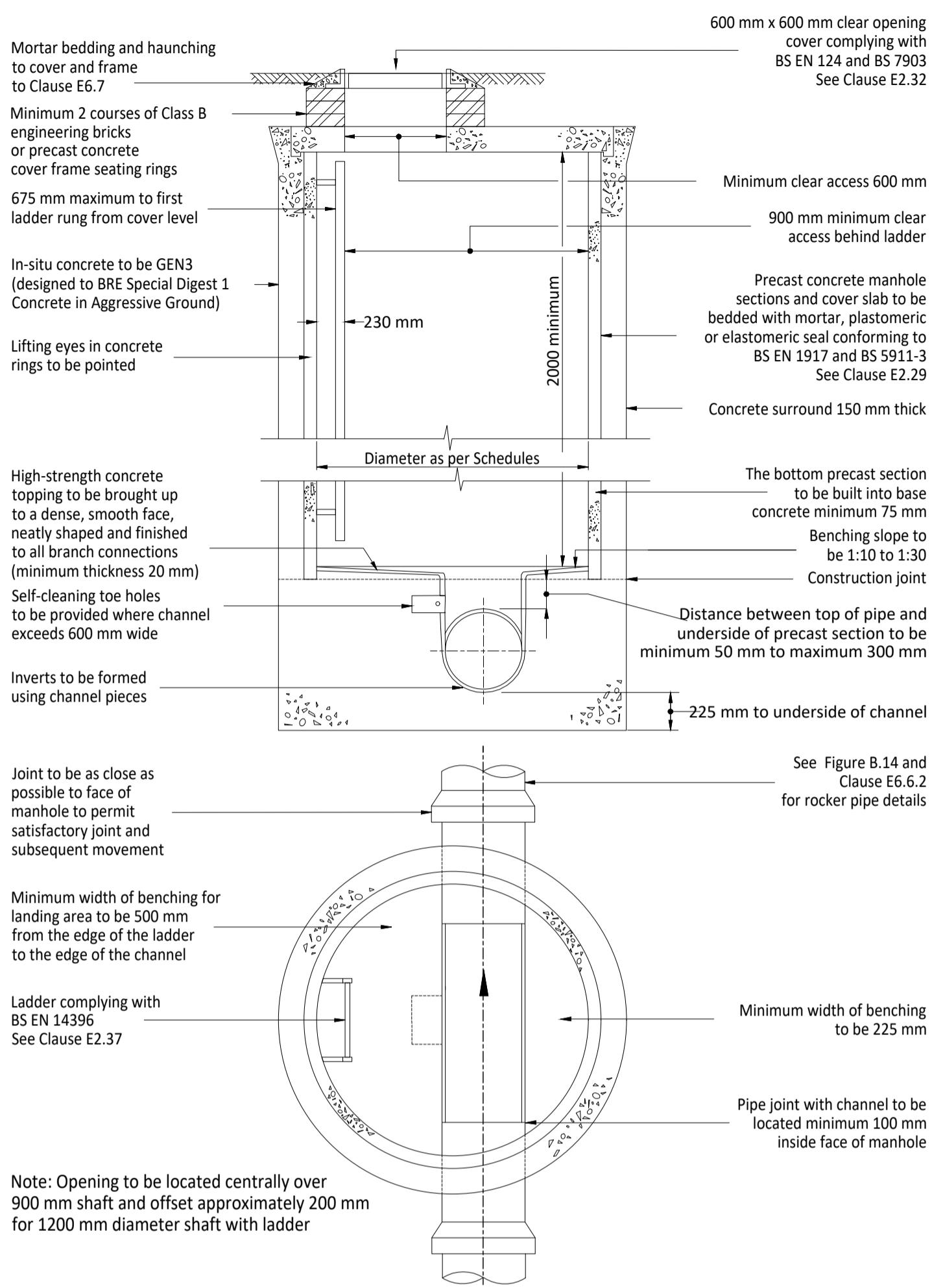


DRAINAGE NOTES:

1. Do not scale.
2. This drawing is to be read in conjunction with and checked against all other drawings, Engineering details, Specification and any structural, Geotechnical or other specialist document provided.
3. Site layout shown for context only, refer to other project drawings for details.
4. All adoptable drainage works to be constructed as detailed in design and construction guidance or as stipulated in the water authorities addendum.
5. All public sewers are to be the subject of a section 104 agreement of the water industry act 1991.
6. Invert levels of existing manholes and sewers are to be checked on site before construction commences and reports reported to engineers.
7. The contractor is responsible for maintaining continuity of flow for all existing sewers within the site boundary and limit of works for the duration of the project.
8. All drainage ironworks to comply with bs en124, and be stamped with bsi kitemark covers to suit loading as below:
 - carriageways and roads -d400
 - driveways and verges -c250
 - footways and pedestrian areas - b125
 - gardens/landscaping - a15
9. All sewer pipes, up to, and including 225mm are to be vitrified clay to BS EN295. All sewer pipes 300mm diameter and above to be concrete pipes to BS EN1916. Where agreed with adopting authority pipes up to and including 600mm diameter can be PVC-U to BS EN1404.
10. All drainage shall be installed and tested strictly in accordance with the manufacturers' printed instructions, bs en 752, bs en 1601, local water authority requirements and the building regulations.
11. All bedding shall be class s unless noted otherwise.
12. All trenches under existing and proposed public highways are to be backfilled with thoroughly compacted type 1 granular sub-base material.
13. Drainage laid beneath roads and areas of vehicular access (e.g. parking etc) with less than 200mm of cover shall be encased in concrete bed and surround with associated movement joints, drainage laid beneath paths, footways and pedestrian areas with less than 900mm of cover shall be similarly treated.
14. Chambers with outgoing pipes greater than 600mm diameter shall be fitted with guard bars, safety chains or other approved safety devices.
15. The use of precast concrete products made with sulphate resisting cement is mandatory, unless a laboratory report proves such precautions are not necessary.
16. All foul and storm water drains which are not to be adopted as public sewers shall be in accordance with document h of the building regulations, together with nhbc standards chapter 5.3 and bs8301.

