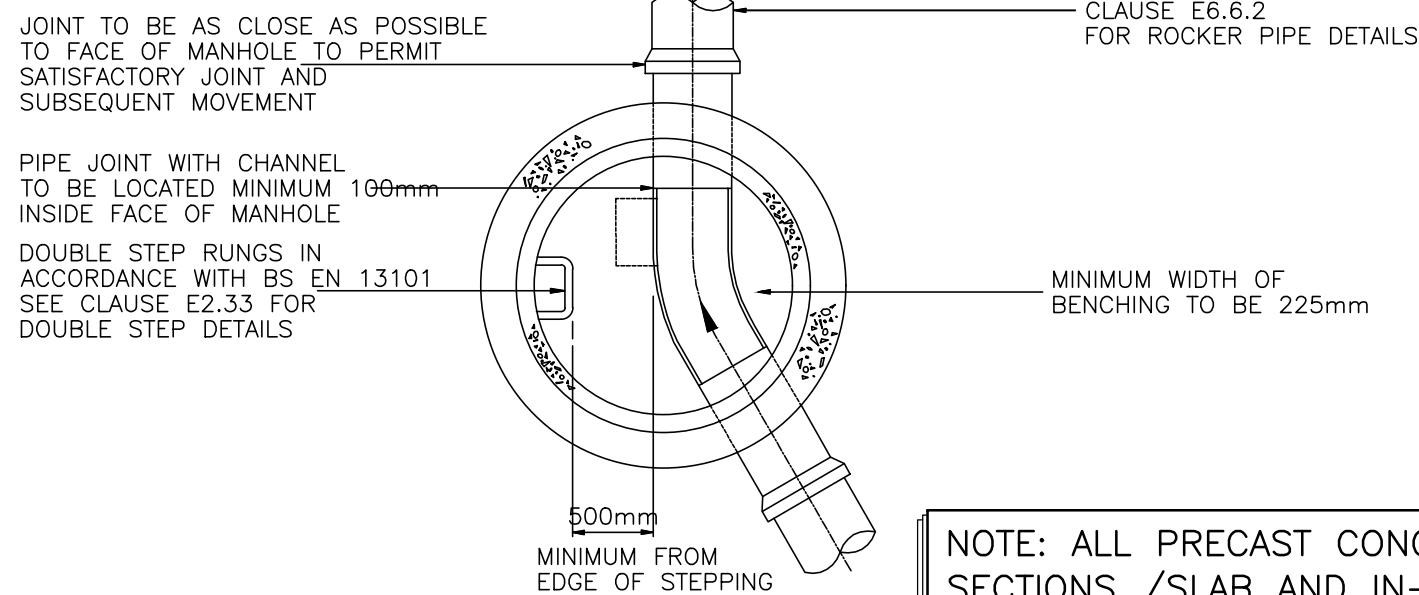
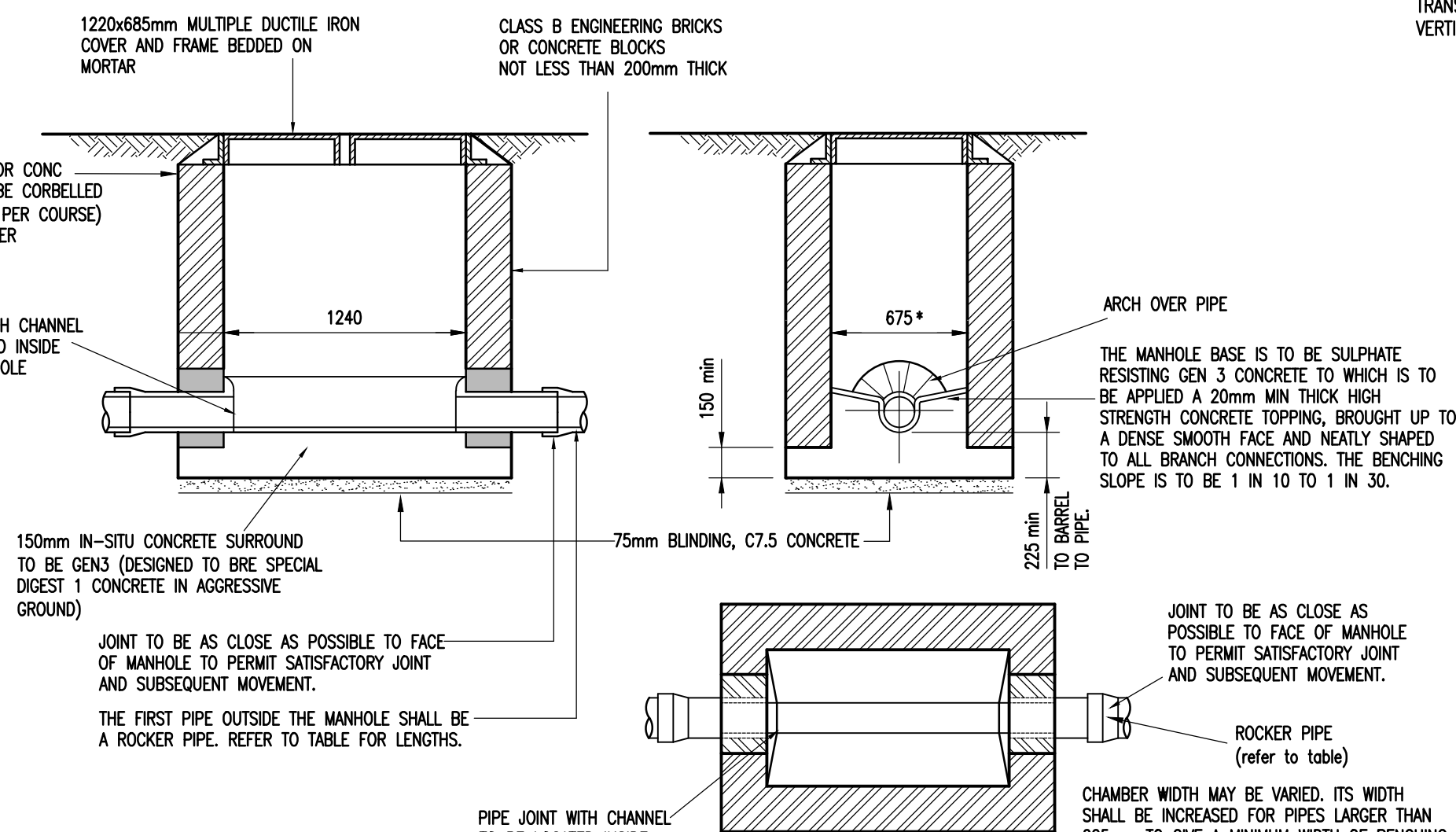
