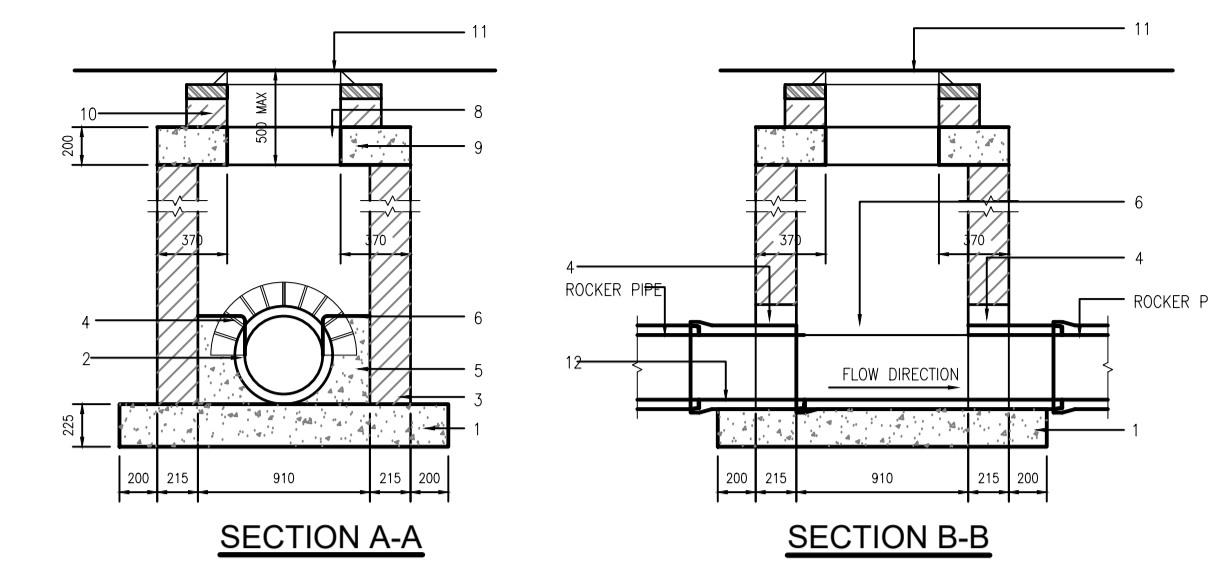


DO NOT SCALE

A1

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Date: Apr 07, 2022 - 12:38pm
Plotted by: patrick.sheridan

