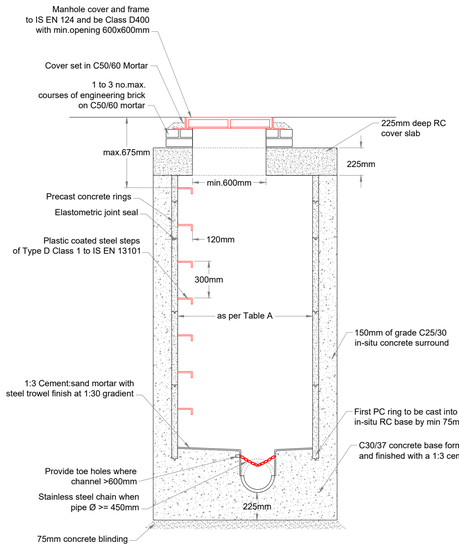
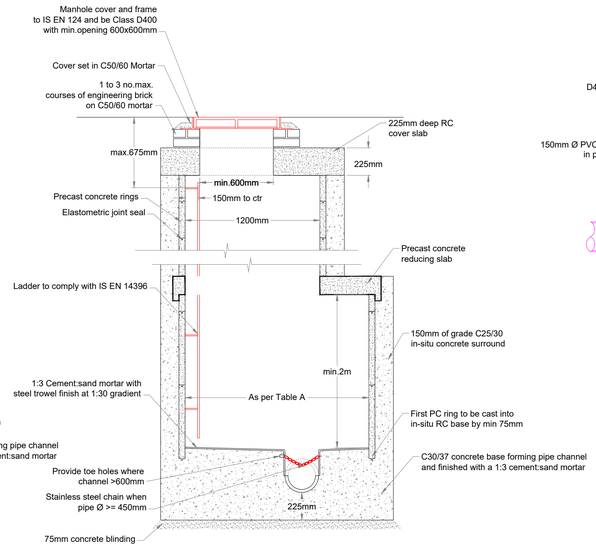
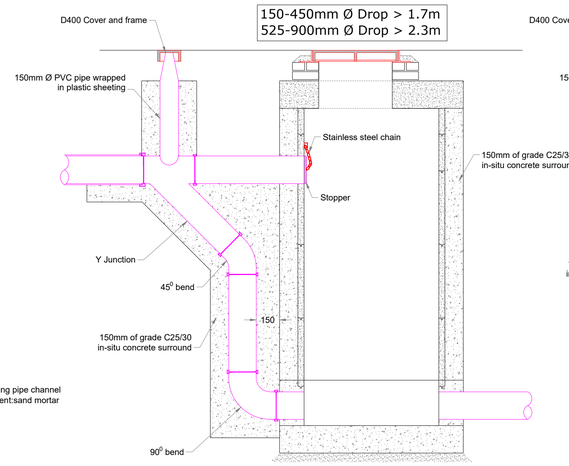


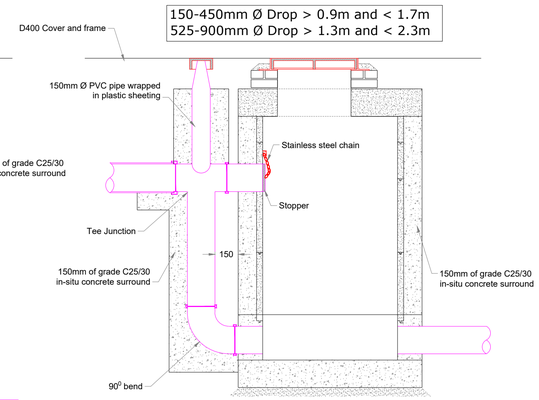
Section A-A
Type A <3m depth
Scale 1:20



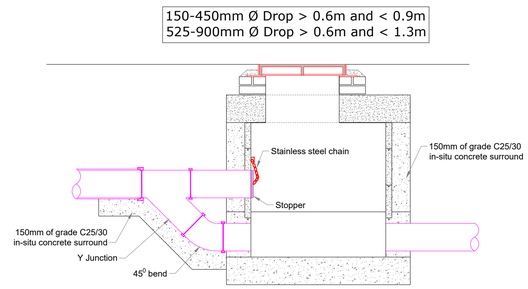
Section A-A
Type B 3-6m depth
Scale 1:20



