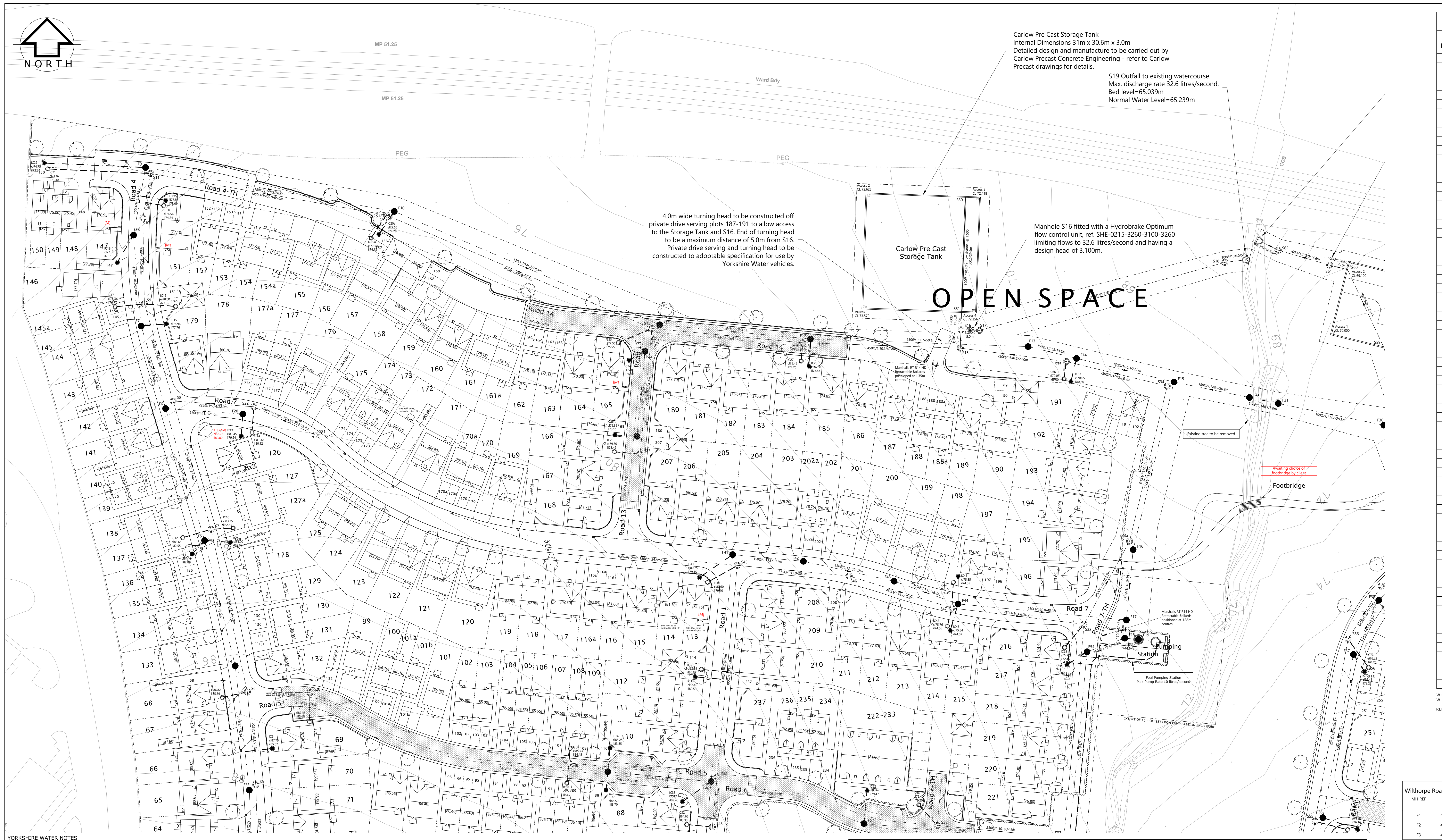
NORTH
Carlow Pre Cast Storage Tank
Internal Dimensions 31m x 30.6m x 3.0m
Detailed design and manufacture to be carried out by Carlow Precast Concrete Engineering - refer to Carlow Precast drawings for details.
S19 Outfall to existing watercourse.
Max. discharge rate 32.6 litres/second.
Bed level=65.039m
Normal Water Level=65.239m
4.0m wide turning head to be constructed off private drive serving plots 187-191 to allow access to the Storage Tank and S16. End of turning head to be a maximum distance of 5.0m from S16. Private drive serving and turning head to be constructed to adoptable specification for use by Yorkshire Water vehicles.
Manhole S16 fitted with a Hydrobrake Optimum flow control unit, ref. SHE-0215-3260-3100-3260 limiting flows to 32.6 litres/second and having a design head of 3.100m.
Carlow Pre Cast Storage Tank
OPEN SPACE
Road 4-TH
Road 14
Road 13
Road 1
Road 5
Road 6
Road 6-TH
Road 7
Footbridge
Pumping Station
Existing tree to be removed
Awaiting choice of footbridge by client
MP 51.25
Ward Bdy
PEG

