ON ORIGINAL

0 5 10 15 20 25 30 40 50mm

NOTES:

SOURCE = GREATER DUBLIN REGIONAL CODE OF PRACTICE V6.0

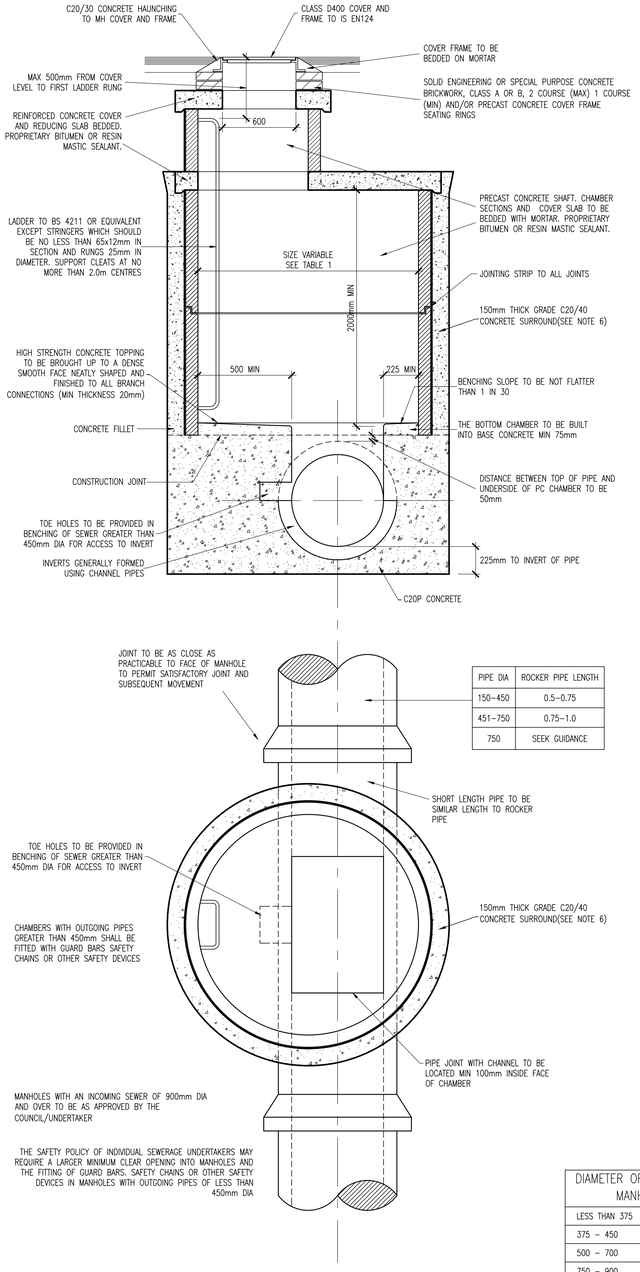
1. 225mm THK CL. 20N/20mm MASS CONCRETE FOUNDATIONS.
2. PREFORMED HALF CIRCLE CHANNEL PIPES. THE PIPELINE MAY WHERE PRACTICABLE BE LAID THROUGH THE MANHOLE AND THE CROWN CUT OUT TO HALF DIAMETER, PROVIDED FLEXIBLE JOINTS ARE SITUATED ON EACH SIDE NO FURTHER THAN 600mm FROM THE INNER FACE OF THE MANHOLE WALL.
3. MANHOLE CONSTRUCTION:
   - FOR SURFACE WATER MANHOLES HIGH-DENSITY BLOCKS TO CLS10 OF IS 20 PART 1:1987 OR CL. 30N/20mm INSITU CONCRETE.
   - BLOCK WORK SHALL BE BEDDED AND JOINTED USING MORTAR TO IS406, BE2S AND VERTICAL JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR AS THE BLOCKS ARE LAID.
   - JOINTS SHALL BE FLUSH POINTED AS THE WORK PROCEEDS.
   - ALL FOUL MANHOLES MUST BE FACED IN SOLID ENGINEERING BRICK (MIN. CLASS A OR B) OR INSITU CONCRETE TO A METRE ABOVE BENCHING LEVEL.
   - BRICK TO BE BONDED TO BLOCK WORK USING ENGLISH GARDEN WALL BOND.
4. 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.
5. BENCHING AND PIPE CHANNEL PIPE SURROUND – CL. 20/20 CONCRETE.
6. BENCHING FINISHED IN 2:1 SAND–CEMENT MORTAR WITH A SMOOTH TROWEL FINISH, AT 1 IN 30 SLOPE TOWARDS CHANNEL.
7. STANDARD RUNGS AT 300 CRS VERTICALLY AND GALVANISED TO LATEST VERSION OF B.S. 729 OR EQUIVALENT. NOTE: STEP IRONS ARE NOT ACCEPTABLE.
8. 600mm SQUARE OPE IN ROOF SLAB.
9. PRECAST R.C. ROOF SLAB SHALL BE 200mm THICK IN CLASS 30N/20mm, WITH 40mm COVER TO STEEL.
10. 1 TO 2 COURSES OF SOLID ENGINEERING BRICKS CL.B TO I.S.91:1983 SET IN 1:3 (CEMENT AND MORTAR).
11. CLASS D400 OR E400 MANHOLE COVER AND FRAME TO IS/EN 124, 150mm DEEP FRAME FOR ROADS AND 100mm DEEP FOR FOOTPATHS AND GREEN AREAS. NON–ROCK BEDDED, CLOSED KEYWAYS, MANUFACTURED FROM SPHEROIDAL GRAPHITE CAST IRON (DUCTILE CAST IRON) (600 x 600 DIA.) 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.
