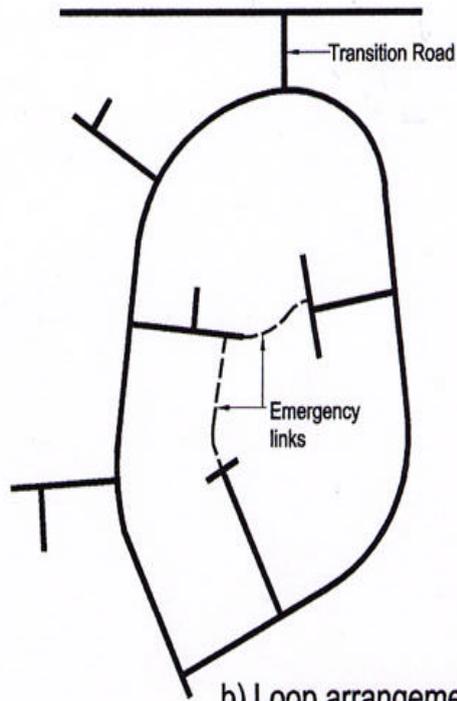
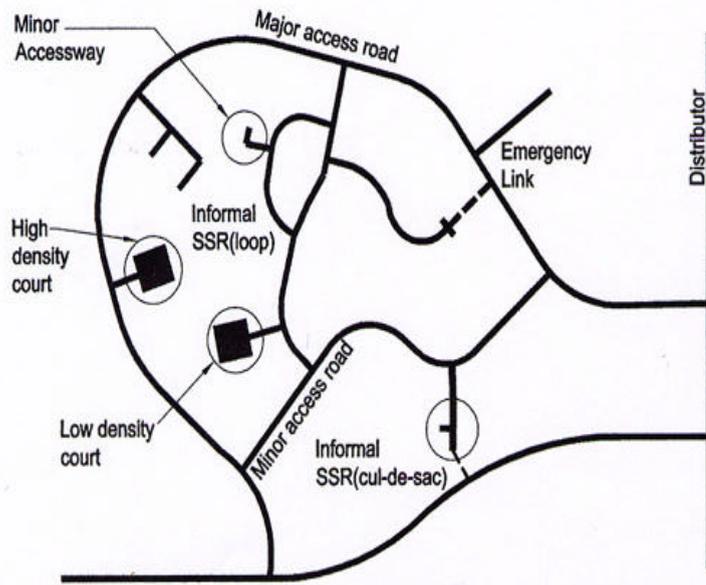




a) Tree-Like Layout



b) Loop arrangement



c) Combined development



9, St Leonards Place, York, YO1 2ET
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Highway layouts

SCALE: NTS
Drawing Group: Engineers

Project

DRAWN BY: DRowntree

DATE: Oct 2002

Drawing No.

Appendix 1

Appendix 2: Car and cycle parking provision per residential unit

Type of Unit	Footstreet Zone		York City Centre (walled city)		Rest of District	
	Car	Cycle	Car	Cycle	Car	Cycle
1 to 2 bedroom	0	1	1	1(c)	1	1(c)
3 to 4 bedroom	0	2	2	2(c)	2	2(c)
5 or more bedrooms	0	2	3	2(c)	3	2(c)
Retirement Homes over 55yrs	-	1	1	1-per2	1	1per2
Retirement Homes over 65yrs	-	-	1per2	-	1per2	-
Visitor Provision	-	-	1 in 4	1 per 10	1 per 4	1 per10
HMO/bedsits	0	1	1 per 3	1	1 per 2	1
Student Accommodation	0	1	1 per 5*	1	1 per 5*	1
Sheltered Housing	0	1 per 2*	1 per 4 ***	1 per 2 **	1 per ***	1 per 2
Flats over shops	0	1(c)	0	1(c)	1	1(c)
Moored Houseboats	0	0	1	1	1	1

* plus 2 if resident warden

** plus 1 per 2 for staff

*** plus 2 if resident warden + 1 space per 2 for non residential staff.

(C) covered and secure space.

Appendix 3: Approved planting - For use in residential highway verges

SCHEDULE OF SHRUBS		
Botanical Name	Common Name	Height(m)
Berberis candidula	Barberry Family	0.5
Berberis thunbergii "Atropurpurea Nana"		0.5
Calluna (in variety)	Ling	0.5
Ceanothus prostratus		0.5
Cornus canadensis	creeping Dogwood	0.3
Cotoneaster dammeri	Cotoneaster Family	0.5
Cotoneaster horizontalis		0.5
Cotoneaster microphyllus		
Cotoneaster salicifolius "Repens"		0.5
Cotoneaster "Skogholm"		0.5
Cytisus x beanii	Broom Family	0.3
Cytisus x kewensis		0.5
Erica (in variety)	Heather	0.5
Euonymus fortunei "Radicans" (in variety)		0.5
Gaultheria sprocumbens	Checkerberry	0.3
Genista sydia		0.5
Genista hispanica	Spanish Gorse	0.5
Hebe albicans	Shrubby Veronica Family	0.5
Hebe armstrongii		0.5
Hebe "Carl Teschner"		0.5
Hebe pinguifolia "Pagei"		0.3
Hedera canariensis (in variety)	Canary Island Ivy	0.3
Hypericum calycinum	Rose of Sharon	0.5
Juniperus communis "Honrbrookii"	Juniper Family	0.5
Juniperus horizontalis		
Lavandula spica "Hidcote"	Lavender	0.5
Pachysandra terminalis		0.5
Rosa "Max Graf"		0.5
Vinca major (in variety)	Greater Periwinkle	0.3
Vinca minor (in variety)	Lesser Periwinkle	0.3

Appendix 3: Suggested trees for planting in residential highway verges

NARROW VERGES up to 3m wide	
Botanical name	Common name
Betula pendula	(Silver Birch)
Crataegus	(Hawthorn)
Prunus padus	(Bird Cherry)
Prunus Avian	(Gean)
Sorbus aucuparia	(Rowan)

WIDE VERGES up to 6m wide	
Botanical name	Common name
Acer Lobelii	(Lobel's Maple)
Alnus cordata	(Italian Alder)
Tilia euchlora	(Lime)

Appendix 4: Safety audit checklist 4

Development Proposals

Scheme Name

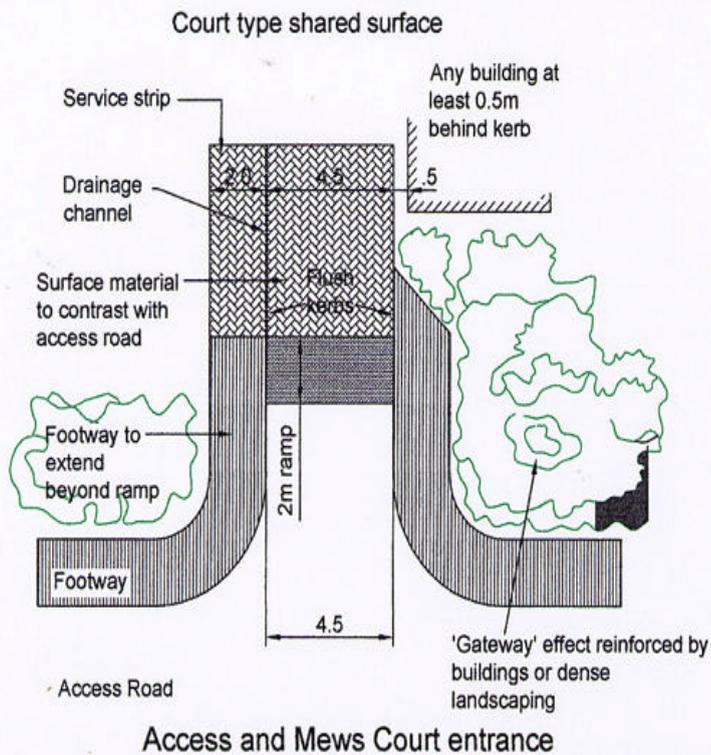
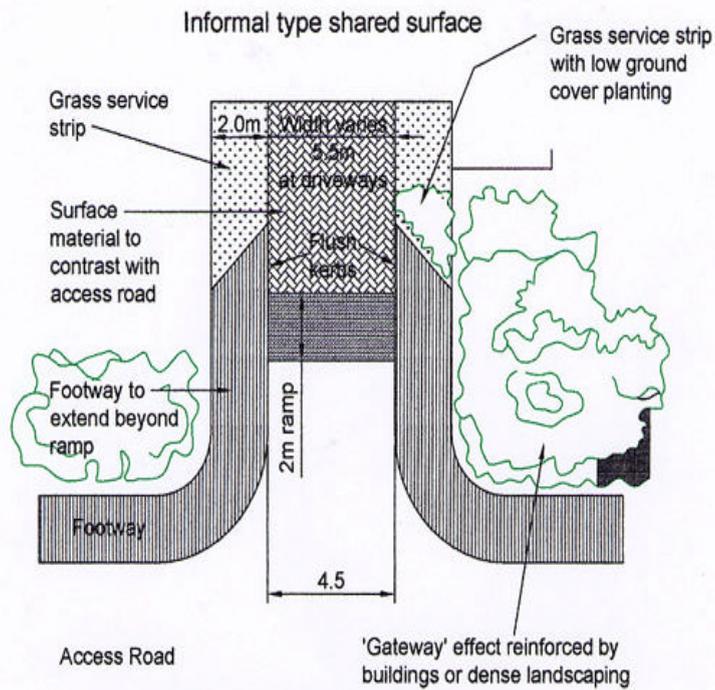
Audit Carried out by:

Date

For detailed proposals access to the existing highway should be referenced to the appropriate junction type checklists, as set out nos. 3 (i) to 3 (v)
The more general items in the checklist below may be used where appropriate to the development proposed.

Item No.	Description	Satisfactory	Query	Comments
1	Horizontal Alignment Is visibility satisfactory at proposed access Are curve radii and forward visibility satisfactory? Are verge widths satisfactory?			
2	Vertical Alignment Are gradients satisfactory? Are sight and stopping distances maintained?			
3	Parking Provision Is on site parking adequate to minimise on street parking and associated risks? Are parking areas conveniently located, with adequate turning facilities?			
4	Servicing Facilities Are off street loading/unloading areas provided? Are there turning facilities for large vehicles?			

