		3304.828 m²	3.305 ha
	3.002	347.871 m²	0.035 ha
	8.006	1377.411 m²	0.138 ha
	8.005	210.953 m²	0.021 ha
	8.004	559.723 m²	0.056 ha
	8.003	86.135 m²	0.009 ha
	8.002	836.636 m²	0.084 ha
	8.001	1023.806 m²	0.102 ha
	8.000	174.160 m²	0.017 ha
	7.011	951.139 m²	0.095 ha
	7.009	866.566 m²	0.087 ha
	7.007	725.984 m²	0.073 ha
	7.006	640.889 m²	0.064 ha
	7.004	507.383 m²	0.051 ha
	7.003	161.100 m²	0.016 ha
	7.002	423.362 m²	0.042 ha
	7.000	616.826 m²	0.062 ha
	6.001	83.494 m²	0.008 ha
	6.000	1162.966 m²	0.116 ha
	5.008	84.616 m²	0.008 ha
	5.007	552.064 m²	0.055 ha
	5.006	698.382 m²	0.070 ha
	5.004	1006.264 m²	0.101 ha
	5.003	520.811 m²	0.052 ha
	5.002	248.921 m²	0.025 ha
	5.001	1013.077 m²	0.101 ha
	5.000	793.658 m²	0.079 ha
	4.001	260.655 m²	0.026 ha
	4.000	820.179 m²	0.082 ha
	1.006	275.981 m²	0.028 ha
	1.005	1265.242 m²	0.127 ha
	1.004	910.861 m²	0.091 ha
	1.003	738.118 m²	0.074 ha
	1.002	181.095 m²	0.018 ha
	1.001	537.385 m²	0.054 ha
	1.000	630.071 m²	0.063 ha
	2.000	1349.425 m²	0.135 ha
	1.015	1317.491 m²	0.132 ha
	1.014	386.120 m²	0.039 ha
	1.013	1157.292 m²	0.116 ha
	1.012	1359.206 m²	0.136 ha
	1.011	317.730 m²	0.032 ha
	1.010	623.827 m²	0.062 ha
	1.009	698.034 m²	0.070 ha
	1.008	877.218 m²	0.088 ha
	1.007	521.411 m²	0.052 ha
	2.001	1230.210 m²	0.123 ha
	3.000	1916.878 m²	0.192 ha

Impermeable Areas (Layout Rev W)		
Pipe Code	Area (m²)	Area (ha)

Foul Water Drainage Design

For the Section 104 Foul Water Signs See Dwg:-

- **CA504 - 101 - C - Section 104 Main Drainage Overview (Phase 1)**
- **CA504 - 102 - E - Section 104 Main Drainage (Phase 1) - 1 of 4**
- **CA504 - 103 - E - Section 104 Main Drainage (Phase 1) - 2 of 4**
- **CA504 - 104 - F - Section 104 Main Drainage (Phase 1) - 3 of 4**
- **CA504 - 105 - G - Section 104 Main Drainage (Phase 1) - 4 of 4**
- **CA504 - 109 - D - Section 104 Main Drainage Longsections (Phase 1)**

Mark	Date	Details	By
C	17.04.24	Updated with Planning Layout Rev W	cg
B	05.07.23	Updated with Planning Layout Rev V3	cg
A	07.10.21	First issue to Wrexham for S&B review	cg

Drawing Upgrade:

Erection Notes

BETTS HYDRO CONSULTING ENGINEERS | BETTS ASSOCIATES CHARTERED ENGINEERS | BETTS GEO CONSULTING ENGINEERS

Client:

Castle Green

Project Title:

Rhosrobin,
Wrexham

Drawing Title:

Sustainable Drainage Approval (SAB)
Surface Water Drainage
Impermeable Areas Plan

Scale:	1:500	for the original size of A0	
Drawn by:	CP	Checked by: RA	Passed by: RA	Date: Sep 2021

Drawing Status:

For Information

Job No	Drawing No	Volume	Level	Type	Class	Number	Revision
CGH04	BEI				C	152	C

Do not scale this drawing

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JTP
Anglesey Business Park, Admiralty Way, Llanfachraeth, Holyhead, Anglesey, LL65 4UY
enquiries@jtp-architects.co.uk
Chester 01244 388178 | Manchester 0161 8120251

LEGEND

- SITE BOUNDARY
- PROPOSED FINISHED FLOOR LEVEL — FFL 134.65
- EXISTING BOUNDARY GROUND LEVEL — +(133.70)
- STEPPED FOUNDATION — STEP-450
- UNDERBUILD - MEASURED FROM FFL TO FGL — UB
- TANKING - MEASURED FROM FFL TO FGL — TK
- GRAVEL BOARDS (UP TO 400mm) — GB - 0.400m
- MASONRY RETAINING WALL (OVER 450mm) — RET - 0.600m
- EXISTING FOUL WATER SEWER — FW
- PROPOSED FOUL WATER SEWER (DCWW - SECTION 104)
- FOUL WATER MANHOLE (DCWW - SECTION 104)
- PROPOSED SURFACE WATER SEWER (SAB)
- SURFACE WATER MANHOLE (SAB)
- SUDS FEATURE OFFERED FOR ADOPTION - INFILTRATION BASIN (SAB)

Surface Water networks under adoptable roads to adopted by Sustainable Drainage Approval Body (SAB)

Proposed 2m wide tarmac cycle footway/footpath route

Proposed 3m wide tarmac cycle footway/footpath route

Recreational grassed area

Mown unsurfaced footpath route

Remove some, clarify and maintain & reinstate boundary dyke

Existing footpath

Existing hedgerow

Existing trees

Existing pond

Existing ditch

Existing public right of way

Existing bridleway

Existing road

Existing building

Existing fence

Existing gate

Existing wall

Existing electricity pole

Existing telegraph pole

Existing lamp post

Existing bus stop

Existing bench

Existing litter bin

Existing dog bin

Existing post box

Existing traffic light

Existing traffic sign

Existing traffic island

Existing traffic calming

Existing traffic cone

Existing traffic barrier

BETTS HYDRO
CONSULTING ENGINEERS

APPENDIX C – DRAINAGE DESIGN SIMULATIONS EXTRACTS

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SURFACE WATER
DRAINAGE NETWORK DETAILS

Site at Main Road, Rhosrobin

For

Castle Green Homes Ltd



Rev. 5.0

18th April 2024

MAIN ROAD, RHOSROBIN

Drainage Network Details

18th April 2024

Issue no.	Rev. 1.0	Rev. 2.0	Rev. 3.0	Rev. 4.0	Rev. 5.0
Date:	05th Nov 2021	06th April 2022	09th May 2022	09th May 2022	18th April 2024
Prepared By:	Chris Pickles	Chris Pickles	Chris Pickles	Chris Pickles	Chris Pickles
Checked By:	Richard Nicholas	Richard Nicholas	Richard Nicholas	Richard Nicholas	Richard Nicholas
Authorised By:	Robert Ankers	Robert Ankers	Robert Ankers	Robert Ankers	Robert Ankers

Betts Associates Ltd
Old Marsh Farm Barns
Welsh Road
Sealand
Flintshire
CH5 2LY

Tel no. 01244 288178
Project no. CAS02

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Simulation
Simulation Results for the 1yr Return Period
Simulation Results for the 30yr Return Period
Simulation Results for the 100yr Return Period + 40% Climate Change

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Surface Network 6

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.316	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Surface Network 6

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	20.293	0.676	30.0	0.063	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	13.232	0.558	23.7	0.054	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	10.954	0.110	99.6	0.018	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.003	13.977	0.140	99.8	0.074	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.004	39.149	0.435	90.0	0.091	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.005	21.808	0.242	90.1	0.127	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.006	29.256	0.325	90.0	0.028	0.00	0.0	0.600	o	300	Pipe/Conduit	
2.000	56.040	0.539	104.0	0.135	5.00	0.0	0.600	o	300	Pipe/Conduit	
3.000	16.701	0.883	18.9	0.192	5.00	0.0	0.600	o	300	Pipe/Conduit	
3.001	11.974	0.630	19.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
3.002	23.274	1.224	19.0	0.035	0.00	0.0	0.600	o	300	Pipe/Conduit	
2.001	33.122	0.329	100.7	0.123	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.007	17.951	0.449	40.0	0.052	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	43.19	5.18	90.561	0.063	0.0	0.0	0.0	1.84	32.6	7.4
1.001	42.92	5.27	89.810	0.117	0.0	0.0	0.0	2.70	107.3	13.6
1.002	42.46	5.40	89.252	0.135	0.0	0.0	0.0	1.31	52.1	15.5
1.003	41.89	5.58	89.142	0.209	0.0	0.0	0.0	1.31	52.0	23.7
1.004	40.69	5.98	88.133	0.300	0.0	0.0	0.0	1.66	117.2	33.1
1.005	40.06	6.20	87.698	0.427	0.0	0.0	0.0	1.66	117.1	46.3
1.006	39.25	6.49	87.455	0.455	0.0	0.0	0.0	1.66	117.2	48.4
2.000	41.81	5.61	91.615	0.135	0.0	0.0	0.0	1.54	109.0	15.3
3.000	43.56	5.08	92.852	0.192	0.0	0.0	0.0	3.63	256.7	22.6
3.001	43.37	5.13	91.969	0.192	0.0	0.0	0.0	3.62	256.1	22.6
3.002	43.00	5.24	91.339	0.227	0.0	0.0	0.0	3.62	256.0	26.4
2.001	40.75	5.96	90.115	0.485	0.0	0.0	0.0	1.57	110.8	53.5
1.007	39.00	6.58	86.980	0.992	0.0	0.0	0.0	3.22	512.6	104.8

