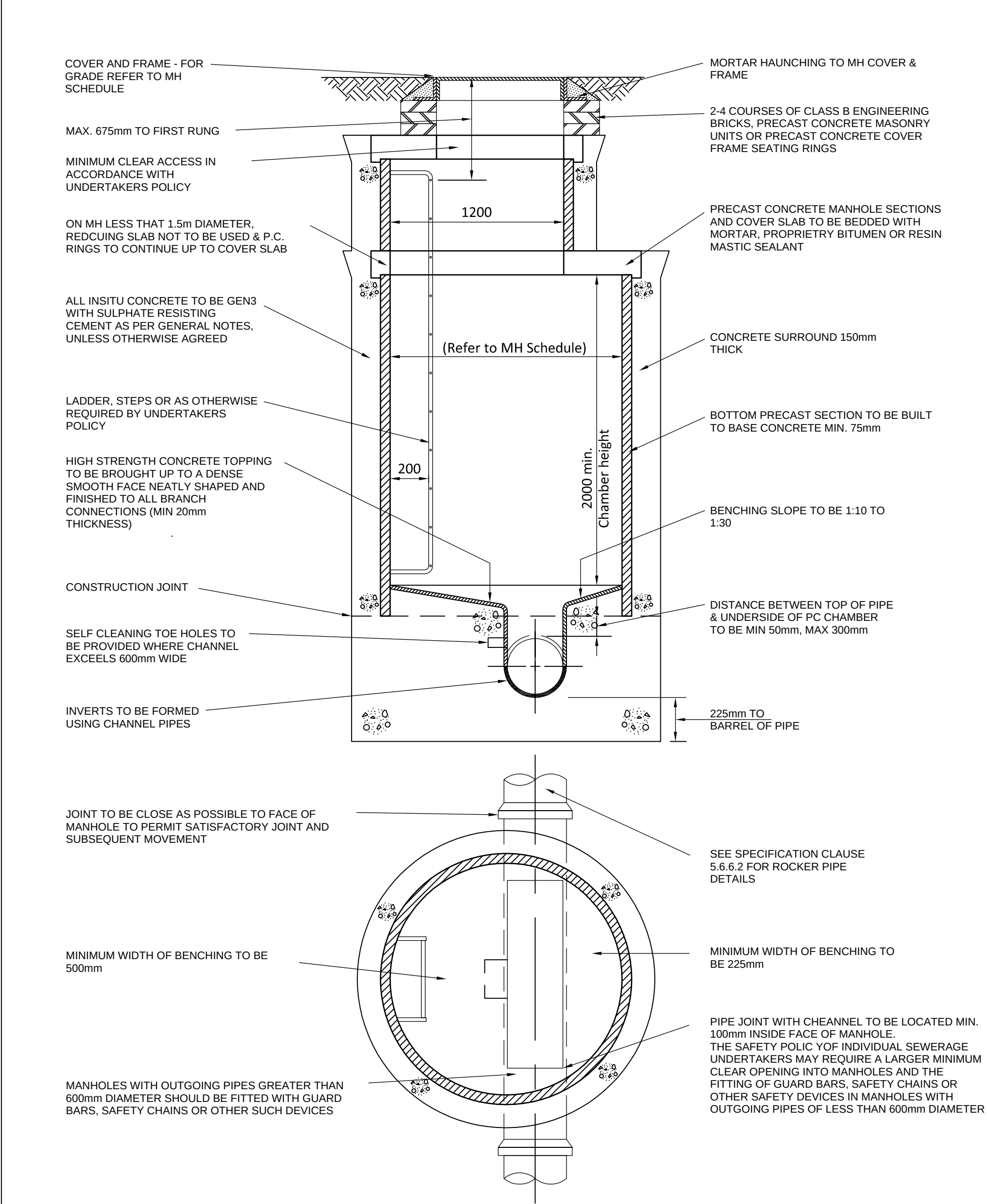
