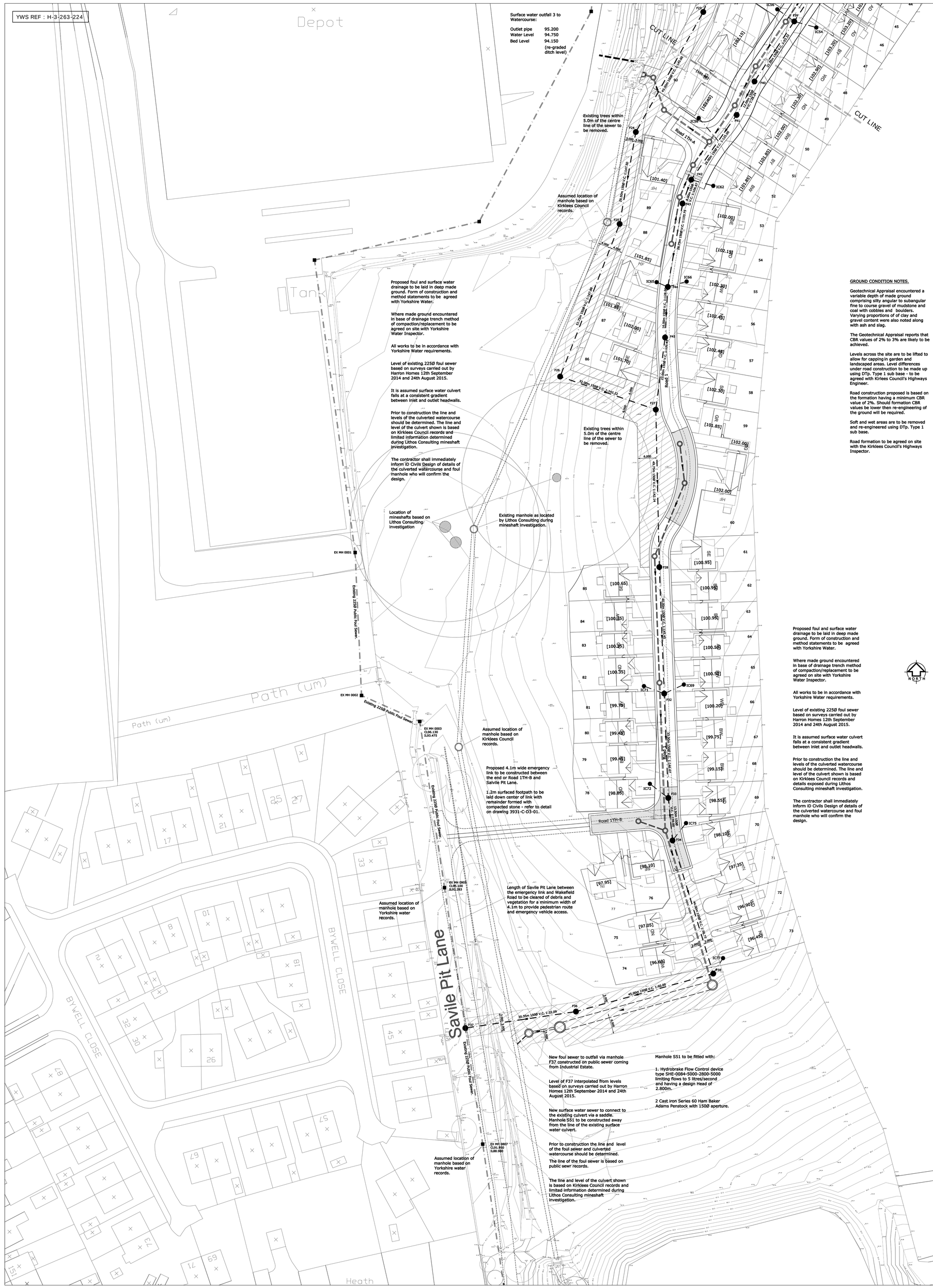
YWS REF : H-3-263-224



FOUL WATER MANHOLE SCHEDULE.

