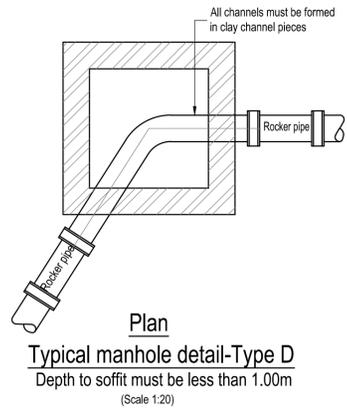
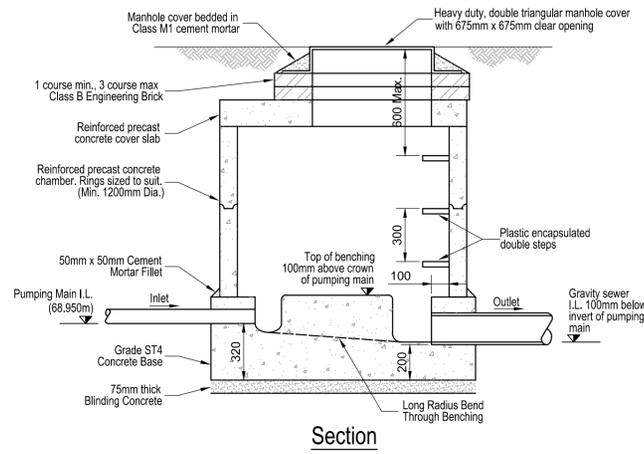


Section

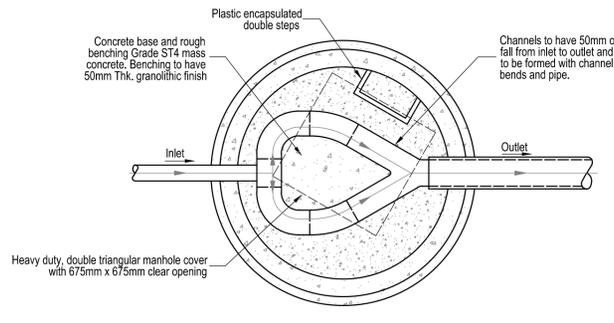


Plan

Typical manhole detail-Type D
Depth to soffit must be less than 1.00m
(Scale 1:20)

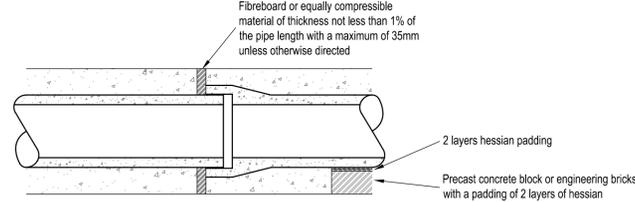


Section

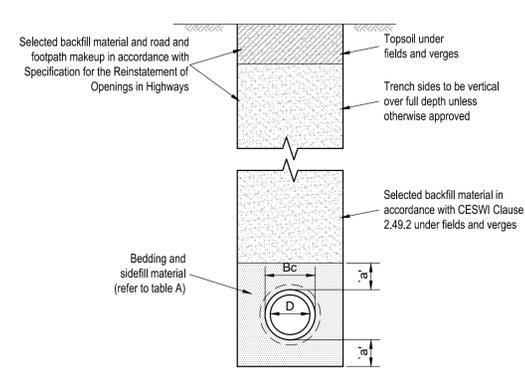


Plan

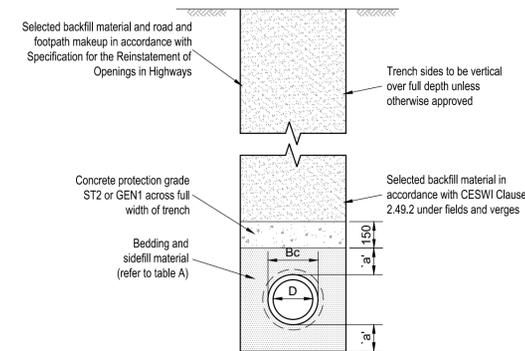
Break Pressure Chamber
(Scale 1:20)



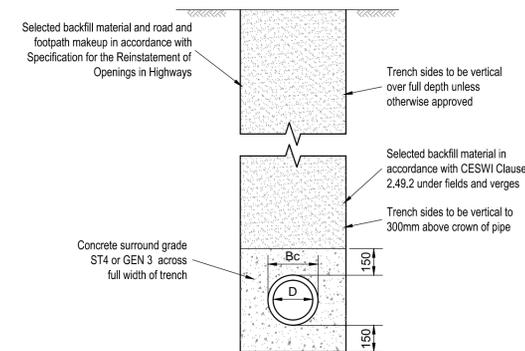
Joint in concrete support to pipe
(Scale 1:20)



Class 'S' Bedding
(Bedding factor 2.5)
(Scale 1:20)



Class 'S' Bedding with concrete protection slab
(Bedding factor 2.5)
(Scale 1:20)



Class 'Z' Bedding
(Concrete surround to pipe)
(Scale 1:20)

