

**Town and Country Planning Act 1990**

**Ribble Valley Borough Council Planning Application Reference : 3/2017/0317**

**Land south of Blackburn Road, Hothersall near Longridge PR3 2YY**

**Outline planning application for employment floorspace (use classes B1, B2 and B8) and associated access, car parking, landscaping and services infrastructure with all matters reserved except access**

**Independent Review of the Highway Proposals for the  
Planning Application on Behalf of Hothersall Parish Council**

**Prepared by**

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(DMRB TD 42/95)

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**1. Introduction**

- 1.1 This report has been prepared on behalf of Hothersall Parish Council to review the highway proposals that have been submitted with Ribble Valley Borough Council (RVBC), planning application 3/2017/0317. The planning application seeks outline planning permission (with access as a detailed matter for approval), for an employment development on land to the south of Blackburn Road in Hothersall near Longridge.
- 1.2 The report is an independent review of the highway proposals that have been submitted with the planning application and has been prepared by John Carruthers who is a Chartered Civil Engineer and a Highway and Transport Consultant. Mr Carruthers has over 31 years of professional highway, traffic and transport experience which includes representing councils, and private sector clients, at planning appeals and inquiries.

**2. Planning Application Proposals**

- 2.1 RVBC planning application 3/2017/0317 seeks outline planning permission for an employment development with up to 10,090 sq.m of B1, B2 and B8 floorspace on a 3.00 hectare site on the south side of Blackburn Road in Hothersall near Longridge. The proposals are in outline except for access.
- 2.2 The planning application states that the site is currently used for agricultural grazing. The proposed illustrative site layout that is included in the Design and Access Statement shows the potential to accommodate up to 9 buildings of various sizes for office, research and light-industrial use (Class B1), general industrial use (Class B2), and/or storage (Class B8).
- 2.3 The planning application shows that proposed development would be served from a simple priority (Give Way), junction onto the B6243 Blackburn Road.

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**3. Review of the Highway Proposals**

3.1 The following sections review the highway proposals that have been submitted with the planning application and the associated traffic and road safety impacts :

*(i) General*

3.2 The planning application seeks detailed approval for the access proposals that are associated with the proposed development and, therefore, it is important that the full details are provided with the planning application. The Development Management Procedure Order (DMPO, 2015), describes the detailed requirements that should be submitted with a planning application where access is a reserved matter and these should extend to the internal site layout to ensure that the proposed maximum amount of development floorspace can be satisfactorily accommodated on the site including the requirements for parking, turning areas and landscaping etc.. An indicative site layout, only, has been submitted and, therefore, the requirements of the DMPO, 2015 are not considered to have been met for the planning application.

3.3 The planning application is accompanied by a Transport Assessment but the document does not contain the level of detail, or traffic analysis, that would, normally, be contained in a Transport Assessment for a major development proposal. The submitted document should be considered as a Transport Statement instead of a Transport Assessment based on the 'Guidelines for Transport Assessment' (GfTA). The GfTA have been withdrawn by the Department for Transport but they are still used as the main guidance for the transport assessment of new developments by most Highway Authorities.

3.4 Because the proposed highway access would be sited on a rural 'B' class road where the national speed limit applies (60 mph for light vehicles), the highway design standard that should be used for the design of the highway access should be the Design Manual for Roads and Bridges (DMRB).

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(ii) Form of Highway Access Junction

- 3.5 The DMRB contains detailed guidance about the selection of the most suitable form of junction that should be used for a new development. This takes into account a wide range of factors such as traffic flows (Annual Average Daily Traffic – AADT), the volume (and composition), of the proposed development traffic, road safety and the specific requirements of all road users including pedestrians, cyclists and equestrians. The recommended design procedure is illustrated in Figure 2/1 of the DMRB n Appendix 1 to ensure that a safe and suitable junction would be provided for the proposed development.
- 3.6 The Transport Statement that has been submitted with the planning application does not refer to the DMRB methodology to derive the proposed junction type or the specific requirements of the junction. Section 2.15 of the DMRB TD42/95 states that a simple junction should only be used when the design flow on the minor road is not expected to exceed 300 vehicles 2-way AADT and traffic flows on the major road are less than 13,000 vehicles AADT. The proposed development would generate more than 300 vehicles AADT (approximately 800 vehicles), and the traffic data for Blackburn Road has not been provided for the forecast design year. The fact that there would be a high proportion of large commercial vehicles using the proposed access is further justification for a right turning lane to be provided on Blackburn Road if a priority junction layout is proposed (the suitability of a priority junction should be reviewed based on the DMRB methodology and traffic data to be provided).
- 3.7 There is no reference to the existing traffic flows on Blackburn Road (AADT), or the future year design traffic flows on this road taking into account traffic growth and traffic associated with other committed developments in the area. The proposed junction should be assessed for traffic capacity in the proposed opening year (the year of completion for the proposed development), and 5 years after completion of the development.

