

Roundabout Junction Check List  
TD 16/07 Geometric Design of Roundabouts



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|-------------------|-------------------------------------|
| Client            | Persimmon Homes Thames Valley       |
| Project           | North Littlehampton                 |
| Junction Location | A259 Worthing Road / Highdown Drive |
| Drawing reference | A/PHLYM.1/GA-2 Rev P12              |
| Design Speed      | 70 KPH                              |
| Prepared by       | OJN/JE/AB                           |
| Date              | Nov-17                              |

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| Key | DMRB Mandatory Section - Design Organisation must comply or must have agreed a suitable departure / relaxation |
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| Mandatory section - To be dealt with at Detailed Design | Departure / relaxation required refer to comments column |
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| Advice only |
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| Advice only item - To be dealt with at Detailed Design | Design does not accord with Advice Item |
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| Para | Design Standard / Guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Design Complies Y/N | Design Checker Comment                                                                                                                  | Design Checker Comment                                                                                                                  | Design Checker Comment                                                                                                                  | Design Checker Comment                                                                                                                                    | Design Checker Comment                                                                                                                  | Design Checker Comment                                                                                                                  | Design Checker Comment                                                                                                                  |
|      | Design Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     | 70kph (40mph)                                                                                                                           | 70kph (40mph)                                                                                                                           | 70kph (40mph)                                                                                                                           | 70kph (40mph)                                                                                                                                             | 70kph (40mph)                                                                                                                           | 70kph (40mph)                                                                                                                           | 70kph (40mph)                                                                                                                           |
| 5.2  | A dropped kerb and tactile paving must be provided at any crossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Y                   | Dropped kerbs and tactile paving provided.                                                                                              | Dropped kerbs and tactile paving provided.                                                                                              | Dropped kerbs and tactile paving provided.                                                                                              | Dropped kerbs and tactile paving provided.                                                                                                                | Dropped kerbs and tactile paving provided.                                                                                              | Dropped kerbs and tactile paving provided.                                                                                              | Dropped kerbs and tactile paving provided.                                                                                              |
| 5.3  | Where possible, the splitter island, extended and/ or widened as necessary, should be used as a pedestrian refuge. An absolute minimum island width of 1.2m is required, preferably 2.5m. For a staggered signal controlled crossing, 3m is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Y                   | Island width at crossing point = 2.9m                                                                                                   | Island width at crossing point = 7.0m                                                                                                   | Island width at crossing point = 3.3m                                                                                                   | Island width at crossing point = 3.3m                                                                                                                     | Island width at crossing point = 2.0m                                                                                                   | Island width at crossing point = 2.0m                                                                                                   | Island width at crossing point = 2.0m                                                                                                   |
| 5.6  | Where provided, stand-alone pedestrian crossing facilities should be located to suit pedestrian desire lines. If possible, they should be outside of the flared section to keep the crossing short, as shown in Figure 5/1. Zebra crossings should be located between 5m and 20m from the give way line                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | N/A                 | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                                     | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   |
| 5.7  | Non-staggered signal-controlled crossings should be sited either at 20m or more than 60m from the give way line. It may be advantageous to use the splitter island (extended as necessary) as a central refuge. The central refuge can also be used to form a staggered crossing. See Local Transport Notes 1/95 and 2/95 and Traffic Advisory Leaflets 1/01 'Puffin Pedestrian Crossings' and 1/02 'The Installation of Puffin Pedestrian Crossings'. Note that if a Puffin crossing is used, a staggered crossing may not be necessary.                                                                                                                                                                                                                               | N/A                 | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                                     | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   |
| 5.9  | Zebra crossings should not be used where the 85th percentile speed exceeds 35mph (if it does, a signal controlled crossing will be required). If the 85th percentile speed exceeds 50mph, serious consideration should be given to speed reduction measures before installing at-grade crossings. Signal-controlled crossings should be equipped with suitable speed measuring and extension equipment (SA, SD or MOVA) (see Traffic Advisory Leaflet 2/03 and Local Transport Note 1/95).                                                                                                                                                                                                                                                                              | N/A                 | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                                     | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   |
| 5.11 | Zigzag markings are a requirement at Zebra, Pelican, Puffin, Toucan and Equestrian crossings, but must not be used where the crossing is part of a Signalised Roundabout.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Y                   | No comments required.                                                                                                                   | Stand alone crossing located on eastern arm approx 96m from giveaway line. Zig-zag markings provided as required.                       | No comments required.                                                                                                                   | No comments required.                                                                                                                                     | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   |
| 5.12 | With the exception of Zebra crossings, central hatching or chevron markings may be used alongside zigzag markings in certain conditions – see Section 15, Chapter 5 of the Traffic Signs Manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                 | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                                     | No comments required.                                                                                                                   | No comments required.                                                                                                                   | No comments required.                                                                                                                   |
