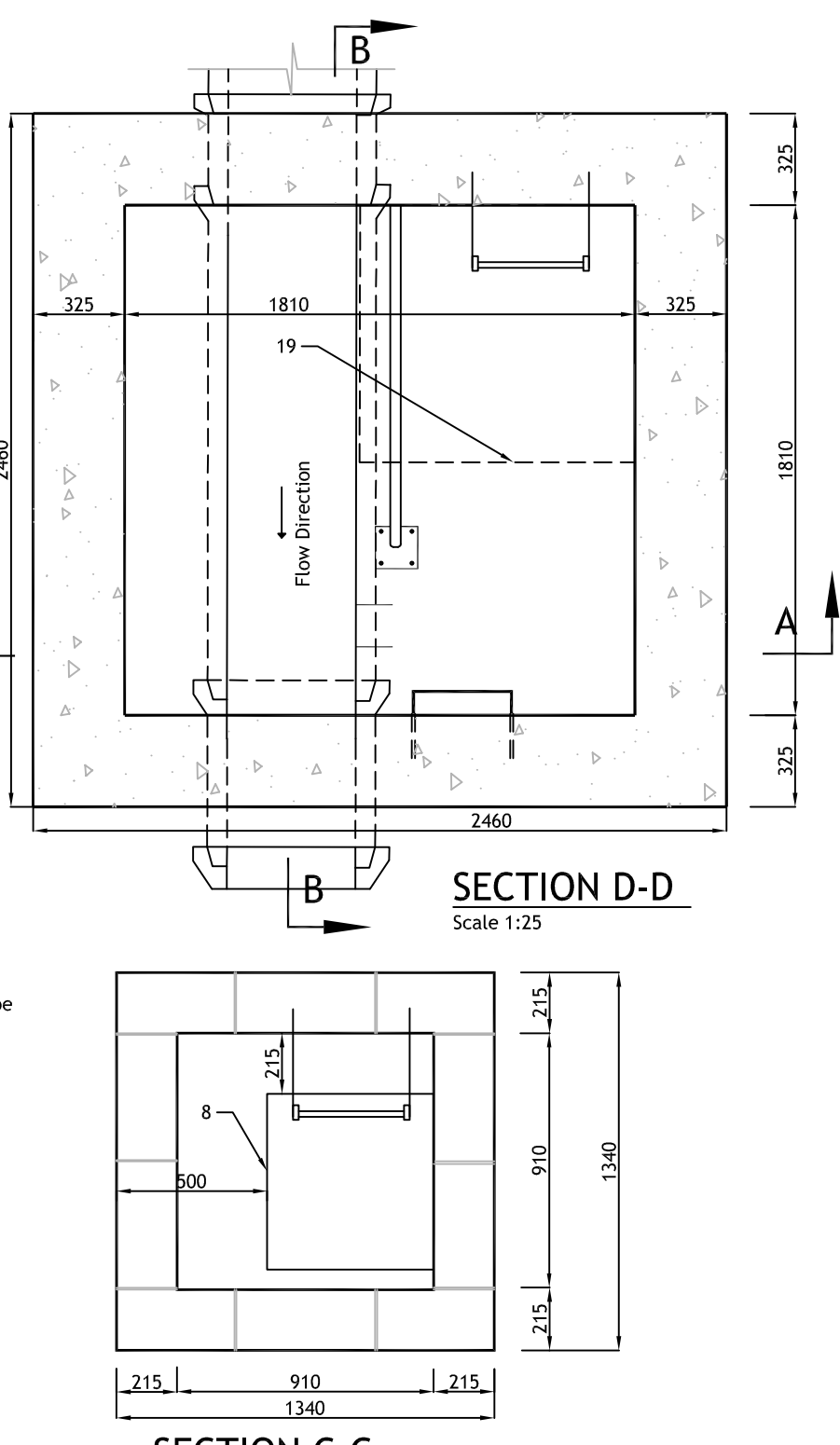
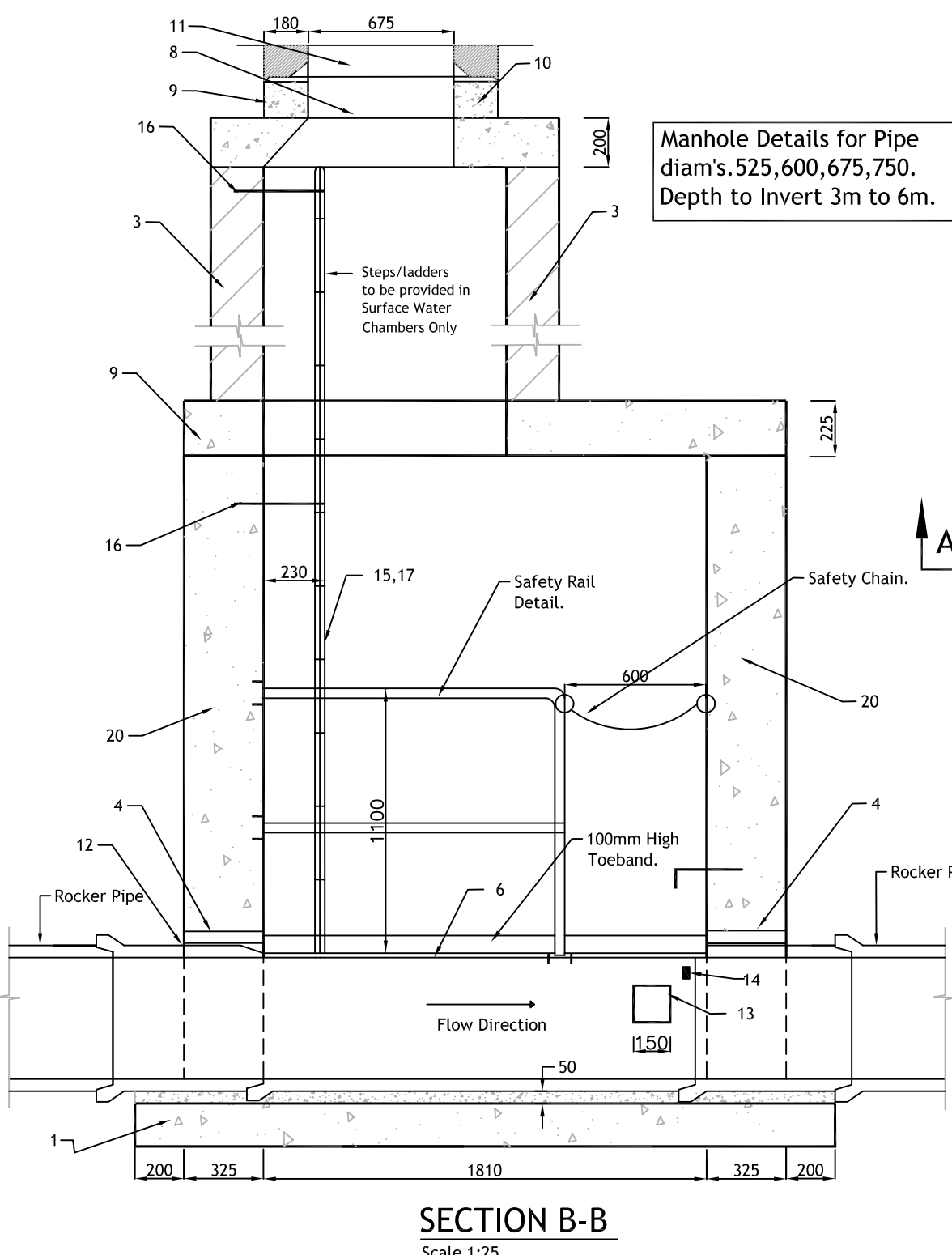