	Is emergency vehicles access provided for?			
5	<p>Landscaping</p> <p>Does landscaping affect visibility at junctions, bends or accesses?</p> <p>As tree planting proposed where vehicles are most likely to run off road?</p>			
6	<p>Traffic Signs</p> <p>Have necessary traffic signs and road markings been provided as part of development?</p>			
7	<p>Other</p> <p>Will there be area wide effects on other roads?</p> <p>Will design keep speeds down where necessary?</p> <p>Are number of accesses to busy roads minimised by layout?</p> <p>Are footways necessary and provided adequately?</p> <p>Are cycleways required?</p> <p>Is street lighting required/adequate?</p> <p>Are busy lay-bys and stops safely located?</p> <p>Are dropped crossings provided at preferred pedestrian route or crossing points?</p> <p>Is pedestrian guard rail provided where walkways join the highway?</p> <p>Other checks made at discretion of auditor or client.</p>			



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Typical Entry Details

SCALE 1:200
Highway Group
Engineers

Project

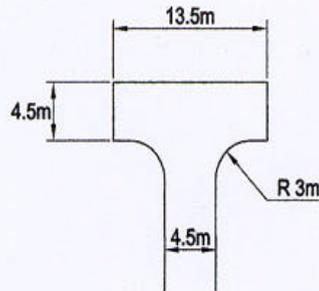
DRAWN BY D Rowntree

DATE Oct 2002

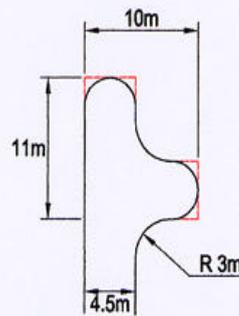
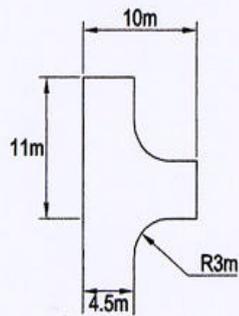
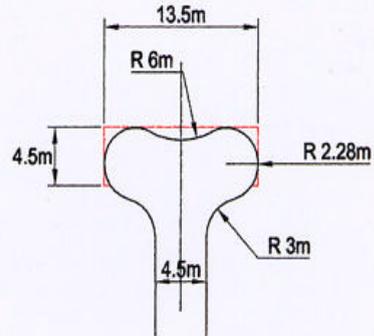
Drawing No.

appendix 5

(i) Basic dimensions and layouts



(ii) Acceptable variations



Minor access ways

These examples show the minimum dimensions to allow the turning of a car as shown is Design Bulletin 32. Extra space or widening should be incorporated to provide at least one casual parking space.

Because of the small radii employed in these layouts statutory undertakers cannot general lay their services round them as is usual. Approval of the statutory undertakers must be sought and/or acceptable routes agreed for services.



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Turning heads - Minor Accessways

SCALE 1:500
Highway Group
Engineers

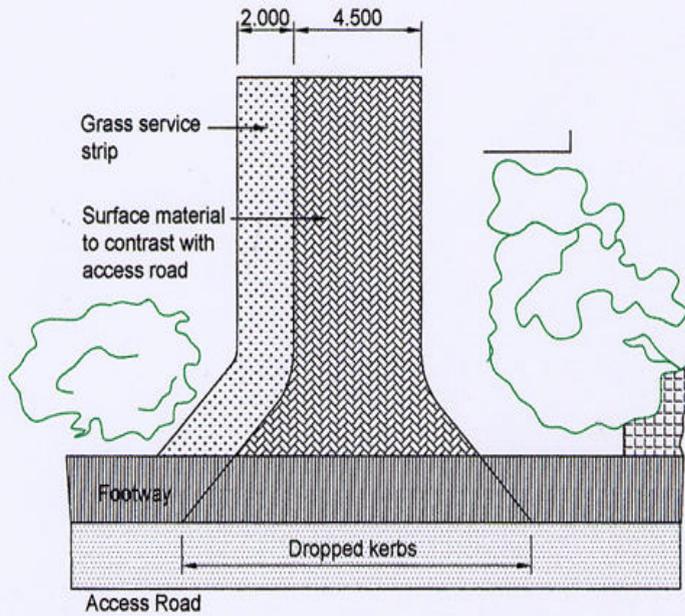
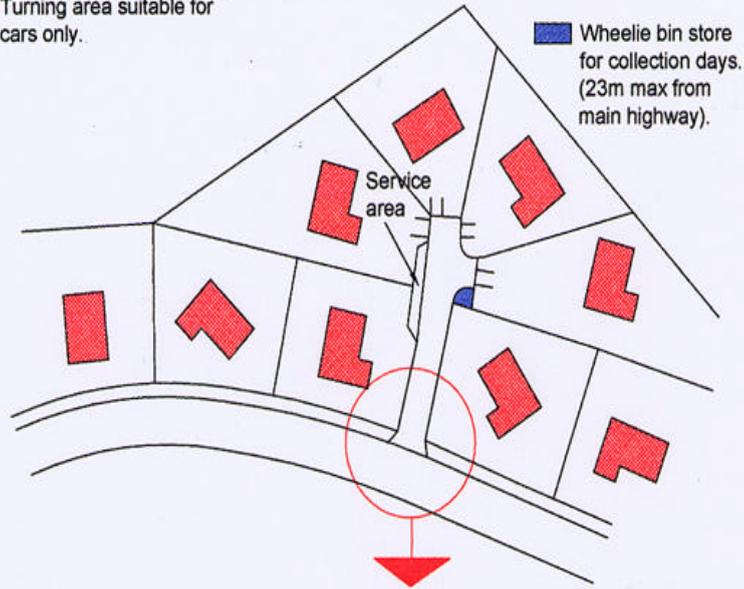
Project

DRAWN BY J Rowntree

DATE Oct 2002

Drawing No. Appendix 6

MINOR ACCESS WAY
 4.5 wide 25.0m long (max).
 Turning area suitable for
 cars only.



Scale: 1:200



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Minor Accessways

SCALE 1:200
 Design Group
 Engineers

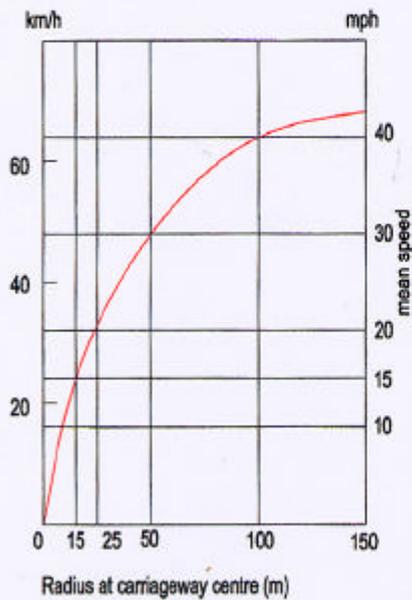
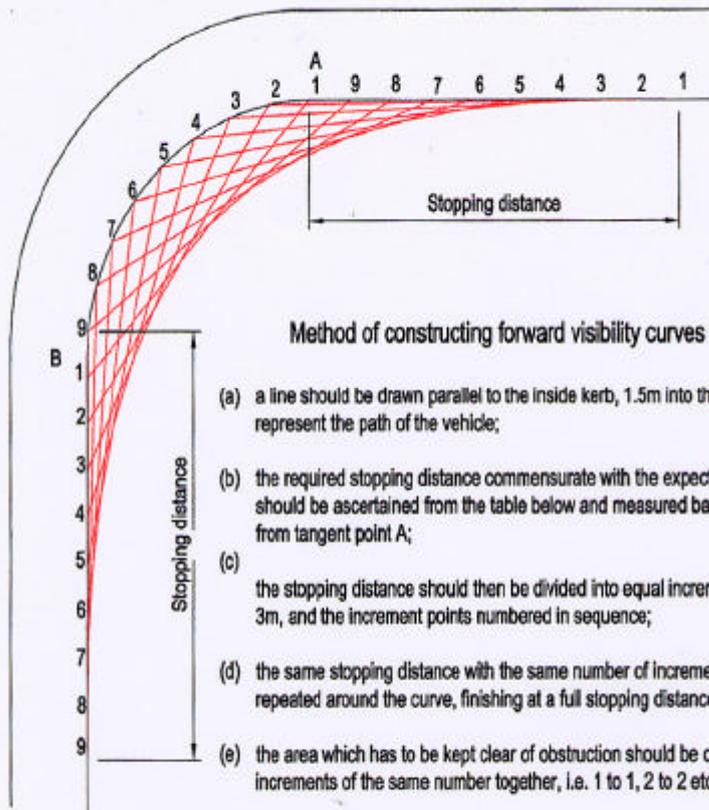
Project

ISSUE BY J Rowtree

DATE Oct 2002

Drawing No.

Appendix 7



Stopping distance (metres)	0	5	10	15	20	25	30
mean speed (km/h)	0	8	16	24	32	40	48
mean speed (mph)	0	6	14	23	33	45	60

It should be noted that this graph represents mean vehicle speeds only and as an additional safety factor it is recommended that 20% be added to these speeds when considering the stopping distances and the forward visibility which should be provided.



