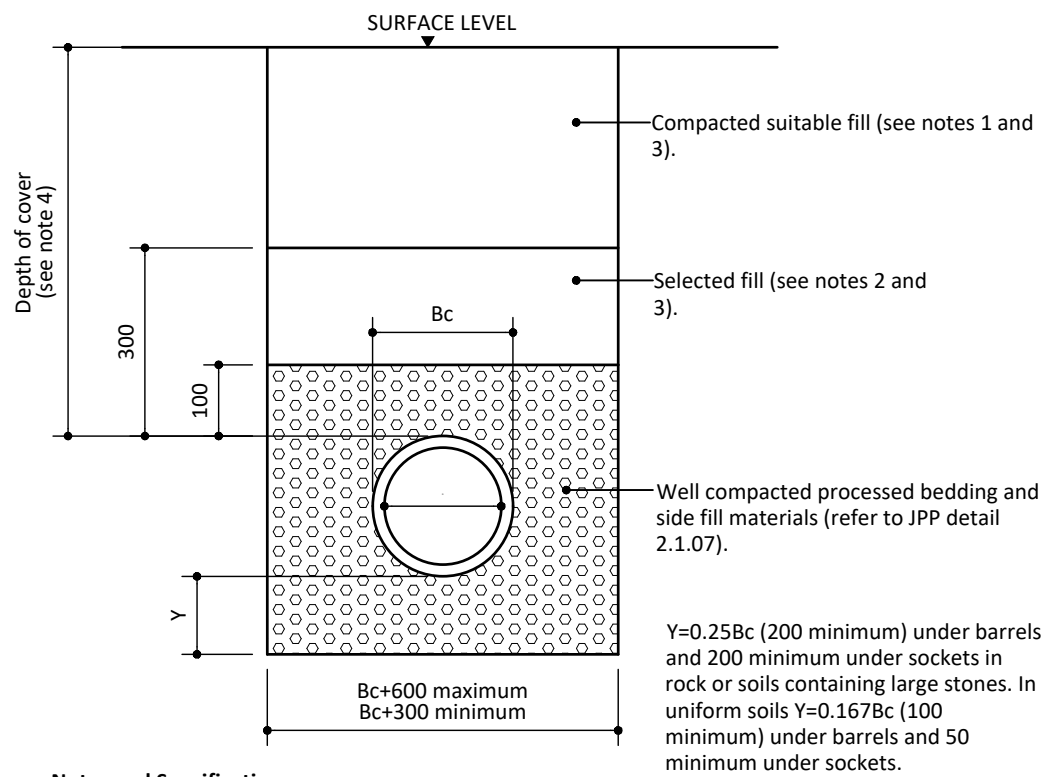
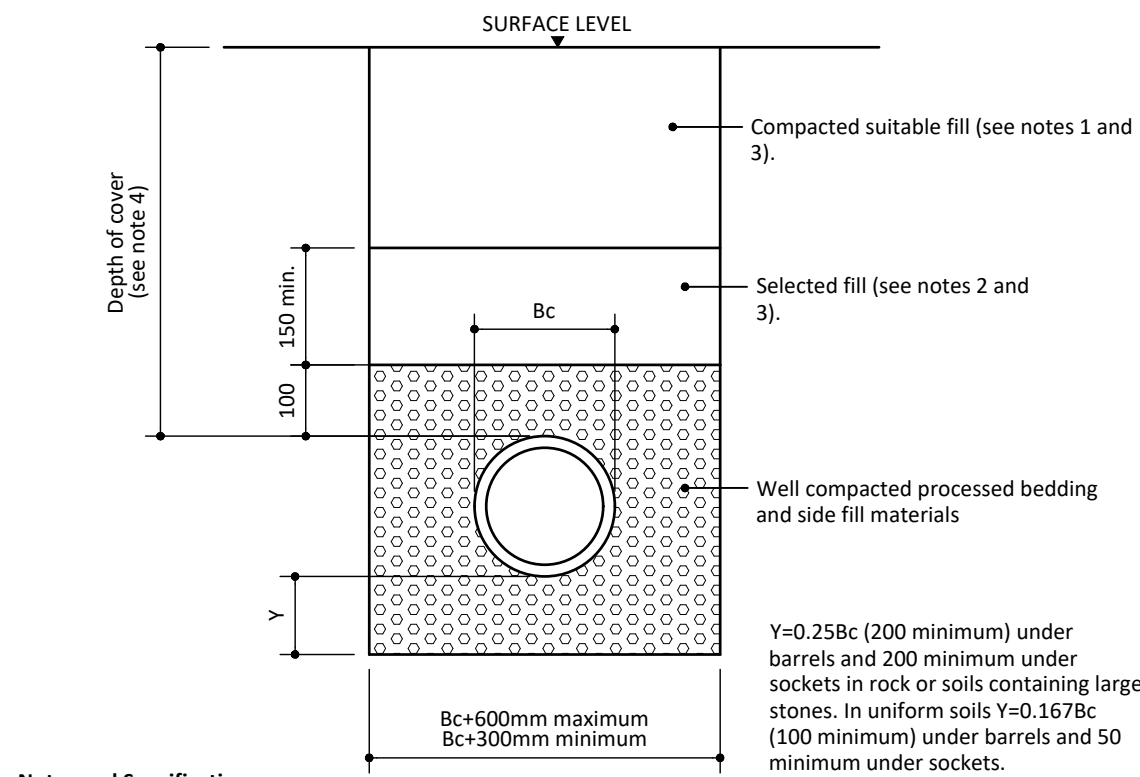