- MANHOLE GENERAL NOTES:**
- ALL BRICK TO BE SOLID ENGINEERING BRICK CLASS A OR B
 - FOR PIPE DIAMETER >750MM USE MANHOLE WITH INTERNAL DIAMETER SIZE = PIPE SIZE + 1 METRE + 300MM
 - DISTANCE FROM TOP RING OF THE LADDER TO GROUND LEVEL MUST BE A MAXIMUM OF 500MM
- MANHOLE DRAWING NOTES:**
- 225mm THICK CL20/20 MASS CONCRETE FOUNDATIONS.
 - PREFORMED HALF CIRCLE CHANNEL PIPES, THE PIPELINE MAY WHERE PRACTICABLE, BE LAD 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 THE MANHOLE WALL.
 - MANHOLE CONSTRUCTION:**
FOR SURFACE WATER MANHOLES HIGH DENSITY BLOCKS TO CL510 OF I.S.20 PART 1: 1987 OR CL30/20 IN-SITU CONCRETE. BLOCKWORK SHALL BE BEDDED AND JOINTED USING MORTAR DESIGNATION THREE TO LS-406. BEDS AND VERTICAL JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR AS THE BLOCKS ARE LAD.
ALL TOLL MANHOLES MUST BE FACED IN SOLID ENGINEERING BRICK (MIN CLASS A OR B), OR IN-SITU CONCRETE FOR 1m ABOVE BENCHING LEVEL BRICK TO BE BONDED TO BLOCKWORK USING ENGLISH GARDEN WALL BOND.
 - RELIEVING ARCH FORMED BY 215x103x65 BRICK CLASS A OR B AS PER DRAWING. RELIEVING ARCHES USED IN BRICK OR BLOCKWORK MANHOLES TO EXTEND OVER FULL THICKNESS OF WALL. A DOUBLE ARCH IS TO BE FORMED FOR PIPE DIAMETERS GREATER THAN 600mm.
 - BENCHING AND PIPE CHANNEL PIPE SURROUND - CL20/20 CONCRETE.
 - BENCHING FINISHED IN 2:1 SAND-CEMENT MORTAR WITH SMOOTH TROWEL FINISH, AT 1 IN 30 SLOPE TOWARDS CHANNEL.
 - STANDARD RUNGS AT 300c/c VERTICALLY AND GALVANISED TO LATEST VERSION OF BS729 OR EQUIVALENT.
 - 600mm SQUARE OPE. IN ROOF SLAB.
 - PRECAST R.C. ROOF SLAB SHALL BE 200MM THICK IN CL30/20MM CONCRETE, WITH 40MM COVER TO STEEL.
 - 1 TO 2 COURSES OF SOLID ENGINEERING BRICKS CLASS B TO I.S.91:1983 SET IN 1:3 (CEMENT AND MORTAR)
 - CLASS D400 OR E600 MANHOLE COVER AND FRAME TO IS/EN 124. 150mm DEEP FRAME FOR ROADS, 100mm DEEP FOR FOOTPATHS AND GREEN AREAS. NON-ROCK DESIGN, CLOSED KEYWAYS, MANUFACTURED FROM SPHEROIDAL GRAPHITE CAST IRON (DUCTILE CAST IRON), 600x600 (OR 600 DIAM) CLEAR OPENING. COVER & 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 MANUFACTURER'S CONSTRUCTIONS.
 - SHORT LENGTH PIPE, PIPE JOINT EXTERNAL TO MANHOLE SHALL NOT EXCEED 600mm FROM THE INNER FACE OF MANHOLE WALL.
 - TOE HOLES OF 230mm MIN. DEPTH AND GALVANISED STEEL SAFETY RAILINGS TO BE PROVIDED IN BENCHING OF SEWERS GREATER THAN 525 DIAMETER, 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 GRADE M(H) NON CALIBRATED CHAIN TYPE 1, COMPLYING WITH BS: 4942 Part 2 OR EQUIVALENT.
 - WHEN DEPTH OF MANHOLES TO INVERT IS GREATER THAN 3.0m LADDERS SHALL BE USED, INSTEAD OF RUNGS, TO BS4211 EXCEPT THAT STRINGERS SHOULD BE NOT LESS THAN 65x20mm IN SECTION AND RUNGS 25mm IN DIAMETER. FIXED LADDERS SHOULD MEET THE DIMENSIONAL REQUIREMENTS OF BS 4211.
 - 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 FACILITATE RENEWAL.
 - ALL LADDERS, RUNGS, HANDRAILS, SAFETY CHAINS ETC. SHALL BE HOT DIP GALVANISED TO BS729.
 - SOCKET OF PIPE SHOULD BE CUT FLUSH WITH THE INSIDE SURFACE OF THE MANHOLE WALL SO THAT THE CHANNEL EXTENDS FULL LENGTH OF THE MANHOLE (EXCEPT FOR PRECAST MANHOLES).
 - POSITION OF 910 SQUARE OPENING IN INTERMEDIATE ROOF SLAB.
-ALL MANHOLES SHALL BE WATER TIGHT TO THE SATISFACTION OF THE ENGINEER.
-FORMWORK TO REINFORCEMENT 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 BS8005 AND WALL THICKNESSES TO IS325 BLOCKWORK DESIGN CODE TAKING GRANULAR FILL PRESSURE AND H.B. SURCHARGE.
-REINFORCEMENT TO SLABS TO ENGINEERS DETAILS.
 - FOR MANHOLES >3.0m DEPTH TO INVERT USE 30N/20 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.
 - FOR PRECAST MANHOLES, CHAMBER WALLS AND COVER SLAB TO BE CONSTRUCTED TO IS EN 1917 AND IS 420 2004.
 - MANHOLE OPENING 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 PRECAST COVER SLAB) AND 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 C20/40 CONCRETE

