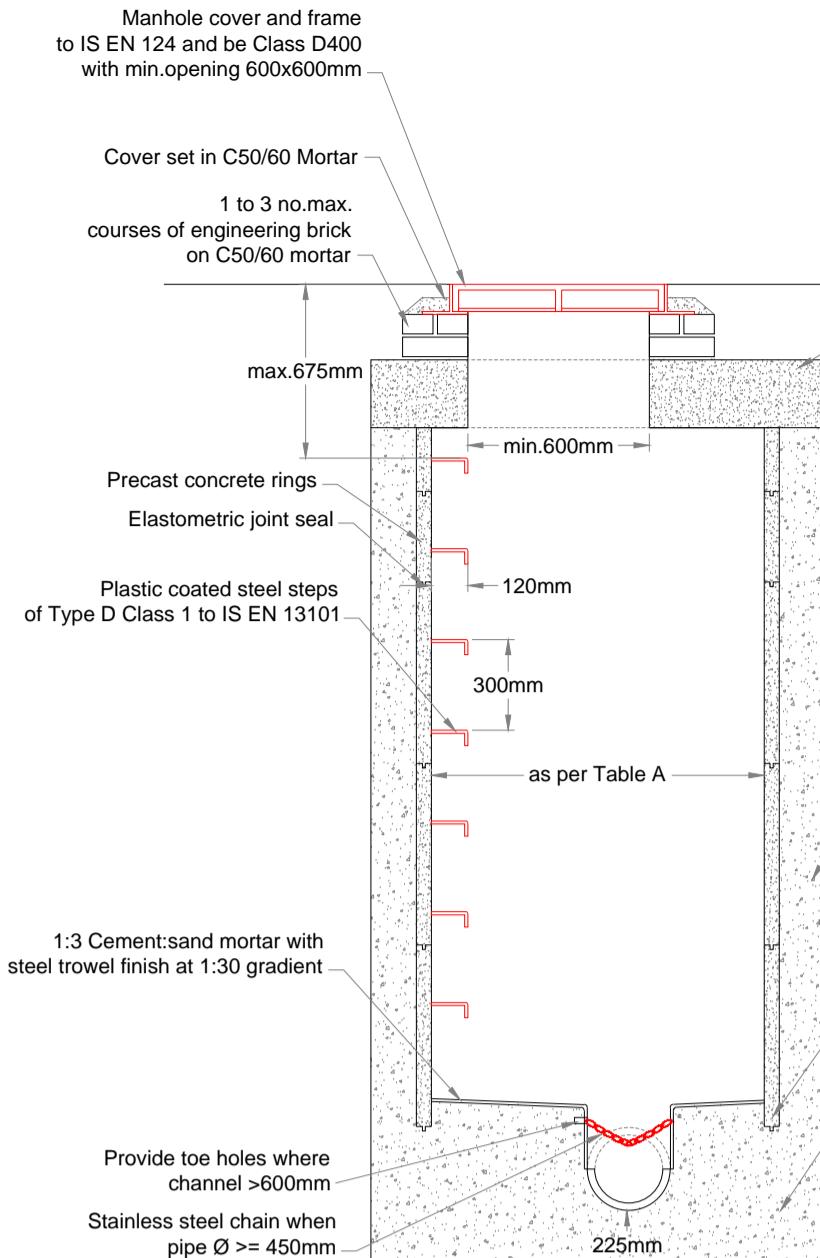


