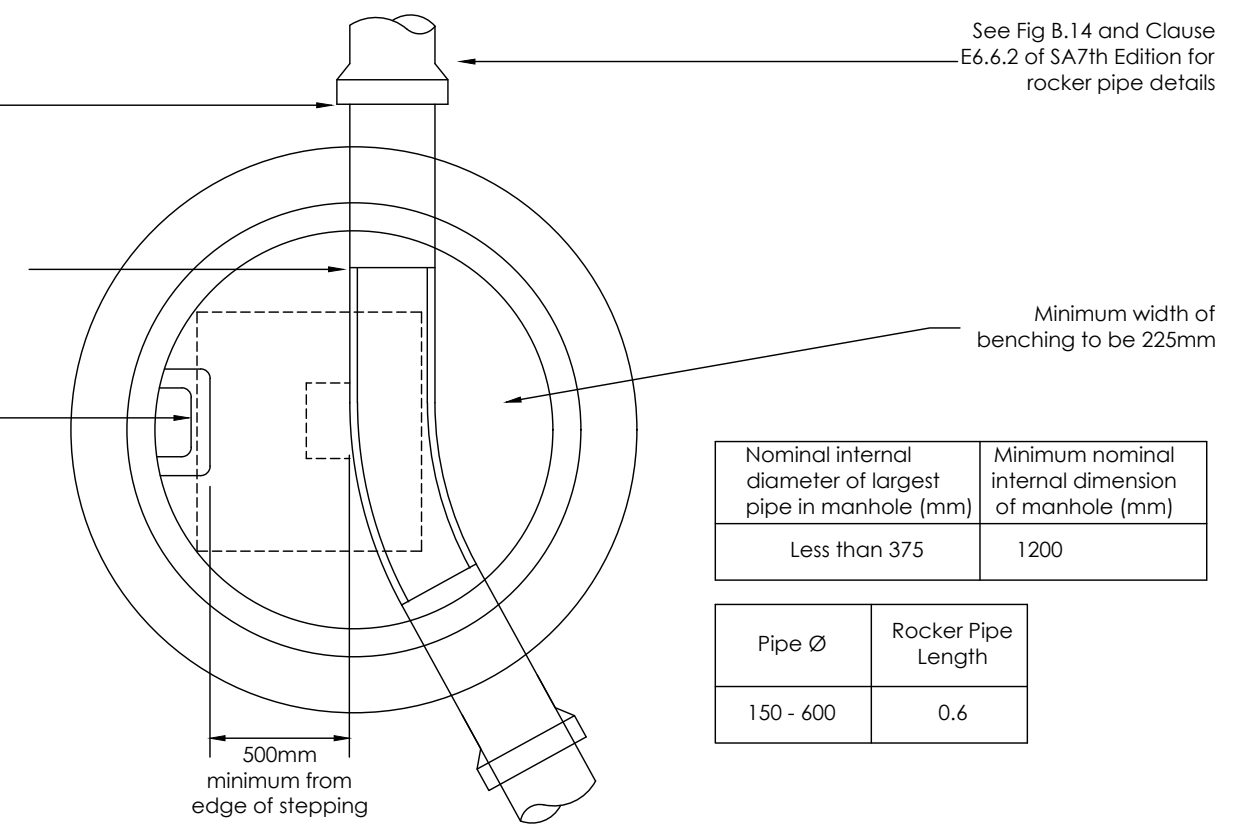


1. All private drainage must comply with the current edition of DTLR Building Regulations approved document H.
2. Drainage design to be to BS EN 752:2008.
3. If a detailed construction of the drainage design must be discussed with the Engineer. If changes are made the Engineer must be supplied with as-constructed information to enable drawings to be suitably updated for the Health & Safety file.
4. Before works commence the contractor should satisfy themselves that the details of the drainage system to be connected into are correct i.e. cover, invert levels, line, depth and type of pipe.
5. Private access chambers are to be appropriate to the depths and loadings as follows :
Depth to invert Access size
up to 1.200mm 300mmØ
up to 1.200mm Inspection chamber 475mmØ (P.P.C.)
 600mmx450mm Brick/P.C. Units
1200 to 1500mm P.C.C. ring manhole 1050mmØ
1500 to 3000mm P.C.C. ring manhole 1200mmØ
 (ring diameter increased if sewer greater than 475mmØ)
6. All manholes shall have a 1.2mØ circular cover at the face of the structure and a "tocker pipe" which should not exceed 600mm in length.
7. Pipe materials shall be:-
Unfritted cloverleaf to BS EN 295
Cast iron to BS EN 545:2010
UPVC - BS EN 141 PP - BS EN 1852
For private sewers less than 150mm or less cover bench depth
Access to manholes & inspection chambers at drainage areas then they shall have concrete surround and/or slab protection. Slab protection to be 100mm thick D25 concrete slab with mesh reinforcement and a bearing of 150mm each side of the slab. Concrete surround to be 150mm D24 with flexible joints.
8. Trenches within 1.2m of load bearing walls should be founded to concrete to the level of the underside of the foundation. Where clearance is less than 150mm from the foundations the concrete should be taken at least up to a 45 degree line from the bottom of the foundations. Alternatively, the foundations could be taken to a deeper level to avoid undercutting by the drainage trench (check with the Engineer where this is required).
9. Pipe bed and surround to be granular Type S unless otherwise noted.