MANHOLE REFERENCE	COVER LEVEL	INVERT LEVEL	DEPTH TO INVERT (m)	DEPTH TO SOFFIT (m)	PIPE SIZE	MANHOLE RING SIZE	MANHOLE TYPE	COVER CLASS
F1	105.575	103.400	2.175	2.025	150Ø	1200Ø	B	D400
F2	105.955	103.175	2.780	2.630	150Ø	1200Ø	B	D400
F3	105.963	103.050	2.913	2.763	150Ø	1200Ø	B	D400
F4	106.133	104.000 (in) 102.700 (in) 102.700 (out)	2.133 3.433 3.433	1.983 3.283 3.283	150Ø 150Ø 150Ø	1350Ø	A	D400
F5	105.609	102.350	3.259	3.109	150Ø	1200Ø	A	D400
F6	105.559	102.250	3.309	3.159	150Ø	1200Ø	A	D400
F7	105.359	102.100	3.259	3.109	150Ø	1200Ø	A	D400
F8	105.816	101.750	4.066	3.916	150Ø	1200Ø	A	D400
F9	106.153	101.600	4.553	4.403	150Ø	1200Ø	A	D400
F10	105.786	101.475	4.311	4.161	150Ø	1200Ø	A	D400
F11	105.283	101.275	4.008	3.858	150Ø	1200Ø	A	D400
F12	104.686	101.025	3.661	3.511	150Ø	1200Ø	A	D400
F13	104.239	100.850	3.389	3.239	150Ø	1200Ø	A	D400
F14	103.239	100.350	2.889	2.739	150Ø	1200Ø	B	D400
F15	101.576	98.550	3.026	2.876	150Ø	1350Ø	B	D400
F16	100.504	97.675	2.829	2.679	150Ø	1200Ø	B	D400
F17	101.371	97.275	4.096	3.946	150Ø	1200Ø	A	D400
F18	101.739	98.650 (in) 97.200 (in) 97.200 (out)	3.089 4.539 4.539	2.939 4.389 4.389	150Ø 150Ø 150Ø	1350Ø	A	D400
F19	101.095	97.050	4.045	3.895	150Ø	1200Ø	A	D400
F20	98.400	96.850	1.550	1.400	150Ø	1200Ø	B1/E	D400
F21	98.725	96.425	2.300	2.150	150Ø	1200Ø	B	D400
F22	99.150	96.100	3.050	2.900	150Ø	1200Ø	B	D400
F23	97.525	95.650	1.875	1.725	150Ø	1200Ø	B	D400
F24	97.000	95.350	1.650	1.500	150Ø	1200Ø	B	D400
F25	97.900	95.150	2.750	2.600	150Ø	1200Ø	B	D400
F26	98.950	94.800	4.150	4.000	150Ø	1200Ø	A	D400
F27	101.625	98.100 (in) 94.575 (in) 94.575 (out)	3.525 7.050 7.050	3.375 6.900 6.900	150Ø 150Ø 150Ø	1800Ø	See drg. 3931-C-04-08	D400
F28	100.748	94.225	6.523	6.373	150Ø	1800Ø	See drg. 3931-C-04-09	D400
F29	106.954	104.800	2.154	2.004	150Ø	1200Ø	B	D400
F30	105.454	103.100	2.354	2.204	150Ø	1200Ø	B	D400
F31	104.968	102.500	2.468	2.318	150Ø	1200Ø	B	D400
F32	99.946	93.950	5.996	5.846	150Ø	1200Ø	A	D400
F33	98.339	93.725	4.614	4.464	150Ø	1200Ø	A	D400
F34	97.665	93.625	4.040	3.890	150Ø	1200Ø	A	D400
F35	95.650	92.850	2.800	2.650	150Ø	1200Ø	B	D400
F36	95.200	92.100	3.100	2.950	150Ø	1200Ø	B	D400
F37	93.450	90.500 (in) 90.425 (in) 90.425 (out) Assumed - T.B.C.	2.950 3.025 3.025	2.800 2.800 2.800	150Ø 225Ø 225Ø	1200Ø	B	D400
F38	104.015	101.650	2.365	2.215	150Ø	1200Ø	B	D400
F39	102.657	100.275	2.382	2.232	150Ø	1200Ø	B	D400
F40	101.751	99.300	2.451	2.301	150Ø	1200Ø	B	D400
F41	101.334	98.875	2.459	2.309	150Ø	1200Ø	B	D400
F42	101.403	98.675	2.728	2.578	150Ø	1200Ø	B	D400
F43	101.500	98.600	2.900	2.750	150Ø	1200Ø	B	D400
F44	101.834	98.400	3.334	3.184	150Ø	1200Ø	A	D400
F45	101.942	98.275	3.667	3.517	150Ø	1200Ø	A	D400

SURFACE WATER MANHOLE SCHEDULE.

