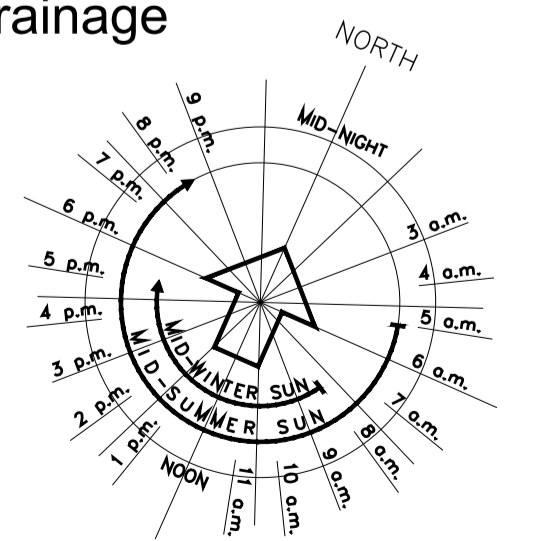
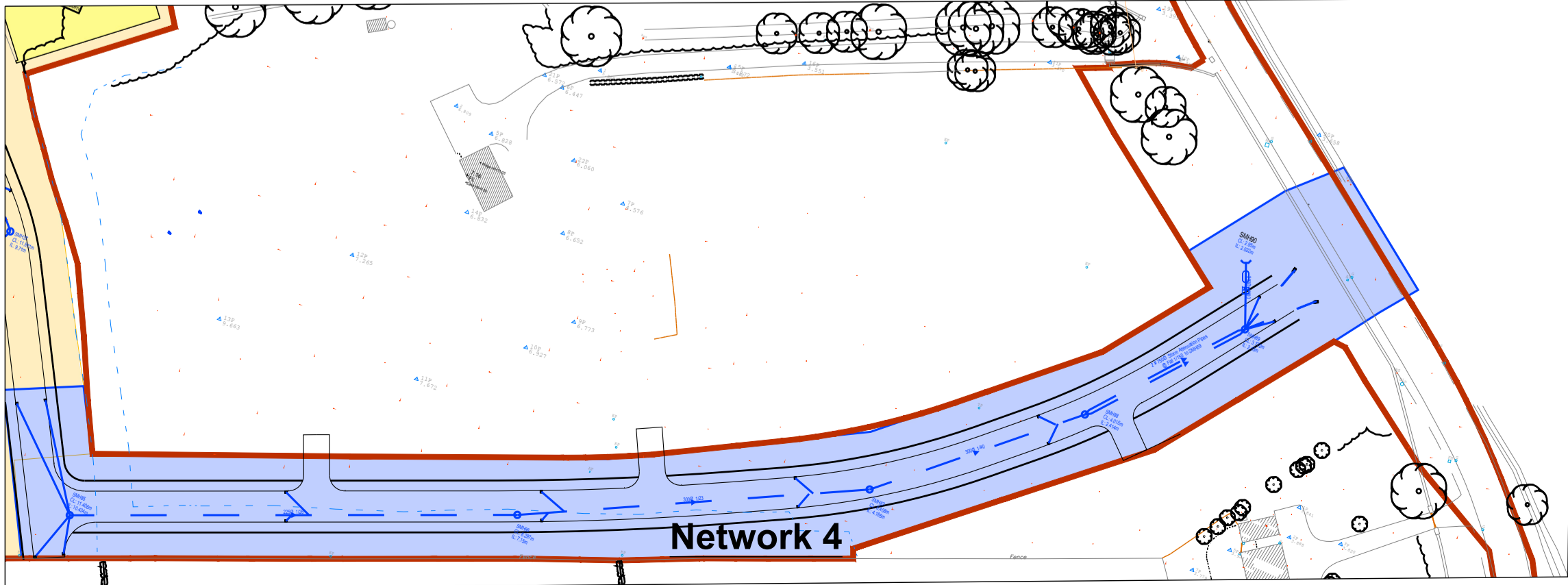


MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	23.029	21.845	1.184	70666.070	804002.880
SMH2	1200	Type D	21.234	20.25	0.984	706616.681	804115.875
SMH3	1200	Type E	20.997	19.615	1.382	706632.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.356	706698.842	804152.954
SMH5	1350	Type E	21.015	19.276	1.739	706622.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.493	70670.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.524	706679.910	804178.413
SMH8	1350	Type E	18.982	17.373	1.609	706745.791	804177.407
SMH9	1200	Type E	21.830	20.227	1.603	706736.743	804083.299
SMH10	1200	Type E	21.141	19.728	1.413	706720.008	804119.810
SMH11	1200	Type B	20.993	19.20	0.840	706723.218	804113.710
SMH12	1200	Type E	18.814	17.13	1.683	706779.850	804135.881
SMH13	1350	Type B	16.992	14.781	2.211	706828.343	804162.585
SMH14	1200/675	Type C	15.500	13.996	1.504	706667.571	804181.411
SMH15	1200	Type E	19.989	17.706	2.283	706623.989	804159.689
SMH16	1200	Type E	17.882	16.228	1.654	706601.841	804205.660
SMH17	1200	Type B	18.351	15.976	2.375	706612.214	804183.567
SMH18	1350	Type A	20.182	15.786	4.396	706655.021	804222.867
SMH19	1350	Type A	19.641	15.467	4.174	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.472	706650.894	804231.079
SMH21	1200	Type A	18.837	16.218	2.619	706616.517	804261.167
SMH22	1350	Type A	19.580	15.27	4.310	706634.963	804299.799
SMH23	1200	Type E	18.804	17.398	1.406	706742.971	804186.247
SMH24	1350	Type B	17.422	14.977	2.445	706749.762	804247.200
SMH25	1200	Type B	15.265	13.461	1.804	706671.679	804311.988
SMH26	1200	Type D	14.996	13.884	1.112	706884.587	804196.704
SMH27	1200	Type D	13.812	12.889	0.923	706867.422	804235.814
SMH28	1200/125	Type B	14.076	11.867	2.209	706822.332	804252.787
SMH29	1200	Type E	13.802	12.244	1.558	706814.117	804261.67
SMH30	1500	Type B	14.017	11.736	2.281	706842.818	804267.215
SMH31	1200	Type D	15.217	14.014	1.203	706896.062	804194.818
SMH32	1200	Type E	14.794	13.59	1.204	706870.096	804226.686
SMH33	1200	Type E	14.878	13.31	1.567	706853.339	804219.791
SMH34	1500	Type B	12.133	9.55	2.578	706919.532	804297.593
SMH35	1200	Type B	10.267	8.13	2.134	706884.857	804234.143
SMH36	1200	Type B	13.220	10.857	2.363	707012.218	804242.282
SMH37	1200	Type B	11.871	9.71	2.160	707027.356	804279.630
SMH38	1200/1200	Type C	10.267	8.13	2.134	706884.857	804234.143
SMH39	1200	Type E	10.45	9.20	1.250	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	1.139	707001.157	804356.414
SMH41	1200	Type D	8.916	7.67	1.241	706991.889	804388.871
SMH42	1200/1200	Type C	9.255	8.55	0.705	706833.588	804356.032
SMH43	1200	Type D	9.240	7.416	1.824	706955.888	804375.889
SMH44	1200	Type E	15.647	14.241	1.406	706505.314	804017.076

01 Overall Site Layout Plan - Storm Drainage
SCALE 1:1000



02 Site Service Roadway - Storm Drainage
SCALE 1:1000



NOTES:

THE GREENFIELD RUNOFF RATE OF (GBAR) 105.00 L/SEC IS CALCULATED ON A SITE AREA OF 175000 M² OR 17.5 HA. THE CHAIN RATE USED FOR THE CALCULATION OF THE REQUIRED ON SITE STORAGE IS REDUCED TO 80 L/SEC TO COMPENSATE FOR THE 26.3 L/SEC OF RUNOFF THAT IS NOT ATTENUATED AND WHICH IS DERIVED FROM THE NORTH END OF THE SITE. THE DESIGN STORAGE VOLUME IS 4000 M³ (3000 M³ MINUS 1000 M³ OF A SILT TRAP, CLASS 1 BYPASS PETROL/ OIL INTERCEPTOR ON ALL NETWORKS AND AN ATTENUATION BASIN WITH A STORAGE VOLUME OF CIRCA 1000 M³ TO PROVIDE A MINIMUM OF 10 MINUTES OF STORAGE FOR A 1 IN 100 YR STORM EVENT IS ALSO 3000 M³ (WINTER) WHERE THE REQUIRED STORAGE VOLUME IS 2076 TONS RESULATING IN AN OVERFLOW VOLUME OF 115.36 M³.

ALL STORM DRAINAGE PIPE LINES HAVE BEEN DESIGNED FOR 1 IN 100 YR RETURN PERIOD WITH A MAXIMUM RAINFALL OF 50 MM/HR. MINIMUM SELF CLEANSING VELOCITY OF 0.8 L/SEC & MINIMUM TIME OF ENTRY 4 MINS. 10% ALLOWANCE HAS BEEN INCLUDED FOR CLIMATIC CHANGE.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATHWAY 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 MAXIMUM OF 10 METERS.

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 IS 124):
CLASS D 400 LOCATION ROADWAYS, HARDBOULDERS, VEHICULAR ACCESSES
B 125 FOOTWAYS, GRASS VERGES
A 15 AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJS) TO BE 100mm d 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 SOLID BLOCKWORK AND HAVING A 100mm IN SITU CONCRETE FLOOR WITH INTERNAL DIMENSIONS OF 400mm x 300mm x 70mm. THE OUTLET FROM THE GULLY SHOULD BE 150mm DIAMETER, SET A MINIMUM OF 375mm ABOVE THE FLOOR OF THE CHAMBER.

GULLY GRATINGS 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 424).

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 LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO ROADWAYS, 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.

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

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DRAWING NO: **116 A** REV. NO:

116 A

TITLE: Storm Drainage Networks Map

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

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

SCALE: 1:1000 @ A1 DRAWN: P. Coyle

DATE: November 2018 CHECKED:

STATUS: **Planning Permission**

JOB NO: **1703**

NOTES:
1. Copyright Reserved 2003 ©
2. Work to agreed dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and shall refer all discrepancies to the Architect.
4. Where appropriate, for details of a structure, or mechanical and electrical details, see Engineers drawings.
5. Proprietary items shall be fitted in strict accordance with manufacturer's instructions.
6. The contractor shall be responsible for the construction of structure, finishes and services.
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