YW REF :H-3-xxx-xxx

CONSTRUCTION RISKS		
CONSTRUCTION RISKS	MAINTENANCE RISKS	DEMOLITION RISKS
Collapse of excavations.		
Un-charted buried existing services.		
Working on live sewers.		
Working adjacent to the public highway.		
Working adjacent to a watercourse.		
Potential contamination and asbestos on the site.		
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.		

Surface Water Schedule

Manhole Number	Cover Level	Inverts	Pipe Ø	MH depth to soffit of pipe	MH Ø	MH Type	Cover
S1	52.69	51.34 51.19	150Ø 300Ø (outlet)	1.200	1500Ø	MH B1/E	D 400
E 446722.332 N 404357.109							
S2	50.89	49.22 49.22 49.07 48.92	150Ø 150Ø 300Ø 450Ø (outlet)	1.516	1500Ø	MH B	D 400
E 446681.420 N 404345.940							
S3	50.05	48.39 48.39 48.09 48.09	150Ø 150Ø 450Ø 450Ø (outlet)	1.514	1500Ø	MH B	D 400
E 446696.759 N 404289.838							
S4	49.07	47.09 47.01	450Ø 525Ø (outlet)	1.530	1500Ø	MH B	D 400
E 446715.275 N 404222.248							
S5	48.90	46.79 46.79	525Ø 525Ø (outlet)	1.590	1500Ø	MH B	D 400
E 446717.402 N 404206.390							
S11	51.30	49.95 49.80	150Ø 300Ø (outlet)	1.200	1500Ø	MH B1/E	D 400
E 446623.511 N 404341.513							
S12	51.20	49.76 49.61 49.61	150Ø 300Ø 300Ø (outlet)	1.282	1500Ø	MH B1/E	D 400
E 446622.037 N 404331.118							
S13	50.02	48.51 48.51 48.36 48.21	150Ø 150Ø 300Ø 450Ø (outlet)	1.351	1500Ø	MH B1/E	D 400
E 446642.907 N 404265.670							
S15	48.47	46.43 46.43 46.28	150Ø 150Ø 300Ø (outlet)	2.190	1500Ø	MH B	D 400
E 446633.178 N 404197.887							
S14	48.93	46.04 46.19 46.04	450Ø 300Ø 450Ø (outlet)	2.439	1500Ø	MH B	D 400
E 446650.406 N 404202.180							
S6	49.16	45.82 45.95 45.82	525Ø 450Ø 525Ø (outlet)	2.818	1500Ø	MH B	D 400
E 446677.253 N 404200.663							
S7	46.13	44.755 44.755 44.38 44.38	150Ø 150Ø 525Ø 525Ø (outlet)	1.222	1500Ø	MH B1/E	D 400
E 446683.995 N 404150.657							
S16	44.74	43.295 43.22	150Ø 225Ø (outlet)	1.289	1500Ø	MH B1/E	D 400
E 446649.024 N 404126.260							
S8	44.69	42.63 42.93 42.55	525Ø 225Ø 600Ø (outlet)	1.534	1500Ø	MH B	D 400
E 446678.709 N 404124.891							
S9	44.30	41.90 41.65	600Ø 850Ø (outlet)	1.801	1800Ø	MH B	D 400
E 446742.920 N 404113.037							
S10 (EX)	45.05	40.86	850Ø			EX MH	D 400
E 446767.029 N 404115.507							

