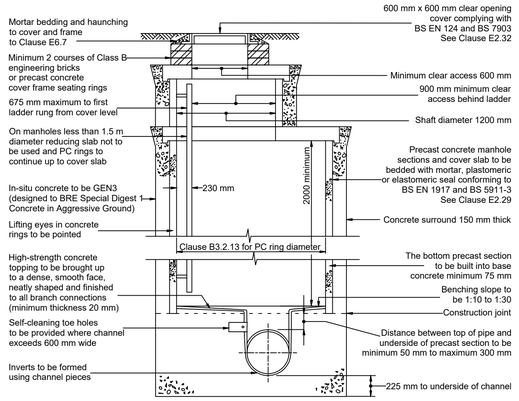
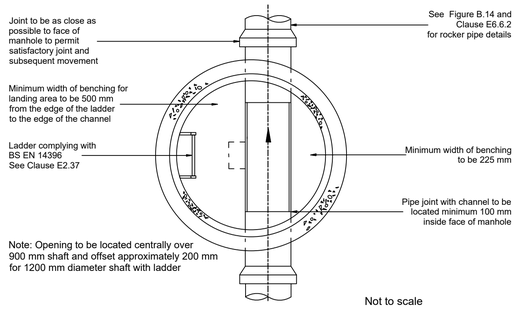
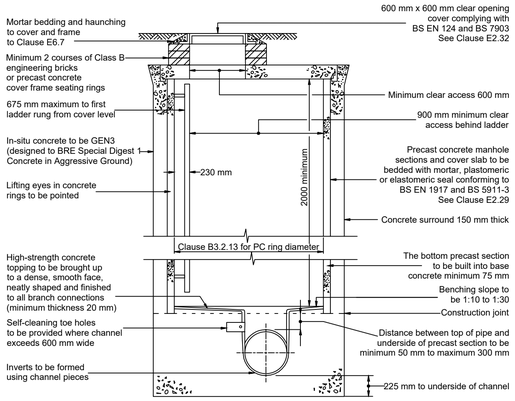
FIGURE B.8
TYPICAL MANHOLE DETAIL - TYPE 1A
Depth from cover level to soffit of pipe 3 m to 6 m

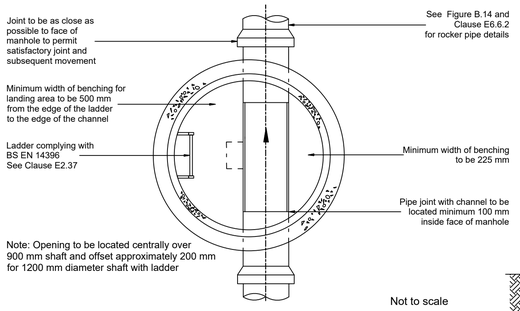




Not to scale

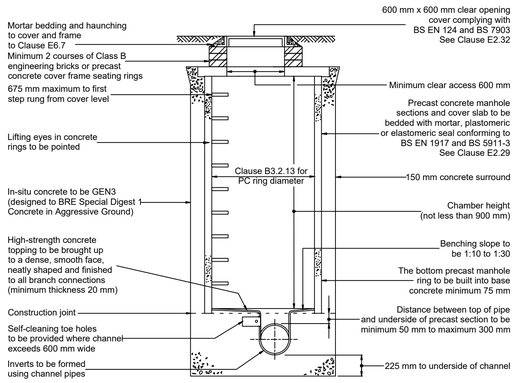
FIGURE B.10
TYPICAL MANHOLE DETAIL - TYPE 1B
Depth from cover level to soffit of pipe 3 m to 6 m

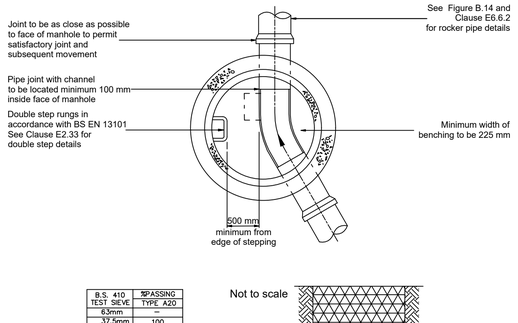




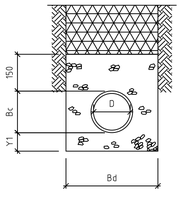
Not to scale

FIGURE B.12
TYPICAL MANHOLE DETAIL - TYPE 2
Maximum depth from cover level to soffit of pipe 3.0 m





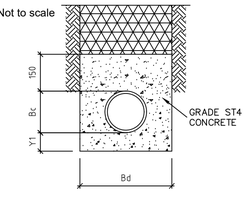
Not to scale



B.S. 410 TEST SIEVE	%PASSING TYPE A20
63mm	–
37.5mm	100
20mm	85–100
14mm	–
10mm	0–25
5mm	0–5
2.36mm	–