LEGEND

- Existing combined public sewer.
- Existing combined public sewer (to be removed/grouted up).
- Proposed combined manhole and sewer.
- Proposed foul water manhole and sewer.
- Proposed foul water rising main.
- Proposed surface water manhole and sewer.
- Proposed surface water rising main.
- Proposed surface water lateral and demarcation manhole.
- Proposed foul water lateral and demarcation manhole.
- Protected strip or easement.

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
10. Pipes up to and including 300mmØ to be clay and pipes greater than 300Ø to be concrete with bed and surround as detailed on the longitudinal sections.

CONSTRUCTION RISKS

CONSTRUCTION RISKS	MAINTENANCE RISKS	DEMOLITION RISKS
Collapse of excavations.	Caution should be exercised when working in and adjacent to the surface water storage tank.	No future abnormal demolition risks associated with Roads and Sewers.
Un-charted buried existing services.		
Working on live sewers.		
Working adjacent to the public highway.		
Working within existing watercourses.		

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.

Wilthorpe Road SWS Manhole Schedule Network 1

MH REF	EASTING	NORTHING	MANHOLE TYPE	MANHOLE SIZE	COVER TYPE	COVER LEVEL	INVERT LEVEL	DEPTH (m)	PIPES IN			DEPTH IN BACKDROP	PIPES OUT		
									PIPE No	IL	DIAMETER		PIPE No	IL	DIAMETER
S1	432998.923	407934.366	B1/E	1500	D400	92.354	91.004	1.200					1.000	91.004	150
S2	433000.479	407950.780	B1/E	1200	D400	91.571	90.216	1.130	1.000	90.291	150		1.001	90.216	225
S3	433009.702	407959.299	B1/E	1500	D400	91.223	89.673	1.325	1.001	89.673	225		1.002	89.673	225
S4	433001.233	407976.307	B1/E	1500	D400	90.056	88.602	1.229	1.002	88.602	225		1.003	88.602	225
S5	433000.346	408002.210	B1/E	1200	D400	88.221	86.651	1.345	1.003	86.651	225		1.004	86.651	225
S20	433015.060	408027.241	B1/E	1500	D400	86.609	84.911	1.473					2.000	84.911	225
S6	432998.074	408027.438	B	1500	D400	86.586	84.635	1.651	1.004	84.710	225		1.005	84.635	300
									2.000	84.709	225				
S7	432988.203	408071.605	B1/E	1500	D400	83.559	82.016	1.243	1.005	82.016	300		1.006	82.016	300
S21	433016.480	408097.237	B1/E	1200	D400	81.820	80.470	1.200					3.000	80.738	150
S22	432999.833	408104.901	B1/E	1500	D400	80.915	79.490	1.200	3.000	79.565	150		3.001	79.490	225
S8	432977.901	408106.473	B1/E	1500	D400	80.459	78.979	1.180	1.006	78.979	300		1.007	78.979	300
									3.001	79.054	225				
S9	432970.109	408132.847	B	1500	D400	78.180	76.362	1.518	1.007	76.362	300		1.008	76.362	300
S10	432969.693	408156.206	B	1500	D400	76.511	73.951	2.185	1.008	74.026	300		1.009	73.951	375
S11	432971.827	408168.282	A	1800	D400	76.203	72.650	3.103	1.009	72.725	375		1.010	72.650	450
S12	433035.835	408156.971	A	1500	D400	76.748	72.488	3.810	1.010	72.488	450		1.011	72.488	450
S23	433104.717	408092.016	B	1500	D400	79.577	77.722	1.630					4.000	77.722	225
S13	433107.955	408126.165	A	1800	D400	77.276	72.292	4.534	1.011	72.292	450	2.000	1.012	72.292	450
									4.000	74.292	225				
S14	433148.879	408122.298	A	1800	D400	75.152	71.613	3.089	1.012	71.613	450		1.013	71.613	450
S24	433146.994	407763.423	B1/E	1200	D400	92.251	90.897	1.204					5.000	90.897	150
S25	433151.172	407807.475	B1/E	1500	D400	88.781	87.356	1.200	5.000	87.431	150		5.001	87.356	225
S36	433199.179	407834.841	B1/E	1500	D400	84.448	83.098	1.125					6.000	83.098	225
