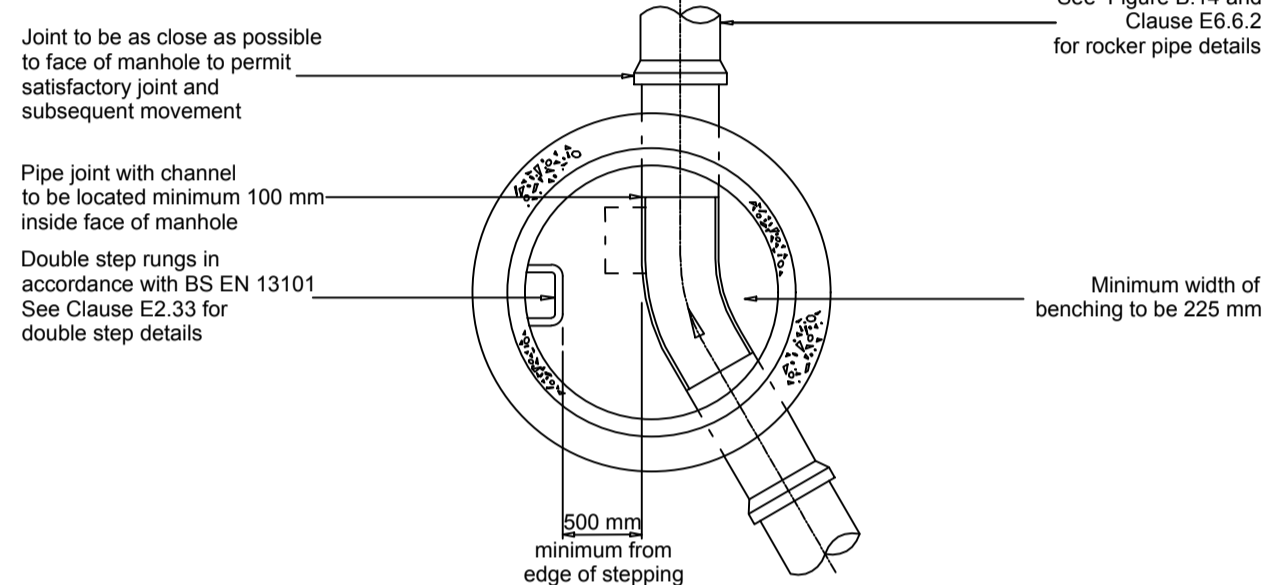