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*(iii) Visibility Splays and Design Speed*

3.8 The speed of traffic on the major road is also an important consideration in the design of a new junction using the DMRB in terms of the required visibility splays and the requirement for other geometric design features such as kerb radii and deceleration lanes. There has been no traffic speed information provided in the Transport Statement to support the design of the proposed junction layout. Section 3.0.4 of the Transport Statement states that it would not be necessary to reduce the speed limit on Blackburn Road to ensure safe access but this has not been demonstrated in the report. The plans that have been submitted with the planning application are not based on an accurate topographical survey base but are drawn on an Ordnance Survey base plan at a relatively small scale which has inherent inaccuracies. The visibility splays should be 4.5 metres by 215 metres based on the DMRB requirements for a 60 mph speed limit unless traffic speed data shows that a lower design speed will be safe. The visibility splays, as proposed, do not meet the DMRB design standards and could not be provided within the land that is owned by the applicants.

*(iv) Large Vehicle Movements at the Proposed Access*

3.9 The proposed junction layout drawing shows that an articulated lorry would have to use the opposite side of the carriageway on Blackburn Road to make a left turn into, or out of, the proposed development. This would present a significant road safety risk to other road users on Blackburn Road where there is a relatively high volume of traffic travelling on this rural section of road with a 60 mph speed limit.

*(v) Road Safety Audit*

3.10 It is recommended good practice for an independent Road Safety Audit (Stages 1 and 2), to be submitted with the planning application. This would identify if there are any significant road safety problems associated with the proposed highway access layout and would ensure that a safe and suitable highway access could be provided within the land ownership of the applicants.

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(vi) *Sustainable Transport*

- 3.11 The Transport Statement shows that there are 2 bus services operating along Blackburn Road with a weekday frequency of every 2 hours. This is considered to be a low frequency and would be unlikely to result in a high number of employees or visitors travelling by public transport. The Lancashire County Council (LCC), Accessibility Assessment should be completed for the proposed development and the site is expected to have a low accessibility by sustainable transport (walking, cycling and public transport).

(vii) *Highway Benefits of the Scheme*

- 3.12 The Transport Statement refers to the possible provision of a waiting and turning area within the site for the use of drivers who travel to the Hillside Specialist School to the east of the site. It is understood that this proposal has not been agreed with the school and there do not appear to have been any recorded injury accidents resulting from this parking on Blackburn Road and Preston Road at the start and end of a school day. Therefore, the possible highway benefits associated with this proposal would be relatively low and would not mitigate the additional risks that would result from the proposed access on Blackburn Road and the additional traffic that would be generated onto the local highway network.

#### **4. Conclusions and Recommendation**

- 4.1 This report has been prepared to review the highway proposals that have been submitted with RVBC planning application 3/2017/0317 for a proposed employment development on land to the south of Blackburn Road in Hothersall near Longridge. The report is an independent review of the highway proposals to assist Hothersall Parish Council and RVBC to assess the implications of the proposed development on highway safety.
- 4.2 The report shows that the information that has been provided with the planning application is not based on the Design Manual for Roads and Bridges (DMRB), and it is not sufficiently detailed to ensure that a safe and suitable access would be provided for the proposed development site.
- 4.3 Given that the planning application seeks approval for access as a detailed matter, it is recommended that the planning application should not be approved until the further information and highway assessments are carried out.

*Ribble Valley Borough Council Planning Application Ref. 3/2017/0317  
Outline planning application (with access as a detailed matter), for employment floorspace  
(use classes B1,B2 and B8) on land south of Blackburn Road in Hothersall PR3 2YY*

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## **Appendix 1**

**Extracts from the Design Manual for Roads and Bridges (DMRB)**



THE HIGHWAYS AGENCY

TD 42/95



THE SCOTTISH OFFICE DEVELOPMENT DEPARTMENT



THE WELSH OFFICE  
Y SWYDDFA GYMREIG



THE DEPARTMENT OF THE ENVIRONMENT FOR  
NORTHERN IRELAND

# Geometric Design of Major/Minor Priority Junctions

**Summary:** This Document gives advice and standards for the geometric design of major / minor priority junctions with regard to traffic operation and safety.

# 1. INTRODUCTION

## General

1.1 The treatment of major/minor priority junctions has recently been the subject of a study sponsored by the Department of Transport. This study reviewed the existing advice given in Advice Note **TA 20/84** on the **Layout of Major/Minor Junctions**, and made recommendations on the amendments and additions to the document based on research carried out since 1984, and on current good practice.

1.2 As a result of the study, this standard now provides details of the latest requirements and recommendations on general design principles and safety aspects of the geometric design of major/minor priority junctions.

1.3 This document replaces Advice Note **TA 20/84**.

1.4 Guidance on the selection of the most appropriate form of junction is given in **TA 30 (DMRB 5.1)** and **TA 23 (DMRB 6.2)**.

