

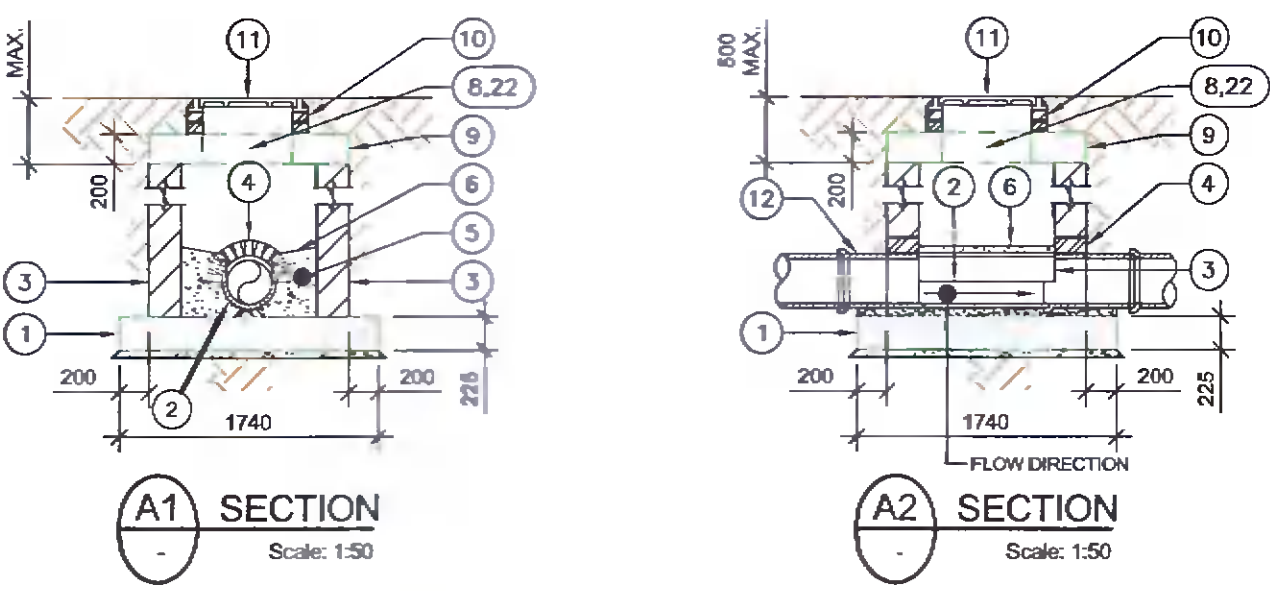
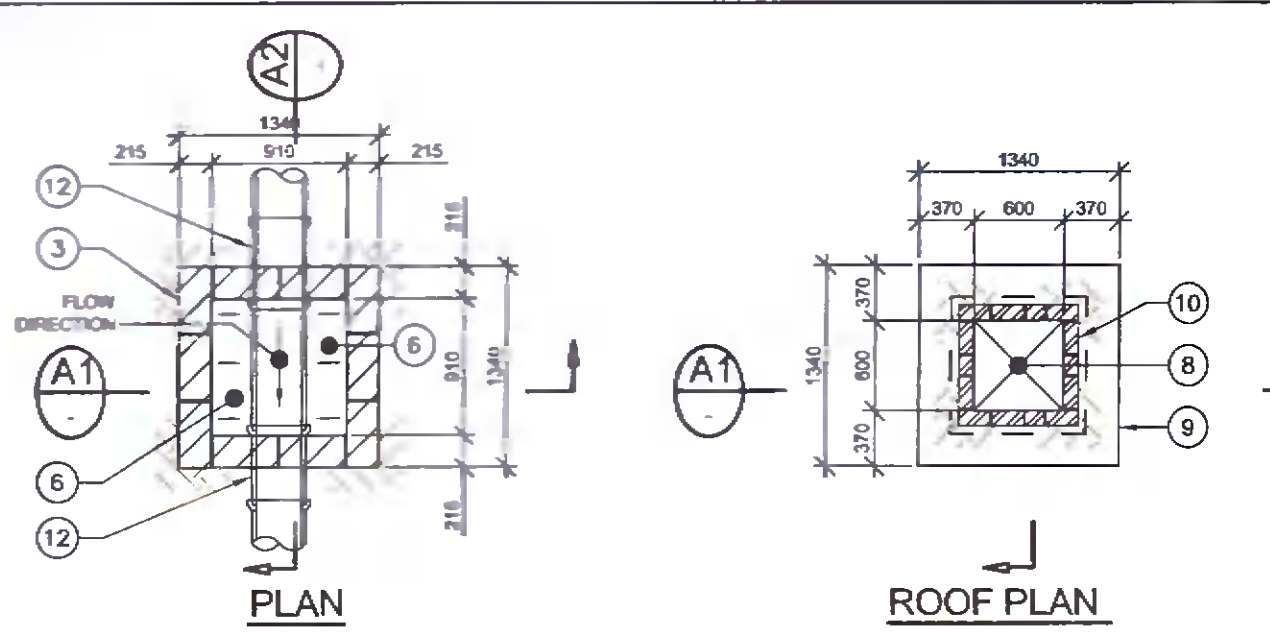
NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT ARCHITECT'S AND ENGINEERS DRAWINGS.
- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE. ENGINEER TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE ANY WORK PROCEEDS.
- REFER TO DRAWING JOB NUMBER 0000 FOR PROJECT SPECIFICATION.

