

NOTES:
 SOURCE = GREATER DUBLIN REGIONAL CODE OF PRACTICE V6.0

- 225mm THK CL 20N/20mm CONCRETE FOUNDATIONS WITH 1 NO. LAYER OF A393 REINFORCING MESH.
- PRE-FORMED WALLS AND VERTICAL JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR AS THE BLOCKS ARE LAID.
- MANHOLE CONSTRUCTION:
 - FOR SURFACE WATER MANHOLES HIGH-DENSITY BLOCKS TO CL.510 OF I.S.20 PART 1: 1987 OR CL.30N/20mm INSITU CONCRETE.
 - BLOCKWORK SHALL BE BEDDED AND JOINTED USING MORTAR TO 1:5.40:6 BEDS AND VERTICAL JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR AS THE BLOCKS ARE LAID.
 - JOINTS SHALL BE FLUSH POINTED AS THE WORK PROCEEDS.
 - ALL FULL MANHOLES AND LINES TO BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE AND STANDARD DETAIL.
 - BRICK TO BE BONDED TO BLOCKWORK USING ENGLISH GARDEN WALL BOND.
 - WHERE BRICK IS BONDED TO BLOCKWORK, INTERNAL MANHOLE DIMENSIONS SHOWN ARE MEASURED FROM THE INSIDE FACE OF BRICKWORK.
 - WHERE MANHOLES ARE CONSTRUCTED OF IN-SITU CONCRETE A MINIMUM OF 1 NO. LAYER OF A393 REINFORCING MESH TO BE PROVIDED IN WALLS AND SLABS.
 - RELIEVING ARCH FORMED BY 215x103x65 SOLID ENGINEERING BRICK CLASS A OR B AS PER DRAWING. RELIEVING ARCHES USED IN BRICK OR BLOCK WORK 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 - CL.20/20 CONCRETE.
 - BENCHING FINISH IN 2:1 SAND-CEMENT MORTAR WITH A SMOOTH TROWEL FINISH AT 1 IN 30 SLOPE TOWARDS CHANNEL STANDING RINGS AT 300 C/S VERTICALLY AND GALVANIZED TO LATEST VERSION OF BS 729 OR EQUIVALENT. NOTE: STEP IRONS ARE NOT ACCEPTABLE.
 - 600mm SQUARE OPE IN ROOF SLAB.
 - PRECAST R.C. ROOF SLAB SHALL BE 200mm THICK IN CLASS 30N/20mm, WITH 40mm COVER TO STEEL.
 - ROOF SLAB - 35N/20mm INSITU CONCRETE, CEMENT CONTENT 300kg/m³, WATER/CEMENT RATIO 0.6. PROVIDE 2 LAYERS OF REINFORCING MESH REF. A393 @ 6.16kg/m WITH MIN. 50mm COVER.
 - 1 TO 2 COURSES OF SOLID ENGINEERING BRICKS CLB TO I.S.91:1983 SET IN 1:3 (CEMENT AND MORTAR).
 - CANTHART BRICKS APPROVED CLASS 0400 OR E600 CIRCULAR MANHOLE COVER AND FRAME TO I.S.91:124. 150mm DEEP FRAME FOR ROADS AND 100mm DEEP FOR FOOTPATHS AND GREEN AREAS. NON-ROCK DESIGN. 2 CLOSED KEYWAYS IN EACH COVER. MANUFACTURED FROM SPHEROIDAL GRAPHITE CAST IRON (DUCTILE CAST IRON), 600 x 600 (600 DIA.) CLEAR OPENING. COVER AND FRAME COATED IN BITUMEN OR OTHER APPROVED MATERIAL. COVER TO HAVE A MINIMUM MASS OF 14kg/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 AND PIPE JOINT EXTERNAL TO MANHOLE SHALL NOT EXCEED 600mm FROM THE INNER FACE OF MANHOLE WALL.
