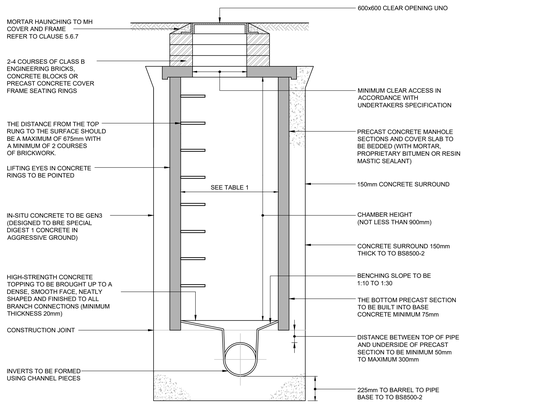


TYPICAL SECTION

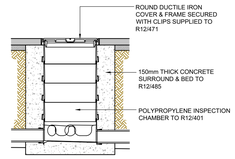
SCALE 1:20

TABLE 1: MANHOLE DIAMETERS	
DIAMETER OF LARGEST PIPE TO MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375 375-700 750-900 GREATER THAN 900	1200 1500 1800 CONSULT UNDERTAKER

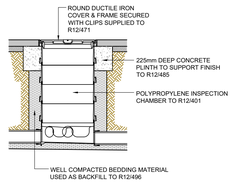
NOTES

CLAUSE 5.6.7: MANHOLE FRAMES SHALL BE SET TO LEVEL, BEDDED AND HAUNCHED EXTERNALLY OVER THE BASE AND SIDES OF THE FRAME IN MORTAR, IN ACCORDANCE WITH THE MANUFACTURE'S INSTRUCTIONS. THE FRAME SHALL BE SEATED ON AT LEAST 2 COURSES OF CLASS B ENGINEERING BRICKS, ON PRECAST CONCRETE MASONRY UNITS OR ON PRECAST CONCRETE COVER FRAME SEATING RINGS TO REGULATE THE DISTANCE BETWEEN THE TOP OF THE COVER AND THE TOP RUNG TO NO GREATER THAN 675mm. A MORTAR FILLET SHALL BE PROVIDED WHERE THE CORNERS TO AN OPENING IN A SLAB ARE CHAMFERED AND THE BRICKWORK IS NOT FLUSH WITH THE EDGES OF THE OPENING.

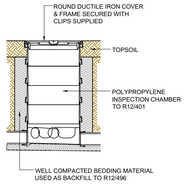
CLAUSE 6.6.2: THE RECOMMENDED LENGTH OF THE PIPE (ROCKER PIPE) AWAY FROM THE STRUCTURE SHALL BE SHOWN IN THE BELOW TABLE 2



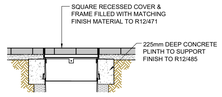
SITED IN AREAS OF HEAVY TRAFFIC USE



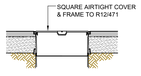
SITED IN DRIVEWAYS/HARD LANDSCAPED AREAS WITH STANDARD ROUND COVER



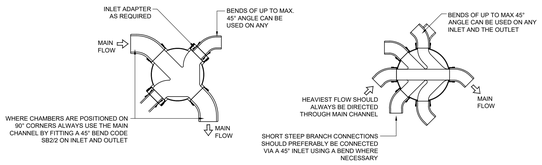
SITED IN SOFT LANDSCAPED AREAS WITH STANDARD ROUND COVER



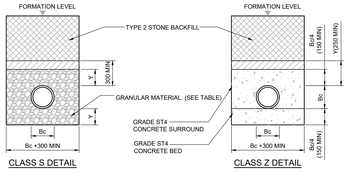
SITED IN DRIVEWAY/HARD LANDSCAPE AREAS, WITH RECESSED COVER



SITED IN CONCRETE FLOOR SLAB



TYPICAL CONNECTION SEQUENCES IN MAIN CHANNEL



NOMINAL PIPE DIA (mm)	SINGLE SIZED (mm)	GRADED (mm)
150 200 TO 300 375 TO 525 GREATER THAN 525	10 OR 14 10,14 OR 20 14 OR 20 14,20 OR 40	14 TO 5 14 TO 5 OR 20 TO 5 14 TO 5 OR 20 TO 5 14 TO 5,20 TO 5 OR 40 TO 5

GRANULAR BEDDING DETAIL

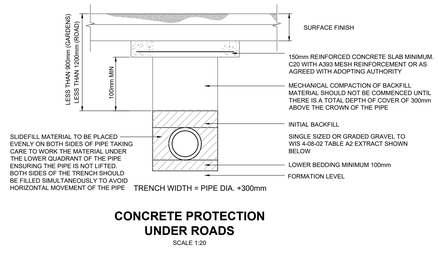
(ALL AGGREGATES BSEN 13242)

NOTES

A) Bc = OUTSIDE DIAMETER OF PIPE BARREL.

