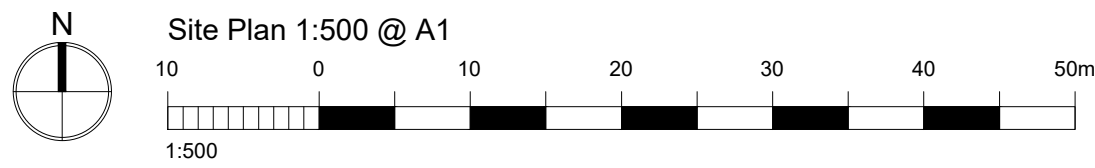
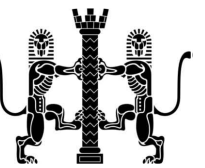


Appendix B

Architects Masterplan



- Notes
1. This drawing is the copyright of MH Architects Ltd
 2. Do not scale this drawing except for Local Authority planning purposes
 3. All dimensions must be checked on site by the contractor prior to commencement of the works.



Client Approval					
X	A - Approved				
X	B - Approved with comments				
X	C - Do not use				
Rev.	Revision Note/Purpose of Issue	Drw By	Date	Chk By	Date



Client		Drew Smith Ltd			
Job title		Colt Industrial Estate Havant ITT for Homes England			
Drawing title		Proposed Site Plan			
Drawn	Date	Checked	Date	Scale at A1	
YM	14/06/2019	JM	14/06/2019	1:500	
Job No.	Pro.	Org.	Zone	Level	Rev.
18-197	CIE	MHA	ZZ	ZZ	A
Purpose of Issue		DR	A	0004	A01

PLANNING ISSUE

Ground Floor | Bicentennial Building
Southern Gate | Chichester
West Sussex | PO19 8EZ
t: 01243 774748
e: admin@mharchitects.co.uk
www.mharchitects.co.uk
Limited Company
Registered in England No. 0994233



Appendix C

Run off Calculations

19142 - Colt International Area 1**Surface Water Runoff Calculations**

r = 0.35

Key
Peak Flow
DO NOT EDIT

Pre Development

1:1yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M1-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.452	1.00	0.36	7.20	0.62	4.46	53.57	87.50
10min	0.17	0.452	1.00	0.51	10.20	0.61	6.22	37.33	60.98
15min	0.25	0.452	1.00	0.62	12.40	0.61	7.56	30.26	49.42
30min	0.50	0.452	1.00	0.79	15.80	0.62	9.80	19.59	32.00
1h	1.00	0.452	1.00	1.00	20.00	0.64	12.80	12.80	20.91
2h	2.00	0.452	1.00	1.22	24.40	0.66	16.10	8.05	13.15
4h	4.00	0.452	1.00	1.49	29.80	0.68	20.26	5.07	8.28
6h	6.00	0.452	1.00	1.69	33.80	0.69	23.32	3.89	6.35

1:30yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M30-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.452	1.00	0.36	7.20	1.46	10.51	126.14	206.06
10min	0.17	0.452	1.00	0.51	10.20	1.49	15.20	91.19	148.96
15min	0.25	0.452	1.00	0.62	12.40	1.51	18.72	74.90	122.34
30min	0.50	0.452	1.00	0.79	15.80	1.53	24.17	48.35	78.98
1h	1.00	0.452	1.00	1.00	20.00	1.54	30.80	30.80	50.31
2h	2.00	0.452	1.00	1.22	24.40	1.53	37.33	18.67	30.49
4h	4.00	0.452	1.00	1.49	29.80	1.51	45.00	11.25	18.38
6h	6.00	0.452	1.00	1.69	33.80	1.48	50.02	8.34	13.62

1:100yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M100-X (mm)	I (mm/hr)	Q (l/s)	Q + 40% CC
5min	0.08	0.452	1.00	0.36	7.20	1.85	13.32	159.84	261.10	365.54
10min	0.17	0.452	1.00	0.51	10.20	1.91	19.48	116.89	190.95	267.32
15min	0.25	0.452	1.00	0.62	12.40	1.95	24.18	96.72	157.99	221.19
30min	0.50	0.452	1.00	0.79	15.80	1.99	31.44	62.88	102.72	143.81
1h	1.00	0.452	1.00	1.00	20.00	2.03	40.60	40.60	66.32	92.85
2h	2.00	0.452	1.00	1.22	24.40	2.01	49.04	24.52	40.06	56.08
4h	4.00	0.452	1.00	1.49	29.80	1.97	58.71	14.68	23.97	33.56
6h	6.00	0.452	1.00	1.69	33.80	1.94	65.57	10.93	17.85	24.99

19142 - Colt International Area 2**Surface Water Runoff Calculations**

r = 0.35

Key
Peak Flow
DO NOT EDIT

Pre Development

1:1yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M1-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	1.636	0.95	0.36	7.20	0.62	4.46	53.57	300.88
10min	0.17	1.636	0.95	0.51	10.20	0.61	6.22	37.33	209.69
15min	0.25	1.636	0.95	0.62	12.40	0.61	7.56	30.26	169.94
30min	0.50	1.636	0.95	0.79	15.80	0.62	9.80	19.59	110.05
1h	1.00	1.636	0.95	1.00	20.00	0.64	12.80	12.80	71.90
2h	2.00	1.636	0.95	1.22	24.40	0.66	16.10	8.05	45.23
4h	4.00	1.636	0.95	1.49	29.80	0.68	20.26	5.07	28.46
6h	6.00	1.636	0.95	1.69	33.80	0.69	23.32	3.89	21.83

1:30yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M30-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	1.636	0.95	0.36	7.20	1.46	10.51	126.14	708.54
10min	0.17	1.636	0.95	0.51	10.20	1.49	15.20	91.19	512.19
15min	0.25	1.636	0.95	0.62	12.40	1.51	18.72	74.90	420.68
30min	0.50	1.636	0.95	0.79	15.80	1.53	24.17	48.35	271.56
1h	1.00	1.636	0.95	1.00	20.00	1.54	30.80	30.80	173.00
2h	2.00	1.636	0.95	1.22	24.40	1.53	37.33	18.67	104.84
4h	4.00	1.636	0.95	1.49	29.80	1.51	45.00	11.25	63.19
6h	6.00	1.636	0.95	1.69	33.80	1.48	50.02	8.34	46.83