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Forward visibility

SCALE: NTS
Drawing Group
Engineers

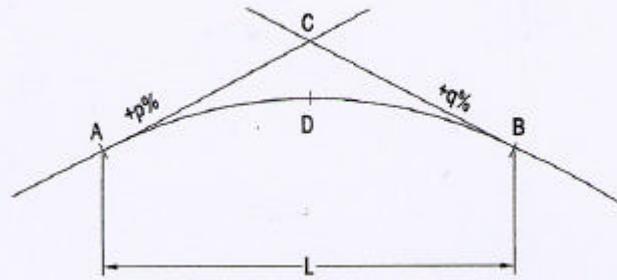
Project

DRAWN BY: D.Rantree

DATE: Oct 2002

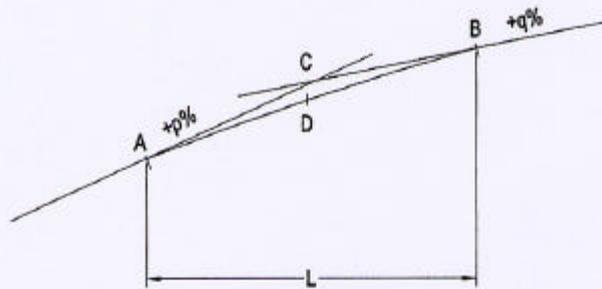
Drawn to:

Appendix 8



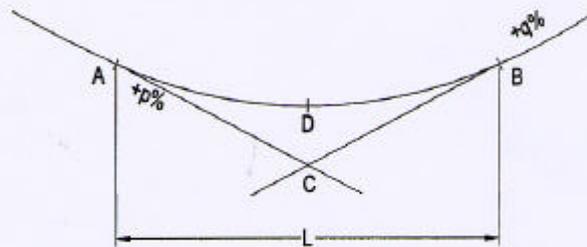
$$L = K [p - (-q)]$$

$$L = K (p + q) \text{ metres}$$



$$L = K [p - (+q)]$$

$$L = K (p - q) \text{ metres}$$



$$L = K [p - (-q)]$$

$$L = K (p + q) \text{ metres}$$

Notes

1. Levels at D = 0.25 (A+B+2C)
2. K value can be obtained from Table for the particular design speed of the road.
3. A, B, C and D are levels



1,51, Leonard's Place, York, YO1 1ET
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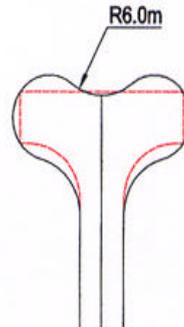
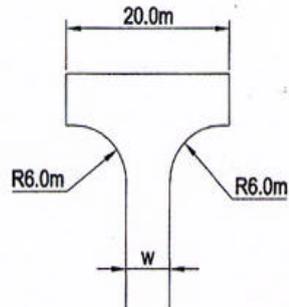
Vertical Curves

SCALE: NTS	PROJECT:	ROAD NO: B6061/2	DATE: Oct 2002
Designing Group	Engineers	Drawing No: Appendix 9	

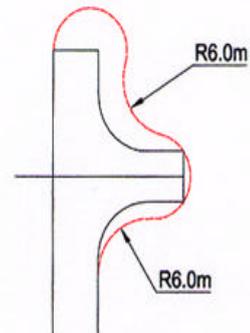
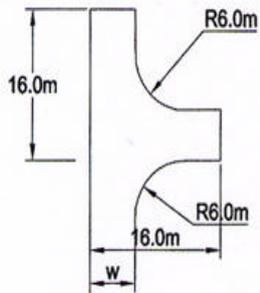
(i) Basic dimensions and layouts

(ii) Acceptable variations

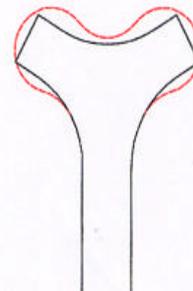
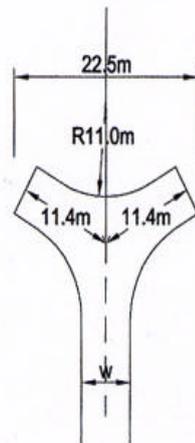
T' type



'Key' type



'Y' type



Minimum kerb radius to amorphous shapes 4.5m except where otherwise indicated.



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Turning heads - Layouts for residential estates

SCALE NTS
Engineering Group
Engineers

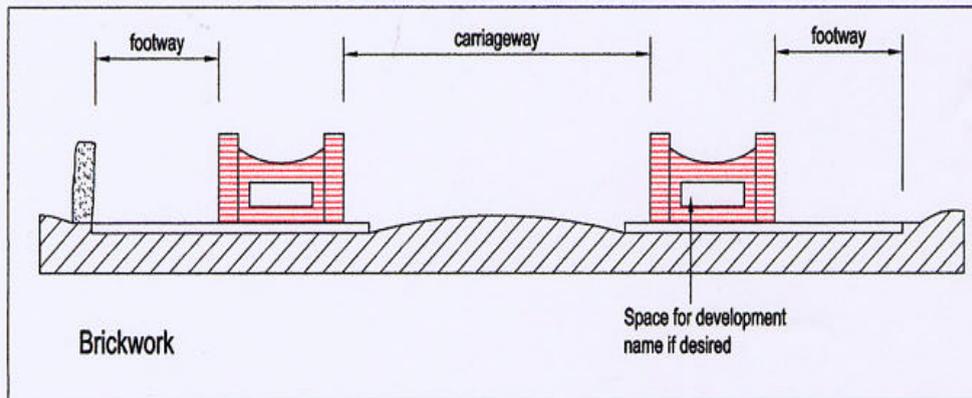
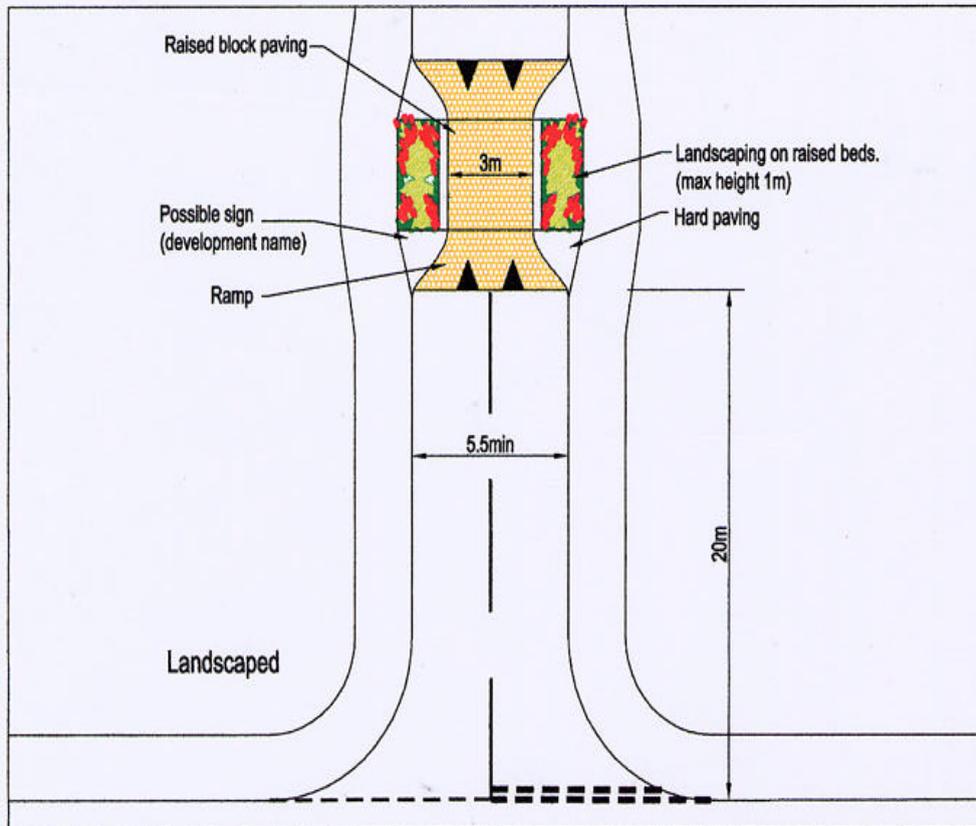
Project

DRAWN BY D. Rountree

DATE Oct 2002

Priority No.

appendix10



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Telephone: 01904 623161

Possible 'Gateway' treatments

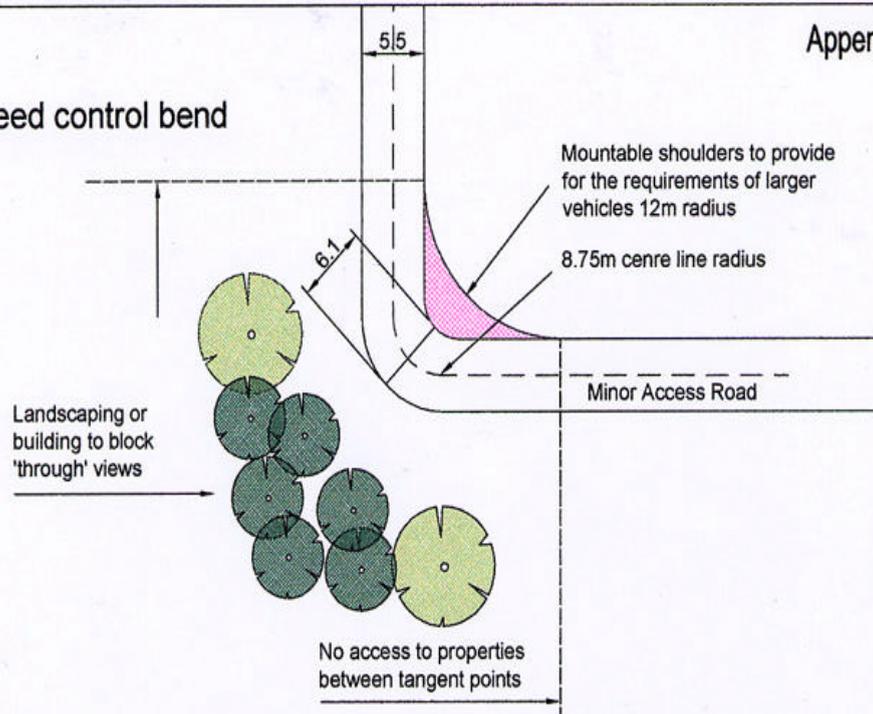
SCALE: NTS
Highway Group
Engineers

PROJECT: [blank]
DRAWN BY: Brown tree

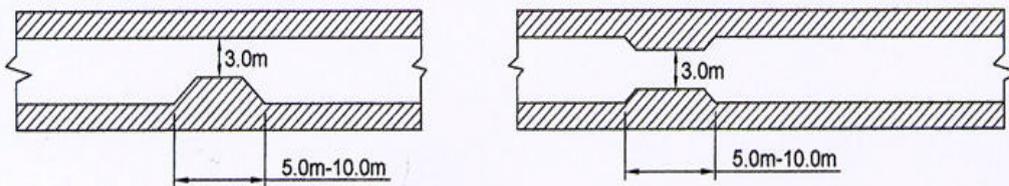
DATE: Oct 2002
Drawing No.