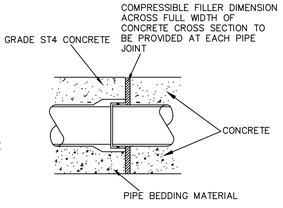
PIPE BEDDING MATERIAL

Not to scale



MAIN BACKFILL — SELECTED EXCAVATED MATERIAL, COMPACTED IN LAYERS NOT EXCEEDING 225mm IN COHESIVE SOILS, TRENCHES UNDER ROADS AND HARDSTANDINGS SHALL BE BACKFILLED WITH IMPORTED FILL TYPE 6F1

PIPE BEDDING — PIPE BEDDING MATERIAL SHALL CONSIST OF FREE DRAINING CLEAN, CHEMICALLY STABLE GRAVEL, CRUSHED STONE OR CRUSHED SLAG IN ACCORDANCE WITH THE TABLE, THE MATERIAL SHALL HAVE A COMPACTION FRACTION VALUE NOT EXCEEDING 0.2



PIPE BEDDING CLASS S

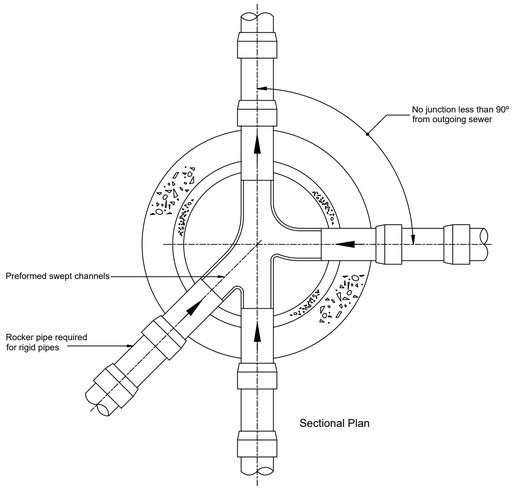
PIPE BEDDING CLASS Z

NOMINAL INT. PIPE DIA.	DIMENSION Y1, EVEN TRENCH BOTTOM (MIN)	DIMENSION Y2, ROCK OR UNEVEN TRENCH BOTTOM (MIN)	GRAN. BEDDING SURROUND TYPE SINGLE SIZED	MAX. PERMITTED TRENCH WIDTH	DIMENSION L, THICKNESS OF COMPRESSIBLE FILLER
150	100	200	A 10	750	18
225	100	200	A 10	825	18
300	100	200	A ¼	925	18
375	100	200	A ¼	1050	18
450	150	200	A ¼	1150	36
525	150	250	A ¼	1200	36
600	150	250	A 20	1350	36
675	150	250	A 20	1450	36
750	225	300	A 20	1500	36
825	225	300	A 20	1600	36
900	225	300	A 20	1900	36
975	225	300	A 20	2000	36
1050	225	300	A 20	2100	36
1125	225	300	A 20	2200	36
1200	250	350	A 20	2300	36
1350	375	450	A 20	2500	54
1500	375	450	A 20	2700	54
1650	375	450	A 20	2800	54
1800	375	500	A 40	3100	54
1950	400	500	A 40	3200	54
2100	425	650	A 40	3400	54
2400	450	675	A 40	3700	54

TRENCH TABLE

NOTES
1. ALL TRENCH EXCAVATIONS TO BE UNDERTAKEN TO NARROW TRENCH CONDITIONS
2. Y1 SHALL BE USED ON ALL OCCASIONS EXCEPT WHERE Y2 IS SPECIFIED BY THE ENGINEER
3. DIMENSION Y SHALL BE INCREASED BY 40 FOR EACH ADDITIONAL 1000 COVER IN EXCESS OF 5000.
4. DIMENSION Y2 TO BE UED IN LIEU OF Y1 WHERE EXCAVATION IS IN ROCK OR MIXED SOILS
5. LIMESTONE PIPE BEDDING WILL NOT BE PERMITTED IN ACIDIC GROUND WATER CONDITIONS REFER TO CONTRACT SPECIFICATION FOR SPECIFIC DETAILS.

FIGURE B.14
TYPICAL ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES

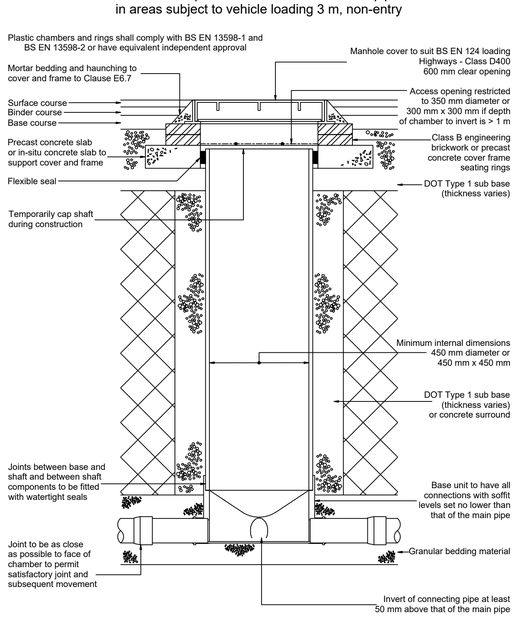


Rigid pipes built into manhole should have a flexible joint as close as feasible to the external face of the structure and the length of the next rocker pipe should be as shown.