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Network Design Table for Surface Network 6

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.008	24.246	0.606	40.0	0.088	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.009	17.681	0.442	40.0	0.070	0.00	0.0	0.600	o	450	Pipe/Conduit	
4.000	22.562	0.135	167.1	0.082	5.00	0.0	0.600	o	225	Pipe/Conduit	
4.001	24.367	0.102	238.9	0.026	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.010	21.542	0.876	24.6	0.062	0.00	0.0	0.600	o	450	Pipe/Conduit	
5.000	14.240	0.086	165.6	0.079	5.00	0.0	0.600	o	225	Pipe/Conduit	
5.001	18.859	0.113	166.9	0.101	0.00	0.0	0.600	o	225	Pipe/Conduit	
5.002	13.831	0.059	234.4	0.025	0.00	0.0	0.600	o	300	Pipe/Conduit	
5.003	22.490	0.095	236.7	0.052	0.00	0.0	0.600	o	300	Pipe/Conduit	
5.004	13.216	0.034	388.7	0.101	0.00	0.0	0.600	o	450	Pipe/Conduit	
5.005	12.505	0.032	390.8	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
5.006	17.637	0.045	391.9	0.070	0.00	0.0	0.600	o	450	Pipe/Conduit	
5.007	13.761	0.035	393.2	0.055	0.00	0.0	0.600	o	450	Pipe/Conduit	
5.008	22.508	0.059	381.5	0.008	0.00	0.0	0.600	o	525	Pipe/Conduit	
1.011	37.163	1.004	37.0	0.032	0.00	0.0	0.600	o	675	Pipe/Conduit	
6.000	24.667	0.148	166.7	0.116	5.00	0.0	0.600	o	225	Pipe/Conduit	
6.001	18.205	0.109	167.0	0.008	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.012	46.756	0.486	96.2	0.136	0.00	0.0	0.600	o	675	Pipe/Conduit	
1.013	16.758	0.168	99.8	0.116	0.00	0.0	0.600	o	675	Pipe/Conduit	
1.014	18.305	0.197	92.9	0.039	0.00	0.0	0.600	o	675	Pipe/Conduit	
1.015	28.258	0.070	403.7	0.131	0.00	0.0	0.600	o	675	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.008	38.67	6.71	86.535	1.080	0.0	0.0	0.0	3.22	512.4	113.1
1.009	38.44	6.80	85.934	1.150	0.0	0.0	0.0	3.22	512.4	119.7
4.000	42.56	5.37	86.975	0.082	0.0	0.0	0.0	1.01	40.1	9.5
4.001	41.30	5.77	86.765	0.108	0.0	0.0	0.0	1.01	71.6	12.1
1.010	38.21	6.89	85.496	1.320	0.0	0.0	0.0	4.11	654.2	136.6
5.000	43.02	5.23	85.403	0.079	0.0	0.0	0.0	1.01	40.3	9.2
5.001	42.00	5.55	85.317	0.180	0.0	0.0	0.0	1.01	40.1	20.5
5.002	41.30	5.77	85.129	0.205	0.0	0.0	0.0	1.02	72.3	22.9
5.003	40.22	6.14	85.070	0.257	0.0	0.0	0.0	1.02	71.9	28.0
5.004	39.62	6.35	84.825	0.358	0.0	0.0	0.0	1.03	163.0	38.4
5.005	39.07	6.56	84.791	0.358	0.0	0.0	0.0	1.02	162.6	38.4
5.006	38.32	6.85	84.759	0.428	0.0	0.0	0.0	1.02	162.4	44.4
5.007	37.76	7.07	84.714	0.483	0.0	0.0	0.0	1.02	162.1	49.4
5.008	36.97	7.40	84.604	0.491	0.0	0.0	0.0	1.14	246.9	49.4
1.011	36.64	7.54	84.395	1.843	0.0	0.0	0.0	4.32	1544.7	182.9
6.000	42.45	5.41	85.120	0.116	0.0	0.0	0.0	1.01	40.2	13.3
6.001	41.50	5.71	84.972	0.124	0.0	0.0	0.0	1.01	40.1	13.9
1.012	35.99	7.84	83.391	2.103	0.0	0.0	0.0	2.67	956.4	205.0
1.013	35.76	7.94	82.905	2.219	0.0	0.0	0.0	2.62	939.1	214.9
1.014	35.52	8.05	82.737	2.258	0.0	0.0	0.0	2.72	973.2	217.2
1.015	34.77	8.42	82.540	2.389	0.0	0.0	0.0	1.30	464.6	224.9

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Network Design Table for Surface Network 6

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
7.000	12.952	0.648	20.0	0.062	5.00	0.0	0.600	o	225	Pipe/Conduit	
7.001	12.537	0.627	20.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.002	15.894	0.795	20.0	0.042	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.003	18.044	0.827	21.8	0.016	0.00	0.0	0.600	o	300	Pipe/Conduit	
7.004	37.769	1.152	32.8	0.051	0.00	0.0	0.600	o	300	Pipe/Conduit	
7.005	17.059	0.520	32.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
7.006	20.497	0.625	32.8	0.064	0.00	0.0	0.600	o	300	Pipe/Conduit	
7.007	20.900	0.638	32.8	0.073	0.00	0.0	0.600	o	300	Pipe/Conduit	
7.008	16.105	0.491	32.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
7.009	22.309	0.380	58.7	0.087	0.00	0.0	0.600	o	300	Pipe/Conduit	
7.010	49.602	0.302	164.2	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
7.011	60.501	0.368	164.4	0.095	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.016	77.703	0.195	398.5	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
8.000	15.616	0.156	100.1	0.017	5.00	0.0	0.600	o	225	Pipe/Conduit	
8.001	14.594	0.146	100.0	0.102	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.002	30.707	0.390	78.7	0.084	0.00	0.0	0.600	o	300	Pipe/Conduit	
8.003	8.300	0.055	150.9	0.009	0.00	0.0	0.600	o	300	Pipe/Conduit	
8.004	9.674	0.064	151.2	0.056	0.00	0.0	0.600	o	300	Pipe/Conduit	
8.005	18.297	0.122	150.0	0.021	0.00	0.0	0.600	o	300	Pipe/Conduit	
8.006	11.752	0.488	24.1	0.137	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.017	123.270	0.308	400.2	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
1.018	47.930	0.120	399.4	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
1.019	54.608	0.136	401.5	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
1.020	2.000	0.006	336.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
7.000	43.57	5.07	90.294	0.062	0.0	0.0	0.0	2.94	116.9	7.3
7.001	43.32	5.14	89.646	0.062	0.0	0.0	0.0	2.94	116.9	7.3
7.002	43.02	5.23	89.019	0.104	0.0	0.0	0.0	2.94	116.9	12.1
7.003	42.72	5.32	88.149	0.120	0.0	0.0	0.0	3.38	239.0	13.9
7.004	41.98	5.55	87.322	0.171	0.0	0.0	0.0	2.76	194.8	19.4
7.005	41.66	5.66	86.170	0.171	0.0	0.0	0.0	2.76	194.8	19.4
7.006	41.28	5.78	85.649	0.235	0.0	0.0	0.0	2.76	194.7	26.3
7.007	40.90	5.91	85.024	0.308	0.0	0.0	0.0	2.76	194.9	34.1
7.008	40.61	6.00	84.386	0.308	0.0	0.0	0.0	2.75	194.7	34.1
7.009	40.09	6.18	83.895	0.395	0.0	0.0	0.0	2.06	145.3	42.9
7.010	38.68	6.71	83.365	0.395	0.0	0.0	0.0	1.58	251.9	42.9
7.011	37.10	7.34	83.063	0.490	0.0	0.0	0.0	1.58	251.7	49.2
1.016	33.01	9.34	82.395	2.879	0.0	0.0	0.0	1.40	616.6	257.4
8.000	43.14	5.20	84.147	0.017	0.0	0.0	0.0	1.31	52.0	2.0
8.001	42.52	5.39	83.991	0.119	0.0	0.0	0.0	1.31	52.0	13.7
8.002	41.60	5.67	83.770	0.203	0.0	0.0	0.0	1.77	125.4	22.9
8.003	41.27	5.78	83.380	0.212	0.0	0.0	0.0	1.28	90.3	23.7
8.004	40.89	5.91	83.325	0.268	0.0	0.0	0.0	1.28	90.2	29.7
8.005	40.20	6.15	83.260	0.289	0.0	0.0	0.0	1.28	90.6	31.5
8.006	40.03	6.21	83.138	0.426	0.0	0.0	0.0	3.22	227.4	46.2
1.017	30.62	10.82	82.200	3.305	0.0	0.0	0.0	1.39	615.2	274.0
1.018	29.79	11.39	81.892	3.305	0.0	0.0	0.0	1.39	615.9	274.0
1.019	28.91	12.05	81.772	3.305	0.0	0.0	0.0	1.39	614.2	274.0
1.020	28.83	12.11	83.547	3.305	0.0	0.0	0.0	0.54	9.6«	274.0