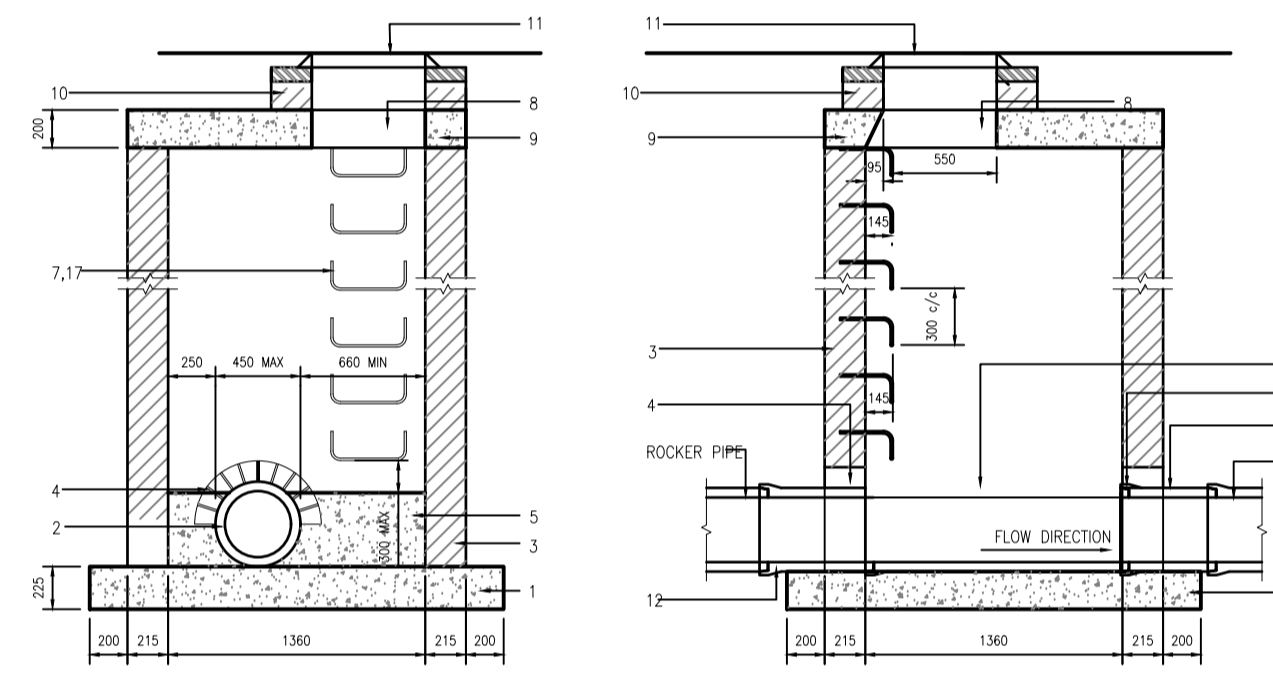


SECTION A-A

SECTION B-B

PLAN TYPE A MANHOLE

MANHOLE DETAILS FOR PIPE #s 150, 225, 300, 375 & 450mm DEPTH TO INVERT LESS THAN 1.0m.