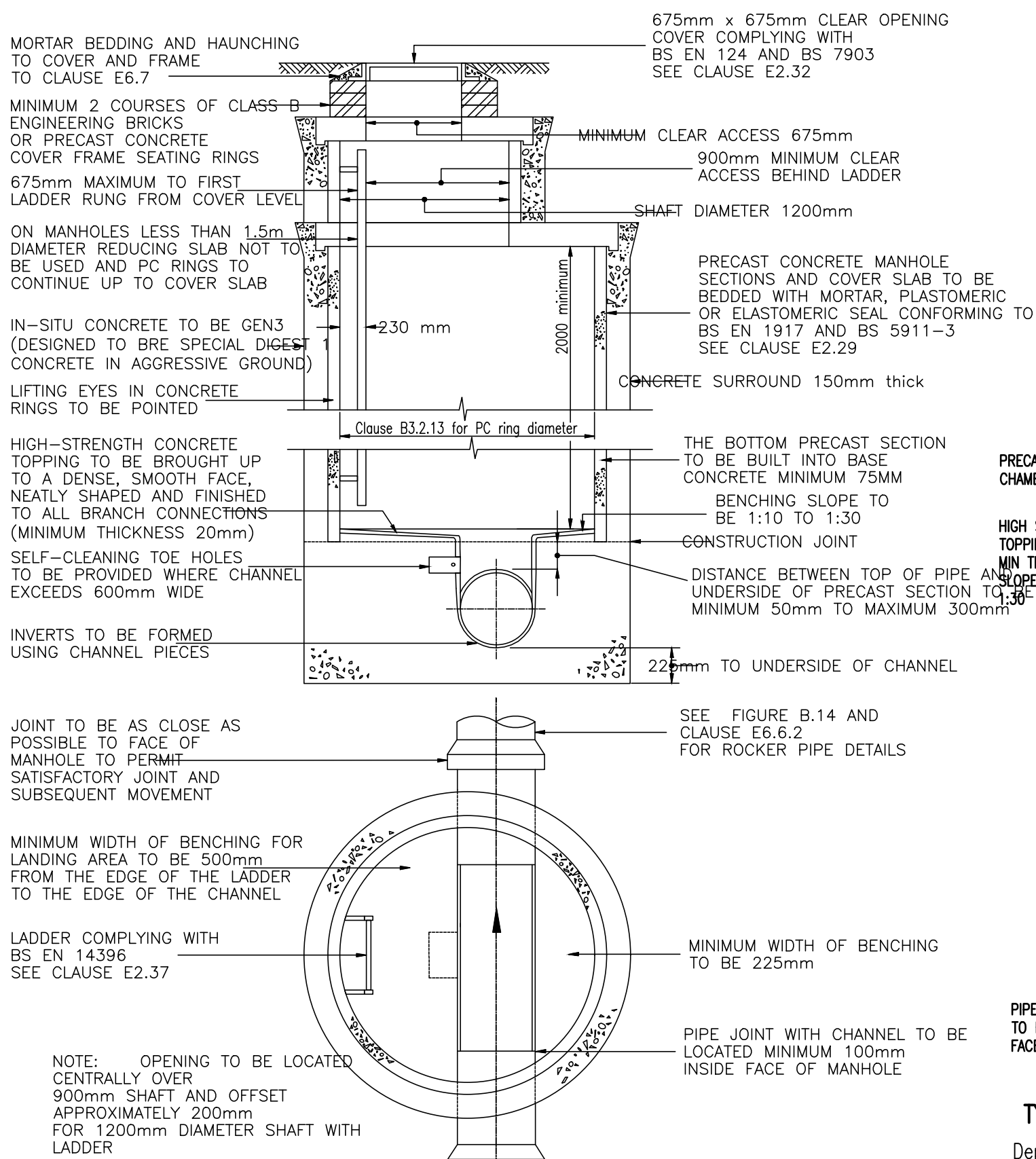


