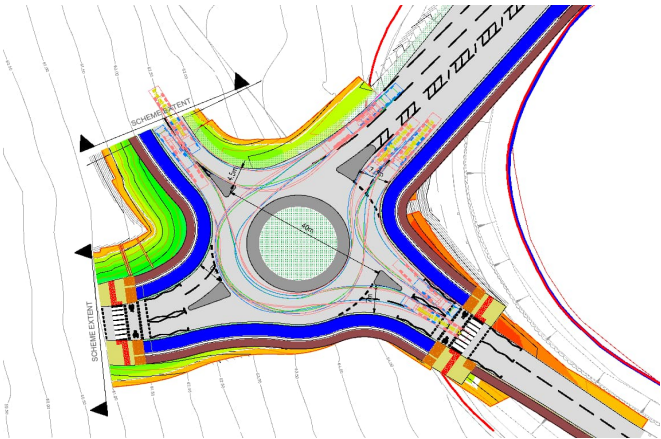
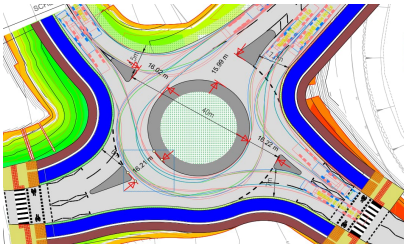

Appendix D – Design Audit

WSP Project No: WSP Project Title: Design Check Audit Drawing No Junction Type Standards / Guidance Stage 1 Road Safety Audit	LAND NORTH WEST OF SOUTHWATER UK0043490.9681-WSP-XX-XX- DR-TP-0103-P03 Normal roundabout	DMRB CD116 Rev 2	GG 101 - Verbal forms used in DMRB <u>must</u> " indicates a statutory or legislative requirement <u>shall</u> " indicates a requirement of the Overseeing Organisation <u>should</u> " indicates advice expressed as a recommendation <u>may</u> " indicates advice expressed as a permissible approach
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MAIN GEOMETRIC DESIGN FEATURES	CD116	Standard	Comply?	Reason (if different from CD116 Rev 2)
Inscribed Circle Diameter	3.5 3.5.1 3.5.2	Minimum value of ICD for a normal or compact roundabout <u>shall</u> be 28 metres The ICD of a compact roundabout <u>should</u> not exceed 36m The ICD of a normal roundabout <u>should</u> not exceed 100m	Y - 40m N/A 40m	
Circulatory Carriageway	3.6	Width of circulatory carriageway for normal or compact roundabout <u>shall</u> be between 1.0 and 1.2 times the max entry width excluding any overrun area	8m ±1.0 5- Within Standard	
	3.6.1	The circulatory carriageway of normal or compact roundabout <u>should</u> be circular and of constant width	Y	
	3.6.2	Dedicated lane signs and road markings <u>may</u> be used on the circulatory carriageway where appropriate.	N/A	
	3.6.5	At normal roundabouts the width of the circulatory carriageway <u>should</u> not exceed 15 metres.	Y=8m	
	3.6.6	The width of the circulatory carriageway on a normal roundabout <u>should</u> accommodate the number of lanes provided on entries and exits.	Y	
	3.6.7	At compact roundabouts, the width of the circulatory carriageway <u>should</u> not exceed 6 metres, so that it is not possible for two cars to pass one another	N/A	
	3.6.8	On the circulatory carriageway, short lengths of reverse curve <u>should</u> be avoided between entry and adjacent exits.	N/A	
Central Island	3.7 3.7.1	The central island of normal and compact roundabouts <u>shall</u> be at least 4 metres in diameter The central island of normal and compact roundabouts <u>should</u> be circular.	Y=17.75 Y	
Overrun Areas	3.8 / 3.9	To provide suitable deflection for vehicles whilst allowing large vehicles to circulate -	3.0m	None of the vehicle tracking is overrunning- only applicable to compact roundabout- ICD 36m
Traffic Islands	3.10,3.10.1,3.10.2	To be provided for all arms. All islands to be kerbed. Road signs not to impede visibility.	Y	Traffic islands on all arms with keep left illuminated bollards provided. Signage to be agreed at detailed design stage.



