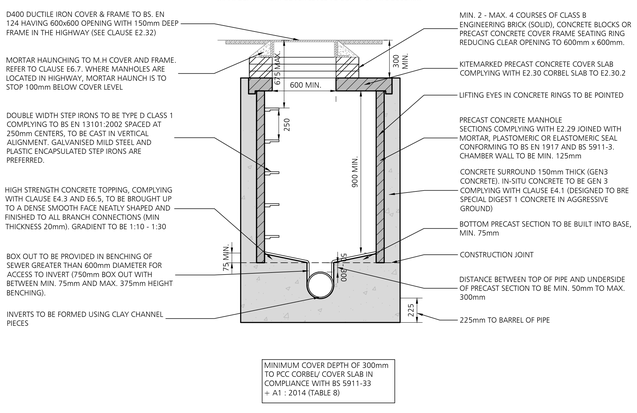
TYPICAL MANHOLE CONSTRUCTION TYPE B (DESIGN AND CONSTRUCTION GUIDANCE)

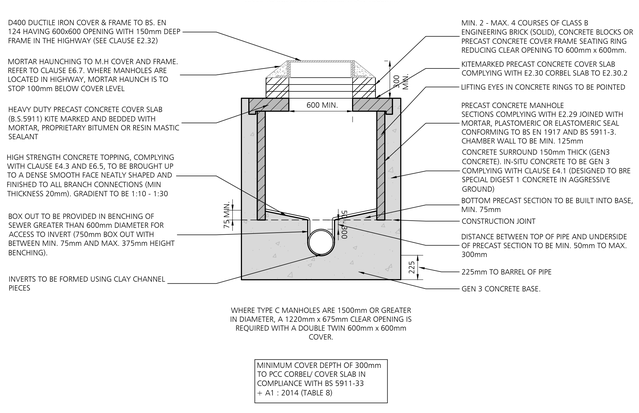
SECTION VIEW



MINIMUM COVER DEPTH OF 300mm TO PCC CORBEL/ COVER SLAB IN COMPLIANCE WITH BS 5911-33 + A1 : 2014 (TABLE 8)

SHALLOW MANHOLE TYPE C (DESIGN AND CONSTRUCTION GUIDANCE)

SECTION VIEW



WHERE TYPE C MANHOLES ARE 1500mm OR GREATER IN DIAMETER, A 1220mm x 675mm CLEAR OPENING IS REQUIRED WITH A DOUBLE TWIN 600mm x 600mm COVER.

MINIMUM COVER DEPTH OF 300mm TO PCC CORBEL/ COVER SLAB IN COMPLIANCE WITH BS 5911-33 + A1 : 2014 (TABLE 8)

TYPICAL MANHOLE CONSTRUCTION TYPE B (DESIGN AND CONSTRUCTION GUIDANCE)

PLAN VIEW

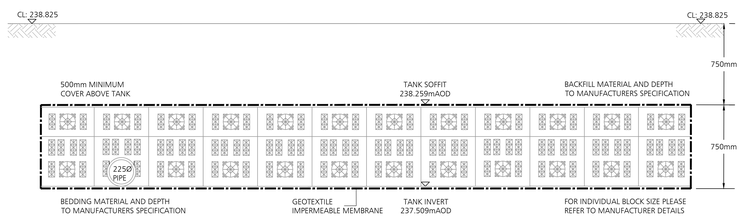
SHALLOW MANHOLE TYPE C (DESIGN AND CONSTRUCTION GUIDANCE)

PLAN VIEW

MANHOLE DIAMETERS	
NOMINAL INTERNAL DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	MINIMUM NOMINAL INTERNAL DIMENSION OF MANHOLE (mm)
UP TO 300	1200
375-450	1350
500-700	1500
750-900	1800
GREATER THAN 900	SPECIFIC DETAILED DRAWING REQUIRED

INDICATIVE CROSS SECTION THROUGH SDS 400 GEOCELLULAR ATTENUATION TANK

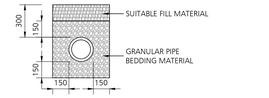
N.T.S



SUITABLE FILL- THE SUITABLE FILL SHALL BE SUITABLE FOR THE LOCATION AND SHALL BE CAREFULLY COMPACTED TO PROVIDE STABILITY WITHOUT DAMAGING THE PIPE.
FILL UNDER CAR PARKING AREAS AND PRIVATE ROADS TO BE WELL COMPACTED GRADED MATERIAL. FILL UNDER ADOPTED ROADS TO BE TYPE 1 GRANULAR SUB-BASE.