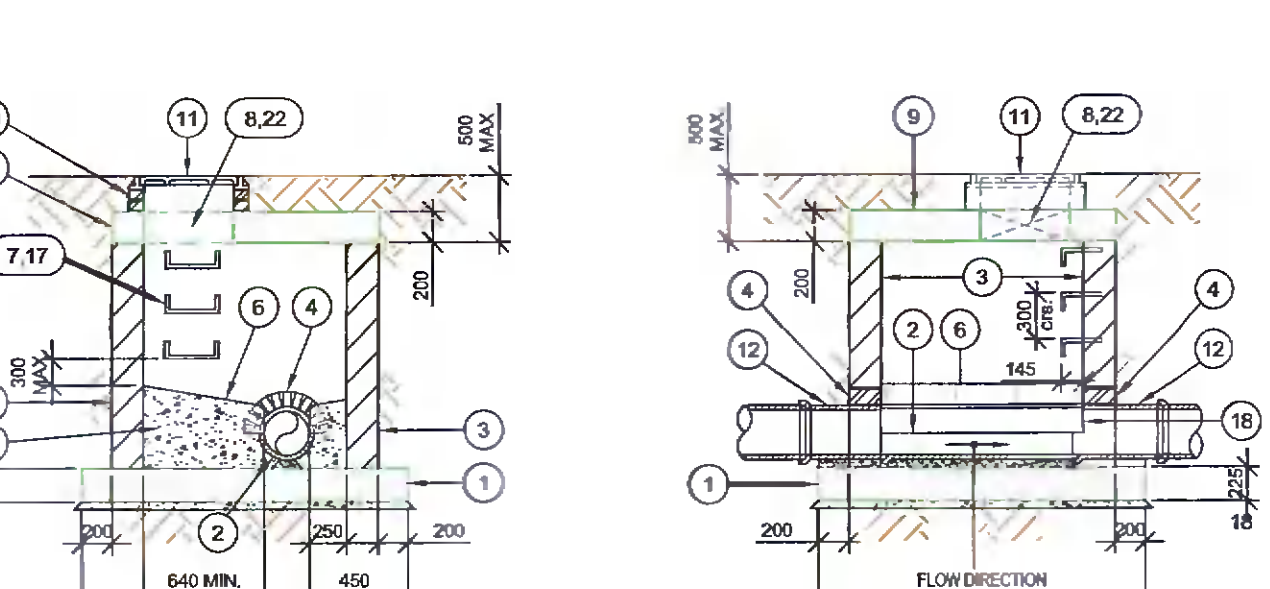
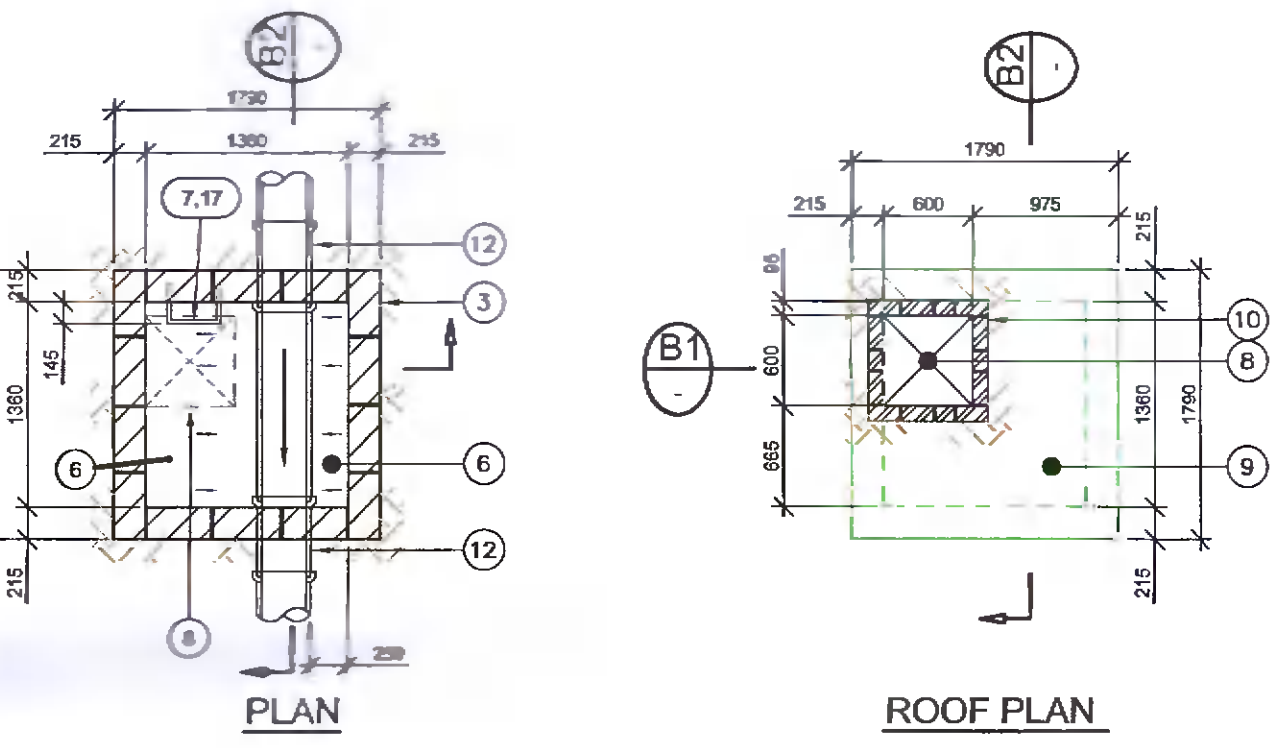
NOTES

- 225mm THICK C20/27 MASS CONCRETE FOUNDATIONS.
- PREFORMED HALF CIRCLE CHANNEL PIPES. THE PIPELINE MAY, WHERE PRACTICABLE, BE Laid THROUGH THE MANHOLE AND THE GROUND CUT OUT TO HALF DIAMETER. PROVIDED FLEXIBLE JOINTS ARE SITUATED ON EACH SIDE NO FURTHER THAN 400mm FROM THE INNER FACE OF MANHOLE WALL.
- MANHOLE CONSTRUCTION
 - FOR SURFACE WATER MANHOLES HIGH-DENSITY BLOCKS 20N STRENGTH TO I.S. EN 771 OR C20/27 IN-SITU CONCRETE TO I.S. EN 206.
 - BLOCK WORK SHALL BE BEDDED & JOINTED USING MORTAR TO I.S. 406. BEDS & VERTICAL JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR AS THE BLOCKS ARE Laid.
 - JOINTS SHALL BE FLUSH POINTED AS THE WORK PROCEEDS.
 - ALL FOLI MANHOLES MUST BE FACED IN SOLID ENGINEERING BRICK (MIN. CLASS '1' OR '2') OR IN-SITU CONCRETE FOR 1m ABOVE BENCHING LEVEL. 60% TO BE BONDED TO BLOCK WORK USING ENGLISH GARDEN WALL BOND.
 - MAXIMUM DEPTH OF BLOCK WORK MANHOLE IS 1.2m (THE USE OF BLOCK WORK IN DEEPER MANHOLES WILL BE CONSIDERED BUT SUCH USE WILL INCURE DETAILED STRUCTURAL DESIGN AND WRITTEN APPROVAL FROM IRISH WATER).
 - RELIEVING ARCH FORMED BY 215 x 103 x 86 SOLID ENGINEERING BRICK CLASS '1' OR '2'. RELIEVING ARCHES USED IN BRICK OR BLOCK WORK MANHOLES EXTEND OVER FULL THICKNESS OF WALL. A DOUBLE ARCH IS TO BE FORMED FOR PIPE DIAMETERS GREATER THAN 600mm.
 - BENCHING & PIPE CHANNEL PIPE SURROUND - C20/27 CONCRETE
 - BENCHING FINISHED IN 1:2 SAND-CEMENT MORTAR WITH A SMOOTH TROWEL FINISH, AT 1 IN 30 SLOPE TOWARDS CHANNEL.
 - STANDARD RINGS AT 300 C/C VERTICALLY & GALVANISED TO THE LATEST VERSION OF I.S. 720 OR EQUIVALENT. NOTE: STEEL RINGS ARE NOT ACCEPTABLE.
 - 600mm SQUARE OPE IN ROOF SLAB.
 - PRECAST R.C. ROOF SLAB SHALL BE 200mm THICK IN GRADE C 30/37, WITH 40mm REINFORCING TO STEEL, DESIGNED TO BE 200 TO TAKE FULL TRAFFIC LOADING.
 - 1 TO 3 COURSES OF SOLID ENGINEERING BRICKS CL. '1' TO I.S. EN 898 SET IN M40 MORTAR.
 - CLASS D400 OR E600 MANHOLE COVER & FRAME TO I.S. EN 124. 150mm DEEP FRAME FOR ROADS & 100mm DEEP FOR FOOTPATHS & GREEN AREAS. NON-ROCK DESIGN, CLOSED KEYWAYS, MANUFACTURED FROM SPHERICAL GRANITE CAST IRON (DUCTILE CAST IRON) OR 600/800mm CLEAR OPENING COVER & FRAME COATED IN BITUMEN OR OTHER APPROVED MATERIAL COVER TO HAVE A MINIMUM MASS OF 40kg/m². FRAME BEARING AREA SHALL BE 600mm MIN. FRAMES SHALL BE BEDDED TO PREVENT COVERS FALLING INTO MANHOLE. FRAMES SHALL BE BEDDED ON APPROVED MORTAR TO MANUFACTURER'S INSTRUCTIONS.
 - SHORT LENGTH PIPE & PIPE JOINT EXTERNAL TO MANHOLE SHALL NOT EXCEED 600mm FROM THE INNER FACE OF MANHOLE WALL.
 - TOE HOLES OF 200mm MINIMUM DEPTH & GALVANISED STEEL SAFETY RAILINGS TO BE PROVIDED IN BENCHING OF SEWERS GREATER THAN 1200mm & DEPTH TO INVERT < 3m FOR ACCESS TO INVERT.
 - A STAINLESS STEEL SAFETY CHAIN IS TO BE PROVIDED ON PIPES THAT EXCEED 450mm IN DIAMETER, COMPLYING WITH ISO 1853 OR EQUIVALENT.
 - WHEN DEPTH OF MANHOLES TO INVERT IS GREATER THAN 3.0m LADDERS SHALL BE USED. INSTEAD OF RINGS TO IS 4211 OR EQUIVALENT EXCEPT THAT STRINGERS SHOULD BE NOT LESS THAN 60 x 12mm IN SECTION & RINGS 20mm IN DIAMETER. FIXED LADDERS SHOULD MEET THE DIMENSIONAL REQUIREMENTS OF I.S. 4211 OR EQUIVALENT. DISTANCE FROM THE TOP RING OF THE LADDER TO GROUND LEVEL SHOULD NOT EXCEED 500mm.
- ALL MANHOLES SHALL BE WATER TIGHT TO THE SATISFACTION OF THE ENGINEER.
- FORMWORK TO REINFORCED CONCRETE & MASS CONCRETE SHALL COMPLY WITH I.S. EN 1090-1:4.
- FINISH TO THE TOP OF SLABS SHALL COMPLY WITH TYPE '1', I.S. EN 1090-1:4.
- PLAN DIMENSIONS OF MANHOLES ARE BASED ON BLOCK WORK HAVING A CO-ORDINATING SIZE OF 400 x 225 x 100 FOR PIPE DIAMETER < 300mm USE MANHOLE WITH INTERNAL DIAMETER SIZE = PIPE SIZE + 4mm + 300mm.
- MANHOLES ARE DESIGNED TO IS EN 752 & WALL THICKNESS TO I.S. 225 BLOCK WORK DESIGN CODE TAKING GRANULAR FILL, PRESSURE & H.L. SURCHARGE.
- REINFORCEMENT TO SLABS TO ENGINEER'S DETAILS.
- FOR MANHOLES < 3m DEPTH TO INVERT USE C 30/37 IN-SITU CONCRETE. REINFORCING MESH REF. J201 TO BE FIXED AT MID POINT OF WALL. ADDITIONAL REINFORCEMENT TO BE SPREAD OVER PIPE CROWN.
- PRECAST MANHOLES, CHAMBER WALLS & COVER SLAB TO BE CONSTRUCTED TO I.S. EN 1917 & I.S. 420:2004.
- MANHOLE OPENINGS TO BE SITUATED FURTHEST FROM THE NEAREST CARRIAGEWAY. MANHOLE STEPS ACCESS TO BE POSITIONED TO ALLOW VIEWING OF CONCERNING TRAFFIC.
- FOR BEDDING & SEALING OF CHAMBER RINGS, THE TOP RING TO PRECAST COVER SLAB & BOTTOM RING TO BE BEDDED WITH CEMENT MORTAR. FOR INTERMEDIATE RINGS, JOINTS TO BE SEALED WITH APPROVED PRE-FORMED JOINTING STRIP.
- PRECAST MANHOLES TO BE SURROUNDED WITH A MINIMUM OF 150mm THICK GRADE C20/25 CONCRETE.
- FOR FOLI DRAINAGE TO BE TAKEN IN CHARGE BY IRISH WATER, MANHOLES ARE TO BE CONSTRUCTED STRICTLY IN ACCORDANCE WITH THE REQUIREMENTS OF IRISH WATER, WHICH MAY DIFFER FROM THE DETAILS PROVIDED. REFER TO IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND ASSOCIATED IRISH WATER STANDARDS I.S. 4211, ALONG WITH ANY PARTICULAR REQUIREMENTS.

