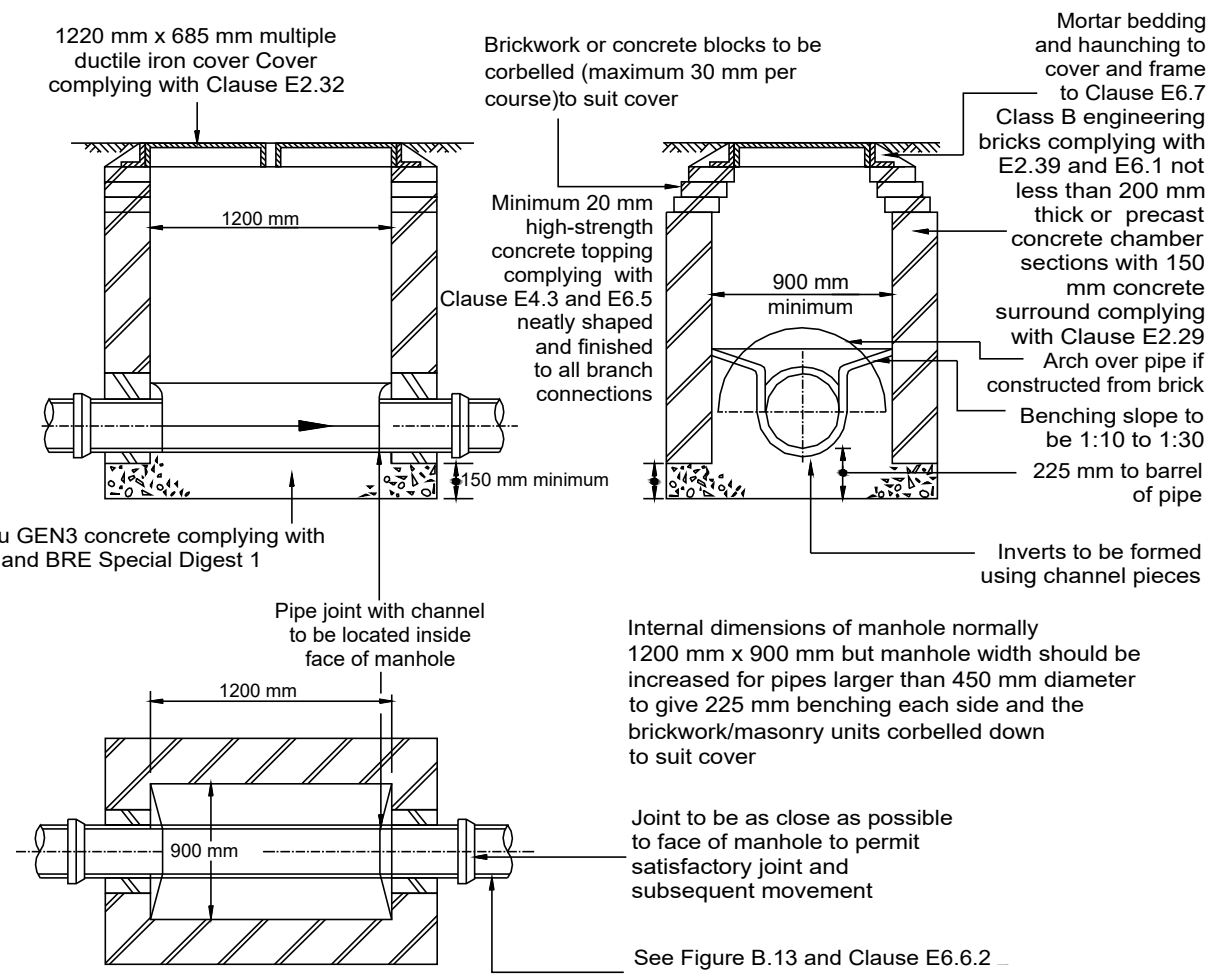


FIGURE B.33
TYPICAL MANHOLE DETAIL - TYPE C
Depth from cover level to soffit of pipe less than 1.5 m
Maximum pipe size 450 mm diameter
Rigid material construction



Note: The use of precast concrete chamber units to E2.29 with 150 mm GEN3 in-situ concrete complying with E4.1 and BRE Special Digest 1 in place of brickwork construction is permitted.

