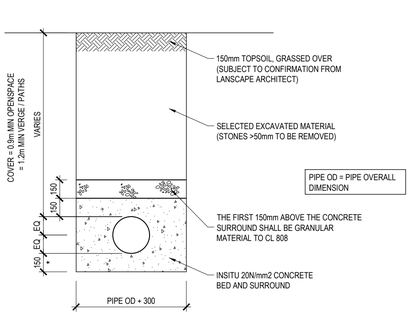
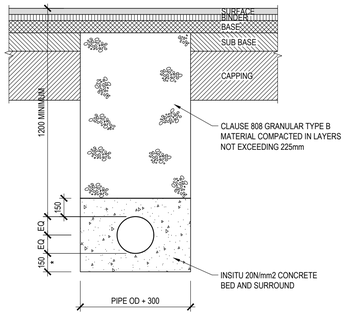
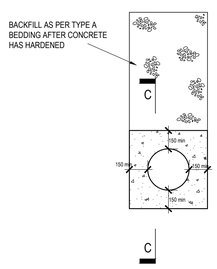


A - BEDDING DETAIL
ACROSS OPENSPACE (SIMILAR)

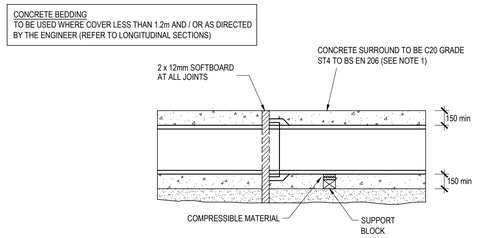


B - BEDDING DETAIL
IN ROADWAYS/VERGES/PATHS

TYPE A
(COVER> 1.2 METRES TO CROWN, RIGID PIPES)
SCALE 1:25



RIGID PIPES : SURROUND

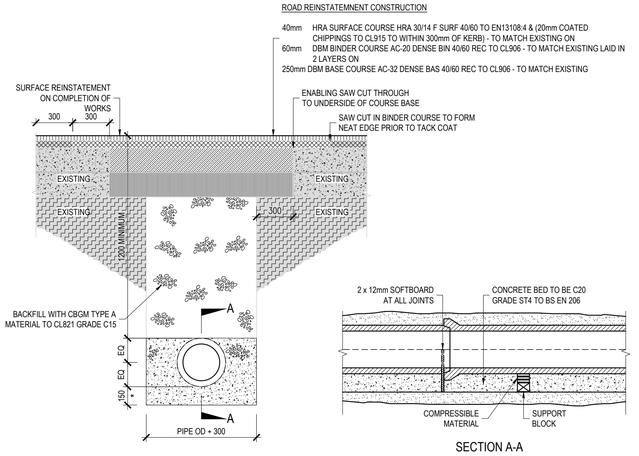


SECTION C - C

TYPE Z
CONCRETE BEDDING/SURROUND
(COVER 750mm - 1200mm)
SCALE 1:25

PIPE BEDDING
DETAILS

FIGURE 7



SECTION A-A

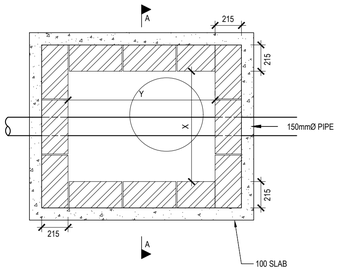
DRAINAGE / DUCT TRENCH AND REINSTATEMENT IN EXISTING ROADS
SCALE 1:25

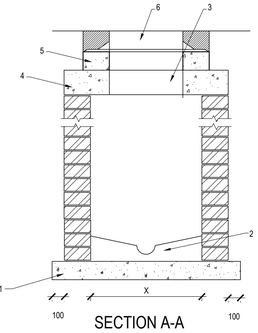
FIGURE 8

NOTES.

