

- 1. All private drainage must comply with the current edition of DTLR Building Regulations approved document H
- 2. Where drainage is to be adopted it should meet with the requirements of Sewers for Adoption 7th edition.
- 3. Drainage design to be to BS EN 752-3 1996
- 4. Any intended changes to 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.
- 5. 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, condition and type of sewer.
- 6. Private access chambers are to be appropriate to the depths and loadings as follows:-

Depth to invert Access size Up to 600mm Mini access chamber 300mmØ Up to 1200mm Inspection chamber 475mm Ø (PPIC) 600mmx450mm Brick/P.C.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).

- 7. All manholes shall have a flexible joint within 150mm of the face of the structure and a "rocker pipe" which should not exceed 600mm in length.
- 8. Pipe materials shall be -Vitrified clayware to BS EN 295 Cast iron to BS EN 545:2010 UPVC - BS EN 1401 PP - BS EN 1852 Structure wall -BS EN 13476
- 9. For private sewers having 900mm or less cover beneath carriageways & hardstanding or 600mm in landscape areas then they shall have concrete surround or slab protection. Slab protection to be 100mm thick C20concrete slab with mesh reinforcement and a bearing of 150mm each side of the trench. Concrete surround to be 150mm C20 with flexible joints.
- 10. Trenches within 1.2m of load bearing walls should be filled with concrete at least to the underside of the foundation. Where the distance is more than 1.2m from the foundations the concrete should be taken at least up to a 45degree line from the bottom of the foundations. Alternatively, the foundations could be taken to a deeper level to avoid undermining by the drainage trench (check with the Engineer where this is required).
- 11. Pipe bed and surround to be granular Type S unless otherwise
- 12. Drains passing through walls or foundations should have either an arched or lintelled opening to give 50mm clearance around the pipe. The opening shall be masked both sides with a rigid non-perishable material, or alternatively a short length of pipe may be built in solid if it is connected within 150mm to rocker pipes (max 600mm long) with flexible joints.
- 13. Drainage under buildings should be bedded and surrounded by at least 100mm of granular material.
- 14. Unless otherwise stated on the drawings or in the schedules then all private drainage shall be 100mmØ.
- 15. All road gully connections to be 150mmØ and surrounded with 150mm C20 concrete surround.
- 16. Where schemes require soakaways they shall not be positioned closer than 5m from the nearest dwelling or structure. Where solution features can occur in the underlying strata such as chalk then this distance will need to be increased to 10m.
- 17. 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 the Water Authority.

18. Covers shall be to B.S. EN 124:1994 Class A15 - greas where only pedestrians have access. Class B125 - for use in car parks and pedestrian areas where occasional vehicular access is likely. Class C250 - areas where not extending more than 500mm from kerb face into the carriageway Class D400 - areas where cars and lorries have access

Cover and frames to be 150mm deep except residential cul-de-sacs 19. It is recommended that drainage works should be constructed from the outfall particularly where the outfall depth is relatively

including carriageways, hard shoulders.

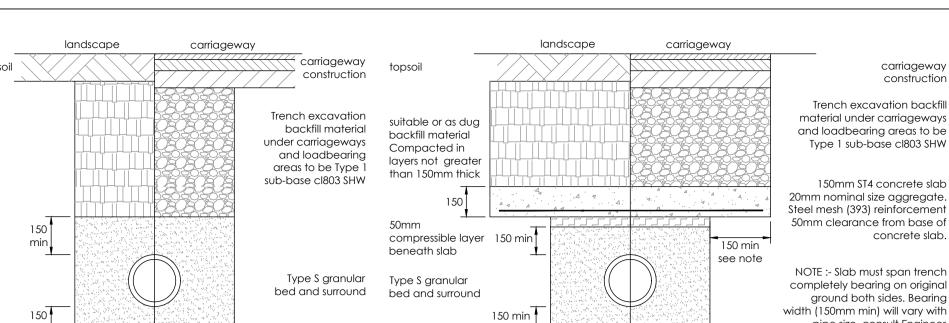
- shallow. If it is not possible to commence works from the outfall the contractor should satisfy themselves that the invert, line, position and type of existing outfall are correct. 20. Drainage works should be protected from possible damage by construction traffic loadings during the construction period. Protection may be provided by barriers. materials should not be
- stored over drainage works. 21. Buildings up to 3 storeys shall have a rest bend at the base of the soil stack 450mm min below the invert of the lowest incoming drain. Buildings over 3 storeys must be a minimum of 750mm below the lowest incoming drain. Buildings over 5 storeys

then the ground floor drainage connections should have their

sewers must be accurately located before piling takes place.

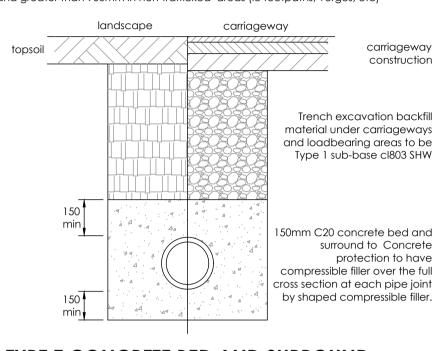
own connections to the external drain. 22. Where piling works are undertaken the positions of existing

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TYPE S GRANULAR SURROUND BED

o 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.)