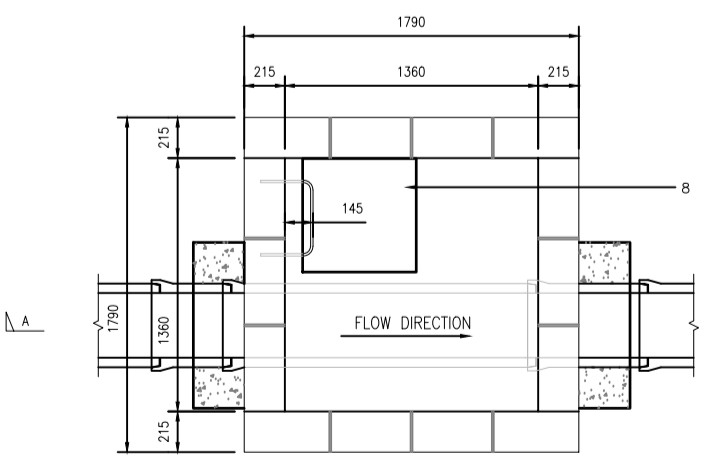


SECTION A-A

SECTION B-B

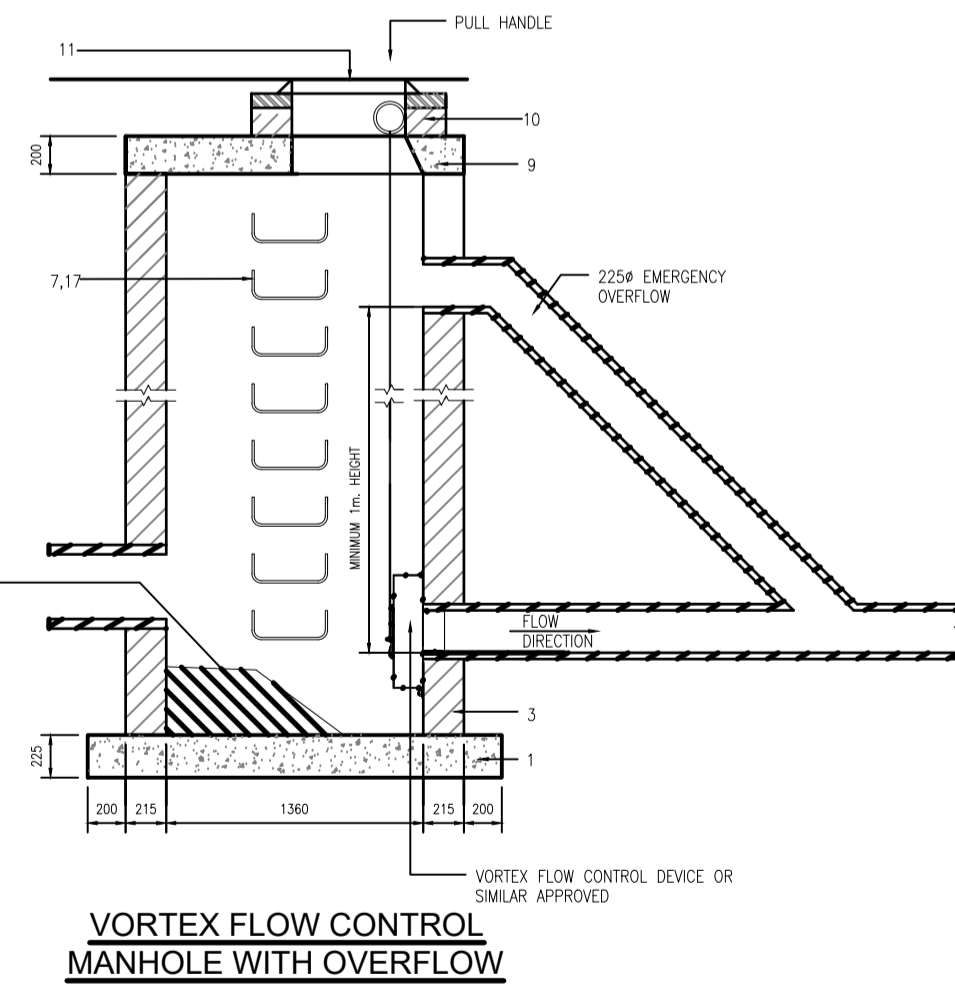
PLAN TYPE B MANHOLE

MANHOLE DETAILS FOR PIPE #s 150, 225, 300, 375 & 450mm DEPTH TO INVERT 1.0m TO 3.0m.

