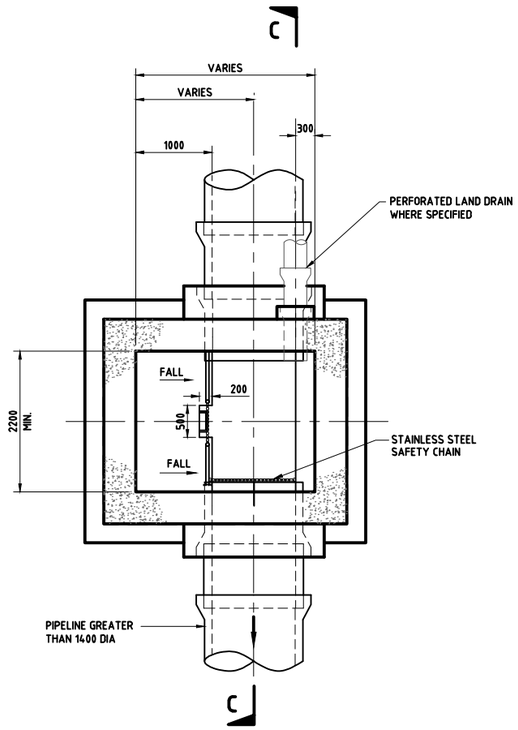
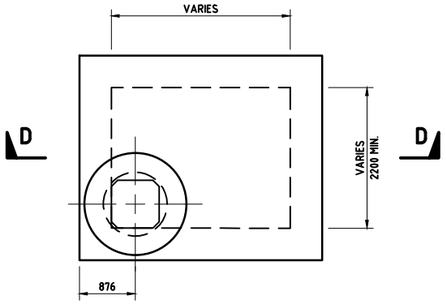
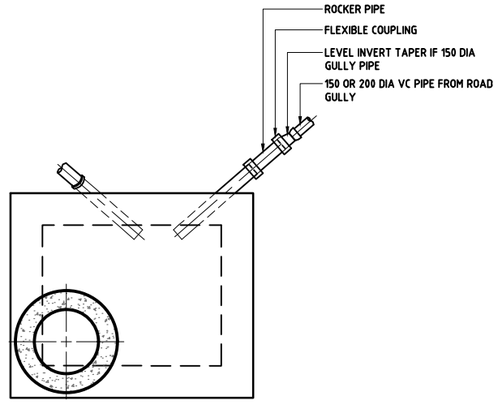


SECTION A-A



PLAN AT COVER LEVEL

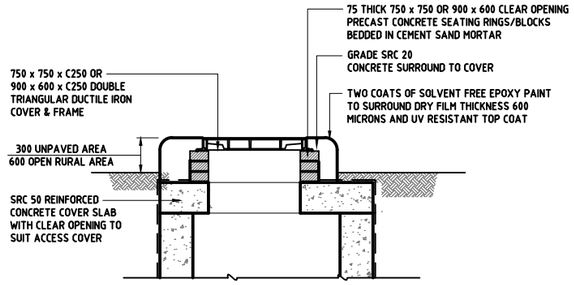


SECTION E-E
(WITH GULLY CONNECTION WHERE SPECIFIED)

TABLE 1

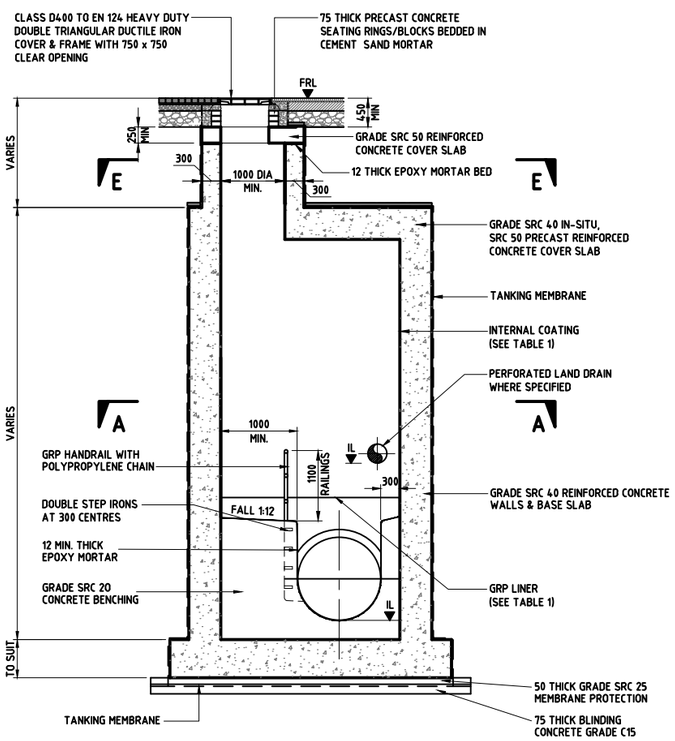
INTERNAL LININGS	
CONCRETE MANHOLES	GRP LINER TO WALLS AND BENCHING TO 300mm ABOVE INLET PIPE CROWN LEVEL THEN 2 COATS OF SOLVENT FREE EPOXY PAINT TO ALL REMAINING INTERNAL SURFACES
POLYMER RESIN CONCRETE (PRC) MANHOLES PRECAST MANHOLES ONLY	NO LINING TO WALLS AND COVER SLAB REQUIRED. IF PRC NOT USED FOR BENCHING, GRP LINING TO BENCHING TO BE USED AS PER QCS.