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Manhole Schedules for Surface Network 6

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S1	92.281	1.720	Open Manhole	1200	1.000	90.561	150				
S2	91.303	1.493	Open Manhole	1200	1.001	89.810	225	1.000	89.885	150	
S3	90.888	1.636	Open Manhole	1200	1.002	89.252	225	1.001	89.252	225	
S4	90.744	1.602	Open Manhole	1200	1.003	89.142	225	1.002	89.142	225	
S5	90.412	2.279	Open Manhole	1350	1.004	88.133	300	1.003	89.002	225	794
S6	90.117	2.419	Open Manhole	1350	1.005	87.698	300	1.004	87.698	300	
S7	90.653	3.198	Open Manhole	1350	1.006	87.455	300	1.005	87.456	300	1
S8	93.316	1.701	Open Manhole	1200	2.000	91.615	300				
S9	96.985	4.133	Open Manhole	1200	3.000	92.852	300				
S10	95.925	3.956	Open Manhole	1050	3.001	91.969	300	3.000	91.969	300	
S11	95.130	3.791	Open Manhole	1050	3.002	91.339	300	3.001	91.339	300	
S12	93.563	3.448	Open Manhole	1200	2.001	90.115	300	2.000	91.076	300	961
								3.002	90.115	300	
S13	91.369	4.389	Open Manhole	1350	1.007	86.980	450	1.006	87.130	300	
								2.001	89.786	300	2656
S14	90.193	3.662	Open Manhole	1350	1.008	86.535	450	1.007	86.531	450	
S15	89.236	3.307	Open Manhole	1350	1.009	85.934	450	1.008	85.929	450	
S16	88.668	1.693	Open Manhole	1200	4.000	86.975	225				
S17	88.391	1.626	Open Manhole	1200	4.001	86.765	300	4.000	86.840	225	
S18	88.814	3.322	Open Manhole	1350	1.010	85.496	450	1.009	85.492	450	
								4.001	86.663	300	1017
S19	86.826	1.423	Open Manhole	1200	5.000	85.403	225				
S20	86.681	1.364	Open Manhole	1350	5.001	85.317	225	5.000	85.317	225	
S21	86.924	1.795	Open Manhole	1350	5.002	85.129	300	5.001	85.204	225	
S22	87.093	2.023	Open Manhole	1350	5.003	85.070	300	5.002	85.070	300	
S23	87.338	2.513	Open Manhole	1350	5.004	84.825	450	5.003	84.975	300	
S24	87.525	2.734	Open Manhole	1350	5.005	84.791	450	5.004	84.791	450	
S25	87.678	2.919	Open Manhole	1350	5.006	84.759	450	5.005	84.759	450	
S26	87.901	3.187	Open Manhole	1350	5.007	84.714	450	5.006	84.714	450	
S27	88.087	3.483	Open Manhole	1350	5.008	84.604	525	5.007	84.679	450	
S28	88.285	3.890	Open Manhole	1500	1.011	84.395	675	1.010	84.620	450	
								5.008	84.545	525	
S29	86.825	1.705	Open Manhole	1200	6.000	85.120	225				
S30	87.141	2.169	Open Manhole	1200	6.001	84.972	225	6.000	84.972	225	
S31	87.386	3.995	Open Manhole	1500	1.012	83.391	675	1.011	83.391	675	
								6.001	84.863	225	1022
S32	86.254	3.349	Open Manhole	1500	1.013	82.905	675	1.012	82.905	675	
S33	85.857	3.120	Open Manhole	1500	1.014	82.737	675	1.013	82.737	675	
S34	85.411	2.871	Open Manhole	1500	1.015	82.540	675	1.014	82.540	675	
S35	92.069	1.775	Open Manhole	1200	7.000	90.294	225				
S36	91.372	1.726	Open Manhole	1200	7.001	89.646	225	7.000	89.646	225	
S37	90.798	1.779	Open Manhole	1200	7.002	89.019	225	7.001	89.019	225	
S38	90.304	2.155	Open Manhole	1200	7.003	88.149	300	7.002	88.224	225	
S39	89.598	2.276	Open Manhole	1200	7.004	87.322	300	7.003	87.322	300	
S40	88.279	2.109	Open Manhole	1200	7.005	86.170	300	7.004	86.170	300	
S41	87.646	1.997	Open Manhole	1200	7.006	85.649	300	7.005	85.649	300	

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Manhole Schedules for Surface Network 6

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S42	86.933	1.909	Open Manhole	1200	7.007	85.024	300	7.006	85.024	300	
S43	86.261	1.875	Open Manhole	1200	7.008	84.386	300	7.007	84.386	300	
S44	85.758	1.863	Open Manhole	1200	7.009	83.895	300	7.008	83.895	300	
S45	85.167	1.802	Open Manhole	1500	7.010	83.365	450	7.009	83.515	300	
S46	85.345	2.282	Open Manhole	1500	7.011	83.063	450	7.010	83.063	450	
S47	84.699	2.304	Open Manhole	1500	1.016	82.395	750	1.015	82.470	675	
								7.011	82.695	450	
S48	85.580	1.433	Open Manhole	1200	8.000	84.147	225				
S49	85.760	1.769	Open Manhole	1200	8.001	83.991	225	8.000	83.991	225	
S50	86.000	2.230	Open Manhole	1200	8.002	83.770	300	8.001	83.845	225	
S51	85.454	2.074	Open Manhole	1200	8.003	83.380	300	8.002	83.380	300	
S52	85.321	1.996	Open Manhole	1200	8.004	83.325	300	8.003	83.325	300	
S53	85.149	1.889	Open Manhole	1200	8.005	83.260	300	8.004	83.261	300	1
S54	84.855	1.717	Open Manhole	1200	8.006	83.138	300	8.005	83.138	300	
S55	84.644	2.444	Open Manhole	1500	1.017	82.200	750	1.016	82.200	750	
								8.006	82.650	300	
S56	83.970	2.078	Open Manhole	1500	1.018	81.892	750	1.017	81.892	750	
S57	83.528	1.756	Open Manhole	1500	1.019	81.772	750	1.018	81.772	750	
S58 Pond	83.724	2.088	Open Manhole	1500	1.020	83.547	150	1.019	81.636	750	
False	83.691	0.150	Open Manhole	0		OUTFALL		1.020	83.541	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	333020.375	352568.470	333020.375	352568.470	Required	
S2	333030.411	352586.108	333030.411	352586.108	Required	
S3	333034.936	352598.542	333034.936	352598.542	Required	
S4	333040.364	352608.057	333040.364	352608.057	Required	
S5	333047.805	352619.889	333047.805	352619.889	Required	
S6	333082.936	352602.613	333082.936	352602.613	Required	
S7	333097.138	352586.063	333097.138	352586.063	Required	
S8	333132.171	352506.253	333132.171	352506.253	Required	
S9	333057.037	352506.734	333057.037	352506.734	Required	

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Manhole Schedules for Surface Network 6

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S10	333069.074	352518.312	333069.074	352518.312	Required	
S11	333075.417	352528.468	333075.417	352528.468	Required	
S12	333091.740	352545.058	333091.740	352545.058	Required	
S13	333117.866	352565.417	333117.866	352565.417	Required	
S14	333129.993	352578.652	333129.993	352578.652	Required	
S15	333141.869	352599.790	333141.869	352599.790	Required	
S16	333185.398	352589.547	333185.398	352589.547	Required	
S17	333169.095	352605.144	333169.095	352605.144	Required	
S18	333147.553	352616.532	333147.553	352616.532	Required	
S19	333123.714	352712.305	333123.714	352712.305	Required	
S20	333111.389	352719.437	333111.389	352719.437	Required	
S21	333100.870	352703.784	333100.870	352703.784	Required	
S22	333094.684	352691.413	333094.684	352691.413	Required	
S23	333083.449	352671.930	333083.449	352671.930	Required	
S24	333094.642	352664.903	333094.642	352664.903	Required	
S25	333106.045	352659.770	333106.045	352659.770	Required	
S26	333121.404	352651.101	333121.404	352651.101	Required	
S27	333133.156	352643.942	333133.156	352643.942	Required	
S28	333154.537	352636.910	333154.537	352636.910	Required	