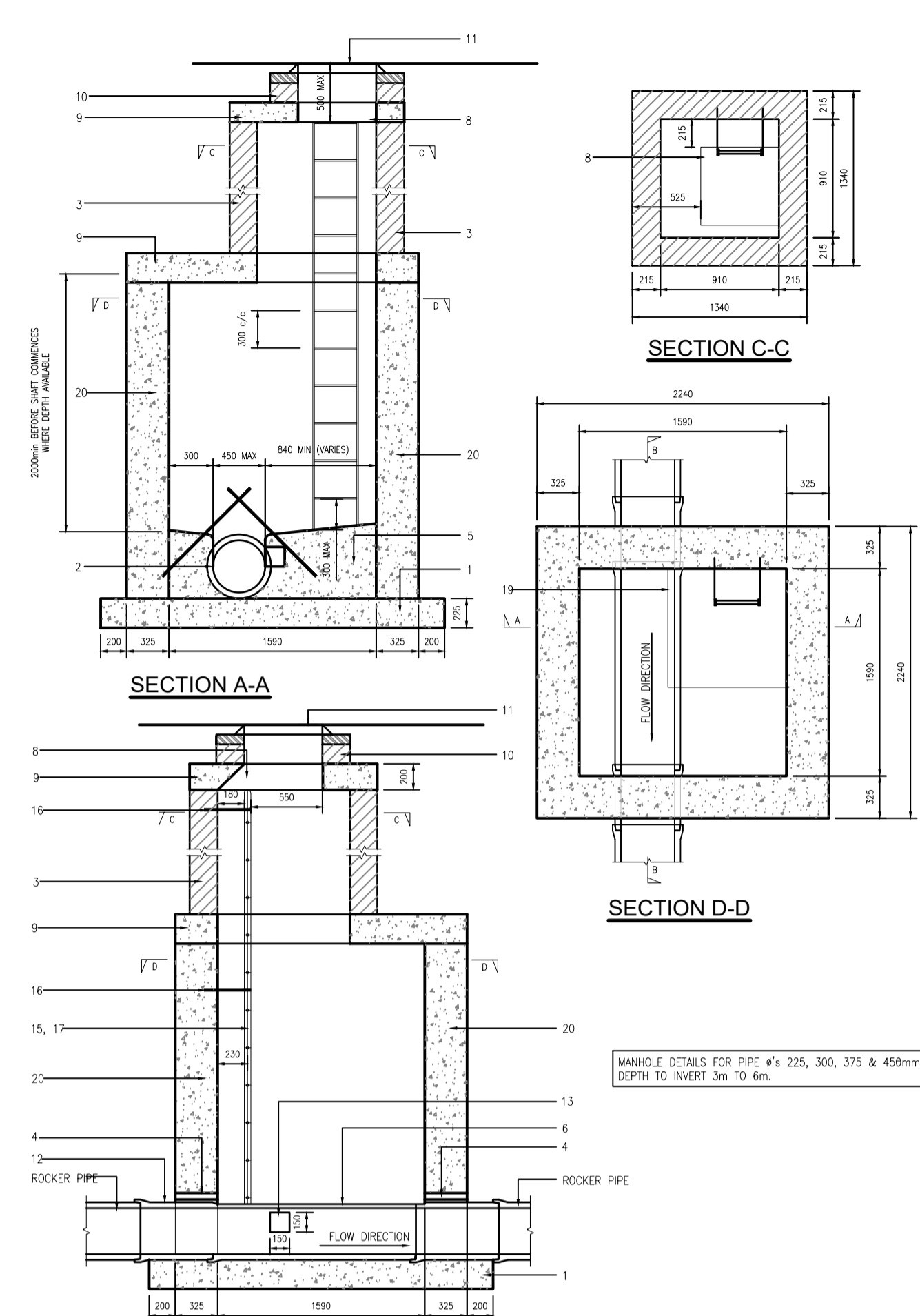


PLAN TYPE F MANHOLE (RAMP)

RAMP MANHOLE DETAIL FOR PIPE #s 150, 225, 300, 375, 450, 525, 600 & 750mm. DROPP = 750mm.