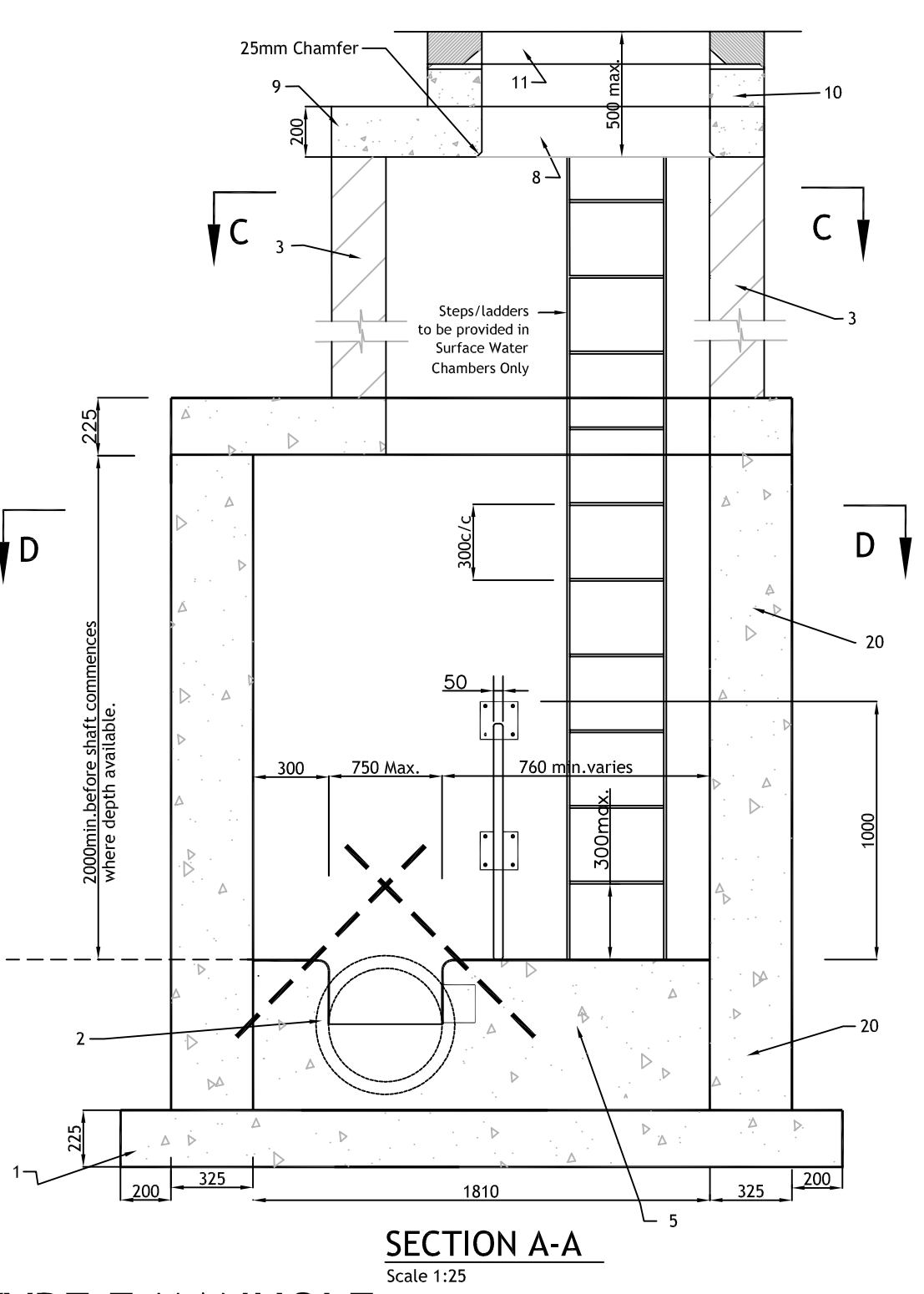
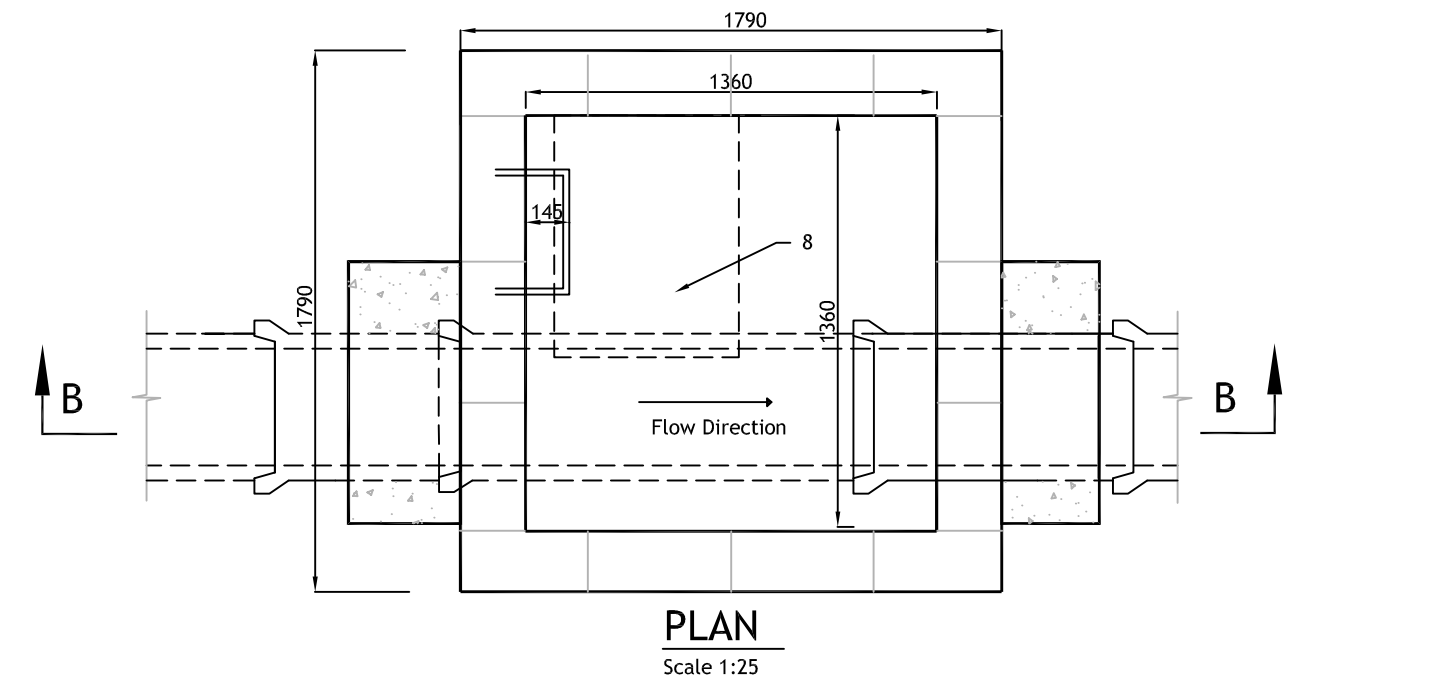