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Manhole Schedules for Surface Network 6

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S29	333201.426	352649.573	333201.426	352649.573	Required	
S30	333183.406	352666.417	333183.406	352666.417	Required	
S31	333166.148	352672.213	333166.148	352672.213	Required	
S32	333181.070	352716.524	333181.070	352716.524	Required	
S33	333189.742	352730.864	333189.742	352730.864	Required	
S34	333203.673	352742.738	333203.673	352742.738	Required	
S35	333155.261	352521.324	333155.261	352521.324	Required	
S36	333163.998	352530.886	333163.998	352530.886	Required	
S37	333171.693	352540.784	333171.693	352540.784	Required	
S38	333182.868	352552.086	333182.868	352552.086	Required	
S39	333196.310	352564.123	333196.310	352564.123	Required	
S40	333222.297	352591.530	333222.297	352591.530	Required	
S41	333232.539	352605.172	333232.539	352605.172	Required	
S42	333247.285	352619.408	333247.285	352619.408	Required	
S43	333263.009	352633.177	333263.009	352633.177	Required	
S44	333272.273	352646.351	333272.273	352646.351	Required	
S45	333287.822	352662.348	333287.822	352662.348	Required	
S46	333252.071	352696.732	333252.071	352696.732	Required	
S47	333229.980	352753.056	333229.980	352753.056	Required	

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Manhole Schedules for Surface Network 6

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S48	333168.992	352756.514	333168.992	352756.514	Required	
S49	333157.657	352767.256	333157.657	352767.256	Required	
S50	333145.361	352775.117	333145.361	352775.117	Required	
S51	333160.856	352801.628	333160.856	352801.628	Required	
S52	333165.868	352808.244	333165.868	352808.244	Required	
S53	333174.065	352813.381	333174.065	352813.381	Required	
S54	333190.836	352820.696	333190.836	352820.696	Required	
S55	333201.608	352825.394	333201.608	352825.394	Required	
S56	333286.775	352914.512	333286.775	352914.512	Required	
S57	333334.700	352913.798	333334.700	352913.798	Required	
S58 Pond	333378.804	352945.998	333378.804	352945.998	Required	
False	333380.164	352947.464			No Entry	

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PIPELINE SCHEDULES for Surface Network 6

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	S1	92.281	90.561	1.570	Open Manhole	1200
1.001	o	225	S2	91.303	89.810	1.268	Open Manhole	1200
1.002	o	225	S3	90.888	89.252	1.411	Open Manhole	1200
1.003	o	225	S4	90.744	89.142	1.377	Open Manhole	1200
1.004	o	300	S5	90.412	88.133	1.979	Open Manhole	1350
1.005	o	300	S6	90.117	87.698	2.119	Open Manhole	1350
1.006	o	300	S7	90.653	87.455	2.898	Open Manhole	1350
2.000	o	300	S8	93.316	91.615	1.401	Open Manhole	1200
3.000	o	300	S9	96.985	92.852	3.833	Open Manhole	1200
3.001	o	300	S10	95.925	91.969	3.656	Open Manhole	1050
3.002	o	300	S11	95.130	91.339	3.491	Open Manhole	1050
2.001	o	300	S12	93.563	90.115	3.148	Open Manhole	1200
1.007	o	450	S13	91.369	86.980	3.939	Open Manhole	1350
1.008	o	450	S14	90.193	86.535	3.208	Open Manhole	1350
1.009	o	450	S15	89.236	85.934	2.852	Open Manhole	1350
4.000	o	225	S16	88.668	86.975	1.468	Open Manhole	1200
4.001	o	300	S17	88.391	86.765	1.326	Open Manhole	1200
1.010	o	450	S18	88.814	85.496	2.868	Open Manhole	1350
5.000	o	225	S19	86.826	85.403	1.198	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	20.293	30.0	S2	91.303	89.885	1.268	Open Manhole	1200
1.001	13.232	23.7	S3	90.888	89.252	1.411	Open Manhole	1200
1.002	10.954	99.6	S4	90.744	89.142	1.377	Open Manhole	1200
1.003	13.977	99.8	S5	90.412	89.002	1.185	Open Manhole	1350
1.004	39.149	90.0	S6	90.117	87.698	2.119	Open Manhole	1350
1.005	21.808	90.1	S7	90.653	87.456	2.897	Open Manhole	1350
1.006	29.256	90.0	S13	91.369	87.130	3.939	Open Manhole	1350
2.000	56.040	104.0	S12	93.563	91.076	2.187	Open Manhole	1200
3.000	16.701	18.9	S10	95.925	91.969	3.656	Open Manhole	1050
3.001	11.974	19.0	S11	95.130	91.339	3.491	Open Manhole	1050
3.002	23.274	19.0	S12	93.563	90.115	3.148	Open Manhole	1200
2.001	33.122	100.7	S13	91.369	89.786	1.283	Open Manhole	1350
1.007	17.951	40.0	S14	90.193	86.531	3.212	Open Manhole	1350
1.008	24.246	40.0	S15	89.236	85.929	2.857	Open Manhole	1350
1.009	17.681	40.0	S18	88.814	85.492	2.872	Open Manhole	1350
4.000	22.562	167.1	S17	88.391	86.840	1.326	Open Manhole	1200
4.001	24.367	238.9	S18	88.814	86.663	1.851	Open Manhole	1350
1.010	21.542	24.6	S28	88.285	84.620	3.215	Open Manhole	1500
5.000	14.240	165.6	S20	86.681	85.317	1.139	Open Manhole	1350

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PIPELINE SCHEDULES for Surface Network 6

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
5.001	o	225	S20	86.681	85.317	1.139	Open Manhole	1350
5.002	o	300	S21	86.924	85.129	1.495	Open Manhole	1350
5.003	o	300	S22	87.093	85.070	1.723	Open Manhole	1350
5.004	o	450	S23	87.338	84.825	2.063	Open Manhole	1350
5.005	o	450	S24	87.525	84.791	2.284	Open Manhole	1350
5.006	o	450	S25	87.678	84.759	2.469	Open Manhole	1350
5.007	o	450	S26	87.901	84.714	2.737	Open Manhole	1350
5.008	o	525	S27	88.087	84.604	2.958	Open Manhole	1350
1.011	o	675	S28	88.285	84.395	3.215	Open Manhole	1500
6.000	o	225	S29	86.825	85.120	1.480	Open Manhole	1200
6.001	o	225	S30	87.141	84.972	1.944	Open Manhole	1200
1.012	o	675	S31	87.386	83.391	3.320	Open Manhole	1500
1.013	o	675	S32	86.254	82.905	2.674	Open Manhole	1500
1.014	o	675	S33	85.857	82.737	2.445	Open Manhole	1500
1.015	o	675	S34	85.411	82.540	2.196	Open Manhole	1500
7.000	o	225	S35	92.069	90.294	1.550	Open Manhole	1200
7.001	o	225	S36	91.372	89.646	1.501	Open Manhole	1200
7.002	o	225	S37	90.798	89.019	1.554	Open Manhole	1200
7.003	o	300	S38	90.304	88.149	1.855	Open Manhole	1200
7.004	o	300	S39	89.598	87.322	1.976	Open Manhole	1200
7.005	o	300	S40	88.279	86.170	1.809	Open Manhole	1200
7.006	o	300	S41	87.646	85.649	1.697	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
5.001	18.859	166.9	S21	86.924	85.204	1.495	Open Manhole	1350
5.002	13.831	234.4	S22	87.093	85.070	1.723	Open Manhole	1350
5.003	22.490	236.7	S23	87.338	84.975	2.063	Open Manhole	1350
5.004	13.216	388.7	S24	87.525	84.791	2.284	Open Manhole	1350
5.005	12.505	390.8	S25	87.678	84.759	2.469	Open Manhole	1350
5.006	17.637	391.9	S26	87.901	84.714	2.737	Open Manhole	1350
5.007	13.761	393.2	S27	88.087	84.679	2.958	Open Manhole	1350
5.008	22.508	381.5	S28	88.285	84.545	3.215	Open Manhole	1500
1.011	37.163	37.0	S31	87.386	83.391	3.320	Open Manhole	1500
6.000	24.667	166.7	S30	87.141	84.972	1.944	Open Manhole	1200
6.001	18.205	167.0	S31	87.386	84.863	2.298	Open Manhole	1500
1.012	46.756	96.2	S32	86.254	82.905	2.674	Open Manhole	1500
1.013	16.758	99.8	S33	85.857	82.737	2.445	Open Manhole	1500
1.014	18.305	92.9	S34	85.411	82.540	2.196	Open Manhole	1500
1.015	28.258	403.7	S47	84.699	82.470	1.554	Open Manhole	1500
7.000	12.952	20.0	S36	91.372	89.646	1.501	Open Manhole	1200
7.001	12.537	20.0	S37	90.798	89.019	1.554	Open Manhole	1200
7.002	15.894	20.0	S38	90.304	88.224	1.855	Open Manhole	1200
7.003	18.044	21.8	S39	89.598	87.322	1.976	Open Manhole	1200
7.004	37.769	32.8	S40	88.279	86.170	1.809	Open Manhole	1200
7.005	17.059	32.8	S41	87.646	85.649	1.697	Open Manhole	1200
7.006	20.497	32.8	S42	86.933	85.024	1.609	Open Manhole	1200