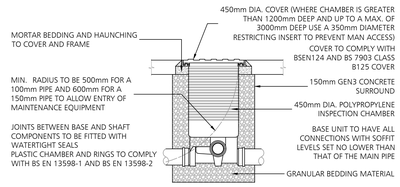
WHERE THE PIPES ARE TO BE ADOPTED CLASS S BEDDING TO BE USED FOR EITHER RIGID OR FLEXIBLE PIPES

SIZE OF BEDDING MATERIAL - ALL GRANULAR MATERIAL TO BE SINGLE SIZED OR GRADED IN ACCORDANCE WITH BS 882.BS1047,BS3797		
PIPE DIAMETER GRADED	NOMINAL SINGLE SIZED	
UP TO 100mm	10mm	
OVER 100mm TO 150mm	10mm or 14mm	5mm to 14mm
OVER 150mm TO 300mm	10mm,14mm or 20mm	5mm to 14mm or 5mm to 20mm
OVER 300mm TO 550mm	14mm or 20mm	5mm to 14mm or 5mm to 20mm
OVER 550mm	14mm, 20mm or 40mm	5mm to 14mm or 5mm to 20mm or 5mm to 40mm



CLASS S BEDDING DETAIL

SCALE 1:20

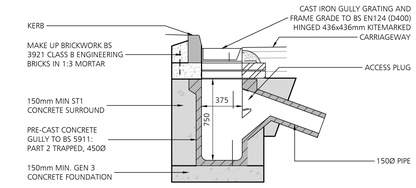


POLYPROPYLENE INSPECTION CHAMBER

MAX. 3000 DEPTH
SCALE 1:20

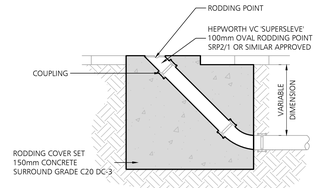
LIMITS OF COVER IN ANY WIDTH OF TRENCH (NOT RELEVENT TO ADOPTABLE SEWERS)						
	LOCATION					
PIPE MATERIAL AND DIAMETER	DOMESTIC GARDENS AND PATHWAYS	DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS FOR VEHICLES <7.5t	PARKING AREAS, MEWS COURTS FOR VEHICLES, PARKING AREAS AND YARDS FOR VEHICLES >7.5t	AGRICULTURAL LAND AND PUBLIC OPEN SPACE	OTHER HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS	
CLASS 120 CLAYWARE PIPES (CLASS S BEDDING)						
100-150mm	0.35m - 8.00m	0.50m - 8.00m	0.90m - 8.00m	0.90m - 8.00m	1.20m - 8.00m	
225mm	0.35m - 5.00m	0.50m - 5.00m	0.90m - 5.00m	0.90m - 5.00m	1.20m - 4.50m	
400mm	0.35m - 4.50m	0.50m - 4.50m	0.90m - 4.50m	0.90m - 4.50m	1.20m - 4.00m	
600mm	0.35m - 4.50m	0.50m - 4.50m	0.90m - 4.50m	0.90m - 4.50m	1.20m - 4.00m	
CLASS M CONCRETE PIPES (CLASS S BEDDING)						
300mm	0.35m - 3.00m	0.50m - 3.00m	0.90m - 3.00m	0.90m - 3.00m	1.20m - 2.50m	
450mm	0.35m - 3.50m	0.50m - 3.50m	0.90m - 3.50m	0.90m - 3.50m	1.20m - 2.50m	
600mm	0.35m - 3.50m	0.50m - 3.50m	0.90m - 3.50m	0.90m - 3.50m	1.20m - 3.00m	
THERMOPLASTIC PIPES (CLASS S BEDDING)						
100-300mm	0.35m - 7.00m	0.50m - 7.00m	0.90m - 7.00m	0.90m - 7.00m	1.20m - 7.00m	

WHERE COVER IS LESS THAN THE ALLOWABLE DEPTH PIPES TO HAVE CONCRETE COVER SLAB PROTECTION.



PRIVATE PRECAST CONCRETE ROAD GULLY DETAIL

SCALE 1:20



PRIVATE RODDING EYE IN CARRIAGEWAY / HARD LANDSCAPE

SCALE 1:20

DO NOT SCALE

DESIGNERS HAZARD IDENTIFICATION

IT IS ASSUMED THAT ALL WORKS WILL BE UNDERTAKEN BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT. IN ADDITION TO THE HAZARDS TYPICALLY ASSOCIATED WITH THE TYPES OF CONSTRUCTION DETAILED ON THIS DRAWING, ANY KNOWN ABNORMAL HAZARDS SPECIFIC TO THIS SCHEME HAVE BEEN IDENTIFIED.

