Type	Depth to invert from cover level	Min internal dimensions		Min clear opening size	
		Rectangular length and width	Circular diameter	Rectangular length and width	Circular diameter
Inspection chamber Shallow Deep	 0.6 or less 1.2 or less > 1.2	 225 x 100 450 x 450 450 x 450	 190 [b] 450 450	 - Min. 430 x 430 Max. 300 x 300[c]	 190[a] 430 Max 350[c]

NOTES:

a The clear opening may be reduced by 20mm in order to provide proper support for the cover and frame.

b Drains up to 150mm.

c A larger clear opening cover may be used in conjunction with a restricted access. The size is restricted for health and safety reasons to deter entry.

Type	Size of largest pipe (DN)	Min internal dimensions [a]		Min clear opening size [a]	
		Rectangular length and width	Circular diameter	Rectangular length and width	Circular diameter
Manhole <1.5m Deep to soffit	 ≤150 225 300 >300	 750 x 675 [g] 1200 x 675 1200 x 750 1800 x (DN+450)	 1000 [g] 1200 1200 The larger of 1800 or (DN+450)	 750 x 675 [b] 1200 x 675 [b]	 Na[c]
>1.5m Deep to soffit	≤225 300 375-450 >450	1200 x 1000 1200 x 1075 1200 x 1225 1800 x (DN+775)	1200 1200 1200 The larger of 1800 or (DN+775)	600 x 600	600
Manhole shaft [d] >3.0m Deep to soffit	Steps [e]	1050 x 800	1050	600 x 600	600
	Ladder [e]	1200 x 800	1200		
	Winch [f]	900 x 800	900	600 x 600	600

NOTES:

a Larger sizes may be required for manholes on bends or where there are junctions.

b May be reduced to 600 by 600 where required by highway loading considerations, subject to safe system of work being specified.

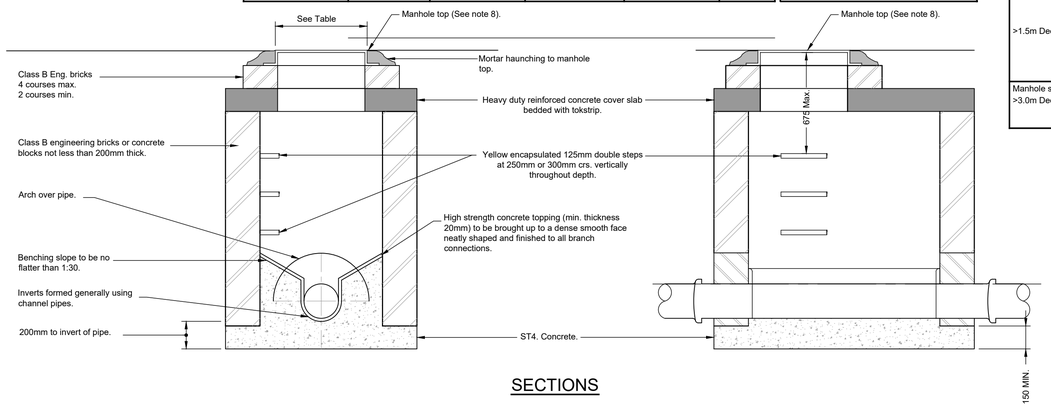
c Not applicable due to working space needed.

d Minimum height of chamber in shafted manhole 2m from benching to underside of reducing slab.

e Minimum clear space between ladders or steps and opposite face of shaft should be approximately 900mm.

f Winch only - no steps or ladders, permanent or removable.

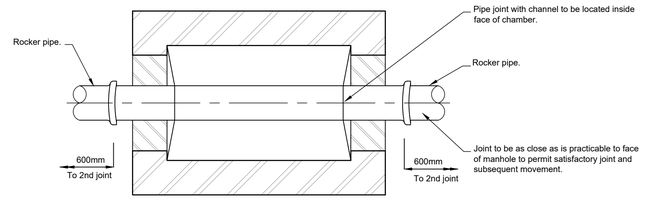
g The minimum size of any manhole serving a sewer (i.e. any drain serving more than one property) should be 1200mm x 675mm rectangular or 1200mm diameter.



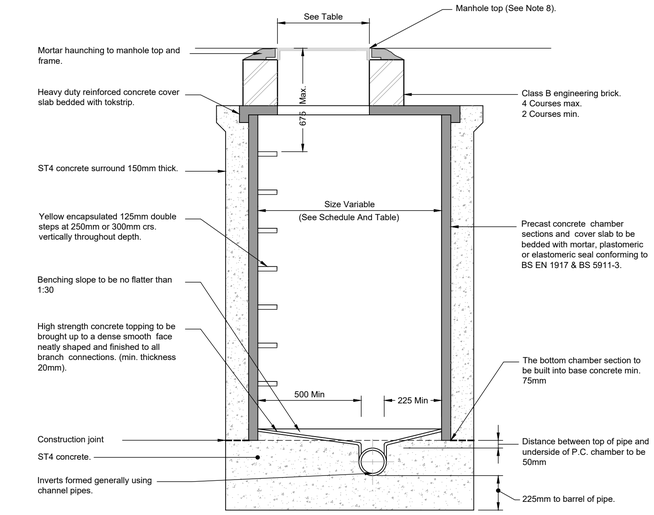
SECTIONS

Rectangular Private Manhole Detail. See Table

(Alternatively use precast concrete chamber sections installed to manufacturers recommendations)
Scale 1:20

