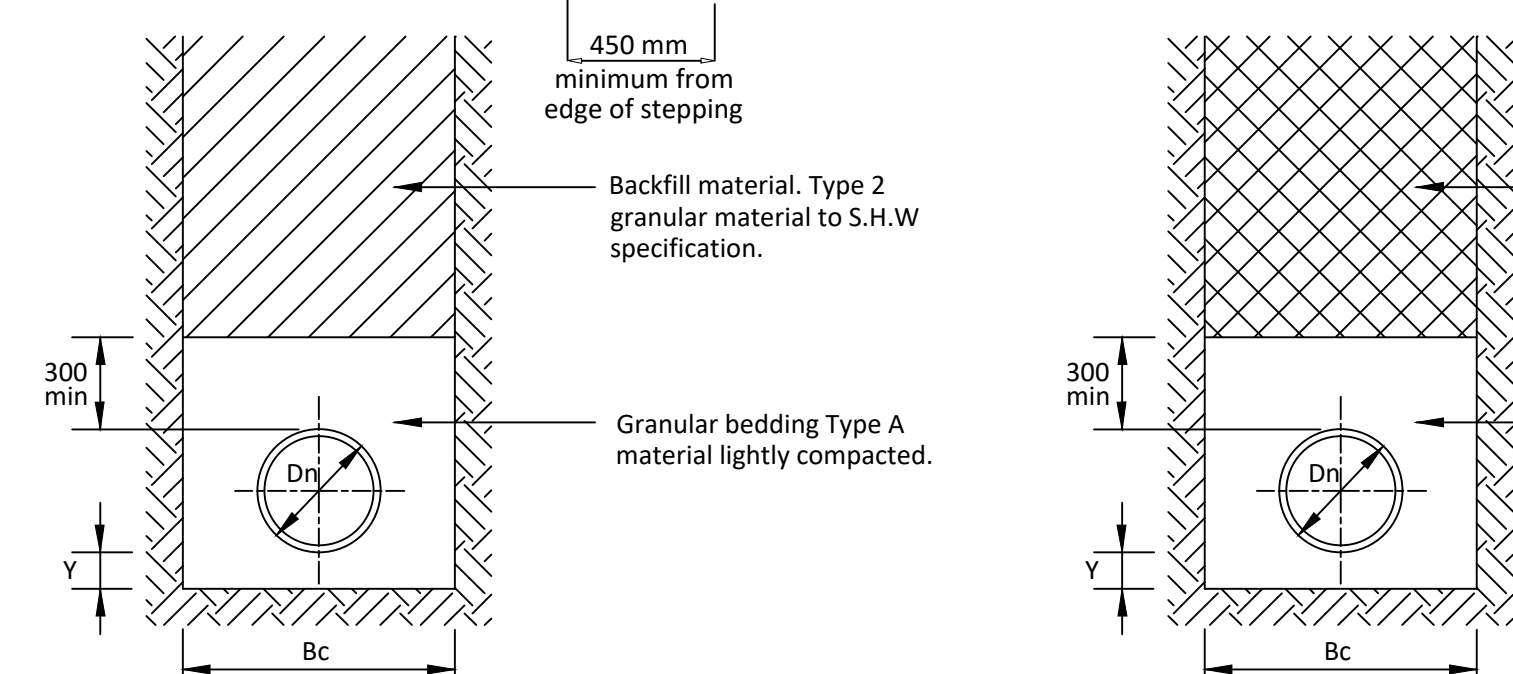
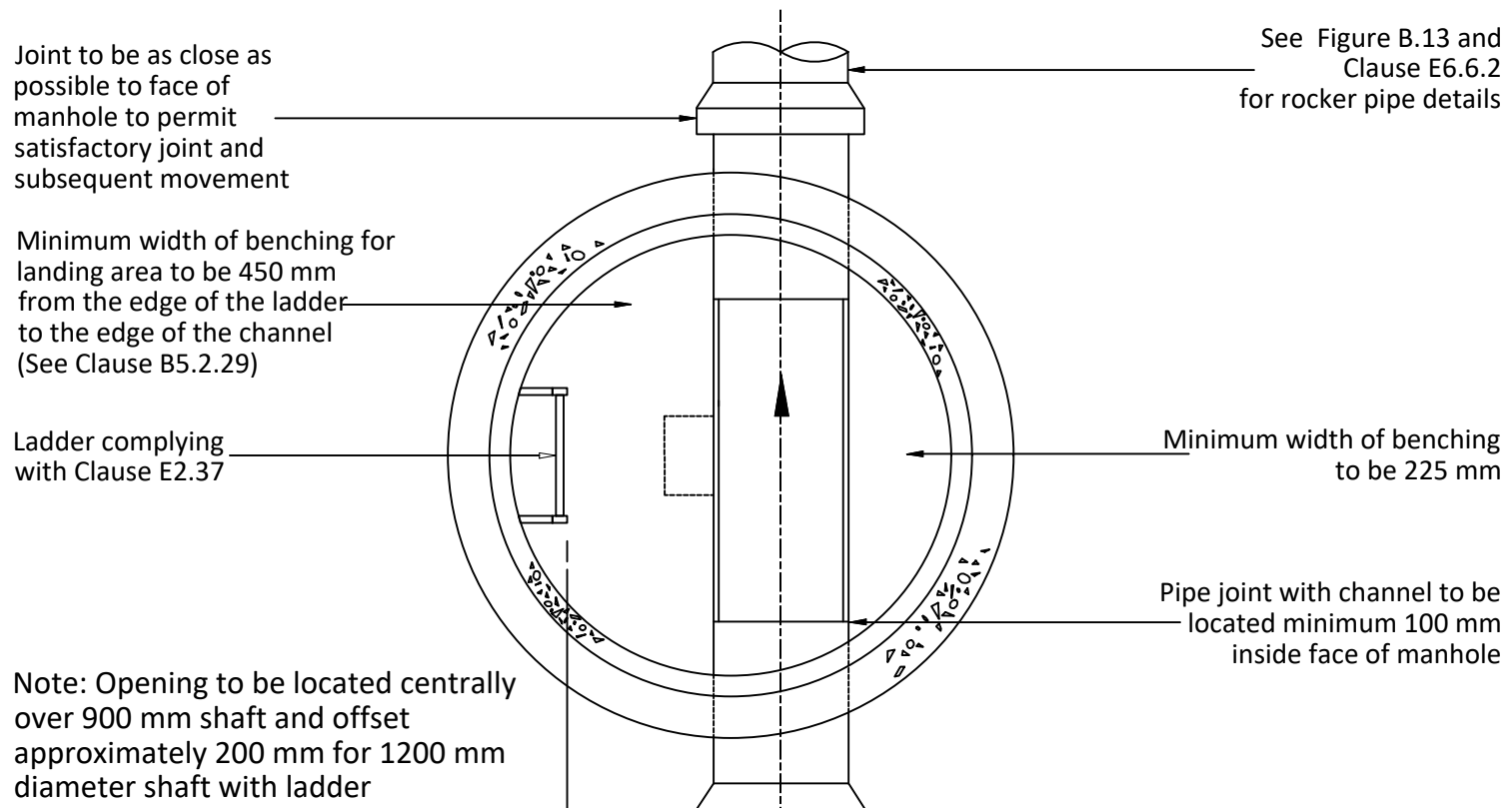