1.5 The main changes and additions from **TA 20/84** can be summarised as follows:-

- a. Visibility requirements are mandatory (paras 7.3 - 7.11).
- b. The 15.5m long articulated goods vehicle with a single rear axle trailer has been replaced as the Design Vehicle by the 16.5m long articulated vehicle (paras 7.14 - 7.16).
- c. The standard layouts in **TA 20/84** have been replaced by figures which illustrate the design elements and their assembly.

## Scope

1.6 This Standard defines the main types of major/minor priority junction which can be used on new and improved trunk roads.

1.7 Advice is also given on the choice between the different types of major/minor priority junction, and on the siting of such junctions.

1.8 Key safety issues are outlined, as are those particular design issues relating to landscaping and the specific requirements of road users.

1.9 Further recommendations are given on the geometric design of the important elements of the major/minor priority junction, and the way in which the individual components can be brought together to produce a good overall design.

## Implementation

1.10 This Standard shall be used forthwith on all schemes for the construction, improvement and maintenance of trunk roads, currently being prepared provided that, in the opinion of the Overseeing Organisations, this would not result in significant additional expense or delay progress. Design Organisations should confirm its application to particular schemes with the Overseeing Organisation.

## Definitions

1.11 The **major** road is the road to which is assigned a permanent priority of traffic movement over that of the other road or roads.

1.12 A **minor** road is a road which has to give priority to the major road.

1.13 The three basic types of major/minor priority junction on single carriageways are defined in the following paragraphs.

1.14 **Simple Junction.** A T- or staggered junction without any ghost or physical islands in the major road, and without channelising islands in the minor road approach (Fig 1/1).

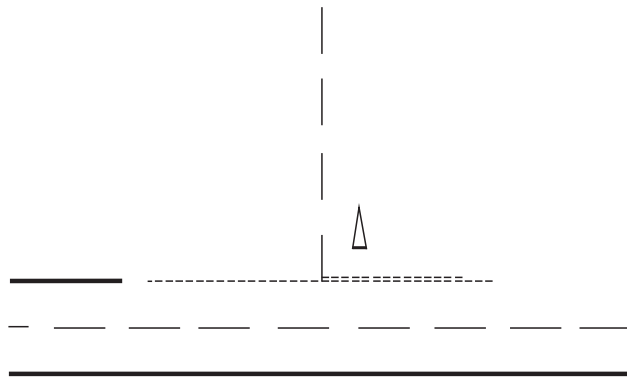


Figure 1/1 :Simple T-Junction  
(paras 1.14, 1.19)

1.15 **Ghost Island Junction.** An at-grade junction, usually a T- or staggered junction, within which an area is marked on the carriageway, shaped and located so as to direct traffic movement (Fig 1/2).

1.16 **Single Lane Dualling.** An at-grade junction, usually a T- or staggered junction, within which central reservation islands are shaped and located so as to direct traffic movement (Fig 1/3).

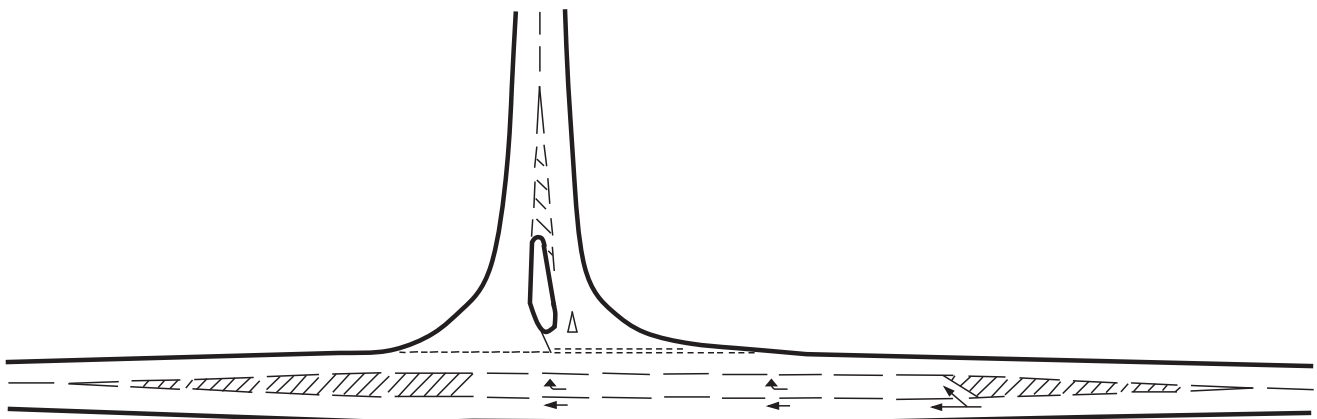


Figure 1 / 2 : Ghost Island Junction (para 1.15)