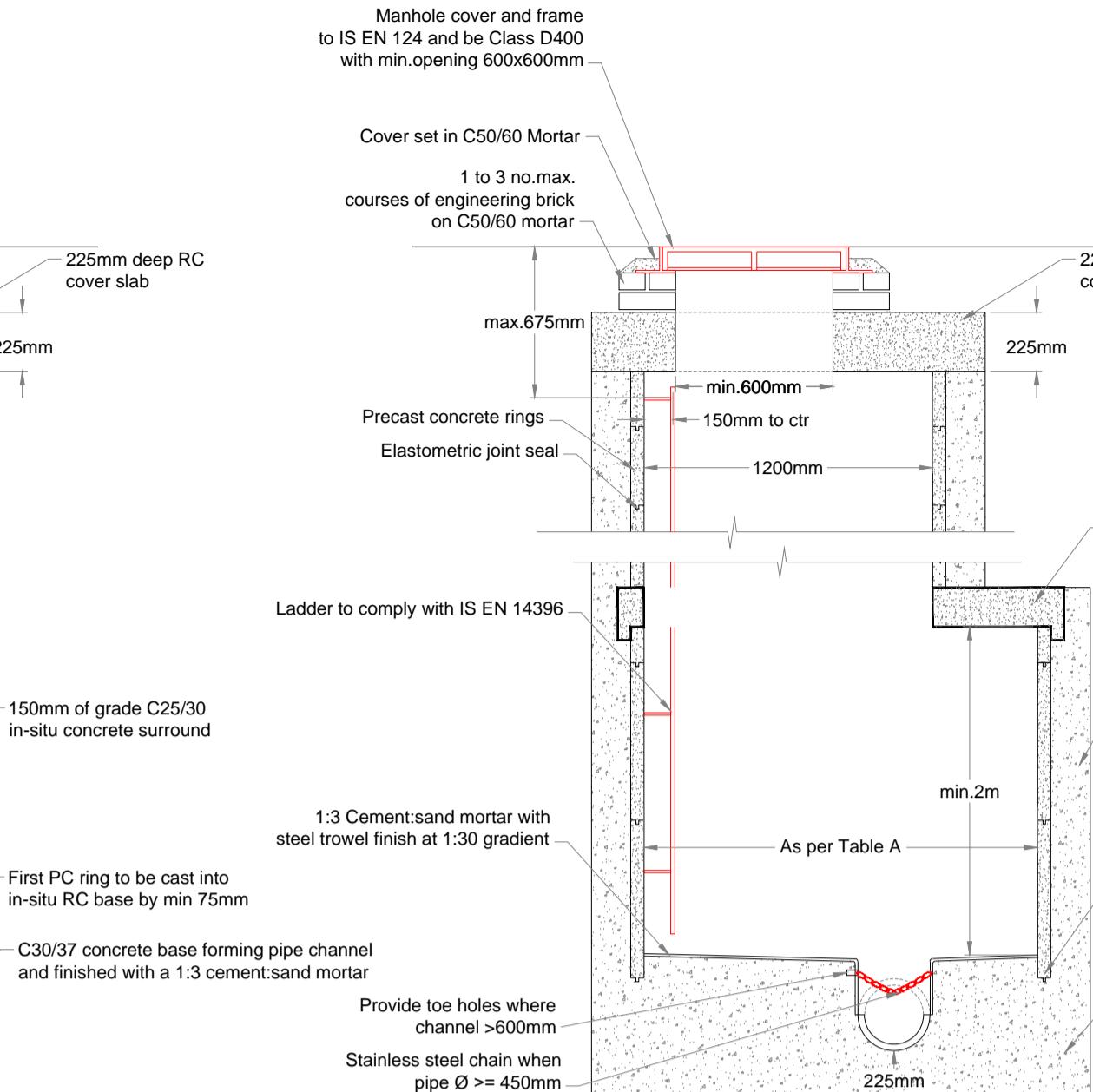
## NOTES:

1. Read in conjunction with all relevant Architect's & Engineer's drawings and cross read the detailed notes on the various manholes.
2. The minimum diameter of manholes as shown in Table A, this may need be increased subject to the number of branches, this is made up as follows:  
For pipes up to 150mm<sup>2</sup>, provide the sum of the branches + 200mm per branch + 300mm  
For pipes over 150mm<sup>2</sup>, provide the sum of the branches + 300mm per branch + 300mm  
3. If no pipes up to 150mm<sup>2</sup> are used: for 2x150<sup>2</sup> + 1x225<sup>2</sup> pipes on one side, length = 1525mm (subject to minimum length)
4. Access rungs shall be provided in manholes greater than 1m to the invert level of the pipe.
5. A 200mm concrete surround, 100mm deep, shall be provided around manhole covers in grassed areas.
6. Class U2 finish to the top of slabs. Reinforcement in the slabs to details as directed by the Engineer.
7. Use pre-tensioned herringbone channel pipes through manholes but the pipeline may be laid through the manhole and the crown cut out to half diameter ensuring that flexible joints are located either side of manhole at max.600mm as measured from the inner face of manhole wall.
8. Use CL 20/10 concrete for benching and pipe channel pipe surround.
9. Benching to be finished in 1:3 cement-sand mortar with a smooth trowel finish, 1 in 30 slope towards channel. Form a 25mm radius nosing on benching, level with crown of the pipe.
10. Standard grating (BS 729) rungs to be positioned @ 300c/c vertically.
11. Manholes to have a min. 600mm square open.
12. 225mm Precast R.C. Roof Slab in C30/37 Concrete. Cover to steel shall be 40mm.
13. MH cover frame to be laid on 1 No. min to 3 No. max. courses of engineering bricks CL 19.
14. MH cover and frames to be Class D400 to IS/EN 124, 150mm deep frame for roads, 100mm deep for footpaths and green areas. Class B250 manhole covers may be used in private areas accessible to light vehicular traffic. Non-rock design, closed keyways, manufactured from spheroidal graphite cast iron (ductile cast iron), 600mm<sup>2</sup> min. (600x600) mm<sup>2</sup> min. cover to steel shall be 40mm. Other approved materials, cover to have a minimum mass of 140kg/m<sup>2</sup>, frame bearing area shall be 80.000mm<sup>2</sup> min., frames shall be designed to prevent covers falling into manhole. Frames shall be bedded on C50/60 mortar to manufacturers instructions.
15. Galvanised steel safety railings to be provided in benching of sewers greater than 450mm Ø and depth to invert>3m for access to invert. Toe holes of 230mm min. depth to be provided where channel >600mm.
16. Safety chain to be provided on pipes that exceed 450mm Ø. Stainless steel safety chain shall be provided in size graded (M/H) non calibrated chart type 1.
17. When depth of Manholes to invert is greater than 3.0m, ladders shall be used, instead of rungs 25mm in diam. B.S.4211 except that strings should not be less than 65x20mm, in section and rungs 25mm in diam. Fixed Ladders should meet the dimensional requirements of B.S.4211.
18. Ladder strings should be adequately supported from the Manhole wall at intervals of not more than 2.0m. Strings should be bolted to cleats to allow renewal.
19. Socket of pipe to be cut flush with the inner surface of the manhole wall.
20. Where there are changes in deep manholes, provide a 90mm square open in the intermediate roof slab.
21. All Manholes shall be watertight to the satisfaction of the Engineer. Formwork to reinforced concrete and mass concrete shall comply to Class 2, Section 4.2.7 BS8110:Part 1:1997. Finish to the top of slabs shall comply to Type A, Section 6.2.7 BS8110: Part 1: 1997. Manholes are designed to B.S.8005 and wall thicknesses to I.S.325.
22. Precast Manholes, Chamber walls and cover slab to be constructed to IS EN 1917 and I.S.420 2000.
23. All manholes to be situated furthest from the nearest carriageway. Manhole steps/ access to be positioned to allow viewing of oncoming traffic.
24. For bedding and sealing of chamber rings, the top ring below PC slab and bottom ring to be bedded with cement mortar. For intermediate rings, joints to be sealed with approved pre-formed jointing strip.
25. Pre cast Manholes to be surrounded with a minimum of 150mm thick Grade C25/30 concrete.