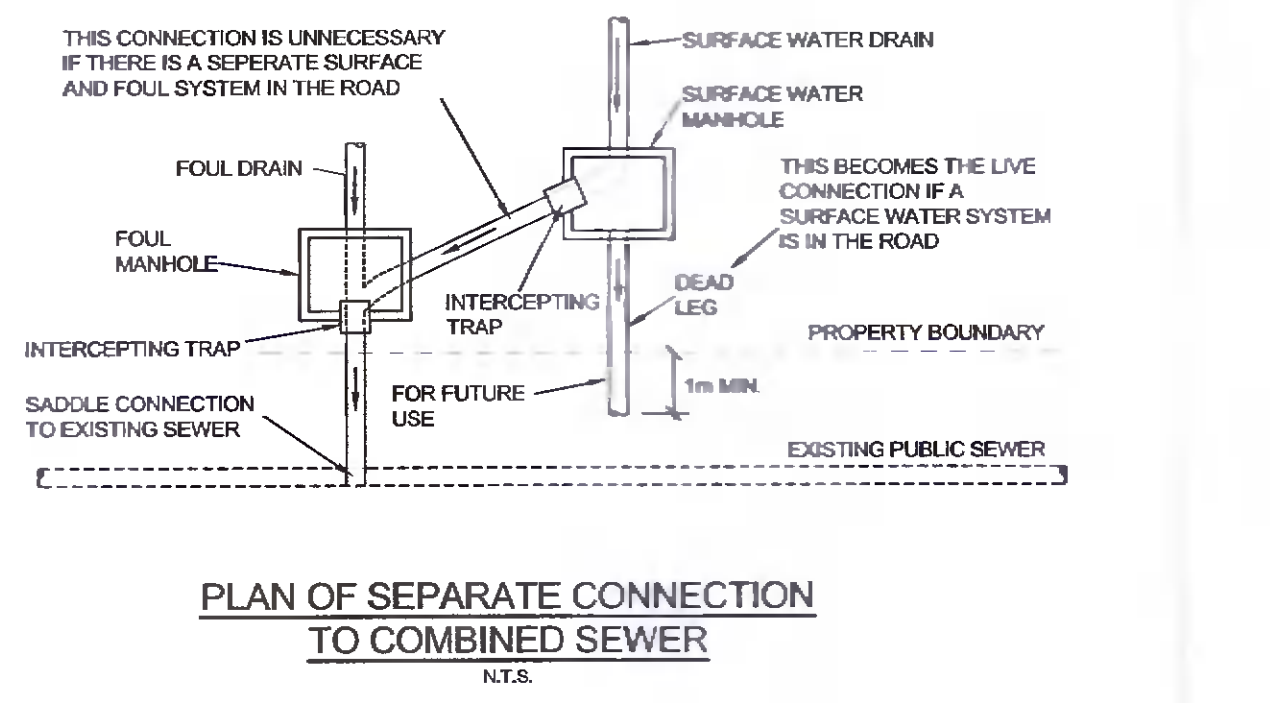
PRECAST MANHOLES NOT PERMITTED WITHIN DCC AREA.