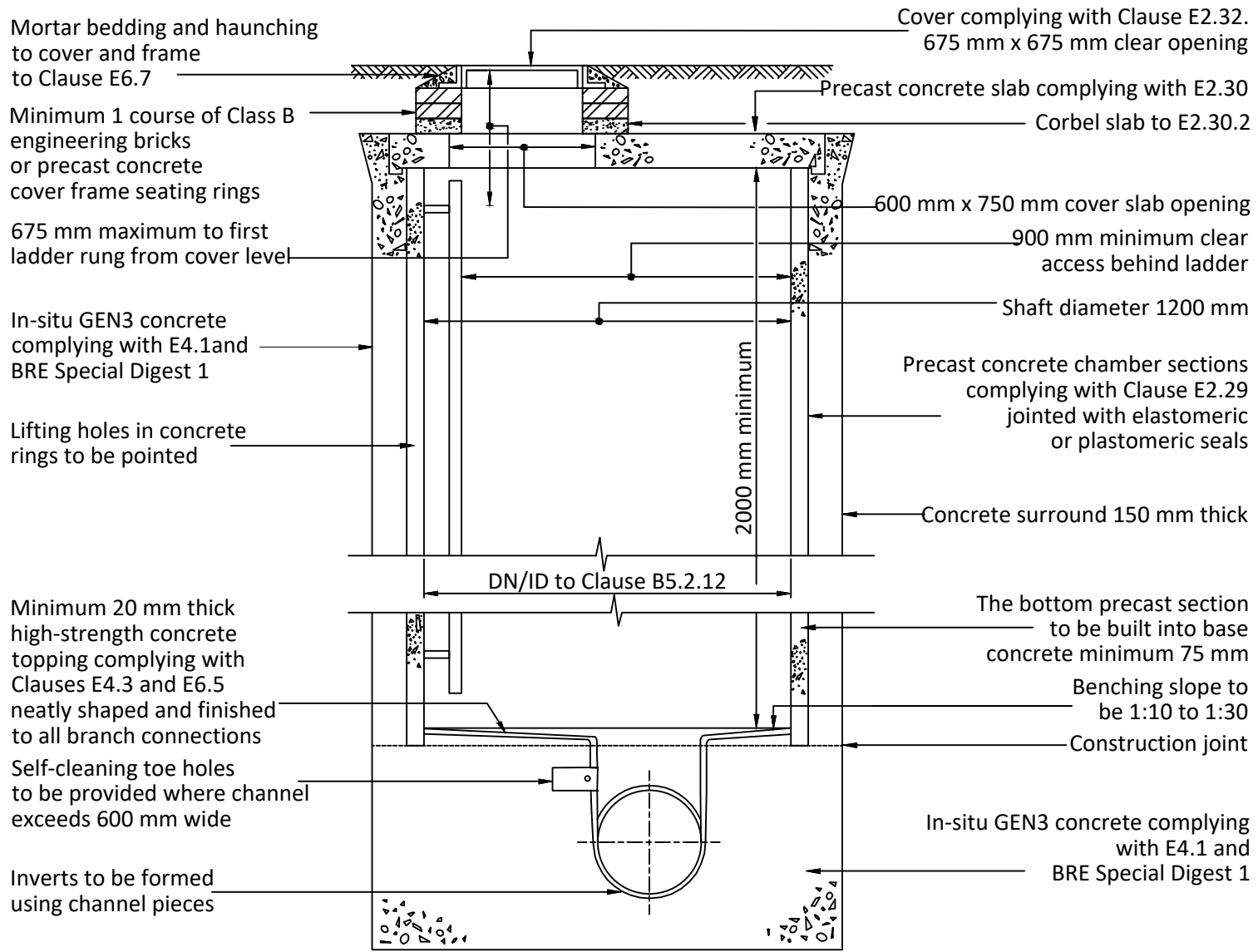