1:100yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M100-X (mm)	I (mm/hr)	Q (l/s)	Q + 40% CC
5min	0.08	1.636	0.95	0.36	7.20	1.85	13.32	159.84	897.80	1256.92
10min	0.17	1.636	0.95	0.51	10.20	1.91	19.48	116.89	656.57	919.20
15min	0.25	1.636	0.95	0.62	12.40	1.95	24.18	96.72	543.26	760.57
30min	0.50	1.636	0.95	0.79	15.80	1.99	31.44	62.88	353.21	494.50
1h	1.00	1.636	0.95	1.00	20.00	2.03	40.60	40.60	228.05	319.26
2h	2.00	1.636	0.95	1.22	24.40	2.01	49.04	24.52	137.74	192.83
4h	4.00	1.636	0.95	1.49	29.80	1.97	58.71	14.68	82.44	115.41
6h	6.00	1.636	0.95	1.69	33.80	1.94	65.57	10.93	61.38	85.94

Appendix D

Microdrainage Network Calculations

The Old Hayloft		Page 1
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales			
Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	19.200	Add Flow / Climate Change (%)	0
Ratio R	0.350	Minimum Backdrop Height (m)	0.600
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	0.500
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)	250

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.686	4-8	0.633

Total Area Contributing (ha) = 1.320

Total Pipe Volume (m³) = 119.108

Network Design Table for Storm

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
S1.000	16.739	0.167	100.0	0.000	4.00	0.0	0.600	600 []	600	600 Culvert	
S1.001	28.014	0.233	120.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.002	28.752	0.144	200.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.003	20.727	0.138	150.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.004	8.125	0.041	200.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S2.000	6.225	0.106	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit	
S2.001	16.147	0.276	58.5	0.016	0.00	0.0	0.600	o	100	Pipe/Conduit	
S2.002	14.873	0.817	18.2	0.012	0.00	0.0	0.600	o	100	Pipe/Conduit	
S2.003	8.149	0.139	58.5	0.016	0.00	0.0	0.600	o	150	Pipe/Conduit	
S2.004	16.418	0.361	45.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S2.005	10.865	0.413	26.3	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)
S1.000	50.00	4.12	19.360	0.000	0.0	0.0	0.0	2.38	667.5	0.0
S1.001	50.00	4.33	19.190	0.000	0.0	0.0	0.0	2.18	609.1	0.0
S1.002	50.00	4.62	18.950	0.000	0.0	0.0	0.0	1.68	471.0	0.0
S1.003	50.00	4.79	18.800	0.000	0.0	0.0	0.0	1.94	544.4	0.0
S1.004	50.00	4.87	18.640	0.000	0.0	0.0	0.0	1.72	485.8	0.0
S2.000	50.00	4.10	24.700	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S2.001	50.00	4.37	24.594	0.016	0.0	0.0	0.0	1.01	7.9	2.1
S2.002	50.00	4.51	24.317	0.028	0.0	0.0	0.0	1.82	14.3	3.8
S2.003	50.00	4.61	23.450	0.044	0.0	0.0	0.0	1.32	23.3	5.9
S2.004	50.00	4.79	23.311	0.044	0.0	0.0	0.0	1.50	26.4	5.9
S2.005	50.00	4.88	22.950	0.044	0.0	0.0	0.0	1.97	34.8	5.9

The Old Hayloft		Page 2
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S3.000	8.529	0.146	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S3.001	19.568	0.454	43.1	0.071	0.00	0.0	0.600	o	150	Pipe/Conduit		
S3.002	20.952	0.500	41.9	0.032	0.00	0.0	0.600	o	150	Pipe/Conduit		
S3.003	20.621	0.500	41.2	0.024	0.00	0.0	0.600	o	225	Pipe/Conduit		
S3.004	20.398	0.713	28.6	0.024	0.00	0.0	0.600	o	225	Pipe/Conduit		
S4.000	6.200	0.106	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S4.001	9.972	0.170	58.5	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit		
S5.000	19.416	0.718	27.0	0.042	4.00	0.0	0.600	o	150	Pipe/Conduit		
S4.002	14.954	0.607	24.6	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S6.000	7.199	0.123	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S6.001	9.408	0.211	44.6	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit		
S4.003	14.766	0.252	58.5	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S7.000	6.207	0.106	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S7.001	10.184	0.230	44.2	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit		
S4.004	16.503	0.405	40.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S8.000	5.733	0.098	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S8.001	11.288	0.193	58.5	0.011	0.00	0.0	0.600	o	225	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)
S3.000	50.00	4.14	24.900	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S3.001	50.00	4.35	24.704	0.071	0.0	0.0	0.0	1.54	27.2	9.6
S3.002	50.00	4.58	24.250	0.103	0.0	0.0	0.0	1.56	27.6	13.9
S3.003	50.00	4.75	23.675	0.127	0.0	0.0	0.0	2.04	81.2	17.3
S3.004	50.00	4.88	23.175	0.151	0.0	0.0	0.0	2.45	97.6	20.5
S4.000	50.00	4.10	24.300	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S4.001	50.00	4.27	24.194	0.006	0.0	0.0	0.0	1.01	7.9	0.8
S5.000	50.00	4.17	24.742	0.042	0.0	0.0	0.0	1.94	34.4	5.7
S4.002	50.00	4.35	23.823	0.048	0.0	0.0	0.0	3.18	224.9	6.4
S6.000	50.00	4.12	23.750	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S6.001	50.00	4.25	23.627	0.006	0.0	0.0	0.0	1.16	9.1	0.8
S4.003	50.00	4.46	23.216	0.053	0.0	0.0	0.0	2.06	145.6	7.2
S7.000	50.00	4.10	23.500	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S7.001	50.00	4.25	23.394	0.006	0.0	0.0	0.0	1.16	9.1	0.8
S4.004	50.00	4.58	22.964	0.059	0.0	0.0	0.0	2.47	174.5	8.0
S8.000	50.00	4.09	23.100	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S8.001	50.00	4.20	22.877	0.011	0.0	0.0	0.0	1.71	68.1	1.6