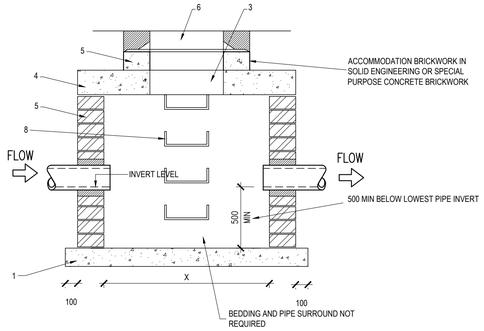
1. 225mm THK C20 MASS CONCRETE FOUNDATIONS
2. BENCHING AND PIPE CHANNEL PIPE SURROUND - C20 CONCRETE.
3. 600mm SQUARE OPENING IN ROOF SLAB.
4. 200mm THK PRECAST R.C. ROOF SLAB IN C20 CONCRETE.
   COVER TO STEEL SHALL BE 40mm. SLAB SHALL BE CONTRACTOR DESIGNED TO BS5911
5. ENGINEERING BRICK H53 TO I.S.91:1983 SET IN TYPE (ii)
6. AN APPROVED DEEP SEAL PATERN GALVANISED IRON AIR TIGHT
   COVER AND FRAME WEIGHING MIN. 4.3 kg, 600 x 600 MM CLEAR OPENING
   SIZE. FRAME TO BE BEDDED IN MASTIC AND 25 x 25 mm SEAL TO BE FILLED
   WITH MANHOLE GREASE.
7. DRAWING TO BE READ IN CONJUNCTION WITH SERVICES LAYOUT PLAN
8. DOUBLE STEP RUNGS TO BE FIXED IN LINE VERTICAL AND SPACED AT 300 mm CENTRES.

MANHOLE TYPE	X	Y
BROADS TRAP/OUTFALL	1200 mm	1200 mm
> 1.5 m	600 mm	900 mm
< 1.5 m	600 mm	750 mm





SECTION A-A
TYPICAL COLLECTOR MANHOLE DETAILS (GARDENS ONLY)



CATCHPIT MANHOLE SECTION (FILTER DRAINS ONLY)

FIGURE 9

PIPE CONNECTION DETAILS
NTS

FIGURE 10

PLAN

SECTION
ROAD GULLEY DETAILS
SCALE 1:25

GULLEY WITH
ADJACENT CONNECTION
SCALE 1:25

GULLEY WITH CONNECTION ON
OPPOSITE SIDE OF ROAD
SCALE 1:25

FIGURE 11

ON ORIGINAL

0 5 10 15 20 25 30 40 50mm

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NO CHANGES OF WHATSOEVER NATURE ARE TO BE MADE TO ANY DETAILS SET OUT OR CONTAINED IN ANY DBFL SPECIFICATIONS OR DRAWINGS UNLESS THE EXPRESS CONSENT HAS BEEN OBTAINED IN ADVANCE, IN WRITING, FROM DBFL.

NOTES:

1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH NRA SPECIFICATION FOR ROADWORKS UNLESS OVERRIDDEN BY GREATER DUBLIN REGIONAL CODES OF PRACTICE FOR DRAINAGE WORKS AS AMENDED BY DUBLIN CITY COUNCIL
2. ALL DRAWINGS TO BE CHECKED BY CONTRACTOR ON SITE AND ENGINEER INFORMED OF DISCREPANCIES BEFORE WORK COMMENCES.
3. ALL LEVELS ARE IN METRES AND ARE RELATED TO THE ORDANANCE DATUM.
4. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACCURACY OF PAVEMENT LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORKS.