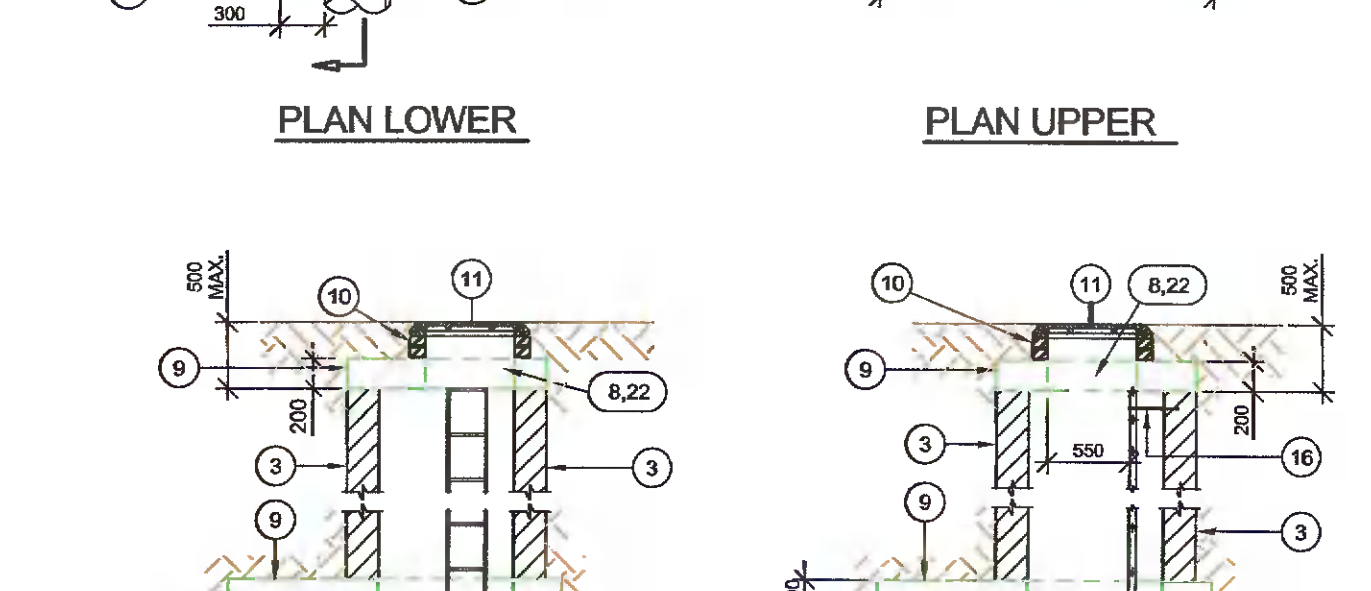
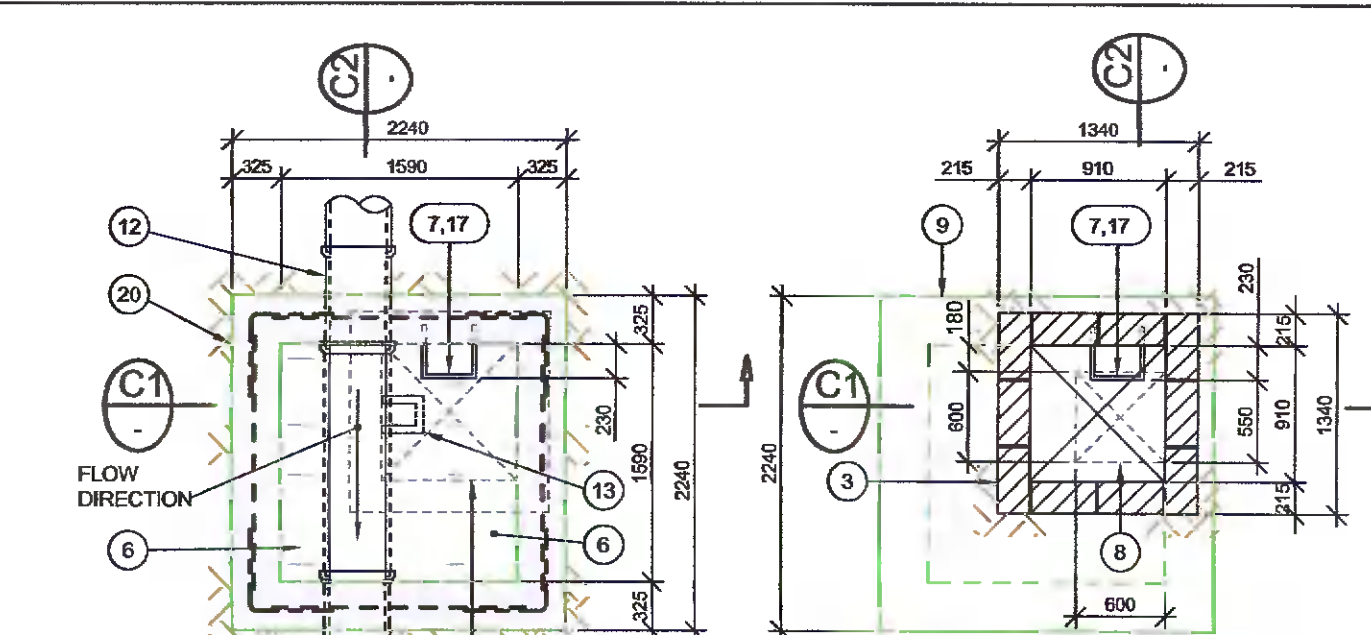
MANHOLE TYPE A (FOR PIPE DIAMETERS 150,225,300,375,450 mm)
DEPTH TO INVERT < 1m



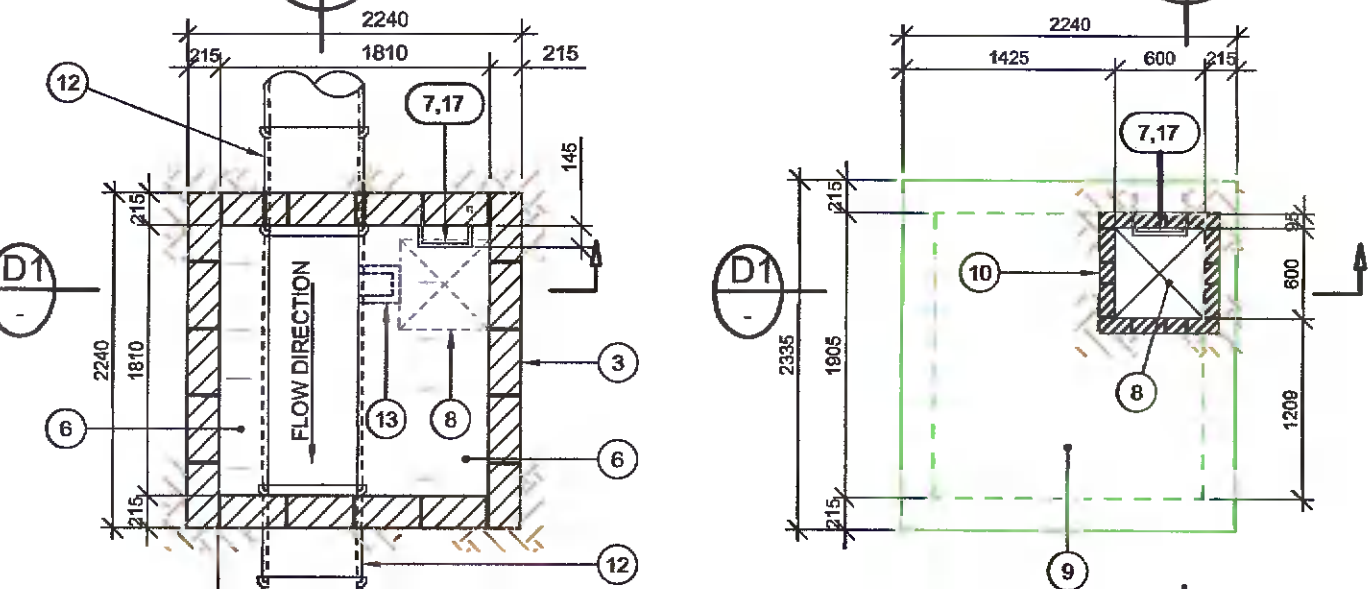
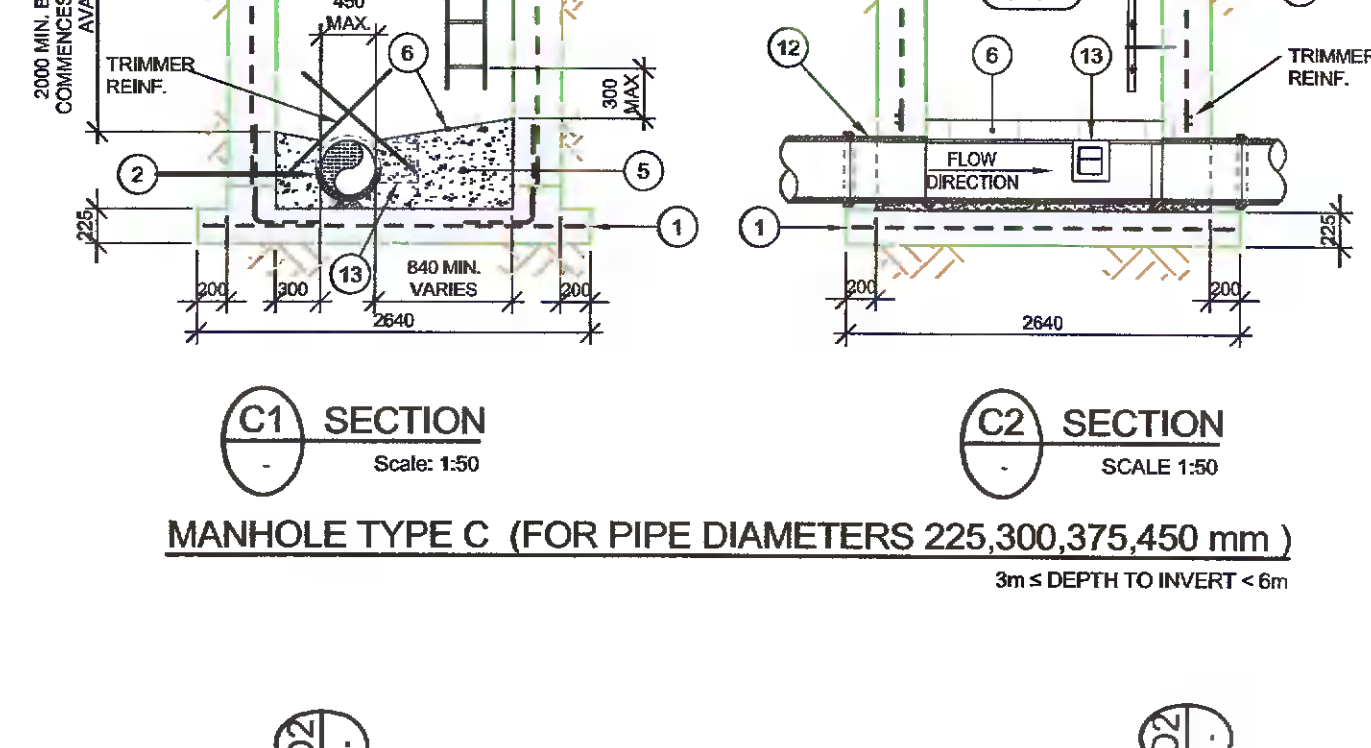
MANHOLE TYPE B (FOR PIPE DIAMETERS 225,300,375,450 mm)
1m ≤ DEPTH TO INVERT < 3m