Figure B 7
Typical manhole cover - Type A2
Depth from cover level to soffit of pipe 3 m to 6 m with ladder
Alternative rigid material construction with concrete surround



CLASS S BEDDING
(On trafficked areas)

CLASS S BEDDING
(Verges & Landscaping)

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

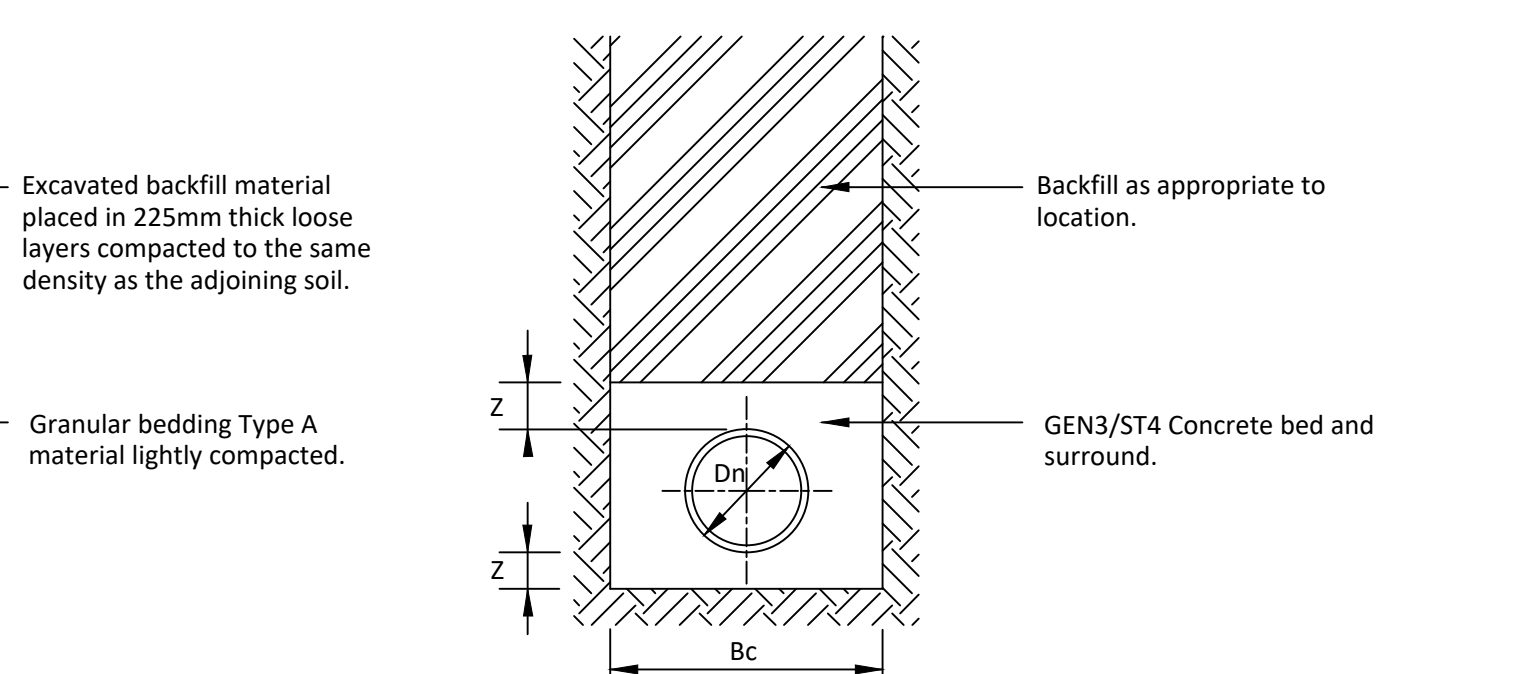