MANHOLE REFERENCE	COVER LEVEL	INVERT LEVEL	DEPTH TO INVERT (m)	DEPTH TO SOFFIT (m)	PIPE SIZE	MANHOLE RING SIZE	MANHOLE TYPE	COVER CLASS
S1	106.332	104.250	2.082	1.857	225Ø	1200Ø	B	D400
S2	106.727	103.950	2.777	2.552	225Ø	1200Ø	B	D400
S3	107.326	103.700 (in) 103.625 (out)	3.626 3.701	3.401 3.401	225Ø 300Ø	1500Ø	A	D400
S4	107.421	103.450	3.971	3.671	300Ø	1200Ø	A	D400
S5	106.068	103.200 (in) 103.200 (in) 103.125 (out)	2.858 2.858 2.933	2.558 2.558 2.558	300Ø 300Ø 375Ø	1500Ø	B	D400
S6	105.540	102.900	2.640	2.265	375Ø	1500Ø	B	D400
S7	105.490	102.825	2.665	2.290	375Ø	1500Ø	B	D400
S8	105.325	102.750	2.575	2.200	375Ø	1500Ø	B	D400
S9	105.719	102.525 (in) 102.450 (out)	3.194 3.269	2.819 2.819	375Ø 450Ø	1500Ø	B	D400
S10	106.080	102.350	3.730	3.280	450Ø	1500Ø	A	D400
S11	105.700	102.275	3.425	2.975	450Ø	1500Ø	B	D400
S12	105.215	102.150	3.065	2.615	450Ø	1500Ø	B	D400
S13	104.620	101.950	2.670	2.220	450Ø	1500Ø	B	D400
S14	104.122	101.775	2.347	1.897	450Ø	1500Ø	B	D400
S15	103.273	100.825	2.448	2.298	450Ø	1500Ø	B	D400
S16	101.422	99.075	2.347	1.897	450Ø	1800Ø	B	D400
S17	100.506	98.150 (in) 98.075 (in) 98.075 (out)	2.356 2.431 2.431	1.981 1.981 1.981	375Ø 450Ø 450Ø	1800Ø	B	D400
S18	100.250	97.725	2.525	2.075	450Ø	1500Ø	B	D400
S19	99.500	97.525	1.975	1.525	450Ø	1500Ø	B	D400
S20	98.000	96.775	1.225	0.775	450Ø	1500Ø	B1/E	D400
HW1 Outfall	G.L. 97.500	96.600	0.900	0.450	450Ø	See drg. 3931-C-04-03		
S21	105.515	103.650	1.865	1.565	300Ø	1500Ø	B	D400
S22	105.912	103.525	2.387	2.087	300Ø	1200Ø	B	D400
S23	105.947	103.425	2.522	2.222	300Ø	1200Ø	B	D400
S24	105.786	103.900	1.886	1.661	225Ø	1500Ø	B	D400
S25	105.439	103.500	1.939	1.714	225Ø	1200Ø	B	D400
S26	104.954	102.900	2.054	1.829	225Ø	1200Ø	B	D400
S27	101.867	99.650 (in) 99.525 (out)	2.217 2.292	1.992 1.992	225Ø 300Ø	1200Ø	B	D400
S28	101.358	99.175 (in) 99.100 (out)	2.183 2.258	1.883 1.883	300Ø 375Ø	1500Ø	B	D400
S29	102.965	101.200	1.765	1.615	150Ø	1200Ø	B	D400
S30	102.990	100.975 (in) 100.900 (out)	2.090 2.015	1.940 1.790	150Ø 225Ø	1200Ø 1200Ø	B	D400
S31	101.750	99.800 (in) 97.750 (out)	1.950 4.000	1.725 3.775	225Ø 225Ø	1500Ø	A	D400
S32	97.600	95.950	1.650	1.425	225Ø	1200Ø	B1/E	D400
HW2 Outfall	G.L. 96.550	95.700	0.850	0.625	225Ø	See drg. 3931-C-04-10		
S33	104.455	102.600	1.855	1.630	225Ø	1200Ø	B	D400
S34	103.955	102.050	1.905	1.680	225Ø	1200Ø	B	D400
S35	102.539	100.750 (in) 100.675 (out)	1.789 1.864	1.564 1.564	225Ø 300Ø	1500Ø	B	D400
S36	101.859	99.975	1.884	1.584	300Ø	1200Ø	B	D400
S37	101.345	99.425	1.920	1.620	300Ø	1200Ø	B	D400
S38	101.178	99.200 (in) 99.125 (in) 99.125 (out)	1.978 2.053 2.053	1.753 1.753 1.753	225Ø 300Ø 300Ø	1500Ø	B	D400
S39	100.650	98.200 (in) 96.450 (out)	2.450 4.200	2.150 3.900	300Ø 300Ø	1200Ø	A	D400
S40	96.600	95.400	1.200	0.900	300Ø	1200Ø	B1/E	D400
HW3 Outfall	G.L. 96.250	95.200	1.050	0.750	300Ø	See drg. 3931-C-04-11		
S41	101.639	99.850	1.789	1.564	225Ø	1500Ø	B	D400
S42	101.444	99.650	1.794	1.569	225Ø	1200Ø	B	D400
S43	101.254	99.450	1.804	1.579	225Ø	1200Ø	B	D400
S44	101.409	99.600	1.809	1.584	225Ø	1200Ø	B	D400
S45	101.215	99.400	1.815	1.590	225Ø	1200Ø	B	D400
S46	100.772	99.000	1.772	1.547	225Ø	1200Ø	B	D400
S47	100.034	98.100 (in) 98.025 (out)	1.934 2.009	1.709 1.709	225Ø 300Ø	1200Ø	B	D400
S48	97.794	95.750 (in) 95.675 (in) 95.675 (out)	2.044 2.119 2.119	1.819 1.819 1.819	225Ø 300Ø 300Ø	1500Ø	B	D400
S49	95.250	93.125 (in) 91.025 (out)	2.125 4.225	1.825 1.825	300Ø 2400Ø (Wehoilte HDPE)	120Ø Access shaft.	Refer to Asset International drawing - T.B.C.	D400
S50	94.525	90.900 (in) 90.900 (out)	3.625 3.625	1.225 3.400	2400Ø (Wehoilte HDPE) 600Ø	120Ø Access shaft.	Refer to Asset International drawing - T.B.C.	D400
S51	93.450	90.625 90.625	2.825 2.825	2.225 2.875	600Ø 150Ø	2100Ø	See drg. 3931-C-04-12	D400
S52	97.868	96.050	1.818	1.593	225Ø	1200Ø	B	D400

