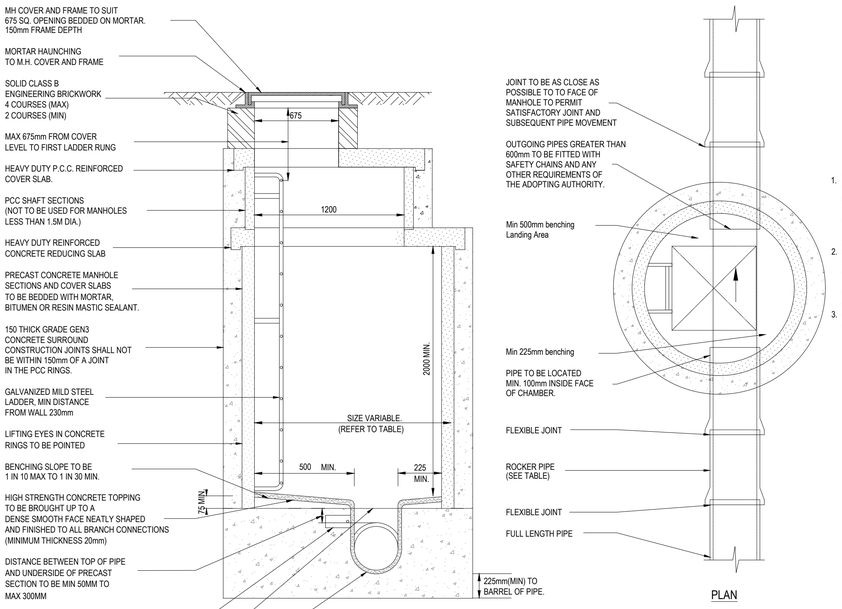


SECTION

PLAN

TYPICAL MANHOLE DETAIL - TYPE A
DEPTH TO SOFFIT OF PIPE 3000 TO 6000

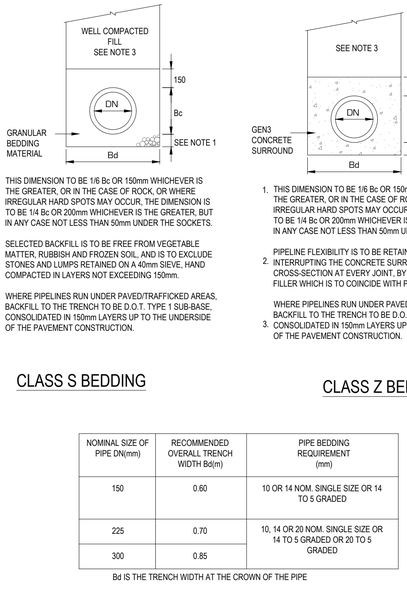
DIA. OF LARGEST PIPE IN M.H.	CHAMBER SECTION INT.DIA. (mm)
LESS THAN 375mm	1200
375 TO 700	1500
750 TO 900	1800
GREATER THAN 900	CONSULT UNDERTAKER

TABLE APPLICABLE TO MANHOLE TYPE A

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

NOMINAL SIZE	EFFECTIVE LENGTH (mm)
150 TO 600	600
601 TO 750	1000
750 AND ABOVE	1250

SHORT AND ROCKER PIPE LENGTHS TABLE
APPLICABLE TO ALL MANHOLE TYPES

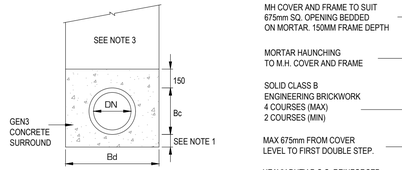


1. THIS DIMENSION TO BE 1/6 Bc OR 150mm WHICHEVER IS THE GREATER, OR IN THE CASE OF ROCK, OR WHERE IRREGULAR HARD SPOTS MAY OCCUR, THE DIMENSION IS TO BE 1/4 Bc OR 200mm WHICHEVER IS THE GREATER, BUT IN ANY CASE NOT LESS THAN 50mm UNDER THE SOCKETS.

