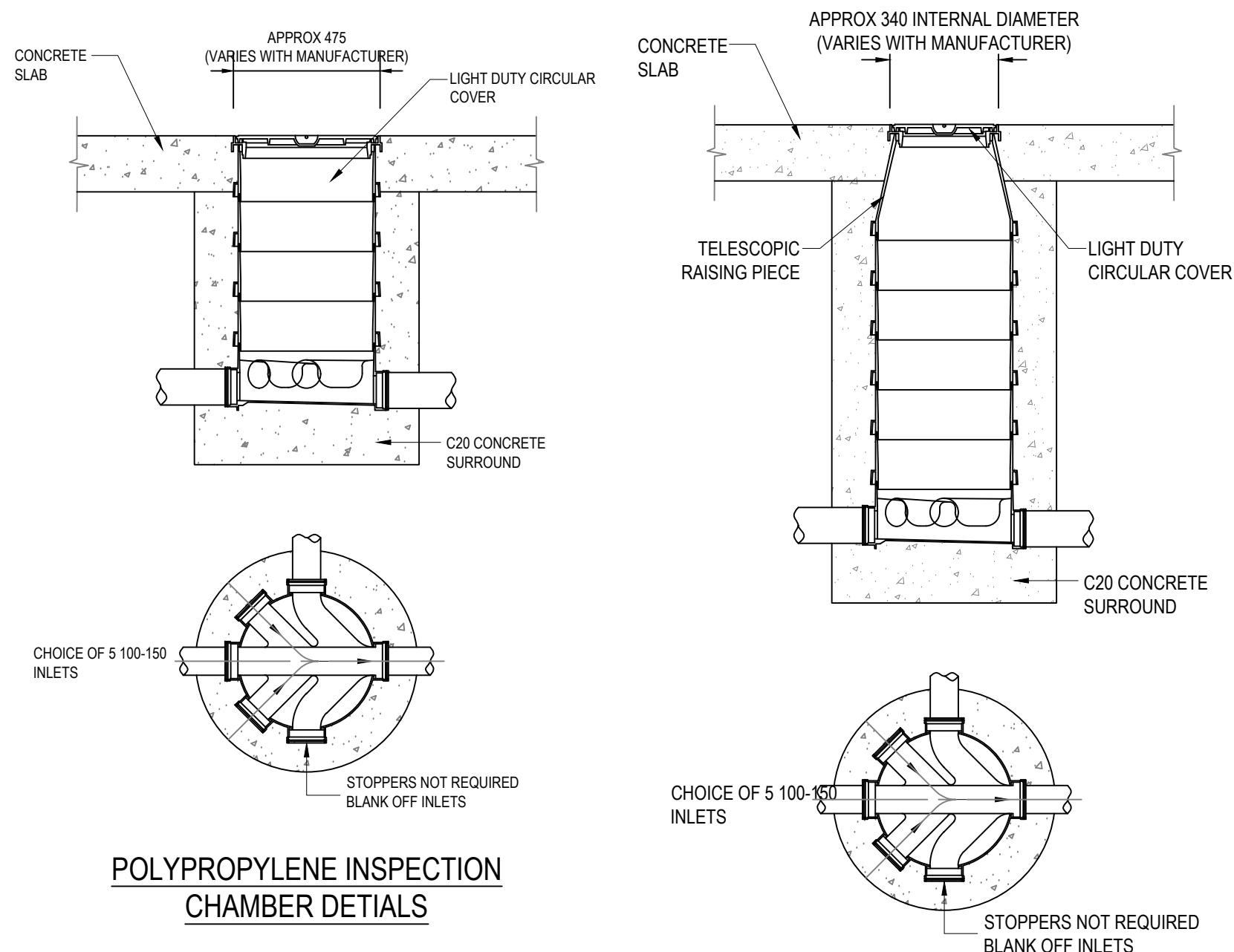
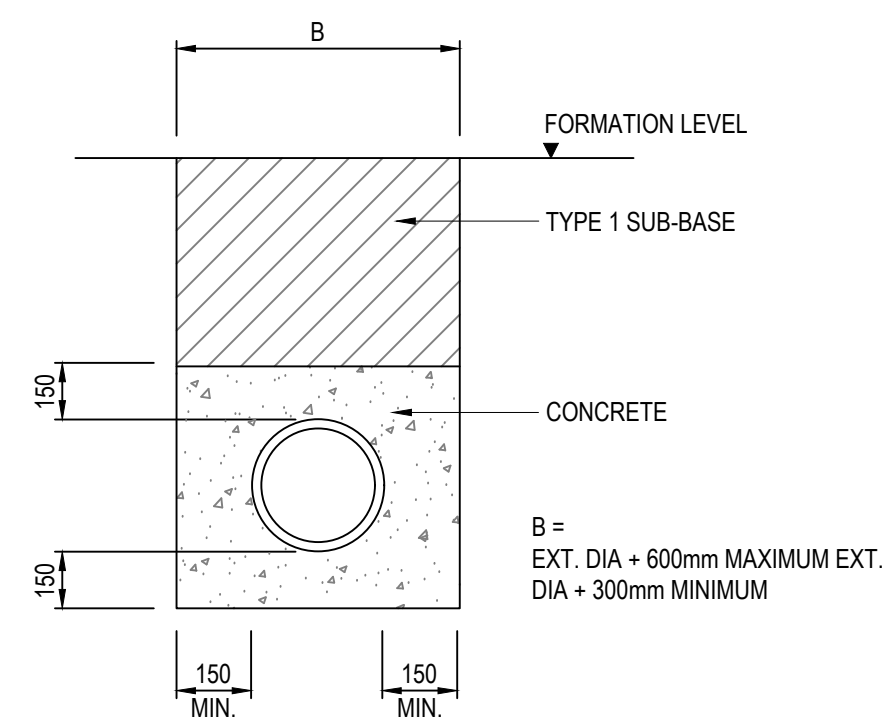
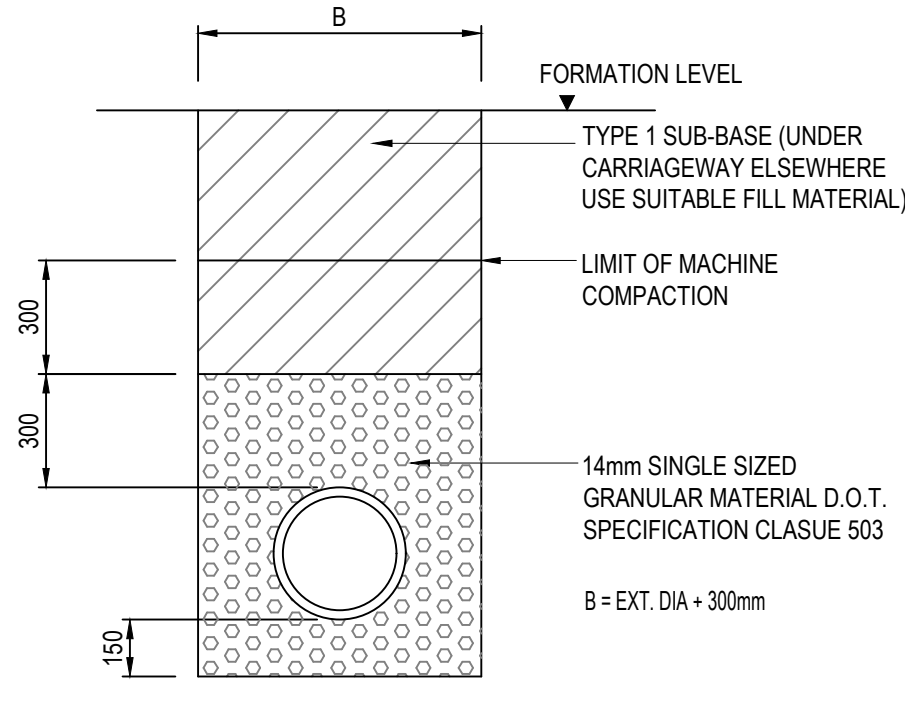