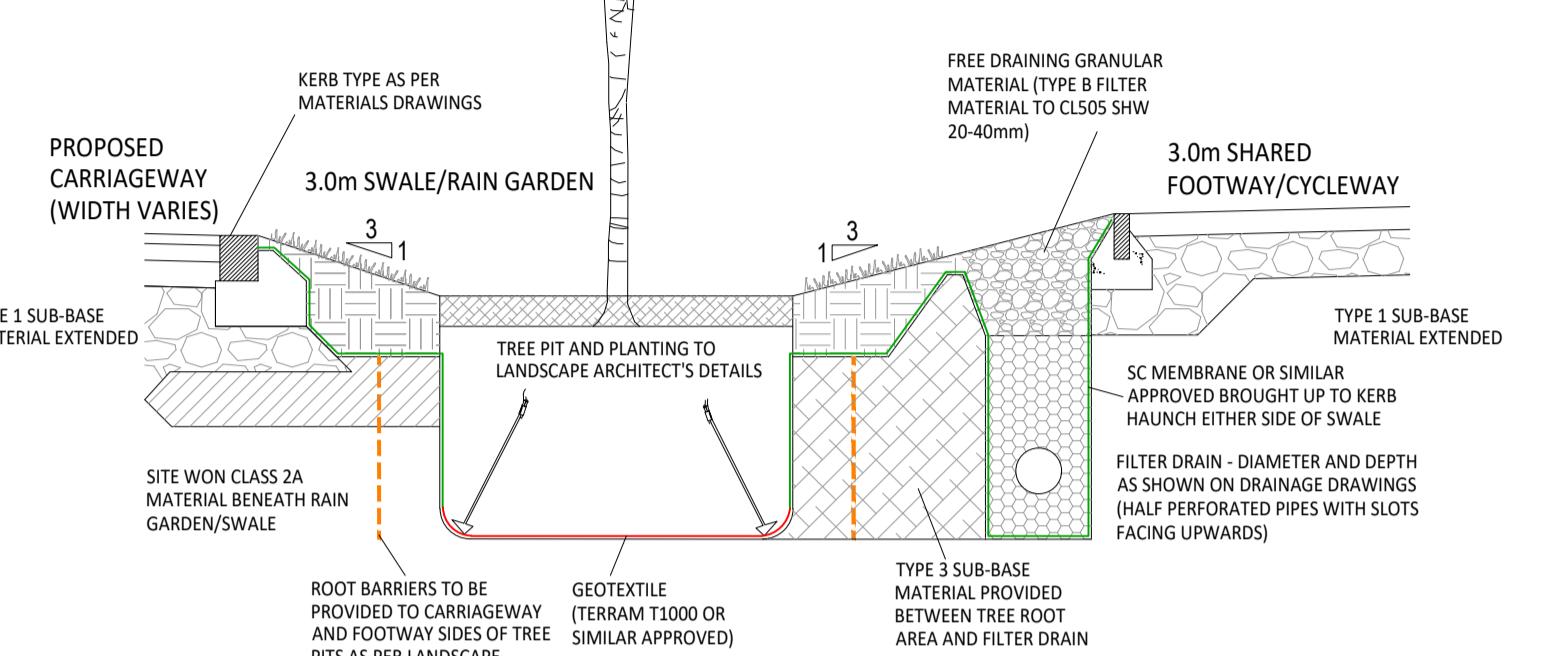
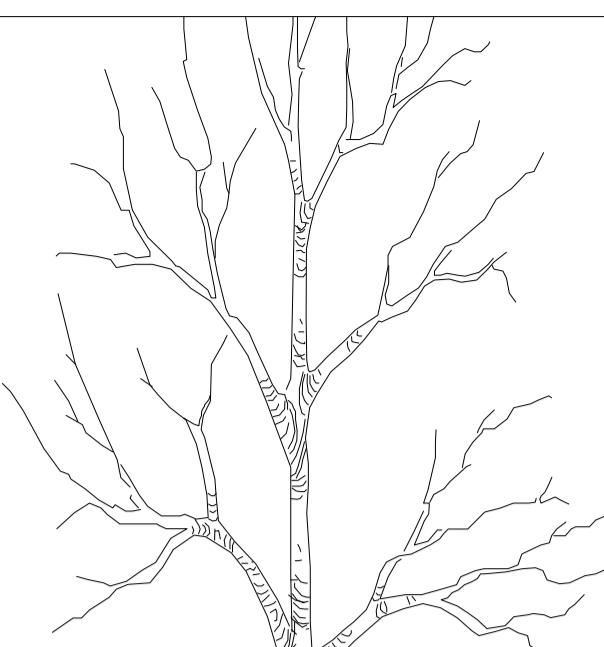
