TYPICAL MANHOLE CONSTRUCTION

675mm maximum to first

step iron from cover level.

D400 Ductile iron cover & frame to BS. EN 124

Minimum clear opening 600mm.

& BS 7903 having 600mm x 600mm opening

with 150mm deep frame in the highway (see

Mortar haunching to M.H. cover and frame Refer to

Clause E6.7. Where manholes are located in highway

mortar haunch is to stop 100mm below cover level.

On manholes less than 1.5m diameter reducing slab not

Double width step irons to be Type D Class 1 complying

to BS EN 13101:2002 spaced at 250mm centers, to be

Lifting eyes in concrete rings to be pointed.

High strength concrete topping to be brought up

thickness 20mm). Gradient to be 1:10 - 1:30.

The bottom precast section is to be built

to a dense smooth face neatly shaped and

finished to all branch connections (min.

into concrete min. 75mm.

Box out to be provided in benching of sewer greater than

600mm dia. for access to invert (750mm box out with

between min 75mm and max 375mm height benching).

Inverts to be formed using clay channel pieces.

GEN 3 concrete base.

cast in vertical alignment. Galvanised mild steel and

plastic encapsulated step irons are preferred.

to be used and PC rings to continue up to cover slab.

clause E2.32).

Type A1 (Design and Construction Guidance) For use on manholes of depth from cover level to soffit level between 3000mm and 6000mm

2 minimum - 4 courses maximum of

Class B engineering bricks, concrete

Kitemarked Precast cover slab.

Shaft diameter 1200mm min

Kitemarked Precast reducing

Concrete surround 150mm thick (GEN3 Concrete

In-situ concrete to be GEN3 (designed to BRE Special Digest 1 Concrete in Aggressive

The bottom precast section to be built into base

Construction joint.

Distance between top of pipe and underside of

precast section to be min 50mm to max 300mm.

concrete minimum 75mm.

slab with 900mm opening.

blocks or precast concrete cover

frame seating rings.

TYPICAL MANHOLE CONSTRUCTION

Type B (Design and Construction Guidance) For use on manholes of depth from cover level to soffit

of pipe 3000mm. D400 Ductile iron cover & frame to BS. 675mm maximum to first EN 124 having 600mm x 600mm opening Min. 2, max. 4 courses of Class B with 150mm deep frame in the highway. Engineering brick (solid), concrete blocks or step iron from cover level. precast concrete cover frame seating ring reducing clear opening to 600mm x 600mm. Mortar haunching to M.H. cover and frame Refer to Clause E6.7. Where manholes are located in highway mortar haunch is to stop 100mm below cover level. Minimum clear access 600mm. Chamber height not less than 900mm. Precast concrete manhole sections and cover slab to be Precast concrete manhole sections and cover bedded with mortar, plastomeric or elastomeric seal slab to be conforming to BS EN 1917 and conforming to BS EN 1917 abd BS5911-3 Chamber wall to BS5911-3. Chamber wall to be minimum 125mm.

be minimum 125mm.

Double width step irons to be Type D Class 1 complying

to BS EN 13101:2002 spaced at 250mm centers, to be

cast in vertical alignment. Galvanised mild steel and

plastic encapsulated step irons are preferred.

Lifting eyes in concrete rings to be pointed.

to a dense smooth face neatly shaped and

finished to all branch connections (min.

The bottom precast section is to be built

into concrete min. 75mm.

High strength concrete topping to be brought up

thickness 20mm). Gradient to be 1:10 - 1:30.

Box out to be provided in benching of sewer greater than

600mm dia. for access to invert (750mm box out with

between min 75mm and max 375mm height benching).