S26	433154.172	407839.109	A	1500	D400	87.537	82.567	4.670	5.001	84.178	225	1.611	5.002	82.567	300
									6.000	82.642	225				
S27	433160.780	407908.774	B	1500	D400	84.945	82.202	2.368	5.002	82.277	300		5.003	82.202	375
S37	433154.794	407931.041	B1/E	1200	D400	84.499	82.715	1.484					7.000	82.715	300
S28	433159.489	407925.192	B	1800	D400	84.482	82.027	2.005	5.003	82.102	375		5.004	82.027	450
									7.000	82.177	300				
S29	433175.043	407932.910	B	1500	D400	83.491	81.087	1.954	5.004	81.087	450		5.005	81.087	450
S30	433185.716	407934.886	B	1500	D400	82.723	80.499	1.774	5.005	80.499	450		5.006	80.499	450
S38	433219.848	407926.089	B	1500	D400	80.267	77.913	2.129					8.000	77.913	225
S31	433214.510	407932.155	B	1800	D400	80.702	77.532	2.645	5.006	77.607	450		5.007	77.532	525
									8.000	77.832	225				
S39	433185.402	407991.139	B	1500	D400	79.878	77.933	1.795					9.000	77.933	150
S32	433219.795	407987.878	B1/E	1800	D400	75.773	74.198	1.050	5.007	74.198	525		5.008	74.198	525
									9.000	74.573	150				
S40	433047.796	407950.779	B	1500	D400	90.786	88.850	1.711					10.000	88.850	225
S41	433107.012	407945.163	B1/E	1200	D400	86.406	85.220	0.961	10.000	85.220	225		10.001	85.220	225
S42	433120.568	407950.929	B1/E	1500	D400	85.756	84.516	1.015	10.001	84.516	225		10.002	84.516	225
S43	433124.345	407990.750	B1/E	1500	D400	84.394	82.925	1.244	10.002	82.925	225		10.003	82.925	225
S48	433085.350	408008.130	B1/E	1500	D400	85.549	84.323	1.001					11.000	84.323	225
S44	433125.631	408004.309	B	1500	D400	83.764	81.820	1.644	10.003	81.895	225		10.004	81.820	300
									11.000	81.895	225				
S49	433079.715	408066.701	B1/E	1200	D400	82.099	80.749	1.200					12.000	80.749	150
S45	433131.085	408061.816	B1/E	1500	D400	80.018	78.443	1.200	10.004	78.518	300		10.005	78.443	375
									12.000	78.668	150				
S46	433161.518	408058.921	B1/E	1500	D400	77.826	76.176	1.200	10.005	76.251	375		10.006	76.176	450
S47	433189.380	408050.229	B1/E	1800	D400	75.443	73.769	1.224	10.006	73.769	450		10.007	73.769	450
S33	433225.289	408045.811	B	1800	D400	73.518	71.138	1.780	5.008	71.213	525		5.009	71.138	600
									10.007	71.288	450				
S33a	433237.624	408068.386	A	1800	D400	72.000	67.725	3.675	5.009	69.724	600	1.999	5.010	67.725	600
S34	433247.865	408110.527	B	1800	D400	69.750	67.191	1.809	5.010	67.341	600		5.011	67.191	750
S35	433220.445	408117.190	B	1800	D400	70.000	67.132	2.118	5.011	67.132	750		5.012	67.132	750
S15	433191.679	408120.812	A	1800	D400	71.957	67.087	4.120	1.013	67.387	450		1.014	67.087	750
									5.012	67.087	750				
S50	433193.066	408160.788	Refer to Carlow Precast drawings for details of the access chambers to the storage tank.			70.659	66.697	3.963					13.000	66.697	Carlow Tank
S51	433192.026	408130.806	Refer to Carlow Precast drawings for details of the access chambers to the storage tank.			71.523	66.637	3.686	13.000	66.637	Carlow Tank		13.001	66.637	1200
S16	433191.852	408125.809	Hydrobrake flow control chamber. Refer to drawing 4015-C-D4-03 for details.			71.857	66.537	5.020	13.001	66.587	1200		1.015	66.537	300
									1.014	66.587	750				
S17	433196.849	408125.636	A	1200	D400	71.449	66.512	4.637	1.015	66.512	300		1.016	66.512	300
S18	433263.504	408144.121	B1/E	1200	D400	66.989	65.789	0.900	1.016	65.789	300		1.017	65.789	300
S19	433268.467	408144.723	Surface Water Outfall Refer to drawing 4015-C-D4-06 for details.			66.759			1.017	65.539	300				