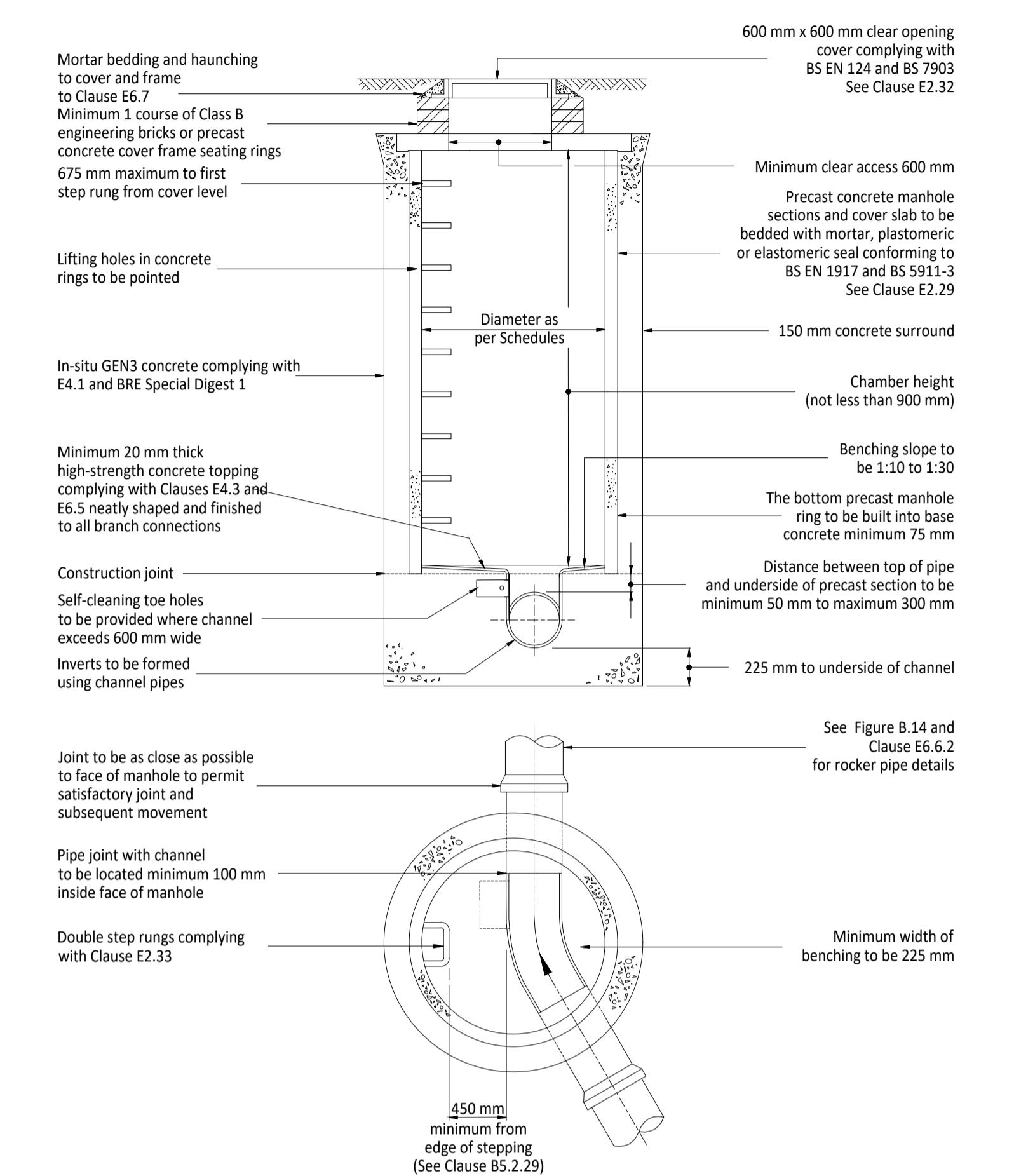
ADOPTABLE MANHOLE DETAIL - TYPE A

