

WREXHAM SAB NORTHERN PARCEL PERMEABLE ROAD DETAILS

Site at Rossett Road, Rossett

For

Castle Green Homes Ltd



Rev. 4.0

20th October 2023

ROSSETT ROAD, ROSSETT

Northern Parcel Permeable Road Details

30th October 2023

Issue no.	Rev. 1.0	Rev. 1.1	Rev. 2.0	Rev. 3.0	Rev. 4.0
Date:	20 th August 2021	24 th May 2022	27 th February 2023	25 th July 2023	30 th October 2023
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Betts Associates Ltd
Old Marsh Farm Barns
Welsh Road
Sealand
Flintshire
CH5 2LY

Tel no. 01244 288178
Project no. CAS02

CGH02 - Rossett Road, Rossett: Northern Parcel Surface Water (SAB) Details Rev 4.0	Date: 27/07/0023			
	Designed by: CP	Checked by: RDN	Approved By: RA	
	Report Details: Type: Junctions Storm Phase: Surface Network 1			
Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Sump Depth (m)	Chamber Shape	Diameter (m)	Diameter (m)	Width (m)	Lock
S9	Manhole	337372.020	357332.107	13.194	1.169	12.025	0.000	Circular	1.350			None
S8	Manhole	337358.769	357319.716	13.058	0.925	12.133	0.000	Circular	1.350			None
S7	Manhole	337342.680	357293.341	13.282	0.904	12.377	0.000	Circular	1.350			None
S5	Manhole	337352.500	357354.140	13.123	1.159	11.964	0.000	Circular	1.800			None
S4	Manhole	337334.690	357368.359	13.401	1.341	12.060	0.000	Circular	1.800			None
S3	Manhole	337320.458	357380.607	13.616	1.478	12.138	0.000	Circular	1.500			None
S2	Manhole	337314.115	357389.419	13.520	1.336	12.184	0.000	Circular	1.500			None
S11	Manhole	337382.423	357336.495	13.097	1.316	11.781	0.000	Circular	1.500			None
S10	Manhole	337406.405	357347.920	12.782	0.842	11.940	0.000	Circular	1.500			None
S6	Manhole	337360.002	357345.673	13.013	1.096	11.917	0.000	Circular	1.800			None
Ex Manhole	Manhole	337368.818	357520.892	11.258	0.380	10.878	0.000	Rectangular		0.900	0.675	None
S19HB	Manhole	337357.983	357506.982	12.500	1.516	10.984	0.000	Circular	1.350			None
S18 Catchpit	Manhole	337365.652	357473.960	12.346	1.180	11.166	0.000	Circular	1.350			None
S17 (Downstream Def)	Manhole	337366.580	357467.146	12.295	1.100	11.195	0.000	Circular	2.100			None
S15	Manhole	337373.816	357427.624	12.374	1.009	11.365	0.000	Rectangular		0.900	0.750	None
S14	Manhole	337382.083	357401.476	12.453	0.973	11.480	0.000	Rectangular		0.900	0.750	None
S13	Manhole	337393.304	357376.946	12.547	0.954	11.593	0.000	Rectangular		0.900	0.825	None
S12HB	Manhole	337393.280	357371.482	12.702	1.086	11.616	0.000	Circular	1.800			None
S1	Manhole	337307.430	357399.368	13.518	1.283	12.235	0.000	Circular	1.500			None
S16	Manhole	337366.483	357457.123	12.301	1.064	11.237	0.000	Rectangular		0.900	0.750	None
Catch Pit SA (3)	Manhole	337384.542	357275.167	13.000	1.134	11.866	0.450	Circular	0.450			None
Catch Pit SA (2)	Manhole	337373.682	357278.545	13.007	1.141	11.866	0.450	Circular	0.450			None
Catch Pit SA (1)	Manhole	337361.271	357283.722	13.106	1.240	11.866	0.450	Circular	0.450			None
Catch Pit SA	Manhole	337358.909	357285.079	13.148	1.282	11.866	0.450	Circular	0.450			None
Catch Pit (25)	Manhole	337373.152	357324.314	13.300	1.598	11.702	0.450	Circular	0.450			None
Plot 55	Manhole	337412.298	357333.792	12.900	0.951	11.949	0.000	Circular	0.450			None
Plot 52	Manhole	337426.119	357327.974	12.763	0.751	12.012	0.000	Circular	0.450			None
Plot 53-54 (1)	Manhole	337421.303	357312.736	12.762	0.662	12.100	0.000	Circular	0.450			None
Plot 50-51	Manhole	337413.214	357356.466	12.850	0.809	12.041	0.000	Circular	0.450			None
Plot 50-51 (1)	Manhole	337408.758	357365.471	12.850	0.912	11.938	0.000	Circular	0.450			None
Catch Pit (1)	Manhole	337406.615	357364.420	12.875	1.461	11.414	0.450	Circular	0.450			None
Catch Pit	Manhole	337401.592	357373.798	12.927	1.678	11.249	0.450	Circular	0.450			None
Catch Pit (14)	Manhole	337397.086	357382.968	12.916	1.662	11.254	0.450	Circular	0.450			None
Catch Pit (16)	Manhole	337392.150	357393.627	12.847	1.708	11.139	0.450	Circular	0.450			None
Catch Pit (17)	Manhole	337391.083	357395.931	12.795	1.732	11.063	0.450	Circular	0.450			None
Catch Pit (20)	Manhole	337382.343	357419.398	12.581	1.568	11.013	0.450	Circular	0.450			None
Catch Pit (21)	Manhole	337382.075	357420.338	12.565	1.625	10.940	0.450	Circular	0.450			None
Catch Pit (22)	Manhole	337378.868	357431.606	12.459	1.609	10.850	0.450	Circular	0.450			None
Catch Pit (36)	Manhole	337372.118	357461.706	12.444	1.618	10.826	0.450	Circular	0.450			None
Manhole (20)	Manhole	337376.544	357449.854	12.331	0.878	11.453	0.000	Circular	0.450			None
Manhole (21)	Manhole	337390.629	357468.620	12.300	0.700	11.600	0.000	Circular	0.450			None

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			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY					