 - TOE HOLES OF 230mm MINIMUM DEPTH AND GALVANIZED STEEL SAFETY RAILINGS TO BE PROVIDED IN BENCHING OF SEWERS GREATER THAN 325mm DIA. AND DEPTH TO INVERT > 3m FOR ACCESS TO INVERT.
 - A SAFETY CHAIN IS TO BE PROVIDED ON PIPES THAT EXCEED 450mm IN DIAMETER. MILD STEEL SAFETY CHAIN SHALL BE 10mm NOMINAL SIZE (GRADE M10) NON-CALIBRATED CHAIN TYPE 1, COMPLYING WITH B.S.4942 PART 2 OR EQUIVALENT.
 - WHEN DEPTH OF MANHOLES TO INVERT IS GREATER THAN 3m, LADDERS SHALL BE USED INSTEAD OF RUNGS TO BS.4211 OR EQUIVALENT EXCEPT THAT STRINGERS SHOULD BE NOT LESS THAN 65mm x 12mm IN SECTION AND RUNGS 25mm IN DIAMETER. FIXED LADDERS SHOULD MEET THE DIMENSIONAL REQUIREMENTS OF BS.4211 OR EQUIVALENT.
 - 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 GALVANIZED TO BS.729 OR EQUIVALENT.
 - PIPE SHOULD BE CUT FLUSH WITH THE INSIDE SURFACE OF THE MANHOLE WALL SO THAT THE CHANNEL EXTENDS THE FULL LENGTH OF THE MANHOLE.
 - POSITION OF 910 SQUARE OPE IN INTERMEDIATE ROOF SLAB.
 - ALL MANHOLES SHALL BE WATER TIGHT TO THE SATISFACTION OF THE ENGINEER.
 - FORMWORK TO REINFORCED CONCRETE AND MASS CONCRETE SHALL COMPLY WITH CLASS 2, SECTION 6.2.7 B.S.8110: PART 1: 1997.
 - FINISH TO THE TOP OF THE SLABS SHALL COMPLY WITH TYPE A SECTION 6.2.7, B.S.8110: PART 1: 1997.
 - PLAN DIMENSIONS OF MANHOLES ARE BASED ON BLOCK WORK HAVING A CO-ORDINATING SIZE OF 450 x 225 x 100.
 - MANHOLES ARE DESIGNED TO B.S.8005 AND WALL THICKNESS TO I.S.225 BLOCK WORK DESIGN CODE TAKING GRANULAR FILL PRESSURE AND H.B. SURCHARGE.
 - REINFORCEMENT TO SLABS TO ENGINEERS DETAILS.
 - FOR MANHOLES 3.5m DEPTH TO INVERT USE 30N/20mm INSITU CONCRETE. PROVIDE 2 LAYERS OF REINFORCING MESH REF. A393 @ 6.16kg/m WITH MIN. 50mm COVER.
 - ADDITIONAL REINFORCEMENT TO BE SUPPLIED OVER PIPE CROWN.
 - MANHOLE OPENINGS TO BE SITUATED FURTHEST FROM THE NEAREST CARRIAGEWAY. MANHOLE STEPS / ACCESS TO BE POSITIONED TO ALLOW VIEWING OF INCOMING TRAFFIC.
 - PROVIDE 2 NO. 300mm LONG T10 DOWELS @ 200mm c/c FROM FOUNDATIONS TO WALLS.
 - PROVIDE REINFORCEMENT AT WALL INTERSECTIONS TO DETAIL SHOWN.
 - WHERE IN-SITU ROOF SLAB IS PROVIDED USE REINFORCEMENT TO WALLS TO DETAIL SHOWN.