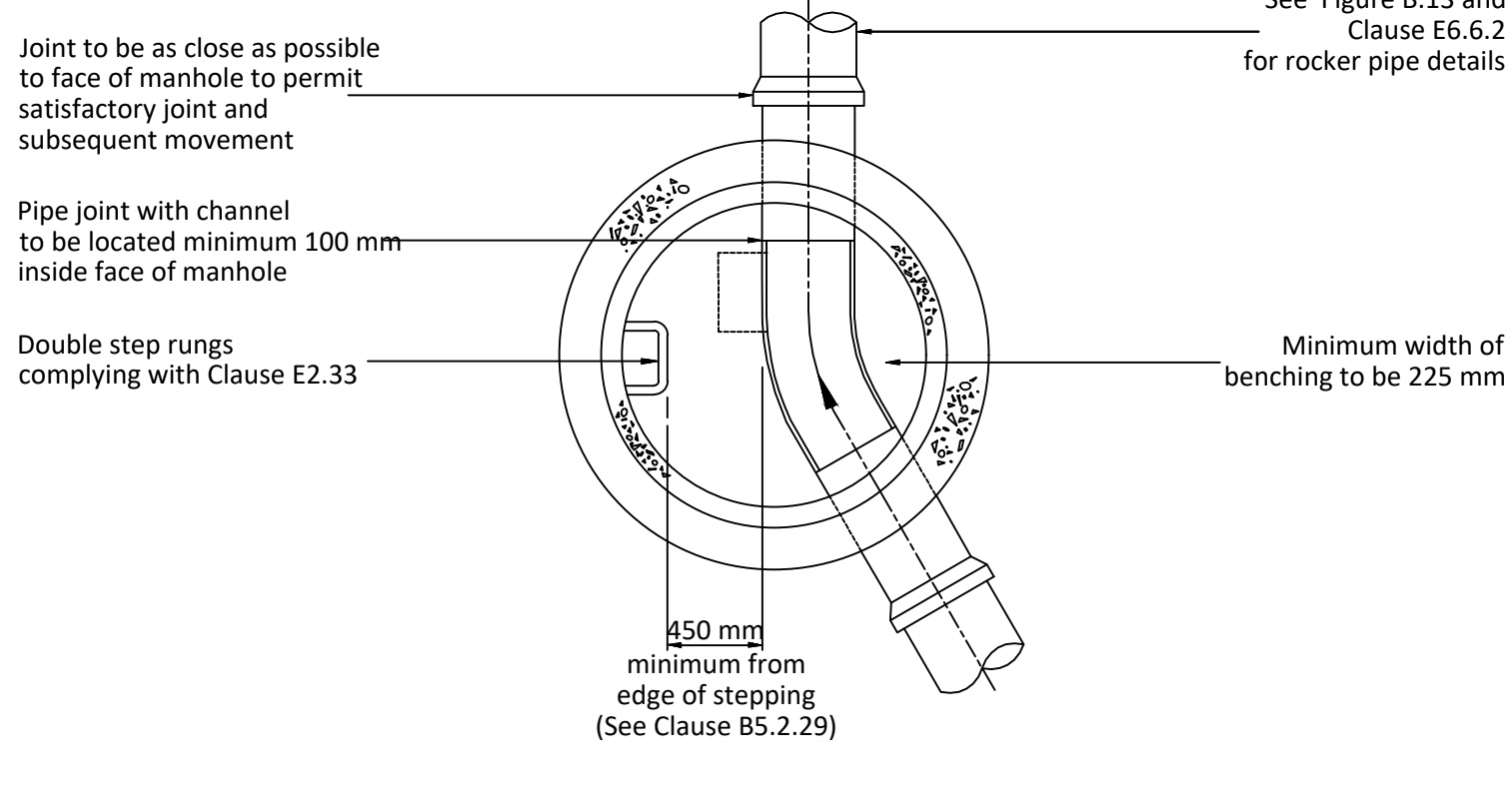
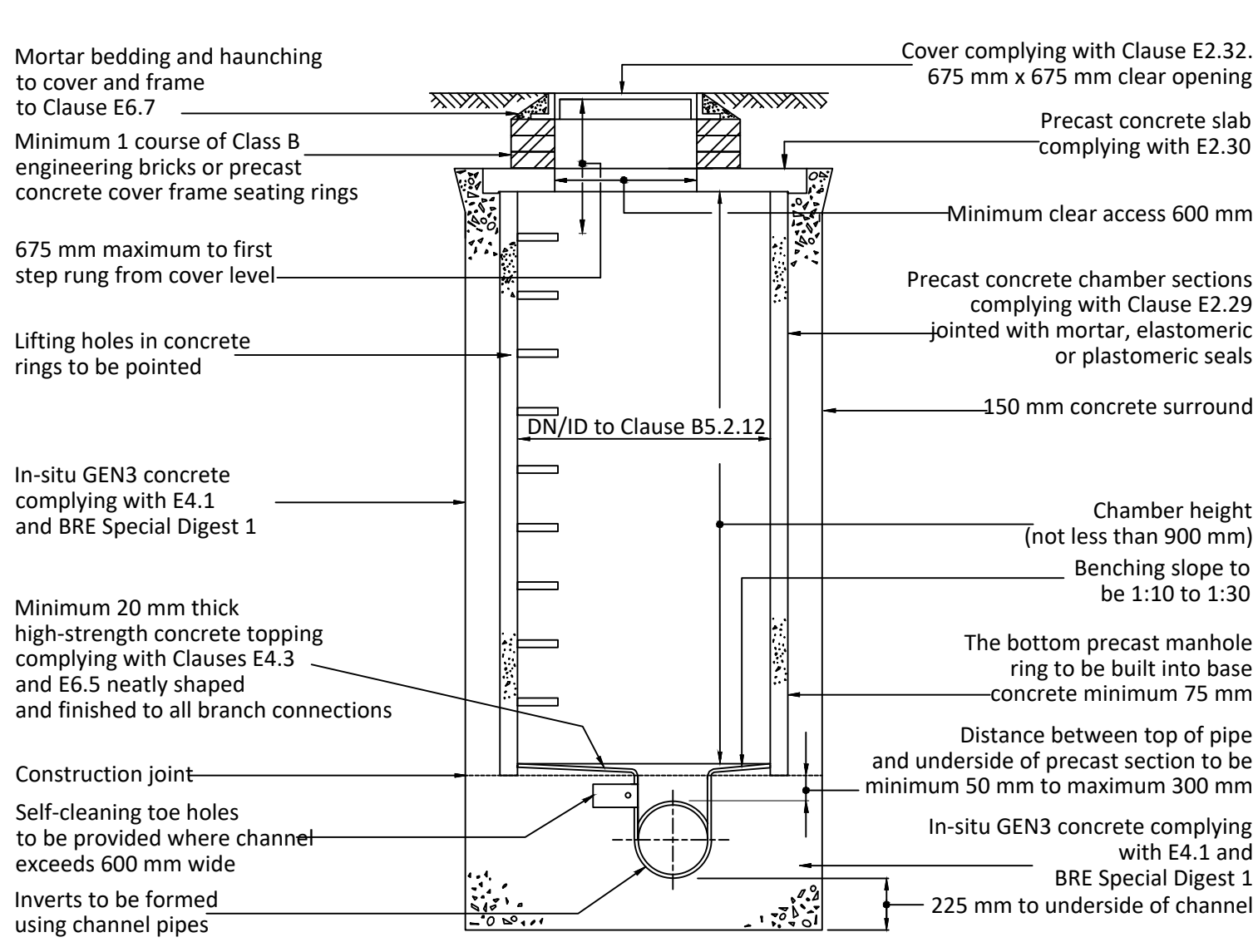
Granular bedding for pipes and backfilling material for temporary drains (trench sub-drains) shall consist of aggregates from natural sources to BS EN 13242 and BS EN 1744-1 or sintered pulverised fuel ash complying with the relevant provisions of BS 3892; sized in accordance with the above table

