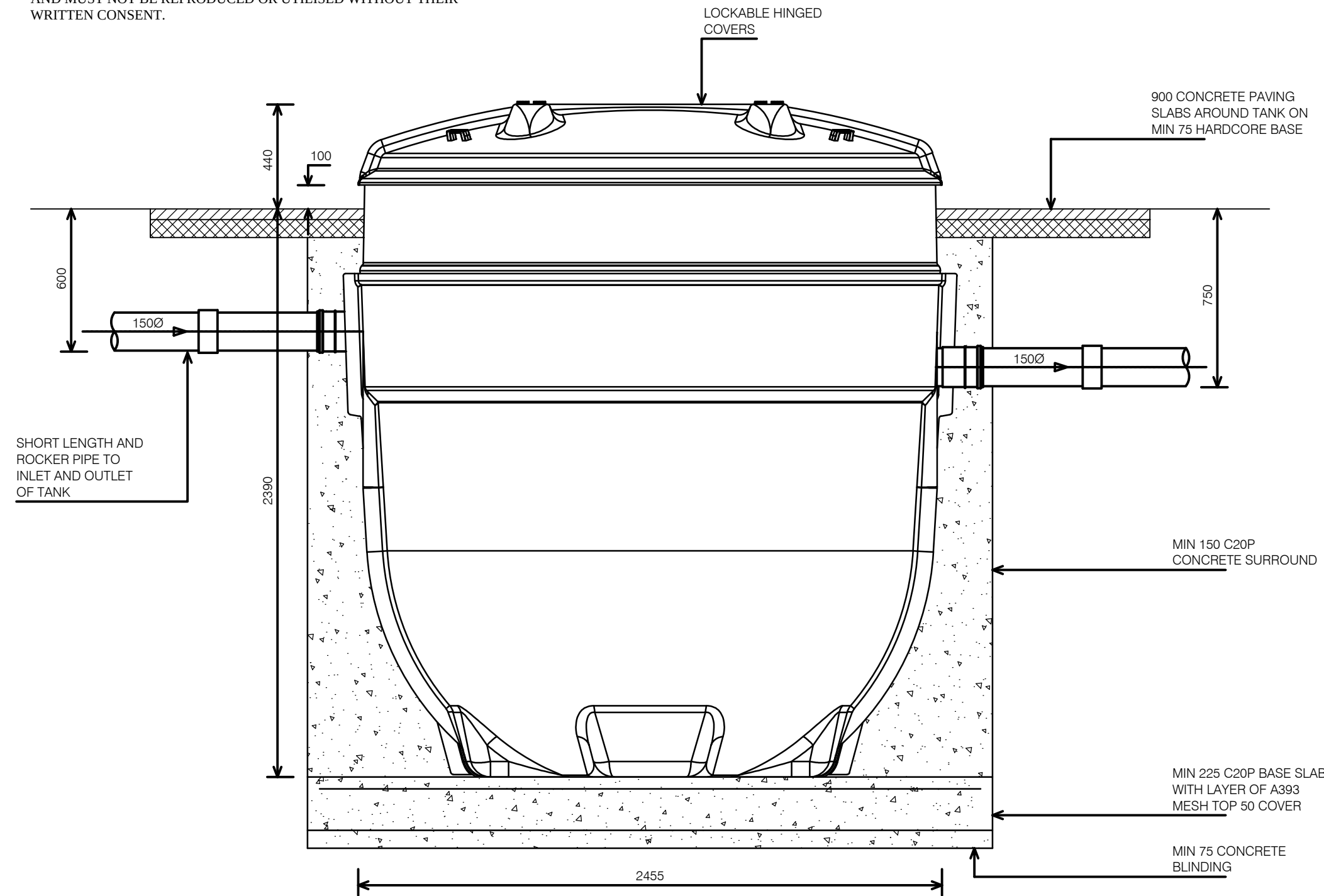


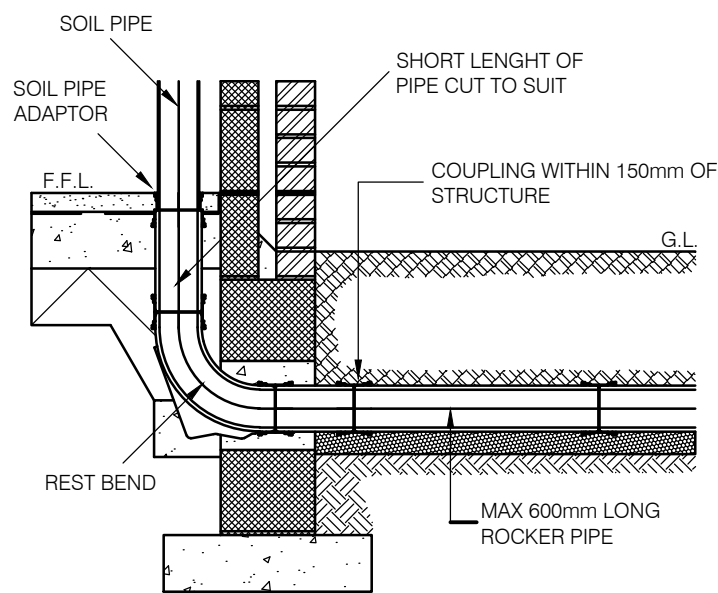
© COPYRIGHT: THIS DRAWING AND ANY DESIGN THEREIN IS THE COPYRIGHT OF PARAMETER TRADING AND MAINTENANCE LTD. AND MUST NOT BE REPRODUCED OR UTILISED WITHOUT THEIR WRITTEN CONSENT.