GENERAL NOTES:
 1) ALL BRICK TO BE SOLID ENGINEERING BRICK CLASS A OR B.
 2) DISTANCE FROM THE TOP RUNG OF THE LADDER TO GROUND LEVEL MUST BE MAXIMUM OF 500mm.

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rev	date	description	by	chd.
client approval		A - Approved		
		B - Approved with comments		
		C - Do not use		

suitability	issue purpose
S2 - INFORMATION	PLANNING

DBFL Consulting Engineers
 Civil, Structural & Transportation Engineering
 www.dbfl.ie

DUBLIN OFFICE: Ormond House, Upper Ormond Quay, Dublin 7, D07 W704
 PHONE: +353 1 404 4000
 CORK OFFICE: 14 South Mall, Cork, T12 CT91
 PHONE: +353 21 2024538
 WATERFORD OFFICE: Suite 10 The Arkun, Maritime Gate, Canada Street, Waterford, X91 W028
 PHONE: +353 51 309 500

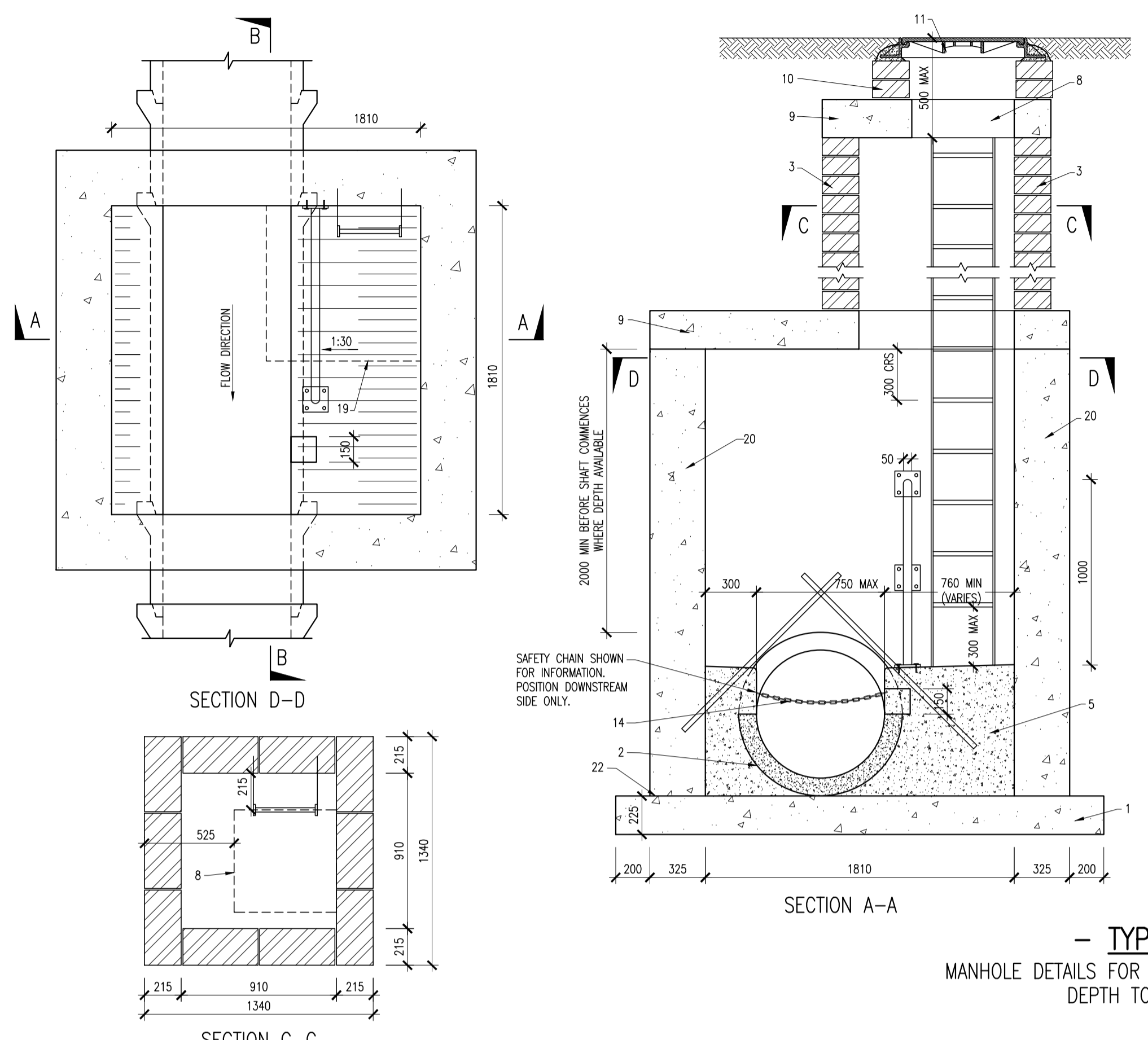
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drawing title
STANDARD SURFACE WATER MANHOLE DETAILS- SHEET 2 OF 2