DEMARCATION CHAMBER SCHEDULE

CHAMBER REFERENCE	SYSTEM	COVER LEVEL	INVERT LEVEL	DEPTH TO INVERT (m)	MANHOLE TYPE	LATERAL DIAMETER	COVER CLASS	OUTGOING PIPE LENGTH (m)	OUTGOING PIPE GRADIENT	OUTGOING PIPE MATERIAL
IC1	SW	92.96	91.76	1.20	TYPE L	150Ø	B125	6.00	1:28	UPVC
IC2	FW	91.50	90.10	1.40	W.N.E.I.C.	150Ø	B125	9.00	1:10	UPVC
IC3	SW	91.40	90.20	1.20	W.O.D.U.I.C.	150Ø	B125	7.50	1:17	UPVC
IC4	SW	90.60	89.40	1.20	W.O.D.U.I.C.	150Ø	B125	7.50	1:10	UPVC
IC5	FW	90.65	89.45	1.20	W.O.D.U.I.C.	150Ø	B125	8.00	1:10	UPVC
IC6	FW	87.45	85.67	1.78	W.N.E.I.C.	150Ø	B125	7.50	1:80	UPVC
IC7	SW	87.15	85.68	1.47	W.N.E.I.C.	150Ø	B125	8.00	1:10	UPVC
IC8	SW	86.82	85.89	0.93	W.O.D.U.I.C.	150Ø	B125	7.00	1:10	UPVC
IC9	FW	84.00	82.80	1.20	TYPE L	150Ø	B125	7.00	1:78	UPVC
IC10	SW	83.75	82.55	1.20	TYPE L	150Ø	B125	6.00	1:11	UPVC
IC11	FW	84.13	82.89	1.24	W.N.E.I.C.	150Ø	B125	5.00	1:10	UPVC
IC12	SW	83.65	82.55	1.10	TYPE L	150Ø	B125	8.00	1:15	UPVC
IC13	FW	81.45	79.64	1.81	W.N.E.I.C.	150Ø	B125	7.40	1:10	UPVC
IC14	SW	81.32	80.12	1.20	W.O.D.U.I.C.	150Ø	B125	7.00	1:13	UPVC
IC15	FW	78.96	77.76	1.20	W.O.D.U.I.C.	150Ø	B125	6.80	1:14	UPVC
IC16	SW	78.60	77.35	1.25	TYPE L	150Ø	B125	8.50	1:10	UPVC
IC17	SW	78.34	76.77	1.57	TYPE L	150Ø	B125	8.00	1:31	UPVC
IC18	FW	77.30	76.10	1.20	W.O.D.U.I.C.	150Ø	B125	8.60	1:10	UPVC
IC19	FW	76.56	73.09	3.47	TYPE L	150Ø	B125	7.00	1:10	UPVC
IC20	SW	76.56	74.24	2.32	TYPE L	150Ø	B125	5.00	1:10	UPVC
IC19a	SW	77.54	74.73	2.81	TYPE L	150Ø	B125	7.50	1:10	UPVC
IC20a	FW	77.55	74.28	3.27	TYPE L	150Ø	B125	7.50	1:10	UPVC
IC21	SW	74.87	73.30	1.57	TYPE L	150Ø	B125	28.00	1:80	UPVC
IC22	FW	74.75	72.84	1.91	TYPE L	150Ø	B125	27.50	1:80	UPVC
IC23	SW	77.55	75.55	2.00	W.N.E.I.C.	150Ø	B125	10.00	1:10	UPVC
IC24	FW	77.85	76.12	1.73	W.N.E.I.C.	150Ø	B125	5.00	1:10	UPVC
IC25	FW	79.35	78.15	1.20	W.O.D.U.I.C.	150Ø	B125	6.00	1:21	UPVC
IC26	SW	79.80	78.49	1.31	TYPE L	150Ø	B125	7.00	1:10	UPVC
IC27	SW	75.45	74.25	1.20	TYPE L	150Ø	B125	5.00	1:10	UPVC
IC28	FW	75.00	73.87	1.13	W.O.D.U.I.C.	150Ø	B125	7.50	1:10	UPVC
IC29	SW	90.20	89.05	1.15	TYPE L	150Ø	B125	7.70	1:62	UPVC
IC30	FW	87.15	84.84	2.31	TYPE L	150Ø	B125	7.75	1:10	UPVC
IC31	SW	86.65	85.45	1.20	W.O.D.U.I.C.	150Ø	B125	10.00	1:12	UPVC
