



KEY

- Proposed Surface Water Sewer
- Proposed Foul Water Sewer
- Indicative Routes
- Road Gully, Omitted until further layout detail supplied

Proposed Drainage is indicative subject to detailed layout design, although sizing and strategy is unlikely to change.

NOTES:

- D400 covers & frames with bitumen to be used on all adaptable manholes. All covers to be embossed with FWSW as appropriate. 150mm deep, non-rocking cover and frames to be used.
- Cover and Rectangular access, shaft and chamber, rings to be bedded with mortar, proprietary bitumen or resin mastic sealant. All lifting holes to be sealed.
- Frame all slab openings and step ions, ladders are properly aligned, at the foot of each ladder or set of steps, a minimum of 400mm landing area should be provided from the outer edge of the step or rung. This may consist of:
 - a single area adjacent to the foot of the ladder or steps; or
 - where the channel is no more than 200mm, one area of at least 225mm adjacent to the foot of the ladder or steps with the remainder on the other side of the channel.
- Chamber Diameters:

Dia. of largest pipe in M.H. (mm)	Dia. of chamber ring (mm)
Less than 375	1200
375-450	1500
500-700	1800
750-900	1900
1050-1200	2100
1350-1500	2400
1650-1800	2700
- Above sites are minimum and may need increasing for more than one incoming pipe to accommodate adequate benching.
- refer mix to be in accordance with the chemical analysis report for buried cells for the site unless High strength lagging to BS EN 12209 and PD 66811 to be brought up to a dense smooth face neatly shaped and finished to all branch connections. Benching slope to be not flatter than 1 in 30.
- Rocker/short pipe lengths:

Pipe dia. (mm)	Rocker pipe length (m)
150-400	0.4
401-750	1.00
over 750	1.25

Short length pipes to be similar length to rocker pipe. Manhole to large diameter sewers. Chambers with outgoing pipes greater than 600mm dia. to be constructed as per detail. Top holes to be provided in benching of sewers greater than 400mm dia. for access to invert.

- Bricks to be solid type and either Class B engineering bricks complying with the relevant provisions of BS EN 771-1, or special bricks shall comply with the relevant provisions of BS EN 772 with sulphate resisting Portland cement binder. Brickwork to be in English bond.
- Block Manhole Walls: Chamber walls to be increased for pipes larger than 225mm dia. to give 25mm benching each side with the brickwork corbelled down to full cover.
- All pipes built into manhole invert should be installed with soffits level.
- PIPE BEDDING AND BACKFILL MATERIALS: Granular bedding and siltfill Type A material and/or be imported or selected in situ material complying with the recommendations of WAA Notes 4-08-02. Selected fill Type B siltfill consist of uniform, evenly compactible material, free from vegetable matter, building rubbish and frozen materials, or materials susceptible to spontaneous combustion, and excluding, of fluid level greater than 80 and/or plastic, limit greater than 55 and materials of excessive high moisture content. Lumps and stones retained on 75mm and 37.5mm sieves respectively shall be excluded from the fill material. Fine bedding and fill materials for pipe pipes shall not contain more than 0.35 sulphate, expressed as sulphur trioxide.

TRENCH WIDTHS		
Pipe dia. (mm)	BC (mm)	BD (mm)
150	160	200
225	280	300
300	380	400
375	500	550
450	580	650
525	670	750
600	750	850
750	960	1050
900	1160	1250
1100	1420	1550
1300	1740	1900
1500	2090	2300

- All Adaptable Drainage pipes to be of spigot & socket type connection.
- During construction all outlet manholes to be fitted with debris screen (mesh size 2mm), over the outgoing pipes.
- All Adaptable Drainage Works shall comply with the requirements of Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England (The Code's Approved version 2.0)

Rev	Description	Date

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Title: **Adoptable Drainage Layout Sheet 1**

Project: **Towcester Grange West**

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