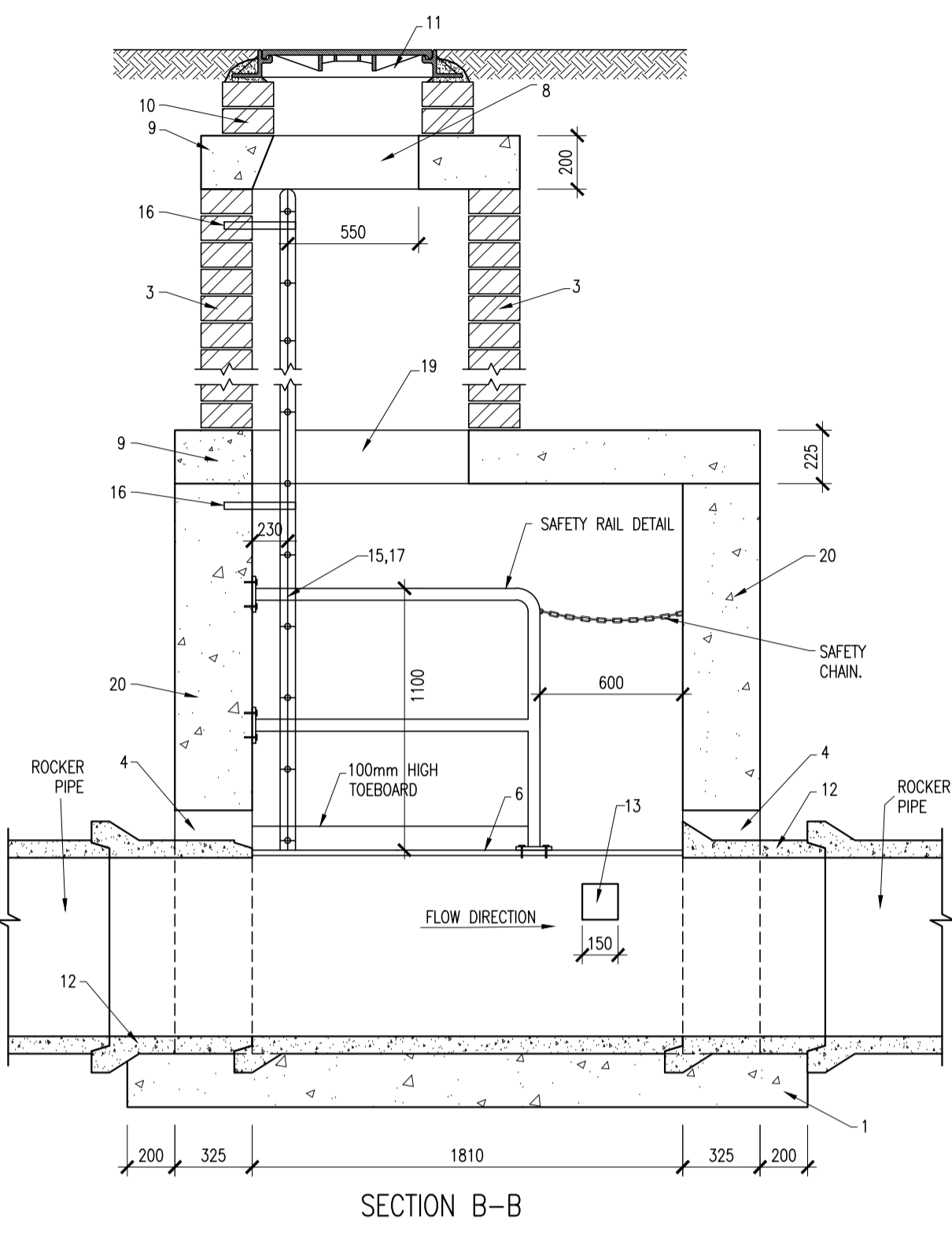
architect
DELPHI ARCHITECTS

designed by	author	scale	sheet size
PM	KGO	AS SHOWN	A1
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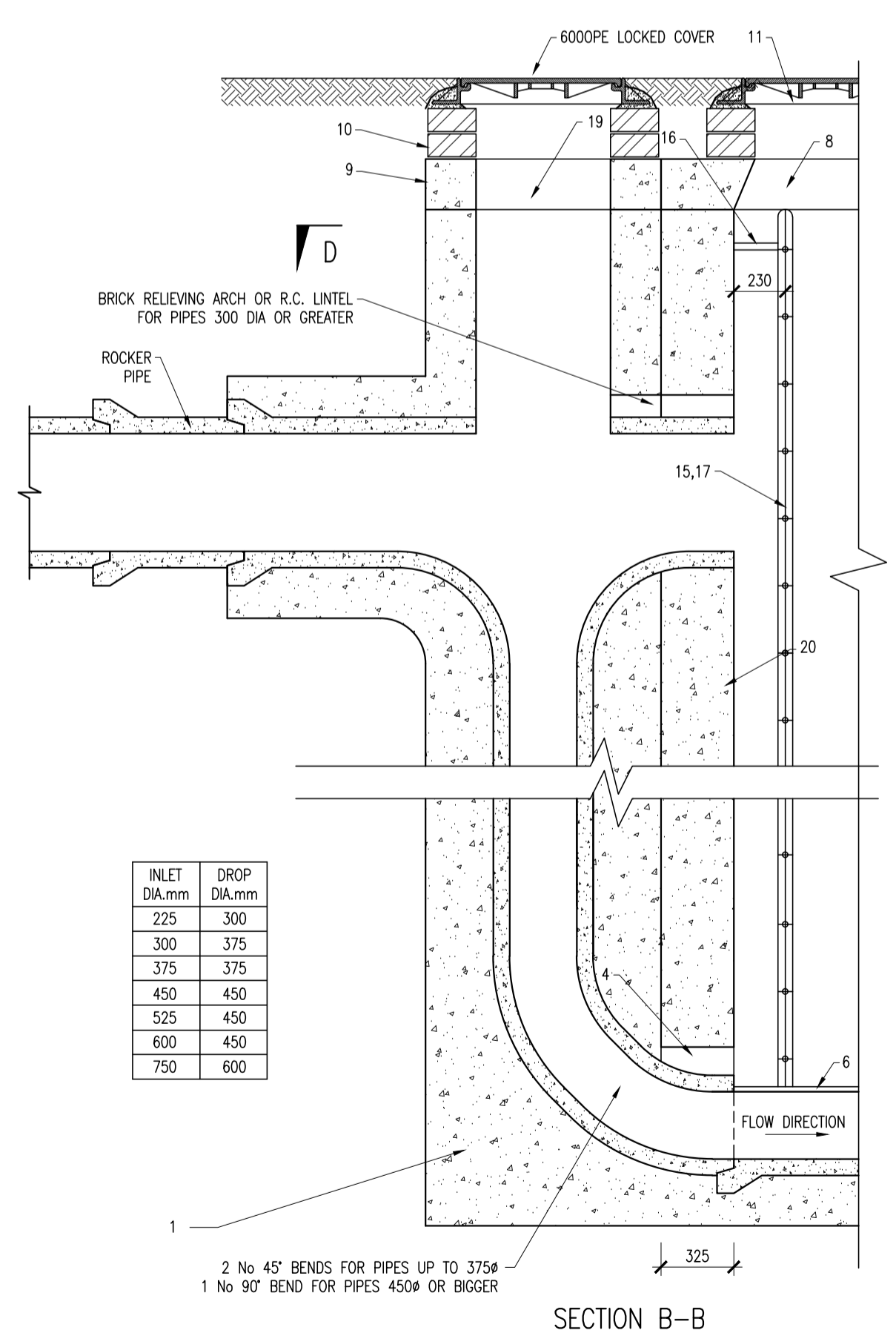