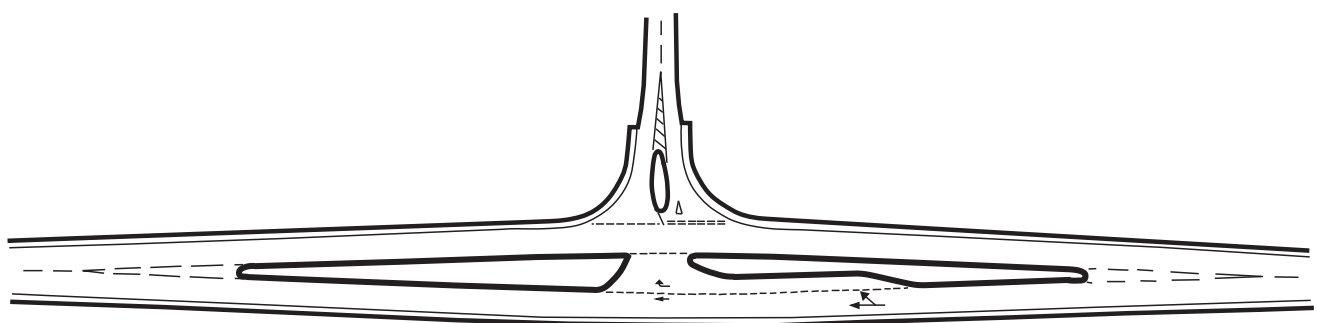


Figure 1/3 : Single Lane Dualling (para 1.16)

1.17 In addition, there are four basic configurations.

1.18 **Crossroads.** An at-grade junction of two roads that cross approximately at right angles (Fig 1/4).

1.19 **T-Junction.** An at-grade junction of two roads, at which the minor road joins the major road approximately at right angles (Fig 1/1).

1.20 **Skew or Y-Junction.** An at-grade junction of two roads, at which the minor road approaches the major road at an oblique angle and terminates at the junction (Fig 1/5).

1.21 **Staggered Junctions.** An at-grade junction of three roads, at which the major road is continuous through the junction, and the minor roads connect with the major road so as to form two opposed T-junctions (Fig 1/6).

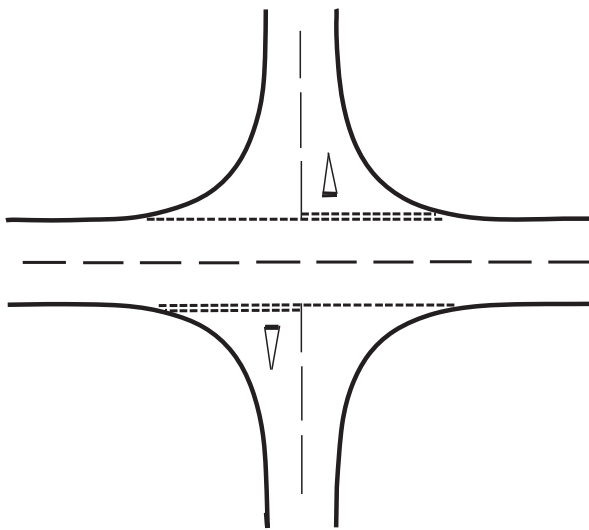


Figure 1/4 : Crossroads (para 1.18)

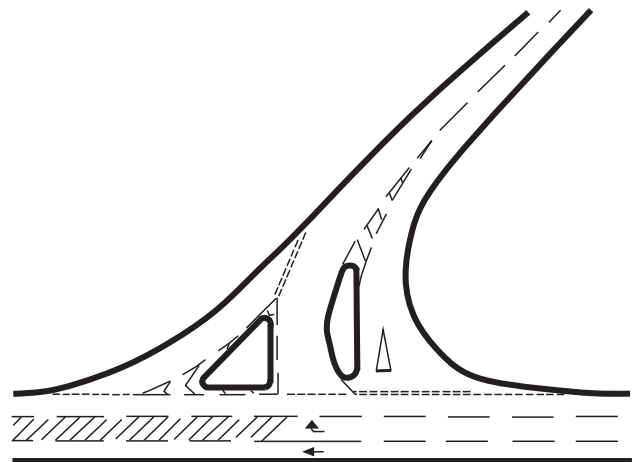


Figure 1/5 : Left Hand Splay Skew Junction  
( para 1.20 )