The Old Hayloft		Page 3
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S4.005	17.038	0.172	99.3	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S2.006	8.269	0.051	161.6	0.036	0.00	0.0	0.600	o	500	Pipe/Conduit	
S2.007	24.745	1.546	16.0	0.000	0.00	0.0	0.600	o	500	Pipe/Conduit	
S1.005	30.188	0.151	200.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.006	4.844	0.032	150.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.007	28.220	0.141	200.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.008	25.383	0.299	85.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.009	23.123	0.385	60.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.010	21.294	0.328	65.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.011	18.884	0.326	58.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S9.000	21.182	0.450	47.1	0.063	4.00	0.0	0.600	o	225	Pipe/Conduit	
S9.001	20.030	0.119	168.9	0.026	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.002	24.144	0.243	99.4	0.032	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.003	26.784	0.159	168.4	0.029	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.004	22.604	0.134	168.4	0.031	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.005	17.188	0.863	19.9	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S10.000	51.621	0.213	241.9	0.518	4.00	0.0	0.600	o	300	Pipe/Conduit	
S10.001	22.546	1.959	11.5	0.027	0.00	0.0	0.600	o	300	Pipe/Conduit	
S11.000	12.949	0.221	58.5	0.033	4.00	0.0	0.600	o	150	Pipe/Conduit	
S11.001	8.000	2.087	3.8	0.004	0.00	0.0	0.600	o	150	Pipe/Conduit	
S12.000	22.172	0.379	58.5	0.030	4.00	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)
S4.005	50.00	4.76	22.559	0.070	0.0	0.0	0.0	1.58	111.5	9.5
S2.006	50.00	4.96	22.187	0.301	0.0	0.0	0.0	1.71	335.0	40.8
S2.007	50.00	5.04	22.136	0.301	0.0	0.0	0.0	5.45	1070.1	40.8
S1.005	50.00	5.33	18.610	0.301	0.0	0.0	0.0	1.72	485.8	40.8
S1.006	50.00	5.37	18.470	0.301	0.0	0.0	0.0	1.99	561.6	40.8
S1.007	50.00	5.65	18.450	0.301	0.0	0.0	0.0	1.72	485.8	40.8
S1.008	50.00	5.81	18.320	0.301	0.0	0.0	0.0	2.64	747.2	40.8
S1.009	50.00	5.93	18.000	0.301	0.0	0.0	0.0	3.15	890.0	40.8
S1.010	50.00	6.05	17.610	0.301	0.0	0.0	0.0	2.96	828.8	40.8
S1.011	50.00	6.15	17.270	0.301	0.0	0.0	0.0	3.13	877.6	40.8
S9.000	50.00	4.18	19.670	0.063	0.0	0.0	0.0	1.91	76.0	8.5
S9.001	50.00	4.52	19.220	0.089	0.0	0.0	0.0	1.00	39.9	12.0
S9.002	50.00	4.82	19.101	0.121	0.0	0.0	0.0	1.31	52.2	16.4
S9.003	50.00	5.27	18.858	0.150	0.0	0.0	0.0	1.00	39.9	20.2
S9.004	50.00	5.64	18.699	0.181	0.0	0.0	0.0	1.00	39.9	24.5
S9.005	50.00	5.74	18.565	0.181	0.0	0.0	0.0	2.95	117.1	24.5
S10.000	50.00	4.85	19.800	0.518	0.0	0.0	0.0	1.01	71.1	70.1
S10.001	50.00	4.94	19.587	0.545	0.0	0.0	0.0	4.66	329.4	73.8
S11.000	50.00	4.16	20.600	0.033	0.0	0.0	0.0	1.32	23.3	4.5
S11.001	50.00	4.19	20.379	0.037	0.0	0.0	0.0	5.18	91.6	5.0
S12.000	50.00	4.28	20.050	0.030	0.0	0.0	0.0	1.32	23.3	4.1

The Old Hayloft		Page 4
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S13.000	25.307	0.433	58.5	0.025	4.00	0.0	0.600	o	150	Pipe/Conduit		
S14.000	20.556	0.351	58.5	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit		
S15.000	21.598	0.369	58.5	0.023	4.00	0.0	0.600	o	150	Pipe/Conduit		
S16.000	15.154	0.259	58.5	0.014	4.00	0.0	0.600	o	150	Pipe/Conduit		
S16.001	9.609	0.164	58.5	0.015	0.00	0.0	0.600	o	150	Pipe/Conduit		
S16.002	4.336	0.127	34.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
S17.000	15.078	0.258	58.5	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit		
S17.001	9.548	0.163	58.5	0.016	0.00	0.0	0.600	o	100	Pipe/Conduit		
S17.002	4.639	0.079	58.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S16.003	17.602	0.900	19.6	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
S16.004	19.222	0.371	51.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
S14.001	7.631	0.077	99.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
S13.001	35.368	0.210	168.4	0.025	0.00	0.0	0.600	o	225	Pipe/Conduit		
S11.002	28.906	0.172	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		
S18.000	30.845	0.950	32.5	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit		
S18.001	13.059	2.480	5.3	0.036	0.00	0.0	0.600	o	100	Pipe/Conduit		

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S13.000	50.00	4.32	20.200	0.025	0.0	0.0	0.0	1.32	23.3	3.4
S14.000	50.00	4.26	20.350	0.020	0.0	0.0	0.0	1.32	23.3	2.7
S15.000	50.00	4.27	20.200	0.023	0.0	0.0	0.0	1.32	23.3	3.1
S16.000	50.00	4.19	20.400	0.014	0.0	0.0	0.0	1.32	23.3	1.9
S16.001	50.00	4.31	20.141	0.030	0.0	0.0	0.0	1.32	23.3	4.0
S16.002	50.00	4.36	19.977	0.030	0.0	0.0	0.0	1.73	30.6	4.0
S17.000	50.00	4.25	20.400	0.017	0.0	0.0	0.0	1.01	7.9	2.2
S17.001	50.00	4.41	20.142	0.032	0.0	0.0	0.0	1.01	7.9	4.4
S17.002	50.00	4.48	19.979	0.032	0.0	0.0	0.0	1.01	7.9	4.4
S16.003	50.00	4.61	19.850	0.062	0.0	0.0	0.0	2.29	40.4	8.4
S16.004	50.00	4.84	18.950	0.062	0.0	0.0	0.0	1.40	24.8	8.4
S14.001	50.00	4.97	18.579	0.104	0.0	0.0	0.0	1.01	17.8	14.1
S13.001	50.00	5.55	18.427	0.155	0.0	0.0	0.0	1.00	39.9	20.9
S11.002	50.00	6.03	18.217	0.222	0.0	0.0	0.0	1.00	39.9	30.0
S18.000	50.00	4.38	21.600	0.016	0.0	0.0	0.0	1.36	10.7	2.2
S18.001	50.00	4.44	20.650	0.052	0.0	0.0	0.0	3.39	26.6	7.0

