

Appendix D. Southern Water Asset Location Plans and Correspondence

SEWER RECORDS PAGE 1 OF 2

99633



99056

494157

O.S. REF.
SZ9499SE

Title: 209330_Butlins, Bognor Regis P

Drawn by: kumaria

Scale: 1:2500

Date: 29/01/2016

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy.

The actual positions should be determined on site.

WARNING: BAC pipes are constructed of Barbed Reinforced Cement
WARNING: Unknown (UNK) materials may include Barbed Reinforced Cement

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495109

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
0451X	5.25	4	150	CP	CIRC	510AX			600	DI	CIRC	8351X	2.81	1.36	300	VC	CIRC						
0501X	4.86	-0.4	300	VC	CIRC	5150Y	2.939	0.112	750	CP	CIRC	8352X	2.91	1.21	300	VC	CIRC						
0502X	4.93	0.1	225	VC	CIRC	5251X	1.47	-0.66	900	CP	CIRC	8401X	2.27	-1.26	300	VC	CIRC						
050DX			300	VC	CIRC	5252X	2.31	-0.54	900	CP	CIRC	8402X	2.49	-1.27	300	VC	CIRC						
0551X	4.92	3.33	225	CP	CIRC	5253X	1.478	-0.412	900	CP	CIRC	8403X	2.8	-1.37	300	VC	CIRC						
0552X	4.93	3.56	225	CP	CIRC	5401X	2.27	0.82	150	VC	CIRC	8404X	3.25	-1.4	300	VC	CIRC						
0602X	4.91	-0.27	300	VC	CIRC	5451X	2.04	0.71	300	VC	CIRC	8405X	2.93	-1.75	525	CI	CIRC						
0653X	4.89	3.28	225	CP	CIRC	5501X	1.81	-2.24	525	CI	CIRC	8406X	3.99	3.05	150	VC	CIRC						
1005X	2.82	1.59	150	VC	CIRC	5501Y	1.81	-0.45	525	CI	CIRC	8407X	4.13	3.11	225	VC	CIRC						
1401X	5.14	-0.16	525	CI	CIRC	5502X	1.47	-0.46	525	CI	CIRC	8408X	2.94	0.08	300	CP	CIRC						
1402X	5.1	-0.01	525	CI	CIRC	5503X	2.04		300	CI	CIRC	8408X			175	VC	CIRC						
2051X	4.55	0.94	600	CP	CIRC	5503Y	2.04		375	CI	CIRC	841DX	1.52	1.52	150	VC	CIRC						
2052X	2.5	1.22	600	CP	CIRC	5504X	1.65	-2.49	OTHER	CI	CIRC	842BX			150	VC	CIRC						
2053X	2.45	0.85	600	CP	CIRC	5505X	3		750	CP	CIRC	842DX			UNKN	UNKN	CIRC						
2101X	2.63	1.59	150	VC	CIRC	5506X			UNKN	UNKN	CIRC	843DX			UNKN	UNKN	CIRC						
2151X	2.63	1.73	300	VC	CIRC	5508X			100	VC	CIRC	844DX			UNKN	UNKN	CIRC						
2152X	1.86	0.22	525	CP	CIRC	551PX	3.05		UNKN	UNKN	CIRC	8451X	2.54	1.8	225	CP	CIRC						
2153X	2.16	0.34	525	CP	CIRC	620WX			600	DI	CIRC	8452X	2.56	1.89	150	VC	CIRC						
2501X	4.07	-0.37	525	CI	CIRC	6251X	2.61	0.01	675	CP	CIRC	8453X	2.84	2.19	150	VC	CIRC						
2502X	4.69	-0.27	525	CI	CIRC	6252X	2.47		675	CP	CIRC	8454X	2.61	2.01	150	VC	CIRC						
255DX			300	VC	CIRC	6301X	2.56	0.29	150	VC	CIRC	8501X	2.37	-1.14	300	VC	CIRC						
3101X	1.86	-0.57	225	VC	CIRC	6401X	2.01	-1.97	525	CI	CIRC	8502X	2.06	-1.16	300	VC	CIRC						
3102X		-0.51	375	CP	CIRC	6501X	1.81	0.24	175	VC	CIRC	851DX	-0.91		225	VC	CIRC						
3152X	1.72	0.14	525	CP	CIRC	6502X	1.82	0.26	175	VC	CIRC	852DX			UNKN	UNKN	CIRC						
3153X	2.34	0.6	600	CP	CIRC	6503X	1.8	0.38	175	VC	CIRC	8551X	2.77		225	VC	CIRC						
3154X	2.45	0.8	600	CP	CIRC	6504X	1.85	0.71	175	VC	CIRC	8552X	2.15	1.57	150	VC	CIRC						
3155X	1.9	0.18	675	CP	CIRC	6551X	2.09	0.72	225	CP	CIRC	8553X	2.62	1.23	300	CP	CIRC						
3201X	1.85	-0.88	375	CP	CIRC	6552X	1.84	0.66	225	CP	CIRC	8554X	2.03	0.67	300	CP	CIRC						
3205X			375	CP	CIRC	6553X	1.8	0.14	225	CI	CIRC	8555X	1.99	0.62	150	VC	CIRC						
3206X			375	CP	CIRC	7201X	3	0.38	300	CP	CIRC	8556X	1.92	0.19	150	VC	CIRC						
3207X			375	CP	CIRC	7202X	3.11	1.35	150	VC	CIRC	8557X	1.95	0.63	300	VC	CIRC						
3208X			375	CP	CIRC	7203X	3.32	0.45	300	CP	CIRC	8603X	3.02	1.78	100	VC	CIRC						
3251X	1.76	-0.12	675	CP	CIRC	7204X	3.12	0.8	150	VC	CIRC	8604X	3.17	1.97	100	VC	CIRC						
3252X	1.91	0.1	675	CP	CIRC	7205X	2.38	0.68	300	CP	CIRC	8605X	3.24	2.33	100	VC	CIRC						
3253X	1.91	0.06	675	CP	CIRC	7206X			100	VC	CIRC	8654X	3.18	1.76	225	VC	CIRC						
3301X	1.94	-0.53	300	CP	CIRC	7251X	3.07	1.1	300	VC	CIRC	8655X	2.91	1.79	225	VC	CIRC						
3302X	1.97	-1.1	375	CP	CIRC	7252X	3.1	0.9	675	CP	CIRC	9301X	4.68	3.09	150	VC	CIRC						
3401X	2.59	-0.55	450	CI	CIRC	7253X	2.39	0.06	675	CP	CIRC	9401X	4.46	3.03	150	VC	CIRC						
3402X	2.53	-1.75	750	CI	CIRC	7401X	1.88	-1.8	525	CI	CIRC	9402X	4.93	3.19	150	VC	CIRC						
3403X	2.96	-1.6	750	CI	CIRC	7402X	2.1	-0.16	175	VC	CIRC	941DX			UNKN	UNKN	CIRC						
3404X	2.84	-0.49	600	CI	CIRC	7451X	2.07	0.87	225	CP	CIRC	9451X	4.39	3.1	150	VC	CIRC						
3405X	2.45	-1.36	375	CP	CIRC	7452X	2.3	0.98	225	CP	CIRC	9501X	4.05	-0.9	300	VC	CIRC						
3452X	2.68	1.37	OTHER	VC	CIRC	7501X	1.92	-0.9	225	VC	CIRC	9502X	4.6	-0.67	300	VC	CIRC						
3501Y	3.415	-0.105	450	CP	CIRC	7502X	2.12	0.07	175	VC	CIRC	9503X	4.31	-0.79	300	VC	CIRC						
3502X	2.942	-0.286	600	CI	CIRC	7551X	1.78	0.34	300	VC	CIRC	9504X	4.34	2.81	150	BAC	CIRC						
3552X	3.51	2.43	300	VC	CIRC	7552X	1.85	0.73	150	VC	CIRC	950DX			UNKN	UNKN	CIRC						
3553X	2.99	1.86	300	VC	CIRC	7553X	2.1	0.83	150	VC	CIRC	951DX			UNKN	UNKN	CIRC						
3604X	2.22	0.021	450	CP	CIRC	7651X	2.14	0.93	150	VC	CIRC	952DX			300	VC	CIRC						
3605X	2.44	-0.22	600	CI	CIRC	8201X	3.91	2.18	150	VC	CIRC	9551X	4.66	3.21	225	CP	CIRC						
4151X	2.69		600	CP	CIRC	8202X			150	VC	CIRC	9552X	3.98	2.78	225	VC	CIRC						
4152X	2.62	0.12	600	CP	CIRC	8203X			150	VC	CIRC	9603X	4.12	3.02	150	BAC	CIRC						
4153X	2.56	0.55	600	CP	CIRC	8204X			100	VC	CIRC												
4154X	3.265	0.006	750	CP	CIRC	8205X			100	VC	CIRC												
4251X	1.94		675	CP	CIRC	8206X			UNKN	UNKN	CIRC												
4252X	1.84	-0.13	675	CP	CIRC	820DX			UNKN	UNKN	CIRC												
4253X	1.8	-0.17	675	CP	CIRC	821DX			150	VC	CIRC												
4254X	1.91	-0.25	675	CP	CIRC	822DX			150	VC	CIRC												
4255X	2.21	-0.215	900	CP	CIRC	823DX			UNKN	UNKN	CIRC												
4256X	1.607	-0.322	900	CP	CIRC	824DX			UNKN	UNKN	CIRC												
4401X	2.04		750	CI	CIRC	82ADX			UNKN	UNKN	CIRC												
4402X	1.99	-1.98	750	CI	CIRC	8301X	2.82	0.13	300	CP	CIRC												
4451X	2.03		UNKN	UNKN	CIRC	8302X	2.96	1.09	150	VC	CIRC												
4452X	2.3		300	VC	CIRC	8303X	3.01	0.27	300	CP	CIRC												
4453X	2.24		225	VC	CIRC	8304X	2.92	1.29	150	VC	CIRC												
4601X	2.31	-0.01	450	CI	CIRC	8309X	2.83	1.26	150	VC	CIRC												