Catch Pit (35)	Manhole	337359.952	357460.804	12.317	1.062	11.255	0.000	Circular	0.450		None
Plot27-30	Manhole	337345.693	357460.622	12.300	0.949	11.351	0.000	Circular	0.450		None
Catch Pit (23)	Manhole	337367.476	357436.563	12.399	1.456	10.943	0.450	Circular	0.450		None
Catch Pit (19)	Manhole	337373.844	357414.189	12.600	1.635	10.965	0.450	Circular	0.450		None
Catch Pit (18)	Manhole	337374.130	357413.186	12.610	1.588	11.022	0.450	Circular	0.450		None
Catch Pit (15)	Manhole	337385.386	357380.917	12.750	1.335	11.415	0.450	Circular	0.450		None
Manhole (28)	Manhole	337377.046	357374.808	12.850	0.408	12.442	0.000	Circular	0.450		None
Manhole (29)	Manhole	337368.766	357369.909	12.888	0.542	12.346	0.000	Circular	0.450		None
Manhole (30)	Manhole	337363.396	357365.278	12.986	0.711	12.275	0.000	Circular	0.450		None
Manhole (31)	Manhole	337362.035	357363.769	13.007	0.803	12.204	0.000	Circular	0.450		None
Catch Pit (32)	Manhole	337355.172	357356.518	13.100	1.413	11.687	0.450	Circular	0.450		None
Catch Pit (27)	Manhole	337335.661	357372.282	13.266	1.479	11.787	0.450	Circular	0.450		None
Manhole (34)	Manhole	337320.730	357390.110	13.697	1.251	12.446	0.000	Circular	0.450		None
Catch Pit (30)	Manhole	337318.474	357392.556	13.665	1.745	11.920	0.450	Circular	0.450		None
Catch Pit (31)	Manhole	337317.223	357403.708	13.300	1.294	12.006	0.450	Circular	0.450		None
Manhole (37)	Manhole	337322.176	357408.646	13.300	0.797	12.503	0.000	Circular	0.450		None
Manhole (38)	Manhole	337322.755	357415.385	13.250	0.702	12.548	0.000	Circular	0.450		None
Manhole (39)	Manhole	337322.634	357425.495	13.250	0.634	12.616	0.000	Circular	0.450		None
Catch Pit (29)	Manhole	337305.616	357390.376	13.617	1.675	11.942	0.450	Circular	0.450		None
Manhole (41)	Manhole	337298.199	357385.107	13.391	0.938	12.453	0.000	Circular	0.450		None
Manhole (42)	Manhole	337294.879	357382.750	13.350	0.870	12.480	0.000	Circular	0.450		None
Manhole (43)	Manhole	337279.086	357370.976	13.350	0.739	12.611	0.000	Circular	0.450		None
Manhole (44)	Manhole	337273.993	357366.452	13.425	0.769	12.656	0.000	Circular	0.450		None
Manhole (45)	Manhole	337329.086	357364.898	13.528	1.210	12.318	0.000	Circular	0.450		None
Catch Pit (28)	Manhole	337331.256	357363.694	13.497	1.697	11.800	0.450	Circular	0.450		None
Catch Pit (33)	Manhole	337347.887	357350.293	13.266	1.562	11.704	0.450	Circular	0.450		None
Manhole (48)	Manhole	337357.681	357323.904	13.210	0.897	12.313	0.000	Circular	0.450		None
Catch Pit (34)	Manhole	337356.048	357321.980	13.204	1.422	11.782	0.450	Circular	0.450		None
Catch Pit SA (4)	Manhole	337327.840	357306.009	13.500	1.427	12.073	0.450	Circular	0.450		None
Catch Pit SA (5)	Manhole	337320.710	357308.000	13.505	1.442	12.063	0.450	Circular	0.450		None
Catch Pit SA (6)	Manhole	337310.773	357313.081	13.572	1.478	12.094	0.450	Circular	0.450		None
Catch Pit SA (7)	Manhole	337309.171	357314.064	13.600	1.529	12.071	0.450	Circular	0.450		None
Catch Pit SA (8)	Manhole	337293.875	357333.717	13.700	1.574	12.126	0.450	Circular	0.450		None
Catch Pit SA (9)	Manhole	337288.739	357338.474	13.700	1.577	12.123	0.450	Circular	0.450		None
Manhole	Manhole	337265.202	357357.052	13.400	0.565	12.835	0.000	Circular	0.450		None
Manhole (1)	Manhole	337425.912	357315.278	12.761	0.771	11.990	0.000	Circular	1.050		None
Manhole (2)	Manhole	337426.366	357321.965	12.752	0.802	11.950	0.000	Circular	1.050		None
Manhole (3)	Manhole	337416.125	357336.427	12.898	1.054	11.844	0.000	Circular	1.050		None
Manhole (4)	Manhole	337403.815	357361.718	12.725	1.050	11.675	0.000	Circular	1.050		None
Simple Junction	Simple Junction	337423.449	357326.083								
Plot 53-54	Manhole	337414.380	357301.831	12.800	0.521	12.279	0.000	Circular	0.450		None
Plot27-30 (1)	Manhole	337326.324	357449.517	12.100	0.415	11.685	0.000	Circular	0.450		None

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Plot27-30 (2)	Manhole	337326.211	357458.341	12.100	0.503	11.597	0.000	Circular	0.450		None
Plot27-30 (3)	Manhole	337328.855	357460.403	12.205	0.641	11.564	0.000	Circular	0.450		None
Plot27-30 (4)	Manhole	337343.838	357460.598	12.301	0.937	11.364	0.000	Circular	0.450		None
Road Gully (1)	Manhole	337348.100	357470.247	12.080	0.450	11.630	0.000	Circular	0.450		None
Road Gully	Manhole	337381.273	357475.053	12.080	0.450	11.630	0.000	Circular	0.450		None
Highway Drain (1)	Manhole	337350.206	357466.889	12.190	0.736	11.454	0.000	Circular	1.050		None
Highway Drain	Manhole	337373.035	357467.876	12.280	0.723	11.557	0.000	Circular	1.050		None
Gully	Manhole	337337.392	357472.475	12.010	0.450	11.560	0.000	Circular	0.450		None
IC Plot 53 (1)	Manhole	337400.489	357296.561	12.650	0.300	12.350	0.000	Circular	0.450		None
IC Plot 53	Manhole	337406.854	357306.528	12.650	0.300	12.350	0.000	Circular	0.450		None

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
S9	Inlet	2.001	(None)	No Restriction
	Inlet (1)	Pipe (10)	(None)	No Restriction
S8	Inlet	2.000	(None)	No Restriction
	Inlet (1)	Pipe (12)	(None)	No Restriction
S7	Road	Catchment Area (31)	(None)	No Restriction
S5	Inlet	1.003	(None)	No Restriction
	Inlet (1)	Pipe (37)	(None)	No Restriction
	Inlet (2)	Pipe (56)	(None)	No Restriction
	Road	Catchment Area (21)	(None)	No Restriction
S4	Inlet	1.002	(None)	No Restriction
	Inlet (1)	Pipe (39)	(None)	No Restriction
	Inlet (2)	Pipe (40)	(None)	No Restriction
	Road	Catchment Area (14)	(None)	No Restriction
S3	Inlet	1.001	(None)	No Restriction
S2	Inlet	1.000	(None)	No Restriction
	Inlet (1)	Pipe (47)	(None)	No Restriction
	Plots	Pipe (45)	(None)	No Restriction
S11	Inlet	3.000 2.002	(None)	No Restriction
S10	Road	Catchment Area (36)	(None)	No Restriction
S6	Inlet	1.004	(None)	No Restriction
Ex Manhole	Inlet (1)	1.015	(None)	No Restriction
S19HB	Inlet (1)	1.014 (1)	(None)	No Restriction
S18 Catchpit	Inlet	1.013	(None)	No Restriction
S17 (Downstream Def)	Inlet	1.012	(None)	No Restriction
	Inlet (1)	Pipe (33)	(None)	No Restriction
	Inlet (2)	Pipe (35)	(None)	No Restriction
	Inlet (3)	Pipe (67)	(None)	No Restriction

