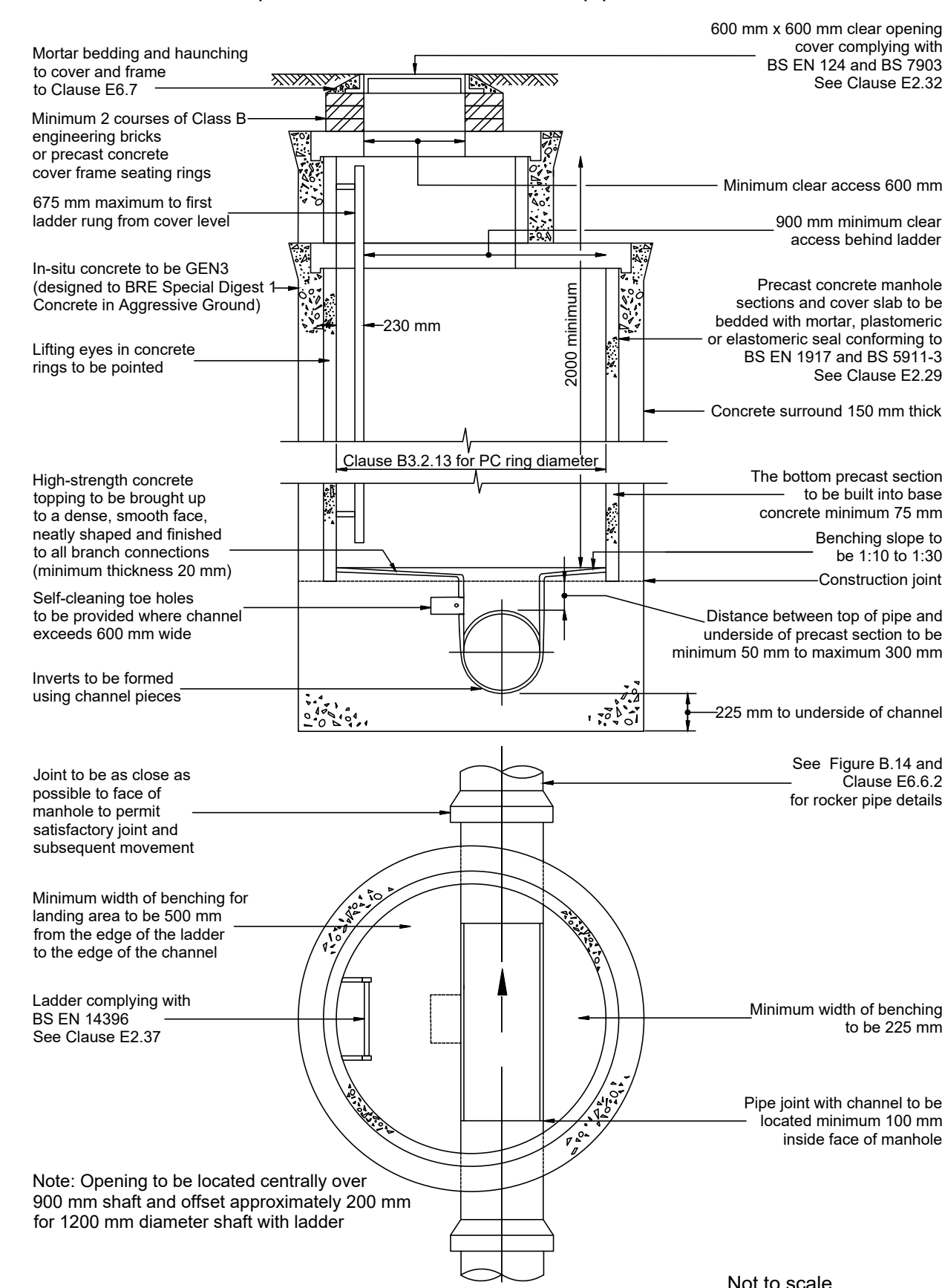


FIGURE B.10
TYPICAL MANHOLE DETAIL - TYPE 1B
Depth from cover level to soffit of pipe 3 m to 6 m



REFER TO NOTES FOR TYPE B PCC MANHOLE
FOR CONSTRUCTION OF CHAMBER WITH
STEP IRONS AND SPECIFICATION OF COVER
SLAB AND COVER/FRAME.



