

ARUP	Job No.	253511	Sheet No.		Rev.	
	Member/Location	Leeds				
Job Title	A61 Barnsley Corridor Improvements					
Calculation	A61-ARUP-XX-XX-RP-CH-0103 Drainage Schedule					
	Drng. Ref.	Refer to drawing A61-ARUP-XX-XX-DR-CH-115				
	Made by	HJ	Date	04/10/2021	Chd.	CW

Proposed Highway Drainage Schedule

Manhole Ref.	Cover Level (mAOD)	MH Depth (m)	Access Cover			Manhole Dia. (Ømm)	Manhole Type	Pipe Out			Pipe(s) In			Backdrop (m)	Comments
			Size	Loading Class	Cover Type			D/S MH	Invert Level (mAOD)	Pipe dia. (Ømm)	D/S MH	Invert Level (mAOD)	Pipe Dia. (Ømm)		
S1	45.680	1.950	600 x 600	B125	Ductile Iron	1500	Type 2	MH S3	43.730	600					Head of run
S2	46.861	1.425	600 x 600	D400	Ductile Iron	1200	Type 2	MH S3	45.436	225					Head of run
S3	46.117	2.449	600 x 600	D400	Ductile Iron	1500	Type 2	MH S4	43.668	600	MH S1	43.668	600	649	
											MH S2	44.692	225		
S4	46.103	2.446	600 x 600	B125	Ductile Iron	1500	Type 2	MH S6	43.657	375	MH S3	43.657	600		Manhole to contain flow control device*
S5	45.500	2.500	600 x 600	D400	Ductile Iron	1350	Type 2	MH S6	43.000	375					Manhole to be constructed on existing highway drain when located.**
S6	45.195	2.587	600 x 600	B125	Ductile Iron	1500	Type 2	MH S7	42.608	375	MH S4	43.601	375	993	
											MH S5	42.608	375		
S7	44.532	2.313	600 x 600	B125	Ductile Iron	1350	Type 2	Outfall	42.219	375	MH S6	42.219	375		
Outfall	44.647	2.452	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	MH S7	42.195	375		New outfall to be constructed into river wall, to Contractors design

* Contractor to verify if manhole diameter will need increasing beyond the size shown in order to adequately construct the flow control device within the chamber.

** Contractor to verify existing location, line and level of existing highways drain. Design of downstream pipes between MH S6 and the new outfall to be reviewed and adjusted as required.

Summary of Stage 4 Drainage Strategy

- The existing site drainage has been assessed with surface water from the highway found to drain to a several highway drains that all discharge into the River Dearne. The existing Asda car park has also been found to discharge to outfall into the river.
- The total existing flow rate from the site extents towards the River Dearne has been calculated to be 131.75 l/s for a 30 year return period.
- The scheme proposals will increase the proposed impermeable area. The proposed drainage strategy seeks to ensure that the overall discharge into the River Dearne matches the existing rate calculated for the 30 year return period.
- Flows from the highway south of the bridge will be collected via new gullies and directed to the existing highway drains beneath the carriageway/footway. The two existing outfalls beneath the bridge structure will be retained.
- Flows from the Asda drainage network will be reduced compared to existing due to the reduction in car park.
- The highway to the north of the bridge shall be collected via new gullies and then attenuated in a new oversized pipe network. These flows shall be restricted to 38 l/s for the 30 year return period, so that the overall flow from the scheme towards the river matches existing.
- When assessing the new highway drainage network, a 30% climate change allowance has been used for the 100 year storm event.