Appendix 11

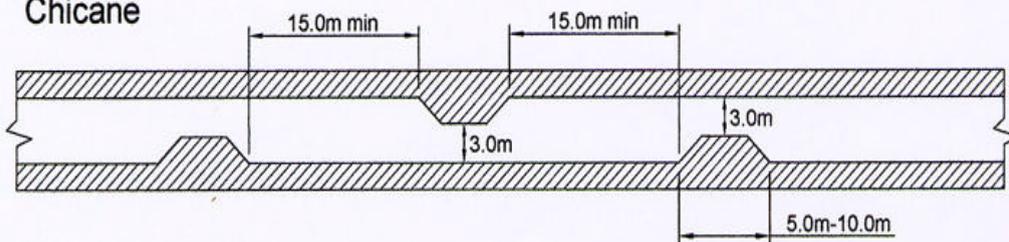
Speed control bend



Road narrowing



Chicane



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Horizontal Speed Control Measures

SCALE NTS
Planning Group
Engineers

Project

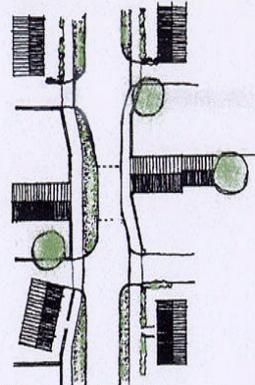
Drawn BY JRowtree

DATE Oct 2002

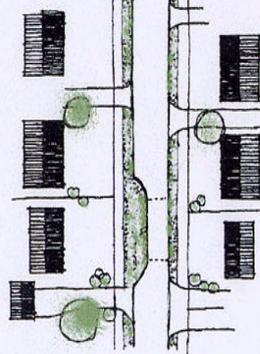
Drawing No

Appendix 12

Speed restraint measures should be an integral part of the design



...pinch -points, 'build-outs' etc can be emphasised by buildings gable to road



...otherwise the effect is lost!

Appendix 13



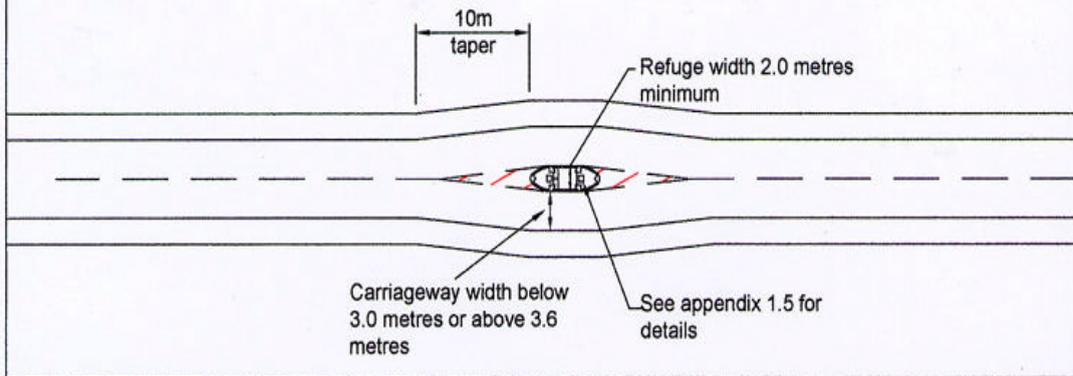
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Horizontal speed restraint measures

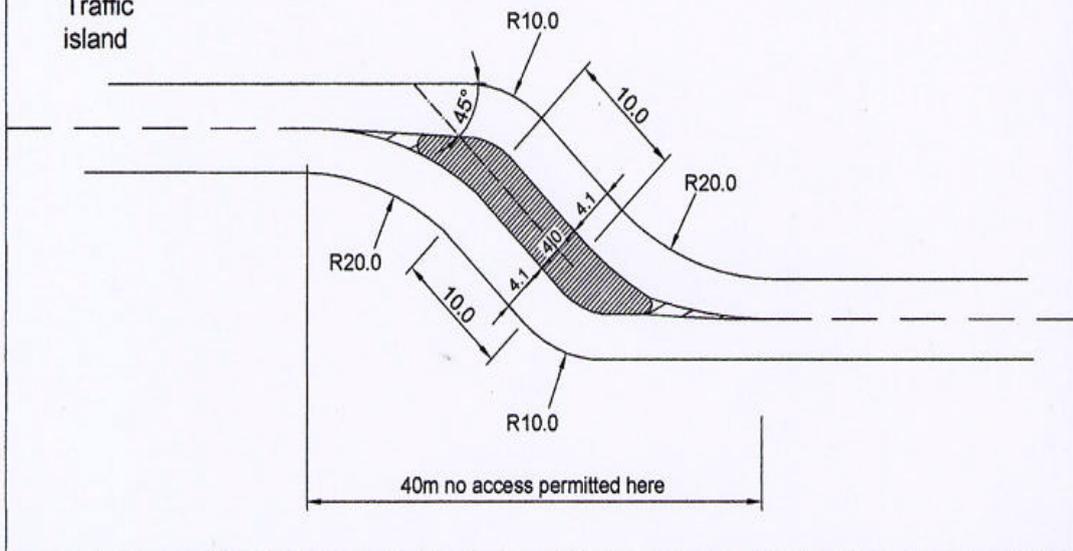
SCALE	NTS	DRAWN BY	DRowther	DATE	Oct 2002
DESIGNED BY		PROJECT		PROJECT	
ENGINEERS					Appendix13

Refuge

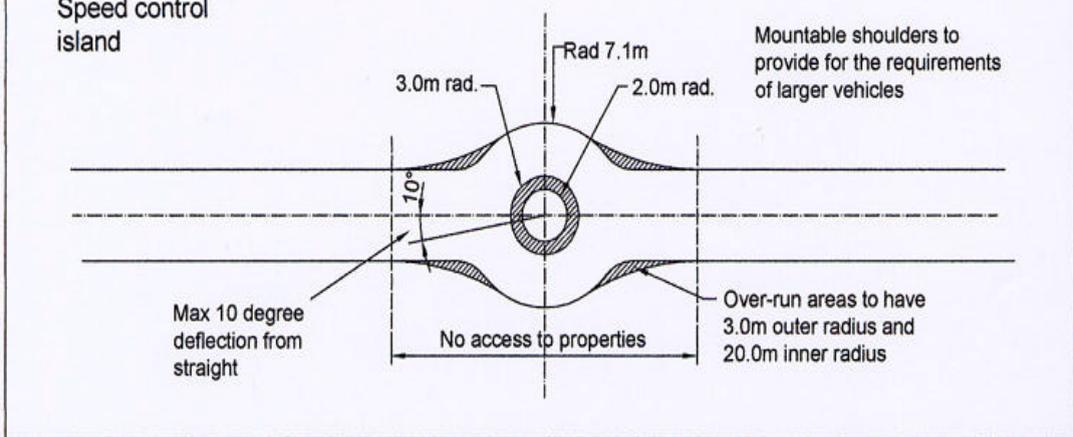
Appendix 14



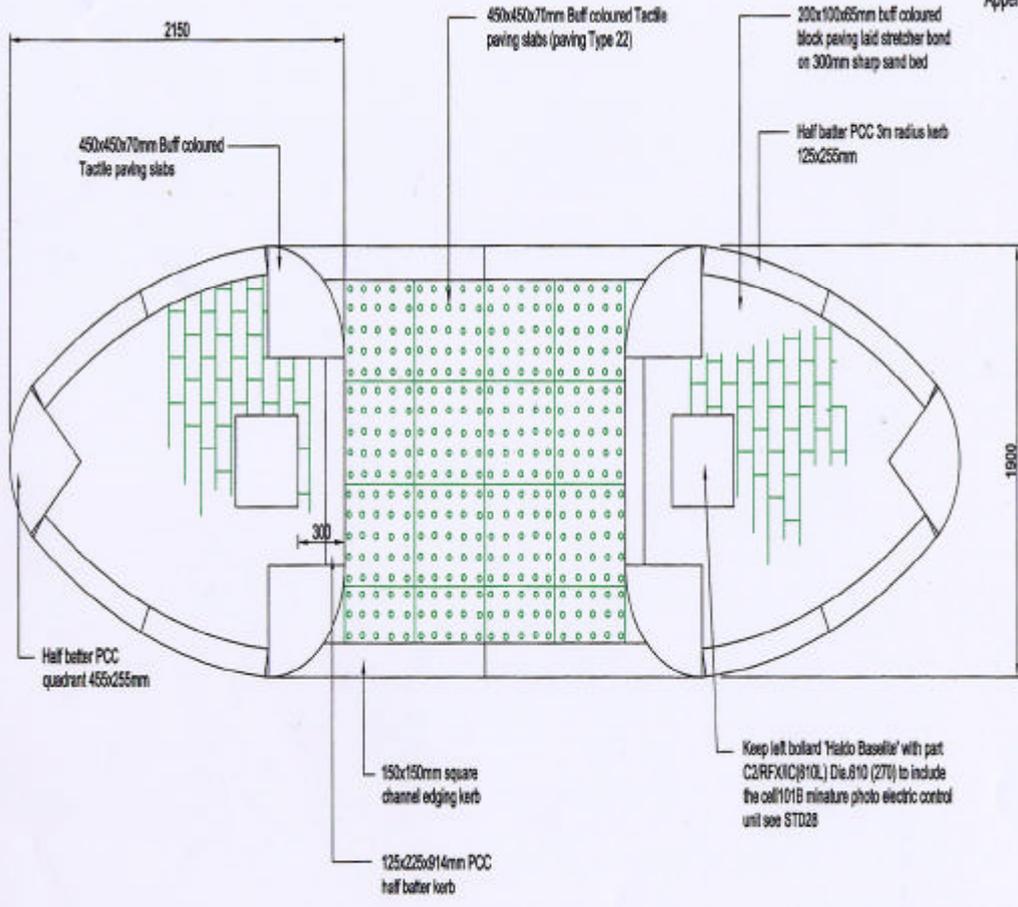
Traffic island



Speed control island



Horizontal speed control measures

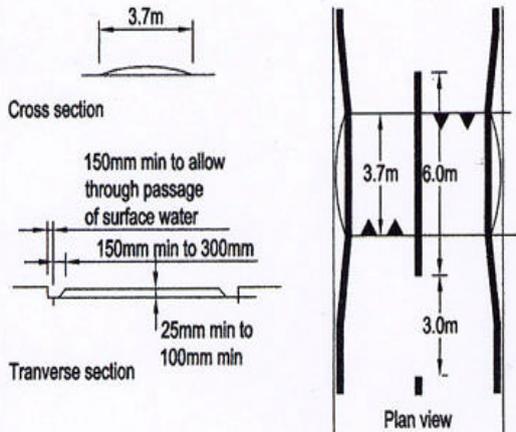


5,21 Leazes Road, York, YO1 1PE
Telephone: 01904 433000

Typical refuge detail

DATE: 05	PROJECT:	DATE: 05/02/2012	DATE: Oct 2012
Drawing No:	Appendix 15		
Engineers			