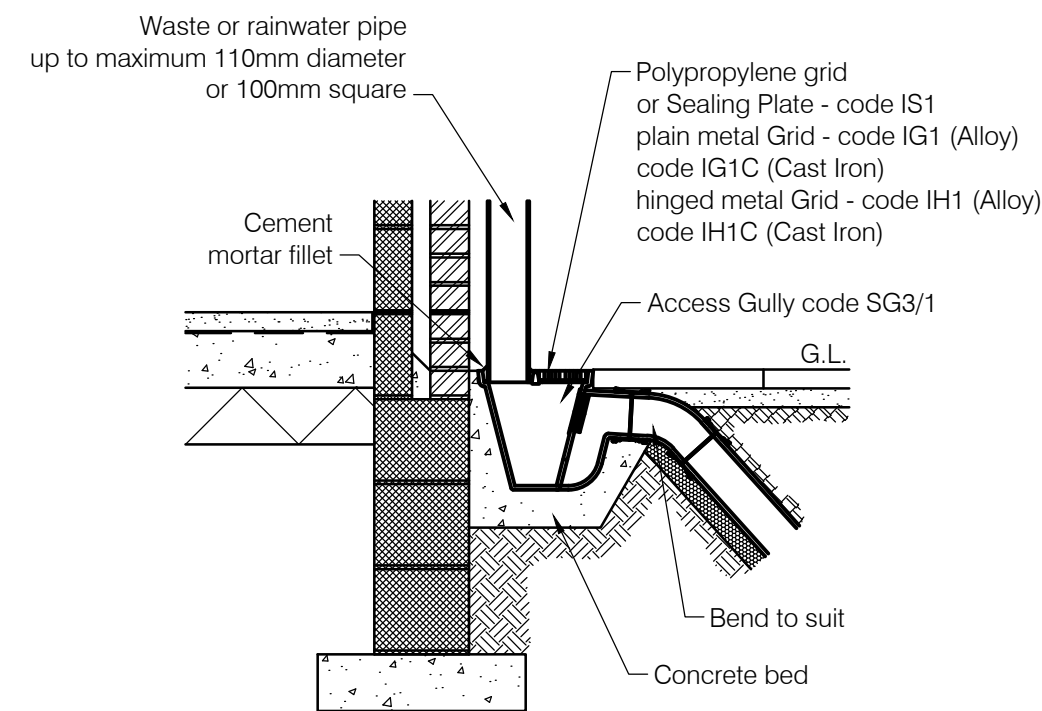
TYPICAL SECTION THROUGH SEWAGE PLANT 1:20

NOTES

1. ALL PRIVATE DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF THE BUILDING REGULATIONS CURRENT APPROVED DOCUMENT H