Maximum depth from cover level to soffit of pipe 3.0 m



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

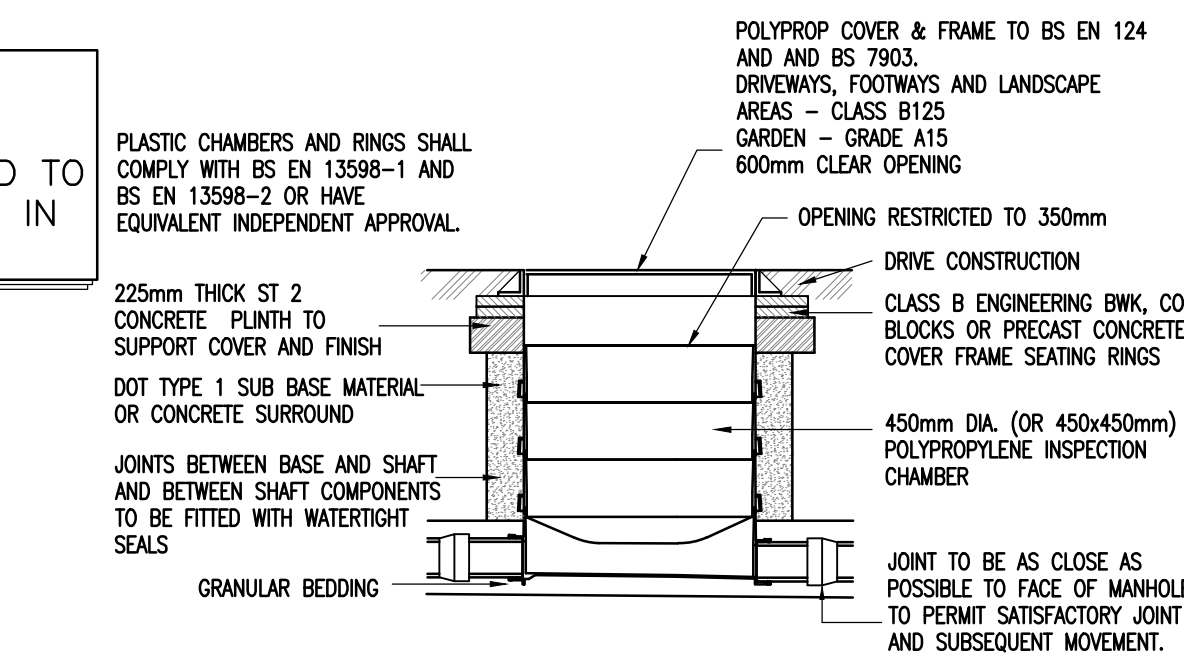


Depth from ground level to soffit of pipe 1.0m to 1.50m

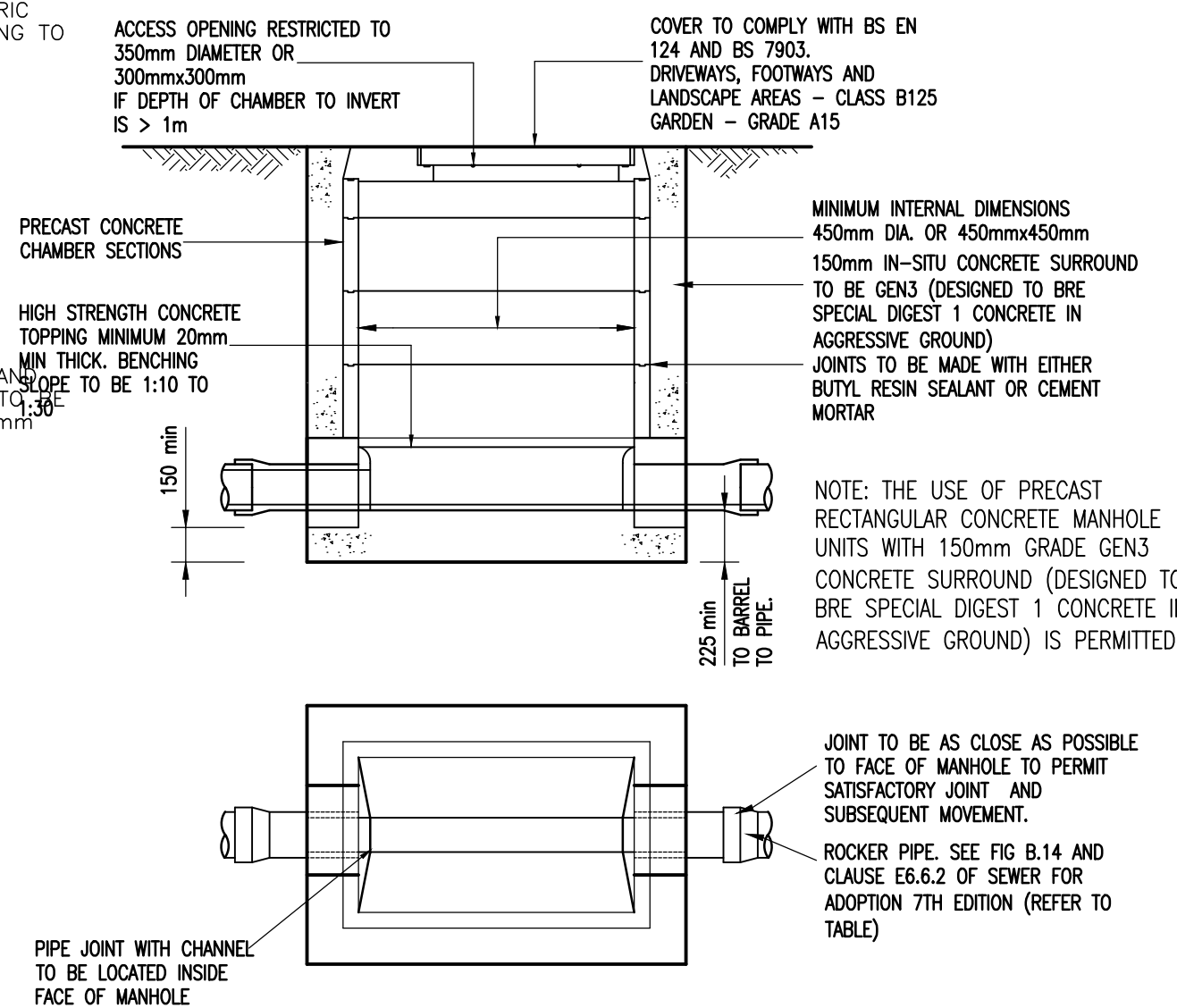
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	NOMINAL DIAMETER (mm)	ROCKER PIPE EFFECTIVE LENGTH (m)
LESS THAN 375	1200	150 – 600	0.60
375 – 450	1350	601 – 750	1.00
500–700	1500	OVER 750	1.25

