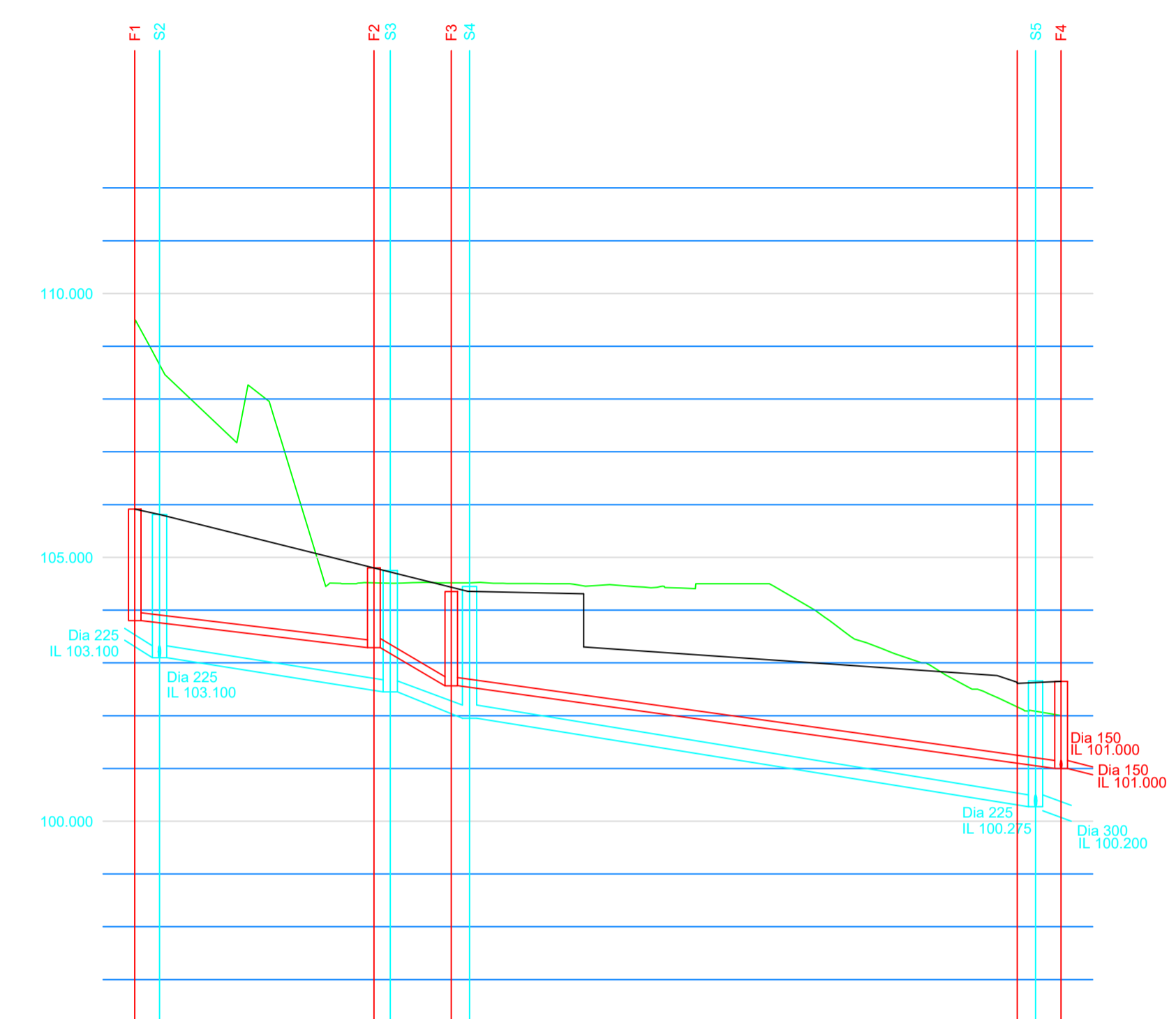


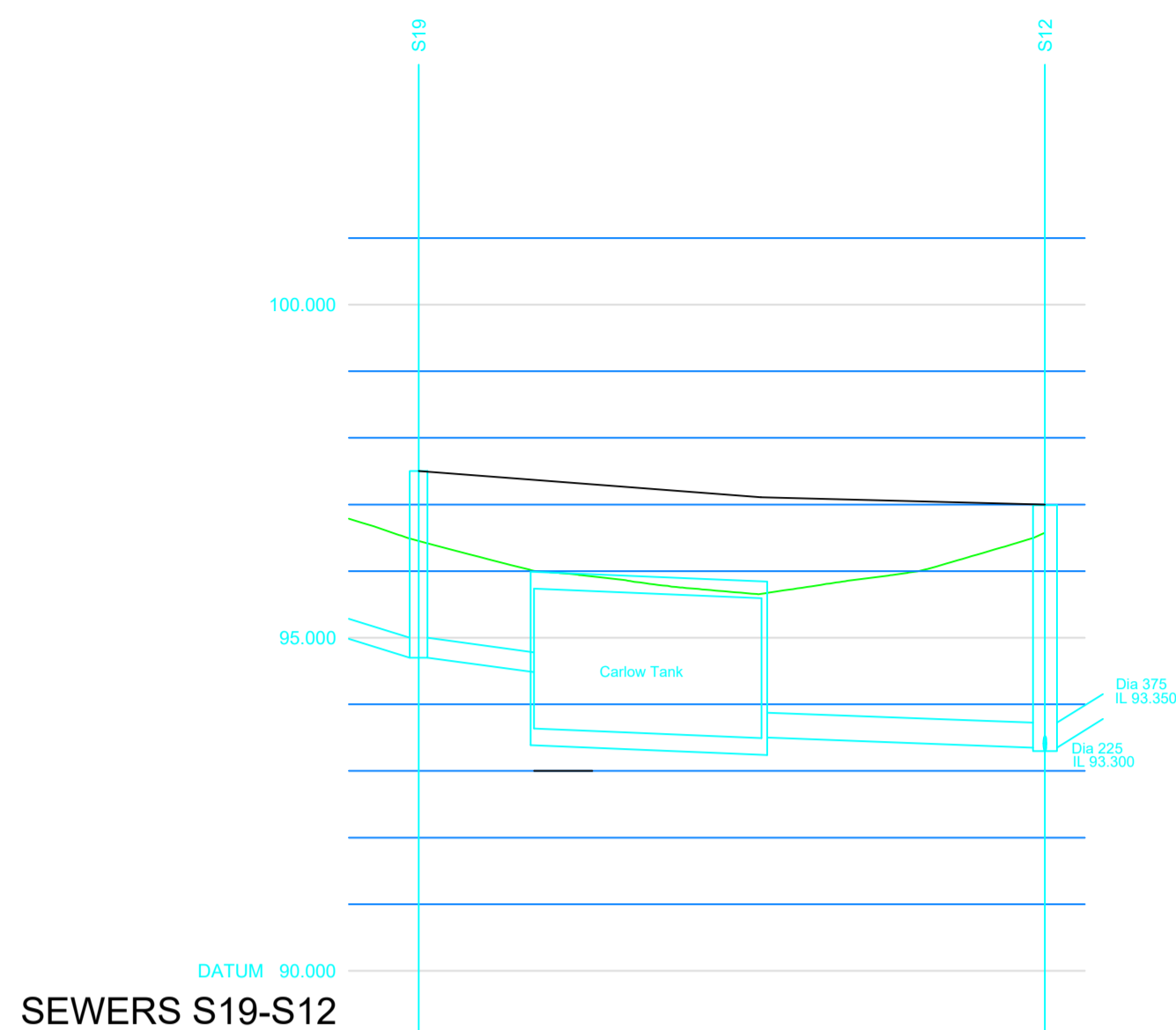
- YORKSHIRE WATER SEWER NOTES**
- All adoptable sewer works and materials to be in accordance with Design and Construction Guidance. The relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and kitemarked.
 - Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BSEN124 with 150mm deep frames in highways.
 - Filled ground must be filled and consolidated under the supervision of and to the satisfaction of Yorkshire Water before any sewer works are carried out.
 - Yorkshire Water is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or indirectly). An alternative method of disposal of the land drainage run-off with therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with the regard to the disposal of the filter drain/land drain run-off.
 - Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a load bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to the Concrete Pipe Systems Association (CPSA), Technical Bulletin issued autumn 2004 for