Section A-A  
Type A <3m depth

Scale 1:20

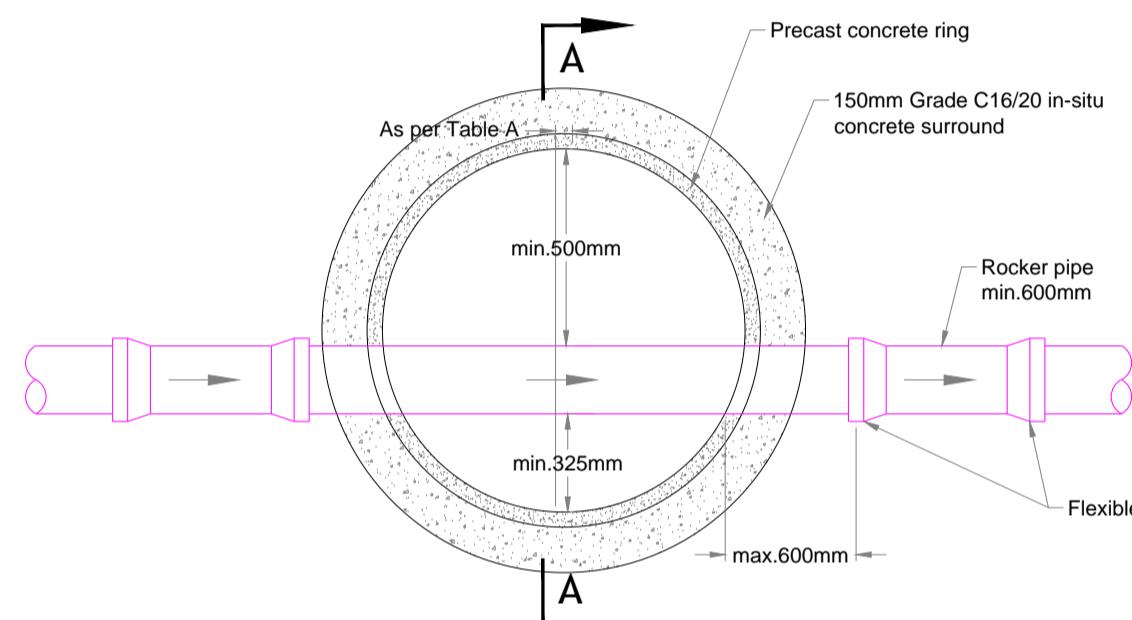


Section A-A  
Type B 3-6m depth

Scale 1:20

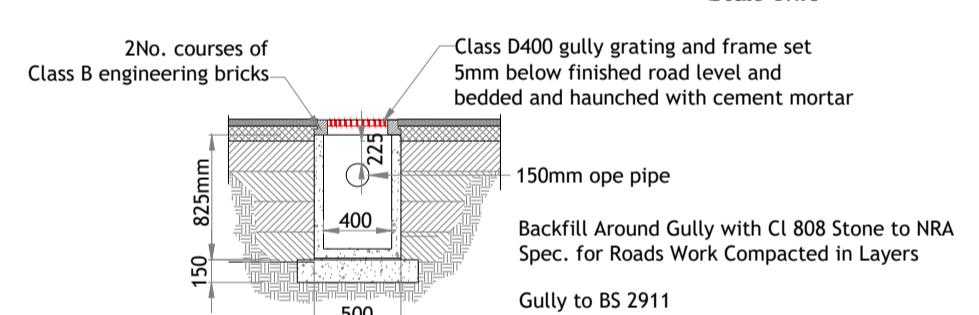
DEPTH (m)	TYPE	PIPE DIAMETER (mm)				
		150	225	300	375	450
0-1	PRECAST	A 1050Ø	A 1200Ø	A 1200Ø	A 1200Ø	A 1200Ø
1-3	PRECAST	A 1050Ø	A 1200Ø	A 1200Ø	A 1350Ø	A 1350Ø
3-6	PRECAST	B 1200Ø	B 1200Ø	B 1200Ø	B 1350Ø	B 1500Ø