The Old Hayloft		Page 5
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S11.003	12.928	0.077	168.4	0.019	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.004	9.743	0.058	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.005	13.639	0.081	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.006	21.428	0.127	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.006	18.232	0.073	250.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S9.007	24.502	0.310	79.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.012	21.583	0.097	222.5	0.000	0.00	0.0	0.600	o	600	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)
S11.003	50.00	6.25	18.045	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S11.004	50.00	6.41	17.968	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S11.005	50.00	6.63	17.911	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S11.006	50.00	6.99	17.830	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S9.006	50.00	7.23	17.477	1.019	0.0	0.0	0.0	1.28	203.8	137.9
S9.007	50.00	7.41	17.404	1.019	0.0	0.0	0.0	2.29	364.0	137.9
S1.012	50.00	7.63	16.944	1.320	0.0	0.0	0.0	1.63	460.4	178.7

Manhole Schedules for Storm											
MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S1	22.100	2.740	Open Manhole	900	S1.000	19.360	600				
S2	22.480	3.290	Open Manhole	900	S1.001	19.190	600	S1.000	19.193	600	
S3	22.400	3.450	Open Manhole	900	S1.002	18.950	600	S1.001	18.957	600	
S4	22.350	3.550	Open Manhole	900	S1.003	18.800	600	S1.002	18.806	600	66
S5	21.700	3.060	Open Manhole	900	S1.004	18.640	600	S1.003	18.662	600	402
S6	25.300	0.600	Open Manhole	250	S2.000	24.700	100				
S7	25.350	0.756	Open Manhole	1200	S2.001	24.594	100	S2.000	24.594	100	
S8	25.350	1.033	Open Manhole	1200	S2.002	24.317	100	S2.001	24.317	100	
S9	24.100	0.650	Open Manhole	1800	S2.003	23.450	150	S2.002	23.500	100	
S10	24.000	0.689	Open Manhole	1200	S2.004	23.311	150	S2.003	23.311	150	
S11	23.600	0.650	Open Manhole	1200	S2.005	22.950	150	S2.004	22.950	150	
S12	25.500	0.600	Open Manhole	25	S3.000	24.900	100				
S13	25.450	0.746	Open Manhole	1200	S3.001	24.704	150	S3.000	24.754	100	
S14	24.900	0.650	Open Manhole	1350	S3.002	24.250	150	S3.001	24.250	150	
S15	24.400	0.725	Open Manhole	1500	S3.003	23.675	225	S3.002	23.750	150	
S16	23.900	0.725	Open Manhole	1350	S3.004	23.175	225	S3.003	23.175	225	
S17	24.900	0.600	Open Manhole	250	S4.000	24.300	100				
S18	24.900	0.706	Open Manhole	1200	S4.001	24.194	100	S4.000	24.194	100	
S20	25.450	0.708	Open Manhole	1500	S5.000	24.742	150				
S21	24.900	1.077	Open Manhole	1200	S4.002	23.823	300	S4.001	24.023	100	
								S5.000	24.023	150	50
S22	24.350	0.600	Open Manhole	250	S6.000	23.750	100				
S23	24.400	0.773	Open Manhole	1200	S6.001	23.627	100	S6.000	23.627	100	
S24	24.700	1.484	Open Manhole	1200	S4.003	23.216	300	S4.002	23.216	300	
								S6.001	23.416	100	
S25	24.100	0.600	Open Manhole	250	S7.000	23.500	100				
S26	24.100	0.706	Open Manhole	1200	S7.001	23.394	100	S7.000	23.394	100	
S27	24.350	1.386	Open Manhole	1200	S4.004	22.964	300	S4.003	22.964	300	
								S7.001	23.164	100	
S28	23.700	0.600	Open Manhole	250	S8.000	23.100	100				
S29	23.800	0.923	Open Manhole	1500	S8.001	22.877	225	S8.000	23.002	100	
S30	23.900	1.341	Open Manhole	1200	S4.005	22.559	300	S4.004	22.559	300	
								S8.001	22.684	225	50
S31	23.400	1.213	Open Manhole	1500	S2.006	22.187	500	S2.005	22.537	150	
								S3.004	22.462	225	
								S4.005	22.387	300	
S32	23.400	1.264	Open Manhole	2700	S2.007	22.136	500	S2.006	22.136	500	
S33	21.590	2.991	Open Manhole	1500	S1.005	18.610	600	S1.004	18.599	600	
								S2.007	20.590	500	1880
S34	21.140	2.681	Open Manhole	1500	S1.006	18.470	600	S1.005	18.459	600	
S35	21.070	2.632	Open Manhole	1500	S1.007	18.450	600	S1.006	18.438	600	
S36	20.140	1.831	Open Manhole	1500	S1.008	18.320	600	S1.007	18.309	600	
S37	19.605	1.605	Open Manhole	1500	S1.009	18.000	600	S1.008	18.021	600	21
S38	19.070	1.460	Open Manhole	1500	S1.010	17.610	600	S1.009	17.615	600	
S39	19.070	1.800	Open Manhole	1500	S1.011	17.270	600	S1.010	17.282	600	