LINE STYLES / COLOURS	MATERIALS	LEGEND - SEWERS
Brown ----- Foul ----- Foul Syphon Sewer ----- Foul Vacuum Main ----- Foul Rising Main	AK Alkaline BAC Bonded Asbestos Cement BRC Brick (Common) BRE Brick (Engineering) CC Concrete Box Culvert CI Cast Iron CO Concrete (In-Situ) CP Concrete (Pre-Cast) CSB Concrete Segments (bolted) CSU Concrete Segments (unbolted) DI Ductile Iron GRG Glass Reinforced Concrete GRP Glass Reinforced Plastic MAC Masonry in regular Courses MAR Masonry in random Courses PE Polyethylene PF Pitch Fibre PP Polypropylene PVC Polyvinyl Chloride RPM Reinforced Plastic Matrix SI Spun Iron ST Steel VC Ventilated Clay XXX Other ZZZ Unknown	Manhole (SW) Manhole (F&C) Lamp hole (SW) Lamp hole (F&C) Pumping Station (SW) Pumping Station (F&C) Side entry manhole (SW) Side entry manhole (F&C) Blind shaft (SW) Blind shaft (F&C) Ejector station (SW) Ejector station (F&C) Watertight door (SW) Watertight door (F&C) Flushing ch. Min-e (SW) Flushing ch. Min-e (F&C) Flushing ch. No-e (SW) Flushing ch. No-e (F&C) Demarcation Chamber Washout (SW) Washout (F&C) Rodding Eye (SW) Rodding Eye (F&C) Gauging point (SW) Gauging point (F&C) Intercept chamber (SW) Intercept chamber (F&C) Storm Tank (SW) Storm Tank (F&C) Vortex chamber (SW) Vortex chamber (F&C) Label ellipse Dummy/S24 manhole Penstock chamber Demiboards Storm Overflow Backdrop manhole Other (s) Other Change in sewer (s) Change in sewer Reflex valve Flap valve Cascade Anode Valve Closed Valve Air Valve Hatch box (SW) Hatch box (F&C) Direction arrow Outfall Emptying valve Catchpit Soakaway Inlet Balancing Pond Wastewater treatment works Marine treatment works Outfall headworks Vent Vent column Tidal storage tank Blank end Head of Public Sewer Micro Pumping Station SHAPES (S) A Arched B Barrel C Circular E Egg H Horseshoe R Rectangular S Square T Trapezoidal U U Shape X Other NODE REFERENCING SYSTEM 1st digit: hundred metre easing identifier 2nd digit: hundred metre nothing identifier sewer type identifier 0-4 = Foul/Combined 5-9 = Surface Water 4th digit: next sequential node

Drawn by:	kumaria	
Title:	209330_Butlins, Bognor Regis P	
Date:	29/01/2016	

Appendix E. Permissible Runoff Rate Calculations

URS Infrastructure & Environment UK Ltd		Page 1
Scott House Alencon Link Basingstoke RG21 7PP		
Date 31/08/2016 18:39 File	Designed by 34735jr Checked by	
XP Solutions		Source Control 2015.1

ICP SUDS Mean Annual Flood

Input

Return Period (years)	1	SAAR (mm)	700	Urban	0.750
Area (ha)	2.437	Soil	0.400	Region Number	Region 7

Results l/s

QBAR Rural	8.3
QBAR Urban	23.5
Q1 year	20.0
Q1 year	20.0
Q30 years	40.8
Q100 years	47.4

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Appendix F. Surface Water Drainage Strategy Drawings and Calculations

URS Infrastructure & Environment UK Ltd		Page 1
Scott House	Butlins Splash	
Alencon Link	Surface Water drainage	
Basingstoke RG21 7PP	surcharged outfall	
Date 26/08/16	Designed by Roddy Prayag	
File 160824 SIMPLE NETWORK MODEL.MDX	Checked by JR	
XP Solutions	Network 2014.1.1	

Existing Network Details 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)
S1.000	12.373	0.124	99.8	0.072	4.00	0.0	0.600	o	150
S1.001	12.373	0.082	150.0	0.000	0.00	0.0	0.600	o	150
S1.002	5.671	0.038	149.2	0.033	0.00	0.0	0.600	o	150
S1.003	5.671	0.038	149.2	0.000	0.00	0.0	0.600	o	150
S1.004	28.792	0.169	170.0	0.173	0.00	0.0	0.600	o	225
S1.005	28.792	0.170	169.4	0.000	0.00	0.0	0.600	o	225
S1.006	18.174	0.107	170.0	0.000	0.00	0.0	0.600	o	225
S1.007	22.107	0.092	240.0	0.177	0.00	0.0	0.600	o	300
S1.008	22.107	0.092	240.0	0.000	0.00	0.0	0.600	o	300
S1.009	17.254	0.072	240.0	0.177	0.00	0.0	0.600	o	300
S1.010	17.254	0.072	239.6	0.000	0.00	0.0	0.600	o	300
S2.000	51.757	0.518	99.9	0.050	4.00	0.0	0.600	o	225
S2.001	35.911	0.239	150.3	0.050	0.00	0.0	0.600	o	225
S3.000	37.800	0.252	150.0	0.035	4.00	0.0	0.600	o	150
S4.000	49.601	0.207	239.6	0.280	4.00	0.0	0.600	o	300
S4.001	24.801	0.103	240.8	0.144	0.00	0.0	0.600	o	300
S4.002	24.801	3.822	6.5	0.000	0.00	0.0	0.600	o	300
S2.002	9.650	0.054	180.0	0.000	0.00	0.0	0.600	o	300
S2.003	10.132	0.032	321.0	0.068	0.00	0.0	0.600	o	375
S2.004	10.132	0.032	321.0	0.000	0.00	0.0	0.600	o	375
S2.005	37.307	0.115	324.4	0.068	0.00	0.0	0.600	o	375

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
S1.000	2.766	0.072	0.0	1.01	17.8
S1.001	2.576	0.072	0.0	0.82	14.5
S1.002	2.494	0.105	0.0	0.82	14.5
S1.003	2.456	0.105	0.0	0.82	14.5
S1.004	2.343	0.278	0.0	1.00	39.8
S1.005	2.174	0.278	0.0	1.00	39.8
S1.006	2.004	0.278	0.0	1.00	39.8
S1.007	1.823	0.455	0.0	1.01	71.4
S1.008	1.730	0.455	0.0	1.01	71.4
S1.009	1.638	0.632	0.0	1.01	71.4
S1.010	1.566	0.632	0.0	1.01	71.5
S2.000	2.625	0.050	0.0	1.31	52.0
S2.001	2.107	0.100	0.0	1.06	42.3
S3.000	2.200	0.035	0.0	0.82	14.5
S4.000	6.060	0.280	0.0	1.01	71.5
S4.001	5.790	0.424	0.0	1.01	71.3
S4.002	5.690	0.424	0.0	6.21	439.0
S2.002	1.793	0.559	0.0	1.17	82.6
S2.003	1.664	0.627	0.0	1.01	111.1
S2.004	1.632	0.627	0.0	1.01	111.1
S2.005	1.600	0.695	0.0	1.00	110.5

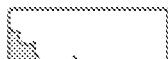
URS Infrastructure & Environment UK Ltd		Page 2
Scott House Alencon Link Basingstoke RG21 7PP	Butlins Splash Surface Water drainage surcharged outfall	
Date 26/08/16 File 160824 SIMPLE NETWORK MODEL.MDX	Designed by Roddy Prayag Checked by JR	
XP Solutions	Network 2014.1.1	

Existing Network Details 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)
S5.000	23.781	0.160	148.6	0.177	4.00	0.0	0.600	o	360
S2.006	13.962	0.048	290.0	0.000	0.00	0.0	0.600	o	375
S2.007	13.962	0.048	290.0	0.000	0.00	0.0	0.600	o	375
S1.011	6.886	0.024	290.0	0.000	0.00	0.0	0.600	o	375
S1.012	6.886	0.024	290.0	0.000	0.00	0.0	0.600	o	375