Pipe bedding notes:

- Pipelines to be constructed in accordance with series 2.3.4, and 5 of the Sixth Edition of the Civil Engineering Specification for the Water Industry.
- Preparation of the trench bottom or surface of the bed shall be completed for at least one full pipe length in advance of pipe laying, except where another arrangement is approved.
- No bedding material shall be placed in trenches containing water.
- Where the trench formation is in ground that, in the opinion of the Engineer, is unsuitable to afford proper support to pipes, either
 - the trench shall be excavated down to solid ground and the extra depth shall be refilled with Grade ST2 or GEN1 concrete to Clause 2.20, granular bedding material to Table A, gravel or broken stone, well compacted to form an even bed.
 - OR
 - the pipes shall be supported by a geotextile system, piles or such other means as directed
- Where granular bedding is to be used, stones, bricks or similar materials shall not be used below or against the pipes to locate them to level and line. Sufficient infill materials shall be placed around the barrels of pipes to prevent movement.
- Where required to comply with testing sewers and pressure pipelines the method of haunching and surrounding pipes shall be modified to leave joints exposed.
- Materials in bedding, haunching and surrounds to pipes shall be compacted in layers not exceeding 150mm thick before compaction.
- Where material is to be placed, compaction of material shall proceed equally on sides of the pipe.
- During the placing of bedding, haunching and surround material temporary side supports and sheeting shall be removed progressively except where directed to be left in and the full width of the trench shall be refilled with bedding, haunching and surround. Care should be taken to fill all spaces left by withdrawn sheeting and framing.
- Backfilling of trenches in roads, verges and where required by the Contract, above 300mm over the crown of the pipe backfill material shall be deposited in layers compacted as specified in the New Roads & Street Works Act 1991 and its Code of Practice entitled Specification for the Reinstatement of Openings in Highways, June 1992.
- The material excavated in forming pipe trenches shall if unsuitable as backfill in accordance with CESWI Clause 2.49.2 be replaced with selected fill. Suitable material shall be set aside and protected for use as backfill.
- If the contractor allows excavated material to become unsuitable for use in backfilling he shall remove it from the site and replace it with material free from vegetable matter, building rubbish, frozen soil, material susceptible to combustion, clay lumps and stones retained on 75mm sieve and 37.5 sieve respectively.
- In all cases the recommendations, requirements and specifications of the pipe manufacturer shall be met.
- Dimension 'a':
 - In rock or material containing hardspots, sleeve jointed pipes shall have a minimum of 150mm or $\frac{1}{2}$ Bc whichever is the greater, under barrels and not less than 150mm under sockets.
 - In uniform soils, sleeve jointed pipes shall have a minimum of 50mm or $\frac{1}{4}$ Bc whichever is the greater, for socketed pipes a minimum of 100mm or $\frac{1}{2}$ Bc, whichever is the greater under barrels and not less than 50mm under sockets.
 - Bc = outside diameter of socket

Notes on concrete bedding, haunching and surround:

- Where concrete bedding, haunching or surround is used, backfilling of the trench shall not be commenced until the concrete has reached a strength of 15N/mm².
- Before placing concrete, pipes shall be supported near joints on a precast concrete block or engineering bricks with a padding of 2 layers of hessian based damp proof course or material of similar yield between the barrel of the pipe and supporting block, the surface of the support shall be perfectly smooth for at least 75mm x 75mm under the pipe, and the size of the block shall be as required by the contract.
- Concreting of the bedding, haunching or surrounds shall not be done until the pipes have been jointed and inspected. The concrete shall be vibrated into place under the pipe and shall be in full contact with the underside of the barrel of the pipe throughout its length. The concrete shall be placed in one operation and shall be worked to produce a homogeneous mass. There shall be no horizontal construction joint in the concrete below the level of half pipe, the pipe shall be anchored carefully against flotation.
- Concrete bedding, haunching or surrounding pipes shall be discontinuous at flexible pipe joints.
- Plastic pipes shall be wrapped in polythene sheet or roofing felt with a minimum thickness of 2mm before being haunched or anchored in concrete.

Table A

Pipe nominal size (mm)	Nominal max. particle size (mm)	Maximum CF value for acceptability	Materials
100	10	0.15	10mm nominal single size

Table B: Concrete Specifications to BS8500-1:2002 and BS EN 206-1:2000

	Site concrete	Mass concrete
Standardised prescribed concrete	Grade ST2	Grade ST4
Indicative 28 day strength	8/10Nmm ²	16/20Nmm ²
Aggregate size	20mm	20mm
Designated concrete	Grade GEN1	Grade GEN3
Indicative 28 day strength	8/10Nmm ²	16/20Nmm ²
Aggregate size	20mm	20mm

CLIENT



PROJECT TITLE

M8 Baillieston to Newhouse

ENGINEER

mouchel FAIRHURST

IN ASSOCIATION WITH



DRAWING TITLE

Accommodation Works
[REDACTED]

SCALE AT A1
As Noted

DRAWING NO
M8MFJV/AW/302

REV
-

[REDACTED]