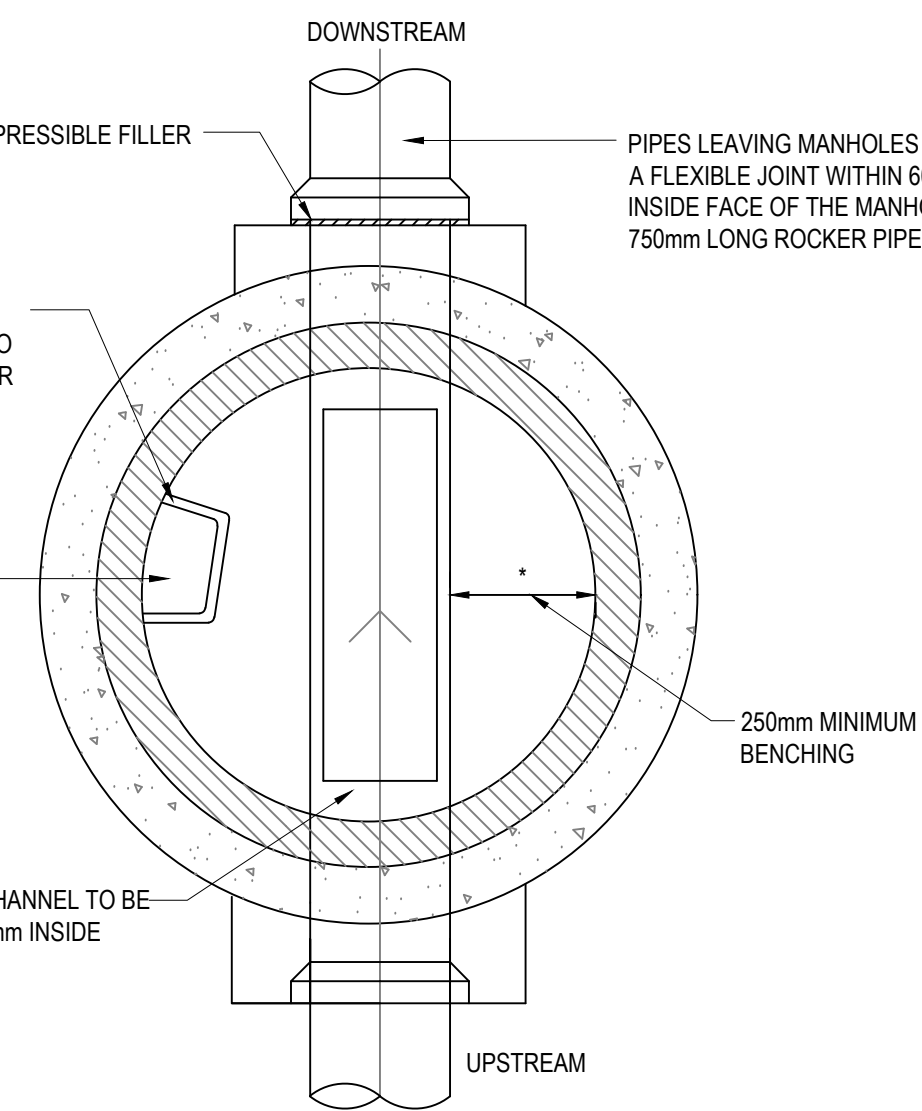
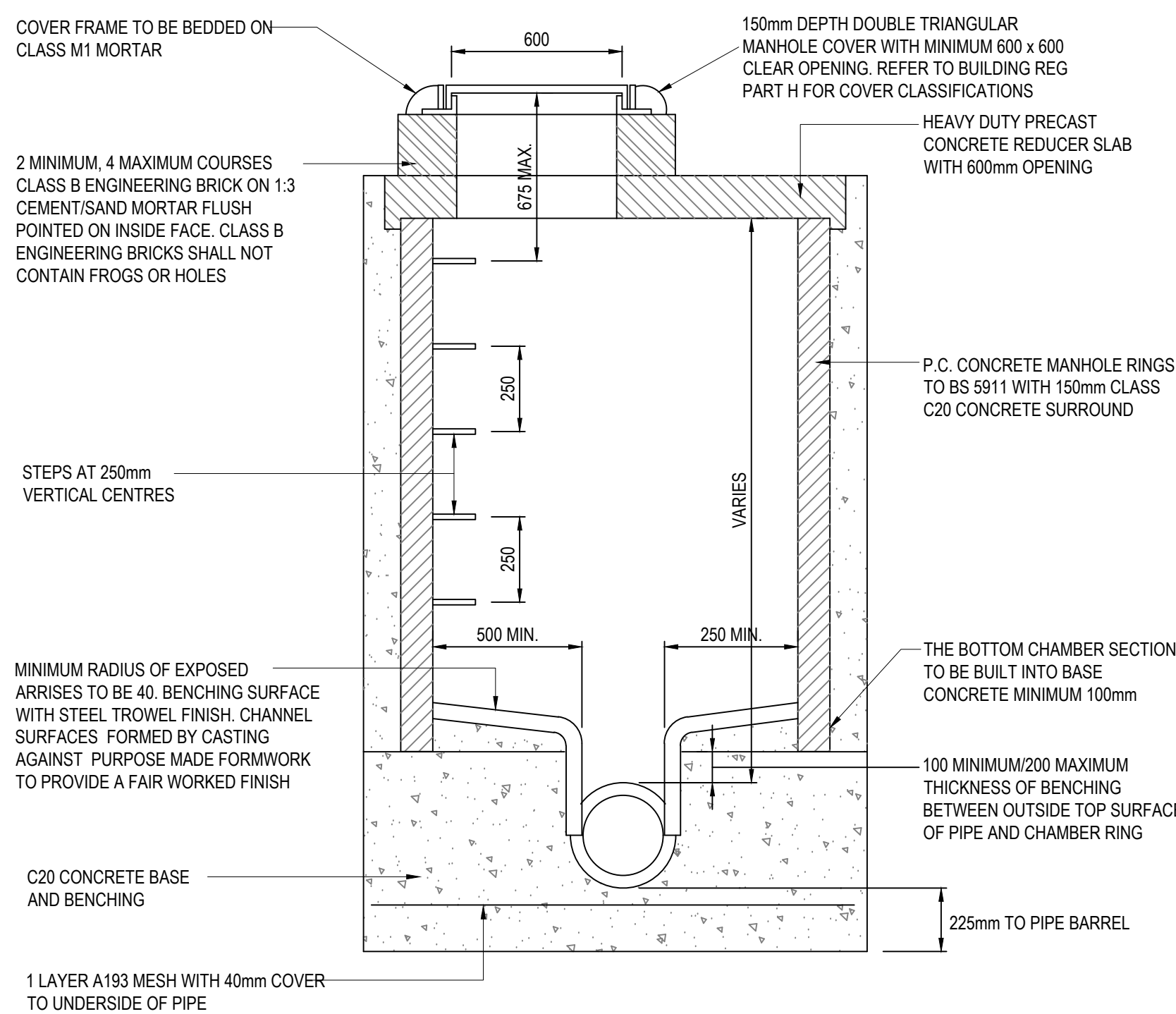
REDUCED ACCESS INSPECTION CHAMBER DETAILS (DEPTH 1.1m < 3m)