Not to scale

FIGURE B.26
CONNECTIONS TO SEWER

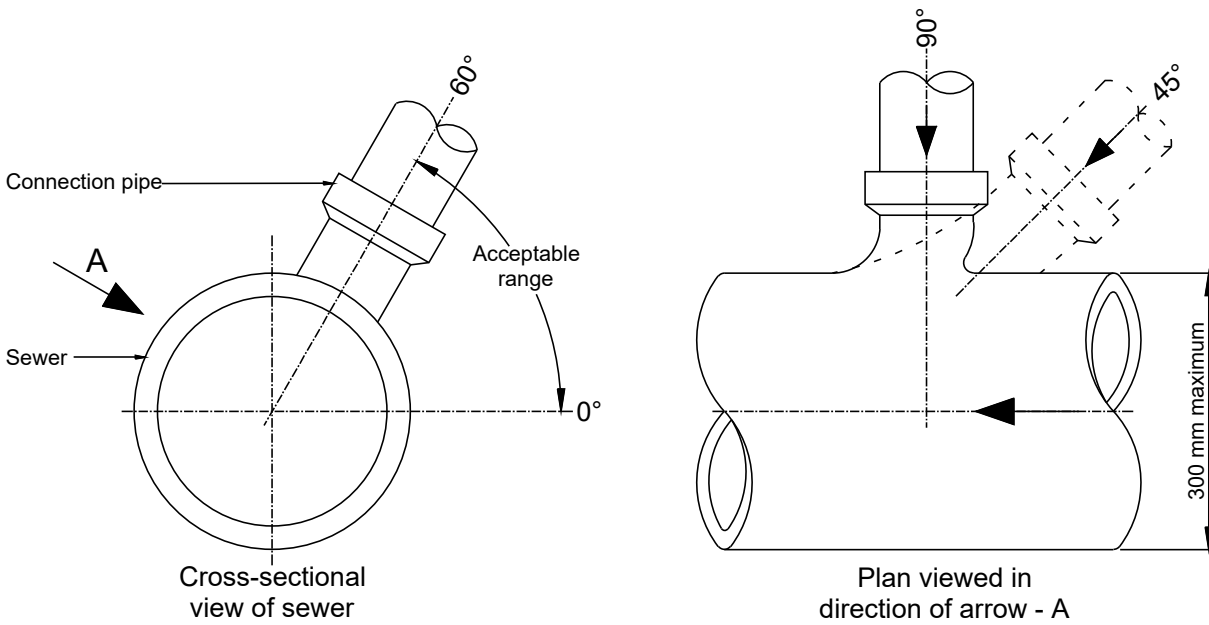
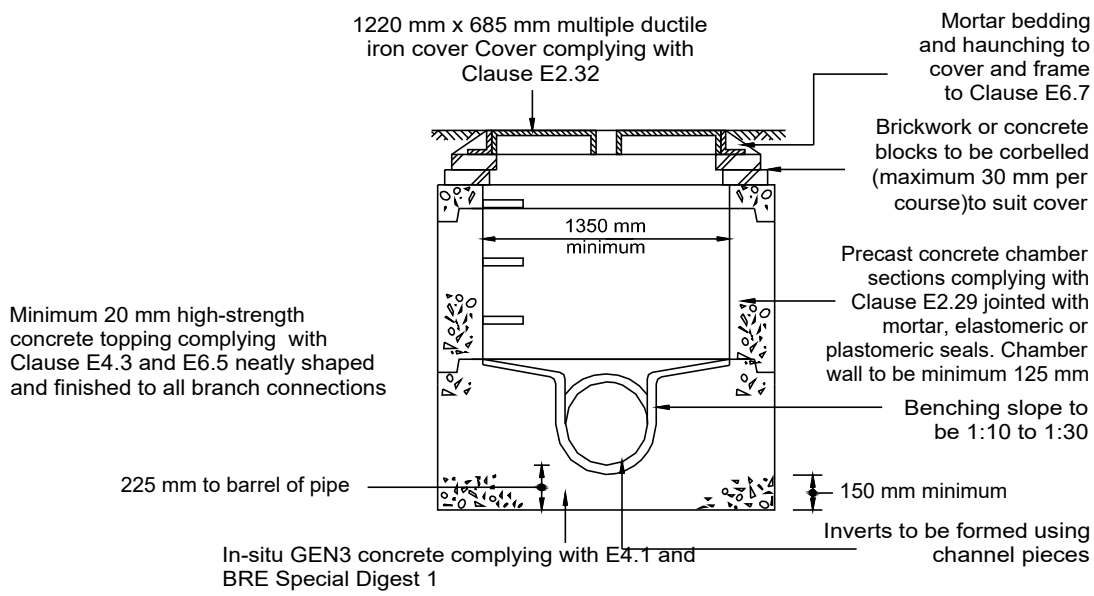
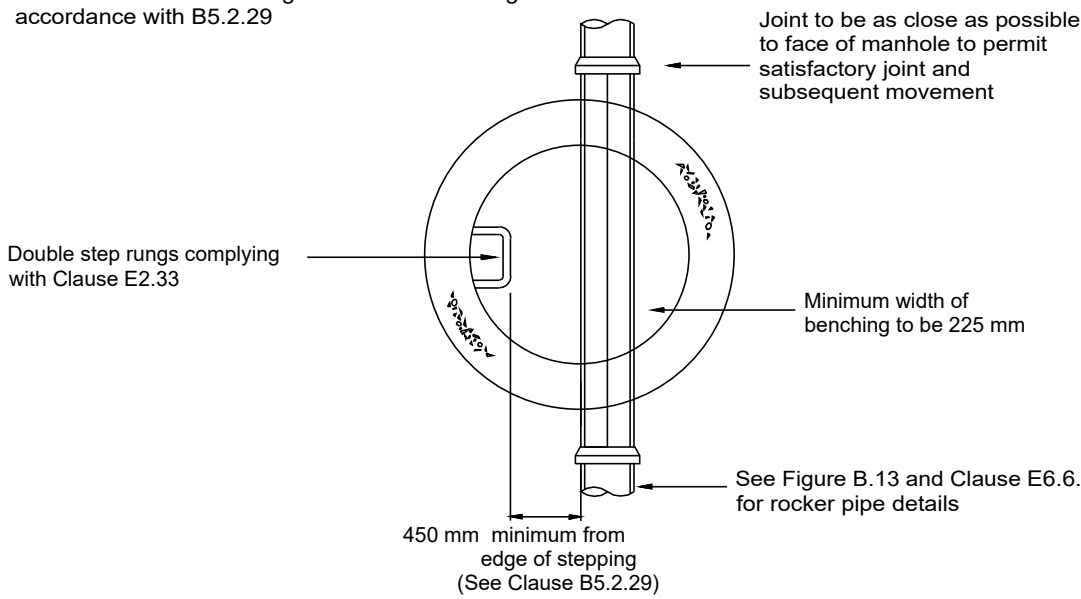