DRAWING SPECIFIC NOTES:

FOR ALL EXTERNAL DRAINAGE WORKS TO BE TAKEN IN CHARGE

1. 225mm THK CL. 20/20 MASS CONCRETE FOUNDATIONS
2. PRE FORMED HALF CIRCLE CHANNEL PIPES. THE PIPELINE MAY WHERE PRACTICABLE, BE LAID THROUGH THE MANHOLE AND THE CROWN BROKEN 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 SOLID CONCRETE BLOCKS CL.S10 TO I.S.20 PART 1 : 1987 OR CL.30/20 INSITU CONCRETE.
   - ** 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 BLOCK ARE LAID.
   - ** JOINTS SHALL BE FLUSH POINTED AS THE WORK PROCEEDS.
   - ** ALL FOUL MANHOLES MUST BE FACED IN ENGINEERING BRICK FOR 1 METRE ABOVE INVERT LEVEL.
   - ** BRICK TO BE BONDED TO BLOCKWORK USING ENGLISH BOND OR WALL TIES.
4. RELIEVING ARCH FORMED BY 215x103x65 BRICK AS PER DRAWING.RELIEVING ARCHES IN BRICK OR BLOCKWORK MANHOLES TO EXTEND OVER FULL THICKNESS OF WALL.
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 BS 729
8. 600mm SQUARE OPE IN ROOF SLAB.
9. 225mm THK PRECAST R.C. ROOF SLAB IN CL.30/20 CONCRETE. COVER TO STEEL SHALL BE 40mm.
10. ENGINEERING BRICK CL.B TO I.S.91:1983 SET IN 1:3 (CEMENT SAND MORTAR)
11. CLASS D400 MANHOLE COVER AND FRAME TO IS/EN 124. 150mm DEEP FRAME FOR ALL ROADS, 100mm DEEP FOR FOOTPATHS AND GREEN AREAS ROADS. NON ROCK DESIGN, CLOSED KEYWAYS, MANUFACTURED FROM SPHEROIDAL GRAPHITE CAST IRON (DUCTILE CAST IRON), 600 x 600 (OR 600 DIA.) CLEAR OPENING, COVER AND FRAME COATED IN BITUMEN OR OTHER APPROVED MATERIAL, COVER SHALL BE QUIET IN USE WITH 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. THE FINAL LEVEL OF MANHOLE COVER AND FRAME IS TO BE SET PRIOR TO THE WEARING COURSE BEING LAID.
12. SHORT LENGTH PIPE, 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. SAFETY CHAIN TO BE PROVIDED IN ALL MANHOLES WITH PIPE DIAMETERS GREATER THAN 450mm. MILD STEEL SAFETY CHAIN SHALL BE 10mm NOMINAL SIZE GRADE M (H) NVON CALIBRATED CHAIN, TYPE 1, COMPLYING WITH B.S.4942 PART 2.
15. WHEN DEPTH OF MANHOLES TO INVERT IS GREATER THAN 3m LADDERS SHALL BE USED TO B.S.4211 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
16. LADDER STRINGERS SHOULD BE ADEQUATELY SUPPORTED FROM THE MANHOLE WALL AT INTERVALS OF NOT MORE THAN 2.4m. 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.
18. SOCKET OF PIPE SHOULD BE CUT WITH THE INSIDE SURFACE OF THE MANHOLE WALL.
19. POSITION OF 910 SQUARE OPE IN INTERMEDIATE ROOF SLAB.
20. FOR MANHOLES >3m DEPTH TO INVERT USE REINFORCED INSITU CONCRETE. REFER TO DBFL REINFORCEMENT DRAWINGS

WARNING

1. IF UNCERTAIN OF A DETAIL OR NOTE. DO NOT PROCEED UNTIL CLARIFICATION IS SOUGHT FROM THE ENGINEER AND SUITABLE INFORMATION PROVIDED
2. ALL ANOMALIES TO BE REPORTED TO THE ENGINEER IMMEDIATELY TO ALLOW TIME FOR REMEDIAL ACTION

rev	date	description	by	chkd.
1	17/09/2026	STAGE 3 LRD	PJC	GPH

client approval
- A - Approved
- B - Approved with comments
- C - Do not use

suitability: S2 - INFORMATION
issue purpose: ISSUEPURPOSE

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project ref.: LDA ROYAL LIVER PHASE 2

drawing title: SURFACE WATER DETAILS SHEET 2

client: LAND DEVELOPMENT AGENCY

designed by	author	scale	sheet size
GPH	PJC	VALUE	A1

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