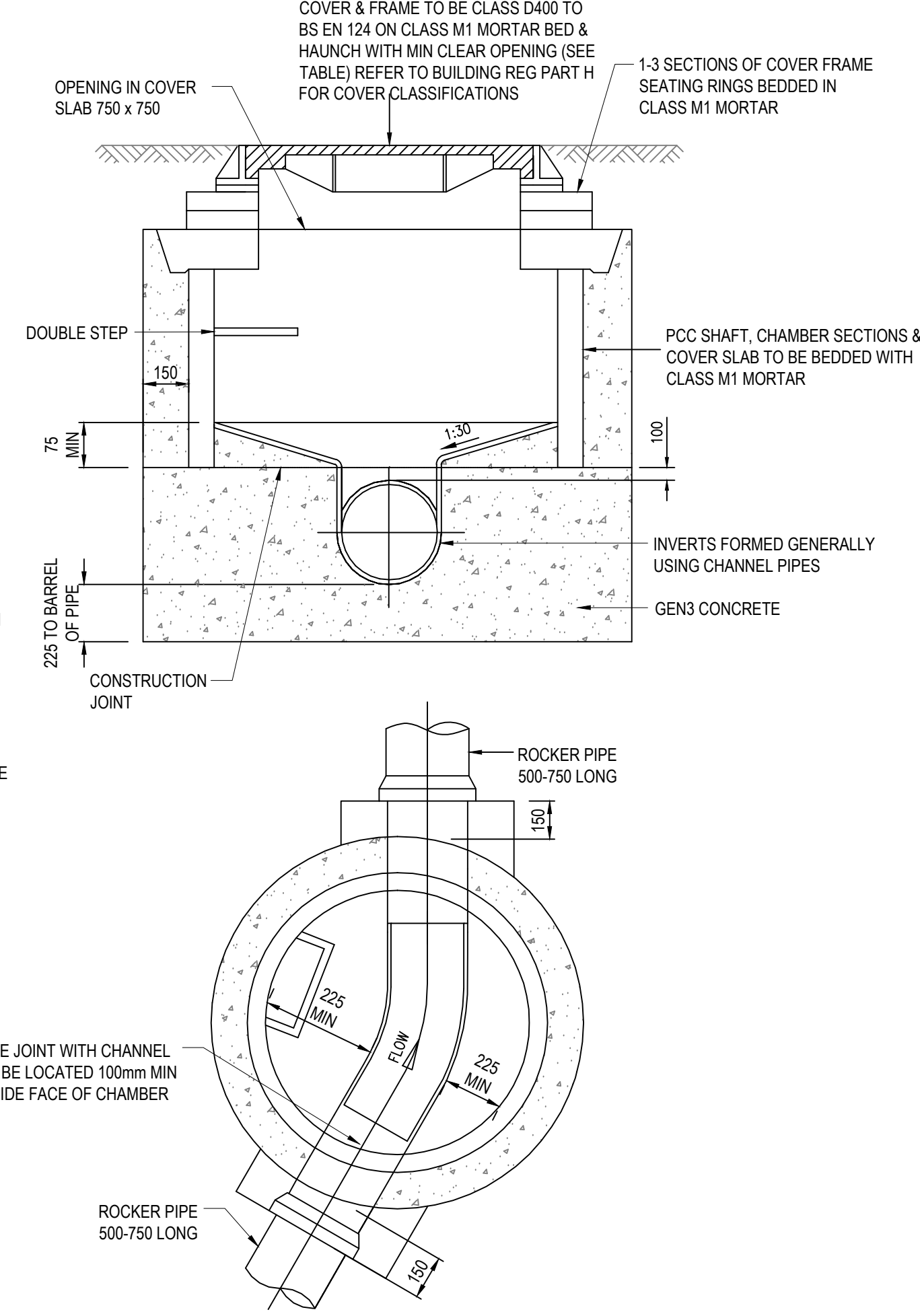
DETAIL OF CLASS 'Z' CONCRETE SURROUND
(FOR PIPES UNDER HIGHWAYS WITH <1.2m COVER)
(FOR PIPES UNDER CAR PARKING WITH <0.9m COVER)
(FOR PIPES IN LANDSCAPING AREAS WITH <0.6m COVER)