10. Drains passing through walls or foundations should be either on arched or infilled opening to give 50mm clearance around the pipe. The opening shall be masked both sides with a rigid non perishable material, or a sheet of 150mm thick rigid pipe may be built in solid if it is connected within 150mm to rocker pipes (max 600mm) with flexible joints.
11. Drainage under buildings should be bedded and surrounded by at least 150mm of granular material. Unless otherwise stated on the drawings or in the schedules then all private drainage shall be 100mmØ.
12. All road gully connections to be 150mmØ and surrounded by at least 250mm of granular material.
13. New connections to existing public sewers should be carried in accordance with appropriate Section 106 (Water Industry Act) 'connection consent' and also under the supervision of a suitably qualified person.
14. Covers shall be to B.S. EN 124:1994.
Class A15 - areas where only pedestrians have access.
Class B125 - for use in car parks and pedestrian areas, where the traffic is likely to be light.
Class C250 - areas where not extending more than 500mm from kerb face into the carriageway
Class D400 - areas where cars and lorries have access including car parks and roads.
Cover and frames to be 150mm deep except residential cut-de-sacs.
15. It is recommended that drainage works should be carried out from the outfall partly where the outfall depth is relatively shallow. If it is not possible to commence works from the outfall the contractor should satisfy themselves that the invert, line, position and type of existing drains are correct.
16. Drainage works should be protected from possible damage by construction traffic loadings during the construction period. Protection may be provided by barriers. Materials should be stored over 5 storeys and drains over 5 storeys. Buildings up to 3 storeys shall have a rest bench at the base of the soil sack 450mm min below the invert of the lowest incoming drain. Buildings over 3 storeys must be a minimum 100mm below the lowest incoming drain. Buildings over 5 storeys then the ground floor drainage connections should have their own connections to the external drain.

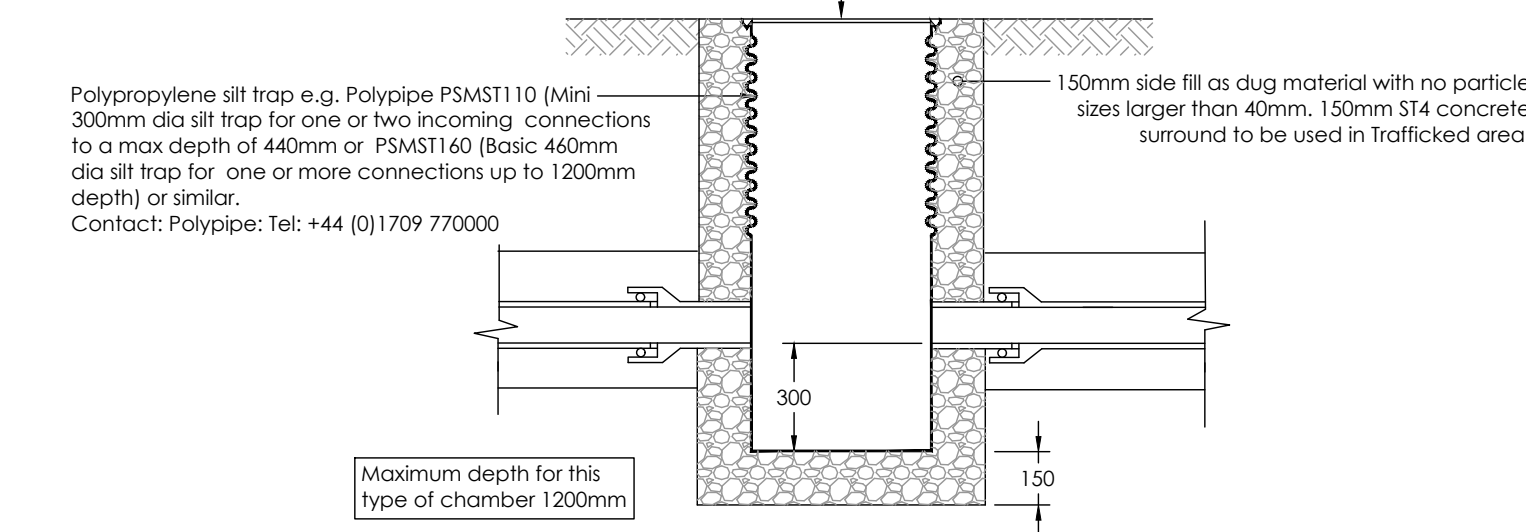


Nominal internal diameter of largest pipe in manhole (mm)	Minimum nominal internal dimension of manhole (mm)
Less than 375	1200

