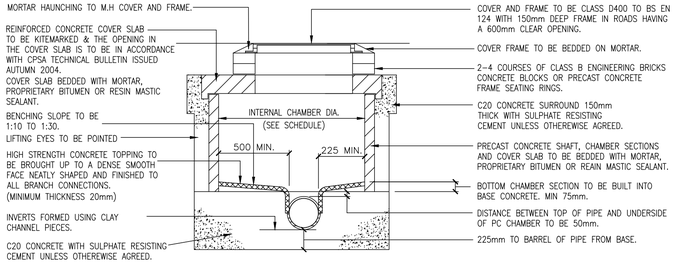
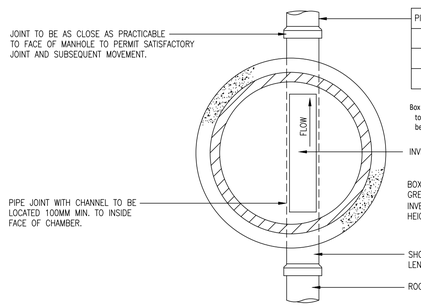


SECTION

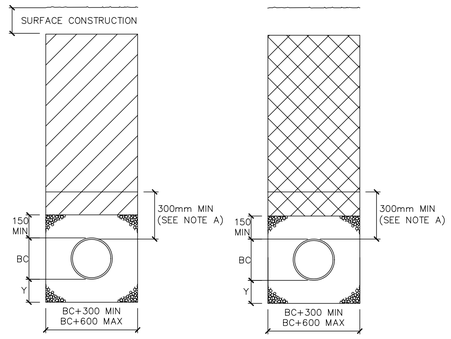


PIPE DIA (mm)	ROCKER PIPE LENGTH (m)
150-300	0.6
675-750	1.00
>750	1.25

Box out to be provided in benching of sewer greater than 600mm dia. for access to invert (750mm box out with between min 75mm and max 375mm height benching"

PLAN

TYPE C SHALLOW MANHOLE
DEPTH OF COVER TO PIPE 1-1.5m
OPENING TO BE SITED OVER CHANNEL



DRAINS WITH FLEXIBLE BED & SURROUND

TYPE 'S'

APPLICABLE UNDER ROADS / SERVICE YARDS WHERE DRAINS HAVE MORE THAN 1200 COVER (IF ADOPTED) OR MORE THAN 600 COVER (IF NOT ADOPTED)

TYPE 'S'

APPLICABLE UNDER FOOTPATHS VERGES AND OTHER NON-TRAFFICKED AREAS WHERE DRAINS HAVE MORE THAN 900 COVER (IF ADOPTED) OR MORE THAN 600 COVER (IF NOT ADOPTED) [100 DIA. RIGID PIPE CAN HAVE MIN. COVER OF 300MM].

BEDDING & TRENCH DETAILS

KEY

BC	OUTSIDE DIAMETER OF PIPE.
Y	BC/6 OR 150mm UNDER BARRELS AND UNDER SOCKETS. (400mm MAX.)
	OR
Y	BC/4 OR 200mm UNDER BARRELS AND 150mm MIN. UNDER SOCKETS WHICHEVER IS GREATER (400mm MAX.) FOR TRENCHES IN HARD MATERIAL.
Z	BC/4 OR 150mm MIN UNDER BARRELS WHICHEVER IS GREATER.
	EARTHWORKS OUTLINE.
	GRANULAR MATERIAL (SEE TABLE)
	SELECTED CLEAN EXCAVATED MATERIAL TO CLAUSE 505 & 601. CLASS 1, 2, OR 3.
	GRANULAR TYPE 1 MATERIAL DEPOSITED IN LAYERS NOT EXCEEDING 225MM UNCONSOLIDATED THICKNESS AND THEN FULLY COMPACTED.
	GRADE GEN3 CONCRETE (20MM AGGREGATE)

GRANULAR MATERIAL	
DIA. OF DRAIN	AGGREGATE
100mm	10mm SINGLE SIZE
150mm	10mm OR 14mm SINGLE SIZE OR 5-20mm GRADED.
225mm-525mm	10mm OR 14mm SINGLE SIZE OR 5-20mm GRADED.
OVER 525mm	10, 14, 20 OR 40mm SINGLE SIZE OR 5-20mm GRADED.

NOTE A
NO MECHANICAL COMPACTION WITHIN 300MM OF CROWN OF PIPE.

NOTE B
WHERE DRAINS ARE LAID UNDER BUILDINGS REFER TO ENGINEER FOR FURTHER DETAILS.

