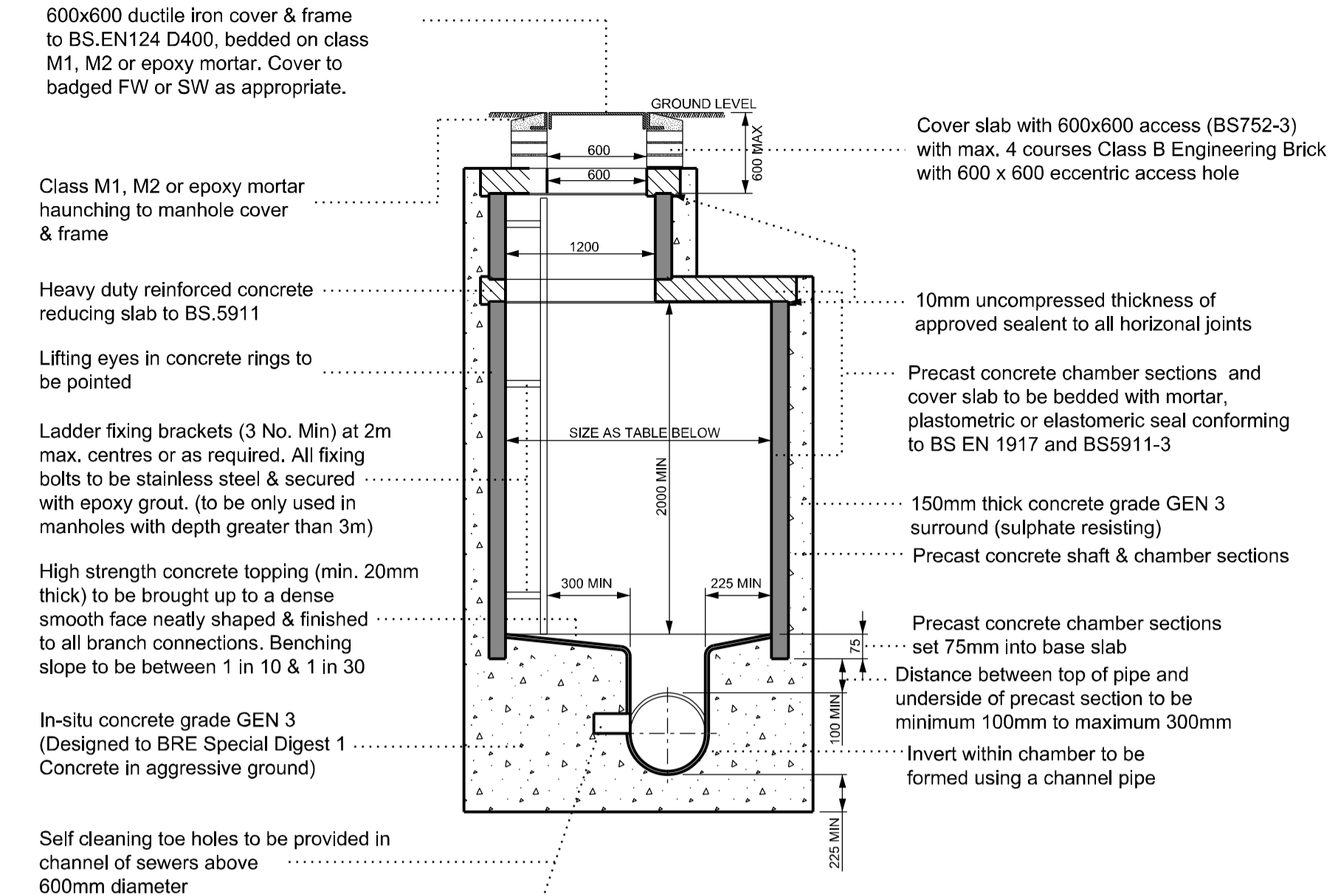


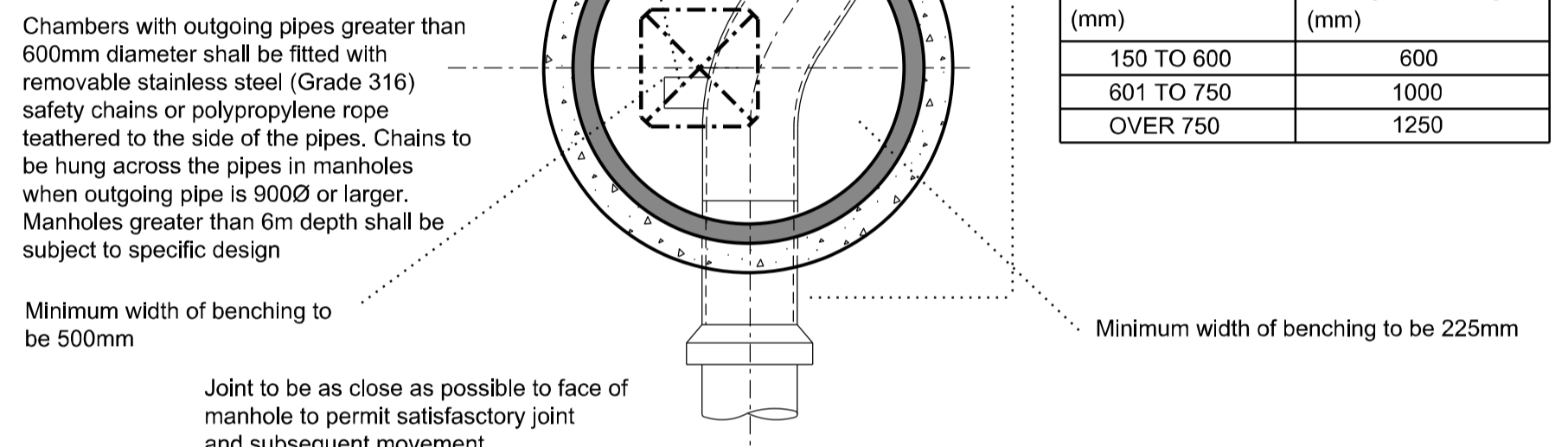
TYPICAL MANHOLE DETAIL TYPE 1A

(DEPTH TO SOFFIT 3m - 6m)