kitemarked cover slab opening sizes. As an alternative 600mm x 600mm access cover slabs are now available (must be kitemarked) and Yorkshire Water would accept without the requirement of the reducing piece.
 - Sulphate resisting cement (C20-DC2) and pre-cast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
 - The adoptable sewers should be located a minimum of 1m and manholes 0.5m from kerb faces and service margins.
 - Sewers must have 5 metres clearance from trees and hedges (please also refer to Figure 2.3 on page 33 in 'Sewers for Adoption' 6th Edition for restrictions on tree planting adjacent to sewers).
 - Sewers to be laid with Class 'S' Bedding (150mm granular bed and surround). Where depth of cover to top of sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular areas), then a concrete slab should be provided above the granular bed and surround.
 - Bedding and backfilling material to conform to the requirement of Water Industry Specification 4-06-02 (Table A2).
 - The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
 - Yorkshire water policy is not to accept Type 'C' brick manholes and 1050mm diameter rings. Instead it is preferred that you use a Type 'B' manhole with 1200mm dia or 1500mm dia rings with the opening sited over the channel where depth of cover to pipe soffit is 1-1.5m.
 - Adoptable plastic sewer pipes to be BSI Kitemarked (certified to WS 4-3-01 and BSEN19476). Adoptable plastic sewer pipes to be laid in 3 metre lengths unless there is a specific operational need to lay longer lengths. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channels in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
 - The minimum crushing strength for clay pipes should be as follows:- 100mm dia 40kN/m, 150mm dia 40kN/m, 225mm 45kN/m and 300mm dia 72kN/m. The minimum crushing strength for concrete pipes should be - (Class 120 to EN 1916/BS5911-1 2002). Plastic pipes should conform to WS 4-35-01 and BSEN19476.
 - Where a B125 cover and frame has been approved, this MUST NOT be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.