| 5.26 | Materials used on the roundabout and its approaches must have suitable skidding and deformation resistance. Irregular surface features must be avoided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | TBC                 | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority.                  | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority.                  | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority.                  | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority.                                    | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority.                  | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority.                  | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority.                  |
| 7.8  | The width of the circulatory carriageway must be between 1.0 and 1.2 times the maximum entry width (see paragraphs 7.22 – 7.29), excluding any overrun area (see Figure 7/4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Y                   | The maximum entry width is 9m. The circulatory carriageway is 9m wide which is between 1.0 - 1.2 x the max entry width.                 | The maximum entry width is 9m. The circulatory carriageway is 9m wide which is between 1.0 - 1.2 x the max entry width.                 | The maximum entry width is 9m. The circulatory carriageway is 9m wide which is between 1.0 - 1.2 x the max entry width.                 | The maximum entry width is 9m. The circulatory carriageway is 9m wide which is between 1.0 - 1.2 x the max entry width.                                   | The maximum entry width is 9m. The circulatory carriageway is 9m wide which is between 1.0 - 1.2 x the max entry width.                 | The maximum entry width is 9m. The circulatory carriageway is 9m wide which is between 1.0 - 1.2 x the max entry width.                 | The maximum entry width is 9m. The circulatory carriageway is 9m wide which is between 1.0 - 1.2 x the max entry width.                 |
| 7.9  | At Normal and Grade Separated Roundabouts, the width of the circulatory carriageway should not exceed 15 metres. At Compact Roundabouts, it should not exceed 6m, although an additional overrun area may be required for small values of inscribed circle diameter, depending on the types of vehicles using the roundabout (see Figure 7/4).                                                                                                                                                                                                                                                                                                                                                                                                                          | Y                   | Circulatory carriageway = 9m                                                                                                            | Circulatory carriageway = 9m                                                                                                            | Circulatory carriageway = 9m                                                                                                            | Circulatory carriageway = 9m                                                                                                                              | Circulatory carriageway = 9m                                                                                                            | Circulatory carriageway = 9m                                                                                                            | Circulatory carriageway = 9m                                                                                                            |
| 7.10 | Short lengths of reverse curve, where two consecutive tangential circular arcs curve in opposite directions, should be avoided between entry and adjacent exits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Y                   | No short lengths of reverse curve are included.                                                                                         | No short lengths of reverse curve are included.                                                                                         | No short lengths of reverse curve are included.                                                                                         | A 8.6m section of reverse curve is included between the southern and western arms. The Designer does not consider this a 'short' length of reverse curve. | No short lengths of reverse curve are included.                                                                                         | No short lengths of reverse curve are included.                                                                                         | No short lengths of reverse curve are included.                                                                                         |
| 7.12 | Hatching should not be used to reduce the entry width in areas adjacent to pedestrian facilities. It cannot be used in the controlled area of a zebra or signal controlled crossing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Y                   | There is no hatching adjacent to pedestrian facilities                                                                                  | There is no hatching adjacent to pedestrian facilities                                                                                  | There is no hatching adjacent to pedestrian facilities                                                                                  | There is no hatching adjacent to pedestrian facilities                                                                                                    | There is no hatching adjacent to pedestrian facilities                                                                                  | There is no hatching adjacent to pedestrian facilities                                                                                  | There is no hatching adjacent to pedestrian facilities                                                                                  |
| 7.13 | The central island should be circular and at least 4 metres in diameter. (Mini-roundabouts have central markings rather than kerbed islands with diameters of up to 4 metres capable of being driven over where unavoidable – refer to TD 54, DMRB 6.2.3.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Y                   | Central island is circular and 32m in diameter.                                                                                         | Central island is circular and 32m in diameter.                                                                                         | Central island is circular and 32m in diameter.                                                                                         | Central island is circular and 32m in diameter.                                                                                                           | Central island is circular and 32m in diameter.                                                                                         | Central island is circular and 32m in diameter.                                                                                         | Central island is circular and 32m in diameter.                                                                                         |
| 7.16 | It should be noted that the swept path for the Design Vehicle may impinge slightly (by up to 0.3m) into either the inner or outer 1m clearance allowance. Given the anticipated frequency of this type of vehicle, this is not considered to be particularly significant and the dimensions in Figure 7/4 should not be increased accordingly.                                                                                                                                                                                                                                                                                                                                                                                                                          | Y                   | The swept path of a 15.5m long articulated vehicle is accommodated for all turning movements. Refer to drawing numbered A/PHLYM.1/TK-1. | The swept path of a 15.5m long articulated vehicle is accommodated for all turning movements. Refer to drawing numbered A/PHLYM.1/TK-1. | The swept path of a 15.5m long articulated vehicle is accommodated for all turning movements. Refer to drawing numbered A/PHLYM.1/TK-1. | The swept path of a 15.5m long articulated vehicle is accommodated for all turning movements. Refer to drawing numbered A/PHLYM.1/TK-1.                   | The swept path of a 15.5m long articulated vehicle is accommodated for all turning movements. Refer to drawing numbered A/PHLYM.1/TK-1. | The swept path of a 15.5m long articulated vehicle is accommodated for all turning movements. Refer to drawing numbered A/PHLYM.1/TK-1. | The swept path of a 15.5m long articulated vehicle is accommodated for all turning movements. Refer to drawing numbered A/PHLYM.1/TK-1. |
