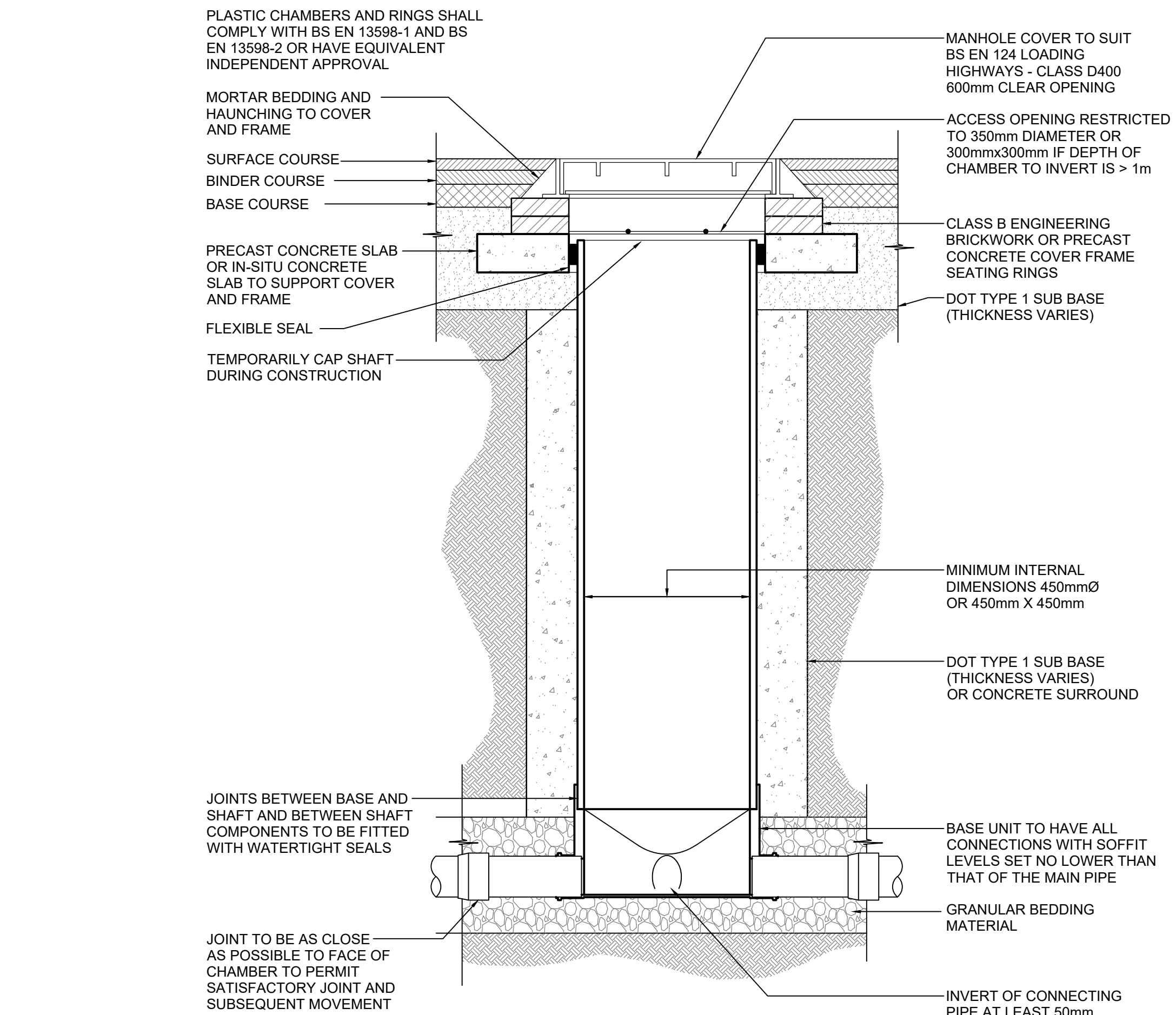
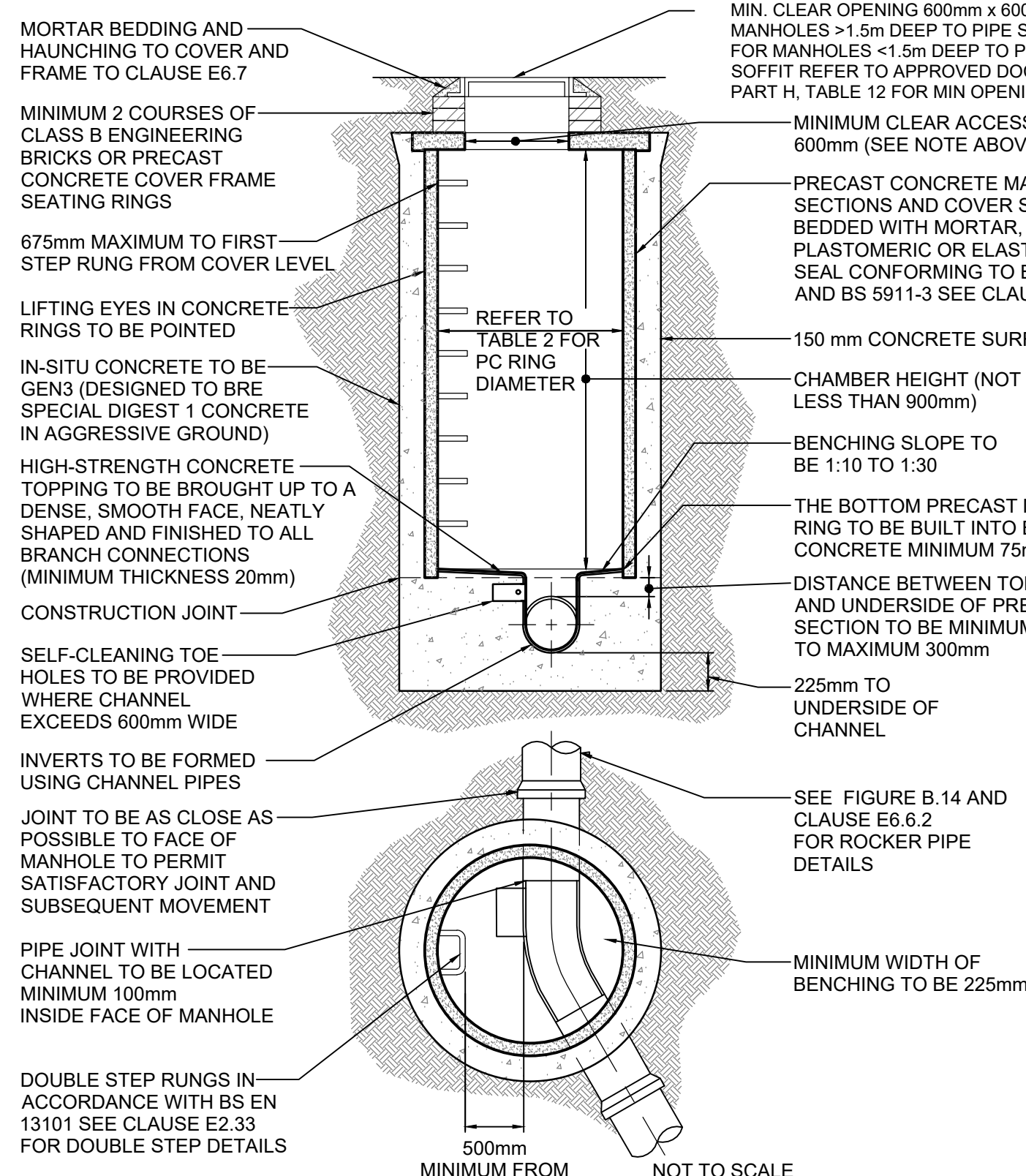