SEWERS F1/S2 - F4/S5

GROUND LEVEL	102.388	102.748	102.213	104.519	104.507	104.500	104.479	104.437	104.500
STORMWATER COVER LEVEL	105.813		104.750	104.450					102.657
STORMWATER INVERT	103.100		102.450	101.950					100.275
STORMWATER DETAILS		Pipe 1.001 Dia 225 Circular CLAY 1 in 44	Pipe 1.002 Dia 225 Circular CLAY 1 in 10				Pipe 1.003 Dia 225 Circular CLAY 1 in 32		
STORMWATER LENGTHS		21.875	4.989				53.637		
FOULWATER COVER LEVEL	105.915		104.800	104.350					102.648
FOULWATER INVERT	103.800		103.200	102.555					101.000
FOULWATER DETAILS		Pipe 1.000 Dia 150 Circular CLAY 1 in 44	Pipe 1.001 Dia 150 Circular CLAY 1 in 10				Pipe 1.002 Dia 150 Circular CLAY 1 in 30		
FOULWATER LENGTHS		22.664	7.332				57.788		

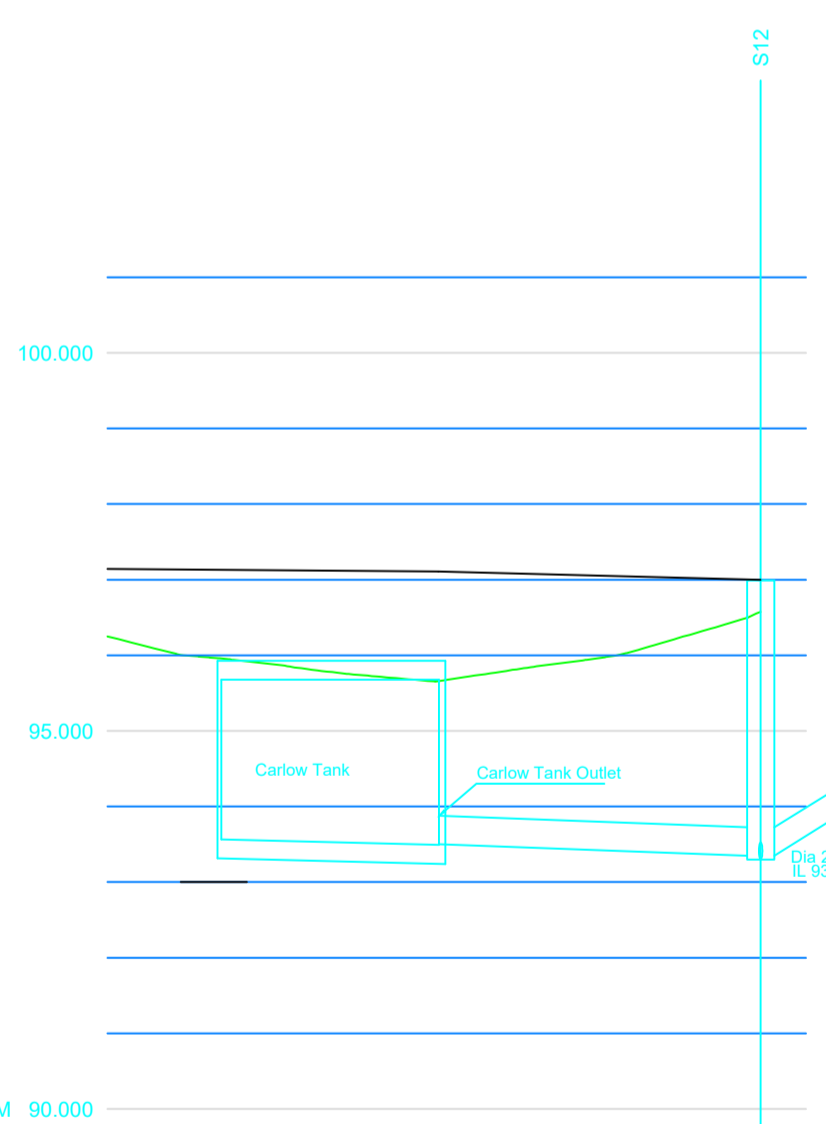
PIPE STRENGTHS 100mm Clay = 40kN/m; 150mm Clay = 40kN/m; 300mm Conc. = 36kN/m; 375mm Conc. = 45kN/m.



SEWERS S19-S12

GROUND LEVEL	97.721	96.141	95.648	95.656	95.720	95.786
STORMWATER COVER LEVEL	97.500	97.250		97.050		96.990
STORMWATER INVERT	94.700	94.700	93.650	93.500	93.500	93.350
STORMWATER DETAILS	Pipe 4.002 Dia 300 Circular CLAY 1 in 43 S BED	Pipe 4.003 Carlow Tank 21 x 14.40 x 2.1m deep @1:200 Falls			Pipe 4.004 Dia 375 Circular CONC 1 in 144 S BED	
STORMWATER LENGTHS	8.662	16.835			21.530	