NOTES

- 225mm Thick C30/37 Mass Concrete Foundations (Over 75mm concrete blinding if required by site conditions)
- Performed half circle Channel pipes. The pipeline may where practicable, be laid through the manhole and the crown cut out to half diameter provided flexible joints are situated on each side no further than 600mm from the inner face of Manhole wall.
- For Surface Water Manholes high density blocks to CL 510 of I.S.20 Part 1: 1987 or CL 30N/20 insitu conc. Blockwork shall be bedded and jointed using Mortar designation three to I.S.406. Beds and vertical joints shall be completely filled with mortar as the blocks are laid. Joints shall be flush pointed as the work proceeds (Blockwork not to be used in areas where a high water table is prevalent). All Foundations must be faced in solid Engineering Brick (min.class A or B), or in-situ concrete for 1 metre above benching level. Brick to be bonded to Blockwork using English Garden Wall Bond.
- Relieving arch formed by 215x103x65 brick as per drawing. Relieving arches used in brick or blockwork manholes to extend over full thickness of wall. Double arch to be formed for pipe diameters greater than 600mm.
- Benching and pipe channel pipe surround- CL 20N/20 concrete.
- Benching finished in 2:1 sand-cement mortar with a smooth trowel finish at 1 in 30 slope towards channel. 25mm radius Nose on Benching to be level with Crown of Pipe.
- Standard rungs at 300c/c vertically and galvanised to BS 729.
- 675mm square ope. in roof slab.
- 225thk. Precast R.C. Roof Slab in C30/37 Concrete. Cover to steel shall be 40mm.
- 1 to 2 No. Engineering Bricks CL B to I.S.91:1983 set in 1:3 (cement sand mortar)
- Class D400 manhole cover and frame to IS/EN 124:150mm deep frame for roads, 100mm deep for footpaths and green areas. Class B250 manhole covers can be used in Private areas accessible to light vehicular traffic. Non-rock design, closed keyways, manufactured from spheruloidal graphite cast iron (ductile cast iron), 675x675 (or 675diam.) 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 approved mortar to manufacturers instructions.
- Short length pipe, pipe joint external to Manhole shall not exceed 600mm from the inner face of the Manhole wall.
- The holes of 230mm min. depth and galvanised steel safety railings to be provided in benching of sewers greater than 525mm diam. and depth to invert-3M for access to invert.
- Safety chain to be provided on pipes that exceed 450mm in diameter. Mild steel safety chain shall be 10mm nominal size graed M(H) non calibrated chain, type 1, complying with B.S.4942 Part 2.
- 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 (Surface Water Chambers Only).
- Ladder stringers should be adequately supported to Manhole wall at intervals of not more than 2.0m. Stringers should be bolted to cleats to facilitate renewal.
- All ladders, rungs, handrails, safety chains etc. shall be hot dip galvanised to B.S.729 (to be provided in Surface Water Chambers Only)
- Socket of pipe should be cut flush with the inside surface of the manhole wall.
- Position of 910 square ope in intermediate roof slab. All Manholes shall be watertight to the satisfaction of the Engineer. Formwork to reinforced concrete and mass concrete shall 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. Plan dimensions of Manholes are based on blockwork having a co-ordinating size of 450x225x100. Manholes are designed to B.58005 and wall thicknesses to I.S.325
- Blockwork design reinforcement to slabs to Engineers details.
- For Manholes >3M depth to invert use C30/37 in-situ concrete. Reinforcing mesh Ref. A393 @ 6.16kg./m to be fixed at mid point of wall. Additional reinforcement to be supplied over pipe crown. All brick to be Engineering Brick.
- For pre-cast Manholes, Chamber walls and cover slab to be constructed to IS EN 1917 and IS 420 2004.
- Manhole opes to be situated furthest from the nearest Carriageway. Manhole steps/access to be positioned to allow viewing of oncoming traffic.
- For bedding and sealing of chamber rings, the top ring to Pre-cast cover slab and bottom ring to be bedded with cement mortar. For intermediate rings, joints to be sealed with approved pre-formed jointing strip.

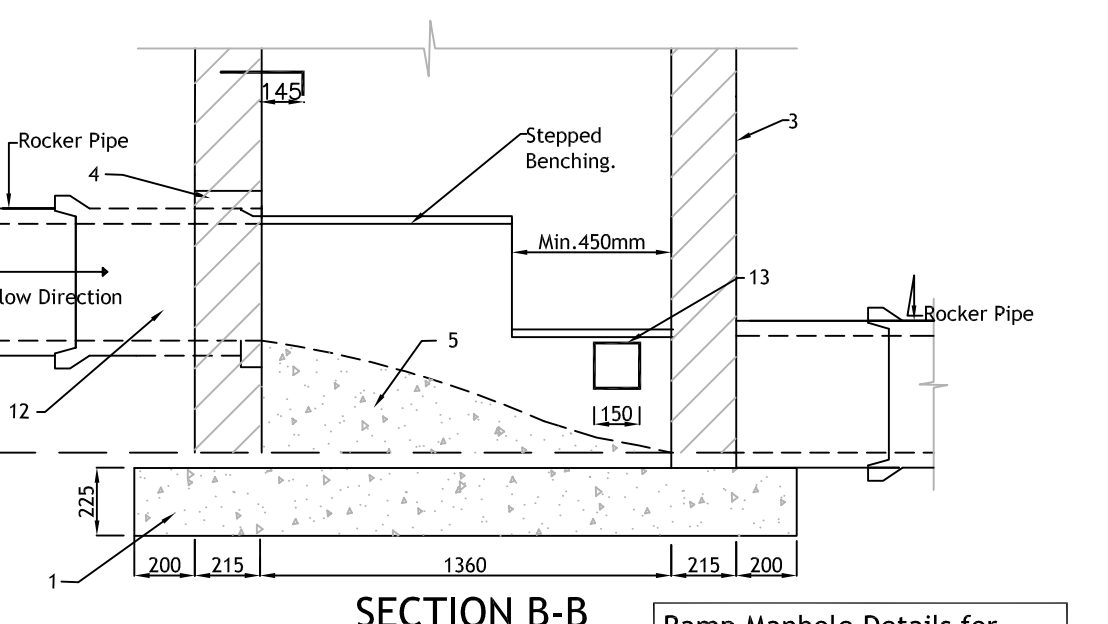


TYPE E MANHOLE



Where Drop 'H' is greater than the max. Value Shown, Use Back-Drop Manhole.

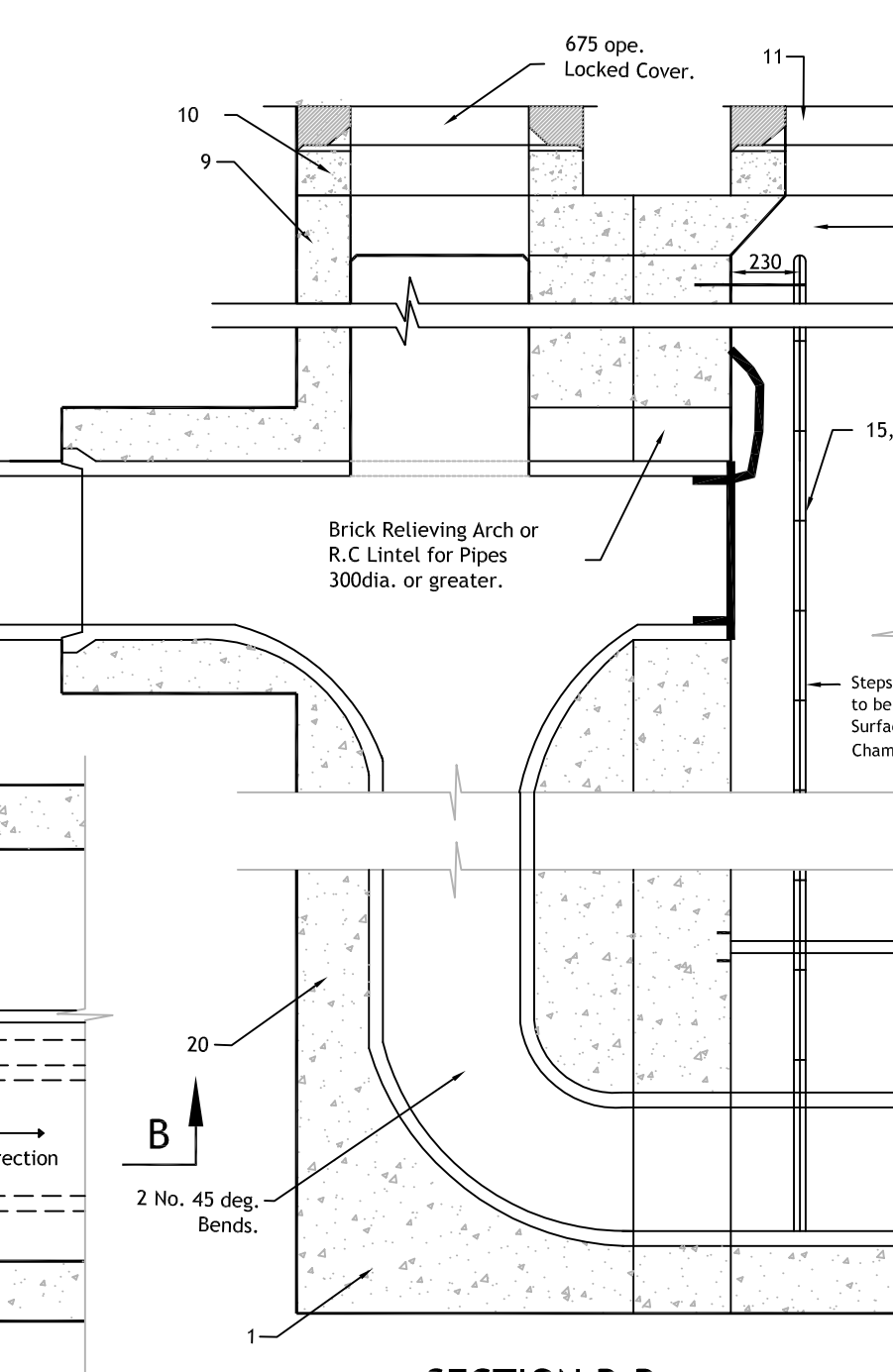
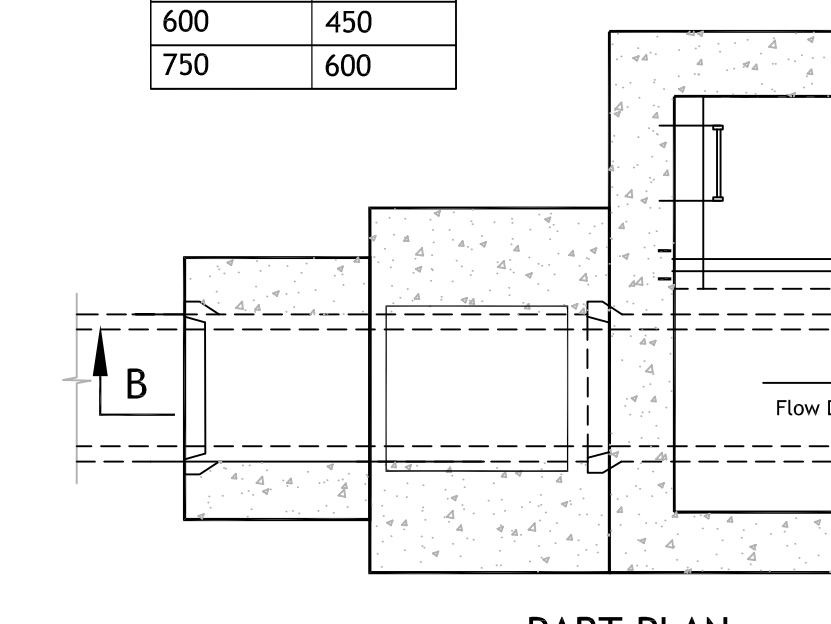
Inlet Dia. mm	H(max) mm
225	600
300	600
375	750
450	750
525	750
600	750
750	750