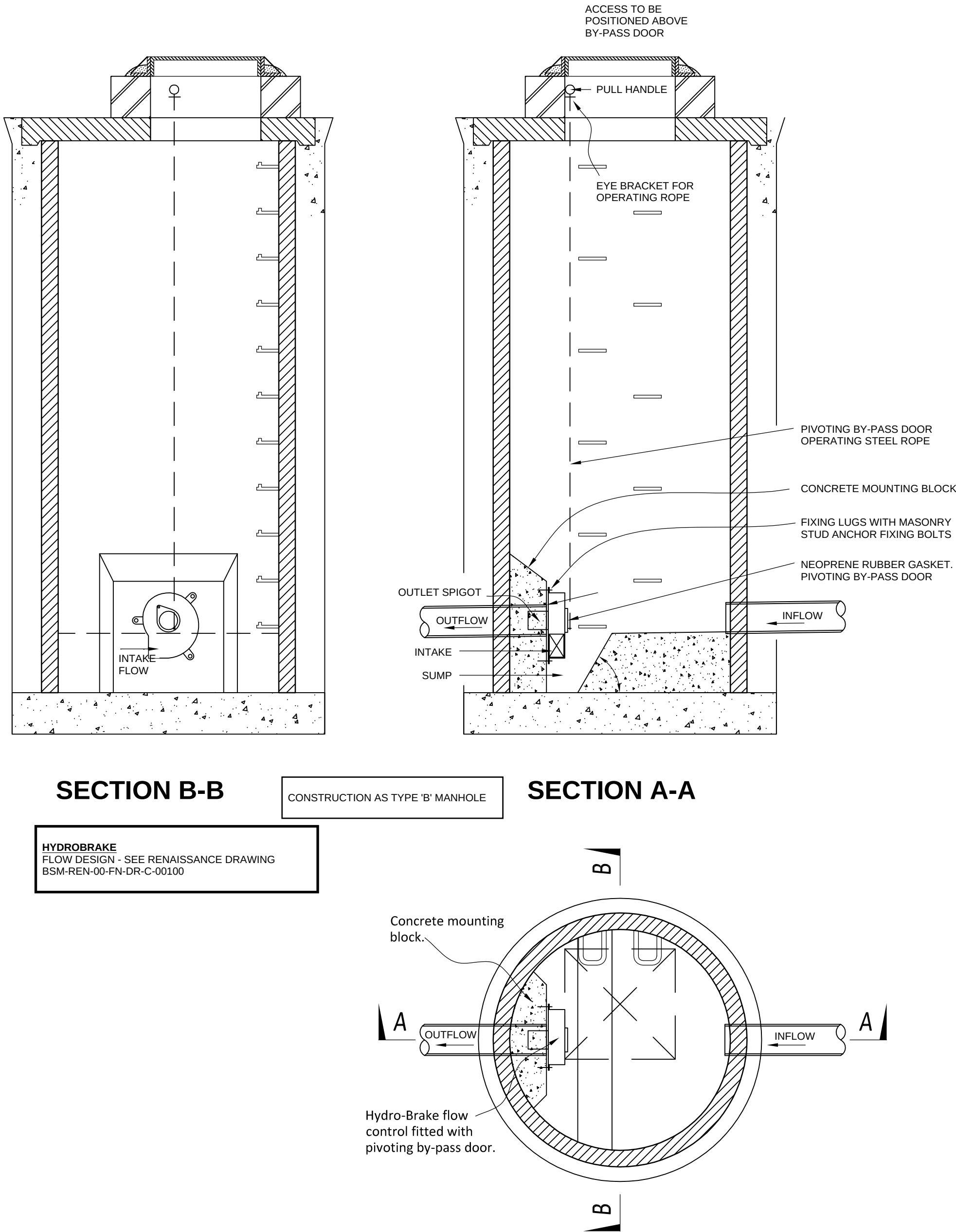