### TYPICAL MANHOLE DETAIL



Plan on Precast  
Concrete Manhole  
<3m depth

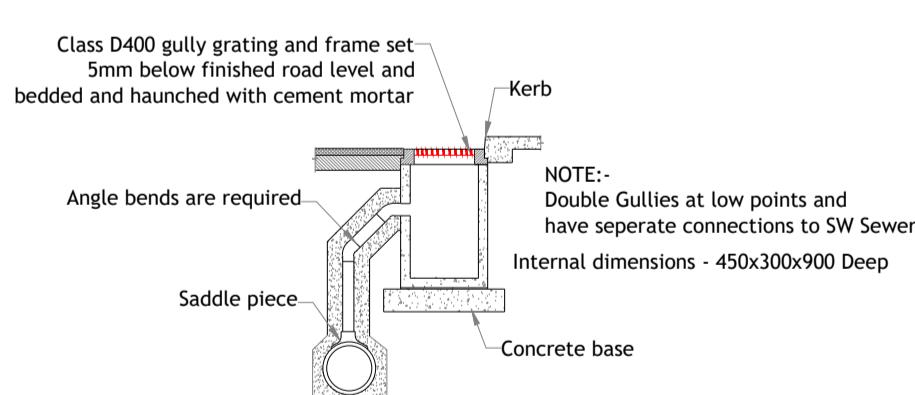
Scale 1:20



Precast Concrete  
Gully Pit

SCALE 1:50

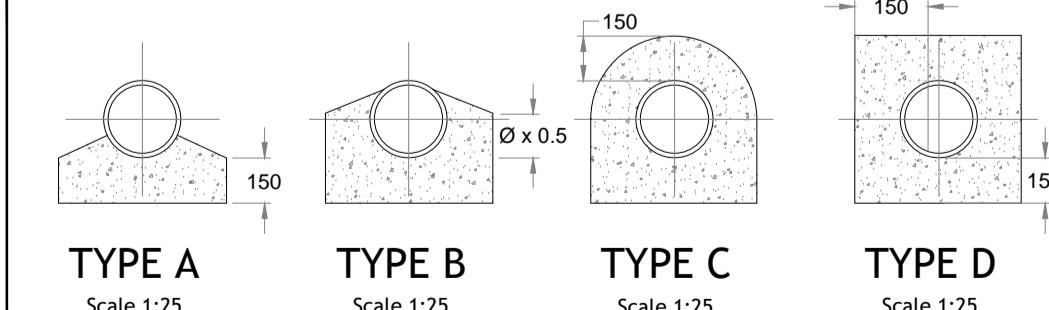
NB:  
All gullies to be positioned at low points and no pending of S/W is acceptable.  
Adjustment to suit site conditions to be discussed with RMA where variation to drawings occurs