ENTRIES	CD116	Standard	Comply?	North eastern arm	Comply?	South eastern arm	Comply?	South western arm	Comply?	North western arm
Entry Width	3.11.1	Where there is white edge lining or hatching the measurement <u>should</u> be taken between the edges of the markings closest to the running lanes rather than kerb to kerb.	Y		Y		Y		Y	
	3.12	On a single carriageway approach to a normal roundabout, the entry width <u>shall</u> not exceed 10.5 metres.	Y		Y		Y		Y	
	3.13	On a dual carriageway approach to a normal roundabout, the entry width <u>shall</u> not exceed 15 metres.	N/A		N/A		N/A		N/A	
	3.14	Lane widths at the give way line for normal and compact roundabouts <u>shall</u> be no less than 3 metres and no greater than 4.5 metres.	Y		Y		Y		Y	
	3.14.1	At the give way line, a lane width value of 4.5 metres <u>should</u> be used at single lane entries.	N/A		N/A		N/A		4.5m	
	3.14.2	At the give way line, lane width values of between 3 metres and 3.5 metres <u>should</u> be used at multi-lane entries.	Y		Y		Y		N/A	
	3.14.3	Vehicle swept paths <u>should</u> be assessed using the largest design vehicle that is anticipated to use each entry lane.	Y		Y		N/A	WSCC didn't require it to be tracked as its likely to be cars and coaches mainly As above	Y	
	3.14.4	Vehicle swept paths <u>should</u> be assessed on multi-lane entries to ensure sufficient width is provided for each entry lane.	Y		Y		N/A		Y	Worst case tracked
	3.14.5	No more than two lanes <u>should</u> be added to the number of upstream lanes on the entry to a roundabout.	Y		Y		Y		Y	
	3.14.6	No entry <u>should</u> be more than four lanes wide.	Y		Y		Y		Y	
	3.14.7	Where entry flaring is provided, lane markings indicating the tapered lanes <u>should</u> only be provided from a point where both lanes will have a minimum width of 2.5 metres.	Y		Y		Y		Y	
	3.14.8	When developing additional entry lanes, short offside lanes <u>should</u> not be used.	Y		Y		Y		Y	
	3.17.1	A minimum average effective flare length of 5 metres in urban areas and 25 metres in rural areas <u>should</u> be used, but capacity can be the determining factor for the actual length	Y=25m		Y=25m		Y=25m		Y=25m	
Flaring										
Angle and Alignment of Entry Lanes	3.18.1	The entry angle <u>should</u> be no less than 20 degrees and no greater than 60 degrees for normal and compact roundabouts	Y	32.7°	Y	45.8°	Y	28.9°	Y	26.7°
	3.18.2	Except on compact roundabouts in urban areas, the kerb line of the traffic island (or central reserve in the case of a dual carriageway) <u>should</u> lie on an arc which, when projected forward, meets the central island tangential	N/A		N/A		N/A		N/A	
Entry Kerb Radius	3.19.1 / 2	The entry kerb radius <u>should</u> not be less than 10 metres and should not be greater than 100 metre	Y	Entry kerb radius 12m	Y	Entry kerb radius 20m	Y	Entry kerb radius 16m	Y	Entry kerb radius 15m
	3.19.3	At compact roundabouts, if the approach is intended for regular use by HGVs, the entry kerb radii <u>should</u> not be less than 20 metres.	N/A		N/A		N/A		N/A	
Entry Path Radius and Deflection	3.24	At compact roundabouts in urban areas, where the speed limit is 40mph or less within 100 metres of the give way line on any approach, the entry path radius <u>shall</u> not exceed 70 metres.	N/A		N/A		N/A		N/A	
	3.25	At compact roundabouts where the speed limit is 50mph or greater within 100 metres of the give way line on any approach, the entry path radius <u>shall</u> not exceed 100 metres.	N/A		N/A		N/A		N/A	
	3.26	At normal roundabouts, the entry path radius <u>shall</u> not exceed 100 metres	Y	30.4m	Y	53m	Y	26.4m	Y	36.2m

ENTRIES	CD116	Standard	Comply?	North eastern arm	Comply?	South eastern arm	Comply?	South western arm	Comply?	North western arm
Exit Width	3.28.1	The exit width for normal roundabouts should accommodate one more traffic lane than is present on the link downstream.	Y		Y		Y		N	
	3.28.2	At a normal roundabout, if the downstream link is a single carriageway road, the exit width should be between 7 metres and 7.5 metres and the exit should taper down to a minimum of 6 metres.	Y		N	6m exit width, tapering down to 3.8m	N	6.5m tapers to 5.25m	N	4.6m exit width, tapering down to 4.6m