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Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
	Inlet (4)	Pipe (69)	(None)	No Restriction
S15	Inlet	1.010	(None)	No Restriction
S14	Inlet	1.009	(None)	No Restriction
S13	Inlet	1.008	(None)	No Restriction
S12HB	Inlet (3)	1.007	(None)	No Restriction
S1	Inlet	Pipe (51)	(None)	No Restriction
	Road	Catchment Area	(None)	No Restriction
S16	Inlet	1.011	(None)	No Restriction
	Inlet (1)	Pipe (5)	(None)	No Restriction
Catch Pit SA (3)	Inlet	N Roof (20) N Roof (21)	(None)	No Restriction
Catch Pit SA (2)	Inlet	N Roof (19)	(None)	No Restriction
Catch Pit SA (1)	Inlet	N Roof (18)	(None)	No Restriction
Catch Pit SA	Inlet	N Roof (17)	(None)	No Restriction
Catch Pit (25)	Inlet	N Drive (4) N Roof (28) N Roof (29) N Drive (3)	(None)	No Restriction
Plot 55	Inlet	N Roof (27) N Roof (26)	(None)	No Restriction
Plot 52	Inlet	N Roof (31) N Roof (30)	(None)	No Restriction
Plot 53-54 (1)	Inlet	N Roof (25) N Roof (24) Pipe (61) N Roof (61)	(None)	No Restriction
Plot 50-51	Inlet	N Roof (33) N Drive (37) N Roof (32)	(None)	No Restriction
Plot 50-51 (1)	Inlet	Pipe (17) N Drive (36) N Roof (34)	(None)	No Restriction
Catch Pit (1)	Inlet	Pipe (18)	(None)	No Restriction
Catch Pit	Inlet	N Drive (35) N Roof (35)	(None)	No Restriction
Catch Pit (14)	Inlet	N Drive (34) N Roof (36)	(None)	No Restriction
Catch Pit (16)	Inlet	N Drive (33) N Roof (37)	(None)	No Restriction
Catch Pit (17)	Inlet	N Drive (32) N Roof (53)	(None)	No Restriction

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Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
Catch Pit (20)	Inlet	N Drive (31) N Roof (54)	(None)	No Restriction
Catch Pit (21)	Inlet	N Drive (28) N Roof (55)	(None)	No Restriction
Catch Pit (22)	Inlet	N Drive (27) N Roof (56)	(None)	No Restriction
Catch Pit (36)	Inlet	Pipe (31) Pipe (32) N Roof (57)	(None)	No Restriction
Manhole (20)	Inlet	N Drive (23)	(None)	No Restriction
Manhole (21)	Inlet	N Drive (25) N Drive (24) N Drive (26)	(None)	No Restriction
Catch Pit (35)	Inlet	Pipe (34) N Roof (58) N Drive (21)	(None)	No Restriction
Plot27-30	Inlet (1)	Pipe (65)	(None)	No Restriction
Catch Pit (23)	Inlet	N Drive (22) N Roof (49) N Roof (50)	(None)	No Restriction
Catch Pit (19)	Inlet	N Drive (29) N Roof (48)	(None)	No Restriction
Catch Pit (18)	Inlet	N Drive (30) N Roof (47)	(None)	No Restriction
Catch Pit (15)	Inlet	N Roof (38) N Roof (40)	(None)	No Restriction
Manhole (28)	Inlet	N Roof (39)	(None)	No Restriction
Manhole (29)	Inlet	Pipe (52)	(None)	No Restriction
Manhole (30)	Inlet	Pipe (53) N Roof (41)	(None)	No Restriction
Manhole (31)	Inlet	Pipe (54)	(None)	No Restriction
	Inlet (1)	N Drive (15)	(None)	No Restriction
	Inlet	Pipe (55)	(None)	No Restriction
Catch Pit (32)	Inlet (1)	N Roof (42)	(None)	No Restriction
	Inlet (2)	N Roof (43)	(None)	No Restriction
Catch Pit (27)	Inlet	N Roof (44) N Drive (16)	(None)	No Restriction
Manhole (34)	Inlet	N Drive (17) N Roof (45)	(None)	No Restriction
Catch Pit (30)	Inlet	Pipe (46) N Roof (46)	(None)	No Restriction

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Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
	Inlet (1)	N Drive (18)	(None)	No Restriction
Catch Pit (31)	Inlet	Pipe (50)	(None)	No Restriction
Manhole (37)	Inlet	Pipe (49)	(None)	No Restriction
Manhole (38)	Inlet	Pipe (48) N Roof (52) N Drive (19)	(None)	No Restriction
Manhole (39)	Inlet	N Roof (51)	(None)	No Restriction
Catch Pit (29)	Inlet	Pipe (44) N Drive (12) N Roof (11)	(None)	No Restriction
Manhole (41)	Inlet	Pipe (43) N Drive (13)	(None)	No Restriction
Manhole (42)	Inlet	Pipe (42)	(None)	No Restriction
	Inlet (1)	N Roof (10)	(None)	No Restriction
	Inlet (2)	N Drive (14)	(None)	No Restriction
Manhole (43)	Inlet	Pipe (41)	(None)	No Restriction
	Inlet (1)	N Roof (9)	(None)	No Restriction
Manhole (44)	Inlet	Pipe (57)	(None)	No Restriction
Manhole (45)	Inlet	N Roof (12)	(None)	No Restriction
	Inlet (1)	N Drive (11)	(None)	No Restriction
Catch Pit (28)	Inlet	Pipe (38) N Roof (13) N Drive (10)	(None)	No Restriction
Catch Pit (33)	Inlet	N Roof (14)	(None)	No Restriction
	Inlet (1)	N Drive (9)	(None)	No Restriction
Manhole (48)	Inlet	N Drive (6) N Roof (15)	(None)	No Restriction
Catch Pit (34)	Inlet	Pipe (11) N Roof (16) N Drive (5)	(None)	No Restriction
Catch Pit SA (4)	Inlet	N Roof (7) N Drive (1) N Roof (6)	(None)	No Restriction
Catch Pit SA (5)	Inlet	N Roof (5)	(None)	No Restriction
Catch Pit SA (6)	Inlet	N Roof (4)	(None)	No Restriction
Catch Pit SA (7)	Inlet	N Roof (3)	(None)	No Restriction
Catch Pit SA (8)	Inlet	N Roof (2) N Roof (1)	(None)	No Restriction
Catch Pit SA (9)	Inlet	N Roof	(None)	No Restriction
Manhole	Inlet	N Roof (8)	(None)	No Restriction
	Inlet	N Drive (7)	(None)	No Restriction

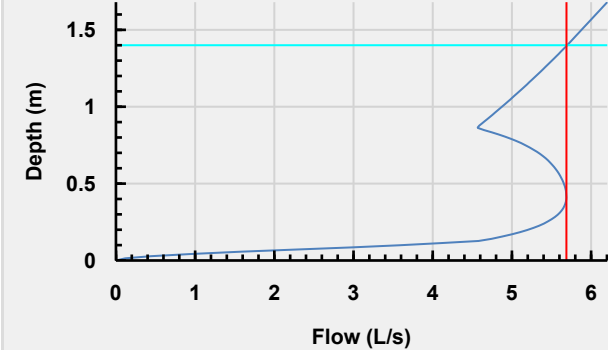
CGH02 - Rossett Road, Rossett: Northern Parcel Surface Water (SAB) Details Rev 4.0	Date: 27/07/0023			
	Designed by: CP	Checked by: RDN	Approved By: RA	
	Report Details: Type: Junctions Storm Phase: Surface Network 1			
			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	