TYPE Z CONCRETE BED AND SURROUND

300 150

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)

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)

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

GRANULAR BEDDING AND SIDEFILL MATERIAL GRADINGS

CONCRETE SLAB PROTECTION

- 675x675mm ductile iron cover

carriageway Mini access or construction connection PPIC chamber positioned off Trench excavation backfill Floor slab main drain run material under carriageways 450mm(min) for single and loadbearing areas to be dwelling and up to 3 Type 1 sub-base cl803 SHW Slow bend to suit 750mm (min) for depth of main Void multistorey >3 <5 storeys drain (max 45°) 5 storeys consult engineer 150mm ST4 concrete slab 20mm nominal size aggregate. Steel mesh (393) reinforcement Inspection chamber 50mm clearance from base of surround to be well intel opening to allow concrete slab. 90° rest bend Type S granular 50mm clearance around compacted backfill material pipe. Void to be sealed Where traffic loadings are bedded on bed and surround NOTE:- Slab must span trench expected such as driveways 150mm of ST4 with compressible sealant to prevent entry completely bearing on original and hardstanding then concrete ground both sides. Bearing of gas. Rigid non backfill shall be ST4 concrete and cover/frame to be perishable sheet material pipe size, consult Engineer bedded on concrete not to cover openings on 45° junction on chamber each side to prevent main drain run rodent infestation. Where chambers are positioned on 90°

MINI ACCESS

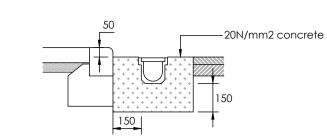
CHAMBER

POLYPROPYLENE INSPECTION **CHAMBER - PPIC**

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

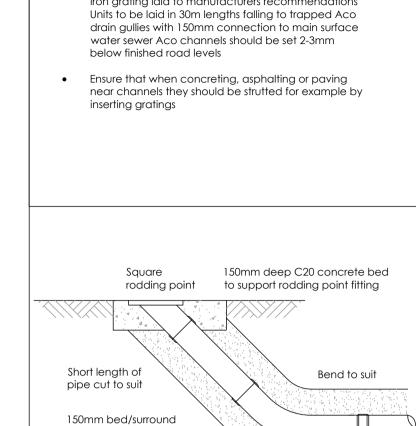
corners always use the main channel by fitting a 45° angle bend on the inlet and

- Bends up to a max 45° angle can be used on
- Heaviest flow should always be directed through the main channel
- Short steep connections should preferably be connected via a 45° inlet using a bend where necessary.
- In buildings up to 3 storey's 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 storey's this should be increased to 750mm. In buildings over 5 storey's the ground floor drainage connections should have their own connections to the external drain.



TYPICAL ACO DRAINAGE DETAIL

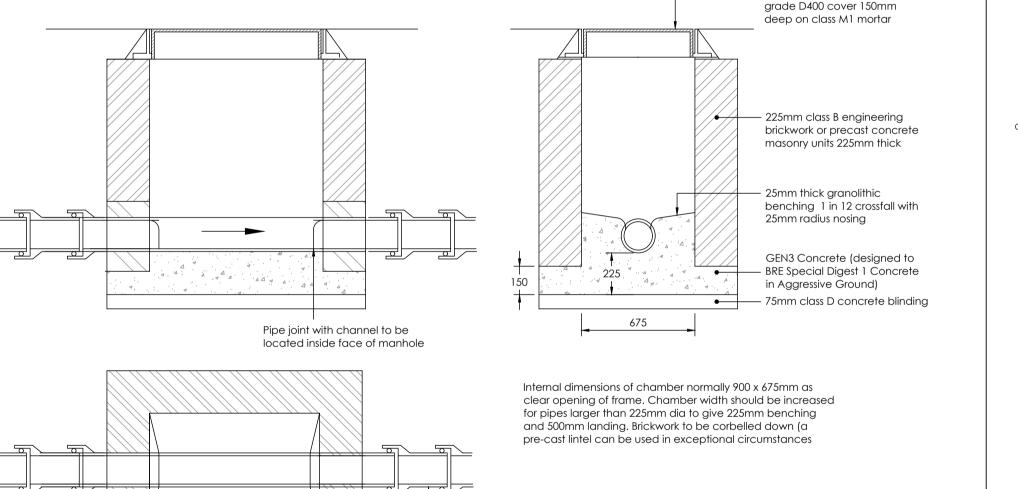
Aco drainage to be class C (NW100) with slotted cast iron grating laid to manufacturers recommendations water sewer Aco channels should be set 2-3mm