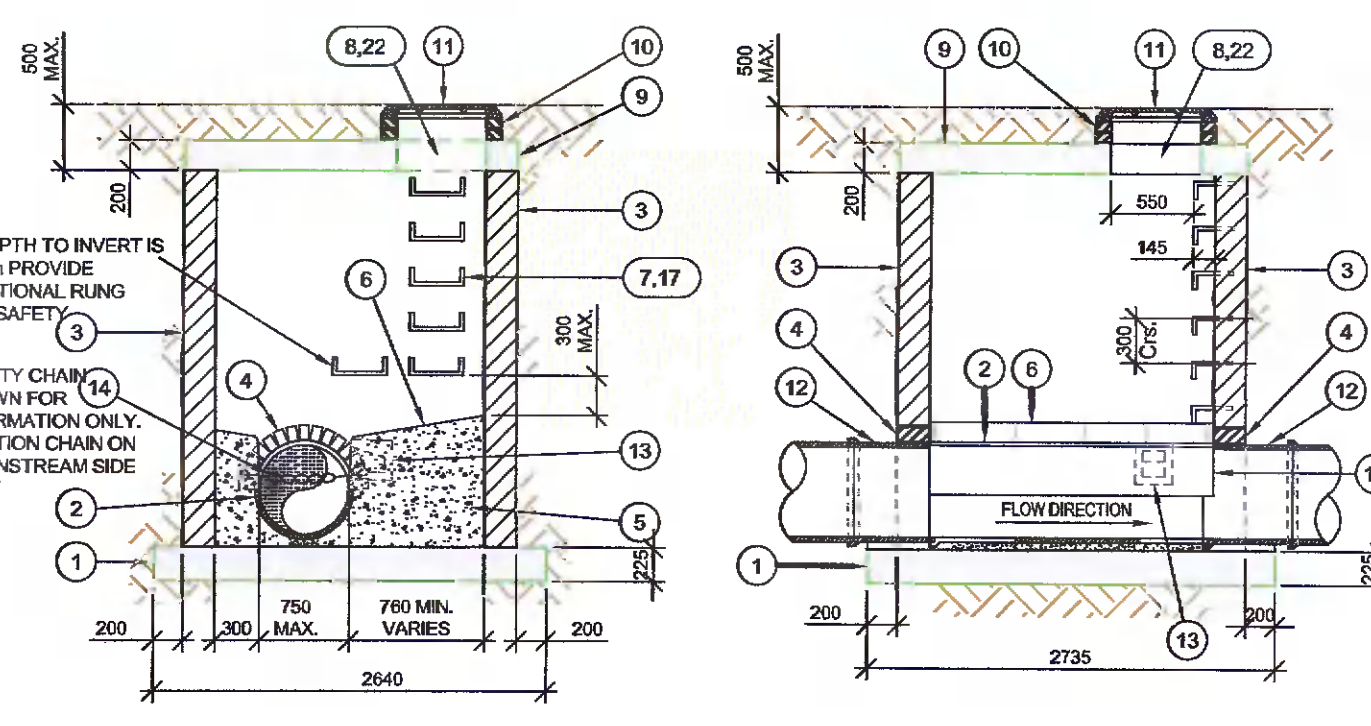
PLAN OF SEPARATE CONNECTION TO COMBINED SEWER
N.T.S.