IC32	SW	84.65	83.33	1.32	W.N.E.I.C.	150Ø	B125	7.00	1:10	UPVC
IC33	FW	84.60	83.40	1.20	W.O.D.U.I.C.	150Ø	B125	9.50	1:10	UPVC
IC34	SW	85.90	84.70	1.20	TYPE L	150Ø	B125	5.50	1:18	UPVC
IC35	SW	85.65	84.45	1.20	TYPE L	150Ø	B125	4.00	1:77	UPVC
IC36	FW	85.25	83.85	1.40	W.N.E.I.C.	150Ø	B125	6.50	1:10	UPVC
IC37	FW	85.50	83.70	1.80	W.N.E.I.C.	150Ø	B125	5.00	1:11	UPVC
IC38	FW	82.40	80.59	1.81	W.N.E.I.C.	150Ø	B125	7.00	1:10	UPVC
IC39	SW	82.05	80.85	1.20	TYPE L	150Ø	B125	7.00	1:13	UPVC
IC40	SW	80.60	79.40	1.20	W.N.E.I.C.	150Ø	B125	9.26	1:13	UPVC
IC41	FW	80.75	79.15	1.60	W.N.E.I.C.	150Ø	B125	11.00	1:10	UPVC
IC42	SW	75.76	74.56	1.20	TYPE L	150Ø	B125	5.00	1:10	UPVC
IC43	FW	75.84	74.07	1.77	TYPE L	150Ø	B125	7.50	1:10	UPVC
IC44	SW	75.55	74.35	1.20	TYPE L	150Ø	B125	7.00	1:25	UPVC
IC45	FW	75.55	74.05	1.50	TYPE L	150Ø	B125	7.50	1:10	UPVC
IC46	FW	89.03	87.10	1.93	W.N.E.I.C.	150Ø	B125	5.75	1:29	UPVC
IC47	SW	89.10	87.15	1.95	W.N.E.I.C.	150Ø	B125	9.00	1:76	UPVC
IC48	FW	85.05	83.39	1.66	W.N.E.I.C.	150Ø	B125	7.50	1:10	UPVC
IC49	SW	84.96	83.76	1.20	W.O.D.U.I.C.	150Ø	B125	6.00	1:10	UPVC
IC50	SW	84.66	83.46	1.20	W.O.D.U.I.C.	150Ø	B125	5.00	1:17	UPVC
IC51	FW	84.65	83.39	1.26	W.N.E.I.C.	150Ø	B125	7.50	1:10	UPVC
IC52	FW	87.89	85.89	2.00	TYPE L	150Ø	B125	7.00	1:10	UPVC
IC53	SW	87.80	86.00	1.80	TYPE L	150Ø	B125	7.50	1:10	UPVC
IC54	SW	85.09	83.15	1.94	W.N.E.I.C.	150Ø	B125	7.60	1:11	UPVC
IC55	FW	84.95	83.75	1.20	W.O.D.U.I.C.	150Ø	B125	10.00	1:10	UPVC
IC56	FW	84.65	83.15	1.50	W.N.E.I.C.	150Ø	B125	8.50	1:10	UPVC
IC57	SW	84.65	83.40	1.25	W.N.E.I.C.	150Ø	B125	8.00	1:15	UPVC
IC58	SW	79.22	78.24	0.98	TYPE L	150Ø	B125	25.50	1:100	UPVC
IC59	FW	79.25	77.93	1.32	TYPE L	150Ø	B125	28.00	1:80	UPVC
IC60	FW	80.67	77.95	2.72	TYPE L	150Ø	B125	7.50	1:10	UPVC
IC61	SW	80.84	78.40	2.44	TYPE L	150Ø	B125	5.00	1:10	UPVC
IC62	FW	80.67	79.47	1.20	W.O.D.U.I.C.	150Ø	B125	9.00	1:68	UPVC
IC63	SW	79.40	78.20	1.20	W.O.D.U.I.C.	150Ø	B125	7.50	1:28	UPVC
IC64	FW	74.15	72.80	1.35	W.N.E.I.C.	150Ø	B125	6.50	1:22	UPVC
IC65	SW	74.05	72.45	1.60	W.N.E.I.C.	150Ø	B125	7.50	1:10	UPVC
IC66	SW	70.05	69.00	1.05	W.O.D.U.I.C.	150Ø	B125	4.75	1:10	UPVC
IC67	FW	70.05	68.80	1.70	W.N.E.I.C.	150Ø	B125	6.50	1:69	UPVC