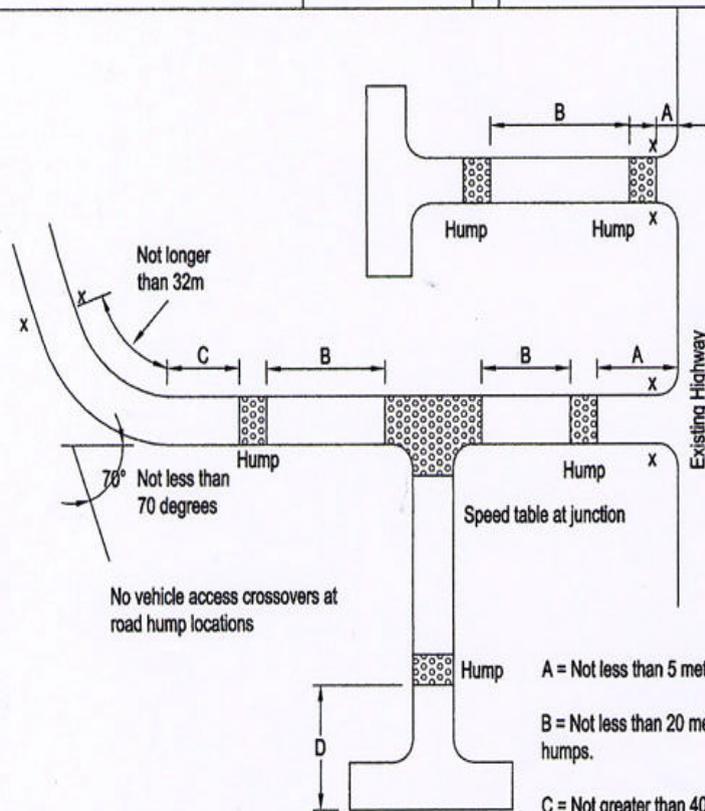
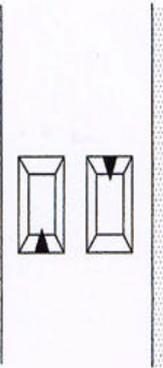
Round-topped speed humps



Speed cushions

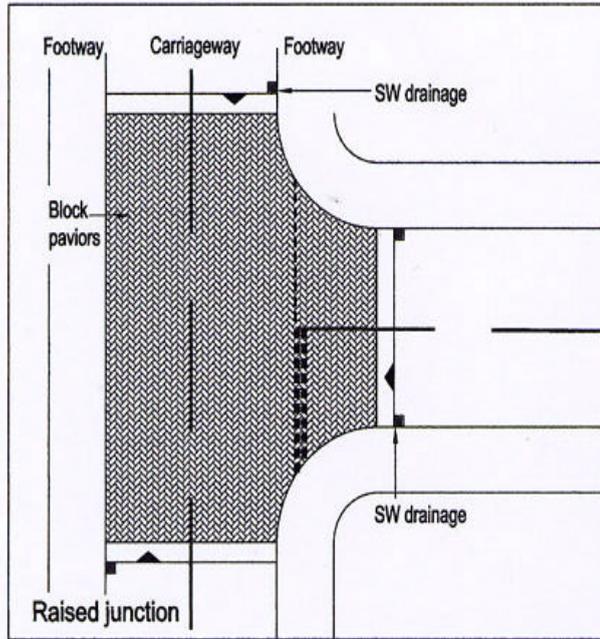
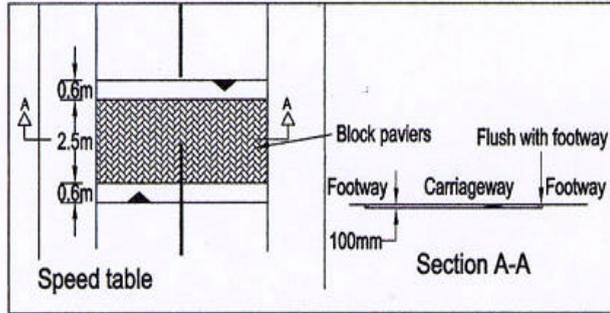
Dimensional advice for speed cushions, to be used subject to local conditions.

- Length 3.7m maximum
3.5m for routes with mini-buses.
2m - 3m on other routes.
- Width 1.6m-1.7m for bus routes.
Up to 2m elsewhere.
- Gradient In the direction of vehicle travel not steeper than 1 in 8.
- Side ramps: not steeper than 1 in 8.



Road hump locations

- A = Not less than 5 metres nor greater than 40metres from junction.
- B = Not less than 20 metres nor greater than 150 metres between humps.
- C = Not greater than 40 metres from a bend where change of direction is not less than 70 degrees and not greater than 32 metres.
- D = Not greater than 40 metres from end of cul-de sac.
- x = Typical locations of traffic signs diagram 557.1



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Vertical speed control measures