Notes and Specification

- Suitable fills shall be capable of accepting compaction plant subject to the Engineer's approval and shall exclude boulders, lumps of concrete, bricks, timber and vegetable matter.
- Selected fill shall be readily compatible material free from roots, organic material, building material, and shall be in an unfrozen condition. Selected fill shall exclude clay lumps exceeding 25mm size. Selected fill shall be carefully compacted around and above the pipe, taking care not to damage the pipe.
- Where the pipe is installed in areas which are paved or future settlement of back fills is not acceptable then back filling of the trench shall be carried out using type 1 sub-base to Highways Agency specification for Highway Works compacted to the same specifications.
- Minimum cover:
Cover shall be greater than:
2000mm in areas subject to heavy construction plant.
1000mm in areas subject to normal construction traffic.
1200mm to finished level of new main road pavements.
600mm in landscape areas, foot ways, gardens or fields
Otherwise use class Z bedding and surround.
- Flexible pipes shall be unplasticised UPVC to BS EN 13598
- Construction, subsequent testing, operation and maintenance shall be carried out in accordance with BS EN 752. Sewers to be adopted by water companies shall be installed in accordance with the current edition of 'Sewers for Adoption' produced by the Water Services Association. Sewers to be adopted by highway authorities shall be installed in accordance with the authority's specification.
- Workmanship shall be in accordance with BS 8000 - 14:1989

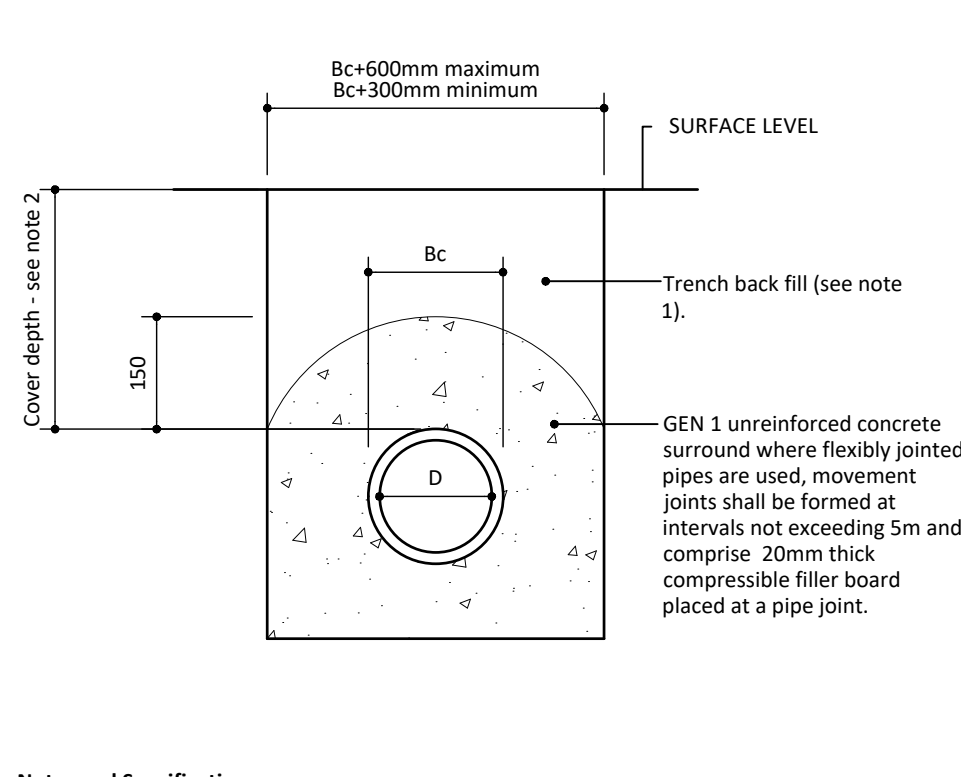
Flexible carrier drain, Class S bedding, surround and sidefill