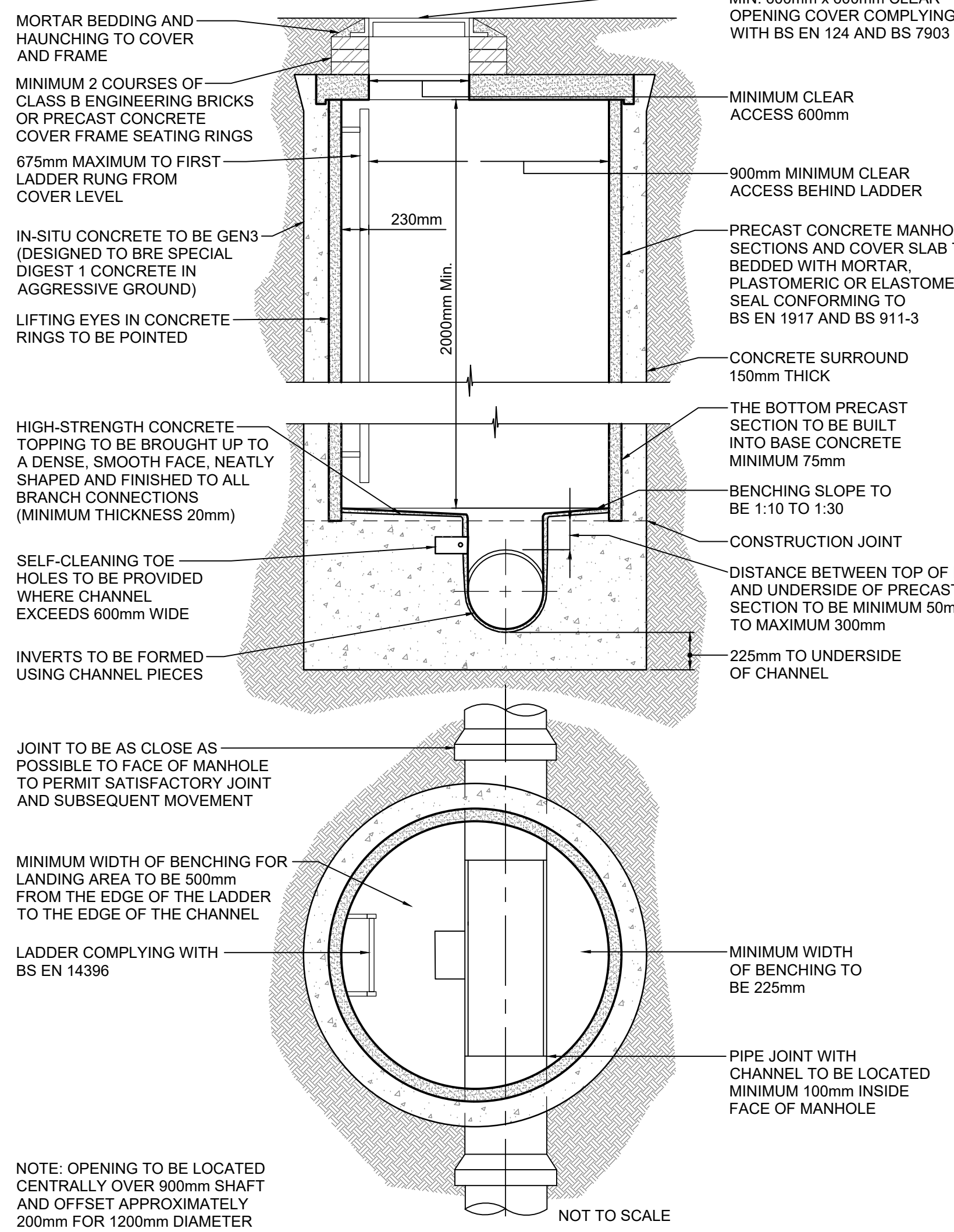
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (FLEXIBLE MATERIAL DETAIL)

MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE IN AREAS SUBJECT TO VEHICLE LOADING 3m, NON-ENTRY



TYPICAL MANHOLE DETAIL - TYPE 2

Maximum depth from cover level to soffit of pipe 3.0 m



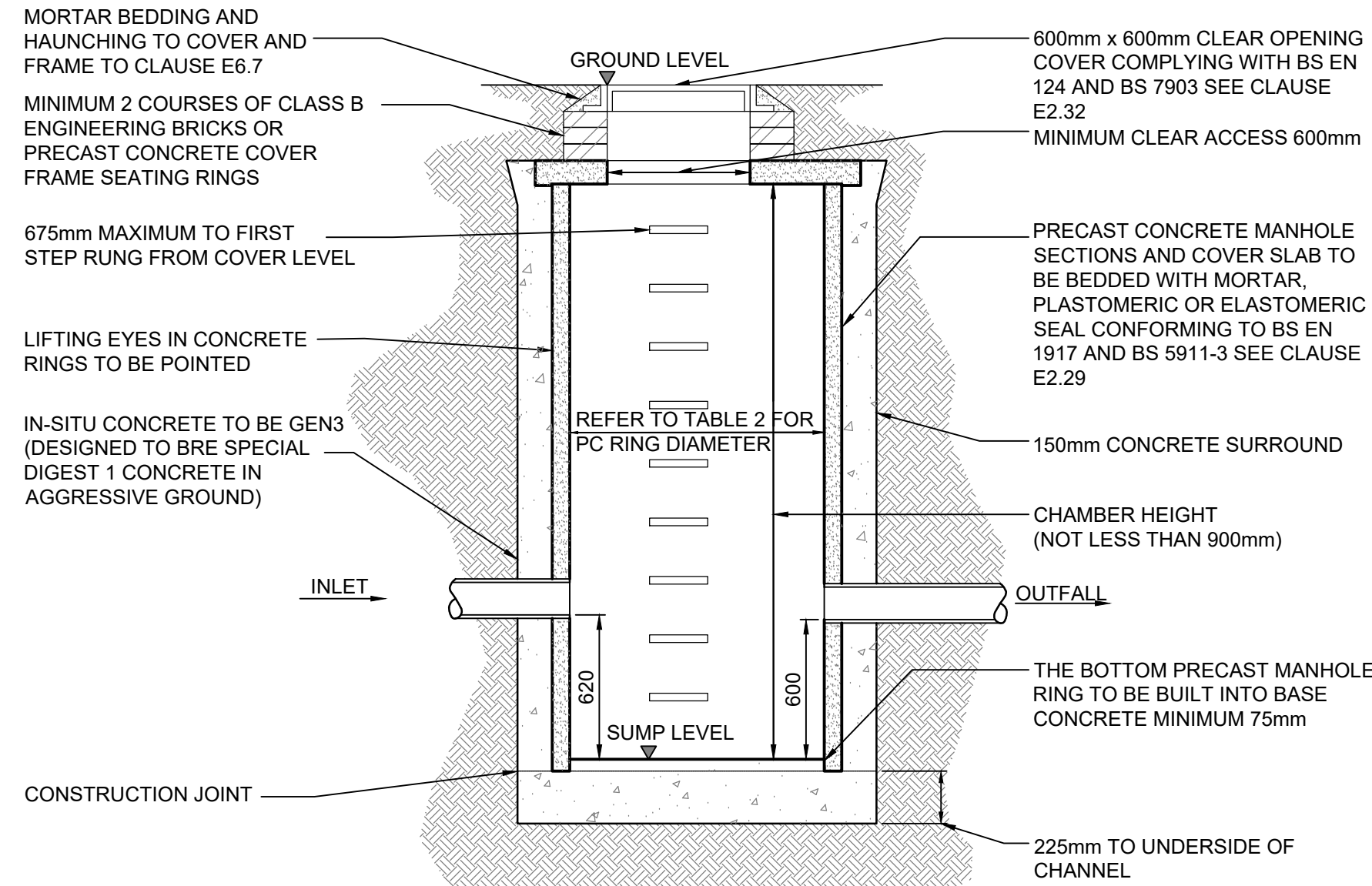
TYPICAL MANHOLE DETAIL - TYPE 1B

Depth from cover level to soffit of pipe 3 m to 6 m

TYPICAL CHAMBER DIAMETERS ARE SHOWN IN TABLE 2 BELOW, SHALL THE NUMBER OF CONNECTIONS INTO THE CHAMBER EXCEED FOUR, THEN A LARGER DIAMETER SHALL BE CONSIDERED.

DIAMETER OF LARGEST PIPE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
100-150	450/475
LESS THAN 375	1200
375-450	1350
500-700	1500
750-900	1800

TABLE 2 - MINIMUM CHAMBER DIAMETERS



SUMP DETAIL

SCALE 1:25

NOTE *
150mm OR 1/4 OF THE O.D. (OUTSIDE DIAMETER) WHICH EVER IS GREATER.
FOR CONCRETE PIPEWORK 200mm OR 1/4 OF O.D. WHICH EVER IS GREATER.

R12-270 BACKFILLING TO PIPELINES GENERALLY:
UNLESS SPECIFIED OTHERWISE, BACKFILL FROM TOP OF SPECIFIED SURROUND OR PROTECTIVE CUSHION WITH MATERIAL EXCAVATED FROM THE TRENCH, COMPACTED IN LAYERS NOT EXCEEDING 300mm THICK. DO NOT USE HEAVY COMPACTORS BEFORE THERE IS 600mm OF MATERIAL OVER PIPES.

R12-280 BACKFILLING UNDER ROADS, PAVINGS & BUILDING FOOTPRINT:
BACKFILL FROM TOP OF SPECIFIED SURROUND OR PROTECTIVE CUSHION UP TO FORMATION LEVEL WITH GRANULAR SUB BASE MATERIAL, TYPE 1 TO DOT SPECIFICATION FOR HIGHWAYS WORKS, CLAUSE 803, LAID AND COMPACTED IN 150mm LAYERS.