SELECTED BACKFILL IS TO BE FREE FROM VEGETABLE
2. MATTER, RUBBISH AND FROZEN SOIL, AND IS TO EXCLUDE STONES AND LUMPS RETAINED ON A 40mm SIEVE, HAND COMPACTED IN LAYERS NOT EXCEEDING 150mm.

WHERE PIPELINES RUN UNDER PAVED/TRAFFICKED AREAS, BACKFILL TO THE TRENCH TO BE D.O.T. TYPE 1 SUB-BASE,
3. CONSOLIDATED IN 150mm LAYERS UP TO THE UNDERSIDE OF THE PAVEMENT CONSTRUCTION.

CLASS S BEDDING



1. THIS DIMENSION TO BE 1/6 Bc OR 150mm WHICHEVER IS THE GREATER, OR IN THE CASE OF ROCK, OR WHERE IRREGULAR HARD SPOTS MAY OCCUR, THE DIMENSION IS TO BE 1/4 Bc OR 200mm WHICHEVER IS THE GREATER, BUT IN ANY CASE NOT LESS THAN 50mm UNDER THE SOCKETS.

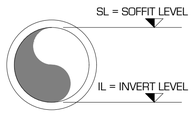
PIPELINE FLEXIBILITY IS TO BE RETAINED BY
2. INTERRUPTING THE CONCRETE SURROUND OVER ITS FULL CROSS-SECTION AT EVERY JOINT, BY A COMPRESSIBLE FILLER WHICH IS TO COINCIDE WITH PIPE JOINTS.

WHERE PIPELINES RUN UNDER PAVED/TRAFFICKED AREAS, BACKFILL TO THE TRENCH TO BE D.O.T. TYPE 1 SUB-BASE,
3. CONSOLIDATED IN 150mm LAYERS UP TO THE UNDERSIDE OF THE PAVEMENT CONSTRUCTION.

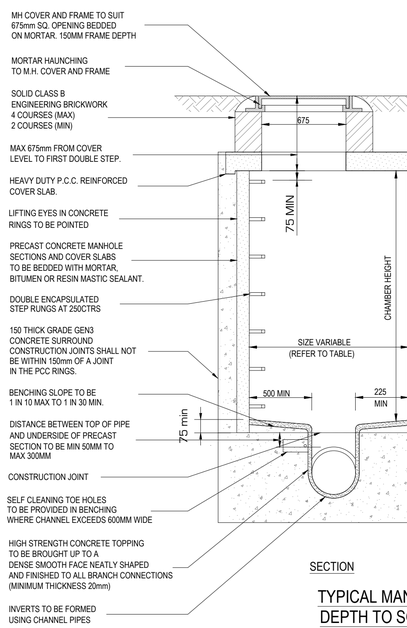
CLASS Z BEDDING

NOMINAL SIZE OF PIPE DN(mm)	RECOMMENDED OVERALL TRENCH WIDTH Bd(m)	PIPE BEDDING REQUIREMENT (mm)
150	0.60	10 OR 14 NOM. SINGLE SIZE OR 14 TO 5 GRADED
225	0.70	10, 14 OR 20 NOM. SINGLE SIZE OR 14 TO 5 GRADED OR 20 TO 5 GRADED
300	0.85	

Bd IS THE TRENCH WIDTH AT THE CROWN OF THE PIPE



DRAIN LEVEL KEY



SECTION

PLAN

TYPICAL MANHOLE DETAIL - TYPE B
DEPTH TO SOFFIT OF PIPE TO 3000

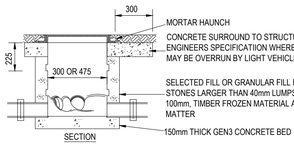
DIA. OF LARGEST PIPE IN M.H.	CHAMBER SECTION INT.DIA. (mm)
LESS THAN 375mm	1200
375 TO 700	1500
750 TO 900	1800
GREATER THAN 900	CONSULT UNDERTAKER