CHAMBER DIAMETERS

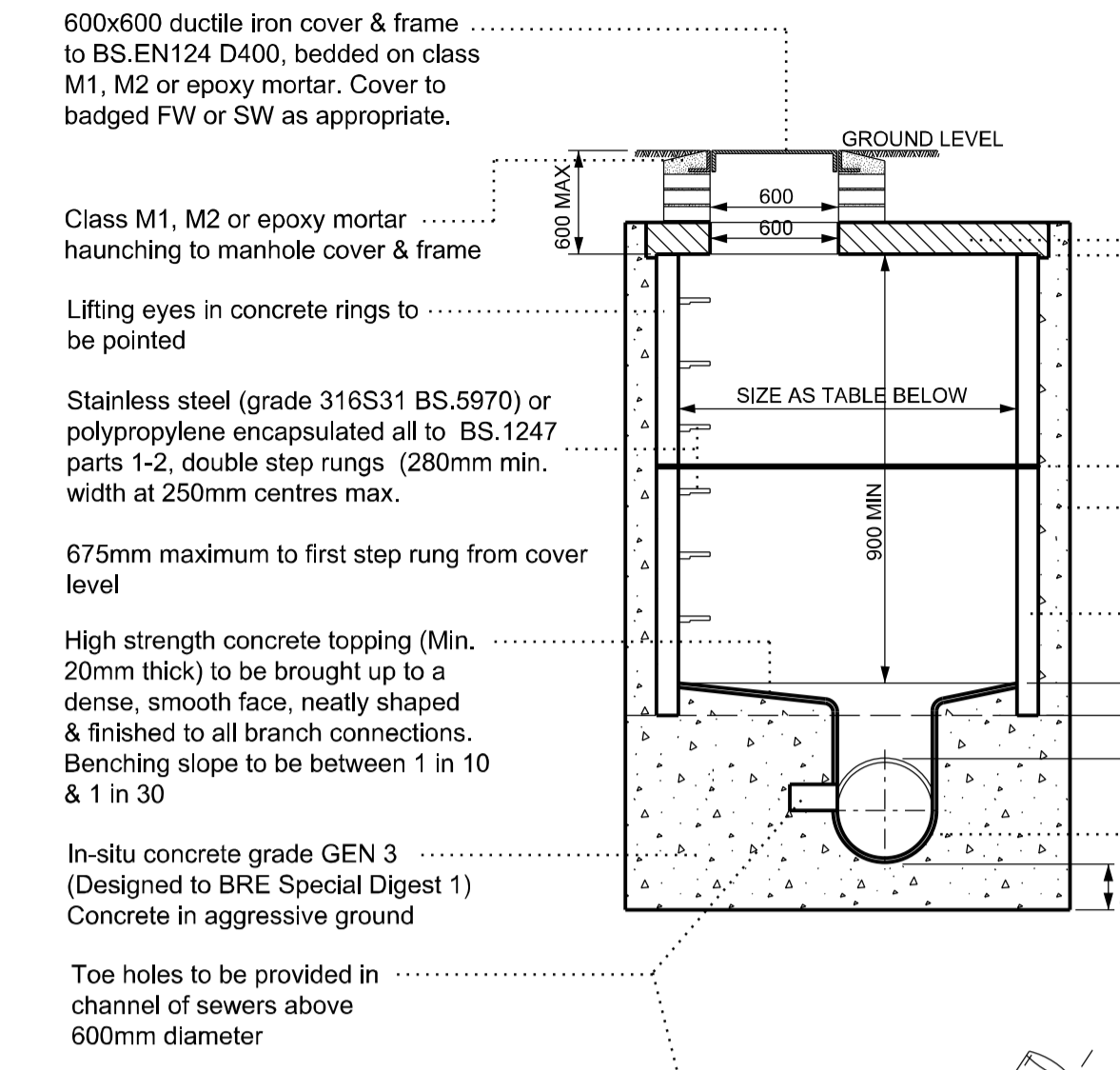
DIA. OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375	1200
375 TO 700	1500
750 TO 900	1800



For manholes of 1800 dia or