SECTION A-A VORTEX FLOW CONTROL MANHOLE WITH OVERFLOW



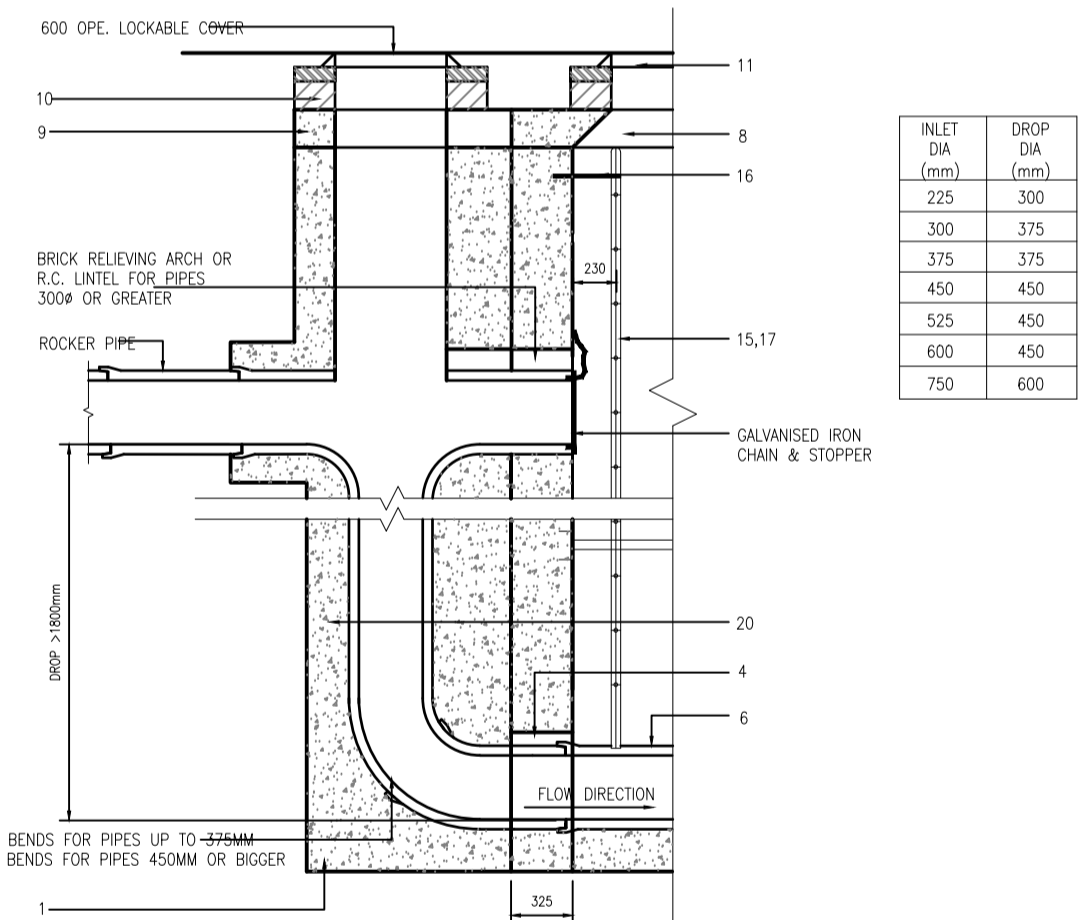
SECTION A-A

SECTION C-C

SECTION D-D

TYPE C MANHOLE

MANHOLE DETAILS FOR PIPE #s 225, 300, 375 & 450mm DEPTH TO INVERT 3m TO 6m.