Selected fill material, whether selected from locally excavated material or imported, shall consist of uniform, readily compactible 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 100mm and 40mm sieves respectively.

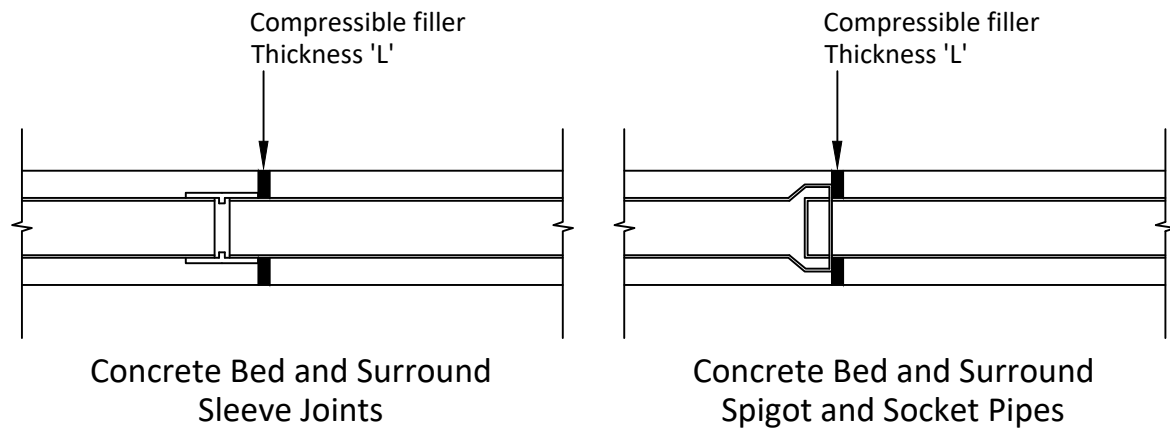
TRENCH WIDTHS & KEY DIMENSIONS

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	150	200		150
225	700	580	150	200		150
300	750	680	150	200	18	150
375	1050	950	150	200		150
450	1150	1030	150	200		150
525	1200	1120	150	200	18	150
600	1350	1240	150	200		150