B) Y = FOR UNIFORM SOILS:

SLEEVE JOINTED PIPES, MIN. 50mm OR 1/6Bc, WHICHEVER IS THE GREATER. SOCKETED PIPE, MIN. 100mm OR 1/6Bc, WHICHEVER IS THE GREATER UNDER BARRELS AND NOT LESS THAN 50mm UNDER SOCKETS. FOR ROCK OR MIXED SOILS CONTAINING ROCK BANDS, BOULDERS, STONES OR OTHER IRREGULAR HARD SPOTS: SLEEVE JOINTED PIPES, MIN. 150mm OR 1/4Bc, WHICHEVER IS THE GREATER. SOCKETED PIPE, MIN. 200mm OR 1/4Bc, WHICHEVER IS THE GREATER UNDER BARRELS AND NOT LESS THAN 150mm UNDER SOCKETS.



CONCRETE PROTECTION UNDER ROADS

SCALE 1:20

NOTES:

1. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS. WHERE CONFLICT OF REQUIREMENTS EXIST THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATION. OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
3. DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.

GENERAL NOTES

4. ALL LEVELS ARE AOD (ABOVE ORDINANCE DATUM).
5. REFER TO DRAWING No. 3100 FOR DRAINAGE LAYOUT.
5. REFER TO DRAWING No. 4100 FOR PROPOSED LEVELS.
6. REFER TO DRAWING No. 4105 FOR EXTERNAL FINISHES.
7. REFER TO DRAWING No. 4110 FOR KERB AND ROAD CONSTRUCTION DETAILS.
8. ALL BANKING WHERE SHOWN TO BE 1:3 SLOPE MAXIMUM. BANKING TO BE CONSTRUCTED IN ACCORDANCE WITH SERIES 600 OF THE DMRB. IF REQUIRED ENSURE SUITABLE EROSION PROTECTION MEMBRANE IS USED. TSC ON SITE.
9. WHERE APPLICABLE LEVELS SHOWN ALONG KERB LINE REFLECT LEVEL AT BOTTOM OF KERB UNLESS NOTED OTHERWISE.
10. EXISTING PAVEMENTS TO BE LOCALLY ADJUSTED TO SUIT PROPOSED LEVELS.
11. ALL LEVELS WHERE SHOWN ARE BOTTOM OF KERB OR GROUND LEVELS AT RETAINING WALLS. (I.E. TREATMENT ABOVE GROUND LEVELS TO BE AS ARCHITECTS DETAILS).
12. EXISTING PAVEMENTS TO BE LOCALLY ADJUSTED TO SUIT PROPOSED LEVELS.
13. ALL WHITE LINING AND SIGNAGE BY OTHERS.

PAVEMENT NOTES

14. ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
15. ALL MATERIAL WITHIN 450mm OF THE ROAD SURFACE SHALL BE ON FROST SUSCEPTIBLE AS REQUIRED BY SHW SERIES 700. SUBJECT TO CONFIRMATION OF THE MEAN ANNUAL FROST INDEX (MAF) BY THE MET OFFICE.
16. SUB GRADE TO BE PREPARED IN ACCORDANCE WITH SHW SERIES 600 AND APPENDIX 6/1.
17. WITHIN EXISTING SURFACES IT MAYBE NECESSARY TO UNDERTAKE LOCALISED (SMALL SCALE) REINSTATEMENT OF TRENCHES AND OTHER LOCALISED EXCAVATIONS. IN THESE CASES, SIMILAR OR EQUIVALENT GRADES OF MATERIALS ARE TO BE REINSTATED.
18. IN AREAS WHERE FULL NEW PAVEMENT CONSTRUCTION IS TO BE PROVIDED, CBR VALUES AT FORMATION ARE TO BE TESTED TO ENSURE ASSUMED DESIGN CBR VALUE OF 2% IS ACHIEVED. DETAILS OF TESTING ARE SPECIFIED IN THE SPECIFICATION FOR HIGHWAY WORKS CLAUSE 631 AND BS 1377 PART 4:1990.

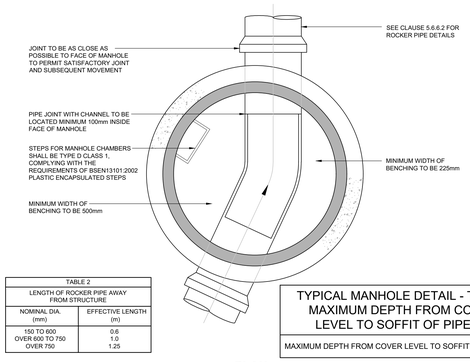


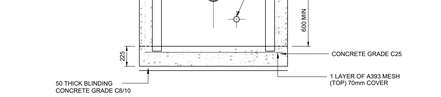
TABLE 2	
LENGTH OF ROCKER PIPE AWAY FROM STRUCTURE	
NOMINAL DIA. (mm)	EFFECTIVE LENGTH (m)
150 TO 600 OVER 600 TO 750 OVER 750	0.6 1.0 1.25