Foul Water Schedule

Manhole Number	Cover Level	Inverts	Pipe Ø	MH depth to soffit of pipe	MH Ø	MH Type	Cover
F1	52.61	50.74 50.74	150Ø 150Ø (outlet)	1.722	1200Ø	MH B	D 400
E 446720.655 N 404354.986							
F2	50.85	48.81 48.81 48.51	150Ø 150Ø 150Ø (outlet)	2.19	1200Ø	MH B	D 400
E 446683.537 N 404344.497							
F3	50.04	47.65 47.65 47.65	150Ø 150Ø 150Ø (outlet)	2.235	1200Ø	MH B	D 400
E 446698.803 N 404288.529							
F4	49.04	46.65 46.65	150Ø 150Ø (outlet)	2.239	1200Ø	MH B	D 400
E 446717.231 N 404221.209							
F5	48.92	46.41 46.41	150Ø 150Ø (outlet)	2.357	1200Ø	MH B	D 400
E 446719.584 N 404204.575							
F12	51.34	49.35 49.35	150Ø 150Ø (outlet)	1.841	1200Ø	MH B	D 400
E 446625.298 N 404338.138							
F13	51.16	49.17 49.17 49.17	150Ø 150Ø 150Ø (outlet)	1.843	1200Ø	MH B	D 400
E 446623.897 N 404329.052							
F14	50.02	47.87 47.87 47.87 47.87	150Ø 150Ø 150Ø 150Ø (outlet)	1.999	1200Ø	MH B	D 400
E 446643.907 N 404267.419							
F15	48.95	45.73 45.73 45.73 45.73	150Ø 150Ø 150Ø 150Ø (outlet)	3.075	1200Ø	MH A	D 400
E 446651.931 N 404203.595							
F16	45.26	44.49 44.49	150Ø 150Ø (outlet)	0.622	1200Ø	MH X	D 400
E 446678.163 N 404202.450							
F6	49.20	45.35 44.35 44.35	150Ø 150Ø 150Ø (outlet)	4.696	1200Ø	MH A	D 400
E 446679.692 N 404198.855							
F7	45.99	43.64 43.64 43.64	150Ø 150Ø 150Ø (outlet)	2.208	1200Ø	MH B	D 400
E 446685.563 N 404148.995							
F17	44.71	43.65 43.65	150Ø 150Ø (outlet)	0.908	1200Ø	MH X	D 400
E 446654.634 N 404127.025							
F8	44.69	43.31 43.31 43.31 43.31	150Ø 150Ø 150Ø 150Ø (outlet)	1.231	1200Ø	MH X	D 400
E 446681.572 N 404126.562							
F9	44.22	42.85 42.85	150Ø 150Ø (outlet)	1.220	1200Ø	MH X	D 400
E 446741.060 N 404114.722							
F10	44.61	42.76 42.76	150Ø 150Ø (outlet)	1.709	1200Ø	MH B	D 400
E 446752.929 N 404118.643							
F11 (EX)	45.07	42.70	150Ø			PFIC	D 400
E 446765.111 N 404117.591							



LEGEND

- Existing highway drain.
- Existing foul water sewer.
- Existing foul water rising main.
- Proposed foul water manhole and sewer.
- Proposed foul water lateral and demarcation manhole.
- Proposed foul water rising main.
- Proposed surface water manhole and sewer.
- Proposed surface water lateral and demarcation manhole.
- Proposed surface water rising main.
- Proposed surface water gully.
- Protected strip or easement.
- Development Boundary.

Health and Safety Notes/CDM Regulations 2015

In line with the above regulations we are obliged to inform the Contractor of the significant risks that have been identified during the design process and how 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.

Notes

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. 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.
3. 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
4. The Local Authority and statutory service providers are to be notified prior to the commencement of work on site.
5. All highway works to be carried out in accordance with the Highways Authority specification for Highway Works.
6. Street lighting to be in accordance with the lighting design.
7. 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".
8. 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 the disposal of the filter drain/land drainage runoff.
9. Adoptable sewers should be a minimum of 1.0m and manholes 0.5m from kerb faces and service margins.
10. Sewers must have 5 metres clearance from trees and hedges, any existing trees should be removed and no new trees planted within this zone. Refer to Figure 2.3 on page 23 "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers.
11. 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.
12. 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.
13. 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.
14. 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.
15. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channels in manholes. Plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
16. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
17. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
18. 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)
19. The minimum crushing strength for Clay pipes should be as follows:

    150mm dia. 40KN/m2
    225mm dia. 45KN/m2
    300mm dia. 72KN/m2
20. The pipe strength for Concrete pipes should be Class 120 to EN1916/BS5911-1:2002.
21. Adoptable plastic sewer pipes to be BSI Kitemarked (certified to WIS 4-35-01) and to BS/EN13476).
22. Adoptable plastic sewer pipes to be laid in maximum of 3 metre lengths unless there is a specific operational need to lay longer lengths.
23. Where plastic pipes are installed in the ground prior to getting approval, the Developer must provide a light-line CCTV Survey and report (electronic deflection testing) of the prospectively adoptable sewers which will be at the Developers expense.
24. 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.
25. Bedding and Backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).