Notes and Specification

- Suitable fills shall be capable of accepting compaction plant subject to the Engineer's approval and shall exclude boulders, lumps of concrete, bricks, timber and vegetable matter.
- Selected fill shall be readily compatible material free from roots, organic material, building material, and shall be in an unfrozen condition. Selected fill shall exclude clay lumps exceeding 25mm size. Selected fill shall be carefully compacted around and above the pipe, taking care not to damage the pipe.
- Where the pipe is installed in areas which are paved or future settlement of back fills is not acceptable then back filling of the trench shall be carried out using type 1 sub-base to Highways Agency specification for Highway Works compacted to the same specifications.
- Minimum cover:
Cover shall be greater than:
2000mm in areas subject to heavy construction plant.
1000mm in areas subject to normal construction traffic.
1200mm to finished level of new main road pavements.
600mm in landscape areas, foot ways, gardens or fields
Otherwise use class Z bedding and surround or bridging slab if drainage is to be adopted by a Water Company.
- Rigid pipes shall be:
(i) Clay pipes with min FN of 40 to BS EN 295 and BS65.
(ii) Concrete pipes to BS 5911 and BS EN 1916.
(iii) Flexible pipes shall be unplasticised UPVC to BS EN 13598.
Concrete pipes shall not be used for foul sewers unless otherwise stated.
- Construction, subsequent testing, operation and maintenance shall be carried out in accordance with BS EN 752. Sewers to be adopted by water companies shall be installed in accordance with the current edition of 'Sewers for Adoption' produced by the Water Services Association. Sewers to be adopted by highway authorities shall be installed in accordance with the authority's specification.
- Workmanship shall be in accordance with BS 8000 - 14:1989

Rigid carrier drain - Class S bedding, sidefill and backfill



Notes and Specification

- Trench excavation shall be back filled as follows:
a) Outside road pavements or areas where surface settlement cannot be accepted, back filling shall be carried out using suitable fills. Suitable fills shall be capable of accepting compaction plant subject to the Engineer's approval and shall exclude boulders, lumps of concrete, bricks, timber and vegetable matter.
b) In areas below road pavements (or where surface settlement cannot be accepted)
(i) Where soffit of pipe is less than 0.5m below formation, back fill with GEN 0 unreinforced concrete.
(ii) Where soffit of pipe is between 0.5m and 1.0m below formation, back fill with Type 1 sub-base.
- Cover to pipes shall be:
2000mm or less in areas subject to heavy construction plant.
1000mm or less in areas subject to normal construction traffic.
1200mm or less to finished level of new main road pavements.
600mm or less in landscape areas, foot ways, gardens or fields
Otherwise use other specified surround and back fill details.
- Pipes, unless otherwise stated, shall be:
(i) Clay pipes with min FN of 40 to BS EN 295 and BS65
(ii) Concrete pipes to BS 5911 and BS EN 1916 or,
(iii) Flexible pipes shall be unplasticised UPVC to BS EN 13598.
Concrete pipes shall not be used for foul sewers unless otherwise stated.
- Construction, subsequent testing, operation and maintenance shall be carried out in accordance with BS EN 752. Sewers to be adopted by water companies shall be installed in accordance with the current edition of 'Sewers for Adoption' produced by the Water Services Association. Sewers to be adopted by highway authorities shall be installed in accordance with the authority's specification.
- Back filling shall only be undertaken when the concrete bedding and surround has obtained sufficient strength to accommodate back filling operations.
- This detail shall not be used where the drainage is to be adopted by Water companies.
- Workmanship shall be in accordance with BS 8000 - 14: 1989

