

CLASS 'S' PIPE BEDDING CLASS 'Z' PIPE BEDDING

PIPE BEDDING DETAILS (FOR ADOPTABLE SEWERS OR SEWERS UNDER TRAFFICKED AREAS)

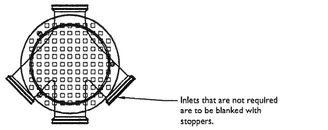
(Scale 1:20)

Minimum Dimensions for Access Fittings and Chambers					
	Internal Sizes			Cover Sizes	
Type	Depth to invert (m)	Length x Width (mm)	Circular (mm)	Length x Width (mm)	Circular (mm)
Rodding Eye	As Drain but Minimum 100mm				
Shallow Access					
Small	0.6 or less	150x100	150	150x100	150
Large	-	225x100	-	225x100	-
Inspection Chamber	0.6 or less	-	190	-	190
	1.0 or less	450x450	450	450x450	450
Manhole	1.5 or less	1200x750	1050	600x600	600
	Over 1.5	1200x750	1200	600x600	600
Manhole Shaft	Over 2.7	900x840	900	600x600	600

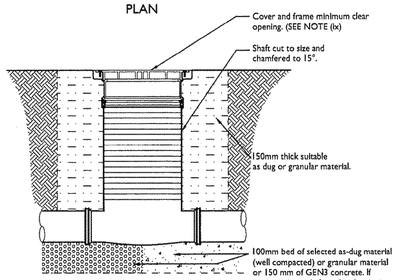
BUILDING REGULATIONS MINIMUM DIMENSIONS FOR MANHOLES

(Not to Scale)

This plan complies with the Building Regulations 2002 Section 'H' - Drainage & Waste Disposal.



PLAN

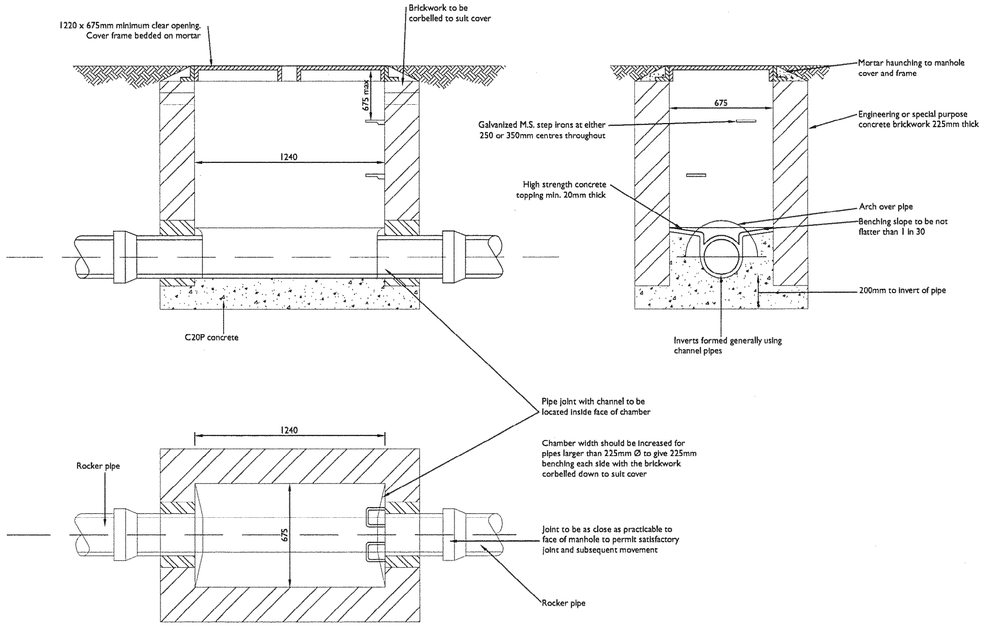


SECTION

POLYPROPYLENE SHALLOW INSPECTION CHAMBER DETAIL (250Ø)

(Scale 1:20)

Depth to Invert of less than 600mm.



DETAIL OF ADOPTABLE MANHOLE TYPE 'C'

(Scale 1:20)

STANDARD NOTES:

1. This drawing is to be read in conjunction with all other OPUS drawings, and with all relevant Architect's and Engineer's drawings and specification.
2. No dimensions are to be scaled from this drawing. Unless noted otherwise all dimensions are in millimeters and all levels are in metres from the site datum.
3. All dimensions to be checked on site. All details and dimensions relating to sub-Contractors work must be checked and agreed between the sub-Contractor or supplier and the general Contractor.
4. The electronic information from this drawing cannot be guaranteed as dimensionally drawn exact. Figured dimensions must be used for setting out and detailing. OPUS logos and company information must be removed from copies if information is re-used."
5. The main Contractor is responsible for the design of all temporary works, and is also responsible for the safe maintenance and stability of existing buildings at all times.
6. The main Contractor is responsible for all occurrences of ground water during the construction period.
7. Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not guaranteed. The main Contractor is responsible for checking all information on site prior to work commencing and taking due care and attention whilst undertaking the works.
8. The contractor must comply with all current legislation relating to Health & Safety.