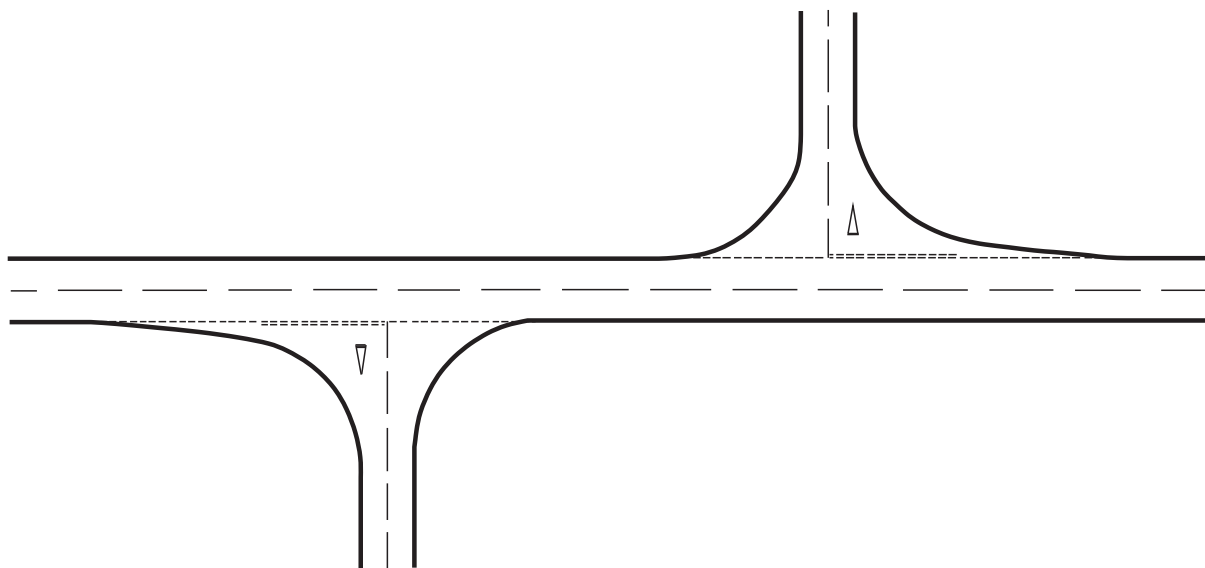


Figure 1/6 : Simple Right/Left Stagger (para 1.21)

**Mandatory Sections**

1.22 Sections of this document which are mandatory standards which the Overseeing Organisation expects in design, are highlighted by being contained in boxes. These are the sections with which the Design Organisation must comply or must have agreed a suitable departure with the relevant Overseeing Organisation. The remainder of the document contains advice and enlargement which is commended to designers for their consideration.

**Relaxations**

1.23 In difficult circumstances, the Design Organisation may relax a mandatory standard set out in this document to that relating to the next lowest design speed step, unless this document specifically excludes it. However, in using any such relaxation, the Design Organisation shall give special attention to the effect this relaxation may have on the overall performance of the junction. This is particularly important in the situation where two or more relaxations are incorporated into different components of the junction design. In all instances of relaxations, the Design Organisation shall record the fact that a relaxation has been used in the design and the corresponding reasons for its use. On completion of the design, the Design Organisation shall report all decisions to the Overseeing Organisation.

**Departures from Mandatory Standards**

1.24 In very exceptional situations Overseeing Organisations may be prepared to agree to Departures from Mandatory Standards where these seem unachievable. Design Organisations faced by such situations and wishing to consider pursuing this course shall discuss any such option at an early stage in design with the relevant Overseeing Organisation. Proposals to adopt Departures from Standard must be submitted by the Design Organisation to the Overseeing Organisation and formal approval received BEFORE incorporation into a design layout to ensure that safety is not significantly reduced.

## 2. FORM OF MAJOR/MINOR PRIORITY JUNCTIONS

### General

2.1 Major/minor priority junctions are the most common form of junction control. Traffic on the minor road gives way to traffic on the major road and is normally controlled by "Give Way" signs and road markings. However, where there are severe visibility restrictions, "Stop" signs and road markings may be considered, with appropriate reference to the **Traffic Signs Regulations and General Directions**.

2.2 The advantage of all major/minor priority junctions is that through traffic on the major road is not delayed. However, high major road speeds or the possibility of major road overtaking traffic manoeuvres should not be encouraged at major/minor priority junctions.

2.3 For more heavily used junctions, more complex forms of junction layout are required. Due to the uncertainty of traffic forecasting, designers should always consider whether the layout they are designing could be upgraded to provide more capacity, if this should prove necessary in the future.

### Design Procedure

2.4 Junction design is a key element of the overall design process for trunk road schemes. The flow chart shown in Fig 2/1 outlines the design process for major/minor priority junctions in a series of interrelated design steps.

2.5 The decision to provide a major/minor priority junction rather than some other form of junction should be based on operational, economic and environmental considerations. [Step 1] Guidance on junction choice is provided in **TA 30 (DMRB 5.1.6)**. However, sequences of junctions should not involve many different layout types. A length of route or bypass containing roundabouts, single lane dualling, ghost islands, simple priority junctions and grade separation would inevitably create confusion and uncertainty for drivers and may result in accidents. Safe road schemes are usually straightforward, containing no surprises for the driver.