CONSTRUCTION RISKS

CONSTRUCTION RISKS	MAINTENANCE RISKS	DEMOLITION RISKS
Management of traffic and pedestrians along Owl Lane - widening of existing road and construction of new junction.		No future abnormal demolition risks associated with Roads and Sewers.
Existing live services in vicinity of new junction and widened section of Owl Lane.		
Made ground between 1.3m and 10.6m found during site investigation - danger of collapse of excavations.		
Made ground found to contain contamination and a risk of combustibility - a cover system is required and an agreed remediation Strategy requires implementing.		
Existing mine shafts in southern part of site to be accurately located and treatment agreed with Structural Engineer.		
Elevated gas concentrations of methane and carbon dioxide were recorded during the site investigation. The site is classed as Amber 2 and precautions when working in confined spaces will be required.		
Connecion to manhole on existing foul public sewer.		
Construction of Surface Water Headwall on live watercourse.		
Danger of sewer collapse when operating plant over existing surface water culvert with minimal cover.		
Proposed foul and surface water drainage in made ground - method statements and form of construction to be agreed with Yorkshire Water.		
New services to be laid in made ground - materials and treatment of trenches to be agreed with Service Companies.		

In addition to the hazards/risks normally associated with this type of work detailed on this drawing take note of the above. ID Civils Design are only required to provide information about any significant risks associated with the design.

Health and Safety Notes/CDM Regulations 2007

In line with the above regulations we are obliged to inform the Contractor of the abnormal risks that may be encountered in the construction of these works. As part of the design process all the salient health & safety aspects are given full consideration and these are observed within the designs viewed on this document. Although considerable effort is undertaken to eliminate risks, the very nature of the project gives rise to some hazards and risks.