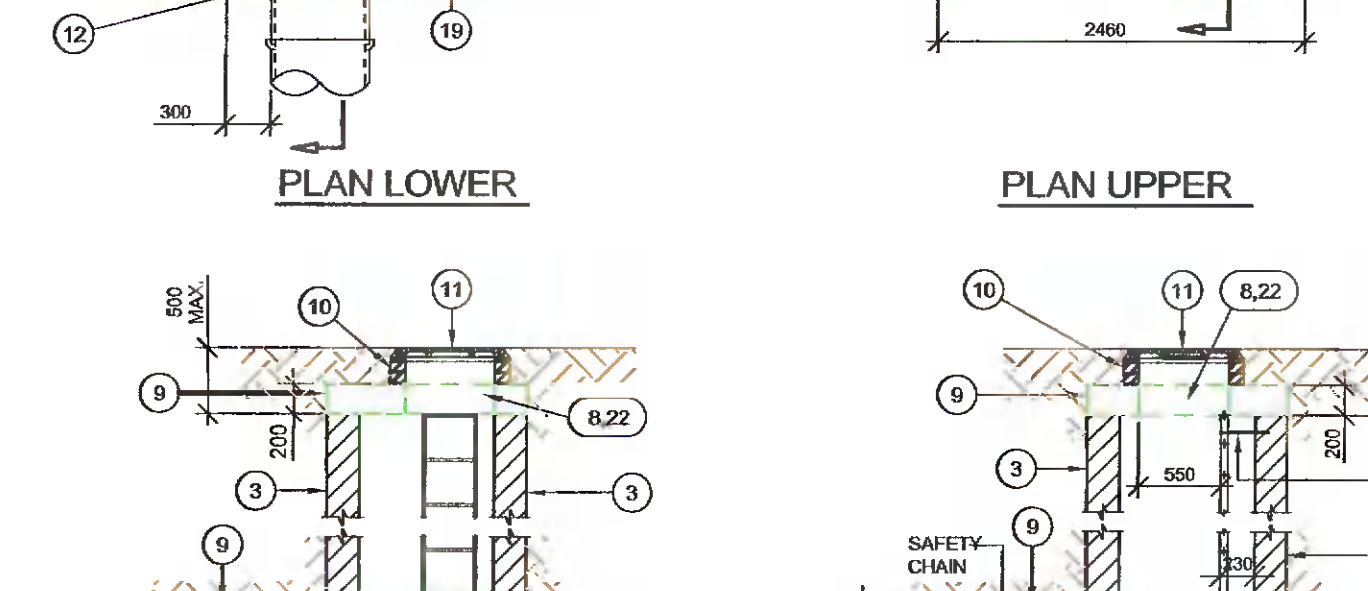
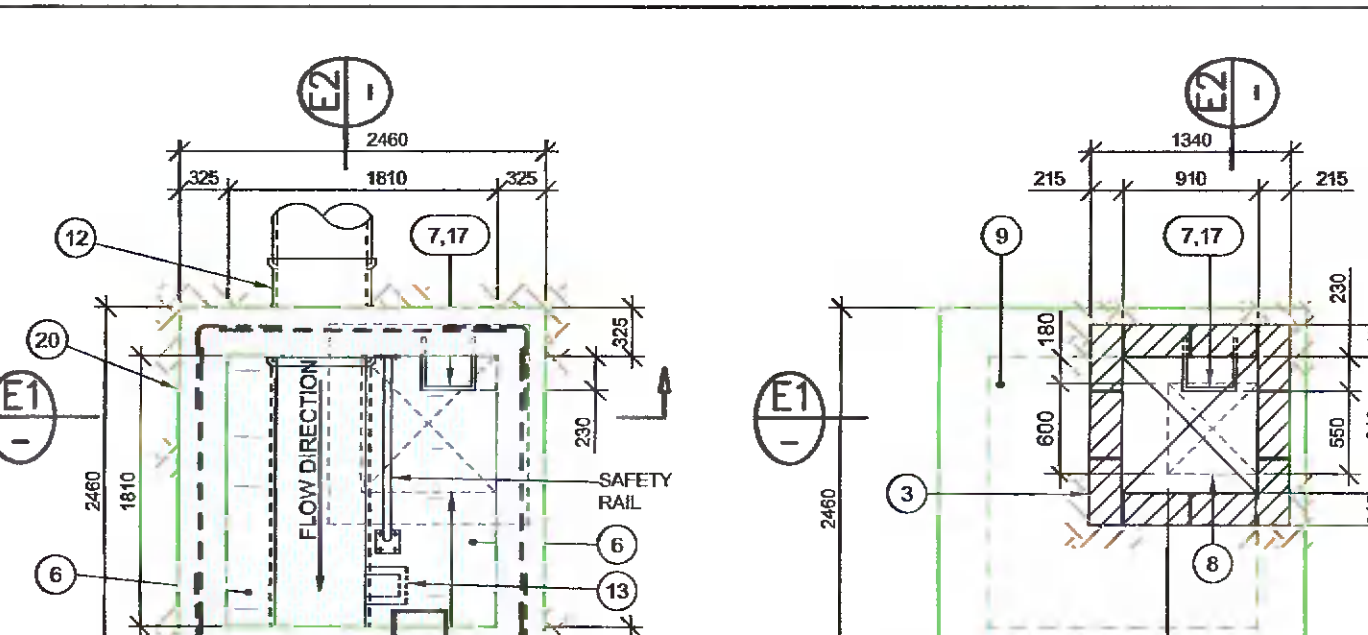
MANHOLE TYPE C (FOR PIPE DIAMETERS 225,300,375,450 mm)
3m ≤ DEPTH TO INVERT < 6m



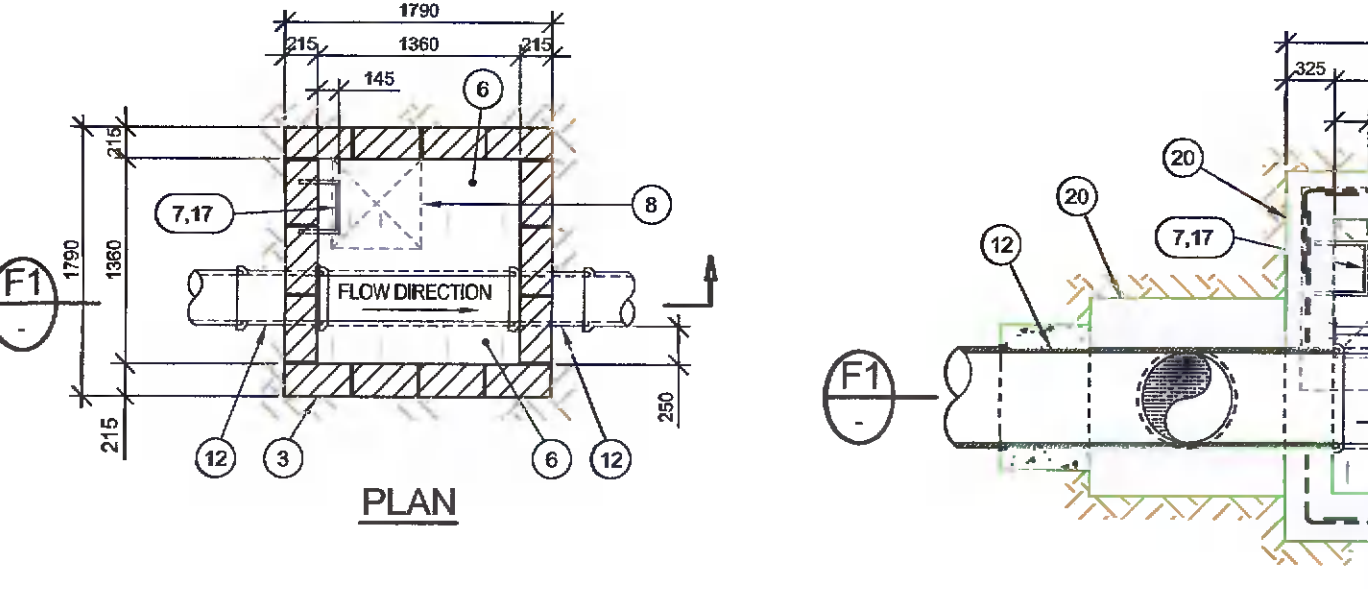
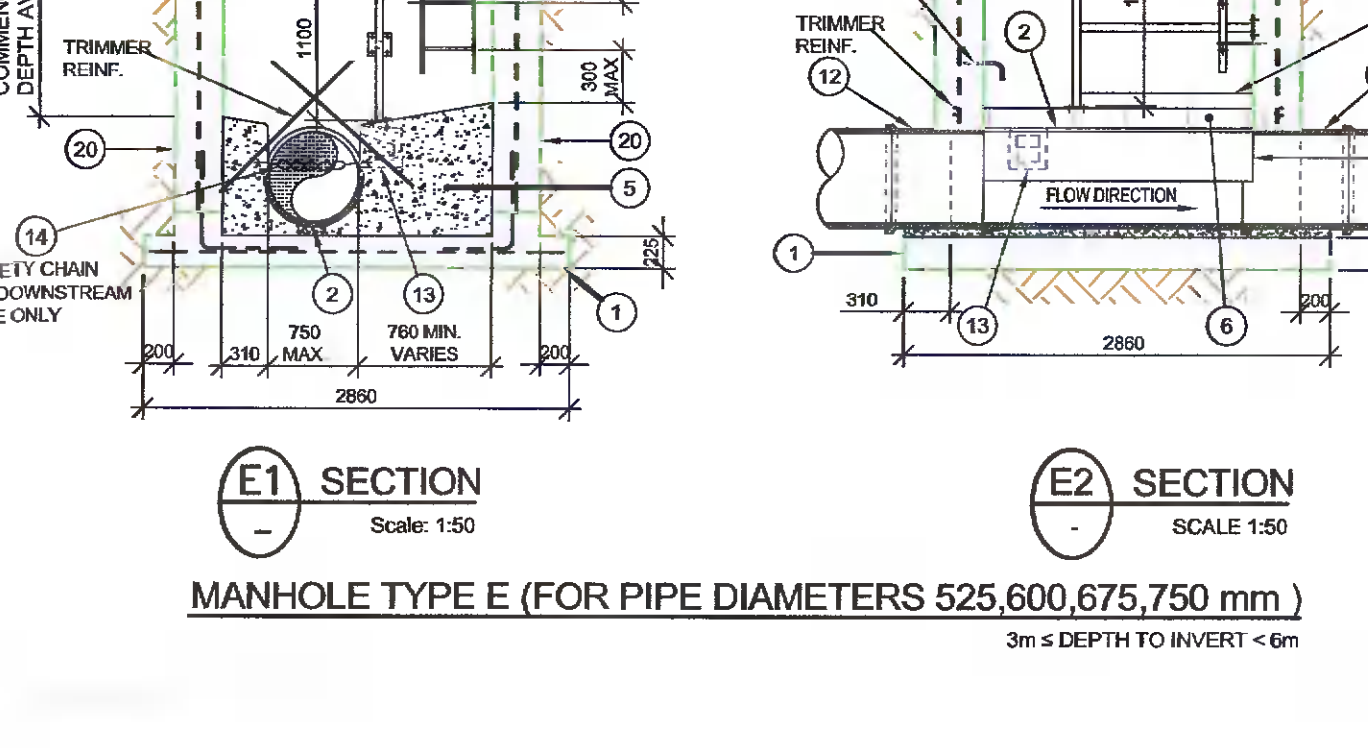
MANHOLE TYPE D (FOR PIPE DIAMETERS 525,600,675,750 mm)
1m ≤ DEPTH TO INVERT < 3m