2.6 The most appropriate type of major/minor priority junction to be used can be chosen from those described in Chapter 1. This decision should be based

on a wide range of factors, taking into account design year traffic flow, the nature and proportions of large goods and passenger carrying vehicles, geometric and traffic delays, an initial estimate of entry and turning stream capacities, and accident costs. It should also be based on a consideration of the particular site characteristics such as development and topography. [Step 2]

2.7 The next step is to address all of the relevant safety issues to ensure as safe a design as possible, to take account of road users' specific requirements and to incorporate a preliminary landscape design within the junction. At this point, the key geometric parameters of the junction design should be assessed. [Steps 3a-3d]

2.8 Having established the various components of the junction design, the Design Organisation should check that the capacity of the junction is still adequate. This includes a check if the junction is located on a route which might experience a wide variation in flow and turning movements, particularly those having prolonged daily peak periods, over a day, week, or year. The check should be undertaken prior to assembling the component parts to form a complete junction. [Step 4]

2.9 Before proceeding to final design [Step 5], a "driveability" check should then be performed, to assess first the smooth assembly of the components of the junction design. This should include a visual assessment of the junction on all approaches from the driver's eye view. Secondly, the junction should be considered within the context of its adjacent links and those adjacent junctions on the particular route. As a whole, the layout should be designed to suit the traffic pattern, with the principal movements following smooth vehicular paths. This improves the smoothness of operation and makes it more readily understood by drivers.

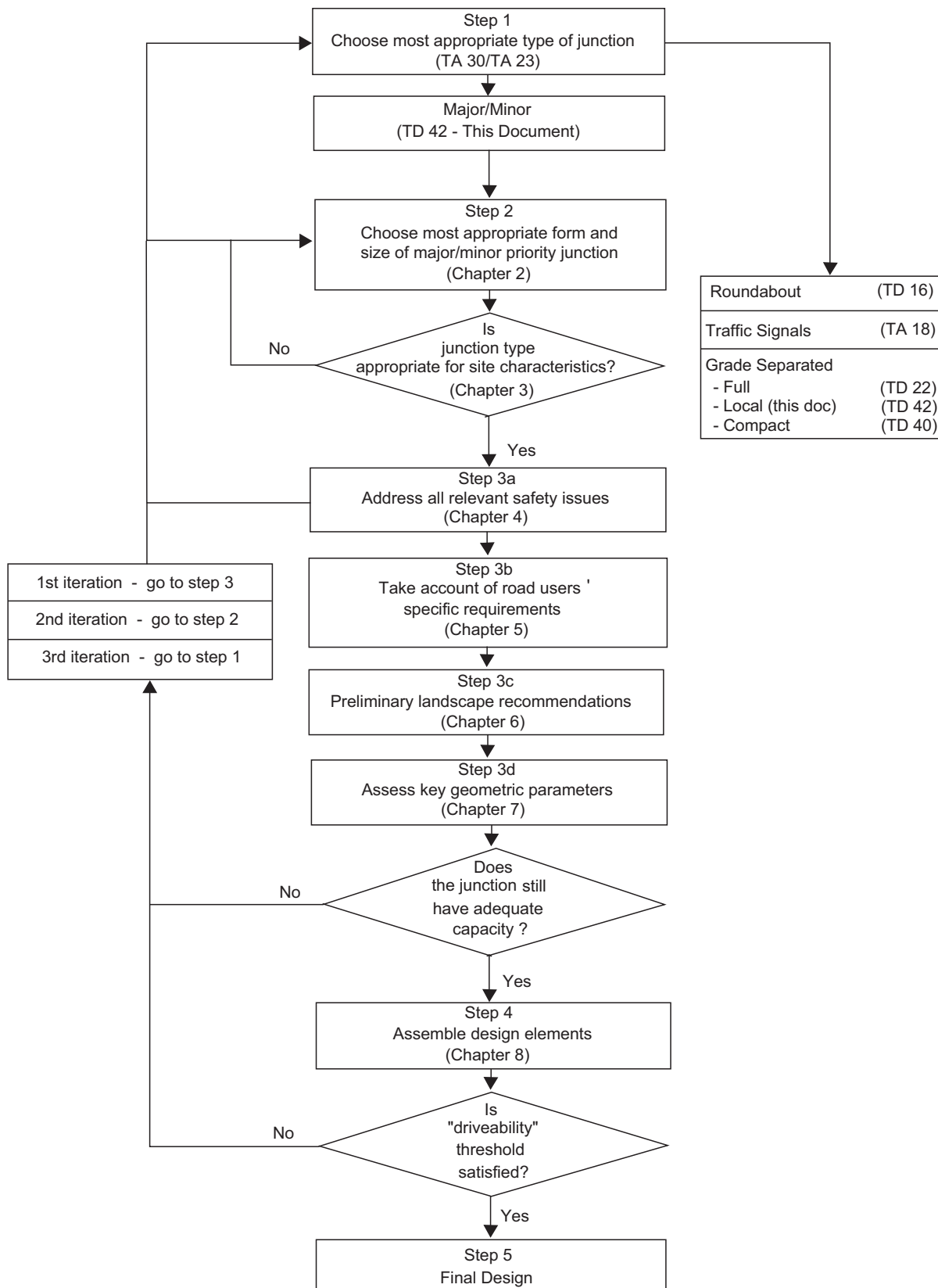


Figure 2/1 : Flow Chart Outlining Design Procedure ( para 2.4 )