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
S5.000	1.859	0.177	0.0	1.29	91.0
S2.006	1.485	0.872	0.0	1.06	116.9
S2.007	1.487	0.872	0.0	1.06	116.9
S1.011	1.389	1.504	0.0	1.06	116.9
S1.012	1.365	1.504	0.0	1.06	116.9

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Scott House	Butlins Splash	
Alencon Link	Surface Water drainage	
Basingstoke RG21 7PP	surcharged outfall	
Date 26/08/16	Designed by Roddy Prayag	
File 160824 SIMPLE NETWORK MODEL.MDX	Checked by JR	
XP Solutions	Network 2014.1.1	

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)	Backdr (mm)
S1	3.500	0.800	Open Manhole	1200	S1.000	2.700	150				
Sperm pave 1	3.500	0.924	Open Manhole	1200	S1.001	2.576	150	S1.000	2.576	150	
S3	3.500	1.006	Open Manhole	1200	S1.002	2.494	150	S1.001	2.494	150	
Sperm pave 2	3.500	1.044	Open Manhole	1200	S1.003	2.456	150	S1.002	2.456	150	
S3	3.500	1.157	Open Manhole	1200	S1.004	2.343	225	S1.003	2.418	150	
Sperm pave 3	3.500	1.326	Open Manhole	1200	S1.005	2.174	225	S1.004	2.174	225	
S4	3.500	1.496	Open Manhole	1200	S1.006	2.004	225	S1.005	2.004	225	
S5	3.000	1.177	Open Manhole	1200	S1.007	1.823	300	S1.006	1.898	225	
STank 2	3.500	1.270	Open Manhole	1200	S1.008	1.730	300	S1.007	1.730	300	
S7	2.900	1.262	Open Manhole	1200	S1.009	1.638	300	S1.008	1.638	300	
STank 3	2.900	1.334	Open Manhole	1200	S1.010	1.566	300	S1.009	1.566	300	
S9	3.500	0.875	Open Manhole	1200	S2.000	2.625	225				
S10	3.000	0.893	Open Manhole	1200	S2.001	2.307	225	S2.000	2.107	225	
S11	3.500	0.800	Open Manhole	1200	S3.000	2.200	150				
SDeck 1	7.000	1.000	Open Manhole	1200	S4.000	5.500	300				
SDeck 2	7.000	1.207	Open Manhole	1200	S4.001	5.793	300	S4.000	5.793	300	
SDeck 3	7.000	1.310	Open Manhole	1200	S4.002	5.690	300	S4.001	5.690	300	
S11	3.000	1.207	Open Manhole	1200	S2.002	1.793	300	S2.001	1.868	225	
								S3.000	1.948	150	
								S4.002	1.868	300	
S12	3.000	1.336	Open Manhole	1350	S2.003	1.664	375	S2.002	1.739	300	
S20	2.000	1.268	Open Manhole	1200	S2.004	1.632	375	S2.003	1.632	375	
S13	2.800	1.200	Open Manhole	1350	S2.005	1.600	375	S2.004	1.600	375	
S16	3.000	1.150	Open Manhole	1200	S5.000	1.550	300				
S16	2.750	1.265	Open Manhole	1350	S2.006	1.485	375	S2.005	1.485	375	
								S5.000	1.690	300	
STank 4	2.700	1.263	Open Manhole	1350	S2.007	1.437	375	S2.006	1.437	375	
SMain Hydrobrake	2.700	1.311	Open Manhole	1350	S1.011	1.389	375	S1.010	1.494	300	
								S2.007	1.389	375	
SNon return valve	2.500	1.235	Open Manhole	1350	S1.012	1.365	375	S1.011	1.365	375	
SOutfall	2.500	1.159	Open Manhole	375		OUTFALL		S1.012	1.341	375	

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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	o	150	S1	3.500	2.700	0.800	Open Manhole	1200
S1.001	o	150	Sperm pave 1	3.500	2.576	0.924	Open Manhole	1200
S1.002	o	150	S3	3.500	2.494	0.856	Open Manhole	1200
S1.003	o	150	Sperm pave 2	3.500	2.456	0.894	Open Manhole	1200
S1.004	o	225	S3	3.500	2.343	0.932	Open Manhole	1200
S1.005	o	225	Sperm pave 3	3.500	2.174	1.101	Open Manhole	1200
S1.006	o	225	S4	3.500	2.004	1.271	Open Manhole	1200
S1.007	o	300	S5	3.000	1.823	0.877	Open Manhole	1200
S1.008	o	300	STank 2	3.000	1.730	0.970	Open Manhole	1200
S1.009	o	300	S7	2.900	1.638	0.962	Open Manhole	1200
S1.010	o	300	STank 3	2.900	1.566	1.034	Open Manhole	1200
S2.000	o	225	S9	3.500	2.625	0.650	Open Manhole	1200
S2.001	o	225	S10	3.000	2.107	0.668	Open Manhole	1200
S3.000	o	150	S11	3.000	2.290	0.650	Open Manhole	1200
S4.000	o	300	SDeck 1	7.000	5.000	0.700	Open Manhole	1200
S4.001	o	300	SDeck 2	7.000	5.793	0.907	Open Manhole	1200
S4.002	o	300	SDeck 3	7.000	5.690	1.010	Open Manhole	1200
S2.002	o	300	S11	3.000	1.753	0.907	Open Manhole	1200
S2.003	o	375	S12	3.000	1.654	0.961	Open Manhole	1350
S2.004	o	375	S20	2.900	1.632	0.893	Open Manhole	1200
S2.005	o	375	S13	2.800	1.600	0.825	Open Manhole	1350

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	12.373	99.8	Sperm pave 1	3.500	2.576	0.924	Open Manhole	1200
S1.001	12.373	150.0	S3	3.500	2.494	0.856	Open Manhole	1200
S1.002	5.671	149.2	Sperm pave 2	3.500	2.456	0.894	Open Manhole	1200
S1.003	5.671	149.2	S3	3.500	2.418	0.932	Open Manhole	1200
S1.004	28.792	170.0	Sperm pave 3	3.500	2.174	1.101	Open Manhole	1200
S1.005	28.792	169.4	S4	3.500	2.004	1.271	Open Manhole	1200
S1.006	18.174	170.0	S5	3.000	1.898	0.877	Open Manhole	1200
S1.007	22.107	240.0	STank 2	3.000	1.730	0.970	Open Manhole	1200
S1.008	22.107	240.0	S7	2.900	1.638	0.962	Open Manhole	1200
S1.009	17.254	240.0	STank 3	2.900	1.566	1.034	Open Manhole	1200
S1.010	17.254	239.6	SMain Hydrobrake	2.700	1.494	0.906	Open Manhole	1350
S2.000	51.757	99.9	S10	3.000	2.107	0.668	Open Manhole	1200
S2.001	35.911	150.3	S11	3.000	1.868	0.907	Open Manhole	1200
S3.000	37.800	150.0	S11	3.000	1.948	0.902	Open Manhole	1200
S4.000	49.601	239.6	SDeck 2	7.000	5.793	0.907	Open Manhole	1200
S4.001	24.801	240.8	SDeck 3	7.000	5.690	1.010	Open Manhole	1200
S4.002	24.801	6.5	S11	3.000	1.868	0.832	Open Manhole	1200
S2.002	9.650	180.0	S12	3.000	1.739	0.961	Open Manhole	1350
S2.003	10.132	321.0	S20	2.900	1.632	0.893	Open Manhole	1200
S2.004	10.132	321.0	S13	2.800	1.600	0.825	Open Manhole	1350
S2.005	37.307	324.4	S16	2.750	1.485	0.890	Open Manhole	1350

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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)
S5.000	o	300	S16	2.600	1.936	0.664	Open Manhole	1200
S2.006	o	375	S16	2.750	1.485	0.890	Open Manhole	1350
S2.007	o	375	STank 4	2.700	1.437	0.888	Open Manhole	1350
S1.011	o	375	SMain Hydrobrake	2.700	1.389	0.936	Open Manhole	1350
S1.012	o	375	SNon return valve	2.600	1.365	0.860	Open Manhole	1350

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)
S5.000	23.781	148.6	S16	2.750	1.690	0.760	Open Manhole	1350
S2.006	13.962	290.0	STank 4	2.700	1.437	0.888	Open Manhole	1350
S2.007	13.962	290.0	SMain Hydrobrake	2.700	1.389	0.936	Open Manhole	1350
S1.011	6.886	290.0	SNon return valve	2.600	1.365	0.860	Open Manhole	1350
S1.012	6.886	290.0	SOutfall	2.500	1.341	0.794	Open Manhole	375