12. SHORT LENGTH PIPE AND PIPE JOINT EXTERNAL TO MANHOLE SHALL NOT EXCEED 600mm FROM THE INNER FACE OF MANHOLE WALL.
13. TOE HOLES OF 230mm MINIMUM DEPTH AND GALVANISED STEEL SAFETY RAILINGS TO BE PROVIDED IN BENCHING OF SEWERS GREATER THAN 525mm DIA. AND DEPTH TO INVERT >3m FOR ACCESS TO INVERT.
14. A SAFETY CHAIN IS TO BE PROVIDED ON PIPES THAT EXCEED 450mm IN DIAMETER. MILD STEEL SAFETY CHAIN SHALL BE 10mm NOMINAL SIZE GRADE M(s) NON–CALIBRATED CHAIN, TYPE 1, COMPLYING WITH B.S.4942 PART 2 OR EQUIVALENT.
15. WHEN DEPTH OF MANHOLES TO INVERT IS GREATER THAN 3.0m LADDERS SHALL BE USED INSTEAD OF RUNGS TO B.S.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 B.S.4211 OR EQUIVALENT.
16. 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.
17. ALL LADDERS, RUNGS, HANDRAILS, SAFETY CHAINS ETC SHALL BE HOT DIP GALVANISED TO B.S.729 OR EQUIVALENT.
18. PIPE SHOULD BE CUT FLUSH WITH THE INSIDE SURFACE OF THE MANHOLE WALL SO THAT THE CHANNEL EXTENDS THE FULL LENGTH OF THE MANHOLE (EXCEPT FOR PRE–CAST MANHOLES).
19. 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 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.325 BLOCK WORK DESIGN CODE TAKING GRANULAR FILL PRESSURE AND H.B. SURCHARGE.
    - REINFORCEMENT TO SLABS TO ENGINEERS DETAILS.
20. FOR MANHOLES >3m DEPTH TO INVERT USE 30N/20mm INSITU CONCRETE REINFORCING MESH REF. A393 @ 6.16kg/m TO BE FIXED AT MID POINT OF WALL. ADDITIONAL REINFORCEMENT TO BE SUPPLIED OVER PIPE CROWN.
21. FOR PRE CAST MANHOLES, CHAMBER WALLS AND COVER SLAB TO BE CONSTRUCTED TO IS EN 1917 AND IS 420 2004.
22. MANHOLE OPENINGS TO BE SITUATED FURTHEST FROM THE NEAREST CARRIAGEWAY. MANHOLE STEPS / ACCESS TO BE POSITIONED TO ALLOW VIEWING OF INCOMING TRAFFIC.
23. 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.
24. PRE CAST MANHOLES TO BE SURROUNDED WITH A MINIMUM OF 150mm THICK GRADE C20/40 CONCRETE.