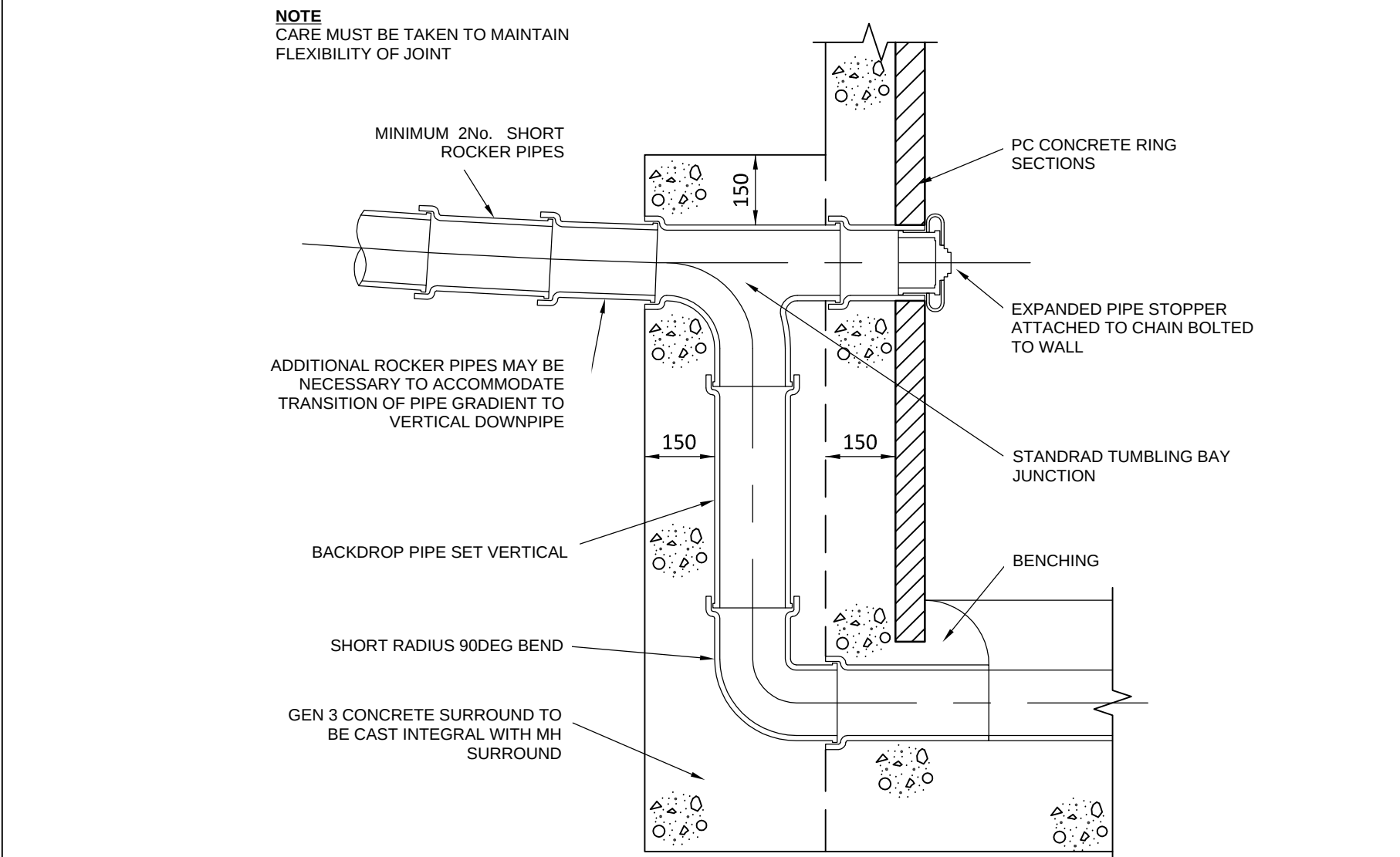


TYPICAL MANHOLE DETAIL - TYPE A



TYPICAL PLAN ON HYDROBRAKE MANHOLE

TYPICAL POLYPROPYLENE INSPECTION CHAMBER, TYPE PPIC - 315DIA OSA



TYPICAL EXTERNAL BACKDROP DETAIL

- NOTES:
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
 - DO NOT SCALE FROM THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS TO BE CHECKED / VERIFIED ON SITE.
 - ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
 - FOR GENERAL NOTES, REFER TO DRAWING BSM BSM-REN-80-XX-DR-S-00010
 - FOR SETTING OUT OF STACK LOCATIONS REFER TO CURRENT ARCHITECTS DRAWINGS. FOR SETTING OUT OF EXTERNAL DRAINAGE REFER TO LANDSCAPE ARCHITECTS CURRENT DRAWINGS. FOR ABOVE GROUND DRAINAGE REFER TO M&E CURRENT DRAWINGS.
 - THE FINAL FOUL AND SURFACE WATER CONNECTION TO THE COMBINED SEWER IS SUBJECT TO UNITED UTILITIES APPROVAL AND IS TO BE IN ACCORDANCE WITH THEIR AGREED DETAILS.
 - WORKS ARE TO GENERALLY COMPLY WITH THE 'SEWERS FOR ADOPTION' 7TH EDITION. IF DISCREPANCIES ARE NOTED BETWEEN SPA AND DRAWINGS, THESE SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR REVIEW.
 - THE FLOW CONTROL IS TO BE TO THE SUPPLIERS DESIGN AND DETAILS. INSTALLATION IS TO BE IN ACCORDANCE WITH THE SUPPLIERS / MANUFACTURERS REQUIREMENTS.
 - MANHOLE COVERS TO BE IN ACCORDANCE WITH BS EN 124 FOR THE RATINGS INDICATED IN THE MH SCHEDULE. THE CONTRACTOR IS TO SUBMIT DETAILS FOR THE PROPOSED MANHOLE COVERS TO THE ENGINEER AND ARCHITECT / LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION.
 - COVER SLABS MUST CARRY THE BSI KITEMARK. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE FRAME, A LOAD BEARING REDUCING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN AS REQUIRED.
 - SULPHATE ASSESSMENT: CONCRETE SHOULD BE DESIGNED IN ACCORDANCE WITH CLASS DS-1, AGGRESSIVE CHEMICAL ENVIRONMENT FOR CONCRETE CLASSIFICATION (ACEC) AC-15 IN ACCORDANCE WITH BRE SPECIAL DIGEST 1 (2005) MUST BE USED IN PRECAST CONCRETE PRODUCTS OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