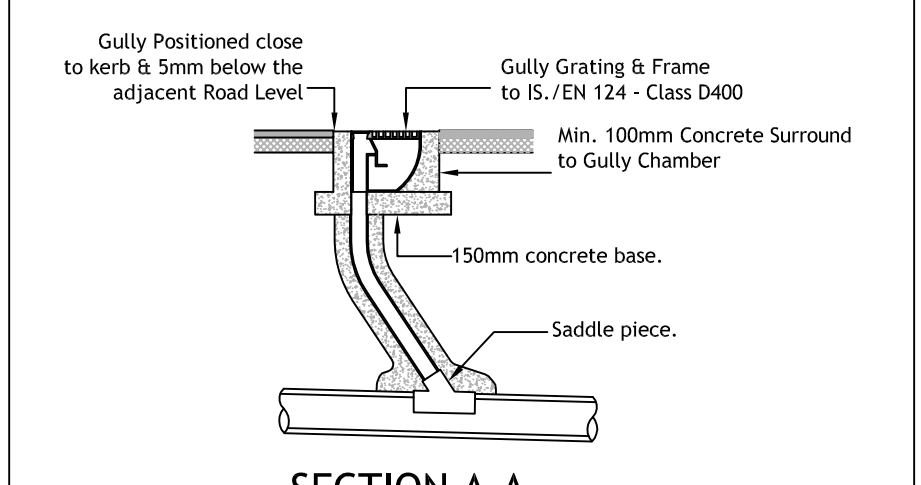
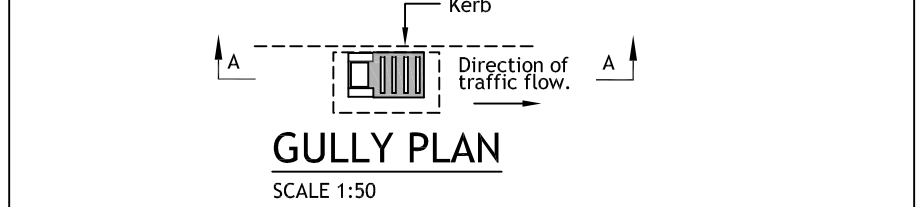
TYPE F MANHOLE (RAMP)

Backdrop Manhole Details for Pipe diam's. 225, 375, 450, 525, 600, 750mm. Drop > 750mm.

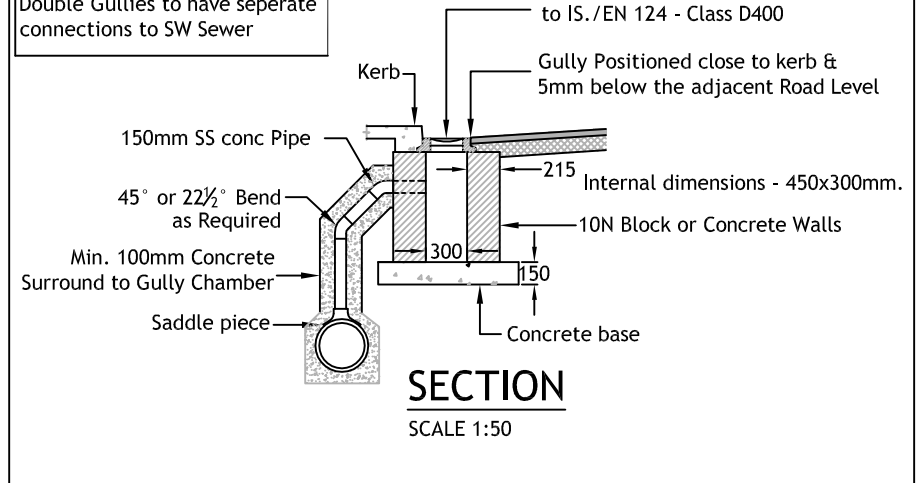
INLET DIA. mm	DROP DIA. mm
225	300
300	375
375	375
450	450
525	450
600	450
750	600



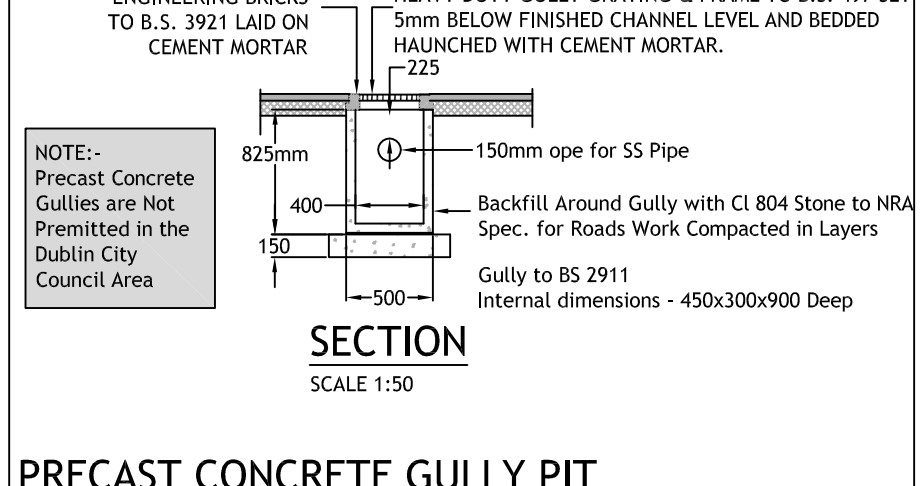
TYPE G MANHOLE (BACKDROP)