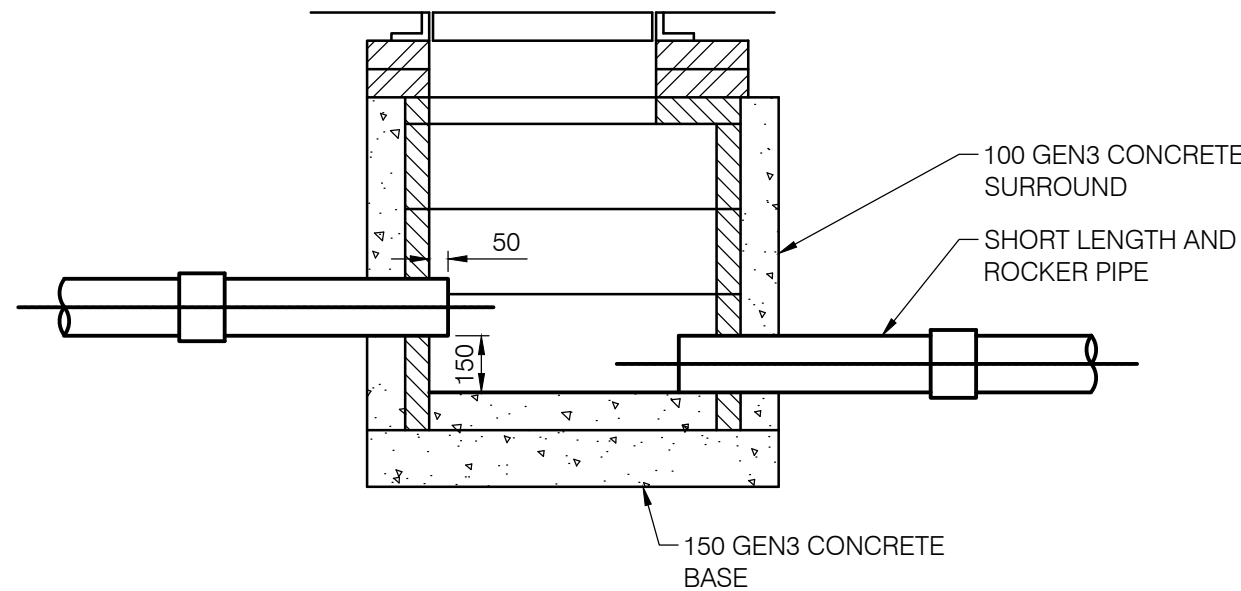


SOIL & VENT PIPE/STUB STACK W/C CONNECTION DETAIL
SCALE 1:20

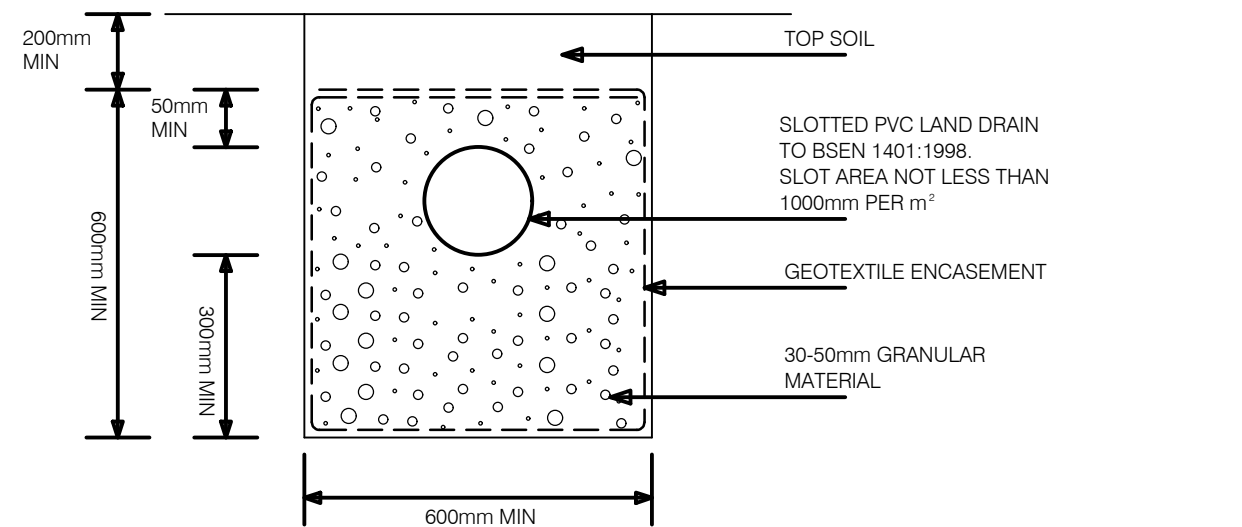


HEPWORTH ACCESS GULLY CONNECTION DETAIL

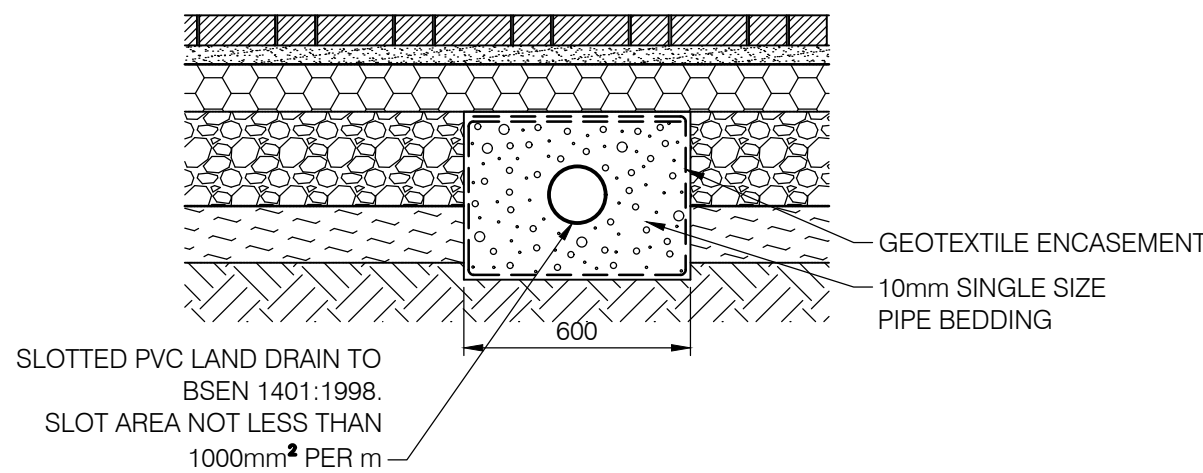
NOTE; DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY



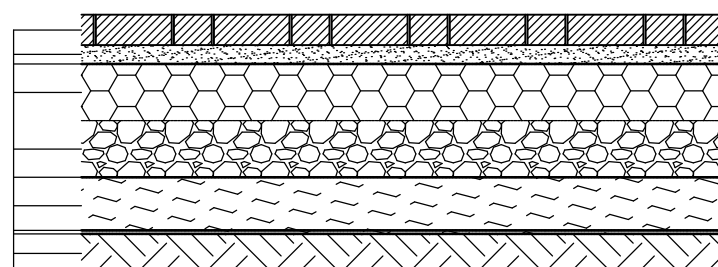
SAMPLE CHAMBER, PRECAST CONCRETE 900x675
SCALE 1:20



DRAINAGE FIELD:- LAND DRAIN DETAIL 1:20



LAND DRAIN DETAIL UNDER POROUS PAVING 1:20



SURFACE COURSE
200x100x80mm THICK BLOCK PAVING TO BS6717 PART 1: 1986, BLOCKS LAID TO BS 7533 JOINTS TO BE FILLED WITH 6mm WASHED AGGREGATE, MARSHALLS 'PRIORA' OR OTHER APPROVED SURFACING.

LAYING COURSE
50mm THICKNESS OF WASHED 6mm AGGREGATE IN ACCORDANCE WITH BS6717 PART 2: 1989 TABLE 2. SEE TABLE 2 BELOW FOR DETAILS.

TERRAM 1000 OR OTHER APPROVED.