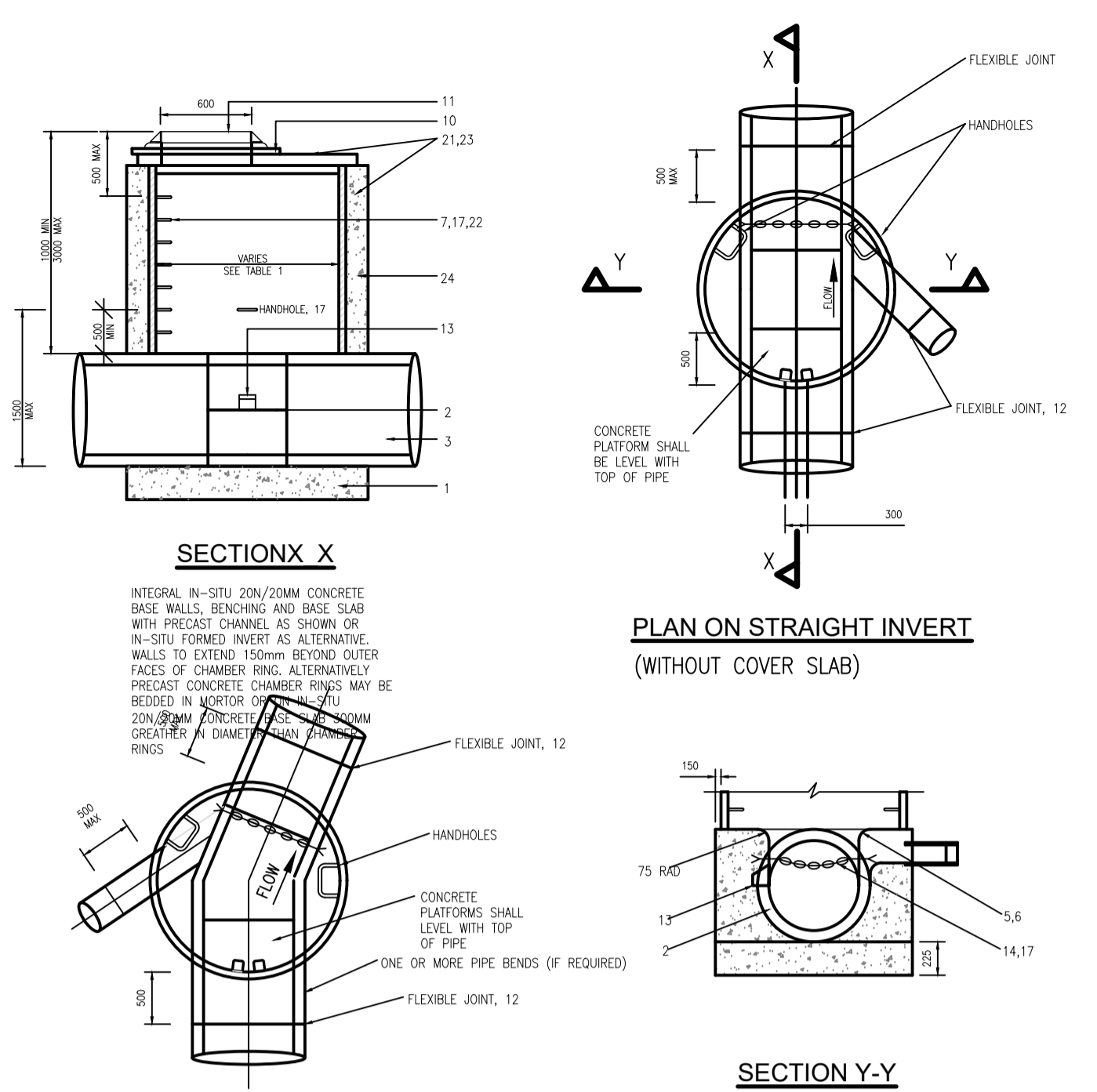


SECTION A-A

PLAN TYPE G MANHOLE (BACKDROP)

BACKDROP MANHOLE DETAILS FOR PIPE #s 225, 300, 375, 450, 525, 600 & 750mm. DROPP >750mm.