The Old Hayloft		Page 8
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

PIPELINE SCHEDULES for Storm

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)
S1.000	600 []	600	S1	22.100	19.360	2.140	Open Manhole	900
S1.001	600 []	600	S2	22.480	19.190	2.560	Open Manhole	900
S1.002	600 []	600	S3	22.400	18.950	2.410	Open Manhole	900
S1.003	600 []	600	S4	22.350	18.800	2.570	Open Manhole	900
S1.004	o	600	S5	21.700	18.640	2.460	Open Manhole	900
S2.000	o	100	S6	25.300	24.700	0.500	Open Manhole	250
S2.001	o	100	S7	25.350	24.594	0.656	Open Manhole	1200
S2.002	o	100	S8	25.350	24.317	0.933	Open Manhole	1200
S2.003	o	150	S9	24.100	23.450	0.500	Open Manhole	1800
S2.004	o	150	S10	24.000	23.311	0.539	Open Manhole	1200
S2.005	o	150	S11	23.600	22.950	0.500	Open Manhole	1200
S3.000	o	100	S12	25.500	24.900	0.500	Open Manhole	25
S3.001	o	150	S13	25.450	24.704	0.596	Open Manhole	1200
S3.002	o	150	S14	24.900	24.250	0.500	Open Manhole	1350
S3.003	o	225	S15	24.400	23.675	0.500	Open Manhole	1500
S3.004	o	225	S16	23.900	23.175	0.500	Open Manhole	1350
S4.000	o	100	S17	24.900	24.300	0.500	Open Manhole	250
S4.001	o	100	S18	24.900	24.194	0.606	Open Manhole	1200
S5.000	o	150	S20	25.450	24.742	0.558	Open Manhole	1500
S4.002	o	300	S21	24.900	23.823	0.777	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)
S1.000	16.739	100.0	S2	22.480	19.193	2.687	Open Manhole	900
S1.001	28.014	120.0	S3	22.400	18.957	2.713	Open Manhole	900
S1.002	28.752	200.0	S4	22.350	18.806	2.504	Open Manhole	900
S1.003	20.727	150.0	S5	21.700	18.662	2.058	Open Manhole	900
S1.004	8.125	200.0	S33	21.590	18.599	2.391	Open Manhole	1500
S2.000	6.225	58.5	S7	25.350	24.594	0.656	Open Manhole	1200
S2.001	16.147	58.5	S8	25.350	24.317	0.933	Open Manhole	1200
S2.002	14.873	18.2	S9	24.100	23.500	0.500	Open Manhole	1800
S2.003	8.149	58.5	S10	24.000	23.311	0.539	Open Manhole	1200
S2.004	16.418	45.5	S11	23.600	22.950	0.500	Open Manhole	1200
S2.005	10.865	26.3	S31	23.400	22.537	0.713	Open Manhole	1500
S3.000	8.529	58.5	S13	25.450	24.754	0.596	Open Manhole	1200
S3.001	19.568	43.1	S14	24.900	24.250	0.500	Open Manhole	1350
S3.002	20.952	41.9	S15	24.400	23.750	0.500	Open Manhole	1500
S3.003	20.621	41.2	S16	23.900	23.175	0.500	Open Manhole	1350
S3.004	20.398	28.6	S31	23.400	22.462	0.713	Open Manhole	1500
S4.000	6.200	58.5	S18	24.900	24.194	0.606	Open Manhole	1200
S4.001	9.972	58.5	S21	24.900	24.023	0.777	Open Manhole	1200
S5.000	19.416	27.0	S21	24.900	24.023	0.727	Open Manhole	1200
S4.002	14.954	24.6	S24	24.700	23.216	1.184	Open Manhole	1200

The Old Hayloft		Page 9
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

PIPELINE SCHEDULES for Storm

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)
S6.000	o	100	S22	24.350	23.750	0.500	Open Manhole	250
S6.001	o	100	S23	24.400	23.627	0.673	Open Manhole	1200
S4.003	o	300	S24	24.700	23.216	1.184	Open Manhole	1200
S7.000	o	100	S25	24.100	23.500	0.500	Open Manhole	250
S7.001	o	100	S26	24.100	23.394	0.606	Open Manhole	1200
S4.004	o	300	S27	24.350	22.964	1.086	Open Manhole	1200
S8.000	o	100	S28	23.700	23.100	0.500	Open Manhole	250
S8.001	o	225	S29	23.800	22.877	0.698	Open Manhole	1500
S4.005	o	300	S30	23.900	22.559	1.041	Open Manhole	1200
S2.006	o	500	S31	23.400	22.187	0.713	Open Manhole	1500
S2.007	o	500	S32	23.400	22.136	0.764	Open Manhole	2700
S1.005	o	600	S33	21.590	18.610	2.380	Open Manhole	1500
S1.006	o	600	S34	21.140	18.470	2.070	Open Manhole	1500
S1.007	o	600	S35	21.070	18.450	2.020	Open Manhole	1500
S1.008	o	600	S36	20.140	18.320	1.220	Open Manhole	1500
S1.009	o	600	S37	19.605	18.000	1.005	Open Manhole	1500
S1.010	600 []	600	S38	19.070	17.610	0.160	Open Manhole	1500
S1.011	600 []	600	S39	19.070	17.270	0.200	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)
S6.000	7.199	58.5	S23	24.400	23.627	0.673	Open Manhole	1200
S6.001	9.408	44.6	S24	24.700	23.416	1.184	Open Manhole	1200
S4.003	14.766	58.5	S27	24.350	22.964	1.086	Open Manhole	1200
S7.000	6.207	58.5	S26	24.100	23.394	0.606	Open Manhole	1200
S7.001	10.184	44.2	S27	24.350	23.164	1.086	Open Manhole	1200
S4.004	16.503	40.8	S30	23.900	22.559	1.041	Open Manhole	1200
S8.000	5.733	58.5	S29	23.800	23.002	0.698	Open Manhole	1500
S8.001	11.288	58.5	S30	23.900	22.684	0.991	Open Manhole	1200
S4.005	17.038	99.3	S31	23.400	22.387	0.713	Open Manhole	1500
S2.006	8.269	161.6	S32	23.400	22.136	0.764	Open Manhole	2700
S2.007	24.745	16.0	S33	21.590	20.590	0.500	Open Manhole	1500
S1.005	30.188	200.0	S34	21.140	18.459	2.081	Open Manhole	1500
S1.006	4.844	150.0	S35	21.070	18.438	2.032	Open Manhole	1500
S1.007	28.220	200.0	S36	20.140	18.309	1.231	Open Manhole	1500
S1.008	25.383	85.0	S37	19.605	18.021	0.984	Open Manhole	1500
S1.009	23.123	60.0	S38	19.070	17.615	0.855	Open Manhole	1500
S1.010	21.294	65.0	S39	19.070	17.282	0.488	Open Manhole	1500
S1.011	18.884	58.0	S73	18.510	16.944	-0.034	Open Manhole	1200

The Old Hayloft		Page 10
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	No Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