NOTE: DIAMETER TO BE INCREASED BY ONE SIZE FOR MANHOLES WITH LARGE NUMBERS OF CONNECTIONS.

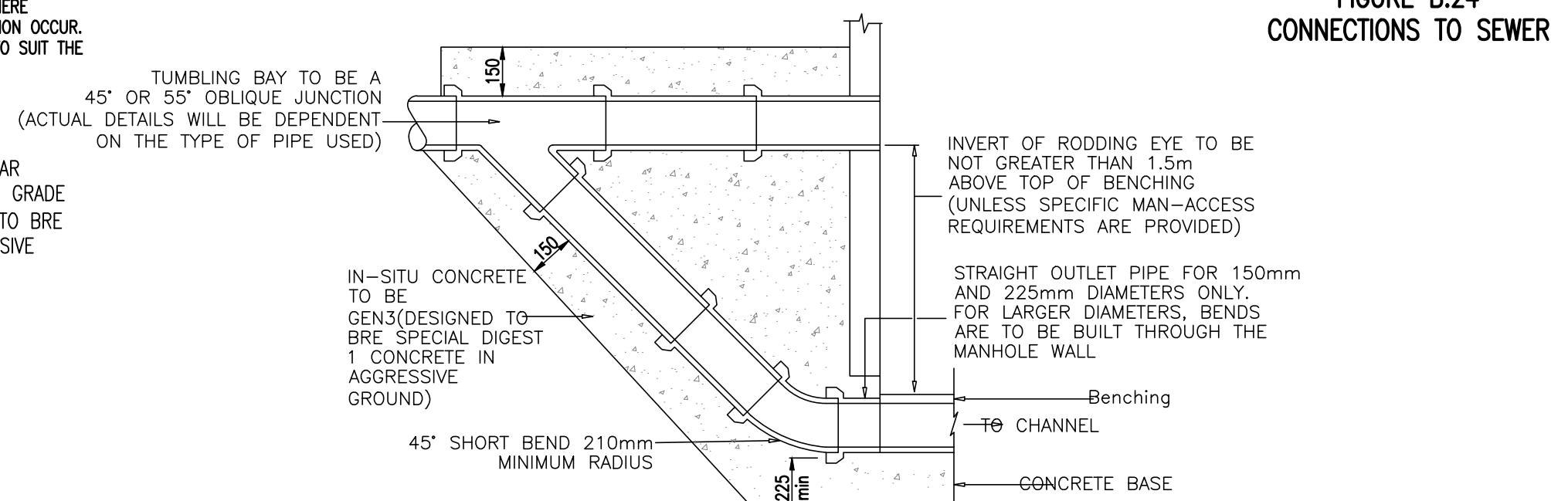
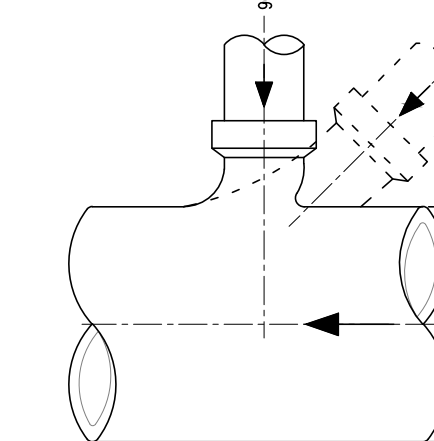
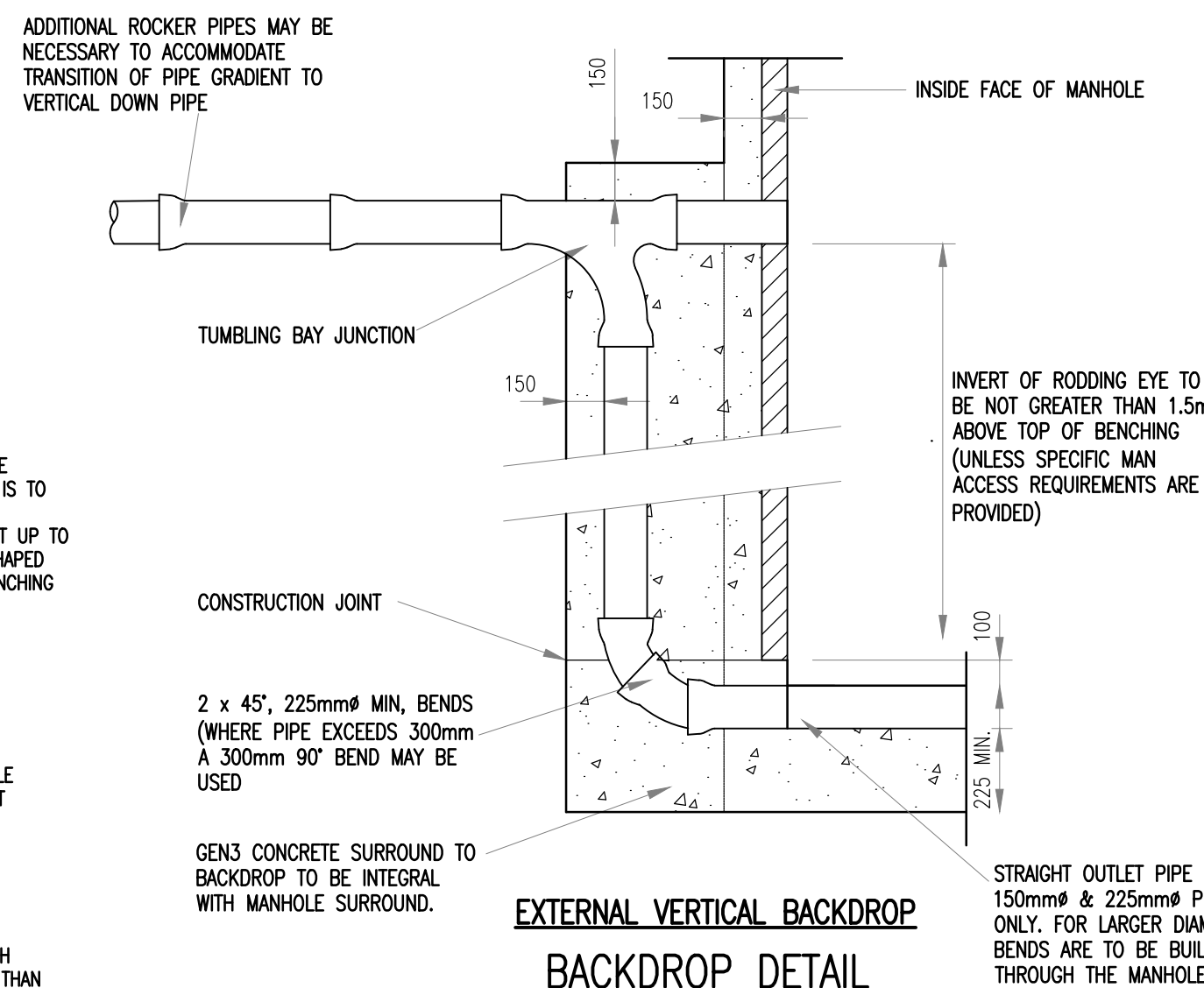
NOTE: THE USE OF PRECAST RECTANGULAR CONCRETE MANHOLE UNITS WITH 150mm GRADE GEN3 CONCRETE SURROUND (DESIGNED TO RESIST SPECIAL DIGEST 1 CONCRETE IN AGGRESSIVE GROUND) IS PERMITTED



Depth from ground level to soffit of pipe Max. 3.0m for areas subject to vehicle loading, Non-entry



Depth from ground level to soffit of pipe Max. 3.0m for areas not subject to vehicle loading or areas subject to light vehicle loading, non-entry



COVER TO COMPLY WITH BS EN 124 AND BS 7903.