larger. Below 1800 dia chamber rings continue to cover slab (no shaft)

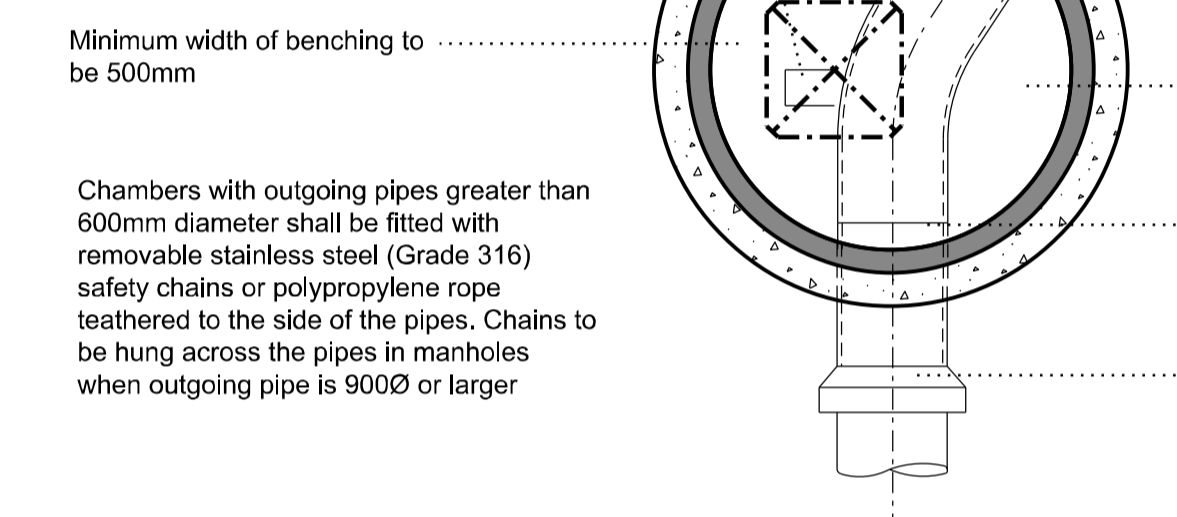
TYPICAL MANHOLE DETAIL TYPE 2

(Maximum depth from cover level to soffit of pipe 3m)