	3.28.3	Where the downstream link is a single carriageway road, the exit width should reduce at a taper of 1:15 to 1:20, starting at the end of the exit from the roundabout, ensuring 6 metres at end of traffic island, to avoid exiting vehicles encroaching onto the opposing lane at the end of the traffic island.	Y		N	As above	N	As above	N	As above
	3.28.4	at a normal roundabout, if the downstream link is an all-purpose two-lane dual carriageway, the exit width should be between 10metres and 11metres, with the exit tapering down to two lanes wide	N/A		N/A		N/A		N/A	
	3.28.6	Where traffic is required to merge after exiting, sufficient distance should be provided from the exit to allow the merging manoeuvre to take place in a safe and efficient manner	N/A		N/A		N/A		N/A	
Exit Kerb Radius	3.29.1	At normal roundabouts the exit kerb radius should exceed the largest entry radius.	Y		Y		Y		Y	
	3.29.2	At normal roundabouts, the exit kerb radius should be 40 metres.	N	30.4	N	Exit kerb radius 55m	N	Exit kerb radius15m	N	Exit kerb radius 65m
	3.29.3	Where an exit kerb radius of 40 metres cannot be achieved, the exit kerb radius should be no less than 20 metres and no greater than 100 metres	N/A		Y		N	Exit kerb radius15m	Y	
	3.29.4	A higher exit kerb radius may be used on normal roundabouts with larger ICDs on high speed roads to suit the overall junction geometry.	N/A		N/A		N/A		N/A	
	3.29.5	At compact roundabouts the exit kerb radius should be equal to the largest entry radius.	N/A		N/A		N/A		N/A	
	3.29.6	At a compact roundabout, the value of the exit kerb radius should be no less than 15 metres and no greater than 20 metres.	N/A		N/A		N/A		N/A	
ENTRIES	CD116	Standard	Comply?	North eastern arm	Comply?	South eastern arm	Comply?	South western arm	Comply?	North western arm
Forward Visibility on Approach	3.4	Desirable Minimum Stopping Sight Distance for approach road design speed - shall - CD 109	Y	120m	Y	120m	Y	120m	Y	120m
Forward Visibility at Entry	3.43	Forward visibility at entry - shall . ≤40m ICD - whole junction 40m - 60m - ICD - 40m visibility distance >60m - 100m ICD - 50m visibility distance >100m ICD - 70m visibility distance	Y		Y		Y		Y	
Visibility to the Right	3.45	Visibility to the right - shall - see above for visibility distance requirements	Y	Subject to future works at reserved matters	Y	Subject to future works at reserved matters	Y	Subject to future works at reserved matters	Y	Subject to future works at reserved matters
Circulatory Visibility	3.49	Circulatory visibility - shall - see above for visibility distance requirements	Y		Y		Y		Y	
Exit Visibility	3.5 Note	On the circulatory carriageway, the exit visibility shall conform to Table 3.43. Once a vehicle has crossed the inscribed circle at the exit from the roundabout, the SSD is to follow the requirements and advice provided in CD 109	Y	40m	Y	40m	Y	40m	Y	40m
Reverse Curves	3.6.9	On the circulatory carriageway, short lengths of reverse curve should be avoided between entry and adjacent exits.	N/A		N/A		N/A		N/A	
	Note 1)	Short lengths of reverse curves can be avoided: 1) by linking the curves with a short straight section; 2) by reducing the size of the ICD; or 3) by converting to a mini roundabout	N/A		N/A		N/A		N/A	
	Note 2)	Where there is a considerate distance between the entry and the next exit, such as a three-arm roundabouts, reverse curvature is acceptable.	Y		Y		Y		Y	
Pedestrian Crossing Visibility	3.57	Pedestrian crossing visibility	N/A		Y		Y		N/A	
Signalised Crossing Visibility	CD123 7.2.1	Visibility of signals - each traffic lane shall have clear visibility of at least one primary signal associated with its particular movement, from a distance minimum of SSD of the approach road.	N/A		N/A		N/A		N/A	

WSP Project No: WSP Project Title: Design Check Audit Drawing No Junction Type Standards / Guidance Stage 1 Road Safety Audit	LAND NORTH WEST OF SOUTHWATER UK0043490.9681-WSP-XX-XX- DR-TP-0101-P03 Priority Junction	DMRB CD123, 109 & 143	GG 101 - Verbal forms used in DMRB "must" indicates a statutory or legislative requirement "shall" indicates a requirement of the Overseeing Organisation "should" indicates advice expressed as a recommendation "may" indicates advice expressed as a permissible approach	
MAIN GEOMETRIC DESIGN FEATURES	CD123/109/ 143	Standard	Comply?	Reason