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.072	0.072	0.072
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.033	0.033	0.033
1.003	-	-	100	0.000	0.000	0.000
1.004	-	-	100	0.173	0.173	0.173
1.005	-	-	100	0.000	0.000	0.000
1.006	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.177	0.177	0.177
1.008	-	-	100	0.000	0.000	0.000
1.009	-	-	100	0.177	0.177	0.177
1.010	-	-	100	0.000	0.000	0.000
2.000	-	-	100	0.050	0.050	0.050
2.001	-	-	100	0.050	0.050	0.050
3.000	-	-	100	0.035	0.035	0.035
4.000	-	-	100	0.280	0.280	0.280
4.001	-	-	100	0.144	0.144	0.144
4.002	-	-	100	0.000	0.000	0.000
2.002	-	-	100	0.000	0.000	0.000
2.003	-	-	100	0.068	0.068	0.068
2.004	-	-	100	0.000	0.000	0.000
2.005	-	-	100	0.068	0.068	0.068
5.000	-	-	100	0.177	0.177	0.177
2.006	-	-	100	0.000	0.000	0.000
2.007	-	-	100	0.000	0.000	0.000
1.011	-	-	100	0.000	0.000	0.000
1.012	-	-	100	0.000	0.000	0.000
Total				Total	Total	Total
				1.504	1.504	1.504

Surcharged Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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S1.012 SOutfall 2.500 1.341 1.000 375 0

Datum (m) 0.500 Offset (mins) 0

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
60	0.555	960	2.000	1860	2.000	2760	0.994	3660	0.555	4560	2.000	5460	2.000	6360	0.994
120	0.994	1020	2.000	1920	2.000	2820	0.555	3720	0.994	4620	2.000	5520	2.000	6420	0.555
180	1.450	1080	2.000	1980	1.450	2880	0.500	3780	1.450	4680	2.000	5580	1.450	6480	0.500
240	2.000	1140	2.000	2040	0.994	2940	0.555	3840	2.000	4740	2.000	5640	0.994	6540	0.555
300	2.000	1200	2.000	2100	0.555	3000	0.994	3900	2.000	4800	2.000	5700	0.555	6600	0.994
360	2.000	1260	1.450	2160	0.500	3060	1.450	3960	2.000	4860	1.450	5760	0.500	6660	1.450
420	2.000	1320	0.994	2220	0.555	3120	2.000	4020	2.000	4920	0.994	5820	0.555	6720	2.000
480	2.000	1380	0.555	2280	0.994	3180	2.000	4080	2.000	4980	0.555	5880	0.994	6780	2.000
540	1.450	1440	0.500	2340	1.450	3240	2.000	4140	1.450	5040	0.500	5940	1.450	6840	2.000
600	0.994	1500	0.555	2400	2.000	3300	2.000	4200	0.994	5100	0.555	6000	2.000	6900	2.000
660	0.555	1560	0.994	2460	2.000	3360	2.000	4260	0.555	5160	0.994	6060	2.000	6960	2.000
720	0.500	1620	1.450	2520	2.000	3420	1.450	4320	0.500	5220	1.450	6120	2.000	7020	1.450
780	0.555	1680	2.000	2580	2.000	3480	0.994	4380	0.555	5280	2.000	6180	2.000	7080	0.994
840	0.994	1740	2.000	2640	2.000	3540	0.555	4440	0.994	5340	2.000	6240	2.000	7140	0.555
900	1.450	1800	2.000	2700	1.450	3600	0.500	4500	1.450	5400	2.000	6300	1.450	7200	0.500

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Surcharged Outfall Details for Storm

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
7260	0.555	7620	2.000	7980	0.555	8340	2.000	8700	0.555	9060	2.000	9420	0.555
7320	0.994	7680	2.000	8040	0.994	8400	2.000	8760	0.994	9120	2.000	9480	0.994
7380	1.450	7740	1.450	8100	1.450	8460	1.450	8820	1.450	9180	1.450	9540	1.450
7440	2.000	7800	0.994	8160	2.000	8520	0.994	8880	2.000	9240	0.994	9600	2.000
7500	2.000	7860	0.555	8220	2.000	8580	0.555	8940	2.000	9300	0.555	9660	2.000
7560	2.000	7920	0.500	8280	2.000	8640	0.500	9000	2.000	9360	0.500	9720	2.000
												10020	0.555
												10080	0.500

Simulation Criteria for Storm

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 Coefficient 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 6 Number of Storage Structures 8 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) 17.500 Storm Duration (mins) 30
 Ratio R 0.400

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Online Controls for Storm

Hydro-Brake Optimum® Manhole: S4, DS/PN: S1.006, Volume (m³): 2.8

Unit Reference MD-SHE-0070-2000-0750-2000
Design Head (m) 0.750
Design Flow (l/s) 2.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 70
Invert Level (m) 2.004
Minimum Outlet Pipe Diameter (mm) 100
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.750	2.0	Kick-Flo®	0.474	1.6
Flush-Flo™	0.223	1.9	Mean Flow over Head Range	-	1.7

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.7	0.800	2.0	2.000	3.1	4.000	4.2	7.000	5.5
0.200	1.9	1.000	2.2	2.200	3.2	4.500	4.5	7.500	5.7
0.300	1.9	1.200	2.4	2.400	3.3	5.000	4.7	8.000	5.8
0.400	1.8	1.400	2.6	2.600	3.5	5.500	4.9	8.500	6.0
0.500	1.6	1.600	2.8	3.000	3.7	6.000	5.1	9.000	6.2
0.600	1.8	1.800	2.9	3.500	4.0	6.500	5.3	9.500	6.4

Hydro-Brake Optimum® Manhole: S7, DS/PN: S1.009, Volume (m³): 2.9

Unit Reference MD-SHE-0064-2000-1200-2000
Design Head (m) 1.200
Design Flow (l/s) 2.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 64
Invert Level (m) 1.638
Minimum Outlet Pipe Diameter (mm) 100
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	2.0	Kick-Flo®	0.573	1.4
Flush-Flo™	0.282	1.8	Mean Flow over Head Range	-	1.6

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.5	0.800	1.7	2.000	2.5	4.000	3.5	7.000	4.5
0.200	1.7	1.000	1.8	2.200	2.6	4.500	3.7	7.500	4.7
0.300	1.8	1.200	2.0	2.400	2.7	5.000	3.9	8.000	4.8
0.400	1.7	1.400	2.1	2.600	2.8	5.500	4.0	8.500	5.0
0.500	1.6	1.600	2.3	3.000	3.0	6.000	4.2	9.000	5.1
0.600	1.5	1.800	2.4	3.500	3.3	6.500	4.4	9.500	5.2

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Hydro-Brake Optimum® Manhole: SDeck 3, DS/PN: S4.002, Volume (m³): 3.1

Unit Reference MD-SHE-0101-4000-0500-4000
Design Head (m) 0.500
Design Flow (l/s) 4.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 101
Invert Level (m) 5.690
Minimum Outlet Pipe Diameter (mm) 150
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.500	3.9	Kick-Flo®	0.361	3.4
Flush-Flo™	0.165	3.9	Mean Flow over Head Range	-	3.3

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.3	0.800	4.9	2.000	7.5	4.000	10.4	7.000	13.6
0.200	3.9	1.000	5.4	2.200	7.8	4.500	11.0	7.500	14.1
0.300	3.7	1.200	5.9	2.400	8.1	5.000	11.5	8.000	14.5
0.400	3.5	1.400	6.3	2.600	8.4	5.500	12.0	8.500	15.0
0.500	3.9	1.600	6.7	3.000	9.0	6.000	12.6	9.000	15.4
0.600	4.3	1.800	7.1	3.500	9.7	6.500	13.1	9.500	15.8

Hydro-Brake Optimum® Manhole: S13, DS/PN: S2.005, Volume (m³): 2.7

Unit Reference MD-SHE-0123-7000-1000-7000
Design Head (m) 1.000
Design Flow (l/s) 7.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 123
Invert Level (m) 1.600
Minimum Outlet Pipe Diameter (mm) 150
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	7.0	Kick-Flo®	0.651	5.7
Flush-Flo™	0.297	6.9	Mean Flow over Head Range	-	6.0

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.4	0.800	6.3	2.000	9.7	4.000	13.4	7.000	17.5
0.200	6.8	1.000	7.0	2.200	10.1	4.500	14.2	7.500	18.1
0.300	6.9	1.200	7.6	2.400	10.5	5.000	14.9	8.000	18.7
0.400	6.8	1.400	8.2	2.600	10.9	5.500	15.6	8.500	19.2
0.500	6.6	1.600	8.7	3.000	11.7	6.000	16.3	9.000	19.8
0.600	6.2	1.800	9.2	3.500	12.6	6.500	16.9	9.500	20.3

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Hydro-Brake Optimum® Manhole: SMain Hydrobrake, DS/PN: S1.011, Volume (m³): 4.4

Unit Reference MD-SHE-0213-2390-1100-2390
Design Head (m) 1.100
Design Flow (l/s) 23.9
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 213
Invert Level (m) 1.389
Minimum Outlet Pipe Diameter (mm) 300
Suggested Manhole Diameter (mm) 1500