1. all dimensions are in millimetres.
2. dimension x is the external diameter of the pipe.
3. the minimum or maximum width of the trench applies on and below a line 300mm above the outside top of the pipe, above 300mm line the trench backfill material shall be as described in clause 505 of s.h.w.
4. the concrete bed or surround may extend to the sides of the trench or be of minimum width, class 8 material is to be used to fill any voids so formed.
5. for type z trench the concrete cover may be formed to a radius batter or horizontal surface, min. cover shall be 150.

- ALL PIPEWORK TO HAVE CLASS 5 GRANULAR BED AND SURROUND AS FOLLOWS (UNLESS REQUIRED OTHERWISE - REFER TO NOTE 9 BELOW). BEDDING THICKNESS 150 MM BELOW PIPE AND 1000 MM BELOW SOCKETS AND 100 MM TO EITHER SIDE OF THE PIPE. IN CASE OF TRENCHES, BEDDING TO BE 750 MM. WHERE TRENCH BOTTOM IS UNEVEN DUE TO HARD SPOTS OR OTHER REASONS, INCREASE DEPTH BY 100MM, SCOOP OUT LOCALLY AT COUPLINGS / SOCKETS AND LAY PIPES DIGGING INTO BED AND RESTING UNIFORMLY ON THE BEDDING. BEDDING TO BE TO LINE AND GRADIENT.
- AFTER INITIAL TESTING, PLACE AND COMPACT MORE GRANULAR MATERIAL IN 100MM LAYERS TO 1500MM (300MM FOR ADAPTABLE SECTIONS) ABOVE CROWN OF PIPE.
- GRANULAR MATERIAL TO W5 4-60-01, TABLE A1 (RIGID PIPELINES), AND COMPLYING WITH W5 4-08-02, RECYCLED MATERIALS COMPLYING WITH BS5800-2.
- CONCRETE SURROUND (CLASS 2):
 - MIN CONCRETE GRADE GEN 3 (C20) STRENGTH
 - CONCRETE TO BE CAST TO FULL TRENCH AND ALLOW TO SET.
 - LAY PIPES ON BLINDING ON FOLDED WEDGES OF COMPRESSIBLE BOARD NOT LESS THAN 100MM ABOVE BLINDING.
 - FORM VERTICAL CONSTRUCTION JOINTS IN SURROUND AT FACE OF PIPE JOINT.
 - WIDTH OF TRENCH TO BE 100MM PRECUT TO PROFILE OF PIPE (PIPE LESS THAN 450MM DIA). FILL ANY GAP BETWEEN SPIGOT AND SOCKET WITH RESILIENT MATERIAL TO PREVENT ENTRY OF CONCRETE.
 - AFTER INITIAL TESTING, PLACE AND COMPACT MORE CONCRETE ACROSS FULL WIDTH OF TRENCH TO RAISE PIPE TO 300MM ABOVE CROWN.