Carrier drain - Class Z bedding, surround and backfill

Notes and Specification

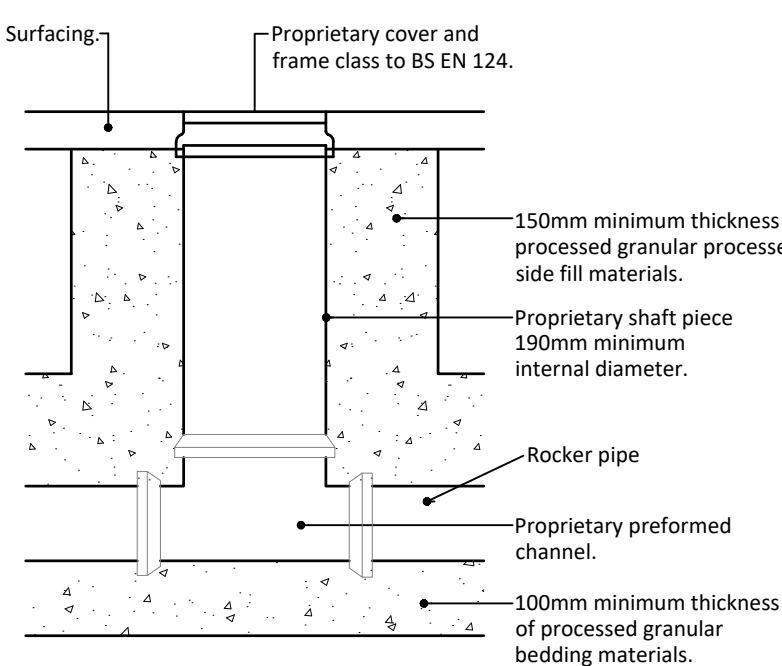
- Processed granular bedding and side fill materials shall include aggregates to BS EN 12620 + A1 and lightweight aggregates to BS EN 13055-1 and shall be graded as defined in the following tables:

Table 1

Pipe Nominal Size (mm)	Maximum Partial Size (mm)	Class of Bedding	Maximum CF Value	Material
100	10	S B	0.15 0.30	10mm nominal single size
over 100 to 150	15	S B	0.15 0.30	10 or 14mm nominal single size or 14 to 5mm graded.
over 150 to 300	20	S B	0.15 0.30	10, 14 or 20mm nominal single size or 14 to 5mm graded or 20mm to 5mm graded.
over 300 to 550	20	S B	0.15 0.30	14 or 20mm nominal single size or 14 to 5mm graded or 20mm to 5mm graded.
over 550	40	S B	0.15 0.30	14, 20 or 40mm nominal single sized crushed rock or 14 to 5mm graded or 20mm to 5mm graded or 40 to 5mm graded.

- The sulphate content of bedding and side fill materials shall not be greater than 0.3% as sulphur trioxide.
- The above specification has been produced based on the Water Industry specification publication No. 4-08-01 (issue 4) February 1994.
- Compaction factor (CF) shall be determined in accordance with water industry publication No 4-08-02 (issue 1) February 1994 - appendix B.