CHAMBER DIAMETERS

DIA. OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375	1200
375 TO 700	1500
750 TO 900	1800

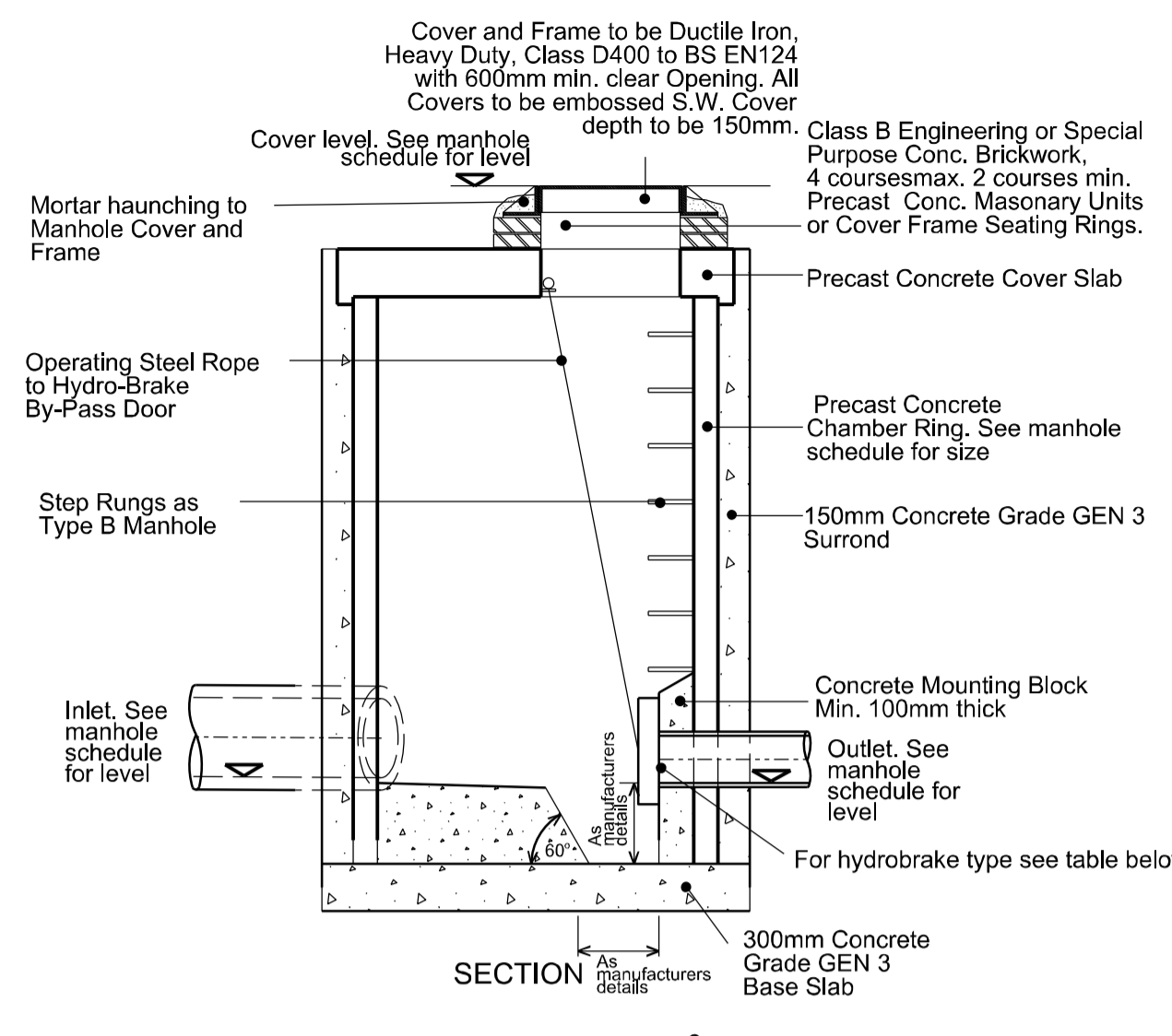


Minimum width of benching to be 500mm

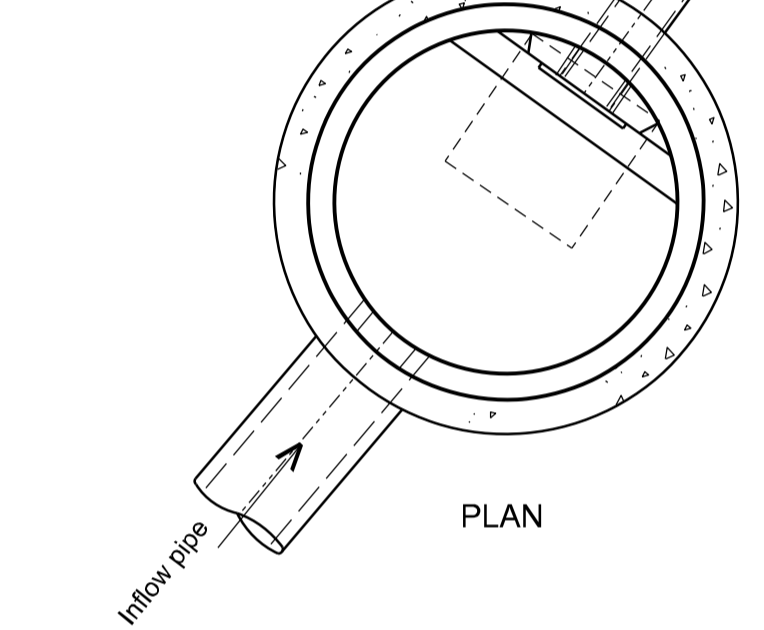
Chambers with outgoing pipes greater than 600mm diameter shall be fitted with removable stainless steel (Grade 316) safety chains or polypropylene rope leathered to the side of the pipes. Chains to be hung across the pipes in manholes when outgoing pipe is 900mm or larger