INLET DIA (mm)	DROP DIA (mm)
225	300
300	375
375	450
450	525
525	600
600	600



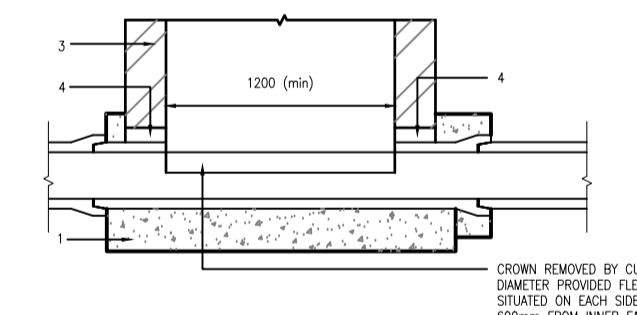
PLAN ON STRAIGHT INVERT (WITHOUT COVER SLAB)

PLAN ON CURVED INVERT (WITHOUT COVER SLAB)

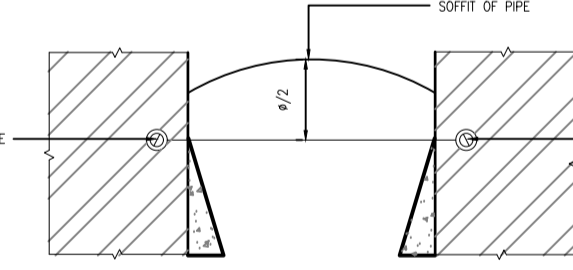
MINIMUM PIPE DIAMETER A (mm)	CHAMBER INTERNAL DIAMETER B (mm)
225	1200
300	1200
375	1200
450	1200
525	1200
600	1200
675	1300
750	1300
900	1500
1050	2100
1200	2100

TABLE 1

TYPE J MANHOLE (PRECAST)

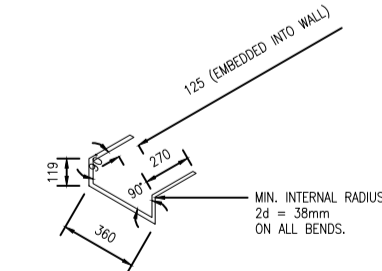
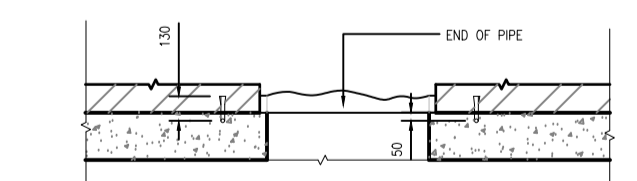


ELEVATION (SAFETY CHAIN, HOOK & EYE)



ELEVATION

ALTERNATIVE METHOD OF FORMING CHANNEL THRU' MANHOLE



STANDARD RUNG (HOT DIP GALVANISED)

STANDARD RUNG & SAFETY CHAIN DETAILS

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Rev	Description	By	Date	Chk'd	Auth
-	FOR PLANNING	PS	01.04.22	AC	GH

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Client

Cosgrave

Project

FASSAROE DEVELOPMENT

Purpose	PLANNING
Title	PHASE 1 STANDARD CONSTRUCTION DETAILS SHEET 1
Original Scale	AS SHOWN
Design/Drawn	PS
Checked	AC
Authorised	GH
Date	22.11.21
Date	22.11.21
Date	22.11.21
Status	P
Drawing Number	5186693 / HTR / 01 / SD / 0001
Rev	-