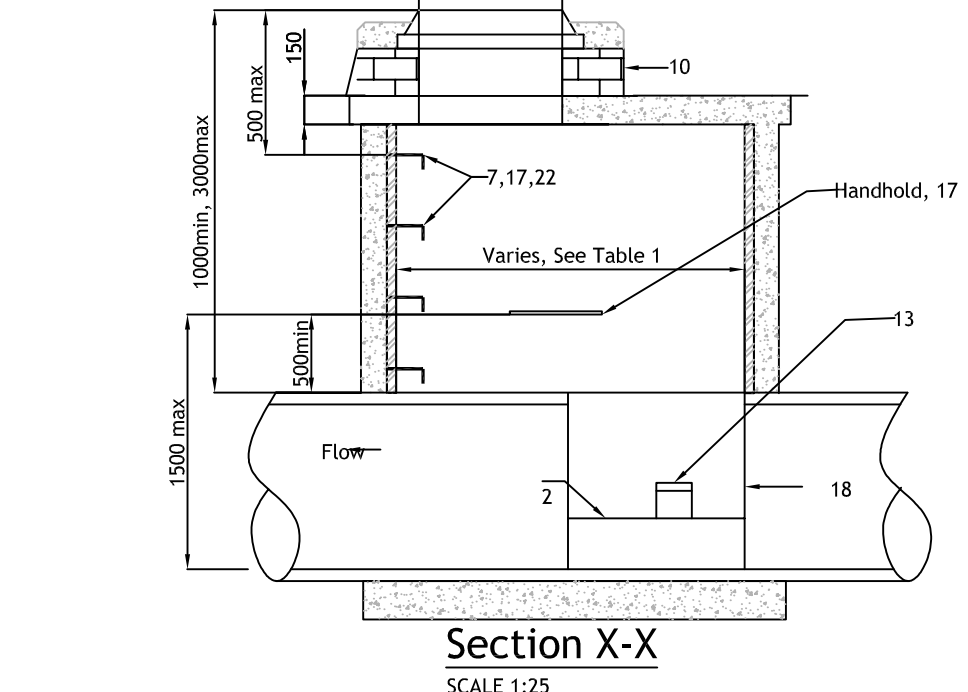
GULLY CONNECTION TO COMBINED SEWER



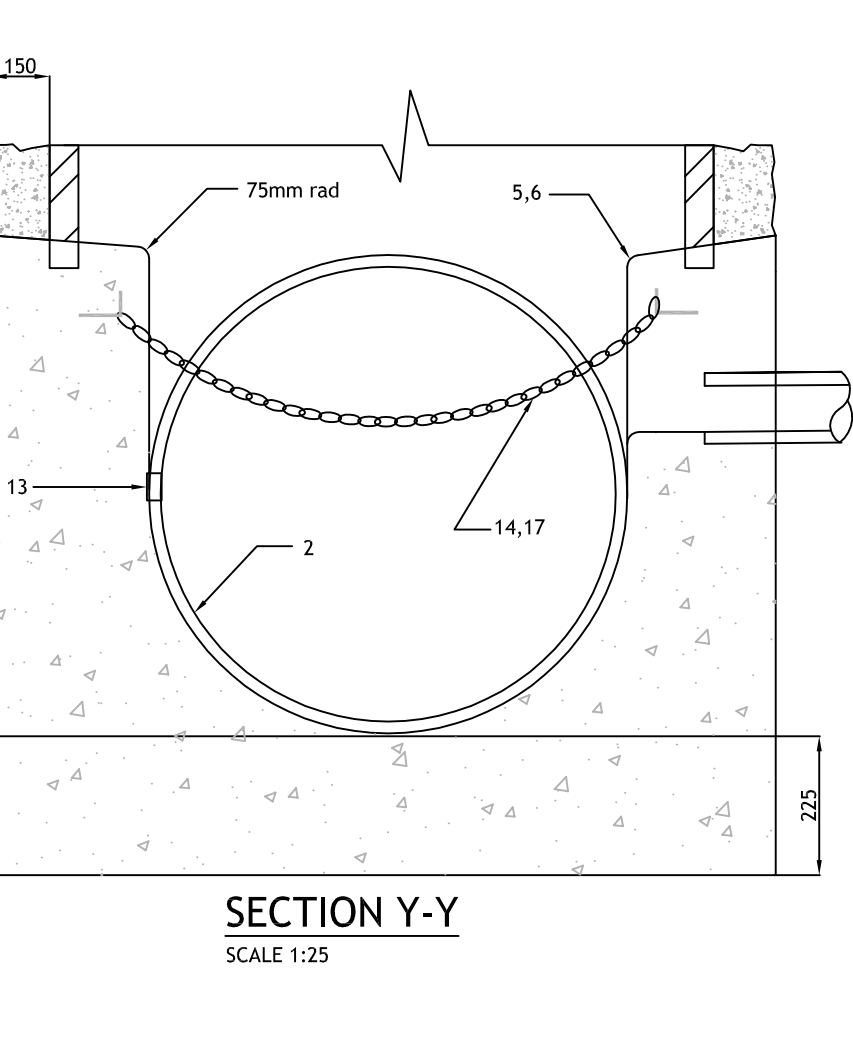
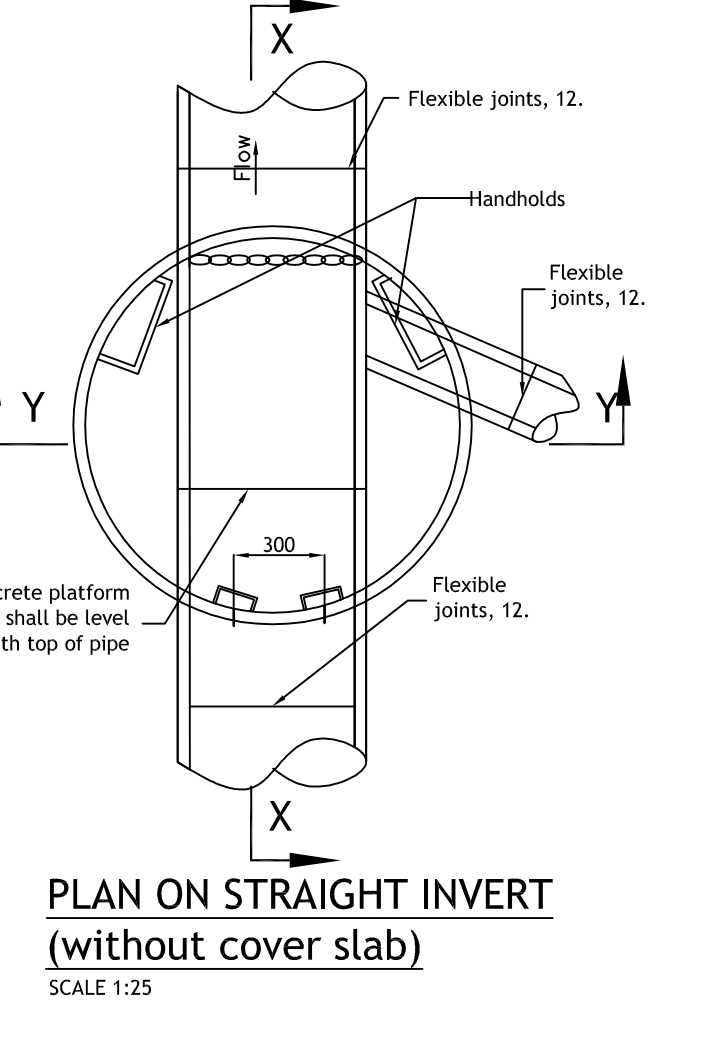
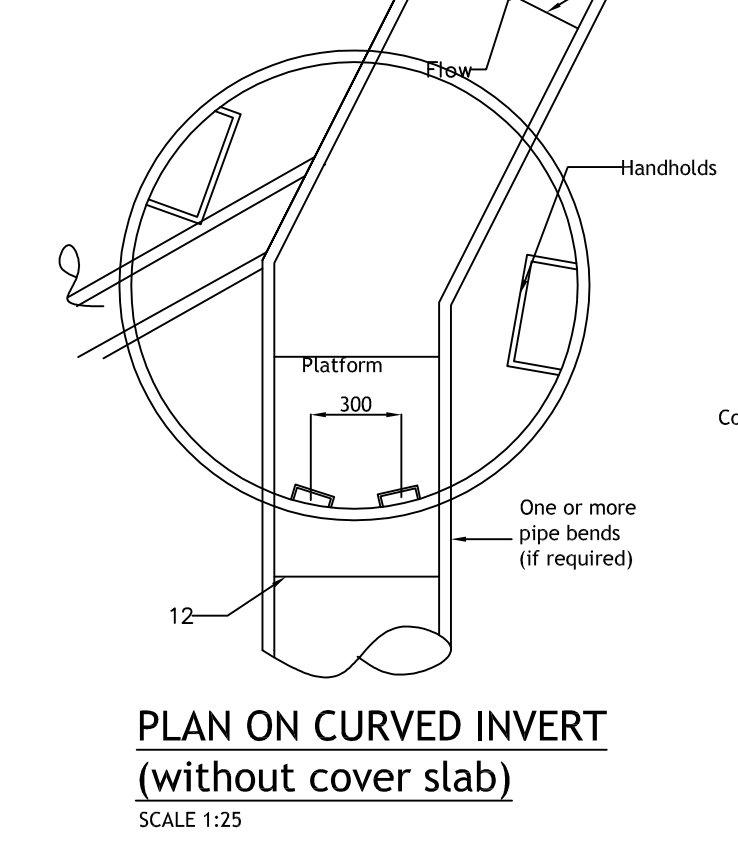
GULLY PIT CONNECTION TO SW SEWER