Gully Connection

SCALE 1:50

### CONCRETE BED/HAUNCH/SURROUND DETAILS



TYPE A  
Scale 1:25

TYPE B  
Scale 1:25

TYPE C  
Scale 1:25

TYPE D  
Scale 1:25

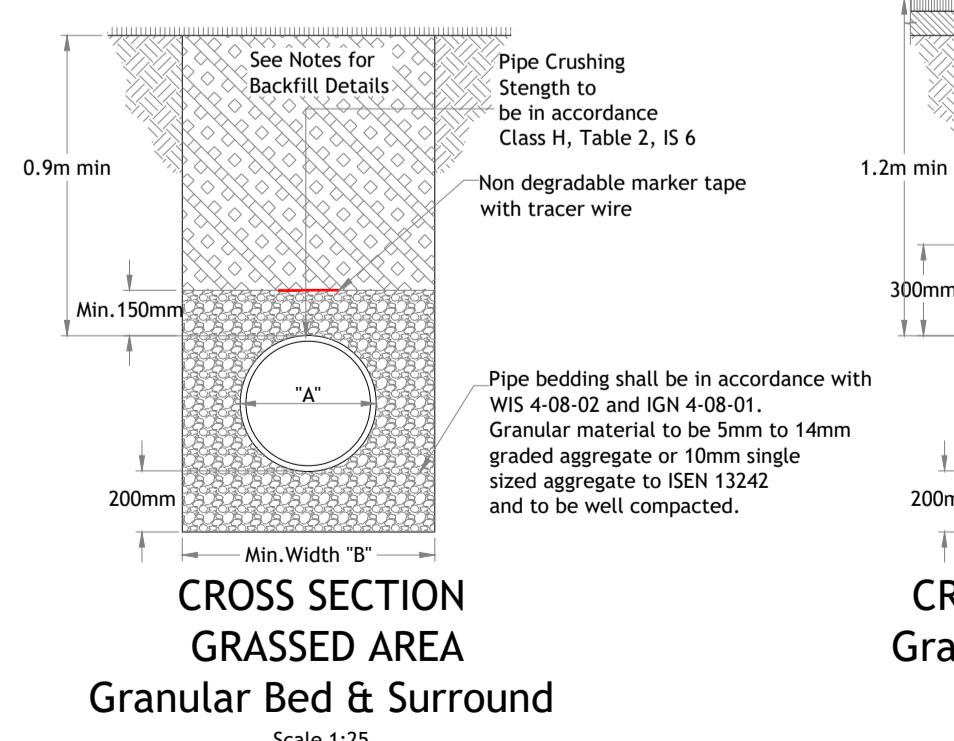
A1 Scale 1:50  
0m 1m 2m 3m 4m 5m

A1 Scale 1:25  
0m 200mm 0.5m 1m  
100mm 300mm

A1 Scale 1:20  
0m 200mm 0.5m 1m  
100mm 300mm

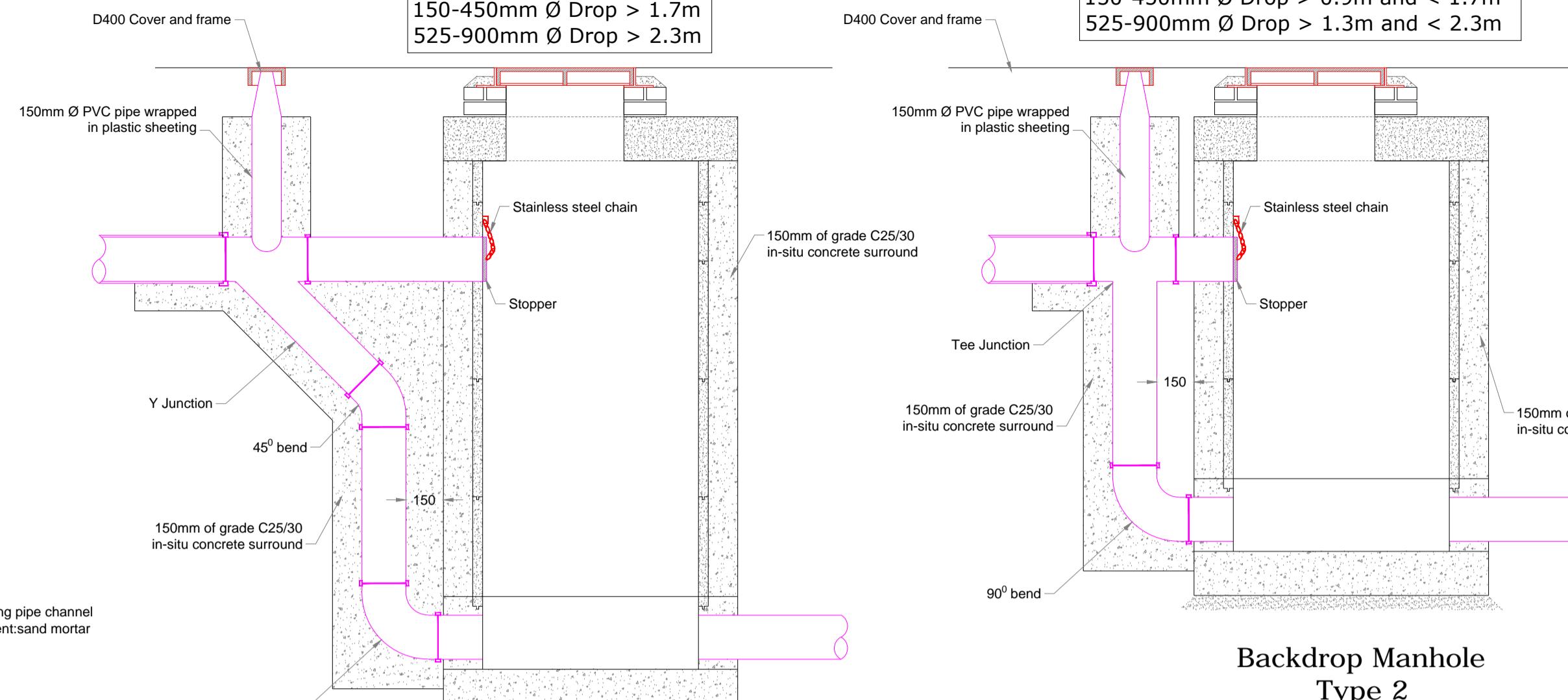
A1 Scale 1:10  
0m 100mm 0.25m 2m  
50mm 150mm

Pipe Diameter "A" (mm) < 80 Rising Main	Trench Width "B" (mm) < 500 TBC with Eng.
100	< 500 TBC with Eng.
150	600
200	600
250	750
300	750
350	750
400	900
450	900