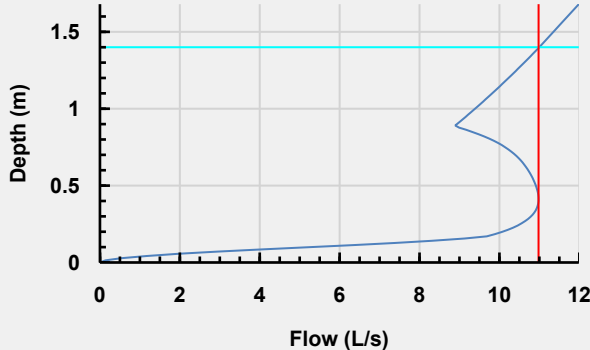
Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
Manhole (1)	Inlet (1)	Pipe (58)	(None)	No Restriction
Manhole (2)	Inlet	N Drive (8)	(None)	No Restriction
	Inlet (1)	Pipe (13)	(None)	No Restriction
Manhole (3)	Inlet	Pipe (14) (1)	(None)	No Restriction
		Pipe (60)		
Manhole (4)	Inlet	Pipe (15)	(None)	No Restriction
Simple Junction	Inlet	Pipe (14)	(None)	No Restriction
	Inlet (1)	Pipe (59)	(None)	No Restriction
Plot 53-54	Inlet	N Roof (23)	(None)	No Restriction
		N Roof (22)		
Plot27-30 (1)	Inlet	N Roof (62)	(None)	No Restriction
Plot27-30 (2)	Inlet	Pipe (62)	(None)	No Restriction
Plot27-30 (3)	Inlet	Pipe (63)	(None)	No Restriction
	Inlet (2)	N Roof (63)	(None)	No Restriction
Plot27-30 (4)	Inlet	Pipe (64)	(None)	No Restriction
	Inlet (1)	N Roof (59)	(None)	No Restriction
Road Gully (1)	Inlet	Catchment Area (91) (1)	(None)	No Restriction
Road Gully	Inlet	Catchment Area (91)	(None)	No Restriction
Highway Drain (1)	Inlet	Pipe (66)	(None)	No Restriction
		Pipe (70)		
Highway Drain	Inlet	Pipe (68)	(None)	No Restriction
Gully	Inlet	N Drive (20)	(None)	No Restriction
IC Plot 53 (1)	Inlet	N Roof (60)	(None)	No Restriction
IC Plot 53	Inlet	N Roof (60) (1)	(None)	No Restriction

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S9	Outlet	2.002	Free Discharge
S8	Outlet	2.001	Free Discharge
S7	Outlet	2.000	Free Discharge
S5	Outlet	1.004	Free Discharge
S4	Outlet	1.003	Free Discharge
S3	Outlet	1.002	Free Discharge
S2	Outlet	1.001	Free Discharge
S11	Outlet	2.003	Free Discharge
S10	Outlet	3.000	Free Discharge
S6	Outlet	1.005	Free Discharge
	Outlet	1.015	Hydro-Brake®

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			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	

Junction	Outlet Name	Outgoing Connection	Outlet Type
S19HB	Invert Level (m)	10.984	
	Design Depth (m)	1.400	
	Design Flow (L/s)	5.7	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☒	
	Unit Reference	SHE-0106-5700-1400-5700	
			
S18 Catchpit	Outlet	1.014	Free Discharge
S17 (Downstream Def)	Outlet	1.013	Free Discharge
S15	Outlet	1.011	Free Discharge
S14	Outlet	1.010	Free Discharge
S13	Outlet	1.009	Free Discharge
	Outlet	1.008	Hydro-Brake®

Junction	Outlet Name		Outgoing Connection	Outlet Type
S12HB	Invert Level (m)	11.616		
	Design Depth (m)	1.400		
	Design Flow (L/s)	11.0		
	Objective	Minimise Upstream Storage Requirements		
	Application	Surface Water Only		
	Sump Available	☒		
	Unit Reference	SHE-0146-1100-1400-1100		
				
S1	Outlet	1.000	Free Discharge	
S16	Outlet	1.012	Free Discharge	
Catch Pit SA (3)	Outlet	Pipe (36)	Free Discharge	
Catch Pit SA (2)	Outlet	Pipe (9)	Free Discharge	
Catch Pit SA (1)	Outlet	Pipe (8)	Free Discharge	
Catch Pit SA	Outlet	Pipe (7)	Free Discharge	
Catch Pit (25)	Outlet	Pipe (10)	Free Discharge	
Plot 55	Outlet	Pipe (60)	Free Discharge	
Plot 52	Outlet	Pipe (59)	Free Discharge	
Plot 53-54 (1)	Outlet	Pipe (58)	Free Discharge	
Plot 50-51	Outlet	Pipe (17)	Free Discharge	
Plot 50-51 (1)	Outlet	Pipe (18)	Free Discharge	
Catch Pit (1)	Outlet	Pipe (19)	Free Discharge	
Catch Pit	Outlet	Pipe (20)	Free Discharge	
Catch Pit (14)	Outlet	Pipe (21)	Free Discharge	
Catch Pit (16)	Outlet	Pipe (23)	Free Discharge	
Catch Pit (17)	Outlet	Pipe (24)	Free Discharge	
Catch Pit (20)	Outlet	Pipe (27)	Free Discharge	
Catch Pit (21)	Outlet	Pipe (28)	Free Discharge	
Catch Pit (22)	Outlet	Pipe (29)	Free Discharge	
Catch Pit (36)	Outlet	Pipe (33)	Free Discharge	
Manhole (20)	Outlet	Pipe (31)	Free Discharge	

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	Report Details: Type: Junctions Storm Phase: Surface Network 1			
			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	

Junction	Outlet Name	Outgoing Connection	Outlet Type
Manhole (21)	Outlet	Pipe (32)	Free Discharge
Catch Pit (35)	Outlet	Pipe (35)	Free Discharge
Plot27-30	Outlet	Pipe (34)	Free Discharge
Catch Pit (23)	Outlet	Pipe (30)	Free Discharge
Catch Pit (19)	Outlet	Pipe (26)	Free Discharge
Catch Pit (18)	Outlet	Pipe (25)	Free Discharge
Catch Pit (15)	Outlet	Pipe (22)	Free Discharge
Manhole (28)	Outlet	Pipe (52)	Free Discharge
Manhole (29)	Outlet	Pipe (53)	Free Discharge
Manhole (30)	Outlet	Pipe (54)	Free Discharge
Manhole (31)	Outlet	Pipe (55)	Free Discharge
Catch Pit (32)	Outlet	Pipe (56)	Free Discharge
Catch Pit (27)	Outlet	Pipe (40)	Free Discharge
Manhole (34)	Outlet	Pipe (46)	Free Discharge
Catch Pit (30)	Outlet	Pipe (47)	Free Discharge
Catch Pit (31)	Outlet	Pipe (51)	Free Discharge
Manhole (37)	Outlet	Pipe (50)	Free Discharge
Manhole (38)	Outlet	Pipe (49)	Free Discharge
Manhole (39)	Outlet	Pipe (48)	Free Discharge
Catch Pit (29)	Outlet	Pipe (45)	Free Discharge
Manhole (41)	Outlet	Pipe (44)	Free Discharge
Manhole (42)	Outlet	Pipe (43)	Free Discharge
Manhole (43)	Outlet	Pipe (42)	Free Discharge
Manhole (44)	Outlet	Pipe (41)	Free Discharge
Manhole (45)	Outlet	Pipe (38)	Free Discharge
Catch Pit (28)	Outlet	Pipe (39)	Free Discharge
Catch Pit (33)	Outlet	Pipe (37)	Free Discharge
Manhole (48)	Outlet	Pipe (11)	Free Discharge
Catch Pit (34)	Outlet	Pipe (12)	Free Discharge
Catch Pit SA (4)	Outlet	Pipe (6)	Free Discharge
Catch Pit SA (5)	Outlet	Pipe (4)	Free Discharge
Catch Pit SA (6)	Outlet	Pipe (3)	Free Discharge
Catch Pit SA (7)	Outlet	Pipe (2)	Free Discharge
Catch Pit SA (8)	Outlet	Pipe (1)	Free Discharge
Catch Pit SA (9)	Outlet	Pipe	Free Discharge
Manhole	Outlet	Pipe (57)	Free Discharge
Manhole (1)	Outlet	Pipe (13)	Free Discharge
Manhole (2)	Outlet	Pipe (14)	Free Discharge
Manhole (3)	Outlet	Pipe (15)	Free Discharge
Manhole (4)	Outlet	Pipe (16)	Free Discharge
Simple Junction	Outlet	Pipe (14) (1)	Free Discharge
Plot 53-54	Outlet	Pipe (61)	Free Discharge
Plot27-30 (1)	Outlet	Pipe (62)	Free Discharge
Plot27-30 (2)	Outlet	Pipe (63)	Free Discharge
Plot27-30 (3)	Outlet	Pipe (64)	Free Discharge
Plot27-30 (4)	Outlet	Pipe (65)	Free Discharge
Road Gully (1)	Outlet	Pipe (66)	Free Discharge
Road Gully	Outlet	Pipe (68)	Free Discharge