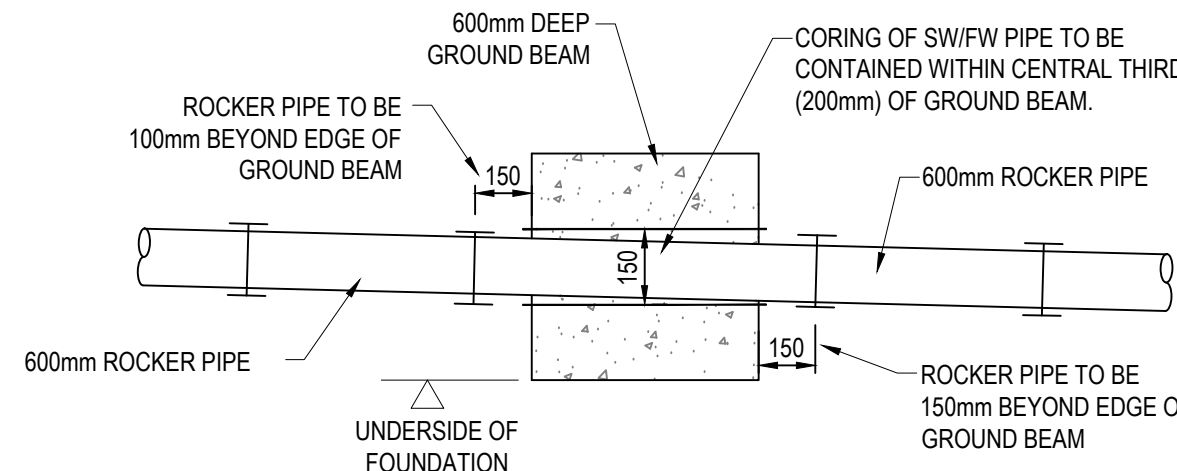
CLASS 'S' BEDDING DETAIL
TYPE 'S' BEDDING TO BE USED FOR PIPES GENERALLY IN FOOTWAY AND LANDSCAPED AREAS, AND FOR PIPES UNDER TRAFFICKED AREAS WITH MORE THAN 0.9m COVER