675	1450	1330	150	200		225
750	1500	1400	150	200	36	225
825	1600	1490	150	225		225
900	2100	1900	150	225		225
975	2150	1950	175	250	36	300
1050	2250	2050	175	275		300
1200	2500	2250	175	300		300
OVER 1200	O.D+1000	O.D+800	I.D/6	I.D/4	54	400

Figure B 10
Typical manhole detail - Type B
Depth from cover level to soffit of pipe 1.5 m to 3.0 m
Alternative Rigid material construction with concrete surround



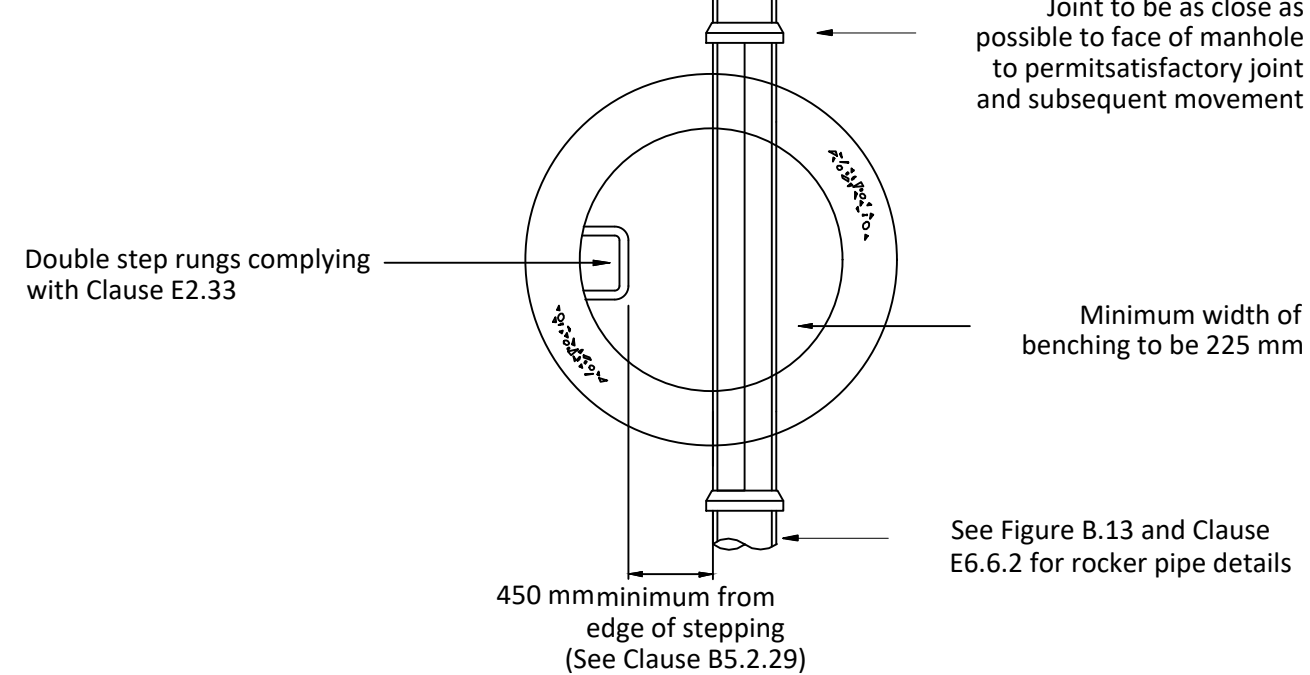
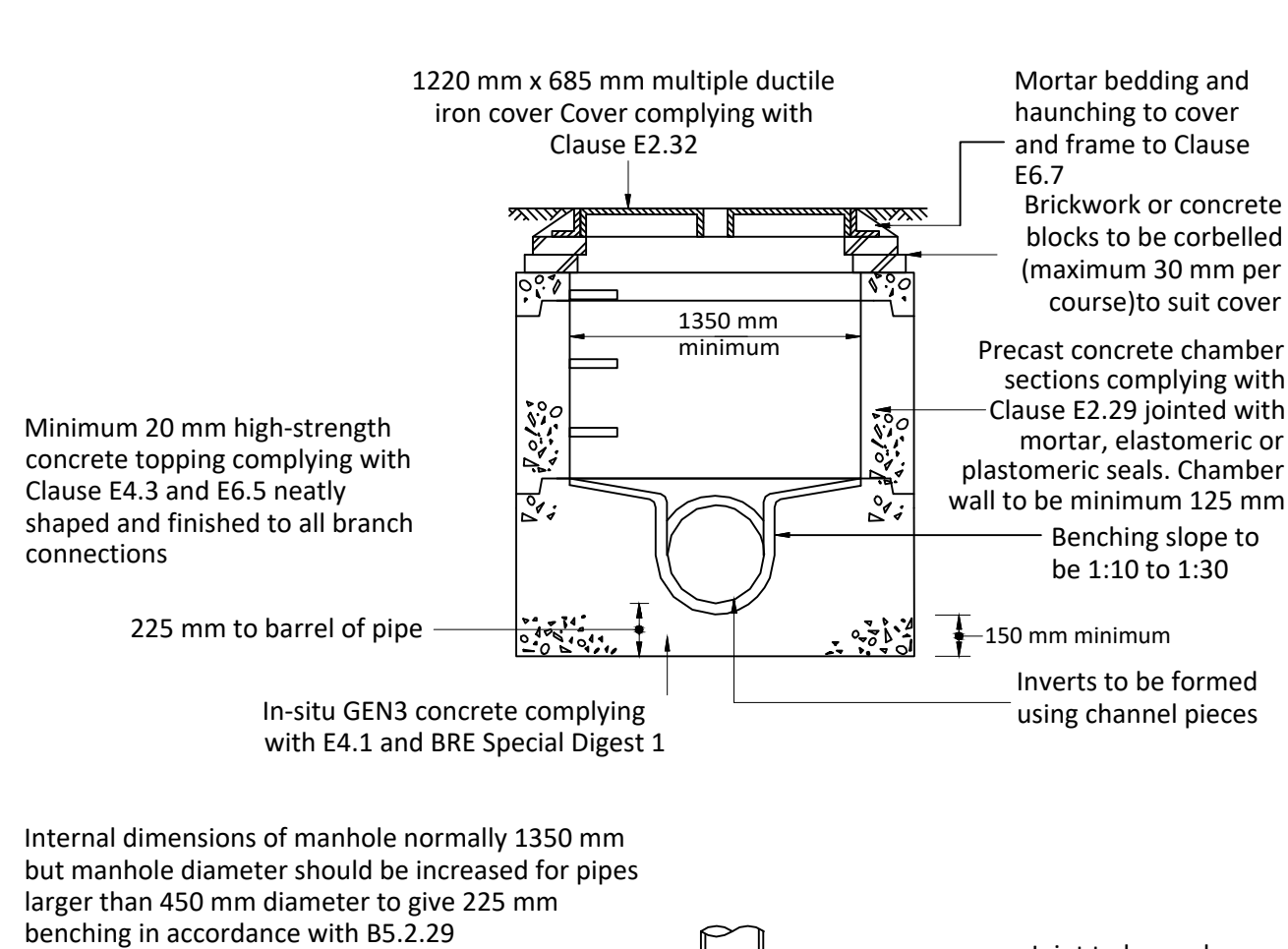
CLASS Z BEDDING
(Cover to pipe <1.2m or as specified)