DRIVEWAYS, FOOTWAYS AND LANDSCAPE AREAS – CLASS B125 GARDEN – GRADE A15

TOPSOIL/SOFT LANDSCAPING

MINIMUM INTERNAL DIMENSIONS: 180mm DIA. OR 225mmx100mm

INVERT OF CONNECTING PIPE AT LEAST 50mm ABOVE MAIN PIPE

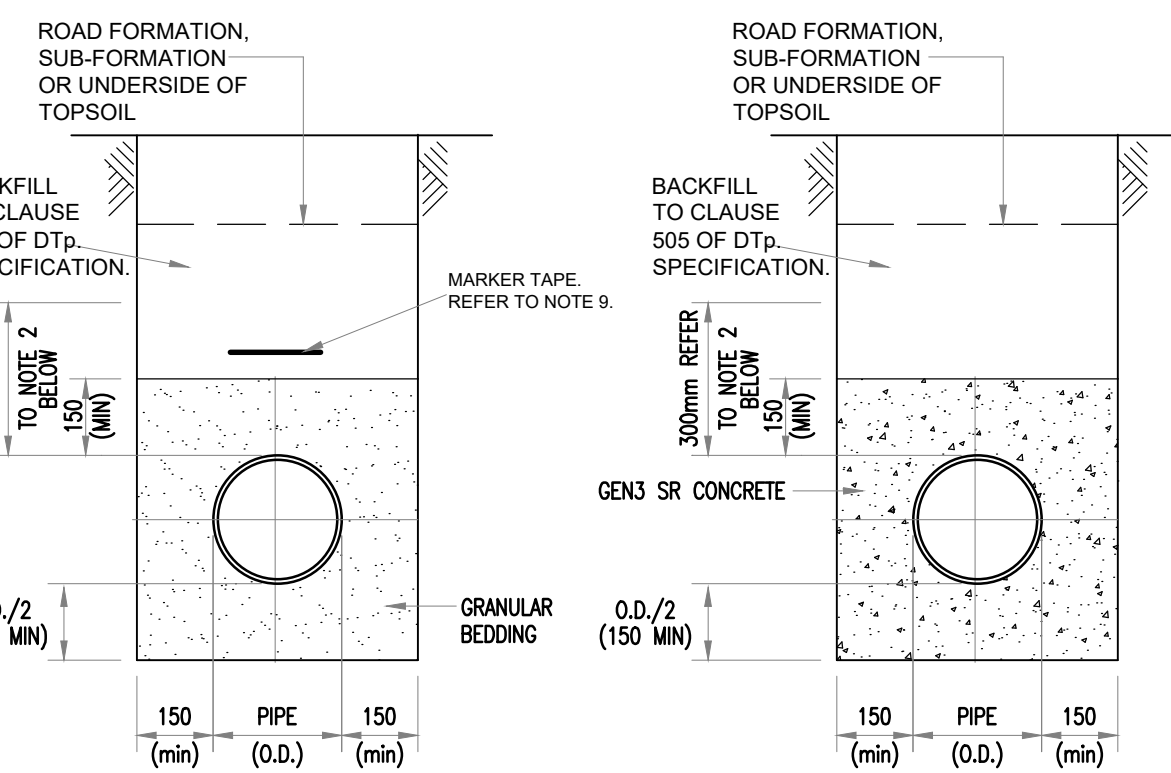
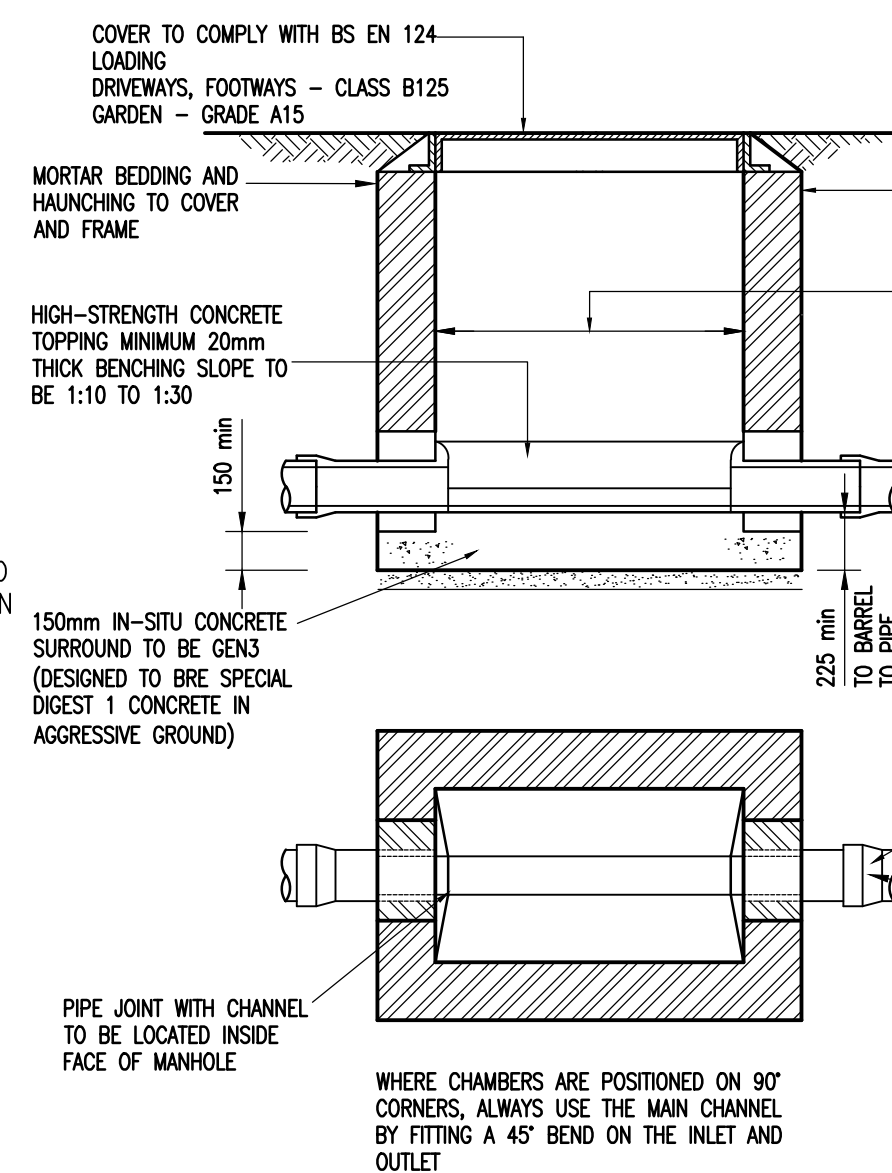
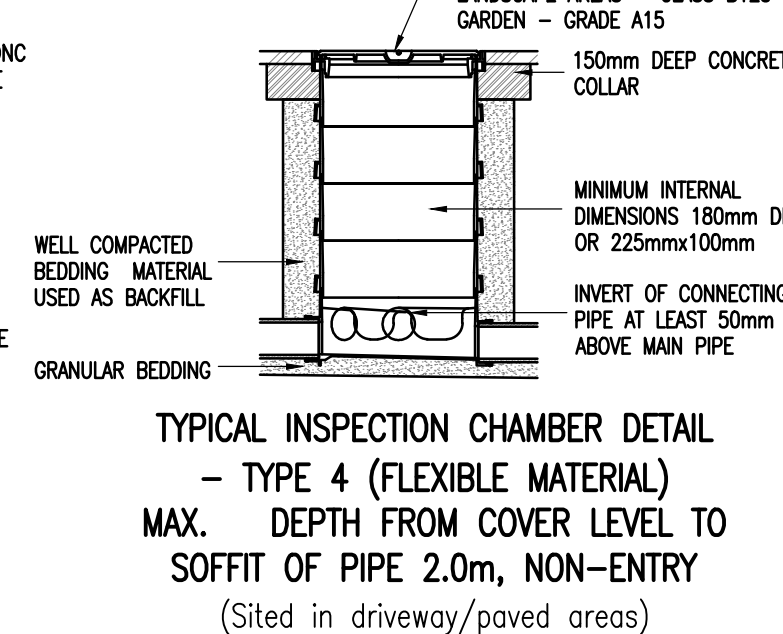
WELL COMPACTED BEDDING MATERIAL USED AS BACKFILL