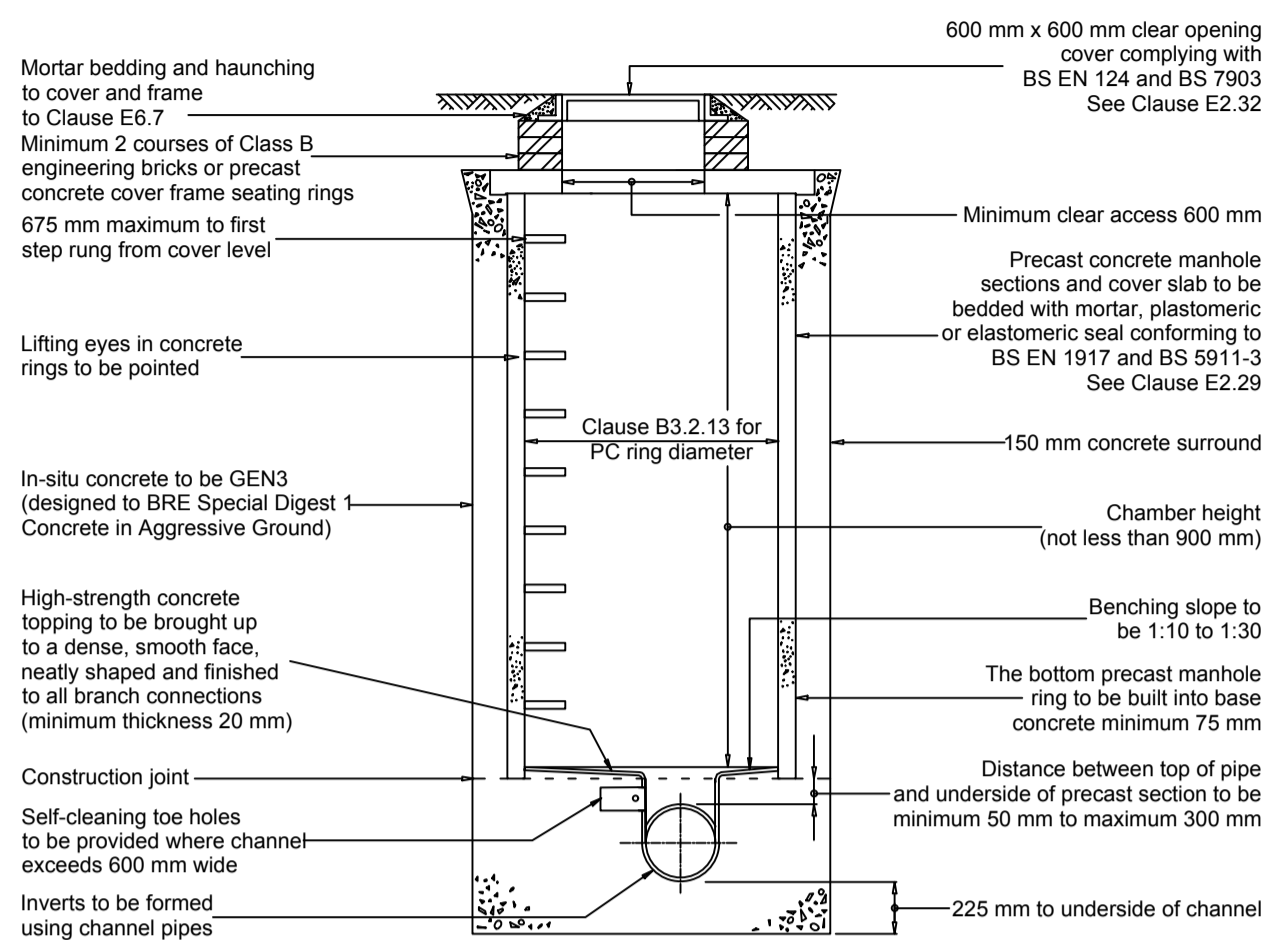