DRAINAGE NOTES:

1. All works to be conducted in strict accordance with specification of the Local Authority, BS8301 1985 & BSEN.752-1.
2. All pipe runs near buildings to comply with the Building Regulations 2002 Part H1. Where a pipe is within 1m of a foundation the trench shall be filled with class GEN3 concrete up to the lowest level of the foundation. Where the trench is further than 1m from the foundation, the trench shall be filled with class GEN3 concrete to a level below the lowest level for the foundation equal to the distance from the foundation less 150mm. In both cases the pipe shall be bedded and surrounded in 150mm thick class GEN3 concrete.
3. Where pipes, external to the structures, have a depth to soffit from ground level of less than 450mm they shall have a class GEN3 concrete encasement (150mm thick).
4. Where a pipe, under a carriageway, has a depth of cover of less than 1.2m the pipe shall be laid in a class Z bedding.
5. Where pipes are bedded and surrounded in concrete, flexible joints should be provided. Compressible boards (fibreboard or polystyrene) shall be provided at a maximum of 8m centres (coinciding with pipe joints). The boards shall be pre-cut to pipe diameter and to a height and width equal to the concrete cross section. A board thickness of 18mm for pipes up to 450mm nominal diameter and 36mm for pipes over 450mm nominal diameter.
6. All private building drainage shall be constructed in strict accordance with BSEN.752-1.
7. Unless otherwise specified, building drainage to be 100mm internal diameter.
8. Minimum gradient for Ø100mm surface drainage pipes is 1:60, and Ø150mm is 1:100.
9. Minimum gradients for foul drainage pipes:
   Ø100mm: 1:40 where flow is less than 1l/s, or where no WCs are connected.
   Ø100mm: 1:78 where flow is 1l/s or greater, or where at least 1No. WC is connected.
   Ø150mm: 1:135 where flow is less than 5l/s, or where up to 5No. WCs are connected.
   Ø150mm: 1:150 where flow is 5l/s or greater, or where 5No. or more WCs are connected
10. All pipes, bends and junction materials shall be vitrified clay, extra strength or super strength to BSEN295:1991, with flexible joints and kitemark certified. Alternatively all pipes and fittings can be UPVC conforming to BS4660 and BS5481:1989 as appropriate and shall be laid in accordance with the manufacturer's specification. If UPVC pipes are to be used then the manufacturer shall be approved by the Engineer prior to construction.
11. All gullies not connected to inspection chambers to be roddable.
12. All gully connections other than those at manholes to be made via 'Y' junctions.
13. Gullies coincident with pedestrian/drive crossings to have pedestrian type gully covers.
14. All road gully connections to be 150mm diameter.
15. All stub stacks to be fitted with air admittance valves where branch drain exceeds 12m except at the head of the run. Soil vent pipes located at the head of a run to be installed with roof tile vent.
16. All connections to be made from soffit to soffit.
17. Trench temporary formwork is required to all excavations exceeding 1.2m depth to provide adequate support and stability at all times.
18. Sewers exceeding 1.2m depth to be constructed in single sections between manholes only. Trenches to be backfilled prior to excavating the succeeding sewer run.
19. All concrete and concrete products to be in accordance with BRE 363 for sulphates.
20. Where sewer or drains are to be abandoned they shall be removed or infilled by grouting in accordance with the Civil Engineer Specification for the Water Industry 6th Edition, clause 523.

TABLE (ii)

Pipe Diameter (mm)	Rocker Pipe Length (mm)
150 - 450	500 - 750
451- 750	750 - 1000
> 750	Refer to Engineer

TABLE (iii)

MH Location	Cover Grade	Test Load
Non-trafficked/ Pedestrian areas	A15	15
Private drives	B125	125
Parking courts	C250	250
Carriageway	D400	400
Airfields/Dockyards	E600	600
Airfields/Dockyards	F900	900

HIGH STRENGTH TOPPING (vii)

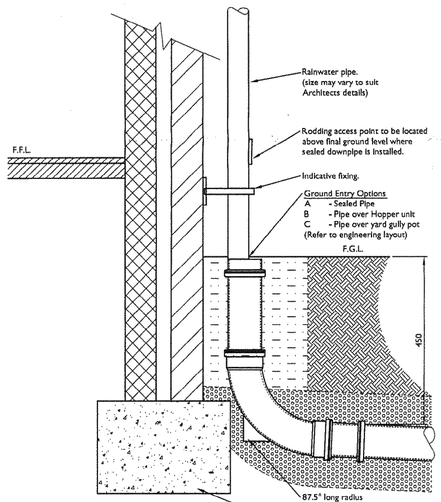
1. High-strength concrete topping shall be produced, laid and finished in accordance with the relevant provisions of BS 8204: Part 2 and the following approximate proportions by weight shall be used: 1 part cement, 1 part natural sand and 2 parts single sized coarse aggregate.