| 7.19 | Splitter islands are used on each arm, located and shaped so as to separate and direct traffic entering and leaving the roundabout. They are usually kerbed, but if there is insufficient space to accommodate a kerbed island, they may consist entirely of markings. Markings may also be used to extend a splitter island on the approach, the exit or the circulatory carriageway. Kerbed splitter islands can act as pedestrian refuges provided that they are large enough to give adequate safe standing space for accompanied wheelchair users and pedestrians with pushchairs or pedal cycles (see paragraph 5.3). Signs and other street furniture can be sited on kerbed islands provided that there is sufficient room to maintain the required clearances. | Y                   | Kerbed splitter island provided.                                                                                                        | Kerbed splitter island provided.                                                                                                        | Kerbed splitter island provided.                                                                                                        | Kerbed splitter island provided.                                                                                                                          | Kerbed splitter island provided.                                                                                                        | Kerbed splitter island provided.                                                                                                        | Kerbed splitter island provided.                                                                                                        |
| 7.24 | Lane widths at the give way line (measured along the normal to the nearside kerb, as for entry width) must be not less than 3m or more than 4.5m, with the 4.5m value appropriate at single lane entries and values of 3 to 3.5m appropriate at multilane entries.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Y                   | 2 x 3.5m lanes provided on entry.                                                                                                       | 3 x 3m lanes provided on entry.                                                                                                         | 3 x 3m lanes provided on entry.                                                                                                         | 3 x 3m lanes provided on entry.                                                                                                                           | 3 x 3m lanes provided on entry.                                                                                                         | 3 x 3m lanes provided on entry.                                                                                                         | 3 x 3m lanes provided on entry.                                                                                                         |
| 7.25 | On a single carriageway approach to a Normal Roundabout, the entry width must not exceed 10.5m. On a dual carriageway approach to a Normal Roundabout, the entry width must not exceed 15m.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Y                   | Entry width = 7m                                                                                                                        | Entry width = 9m                                                                                                                        | Entry width = 9m                                                                                                                        | Entry width = 9m                                                                                                                                          | Entry width = 9m                                                                                                                        | Entry width = 9m                                                                                                                        | Entry width = 9m                                                                                                                        |
| 7.26 | If flaring is provided, tapered lanes should have a minimum width of 2.5m.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Y                   | All tapered lanes have a minimum width of 2.75m                                                                                         | All tapered lanes have a minimum width of 2.86m                                                                                         | All tapered lanes have a minimum width of 2.78m                                                                                         | All tapered lanes have a minimum width of 2.78m                                                                                                           | All tapered lanes have a minimum width of 2.78m                                                                                         | All tapered lanes have a minimum width of 2.78m                                                                                         | All tapered lanes have a minimum width of 2.78m                                                                                         |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                                                                                                                                                                             |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                     |                                                                                                                                                                             |
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| Key       | DMRB Mandatory Section - Design Organisation must comply or must have agreed a suitable departure / relaxation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     | Mandatory section - To be dealt with at Detailed Design                                                                                                                     |                                                                                                                                                                                                                                               | Departure / relaxation required refer to comments column                                                                                                                                                                                                                            |                                                                                                                                                                             |
|           | Advice only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                     | Advice only item - To be dealt with at Detailed Design                                                                                                                      |                                                                                                                                                                                                                                               | Design does not accord with Advice Item                                                                                                                                                                                                                                             |                                                                                                                                                                             |
|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                                                                                                                                                                             |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                     |                                                                                                                                                                             |
|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     | Northern Arm                                                                                                                                                                | Eastern Arm                                                                                                                                                                                                                                   | Southern Arm                                                                                                                                                                                                                                                                        | Western Arm                                                                                                                                                                 |
| Para      | Design Standard / Guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Design Complies Y/N | Design Checker Comment                                                                                                                                                      | Design Checker Comment                                                                                                                                                                                                                        | Design Checker Comment                                                                                                                                                                                                                                                              | Design Checker Comment                                                                                                                                                      |