FIGURE B.14
TYPICAL MANHOLE DETAIL - TYPE C
Depth from cover level to soffit of pipe less than 1.5 m
Maximum pipe size 450 mm diameter
Rigid material construction



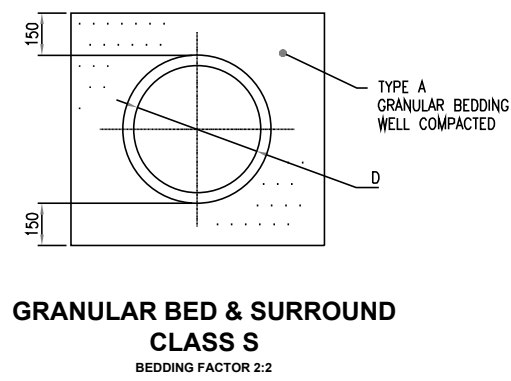
Internal dimensions of manhole normally 1350 mm but manhole diameter should be increased for pipes larger than 450 mm diameter to give 225 mm benching in accordance with B5.2.29



Note: The use of precast concrete chamber units to E2.29 with 150 mm GEN3 in-situ concrete complying with E4.1 and BRE Special Digest 1 in place of brickwork construction is permitted.

Not to scale

BEDDING DETAILS FOR CONCRETE & CLAYWARE PIPES



GRANULAR BED & SURROUND
CLASS S
BEDDING FACTOR 1.25

- NOTES
1. CLASS 'S' GRANULAR BED AND SURROUND PREFERRED WITH THE ADDITION OF A REINFORCED CONCRETE PROTECTION SLAB WHERE THE DEPTH OF COVER IS LESS THAN 1.2M OR LESS THAN 0.9m IN NON TRAFFICKED AREAS.
 2. SEE WS 4-08-02 FOR BEDDING MATERIAL SPECIFICATION
 3. REFER TO IGN 4-11-02 FOR TRENCH WIDTH DETAILS