DEMARCATION CHAMBER SCHEDULE.

DEMARCATION CHAMBER REFERENCE	SYSTEM	COVER LEVEL	INVERT LEVEL	DEPTH TO INVERT (m)	MANHOLE TYPE	MANHOLE DIAMETER	LATERAL DIAMETER	COVER CLASS	COVER SIZE	OUTGOING PIPE LENGTH (m)	OUTGOING PIPE GRADIENT	OUTGOING PIPE MATERIAL
IC1	SW	51.40	50.34	1.06	W.O.D.U.I.C.	500Ø	150Ø	B125	462Ø	14.2	1:10	V.C.
IC2	FW	51.30	49.73	1.57	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	12.2	1:10	V.C.
IC3	FW	53.30	51.91	1.39	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	11.7	1:10	V.C.
IC4	SW	53.30	51.70	1.60	Type B manhole	1200Ø	150Ø	D400	600x600	10.2	1:20	V.C.
IC5	SW	52.50	51.45	1.38	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	6.6	1:10	V.C.
IC6	FW	52.35	50.79	1.44	W.N.E.I.C.	5000Ø	150Ø	B125	462Ø	5.0	1:10	V.C.
IC7	SW	51.30	50.19	1.11	W.O.D.U.I.C.	500Ø	150Ø	B125	462Ø	9.7	1:10	V.C.
IC8	SW	50.30	48.91	1.39	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	5.2	1:10	V.C.
IC9	FW	50.30	48.34	1.96	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	6.9	1:10	V.C.
IC10	SW	50.40	49.09	1.31	Type B1/E	1200Ø	150Ø	D400	600x600	7.0	1:10	V.C.
IC11	FW	50.30	48.27	2.03	Type B manhole	1200Ø	150Ø	D400	600x600	6.2	1:10	V.C.
IC12	FW	50.05	48.07	1.89	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	6.2	1:10	V.C.
IC13	SW	50.00	48.40	1.60	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	6.0	1:10	V.C.
IC14	SW	49.70	48.00	1.70	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	5.7	1:10	V.C.
IC15	FW	49.70	47.60	2.10	Type B manhole	1200Ø	150Ø	B125	600x600	6.0	1:10	V.C.
IC16	FW	49.75	47.64	2.11	Type B manhole	1200Ø	150Ø	B125	600x600	6.8	1:10	V.C.
IC17	SW	49.56	47.64	1.92	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	3.9	1:10	V.C.
IC18	FW	49.45	46.56	2.89	Type B manhole	1200Ø	150Ø	D400	600x600	8.3	1:10	V.C.
IC19	SW	49.45	47.45	2.00	Type B manhole	1200Ø	150Ø	D400	600x600	6.1	1:10	V.C.
IC20	FW	51.56	49.46	2.10	Type B manhole	1200Ø	150Ø	B125	600x600	8.8	1:80	V.C.
IC21	SW	51.62	50.42	1.20	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	4.7	1:10	V.C.
IC22	FW	51.60	50.07	1.53	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	7.1	1:10	V.C.
IC23	SW	51.50	50.21	1.29	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	4.5	1:10	V.C.
IC24	FW	51.40	49.88	1.52	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	7.0	1:10	V.C.
IC25	SW	50.30	49.06	1.24	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	5.5	1:10	V.C.
IC26	FW	50.55	48.70	1.85	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	8.8	1:10	V.C.
IC27	FW	50.40	48.60	1.80	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	7.3	1:10	V.C.