RECESSED COVERS (viii)

1. Where inspection chamber is located in areas of block paving it shall be fitted with a recessed cover to accommodate paving blocks.

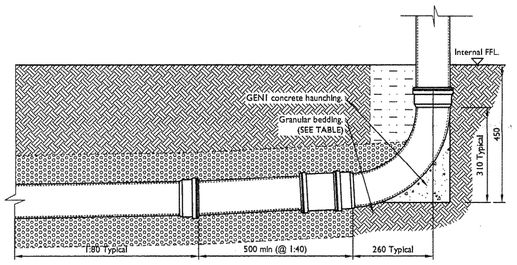
MANHOLE COVERS & FRAMES (ix)

1. Manhole cover and frames shall comply with the relevant provisions of BS EN 124, BS 7903 and Highway Agency Guidance Document HA 104/02. They shall be of a non-rocking design which does not rely on the use of cushion inserts.
2. All manhole covers shall be the non-ventilating type and shall have closed keyways.
3. Refer to TABLE (iv) for frame depths.
4. Refer to Manhole Schedule/Drainage Drawing for cover grades.



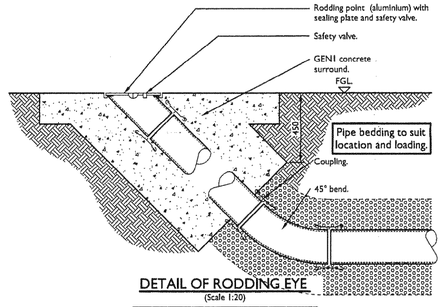
DETAIL OF RAINWATER PIPE

(Scale 1:20)



DETAIL OF FOUL REST BEND

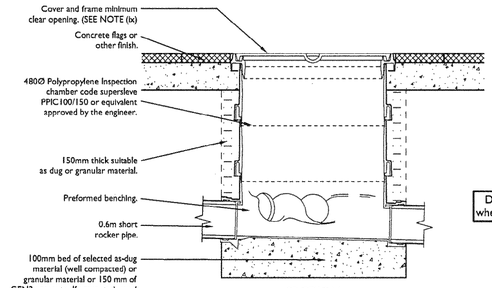
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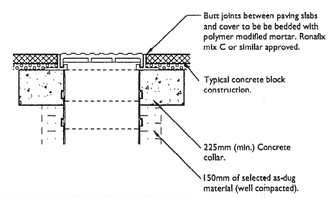
DETAIL OF RODDING EYE

(Scale 1:20)

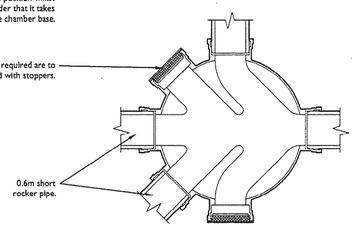
Depth to invert of less than 600mm.



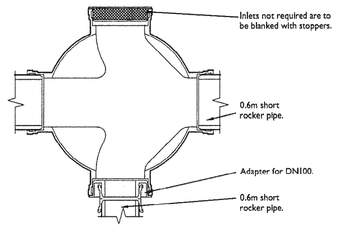
SECTION



Detail of cover where used under areas accessible to wheeled vehicles with wheel load in excess of 1.5 tonnes.



PLAN OF PPIC100

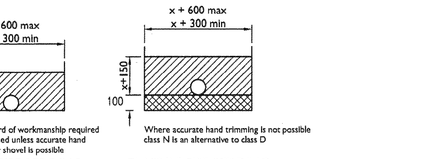


PLAN OF PPIC150

POLYPROPYLENE INSPECTION CHAMBER DETAIL (480Ø)

(Scale 1:20)

Depth to invert of less than 930mm.
Depth to invert with concrete collar of less than 1.0m.



PIPE BEDDING DETAILS (PRIVATE DRAINS)

(Scale 1:20)

Rev.	Description	Date	Drawn	Reviewed
P2	ISSUED FOR APPROVAL	24.07.2009	DLS	APT
P1	FIRST ISSUE	16.07.2009	DLS	APT

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Project: 37 - 39 Manor Road, East Preston

Drg.Title: Drainage Details

Scale: AS SHOWN	Drawn: DLS	Reviewed: APT	
Status: FOR APPROVAL		Date: 16.07.2009	
Proj.No: E-G7468	Drg No: 211	Rev: P2	

ORIGINAL SHEET SIZE A1 [841 x 594]