SCALE 1:200

Drawn by
Engineers

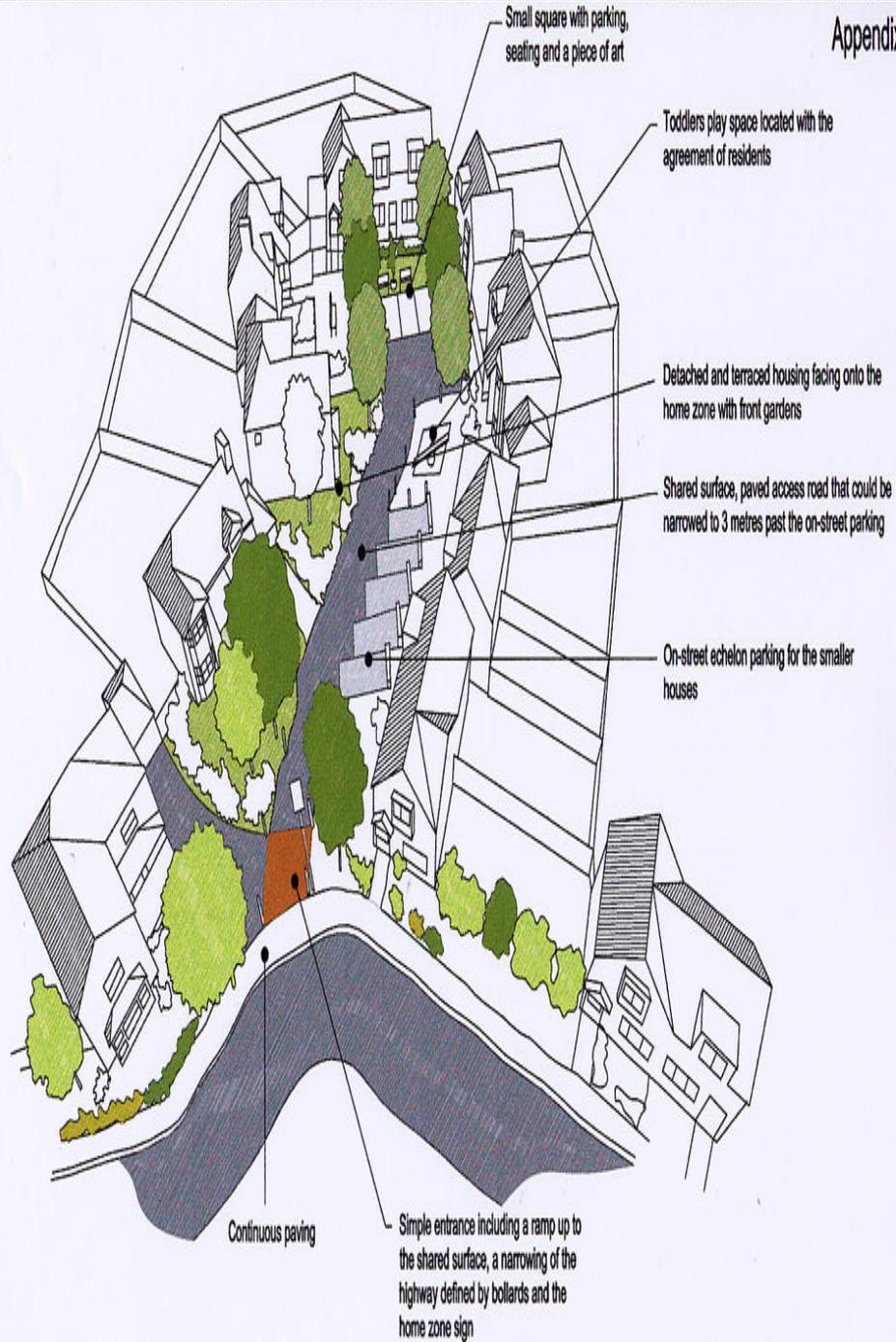
Project

DRAWN BY DRowtree

DATE Oct 2002

Drawing No

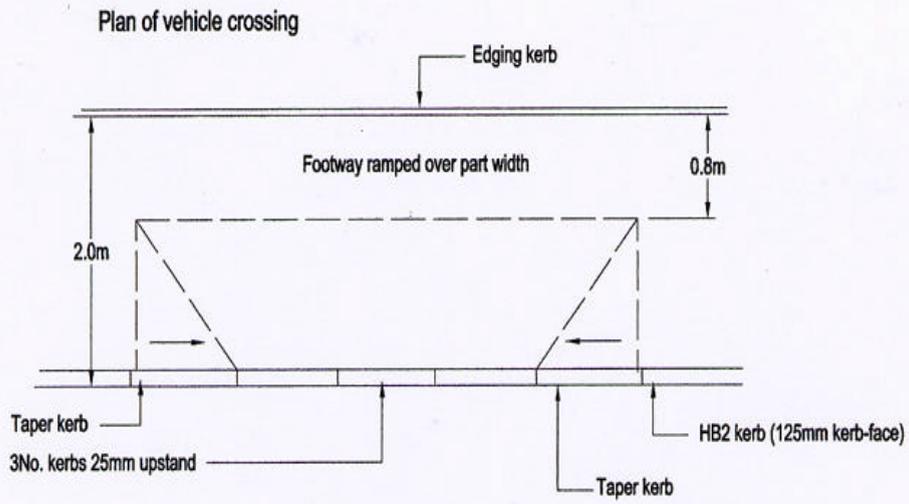
Appendix 17



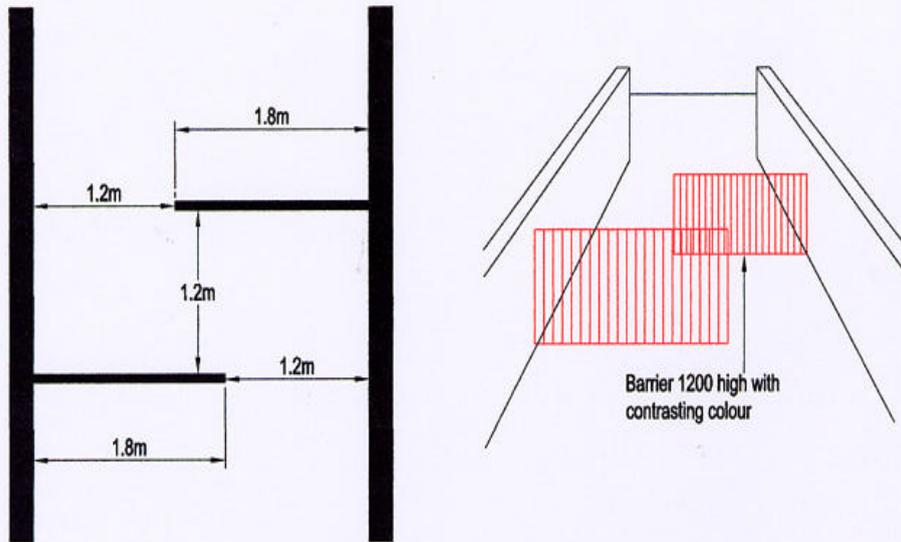
951Leazes Place, York, YO1 2ET
Telephone 01904 626261

Typical Home Zone layout

SCALE	N.T.S.	DRAWN BY	U Brown tree	DATE	Oct 2002
Engineering Group		Project		Printing by	Appendix 18
Engineers					



Entry to private drives



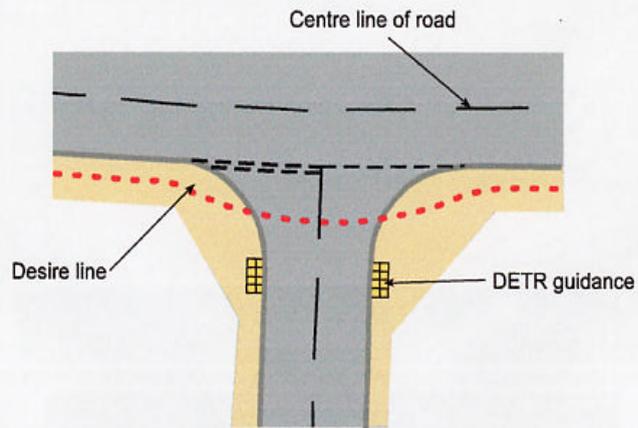
Staggered barrier layout for footpaths and footways



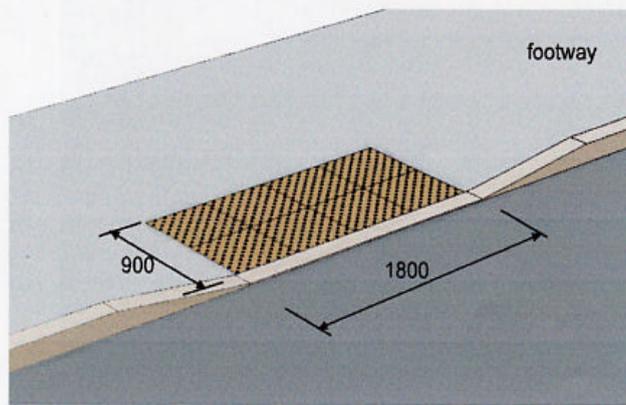
9, St Leonards Place, York, YO1 2ET
Telephone: 01904 613161

SCALE: NTS
DRAWN BY: DRowtree
DATE: Oct 2002
Project:
Drawing No.
Engineers:
Barriering Group

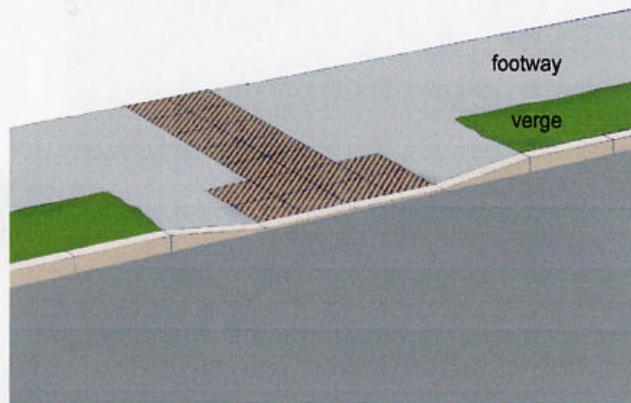
Appendix 19



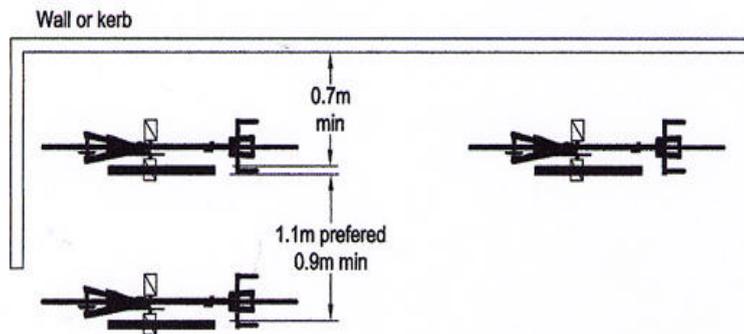
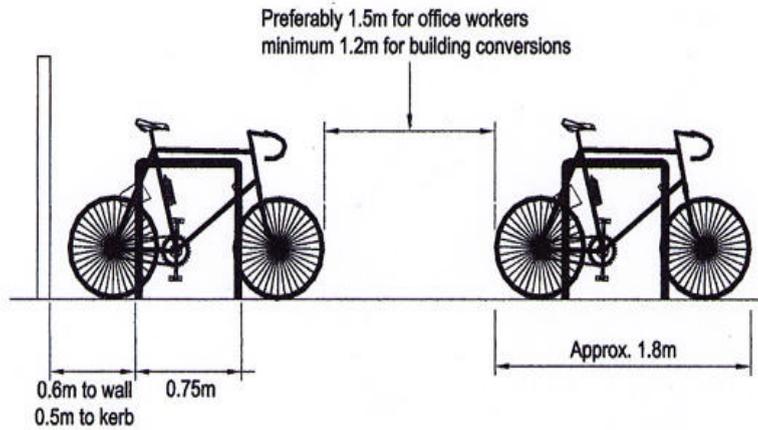
Pedestrian desire line and DETR guidance.



Standard detail



Tails to be provided where the crossing may be difficult to locate



Footprint of a stand-alone Sheffield Stand - 1.8m x 1m

Footprint of a Sheffield Stand adjacent to a wall or kerb - 1.8mx1.2m

Footprint of a Sheffield Stand "Toast-rack" - 1.8m x (No. of stands x 1m)



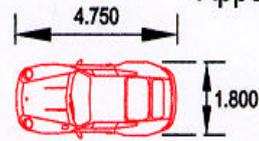
9, St Leonards Place, York, YO1 2ET
Telephone: 01904 613161

Design Guidelines for Installation of Cycle Parking

SCALE	NTS	DRAWN BY	DRowntree	DATE	Oct 2002
Projecting Group	Project	Projecting Group	Projecting Group	Projecting No.	appendix21

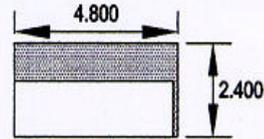
'Standard' car size

99% of all new cars will fit within the dimensions of a rectangle 4.75m x 1.8m



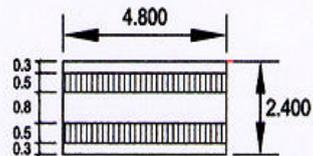
'Standard' Car parking space

A minimum space of 4.8m x 2.4m is required for hardstandings, car ports and the internal dimension of garages. The standard dimension of 4.8 x 2.4m must only be used as a general minimum (16ft. x 8ft)



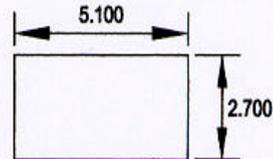
Basic Hardstanding

For a 'standard car' excluding working space for individual plots.



Basic

- Convertible hardstanding
- Convertible car port
- Attached garage
- Detached garage
- Group hardstandings (convertible to garages later)

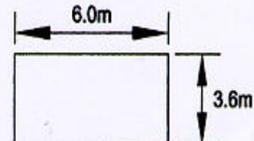


NOTES

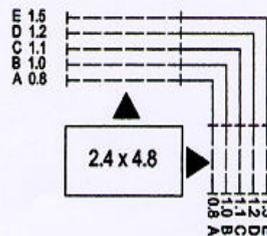
- a. Dimensions of convertible hardstandings include allowance for wall thickness
- b. Slab dimensions are the absolute minimum for garages and larger sizes will be required to provide working space.
- c. Add from 0.6m in length x 1.0m in width to 1.5m in length and 1.5 m in width for working space.
- d. In special cases of garages or car ports for the semi-ambulant, see "Designing for the Disabled" by Selwyn Goldsmith RIBA

Car working space

For practical purposes "standard car" parking spaces need to be increased to accommodate working areas - e.g. for washing and storage space.



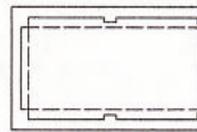
- A - Working surface and minimum clearance
- B - Door opening from dwelling
- C - Washing and cleaning
- D - Washing and storage space
- E - As D, with space for kneeling



Individual Garage

The MINIMUM internal size is 4.8m x 2.4m

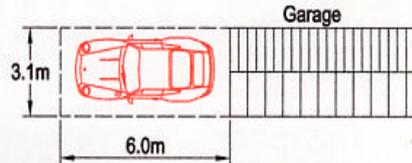
THROUGH garages-with doors back and front are strongly recommended when this can give access for additional rear cutilage parking.