150mm CEMENT BOUND MATERIAL
BS EN 14227-1:2004, 'HYDRAULICALLY BOUND MIXTURES - SPECIFICATIONS - PART 1: CEMENT BOUND GRANULAR MIXTURES'. MINIMUM CEMENT CONTENT BY MASS = 3%. STRENGTH CLASS = C8/6 (AS DEFINED IN TABLE 2 OF BS EN 14227-1:2004). MINIMUM PERMEABILITY 20,000mm/HOUR. THE 28 DAYS ELASTIC MODULUS WOULD BE EXPECTED TO BE APPROXIMATELY 10,000N/mm². PARTICLE SIZE DISTRIBUTION TO BE AS FOR COARSE GRADED AGGREGATE, SEE TABLE 1.

MINIMUM 150mm of 4/20mm COARSE GRADED AGGREGATE (CGA) MATERIAL SHOULD FALL WITHIN THE PARTICLE SIZE DISTRIBUTION ENVELOPE OF TABLE 3, BUT ADVICE SHOULD BE SOUGHT FROM THE BLOCK PAVING MANUFACTURER ON SPECIFIC GRADINGS SUITABLE FOR THEIR PRODUCT/SYSTEMS AND COMPLY WITH THE REQUIREMENTS OF BS EN 13242:2002.

FINAL DEPTH SUBJECT TO SURFACE WATER ATTENUATION REQUIREMENTS

IMPERMEABLE MEMBRANE, 2000 GAUGE POLYTHENE INSTALLED AND JOINTED TO MANUFACTURER'S PRODUCT GUIDANCE

MINIMUM 150mm of 6FS CAPPING MATERIAL. ASSUMES CBR OF 5%, REFER TO TABLE 1 FOR LOWER FORMATION CBR RESULTS.

TENSAR TX 160 (ONLY WHERE FORMATION CBR IS FOUND TO BE 1% OR LESS, REFER TO ENGINEER)

TERRAM 1000 OR OTHER APPROVED.

FORMATION.

NOTE:- ALL BLOCKS TO BE LAID HERRINGBONE PATTERN OR OTHER BOND AS APPROVED. EDGE RESTRAINTS TO BE PROVIDED TO PERIMETER OF ALL BLOCK PAVED AREAS.

POROUS BLOCK PAVED CAR PARK/YARD,
LOAD CATEGORY 4 CONSTRUCTION (0.15 msa),
SCALE 1:20

GENERAL NOTES:

1. EXISTING DRAIN LEVELS TO BE CHECKED PRIOR TO ANY CONSTRUCTION.
2. THIS DRAWING TO BE CHECKED BY CONTRACTOR AGAINST ALL OTHER RELEVANT DRAWINGS AND ANY ERROR OR OMISSION REPORTED TO ENGINEER.
3. PROPOSED SEWERAGE PLANT KLARGESTER BIODISC MODEL BF. OVERALL SIZE 4.345x2.450x2.825 DEEP (PROVISIONAL SUBJECT TO ENVIRONMENT AGENCY CONSENT CONDITIONS) INSTALLATION TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. PROPOSED KLARGESTER SAMPLE CHAMBER AFTER SEWAGE TREATMENT PLANT TO BE 0.550m DIAMETER 0.930m DEEP TYPE SC4A. SEE KLARGESTER DETAIL SHEETS. ALTERNATIVELY SEE SAMPLE CHAMBER DETAIL BELOW.