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.100	23.9	Kick-Flo®	0.790	20.4
Flush-Flo™	0.372	23.9	Mean Flow over Head Range	-	20.2

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.2	0.800	20.5	2.000	31.8	4.000	44.4	7.000	58.3
0.200	20.8	1.000	22.8	2.200	33.3	4.500	47.0	7.500	60.2
0.300	23.7	1.200	24.9	2.400	34.7	5.000	49.5	8.000	62.2
0.400	23.9	1.400	26.8	2.600	36.1	5.500	51.8	8.500	64.0
0.500	23.6	1.600	28.6	3.000	38.7	6.000	54.1	9.000	65.8
0.600	23.1	1.800	30.2	3.500	41.6	6.500	56.2	9.500	67.6

Non Return Valve Manhole: SNon return valve, DS/PN: S1.012, Volume (m³): 2.4

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Storage Structures for Storm

Porous Car Park Manhole: Sperm pave 1, DS/PN: S1.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	18.7
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	103.9	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	2.576	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: Sperm pave 2, DS/PN: S1.003

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	17.2
Max Percolation (l/s)	47.8	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	2.456	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: Sperm pave 3, DS/PN: S1.005

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.0
Membrane Percolation (mm/hr)	1000	Length (m)	44.5
Max Percolation (l/s)	247.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	2.174	Cap Volume Depth (m)	0.400

Cellular Storage Manhole: STank 2, DS/PN: S1.008

Invert Level (m)	1.730	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	540.0	0.0	0.500	540.0	0.0	0.501	0.0	0.0

Cellular Storage Manhole: STank 3, DS/PN: S1.010

Invert Level (m)	1.566	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	200.0	0.0	0.500	200.0	0.0	0.501	0.0	0.0

Cellular Storage Manhole: SDeck 2, DS/PN: S4.001

Invert Level (m)	5.793	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	4237.0	0.0	0.060	4237.0	0.0	0.061	0.0	0.0

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Cellular Storage Manhole: S20, DS/PN: S2.004

Invert Level (m) 1.620 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	288.0	0.0	0.500	288.0	0.0	0.501	0.0	0.0

Cellular Storage Manhole: STank 4, DS/PN: S2.007

Invert Level (m) 1.437 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	176.0	0.0	0.500	176.0	0.0	0.501	0.0	0.0

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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 Coefficient 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 6 Number of Storage Structures 8 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 17.500 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status OFF
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
S1.000	15 Summer	1	0%	30/15 Summer				
S1.001	60 Winter	1	0%	100/15 Winter				
S1.002	15 Winter	1	0%	100/15 Summer				
S1.003	60 Winter	1	0%	100/15 Summer				
S1.004	15 Winter	1	0%	30/15 Summer				
S1.005	240 Winter	1	0%	30/180 Winter				
S1.006	240 Winter	1	0%	1/120 Winter				
S1.007	15 Winter	1	0%	100/15 Summer				
S1.008	600 Winter	1	0%	30/960 Winter				
S1.009	15 Winter	1	0%	1/15 Summer				
S1.010	480 Winter	1	0%	30/360 Winter				
S2.000	15 Winter	1	0%					
S2.001	15 Winter	1	0%	100/15 Summer				
S3.000	15 Winter	1	0%	100/15 Summer				
S4.000	15 Winter	1	0%	30/15 Summer	100/15 Summer			2
S4.001	1440 Winter	1	0%					
S4.002	1440 Winter	1	0%					
S2.002	15 Winter	1	0%	100/15 Summer				
S2.003	15 Winter	1	0%	100/15 Summer				
S2.004	600 Winter	1	0%	100/120 Winter				
S2.005	600 Winter	1	0%	100/15 Summer	100/600 Winter			2
S5.000	15 Winter	1	0%	100/15 Summer				
S2.006	480 Winter	1	0%	30/360 Summer				
S2.007	480 Winter	1	0%	30/240 Summer				
S1.011	480 Winter	1	0%	2/360 Winter				
S1.012	480 Winter	1	0%	1/360 Winter				

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m ³)	Flow / Cap. (l/s)	O'flow (l/s)	Flow (l/s)	
S1.000		S1 2.782	-0.068	0.000	0.58	0.0	9.4	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
S1.001	Sperm pave 1	2.613	-0.113	0.000	0.14	0.0	1.9	OK
S1.002	S3	2.553	-0.091	0.000	0.32	0.0	3.9	OK
S1.003	Sperm pave 2	2.502	-0.104	0.000	0.20	0.0	2.4	OK
S1.004	S3	2.454	-0.114	0.000	0.49	0.0	18.0	OK
S1.005	Sperm pave 3	2.245	-0.154	0.000	0.07	0.0	2.7	OK
S1.006	S4	2.240	0.011	0.000	0.05	0.0	1.9	SURCHARGED
S1.007	S5	1.933	-0.189	0.000	0.29	0.0	18.3	OK
S1.008	STank 2	1.853	-0.177	0.000	0.03	0.0	1.7	OK
S1.009	S7	2.016	0.078	0.000	0.03	0.0	1.8	SURCHARGED
S1.010	STank 3	1.746	-0.120	0.000	0.16	0.0	9.8	OK
S2.000	S9	2.679	-0.171	0.000	0.13	0.0	6.3	OK
S2.001	S10	2.189	-0.143	0.000	0.28	0.0	11.3	OK
S3.000	S11	2.259	-0.091	0.000	0.32	0.0	4.5	OK
S4.000	SDeck 1	6.157	-0.143	0.000	0.54	0.0	36.2	OK
S4.001	SDeck 2	5.810	-0.283	0.000	0.01	0.0	0.7	OK
S4.002	SDeck 3	5.728	-0.262	0.000	0.00	0.0	0.7	OK
S2.002	S11	1.896	-0.197	0.000	0.26	0.0	15.9	OK
S2.003	S12	1.800	-0.239	0.000	0.29	0.0	22.6	OK
S2.004	S20	1.751	-0.256	0.000	0.05	0.0	4.1	OK
S2.005	S13	1.751	-0.224	0.000	0.04	0.0	4.2	OK
S5.000	S16	1.959	-0.191	0.000	0.28	0.0	23.0	OK
S2.006	S16	1.745	-0.115	0.000	0.05	0.0	4.9	OK
S2.007	STank 4	1.745	-0.067	0.000	0.11	0.0	9.9	OK
S1.011	SMain Hydrobrake	1.746	-0.018	0.000	0.26	0.0	20.2	OK
S1.012	SNon return valve	1.746	0.006	0.000	0.26	0.0	20.4	SURCHARGED

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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 Coefficient 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 6 Number of Storage Structures 8 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 17.500 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status OFF
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
S1.000	15 Summer	2	0%	30/15 Summer				
S1.001	60 Winter	2	0%	100/15 Winter				
S1.002	15 Winter	2	0%	100/15 Summer				
S1.003	60 Winter	2	0%	100/15 Summer				
S1.004	15 Winter	2	0%	30/15 Summer				
S1.005	180 Winter	2	0%	30/180 Winter				
S1.006	180 Winter	2	0%	1/120 Winter				
S1.007	15 Winter	2	0%	100/15 Summer				
S1.008	720 Winter	2	0%	30/960 Winter				
S1.009	15 Winter	2	0%	1/15 Summer				
S1.010	480 Winter	2	0%	30/360 Winter				
S2.000	15 Winter	2	0%					
S2.001	15 Winter	2	0%	100/15 Summer				
S3.000	15 Winter	2	0%	100/15 Summer				
S4.000	15 Winter	2	0%	30/15 Summer	100/15 Summer			2
S4.001	1440 Winter	2	0%					
S4.002	1440 Winter	2	0%					
S2.002	15 Winter	2	0%	100/15 Summer				
S2.003	15 Winter	2	0%	100/15 Summer				
S2.004	600 Winter	2	0%	100/120 Winter				
S2.005	600 Winter	2	0%	100/15 Summer	100/600 Winter			2
S5.000	15 Winter	2	0%	100/15 Summer				
S2.006	480 Winter	2	0%	30/360 Summer				
S2.007	480 Winter	2	0%	30/240 Summer				
S1.011	480 Winter	2	0%	2/360 Winter				
S1.012	480 Winter	2	0%	1/360 Winter				

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m ³)	Flow / Cap. (l/s)	O'flow (l/s)	Flow (l/s)	
S1.000		S1 2.798	-0.052	0.000	0.75	0.0	12.1	OK