TYPICAL WIDE WALL MANHOLE CONSTRUCTION

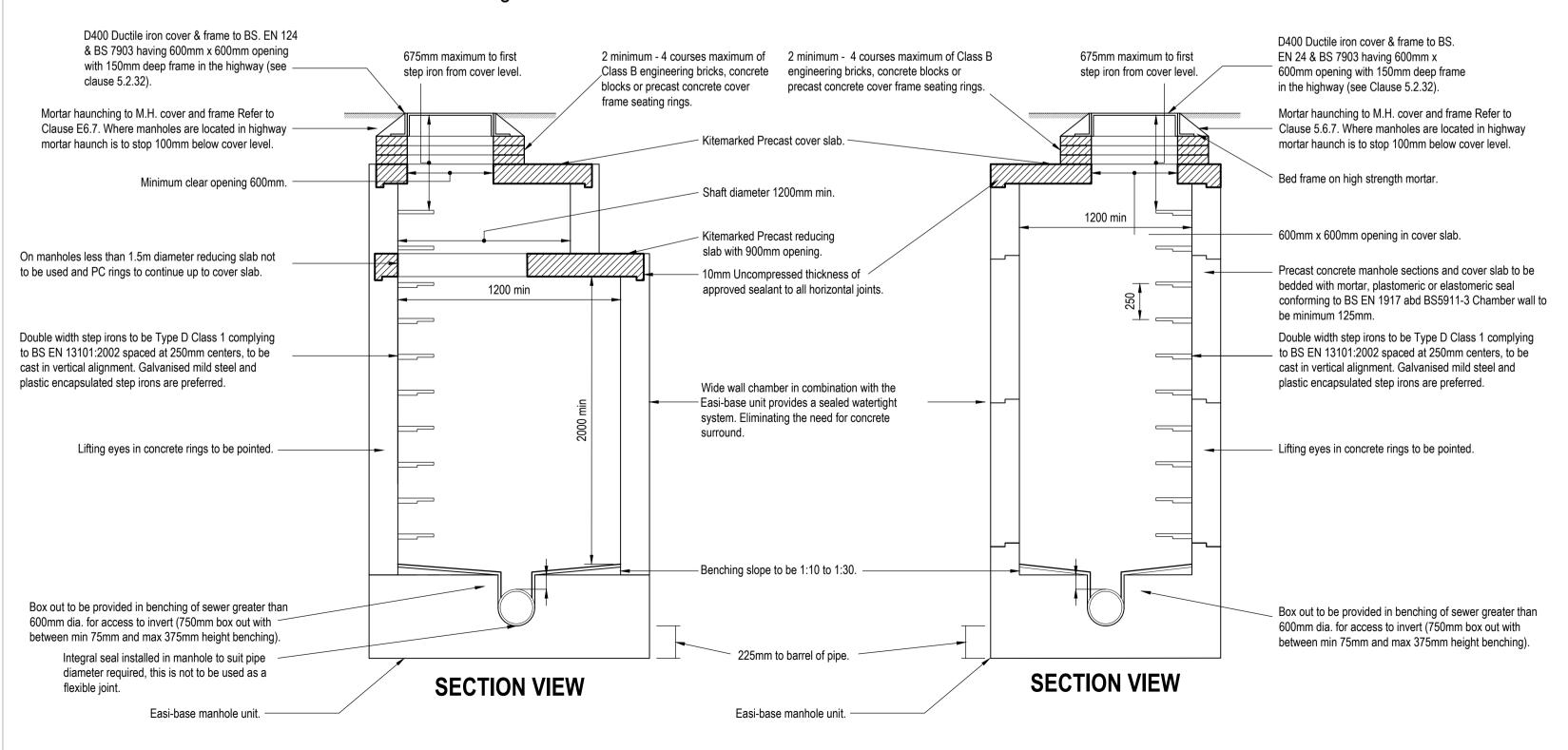
SECTION VIEW

Type A Alternative Wide Wall Manhole Construction (Design and Construction Guidance) For use on manholes of depth from cover level to soffit level between 3000mm and 6000mm. Wide wall manhole ring construction

TYPICAL WIDE WALL MANHOLE CONSTRUCTION

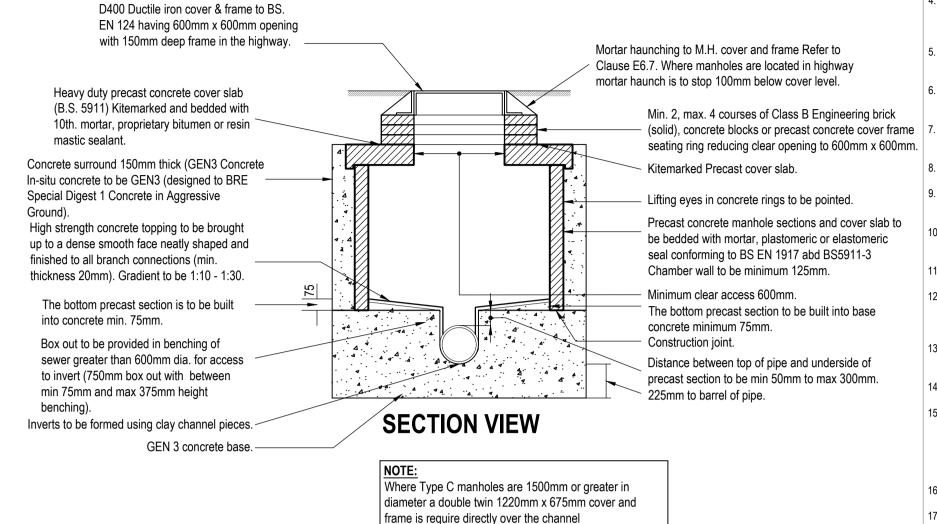
SECTION VIEW

Type B Alternative Wide Wall Manhole Construction (Design and Construction Guidance) For use on manholes of depth from cover level to soffit of pipe 3000mm. Wide wall manhole ring construction