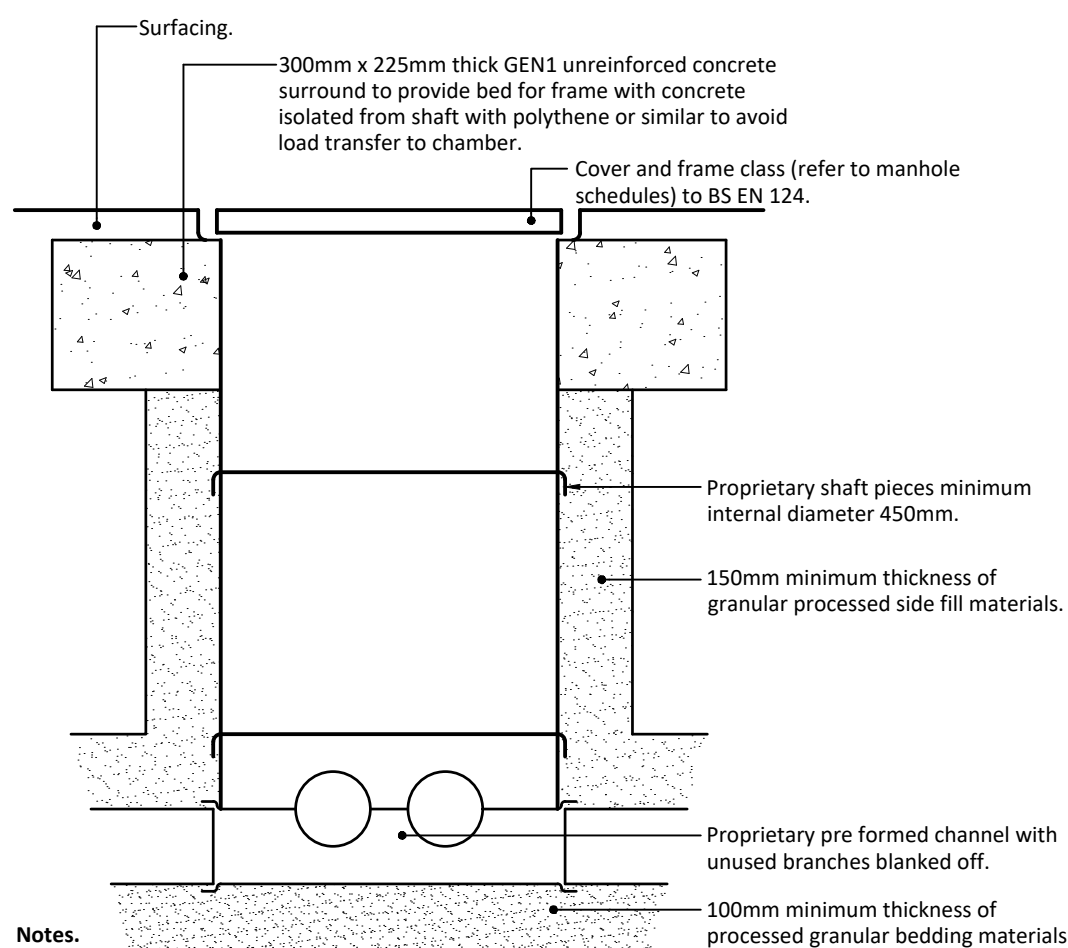
Specification for bedding and sidefill materials for rigid pipes (Class S & B bedding)



Notes

- Plastic inspection chambers shall be to BS 7158:1989.
 - Notwithstanding the above detail, proprietary shallow chambers shall be installed strictly in accordance with manufacturers instructions.
 - Refer to manufacturers details for strengthening details when used in areas subject vehicular loads.
 - Refer to JPP specification for processed granular bedding and side fill materials.
- Limitation of Use**
- Chamber is unsuitable for adoption by water companies.
 - Maximum inlet and outlet size is typically 110mm.
 - Maximum depth to invert is 600mm.
 - Chamber shall not be used in areas subject to vehicular loads unless agreed with the manufacturer.
 - Access is restricted to visual and depth limited by ability to manipulate a stopper at arms length.

190Ø proprietary plastic inspection chamber



Notes.

- Plastic inspection chambers shall be to BS7158: 1989.
- Vitrified clay inspection chambers shall be to BS65: 1991 and BS EN 295-6: 1996.
- Proprietary inspection chambers shall be installed strictly in accordance with manufacturers instructions.
- Refer to JPP specification for granular processed bedding and side fill materials.

Limitations of use.

- Chamber can be used in areas subject to light vehicular loading.
- Chamber is unsuitable for adoption by water companies.
- Chamber as detailed is not suitable for internal installation.
- Maximum inlet and outlet size is typically 150mm.
- Maximum depth to invert 4000mm.
- Access for inspection and remotely operated equipment only.

Proprietary plastic inspector chamber.