1. DO NOT SCALE THIS DRAWING. IF IN DOUBT ASK.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, ENGINEER'S AND SPECIALIST'S DRAWINGS AND SPECIFICATIONS.

3. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL LEVELS IN METRES UNLESS NOTED OTHERWISE.

4. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

5. ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH BARNSLEY MBC SPECIFICATION.

6. MANHOLE COVERS MUST / SHALL HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.

7. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF BARNSLEY MBC BEFORE ANY SEWER WORKS ARE CARRIED OUT.

8. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERB FACES AND SERVICE MARGINS.

9. SEWERS TO BE LAID IN CLASS 'S' BEDDING (150mm GRANULAR BED AND SURROUND). WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NONE VEHICULAR AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.

10. SEWERS MUST HAVE 5m CLEARANCE FROM TREES AND HEDGES.

11. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.

12. ALL HIGHWAY AND DRAINAGE DETAILS ARE SUBJECT TO THE APPROVAL OF THE RELEVANT AUTHORITIES PRIOR TO CONSTRUCTION.

13. COVER SLABS MUST CARRY THE BSI KITEMARK.
A 600mm x 600mm CLEAR OPENING IS REQUIRED.

DRAINAGE NOTES

1. DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF BARNSLEY MBC.

2. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE TO BS EN 1916 / BS 5911-1 : 2002

3. ALL PIPE RUNS TO BE LAID WITH FLEXI-JOINTS.

4. ALL PIPES ENTERING AND EXITING MANHOLES ARE TO BE CONNECTED WITH PIPE SOFFITS LEVEL WHEREVER POSSIBLE.

5. BEDDING AND BACKING TO BE AS FOLLOWS:-

LOCATION	COVER TO SOFFIT	BEDDING
SEWERS UNDER ROADS, CAR PARKING AND VERGES	>1.2m	CLASS S GRANULAR BED AND SURROUND
	<1.2m	CONCRETE SLAB
SEWERS UNDER NON VEHICLE ACCESS AREAS	>0.9m	CLASS S GRANULAR BED AND SURROUND
	<0.9m	CONCRETE SLAB

6. THE FOLLOWING CONCRETE MIXES ARE TO BE USED (ALL IN ACCORDANCE WITH BS5328) :-

LOCATION	MIX REFERENCE	DETAILS (WHERE APPLICABLE)
CONCRETE SURROUND TO PIPES	GEN3	
CONCRETE BASE AND SURROUND TO MANHOLES	GEN3	

7. THE ABOVE CONCRETE MIXES HAVE BEEN SELECTED FOR BRE 365 CLASS 1 SULPHATES.

8. MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON HEAVY DUTY GRADE D400 DOUBLE TRIANGULAR TO BS EN124 AND ARE TO BE GRADE A STANDARD IN VEHICULAR TRAFFICKED AREAS & HIGHWAYS.

9. MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON MEDIUM DUTY GRADE B125 OR C250 CIRCULAR OR RECTANGULAR TO BS EN124 POSITIONS OUTSIDE VEHICULAR TRAFFICKED AREAS, REFER TO MANHOLE SCHEDULES FOR SPECIFIC TYPES AND LOCATIONS.

10. FIRST FLEXIBLE JOINT IN PIPES ADJACENT TO A MANHOLE SHALL BE A MAXIMUM OF 600MM FROM INSIDE FACE OF MANHOLE, CONNECTING TO ROCKER PIPE. THE MINIMUM LENGTH OF ROCKER PIPE IS AS FOLLOWS:-

PIPE DIAMETER	LENGTH OF ROCKER PIPE
150mm - 450mm	600mm
675mm - 750mm	1000mm
GREATER THAN 825mm	1250mm

11. GULLY CONNECTIONS SHALL BE TYPE Z BED AND SURROUND TO 1.2M DEPTH.

12. CHAMBERS SHALL BE SUBSTANTIALLY WATERTIGHT. JOINING MATERIAL FOR CHAMBER UNITS SHALL BE DESIGNATION:

(I) MORTAR OR A PROPRIETARY BITUMEN OR RESIN MASTIC SEALANT WITH THE CONCRETE SURFACES PRIMED WITH AN APPROPRIATE COMPOUND.

13. ALL PRECAST CONCRETE PRODUCTS (IE PIPES, MANHOLES RINGS ETC.) SHALL BE OF SUITABLE CONCRETE MIX TO CATER FOR CLASS 1 SULPHATES.

Rev	Details	Date	Drwn	Chk.

Dave Chambers

Bloemfontein Street, Cudworth
Barnsley

Highway drainage
Manhole & bedding details

Dwg No. : STE/22/07/05

Date : 1-6-22

Scale : NTS

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