Junction selection (CD123)	2.1	Priority junctions shall not be used on motorways or all-purpose dual three-lane carriageways.	Y	
	2.1.1	Priority junctions should not be located on a sharp curve on a major road	Y	
	2.1.2	Priority junctions should only be located on level ground or where any approach that is on a downhill gradient does not exceed 2% over the applicable desirable minimum stopping sight distance (SSD).	Y	
	2.1.3	The number of priority junctions providing access to the all-purpose trunk roads should be minimised.	Y	
	2.13	Ghost islands shall not be used where overtaking opportunities on adjacent links are restricted	Y	
	2.12.1	On new single carriageways where overtaking opportunity is limited, ghost island junctions should be sited on non-overtaking sections.	Y	
	2.14	Ghost islands shall only be used where major road traffic flows allow traffic turning right out of the minor road to do so in one manoeuvre.	Y	
	2.14.1	On urban roads with a speed limit of 30 mph or less, where a ghost island cannot be accommodated, a passing bay as illustrated in Figure 2.14.1 may be used.	N/A	
Visibility (CD123)	3.1	Unobstructed visibility of the junction shall be provided from the minor road over a distance corresponding to desirable minimum SSD, including the give way sign where present.	Y	70m
	3.2	The junction shall be clearly visible from a minimum distance of 15m back along the minor road centreline from the continuation of the nearside edge of the major road.	Y	
	3.3	Where a direct access crosses a footway, a visibility splay shall be provided in accordance with Figure 3.3.	N/A	
	3.4	Visibility splays shall be provided at all priority junctions and direct accesses between points W, X and Y in accordance with Figure 3.4.	Y	x=2.4m, y=70m
	3.5	The speed of the major road used to determine point Y shall be based on design speed or measured speed depending on junction type and route classification.	TBC	30mph
	3.6	Visibility splays to the right shall be provided where minor road traffic can join a two-way major road or turn left onto a one-way road.	Y	70m
	3.6.1	Visibility splays to the right shall also be provided where minor road traffic can turn right onto a one-way road where contraflow provisions exist.	N/A	
	3.7	Visibility splays to the left shall be provided where minor road traffic joins a two-way single carriageway major road or turns right onto a dual carriageway or one-way road where required.	Y	70m
	3.7.1	Visibility splays to the left shall also be provided where minor road traffic turns left onto a one-way road where contraflow provisions exist.	N/A	
	3.7.2	At one-way major roads, visibility splays may be provided in both directions for vehicles turning out of the minor road.	N/A	
	3.8	The minimum setback distance (X) shall comply with requirements for direct accesses, simple priority junctions, and other priority junction types.	Y	2.4m
	3.9	Where the line between points X and Y extends into the major road carriageway, additional visibility shall be provided to the nearer edge of carriageway.	Y	
	3.10	Where a junction is located on the outside of a horizontal curve, additional visibility shall be provided on the inside of the curve.	Y	
	3.11	The desirable minimum SSD shall not be available from an X distance greater than 9m.	N/A	
	3.12	Where right turn movements are permitted across a central reserve, visibility shall be provided within the central reserve in accordance with defined points.	N/A	
Visibility (CD109)	3.1	Stopping sight distance as identified in Table 2.10 shall be measured between driver's eye heights of 1.05 metres and 2.00 metres to object heights of between 0.26 metres and 2.00 metres measured from the road surface, as shown in Figure 3.1.	Y	
	3.2	Desirable minimum stopping sight distance shall be available between any two points in the centre of each lane within the horizontal and vertical extents of the visibility envelope (measured for each carriageway in the case of dual carriageways and motorways).	Y	
Priority junction – general geometry (CD123)	5.1	The road camber on the major road shall be retained through the junction with the minor road graded into the channel line of the major road.	TBC	Needs cross/falls/levels confirmation.
