Geometric Design Checks:

Proposed Roundabout South, Barnsley West

References: DMRB CD116 Rev 0 - July 2019 (this supersedes the withdrawn guidance in Vol. 6 TD16/07)
Fore Drawings: 3062
Notes: CD 116 replaces TD 16/07, TD 54/07 and TD 51/17, and roundabout related parts to TD 50/04, TA 23/81, TA 78/97, TA 86/03 and TD 70/08. The full document has been re-written to make it compliant with the new Highways England drafting rules.

Roundabout Type: Normal

Date: 20 November 2023

Parameter		Variable	Paragraph	CD116 Requirement	Design Actual	Acceptable	Comments
ICD		D	3.1 to 3.5	D value between 28m and 100m	46.00	Yes	
Circulatory width		c	3.6 to 3.9	c value ≤15m	10.00	Yes	10m is specified by BMBC as a local requirement
Rbt South Arm N	Arm 1 (entry width)	e	3.6 to 3.9	Between 1.0 and 1.2 times entry width, excluding any overrun area	7.50	Yes	10m is specified by BMBC as a local requirement
Rbt South Arm E	Arm 2 (entry width)				6.21	Yes	10m is specified by BMBC as a local requirement
Rbt South Arm S	Arm 3 (entry width)				7.50	Yes	10m is specified by BMBC as a local requirement
Rbt South Arm W	Arm 4 (entry width)				6.00	Yes	10m is specified by BMBC as a local requirement
Central island diameter		I	3.7	I value ≥4m	26.00	Yes	Includes maintenance strip of 1.5m
Central overrun area		b	3.8 to 3.9	To provide sufficient entry deflection for vehicles while still allowing large vehicles to circulate	0.00	Yes	
Entry width	Arm 1	e	3.11 to 3.15	e value 4.0m - 10.5m parameter range (practical limits for single carriageway approach)	7.50	Yes	
	Arm 2				6.21	Yes	
	Arm 3				7.50	Yes	
	Arm 4				6.00	Yes	
Approach half width	Arm 1	v	3.16 and Table B.2	v value 2.0m - 7.3m parameter range (practical limits)	3.65	Yes	
	Arm 2				3.00	Yes	
	Arm 3				3.65	Yes	
	Arm 4				3.00	Yes	
Entry lane alignment	Arm 1	L	3.18	Splitter island kerb (arc) must be tangential to central island when extended forward from give way line		Yes	
	Arm 2					Yes	
	Arm 3					Yes	
	Arm 4					Yes	
Flare length	Arm 1	l'	3.17	Single lane entries should be slightly flared to accommodate HGVs	7.34	Yes	
	Arm 2				7.15	Yes	
	Arm 3				7.51	Yes	
	Arm 4				9.21	Yes	
Entry angle	Arm 1	Φ	3.18	Φ value between 20 to 60 degrees	39.41	Yes	
	Arm 2				39.74	Yes	
	Arm 3				41.43	Yes	
	Arm 4				38.18	Yes	
Entry kerb radius	Arm 1	r	3.19	r value between 10m to 100m	23.00	Yes	
	Arm 2				20.00	Yes	
	Arm 3				20.00	Yes	
	Arm 4				15.00	Yes	
Entry path radius	Arm 1	length of a(ent)	3.20 to 3.26	a value ≤ 100m for 25m length	98.86	Yes	
	Arm 2				70.06	Yes	
	Arm 3				97.59	Yes	
	Arm 4				85.81	Yes	
Exit width	Arm 1	ew	3.28	ew values similar to entry width	7.06	Yes	
	Arm 2				6.08	Yes	
	Arm 3				7.05	Yes	
	Arm 4				6.09	Yes	
Exit taper	Arm 1	et	3.28	et values between 1:15 and 1:20	1:15	Yes	
	Arm 2				1:14	Yes	
	Arm 3				1:15	Yes	
	Arm 4				1:15	Yes	
Exit kerb radius	Arm 1	a(exit)	3.29	a values between 15m to 100m	80	Yes	
	Arm 2				60	Yes	
	Arm 3				100	Yes	
	Arm 4				50	Yes	
Visibility on Approach (DMRB Eye Height 1.05m, Target height 0.26m)	Arm 1	va	3.39	To be in accordance with CD109		Yes	
	Arm 2					Yes	
	Arm 3					Yes	
	Arm 4					Yes	
Visibility on Entry	Arm 1	ve	3.43	Visibility distance of 40m for ICD 40m to 60m roundabouts		Yes	Assume no construction on central island
	Arm 2					Yes	Assume no construction on central island
	Arm 3					Yes	Assume no construction on central island
	Arm 4					Yes	Assume no construction on central island