

CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing. Abnormal or unusual residual risks may be shown above where it is considered that such risks may not normally be expected by competent persons engaged on work of this nature or type.

Notes

- All adoptable sewer works and material to be in accordance with Sewers for Adoption 6th Edition, The Relevant British Standard and United Utilities Standards/Requirements/Adoption and Materials.
- Manhole covers shall have a minimum clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.

Filled ground must be filled and consolidated under the supervision and to the satisfaction of United Utilities before any sewer works are carried out.

- United Utilities is not obliged to accept filler drain/land drainage run-off into the public sewer network or adoptable drainage system (utility or privately). An approved and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filler drain/land drainage run-off.

- Cover slabs must carry the BS Kitemark or will be rejected by United Utilities Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the United Utilities specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), Technical Bulletin issued Autumn 2004 for Kitemarked cover slab opening sizes.

- Slip/anti resistant cement (C20/20C2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.

- Sewers must have 5 metres clearance from trees and hedges (please also refer to Planning Policy 23 'Sewers for Adoption 6th Edition for restrictions or tree planting adjacent to sewers).

- Unless noted otherwise, sewers are to be laid in Class S bedding in accordance with United Utilities standard details. Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in non vehicular access areas) then a concrete bed and surround shall be provided.

- Bedding and backfill material to conform to the requirement of 'Water Industry Specification 1-06-02' (Table A2) and in accordance with United Utilities standard embedment details.

- United Utilities policy is not to accept Type 'C' brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a Type 'B' manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.

P7	24.04.20	Updated to latest drainage	LCS	MAR
P6	20.02.2020	Revised in accordance to LUFA/Highway	JW	MAR
Rev.	Date	Amendment	Drawn	Chkd. Appd.



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Old Row
Barrow

FIRST ISSUE

S104
Drainage Layout

Drawn	Date	Checked	Date	Approved	Date
AN	Jan 19	MAR	Jan 19		
Scale	Sheet	Of	Size	Dimensions	
1:500	A1				

Project No.	881590	Drawing File	
Drawing No.	ENG20	Rev.	P7