|           | Design Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     | 70kph (40mph)                                                                                                                                                               | 70kph (40mph)                                                                                                                                                                                                                                 | 70kph (40mph)                                                                                                                                                                                                                                                                       | 70kph (40mph)                                                                                                                                                               |
| 7.28      | The use of very short offside lanes is not recommended as they tend to be used infrequently in practice with the result that debris collects on the road surface and forms a safety hazard, particularly for two-wheeled vehicles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Y                   | Offside lane length = 97m                                                                                                                                                   | Offside lane length = 58m                                                                                                                                                                                                                     | Offside lane length = 17m                                                                                                                                                                                                                                                           | Offside lane length = 71m                                                                                                                                                   |
| 7.30      | The alignment of entry lanes is critical. Except at Compact Roundabouts in urban areas, the kerbline of the splitter island (or central reserve in the case of a dual carriageway) should lie on an arc which, when projected forward, meets the central island tangentially (see Figure 7/6) in order to reduce the likelihood of vehicle paths overlapping.                                                                                                                                                                                                                                                                                                                                                                             | Y                   | Extension of splitter island road markings is tangential with central island.                                                                                               | Extension of splitter island road markings is tangential with central island.                                                                                                                                                                 | Extension of splitter island road markings is tangential with central island.                                                                                                                                                                                                       | Extension of splitter island road markings is tangential with central island.                                                                                               |
| 7.47      | The entry angle, $\phi$ , should lie between 20 and 60 degrees.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Y                   | Roundabout entry angle = 31 deg                                                                                                                                             | Roundabout entry angle = 34 deg                                                                                                                                                                                                               | Roundabout entry angle = 30 deg.                                                                                                                                                                                                                                                    | Roundabout entry angle = 43 deg.                                                                                                                                            |
| 7.48/7.49 | 7.48 The entry kerb radius, $r$ , is the minimum radius of curvature of the nearside kerb line over the distance from 25m ahead of the give way line to 10m downstream of it (see Figure 7/10). It is the radius of the best fit circular curve over a length of 25m.<br>7.49 The entry kerb radius should be not less than 10m. Except at Compact Roundabouts, if the approach is intended for regular use by large goods vehicles, the value should be not less than 20m. However, entry kerb radii of 100m or more will tend to result in inadequate entry deflection.                                                                                                                                                                 | Y                   | $r = 30m$                                                                                                                                                                   | $r = 20m$                                                                                                                                                                                                                                     | $r = 50m$                                                                                                                                                                                                                                                                           | $r = 20m$                                                                                                                                                                   |
| 7.56      | The entry path radius must be checked for all turning movements. It must not exceed 70m at Compact Roundabouts in urban areas (where the speed limit and the design speed within 100m of the give way line on any approach do not exceed 40mph and 70kph respectively). At all other roundabout types, the entry path radius must not exceed 100m.                                                                                                                                                                                                                                                                                                                                                                                        | Y                   | Entry path radius = 97m.                                                                                                                                                    | Entry path radius = 100m                                                                                                                                                                                                                      | Entry path radius = 63m                                                                                                                                                                                                                                                             | Entry path radius = 79m                                                                                                                                                     |
| 7.61/7.62 | With the exception of Compact Roundabouts, the exit width should, where possible, accommodate one more traffic lane than is present on the link downstream.<br>7.62 For example, at a Normal Roundabout, if the downstream link is a single carriageway road with a long splitter island, the exit width should be between 7m and 7.5m and the exit should taper down to a minimum of 6m (see Figure 7/16), allowing traffic to pass a broken down vehicle. If the link is an all-purpose two-lane dual carriageway, the exit width should be between 10m and 11m and the exit should taper down to two lanes wide.                                                                                                                       | N                   | A 7m exit width has been provided with a 6.8m at the end of splitter island.                                                                                                | A 7m exit width has been provided with a 6.6m at the end of splitter island.                                                                                                                                                                  | A 7m exit width has been provided with a 3.3m at the end of splitter island.<br><br>This is not a mandatory section of the DMRB. The Designer considers this acceptable to facilitate the right turn lane into Highdown Drive.                                                      | A 7m exit width has been provided with a 6.1m at the end of splitter island.                                                                                                |