Notes and specification

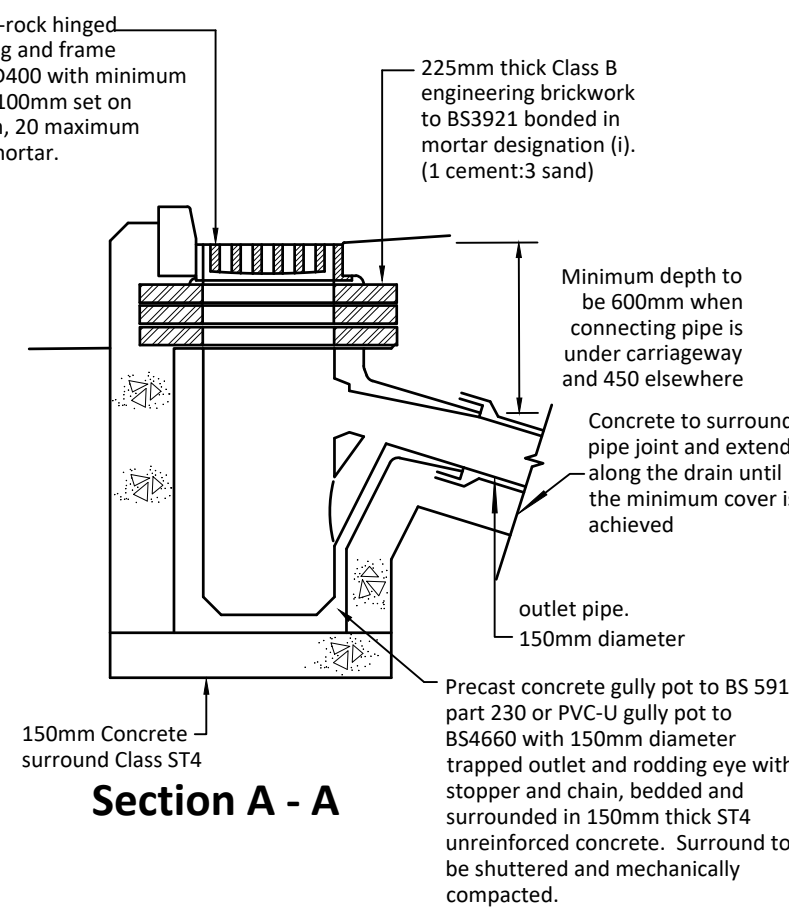
- Processed granular bedding and side fill materials shall include aggregates to BS EN 12620 + A1 and lightweight aggregates to BS EN 13055-1 and shall be graded as defined in the following tables:

Table 1

Pipe Nominal Size (mm)	Maximum Partial Size (mm)	Maximum CF Value	Material
100	10	0.15	10mm nominal single size
over 100 to 150	15	0.15	10 or 14mm nominal single size or 14 to 5mm graded.
over 150 to 300	20	0.15	10, 14 or 20mm nominal single size or 14 to 5mm graded or 20mm to 5mm graded.
over 300 to 550	20	0.15	14 or 20mm nominal single size or 14 to 5mm graded or 20mm to 5mm graded.
over 550	40	0.15	14, 20 or 40mm nominal single size or 14 to 5mm graded or 20mm to 5mm graded or 40 to 5mm graded.

- The sulphate content of bedding and side fill materials shall not be greater than 0.3% as sulphur trioxide.
- The above specification has been produced based on the Water Industry specification publication No. 4-08-01 (issue 4) February 1994.
- Compaction factor (CF) shall be determined in accordance with the water industry publication No 4-08-02 (issue 1) February 1994 - appendix B.

Specification for bedding and sidefill materials for flexible pipes (Class S & B bedding)