2.10 If, at any point in the design procedure, the junction design is unsatisfactory, then the designer should return to the previous step in the procedure to refine the design. In certain extreme cases, this process could result in a change in junction type or form.

**Choice of Major/Minor Priority Junction**

2.11 Table 2/1 shows the major/minor priority junction forms considered suitable for various major road carriageway types in both urban and rural situations. This Table should be used as a starting point in choosing the most appropriate type of major/minor priority junction to use at a particular site.

Carriageway Type		Junction Type								
		Simple			Ghost Island			Dualling		
Standard	Location	T	Staggered	Crossroads	T	Staggered	Crossroads	T	Staggered	Crossroads
S2	Urban	Yes	Yes	Maybe	Yes	Yes	No	Yes (D1)	Yes (D1)	No
	Rural	Yes	Yes	Maybe	Yes	Yes	No	Yes (D1)	Yes (D1)	No
WS2	Urban	No	No	No	Yes	Yes	No	Yes (D1)	Yes (D1)	No
	Rural	No	No	No	Yes	Yes	No	Yes (D1)	Yes (D1)	No
D2	Urban	No	No	No	No	No	No	Yes (D2)	Yes (D2)	No
	Rural	No	No	No	No	No	No	Yes (D2)	Yes (D2)	No
D3		No	No	No	No	No	No	No	No	No

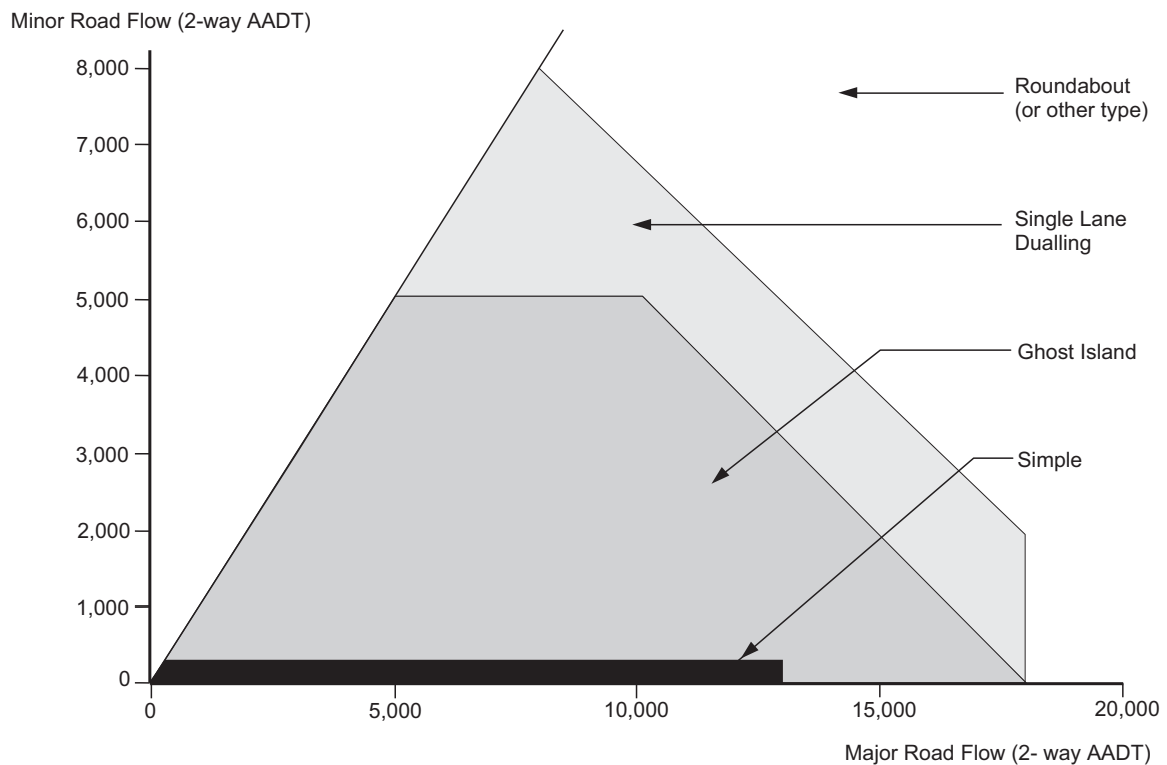
T Junction      Staggered Junction      Crossroads

**Table 2/1: Possible Junction Types for Different Major Road Carriageway Types**

2.12 Fig 2/2 may be useful when considering further the options for a site. For single carriageway roads it shows approximately the various levels of T-junction which may be applicable for different combinations of flows. The information takes into account geometric and traffic delays, entry and turning traffic flows, and accident costs. However, it must be noted that Fig 2/2 gives the starting point for junction choice and there are other factors such as those indicated in para 2.6 to be considered before a final decision is made.