R12-370 CLASS S GRANULAR SURROUND
LOWER PART OF TRENCH WIDTH TO BE AS CLAUSE 607 GRANULAR MATERIAL-NATURAL

PIPE SIZES DN 100 & DN 150: SIZE 4/10,
PIPE SIZES DN 225 & DN 300: SIZE 4/10, 10/20 OR 4/20,
PIPE SIZES DN 375-500: SIZE 10/20 OR 4/20,
PIPE SIZES DN 600 AND ABOVE: SIZE 10/20, 20/40, 4/20 OR 4/40.

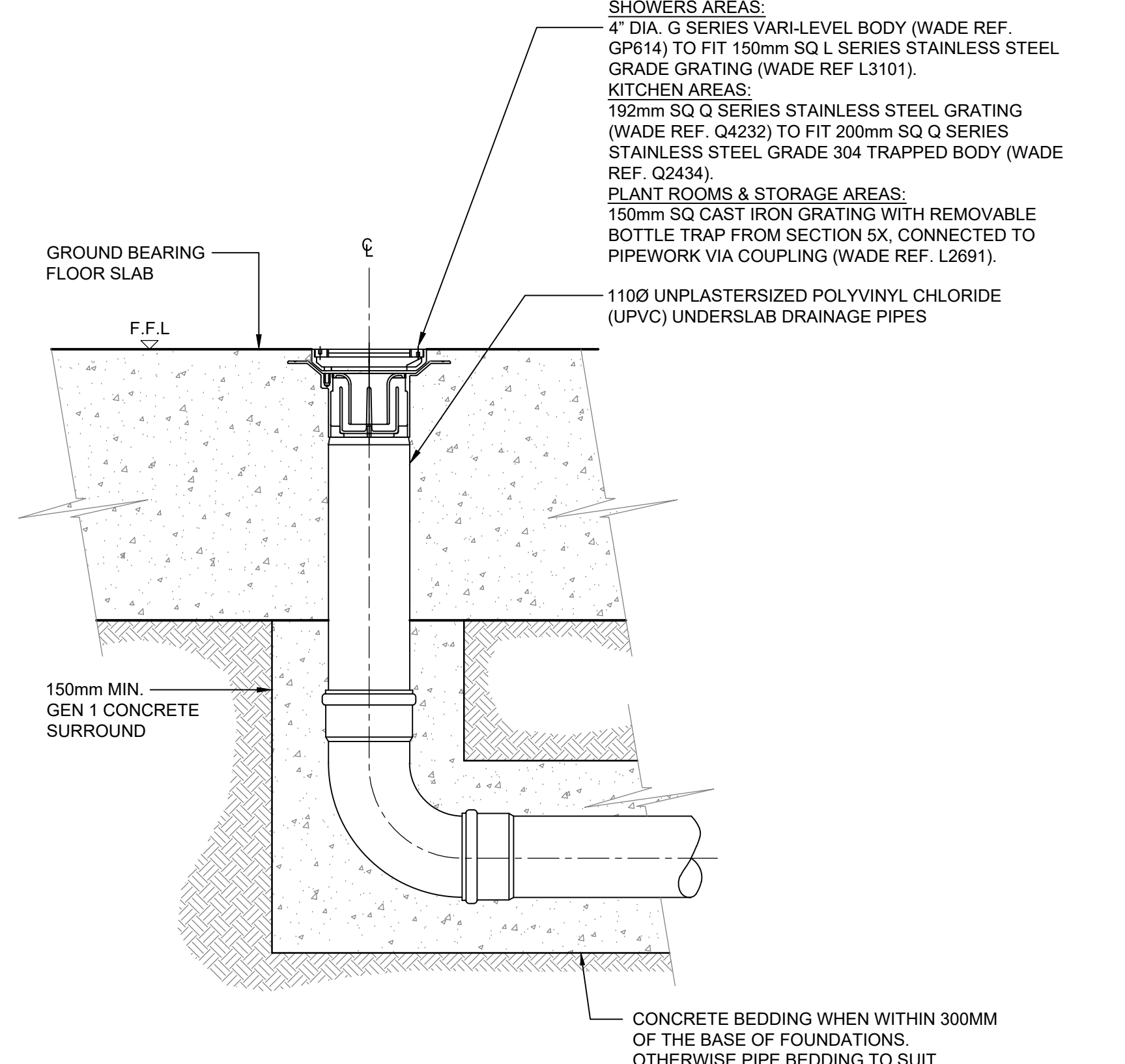
LAY AND COMPACT TO A THICKNESS NOT LESS THAN 50mm FOR SLEEVE JOINTED PIPES, 100mm FOR SOCKET JOINTED PIPES, OVER FULL WIDTH OF TRENCH, WHERE TRENCH BOTTOM IS UNEVEN DUE TO HARD SPOTS OR OTHER REASON, INCREASE DEPTH BY 100mm. SCOOP OUT LOCALLY AT COUPLINGS/SOCKETS AND LAY PIPES DIGGING SLIGHTLY INTO BED AND RESTING UNIFORMLY ON THEIR BARRELS. ADJUST TO LINE AND GRADIENT.

AFTER INITIAL TESTING, LAY AND COMPACT MORE GRANULAR MATERIAL IN 100mm LAYERS TO 150mm (250mm FOR ADOPTED SEWERS) ABOVE CROWN OF PIPE.

LOWER PART OF TRENCH:
WHERE BEDDING CLASS S IS SPECIFIED TRENCH WIDTH TO BE NOT MORE THAN THE FOLLOWING, REGARDLESS OF DEPTH OF COVER

Nominal Pipe Size (DN)	100	150	225	300
Max. Trench Width (mm)	600	700	800	900

BEDDING CLASS S
SCALE 1:10



FLOOR GULLY

SCALE 1:10

NOTE *
150mm OR 1/4 OF THE O.D. (OUTSIDE DIAMETER) WHICH EVER IS GREATER. FOR CONCRETE PIPEWORK 200mm OR 1/4 OF O.D. WHICH EVER IS GREATER.