| 7.63      | The width should be reduced in such a way as to avoid exiting vehicles encroaching onto the opposing lane at the end of the splitter island. Normally the width would reduce at a taper of 1:15 to 1:20. Where the exit is on an up gradient, the exit width may be maintained for a short distance before tapering in. This helps reduce intermittent congestion caused by slowly accelerating large goods vehicles by giving other drivers an opportunity to overtake them. If the exit road is on an up gradient combined with an alignment which bends to the left, it may be necessary to maintain the exit width over a longer distance to help ensure that overtaking manoeuvres can be completed before the merge is encountered. | N                   | The exit gradually tapers from 7m to single lane width.                                                                                                                     | The exit gradually tapers from 7m to single lane width.                                                                                                                                                                                       | The exit tapers from 7m to 3m single lane width at approx 1:7.<br><br>This is not a mandatory section of the DMRB. The Designer considers this acceptable to facilitate the right turn lane into Highdown Drive and the fact that Fitzalan Link is a 30mph single carriageway road. | The exit gradually tapers from 7m to single lane width.                                                                                                                     |
| 7.64      | At a Compact Roundabout, the exit width should be similar to the entry width.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N/A                 | N/A                                                                                                                                                                         | N/A                                                                                                                                                                                                                                           | N/A                                                                                                                                                                                                                                                                                 | N/A                                                                                                                                                                         |
| 7.65      | On exits, the edge line should continue along the projected line of the kerbing once this is terminated (see Figures 8/10 and 8/11 in Chapter 8).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Y                   | Kerbs provided throughout.                                                                                                                                                  | Kerbs provided throughout.                                                                                                                                                                                                                    | Kerbs provided throughout.                                                                                                                                                                                                                                                          | Kerbs provided throughout.                                                                                                                                                  |
| 7.67      | At a Compact Roundabout, the value of the exit kerb radius should lie between 15m and 20m.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | N/A                 | N/A                                                                                                                                                                         | N/A                                                                                                                                                                                                                                           | N/A                                                                                                                                                                                                                                                                                 | N/A                                                                                                                                                                         |
| 7.68      | At other roundabouts, the exit kerb radius should not be less than 20m or greater than 100m. A value of 40m is desirable, but for larger roundabouts on high speed roads, a higher value may suit the overall junction geometry. A compound curve starting with a 40m radius and developing to a larger radius, of up to 100m, will usually offer the best solution. Larger values of exit radii may lead to high exit speed, which will not be appropriate if there are significant numbers of cyclists using the junction or where pedestrian crossing facilities are located immediately downstream.                                                                                                                                   | N                   | Exit radius = 90m                                                                                                                                                           | Exit radius = 116m slightly higher than desirable maximum. The design of this arm has been designed to tie in with the WSCC A259 Worthing Road widening scheme. The Designer considers that this will have no material impact on road safety. | Exit radius = 80m                                                                                                                                                                                                                                                                   | Exit radius = 60m                                                                                                                                                           |
| 8.1       | Except for visibility to the right at entry (paragraph 8.7) and across the central island (paragraph 8.9), visibility must be obtainable from a driver's eye height of between 1.05m and 2m to an object height of between 0.26m and 2m, in accordance with the envelope of visibility for measurement of stopping sight distance in TD 9 (DMRB 6.1.1).                                                                                                                                                                                                                                                                                                                                                                                   | Y                   | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority. | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                   | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                                                         | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority. |
| 8.2       | Where signs are to be erected on a central reserve, verge or splitter island within the envelope of visibility, including to the right, the mounting height must not be less than 2m above the carriageway surface.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | TBC                 | Signage subject to detailed design                                                                                                                                          | Signage subject to detailed design                                                                                                                                                                                                            | Signage subject to detailed design                                                                                                                                                                                                                                                  | Signage subject to detailed design                                                                                                                                          |
| 8.3       | Visibility on the approach (Desirable Minimum Stopping Sight Distance for the design speed of the road) must conform to TD 9 (DMRB 6.1.1) with the position of the object at the give way line indicated in Figure 8/1. Chevron signs on the central island must also be visible to approaching drivers in all lanes from a distance equal to the Desirable Minimum Stopping Sight Distance.                                                                                                                                                                                                                                                                                                                                              | Y                   | For a Design Speed of 70kph (40mph) - 120m forward visibility is achieved.                                                                                                  | For a Design Speed of 70kph (40mph) - 120m forward visibility is achieved.                                                                                                                                                                    | For a Design Speed of 70kph (40mph) - 120m forward visibility is achieved.                                                                                                                                                                                                          | For a Design Speed of 70kph (40mph) - 120m forward visibility is achieved.                                                                                                  |