PRECAST CONCRETE MANHOLES MAY BE USED AS AN ALTERNATIVE. SEE SD 8-4-307, SD 8-4-308 AND SD 8-4-309 FOR TYPICAL DETAILS. STRUCTURAL DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL OF THE ENGINEER.

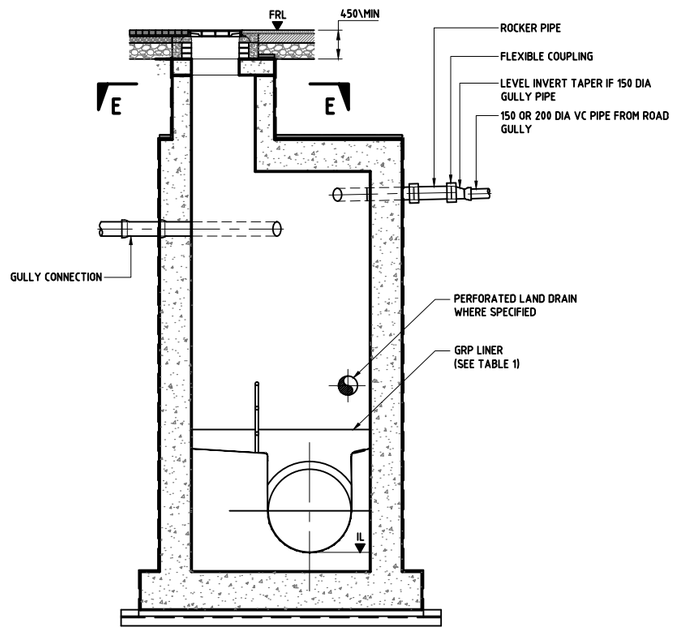


TYPICAL COVER DETAILS FOR UNPAVED AREAS

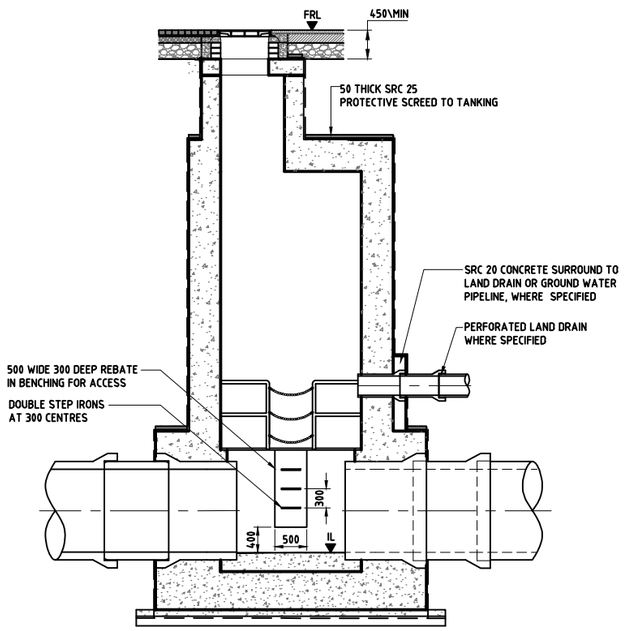
SCALE 1:25



SECTION B-B



SECTION D-D
GULLY CONNECTION



SECTION C-C

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT Q.C.S. UNLESS OTHERWISE AGREED WITH THE ENGINEER.
3. WHERE THERE IS A DISCREPANCY BETWEEN THE REQUIREMENTS IN THE SPECIFICATION AND THOSE SHOWN ON THIS DRAWING THE SPECIFICATION TAKE PRECEDENCE.
4. VARIATION TO STANDARD DETAILS ARE PERMISSIBLE TO MEET SITE SPECIFIC REQUIREMENTS SUBJECT TO ENGINEER'S APPROVAL.
5. SEE DRAWING No. SD 8-4-106 FOR STRUCTURAL DETAILS AND NOTES.
6. ALL JOINTS BETWEEN SECTIONS OF GRP LINERS SHALL BE LAMINATED OVER WITH 200mm WIDE RESIN RICH GLASS.
7. ALL JOINTS BETWEEN PIPES, FIXTURES AND GRP LINERS ARE SEALED.
8. ALL JOINTS BETWEEN CONCRETE SECTIONS ARE WATERTIGHT.
9. UNLESS DETAILED OTHERWISE, ALL INSITU CONCRETE SHALL BE GRADE SRC 40 AND ALL PRECAST CONCRETE SHALL BE GRADE SRC 50.
10. ALL INCOMING PIPES ARE LAID SOFFIT TO SOFFIT WITH THE OUTGOING PIPE UNLESS A RAMP/BACKDROP IS CONSTRUCTED OR AS SHOWN ON THE PLAN.
11. ROCKER PIPE IS 600mm IN LENGTH OR 1.5xD WHICH EVER IS GREATER.
12. GRP PIPES AND FABRICATIONS CAST INTO CONCRETE SHALL BE GRIT COATED.
13. DI MANHOLE COVERS SHALL BE BADGED 'SURFACE WATER' IN ENGLISH AND ARABIC.
14. MANHOLES IN CARRIAGEWAY TO BE BACKFILLED TO THE UNDERSIDE OF THE SUB BASE, FROM THE EXCAVATED SURFACE WITH 5MPA FLOWABLE FILL. AT TRENCH OPENINGS, ROUGH SHUTTERING SHALL BE PROVIDED TO GIVE A MINIMUM THICKNESS OF 300 AROUND THE MANHOLE. WHERE FLOWABLE FILL IS USED FOR BACKFILL, TANKING MEMBRANE TO WALLS IS REQUIRED ONLY TO 300 ABOVE THE HIGHEST PIPE CROWN LEVEL. POLYTHENE SHEETING SHALL BE USED TO PREVENT THE FLOWABLE FILL ENTERING THE GRANULAR BED AND SURROUND. TANKING MEMBRANE IS NOT REQUIRED FOR PRC MANHOLES.
15. STAINLESS STEEL SAFETY CHAINS AND TOE HOLDS OR STEP IRONS SHALL BE CONSIDERED FOR ALL PIPES GREATER THAN 600 DIA.