Depth from cover level to soffit of pipe 3 m to 6 m

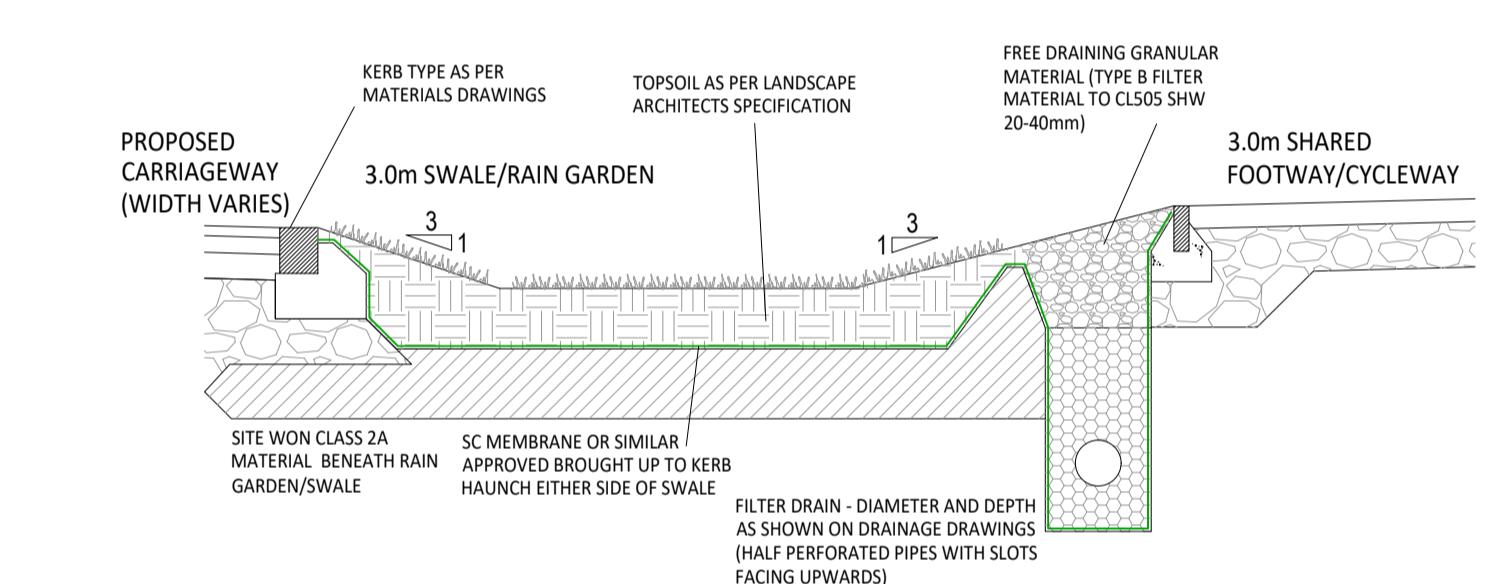


ADOPTABLE MANHOLE DETAIL - TYPE B

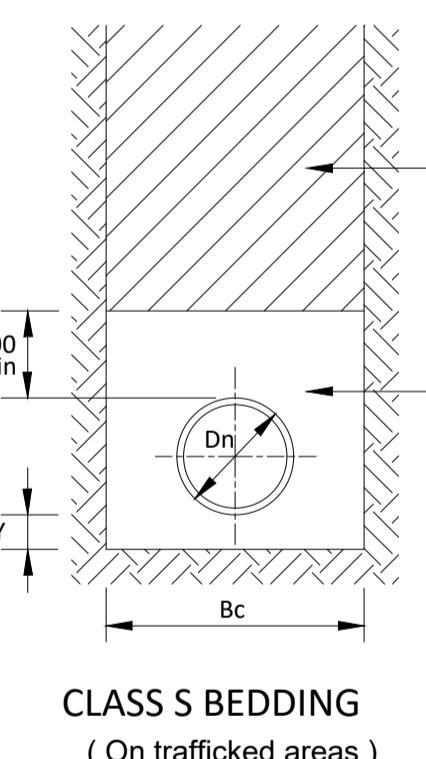
Depth from cover level to soffit of pipe 1.5m to 3.0 m



SWALE/RAIN GARDEN WITH TREE PLANTING SECTION

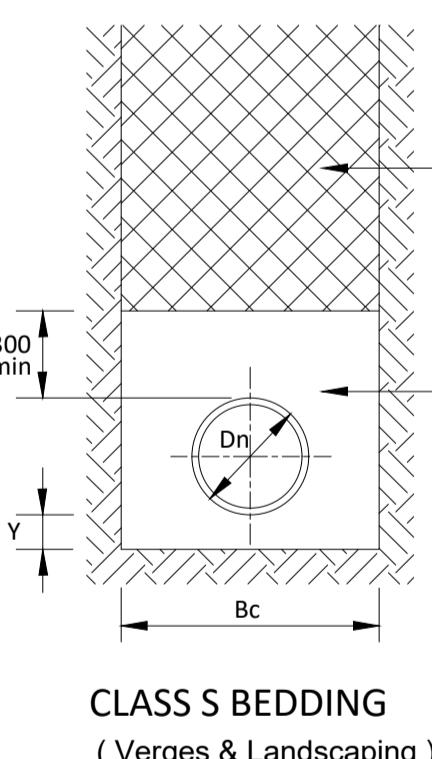


STANDARD SWALE/RAIN GARDEN SECTION



CLASS S BEDDING

(On trafficked areas)