TYPICAL MANHOLE DETAIL - TYPE 2 (Insitu base)

Maximum depth from cover level to soffit of pipe 3.0 m

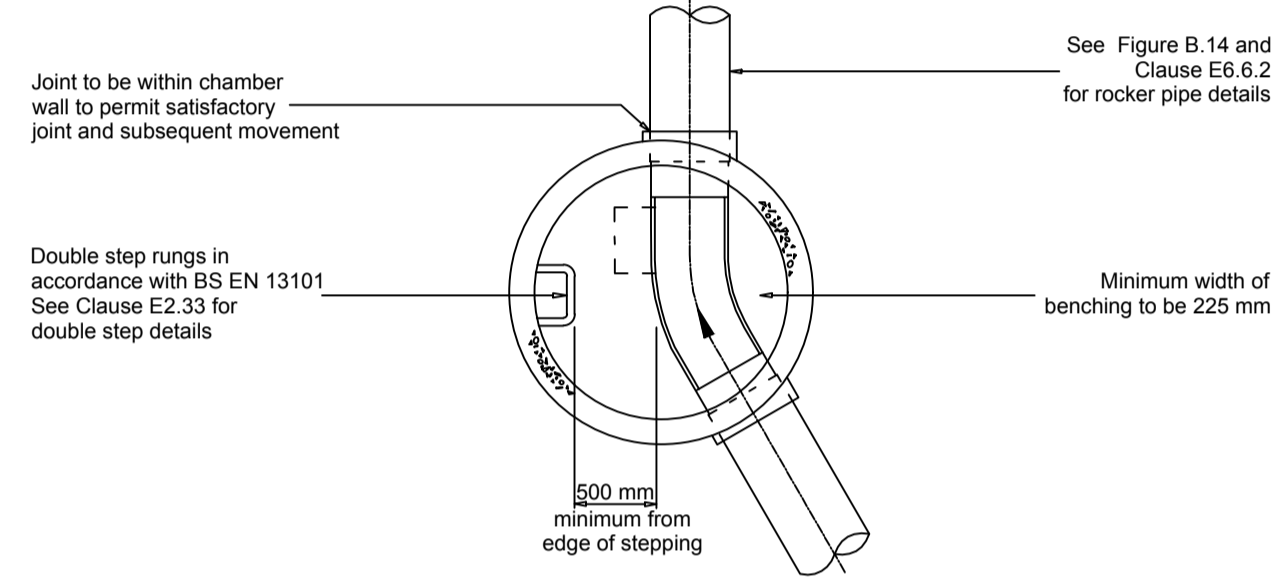
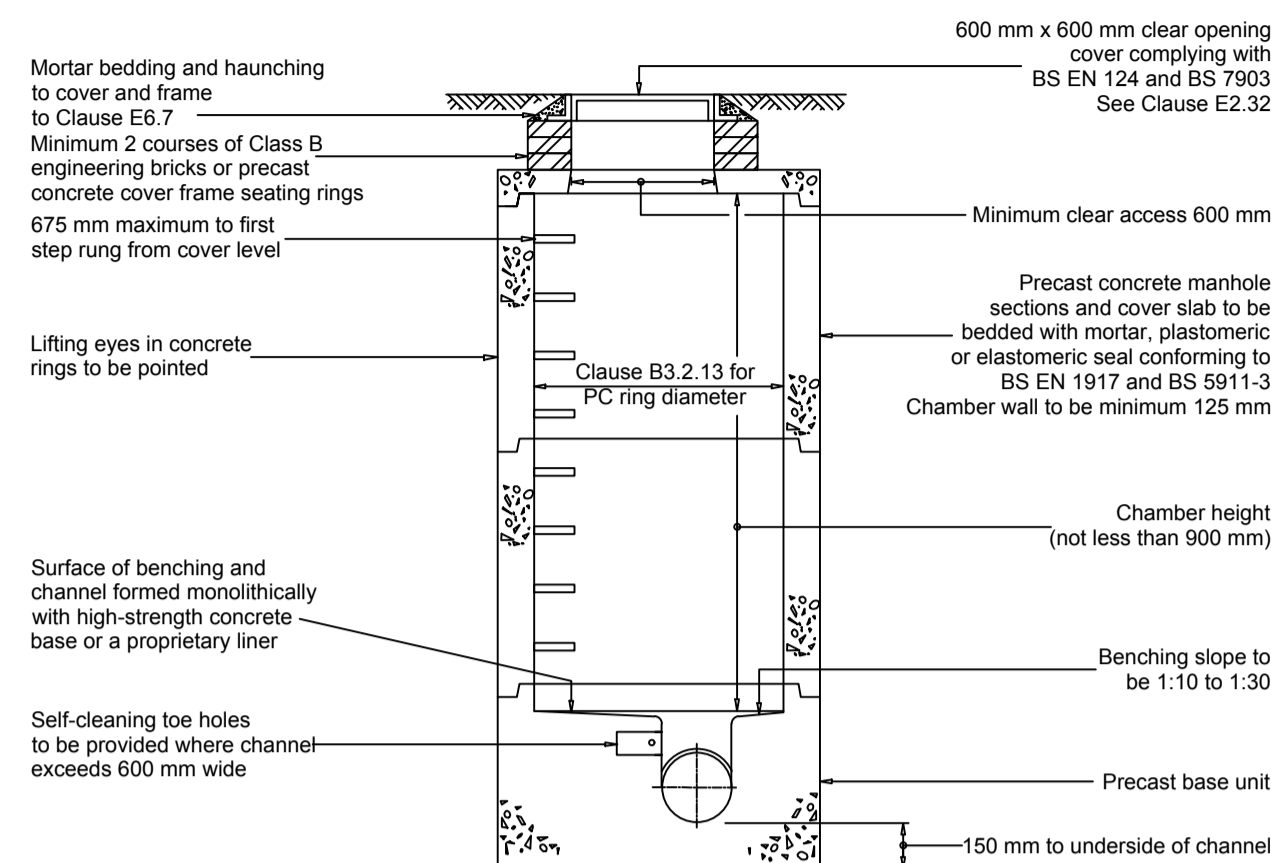