16. DOUBLE STEP IRON TYPE C PLASTIC ENCAPSULATED. ANY SHAPE TREAD WITH PATTERNED SURFACE AND WITHOUT UPSTAND TO BS EN 13101:2002.
17. SEE DRAWING No.SD 8-4-103 FOR TANKING DETAILS.
18. WHERE MANHOLES ARE LOCATES IN A CARRIAGEWAY WITH A POSTED SPEED LIMIT OF 100KM/HR. OR GREATER, CLASS E600 COVERS ARE TO BE USED.

NOTES APPLICABLE TO BACKDROP MANHOLES:

FOR SURFACE WATER ONLY SYSTEMS OF 600 DIAMETER OR LESS A BACKDROP IS NOT REQUIRED. A BACKDROP SHALL BE PROVIDED FOR PIPES 700 DIAMETER AND ABOVE.

FOR SURFACE WATER SYSTEMS THAT INCLUDE GROUND WATER FLOWS, BACKDROPS SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING CRITERIA.

WHERE THERE IS A DIFFERENCE IN LEVEL BETWEEN THE INVERT LEVEL OF THE INCOMING AND OUTGOING PIPES THE FOLLOWING RULES APPLY:

a) WHERE THE DIFFERENCE IN LEVEL IS LESS THAN 600 THE PIPE CONNECTION MAY BE DIRECT THROUGH THE MANHOLE, OR GRADIENT ADJUSTED TO SUIT. DIRECT CONNECTION SHALL NOT DISCHARGE ONTO THE BENCHING

b) WHERE THE DIFFERENCE IN LEVEL IS GREATER THAN 600 AND LESS THAN 1200 A RAMP BACKDROP SHALL BE CONSTRUCTED

c) WHERE THE DIFFERENCE IS GREATER THAN 1200 AND LESS THAN 8000 A VERTICAL BACKDROP SHALL BE CONSTRUCTED.

d) EXTERNAL BACKDROPS ARE PREFERRED. INTERNAL BACKDROPS MAY BE USED WHERE AN EXTERNAL BACKDROP IS NOT POSSIBLE, SUBJECT TO THE APPROVAL OF THE ENGINEER. INTERNAL BACKDROPS SHALL BE MAXIMUM 300 DIAMETER.

e) VORTEX DROP TO BE USED WHEN DIFFERENCE IN LEVEL IS GREATER THAN 8000 AND FLOW IS GREATER THAN 30 L/SEC OR VELOCITY IS GREATER THAN 1.2M/S. TYPE OF VORTEX DROP AND DESIGN TO BE APPROVED BY THE ENGINEER

f) WHEN FLOWS AND VELOCITIES ARE SUCH THAT BACKDROPS AND VORTEX DROPS ARE NOT APPROPRIATE OTHER STRUCTURES, EG STEPPED CASCADE, CHUTES, BAFFLED PIPELINES ETC. MAY BE PROPOSED FOR THE APPROVAL OF THE ENGINEER. REFER TO DRAWING SD 8-4-320 FOR GUIDANCE ON SELECTION OF STRUCTURES

Rev.	Date	Revision Details	Appd.
5	OCT 19	ISSUED FOR USE	
4	APR 19	ISSUED FOR USE	
3	01 MAR 19	UPDATED ISSUE	
2	04 APR 16	ISSUED FOR USE	
1	01 DEC 15	ISSUED FOR USE	

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QCS Section:
Section 8 - Drainage Works
Part 4 - Pipe Installation

Drawing Title:
SURFACE WATER MANHOLE TYPE C

Approved:	Sheet No: 1 OF 1
Date: OCT 2019	Scale: 1:50 on A1
Drawing Number: SD 8-4-303	Revision: 5