CLASS S BEDDING
(Verges & Landscaping)

GRANULAR BEDDING

Nominal bore of pipe (mm)	Alternative Aggregate sizes (mm)	
	Single sized	Graded
100	10	-
150	10 or 14	14-5
225-300	14 or 20	14-5 or 20-5
375-525	14 or 20	14-5 or 20-5
>525	14, 20 or 40	14-5, 20-5 or 40-5

Granular bedding for pipes and backfilling material for temporary drains (trench sub-drains) shall consist of aggregates from natural sources to BS EN 13242 and BS EN 1744-1 or sintered pulverised fuel ash complying with the relevant provisions of BS 3892; sized in accordance with the above table

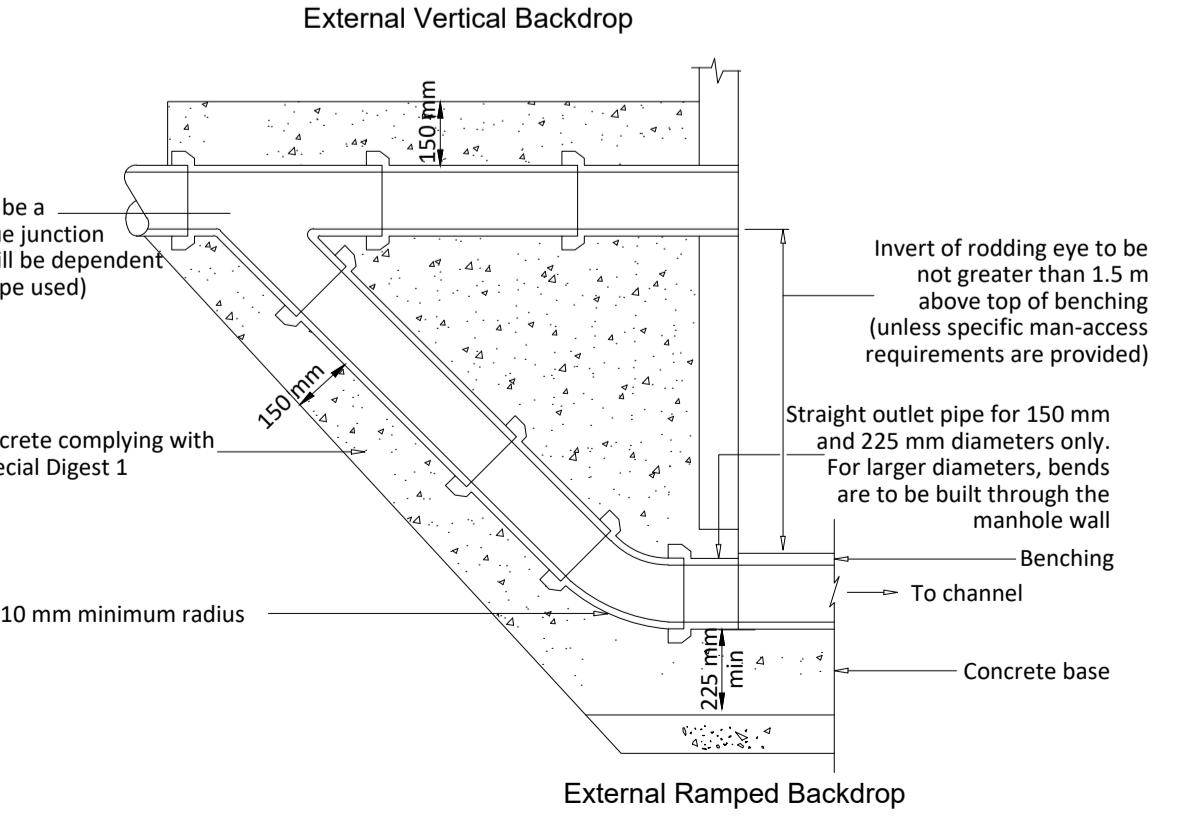
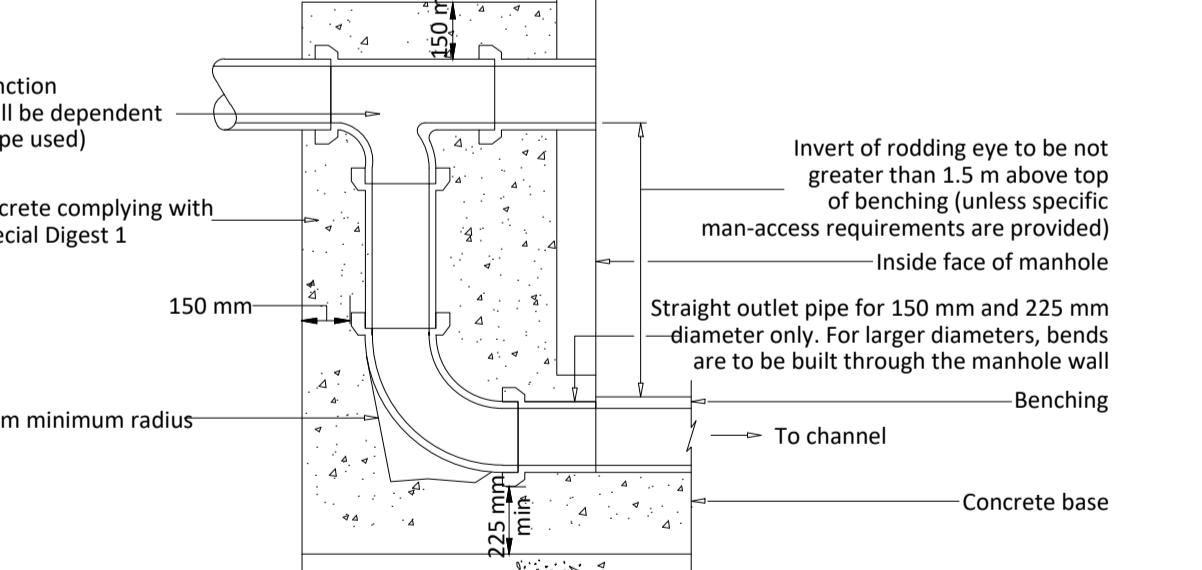
Selected fill material, whether selected from locally excavated material or imported, shall consist of uniform, readily compactable material, free from vegetable matter, building rubble and frozen material, or materials susceptible to spontaneous combustion, and excluding clay or liquid limit greater than 80 and/or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones shall be retained on 100mm and 40mm sieves respectively.

TRENCH WIDTHS & KEY DIMENSIONS

Dia Dn (mm)	Width Bc (mm)		Y(mm)		L(mm)	Z MIN (mm)
	Max	Min	Y1 (Uniform Soil)	Y2 (Rock)		
100	550	450	100	200	18	150
	150	600	490	200		150
	225	700	580	200		150
300	750	680	150	200	36	150
	375	1050	950	200		150
	450	1150	1030	200		150
525	1200	1120	150	200	36	150
	600	1350	1240	200		150
	675	1450	1330	200		225
750	1500	1400	150	200	36	225
	825	1600	1490	225		225
	900	2100	1900	225		300
975	2150	1950	175	250	54	300
	1050	2250	1950	275		300
	1200	2500	2250	300		300
OVER 1200	O.D+1000	O.D+800	I.D/6	I.D/4	54	400