Not to scale

OR

TYPICAL MANHOLE DETAIL - TYPE 2 (Precast base)

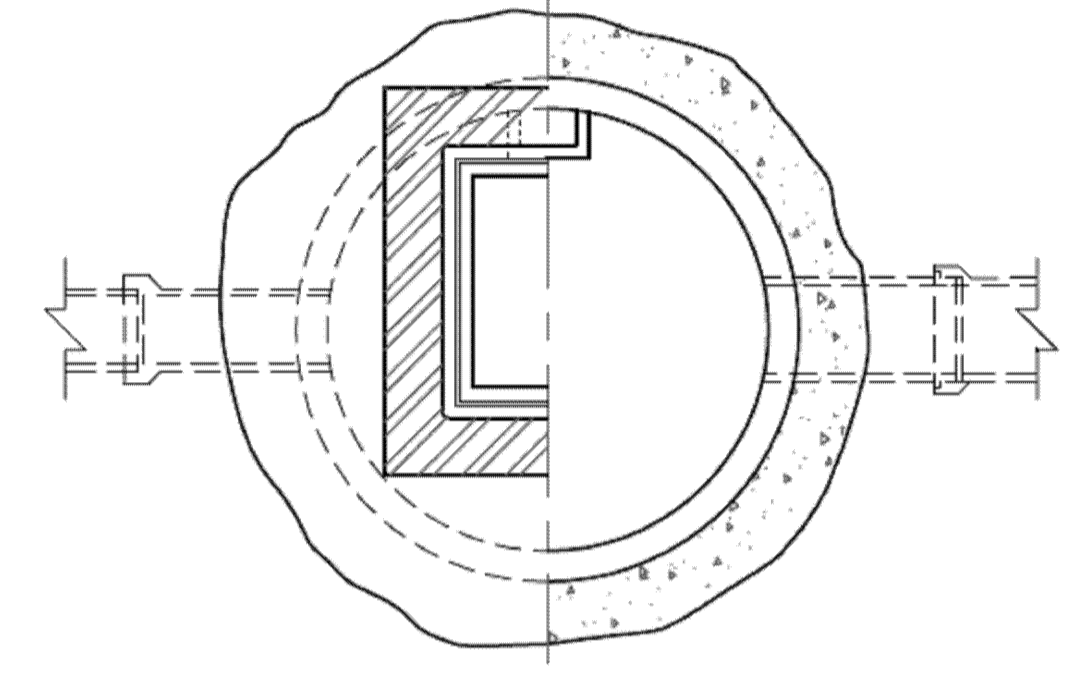