MANHOLE TYPE D (FOR PIPE DIAMETERS 525,600,675,750 mm)
1m ≤ DEPTH TO INVERT < 3m



MANHOLE TYPE E (FOR PIPE DIAMETERS 525,600,675,750 mm)
3m ≤ DEPTH TO INVERT < 6m



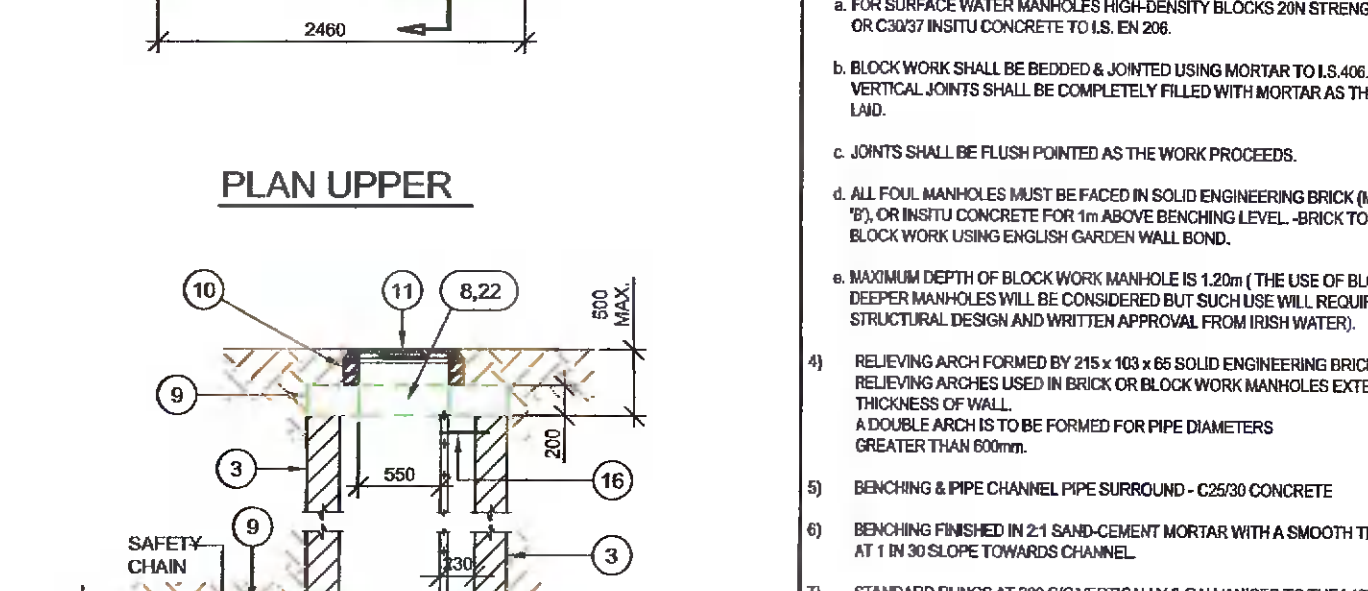
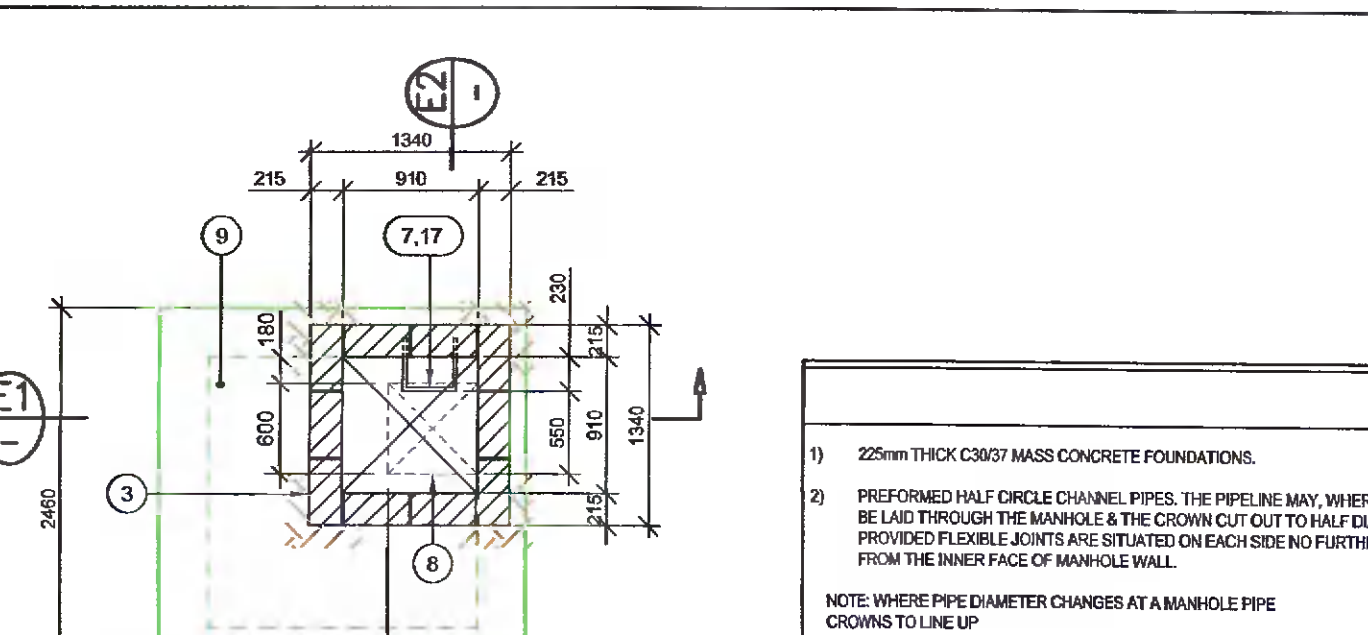
MANHOLE TYPE F RAMP MANHOLE (FOR PIPE DIAMETERS 150-750 mm)
SCALE 1:50