W.O.D.U.I.C. = WAVIN OsmaDrain 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 4015-C-D4-02 FOR DETAILS OF TYPE L MANHOLE.

Wilthorpe Road FWS Manhole Schedule

MH REF	EASTING	NORTHING	MANHOLE TYPE	MANHOLE SIZE	COVER TYPE	COVER LEVEL	INVERT LEVEL	DEPTH (m)	PIPES IN			DEPTH IN BACKDROP	PIPES OUT		
									PIPE No	IL	DIAMETER		PIPE No	IL	DIAMETER
F1	433007.833	407959.479	B	1200	D400	91.198	89.223	1.825					1.000	89.223	150
F2	432999.509	407977.274	B	1200	D400	90.011	88.152	1.709	1.000	88.152	150		1.001	88.152	150
F3	432998.612	408000.757	B	1200	D400	88.285	86.201	1.934	1.001	86.201	150		1.002	86.201	150
F4	432994.772	408034.540	B	1200	D400	86.096	84.185	1.761	1.002	84.185	150		1.003	84.185	150
F5	432986.458	408068.576	B	1500	D400	83.697	81.566	1.981	1.003	81.566	150		1.004	81.566	150
F20	432996.816	408102.916	B	1200	D400	80.905	79.040	1.715					2.000	79.040	150
F6	432975.869	408104.418	B	1200	D400	80.639	78.529	1.960	1.004	78.529	150		1.005	78.529	150
									2.000	78.529	150				
F7	432969.248	408126.831	B	1200	D400	78.707	76.192	2.365	1.005	76.192	150		1.006	76.192	150
F8	432967.167	408151.532	B	1500	D400	76.809	73.713	2.946	1.006	73.713	150		1.007	73.713	150
F9	432970.414	408169.903	A	1200	D400	76.114	72.500	3.464	1.007	72.500	150		1.008	72.500	150
F10	433037.959	408157.966	A	1200	D400	76.657	72.038	4.469	1.008	72.038	150		1.009	72.038	150
F21	433103.872	408096.881	B1/E	1200	D400	79.212	77.862	1.200					3.000	77.862	150
F22	433106.060	408119.952	A	1200	D400	77.538	73.825	3.563	3.000	75.545	150	1.720	3.001	73.825	150
F11	433110.053	408127.172	A	1200	D400	77.211	71.500	5.561	1.009	71.500	150	1.500	1.010	71.500	150
									3.001	73.000	150				
F12	433150.971	408123.305	A	1200	D400	74.980	71.200	3.630	1.010	71.200	150		1.011	71.200	150
F13	433210.072	408121.254	B1/E	1200	D400	71.150	70.028	0.972	1.011	70.028	150		1.012	70.028	150
F14	433223.245	408118.054	B1/E	1200	D400	70.000	68.706	1.144	1.012	68.706	150		1.013	68.706	150
F23	433490.128	408056.125	B	1200	D400	70.229	68.537	1.542					4.000	68.537	150
F24	433463.249	408058.674	B	1200	D400	70.961	68.200	2.612	4.000	68.199	150		4.001	68.199	150
F25	433441.011	408057.587	A	1200	D400	71.599	67.977	3.472	4.001	67.976	150		4.002	67.976	150
F33	433435.592	408094.932	B	1200	D400	70.128	68.450	1.528					5.000	68.450	150
F34	433434.164	408076.234	B	1200	D400	71.232	68.200	2.882	5.000	68.200	150		5.001	68.200	150
F26	433429.414	408061.217	A	1200	D400	71.909	67.855	3.904	4.002	67.854	150		4.003	67.854	150
									5.001	67.855	150				
F27	433398.379	408070.927	A	1200	D400	72.858	67.530	5.178	4.003	67.529	150		4.004	67.529	150
F28	433339.291	408069.351	Refer to drawing no. 4015-C-D4-09 for details.			74.507	66.939	7.418	4.004	66.938	150		4.005	66.938	150
F35	433285.312	407967.725	B	1200	D400	78.201	76.575	1.476					6.000	76.575	150
F36	433290.108	407993.278	B	1200	D400	77.498	75.167	2.181	6.000	75.167	150		6.001	75.167	150
F37	433298.428	408037.611	A	1200	D400	76.125	72.726	3.249	6.001	72.726	150		6.002	72.726	150
F38	433305.292	408052.342	A	1200	D400	75.671	70.470	5.051	6.002	71.970	150	1.500	6.003	70.470	150