Parking space in front of a garage.

Allow a minimum of 6m space for minimum working at rear, up and over door clearance at front.

This space MUST NOT lie within future highway limits.

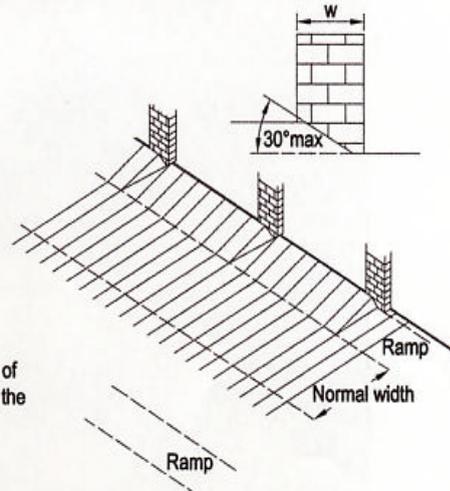


Grouped garages on sloping sites

Where garages are sited across contours they may need to be wider than normal to accommodate wider piers.

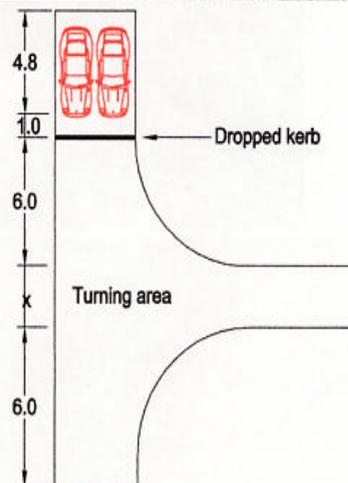
The maneuvering space in a garage forecourt will need to be wider than the minimum to accommodate a short ramp.

The length of a ramp and width of pier will depend on the slope of the forecourt.

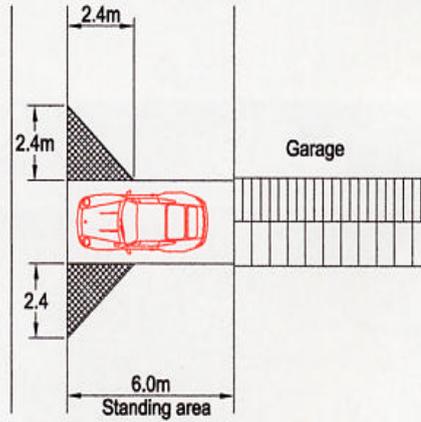


Parking space abutting turning areas

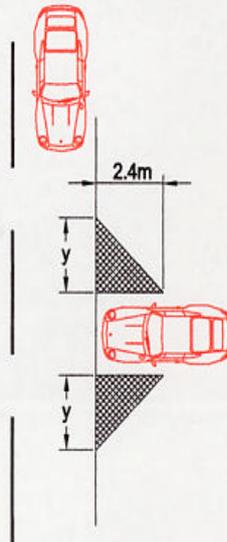
Parking bays will need to be lengthened where they abut turning areas and provided with a dropped kerb to act as a distance stop. This will enable large vehicles to turn properly. xxxroad width.



(I) Vehicle v. pedestrian - splays measuring 2.4m x 2.4m will be required.



(II) Vehicle v. vehicle - The 'y' dimension will relate to the minimum stopping distance for the anticipated speed of oncoming vehicles in accordance with para. 9.10.2



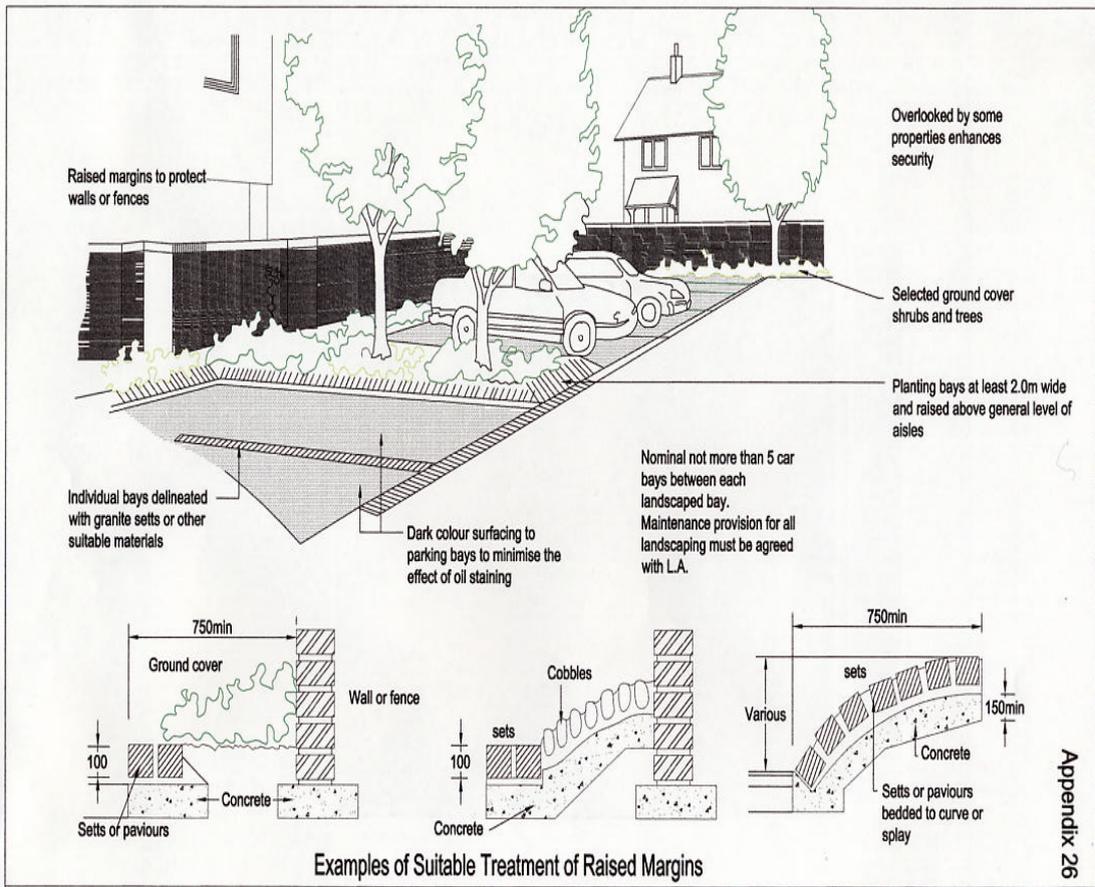
 The shaded triangular areas must be kept clear of all obstructions exceeding 0.6m in height.



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Visibility at individual accesses

SCALE: 1:200	DRAWN BY: JRowtree	DATE: Oct 2002
Engineering Group	Project	Drawing No. appendix25
Engineers		



Examples of Suitable Treatment of Raised Margins



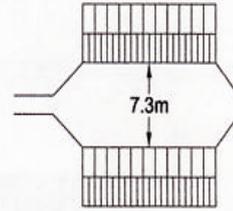
55, Leazes Road, York, YO1 1EX
Telephone: 01904 633161

Typical Communal Parking Area

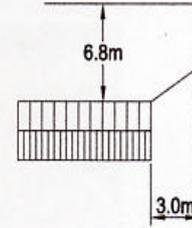
DATE: NTS	PROJECT:	DRAWN BY: BBoatright	DATE: Oct 2002
Prepared by: Group			Drawing No: Appendix26
Engineers			

Appendix 27

Maneuvering space between walls or garages min. 7.3m - up to 9.0m desirable to allow for opening lock up doors and cars parked outside.

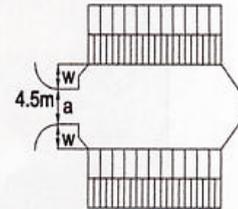


Maneuvering space between garage and opposite kerb - 6.8m



Maneuvering space at end of forecourt aisles - 3.0m

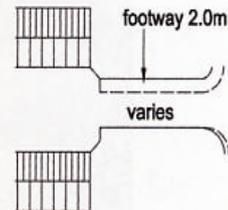
Garage forecourts need to be kept as visually unobtrusive as possible. The provision of screening by layout or by screen wings (w) may be required.



Accessway Widths to Garage Courts

Total spaces*	Widths
(a) Up to 6	2.5m
(b) 7-16	4.5m
(c) Over 16	5.0m

*Garages and hardstandings for service vehicles to Mews areas 4.5m

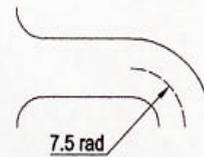


Radius

For access ways up to 16 spaces a minimum centre line radius of 7.5m

For access ways over 16 spaces radius to be designed for 10mph and forward visibility provided accordingly.

Washing area should be sited clear of the vehicular access and parking area.



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Car parking - Grouped parking areas

SCALE: NTS
Designing Group:
Engineers

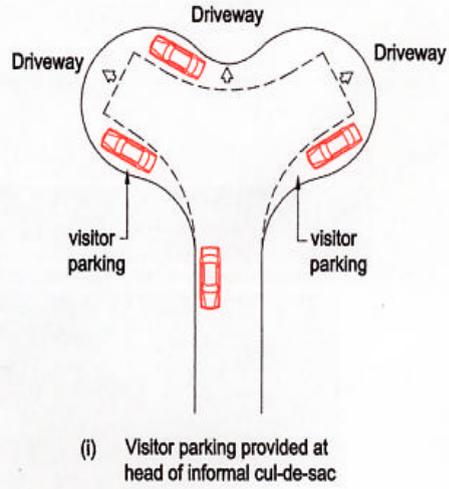
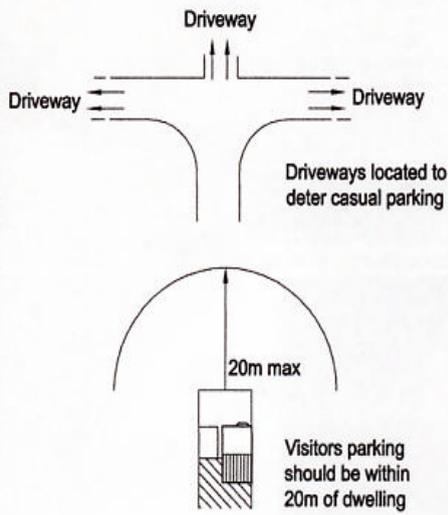
Project

DRAWN BY: JRowtree

DATE: Oct 2002

Drawing No.