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
S1.001	Sperm pave 1	2.621	-0.105	0.000	0.20	0.0	2.6	OK
S1.002	S3	2.564	-0.080	0.000	0.44	0.0	5.2	OK
S1.003	Sperm pave 2	2.512	-0.094	0.000	0.30	0.0	3.6	OK
S1.004	S3	2.473	-0.095	0.000	0.62	0.0	23.1	OK
S1.005	Sperm pave 3	2.273	-0.126	0.000	0.08	0.0	3.1	OK
S1.006	S4	2.268	0.039	0.000	0.05	0.0	1.9	SURCHARGED
S1.007	S5	1.950	-0.172	0.000	0.38	0.0	23.7	OK
S1.008	STank 2	1.888	-0.142	0.000	0.03	0.0	1.7	OK
S1.009	S7	2.064	0.125	0.000	0.03	0.0	1.8	SURCHARGED
S1.010	STank 3	1.775	-0.091	0.000	0.17	0.0	10.2	OK
S2.000	S9	2.687	-0.163	0.000	0.16	0.0	8.2	OK
S2.001	S10	2.202	-0.130	0.000	0.37	0.0	14.6	OK
S3.000	S11	2.268	-0.082	0.000	0.42	0.0	5.8	OK
S4.000	SDeck 1	6.185	-0.115	0.000	0.70	0.0	46.8	OK
S4.001	SDeck 2	5.813	-0.280	0.000	0.01	0.0	0.9	OK
S4.002	SDeck 3	5.732	-0.258	0.000	0.00	0.0	0.9	OK
S2.002	S11	1.912	-0.181	0.000	0.33	0.0	20.5	OK
S2.003	S12	1.822	-0.217	0.000	0.37	0.0	29.1	OK
S2.004	S20	1.784	-0.223	0.000	0.06	0.0	4.7	OK
S2.005	S13	1.784	-0.191	0.000	0.05	0.0	4.7	OK
S5.000	S16	1.976	-0.174	0.000	0.37	0.0	29.7	OK
S2.006	S16	1.774	-0.086	0.000	0.06	0.0	5.6	OK
S2.007	STank 4	1.774	-0.038	0.000	0.11	0.0	10.5	OK
S1.011	SMain Hydrobrake	1.774	0.010	0.000	0.27	0.0	21.1	SURCHARGED
S1.012	SNon return valve	1.774	0.034	0.000	0.27	0.0	21.3	SURCHARGED

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

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 Coefficient 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 6 Number of Storage Structures 8 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 17.500 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status OFF
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
S1.000	15 Winter	30	0%	30/15 Summer				
S1.001	30 Winter	30	0%	100/15 Winter				
S1.002	15 Winter	30	0%	100/15 Summer				
S1.003	15 Winter	30	0%	100/15 Summer				
S1.004	15 Summer	30	0%	30/15 Summer				
S1.005	360 Winter	30	0%	30/180 Winter				
S1.006	360 Winter	30	0%	1/120 Winter				
S1.007	1440 Winter	30	0%	100/15 Summer				
S1.008	1440 Winter	30	0%	30/960 Winter				
S1.009	15 Summer	30	0%	1/15 Summer				
S1.010	480 Winter	30	0%	30/360 Winter				
S2.000	15 Winter	30	0%					
S2.001	15 Winter	30	0%	100/15 Summer				
S3.000	15 Winter	30	0%	100/15 Summer				
S4.000	15 Winter	30	0%	30/15 Summer	100/15 Summer			2
S4.001	960 Winter	30	0%					
S4.002	960 Winter	30	0%					
S2.002	15 Winter	30	0%	100/15 Summer				
S2.003	600 Winter	30	0%	100/15 Summer				
S2.004	600 Winter	30	0%	100/120 Winter				
S2.005	600 Winter	30	0%	100/15 Summer	100/600 Winter			2
S5.000	15 Winter	30	0%	100/15 Summer				
S2.006	480 Winter	30	0%	30/360 Summer				
S2.007	480 Winter	30	0%	30/240 Summer				
S1.011	480 Winter	30	0%	2/360 Winter				
S1.012	480 Winter	30	0%	1/360 Winter				

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)	Flow (l/s)	
S1.000		2.957	0.107	0.000	1.35	0.0	21.5	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
S1.001	Sperm pave 1	2.651	-0.075	0.000	0.50	0.0	6.6	OK
S1.002	S3	2.611	-0.033	0.000	0.93	0.0	11.2	OK
S1.003	Sperm pave 2	2.559	-0.047	0.000	0.81	0.0	9.7	OK
S1.004	S3	2.654	-0.086	0.000	1.23	0.0	45.7	SURCHARGED
S1.005	Sperm pave 3	2.415	0.016	0.000	0.12	0.0	4.3	SURCHARGED
S1.006	S4	2.493	0.264	0.000	0.05	0.0	1.9	SURCHARGED
S1.007	S5	2.056	-0.066	0.000	0.07	0.0	4.4	OK
S1.008	STank 2	2.055	0.024	0.000	0.03	0.0	2.1	SURCHARGED
S1.009	S7	2.130	0.192	0.000	0.03	0.0	1.8	SURCHARGED
S1.010	STank 3	1.901	0.035	0.000	0.24	0.0	14.8	SURCHARGED
S2.000	S9	2.712	-0.138	0.000	0.31	0.0	15.5	OK
S2.001	S10	2.258	-0.074	0.000	0.76	0.0	30.3	OK
S3.000	S11	2.301	-0.049	0.000	0.79	0.0	11.0	OK
S4.000	SDeck 1	5.418	-0.118	0.000	1.26	0.0	84.8	SURCHARGED
S4.001	SDeck 2	5.827	-0.266	0.000	0.03	0.0	2.0	OK
S4.002	SDeck 3	5.757	-0.233	0.000	0.01	0.0	2.0	OK
S2.002	S11	1.975	-0.118	0.000	0.68	0.0	41.4	OK
S2.003	S12	1.940	-0.099	0.000	0.08	0.0	6.6	OK
S2.004	S20	1.939	-0.068	0.000	0.08	0.0	6.7	OK
S2.005	S13	1.938	-0.037	0.000	0.07	0.0	6.8	OK
S5.000	S16	2.035	-0.115	0.000	0.70	0.0	56.2	OK
S2.006	S16	1.908	0.048	0.000	0.08	0.0	7.8	SURCHARGED
S2.007	STank 4	1.908	0.096	0.000	0.17	0.0	15.9	SURCHARGED
S1.011	SMain Hydrobrake	2.028	0.264	0.000	0.30	0.0	23.3	SURCHARGED
S1.012	SNon return valve	1.934	0.194	0.000	0.30	0.0	23.4	SURCHARGED

URS Infrastructure & Environment UK Ltd		Page 19
Scott House Alencon Link Basingstoke RG21 7PP	Butlins Splash Surface Water drainage surcharged outfall	
Date 26/08/16 File 160824 SIMPLE NETWORK MODEL.MDX	Designed by Roddy Prayag Checked by JR	
XP Solutions	Network 2014.1.1	

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

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 Coefficient 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 6 Number of Storage Structures 8 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 17.500 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status OFF
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