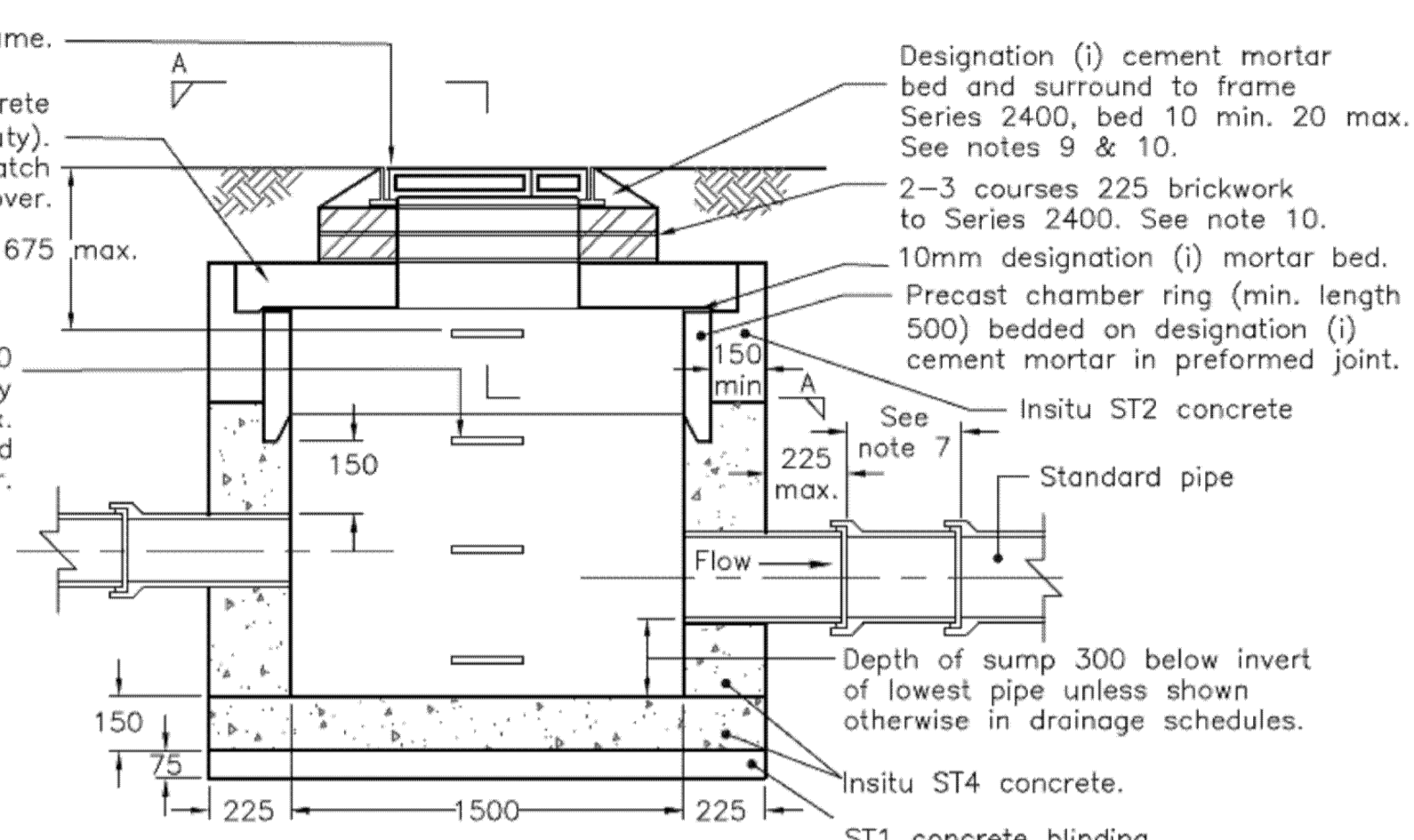
Maximum depth from cover level to soffit of pipe 3.0 m