TYPICAL FLOW CONTROL CHAMBER DETAIL

INDIVIDUAL FLOW CONTROL CHAMBER DETAILS SUBJECT TO STRUCTURAL ENGINEERS DESIGNS.



Class B Engineering or Special Purpose Conc. Brickwork, 4 courses max. 2 courses min. Precast Conc. Masonry Units or Cover Frame Sealing Rings.



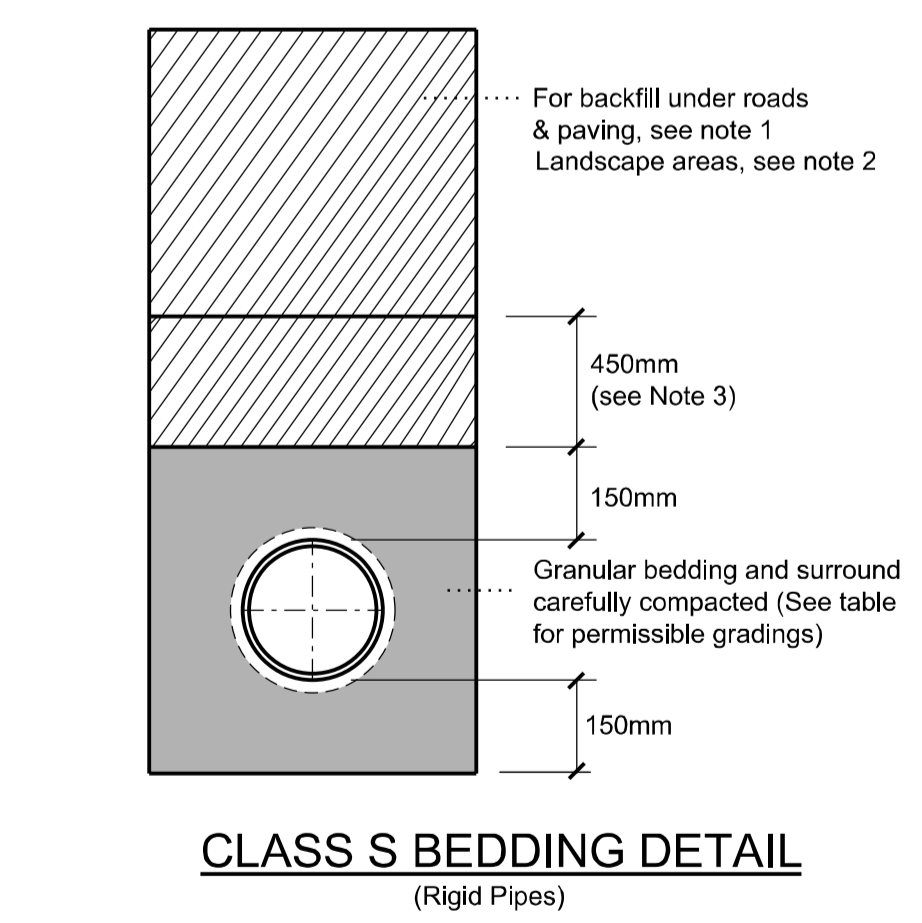
Manhole Ref	Hydrobrake type	Design head	Permitted flow	Hydrobrake size
S22	"Optimum"	1.5m	31.4 l/s	Refer to manufacturer
S27	"Optimum"	1.0m	50.0 l/s	Refer to manufacturer
S39	MD6	1.0m	30.0 l/s	215mm