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			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	

Junction	Outlet Name	Outgoing Connection	Outlet Type
Highway Drain (1)	Outlet	Pipe (67)	Free Discharge
Highway Drain	Outlet	Pipe (69)	Free Discharge
Gully	Outlet	Pipe (70)	Free Discharge
IC Plot 53 (1)	Outlet	Pipe (71)	Free Discharge
IC Plot 53	Outlet	Pipe (72)	Free Discharge

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	Designed by:	Checked by:	Approved By:	
	CP	RDN	RA	
Report Details:			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	
Type: Stormwater Controls				
Storm Phase: Surface Network 1				



Outlet

Type : Pond

Dimensions

Exceedance Level (m)	12.542
Depth (m)	0.886
Base Level (m)	11.656
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	295.665

Depth (m)	Area (m²)	Volume (m³)
0.000	436.23	0.000
0.886	655.22	480.236

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1.005
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	2.003
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	1.007
Outlet Type	Orifice
Diameter (m)	0.225
Coefficient of Discharge	0.600
Invert Level (m)	11.656

Advanced

Perimeter	Circular
Length (m)	29.604
Friction Scheme	Manning's n
n	0.035

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Porous Paving

Type : Porous Paving

Dimensions		
Exceedance Level (m)		12.287
Depth (m)		1.050
Base Level (m)		11.237
Paving Layer Depth (mm)		80
Membrane Percolation (m/hr)		1000.0
Porosity (%)		30
Length (m)		101.508
Long. Slope (1:X)		238.00
Width (m)		4.200
Total Volume (m³)		129.713

Under Drain		
Height Above Base (m)		0.010
Diameter (mm)		225
No. of Barrels		2
Release Height (m)		0.125
Friction Scheme	Manning's n	
n		0.015

Inlets		
ROAD		
Inlet Type	Lateral Inflow	
Incoming Item(s)	Catchment Area (90)	
Bypass Destination	(None)	
Capacity Type	No Restriction	

Inlet		
Inlet Type	Lateral Inflow	
Incoming Item(s)	Pipe (19)	
Bypass Destination	(None)	
Capacity Type	No Restriction	

Inlet (1)		
Inlet Type	Lateral Inflow	
Incoming Item(s)	Pipe (20)	
Bypass Destination	(None)	
Capacity Type	No Restriction	

Inlet (2)		
Inlet Type	Lateral Inflow	
Incoming Item(s)	Pipe (21)	
Bypass Destination	(None)	
Capacity Type	No Restriction	

Inlet (3)		
Inlet Type	Lateral Inflow	
Incoming Item(s)	Pipe (22)	
Bypass Destination	(None)	
Capacity Type	No Restriction	

Inlet (4)		
Inlet Type	Lateral Inflow	
Incoming Item(s)	Pipe (23)	
Bypass Destination	(None)	
Capacity Type	No Restriction	

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Inlet (5)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (24)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (6)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (25)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (7)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (26)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (8)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (27)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (9)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (28)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (10)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (29)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (11)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (30)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (12)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (16)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (5)
Outlet Type	Orifice
Diameter (m)	0.150
Coefficient of Discharge	0.600
Invert Level (m)	11.237

Advanced

Conductivity (m/hr)	500.0
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Plots 1-6 Porous Paving

Type : Porous Paving

Dimensions

Exceedance Level (m)	13.450
Depth (m)	0.950
Base Level (m)	12.500
Paving Layer Depth (mm)	80
Membrane Percolation (m/hr)	1.0
Porosity (%)	30
Length (m)	61.163
Long. Slope (1:X)	159.00
Width (m)	4.800
Total Volume (m³)	76.625

Inlets

Inlet

Inlet Type	Lateral Inflow
Incoming Item(s)	N Drive
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (1)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (3)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (2)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (4)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (3)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (5)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (4)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (6)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (6)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

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Advanced

Base Infiltration Rate (m/hr)	0.4464
Side Infiltration Rate (m/hr)	0.4464
Safety Factor	2.0
Conductivity (m/hr)	500.0



Plots 58-61 SA

Type : Porous Paving

Dimensions

Exceedance Level (m)	12.950
Depth (m)	0.650
Base Level (m)	12.300
Paving Layer Depth (mm)	80
Membrane Percolation (m/hr)	1.0
Porosity (%)	30
Length (m)	41.000
Long. Slope (1:X)	114.00
Width (m)	4.800
Total Volume (m³)	33.653

Inlets

Inlet

Inlet Type	Lateral Inflow
Incoming Item(s)	N Drive (2)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (7)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (8)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (3)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (9)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (4)

Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (36)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Advanced

Base Infiltration Rate (m/hr)	0.2196
Side Infiltration Rate (m/hr)	0.2196
Safety Factor	2.0
Conductivity (m/hr)	500.0

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Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				



Cellular Storage

Type : Cellular Storage

Dimensions	
Exceedance Level (m)	12.402
Depth (m)	0.800
Base Level (m)	11.145
Number of Crates Long	20
Number of Crates Wide	57
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	433.657

Inlets	
Inlet	
Inlet Type	Point Inflow
Incoming Item(s)	1.014
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets	
Outlet	
Outgoing Connection	1.014 (1)
Outlet Type	Orifice
Diameter (m)	0.225
Coefficient of Discharge	0.600
Invert Level (m)	11.145

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Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				

SA Plot 53

Type : Cellular Storage

Dimensions	
Exceedance Level (m)	12.750
Depth (m)	0.400
Base Level (m)	11.900
Number of Crates Long	3
Number of Crates Wide	5
Number of Crates High	1
Porosity (%)	100
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	3.450
Inlets	
Inlet (1)	
Inlet Type	Point Inflow
Incoming Item(s)	Pipe (71)
Bypass Destination	(None)
Capacity Type	No Restriction
Inlet (2)	
Inlet Type	Point Inflow
Incoming Item(s)	Pipe (72)
Bypass Destination	(None)
Capacity Type	No Restriction
Outlets	
Advanced	
Side Infiltration Rate (m/hr)	0.432
Safety Factor	2.0