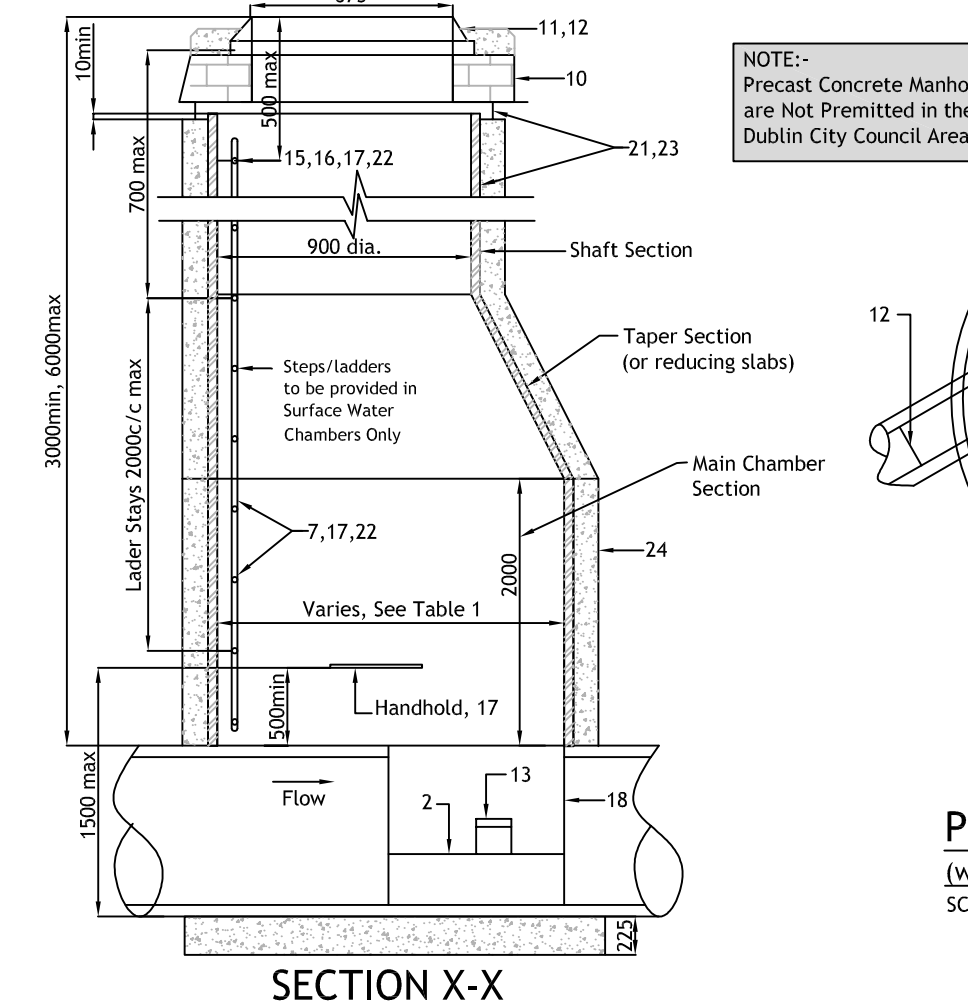
PRECAST CONCRETE GULLY PIT



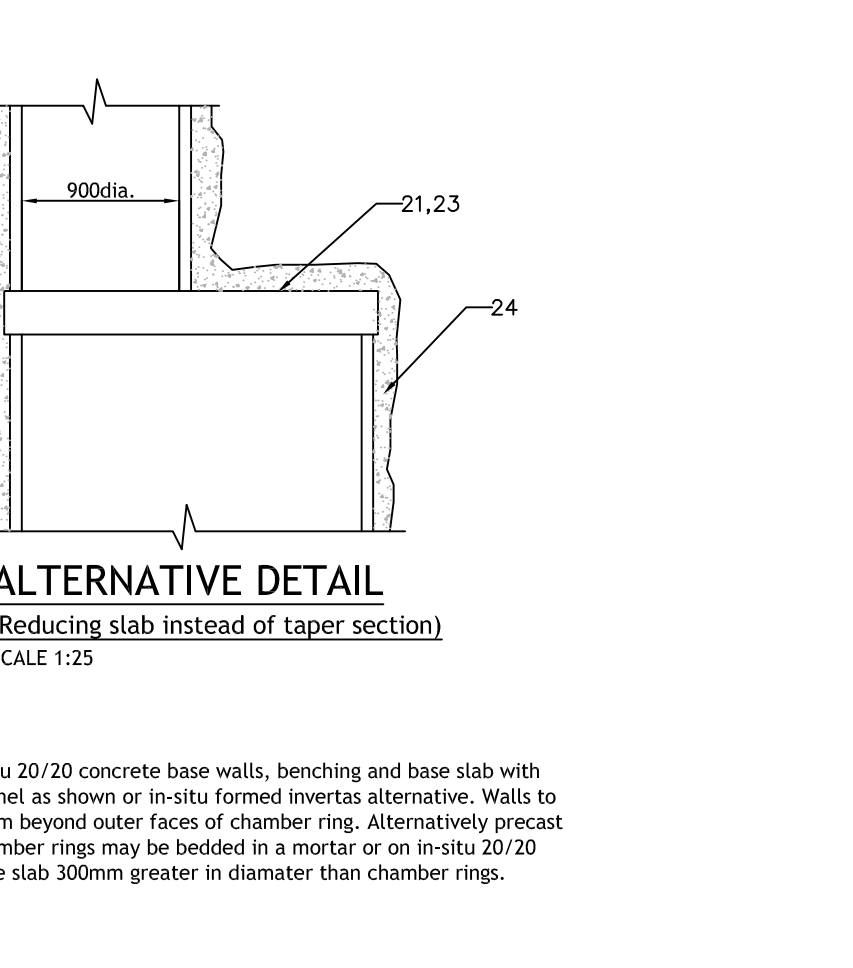
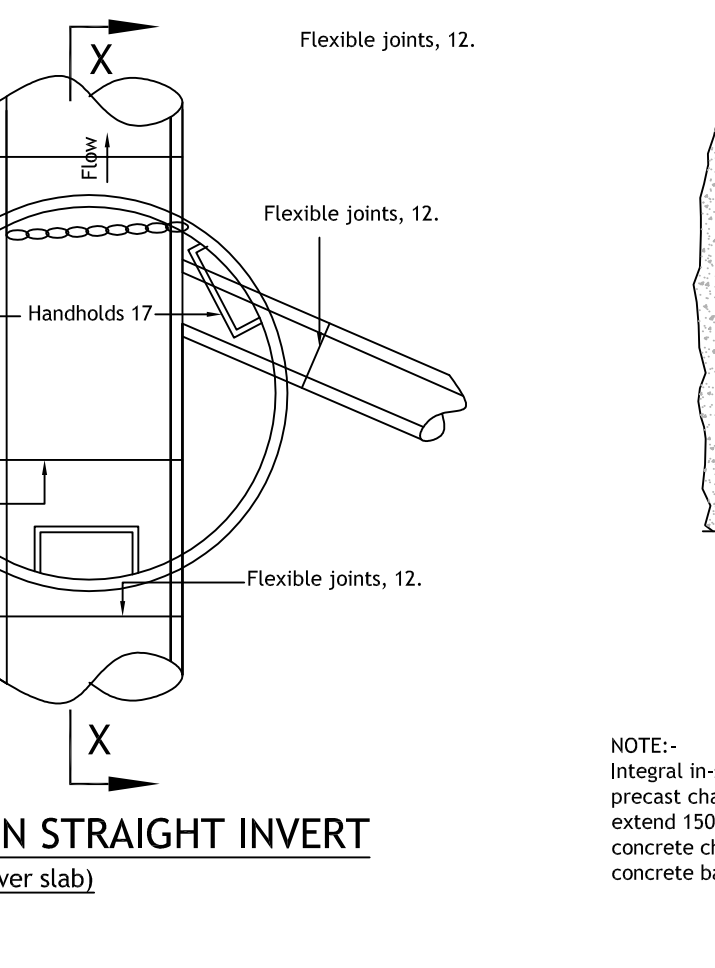
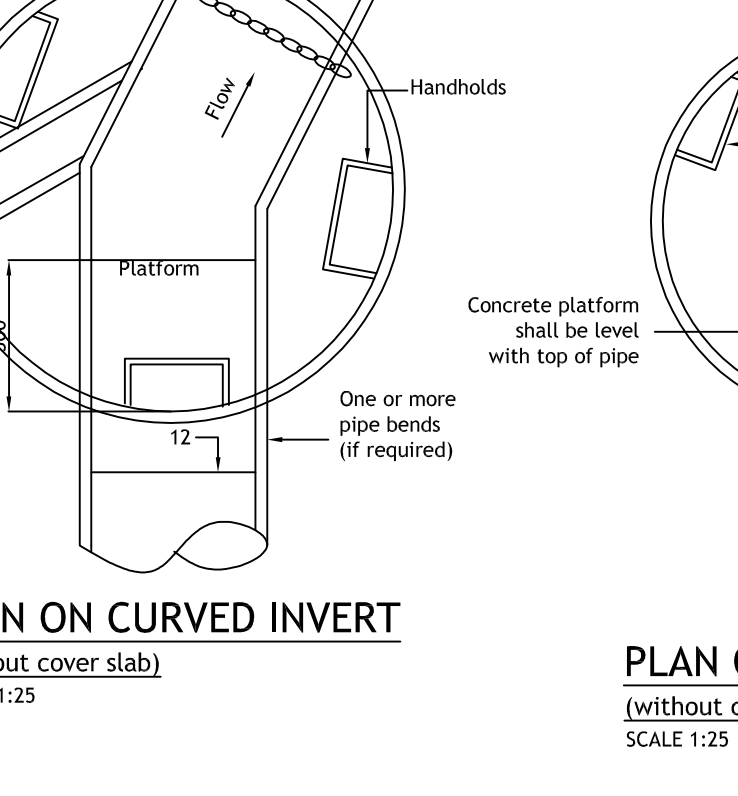
NOTE:- Precast Concrete Manholes are Not Permitted in the Dublin City Council Area