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|      | Advice only                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     | Advice only item - To be dealt with at Detailed Design                                                                                                                                                             |                                                                                                                                                                                                                    | Design does not accord with Advice Item                                                                                                                                                                            |                                                                                                                                                                                                                                                              |
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                                                                                                                                                                                                                    |                                                                                                                                                                                                                    |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                              |
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     | Northern Arm                                                                                                                                                                                                       | Eastern Arm                                                                                                                                                                                                        | Southern Arm                                                                                                                                                                                                       | Western Arm                                                                                                                                                                                                                                                  |
| Para | Design Standard / Guidance                                                                                                                                                                                                                                                                                                                                                                                                                                          | Design Complies Y/N | Design Checker Comment                                                                                                                                                                                             | Design Checker Comment                                                                                                                                                                                             | Design Checker Comment                                                                                                                                                                                             | Design Checker Comment                                                                                                                                                                                                                                       |
|      | <b>Design Speed</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 70kph (40mph)                                                                                                                                                                                                      | 70kph (40mph)                                                                                                                                                                                                      | 70kph (40mph)                                                                                                                                                                                                      | 70kph (40mph)                                                                                                                                                                                                                                                |
| 8.4  | Drivers of all vehicles approaching the give way line must be able to see objects of height between 0.26m and 2m on the full width of the circulatory carriageway for the Visibility Distance given in Table 8/1 (measured along the centre of the circulatory carriageway as shown in Figure 8/2). The visibility must be checked from the centre of the nearside lane at a distance of 15m back from the give way line, as shown in Figure 8/2.                   | TBC                 | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                                  |
| 8.5  | Drivers of all vehicles approaching the give way line must be able to see the full width of the circulatory carriageway to their right, from the centre of the offside lane at the give way line, for the Visibility Distance given in Table 8/1 (measured along the centre of the circulatory carriageway), as shown in Figure 8/3. This includes Grade Separated Roundabouts with bridge parapets on either side of the circulatory carriageway.                  | TBC                 | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                                  |
| 8.6  | Visibility to the right must also be checked from the centre of the offside lane at a distance of 15m back from the give way line, as shown in Figure 8/4.                                                                                                                                                                                                                                                                                                          | TBC                 | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                                  |
| 8.7  | The envelope of visibility must be obtainable from a driver's eye height of between 1.05m and 2m to an object height of between 1.05m and 2m.                                                                                                                                                                                                                                                                                                                       | TBC                 | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                                  |
| 8.9  | Drivers on the circulatory carriageway must be able to see the full width of the circulatory carriageway ahead of them for the Visibility Distance given in Table 8/1. This visibility must be checked at a distance of 2m in from the central island, as shown in Figure 8/5. The envelope of visibility must be obtainable from a driver's eye height of between 1.05m and 2m to an object height of between 1.05m and 2m.                                        | TBC                 | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                                  |
| 8.11 | Drivers approaching a roundabout with a Zebra crossing across the entry must be able to see the full width of the crossing so that they can see whether there are pedestrians wishing to cross. For a signal-controlled crossing, the driver must also be able to see at least one signal head. The visibility required is the Desirable Minimum Stopping Sight Distance for the design speed of the link. See TD 9 (DMRB 6.1.1) and Local Transport Note LTN 2/95. | N/A                 | N/A                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                                                          |
| 8.12 | At the give way line, drivers must be able to see the full width of a pedestrian crossing (whether signal-controlled, zebra or informal) across the next exit if it is within 20m of the give way line on that arm (crossings should not be sited between 20m and 60m from the give way line). See Figure 8/6.                                                                                                                                                      | Y                   | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                        | Achievable on plan - Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority.                                                                                  |
