



MANHOLE NO.	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING	NORTHING
SMH1	Type D	23.228	21.945	1.283	706695.970	804565.880
SMH2	Type D	21.234	20.205	0.789	706616.681	804115.875
SMH3	Type D	20.997	19.815	0.777	706632.781	804223.954
SMH4	Type E	21.272	19.919	1.331	706698.842	804522.954
SMH5	Type E	21.015	19.276	0.993	706682.249	804146.200
SMH6	Type E	20.591	19.986	1.183	706670.972	804174.411
SMH7	Type E	20.527	19.803	1.504	706679.910	804178.413
SMH8	Type E	19.882	17.373	1.309	706745.791	804171.407
SMH9	Type D	21.633	20.202	1.178	706726.743	804602.299
SMH10	Type D	21.141	19.738	1.188	706720.008	804119.810
SMH11	Type B	20.993	19.200	0.840	706723.218	804133.770
SMH12	Type E	19.814	17.133	1.439	706779.600	804138.811
SMH13	Type B	16.992	14.781	1.422	706628.343	804162.585
SMH14	Type C	15.500	13.996	1.278	706687.571	804181.411
SMH15	Type D	19.959	17.736	1.138	706693.369	804158.929
SMH16	Type E	17.682	16.226	1.231	706691.841	804205.500
SMH17	Type B	16.351	15.975	0.658	706612.214	804353.807
SMH18	Type A	20.192	19.739	4.156	706655.621	804267.907
SMH19	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	Type E	19.619	16.919	2.347	706655.844	804231.079
SMH21	Type D	19.637	16.216	3.194	706616.157	804261.167
SMH22	Type A	19.580	15.27	3.242	706634.963	804259.799
SMH23	Type E	19.834	17.388	1.181	706742.911	804186.207
SMH24	Type B	17.422	14.677	1.722	706749.782	804247.200
SMH25	Type B	15.525	13.461	1.402	706691.679	804241.288
SMH26	Type D	14.969	13.984	0.987	706694.697	804176.704
SMH27	Type D	13.812	12.889	0.988	706687.422	804258.814
SMH28	Type C	14.375	11.897	1.230	706632.302	804252.797
SMH29	Type E	13.602	12.244	1.133	706641.117	804261.677
SMH30	Type D	14.017	11.736	1.532	706642.618	804267.215
SMH31	Type D	15.217	14.014	0.978	706696.602	804164.418
SMH32	Type D	14.784	13.530	1.039	706670.096	804226.695
SMH33	Type D	14.978	13.311	1.278	706693.339	804219.791
SMH34	Type B	12.133	9.85	1.389	706619.632	804297.693
SMH35	Type B	14.289	12.29	1.794	707022.858	804216.192
SMH36	Type B	13.220	10.867	2.112	707012.218	804242.262
SMH37	Type D	11.871	9.71	1.338	707027.566	804279.630
SMH38	Type C	10.286	8.13	1.386	706984.880	804324.343
SMH39	Type D	10.45	8.20	1.025	707010.192	804303.336
SMH40	Type D	9.229	8.10	0.909	707001.157	804364.414
SMH41	Type D	8.916	7.87	0.741	706991.889	804388.871
SMH42	Type C	9.255	7.56	0.995	706963.508	804355.032
SMH43	Type D	9.240	7.416	1.074	706955.668	804375.889
SMH44	Type E	15.647	14.241	1.181	706656.314	804601.076
SMH45	Type E	15.625	14.133	1.302	706644.445	804597.428
SMH46	Type E	13.731	12.291	1.140	706678.121	804417.444
SMH47	Type A	15.613	12.991	3.222	706610.210	804361.775
SMH48	Type E	16.183	14.677	1.268	706632.891	804320.074
SMH49	Type E	17.278	16.00	1.053	706651.287	804320.565
SMH50	Type E	16.318	13.85	4.168	706659.332	804291.404
SMH51	Type A	17.997	13.52	3.977	706698.121	804310.027
SMH52	Type A	16.567	11.65	3.006	706638.068	804338.883
SMH53	Type A	15.460	11.595	3.995	706670.637	804357.738
SMH54	Type E	12.879	11.425	1.154	706675.289	804438.858
SMH55	Type B	13.806	11.035	2.571	706689.466	804390.534
SMH56	Type A	14.463	10.80	2.837	706701.509	804370.479
SMH57	Type B	13.602	10.574	2.503	706722.308	804383.853
SMH58	Type E	10.871	8.45	1.121	706741.584	804432.289
SMH59	Type E	11.464	9.16	2.061	706757.861	804439.729
SMH60	Type A	12.089	8.80	1.280	706766.651	804386.973
SMH61	Type B	11.273	8.30	2.239	706698.627	804381.791
SMH62	Type E	9.948	8.803	1.120	706682.886	804465.089
SMH63	Type E	10.252	8.902	1.125	706615.689	804478.861
SMH64	Type B	10.101	8.25	1.327	706698.880	804451.474
SMH65	Type B	10.109	8.04	1.766	706673.233	804435.516
SMH66	Type E	9.905	8.434	1.186	706612.473	804462.709
SMH67	Type D	10.414	7.85	1.656	706636.666	804411.999
SMH68	Type D	8.326	7.50	0.601	706647.412	804391.198
SMH69	Type C	8.910	7.437	1.877	706653.353	804398.792
SMH70	HEADWALL	8.672	7.297	0.880	706644.613	804390.246
SMH71	Type B	7.782	6.80	1.607	706650.680	804439.790
SMH72	Type A	8.890	6.48	3.027	706621.487	804451.500
SMH73	Type A	9.995	6.37	3.248	706618.915	804451.368
SMH74	Type D	8.40	8.225	0.95	706634.244	804461.451
SMH75	Type E	8.50	7.271	0.898	706641.964	804501.919
SMH76	Type E	8.35	6.907	1.215	706630.362	804511.601
SMH77	Type D	7.80	6.50	1.00	706617.542	804535.386
SMH78	Type B	8.397	5.00	2.013	706695.561	804561.988
SMH79	Type C	4.880	3.07	1.155	706680.872	804570.721
SMH80	Type C	4.195	2.709	1.035	706651.225	804560.547
SMH81	Type D	3.952	2.614	0.887	706639.617	804553.330
SMH82	Type D	2.999	2.202	1.001	706698.460	804611.614
SMH83	Type D	3.555	1.795	0.82	707068.905	804633.812
SMH84	HEADWALL	3.47	1.519	0.902	707001.900	804635.972
SMH85	Type D	11.406	10.434	0.747	707059.536	804234.050
SMH86	Type D	8.297	7.15	0.847	707138.887	804260.771
SMH87	Type D	4.468	4.193	0.503	707199.322	804301.960
SMH88	Type D	4.015	2.414	0.851	707230.916	804329.867
SMH89	Type D	3.772	2.15	0.848	707253.214	804307.948
SMH90	HEADWALL	2.98	2.022	0.178	707246.300	804307.976