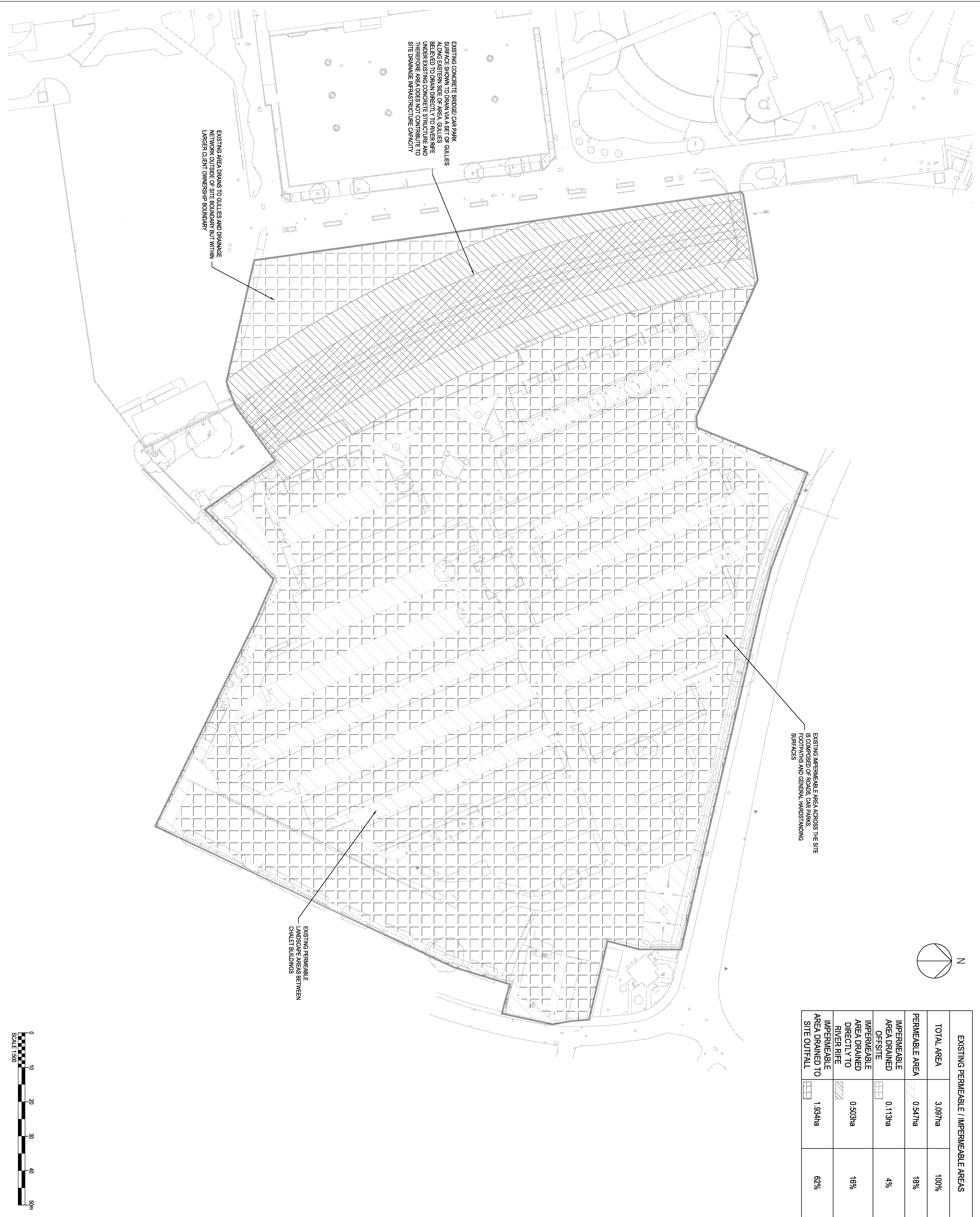
PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
S1.000	15 Winter	100	+40%	30/15 Summer				
S1.001	1440 Winter	100	+40%	100/15 Winter				
S1.002	1440 Winter	100	+40%	100/15 Summer				
S1.003	1440 Winter	100	+40%	100/15 Summer				
S1.004	15 Winter	100	+40%	30/15 Summer				
S1.005	600 Winter	100	+40%	30/180 Winter				
S1.006	600 Winter	100	+40%	1/120 Winter				
S1.007	600 Winter	100	+40%	100/15 Summer				
S1.008	600 Winter	100	+40%	30/960 Winter				
S1.009	600 Winter	100	+40%	1/15 Summer				
S1.010	600 Winter	100	+40%	30/360 Winter				
S2.000	720 Winter	100	+40%					
S2.001	720 Winter	100	+40%	100/15 Summer				
S3.000	720 Winter	100	+40%	100/15 Summer				
S4.000	15 Winter	100	+40%	30/15 Summer	100/15 Summer			2
S4.001	720 Winter	100	+40%					
S4.002	720 Winter	100	+40%					
S2.002	720 Winter	100	+40%	100/15 Summer				
S2.003	720 Winter	100	+40%	100/15 Summer				
S2.004	720 Winter	100	+40%	100/120 Winter				
S2.005	720 Winter	100	+40%	100/15 Summer	100/600 Winter			2
S5.000	600 Winter	100	+40%	100/15 Summer				
S2.006	600 Winter	100	+40%	30/360 Summer				
S2.007	600 Winter	100	+40%	30/240 Summer				
S1.011	600 Winter	100	+40%	2/360 Winter				
S1.012	600 Winter	100	+40%	1/360 Winter				

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m ³)	Flow / Cap. (l/s)	O'flow (l/s)	Flow (l/s)	
S1.000		S1 3.397	0.547	0.000	2.31	0.0	37.3	FLOOD RISK

URS Infrastructure & Environment UK Ltd		Page 20
Scott House Alencon Link Basingstoke RG21 7PP	Butlins Splash Surface Water drainage surcharged outfall	
Date 26/08/16 File 160824 SIMPLE NETWORK MODEL.MDX	Designed by Roddy Prayag Checked by JR	
XP Solutions	Network 2014.1.1	

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

PN	US/MH Name	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
		Level (m)		Volume (m³)		(l/s)	Flow (l/s)	
S1.001	Sperm pave 1	2.785	0.059	0.000	0.14	0.0	1.8	SURCHARGED
S1.002	S3	2.784	0.140	0.000	0.22	0.0	2.7	SURCHARGED
S1.003	Sperm pave 2	2.784	0.178	0.000	0.22	0.0	2.7	SURCHARGED
S1.004	S3	2.814	0.346	0.000	1.72	0.0	23.6	SURCHARGED
S1.005	Sperm pave 3	2.791	0.392	0.000	0.16	0.0	6.0	SURCHARGED
S1.006	S4	2.792	0.563	0.000	0.05	0.0	1.9	SURCHARGED
S1.007	S5	2.825	0.702	0.000	0.17	0.0	10.7	FLOOD RISK
S1.008	STank 2	2.824	0.794	0.000	0.03	0.0	1.7	FLOOD RISK
S1.009	S7	2.824	0.885	0.000	0.03	0.0	1.8	FLOOD RISK
S1.010	STank 3	2.596	0.730	0.000	0.30	0.0	18.1	SURCHARGED
S2.000	S9	2.815	-0.035	0.000	0.04	0.0	2.2	OK
S2.001	S10	2.812	0.480	0.000	0.11	0.0	4.4	FLOOD RISK
S3.000	S11	2.812	0.462	0.000	0.11	0.0	1.6	FLOOD RISK
S4.000	SDeck 1	7.001	0.701	0.637	2.11	0.0	142.1	FLOOD
S4.001	SDeck 2	5.852	-0.241	0.000	0.06	0.0	3.9	OK
S4.002	SDeck 3	5.822	-0.168	0.000	0.01	0.0	3.9	OK
S2.002	S11	2.809	0.716	0.000	0.14	0.0	8.5	FLOOD RISK
S2.003	S12	2.806	0.767	0.000	0.14	0.0	11.2	FLOOD RISK
S2.004	S20	2.803	0.796	0.000	0.09	0.0	7.0	FLOOD RISK
S2.005	S13	2.801	0.826	1.122	0.07	0.0	6.9	FLOOD
S5.000	S16	2.610	0.460	0.000	0.11	0.0	9.1	SURCHARGED
S2.006	S16	2.608	0.748	0.000	0.16	0.0	15.1	FLOOD RISK
S2.007	STank 4	2.603	0.791	0.000	0.26	0.0	23.8	FLOOD RISK
S1.011	SMain Hydrobrake	2.599	0.835	0.000	0.30	0.0	23.4	FLOOD RISK
S1.012	SNon return valve	2.502	0.762	0.000	0.30	0.0	23.7	FLOOD RISK



EXISTING PERMEABLE / IMPERMEABLE AREAS			
TOTAL AREA	3.097ha	100%	
PERMEABLE AREA	0.547ha	18%	
IMPERMEABLE AREA DRAINED	0.113ha	4%	
IMPERMEABLE OFFSITE			
IMPERMEABLE AREA DRAINED DIRECTLY TO RIVER RIFE	0.503ha	16%	
IMPERMEABLE AREA DRAINED TO SITE OUTFALL	1.934ha	62%	

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS
In addition to the hazards/risks normally associated with the type of work detailed on this drawing take note of above. It is assumed that all works on this drawing will be carried out by a competent contracted working, where appropriate, to the appropriate relevant standards.		
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KEY	
	SITE BOUNDARY
	EXISTING UNDRAINED PERMEABLE AREA
	EXISTING IMPERMEABLE AREA DRAINING OFFSITE
	EXISTING IMPERMEABLE AREA DRAINING TO RIVER
	RIFE
	EXISTING IMPERMEABLE AREA DRAINING TO SITE DRAINAGE OUTFALL

AREAS UPDATED FOR EXISTING CONCRETE BRIDGE SURVEY	JC	28.03.16	P03
SITE BOUNDARY UPDATED TO REFLECT ARCHITECT'S LAYOUT	RP		
	JCH	07.04.16	P02
	JR		
FIRST ISSUE	JCH	11.03.16	P01
	JR		
Revision Details	By	Date	Scale
	Check		