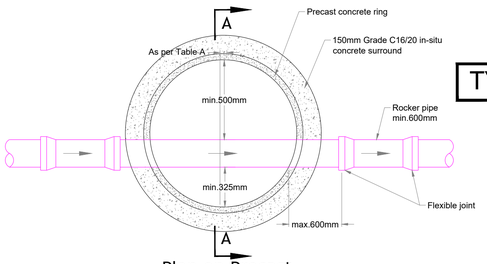
Backdrop Manhole
Type 1
Scale 1:20



Backdrop Manhole
Type 2
Scale 1:20



Backdrop Manhole
Type 3
Scale 1:20

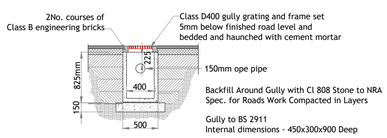


Plan on Precast
Concrete Manhole
<3m depth
Scale 1:20

TYPICAL MANHOLE DETAIL

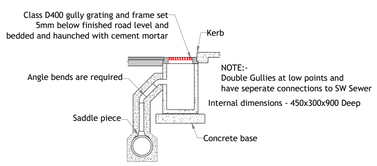
TABLE A

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



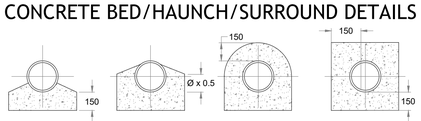
Precast Concrete
Gully Pit
SCALE 1:50

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



Gulley Connection
SCALE 1:50

CONCRETE BED/HAUNCH/SURROUND DETAILS



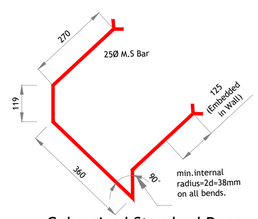
TYPE A
Scale 1:25

TYPE B
Scale 1:25

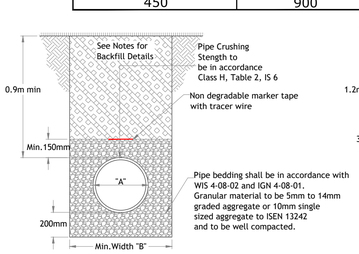
TYPE C
Scale 1:25

TYPE D
Scale 1:25

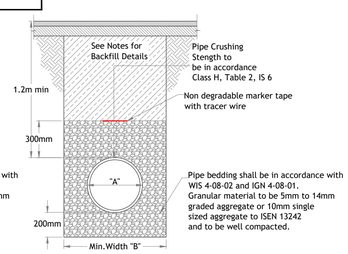
Pipe Diameter "A" (mm) <80 Rising Main	Trench Width "B" (mm)
100	<500 TBC with Eng.
150	600
200	600
250	750
300	750
350	750
400	900
450	900