- SELECTED FILL MATERIAL:
 - THIS SHOULD CONSIST OF UNIFORM READILY COMPACTIBLE MATERIAL, FREE FROM ROOT TREES, VEGETABLE MATTER, BUILDING RUBBISH AND FROZEN SOIL.
 - WHEN USED AS FILL THE MATERIAL SHOULD NOT CONTAIN LARGE CLAY LUMPS OR COBBLES.
 - AS DUG MATERIAL MAY BE USED PROVIDED THAT IT IS READILY COMPACTIBLE AND PROVIDES STABLE EMBEDMENT.
 - WHERE THE FINAL DEPTH OF COVER TO THE CROWN OF PIPES IS LESS THAN 900MM IN AGRICULTURAL LAND AND PUBLIC OPEN SPACE OR LESS THAN 1200MM IN HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS FOR HGV'S, AREAS WITH LIMITED ACCESS FOR VEHICLE HEIGHT EXCESS (LORRIES, TRUCKS) ARE TO HAVE A CONCRETE BED AND SURROUND.
 - PROTECTION VIA A REINFORCED CONCRETE SLAB, THE DEPTH OF COVER TO THE CROWN OF PIPES CAN BE REDUCED FOR THE FOLLOWING AREAS ONLY: DOMESTIC GARDENS, DRIVEWAYS AND YARDS WITHOUT ANY POSSIBILITY OF VEHICLE ACCESS - 350MM.
 - DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY HGV'S - 500MM.
 - DOMESTIC DRIVEWAYS, PARKING AREAS AND NARROW ACCESS WITHOUT FOOTWAYS (E.G. MEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR HGV'S - 900MM.
- PIPE MATERIAL AND STRENGTH:
 - ALL SEWER PIPES UP TO AND INCLUDING 225MM DIAMETER ARE TO BE VITRIFIED CLAY COMPLYING WITH BS 65 (STORM SEWERS) & BS EN 295 (FOUL SEWERS).
 - ALL SEWER PIPES 300MM DIAMETER AND ABOVE TO BE CLASS 8 CONCRETE PIPES UNLESS NOTED OTHERWISE.
 - FOR ALL PIPES 150MM AND ABOVE, JOINTS AND FITTINGS FOR GRAVITY SEWERS, WHEN AGREED AS AN ALTERNATIVE TO CLAY OR CONCRETE, SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 4660 AND BS EN 1401-1, TO BE LAID IN MAXIMUM 3M LENGTHS.
 - FOR ALL PLASTIC STRUCTURED WALL PIPES, WHEN AGREED AS AN ALTERNATIVE TO CLAY OR CONCRETE, SHALL COMPLY WITH THE RELEVANT PROVISIONS OF THE WJS 4-35-01.
 - A FLEXIBLE MECHANICAL JOINT SHALL BE PROVIDED IN EACH SECTION OF THE PIPE AND WITHIN 150MM OF WHERE IT ENTERS A BUILDING OR CONNECTS WITH A WALL OR OTHER STRUCTURE.