F29	433319.426	408065.639	Refer to drawing no. 4015-C-D4-14 for details.			75.139	66.735	8.254	4.005	66.735	150	1.500	4.006	66.735	150
									6.003	68.235	150				
F30	433306.666	408099.893	A	1200	D400	71.715	66.468	5.097	4.006	66.468	150		4.007	66.468	150
F31	433278.008	408105.796	B	1200	D400	69.281	66.250	2.881	4.007	66.250	150		4.008	66.250	150
F32	433270.173	408107.409	B	1200	D400	68.152	66.196	1.806	4.008	66.196	150		4.009	66.196	150
F15	433249.676	408111.631	A	1200	D400	69.500	66.056	3.294	1.013	66.056	150		1.014	66.056	150
									4.009	66.056	150				
F16	433238.610	408066.088	Refer to drawing no. 4015-C-D4-12 for details.			72.000	65.743	6.107	1.014	65.743	150		1.015	65.743	150
F39	433119.281	407953.241	B	1200	D400	85.772	84.066	1.556					7.000	84.066	150
F45	433095.942	408005.769	B	1200	D400	85.268	83.226	1.892					8.000	83.226	150
F40	433124.010	408003.107	B	1500	D400	83.869	81.384	2.335	7.000	81.384	150		7.001	81.383	150
									8.000	81.383	150				
F41	433129.856	408064.740	B	1200	D400	80.010	78.068	1.792	7.001	78.067	150		7.002	78.067	150
F42	433149.063	408062.919	B	1200	D400	78.849	76.613	2.086	7.002	76.612	150		7.003	76.612	150
F43	433173.704	408057.512	B	1200	D400	76.771	74.711	1.910	7.003	74.710	150		7.004	74.710	150
F44	433191.055	408051.337	B	1500	D400	75.265	73.319	1.796	7.004	73.318	150		7.005	73.318	150
F17	433236.784	408046.970	Refer to drawing no. 4015-C-D4-08 for details.			73.350	65.614	7.586	1.015	65.614	150	3.110	1.016	65.614	150
									7.005	68.724	150				
F46	433197.075	407833.835	B	1200	D400	84.645	82.648	1.847					9.000	82.648	150
F55	433149.566	407806.424	B	1200	D400	88.885	86.905	1.830					10.000	86.905	150
F47	433152.566	407838.056	A	1500	D400	87.619	82.089	5.380	9.000	82.089	150	1.639	9.001	82.089	150
									10.000	83.728	150				
F48	433159.439	407910.520	A	1200	D400	84.922	81.179	3.593	9.001	81.179	150		9.002	81.179	150
F49	433157.079	407925.336	A	1200	D400	84.529	80.991	3.388	9.002	80.991	150		9.003	80.991	150
F50	433175.641	407934.546	B	1200	D400	83.456	80.560	2.746	9.003	80.560	150		9.004	80.560	150
F51	433184.572	407936.200	B	1200	D400	82.834	80.371	2.313	9.004	80.371	150		9.005	80.371	150
F56	433221.319	407927.296	B	1200	D400	80.234	77.584	2.500					11.000	77.584	150
F52	433216.116	407933.208	A	1500	D400	80.569	77.203	3.216	9.005	77.203	150		9.006	77.203	150
									11.000	77.203	150				
F57	433165.506	407991.670	B	1200	D400	80.984	79.338	1.496					12.000	79.338	150
F53	433221.160	407986.392	B	1200	D400	75.718	73.748	1.820	9.006	73.748	150		9.007	73.748	150
									12.000	73.748	150				
F54	433226.087	408038.340	B	1200	D400	73.816	71.058	2.608	9.007	71.058	150		9.008	71.058	150
F18	433236.313	408042.041	Refer to drawing no. 4015-C-D4-13 for details.			73.515	65.505	7.785	1.016	65.580	150	4.992	1.017	65.505	225
									9.008	70.497	150				
F19	433240.065	408041.685	Foul pumping station. Refer to drawing nos. 4015-C-D4-15 for details.			73.475			1.017	65.479	225				
F58	433178.677	407692.508	B1/E	1200	D400	94.119	92.769	1.200					-	92.769	150
F59	433182.949	407689.911	B	1200	D400	94.300	92.707	1.443	-	92.707	150		-	(T.B.C.)	300