- Notes.**
- Backfilling under roads and paving: Backfill from top of granular bedding up to formation level with Granular Subbase Material Type 1 to Highways Agency specification for Highway Works 1998 Clause 803, laid and compacted in 150mm layers.
 - Backfilling under landscaped areas: Backfill from top of granular bedding up to underside of topsoil with selected Class 1B material. Class 1B fill whether selected from locally excavated material or imported, shall consist of uniform readily compactable material, free from vegetable matter, building rubbish and frozen material, or materials susceptible to spontaneous combustion, and excluding clay of liquid limit greater than 80 and/or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones retained on 75mm and 37.5mm sieves respectively shall be excluded from the fill material. Laid and compacted in layers not exceeding 300mm.
 - Do not use heavy compactors before there is 600mm of material over pipe.

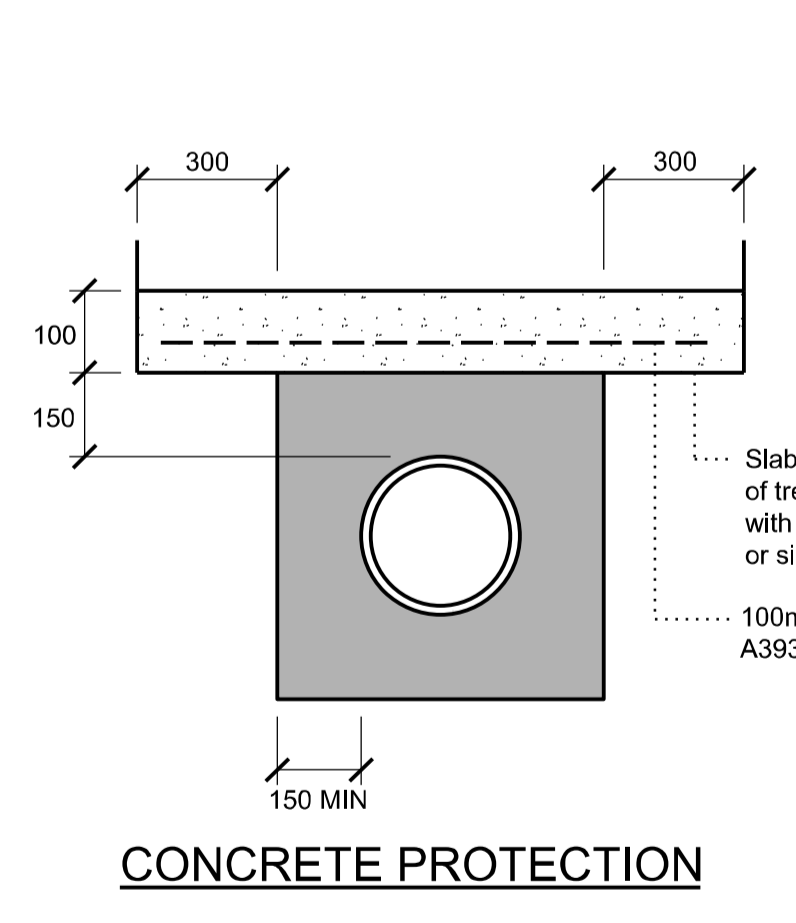
Table - Granular bedding and sidefill materials for rigid pipes