Pipe Ø	Rocker Pipe Length
150 - 600	0.6



In buildings up to 3 storeys the rest bend at the base of the soil stack should be 450mm below the invert of the lowest incoming drain. In buildings over 3 storeys this should be increased to 750mm. In buildings over 5 storeys the ground floor drainage connections should have their own connections to the external drain.



Maximum depth for this type of chamber 1200mm

150mm min topsoil or as indicated on surface finishes drawing.

Suitable backfill (as dug) or hard-surfacing make up as required.

Infiltration geotextile wrap around 'crate' system e.g. Polypipe Permatuff PV23002 or similar

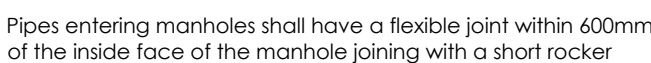
Inlet pipe from upstream silt trap/catchpit

Cellular storage system e.g. Wavin Aquacell Core-R or similar approved. Size 1000mm L x 500mm W x 400mm D (refer to drainage layout drawing for overall dimensions)

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Chamber Type	Internal Diameter	Max No Inlets	Max Depth
Polypropylene Mini Access Chamber (mac)	300	3	600
Polypropylene Inspection Chamber (PPIC)	475	5	1250

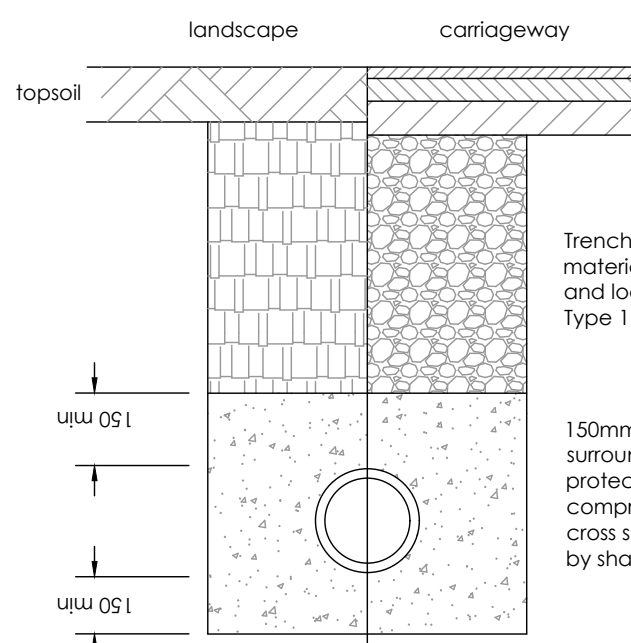


DEPTH	CHAMBER SIZE
up to 0.65m	300mm diameter
0.60–1.20m	450mm diameter
up to 1.2m to invert	600x450
1.2-2m	1200x750
	1050mm diameter up to 1.5m depth.
	1200mm diameter over 1.5m depth.

All 100mmØ pipework to be Marley Plastic or Supersleve laid in 150mm surround. If cover to pipe less than 1200mm in carriageway or 900mm in verges etc then bed and surround to be flexibly jointed concrete if cover is more 10mm pea shingle to be used. Concrete bed and surround also required if chambers are within the canopies of existing or proposed trees (mature height)

Technical drawing of a trench for a drainage channel. The drawing shows a cross-section of the trench with a concrete channel at the bottom. The trench is filled with 150mm side fill (dug material with no particles larger than 40mm) and 150mm ST4 concrete surround. A cover and frame are shown on top, with a note indicating they should suit loading conditions. Dimensions are given: 300mm for the channel depth and 150mm for the concrete surround thickness.