Significant risks that cannot be eliminated by design and could not be foreseen by a competent contractor are noted in the risk assessment boxes on the drawings.

N O T E S

1. No work should commence on site until written approval is received from Yorkshire Water/Adopting Highway Authority or any relevant Authority. Works undertaken prior to approval are at the Developers risk and ID Civils Design will not be held responsible for subsequent delays in approvals, remedial costs or construction programme delays.
2. All sewer works to be adopted to be in accordance with "Sewers for Adoption" (6th Edition), the relevant British/European and Yorkshire Water's Standards/Requirements/Addendum and "Kitemarked".
3. Manhole covers shall have a minimum clear opening of 600 x 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
4. Bedding and Backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
5. Sewers in the road to have 1.0m minimum clearance and manholes 0.5m minimum clearance from kerbs and service margins.
6. Sewers must have 5 metres clearance from trees and hedges. (refer to Figure 2.3 page 33 "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers).
7. Where depth of cover to top of sewer is less than 1.2m in highways and 1.0m in verges then a reinforced concrete slab is to be provided as protection - see drawing no 3931-C-D4-01 for details.
8. Prior to the commencement of on site works the contractor is to check the location, invert levels, sizes and conditions of manholes, pipes, and any ditches or watercourses in which it is intended to outfall. Any discrepancy is to be reported immediately to ID Civils Design.
9. Prior to construction the actual position and depth of services likely to be affected by the work should be established by means of a hand dig in close liaison with the statutory service authorities. The contractor shall immediately inform ID Civils Design of any services exposed that may affect the design.
10. The Local Authority and statutory service providers are to be notified prior to the commencement of work on site.
11. All highway works to be carried out in accordance with Kirklees Council's specification for Highway Works.

Yorkshire Water Notes.

1. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
2. 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 required and you will have to liaise with the Local authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage runoff.
3. 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 Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued autumn 2004 for Kitemarked cover slab opening sizes.
4. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
5. Sewers must have 5 metres clearance from trees and hedges.please also refer to Figure 2.3 on page 23 "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers.
6. 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. (Ref. S.F.A.6 TABLE 2.4)
7. 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.
8. Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm dia. manhole 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 the depth of cover to pipe soffit is 1-1.5m.
9. The minimum crushing strength for Clay pipes should be as follows:
   150mm dia. 40KN/m2
   225mm dia. 45KN/m2
   300mm dia. 72KN/m2
   The pipe strength for Concrete pipes to be Class 120 to EN 1916 / BS 5911-1 : 2002.

Rev	Description	By	Date
F	Double gully connections linked. Note 9 amended.	DB	14/04/15
E	Plots 44, 47, 51, 63, 81, 111, 112, 122, 154 and 166 changed to a Baybridge House Type.	DB	01/04/16
D	Floor levels confirmed for plots 43-93. Foul run F25-F28 revised and F31-F44 added. S29-HW2, S33-HW3 and S41-S52 added. Manhole schedules revised to suit and note added regarding exising foul sewer and culverted watercourse.	DB	02/10/15
C	Mineshafts indicated. F28 omitted and run F19-EX.MH revised to avoid mineshafts.	DB	17/03/15
B	Gradient and levels revised to F4-F5 and S20-S5. Manhole schedules amended to suit. YW reference added. Note added regarding condition of existing foul manhole.	DB	15/12/14
A	Adoptable foul drainage revised to suit as surveyed outfall level. Note regarding elevated gas levels added to construction risks.	DB	07/10/14

Client:

Harron Homes.

Project Title:

Owl Lane, Dewsbury.

Drawing Title:

1:500 Engineering Layout - Sheet 2.

Scale	Date
1:500 @ A0	17/08/14

Drawing No	Revision	Status
3931-C-D1-02	F	Approval.

LEGEND

- Existing foul public sewer.
- Existing culverted watercourse.
- Existing private surface water drain.
- Proposed foul water manhole and sewer.
- Proposed surface water manhole and sewer.
- Proposed highway drainage and manhole.
- Proposed surface water lateral and demarcation manhole.
- Proposed foul water lateral and demarcation manhole.
- Protected strip or easement.
- Block paving.
- [104.55] Proposed D.P.C. level.

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