Pipe Nominal Bore (DN)	Maximum Particle Size (mm)	Class of Bedding	Suitable materials	
			Imported granular materials (Note a)	Maximum CF value for as-dug granular material (Note b)
100	10	S	10mm nominal single-size	0.15
		B	10mm nominal single-size	0.30 (Note c)
		F	10mm nominal single-size	0.15
Over 100 to 150	15	S	Course, Medium or fine sand	0.15
		B	14mm to 5mm graded	0.30 (Note c)
		F	14mm to 5mm graded	0.15
Over 150 to 500	20	S	Coarse, medium or fine sand	0.15
		B	14mm to 5mm graded or 20mm to 5mm graded	0.30 (Note c)
		F	14mm to 5mm graded or 20mm to 5mm graded	0.15
Over 500 (Note d)	40	S	All in aggregate or coarse medium or fine sand	0.15
		B	14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded	0.30 (Note c)
		F	14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded	0.15

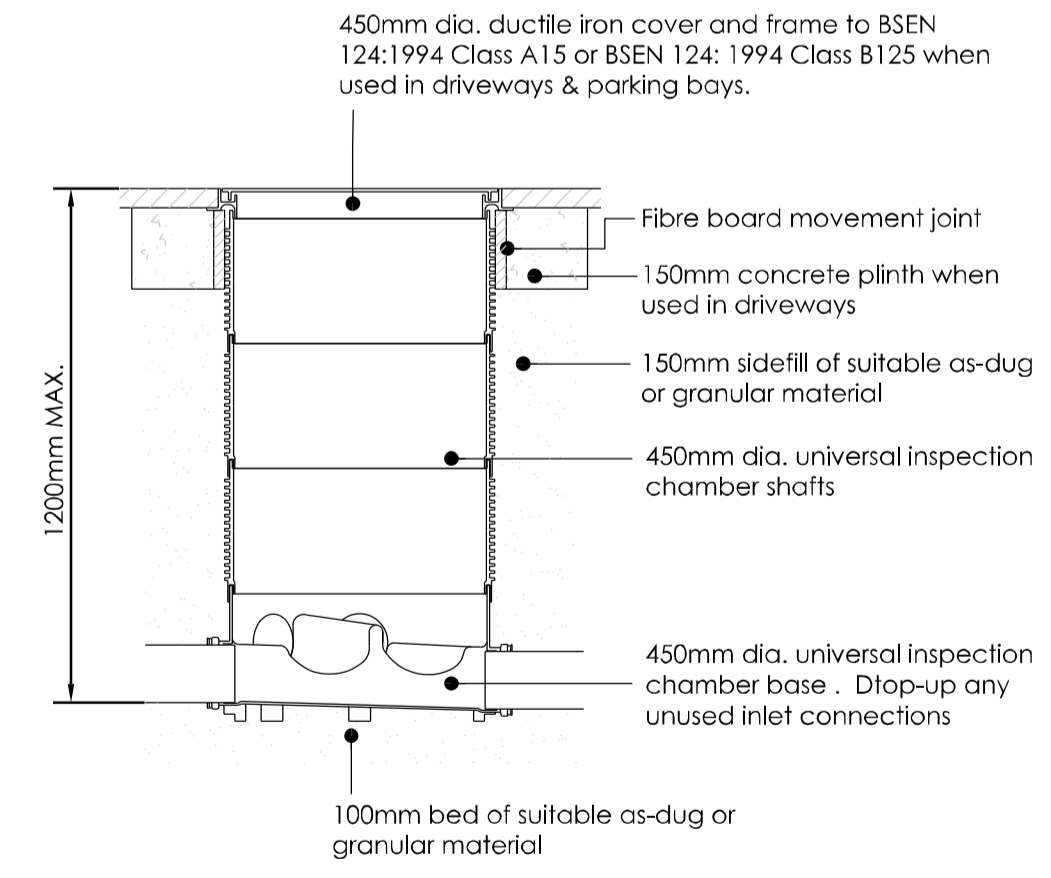
- Notes**
- Imported granular materials to include aggregates to BS 882, air-cooled blast furnace slag to BS 1047 and sintered pulverized-fuel ash to BS 3797 Compaction fraction value, See Appendix A
 - The higher the CF value for as dug bedding and sidefill materials the greater the required effort for adequate compaction.
 - Angular materials should be chosen to ensure sufficient support is provided to these heavier pipes. Crushed rock aggregates to BS 882 are recommended. Air-cooled blast furnace slag to BS 3797 or other granular materials may be used if they show a similar degree of angularity