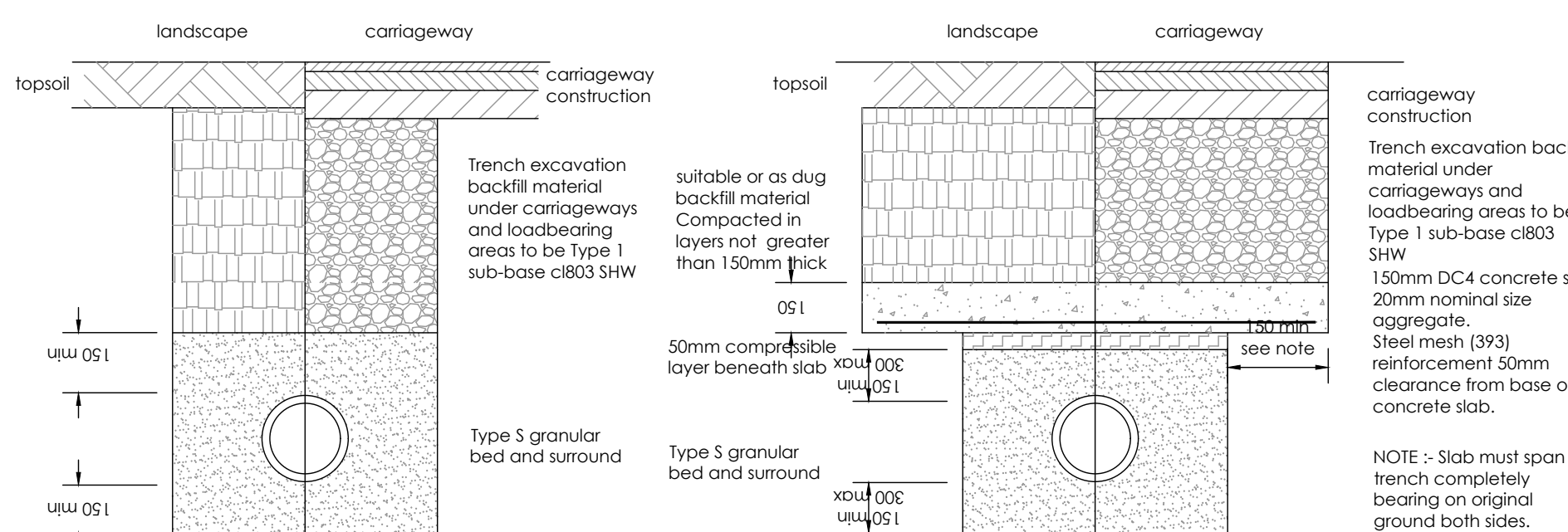
To be used where cover to pipe soffit is greater than 1200mm in vehicular areas and greater than 900mm in non-trafficked areas (ie footpaths, verges, etc)



To be used where cover to pipe soffit is less than 1200mm in vehicular areas and 900mm in non-trafficked areas (ie footpaths, verges, etc)



- Channel drainage to be class C (NW100) with slotted cast iron grating laid to manufacturers recommendations Units to be laid in 30m lengths falling to trapped drain gullies with 150mm connection to main surface water sewer Channels should be set 2-3mm below finished levels
- Ensure that when concreting, asphaltting or paving near channels they should be strutted for example by inserting gratings.



To be used where cover to pipe soffit is less than 1200mm in vehicular and 900mm in non-trafficked areas (ie footpaths, verges, etc)

Pipe nominal size (DN)	Pipe Bedding Requirement (mm)
100	10 nominal single size
over/100 150	10 or 14mm nominal single size or 10 to 14mm to 5mm graded
over/150 300	10, 14 or 20mm nominal single-size or 14mm to 5mm graded or 20mm to 5mm graded
over 300 to 550	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded
Grade 2	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded
over 550	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded

To be used where cover to pipe soffit is less than 1200mm in vehicular areas and 900mm in non-trafficked areas (ie footpaths, verges, etc)

- NOTES**
1. All dimensions and levels are in metres unless otherwise noted
 2. This drawing is to be read in conjunction with the relevant Architect/Engineer's drawings, specifications and CDM documentation
 3. This drawings has been produced electronically and may have been photo reduced or enlarged when copied. Work to figured dimensions only (DO NOT SCALE). All dimensions to be checked on site. Any errors or omissions to be reported to the engineer immediately.
 4. This drawing contains coloured lines / information that may not be clear if reproduced in black and white.
 5. Digital copies of this plan can only be considered accurate if supplied directly by Infrastructure CS Ltd.

P02	NJ	TST	Soakaway Detail added to drawing					28/10/20
P01	SNN	TST	Initial issue					12/10/20
REV	DRAWN	CHECK	REVISION COMMENTS					ISSUE DATE
DRAWING TITLE Typical Details - Drainage Details							SHEET NO. 1/1	
PROJECT Bairds Care Home Littlehampton Sussex								
CLIENT			 BRACKLEY					
			 Infrastruct CS Ltd					
SCALE @ A1 Not to Scale								
PROJECT NUMBER		PHASE		DATE		ENGINEER TST		
2868		S2		October 20		DRAFT SNN		
						APPROVED DJ		
PROJECT	ORIGIN	PHASE	LEVEL	TYPE	ROLE	DWG-NO REVISION		
BCH	ICS	01	XX	DR	C	010	002	