FIGURE B.27
PROTECTION OF PIPES LAID AT SHALLOW DEPTHS

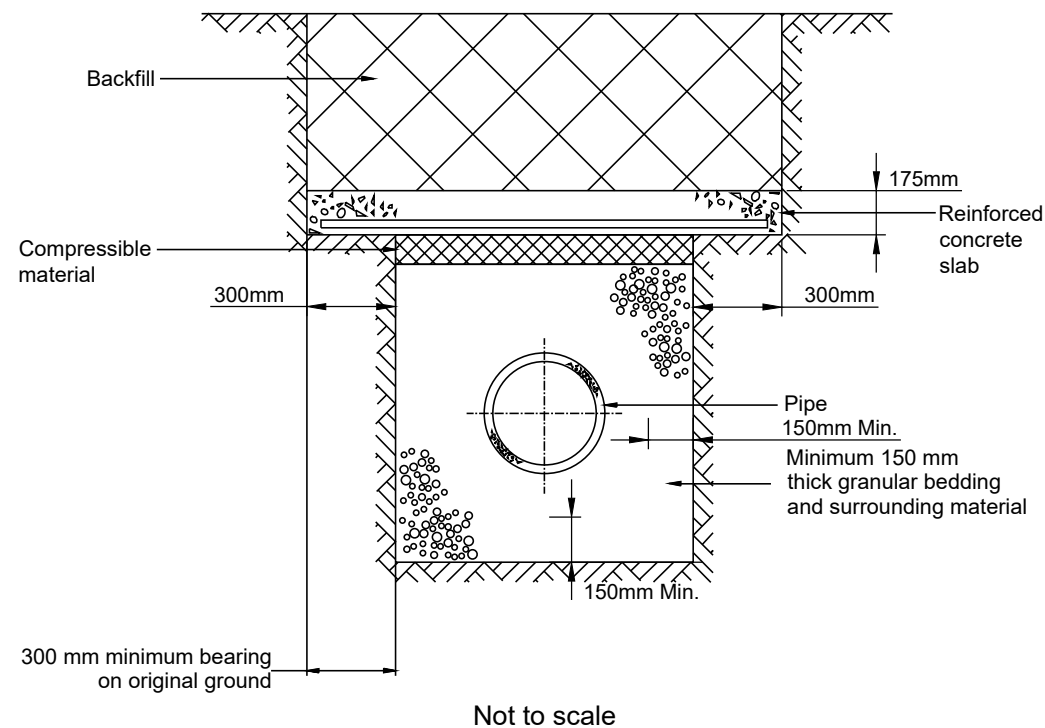


FIGURE B.28