PIPELINE SCHEDULES for Storm

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)
S9.000	o	225	S40	21.100	19.670	1.205	Open Manhole	1800
S9.001	o	225	S41	20.650	19.220	1.205	Open Manhole	1800
S9.002	o	225	S42	20.650	19.101	1.324	Open Manhole	1200
S9.003	o	225	S43	20.650	18.858	1.567	Open Manhole	1200
S9.004	o	225	S44	20.650	18.699	1.726	Open Manhole	1200
S9.005	o	225	S45	20.500	18.565	1.710	Open Manhole	1200
S10.000	o	300	S46	20.600	19.800	0.500	Open Manhole	1200
S10.001	o	300	S47	20.800	19.587	0.913	Open Manhole	1200
S11.000	o	150	S48	21.200	20.600	0.450	Open Manhole	1500
S11.001	o	150	S49	21.200	20.379	0.671	Open Manhole	1200
S12.000	o	150	S50	20.650	20.050	0.450	Open Manhole	1500
S13.000	o	150	S51	20.800	20.200	0.450	Open Manhole	1350
S14.000	o	150	S52	20.950	20.350	0.450	Open Manhole	1200
S15.000	o	150	S53	20.800	20.200	0.450	Open Manhole	1350
S16.000	o	150	S54	21.000	20.400	0.450	Open Manhole	1500
S16.001	o	150	S55	21.000	20.141	0.709	Open Manhole	1200
S16.002	o	150	S56	21.000	19.977	0.873	Open Manhole	1200
S17.000	o	100	S57	21.000	20.400	0.500	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)
S9.000	21.182	47.1	S41	20.650	19.220	1.205	Open Manhole	1800
S9.001	20.030	168.9	S42	20.650	19.101	1.324	Open Manhole	1200
S9.002	24.144	99.4	S43	20.650	18.858	1.567	Open Manhole	1200
S9.003	26.784	168.4	S44	20.650	18.699	1.726	Open Manhole	1200
S9.004	22.604	168.4	S45	20.500	18.565	1.710	Open Manhole	1200
S9.005	17.188	19.9	S71	20.000	17.702	2.073	Open Manhole	1200
S10.000	51.621	241.9	S47	20.800	19.587	0.913	Open Manhole	1200
S10.001	22.546	11.5	S71	20.000	17.627	2.073	Open Manhole	1200
S11.000	12.949	58.5	S49	21.200	20.379	0.671	Open Manhole	1200
S11.001	8.000	3.8	S64	21.050	18.292	2.608	Open Manhole	1200
S12.000	22.172	58.5	S64	21.050	19.671	1.229	Open Manhole	1200
S13.000	25.307	58.5	S63	20.800	19.767	0.883	Open Manhole	1200
S14.000	20.556	58.5	S62	20.950	19.999	0.801	Open Manhole	1200
S15.000	21.598	58.5	S62	20.950	19.831	0.969	Open Manhole	1200
S16.000	15.154	58.5	S55	21.000	20.141	0.709	Open Manhole	1200
S16.001	9.609	58.5	S56	21.000	19.977	0.873	Open Manhole	1200
S16.002	4.336	34.1	S60	21.000	19.850	1.000	Open Manhole	1200
S17.000	15.078	58.5	S58	21.000	20.142	0.758	Open Manhole	1200

The Old Hayloft		Page 1
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	19.200	Add Flow / Climate Change (%)	0
Ratio R	0.350	Minimum Backdrop Height (m)	0.600
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	0.500
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)	250

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.686	4-8	0.633

Total Area Contributing (ha) = 1.320

Total Pipe Volume (m³) = 119.108

Network Design Table for Storm

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
S1.000	16.739	0.167	100.0	0.000	4.00	0.0	0.600	600 []	600	600 Culvert	
S1.001	28.014	0.233	120.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.002	28.752	0.144	200.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.003	20.727	0.138	150.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.004	8.125	0.041	200.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S2.000	6.225	0.106	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit	
S2.001	16.147	0.276	58.5	0.016	0.00	0.0	0.600	o	100	Pipe/Conduit	
S2.002	14.873	0.817	18.2	0.012	0.00	0.0	0.600	o	100	Pipe/Conduit	
S2.003	8.149	0.139	58.5	0.016	0.00	0.0	0.600	o	150	Pipe/Conduit	
S2.004	16.418	0.361	45.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S2.005	10.865	0.413	26.3	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)
S1.000	50.00	4.12	19.360	0.000	0.0	0.0	0.0	2.38	667.5	0.0
S1.001	50.00	4.33	19.190	0.000	0.0	0.0	0.0	2.18	609.1	0.0
S1.002	50.00	4.62	18.950	0.000	0.0	0.0	0.0	1.68	471.0	0.0
S1.003	50.00	4.79	18.800	0.000	0.0	0.0	0.0	1.94	544.4	0.0
S1.004	50.00	4.87	18.640	0.000	0.0	0.0	0.0	1.72	485.8	0.0
S2.000	50.00	4.10	24.700	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S2.001	50.00	4.37	24.594	0.016	0.0	0.0	0.0	1.01	7.9	2.1
S2.002	50.00	4.51	24.317	0.028	0.0	0.0	0.0	1.82	14.3	3.8
S2.003	50.00	4.61	23.450	0.044	0.0	0.0	0.0	1.32	23.3	5.9
S2.004	50.00	4.79	23.311	0.044	0.0	0.0	0.0	1.50	26.4	5.9
S2.005	50.00	4.88	22.950	0.044	0.0	0.0	0.0	1.97	34.8	5.9

The Old Hayloft		Page 2
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S3.000	8.529	0.146	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S3.001	19.568	0.454	43.1	0.071	0.00	0.0	0.600	o	150	Pipe/Conduit		
S3.002	20.952	0.500	41.9	0.032	0.00	0.0	0.600	o	150	Pipe/Conduit		
S3.003	20.621	0.500	41.2	0.024	0.00	0.0	0.600	o	225	Pipe/Conduit		
S3.004	20.398	0.713	28.6	0.024	0.00	0.0	0.600	o	225	Pipe/Conduit		
S4.000	6.200	0.106	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S4.001	9.972	0.170	58.5	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit		
S5.000	19.416	0.718	27.0	0.042	4.00	0.0	0.600	o	150	Pipe/Conduit		
S4.002	14.954	0.607	24.6	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S6.000	7.199	0.123	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S6.001	9.408	0.211	44.6	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit		
S4.003	14.766	0.252	58.5	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S7.000	6.207	0.106	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S7.001	10.184	0.230	44.2	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit		
S4.004	16.503	0.405	40.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S8.000	5.733	0.098	58.5	0.000	4.00	0.0	0.600	o	100	Pipe/Conduit		
S8.001	11.288	0.193	58.5	0.011	0.00	0.0	0.600	o	225	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)
S3.000	50.00	4.14	24.900	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S3.001	50.00	4.35	24.704	0.071	0.0	0.0	0.0	1.54	27.2	9.6
S3.002	50.00	4.58	24.250	0.103	0.0	0.0	0.0	1.56	27.6	13.9
S3.003	50.00	4.75	23.675	0.127	0.0	0.0	0.0	2.04	81.2	17.3
S3.004	50.00	4.88	23.175	0.151	0.0	0.0	0.0	2.45	97.6	20.5
S4.000	50.00	4.10	24.300	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S4.001	50.00	4.27	24.194	0.006	0.0	0.0	0.0	1.01	7.9	0.8
S5.000	50.00	4.17	24.742	0.042	0.0	0.0	0.0	1.94	34.4	5.7
S4.002	50.00	4.35	23.823	0.048	0.0	0.0	0.0	3.18	224.9	6.4
S6.000	50.00	4.12	23.750	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S6.001	50.00	4.25	23.627	0.006	0.0	0.0	0.0	1.16	9.1	0.8
S4.003	50.00	4.46	23.216	0.053	0.0	0.0	0.0	2.06	145.6	7.2
S7.000	50.00	4.10	23.500	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S7.001	50.00	4.25	23.394	0.006	0.0	0.0	0.0	1.16	9.1	0.8
S4.004	50.00	4.58	22.964	0.059	0.0	0.0	0.0	2.47	174.5	8.0
S8.000	50.00	4.09	23.100	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S8.001	50.00	4.20	22.877	0.011	0.0	0.0	0.0	1.71	68.1	1.6