R12-281 BACKFILLING OVER CONCRETE
DO NOT START BACKFILLING WITHIN 24 HOURS OF PLACING CONCRETE. DO NOT USE HEAVY COMPACTORS AND PREVENT IMPOSITION OF TRAFFIC LOADS WITHIN 72 HOURS OF PLACING CONCRETE.

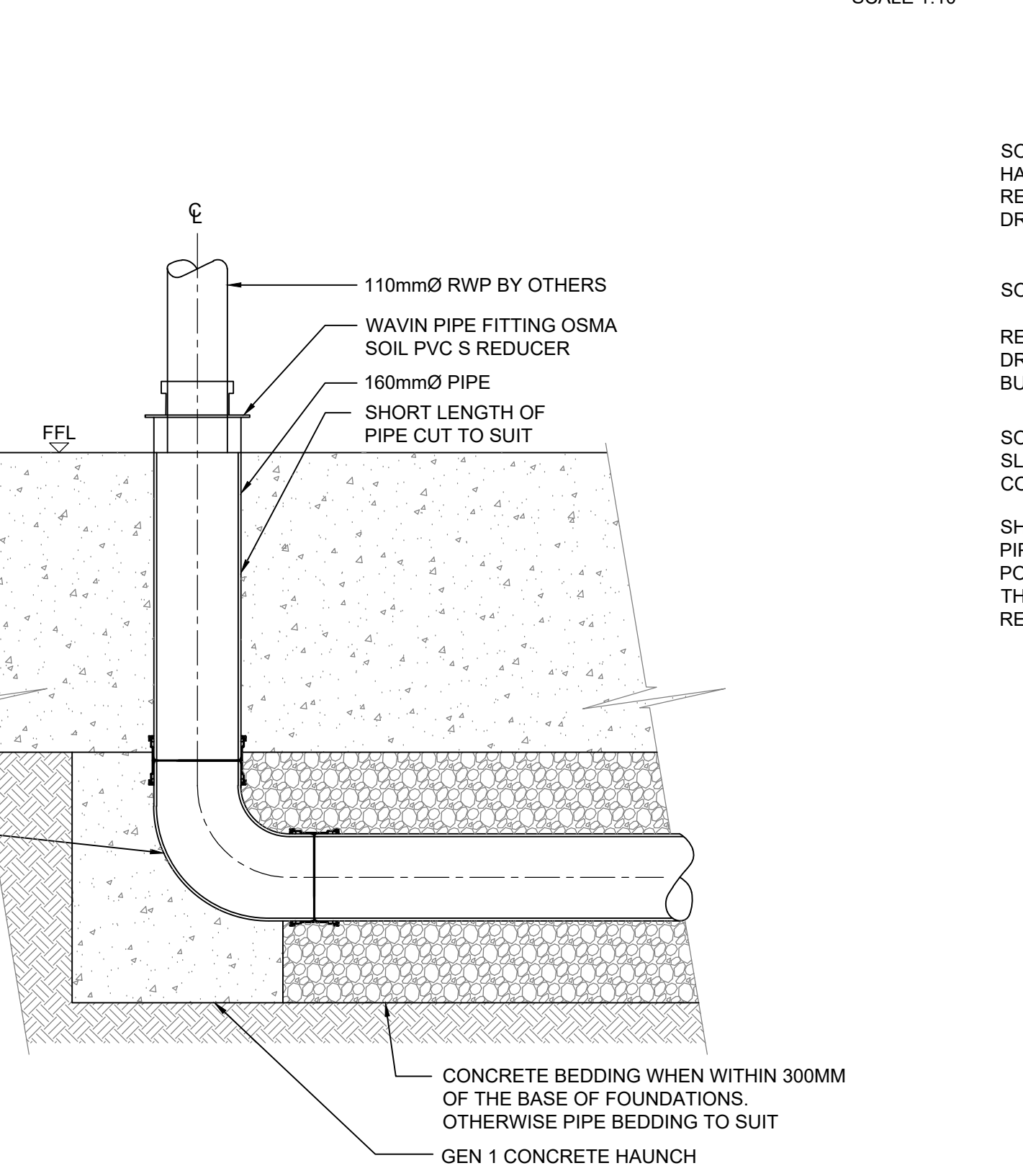
R12-106 CLASS Z CONCRETE SURROUND

LAY CONCRETE BLINDING, 25mm THICK OVER FULL WIDTH OF TRENCH AND ALLOW TO SET.
LAY PIPES ON BLINDING ON FOLDING WEDGES OF COMPRESSIBLE BOARD TO GIVE A MINIMUM 150mm CLEARANCE UNDER THE PIPE. ANCHOR THE PIPELINE OR FILL WITH WATER, IF NECESSARY, TO PREVENT FLOTATION.

FORM VERTICAL CONSTRUCTION JOINTS IN SURROUND AT FACE OF FLEXIBLE PIPE JOINTS USING 18mm THICK COMPRESSIBLE BOARD PRECUT TO PROFILE PIPE. FILL ANY GAP BETWEEN SPIGOT AND SOCKET WITH RESILIENT MATERIAL TO PREVENT ENTRY TO CONCRETE.