IC28	SW	50.24	49.28	0.96	W.O.D.U.I.C.	500Ø	150Ø	B125	462Ø	7.7	1:10	V.C.
IC29	SW	49.64	48.51	1.13	W.O.D.U.I.C.	500Ø	150Ø	B125	462Ø	6.1	1:10	V.C.
IC30	FW	49.60	47.08	2.52	Type B manhole	1200Ø	150Ø	B125	600x600	6.2	1:10	V.C.
IC31	FW	49.40	46.79	2.61	Type B manhole	1200Ø	150Ø	D400	600x600	6.5	1:10	V.C.
IC32	SW	49.30	48.00	1.30	W.N.E.I.C.	500Ø	150Ø	D400	462Ø	4.3	1:10	V.C.
IC33	FW	49.75	46.04	3.71	Type A	1200Ø	150Ø	B125	600x600	9.0	1:29	V.C.
IC34	SW	48.40	46.82	1.58	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	9.6	1:80	V.C.
IC35	SW	48.40	46.50	1.90	W.N.E.I.C.	500Ø	150Ø	D400	462Ø	5.3	1:80	V.C.
IC36	FW	49.10	45.83	3.27	Type A	1200Ø	150Ø	B125	600x600	8.6	1:80	V.C.
IC37	FW	49.00	45.66	3.34	Type A	1200Ø	150Ø	B125	600x600	4.5	1:10	V.C.
IC38	SW	48.90	46.73	2.17	Type B manhole	1200Ø	150Ø	D400	600x600	6.0	1:10	V.C.
IC39	FW	47.50	45.32	2.18	Type B manhole	1200Ø	150Ø	B125	600x600	6.5	1:10	V.C.
IC40	SW	46.50	44.44	2.06	Type B manhole	1200Ø	150Ø	B125	600x600	5.9	1:10	V.C.
IC41	FW	46.60	44.22	2.38	Type B manhole	1200Ø	150Ø	B125	600x600	5.8	1:10	V.C.
IC42	SW	46.50	44.44	2.06	Type B manhole	1200Ø	150Ø	B125	600x600	5.9	1:10	V.C.
IC43	SW	45.40	43.57	1.83	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	4.0	1:10	V.C.
IC44	FW	45.00	44.20	0.80	W.O.D.U.I.C.	500Ø	150Ø	B125	462Ø	8.8	1:10	V.C.
IC45	FW	45.20	43.85	1.35	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	10.4	1:52	V.C.
IC46	SW	45.10	44.02	1.08	W.O.D.U.I.C.	500Ø	150Ø	B125	462Ø	7.0	1:10	V.C.
IC47	FW	45.30	43.82	1.48	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	5.6	1:10	V.C.
IC48	SW	45.30	43.59	1.71	W.N.E.I.C.	500Ø	150Ø	B125	462Ø	6.2	1:10	V.C.
IC49	FW	45.80	43.47	2.33	Type B manhole	1200Ø	150Ø	B125	600x600	3.3	1:10	V.C.
IC50	SW	45.80	42.56	3.24	Type B manhole	1200Ø	150Ø	B125	600x600	3.3	1:10	V.C.

W.O.D.U.I.C. = WAVIN Osmaliram Universal Inspection Chamber (up to 1200mm deep).
W.N.E.I.C. = WAVIN NON ENTRY INSPECTION CHAMBER (Up to 2000mm deep)

REFER TO ID CIVILS DESIGN DRAWING 4759-C-D4-02 FOR DETAILS OF TYPE B MANHOLE.

Rev	Description	By	Date
A	Demarcation chamber schedule updated	CR	28.10.19

Client:

Countryside Properties

Project Title:

Goldthorpe

Drawing Title:

S104 Agreement Layout

Scale	Date
1:500 @ A0	16.10.19

Drawing No	Revision	Status
5003-C-D6-01	A	A

ID Civils Design Consulting Engineers

Geo Structures Civils

North East & Yorkshire:
Aske Stables, Aske, Richmond, North Yorkshire, DL10 5HG
t: 01748 889015
f: 01565 740263

North West & Midlands:
Caledonian House, Tatton Street, Knutsford, Cheshire, WA16 6AG
t: 01565 755557
f: 01565 740263