TABLE APPLICABLE TO MANHOLE TYPE B

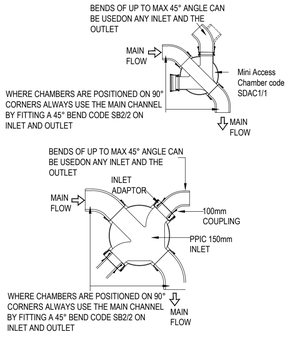
(CHAMBER SIZES ARE MINIMUM REQUIRED,
SEE LAYOUT FOR VARIATIONS, IF ANY)

NOMINAL SIZE	EFFECTIVE LENGTH (mm)
150 TO 600	600
601 TO 750	1000
750 AND ABOVE	1250

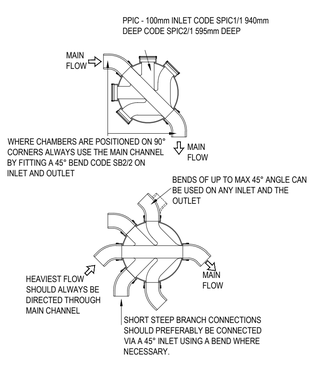
SHORT AND ROCKER PIPE LENGTHS TABLE
APPLICABLE TO ALL MANHOLE TYPES



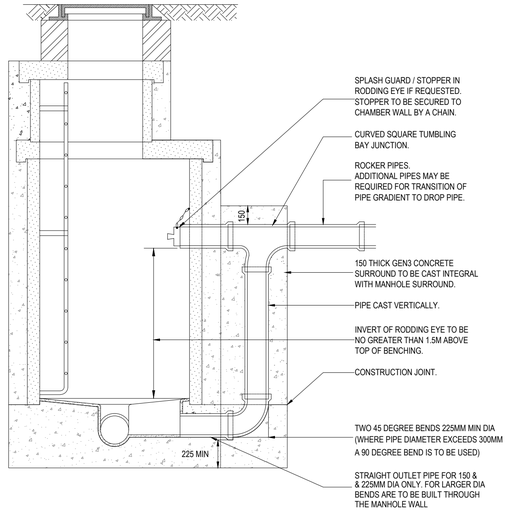
SECTION



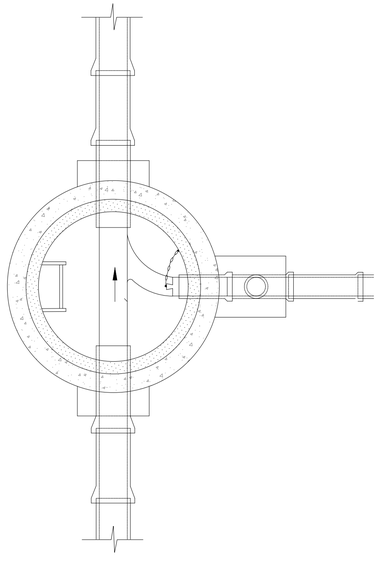
300 DIA POLYPROPYLENE INSPECTION CHAMBER
(UP TO 0.6m DEEP)