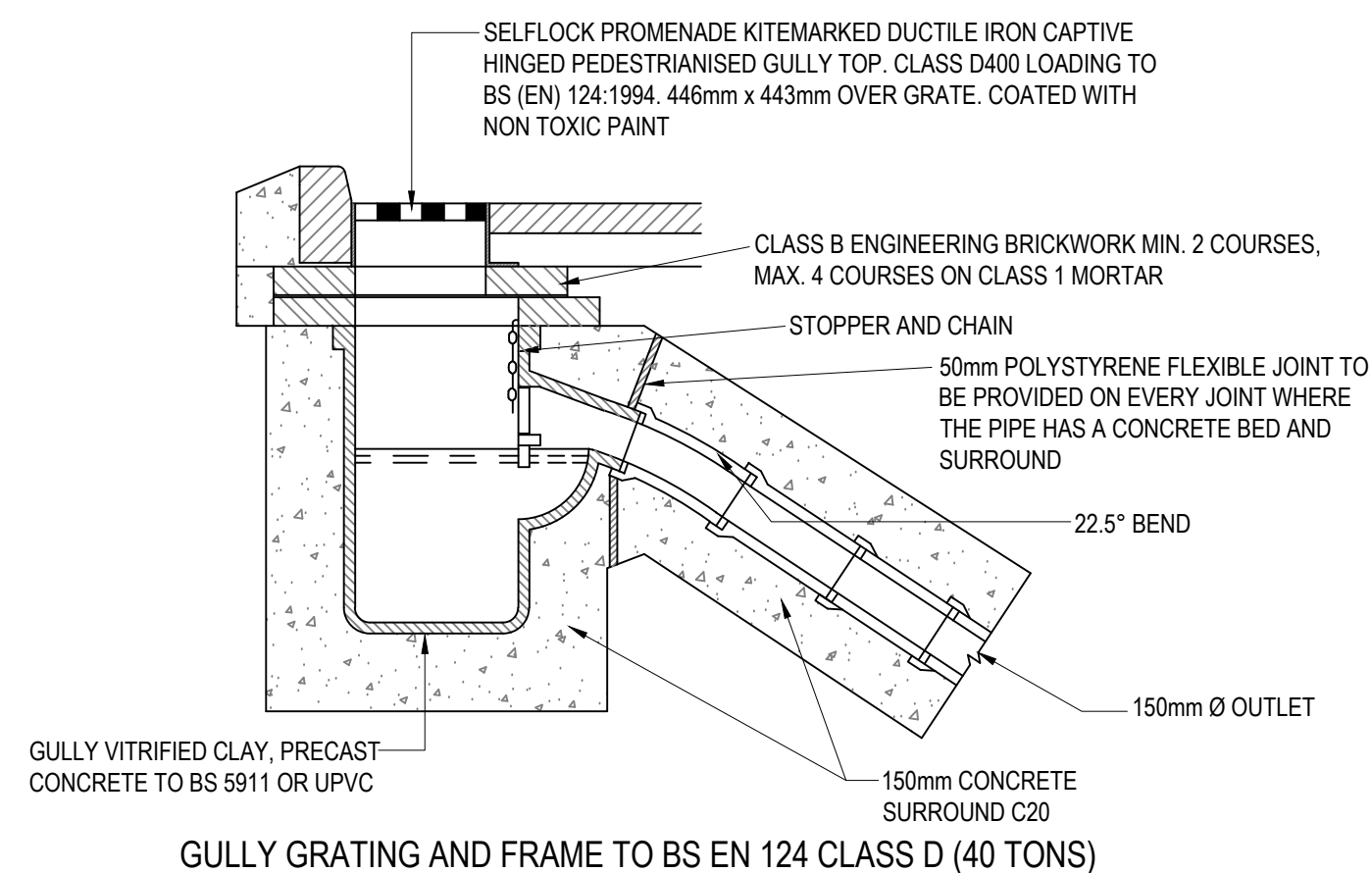
TYPICAL MANHOLE TYPE B
(MAX. DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 3.0m)