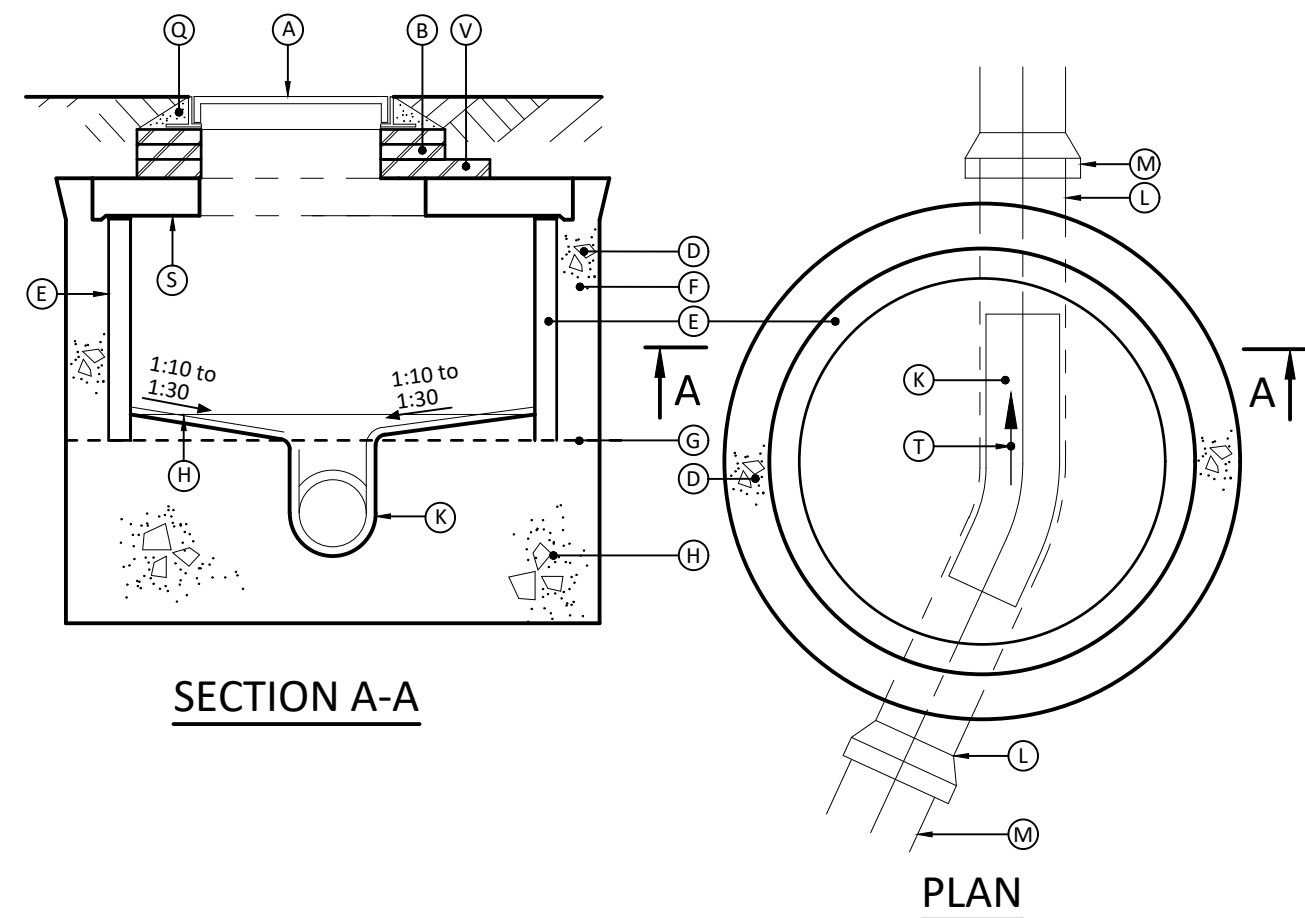


Section A - A

Private Gully Detail

General Notes

- All dimensions are in metres unless otherwise stated.
- All levels are in metres.
- This drawing is to be read in conjunction with all relevant Engineers and Architect's drawings, Specifications, Reports and Engineering Details.
- Do not scale from this drawing.