GRANULAR BEDDING

PIPE

100 100

100 100

CONCRETE

NOTES:

1. BEDDING BENEATH AND AT THE SIDES OF THE PIPE TO BE WELL COMPACTED
2. THE FIRST 300mm OF FILL ABOVE THE CROWN OF THE PIPE IS TO BE LIGHTLY TAMPED BY HAND MECHANICAL COMPACTION MAY BE USED ONLY ABOVE THIS LEVEL.
3. GEOTEXTILES MAY BE USED WHERE DIRECTED OR APPROVED BY THE ENGINEER TO CONTAIN BEDDING MATERIAL IN CERTAIN SOILS e.g. RUNNING SAND
4. IN VERY WET CONDITIONS, WHERE DIRECTED OR APPROVED BY THE ENGINEER A TEMPORARY LAND DRAIN MAY BE LAID WITHIN THE GRANULAR BED.

BEDDING DETAILS

1. ALL WORKS FOR ADOPTION UNDER A SECTION 104 AGREEMENT SHALL BE CARRIED OUT TO THE NATIONAL WATER COUNCIL "USE" SENIORS FOR ADOPTION" 7TH EDITION AND THE REQUIREMENTS OF DMR CWMRU WELSH WATER AS THE STATUTORY SEWERAGE UNDERTAKER AND THE WELSH MINISTERS BUILD STANDARD.
2. A SECTION 106 APPLICATION TO CONNECT MUST BE MADE TO DOWNS, THE DEVELOPMENT SHALL HAVE 21 DAYS NOTICE PRIOR TO CONNECTION, THE WORKS MAY ONLY BE UNDERTAKEN BY A DOWNS HEALTH & SAFETY APPROVED CONTRACTOR.
3. AN ACCREDITED CONTRACTOR BY THE BRITISH PLASTICS FEDERATION WILL BE USED TO LAY ANY ADOPTABLE PLASTICS PIPES, A COPY OF THE ACCREDITATION CERTIFICATE TO BE SUPPLIED TO DOWNS BEFORE ANY ORDER IS PLACED OR WORK COMMENCES ON SITE.