Notes

1. TO SEWERS FOR ADOPTION 6TH EDITION.
2. ALL SPECIFICATION CLAUSES LISTED REFER TO AFOREMENTIONED DOCUMENT.
3. THIS DRAWING IS INTENDED FOR GUIDANCE ONLY, IS NOT FULLY COMPREHENSIVE AND MUST BE READ IN CONJUNCTION WITH THE ABOVE DOCUMENT, WHICH WILL SUPERSEDE THIS DRAWING IN THE EVENT OF CONFLICT.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
5. ALL MATERIALS FOR USE IN THE CONTRACT MUST BE BS KITEMARKED.
6. THE CONTRACTOR MUST ALLOW WITHIN HIS RATES FOR COMPLIANCE AT ALL TIMES WITH THE 1974 HEALTH AND SAFETY AT WORK ACT AND THE 2015 CDM REGULATIONS.
7. FLOWS IN EXISTING SEWERS SHALL BE MAINTAINED AT ALL TIMES.
8. MANHOLES WITH OUTGOING PIPES GREATER THAN 600mm DIAMETER SHALL BE FITTED WITH SAFETY CHAINS, GUARD BARS OR SIMILAR. THE CONTRACTOR SHALL HOWEVER NOTE THAT THE SAFETY POLICY OF INDIVIDUAL AUTHORITIES MAY REQUIRE SUCH MEASURES ON SMALLER DIAMETER PIPES.
9. ALL LIFTING EYES IN P.C.C. PRODUCTS SHALL BE POINTED SMOOTH AFTER FIXING.
10. CORBELLING OF BRICKWORK SHALL NOT EXCEED 30mm PER COURSE.
11. CUT PIPES TO BE MACHINE CUT AND GROUND SMOOTH.
12. ALL CEMENT AND CONCRETE PRODUCTS TO USE SULPHATE RESISTING CEMENT.
13. ALL PIPEWORK TO HAVE SPIGOT AND SOCKET FLEXIBLE JOINTS UNLESS OTHERWISE SPECIFIED. ALL CLAY PIPES AND FITTINGS SHALL BE TO SPEC CL.4.2.19 (BS65). ALL CONCRETE PIPES AND FITTINGS SHALL BE TO SPEC CL.4.2.20 (BS5911).
14. THE MANHOLE DIAMETER TO LARGEST PIPE DIAMETER RELATIONSHIP IS FOR GUIDANCE ONLY, AND RELATES TO MINIMUM CHAMBER SIZES. INDIVIDUAL MANHOLES MUST ALWAYS BE SIZED TO ACCOMMODATE ALL INCOMING BRANCHES SEPARATELY WITHIN THE AVAILABLE BENCHING WHILST MAINTAINING THE MINIMUM 500x500mm LANDING AREA.

Int. Pipe Dia. (mm)	Ext. Pipe Over Barrel (Bc)	Agg. size for type 'A' bedding material (mm)
150	203	10 or 14
225	286	10,14 or 20
300	375	14,20 or 40
375	457	14,20 or 40
450	540	14,20 or 40
525	622	14,20 or 40
600	705	14,20 or 40
675	787	14,20 or 40
750	870	14,20 or 40
825	952	14,20 or 40
900	1035	14,20 or 40
975	1118	14,20 or 40
1050	1194	14,20 or 40
1125	1295	14,20 or 40
1200	1372	14,20 or 40

TABLE 1:-
ADJUSTMENT TO PAVEMENT DESIGN FOR LOW CBR SUBGRADES

CBR OF SUBGRADE	TOTAL THICKNESS OF CAPPING MATERIAL (mm)
1%	600
2%	350
3%	250
4%	200
5%	150

TABLE 2:-
Laying Course and Jointing Material

The material should comply with the requirements of a material of type 2/6.3 Gc 80/20 according to BS EN 13242:2002. 'Aggregates for unbound and hydraulically bound materials for use in civil engineering works and road construction' as shown in th etable below.

Sieve size (mm)	Percentage Passing (%)
14	100
10	98-100
6.3	80-99
2.0	0-20
1.0	0-5

Typical particle size distribution limits for for laying course material.

TABLE 3:-
Coarse Graded Aggregate (CGA)

CGA should comply with the requirements of BS EN 13242:2002 - 'Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction'. The material should be designated Type 4/20 (4mm minimum and 20mm maximum particle size).

Sieve size (mm)	Percentage Passing (%)
40	100
31.5	98-100
20	90-99
10	25-70
4	0-15
2	0-5

Typical particle size distribution limits for Type 4/20 coarse graded aggregate (CGA)

Rev	Details	Date	Initials
PARAMETER TRADING & MAINTENANCE LTD.		7 Bull Farm Mews Bull Lane Matlock Derbyshire DE4 5NB Tel 01629 55820 Mobile 07990 640523 Email: sean.straw@btinternet.com	
Client		BECKETT JACKSON THOMPSON LTD.	
Project		BADGER FARM WILLOWPIT LANE HILTON	
Title		DRAINAGE CONSTRUCTION DETAILS SHEET 3	
Drawn	Checked	Date	
SMRS	RRS	30/11/18	
Scale	Cad Ref	DW249-030	
Project Ref.		Drawing No.	Rev.
PTM/DW249		032	-