Flexible Joint Details

Form vertical construction joints in GEN3/ST4 concrete surround at face of every pipe joint using compressible board (refer to table for thickness 'L', precut to finished profile of concrete and pipe. Fill any gap between spigot and socket with resilient material to prevent entry.

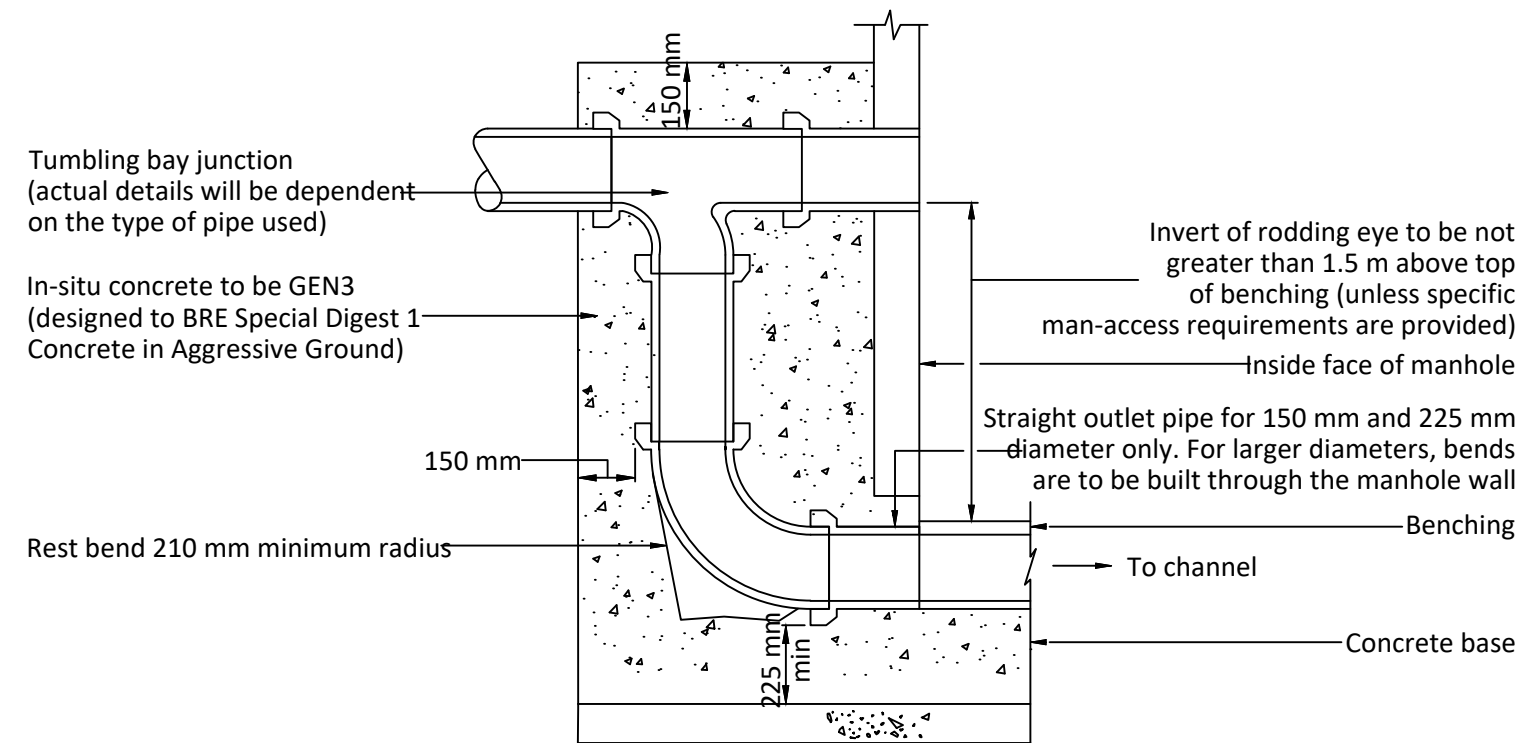
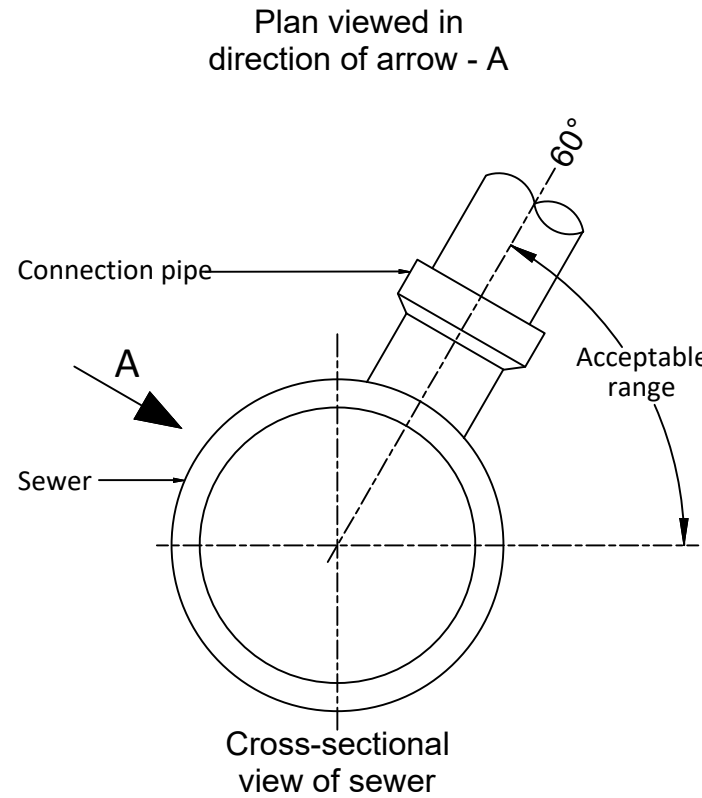
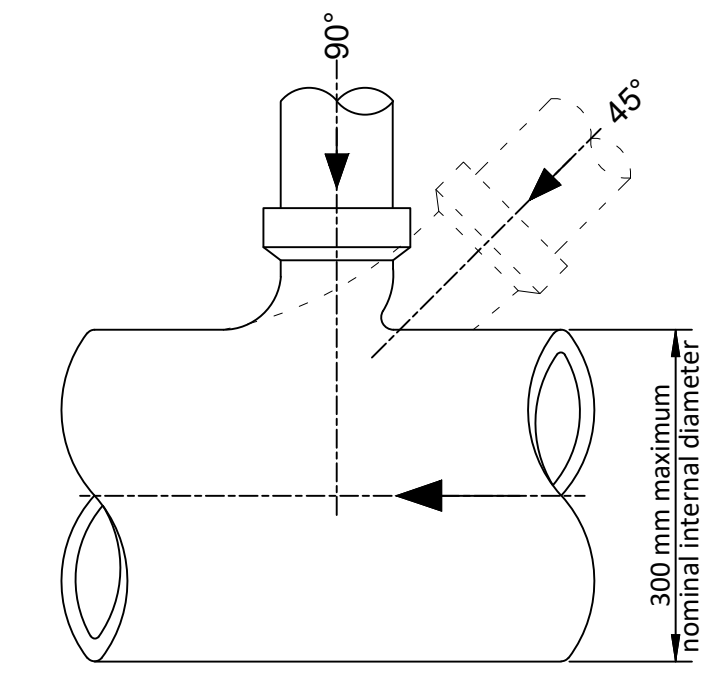
Figure B 15
Typical manhole detail - Type C
Depth from cover level to soffit of pipe less than 1.5 m
Rigid material construction