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.

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. All adoptable sewer works and materials to be in accordance with "Sewers for Adoption" 6th Edition, The Relevant British/European and Yorkshire Water's Standards / Requirements / Addendum to the Mechanical and Electrical Specification 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. Plastic pipes on adoptable sewers should conform to WIS 4-35-01.
6. The maximum length of pipe work is not to exceed 3 metres.
7. Sewers in the road to have 1.0m minimum clearance and manholes 0.5m minimum clearance from kerbs and service margins.
8. 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).
9. 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. See drawing no 4015-C-D4-01 for details.
10. 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.
11. 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.
12. The Local Authority and statutory service providers are to be notified prior to the commencement of work on site.
13. All highway works to be constructed in accordance with the South Yorkshire Design Guide and any specific requirements of Barnsley MBC.
14. Rising main to be 125mm HDPE (101.3mm internal diameter) x 427.1m long coloured black. The Rising main should be SDR11 which is 12 BAR laid in accordance with the manufacturers recommendations. The pumping main should be marked 300mm above the main with non-degradable marker tape containing a trace wire terminating at the Valve Chamber. The pumping main should comply with the provisions of WIS4 - 32 - 14, 15 and 17. The pumping main shall be tested in accordance with the requirements of SFA 6th Edition part 5.7.10 with certification provided to Y.W. by the testing agent. The proposed route of the foul rising main is to have a 6m easement when outside adoptable carriageway.

Rev	Description	By	Date
I	Foul manhole reference numbers amended to suit revisions to pipe hireachy.	DL	26.04.17
H	Demarcation chambers IC13, IC14, IC17, IC19, IC20, IC40 amended, IC19a and IC20a added, backdrops added to lateral connections on manholes F10 and S12, lateral connections removed from manholes F8 and S10, road gully locations amended to avoid revised vehicular crossings and and Road 4-TH footpath amended adjacent to plot 153.	DL	23.03.17
G	Ramp removed from Road 4-TH and road gully locations amended to avoid vehicular crossings.	DL	01.07.16
F	Street lighting layout amended and amended road levels/back of footpath levels added.	DL	07.04.16
E	Road 7, 7-TH, 14 amended, plots re-numbered, plots 189-198 amended and all associated external levels and drainage amended accordingly.	DL	16.12.15
D	Outgoing pipe on hydrobrake manhole S16 dropped by 50mm, hydrobrake design and downstream pipe gradients amended accordingly and bed and normal water levels shown in watercourse.	DL	06.11.15
C	Sewer gradients rationalised between F12-F51, F27-F29, F37-F39, F43-F38, S28-S30, S42-S44, S52-S58 and S65-S70. Manhole schedules amended accordingly.	DL	07.10.15
B	IC7, IC15, IC46, IC47, IC54 and IC55 relocated from rear gardens. MH S20 and S62 relocated. S1, S20, S23, S38, S40, S52, S55, S56, S58, S65, S66, S71 and F5, F8, F25, F30, F38, F42, F49 and F50 chamber sizes increased by an increment. Phase 2 SW storage structure and hydrobrake amended. Notes added to access roads to hydrobrake manholes S16 and S62. Demarcation chamber IC69 and manhole F55 deepened.	DL	05.10.15
A	Demarcation chamber schedule added and minor modifications to chamber depths.	DL	04.06.15

Client:

Persimmon Homes
West Yorkshire

Project Title:

Wilthorpe Road,
Barnsley

Drawing Title:

1:500 Engineering Layout
Sheet 2

Scale	Date	
1:500 @ A0	17.12.14	
Drawing No	**Revision**	**Status**
4015-C-D1-02	I	Approval

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