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PIPELINE SCHEDULES for Surface Network 6

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
7.007	o	300	S42	86.933	85.024	1.609	Open Manhole	1200
7.008	o	300	S43	86.261	84.386	1.575	Open Manhole	1200
7.009	o	300	S44	85.758	83.895	1.563	Open Manhole	1200
7.010	o	450	S45	85.167	83.365	1.352	Open Manhole	1500
7.011	o	450	S46	85.345	83.063	1.832	Open Manhole	1500
1.016	o	750	S47	84.699	82.395	1.554	Open Manhole	1500
8.000	o	225	S48	85.580	84.147	1.208	Open Manhole	1200
8.001	o	225	S49	85.760	83.991	1.544	Open Manhole	1200
8.002	o	300	S50	86.000	83.770	1.930	Open Manhole	1200
8.003	o	300	S51	85.454	83.380	1.774	Open Manhole	1200
8.004	o	300	S52	85.321	83.325	1.696	Open Manhole	1200
8.005	o	300	S53	85.149	83.260	1.589	Open Manhole	1200
8.006	o	300	S54	84.855	83.138	1.417	Open Manhole	1200
1.017	o	750	S55	84.644	82.200	1.694	Open Manhole	1500
1.018	o	750	S56	83.970	81.892	1.328	Open Manhole	1500
1.019	o	750	S57	83.528	81.772	1.006	Open Manhole	1500
1.020	o	150	S58 Pond	83.724	83.547	0.027	Open Manhole	1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
7.007	20.900	32.8	S43	86.261	84.386	1.575	Open Manhole	1200
7.008	16.105	32.8	S44	85.758	83.895	1.563	Open Manhole	1200
7.009	22.309	58.7	S45	85.167	83.515	1.352	Open Manhole	1500
7.010	49.602	164.2	S46	85.345	83.063	1.832	Open Manhole	1500
7.011	60.501	164.4	S47	84.699	82.695	1.554	Open Manhole	1500
1.016	77.703	398.5	S55	84.644	82.200	1.694	Open Manhole	1500
8.000	15.616	100.1	S49	85.760	83.991	1.544	Open Manhole	1200
8.001	14.594	100.0	S50	86.000	83.845	1.930	Open Manhole	1200
8.002	30.707	78.7	S51	85.454	83.380	1.774	Open Manhole	1200
8.003	8.300	150.9	S52	85.321	83.325	1.696	Open Manhole	1200
8.004	9.674	151.2	S53	85.149	83.261	1.588	Open Manhole	1200
8.005	18.297	150.0	S54	84.855	83.138	1.417	Open Manhole	1200
8.006	11.752	24.1	S55	84.644	82.650	1.694	Open Manhole	1500
1.017	123.270	400.2	S56	83.970	81.892	1.328	Open Manhole	1500
1.018	47.930	399.4	S57	83.528	81.772	1.006	Open Manhole	1500
1.019	54.608	401.5	S58 Pond	83.724	81.636	1.338	Open Manhole	1500
1.020	2.000	336.9	False	83.691	83.541	0.000	Open Manhole	0

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Setting Out Information - True Coordinates (Surface Network 6)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Layout (North)
1.000	S1	1200		333020.375	352568.470	333020.375	352568.470	
1.001	S2	1200		333030.411	352586.108	333030.411	352586.108	
1.002	S3	1200		333034.936	352598.542	333034.936	352598.542	
1.003	S4	1200		333040.364	352608.057	333040.364	352608.057	
1.004	S5	1350		333047.805	352619.889	333047.805	352619.889	
1.005	S6	1350		333082.936	352602.613	333082.936	352602.613	
1.006	S7	1350		333097.138	352586.063	333097.138	352586.063	
2.000	S8	1200		333132.171	352506.253	333132.171	352506.253	
3.000	S9	1200		333057.037	352506.734	333057.037	352506.734	
3.001	S10	1050		333069.074	352518.312	333069.074	352518.312	
3.002	S11	1050		333075.417	352528.468	333075.417	352528.468	
2.001	S12	1200		333091.740	352545.058	333091.740	352545.058	
1.007	S13	1350		333117.866	352565.417	333117.866	352565.417	
1.008	S14	1350		333129.993	352578.652	333129.993	352578.652	
1.009	S15	1350		333141.869	352599.790	333141.869	352599.790	
4.000	S16	1200		333185.398	352589.547	333185.398	352589.547	
4.001	S17	1200		333169.095	352605.144	333169.095	352605.144	
1.010	S18	1350		333147.553	352616.532	333147.553	352616.532	
5.000	S19	1200		333123.714	352712.305	333123.714	352712.305	

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Setting Out Information - True Coordinates (Surface Network 6)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Layout (North)
5.001	S20	1350		333111.389	352719.437	333111.389	352719.437	
5.002	S21	1350		333100.870	352703.784	333100.870	352703.784	
5.003	S22	1350		333094.684	352691.413	333094.684	352691.413	
5.004	S23	1350		333083.449	352671.930	333083.449	352671.930	
5.005	S24	1350		333094.642	352664.903	333094.642	352664.903	
5.006	S25	1350		333106.045	352659.770	333106.045	352659.770	
5.007	S26	1350		333121.404	352651.101	333121.404	352651.101	
5.008	S27	1350		333133.156	352643.942	333133.156	352643.942	
1.011	S28	1500		333154.537	352636.910	333154.537	352636.910	
6.000	S29	1200		333201.426	352649.573	333201.426	352649.573	
6.001	S30	1200		333183.406	352666.417	333183.406	352666.417	
1.012	S31	1500		333166.148	352672.213	333166.148	352672.213	
1.013	S32	1500		333181.070	352716.524	333181.070	352716.524	
1.014	S33	1500		333189.742	352730.864	333189.742	352730.864	
1.015	S34	1500		333203.673	352742.738	333203.673	352742.738	
7.000	S35	1200		333155.261	352521.324	333155.261	352521.324	
7.001	S36	1200		333163.998	352530.886	333163.998	352530.886	
7.002	S37	1200		333171.693	352540.784	333171.693	352540.784	
7.003	S38	1200		333182.868	352552.086	333182.868	352552.086	

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Setting Out Information - True Coordinates (Surface Network 6)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Layout (North)
7.004	S39	1200		333196.310	352564.123	333196.310	352564.123	
7.005	S40	1200		333222.297	352591.530	333222.297	352591.530	
7.006	S41	1200		333232.539	352605.172	333232.539	352605.172	
7.007	S42	1200		333247.285	352619.408	333247.285	352619.408	
7.008	S43	1200		333263.009	352633.177	333263.009	352633.177	
7.009	S44	1200		333272.273	352646.351	333272.273	352646.351	
7.010	S45	1500		333287.822	352662.348	333287.822	352662.348	
7.011	S46	1500		333252.071	352696.732	333252.071	352696.732	
1.016	S47	1500		333229.980	352753.056	333229.980	352753.056	
8.000	S48	1200		333168.992	352756.514	333168.992	352756.514	
8.001	S49	1200		333157.657	352767.256	333157.657	352767.256	
8.002	S50	1200		333145.361	352775.117	333145.361	352775.117	
8.003	S51	1200		333160.856	352801.628	333160.856	352801.628	
8.004	S52	1200		333165.868	352808.244	333165.868	352808.244	
8.005	S53	1200		333174.065	352813.381	333174.065	352813.381	
8.006	S54	1200		333190.836	352820.696	333190.836	352820.696	
1.017	S55	1500		333201.608	352825.394	333201.608	352825.394	
1.018	S56	1500		333286.775	352914.512	333286.775	352914.512	
1.019	S57	1500		333334.700	352913.798	333334.700	352913.798	

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Setting Out Information - True Coordinates (Surface Network 6)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Layout (North)
1.020	S58 Pond	1500		333378.804	352945.998	333378.804	352945.998	

PN	DSMH Name	Dia/Len (mm)	Width (mm)	DS Easting (m)	DS Northing (m)	Layout (North)
1.020	False	0		333380.164	352947.464	



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Area Summary for Surface Network 6

