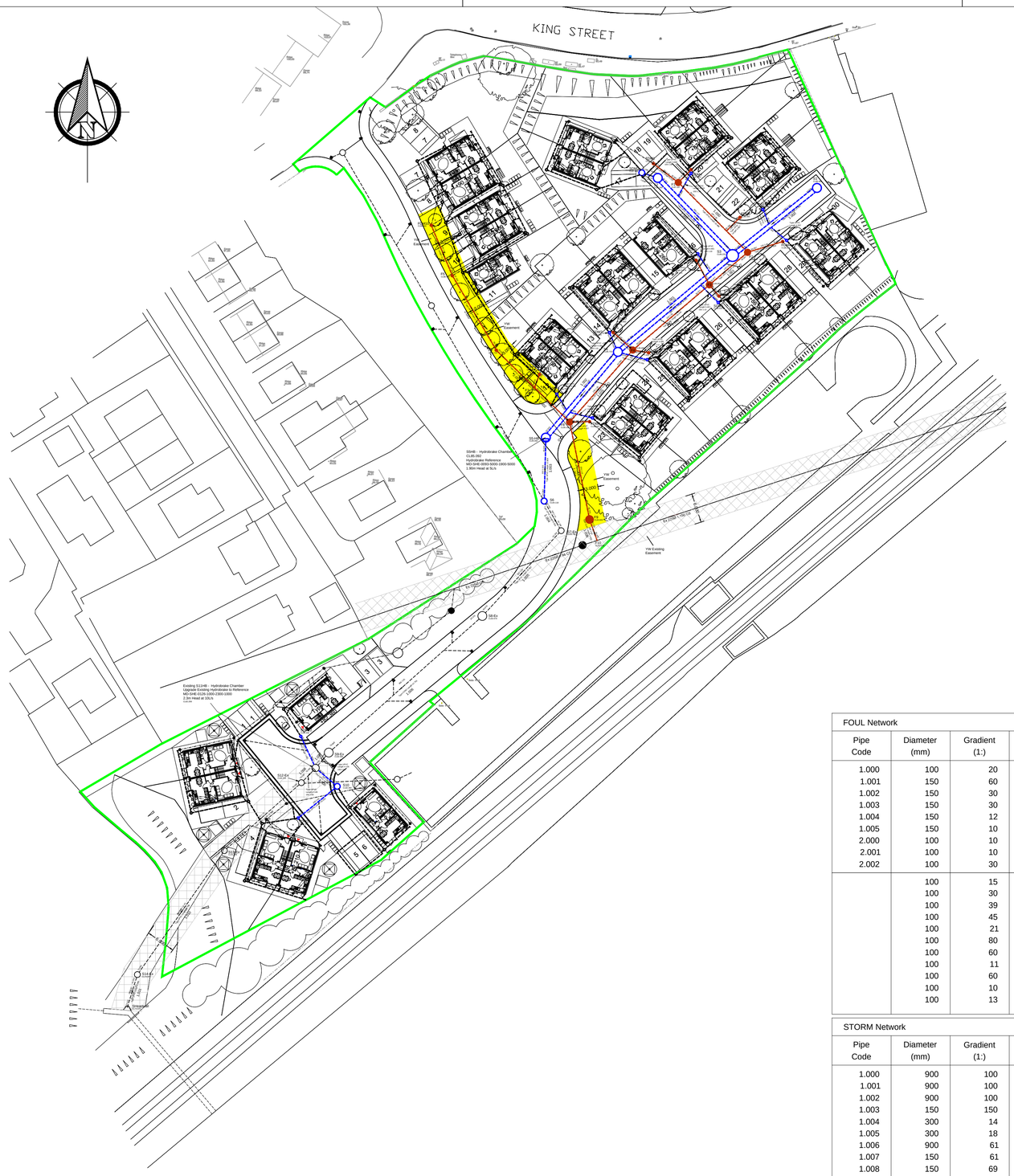


NOTES

1. DO NOT SCALE - Use figured dimensions only.
2. All dimensions shown are in millimetres unless otherwise stated.
3. The Contractor is to verify all dimensions on site before commencing work or preparing shop drawings.
4. This drawing is to be read in conjunction with all Engineers and Architects drawings and specifications.
5. 100 & 150 dia. Vitrified Clay pipes to be a strength of FH40kN/m. & 225 dia. pipes to be a strength of FH45kN/m. to BS. EN295-1, (kitemarked), Hepworth. 225 dia - 1800 dia Concrete pipes to be Class 120 to BS EN 1916:2002.
6. Plastic drainage to be Wavin Plastic Drainage, kitemarked, to BS. 4660:2000 & BS. EN1401-1:1988.
   Plastic structural wall sewer pipes to be Wavin Plastic Drainage to BS. EN13476-1/2 and WIS-4-35-01. Kitemarked.
   - Plastic pipes less than 500mm. dia. shall be a nominal short term ring stiffness not less than 8kN/m². (SN8).
   - Plastic pipes greater than 500mm. dia. shall have a nominal short term ring stiffness not less than 2kN/m². (SN2), unless supported by design calculations.
   - Plastic chambers & rings to BS. EN13598-1and 2. Kitemarked.
   - Drainage pipes to be laid in maximum 3m lengths.
7. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
8. All pipe connections at manholes to be soffit to soffit.
9. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
10. All adoptable sewer works and materials to be in accordance with "Sewer For Adoption 6th Edition", The Relevant British /European and Yorkshire Water's Standards / Requirements / Addendum and KITEMARKED.
11. Manhole Covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in Highways. Refer to manhole schedule for all other Class of manhole covers.
12. Filled ground must be filled and consolidated under supervision and to the satisfaction of YW. before any sewer works are carried out.
13. Yorkshire Water is NOT obliged to accept filter drain / land drainage runoff into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage runoff will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to disposal of the filter drainage / land drainage runoff.
14. 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 600x600mm for the Yorkshire Water specified size. Refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.
15. Sewers must have 5 meters clearance from new trees and hedges and 3m from existing tress. Also refer to SFA 6th Ed Figure 2.3 for restrictions on tree planting adjacent to sewers.