GENERAL NOTES:

i) ALL BRICK TO BE SOLID ENGINEERING BRICK CLASS A OR B.

ii) FOR PIPE DIAMETER >750mm USE MANHOLE WITH INTERNAL DIAMETER SIZE = PIPE SIZE + 1 METRE + 300mm.

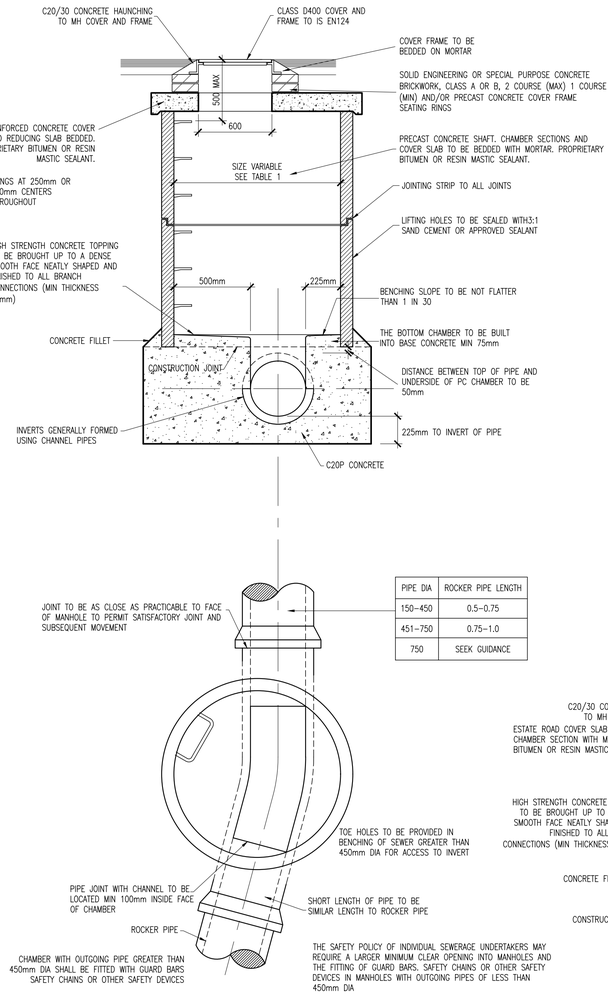
iii) DISTANCE FROM THE TOP RUNG OF THE LADDER TO GROUND LEVEL MUST BE MAXIMUM OF 500mm.



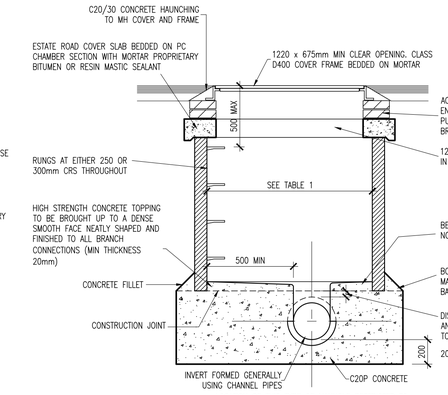
TYPICAL MANHOLE DETAIL – TYPE K
DEPTH TO SOFFIT 3 TO 6m
SCALE 1:25

DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	CHAMBER SECTION DIAMETER (mm)
LESS THAN 375	1200 (1050 WHERE DEPTH TO SOFFIT IS 1.35m – 1.5m)
375 – 450	1350
500 – 700	1500
750 – 900	1800
> 750	PIPE SIZE + 1.3m

TABLE 1



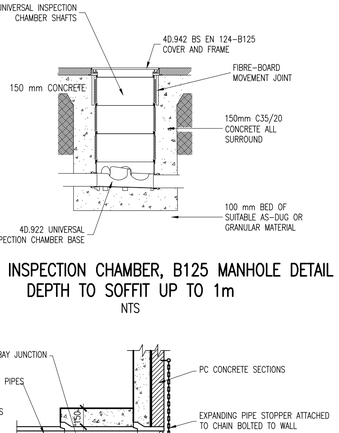
TYPICAL MANHOLE DETAIL – TYPE J
DEPTH TO SOFFIT 1.35 TO 3m
SCALE 1:25



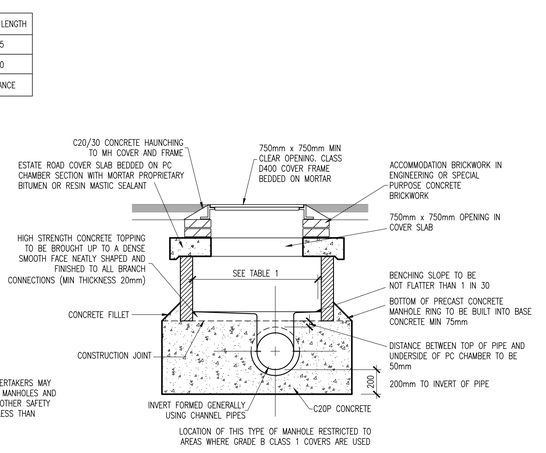
TYPICAL MANHOLE DETAIL – TYPE E
DEPTH TO SOFFIT 1.0 TO 1.35m
SCALE 1:25

TYPE 2 GRANULAR MATERIAL :