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.063	0.063	0.063
1.001	-	-	100	0.054	0.054	0.054
1.002	-	-	100	0.018	0.018	0.018
1.003	-	-	100	0.074	0.074	0.074
1.004	-	-	100	0.091	0.091	0.091
1.005	-	-	100	0.127	0.127	0.127
1.006	-	-	100	0.028	0.028	0.028
2.000	-	-	100	0.135	0.135	0.135
3.000	-	-	100	0.192	0.192	0.192
3.001	-	-	100	0.000	0.000	0.000
3.002	-	-	100	0.035	0.035	0.035
2.001	-	-	100	0.123	0.123	0.123
1.007	-	-	100	0.052	0.052	0.052
1.008	-	-	100	0.088	0.088	0.088
1.009	-	-	100	0.070	0.070	0.070
4.000	-	-	100	0.082	0.082	0.082
4.001	-	-	100	0.026	0.026	0.026
1.010	-	-	100	0.062	0.062	0.062
5.000	-	-	100	0.079	0.079	0.079
5.001	-	-	100	0.101	0.101	0.101
5.002	-	-	100	0.025	0.025	0.025
5.003	-	-	100	0.052	0.052	0.052
5.004	-	-	100	0.101	0.101	0.101
5.005	-	-	100	0.000	0.000	0.000
5.006	-	-	100	0.070	0.070	0.070
5.007	-	-	100	0.055	0.055	0.055
5.008	-	-	100	0.008	0.008	0.008
1.011	-	-	100	0.032	0.032	0.032
6.000	-	-	100	0.116	0.116	0.116
6.001	-	-	100	0.008	0.008	0.008
1.012	-	-	100	0.136	0.136	0.136
1.013	-	-	100	0.116	0.116	0.116
1.014	-	-	100	0.039	0.039	0.039
1.015	-	-	100	0.131	0.131	0.131
7.000	-	-	100	0.062	0.062	0.062
7.001	-	-	100	0.000	0.000	0.000
7.002	-	-	100	0.042	0.042	0.042
7.003	-	-	100	0.016	0.016	0.016
7.004	-	-	100	0.051	0.051	0.051
7.005	-	-	100	0.000	0.000	0.000
7.006	-	-	100	0.064	0.064	0.064
7.007	-	-	100	0.073	0.073	0.073
7.008	-	-	100	0.000	0.000	0.000
7.009	-	-	100	0.087	0.087	0.087
7.010	-	-	100	0.000	0.000	0.000
7.011	-	-	100	0.095	0.095	0.095
1.016	-	-	100	0.000	0.000	0.000
8.000	-	-	100	0.017	0.017	0.017
8.001	-	-	100	0.102	0.102	0.102
8.002	-	-	100	0.084	0.084	0.084
8.003	-	-	100	0.009	0.009	0.009
8.004	-	-	100	0.056	0.056	0.056
8.005	-	-	100	0.021	0.021	0.021
8.006	-	-	100	0.137	0.137	0.137
1.017	-	-	100	0.000	0.000	0.000
1.018	-	-	100	0.000	0.000	0.000
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				3.305	3.305	3.305

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Free Flowing Outfall Details for Surface Network 6

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.020	False	83.691	83.541	0.000	0	0

Simulation Criteria for Surface Network 6

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.316		

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Online Controls for Surface Network 6

Pump Manhole: S58 Pond, DS/PN: 1.020, Volume (m³): 23.8

Invert Level (m) 83.547

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Storage Structures for Surface Network 6

Infiltration Basin Manhole: S58 Pond, DS/PN: 1.020

Invert Level (m) 81.536 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.19796 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	532.6	2.188	1603.2

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Volume Summary (Static)

Length Calculations based on Centre-Centre

Pipe Number	USMH Name	Manhole Volume (m³)	Pipe Volume (m³)	Storage Structure Volume (m³)	Total Volume (m³)
1.000	S1	1.945	0.359	0.000	2.304
1.001	S2	1.689	0.526	0.000	2.215
1.002	S3	1.850	0.436	0.000	2.286
1.003	S4	1.812	0.556	0.000	2.368
1.004	S5	3.262	2.767	0.000	6.029
1.005	S6	3.463	1.542	0.000	5.004
1.006	S7	4.578	2.068	0.000	6.646
2.000	S8	1.924	3.961	0.000	5.885
3.000	S9	4.674	1.181	0.000	5.855
3.001	S10	3.426	0.846	0.000	4.272
3.002	S11	3.283	1.645	0.000	4.928
2.001	S12	3.900	2.341	0.000	6.241
1.007	S13	6.282	2.855	0.000	9.137
1.008	S14	5.236	3.856	0.000	9.092
1.009	S15	4.726	2.812	0.000	7.538
4.000	S16	1.915	0.897	0.000	2.812
4.001	S17	1.839	1.722	0.000	3.561
1.010	S18	4.749	3.426	0.000	8.175
5.000	S19	1.609	0.566	0.000	2.176
5.001	S20	1.952	0.750	0.000	2.702
5.002	S21	2.569	0.978	0.000	3.547
5.003	S22	2.896	1.590	0.000	4.485
5.004	S23	3.597	2.102	0.000	5.699
5.005	S24	3.913	1.989	0.000	5.902
5.006	S25	4.178	2.805	0.000	6.983
5.007	S26	4.562	2.189	0.000	6.750
5.008	S27	4.986	4.872	0.000	9.858
1.011	S28	6.874	13.299	0.000	20.173
6.000	S29	1.928	0.981	0.000	2.909
6.001	S30	2.453	0.724	0.000	3.177
1.012	S31	7.060	16.731	0.000	23.791
1.013	S32	5.918	5.997	0.000	11.915
1.014	S33	5.513	6.550	0.000	12.064
1.015	S34	5.073	10.112	0.000	15.186
7.000	S35	2.007	0.515	0.000	2.522
7.001	S36	1.952	0.498	0.000	2.451
7.002	S37	2.012	0.632	0.000	2.644
7.003	S38	2.437	1.275	0.000	3.713
7.004	S39	2.574	2.670	0.000	5.244
7.005	S40	2.385	1.206	0.000	3.591
7.006	S41	2.259	1.449	0.000	3.707
7.007	S42	2.159	1.477	0.000	3.636
7.008	S43	2.121	1.138	0.000	3.259
7.009	S44	2.107	1.577	0.000	3.684
7.010	S45	3.184	7.889	0.000	11.073
7.011	S46	4.033	9.622	0.000	13.655
1.016	S47	4.072	34.328	0.000	38.400
8.000	S48	1.621	0.621	0.000	2.242
8.001	S49	2.001	0.580	0.000	2.581
8.002	S50	2.522	2.171	0.000	4.693
8.003	S51	2.346	0.587	0.000	2.932
8.004	S52	2.257	0.684	0.000	2.941
8.005	S53	2.136	1.293	0.000	3.430
8.006	S54	1.942	0.831	0.000	2.773
1.017	S55	4.319	54.459	0.000	58.778
1.018	S56	3.672	21.175	0.000	24.847
1.019	S57	3.103	24.125	0.000	27.228
1.020	S58 Pond	0.313	0.035	2231.649	2231.997

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Volume Summary (Static)

Pipe Number	USMH Name	Manhole Volume (m³)	Pipe Volume (m³)	Storage Structure Volume (m³)	Total Volume (m³)
Total		185.169	276.868	2231.649	2693.686

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 6

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.740
Region England and Wales Ratio R 0.316 Cv (Winter) 0.850