	5.2	Allowance shall be made for the swept turning paths of the worst case design vehicle expected to use the priority junction.	Y	Tracked for large car, rigid bus crosses over lane turning in and out
	5.3	For priority junctions, the maximum gradient on the minor road approach shall comply with limits over a minimum 15m from the edge of the major road carriageway.	Y	
	5.3.1	The maximum gradient on the minor road approach should be in accordance with the preferred value.	Y	
	5.3.2	Where the preferred gradient cannot be achieved, the maximum gradient should be as close as practicable but not less than the alternative value.	N/A	
	5.4	At new priority junctions, the angle of the minor road approach over 15m shall be either 90 degrees or a minimum of 70 degrees.	Y	
	5.4.1	The angle of the minor road approach should be in accordance with the preferred value (90 degrees).	Y	
	5.4.2	Where the preferred angle cannot be achieved, the angle should be as close as practicable but not less than 70 degrees.	N/A	
Corner radii / tapers (CD123)	5.5	Corner radii shall be provided at all priority junction corners where carriageway or kerb lines intersect and turning movements are required.	Y	
	5.6	Corner radii shall be measured for simple priority junctions and junctions with merge/diverge tapers or auxiliary lanes in accordance with Figure 5.6.	Y	
	5.6.1	At simple priority junctions with no design vehicle provision, minimum corner radii shall be 6m in urban areas and 10m in rural areas.	Y	
	5.6.2	At simple priority junctions with design vehicle provision, corner radii shall be 10m (urban) or 15m (rural) with appropriate tapers, including 1:5 over 30m, 1:10 over 25m, or 1:8 over 32m for staggered junctions.	N/A	
	5.6.3	At ghost island junctions with no merge or diverge tapers, corner radii shall be 15m with a 1:6 taper over 30m.	N/A	
	5.6.4	Where a diverge taper or auxiliary lane is provided, corner radii shall be provided with 15m radius and taper, with minimum radii at merge/diverge ends dependent on design speed.	N/A	

Carriageway widths (CD123)	5.7	Where a physical traffic island is provided on the minor road, the minor road approach lanes <u>shall</u> be 4.0m wide at the tip of the associated hatched marking.	N/A	Kerb radius 6m / road width 6.8 m confirm requirement/acceptability via swept path (and any widening). As above Passing provision depends on confirmed widths/lengths beyond junction. Additional width on tight curves – confirm applicability/provision at detailed stage.
	5.7.1	Where no physical traffic island is provided on the minor road, the existing minor road lane width <u>shall</u> continue up to the start of the corner radius or give way line.	Y	
	5.8	Where a physical traffic island is provided on a minor road, the minor road approach lane width adjacent to the island <u>shall</u> be 4.0m for simple and ghost junctions, 4.5m for SLD and dual carriageway junctions, and 5.5m where two approach lanes are provided.	N/A	
	5.9	Where a physical traffic island is provided on a minor road, the minor road exit lane width adjacent to the island <u>shall</u> be 4.0m for simple priority junctions, 4.5m for ghost island junctions, and 5.0m for SLD and dual carriageway junctions.	N/A	
	5.10	For curves with a radius of 90m or less, minimum lane widths <u>shall</u> comply with Table 5.10.	N	
		For curve radii between values in Table 5.10, minimum lane width <u>shall</u> be interpolated.	N	
	5.11	On single lane sections greater than 50m, sufficient carriageway width <u>shall</u> be provided to allow vehicles to pass a stationary vehicle.	TBC	
	5.12	For curves with radius of 90m or less, an additional 2.5m carriageway width <u>shall</u> be provided to allow for passing of broken down vehicles.	N	
	5.12.1			
Traffic islands (CD123)	5.13	Physical traffic islands <u>shall</u> have an area of at least 4.5m².	N	2.2m².