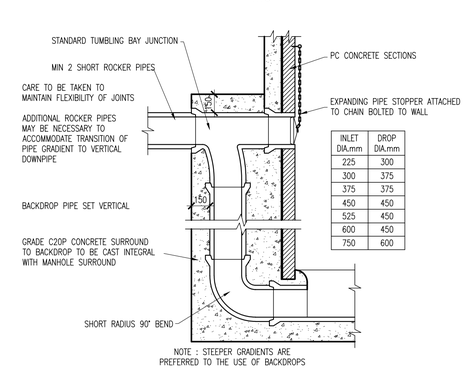
PIPE SIZE	100% PASSING
UP TO 225mm	10mm SIEVE
225 TO 450mm	20mm SIEVE
ABOVE 450mm	25mm SIEVE



UNIVERSAL INSPECTION CHAMBER, B125 MANHOLE DETAIL
DEPTH TO SOFFIT UP TO 1m
NTS



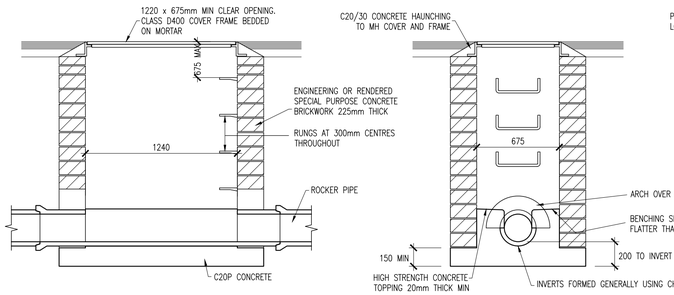
TYPICAL MANHOLE DETAIL – TYPE F
DEPTH TO SOFFIT LESS THAN 1.0m
SCALE 1:25



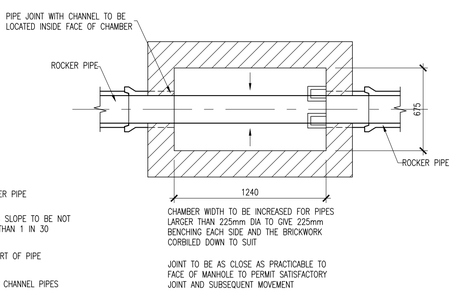
INLET DIA.mm	DROP DIA.mm
225	300
300	375
375	375
450	450
525	450
600	450
750	600

NOTE : STEEPER GRADIENTS ARE PREFERRED TO THE USE OF BACKDROPS

TYPICAL VERTICAL BACKDROP DETAIL
SCALE 1:25



TYPICAL MANHOLE DETAIL – TYPE D
DEPTH TO SOFFIT 1.0m TO 1.35m
SCALE 1:25



C	31–07–20	STAGE 3 NEW APPLICATION	DJG	DMW
B	10–03–20	STAGE 2 NEW APPLICATION	DJG	AGS
A	09–10–19	PLANNING SHD STAGE 3	DJG	DCG
REV.	DATE	DESCRIPTION	BY	CHKD

PLANNING SHD STAGE 3

DESIGNED	DMW	PREPARED	DJG
DATE	DEC 2018	CHECKED	DJR

DBFL Consulting Engineers
DUBLIN OFFICE Ormond House, Upper Ormond Quay, Dublin 7, Ireland. PHONE +353 1 400 4000 FAX +353 1 400 4050
WATERFORD OFFICE Unit 2, The Chandlery, 1-2 O' Connell Street, Waterford, Ireland. PHONE +353 51 309 500 FAX +353 51 844 913
EMAIL info@dbfl.ie SITE www.dbfl.ie

PROJECT
STRATEGIC HOUSING DEVELOPMENT AT COLPE WEST, DROGHEDA, CO. MEATH

DRG. TITLE
DRAINAGE DETAILS SHEET 1

CLIENT
SHANNON HOMES DROGHEDA LTD.

SCALE	AS SHOWN @A1	FILE REF.	170092-3061

DRG. NO. 170092-3061 C