2.13 Ordinarily, the 2-way Annual Average Daily Traffic (AADT) design year flows are used to determine the approximate level of junction provision for new junctions. However, if there is evidence in the area of the junction of high seasonal variations, or if short, intense peaks in the traffic flows are likely, then consideration should be given to using either the appropriate seasonal or peak hour flows in the initial capacity assessment detailed in para 2.6, or to justify a different type of junction.

2.14 The following principles can be identified from Table 2/1 and Fig 2/2.



**Figure 2/2 : Approximate Level of Provision of T-junctions on New Single Carriageway Roads for Various Major and Minor Road Design Year Traffic Flows ( paras 2.2, 2.14 )**

**Simple**

2.15 Simple junctions are appropriate for most minor junctions on single carriageway roads, but must not be used for wide single carriageways or dual carriageways. For new rural junctions they shall only be used when the design flow in the minor road is not expected to exceed about 300 vehicles 2-way AADT, and that on the major road is not expected to exceed 13,000 vehicles 2-way AADT.

2.16 At existing rural, and at urban junctions the cost of upgrading a simple junction to provide a right turning facility will vary from site to site. However, upgrading should always be considered where the minor road flow exceeds 500 vehicles 2-way AADT, a right turning accident problem is evident, or where vehicles waiting on the major road to turn right inhibit the through flow and create a hazard.

2.17 In those instances where the flow levels are not great enough to justify the provision of a right turning facility, and a right turning problem remains, consideration may be given to the use of a low cost remedial measure. Two such measures include a nearside passing bay, to allow through vehicles to pass those right turners waiting in the centre of the major road, albeit at a reduced speed, or a left hand diverging lane loop, which allows right turners to wait off the major road, and to make the crossing movement at right angles.

These are shown in Figs 2/3 and 2/4.

2.18 The decision to provide a right turning facility shall be made in accordance with the warrants given in paras 2.15 and 2.16. The choice of type of right turn facility to be used, however, will depend on the particular site characteristics.

**Ghost Island**

2.19 The use of ghost islands on unrestricted rural single carriageway roads can, in certain circumstances, pose safety problems. In situations where overtaking opportunity on the major road on either side of the junction is restricted, the presence of a widened carriageway, albeit with hatch markings, could result in overtaking manoeuvres which may conflict with right turns into and out of the minor road.

2.20 Ghost islands shall be used on new single carriageway roads, or in the upgrading of existing junctions to provide right turning vehicles with a degree of shelter from the through flow. They are highly effective in improving safety, and are relatively cheap, especially on wide 2-lane single carriageway roads where very little extra construction cost is involved.

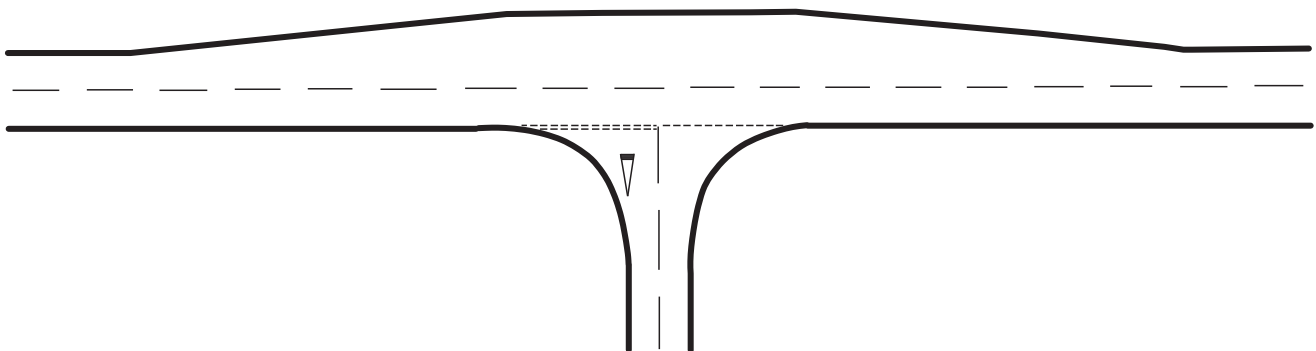


Figure 2/3 : Major/Minor Priority Junction with Nearside Passing Bay (para 2.17)