	5.13.1	Traffic islands smaller than 4.5m² <u>should</u> be defined by road markings.	N	These are physical islands
	5.13.2	Physical traffic islands <u>should</u> include features to make them conspicuous, e.g. traffic bollards and signage.	TBC	Not confirmed on current GA.
	5.13.3	Traffic islands on minor roads <u>should</u> be physical islands.	N/A	
	5.14	Physical traffic islands <u>shall</u> be used on the minor road where turning movements are prohibited to prevent or deter such movements.	N/A	
	5.15	Junctions that form part of a compact grade separated junction <u>shall</u> include physical islands to prevent right turn manoeuvres into and out of the major road.	N/A	
	5.16	Traffic islands on the minor road <u>shall</u> be set back a minimum of 1m from the edge of running carriageway or in-line with the back of the hard strip where ≥1m.	N/A	
NMU crossings / refuges (CD143)	E/4.2	Where there is a parking demand, physical measures to prevent parking at pedestrian and cyclist crossings <u>shall</u> be included in the scheme design.	N/A	Absolute minimum Less than 2m To be shown at detailed stage To be shown at detailed stage 2m
	E/4.5	Dropped kerbs <u>shall</u> be provided at pedestrian crossings.	Y	
	E/4.6	Refuge islands <u>shall</u> not be provided where the speed limit is greater than 40 mph except where the refuge island is incorporated into a single lane dualling design.	N/A	
	E/4.7	Table E/4.7 <u>shall</u> be used to determine the depth of pedestrian and shared use refuge islands, measured in the direction of travel of the pedestrian or cyclist.	Y	
	E/4.7.1	The width of the pedestrian or shared use refuge island <u>should</u> not be less than the width of the connecting facility or less than 2.0 metres.	N	
	E/4.8	Dropped kerbs <u>shall</u> be provided at refuge islands.	TBC	
	E/4.8.1	Tactile surfaces <u>should</u> be provided at the dropped kerb approaches to pedestrian and shared use refuge islands and within the refuge island.	N	
	E/5.1	Visibility splays <u>shall</u> be provided for routes at junctions and crossings used by pedestrians, cyclists (on shared use facilities only) and equestrians where these users have to stop or give way.	TBC	
	E/5.2	Visibility splay "x" distances for pedestrians, cyclists (on shared use facilities only) and equestrians at junctions and crossing points <u>shall</u> be provided in accordance with Table E/5.2.	Y	
	E/5.3	Visibility splay "y" distance for pedestrians and cyclists (on shared use facilities only) at junctions and crossing points <u>shall</u> be provided in accordance with Table E/5.3.	TBC	
	E/5.4	"Y" distances <u>shall</u> be measured from an eye height of 0.9 metres to 2.0 metres for pedestrians and 1.0 metre to 2.2 metres for cyclists.	TBC	
	E/5.5	When measuring "y" distances at junctions or crossings, the object height <u>shall</u> be taken as 0.26 metres to 2.0 metres.	TBC	

WSP Project No: WSP Project Title: Design Check Audit Drawing No Junction Type Standards / Guidance Stage 1 Road Safety Audit	LAND NORTH WEST OF SOUTHWATER UK0043490.9681-WSP-XX-XX- DR-TP-0109 Normal roundabout	DMRB CD116 Rev 2		GG 101 - Verbal forms used in DMRB "must" indicates a statutory or legislative requirement "shall" indicates a requirement of the Overseeing Organisation "should" indicates advice expressed as a recommendation "may" indicates advice expressed as a permissible approach
MAIN GEOMETRIC DESIGN FEATURES	CD116	Standard	Comply?	Reason (if different from CD116 Rev 2)
Inscribed Circle Diameter	3.5 3.5.1 3.5.2	Minimum value of ICD for a normal or compact roundabout shall be 28 metres The ICD of a compact roundabout should not exceed 36m The ICD of a normal roundabout should not exceed 100m	Y - 85m N/A 85m	