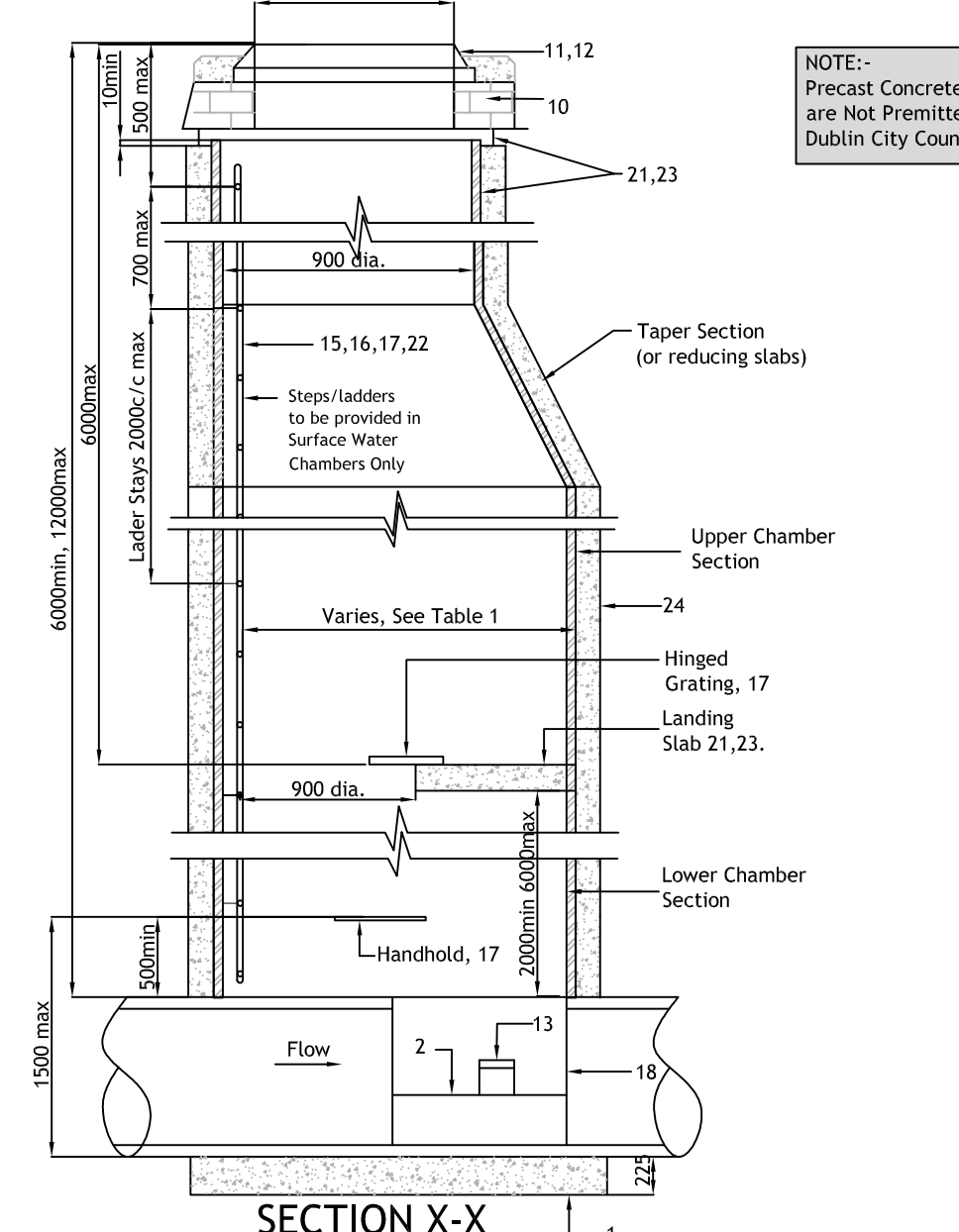
TYPE J MANHOLE



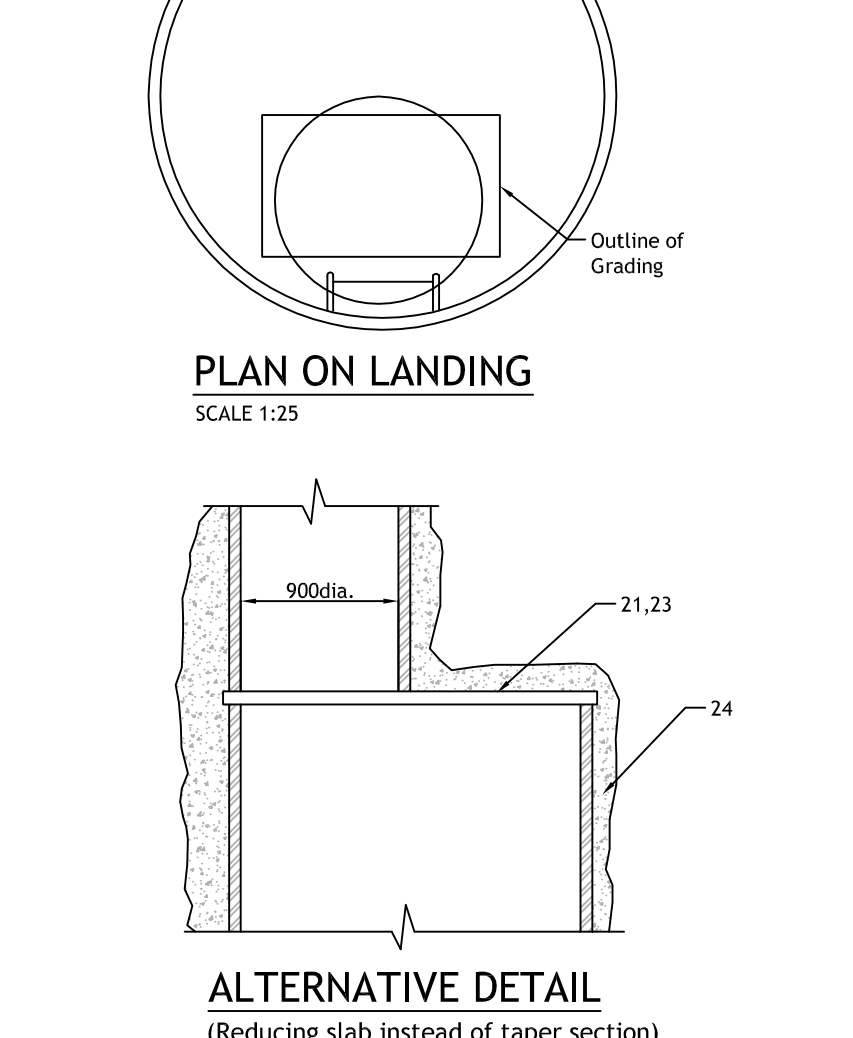
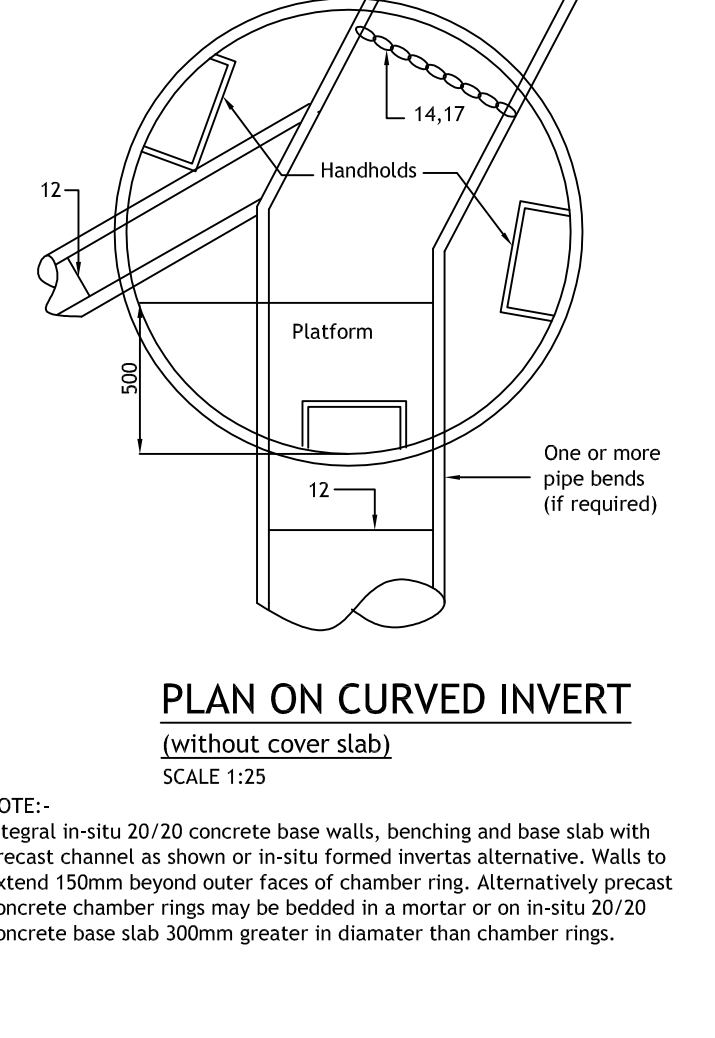
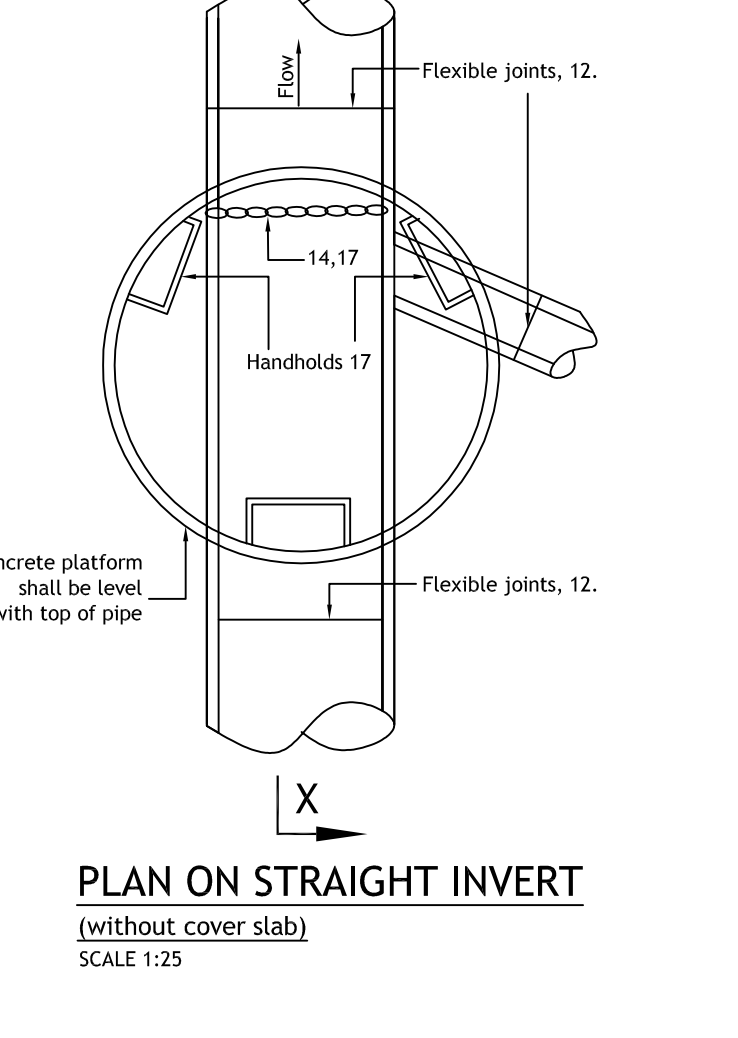
NOTE:- Precast Concrete Manholes are Not Permitted in the Dublin City Council Area



TYPE K MANHOLE



NOTE:- Precast Concrete Manholes are Not Permitted in the Dublin City Council Area



TYPE L MANHOLE

GENERAL NOTES:-

- Read in conjunction with all relevant Architect's Engineer's drawings and cross read the detailed notes on the various manholes.
- The minimum length of manholes are as shown, however this may need to be increased subject to the number of branches, this is made up as follows:
For pipes up to 150mmØ, provide the sum of the branches + 200mm per branch + 300mm
For pipes over 150mmØ, provide the sum of the branches + 300mm per branch + (300mm if no pipes up to 150mmØ are used)
eg: for 2x150Ø + 1x225Ø pipes on one side, length = 1525mm (subject to minimum length).
- Access Rungs shall be provided in MH greater than 1000mm to the invert level of the pipe.
- A 300mm concrete surround shall be provided around manhole covers in grassed areas.