NOTES:

THE GREENFIELD RUNOFF RATE OF (GBR) 185.50L/TS/EC IS CALCULATED ON A SITE AREA OF 175000M² OR 17.50HA. THE GBR RATE USED FOR THE CALCULATION OF THE REQUIRED ON-SITE STORAGE IS REDUCED TO 86.8L/TS/EC TO COMPENSATE FOR THE 25.3L/TS/EC OF RUNOFF THAT IS NOT ATTENUATED AND WHICH IS DERIVED FROM THE NORTHWEST CORNER OF THE DEVELOPMENT. THE ATTENUATION SYSTEM CONSISTS OF A SILT TRAP, CLASS B BYPASS PETROLIUM INTERCEPTOR ON ALL NETWORKS AND AN ATTENUATION BASIN/FOND HAVING A STORAGE VOLUME OF 3750M³. THE CRITICAL STORAGE DURATION FOR A 1 IN 30 YR STORM EVENT IS 360mins (WINTER) WHERE THE REQUIRED VOLUME IS 2243.7M³. THE CRITICAL STORAGE DURATION FOR A 1 IN 100 YR STORM EVENT IS ALSO 360mins (WINTER) WHERE THE REQUIRED STORAGE VOLUME IS 2978.70M³ RESULTING IN AN OVERFLOW VOLUME OF 115.3M³.

ALL STORM DRAINAGE PIPE LINES HAVE BEEN DESIGNED FOR 1 IN 2 YR RETURN PERIOD WITH A MAXIMUM RAINFALL OF 50MM/HR. MINIMUM SELF-CLEANING VELOCITY OF 0.8L/TS/EC & MINIMUM TIME OF ENTRY 4MINS. 10% ALLOWANCE HAS BEEN INCLUDED FOR GLOBAL CLIMATE CHANGE.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATHRoad LEVELS.

ALL LEVELS FOR PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MINIMUM OF 12m.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES TO COMPLY WITH THE REQUIREMENTS OF BS EN 124:

- CLASS D 400
- ROADWAYS, HARSH SHOULDERS, VEHICULAR ACCESSES
- B 125
- FOOTPATHS, GRASS VERGES
- A 15
- AREAS ACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJS) TO BE 100mm ID uPVC PIPES AT A GRADIENT OF 1 IN 60.

GULLIES SHALL BE PRECAST CONCRETE COMPLYING WITH THE REQUIREMENTS OF BS 5911: PART 230, OR MAY CONSIST OF A CHAMBER CONSTRUCTED OF 100mm ISD REDWORK AND HAVING A 150mm IN SITU CONCRETE FLOOR, WITH INTERNAL DIMENSIONS OF 450mm x 300mm x 750mm. THE OUTLET FROM THE GULLY SHOULD BE 150mm DIAMETER, SET A MINIMUM OF 375mm ABOVE THE FLOOR OF THE CHAMBER.

GULLY LOCATIONS IN ROADS SHOULD BE SET WITH THE DIRECTION OF THE OPENINGS AT RIGHT ANGLES TO THE DIRECTION OF TRAFFIC.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTLET POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC FOR PIPES UP TO 300mm IN DIAMETER IN ACCORDANCE WITH THE REQUIREMENTS OF IS 426.

TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

DRAINAGE PIPES SHOULD BE LAD WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO ROADWAYS AND 0.6m IN GARDENS, WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS. ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

A	Issued for Planning	May 2019	T.Finn
REV. NO.	DESCRIPTION	DATE	INITIALS

CREATIVE • INNOVATIVE

Blakestown, Ardee, Co. Louth, Ireland
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DRAWING NO: 113A

ENG

TITLE: Storm Drainage Layout Zone 3

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES:

- Copyright Reserved 2003 ©
- Work to figure dimensions only. Do not scale drawing.
- The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect.
- Where appropriate, for details of structure, mechanical and electrical details, see Engineers drawings.
- Emergency items shall be fixed in strict accordance with manufacturers instructions.
- Where appropriate, items shall be checked with manufacturer.
- The contractor shall be responsible for the coordination of structure, trades and services.

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