Nominal diameter (mm)	Maximum effective length (m)
150 - 600	0.6
601 - 750	1.00
over 750	1.25

All pipes entering the bottom of the manhole to have soffits level.

FIGURE B.16
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (Flexible material detail)
Maximum depth from cover level to soffit of pipe in areas subject to vehicle loading 3 m, non-entry



Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

This drawing is to be read in conjunction with all other relevant documentation.
Do not Scale
All setting out by contractor. Report all discrepancies to bdi Structural Solutions.
Drawing Copyright of BDI Structural Solutions ©
Client required to comply with requirements of Party Wall Act as required by nature of work.

NOTES

1. CONSTRUCTION AND SPECIFICATION OF THE DRAINAGE NETWORK TO BE IN ACCORDANCE WITH THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY AND SEWERS FOR ADOPTION 7TH EDITION.
2. CONCRETE BASE AND PIPE SURROUND TO BE PLACED IN A SINGLE CONTINUOUS OPERATION FROM TOP OF BASE SLAB TO TOP OF BENCHING AND PIPE SURROUND.
3. CUT ENDS OF PIPES SHALL BE TREATED WITH EPOXY RESIN/PAINT/MORTAR APPROVED BY THE ENGINEER.
4. A JOINT SEALANT (HYDROTITE OR SIMILAR APPROVED) SHALL BE BONDED TO THE SEGMENT JOINT FACE PRIOR TO ERECTION.
5. IN ADDITION TO THE REQUIREMENTS OF THE SPEC. CLASS B ENGINEERING BRICKS SHALL NOT CONTAIN FROGS OR HOLES.
6. SAFETY LADDER TO BE TO SPECIFICATION AS SHOWN ON SHEPHERD GILMOUR INFRASTRUCTURES TYPICAL DETAIL.
7. STANDARD CONCRETE MIXES IN ACCORDANCE WITH BS 5328 SHALL BE USED WITH A 20mm NOMINAL MAXIMUM SIZE OF AGGREGATE AND A 75mm SLUMP.
8. SUITABLE APPLICATIONS OF CONCRETE MIXES ARE:

STANDARD MIX	GRADE OF CONC.	APPLICATION
ST1	C7.5	FILLINGS, BLINDINGS, SOFT SPOTS AND DRAINAGE SUMPS.
ST4	C20	ALL OTHER APPLICATIONS.

9. HIGH STRENGTH CONCRETE TOPPING TO BENCHING SHALL BE PRODUCED, LAID AND FINISHED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF BS 8204: PART 2 AND THE FOLLOWING APPROXIMATE MIX PROPORTIONS BY WEIGHT SHALL BE USED: 1 PART CEMENT, 1 PART NATURAL SAND AND 2 PARTS SINGLE SIZED COARSE AGGREGATE.
10. FIXINGS FOR METALWORK
MILD STEEL BOLTS AND NUTS SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH BS EN ISO 1460 AND STAINLESS STEEL BOLTS AND NUTS SHALL BE MANUFACTURED FROM GRADE 316S31 STEEL COMPLYING WITH BS 970: PART 1 OR BS 1449: PART 2.
11. STAINLESS STEEL PROPRIETARY FIXINGS SHALL BE MANUFACTURED FROM GRADE 316S31 STEEL COMPLYING WITH BS 970: PART 1 OR BS 1449 PART 2. MILD AND HIGH TENSILE STEEL PROPRIETARY FIXINGS SHALL BE PROTECTED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF THE APPROPRIATE BRITISH STANDARD AS PER 4.2.36 OF SEWERS FOR ADOPTION 5TH EDITION.
12. NUTS, SCREWS, WASHERS AND BOLTS TO BE IN ACCORDANCE WITH CL4.2.32 OF SEWERS FOR ADOPTION 5TH EDITION.
13. COVERS TO CHAMBERS SHOULD BE SUCH SO AS THE LIFTING EFFORT DOES NOT EXCEED 25kgF.
14. STEPS IN MANHOLES AND OTHER CHAMBERS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 1247: PARTS 1, 2 AND 3 OR WIS 4–33–01.

FOR APPROVAL

Rev	Date		Drawn	Apprd

BDi Structural & Civil Engineering
BDI, Suite B, Stafford Court, Washway Road, Sale, M33 7PE
www.bdistructuralsolutions.co.uk
T: 0161 969 3886
E: bdi@bdistructuralsolutions.co.uk

Client: Urbanize Homes Ltd

Project: Tatton Arms, Boat Lane, Northenden, Manchester, M22 4HR

Drawing Title: Drainage Details

Scale: 1:500 at A1
Drg No.: 20229555 C1 02
Drawn: AJ
Chk'd by: JJ
Date: 20/02/23
Date Chk'd: 20/02/23
Rev: A1