ABNORMAL HAZARD REFERENCE

NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. IF ANY DISCREPANCIES ARE FOUND IN THIS DRAWING, PLEASE REPORT TO DUDLEYS CONSULTING ENGINEERS.
3. ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH 'CODE FOR ADOPTION'. THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARDS/REQUIREMENTS/LOCAL PRACTICE FOR THE ADOPTION OF SMALL SUBMERSIBLE FOUL AND SURFACE WATER PUMPING STATIONS AND MUST BE KITEMARKED.
4. MANHOLE COVERS SHALL/MUST HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.
5. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
6. YORKSHIRE WATER IS NOT OBLIGED TO ACCEPT FILTER DRAIN/LAND DRAINAGE RUN-OFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR IN-DIRECTLY). AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUN-OFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIAISE WITH THE LOCAL AUTHORITY, LAND DRAINAGE SECTION REGARDING THE DISPOSAL OF THE FILTER DRAIN/LAND DRAINAGE RUN-OFF.
7. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERB FACES AND SERVICE MARGINS.
8. SEWERS MUST HAVE 5m CLEARANCE FROM TREES AND HEDGES OR THE WIDTH OF THE CANOPY AT MATURE HEIGHT (PLEASE ALSO REFER DESIGN AND CONSTRUCTION GUIDANCE FOR RESTRICTIONS ON TREE PLANTING ADJACENT TO SEWERS).
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 NONVEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
10. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A1).
11. YORKSHIRE WATER POLICY IS THAT BRICK MANHOLES AND 1050mm DIA. MANHOLE RINGS ARE NOT PREFERRED. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE "B" MANHOLE WITH 1200mm DIA., 1350mm DIA. OR 1500mm DIA. RINGS, WITH THE OPENING SITED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFFIT IS 1 - 1.5m.
12. ADOPTABLE PLASTIC SEWER PIPES TO BE BSI KITEMARKED (CERTIFIED TO WIS 4-35-01 AND BS/EN13476). ADOPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3m LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD REQUIRE CLAY WARE CHANNEL IN MANHOLES.
13. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS : 100mm DIA. 40kN/m, 150mm DIA. 40kN/m, 225mm DIA. 45kN/m AND 300mm DIA. 72kN/m. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - (CLASS 120 TO EN 1916/BS5911-1:2002). PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN13476.
14. WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUITABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.
15. THERE MUST BE ENOUGH CLEARANCE AT CROSSOVERS TO ACCOMMODATE BEDDING TO BOTH PIPES, APPROX. 300mm : IF CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY NEED TO BE INCREASED.
16. ALL PRECAST CONCRETE ELEMENTS, INCLUDING COVER SLABS, TO BE IN ACCORDANCE WITH THE SEWERAGE SECTOR GUIDANCE APPENDIX C CLAUSES E2.29 AND E2.30 AND TO HAVE A CONCRETE DESIGN CHEMICAL CLASS OF DC-4.
17. PCC COVER SLABS TO HAVE A MINIMUM OF 300mm COVER.
18. ALL PCC UNITS IN OVERSIZE MANHOLES MUST HAVE A DESIGN WORKING LIFE OF 100 YEARS (MIN.) IN ACCORDANCE WITH BS 8500-1:2015+A2:2019-TABLE A.5.

DRAINAGE WITHIN HIGHWAY REQUIREMENTS

1. ALL ADOPTABLE SEWER WORKS & MATERIALS TO BE IN ACCORDANCE WITH CODE FOR ADOPTION & NATIONAL SPECIFICATION DESIGN MANUAL FOR ROADS & BRIDGES
2. ALL PCC UNITS IN OVERSIZE MANHOLES MUST HAVE A DESIGN WORKING LIFE OF 100 YEARS (MIN) IN ACCORDANCE WITH BS 8500 - 1:2015+A2:2019 TABLE A5
3. PRECAST CONCRETE MANHOLE UNITS INCLUDING THEIR PCC COVER SLABS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 1917 & BS EN 5911-3 & SHALL BE MANUFACTURED FROM CONCRETE WITH A DESIGN CHEMICAL CLASS DC-4 UNLESS SATISFACTORY EVIDENCE THROUGH SOIL ANALYSIS CAN BE PROVIDED THAT A LOWER CLASS WILL RESIST ATTACK FROM SOILS & GROUND WATER
4. PRECAST CONCRETE CORBEL SLABS SHALL COMPLY WITH BS 5911-3 TABLE 3 & FIGURE 8.
5. COVER SLABS SHALL BE INSTALLED WITH A MINIMUM OF 300mm COVER TO FINISHED GROUND LEVEL
6. SUBMISSION OF A CONSTRUCTION COMPLIANCE CERTIFICATE SHALL BE PROVIDED UPON COMPLETION OF DRAINAGE WORKS AND AS-BUILT DRAWINGS
7. COVER, REDUCING & LANDING SLABS TO BE SUBJECTED TO THE VERTICAL PROOF LOAD TEST FOR REINFORCED CONCRETE SLABS IN ACCORDANCE WITH BS EN 1917:2002, ANNEX B.

DATE	REVISION DESCRIPTION	BY	CHK.	REV.
02.04.26	UPDATED TO SUIT HIGHWAYS COMMENTS	AH	KL	C03
20.03.26	TYPE B AND TYPE C MANHOLES UPDATED AND NOTES ADDED	APW	JA	C02
23.09.25	CONSTRUCTION ISSUE	OB	SDR	C01

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PROJECT
SCHOLES
CHAPELGATE, HOLMFIRTH
HD9 1SX

TITLE
DRAINAGE
CONSTRUCTION DETAILS

SCALE	PAPER	STAGE	STATUS
1:200	A0	CONSTRUCTION	

DRAWING NO. 22055-DCE-XX-XX-D-C-125 REV. C03