Not to scale

TYPICAL CATCHPIT DETAIL - TYPE C4 (Highway Drainage Only)

Ductile iron cover and frame. See notes 3, 4 & 6. Reinforced precast concrete cover slab (heavy duty). Size of access hole to match clear opening of cover.

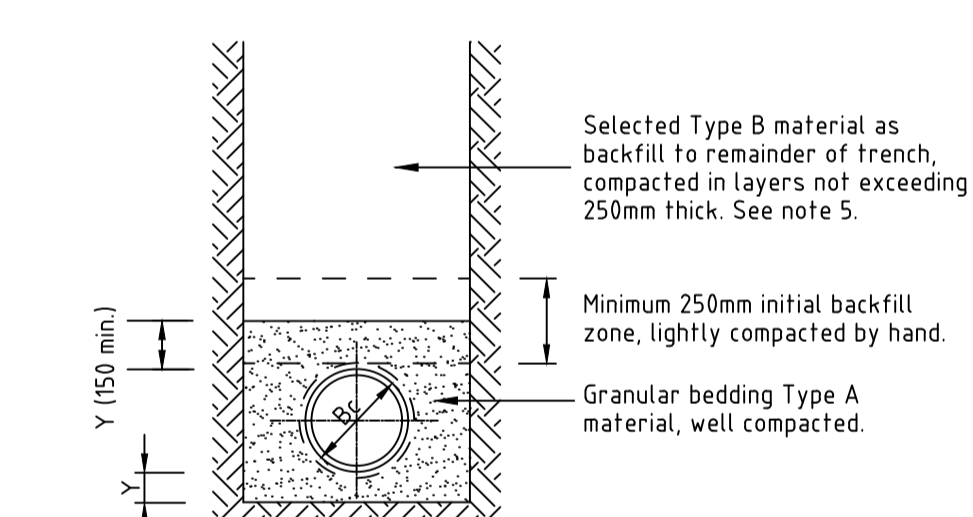


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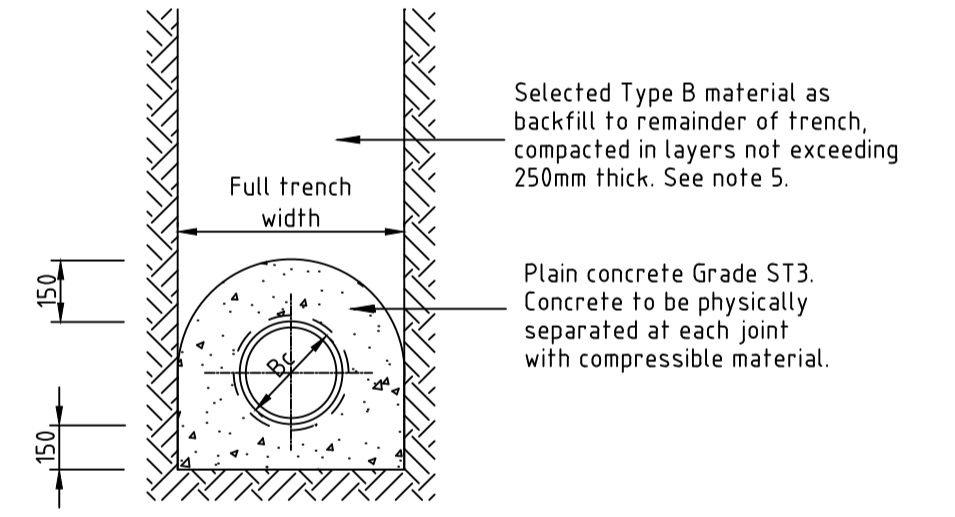
CATCHPIT CONSTRUCTION NOTES:

- Standard frame to have clear opening of 750 x 600.
- Finish to internal concrete to be F2 on formed surfaces and U2 on unformed surfaces to MCHW clause 1708.
- Chamber rings and cover slab to be constructed in precast concrete to BS 5911-3 and BS EN 1917.
- Frame bedding mortar shall be a proprietary mortar with a compressive strength exceeding 30 N/mm² in 3 Hrs and a tensile strength exceeding 5 N/mm² in 3 Hrs.

RIGID PIPES (Clay, concrete).



CLASS S BEDDING

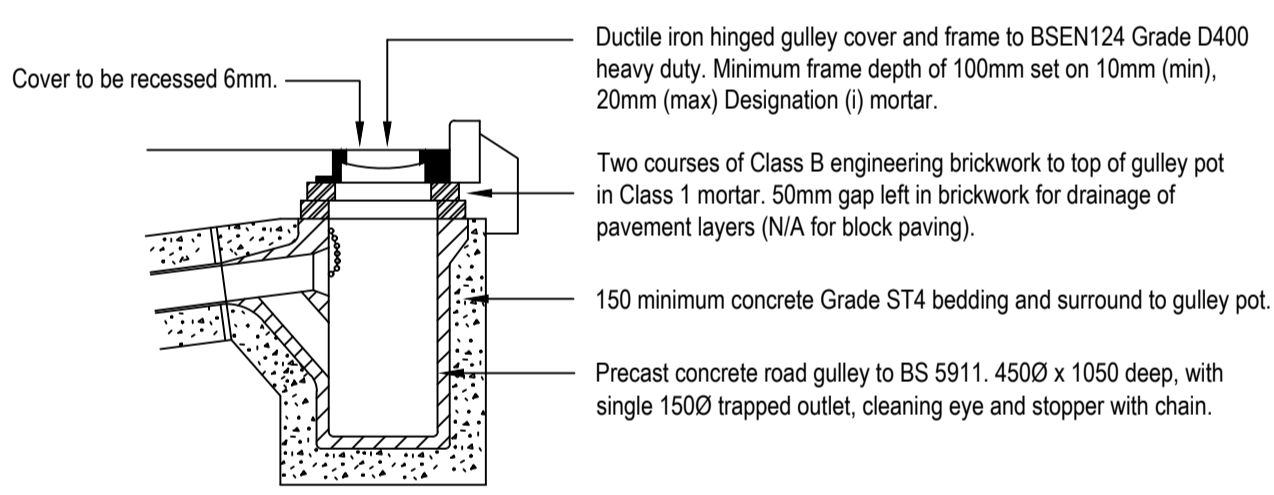


CLASS A BEDDING (Gully connections)