TABLE F

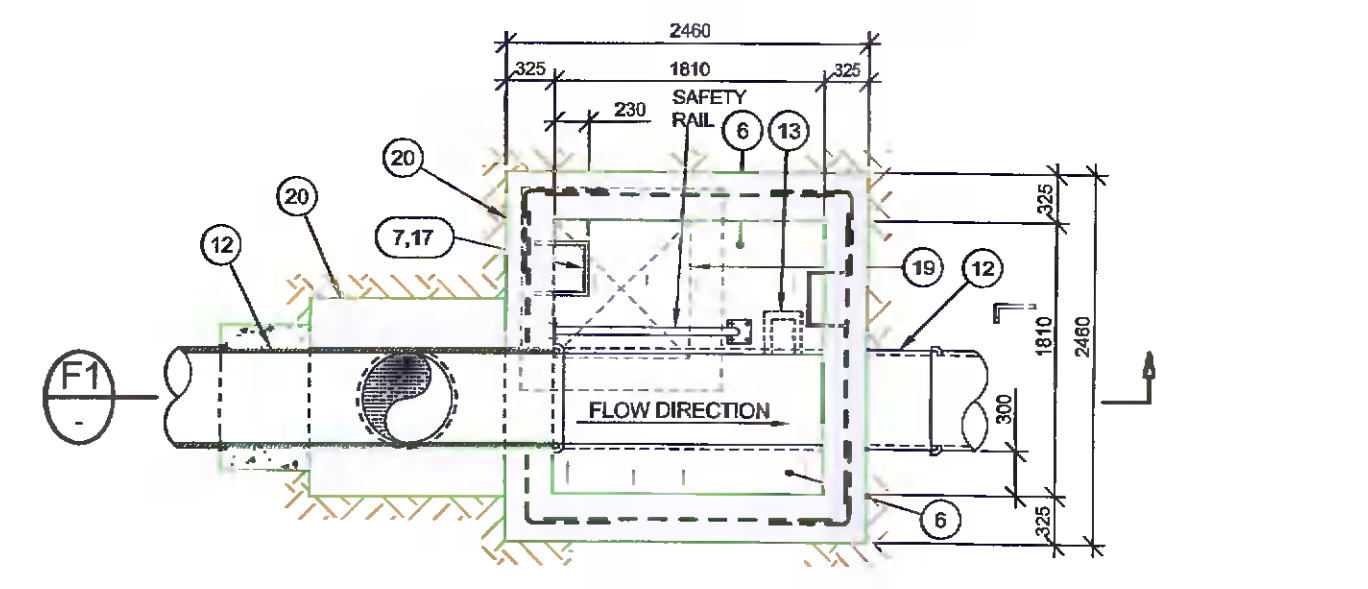
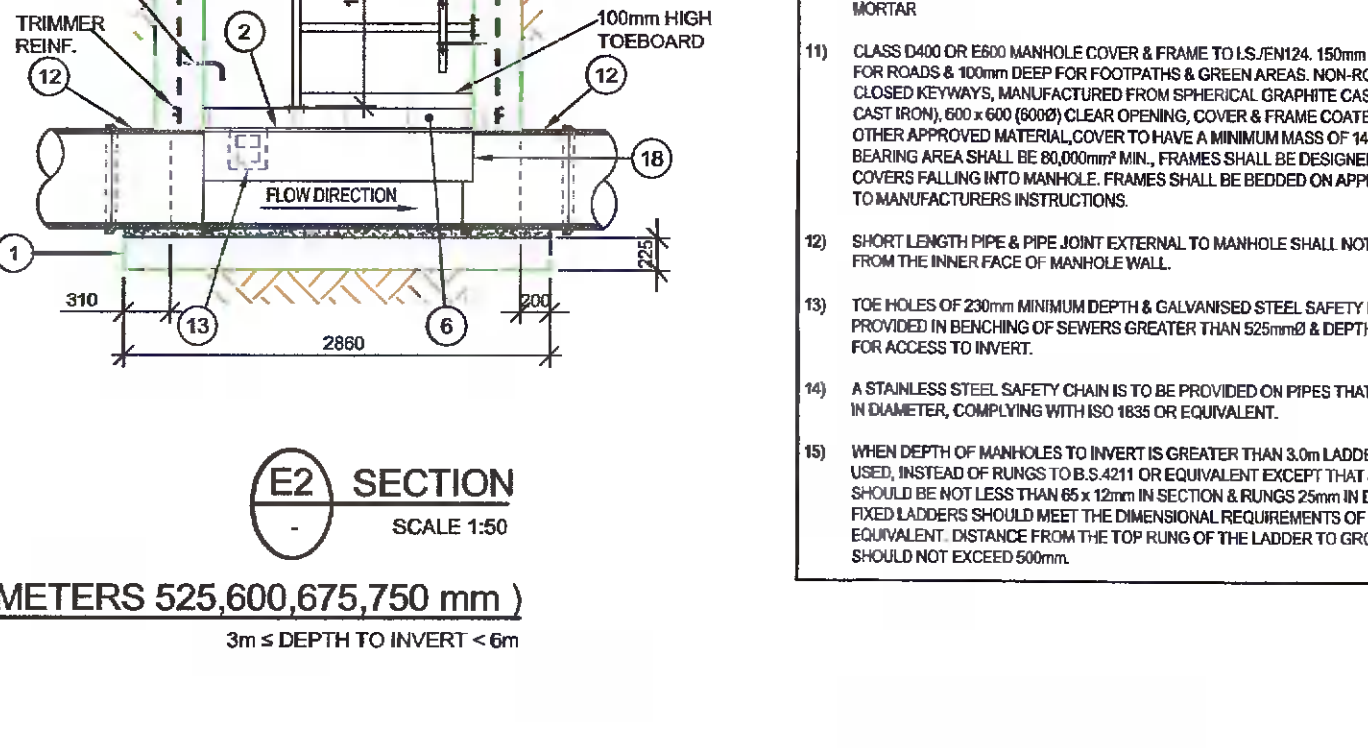
INLET Ø	DEPTH (max)
mm	mm
A	H
225	600
300	600
375	750
450	750
525	750
600	750
750	750

WHEN THE DROP 'H' IS GREATER THAN THE MAX VALUE SHOWN USE BACKDROP MANHOLE

MANHOLE TYPE G BACKDROP MANHOLE FOR ALL PIPE DIAMETERS 225-750 mm
DROP > 600 FOR 225 & 300 PIPE DIAMETERS
DROP > 750 FOR GREATER PIPE DIAMETERS
SCALE 1:50



MANHOLE TYPE G BACKDROP MANHOLE FOR ALL PIPE DIAMETERS 225-750 mm
DROP > 600 FOR 225 & 300 PIPE DIAMETERS
DROP > 750 FOR GREATER PIPE DIAMETERS
SCALE 1:50



MANHOLE TYPE G BACKDROP MANHOLE FOR ALL PIPE DIAMETERS 225-750 mm
DROP > 600 FOR 225 & 300 PIPE DIAMETERS
DROP > 750 FOR GREATER PIPE DIAMETERS
SCALE 1:50

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

Rev	Date	Amendments	by	chkd

PROJECT
PROPOSED PAINT STORE AT GALCO, BALLYMOUNT

CLIENT
GALCO

DRAWING TITLE
MANHOLE DETAILS SHEET 1 OF 2

drawn by: DB date: 01.04.22 scale: N.T.S @ A1 chk: IC

GALC - DOW - 00 - XX - DR - CE

Project	Originator	Volume	Level	Type	Role
21183	5010				P-01

DOW Project No. drg. no. rev.

S4 - FOR STAGE APPROVAL

Suitability Status: Code - Description

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