CLASS S GRANULAR

TO SUIT PIPE DIAMETER +750 MAX

300 MIN

150

PIPE DIA. < 300 MIN

CLASS Z PLAIN CONCRETE

TO SUIT PIPE DIAMETER +750 MAX

300 MIN

150

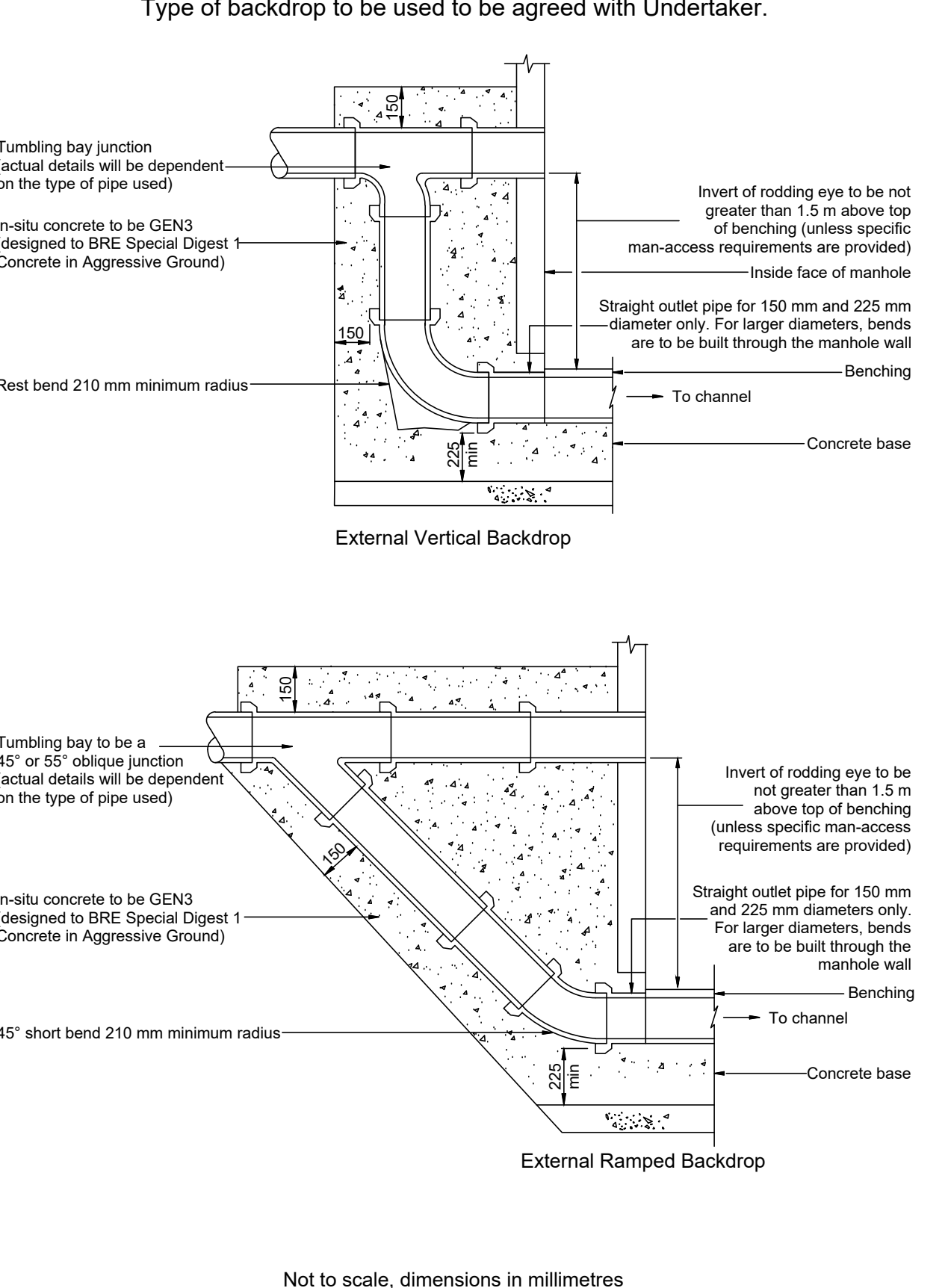
PIPE DIA. < 300 MIN

EXTRACT TABLE A1, WIS 4-08-02 (AMENDMENT NOV 2008)
 PROCESSED AND AS-DUG GRANULAR SIDEFILL AND BEDDING MATERIALS FOR RIGID PIPES