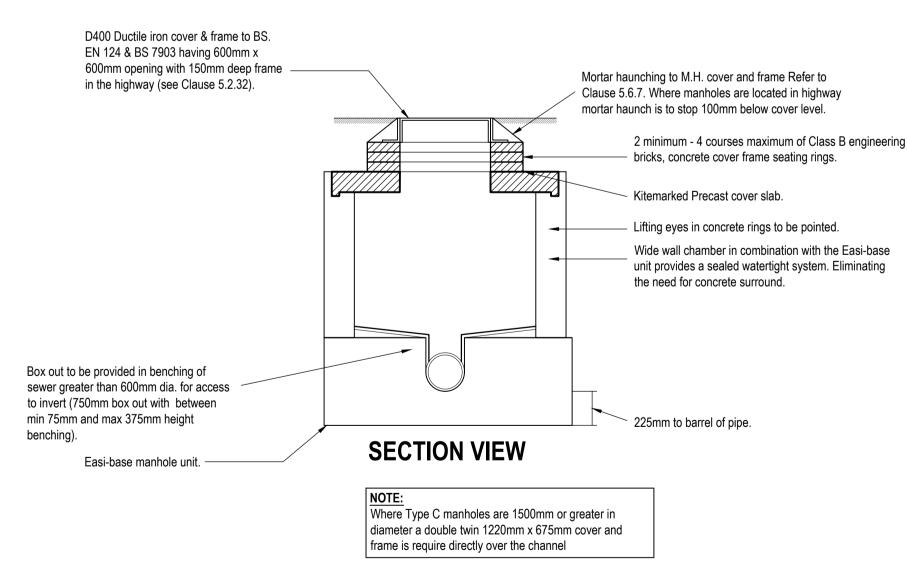
SHALLOW MANHOLE CONSTRUCTION

Type C (Design and Construction Guidance) For use on manholes of depth from soffit to cover level less than 1.5m



SHALLOW MANHOLE CONSTRUCTION

Type C Alternative Wide Wall Manhole Construction (Design and Construction Guidance) Construction of manholes where depth from soffit to cover level less than 1500mm



Manhole Diameters	
Nominal internal diameter of largest pipe in manhole (mm)	Minimum nominal internal dimension of manhole (mm)
Up to 300	1200
375-450	1350
500-700	1500
750-900	1800
Greater than 900	Specific detailed drawing required

Where manholes have backdrop connections a full 150mm concrete surround to the manhole is required.

Notes:

- All pipes shall be either A - Vitrified clay to BS EN 295 with a minimum crushing strength as follow:
- B PVC (certified to WIS 4-35-01 & BS/EN 13476)

deep frames in highways

gully joining with a short Rocker pipe

225 dia. - 45 kN/m

- C Class 120 concrete to BS 5911-1:2002/EN 1916.
- All pipes should always connect soffit to soffit unless noted otherwise.
- All sewers to have BSI kitemark status (certified to WIS 4-35-01 & BS EN 13476). Maximum pipe length to be 3m. Plastic channel sections in manholes are not acceptable. Clay channel sections shall be used.
- Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top
- of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provide above granular bed and surround. Manhole covers shall/must have a clear opening of 600 and shall be class D400 to BS EN 124 with 150
- Pipes entering manholes and road gullies shall have a flexible joint within 600 of the inside the manhole or
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service
- Sewers must have 5m clearance from trees and hedges

other granular material approved by the highway authority

- All trenches in roads and paved areas shall be backfilled with Type 1 DOT granular sub-base material, or
- . Fill ground must be filled and consolidated under the supervision and to the satisfaction of IWNL before any sewer works are carried out.
- 1. All insitu concrete to be designated mix FND2 to BS 8500-1 unless agreed otherwise.
- 12. The invert levels at the proposed points of connection to existing public sewers shall be checked before any new drains are constructed. Any variation to the levels shown on the drawing shall be notified to
- 3. The chamber size of manholes with more than one connection in them may need to be increased an
- 14. Cover levels are indicative only. Covers to be set to suit camber/gradient of existing and proposed roads.
- 15. Cover slabs must carry the BSI Kitemark or will be rejected by IWNL 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 IWNL specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.
- 16. All foul lateral sewers and drains to be 150Ø unless noted otherwise.
- 17. IWNL policy is that Type "C" brick manholes and 1050mm dia manhole rings are not preferred. 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
- 18. Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways
- 19. Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.
- 20. All adoptable sewer works and material to be in accordance with "Code for Adoption". The Relevant British/European and IWNL's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked
- . IWNL is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.
- 2. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary
- 23. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table
- 24. Adoptable plastic sewer pipes to be BSI Kitemarked (certified to WIS 4-35-01 and BS/EN13476). Adoptable plastic sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths. Plastic channel sections in manholes are not acceptable and IWNL would prefer clayware channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
- 5. The clearance of the crossover points (min 300mm) between the surface water, foul sewers, rising main and other services should be sufficient clearance to provide 150mm surround of a certain mm that exceeds this (200mm)
- 26. All adoptable laterals to be 150Ø and VC unless stated otherwise

CD GH 24.07.2023 P01 First Issue. DESCRIPTION SIG CHK DATE

HOMES BY HONEY

BARNBURGH LANE, GOLDTHORPE

S104 ADOPTABLE MANHOLE **DETAILS - SHEET 1**



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ECE PROJECT No SCALE AT A1 STATUS SUITABLE FOR Costing

DRAWING NUMBER **47619** - ECE - XX - XX - DR - C - **0023** P01

Project Originator Zone Level Type Role Number