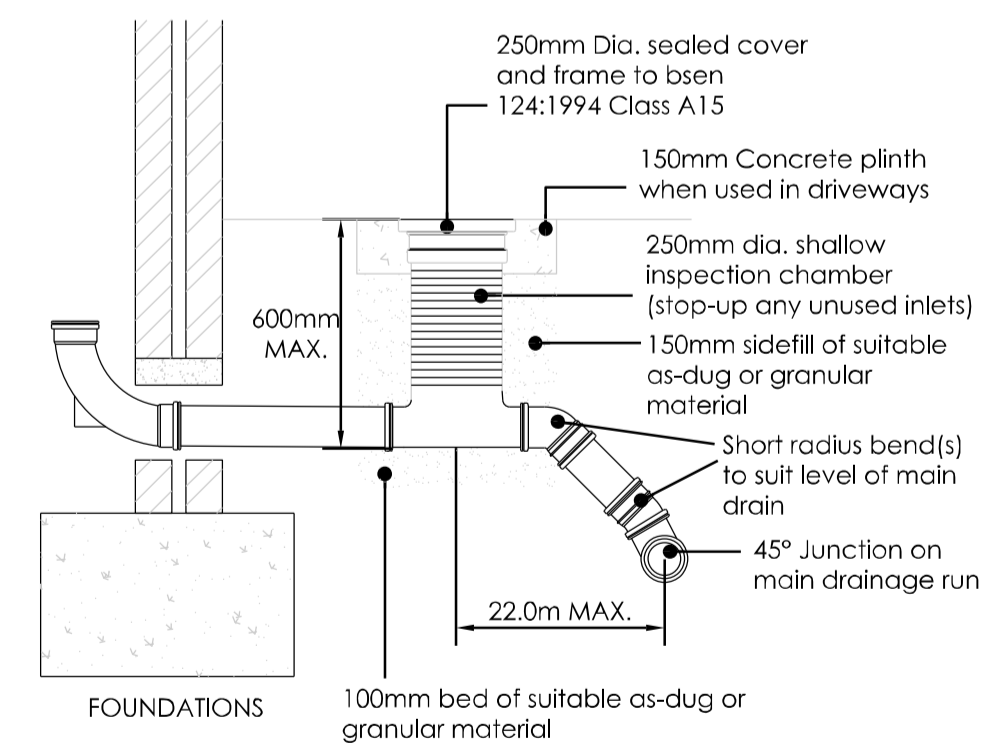
CLASS S BEDDING DETAIL
(Rigid Pipes)



CONCRETE PROTECTION



TYPICAL INSPECTION CHAMBER
For use in soft areas, driveways and parking bays only



SHALLOW INSPECTION CHAMBER
For use in soft areas & driveways only

Revision	Description	Drawn	Checked	Date
Preliminary	Information	Tender	Construction	As Built

Woods Hardwick
Architects, Engineers and Development Consultants

15-17 Goldington Road Bedford MK40 3JH United Kingdom
T. +44 (0)1234 268862 F. +44 (0)1234 353034 mail@woodshardwick.com www.woodshardwick.com