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	S1	15 minute 1 year Winter I+0%	92.281	90.611	-0.100		7.3	OK
1.001	S2	15 minute 1 year Winter I+0%	91.303	89.865	-0.170		12.6	OK
1.002	S3	15 minute 1 year Winter I+0%	90.888	89.342	-0.135		14.4	OK
1.003	S4	15 minute 1 year Winter I+0%	90.744	89.253	-0.114		21.8	OK
1.004	S5	15 minute 1 year Winter I+0%	90.412	88.242	-0.191		30.6	OK
1.005	S6	15 minute 1 year Winter I+0%	90.117	87.833	-0.165		42.8	OK
1.006	S7	15 minute 1 year Winter I+0%	90.653	87.592	-0.163		45.1	OK
2.000	S8	15 minute 1 year Winter I+0%	93.316	91.693	-0.222		15.7	OK
3.000	S9	15 minute 1 year Winter I+0%	96.985	92.916	-0.236		22.5	OK
3.001	S10	15 minute 1 year Winter I+0%	95.925	92.036	-0.233		22.2	OK
3.002	S11	15 minute 1 year Winter I+0%	95.130	91.407	-0.232		25.5	OK
2.001	S12	15 minute 1 year Winter I+0%	93.563	90.272	-0.143		53.9	OK
1.007	S13	15 minute 1 year Winter I+0%	91.369	87.140	-0.290		103.4	OK
1.008	S14	15 minute 1 year Winter I+0%	90.193	86.692	-0.293		111.0	OK
1.009	S15	15 minute 1 year Winter I+0%	89.236	86.109	-0.275		117.9	OK
4.000	S16	15 minute 1 year Winter I+0%	88.668	87.053	-0.147		9.5	OK
4.001	S17	15 minute 1 year Winter I+0%	88.391	86.854	-0.211		12.2	OK
1.010	S18	15 minute 1 year Winter I+0%	88.814	85.652	-0.294		135.8	OK
5.000	S19	15 minute 1 year Winter I+0%	86.826	85.481	-0.147		9.2	OK
5.001	S20	15 minute 1 year Winter I+0%	86.681	85.434	-0.108		19.1	OK
5.002	S21	15 minute 1 year Winter I+0%	86.924	85.253	-0.176		21.5	OK
5.003	S22	15 minute 1 year Winter I+0%	87.093	85.205	-0.165		26.2	OK
5.004	S23	15 minute 1 year Winter I+0%	87.338	85.018	-0.257		35.2	OK
5.005	S24	15 minute 1 year Winter I+0%	87.525	84.987	-0.254		34.7	OK
5.006	S25	15 minute 1 year Winter I+0%	87.678	84.957	-0.252		40.3	OK
5.007	S26	15 minute 1 year Winter I+0%	87.901	84.917	-0.247		44.5	OK
5.008	S27	15 minute 1 year Winter I+0%	88.087	84.774	-0.355		45.0	OK
1.011	S28	15 minute 1 year Winter I+0%	88.285	84.563	-0.507		179.1	OK
6.000	S29	15 minute 1 year Winter I+0%	86.825	85.215	-0.130		13.3	OK
6.001	S30	15 minute 1 year Winter I+0%	87.141	85.070	-0.127		14.2	OK
1.012	S31	15 minute 1 year Winter I+0%	87.386	83.619	-0.447		202.3	OK
1.013	S32	15 minute 1 year Winter I+0%	86.254	83.207	-0.373		212.8	OK
1.014	S33	15 minute 1 year Winter I+0%	85.857	83.027	-0.385		216.7	OK
1.015	S34	15 minute 1 year Winter I+0%	85.411	82.925	-0.290		223.6	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 6

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
7.000	S35	15 minute 1 year Winter I+0%	92.069	90.334	-0.185		7.2	OK
7.001	S36	15 minute 1 year Winter I+0%	91.372	89.686	-0.185		7.1	OK
7.002	S37	15 minute 1 year Winter I+0%	90.798	89.069	-0.175		11.3	OK
7.003	S38	15 minute 1 year Winter I+0%	90.304	88.198	-0.251		13.0	OK
7.004	S39	15 minute 1 year Winter I+0%	89.598	87.385	-0.237		18.0	OK
7.005	S40	15 minute 1 year Winter I+0%	88.279	86.235	-0.234		18.0	OK
7.006	S41	15 minute 1 year Winter I+0%	87.646	85.724	-0.225		24.2	OK
7.007	S42	15 minute 1 year Winter I+0%	86.933	85.111	-0.213		31.3	OK
7.008	S43	15 minute 1 year Winter I+0%	86.261	84.474	-0.212		31.3	OK
7.009	S44	15 minute 1 year Winter I+0%	85.758	84.009	-0.186		39.6	OK
7.010	S45	15 minute 1 year Winter I+0%	85.167	83.491	-0.324		39.2	OK
7.011	S46	15 minute 1 year Winter I+0%	85.345	83.201	-0.312		47.3	OK
1.016	S47	15 minute 1 year Winter I+0%	84.699	82.766	-0.379		260.8	OK
8.000	S48	15 minute 1 year Winter I+0%	85.580	84.177	-0.195		2.0	OK
8.001	S49	15 minute 1 year Winter I+0%	85.760	84.070	-0.146		12.0	OK
8.002	S50	15 minute 1 year Winter I+0%	86.000	83.856	-0.214		20.3	OK
8.003	S51	15 minute 1 year Winter I+0%	85.454	83.502	-0.178		21.3	OK
8.004	S52	15 minute 1 year Winter I+0%	85.321	83.460	-0.165		26.7	OK
8.005	S53	15 minute 1 year Winter I+0%	85.149	83.386	-0.174		28.5	OK
8.006	S54	15 minute 1 year Winter I+0%	84.855	83.237	-0.201		41.5	OK
1.017	S55	15 minute 1 year Winter I+0%	84.644	82.577	-0.373		270.1	OK
1.018	S56	15 minute 1 year Winter I+0%	83.970	82.278	-0.364		255.7	OK
1.019	S57	15 minute 1 year Winter I+0%	83.528	82.140	-0.382		253.4	OK
1.020	S58 Pond	240 minute 1 year Winter I+0%	83.724	82.022	-1.675	180	0.0	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 6

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.740
Region England and Wales Ratio R 0.316 Cv (Winter) 0.850

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	S1	15 minute 30 year Winter I+0%	92.281	90.644	-0.067		18.0	OK
1.001	S2	15 minute 30 year Winter I+0%	91.303	89.905	-0.130		34.3	OK
1.002	S3	15 minute 30 year Winter I+0%	90.888	89.559	0.082		38.8	SURCHARGED
1.003	S4	15 minute 30 year Winter I+0%	90.744	89.470	0.103		59.7	SURCHARGED
1.004	S5	15 minute 30 year Winter I+0%	90.412	88.358	-0.075		84.2	OK
1.005	S6	15 minute 30 year Winter I+0%	90.117	88.111	0.113		112.1	SURCHARGED
1.006	S7	15 minute 30 year Winter I+0%	90.653	87.820	0.065		118.0	SURCHARGED
2.000	S8	15 minute 30 year Winter I+0%	93.316	91.742	-0.173		38.4	OK
3.000	S9	15 minute 30 year Winter I+0%	96.985	92.954	-0.198		54.9	OK
3.001	S10	15 minute 30 year Winter I+0%	95.925	92.076	-0.193		54.4	OK
3.002	S11	15 minute 30 year Winter I+0%	95.130	91.449	-0.190		64.5	OK
2.001	S12	15 minute 30 year Winter I+0%	93.563	90.692	0.277		138.0	SURCHARGED
1.007	S13	15 minute 30 year Winter I+0%	91.369	87.261	-0.169		265.3	OK
1.008	S14	15 minute 30 year Winter I+0%	90.193	86.808	-0.177		286.8	OK
1.009	S15	15 minute 30 year Winter I+0%	89.236	86.247	-0.137		303.3	OK
4.000	S16	15 minute 30 year Winter I+0%	88.668	87.107	-0.093		23.0	OK
4.001	S17	15 minute 30 year Winter I+0%	88.391	86.913	-0.152		30.7	OK
1.010	S18	15 minute 30 year Winter I+0%	88.814	85.766	-0.180		349.0	OK
5.000	S19	15 minute 30 year Winter I+0%	86.826	85.685	0.057		22.3	SURCHARGED
5.001	S20	15 minute 30 year Winter I+0%	86.681	85.646	0.104		50.1	SURCHARGED
5.002	S21	15 minute 30 year Winter I+0%	86.924	85.422	-0.007		53.5	OK
5.003	S22	15 minute 30 year Winter I+0%	87.093	85.370	0.000		65.0	SURCHARGED
5.004	S23	15 minute 30 year Winter I+0%	87.338	85.215	-0.060		86.7	OK
5.005	S24	15 minute 30 year Winter I+0%	87.525	85.188	-0.053		83.9	OK
5.006	S25	15 minute 30 year Winter I+0%	87.678	85.162	-0.047		97.8	OK
5.007	S26	15 minute 30 year Winter I+0%	87.901	85.125	-0.039		106.4	OK
5.008	S27	15 minute 30 year Winter I+0%	88.087	84.882	-0.247		107.7	OK
1.011	S28	15 minute 30 year Winter I+0%	88.285	84.678	-0.392		461.7	OK
6.000	S29	15 minute 30 year Winter I+0%	86.825	85.287	-0.058		32.5	OK
6.001	S30	15 minute 30 year Winter I+0%	87.141	85.148	-0.049		34.9	OK
1.012	S31	15 minute 30 year Winter I+0%	87.386	83.853	-0.213		516.7	OK
1.013	S32	15 minute 30 year Winter I+0%	86.254	83.679	0.099		506.3	SURCHARGED
1.014	S33	15 minute 30 year Winter I+0%	85.857	83.531	0.119		509.9	SURCHARGED
1.015	S34	15 minute 30 year Winter I+0%	85.411	83.384	0.169		524.5	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 6