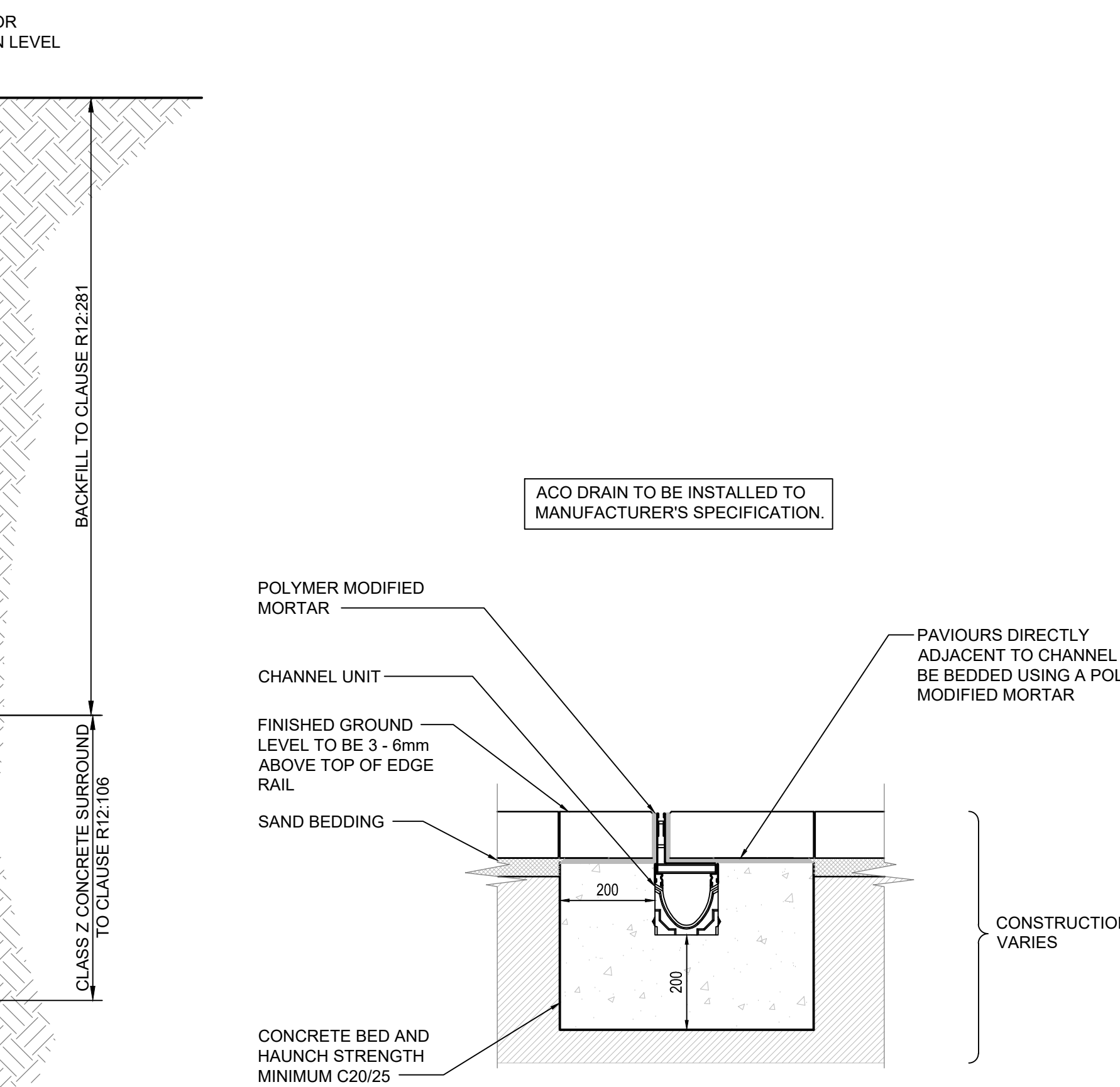
AFTER INITIAL TESTING, PLACE AND COMPACT MORE CONCRETE FOR FULL WIDTH OF TRENCH TO ENCASE PIPE TO 150mm ABOVE CROWN OR TO OTHER HEIGHT AS SPECIFIED OR SHOWN ON DRAWINGS.