TYPICAL MANHOLE TYPE E
(MAX. DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE <1.5m)

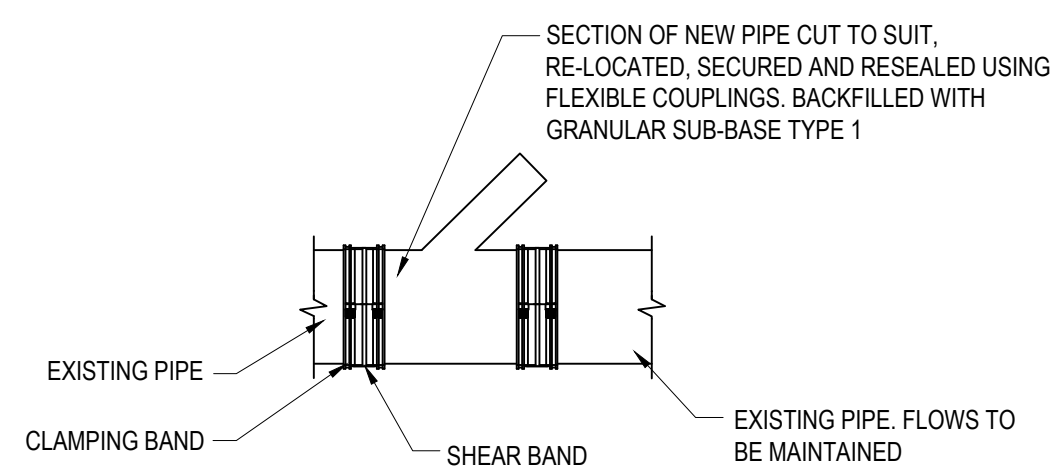


DETAIL SHOWING SW/FW PIPE THROUGH GROUND BEAM



GULLY FRAME			
SIZE OF GULLY (mm)	MIN.WIDTH	MIN.AREA OF WATERWAY	MIN.DEPTH OF FRAME
450x750 DEEP	450mm	900cm ²	75mm

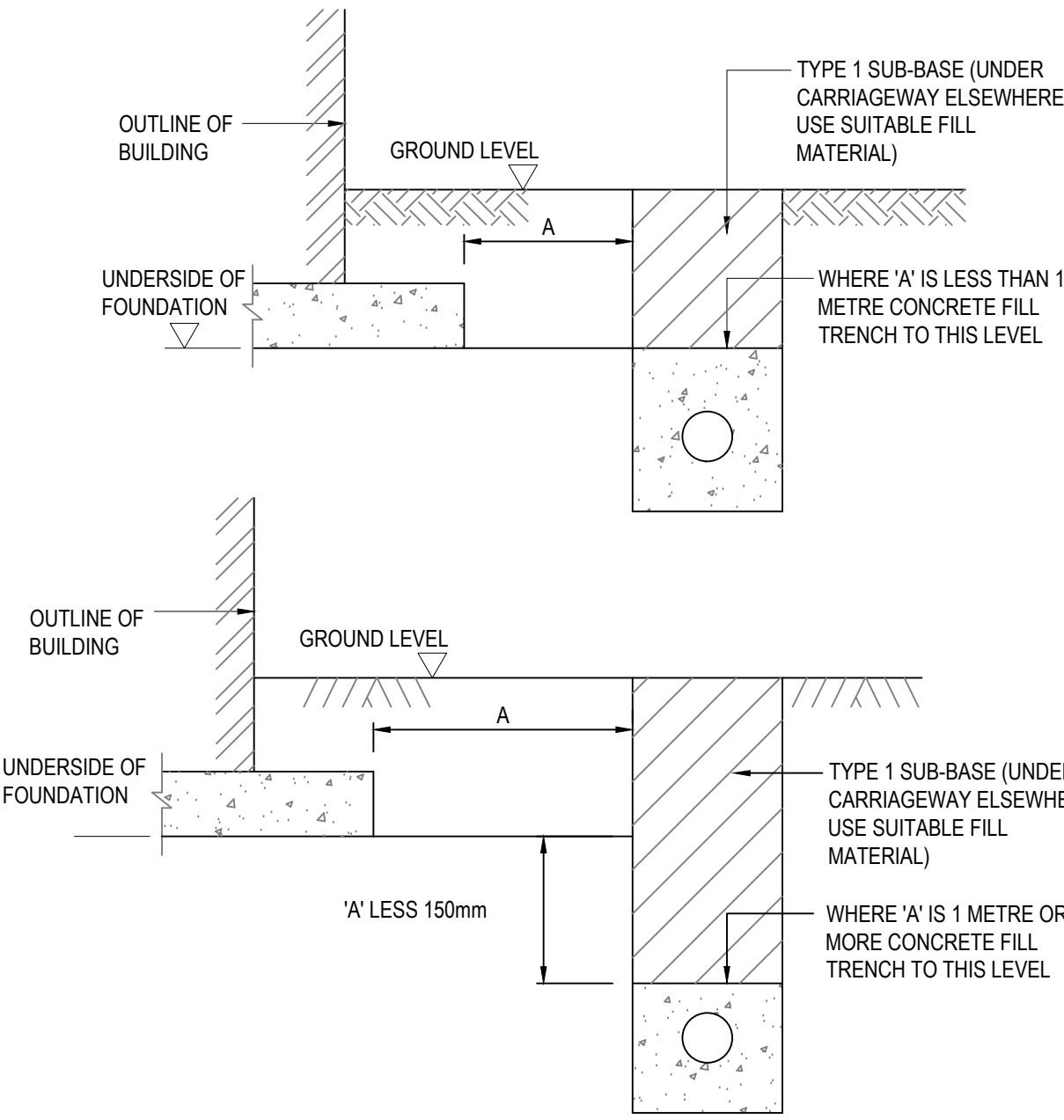
NOTES
1. GULLY, GRATING AND FRAME TO COMPLY WITH BS EN 124
2. BACKFILL TO GULLY CONNECTIONS BELOW FORMATION IN CARRIAGEWAYS SHALL BE TYPE 1 SUB-BASE MATERIAL WHERE MECHANICAL COMPACTION IS IMPRACTICAL THE BACKFILLING SHALL BE GRADE C10P/20 CONCRETE.
3. GULLY GRATING AND FRAME TO BE HINGED TYPE.