SOURCE: GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS (V6.0)



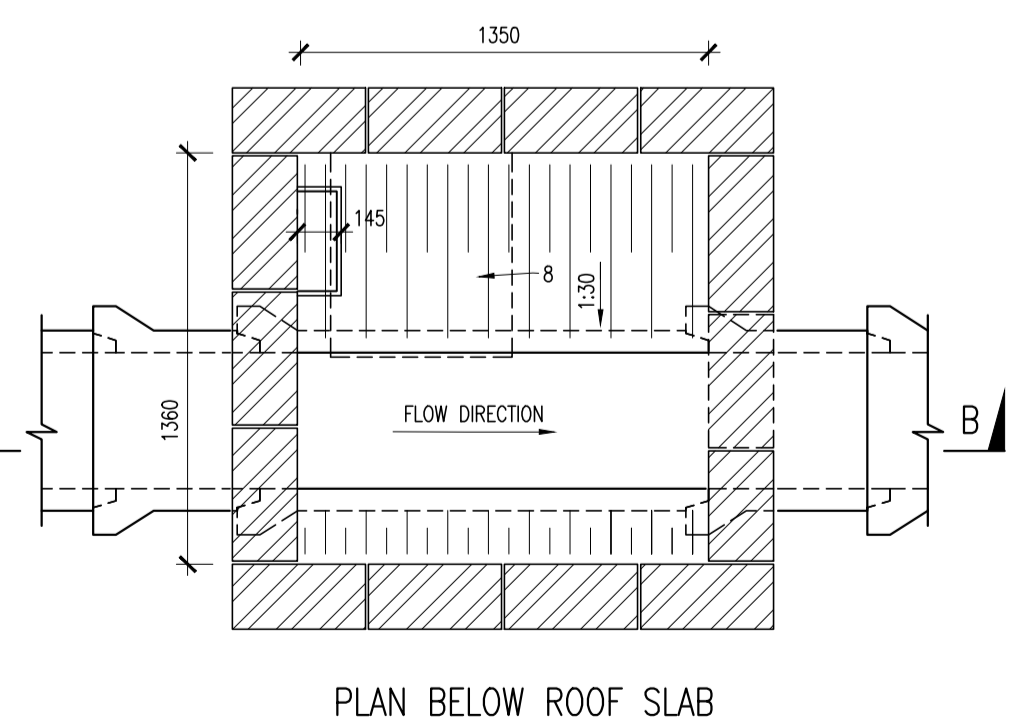
- TYPE E MANHOLE -
 MANHOLE DETAILS FOR PIPE DIA'S 525, 600, 675 & 750mm.
 DEPTH TO INVERT 3.0m TO 6.0m.



