



alan johnston partnership
Consulting Structural & Civil Engineers

CARRIAGEWAY TECHNICAL NOTE

221-130, Halsnead, Lickers Lane

Abstract

Engineering observation to support the need for wider carriageway widths on all adoptable roads

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1. Scope of report and scheme description

The purpose of this report is to provide a technical note in support of the current carriageway widths from a drainage perspective.

2. Location and site conditions

The site is situated to the south of Lickers Lane, Whiston and is part of the overall Halsnead garden Village development. The site is located at National Grid reference SJ 47441 90386. The site location is illustrated in Appendix A and the extent of the area to which the application relates is shown on the enclosed aerial photo, attached in Appendix B.

The existing site covers a total area of 3.41ha and is a greenfield site. The site comprises entirely of greenfield areas. The site is bounded to the north by existing woodland and pond areas, with Lickers Lane located further north. To the east, south and west the site is bounded by existing greenfield and agricultural land.

The site falls from north to south, with levels falling from approximately 51.50mAOD in the north to approximately 45.80mAOD in the south.

3. UU Technical Guidance

Location and maintenance considerations

Sewers for adoption are usually located within highways or areas of public open space. For assets not located within the highway the Principal Designer should consider future maintenance, and provide suitable access provisions. The location of new or existing sewers within new developments should not impede our ability to carry out our basic maintenance duties.

Manhole Chambers (UU Contractors Guide)

Manholes should also be positioned 0.5m away from kerb lines, preferably with the manhole cover positioned away from the wheel line of traffic.

Manholes should be constructed where there is a change of direction and/or a change of gradient, or where access is required for maintenance purposes. Such changes in direction or gradient must be made within the channel and not outside of the manhole or concealed by benching.

SFA 8th Edition Technical Note

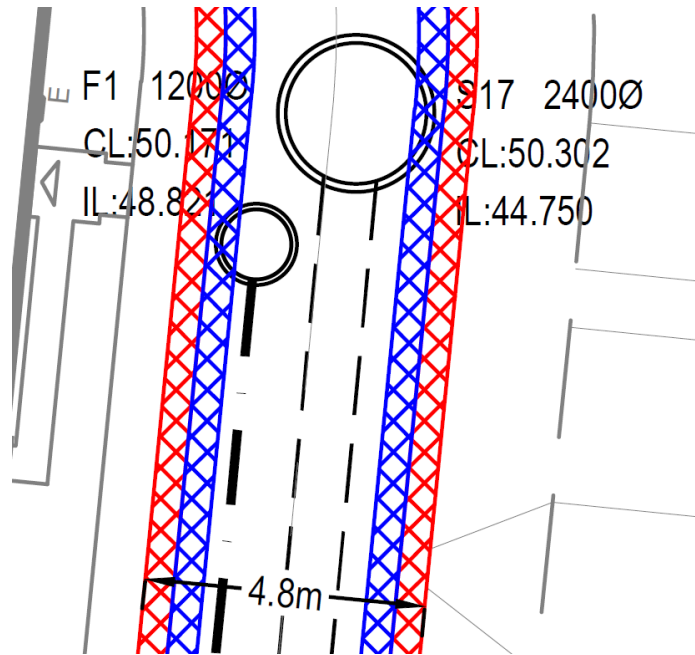
‘When in a highway, the outside of the sewer should be in the vehicle carriageway (not footway) and be at least 1 m from the kerb line. The external faces of manholes (including any concrete surround) should be at least 0.5 m from the kerb line.’

4. Current road widths

Some of the smaller 4.5m lanes within the design guide will struggle to fit in SW and FW pipes whilst maintaining the offsets required in order for the drains to be adopted.

The hatching within the extract below indicates a 0.5m offset and 1.0m offset; In order to comply with UU requirements and achieve S104 adoption of the network, all manholes must sit free from the red hatching, and sewers must sit freely from the blue hatching.

As demonstrated, within a 4.8m wide road the maximum size diameter manhole we can achieve for surface water is 2400mm with a sewer of 900mm, if the road were to reduce to a 4.5m wide lane, the maximum size manhole we can achieve would be 2100mm with a sewer of 600mm.



5. STORM EVENT 100YR+40CC

100 YEAR + 40CC STORM EVENT RESULTS

Our surface water drainage network currently shows a system that achieves these clearances with no surface water flooding.

Any reduction in road width will lead to the overall attenuation within the drainage network decreasing and cause flooding to the surrounding properties.

The Alan Johnston Partnership				Page 10	
1 Dale Street Liverpool L2 2ET					
Date 16/08/2022 12:54		Designed by Joseph Poole			
File 221-130 MDX NETWORK 2022.08.10.MDX		Checked by			
XP Solutions		Network 2018.1.1			

Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/ME Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000		1	0.03	13.6	SURCHARGED	
1.001		2	0.04	18.4	FLOOD RISK	
2.000		3	0.01	4.2	FLOOD RISK	
2.001		4	0.01	2.6	FLOOD RISK	
1.002		5	0.04	11.8	FLOOD RISK	
1.003		6	0.02	6.6	SURCHARGED	
1.004		7	0.21	7.0	SURCHARGED	
1.005		8	0.10	60.7	SURCHARGED	
3.000		9	0.05	23.9	SURCHARGED	
1.006		10	0.15	82.5	SURCHARGED	
1.007		11	0.16	52.2	FLOOD RISK	
1.008		12	0.09	40.6	SURCHARGED	
4.000		13	0.04	12.3	OK	
4.001		14	0.04	19.9	OK	
4.002		16	0.22	5.0	SURCHARGED	
4.003	16a	1.06		38.7	SURCHARGED	
5.000		17	0.05	40.0	SURCHARGED	
5.001		18	0.04	29.6	SURCHARGED	
5.002		19	0.07	32.6	FLOOD RISK	
5.003		20	0.65	21.6	FLOOD RISK	
5.004		21	0.40	15.7	SURCHARGED	
5.005		22	0.23	15.3	SURCHARGED	
4.004		23	0.06	29.8	SURCHARGED	
4.005		24	0.05	32.0	SURCHARGED	
4.006		25	0.04	29.8	SURCHARGED	
4.007	25a	0.02		26.0	SURCHARGED	
4.008		26	0.01	30.3	FLOOD RISK	
4.009		27	0.01	22.2	FLOOD RISK	
1.009		28	0.01	38.3	FLOOD RISK	
1.010		29	0.18	24.4	FLOOD RISK	

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