- All Manholes covers and gullies shall be approved Local Authority type and to their standard pattern.
- All Drainage work shall be Constructed Strictly in accordance with the requirements of the Local Authority's Building Regulations.
- Class U2 finish to the top of slabs. Reinforcement in the slabs to details or instructed by the Engineer.

TABLE 1: MANHOLE TYPES AND SIZES

DEPTH (m)	PIPE DIAMETER (mm)	PRECAST	IN-SITU	PRECAST	IN-SITU	PRECAST	IN-SITU	PRECAST	IN-SITU
150	225	A	A	A	A	A	A	A	A
225	225	A	A	A	A	A	A	A	A
300	300	B	B	B	B	B	B	B	B
375	375	C	C	C	C	C	C	C	C
450	450	D	D	D	D	D	D	D	D
525	525	E	E	E	E	E	E	E	E
600	600	F	F	F	F	F	F	F	F
675	675	G	G	G	G	G	G	G	G
750	750	H	H	H	H	H	H	H	H
900	900	I	I	I	I	I	I	I	I
1050	1050	J	J	J	J	J	J	J	J
1200	1200	K	K	K	K	K	K	K	K

REV. DATE DESCRIPTION

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PAT O'GORMAN & ASSOCIATES
Consulting Structural and Civil Engineers
Unit C2, Nutgrove Office Park, Rathfarnham, Dublin 14.
Tel: +353 1 205 1102 Fax: +353 1 205 1102
E-mail: info@pogorman.ie www.pogorman.ie

PROJECT: PROSPEROUS

DRAWING TITLE: STANDARD MANHOLE DETAILS

SHEET 2 of 2

ARCHITECT: MCRM STAGE: PART 8

DATE	CHECKED	DRAWN	SCALES	DWG NO.	REV.
FEB 2017	PM	CB	AS SHOWN	1642-107	0