FOR INFORMATION

Client

BUTLINS

Project Title

BUTLINS SPLASH
BOGNOR REGIS

Drawing Title

EXISTING DRAINED AREAS

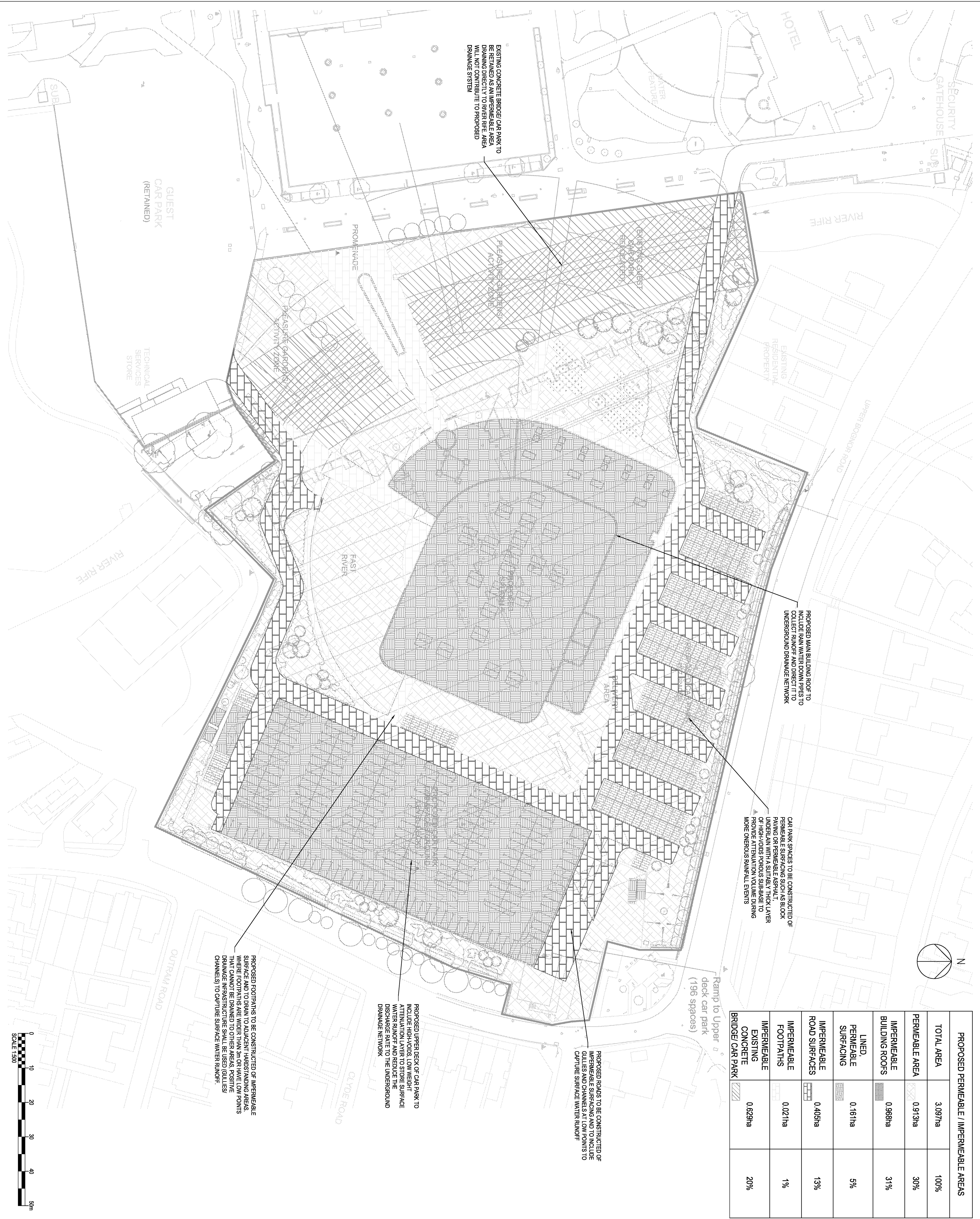
Designed	Drawn	Checked	Approved	Date
JCH	JCH	JR	JR	FEB 2016
Units Internal Project No.	80472840	Stability	FOR INFORMATION	

Scale @ A1
1:500 AND 1:1000 AT A3

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44 (0)1753 511 202



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KEY

- SITE BOUNDARY
- PROPOSED PERMEABLE AREAS
- PROPOSED BUILDING ROOFS
- PROPOSED PERMEABLE SURFACING(BLOCK PAVING OR PERMEABLE ASPHALT)
- PROPOSED ROADS
- PROPOSED FOOTPATHS
- EXISTING CONCRETE BRIDGE/ CAR PARK OVER RIVER RIFE

Purpose of Issue	DETAILS UPDATED TO REFLECT ARCHITECT'S LAYOUT			
	JCH	RP	28.08.16	P03
	JCH	JR	07.04.16	P02
	JCH	JR	11.03.16	P01
FIRST ISSUE				
Revision Details		By	Check	Date
		JCH	JR	11.03.16
		JCH	JR	11.03.16

FOR INFORMATION

Client

BUTLINS

Project Title

BUTLINS SPLASH
BOGNOR REGIS

Drawing Title

PROPOSED DRAINED AREAS

Designed	Drawn	Checked	Approved	Date
JCH	JCH	JR	JR	FEB 2016
UNIS Internal Project No.		Status		
60472840		FOR INFORMATION		

Scale @ A1

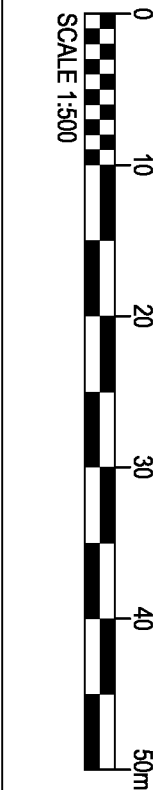
1:500 AND 1:1000 AT A3

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Sanger, R021 / P0
44-017558 310 200
44-017558 310 201
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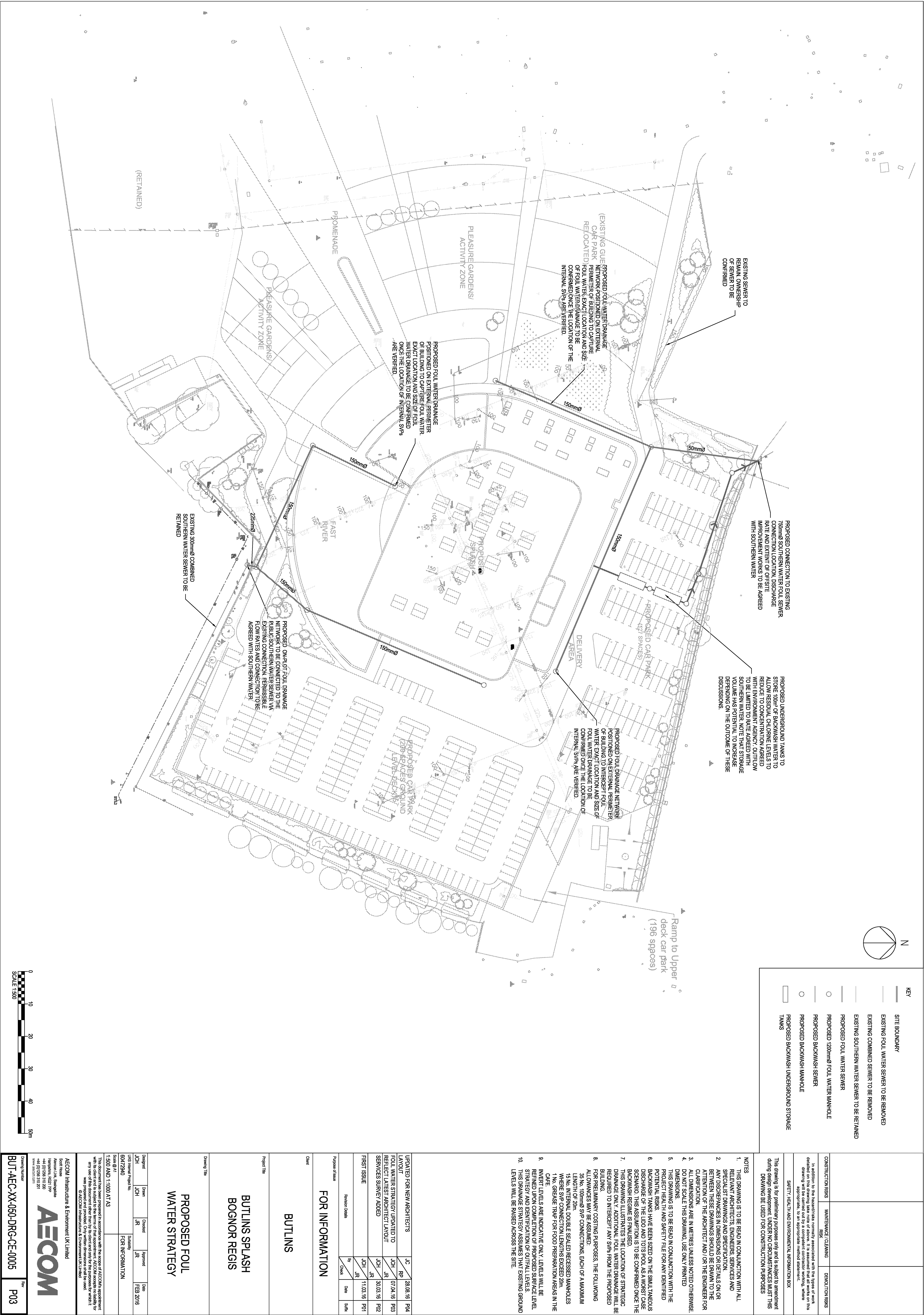
LEVEL FOR SURFACE	IDENTIFICATION OF EXISTING AND NECESSARY PERSONNEL ENTERING A CONFINED SPACE ALL APPROPRIATE SAFETY MEASURES ARE TO BE TAKEN WHEN IDENTIFYING THIS HAZARD LEVEL.	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS
WATER NETWORK			
UNKNOWN			
CONSTRUCTION RISKS			

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

NOTES

3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

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