SECTION A-A

PLAN

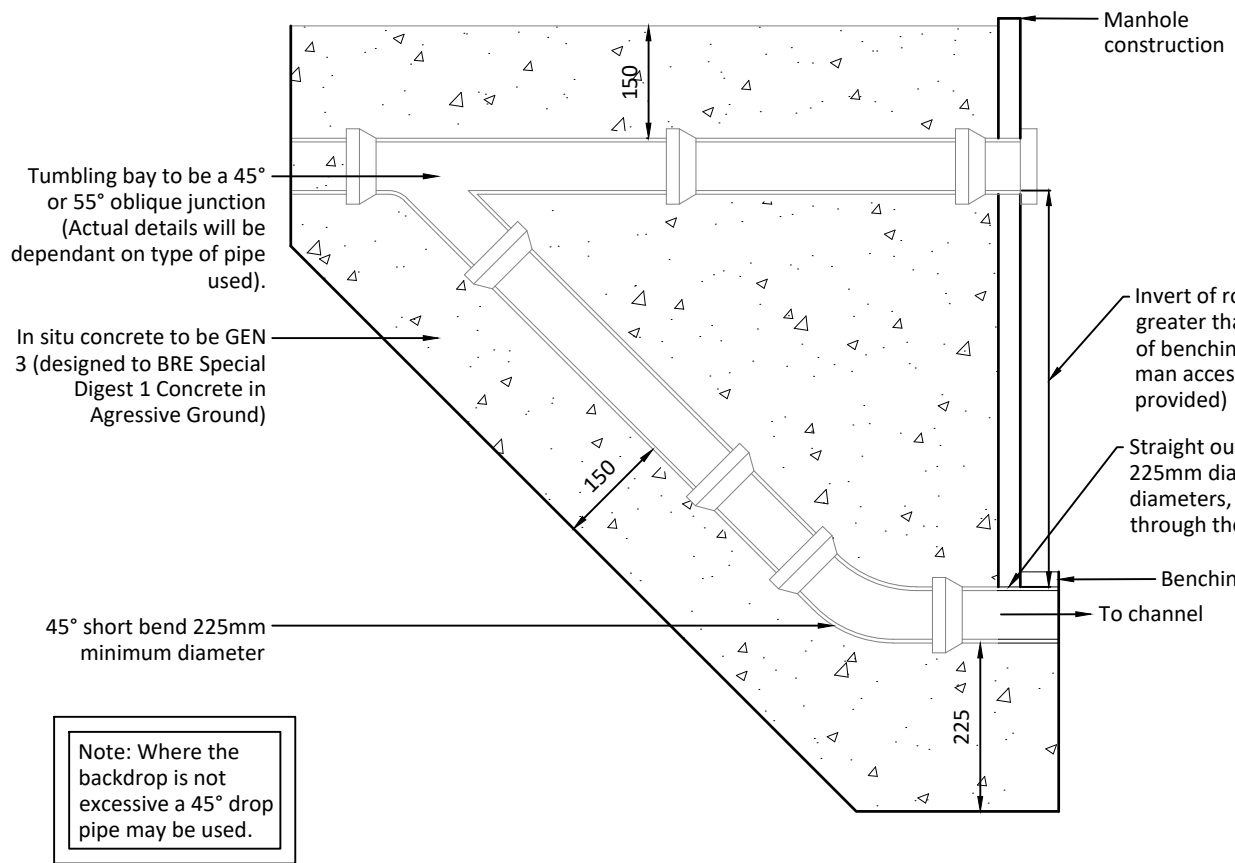
SHAFT DIAMETERS	
Dia of largest pipe in MH (mm)	Int. Dia of MH (mm)
Less than 375	1200
375 to 700	1500
750 to 900	1800

For every two additional incoming pipes, the diameter of the manhole shall be increased by 150mm.

NOTE: All in situ concrete shall be sulphate resisting unless agreed otherwise

ROCKER PIPES	
Pipe diameter (mm)	Effective Length (mm)
150 to 600	600
over 600 to 750	1000
over 750	1250

Precast concrete manhole type E Depth to soffit Up to 1.5m



External ramped backdrop



Northampton
4 Ironstone Way, Brixworth,
Northampton NN6 9UD
T: 01604 781811



Manchester
3rd Floor, 82 King Street,
Manchester, M2 4WQ,
T: 0161 6822927



Milton Keynes
Suite 25 Unford Forum, Rockingham Drive,
Unford Wood, Milton Keynes, MK14 6L3
T: 01908 889433

E: mail@jppuk.net
W: jppuk.net

- Infrastructure Design
- Structural Engineering
- Planning Services
- Geotechnical & Environmental
- Surveying
- Professional Advice

Drawn By:	RF	Client	Geda Construction
Chkd By:	TH	Project	Housing Development
Scale @ A1:	NTS		Crease Drove
Date:	September 2020	Title	Private Drainage Construction Details
Status:	CONSTRUCTION		
Project No.:	11557	Drawing No:	126
		Rev:	A

