

[illegible]

Not to scale

150 mm thick stone pitching set in and bedded on in-situ concrete or precast concrete headwall, designed to BRE Special Digest 1, Concrete in Aggressive ground

Flap valve required for PS overflow, tidal or other areas at risk of backing up

Construction joints

Water level

500 mm minimum

150 mm minimum concrete bed and surround to pipe cast integrally with headwall

Note: Stone pitching to be smooth, hard and durable

Section A-A

Dimension to be agreed with local land drainage authority

Pipe diameter +500 mm minimum

Water

Side View Annotations:

- Mortar bedding and haunching to cover and frame to Clause E6.7
- Minimum 1 course of Class B engineering bricks or precast concrete cover frame seating rings
- Minimum 50 mm gap between slab and plastic chamber unit
- 675 mm maximum to first step rung from cover level
- Backfill: minimum 150 mm thick compacted granular bed (type 20/5 or single size stone max 20 mm) or GEN3 complying with E4.1 and BRE Special Digest 1 in accordance with the manufacturer's instruction
- Self-cleaning toe holes to be provided where channel exceeds 600 mm wide
- Bedding: compacted granular bed (type 20/5 or single size stone max 20 mm) or GEN3 complying with E4.1 and BRE Special Digest 1 in accordance with the manufacturer's instruction
- Precast concrete slab complying with E2.30
- Cover complying with Clause E2.32. 600 mm x 600 mm clear opening
- Load disconnecting assembly (footing and slab with flexible seal) for granular surround (See Clause B5.2.22)
- Minimum clear access 600 mm
- DN/ID to Clause B5.2.12
- Plastic manhole units and rings shall comply with Clause E2.31
- Minimum 150 mm to underside of channel
- Base plate with overhang

Top View Annotations:

- Pipe joint with channel to be located minimum 100 mm inside face of manhole
- Double step rungs complying with Clause E2.33
- Joint to be as close as possible to face of manhole to permit satisfactory joint and subsequent movement
- Minimum width of benching to be 225 mm
- 450 mm minimum from edge of stepping (See Clause B5.2.29)

Not to scale

Nominal diameter (mm)	Maximum effective length (m)
150 - 600	0.6
601 - 750	1.00
over 750	1.25

Plastic chambers and rings shall comply with Clause E2.31

Mortar bedding and haunching to cover and frame to Clause E6.7

Surface course
Binder course
Base course

Minimum 50 mm gap between slab and chamber unit

Flexible seal.
(Seal needs to be watertight and provide a suitable specification for the details and material)

Temporarily cap shaft during construction

Cover complying with Clause E2.32

If distance from cover level to soffit of pipe is $> 1\text{m}$, access opening shall be restricted to 350 mm diameter or 300 mm $\times$ 300 mm Class B engineering brickwork or precast concrete cover frame seating rings

Precast concrete slab or in-situ concrete slab to support cover and frame

Granular type I sub-base material to Clause E2.43 (thickness varies)

Minimum internal dimensions 450 mm diameter or 450 mm $\times$ 450 mm

Minimum 150 mm thick granular type I sub-base material to Clause E2.43 or G6/3 in-situ concrete surround complying with E4.1 and BRE Special Digest 1 in accordance with the manufacturer's instruction

Base unit to have all connections with soffit levels set no lower than that of the main pipe

Granular bedding material

Invert of connecting pipe at least 50 mm above that of the main pipe

Joints between base and shaft and between shaft components to be fitted with watertight seals

Joint to be as close as possible to face of chamber to permit satisfactory joint and subsequent movement

Not to scale

Plastic chambers and rings shall comply with Clause E2.31

Sited in domestic gardens

Mortar bedding and haunching to cover and frame to Clause E6.7

150 mm deep concrete collar

Temporarily cap shaft during construction

Flexible seal

Compacted granular bed (type 20/5 or single size stone max 20 mm)

Cover complying with Clause E2.32

If distance from cover level to soffit of pipe is > 1m, access opening shall be restricted to 350 mm diameter or 300 mm x 300 mm

Minimum internal dimensions 450 mm x 450 mm

Sited in highway

Mortar bedding and haunching to cover and frame to Clause E6.7

Temporarily cap shaft during construction

Flexible seal

Granular bed or GEN3 complying with E4.1 and BRE Special Digest 1

Cover complying with Clause E2.32

Topsoil

If distance from cover level to soffit of pipe is > 1m, access opening shall be restricted to 350 mm diameter or 300 mm x 300 mm

Minimum internal dimensions 450 mm x 450 mm

Note: Where the access chamber is in the highway (including any footway), the highway authority can have specific requirements.

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2. Do not scale
3. Refer to all other Project Drawings and supporting notes.
4. All adoptable drainage works to be constructed as detailed in Design and Construction Guidance or as stipulated in the Water Utilities Memorandum.
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 results reported to Engineer.
7. The Contractor is responsible for maintaining continuity of flow for all existing sewers within the site boundary and limit of work for the duration of the project.
8. All drainage runworks to comply with BS EN124, and be stamped with BS Kitemark. Cover to suit loading as follows:
 - Carriageways and Roads - E600/D400
 - Driveways and Verges - C250
 - Footways and Pedestrian Areas - B125
 - Garages/Landscaping - A15
9. All sewer pipes up to, and including 225mm are to be vitrified clay BS EN285. 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 adopted to BS EN1049.
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 5 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 (car-parks) shall be less than 1200mm of cover shall be excess in concrete bed and surround with associated movement joints. Drainage laid beneath paths, footways and pedestrian areas will be less than 900mm of cover shall be similarly treated.
14. Chambers with guarding pipes greater than 600mm diameter shall be fitted with output 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 drainage shall be a minimum diameter pipe of 150mm (150) and to be surrounded by a minimum of 150mm of grade 8/10 concrete over its full length (which should not exceed 15cm) and its connection to the carrier system.
17. All sewers to be abandoned must be surveyed to identify any lateral connections that are still live with any find to be reported to the Engineer.
18. 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 MHC Standards Chapter 5.3 and BS5930.
19. All gullies connected direct to drains to be roddable.
20. 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.
21. Gullies within and adjacent to area of site works to be suction cleaned at commencement and completion of works.

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

P3	08.24	Figures B12, B18 & B19 added & notes updated	AS	SM
P2	06.24	Minor adjustments to gully detail to reflect WBC standard detail requirements	SM	LC
P1	03.24	First Issue	LC	SM
Rev	Date	Description	Drawn	Checked

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UNIVERSITY OF READING

Project
THAMES VALLEY SCIENCE PARK
PRIMARY INFRASTRUCTURE

Title
NHM ACCESS ROAD
DRAINAGE CONSTRUCTION
DETAILS SHEET 2

Status

Scale AS SHN @ A1	Date MAR 2024	Drawn LC	Checked SM
Drawing No HD065-552			Revision P3