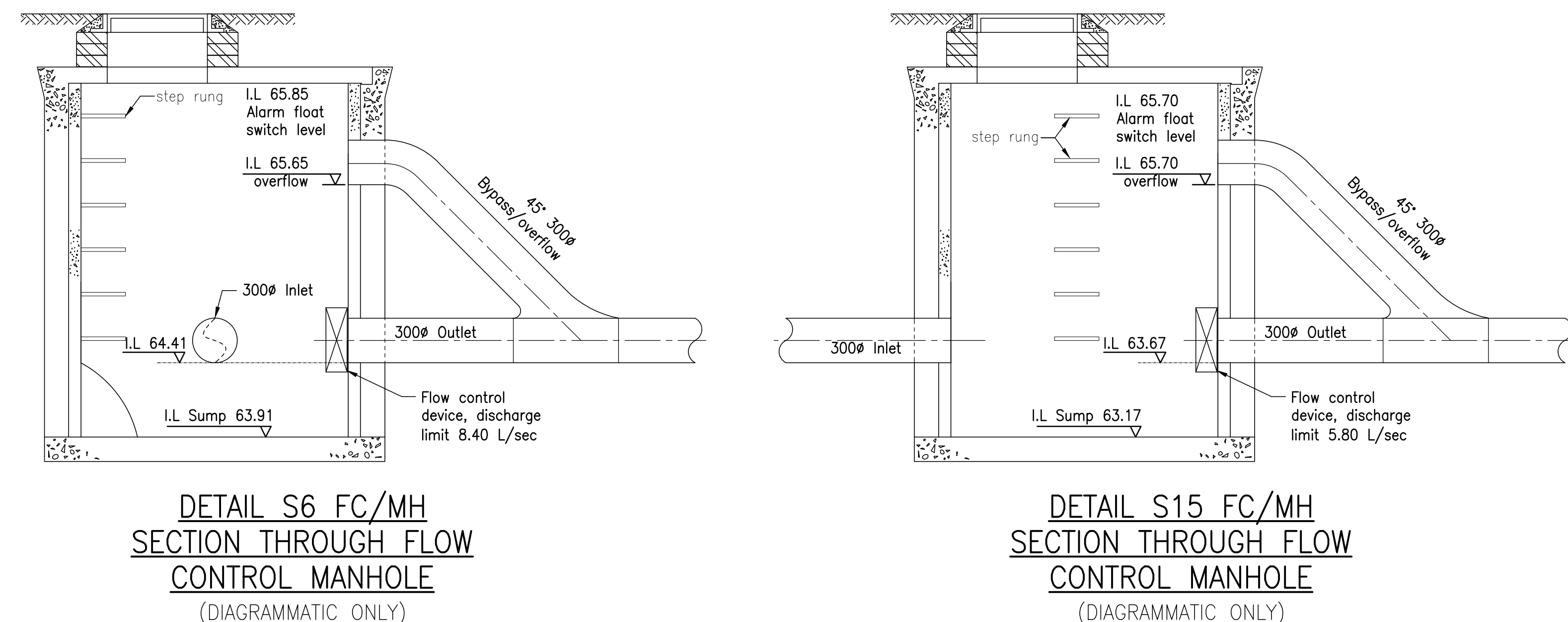
PIPE NOMINAL BORE (MM)	NOMINAL MAXIMUM PARTICLE SIZE (MM)	MATERIALS SPECIFIED IN BRITISH STANDARDS
OVER 100 TO 150	16	10 OR 14MM NOMINAL SINGLE SIZE OR 14MM TO 5MM GRADED
OVER 150 TO 300	20	10 OR 14 OR 20MM NOMINAL SINGLE SIZE OR 14MM TO 5MM GRADED OR 20MM TO 5MM GRADED
OVER 300 TO 550	20	14 OR 20MM NOMINAL SINGLE SIZE OR 14MM TO 5MM GRADED OR 20MM TO 5MM GRADED
OVER 550	40	14, 20 OR 40MM NOMINAL SINGLE SIZE OR 14MM TO 5MM GRADED OR 20MM TO 5MM GRADED OR 40MM TO 5MM GRADED

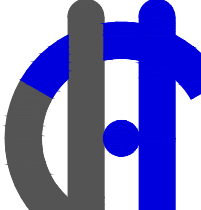
NOTES:
 * MAXIMUM COMPACTION FRACTION VALUE = 0.15
 * PROCESSED GRANULAR MATERIALS TO INCLUDE AGGREGATES TO BS EN 13242
 * CLASS OF BEDDING = S, AS DEFINED IN BS EN 1295-1:1998 STRUCTURAL
 DESIGN OF BURIED PIPELINES UNDER VARIOUS CONDITIONS OF LOADING

FIGURE B.15
TYPICAL VERTICAL AND RAMPED BACKDROP DETAIL.
Note: Steeper gradients are preferred to the use of backdrops.
Type of backdrop to be used to be agreed with Undertaker.



DRAINAGE PIPEWORK BEDDING DETAILS



REV	DATE	BY	DETAILS OF REVISION		
ARCHITECT / CLIENT RUSSELL WBHO					
PROJECT PROPOSED NEW BUILD DEVELOPMENT NEW SMITHFIELD MARKET MANCHESTER					
TITLE MANHOLE DETAILS AND SECTIONS				DRAWN BY P.L	
				DATE 23.06.22	
				SCALE 1:250	
PROJECT No. HC-22121-(30)-003				REVISION	
HEALEY CONSULTING Brunel House 63 Dale Street Milton Rochdale OL16 3NJ Tel: 01708 343961 Fax: 01708 343981 email: office@healeyconsulting.co.uk copyright: Healey Consulting  HEALEY consulting structural engineering consultants					