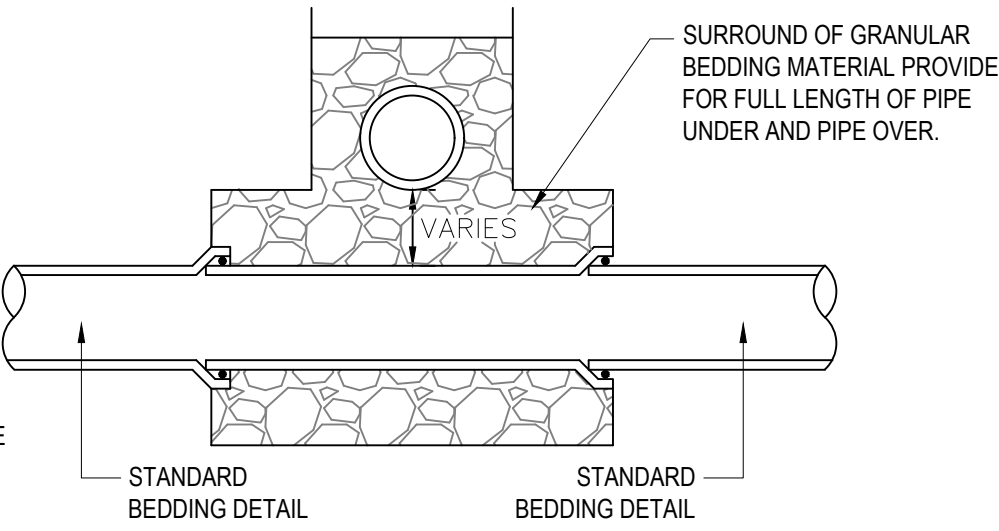
A SUITABLE SECTION OF PIPE IS CUT AND REMOVED FROM THE EXISTING PIPELINE. THE NEW JUNCTION IS LOCATED. THE ORIENTATION OF THE JUNCTION ARM ESTABLISHED AND THE NEW JUNCTION SECURED AND SEALED INTO THE PIPELINE USING FLEXIBLE COUPLINGS

NOTE

- THE REPLACEMENT PIPE OR JUNCTION SHOULD LEAVE A TOTAL LENGTH OF 20MM LESS THAN THAT BETWEEN THE CUT ENDS OF THE EXISTING PIPELINE.
- COUPLINGS SHOULD BE TIGHTENED EITHER STARTING WITH THE SHEAR BAND FOLLOWED BY THE CLAMPING BANDS OR WORKING ACROSS THE COUPLINGS FROM ONE OF THE CLAMPING BANDS.
- IT IS IMPORTANT TO ENSURE THAT THE ENDS OF THE PIPES ARE CUT SQUARE AND THAT THERE IS SUFFICIENT CLEARANCE BETWEEN THE ENDS OF THE PIPES TO ALLOW FLEXIBLE MOVEMENT TO TAKE PLACE.