BEDDING CLASS Z
SCALE 1:10



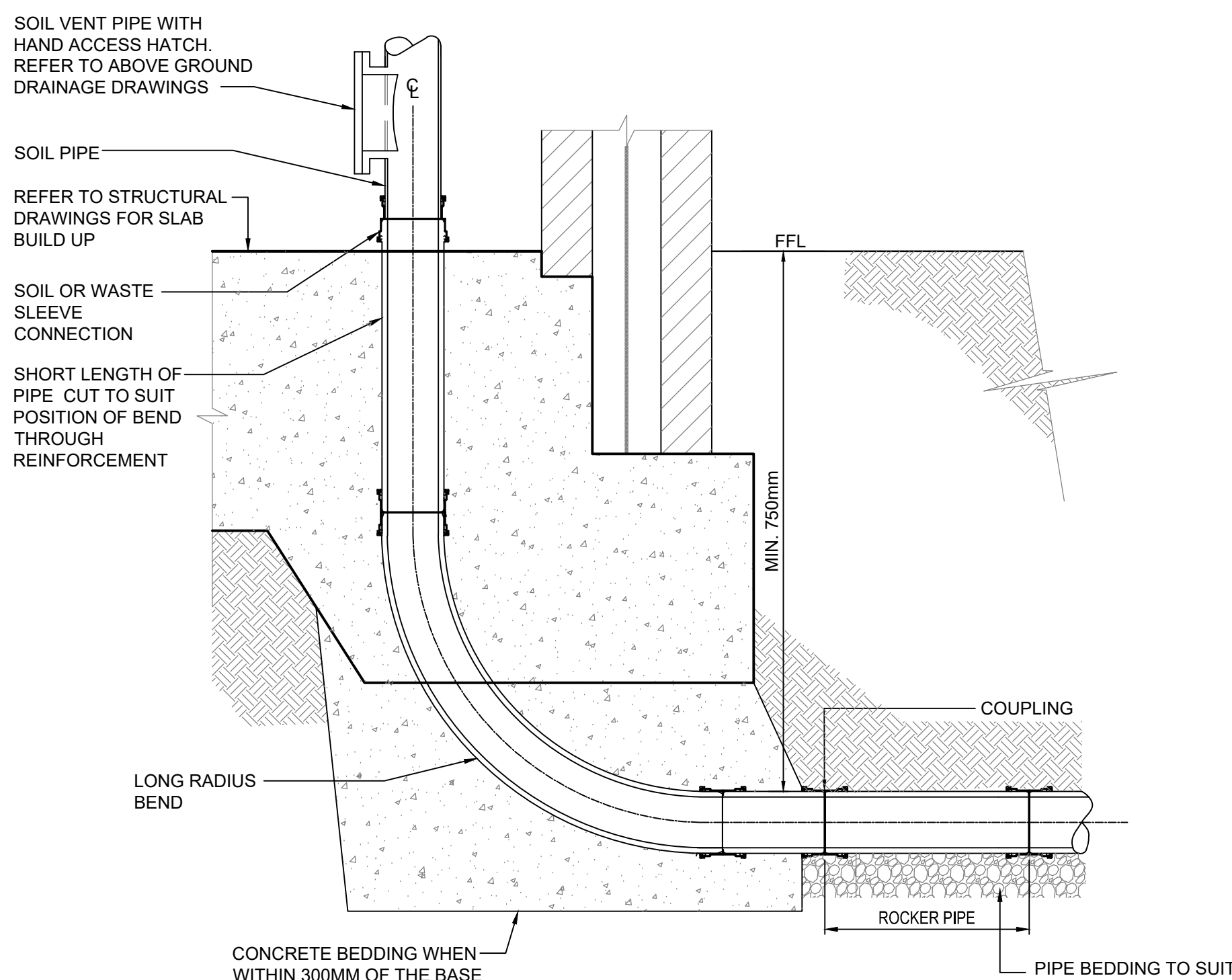
INTERNAL RWP DETAIL

(SCALE 1:10)