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	Report Details: Type: Connections Storm Phase: Surface Network 1			
Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)	Downstream Cover Level (m)	Downstream Invert Level (m)	Lock	Flow Restriction (L/s)
1.013	6.877	Pipe	237.144		0.6	300	12.295	11.195	12.346	11.166	None	
1.012	10.023	Pipe	238.649		0.6	300	12.301	11.237	12.295	11.195	None	
1.011	30.397	Pipe	237.479		0.6	300	12.374	11.365	12.301	11.237	None	
1.000	11.987	Pipe	235.029		0.6	300	13.518	12.235	13.520	12.184	None	
1.002	18.776	Pipe	240.722		0.6	300	13.616	12.138	13.401	12.060	None	
1.004	11.312	Pipe	241.509		0.6	300	13.123	11.964	13.013	11.917	None	
1.001	10.858	Pipe	236.039		0.6	300	13.520	12.184	13.616	12.138	None	
1.003	22.790	Pipe	237.000		0.6	300	13.401	12.060	13.123	11.964	None	
1.008	5.464	Pipe	237.583		0.6	300	12.702	11.616	12.547	11.593	None	9.76
1.009	26.974	Pipe	238.707		0.6	300	12.547	11.593	12.453	11.480	None	
2.002	11.291	Pipe	46.254		0.6	225	13.194	12.025	13.097	11.781	None	
3.000	26.565	Pipe	166.967		0.6	225	12.782	11.940	13.097	11.781	None	
2.001	18.141	Pipe	167.976		0.6	225	13.058	12.133	13.194	12.025	None	
2.000	30.896	Pipe	126.415		0.6	225	13.282	12.377	13.058	12.133	None	
1.010	27.424	Pipe	238.465		0.6	300	12.453	11.480	12.374	11.365	None	
Pipe (5)	2.937	Pipe	0.000		0.6	150	12.714	11.237	12.301	11.237	All	44.43
1.015	17.632	Pipe	166.338		0.6	225	12.500	10.984	11.258	10.878	None	5.91
1.005	8.592	Pipe	238.000		0.6	300	13.013	11.917	12.542	11.881	Levels	
2.003	8.982	Pipe	167.000		0.6	225	13.097	11.781	12.542	11.727	Levels	
1.007	6.340	Pipe	158.500		0.6	100	12.542	11.656	12.702	11.616	None	72.71
1.014	8.387	Pipe	399.366		0.6	300	12.346	11.166	12.402	11.145	None	
1.014 (1)	25.515	Pipe	158.476		0.6	150	12.402	11.145	12.500	10.984	None	113.05
Pipe	6.404	Pipe	150.000		0.6	150	13.700	12.573	13.835	12.530	All	
Pipe (1)	6.327	Pipe	150.000		0.6	150	13.700	12.576	13.835	12.534	All	
Pipe (2)	2.001	Pipe	150.000		0.6	150	13.600	12.521	13.835	12.508	All	
Pipe (3)	2.000	Pipe	150.000		0.6	150	13.572	12.544	13.835	12.531	All	
Pipe (4)	2.002	Pipe	150.000		0.6	150	13.505	12.513	13.835	12.500	All	
Pipe (6)	3.412	Pipe	150.000		0.6	150	13.500	12.523	13.835	12.500	All	
Pipe (7)	2.465	Pipe	150.000		0.6	150	13.148	12.316	13.310	12.300	All	
Pipe (8)	2.397	Pipe	150.000		0.6	150	13.106	12.316	13.310	12.300	All	
Pipe (9)	2.344	Pipe	150.000		0.6	150	13.007	12.316	13.310	12.300	All	
Pipe (10)	7.875	Pipe	-24.381		0.6	150	13.300	11.702	13.194	12.025	None	
Pipe (11)	2.523	Pipe	4.752		0.6	100	13.210	12.313	13.204	11.782	None	
Pipe (12)	3.540	Pipe	-10.086		0.6	150	13.204	11.782	13.058	12.133	None	
Pipe (17)	10.047	Pipe	97.548		0.6	100	12.850	12.041	12.850	11.938	None	
Pipe (18)	2.387	Pipe	32.257		0.6	100	12.850	11.938	12.875	11.864	None	
Pipe (19)	3.513	Pipe	150.000		0.6	150	12.875	11.864	12.714	11.841	All	
Pipe (20)	3.556	Pipe	150.000		0.6	150	12.927	11.699	12.714	11.675	All	
Pipe (21)	3.354	Pipe	150.000		0.6	150	12.916	11.704	12.714	11.682	All	

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Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				

Pipe (22)	4.864	Pipe	150.000		0.6	150	12.750	11.865	12.714	11.833	All	
Pipe (23)	3.325	Pipe	150.000		0.6	150	12.847	11.589	12.714	11.567	All	
Pipe (24)	3.428	Pipe	150.000		0.6	150	12.795	11.513	12.714	11.490	All	
Pipe (25)	3.007	Pipe	150.000		0.6	150	12.610	11.472	12.714	11.452	All	
Pipe (26)	3.008	Pipe	150.000		0.6	150	12.600	11.415	12.714	11.395	All	
Pipe (27)	3.109	Pipe	150.000		0.6	150	12.581	11.463	12.714	11.442	All	
Pipe (28)	3.139	Pipe	150.000		0.6	150	12.565	11.390	12.714	11.369	All	
Pipe (29)	3.543	Pipe	150.000		0.6	150	12.459	11.300	12.714	11.276	All	
Pipe (31)	12.651	Pipe	20.177		0.6	100	12.331	11.453	12.444	10.826	None	
Pipe (32)	19.761	Pipe	25.531		0.6	100	12.300	11.600	12.444	10.826	None	
Pipe (33)	7.763	Pipe	95.839		0.6	150	12.444	11.276	12.295	11.195	None	
Pipe (34)	14.261	Pipe	148.547		0.6	150	12.300	11.351	12.317	11.255	None	
Pipe (35)	9.173	Pipe	152.888		0.6	150	12.317	11.255	12.295	11.195	None	
Pipe (30)	3.007	Pipe	150.000		0.6	150	12.399	11.393	12.714	11.373	All	
Pipe (36)	2.186	Pipe	150.000		0.6	150	13.000	12.316	13.310	12.301	All	
Pipe (37)	6.006	Pipe	150.000		0.6	150	13.266	12.154	13.123	12.114	All	
Pipe (38)	2.481	Pipe	4.789		0.6	100	13.528	12.318	13.497	11.800	None	
Pipe (39)	5.793	Pipe	150.000		0.6	150	13.497	12.250	13.401	12.211	All	
Pipe (40)	4.041	Pipe	-14.802		0.6	150	13.266	11.787	13.401	12.060	None	
Pipe (41)	6.812	Pipe	151.379		0.6	150	13.425	12.656	13.350	12.611	None	
Pipe (42)	19.699	Pipe	150.000		0.6	150	13.350	12.611	13.350	12.480	None	
Pipe (43)	4.071	Pipe	150.000		0.6	150	13.350	12.480	13.391	12.453	None	
Pipe (44)	9.098	Pipe	17.816		0.6	150	13.391	12.453	13.617	11.942	None	
Pipe (45)	8.553	Pipe	-35.326		0.6	150	13.617	11.942	13.520	12.184	None	
Pipe (46)	3.328	Pipe	6.327		0.6	100	13.697	12.446	13.665	11.920	None	
Pipe (47)	5.370	Pipe	-20.341		0.6	150	13.665	11.920	13.520	12.184	None	
Pipe (48)	10.111	Pipe	148.693		0.6	150	13.250	12.616	13.250	12.548	None	
Pipe (49)	6.764	Pipe	150.000		0.6	150	13.250	12.548	13.300	12.503	None	
Pipe (50)	6.994	Pipe	14.083		0.6	150	13.300	12.503	13.300	12.006	None	
Pipe (51)	10.712	Pipe	-46.836		0.6	150	13.300	12.006	13.518	12.235	None	
Pipe (52)	9.621	Pipe	100.000		0.6	100	12.850	12.442	12.888	12.346	None	
Pipe (53)	7.092	Pipe	100.000		0.6	100	12.888	12.346	12.986	12.275	None	
Pipe (54)	2.031	Pipe	28.662		0.6	100	12.986	12.275	13.007	12.204	None	
Pipe (55)	9.984	Pipe	19.329		0.6	150	13.007	12.204	13.100	11.687	None	
Pipe (56)	3.576	Pipe	-12.939		0.6	150	13.100	11.687	13.123	11.964	None	
Pipe (57)	12.870	Pipe	71.898		0.6	100	13.400	12.835	13.425	12.656	None	
Pipe (13)	6.702	Pipe	167.558		0.6	225	12.761	11.990	12.752	11.950	None	
Pipe (15)	28.128	Pipe	166.438		0.6	225	12.898	11.844	12.725	11.675	None	
Pipe (16)	1.839	Pipe	150.000		0.6	225	12.725	11.675	12.714	11.663	All	
Pipe (58)	5.264	Pipe	150.388		0.6	150	12.762	12.100	12.761	12.065	All	
Pipe (14)	5.047	Pipe	167.000		0.6	225	12.752	11.950	12.807	11.920	None	
Pipe (14) (1)	12.674	Pipe	166.760		0.6	225	12.807	11.920	12.898	11.844	None	
Pipe (59)	3.272	Pipe	155.794		0.6	150	12.763	12.012	12.807	11.991	None	