1. THE PLANNING, DESIGN AND CONSTRUCTION OF SEWERS SHALL BE IN ACCORDANCE WITH SEWERS FOR ADOPTED 7th EDITION.
2. THE MINIMUM SIZE OF SEWER WHERE GASES, SLEAVE CHIMES, OR OTHER SAFETY DEVICES ARE REQUIRED IN MANHOLES SHALL BE 375mm. OTHERWISE
3. ALL TYPE 1 AND 2 MANHOLES SHOULD BE A COMPLETE SURROUND. CONCRETE RINGS SHALL BE SEALED USING "TOXSTOP" AND LIFTING EYES POINTED WITH RESIN MODIFIED MORTAR.
4. COMPLIANCE WITH HEALTH AND SAFETY MATTERS ON ANY TRENCH/MANHOLE IS OBLIGATORY AND A PERMIT TO ENTER A CONFINED SPACE IS REQUIRED WHENEVER THE NEED FOR NEW ENTRY DRAINAGE TO THE EXISTING PUBLIC SEWERAGE SYSTEM, A PERMIT TO ENTER A CONFINED SPACE WILL BE OBTAINED FROM DOW PRIOR TO WORKS COMMENCING ON ANY PUBLIC SEWERAGE SYSTEM.
5. WHERE THE PROPOSED SITE DRAINAGE CONNECTS TO THE PUBLIC SEWERAGE SYSTEM, A NEW ENTRY DRAINAGE, NEW MANHOLE OR AT AN EXISTING MANHOLE OR AT AN EXISTING MANHOLE, IT WILL REQUIRE THE SUBMISSION OF AN APPLICATION FOR SEWER CONNECTIONS FORM DOW PRIOR TO WORKS COMMENCING.
6. MVI COVERS AND FRAMES SHALL BE DUCTILE IRON WITH A MINIMUM SQUARE COVER SIZE OF 450x450mm. THEY SHALL BE DOUBLE TRAP FOR 675mm SQUARE OPENINGS AND BE PROVIDED WITH LOGSIC BOLTED CONNECTIONS. TYPICALLY FRAMES ARE 150mm DEEP BUT IN ALL CASES THE FRAMES SHALL BE 150mm DEEP.
7. PROPOSED ADOPTED SEWERS ARE ONLY PERMITTED TO HAVE OTHER SLOPE/SLOLY CONNECTIONS AND OTHER SERVICES LAID AT AN ANGLE OF BETWEEN 45° AND 90° ACROSS THE LINE WITH A VERTICAL CLEARANCE IN EXCESS OF 300mm.
8. ALL BROWNKROW TO BE KITE MARKED BY ISOI OR CERTIFIED BY EQUAL INSPECTION AUTHORITY.
9. RED COLOURED PLASTIC MARKER TAPE AT LEAST 150mm WIDE SHALL BE LAID AT 150mm TO 200mm ABOVE THE SURFACE OF THE PIPE. THE TAPE SHALL BE PRINTED WITH THE WORDS "GRAVITY SEWER" IN BOLD CAPITAL LETTERS THROUGHOUT ITS LENGTH AND AT INTERVALS NOT EXCEEDING 700mm. IT SHALL INCORPORATE A CORROSION RESISTANT TRACING SYSTEM FOR NON-METALLIC PIPES.
10. ALL WORKS TO BE ADOPTED UNDER THE SECTION 104 AGREEMENT SHALL BE INSPECTED BY DOW IN ACCORDANCE WITH THEIR REQUIREMENTS (FOUL AND SURFACE WATER SEWERS)
11. ALL WORKS TO BE ADOPTED UNDER THE SECTION 38 AGREEMENT SHALL BE INSPECTED BY RCT IN ACCORDANCE WITH THEIR REQUIREMENTS (HIGHWAY DRAINAGE)
12. REFER TO LONGITUDINAL SECTIONS FOR DETAILS OF PIPE SIZES, INVERT LEVELS, BEDDING, ETC.
13. SUBJECT TO DRAINAGE AUTHORITY APPROVAL PLASTIC PIPES FOR GRAVITY SEWER:
 - 150mm to 300mm may BE EITHER:
 - MARLEY TWINWALL SYSTEM
 - UPONOR ULTRALITE SYSTEM
 - COSAL ULTRALITE SYSTEM
 - POLYSUNDER TWINWALL SYSTEM
 - PLASTIC PIPES APPROVAL BY DOW FOR LARGER DRAINAGE GRAVITY SEWERS ARE:
 - POLYPIPE - RINGSKID (400mm-600mm)
 - POLYPIPE - RINGSTORM XL (750mm-800mm)
14. ANY PROPOSED CHANGES TO THE MATERIAL MUST BE AUTHORISED BY DOW.
15. SULPHATE RESISTING PORTLAND CEMENT SHALL BE USED FOR ALL CONCRETES AND MORTARS HAVING ENOUGH COMPRESSIVE STRENGTH OF 20N/mm² OR GREATER FOLLOWING PRECAST CONCRETE SPECIFICATIONS, UNLESS TESTS INDICATE OTHERWISE.
16. FOUL WATER MANHOLES TO BE COVERED "TW" SURFACE WATER MANHOLES TO BE COVERED "SW"

-	10.02.2020	First Issue.	KF	SID
REV.	DATE	DETAILS	BY.	CHK.



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Drainage Construction Details

DRAWN:	CHK:	STATUS:	SCALE:
KF	SJD	Approval	NTS @ A1
DATE:	JOB NO.	DRG. NO.	REV.
Feb'2020	1914	110	-