16. Sewers to be laid in Class 'S' bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provided above granular bed and surround. Refer to drainage details.
17. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
18. 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.
19. Yorkshire Water's Policy is not to accept Type 'C' brick manholes and 1050mm dia manhole rings. Instead it is preferred that Type 'B' manholes with 1200mm dia or 1500mm dia rings are used, with the opening sited over the the channel where depth of cover to pipe soffit is 1.0 - 1.5m.
20. Plastic Channel Sections in manholes are not acceptable and clayware is required.
21. All private sewers & manholes to be constructed in accordance with Building Regulations Part H.
    - 100Ø Private Foul Drains to be laid at 1:80 minimum where 1 toilet connected or 1:40 where no toilets are connected. 150Ø sewers are to be laid at a minimum of 1:150.
    - 150Ø Private Surface water drains to be laid at 1:150 minimum.
22. All gully connections to be 150 dia. at 1 : 150 fall.
23. Gully connections to be encased in concrete (ST4) 150th. where depth of cover is less than 1.2m. 18mm. Flexcell board to be provided at each pipe joint.

FOUL Network

Pipe Code	Diameter (mm)	Gradient (1:)	Pipe Type	Pipe Length	Upstream Manhole Number	Upstream Manhole Invert	Upstream Manhole Cover	Downstream Manhole Number	Downstream Manhole Invert	Downstream Manhole Cover
1.000	100	20	UPVC	19.986	F1	85.897	87.197	F2	84.897	86.197
1.001	150	60	UPVC	10.213	F2	84.847	86.197	F3	84.677	86.054
1.002	150	30	UPVC	20.426	F3	84.677	86.054	F4	83.996	85.688
1.003	150	30	UPVC	19.462	F4	83.996	85.688	F8	83.347	85.295
1.004	150	12	UPVC	20.213	F8	83.347	85.295	F9	81.725	83.943
1.005	150	10	CLAY	4.502	F9	81.725	83.943	F10	81.275	83.528
2.000	100	10	UPVC	17.604	F5	87.353	88.476	F6	85.593	86.715
2.001	100	10	UPVC	10.833	F6	85.593	86.715	F7	84.510	85.656
2.002	100	30	UPVC	10.034	F7	84.510	85.656	F8	84.176	85.295
	100	15	UPVC	6.322	FDM1	86.320	87.524	F1	85.897	87.197
	100	30	UPVC	3.689	FDM2	86.020	87.311	F1	85.897	87.197
	100	39	UPVC	3.887	FDM3	85.298	86.593	BRANCH	85.199	86.499
	100	45	UPVC	7.439	FDM4	85.064	86.264	F2	84.897	86.197
	100	21	UPVC	5.678	FDM5	85.000	86.318	F3	84.727	86.054
	100	80	UPVC	3.000	FDM6	84.765	86.050	F3	84.728	86.054
	100	60	UPVC	5.351	FDM7	84.663	85.963	F4	84.574	85.688
	100	11	UPVC	3.266	FDM8	84.343	85.730	F4	84.046	85.688
	100	60	UPVC	4.027	FDM9	84.052	85.352	F8	83.985	85.295
	100	10	UPVC	11.086	FDM10	88.461	89.461	F5	87.352	88.476
	100	13	UPVC	2.870	FDM11	84.738	85.738	F7	84.510	85.656