- TYPE H MANHOLE -
 DETAIL OF MANHOLE WITH INTERCEPTOR TRAP.



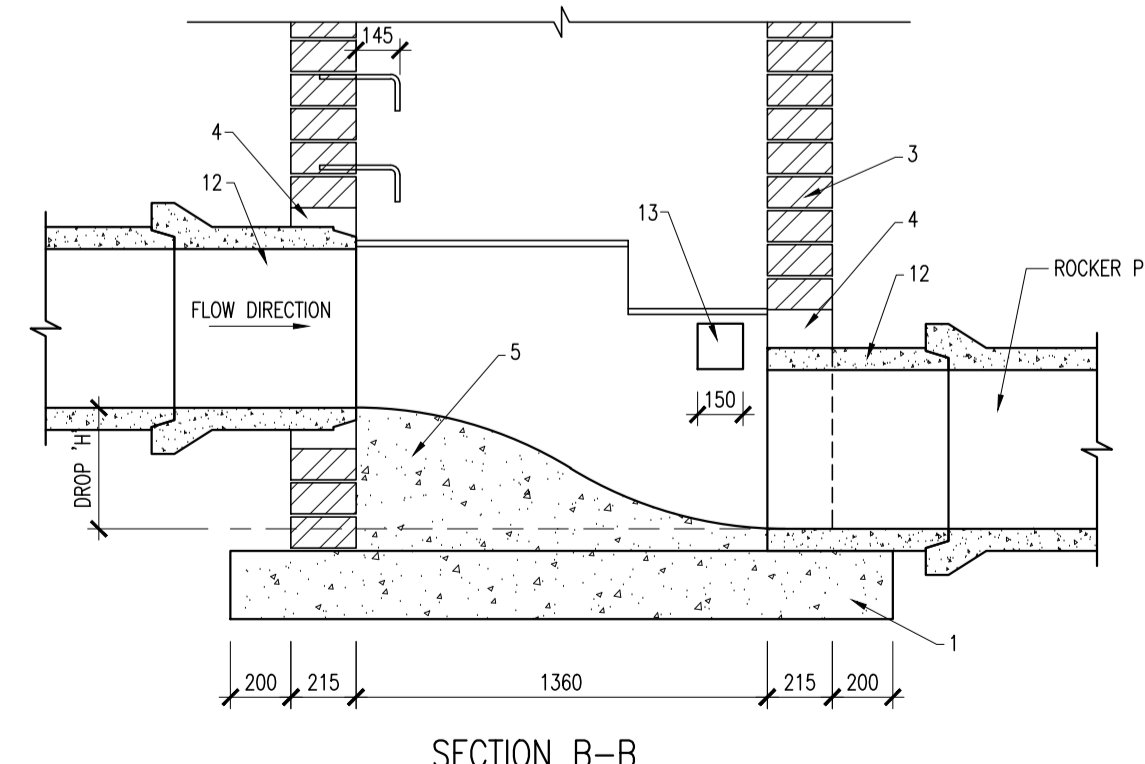
- TYPE G MANHOLE (BACKDROP) -
 BACKDROP MANHOLE DETAILS FOR PIPE DIA'S 225, 300, 375, 450, 525, 600 & 750mm.
 (DROP GREATER THAN 750mm.)



- TYPE F MANHOLE (RAMP) -
 RAMP MANHOLE DETAILS FOR PIPE DIA'S 150, 225, 300, 375, 450, 525, 600 & 750mm.
 (DROP NO GREATER THAN 750mm)

INLET DIA. mm	"h" (MAX) mm
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.



SECTION B-B

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

2 No 45° BENDS FOR PIPES UP TO 375
 1 No 90° BEND FOR PIPES 450 OR BIGGER

SECTION B-B