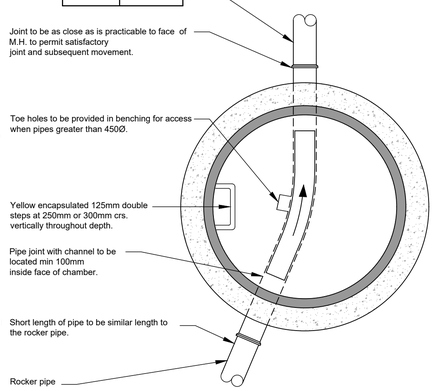


Plan



Section

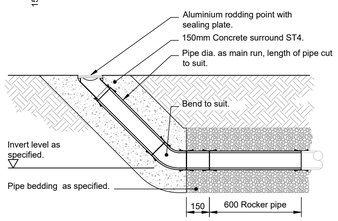
Nominal Pipe Dia.	Rocker Pipe Length
150-600	0.6m
675-750	1.0m
Over 750	1.25m



Plan

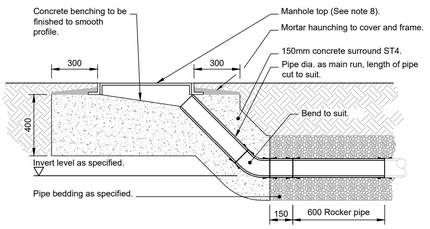
Circular Private Manhole Detail. See Table

Scale 1:20



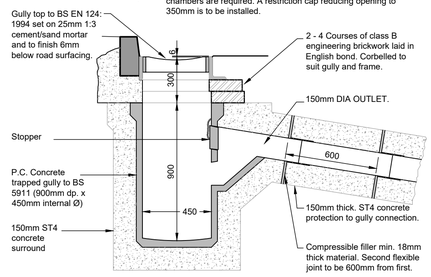
Rodding Eye Detail

Scale 1:20



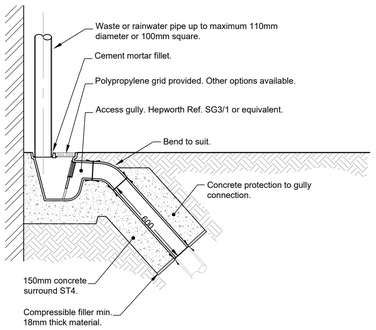
Heavy Duty Rodding Eye Detail

Scale 1:20



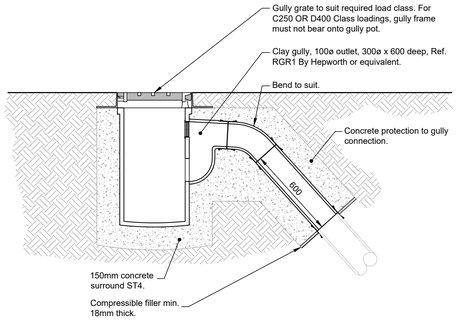
Road Gully Detail

Scale 1:20



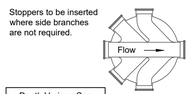
Access Gully Detail

Scale 1:20

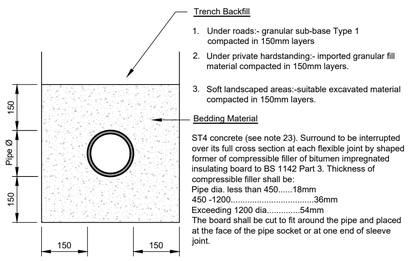


Yard Gully Detail

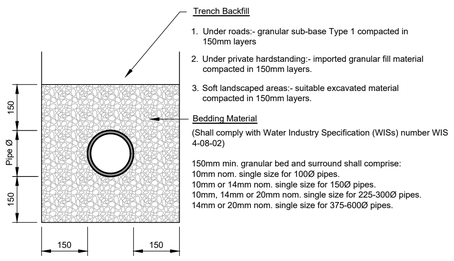
Scale 1:20



Plan

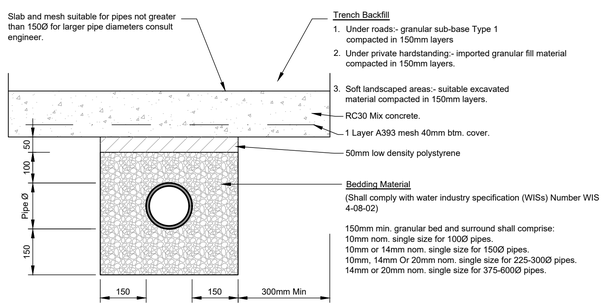


Concrete Protection Rigid Pipes

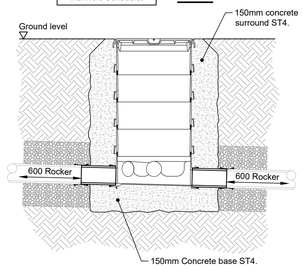


Granular Surround Bed And Surround Details

See note 11
Scale 1:10

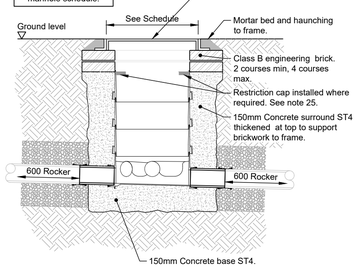


Concrete Protection Flexible Pipes



Used under private domestic drives, footpaths and soft landscaping areas and other areas subject to light loadings.