| 8.13 | <b>Exit Visibility</b><br>On the circulatory carriageway, the exit visibility should conform to Table 8/1. Once a vehicle has crossed the inscribed circle at the exit from the roundabout, the Stopping Sight Distance should conform to TD 9 (DMRB 6.1.1).                                                                                                                                                                                                        | N                   | Looks achievable on plan - to be drafted at detailed design roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority. | Looks achievable on plan - to be drafted at detailed design roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority. | Looks achievable on plan - to be drafted at detailed design roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority. | 120m exit visibility achievable on plan from a point 5m from the exit of the circulatory carriageway. Roundabout levels shall be indicated at detailed design stage and shall be designed to accord DMRB unless otherwise agreed with the Highway Authority. |
| 8.14 | Signs, street furniture and planting should be located and designed so as not to obstruct visibility. However, isolated objects less than 550mm wide such as lamp columns, sign supports or bridge columns are acceptable.                                                                                                                                                                                                                                          | TBC                 | Signs, street furniture and planting details shall be provided at detailed stage.                                                                                                                                  | Signs, street furniture and planting details shall be provided at detailed stage.                                                                                                                                  | Signs, street furniture and planting details shall be provided at detailed stage.                                                                                                                                  | Signs, street furniture and planting details shall be provided at detailed stage.                                                                                                                                                                            |
| 8.16 | Steep gradients should be avoided at roundabout approaches or flattened to a maximum of 2% before entry.                                                                                                                                                                                                                                                                                                                                                            | TBC                 | To be confirmed at detailed design.                                                                                                                                                                                | To be confirmed at detailed design.                                                                                                                                                                                | To be confirmed at detailed design.                                                                                                                                                                                | To be confirmed at detailed design.                                                                                                                                                                                                                          |
| 8.17 | On the approaches and exits, superelevation can assist drivers in negotiating the associated curves. Its value, when used, should be appropriate to the speed of vehicles, and equal to or greater than those necessary for surface drainage, but should not exceed 5% (1 in 20). Superelevation should be reduced to 2% at 20m from the give way line, since with adequate advance signing and entry deflection, speeds on approaches should be reducing.          | TBC                 | To be confirmed at detailed design.                                                                                                                                                                                | To be confirmed at detailed design.                                                                                                                                                                                | To be confirmed at detailed design.                                                                                                                                                                                | To be confirmed at detailed design.                                                                                                                                                                                                                          |
| 8.18 | Except on large Grade Separated Roundabouts (where long sections of circulatory carriageway should have appropriate superelevation), crossfall is required to drain surface water on circulatory carriageways. The normal value is 2% (1 in 50). It should not exceed 2.5% (1 in 40). To avoid ponding, longitudinal edge profiles should be graded at not less than 0.67% (1 in 150), with 0.5% (1 in 200) considered the minimum.                                 | TBC                 | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                               | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                               | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                               | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                                                                         |
| 8.22 | At exits, superelevation should be provided where necessary to allow vehicles to accelerate safely away from the roundabout. However, as with entries, crossfall adjacent to the roundabout should not exceed 2%. If the exit leads into a right hand curve, superelevation should be introduced gradually.                                                                                                                                                         | TBC                 | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                               | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                               | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                               | Roundabout levels shall be indicated at detailed stage and shall be designed to accord with DMRB unless otherwise agreed with the highway Authority.                                                                                                         |
| 8.24 | In England, the provision of road lighting at roundabouts must be considered in accordance with DMRB 8.3.                                                                                                                                                                                                                                                                                                                                                           | TBC                 | It is intended that road lighting shall be provided in accordance with Highway Authority requirements.                                                                                                             | It is intended that road lighting shall be provided in accordance with Highway Authority requirements.                                                                                                             | It is intended that road lighting shall be provided in accordance with Highway Authority requirements.                                                                                                             | It is intended that road lighting shall be provided in accordance with Highway Authority requirements.                                                                                                                                                       |

|     |                                                                                                                       |
|-----|-----------------------------------------------------------------------------------------------------------------------|
| Key | <b>DMRB Mandatory Section</b> - Design Organisation must comply or must have agreed a suitable departure / relaxation |
|     | Advice only                                                                                                           |

|                                                                |                                                                 |
|----------------------------------------------------------------|-----------------------------------------------------------------|
| <b>Mandatory section - To be dealt with at Detailed Design</b> | <b>Departure / relaxation required refer to comments column</b> |
| <b>Advice only item - To be dealt with at Detailed Design</b>  | <b>Design does not accord with Advice Item</b>                  |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     | Northern Arm                                                                                                           | Eastern Arm                                                                                                            | Southern Arm                                                                                                           | Western Arm                                                                                                            |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Para | Design Standard / Guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Design Complies Y/N | Design Checker Comment                                                                                                 | Design Checker Comment                                                                                                 | Design Checker Comment                                                                                                 | Design Checker Comment                                                                                                 |