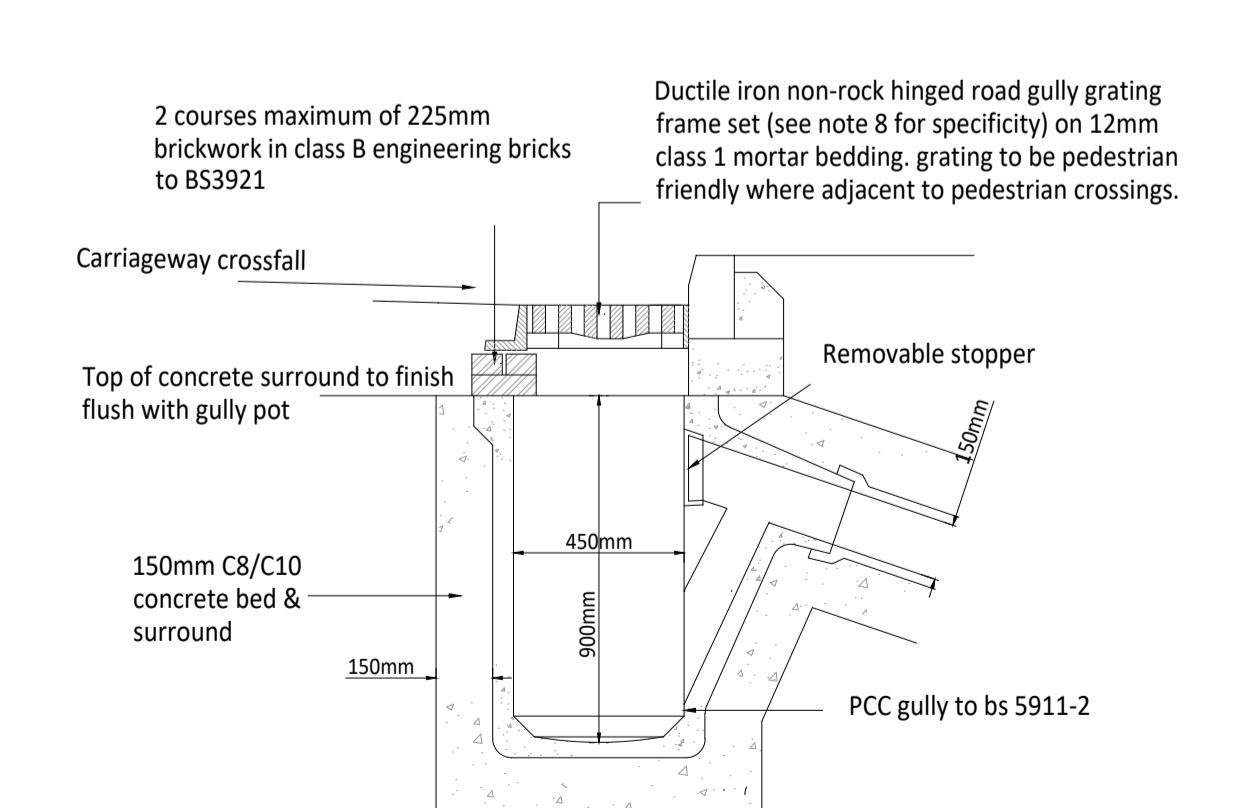
Figure B 16
Typical vertical and ramped detail (rigid materials)
For use in manhole types A to D

Note: Steeper gradients are preferred to the use of backdrops.
Type of backdrop to be used to be agreed with the water company.



TYPICAL TRAPPED GULLY DETAIL

SCALE 1:20



ALL PIPE BEDDING TO BE CLASS 'S' GRANULAR SURROUND UNLESS NOTED OTHERWISE ON THE DRAWING

A 06.25 FIRST ISSUE RG Drawn CS Checked
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Client

UNIVERSITY OF READING

Project

LODDON GARDEN VILLAGE

Title DRAINAGE DETAILS SHEET 1 OF 2

Status

Scale AS SHOWN @ A1 Date JUN 2025 Drawn RG Checked CS
Drawing No A392-OPA-0530 Revision A