475 DIA POLYPROPYLENE INSPECTION CHAMBER

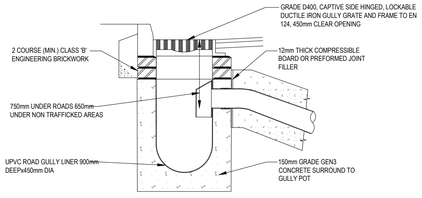


SECTION

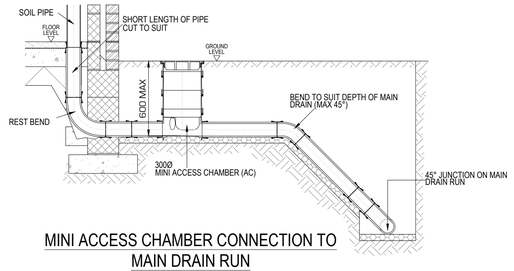


PLAN

TYPICAL VERTICAL BACKDROP MANHOLE DETAIL



GULLY DETAIL
Scale 1:20



MINI ACCESS CHAMBER CONNECTION TO MAIN DRAIN RUN

DRAINAGE NOTES

1. ALL ADOPTABLE DRAINAGE WORKS AND MATERIALS TO BE IN ACCORDANCE WITH "CODE FOR ADOPTION", THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATERS STANDARDS/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
2. 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.
3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. ALL ADOPTABLE SEWERS TO BE KITEMARKED (CERTIFIED TO WIS 4-35-01 AND BS/EN/13476).
5. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND THE WATER AUTHORITY PREFER CLAYWARE CHANNEL IN MANHOLES. PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE BECAUSE THEY FLOAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON THE BENCHING.
6. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
8. SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES.
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 ACCESS AREAS) THEN A CLASS 'Z' BEDDING(CONCRETE SURROUND) SHOULD BE PROVIDED.
10. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A2).
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 PRIVATE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH BUILDING REGULATIONS 2010 EDITION.
13. CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES PRIOR TO COMMENCEMENT ON SITE.
14. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
15. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
16. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DEWATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
17. FOR PIPE SPECIFICATION PLEASE REFER TO ADDITIONAL NOTES.
18. VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN295 AND BS 65 RESPECTIVELY AND BE KITEMARKED. ALL PIPES SHALL BE EXTRA STRENGTH TO BS 65 OR EQUIVALENT BS EN295 PIPE CRUSHING STRENGTH.
19. STRUCTURED WALL PLASTIC PIPES TO WIS 4-35-01 MAY BE USED FOR FOUL & SURFACE WATER DRAINAGE, SUBJECT TO ADOPTING AUTHORITY APPROVAL.
20. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. CONCRETE PIPES TO BE CLASS 120 UNLESS NOTED OTHERWISE.
21. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 FOR ROADS AND SERVICE YARD AREAS. CLASS C250 TO BE USED IN CAR PARKING AREAS.
22. BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR, IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS OF "THE STREET WORKS REGULATIONS 1992" AND RELEVANT PROVISIONS OF H.A.U.C. "SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
23. ALL TRADITIONAL RAINWATER PIPE DOWN COMERS TO DISCHARGE TO TRAPPED GULLIES.
24. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
25. ALL GULLY LEADS TO BE 150mm DIAMETER.
26. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
27. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
28. THE CONTRACTOR MUST ENSURE THAT ANY OF THE EXISTING DRAINAGE WHICH IS LIVE IS KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.
29. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
30. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.
31. ADOPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3m LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
32. WHERE PLASTIC PIPES ARE INSTALLED PRIOR TO GETTING APPROVAL THEN A LIGHT LINE CCTV SURVEY AND REPORT ARE REQUIRED PRIOR TO APPROVAL.
33. 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.
34. THERE SHOULD BE ENOUGH CLEARANCE TO ACCOMMODATE THE BEDDING FOR BOTH PIPES, APPROX 300MM : IF CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY BE INCREASED
35. 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.

SUBJECT TO LOCAL AUTHORITY & WATER AUTHORITY APPROVAL

DATE	DESCRIPTION	DR	CHK	REV
21/07/2025	FIRST ISSUE	SR	AE	01

TENDER

RWO Civil Structures Geoenvironmental
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CLIENT:
YORKSHIRE COUNTY PROPOERTIES

PROJECT:
DENBY LANE
GRANGE MOOR

TITLE:
DRAINAGE CONSTRUCTION DETIALS

PROJECT No:	DISCIPLINE:	SCALE:
Y22054	CIVIL	1:1:250 @:A1

DRAWING No: D701 REV: 1

Project - Originator - Functional Breakdown - Spatial Breakdown - Form - Discipline - Number