|      | <b>Design Speed</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     | <b>70kph (40mph)</b>                                                                                                   | <b>70kph (40mph)</b>                                                                                                   | <b>70kph (40mph)</b>                                                                                                   | <b>70kph (40mph)</b>                                                                                                   |
| 8.25 | Road markings to be in accordance with Chapter 5 of TSM in particular Figure 8.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Y                   | Road markings provided in accordance with TSM Chapter 5.                                                               | Road markings provided in accordance with TSM Chapter 5.                                                               | Road markings provided in accordance with TSM Chapter 5.                                                               | Road markings provided in accordance with TSM Chapter 5.                                                               |
| 8.28 | The use of right pointing arrows on lane dedication signs or as markings on the road is not permitted on roundabout approaches (except at mini-roundabouts). This is to avoid confusing drivers, particularly those from overseas, over which way to proceed around the roundabout. Where a right hand lane is dedicated to a specific destination, it should be associated with an ahead arrow on the approach. A right pointing arrow may be used on the circulatory carriageway.                                                                                                                                                                                                              | Y                   | No right pointing arrows are used.                                                                                     | No right pointing arrows are used.                                                                                     | No right pointing arrows are used.                                                                                     | No right pointing arrows are used.                                                                                     |
| 8.29 | Left turn arrows should only be used with caution on the circulatory carriageway, to avoid drivers mistakenly turning into roundabout entries.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Y                   | No lane destination markings indicated.                                                                                | No lane destination markings indicated.                                                                                | No lane destination markings indicated.                                                                                | No lane destination markings indicated.                                                                                |
| 8.33 | Chevron signs can impinge on circulatory visibility but the effects can be minimised by positioning the signs 2m back from the central island kerbline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Y                   | Chevron signing shall be set back 2m as required.                                                                      | Chevron signing shall be set back 2m as required.                                                                      | Chevron signing shall be set back 2m as required.                                                                      | Chevron signing shall be set back 2m as required.                                                                      |
| 8.34 | The use of segregated left turn lanes is covered in TD 51 (DMRB 6.3.5).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Y                   | No segregated left turn lane included.                                                                                 | No segregated left turn lane included.                                                                                 | No segregated left turn lane included.                                                                                 | No segregated left turn lane included.                                                                                 |
| 8.36 | Materials with appropriate skid resistance must be used for road markings at roundabouts. Details of the requirements for these are given in Clause 1212 of MCHW 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TBC                 | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority. | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority. | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority. | The material chosen at detailed design stage will accord with DMRB unless otherwise agreed with the Highway Authority. |
| 8.37 | The design of landscaping within the highway limits must be carried out in consultation with appropriate specialists. The designer must develop clear objectives for the design and must consider the long-term maintenance implications of the scheme. Where the responsibility for maintenance is passed to a third party, such as a local council, maintenance standards must be agreed. If a third party wishes to enhance the standard of planting or landscaping at roundabouts, for example, using special floral displays, this must only be with the agreement of the Overseeing Organisation, and must not compromise visibility or safety. Further advice is given in DMRB Volume 10. | TBC                 | Landscaping to be considered and agreed with the Highway Authority.                                                    | Landscaping to be considered and agreed with the Highway Authority.                                                    | Landscaping to be considered and agreed with the Highway Authority.                                                    | Landscaping to be considered and agreed with the Highway Authority.                                                    |
| 8.45 | Roundabout entries and exits should be kerbed, and hard strips or hard shoulders on each approach should terminate where entry widening begins.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Y                   | All entries and exits are kerbed.                                                                                      | All entries and exits are kerbed.                                                                                      | All entries and exits are kerbed.                                                                                      | All entries and exits are kerbed.                                                                                      |
| 8.46 | The verge width should be at least 2.5m and should generally be consistent around the roundabout. Further advice is given in TD 27 (DMRB 6.3.2). Factors that should be taken into account in determining verge width include:<br>• visibility requirements (paragraphs 8.1 to 8.18);<br>• needs of Non-Motorised Users (see TA 90 and TA 91, DMRB 5.2.4);<br>• space required to accommodate buried services, road signs and other street furniture;<br>• maintenance access (see paragraph 1.18);<br>• any likely future traffic increases that could require an increase in carriageway width.                                                                                                | Y                   | Kerbs and footways provided throughout.                                                                                | Kerbs and footways provided throughout.                                                                                | Kerbs and footways provided throughout.                                                                                | Kerbs and footways provided throughout.                                                                                |
| 8.50 | If, as part of an improvement scheme, changes are proposed to lane assignments on a roundabout approach and circulatory carriageway, the designer must review the safety and capacity of the overall roundabout layout, including analysis of swept paths through entries and around the central island.                                                                                                                                                                                                                                                                                                                                                                                         | N/A                 | New junction, not junction improvement.                                                                                | New junction, not junction improvement.                                                                                | New junction, not junction improvement.                                                                                | New junction, not junction improvement.                                                                                |