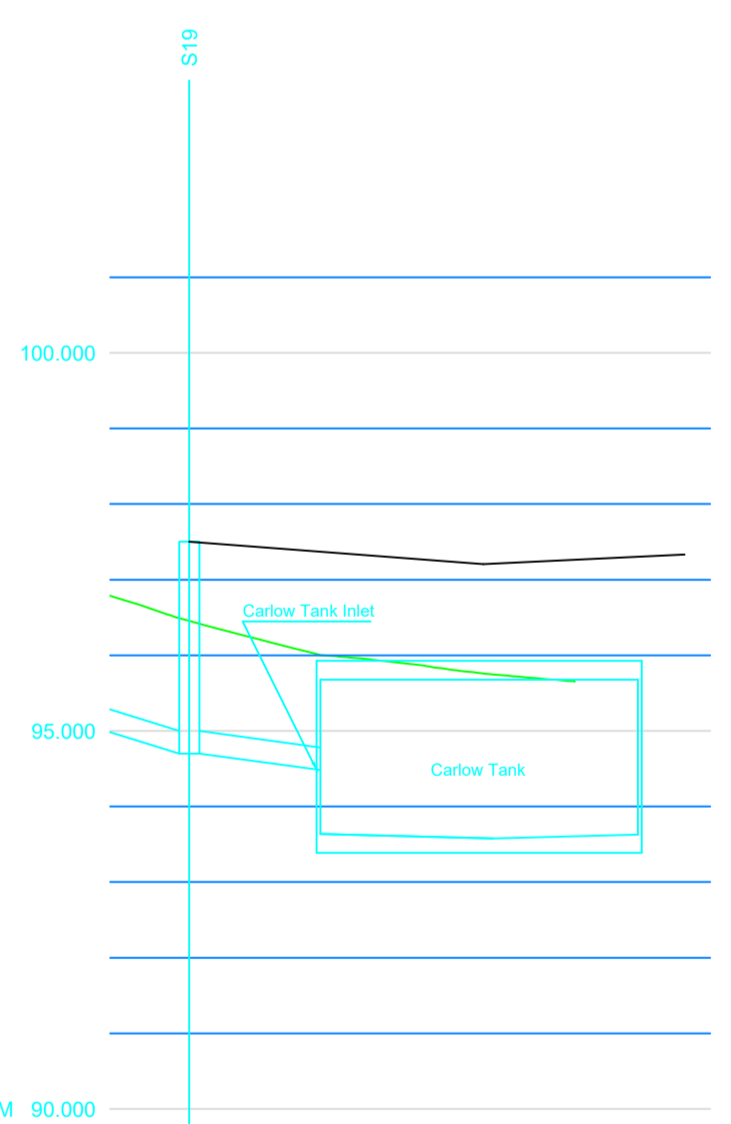
PIPE STRENGTHS 100mm Clay = 40kN/m; 150mm Clay = 40kN/m; 300mm Conc. = 36kN/m; 375mm Conc. = 45kN/m.



CARLOW TANK

GROUND LEVEL	95.648	95.656	95.720	95.786
STORMWATER COVER LEVEL	97.050	97.050		96.990
STORMWATER INVERT	93.575	93.500	93.500	93.350
STORMWATER DETAILS	Pipe 4.003 Carlow Tank 21 x 14.40 x 2.1m deep @1:200 Falls		Pipe 4.004 Dia 375 Circular CONC 1 in 144 S BED	
STORMWATER LENGTHS	14.400		21.530	

PIPE STRENGTHS 100mm Clay = 40kN/m; 150mm Clay = 40kN/m; 300mm Conc. = 36kN/m; 375mm Conc. = 45kN/m.



CARLOW TANK

GROUND LEVEL	97.721	96.141	95.648	95.656
STORMWATER COVER LEVEL	97.500	97.250		97.150
STORMWATER INVERT	94.700	94.700	93.500	93.500
STORMWATER DETAILS	Pipe 4.002 Dia 300 Circular CLAY 1 in 43 S BED	Pipe 4.003 Carlow Tank 21 x 14.40 x 2.1m deep @1:200 Falls		
STORMWATER LENGTHS	8.662		21.000	

PIPE STRENGTHS 100mm Clay = 40kN/m; 150mm Clay = 40kN/m; 300mm Conc. = 36kN/m; 375mm Conc. = 45kN/m.

Checked	1	For 104 Agreement appraisal.	23/01/23
Rev #			

Client
BIG CITY CO. MD

Job Title
**GARDEN HOUSE CLOSE
MONK BRETTON
BARNSELY**

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Drawing Title
HIGHWAYS AND DRAINAGE
**ROAD AND SEWER
LONG SECTIONS
(3 OF 3)**

Scale	Date	Drawn	Checked
1:500H/100V@A1	JAN 2023	HM	JB

Drg No.	Rev
4019/107	1