STORM Network

Pipe Code	Diameter (mm)	Gradient (1:)	Pipe Type	Pipe Length	Upstream Manhole Number	Upstream Manhole Invert	Upstream Manhole Cover	Downstream Manhole Number	Downstream Manhole Invert	Downstream Manhole Cover
1.000	900	100	UPVC	21.961	S1	83.828	86.499	S3	83.608	86.233
1.001	900	100	UPVC	30.445	S3	83.608	86.233	S4	83.304	85.733
1.002	900	100	UPVC	22.745	S4	83.304	85.733	S5-HB	83.076	85.092
1.003	150	150	UPVC	12.909	S5-HB	83.026	85.092	S6	82.940	84.118
1.004	300	14	UPVC	6.934	S6	82.790	84.118	S7-Ex	82.290	83.790
1.005	300	18	UPVC	23.602	S7-Ex	82.290	83.790	S8-Ex	80.970	82.970
1.006	900	61	CONC	41.753	S8-Ex	80.370	82.970	S9-Ex	79.688	82.365
1.007	150	61	UPVC	4.126	S9-Ex	79.688	82.365	S11- HB	79.620	82.299
1.008	150	69	UPVC	4.149	S11- HB	79.620	82.299	S12-Ex	79.560	82.234
1.009	150	12	UPVC	20.868	S12-Ex	79.560	82.234	S13-Ex	77.790	81.709
1.010	150	9	UPVC	30.766	S13-Ex	77.790	81.709	S14-Ex	74.290	74.975
1.011	150	11	UPVC	6.968	S14-Ex	74.290	74.975	SHeadwall	73.672	74.077
2.000	900	37	UPVC	21.900	S2	84.203	87.320	S3	83.608	86.233
3.000	300	60	UPVC	5.754	S10	80.522	82.350	S11- HB	80.426	82.299
	150	10	UPVC	3.613	SDM1	84.815	86.633	BRANCH	84.454	86.349
	150	10	UPVC	4.557	SDM2	84.910	86.274	BRANCH	84.454	86.349
	150	10	UPVC	3.426	SDM3	85.296	87.448	S2	84.953	87.320
	150	10	UPVC	5.742	SDM4	85.374	87.281	BRANCH	84.800	87.036
	150	10	UPVC	4.801	SDM5	84.780	86.371	BRANCH	84.300	86.155
	150	13	UPVC	5.457	SDM6	84.680	86.024	BRANCH	84.269	86.109
	150	10	UPVC	4.284	SDM7	84.481	85.963	S4	84.054	85.733
	150	22	UPVC	6.164	SDM8	84.330	85.710	S4	84.054	85.733
	150	11	UPVC	4.188	SDM9	84.289	85.649	BRANCH	83.895	85.408
	150	49	UPVC	5.185	SDM10	84.000	85.370	BRANCH	83.895	85.408
	300	60	UPVC	10.253	SDM11	80.693	82.198	S10	80.522	82.350
	150	60	UPVC	7.091	SDM12	81.035	82.340	S11-HB	80.917	82.299

Rev	Description	Dr	Ch	Date
P1	PRELIMINARY ISSUE	RKG	JR	03.07.17

Client: D J Atkinson Construction Ltd

Project: PROPOSED RESIDENTIAL DEVELOPMENT
ELSECAR

Title: S104 AGREEMENT

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Approved:
Drawing Number: 1316/32
Rev: P1

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