Section



Used under areas subject to heavy loadings i.e. roads, shared access ways etc.

Section

Polypropylene Inspection Chamber (PPIC) For Depths Up To 3.0m.

Scale 1:20

NOTES

15. If a drain passes beside a building the foundations of the building should be taken deep enough so as not to surcharge the drain on 45° spread of loading.
16. Ensure min. 150mm clear distances between pipes crossing.
17. Pipes shall be at a min. gradient 1:40 unless invert levels indicate otherwise.
18. Pipe work shall be plastic, clay or concrete and 100 dia. unless noted otherwise.
19. All existing drains to become redundant shall be excavated or sealed with cement grout.
20. The minimum depth of rest bends below the lowest foul water connection for building up to and including 5 storeys in height shall be:

    Single dwellings:
    450mm for 1, 2 & 3 storey.
    750mm for 4 & 5 storey.

    Multiple dwellings:
    750mm for 2, 3, 4 & 5 storey.

    The minimum centre line radius of a rest bend shall be 200mm.
21. Pipes passing through foundations and structures shall be sleeved and have flexible pipe joints located on both sides in accordance with the building regulations.
22. All mortar shall be 3:1 sand:cement unless stated otherwise.
23. All concrete shall be in accordance with BS EN 206:2013 with sulphate resistance to suit ground conditions.
24. All catchpits to have 300mm sump unless noted otherwise.
25. For chambers with a depth greater than 1.20m, reduced access chambers are required. A restriction cap reducing opening to 350mm is to be installed.

NOTES

1. Do not scale this drawing.
2. This drawing is to be read in conjunction with all relevant architects and engineers drawings.
3. All building drainage works to be in accordance with BS EN 752 building drainage and the current building regulations.
4. For precise locations of RWP'S, SVP'S and TBIG'S refer to architects plans.
5. For precise locations and setting out of houses, private drives and parking areas - refer to architects plans.
6. Private manhole and inspection chamber cover, invert level and sizes shown on manhole schedules.
7. Cover levels to be adjusted locally to suit finished ground levels.
8. Manhole topps to be ductile iron class D400 in carriageways, class B125 in car parking areas and class A15 only in pedestrian areas and footways all to BS EN 124:1994 having 600mm minimum clear opening, non ventilating type with closed keyways.

   PPIC'S:-
   Cast iron cover and plastic frame is suitable for use where wheel loads do not exceed 1.5 tonnes. Covers to be bolt down type.

   For heavy loading installations cover to be replaced with appropriate type.
9. Levels to existing chambers, manholes and sewers to be verified on site prior to drainage works commencing.
10. Gullies:-
    Gullies ref. 'RG' shall be trapped PC concrete 900 dp x 450mm dia. with 150 dia. outlet and 150mm ST4 concrete surround.

    Gullies ref. 'YG' shall be trapped PC concrete/clay extra strength 600 dp x300mm dia. with 100 dia. outlet and 150mm ST4 concrete surround. All gullies shall have tops to BS EN124:1994 Class B125 in pedestrian only areas, C250 in car parking areas, and D400 in roads.
11. Bedding shall be 150mm granular bed surround where cover:

    i) Greater than 450mm for 100 dia. rigid pipes in soft landscape areas.

    ii) Greater than 600mm for all pipe dia's greater than 100mm in soft landscape areas.

    iii) Greater than 900mm for pipes in trafficked areas.

    iv) Greater than 1.2m for pipes in adopted areas. All other cases including gully connections use 150mm (min.) concrete protection.
12. Access shall be provided at the base of all RWP'S using trapped access gullies bedded and surrounded in 150mm ST4 concrete. Gullies to be Hepworth Ref. SG3/1.
13. Private pipe runs to enter into top half of existing sewers. All new pipe connections to be via y-junctions.
14. Pipes at manholes to be soffit to soffit unless noted otherwise.

Rev	Date	By	Chkd.	Revision notes
-	23/10/20	MJ	AR	Preliminary issue.

Job Title
Cull Farm, Dean Street
Maidstone
ME15 0PS

Drawing Title
Private Drainage Construction Details.

Client
Offset Architects

HODEL CONSULTING ENGINEERS
01732 617555
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Scale at A1:	Status:	
1:10 1:20	PRELIMINARY	
Drawn: MJ Date: Oct '20	Checked: AR Date: Oct '20	Approved: - Date: -
Drawing No.: 19-014_C02		Revision: -