CROSS SECTION ROADS  
Granular Bed & Surround

Scale 1:25

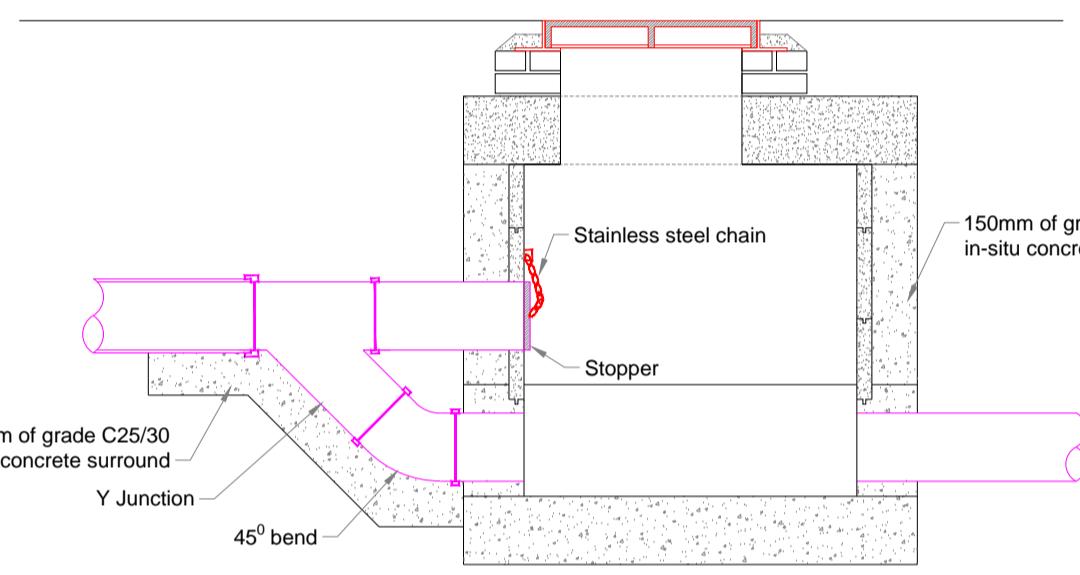


Backdrop Manhole  
Type 1

Scale 1:20

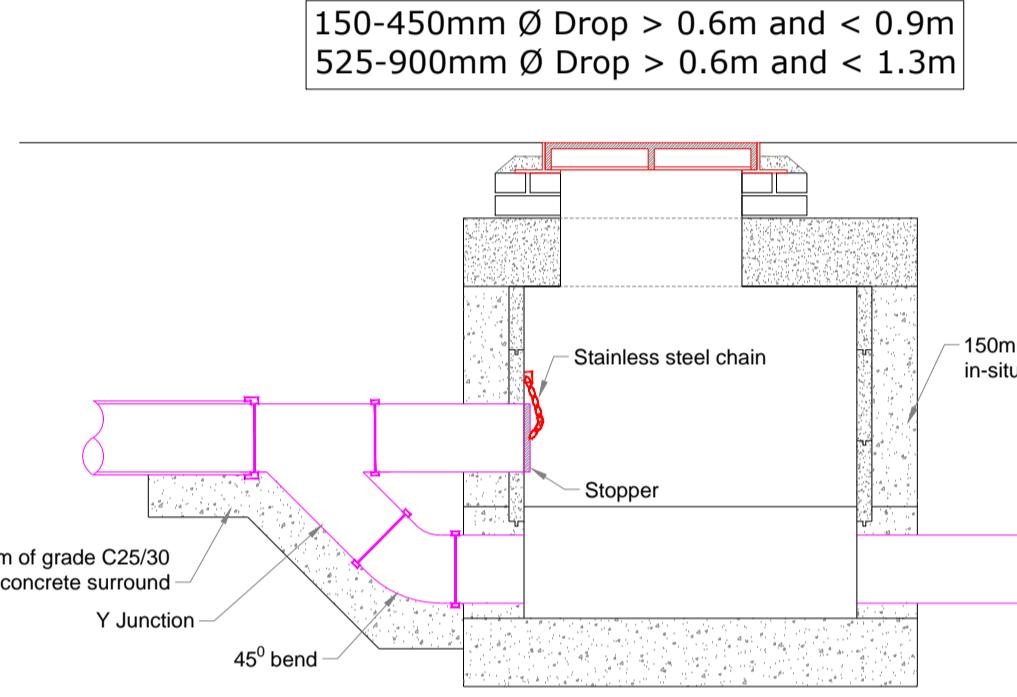
150-450mm Ø Drop > 0.6m and < 0.9m  
525-900mm Ø Drop > 0.6m and < 1.3m