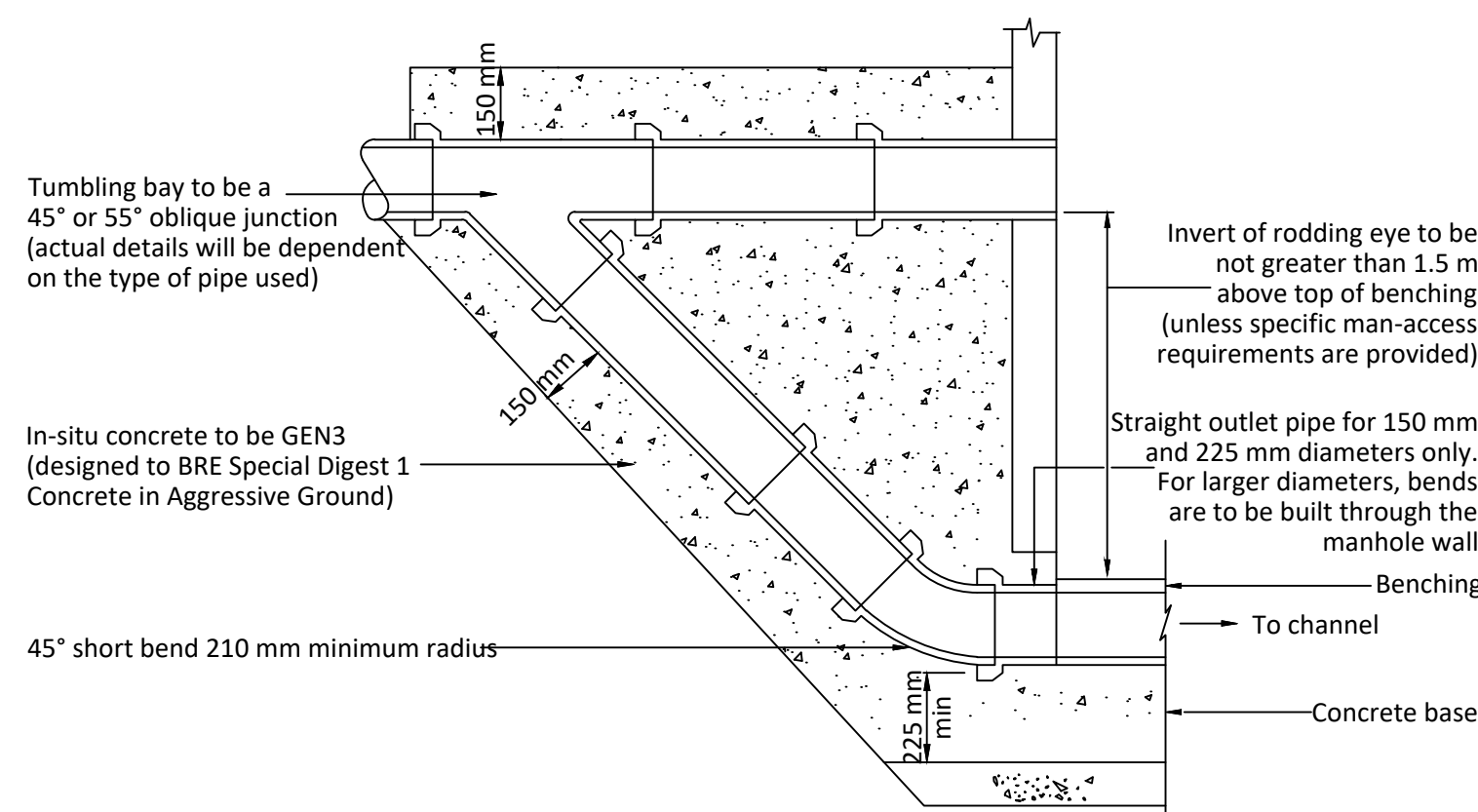
Note: The use of precast concrete chamber units to E2.29 with 150 mm GEN3 in-situ concrete complying with E4.1 and BRE Special Digest 1 in place of brickwork construction is permitted.

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

Figure B 26
Connections to sewer



External Vertical Backdrop



External Ramped Backdrop

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DRAINAGE NOTES:

- Do not scale.
- Refer to all other Project Drawings and supporting notes.
- All adoptable drainage works to be constructed as detailed in Design and Construction Guidance or as stipulated in the Water Authorities Addendum.
- All public sewers are to be the subject of a Section 104 agreement of the Water Industry Act 1991.
- Invert levels of existing manholes and sewers are to be checked on site before construction commences and results reported to engineers.
- 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.
- All drainage ironworks to comply with BS EN124, and be stamped with BS Kitemark. Covers to suit loading as below:
 - Carriageways and Roads - E600/D400
 - Driveways and Verges - C250
 - Footways and Pedestrian Areas - B125
 - Gardens/Landscaping - A15
- 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.
- 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.
- All bedding shall be Class S unless noted otherwise.
- All trenches under existing and proposed public highways are to be backfilled with thoroughly compacted Type 1 granular sub-base material.
- Drainage laid beneath roads and areas of vehicular access (car parking etc) with less than 1200mm 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 300mm of cover shall be similarly treated.
- Chambers with outgoing pipes greater than 600mm diameter shall be fitted with guard bars, safety chains or other approved safety devices.
- The use of precast concrete products made with sulphate resisting cement is mandatory, unless a laboratory report proves such precautions are not necessary.
- All gully connections to use a minimum diameter pipe of 150mm and to be surrounded by a minimum of 150mm of grade C8/C10 concrete over its full length (which should not exceed 15m) and its connection to the carrier system.
- All sewers to be abandoned must be surveyed to identify any lateral connections that are still live with any found to be reported to the Engineer.
- 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.
- All gullies connected direct to drains to be roddable.
- Trees and shrubs of a large size or heavy canopy with a moderate or high water demand must not be planted within any sewer easement.
- Gullies within and adjacent to area of site works to be suction cleansed at commencement and completion of works.

P2	08.24	Notes updated	LC	SM
P1	03.24	First Issue	LC	SM
Rev	Date	Description	Drawn	Checked



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Client

UNIVERSITY OF READING

Project

THAMES VALLEY SCIENCE PARK
PRIMARY INFRASTRUCTURE

Title

NHM ACCESS ROAD
DRAINAGE CONSTRUCTION
DETAILS SHEET 1

Status

Scale	Date	Drawn	Checked
AS SHN @ A1	MAR 2024	LC	SM

Drawing No	Revision
HD065-551	P2