Granular bedding Type A
For pipes and backfilling material for temporary drains (trench sub-drains). Shall consist of aggregate s from natural sources to BS EN 1242 and BS EN 1744-1 or sintered pulverised fuel ash complying with the relevant provisions of BS 3892.

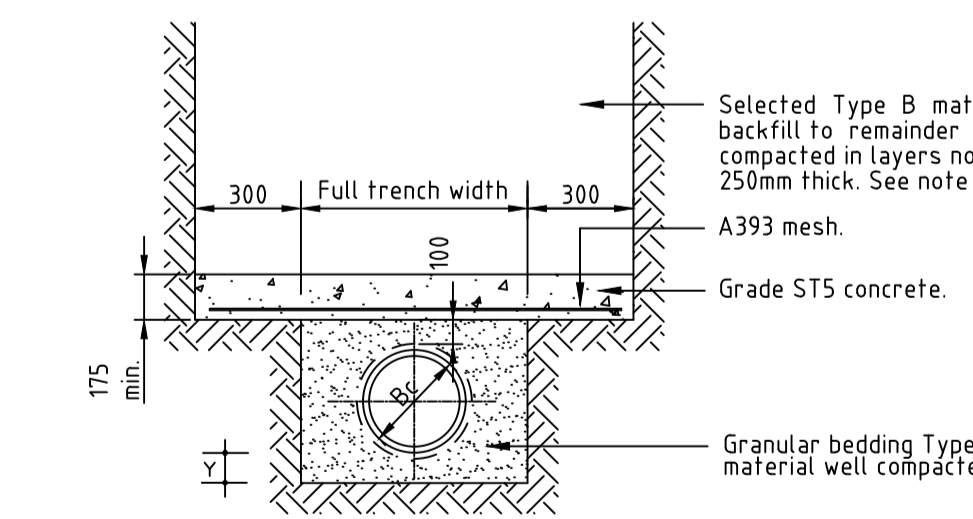
Selected fill Type B
Whether selected from locally excavated material or imported, shall consist of uniform, readily compactable material, free from vegetable matter, building rubbish and frozen material or materials susceptible to spontaneous combustion and excluding clay of liquid limit greater than 80 and or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones shall be retained on 75mm and 37.5mm sieves respectively.

Compacted fill Type 1
Type 1 granular backfill material to Specification for Highway Works.



Note:- Gully connections to be bedded on and surrounded in Grade ST4 concrete 150mm thick throughout their length and irrespective of depth.

ROAD GULLY



PROTECTIVE SLAB DETAIL

Cover <1200 all pipe types within carriageway and <900 in open spaces.

Rocker pipe. (Table 2) :-

| Pipe Dia. | Rocker Pipe Length |
|--------------|--------------------|
| 150-600 | 600 |
| 675-750 | 1000 |
| 825 and over | 1250 |

ROCKER PIPE LENGTH

Chamber diameters are to be in accordance with the table below. (Table 1) :-

| Diameter of largest pipe in manhole (mm) | Chamber section diameter (mm) |
|------------------------------------------|-------------------------------|
| Less than 375mm | 1200 |
| 375 - 700 | 1500 |
| 750 - 900 | 1800 |

unless otherwise stated and contained in the manhole schedule for the works.