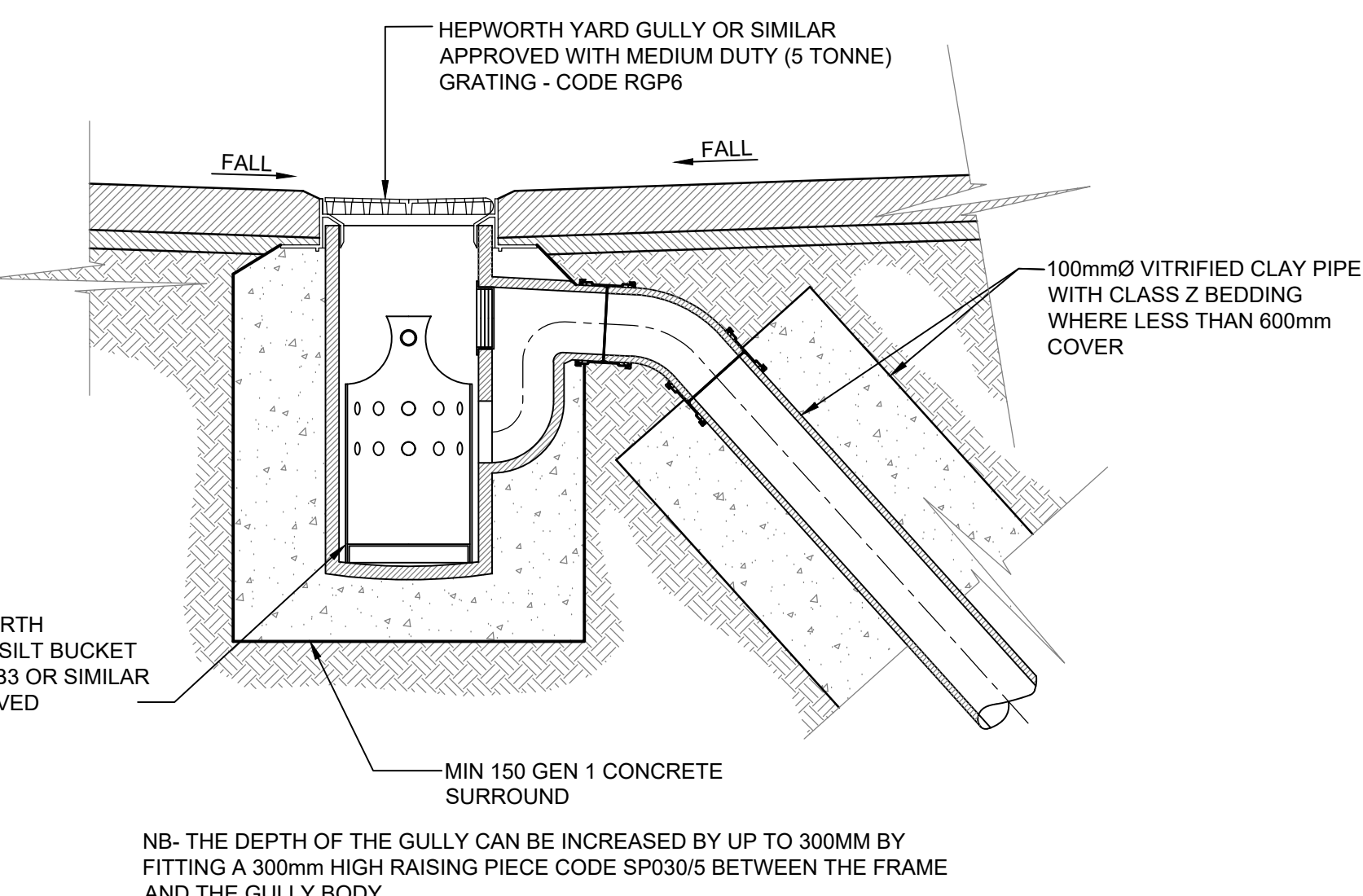
ACO MULTIDRAIN BRICKSLOT DETAIL

SCALE 1:10



FOUL POP-UP BASE DETAIL

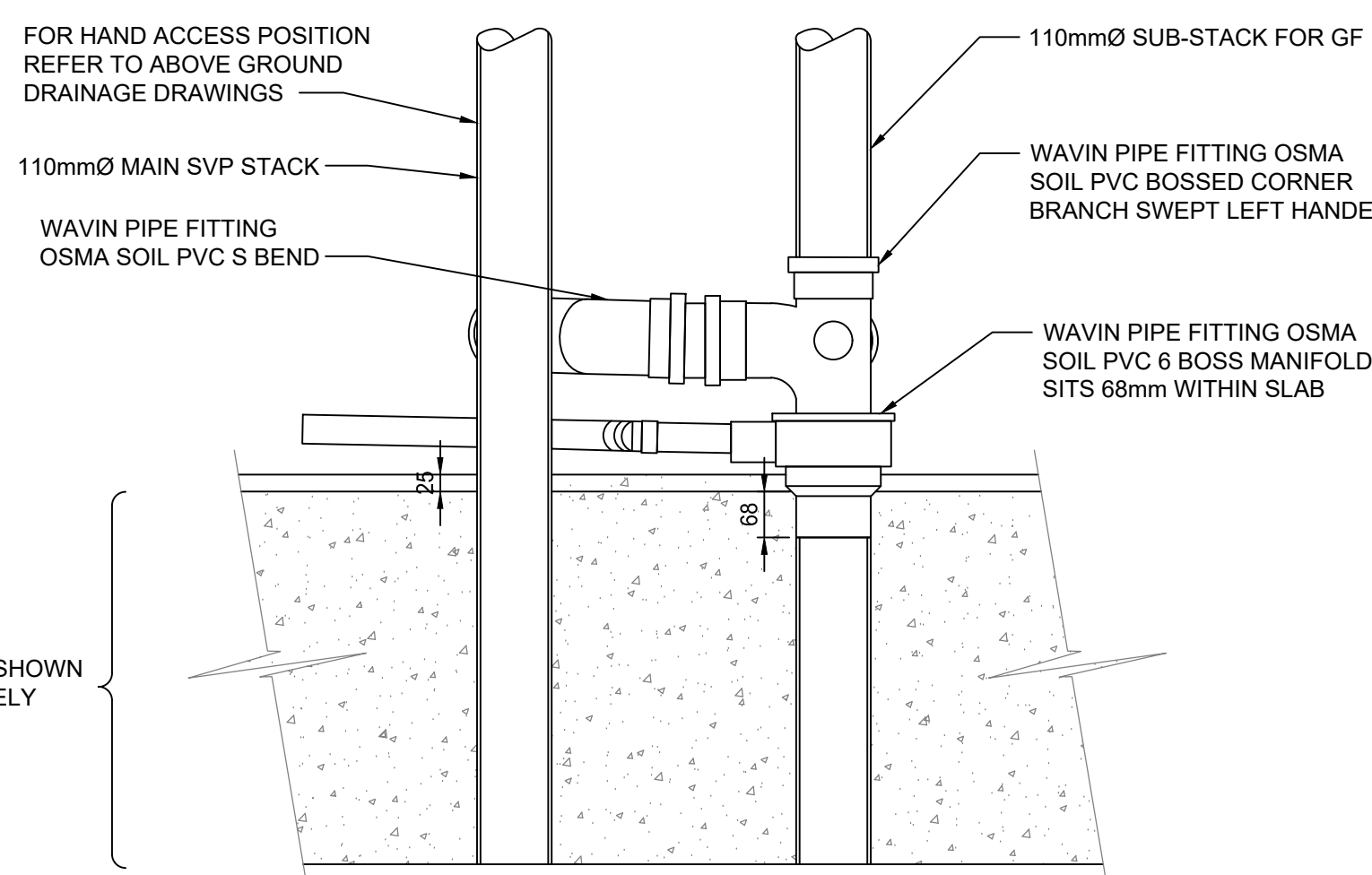
SCALE 1:10



YARD GULLY DETAIL

SCALE 1:10

REFER TO DRAWING UMRF-CAD-ZB03-ZZ-SK-Z-9902 BY CAD21 REV P02 FOR L00 SERVICE CUPBOARD CONNECTION DETAIL.



SERVICE CUPBOARD FOUL CONNECTION DETAIL

SCALE 1:10

NOTES

- TO BE READ IN CONJUNCTION WITH ALL RELEVANT KENNEDY REDFORD DRAWINGS AND SPECIFICATION.
- TO BE READ IN CONJUNCTION WITH EXTERNAL ARCHITECTURAL, MEP, AND LANDSCAPE DESIGN DRAWINGS.
- ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH DRAWINGS UMRF-KRD-XX-XX-DR-C-00501 & 00502.
- ANY DISCREPANCIES IN THE DESIGN INFORMATION OR CONDITIONS FOUND ON SITE SHOULD BE RAISED TO THE ENGINEER IMMEDIATELY.
- PRIVATE DRAINS TO BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS.
- NO CONNECTION TO BE MADE TO THE PUBLIC SEWER UNTIL APPROVAL HAS BEEN RECEIVED FROM THE UNITED UTILITIES AND MANCHESTER CITY COUNCIL.
- REFER TO THE MANUFACTURER'S INSTALLATION GUIDANCE FOR ALL SPECIFIED PRODUCTS.

REV	DATE	DESCRIPTION	DRN	CHK	APP
C02	20.02.26	DETAILS UPDATED	N/R	J/H	P/V
C01	03.02.26	CONSTRUCTION ISSUE	N/R	J/H	P/V
P04	16.01.26	DETAILS UPDATED	N/R	J/H	P/V
P03	23.05.25	DRAWING STATUS UPDATE	N/R	J/H	P/V
P02	19.02.25	PLANNING ISSUE (DRAWING STATUS UPDATE)	N/R	J/H	P/V
P01	13.02.25	FIRST ISSUE	N/R	J/H	P/V

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KennedyRedford
MANAGING VISION

CLIENT

GRAHAM

PROJECT NAME
UoM RESIDENCES DBFO

DRAWING TITLE
DRAINAGE DETAILS
SHEET 1

DATE	SCALE	SHEET SIZE	REV
13.02.25	AS SHOWN	A0	C02

DRAWING STATUS
FOR CONSTRUCTION

DRAWING NUMBER
UMRF - KRD - XX - XX - DR - C - 00540