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
7.000	S35	15 minute 30 year Winter I+0%	92.069	90.357	-0.162		17.7	OK
7.001	S36	15 minute 30 year Winter I+0%	91.372	89.710	-0.161		17.5	OK
7.002	S37	15 minute 30 year Winter I+0%	90.798	89.103	-0.141		30.2	OK
7.003	S38	15 minute 30 year Winter I+0%	90.304	88.233	-0.216		34.9	OK
7.004	S39	15 minute 30 year Winter I+0%	89.598	87.431	-0.191		50.2	OK
7.005	S40	15 minute 30 year Winter I+0%	88.279	86.283	-0.187		49.7	OK
7.006	S41	15 minute 30 year Winter I+0%	87.646	85.783	-0.166		68.7	OK
7.007	S42	15 minute 30 year Winter I+0%	86.933	85.181	-0.143		90.2	OK
7.008	S43	15 minute 30 year Winter I+0%	86.261	84.547	-0.139		89.2	OK
7.009	S44	15 minute 30 year Winter I+0%	85.758	84.121	-0.074		114.1	OK
7.010	S45	15 minute 30 year Winter I+0%	85.167	83.593	-0.222		114.3	OK
7.011	S46	15 minute 30 year Winter I+0%	85.345	83.314	-0.199		134.8	OK
1.016	S47	15 minute 30 year Winter I+0%	84.699	83.236	0.091		599.7	SURCHARGED
8.000	S48	15 minute 30 year Winter I+0%	85.580	84.196	-0.176		4.8	OK
8.001	S49	15 minute 30 year Winter I+0%	85.760	84.143	-0.073		36.0	OK
8.002	S50	15 minute 30 year Winter I+0%	86.000	83.927	-0.143		61.2	OK
8.003	S51	15 minute 30 year Winter I+0%	85.454	83.704	0.024		61.3	SURCHARGED
8.004	S52	15 minute 30 year Winter I+0%	85.321	83.652	0.027		76.1	SURCHARGED
8.005	S53	15 minute 30 year Winter I+0%	85.149	83.560	0.000		80.7	OK
8.006	S54	15 minute 30 year Winter I+0%	84.855	83.321	-0.117		117.1	OK
1.017	S55	15 minute 30 year Winter I+0%	84.644	83.014	0.064		618.6	SURCHARGED
1.018	S56	15 minute 30 year Winter I+0%	83.970	82.648	0.006		582.7	SURCHARGED
1.019	S57	360 minute 30 year Winter I+0%	83.528	82.609	0.087		144.9	SURCHARGED
1.020	S58 Pond	360 minute 30 year Winter I+0%	83.724	82.604	-1.093	366	0.0	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 6

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.740
Region England and Wales Ratio R 0.316 Cv (Winter) 0.850

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	S1	15 minute 100 year Winter I+40%	92.281	91.007	0.296		28.4	SURCHARGED
1.001	S2	15 minute 100 year Winter I+40%	91.303	90.512	0.477		50.2	SURCHARGED
1.002	S3	15 minute 100 year Winter I+40%	90.888	90.379	0.902		55.5	SURCHARGED
1.003	S4	15 minute 100 year Winter I+40%	90.744	90.235	0.868		87.1	SURCHARGED
1.004	S5	15 minute 100 year Winter I+40%	90.412	89.811	1.378		117.0	SURCHARGED
1.005	S6	15 minute 100 year Winter I+40%	90.117	89.327	1.329		168.1	SURCHARGED
1.006	S7	15 minute 100 year Winter I+40%	90.653	88.824	1.069		174.7	SURCHARGED
2.000	S8	15 minute 100 year Winter I+40%	93.316	91.880	-0.035		66.9	OK
3.000	S9	15 minute 100 year Winter I+40%	96.985	92.994	-0.158		99.1	OK
3.001	S10	15 minute 100 year Winter I+40%	95.925	92.120	-0.149		98.1	OK
3.002	S11	15 minute 100 year Winter I+40%	95.130	91.959	0.320		110.7	SURCHARGED
2.001	S12	15 minute 100 year Winter I+40%	93.563	91.678	1.263		223.2	SURCHARGED
1.007	S13	15 minute 100 year Winter I+40%	91.369	88.121	0.691		405.5	SURCHARGED
1.008	S14	15 minute 100 year Winter I+40%	90.193	87.641	0.656		424.5	SURCHARGED
1.009	S15	15 minute 100 year Winter I+40%	89.236	87.103	0.719		440.9	SURCHARGED
4.000	S16	15 minute 100 year Winter I+40%	88.668	87.236	0.036		41.6	SURCHARGED
4.001	S17	15 minute 100 year Winter I+40%	88.391	86.982	-0.083		54.9	OK
1.010	S18	15 minute 100 year Winter I+40%	88.814	86.546	0.600		503.3	SURCHARGED
5.000	S19	15 minute 100 year Winter I+40%	86.826	86.525	0.897		34.1	SURCHARGED
5.001	S20	15 minute 100 year Winter I+40%	86.681	86.469	0.927		75.9	FLOOD RISK
5.002	S21	15 minute 100 year Winter I+40%	86.924	86.193	0.764		84.1	SURCHARGED
5.003	S22	15 minute 100 year Winter I+40%	87.093	86.139	0.769		105.0	SURCHARGED
5.004	S23	15 minute 100 year Winter I+40%	87.338	86.024	0.749		147.5	SURCHARGED
5.005	S24	15 minute 100 year Winter I+40%	87.525	85.993	0.752		145.8	SURCHARGED
5.006	S25	15 minute 100 year Winter I+40%	87.678	85.964	0.755		174.7	SURCHARGED
5.007	S26	15 minute 100 year Winter I+40%	87.901	85.923	0.759		194.5	SURCHARGED
5.008	S27	15 minute 100 year Winter I+40%	88.087	85.881	0.752		177.1	SURCHARGED
1.011	S28	15 minute 100 year Winter I+40%	88.285	85.845	0.775		637.0	SURCHARGED
6.000	S29	15 minute 100 year Winter I+40%	86.825	85.817	0.472		55.8	SURCHARGED
6.001	S30	15 minute 100 year Winter I+40%	87.141	85.708	0.511		58.1	SURCHARGED
1.012	S31	15 minute 100 year Winter I+40%	87.386	85.616	1.550		704.8	SURCHARGED
1.013	S32	15 minute 100 year Winter I+40%	86.254	85.316	1.736		727.6	SURCHARGED
1.014	S33	15 minute 100 year Winter I+40%	85.857	85.033	1.621		732.5	SURCHARGED
1.015	S34	30 minute 100 year Winter I+40%	85.411	84.751	1.536		724.9	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 6

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
7.000	S35	15 minute 100 year Winter I+40%	92.069	90.381	-0.138		32.0	OK
7.001	S36	15 minute 100 year Winter I+40%	91.372	89.733	-0.138		31.6	OK
7.002	S37	15 minute 100 year Winter I+40%	90.798	89.137	-0.107		54.5	OK
7.003	S38	15 minute 100 year Winter I+40%	90.304	88.264	-0.185		63.0	OK
7.004	S39	15 minute 100 year Winter I+40%	89.598	87.474	-0.148		90.6	OK
7.005	S40	15 minute 100 year Winter I+40%	88.279	86.329	-0.141		89.9	OK
7.006	S41	15 minute 100 year Winter I+40%	87.646	85.850	-0.099		124.1	OK
7.007	S42	15 minute 100 year Winter I+40%	86.933	85.581	0.257		151.7	SURCHARGED
7.008	S43	15 minute 100 year Winter I+40%	86.261	85.232	0.546		145.4	SURCHARGED
7.009	S44	15 minute 100 year Winter I+40%	85.758	84.956	0.761		180.0	SURCHARGED
7.010	S45	30 minute 100 year Winter I+40%	85.167	84.635	0.820		147.3	SURCHARGED
7.011	S46	30 minute 100 year Winter I+40%	85.345	84.567	1.054		154.3	SURCHARGED
1.016	S47	30 minute 100 year Winter I+40%	84.699	84.447	1.302		853.4	FLOOD RISK
8.000	S48	15 minute 100 year Winter I+40%	85.580	84.728	0.356		9.7	SURCHARGED
8.001	S49	15 minute 100 year Winter I+40%	85.760	84.719	0.503		51.0	SURCHARGED
8.002	S50	15 minute 100 year Winter I+40%	86.000	84.566	0.496		88.5	SURCHARGED
8.003	S51	15 minute 100 year Winter I+40%	85.454	84.364	0.684		89.9	SURCHARGED
8.004	S52	30 minute 100 year Winter I+40%	85.321	84.307	0.682		97.8	SURCHARGED
8.005	S53	30 minute 100 year Winter I+40%	85.149	84.242	0.682		104.9	SURCHARGED
8.006	S54	30 minute 100 year Winter I+40%	84.855	84.150	0.712		152.5	SURCHARGED
1.017	S55	30 minute 100 year Winter I+40%	84.644	83.995	1.045		935.1	SURCHARGED
1.018	S56	480 minute 100 year Winter I+40%	83.970	83.372	0.730		212.3	SURCHARGED
1.019	S57	480 minute 100 year Winter I+40%	83.528	83.366	0.844		212.0	FLOOD RISK
1.020	S58 Pond	480 minute 100 year Winter I+40%	83.724	83.360	-0.337	496	0.0	OK

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Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

www.betts-associates.co.uk

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Head Office Betts Associates Ltd