RODDING EYE INSTALLATION

concrete/aranular

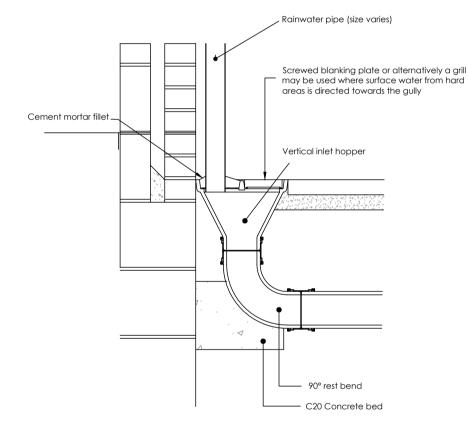
(dependant on depth)



Joint to be as close as possible to face of manhole

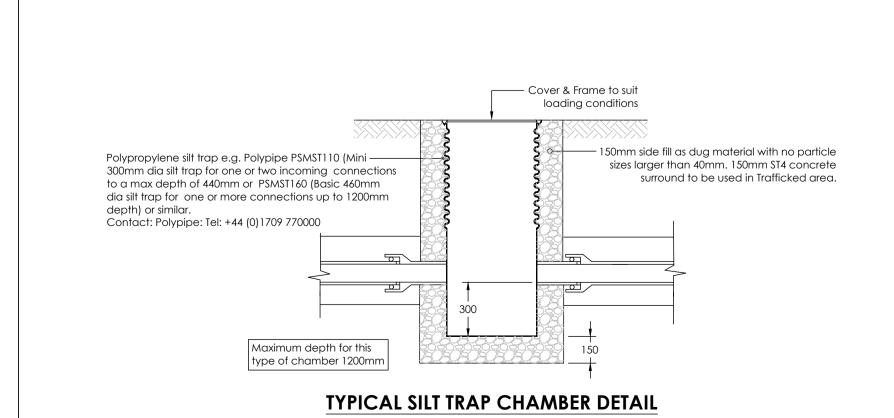
TYPICAL MANHOLE DETAIL - TYPE D (Should outfall manhole need replacing)

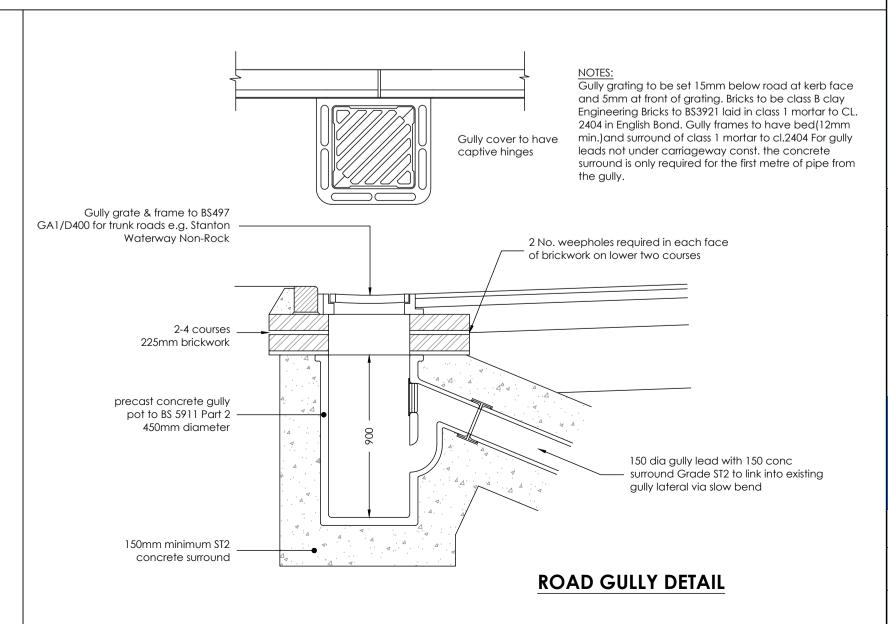
to permit satisfactory joint and movement

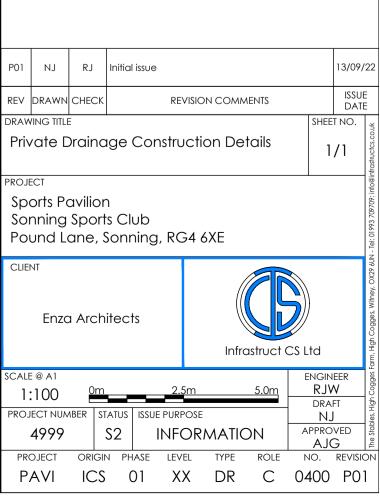


RAIN WATER PIPE WITH RODDING

ACCESS







. All dimensions and levels are in metres unless otherwise noted

3. This drawing has been produced electronically and may have

been photo reduced or enlarged when copied. Work to figured

dimensions only (DO NOT SCALE - EXCEPT FOR PLANNING PURPOSES)

All dimensions to be checked on site. Any errors or omissions to be

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. Digital copies of this plan can only be considered accurate if

. This drawing is to be read in conjunction with the relevant

Architect's/Engineer's drawings, specifications and CDM

reported to the engineer immediately.

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documentation