PLAN

SCALE 1:20

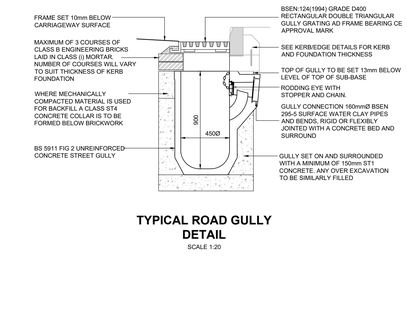
TYPICAL MANHOLE DETAIL - TYPE B MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3m

MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3.0m



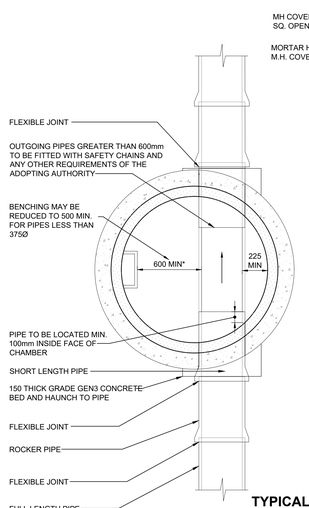
TYPICAL CATCHPIT DETAIL

SCALE 1:25

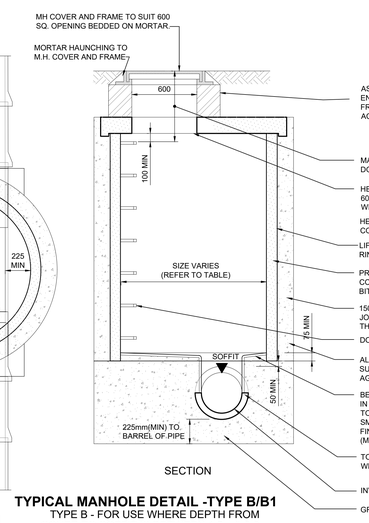


TYPICAL ROAD GULLY DETAIL

SCALE 1:20



PLAN

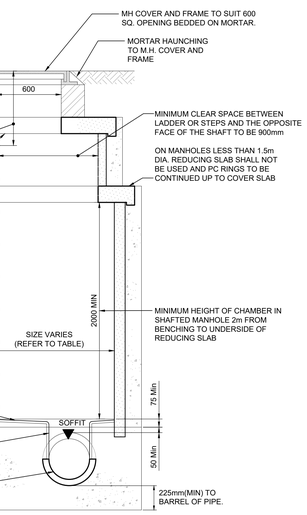


SECTION

TYPICAL MANHOLE DETAIL -TYPE B/B1

TYPE B - FOR USE WHERE DEPTH FROM COVER TO SOFFIT IS BETWEEN 1.5m & 3.0m

TYPE B MANHOLE DETAILS MAY BE APPLIED TO TYPE A MANHOLES FOR CHAMBER DIAMETERS LESS THAN 1500Ø UP TO 6.0m DEPTH TO SOFFIT.



TYPICAL MANHOLE DETAIL - TYPE A

FOR USE WHERE DEPTH FROM COVER TO SOFFIT IS BETWEEN 3.0m & 6.0m

Manhole Depth (To Soffit)	Diameter of largest pipe in manhole (mm)	Internal diameter of manhole (mm)	Minimum Clear opening size
Less than 1500	150	1200	1200x600 (double twin)
	300	1200	1200x600 (double twin)
	450	1500	1200x600 (double twin)
	700	1500	1200x600 (double twin)
	900	1800	1200x600 (double twin)
	1000	2100	1200x600 (double twin)
	Greater than 1000	Refer to schedules	1200x600 (double twin)
Greater than 1500	100 - 450	1200	600x600
	Greater than 450	Larger of 1800 or (DN+775)	600x600
	Greater than 1000	Refer to schedules	600x600
Manhole Shaft Greater than 3000 to soffit of pipe	STEPS	1200	600x600
	LADDERS	1200	600x600

TABLE APPLICABLE TO MANHOLE TYPES A AND B

CHAMBER SIZES ARE MINIMUM REQUIRED. SEE LAYOUT FOR VARIATIONS, IF ANY.

NOMINAL SIZE	EFFECTIVE LENGTH (mm)
150 TO 600 675 TO 675 825 AND ABOVE	600 1000 1250

APPLICABLE TO ALL MANHOLE TYPES

T1	FIRST ISSUE		19.08.19	MJ	JB / JSS
Rev	Description		Date	By	Chk / App

Alan Wood & Partners

Sheffield Office
Hallamshire House
Meadow Court
Hayland Street
Sheffield
S9 1BY

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Client: Turner and Townsend Project Management Ltd

Drawing: Drainage Details

Role: Civil Engineer

Drawing Status: TENDER

Job. no. 41207 | Scale@ A0: AS NOTED | Rev. T1

Project	Originator	Volume	Level	Type	Role	Number
FIRE	AWP	ZZ	00	DR	C	3105

100mm at A0