Galvanised Standard Rung
Scale 1:10

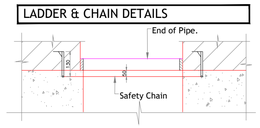


CROSS SECTION
GRASSED AREA
Granular Bed & Surround
Scale 1:25

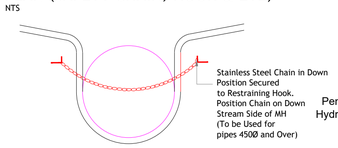


CROSS SECTION ROADS
Granular Bed & Surround
Scale 1:25

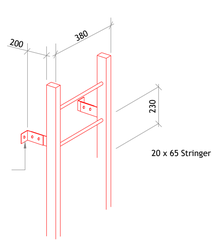
LADDER & CHAIN DETAILS

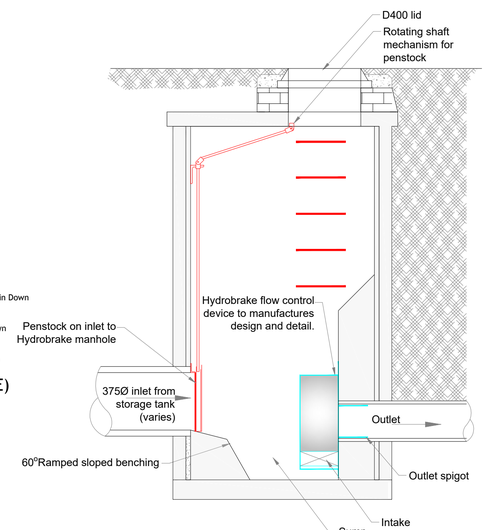


PLAN (SAFETY CHAIN, HOOK & EYE)
NTS



ELEVATION (SAFETY CHAIN, HOOK & EYE)
NTS





Typical Hydrobrake Manhole
Scale1:20

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 are as shown in Table A, but this may need be increased subject to the number of branches, this is made up as follows:
   For pipes up to 150mmØ, provide the sum of the braches + 200mm per branch + 300mm
   For pipes over 150mmØ, provide the sum of the braches + 300mm per branch + (300mm
   If no pipes up to 150mmØ are usedieg: for 2x150Ø + 1x225Ø pipes on one side, length =1525mm (subject to minimum length)
3. Access rungs shall be provided in manholes greater than 1m to the invert level of the pipe.
4. A 200mm concrete surround, 100mm deep, shall be provided around manhole covers in grassed areas.
5. Class U2 finish to the top of slabs. Reinforcement in the slabs to details or as directed by the Engineer.
6. Manhole foundations to be 225mm C30/37 mass concrete with 75mm lean mix concrete blinding if required by site conditions.
7. Use pre-formed half circle 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. 20N/20 concrete for benching and pipe channel pipe surround.
9. Benching to be finished in 1:3 cement-sand mortar with a smooth trowel finish,at 1 in 30 slope towards channel. Form a 25mm radius nosing on benching, level with crown of the pipe.
10. Standard galvanised (BS 729) rungs to be positioned @ 300c/c vertically.
11. Roof slab to have a min. 600mm square ope.
12. 225thk. 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.B to I.S.91:1983 set in C50/60 mortar
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), 600x600 (or 600diam.) clear opening, cover and frame coated in bitumen or other approved material, cover to have a minimum mass of 140Kg/m², frame bearing area shall be 80,000mm² 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 10mm nominal size graed M(H) non calibrated chain, type 1. complying with B.S.4942 Part 2.
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 stringers should be not less than 65x20mm. in section and rungs 25mm in diam.Fixed Ladders should meet the dimensional requirements of B.S.4211.
18. Ladder stringers should be adequately supported from the Manhole wall at intervals of not more than 2.0m.Stringers should be bolted to cleats to allow renewal.
19. Socket of pipe to be cut flush with the inside surface of the manhole wall.
20. Where manhole diamater changes in deep manholes, provide a 910mm square ope 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 comply to Class 2, Section 6.2.7 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 BS.8005 and wall thicknesses to I.S325.
22. Precast Manholes, Chamber walls and cover slab to be constructed to IS EN 1917 and IS 420 2004.
23. Manhole opes 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.

PIPE BEDDING & BACK FILLING NOTES:-

1. Pipe backfill to be granular material to Cl804/808 in accordance with the NRA Specification for Road Works. Use only Cl.808 material when within 500mm of cement bound materials such as concrete kerbs/paths/haunching.
2. Backfill material to be well compacted in accordance with Cl.802 of the NRA specification compacted in layers of not greater than 150mm.
3. Back filling in open spaces shall consist of suitable selected excavated material, shall be free from stones greater than 25mm in size,builders rubbish,vegetable matter and lumps of clay greater than 75mm in size and shall be compacted in 150mm layers. It shall meet the requirements of "Acceptable material" as defined in Clause 601 of the NRA Specification for Road Works.
4. Pipe bedding shall be in accordance with WIS 4-08-02 and IGN 4-08-01. Granular material to be 5mm to 14mm graded aggregate or 10mm single sized aggregate to ISEN 13242.
5. All pipes to have a 150mm Concrete surround where the cover is less than 900mm in Landscaped/Pedestrian areas. Use concrete bed & surround details if cover is <1.2m trafficked areas. All other pipework to be to bedding details as shown.
6. Concrete for pipe bedding, haunching and surrounds shall be grade C16/20 and have expansion joints at all pipe joints using 18mm filler board.
7. Formwork to Reinforced Concrete and mass concrete shall be class F2.
8. Wrap PE pipes in plastic sheeting before casting into concrete

All pipe/manhole details to be compliant with Uisce Éireann's Wastewater Infrastructure Standard Details document Aug'25 (Rev'04)

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

REV	DATE	DESCRIPTION

ROGER MULLARKEY & ASSOCIATES
Consulting Structural and Civil Engineers
Duncreevan, Kilcock, Co.Kildare
Tel: +353 1 610 3755 Mob: +353 87 232 4917
E-mail. info@rmullarkey.ie www.rmullarkey.ie

Project
GREENFIELDS LRD, SWORDS

Drawing Title
MANHOLE DETAILS

Architect
MCORM Architects

Date	Drawn By	Scales	Dwg.No.	Stage	Rev
Oct'25	RM	As Shown @ A1	2412/12	LRD Stage 3	

©This drawing is Copyright and must only be used for the project noted