JOINTS FOR CONCRETE ENCASED PIPES

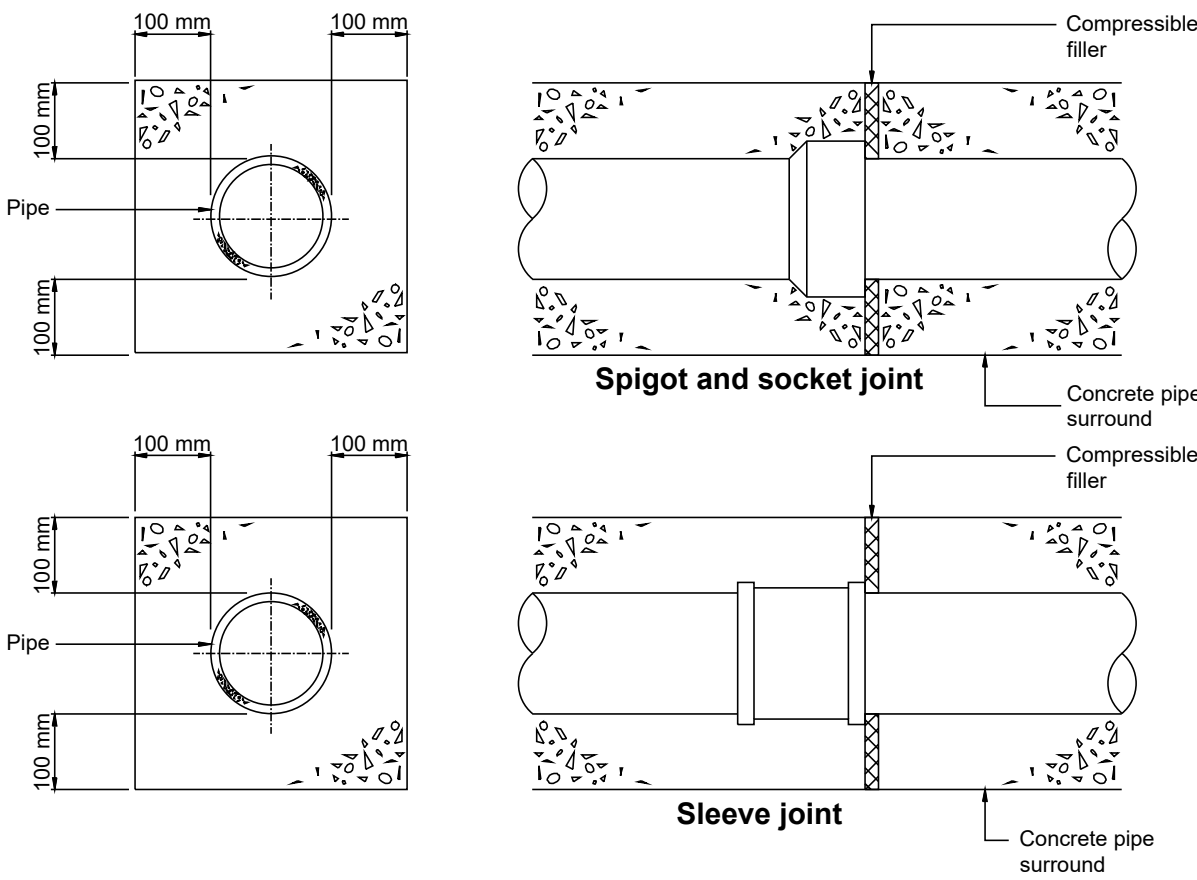
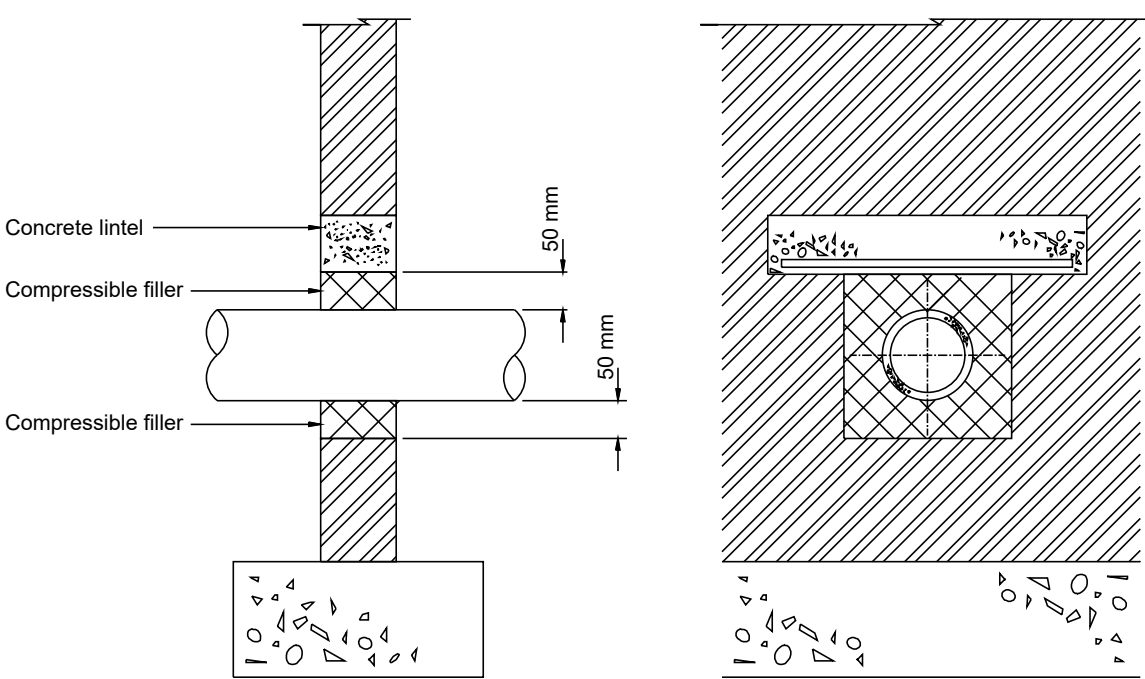