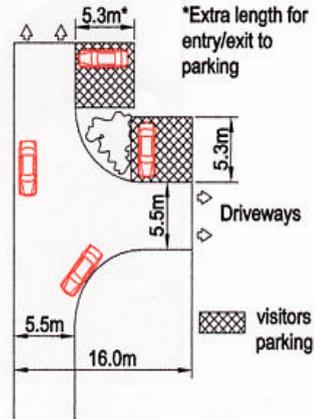
appendix27



(ii) Road width=5.5m or greater:
On-street visitor parking acceptable



(iii) Shared surface road:
casual parking in lay-by



(iv) Visitor parking provided at turning head without blocking driveways



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Location of visitors parking

SCALE: NTS
Drawing Group: Engineers

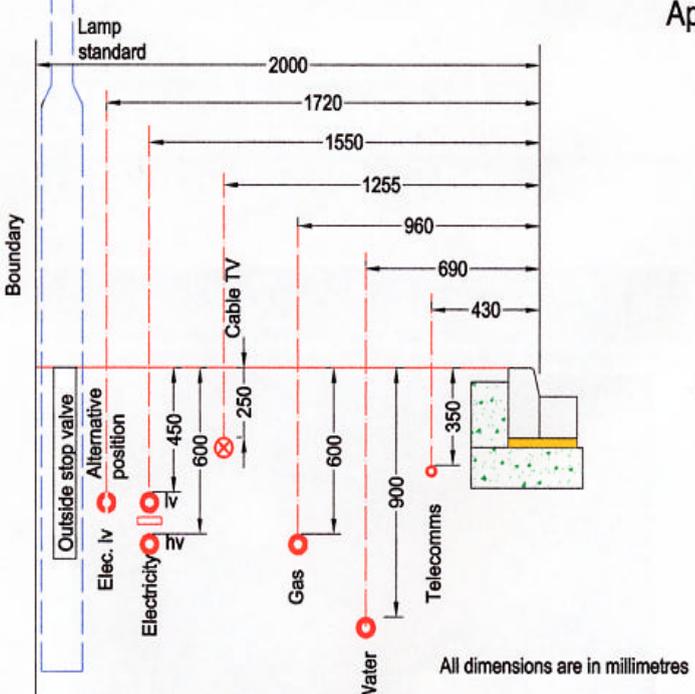
Project:

DRAWN BY: DRowtree

DATE: Oct 2002

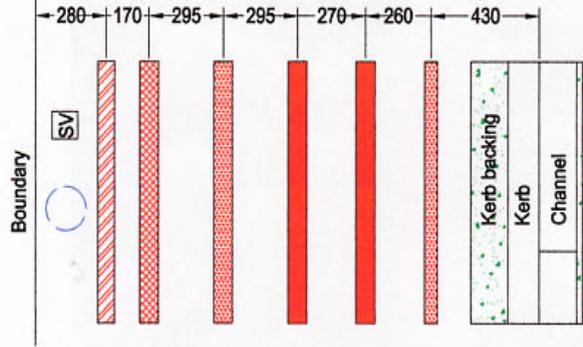
Drawing No: appendix28

Section



All dimensions are in millimetres

Plan



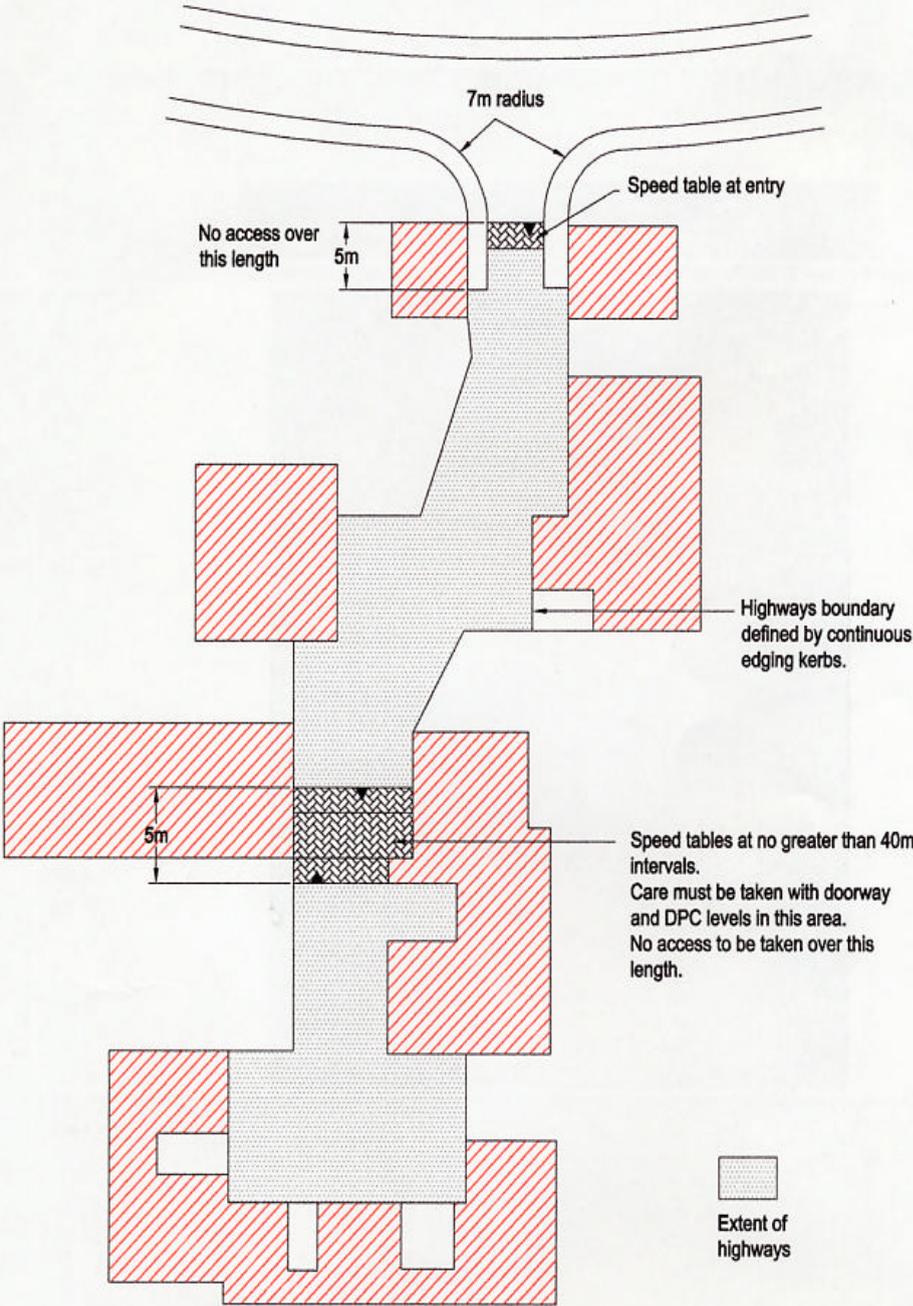
Notes

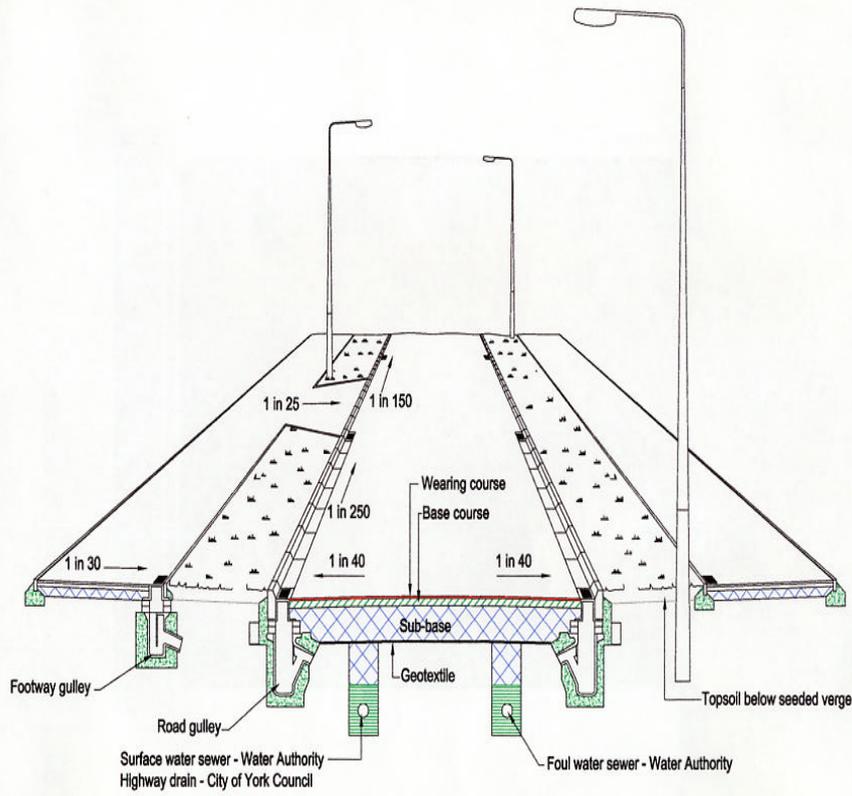
1. The layout of Mains is generally in accordance with the "Report of Joint Committee on Location of Underground Services" published by the Institution of Civil Engineers.
2. The dimensions shown represent the preferred arrangement in straight routes on residential estates. Variations may be necessary of curves and changes of gradient.
3. The space allocated is considered to be the absolute minimum and in certain circumstances e.g. where both h.v. and l.v. cables are laid, the l.v. cable will be laid in the alternative position and additional width may be required.
4. Where services are to be connected to gas mains, a minimum distance of 2.0m is required between the building line and the centre line of the main.
5. With agreement of the statutory authorities, services can be locally grouped to avoid features such as trees.



Layout of Mains (Public Utilities)

SCALE: NTS	DRAWN BY: Brown tree	DATE: Oct 2002	
Designing Group	Project	Drawing No.	Appendix 29
Engineers			





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General cross section detail

DATE	NTS	DRAWN BY	DRowntree	DATE	Oct 2012
Engineering Group		Project		Drawing No.	appendix32
Engineers					