Circulatory Carriageway	3.6	Width of circulatory carriageway for normal or compact roundabout shall be between 1.0 and 1.2 times the max entry width excluding any overrun area.	8m =1.0 5- Within Standard	Not circular roundabout
	3.6.1	The circulatory carriageway of normal or compact roundabout should be circular and of constant width	N/A	
	3.6.2	Dedicated lane signs and road markings may be used on the circulatory carriageway where appropriate.	N/A	
	3.6.5	At normal roundabouts the width of the circulatory carriageway should not exceed 15 metres.	Y	
	3.6.6	The width of the circulatory carriageway on a normal roundabout should accommodate the number of lanes provided on entries and exits.	Y	
	3.6.7	At compact roundabouts, the width of the circulatory carriageway should not exceed 6 metres, so that it is not possible for two cars to pass one another	N/A	
	3.6.8	On the circulatory carriageway, short lengths of reverse curve should be avoided between entry and adjacent exits.	N/A	
Central Island	3.7 3.7.1	The central island of normal and compact roundabouts shall be at least 4 metres in diameter The central island of normal and compact roundabouts should be circular.	Y=60 N/A	
Overrun Areas	3.8 / 3.9	To provide suitable deflection for vehicles whilst allowing large vehicles to circulate -	N/A	None of the vehicle tracking is overrunning- only applicable to compact roundabout- ICD 36m
Traffic Islands	3.10,3.10.1,3.10.2	To be provided for all arms. All islands to be kerbed. Road signs not to impede visibility.	Y	Traffic islands on all arms with keep left illuminated bollards provided. Signage to be agreed at detailed design stage.

ENTRIES	CD116	Standard	Comply?	North eastern arm	Comply?	South eastern arm	Comply?	South western arm	Comply?	North western arm
Entry Width	3.11.1	Where there is white edge lining or hatching the measurement should be taken between the edges of the markings closest to the running lanes rather than kerb to kerb.	Y		Y		Y		Y	
	3.12	On a single carriageway approach to a normal roundabout, the entry width shall not exceed 10.5 metres.	N/ 10.7		N/ 11.7		Y		Y	
	3.13	On a dual carriageway approach to a normal roundabout, the entry width shall not exceed 15 metres.	N/A		N/A		N/A		N/A	
	3.14	Lane widths at the give way line for normal and compact roundabouts shall be no less than 3 metres and no greater than 4.5 metres.	Y		Y		Y		Y	
	3.14.1	At the give way line, a lane width value of 4.5 metres should be used at single lane entries.	N/A		N/A		N/A		4.5m	
	3.14.2	At the give way line, lane width values of between 3 metres and 3.5 metres should be used at multi-lane entries.	Y		Y		Y		N/A	
	3.14.3	Vehicle swept paths should be assessed using the largest design vehicle that is anticipated to use each entry lane.	Y		Y		N/A		Y	
	3.14.4	Vehicle swept paths should be assessed on multi-lane entries to ensure sufficient width is provided for each entry lane.	Y		Y		N/A		Y	
	3.14.5	No more than two lanes should be added to the number of upstream lanes on the entry to a roundabout.	Y		Y		Y		Y	
	3.14.6	No entry should be more than four lanes wide.	Y		Y		Y		Y	
	3.14.7	Where entry flaring is provided, lane markings indicating the tapered lanes should only be provided from a point where both lanes will have a minimum width of 2.5 metres.	Y		Y		Y		Y	
	3.14.8	When developing additional entry lanes, short offside lanes should not be used.	Y		Y		Y		Y	
	3.17.1	A minimum average effective flare length of 5 metres in urban areas and 25 metres in rural areas should be used, but capacity can be the determining factor for the actual length	Y=25m		Y=25m		Y=25m		Y=25m	