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Pipe (60)	4.647	Pipe	44.255		0.6	150	12.900	11.949	12.898	11.844	None	
Pipe (61)	12.917	Pipe	100.131		0.6	100	12.800	12.279	12.762	12.150	All	
Pipe (62)	8.826	Pipe	100.291		0.6	100	12.100	11.685	12.100	11.597	None	
Pipe (63)	3.352	Pipe	101.587		0.6	100	12.100	11.597	12.205	11.564	None	
Pipe (64)	14.985	Pipe	99.237		0.6	100	12.205	11.564	12.301	11.413	All	
Pipe (65)	1.855	Pipe	142.663		0.6	150	12.301	11.364	12.300	11.351	All	
Pipe (66)	3.964	Pipe	22.521		0.6	150	12.080	11.630	12.190	11.454	None	
Pipe (67)	16.377	Pipe	150.243		0.6	150	12.190	11.454	12.295	11.345	All	
Pipe (68)	10.926	Pipe	150.000		0.6	150	12.080	11.630	12.280	11.557	None	
Pipe (69)	6.496	Pipe	17.937		0.6	150	12.280	11.557	12.295	11.195	None	
Pipe (70)	13.978	Pipe	131.868		0.6	150	12.010	11.560	12.190	11.454	None	
Pipe (71)	8.217	Pipe	150.000		0.6	100	12.650	12.350	12.750	12.295	All	
Pipe (72)	9.282	Pipe	150.000		0.6	100	12.650	12.350	12.750	12.288	All	

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Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	S1		Time of Concentration	0.038	100	0	100	0.038
Catchment Area (14)	S4		Time of Concentration	0.023	100	0	100	0.023
Catchment Area (21)	S5		Time of Concentration	0.049	100	0	100	0.049
Catchment Area (31)	S7		Time of Concentration	0.073	100	0	100	0.073
Catchment Area (36)	S10		Time of Concentration	0.050	100	0	100	0.050
Catchment Area (90)	Porous Paving		Time of Concentration	0.088	100	0	100	0.088
Catchment Area (91)	Road Gully		Time of Concentration	0.020	100	0	100	0.020
Catchment Area (91) (1)	Road Gully (1)		Time of Concentration	0.021	100	0	100	0.021
N Drive	Plots 1-6 Porous Paving		Time of Concentration	0.049	100	0	100	0.049
N Drive (1)	Catch Pit SA (4)		Time of Concentration	0.004	100	0	100	0.004
N Drive (2)	Plots 58-61 SA		Time of Concentration	0.041	100	0	100	0.041
N Drive (3)	Catch Pit (25)		Time of Concentration	0.003	100	0	100	0.003
N Drive (4)	Catch Pit (25)		Time of Concentration	0.003	100	0	100	0.003
N Drive (5)	Catch Pit (34)		Time of Concentration	0.003	100	0	100	0.003
N Drive (6)	Manhole (48)		Time of Concentration	0.003	100	0	100	0.003
N Drive (7)	Manhole (1)		Time of Concentration	0.029	100	0	100	0.029
N Drive (8)	Manhole (2)		Time of Concentration	0.026	100	0	100	0.026
N Drive (9)	Catch Pit (33)		Time of Concentration	0.003	100	0	100	0.003
N Drive (10)	Catch Pit (28)		Time of Concentration	0.003	100	0	100	0.003
N Drive (11)	Manhole (45)		Time of Concentration	0.003	100	0	100	0.003
N Drive (12)	Catch Pit (29)		Time of Concentration	0.003	100	10	110	0.003
N Drive (13)	Manhole (41)		Time of Concentration	0.004	100	10	110	0.004
N Drive (14)	Manhole (42)		Time of Concentration	0.036	100	0	100	0.036
N Drive (15)	Manhole (31)		Time of Concentration	0.032	100	0	100	0.032
N Drive (16)	Catch Pit (27)		Time of Concentration	0.003	100	0	100	0.003
N Drive (17)	Manhole (34)		Time of Concentration	0.003	100	0	100	0.003
N Drive (18)	Catch Pit (30)		Time of Concentration	0.003	100	0	100	0.003
N Drive (19)	Manhole (38)		Time of Concentration	0.020	100	0	100	0.020
N Drive (20)	Gully		Time of Concentration	0.019	100	0	100	0.019
N Drive (21)	Catch Pit (35)		Time of Concentration	0.004	100	0	100	0.004
N Drive (22)	Catch Pit (23)		Time of Concentration	0.008	100	0	100	0.008
N Drive (23)	Manhole (20)		Time of Concentration	0.004	100	0	100	0.004
N Drive (24)	Manhole (21)		Time of Concentration	0.002	100	0	100	0.002
N Drive (25)	Manhole (21)		Time of Concentration	0.002	100	0	100	0.002
N Drive (26)	Manhole (21)		Time of Concentration	0.002	100	0	100	0.002
N Drive (27)	Catch Pit (22)		Time of Concentration	0.003	100	0	100	0.003
N Drive (28)	Catch Pit (21)		Time of Concentration	0.003	100	0	100	0.003
N Drive (29)	Catch Pit (19)		Time of Concentration	0.003	100	0	100	0.003
N Drive (30)	Catch Pit (18)		Time of Concentration	0.003	100	0	100	0.003
N Drive (31)	Catch Pit (20)		Time of Concentration	0.003	100	0	100	0.003

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Report Details: Type: Inflow Summary Storm Phase: Surface Network 1	Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY			