The Old Hayloft		Page 3
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S4.005	17.038	0.172	99.3	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S2.006	8.269	0.051	161.6	0.036	0.00	0.0	0.600	o	500	Pipe/Conduit	
S2.007	24.745	1.546	16.0	0.000	0.00	0.0	0.600	o	500	Pipe/Conduit	
S1.005	30.188	0.151	200.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.006	4.844	0.032	150.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.007	28.220	0.141	200.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.008	25.383	0.299	85.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.009	23.123	0.385	60.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.010	21.294	0.328	65.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S1.011	18.884	0.326	58.0	0.000	0.00	0.0	0.600	600 []	600	600 Culvert	
S9.000	21.182	0.450	47.1	0.063	4.00	0.0	0.600	o	225	Pipe/Conduit	
S9.001	20.030	0.119	168.9	0.026	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.002	24.144	0.243	99.4	0.032	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.003	26.784	0.159	168.4	0.029	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.004	22.604	0.134	168.4	0.031	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.005	17.188	0.863	19.9	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S10.000	51.621	0.213	241.9	0.518	4.00	0.0	0.600	o	300	Pipe/Conduit	
S10.001	22.546	1.959	11.5	0.027	0.00	0.0	0.600	o	300	Pipe/Conduit	
S11.000	12.949	0.221	58.5	0.033	4.00	0.0	0.600	o	150	Pipe/Conduit	
S11.001	8.000	2.087	3.8	0.004	0.00	0.0	0.600	o	150	Pipe/Conduit	
S12.000	22.172	0.379	58.5	0.030	4.00	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)
S4.005	50.00	4.76	22.559	0.070	0.0	0.0	0.0	1.58	111.5	9.5
S2.006	50.00	4.96	22.187	0.301	0.0	0.0	0.0	1.71	335.0	40.8
S2.007	50.00	5.04	22.136	0.301	0.0	0.0	0.0	5.45	1070.1	40.8
S1.005	50.00	5.33	18.610	0.301	0.0	0.0	0.0	1.72	485.8	40.8
S1.006	50.00	5.37	18.470	0.301	0.0	0.0	0.0	1.99	561.6	40.8
S1.007	50.00	5.65	18.450	0.301	0.0	0.0	0.0	1.72	485.8	40.8
S1.008	50.00	5.81	18.320	0.301	0.0	0.0	0.0	2.64	747.2	40.8
S1.009	50.00	5.93	18.000	0.301	0.0	0.0	0.0	3.15	890.0	40.8
S1.010	50.00	6.05	17.610	0.301	0.0	0.0	0.0	2.96	828.8	40.8
S1.011	50.00	6.15	17.270	0.301	0.0	0.0	0.0	3.13	877.6	40.8
S9.000	50.00	4.18	19.670	0.063	0.0	0.0	0.0	1.91	76.0	8.5
S9.001	50.00	4.52	19.220	0.089	0.0	0.0	0.0	1.00	39.9	12.0
S9.002	50.00	4.82	19.101	0.121	0.0	0.0	0.0	1.31	52.2	16.4
S9.003	50.00	5.27	18.858	0.150	0.0	0.0	0.0	1.00	39.9	20.2
S9.004	50.00	5.64	18.699	0.181	0.0	0.0	0.0	1.00	39.9	24.5
S9.005	50.00	5.74	18.565	0.181	0.0	0.0	0.0	2.95	117.1	24.5
S10.000	50.00	4.85	19.800	0.518	0.0	0.0	0.0	1.01	71.1	70.1
S10.001	50.00	4.94	19.587	0.545	0.0	0.0	0.0	4.66	329.4	73.8
S11.000	50.00	4.16	20.600	0.033	0.0	0.0	0.0	1.32	23.3	4.5
S11.001	50.00	4.19	20.379	0.037	0.0	0.0	0.0	5.18	91.6	5.0
S12.000	50.00	4.28	20.050	0.030	0.0	0.0	0.0	1.32	23.3	4.1

The Old Hayloft		Page 4
Pucknall Farm Romsey Hampshire SO51 0QJ	19142 Colt International Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S13.000	25.307	0.433	58.5	0.025	4.00	0.0	0.600	o	150	Pipe/Conduit	
S14.000	20.556	0.351	58.5	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S15.000	21.598	0.369	58.5	0.023	4.00	0.0	0.600	o	150	Pipe/Conduit	
S16.000	15.154	0.259	58.5	0.014	4.00	0.0	0.600	o	150	Pipe/Conduit	
S16.001	9.609	0.164	58.5	0.015	0.00	0.0	0.600	o	150	Pipe/Conduit	
S16.002	4.336	0.127	34.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S17.000	15.078	0.258	58.5	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit	
S17.001	9.548	0.163	58.5	0.016	0.00	0.0	0.600	o	100	Pipe/Conduit	
S17.002	4.639	0.079	58.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S16.003	17.602	0.900	19.6	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S16.004	19.222	0.371	51.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S14.001	7.631	0.077	99.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S13.001	35.368	0.210	168.4	0.025	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.002	28.906	0.172	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S18.000	30.845	0.950	32.5	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S18.001	13.059	2.480	5.3	0.036	0.00	0.0	0.600	o	100	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)
S13.000	50.00	4.32	20.200	0.025	0.0	0.0	0.0	1.32	23.3	3.4
S14.000	50.00	4.26	20.350	0.020	0.0	0.0	0.0	1.32	23.3	2.7
S15.000	50.00	4.27	20.200	0.023	0.0	0.0	0.0	1.32	23.3	3.1
S16.000	50.00	4.19	20.400	0.014	0.0	0.0	0.0	1.32	23.3	1.9
S16.001	50.00	4.31	20.141	0.030	0.0	0.0	0.0	1.32	23.3	4.0
S16.002	50.00	4.36	19.977	0.030	0.0	0.0	0.0	1.73	30.6	4.0
S17.000	50.00	4.25	20.400	0.017	0.0	0.0	0.0	1.01	7.9	2.2
S17.001	50.00	4.41	20.142	0.032	0.0	0.0	0.0	1.01	7.9	4.4
S17.002	50.00	4.48	19.979	0.032	0.0	0.0	0.0	1.01	7.9	4.4
S16.003	50.00	4.61	19.850	0.062	0.0	0.0	0.0	2.29	40.4	8.4
S16.004	50.00	4.84	18.950	0.062	0.0	0.0	0.0	1.40	24.8	8.4
S14.001	50.00	4.97	18.579	0.104	0.0	0.0	0.0	1.01	17.8	14.1
S13.001	50.00	5.55	18.427	0.155	0.0	0.0	0.0	1.00	39.9	20.9
S11.002	50.00	6.03	18.217	0.222	0.0	0.0	0.0	1.00	39.9	30.0
S18.000	50.00	4.38	21.600	0.016	0.0	0.0	0.0	1.36	10.7	2.2
S18.001	50.00	4.44	20.650	0.052	0.0	0.0	0.0	3.39	26.6	7.0