FIGURE B.29
PROTECTION OF PIPES PENETRATING SINGLE LEAF BOUNDARY WALLS



Not to scale
(all dimensions are minimum sizes)

NOTES:

1. D400 covers & frames with kitemark to be used on all adoptable manholes. All covers to be embossed with FW/SW as appropriate. 150mm deep, non rocking cover and frames to be used.
2. Cover and Reducing slots, shaft and chamber rings to be bedded with mortar, proprietary bitumen or resin mastic sealant. All lifting holes to be pointed.
3. Ensure all slab openings and step irons, ladders are properly aligned. At the foot of each ladder or set of step rungs, a minimum of 450 mm landing area should be provided from the outer edge of the step or rung. This may consist of:
a) a single area adjacent to the foot of the ladder or steps; or
b) where the channel is no more than DN450, one area of at least 225 mm adjacent to the foot of the ladder or steps with the remainder on the other side of the channel.
4. Chamber Diameters:

Pipe dia. (mm)	Dia. of largest pipe in M.H. (mm)	Dia. of chamber ring (mm)
Less than 375	375-450	1200
375-450	450-700	1500
450-700	700-900	1800
700-900	900-1200	2100
900-1200	1200-1500	2400
1200-1500	1500-1800	2700
5. Above sizes are minimum and may need increasing for more than one incoming pipe to accommodate adequate benching.
6. Concrete mix to be in accordance with the chemical analysis report for buried concrete for the site concerned. High strength topping to BS EN 12620 and PD 6682-1 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.
7. Rocker/Short pipe lengths:

Pipe dia. (mm)	Rocker pipe length (m)
150-600	0.6
601-750	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. Toe holes to be provided in benching of sewers greater than 450mm dia. for access to invert.

8. 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 4729 with Sulphate-resisting Portland cement binder. Brickwork to be in English bond.
9. Brick Manhole Widths. Chamber widths to be increased for pipes larger than 225mm dia. to give 225mm benching each side with the brickwork corbelled down to suit cover.
10. All pipes built into manhole invert should be installed with soffits level.
11. PIPE BEDDING AND BACKFILL MATERIALS Granular bedding and sidefill Type A material shall be imported or selected as-dug material complying with the recommendations of WAA Notes 4-08-02. Selected fill type B shall consist of uniform, readily compactable material, free from vegetable matter, building rubbish and frozen materials, or materials susceptible to spontaneous combustion, and excluding clay of liquid limit greater than 80, and/or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones retained on 75mm and 37.5mm sieves respectively shall be excluded from the fill material. Pipe bedding and fill materials to concrete pipes shall not contain more than 0.3% sulphate, expressed as sulphur trioxide.

TRENCH WIDTHS		
Pipe dia. (mm)	BC (mm)	BD (mm)
150	190	600
225	280	700
300	380	750
375	500	1050
450	580	1150
525	670	1200
600	750	1300
750	940	1560
900	1160	1760
1350	1620	2220
1500	1740	2340
1800	2090	2690

12. All Adoptable Drainage pipes to be of spigot & socket type connection.
13. During construction all outfall manholes to be fitted with debris screen (mesh size 25mm), over the outgoing pipes
14. All Adoptable 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) Approved Version 2.0

REV	DESCRIPTION	DATE
STATUS:		
PRELIMINARY		
SCALE : NTS @ A1		
DATE : Oct 2025		
DRAWN : IDL		
TITLE :		
Adoptable Drainage Details Sheet 3		
PROJECT :		
London Road, St Ippolyts		
DRG. No: 1331-03-06		
FILE REF: 1331-03-04_07		



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