Entry Kerb Radius	3.19.1 / 2	The entry kerb radius should not be less than 10 metres and should not be greater than 100 metre	Y	Entry kerb radius 45.5m	Y	Entry kerb radius 1045m - Signalised	Y	Entry kerb radius 25.7m	Y	Entry kerb radius 43.5/ 48.9m
	3.19.3	At compact roundabouts, if the approach is intended for regular use by HGVs, the entry kerb radii should not be less than 20 metres.	N/A		N/A		N/A		N/A	

ENTRIES	CD116	Standard	Comply?	North eastern arm	Comply?	South eastern arm	Comply?	South western arm	Comply?	North western arm
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Exit Width	3.28.1	The exit width for normal roundabouts should accommodate one more traffic lane than is present on the link downstream.	Y		Y	7m	Y	8.5	N	
	3.28.2	At a normal roundabout, if the downstream link is a single carriageway road, the exit width should be between 7 metres and 7.5 metres and the exit should taper down to a minimum of 6 metres.	Y/ 7m		N/ 7m		N/ 8.5m		Y/ 7.4m	
	3.28.3	Where the downstream link is a single carriageway road, the exit width should reduce at a taper of 1:15 to 1:20, starting at the end of the exit from the roundabout, ensuring 6 metres at end of traffic island, to avoid exiting vehicles encroaching onto the opposing lane at the end of the traffic island.	Y		Y			Exit width 8.5m taper down to 7m	Y	
	3.28.4	At a normal roundabout, if the downstream link is an all-purpose two-lane dual carriageway, the exit width should be between 10metres and 11metres, with the exit tapering down to two lanes wide	N/A		N/A		N/A		N/A	
	3.28.6	Where traffic is required to merge after exiting, sufficient distance should be provided from the exit to allow the merging manoeuvre to take place in a safe and efficient manner	N/A		N/A		N/A		N/A	
Exit Kerb Radius	3.29.1	At normal roundabouts the exit kerb radius should exceed the largest entry radius.	Y		Y		Y		Y	
	3.29.2	At normal roundabouts, the exit kerb radius should be 40 metres.	N	45.5	N/A	?	N	80m	N	77.7m
	3.29.3	Where an exit kerb radius of 40 metres cannot be achieved, the exit kerb radius should be no less than 20 metres and no greater than 100 metres	Y	radius as above	N		Y	radius as above	Y	
	3.29.4	A higher exit kerb radius may be used on normal roundabouts with larger ICDs on high speed roads to suit the overall junction geometry.	N/A		N/A		N/A		N/A	
	3.29.5	At compact roundabouts the exit kerb radius should be equal to the largest entry radius.	N/A		N/A		N/A		N/A	
	3.29.6	At a compact roundabout, the value of the exit kerb radius should be no less than 15 metres and no greater than 20 metres.	N/A		N/A		N/A		N/A	
ENTRIES	CD116	Standard	Comply?	North eastern arm	Comply?	South eastern arm	Comply?	South western arm	Comply?	North western arm
Forward Visibility on Approach	3.4	Desirable Minimum Stopping Sight Distance for approach road design speed - shall - CD 109 - 160m	Y	160m	Y	160m	Y	122m	Y	160m
Forward Visibility at Entry	3.43	Forward visibility at entry - shall . <40m ICD = whole junction 40m - 60m - ICD - 40m visibility distance >60m - 100m ICD - 50m visibility distance - ICD 85m >100m ICD - 70m visibility distance	Y	50m	Y	50m	Y	50m	Y	50m
Visibility to the Right	3.45	Visibility to the right - shall - see above for visibility distance requirements	Y	50m	Y	NMU within visibility splays	Y	50m	Y	50m
Exit Visibility	3.5 Note	On the circulatory carriageway, the exit visibility shall conform to Table 3.43. Once a vehicle has crossed the inscribed circle at the exit from the roundabout, the SSD is to follow the requirements and advice provided in CD 109	N	117m	N	51m	Y	160m	N/A	37m