The Old Hayloft		Page 5
Pucknall Farm	19142	
Romsey	Colt International	
Hampshire SO51 0QJ	Surcharge	
Date 19/12/2019	Designed by SJW	
File SURFACE WATER COMBINED FREEFLO...	Checked by RL	
XP Solutions	Network 2018.1.1	

Network Design Table for Storm

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
S11.003	12.928	0.077	168.4	0.019	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.004	9.743	0.058	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.005	13.639	0.081	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.006	21.428	0.127	168.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S9.006	18.232	0.073	250.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S9.007	24.502	0.310	79.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.012	21.583	0.097	222.5	0.000	0.00	0.0	0.600	o	600	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)
S11.003	50.00	6.25	18.045	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S11.004	50.00	6.41	17.968	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S11.005	50.00	6.63	17.911	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S11.006	50.00	6.99	17.830	0.293	0.0	0.0	0.0	1.00	39.9	39.6
S9.006	50.00	7.23	17.477	1.019	0.0	0.0	0.0	1.28	203.8	137.9
S9.007	50.00	7.41	17.404	1.019	0.0	0.0	0.0	2.29	364.0	137.9
S1.012	50.00	7.63	16.944	1.320	0.0	0.0	0.0	1.63	460.4	178.7

Manhole Schedules for Storm											
MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S1	22.100	2.740	Open Manhole	900	S1.000	19.360	600				
S2	22.480	3.290	Open Manhole	900	S1.001	19.190	600	S1.000	19.193	600	
S3	22.400	3.450	Open Manhole	900	S1.002	18.950	600	S1.001	18.957	600	
S4	22.350	3.550	Open Manhole	900	S1.003	18.800	600	S1.002	18.806	600	66
S5	21.700	3.060	Open Manhole	900	S1.004	18.640	600	S1.003	18.662	600	402
S6	25.300	0.600	Open Manhole	250	S2.000	24.700	100				
S7	25.350	0.756	Open Manhole	1200	S2.001	24.594	100	S2.000	24.594	100	
S8	25.350	1.033	Open Manhole	1200	S2.002	24.317	100	S2.001	24.317	100	
S9	24.100	0.650	Open Manhole	1800	S2.003	23.450	150	S2.002	23.500	100	
S10	24.000	0.689	Open Manhole	1200	S2.004	23.311	150	S2.003	23.311	150	
S11	23.600	0.650	Open Manhole	1200	S2.005	22.950	150	S2.004	22.950	150	
S12	25.500	0.600	Open Manhole	25	S3.000	24.900	100				
S13	25.450	0.746	Open Manhole	1200	S3.001	24.704	150	S3.000	24.754	100	
S14	24.900	0.650	Open Manhole	1350	S3.002	24.250	150	S3.001	24.250	150	
S15	24.400	0.725	Open Manhole	1500	S3.003	23.675	225	S3.002	23.750	150	
S16	23.900	0.725	Open Manhole	1350	S3.004	23.175	225	S3.003	23.175	225	
S17	24.900	0.600	Open Manhole	250	S4.000	24.300	100				
S18	24.900	0.706	Open Manhole	1200	S4.001	24.194	100	S4.000	24.194	100	
S20	25.450	0.708	Open Manhole	1500	S5.000	24.742	150				
S21	24.900	1.077	Open Manhole	1200	S4.002	23.823	300	S4.001	24.023	100	
								S5.000	24.023	150	50
S22	24.350	0.600	Open Manhole	250	S6.000	23.750	100				
S23	24.400	0.773	Open Manhole	1200	S6.001	23.627	100	S6.000	23.627	100	
S24	24.700	1.484	Open Manhole	1200	S4.003	23.216	300	S4.002	23.216	300	
								S6.001	23.416	100	
S25	24.100	0.600	Open Manhole	250	S7.000	23.500	100				
S26	24.100	0.706	Open Manhole	1200	S7.001	23.394	100	S7.000	23.394	100	
S27	24.350	1.386	Open Manhole	1200	S4.004	22.964	300	S4.003	22.964	300	
								S7.001	23.164	100	
S28	23.700	0.600	Open Manhole	250	S8.000	23.100	100				
S29	23.800	0.923	Open Manhole	1500	S8.001	22.877	225	S8.000	23.002	100	
S30	23.900	1.341	Open Manhole	1200	S4.005	22.559	300	S4.004	22.559	300	
								S8.001	22.684	225	50
S31	23.400	1.213	Open Manhole	1500	S2.006	22.187	500	S2.005	22.537	150	
								S3.004	22.462	225	
								S4.005	22.387	300	
S32	23.400	1.264	Open Manhole	2700	S2.007	22.136	500	S2.006	22.136	500	
S33	21.590	2.991	Open Manhole	1500	S1.005	18.610	600	S1.004	18.599	600	
								S2.007	20.590	500	1880
S34	21.140	2.681	Open Manhole	1500	S1.006	18.470	600	S1.005	18.459	600	
S35	21.070	2.632	Open Manhole	1500	S1.007	18.450	600	S1.006	18.438	600	
S36	20.140	1.831	Open Manhole	1500	S1.008	18.320	600	S1.007	18.309	600	
S37	19.605	1.605	Open Manhole	1500	S1.009	18.000	600	S1.008	18.021	600	21
S38	19.070	1.460	Open Manhole	1500	S1.010	17.610	600	S1.009	17.615	600	
S39	19.070	1.800	Open Manhole	1500	S1.011	17.270	600	S1.010	17.282	600	