Scale 1:20



Backdrop Manhole  
Type 2

Scale 1:20

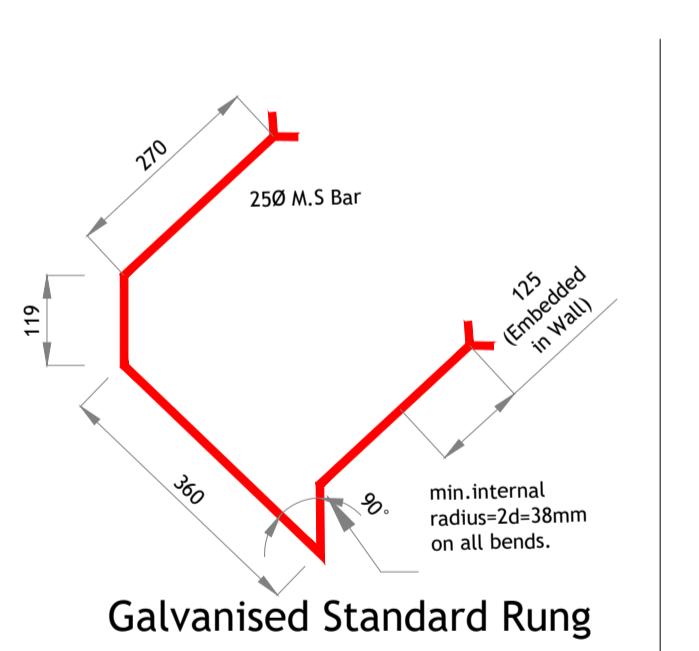


Backdrop Manhole  
Type 3

Scale 1:20

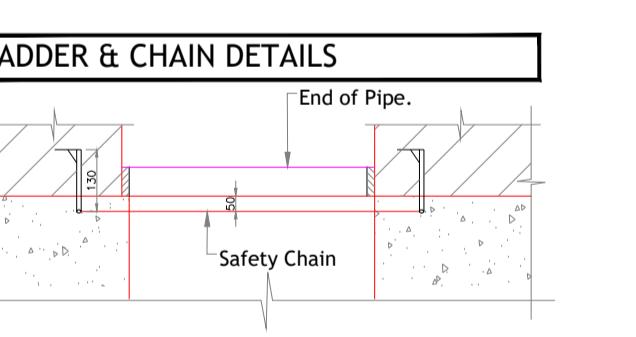
All pipe/manhole details to be compliant with  
Uisce Éireann Wastewater Infrastructure Standard  
Details document '25'

THIS IS A PLANNING DRAWING AND IS  
FOR THE APPROVAL OF UISCE ÉIREANN



Galvanised Standard Rung

Scale 1:10



PLAN (SAFETY CHAIN, HOOK & EYE)

NTS

Note:  
DLRC require that the bypass facility is disabled from the vortex control device

Safety Chain

End of Pipe.

25Ø M.5 Bar

119

270

360

25Ø M.5 Bar

125

Embedded in Wall

min. internal radius=2d+38mm on all bends.

Galvanised Standard Rung

Scale 1:10

25Ø M.5 Bar

119

270

360

25Ø M.5 Bar

125

Embedded in Wall

min. internal radius=2d+38mm on all bends.

Galvanised Standard Rung

Scale 1:10

25Ø M.5 Bar

119

270

360

25Ø M.5 Bar

125

Embedded in Wall

min. internal radius=2d+38mm on all bends.

Galvanised Standard Rung

Scale 1:10

25Ø M.5 Bar

119

270

360

25Ø M.5 Bar

125

Embedded in Wall

min. internal radius=2d+38mm on all bends.

Galvanised Standard Rung

Scale 1:10

25Ø M.5 Bar

119

270

360

</