CHAMBER SIZE

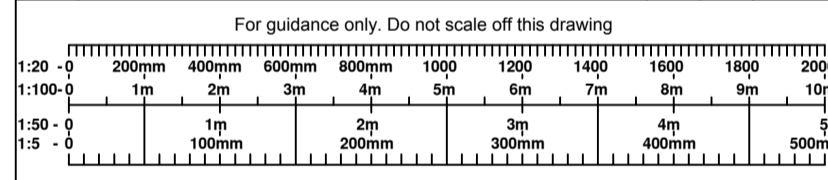
| Pipe dia. (mm) | Trench width (maximum). | Dimension Y (minimum). | | | |
|----------------|-------------------------|------------------------|----------|----------------------------|----------|
| | | Uniform soils | | Rock or variable material. | |
| | | Barrels | Sockets. | Barrels. | Sockets. |
| 150 | 600 | 100 | 50 | 200 | 150 |
| 225 | 700 | 100 | 50 | 200 | 150 |
| 300 | 850 | 100 | 50 | 200 | 150 |
| 375 | 1050 | 100 | 50 | 200 | 150 |
| 450 | 1150 | 100 | 50 | 200 | 150 |
| 525 | 1200 | 115 | 50 | 200 | 150 |
| 600 | 1350 | 130 | 50 | 200 | 150 |
| 675 | 1450 | 150 | 50 | 215 | 150 |
| 750 | 1500 | 160 | 50 | 230 | 150 |
| 825 | 1600 | 170 | 50 | 250 | 150 |
| 900 | 1900 | 200 | 50 | 275 | 150 |

Notes
1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used.
3. This drawing should be read in conjunction with all other relevant drawings and specifications.

Adoptable Drainage Notes:

- Details and Specifications are to be in accordance with "Sewers for Adoption 7th Edition". Highway Drain to be in accordance with OCC Standard Details.
- Manhole covers and frames to be ductile iron heavy duty to BS EN124/D:400. Type 1 and 2 manholes to have double triangular covers 600 x 600 opening. Covers to be bedded on class M1, M2 or epoxy mortar. All manhole covers to be non rocking and to be marked SW or FW as appropriate, clearly readable and kite marked. Private manhole covers not to be bagged. The minimum frame depth shall be 100mm and in situations where traffic loading is anticipated to be heavier than on typical residential estate cul-de-sacs the frame depth shall be increased to 150mm and a highway specification (formerly 'M Way') used. Where block paving is used the depth of the frame shall be 150mm.
- All pipes to enter manholes with soffits level. All pipes to enter flow control chambers with inverts level.
- Exposed reinforcing steel in cut pipes to be painted with Mulsel or similar approved.
- Trench backfill, Type B material is to be Type 1 granular backfill under adoptable paved areas or within 45° envelope of the kerb foundation.
- Brick arches in brickwork manholes are required for pipes 225 dia. and greater.
- Brickwork to be corbelled a maximum of 30mm per course.
- Instead of corbels to brickwork manholes, a heavy duty precast or insitu concrete cover slab may be used with cover and frame on one or two courses of engineering brickwork (Class B).
- Minimum 150 step between joints in precast concrete ring and insitu concrete surround. Maximum insitu concrete pour height - 2000.
- Sulphate resisting concrete shall be used in accordance with BRE Special Digest 1, parts 1 - 4.
- All pipes entering manholes to be a minimum of 150 dia.
- Insitu concrete grade to be in accordance with BS 8500 and BS EN 206 Part 1.
- Concrete pipes and fittings to be in accordance with BS EN 1916 and BS EN 1917. Clay pipes to be in accordance with BS EN 295. Plastic pipes not permitted.

| Rev | Description | By | Ckd | Date |
|-----|------------------------------------------------------------------------------------------------------|----|-----|----------|
| P4 | Road gully detail added from paving details drawing. | JB | KMc | 14.11.16 |
| P3 | Type 2 manhole details updated for clarification. | JB | KMc | 01.09.16 |
| P2 | Manholes updated to Sewers for Adoption 7th Edition (Foul) and OCC Standard Details (Highway Drain). | JB | KMc | 16.08.16 |
| P1 | FIRST ISSUE | JB | KMc | 04.07.16 |



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Client **Bellway**

Project **Kingsmere, Bicester KM5 & KM22**

Title **Adoptable Drainage Details**

| Status | Scale | Date Created |
|----------------|----------|--------------|
| Preliminary | NTS @A1 | 04.07.2016 |
| Project Leader | Drawn By | Checked by |
| KMc | JB | KMc |

| Drawing Number | Rev |
|----------------|-----|
| JKK8310 _108 | P4 |