TRENCH DETAIL FOR FW AND SW PIPE RUNS NEAR BUILDING FOUNDATIONS



PIPE CROSSINGS OVER

STANDARD MIX	GRADE OF CONCRETE	APPLICATIONS
ST1	C7.5	FILLINGS, BLINDINGS, SOFT SPOTS AND DRAINAGE SUMPS
ST4	C20	ALL OTHER APPLICATIONS

IMPORTANT NOTES

- SETTING OUT SHALL BE UNDERTAKEN USING ONLY THE INFORMATION GIVEN. DISTANCES SHOULD NOT BE SCALED FROM THIS DRAWING.
- ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEWERS FOR ADOPTION 7TH EDITION AND UNITED UTILITIES DETAILS & GUIDELINES.
- THE MINIMUM GRAVITY PIPE DIAMETER UNDER ADOPTABLE HIGHWAYS SHALL BE 150mm
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION GIVEN WITH REGARDS TO EXISTING SERVICES AND DRAINAGE CONNECTIONS ETC. PRIOR TO COMMENCING THE WORKS. THE RATES SHALL INCLUDE FOR HAND DIG AROUND SERVICES WHERE NECESSARY. THE CONTRACTOR SHALL ADHERE TO THE CDM REGULATIONS AT ALL TIMES
- THE OUTSIDES OF ALL SEWERS SHALL BE A MINIMUM OF 1.0m FROM KERB LINES AND THE OUTSIDE OF MANHOLES SHALL BE A MINIMUM OF 0.5m FROM KERB LINES
- EXISTING FLOWS IN WATERCOURSES, SEWERS AND LAND DRAINS SHALL BE MAINTAINED AT ALL TIMES
- ONLY TRAINED PERSONNEL SHALL BE PERMITTED TO ENTER CONFINED SPACES
- ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS
- ALL OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS ETC. ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS. ALL WORKS ARE TO BE INSPECTED BY L.A., NHBC OR THE NETWORK OPERATOR AS APPLICABLE.
- WHERE 'ULTRA RIP' UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION
- A CLASS B BED AND SURROUND MUST BE USED FOR SUCH PIPES. TRENCH BACKFILL IN HIGHWAYS TO WITHIN 1M OF HIGHWAY SHALL AS DIRECTED BY THE HIGHWAY AUTHORITY BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 3.1.4
- SLAB LEVELS SHALL NOT BE VARIED WITHOUT REFERENCE TO THE ENGINEER FOR GUIDANCE
- ALL GULLY CONNECTIONS TO BE 150mm VITRIFIED CLAY UNLESS NOTED OTHERWISE
- ALL MANHOLE COVERS TO BE RECESSED TO ACCEPT FINISH AS DETAILED BY LANDSCAPE ARCHITECT
- SLOW REST BENDS TO BE USED IN ALL LOCATIONS MADE UP FROM 2m. 45 DEG BENDS (600mm TO INVERT FROM FFL)
- MANHOLE POSITIONS AND ACCESS COVERS TO BE ACCURATELY SET OUT BY LANDSCAPE ARCHITECT TO SUIT EXTERNAL FINISHES
- ALL DRAINS CAST THROUGH FOUNDATIONS TO HAVE ROCKER PIPES ON BOTH SIDES OF FOUNDATION
- ALL POP UP POSITIONS TO BE CONFIRMED SET OUT DIMENSIONS TO BE AGREED & PROVIDED BY OTHERS
- ALL DISCHARGE RATES TO BE CONFIRMED BY M&E DESIGNER
- ALL SURFACE WATER COLLECTION FEATURES TO BE CONFIRMED BY THE LANDSCAPE ARCHITECT
- STORAGE HAS BEEN PROVIDED IN A CELLULAR STORAGE TANK AND UP-SIZED MANHOLES AND PIPES
- EXISTING SEWER DEPTHS HAVE BEEN APPROXIMATED FROM LIMITED INFORMATION. NEW CONNECTIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION OF ANY DRAINAGE WORKS
- LANDSCAPE ARCHITECT TO CONFIRM GULLY AND DRAINAGE CHANNEL LOCATIONS TO LANDSCAPED AREAS
- FULL NETWORK TO BE CONFIRMED FOLLOWING CONFIRMATION OF BRANCH CONNECTION POINTS FROM BUILDING M&E DESIGNER
- CCTV SURVEY OF EXISTING SITE DRAINAGE REQUIRED PRIOR TO THE COMMENCEMENT OF ANY WORKS STARTING ON SITE

PI	09.11.2022	PRELIMINARY ISSUE	LS	KOB	KOB
REV	DATE	DESCRIPTION	BY	CHK	APP

DRAWING STATUS:	PRELIMINARY
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CLIENT:	HUYTON ASPHALT LTD
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ARCHITECT:	DK-ARCHITECTS
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PROJECT:	LEES ROAD KNOWSLEY INDUSTRIAL PARK KNOWSLEY
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TITLE:	PRIVATE DRAINAGE STANDARD DETAILS
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STATUS:	PROJECT No.	PROJECT	ORIGINATOR	VOL/SYS	LEVEL	TYPE	ROLE	DRAWING No.	REV:
S2	221-160	LRK - AJP - ZZ - 00 - DR - C - 0007							P01
SCALE @ A1: 1:20		DESIGNED: LS	DRAWN: LS		CHECKED: KOB		APPROVED: KOB		DATE: NOV 2022