 - SEWERS TO BE LAID IN CLASS 'S' BEDDING (150mm GRANULAR BED AND SURROUND), WHERE DEPTH OF COVER TO TOP OF DRAIN IS LESS THAN 1.2m IN TRAFFICED AREAS, AND LESS THAN 0.9m IN PEDESTRIAN AREAS, THEN A 150mm CONCRETE PROTECTION SLAB SHOULD BE PROVIDED ABOVE THE GRANULAR BED AND SURROUND.
 - BEDDING AND BACKFILL REQUIREMENTS TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION (WIS) 4-08-02 (TABLE A2).
 - ALL SEWERS TO BE BSI KITEMARKED (CERTIFIED TO WIS 4-35-01).
 - ALL CONCRETE PIPES TO BE TO BS EN 1916 CLASS 120 (54kN/m)
 - PLASTIC PIPES ARE TO BE USED PROVIDED THEY HAVE THE BSI KITEMARK AND CERTIFIED TO BS EN 13476-1 AND CONFORM WITH WIS 4-35-01 OR BS EN 13476-3. PIPES LESS THAN OR EQUAL TO 500 DIA. SHALL HAVE A SHORT TERM RING STIFFNESS NOT LESS THAN 8kN/m²
 - SEWER PIPES TO BE LAID IN MAXIMUM 3m LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER AND THIS IS AGREED BETWEEN THE CONTRACTOR AND THE PIPE SUPPLIER.
 - THE CONTRACTOR IS TO KEEP A RECORD SET OF THE AS-INSTALLED DRAINAGE ON SITE AND PROVIDE THIS TO RENAISSANCE AND CONTRACTOR UPON COMPLETION OF THE WORKS AS THE FINAL CONSTRUCTION DRAWING. THIS SHOULD INCLUDE A CCTV SURVEY OF THE INSTALLED DRAINAGE FOLLOWING JET WASHING, AND WHICH HAS BEEN UNDERTAKEN FOLLOWING COMPLETION OF THE WORKS.
 - DURING THE WORKS ALTERATIONS TO THE DRAINAGE LAYOUT ARE TO BE MARKED UP BY THE CONTRACTOR AND AGREED WITH RENAISSANCE IN WRITING.
 - THE HEAD OF ALL FOUL BELOW GROUND DRAINAGE RUNS ARE TO BE VENTED WITH THE ABOVE GROUND DRAINAGE TO M&E SUBCONTRACTOR DETAILS
 - THE LAST SURFACE WATER MANHOLE IS TO INCORPORATE A SILT TRAP.
 - ALL DRAINAGE IS TO BE RODDABLE AT STACK LOCATIONS ABOVE GROUND.

C01	ISSUED FOR CONSTRUCTION	26.05.20	MH	HG
Rev:	Description:	Date:	By:	Chkd:
renaissance Project: Renaissance Associates Ltd Carvers Warehouse 77 Dale Street Manchester M1 2HG				
BRUNSWICK STREET, MANCHESTER				
Drawing Title: BELOW GROUND DRAINAGE DETAILS - SHEET 1				
Status:	Purpose of Issue:			
A	CONSTRUCTION			
Size:	Date:	Drawn by:	Designed by:	Checked by:
A1	MAY 20	MH	NP	HG
Scale:	1:100	Project No:	2004-04	
Project:	Originator:	Volume:	Level:	Type: Role: Category/Number: Rev:
BSM-REN -00- FN- DR-C -00200-C01				