N Drive (32)	Catch Pit (17)		Time of Concentration	0.003	100	0	100	0.003
N Drive (33)	Catch Pit (16)		Time of Concentration	0.003	100	0	100	0.003
N Drive (34)	Catch Pit (14)		Time of Concentration	0.003	100	0	100	0.003
N Drive (35)	Catch Pit		Time of Concentration	0.003	100	0	100	0.003
N Drive (36)	Plot 50-51 (1)		Time of Concentration	0.003	100	0	100	0.003
N Drive (37)	Plot 50-51		Time of Concentration	0.008	100	0	100	0.008
N Roof	Catch Pit SA (9)		Time of Concentration	0.008	100	10	110	0.009
N Roof (1)	Catch Pit SA (8)		Time of Concentration	0.004	100	10	110	0.004
N Roof (2)	Catch Pit SA (8)		Time of Concentration	0.008	100	10	110	0.009
N Roof (3)	Catch Pit SA (7)		Time of Concentration	0.012	100	10	110	0.013
N Roof (4)	Catch Pit SA (6)		Time of Concentration	0.009	100	10	110	0.010
N Roof (5)	Catch Pit SA (5)		Time of Concentration	0.008	100	10	110	0.009
N Roof (6)	Catch Pit SA (4)		Time of Concentration	0.002	100	10	110	0.002
N Roof (7)	Catch Pit SA (4)		Time of Concentration	0.007	100	10	110	0.008
N Roof (8)	Manhole		Time of Concentration	0.011	100	10	110	0.012
N Roof (9)	Manhole (43)		Time of Concentration	0.001	100	0	100	0.001
N Roof (10)	Manhole (42)		Time of Concentration	0.017	100	10	110	0.018
N Roof (11)	Catch Pit (29)		Time of Concentration	0.008	100	10	110	0.009
N Roof (12)	Manhole (45)		Time of Concentration	0.012	100	10	110	0.013
N Roof (13)	Catch Pit (28)		Time of Concentration	0.010	100	10	110	0.010
N Roof (14)	Catch Pit (33)		Time of Concentration	0.012	100	10	110	0.013
N Roof (15)	Manhole (48)		Time of Concentration	0.008	100	10	110	0.009
N Roof (16)	Catch Pit (34)		Time of Concentration	0.009	100	10	110	0.010
N Roof (17)	Catch Pit SA		Time of Concentration	0.009	100	10	110	0.010
N Roof (18)	Catch Pit SA (1)		Time of Concentration	0.012	100	10	110	0.013
N Roof (19)	Catch Pit SA (2)		Time of Concentration	0.012	100	10	110	0.013
N Roof (20)	Catch Pit SA (3)		Time of Concentration	0.011	100	10	110	0.012
N Roof (21)	Catch Pit SA (3)		Time of Concentration	0.004	100	10	110	0.004
N Roof (22)	Plot 53-54		Time of Concentration	0.004	100	10	110	0.004
N Roof (23)	Plot 53-54		Time of Concentration	0.006	100	10	110	0.006
N Roof (24)	Plot 53-54 (1)		Time of Concentration	0.006	100	10	110	0.007
N Roof (25)	Plot 53-54 (1)		Time of Concentration	0.004	100	10	110	0.004
N Roof (26)	Plot 55		Time of Concentration	0.002	100	10	110	0.002
N Roof (27)	Plot 55		Time of Concentration	0.007	100	10	110	0.008
N Roof (28)	Catch Pit (25)		Time of Concentration	0.009	100	10	110	0.010
N Roof (29)	Catch Pit (25)		Time of Concentration	0.010	100	10	110	0.011
N Roof (30)	Plot 52		Time of Concentration	0.004	100	10	110	0.004
N Roof (31)	Plot 52		Time of Concentration	0.011	100	10	110	0.012
N Roof (32)	Plot 50-51		Time of Concentration	0.004	100	10	110	0.004
N Roof (33)	Plot 50-51		Time of Concentration	0.011	100	10	110	0.012
N Roof (34)	Plot 50-51 (1)		Time of Concentration	0.010	100	10	110	0.011
N Roof (35)	Catch Pit		Time of Concentration	0.008	100	10	110	0.009
N Roof (36)	Catch Pit (14)		Time of Concentration	0.008	100	10	110	0.009

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N Roof (37)	Catch Pit (16)		Time of Concentration	0.009	100	10	110	0.010
N Roof (38)	Catch Pit (15)		Time of Concentration	0.007	100	10	110	0.008
N Roof (39)	Manhole (28)		Time of Concentration	0.008	100	10	110	0.009
N Roof (40)	Catch Pit (15)		Time of Concentration	0.002	100	10	110	0.002
N Roof (41)	Manhole (30)		Time of Concentration	0.008	100	10	110	0.008
N Roof (42)	Catch Pit (32)		Time of Concentration	0.007	100	10	110	0.008
N Roof (43)	Catch Pit (32)		Time of Concentration	0.002	100	10	110	0.002
N Roof (44)	Catch Pit (27)		Time of Concentration	0.010	100	10	110	0.010
N Roof (45)	Manhole (34)		Time of Concentration	0.009	100	10	110	0.010
N Roof (46)	Catch Pit (30)		Time of Concentration	0.010	100	10	110	0.010
N Roof (47)	Catch Pit (18)		Time of Concentration	0.012	100	10	110	0.014
N Roof (48)	Catch Pit (19)		Time of Concentration	0.012	100	10	110	0.014
N Roof (49)	Catch Pit (23)		Time of Concentration	0.008	100	10	110	0.009
N Roof (50)	Catch Pit (23)		Time of Concentration	0.004	100	10	110	0.004
N Roof (51)	Manhole (39)		Time of Concentration	0.011	100	10	110	0.012
N Roof (52)	Manhole (38)		Time of Concentration	0.009	100	10	110	0.010
N Roof (53)	Catch Pit (17)		Time of Concentration	0.012	100	10	110	0.013
N Roof (54)	Catch Pit (20)		Time of Concentration	0.012	100	10	110	0.013
N Roof (55)	Catch Pit (21)		Time of Concentration	0.010	100	10	110	0.010
N Roof (56)	Catch Pit (22)		Time of Concentration	0.008	100	10	110	0.008
N Roof (57)	Catch Pit (36)		Time of Concentration	0.017	100	10	110	0.018
N Roof (58)	Catch Pit (35)		Time of Concentration	0.012	100	10	110	0.013
N Roof (59)	Plot27-30 (4)		Time of Concentration	0.007	100	10	110	0.007
N Roof (60)	IC Plot 53 (1)		Time of Concentration	0.003	100	10	110	0.003
N Roof (60) (1)	IC Plot 53		Time of Concentration	0.002	100	10	110	0.003
N Roof (61)	Plot 53-54 (1)		Time of Concentration	0.005	100	10	110	0.005
N Roof (62)	Plot27-30 (1)		Time of Concentration	0.003	100	10	110	0.004
N Roof (63)	Plot27-30 (3)		Time of Concentration	0.003	100	10	110	0.004
TOTAL		0.0		1.231				1.283

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	Report Details: Type: Outfall Details Storm Phase: Surface Network 1			
			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	

Outfalls

Outfall	Outfall Type	Fixed Surcharged Level (m)	Level Curve
Ex Manhole	Free Discharge		

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Report Title: Rainfall Analysis Criteria	Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Use Catchment Values
Junction Flood Risk Margin (mm)	300
Pre-fill Manhole Sumps	☒
Perform No Discharge Analysis	☐

Rainfall	
Rossett	Type: FSR
Region	England And Wales
M5-60 (mm)	18.0
Ratio R	0.354
Summer	☒
Winter	☒

Return Period	
Return Period (years)	Increase Rainfall (%)
1.0	0.000
2.0	0.000
5.0	0.000
10.0	0.000
30.0	0.000
100.0	0.000
100.0	40.000

Storm Durations	
Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

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	Report Details: Type: Junctions Summary Storm Phase: Surface Network 1			
			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	



Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S9	Rossett: 100 years: +40 %: 15 mins: Winter	13.194	12.025	12.303	0.278	50.6	0.398	0.000	47.5	30.973	Surcharged
S8	Rossett: 100 years: +40 %: 15 mins: Winter	13.058	12.133	12.424	0.291	42.3	0.417	0.000	38.4	24.162	Surcharged
S7	Rossett: 100 years: +40 %: 15 mins: Winter	13.282	12.377	12.536	0.159	38.8	0.227	0.000	35.4	17.920	OK
S5	Rossett: 100 years: +40 %: 30 mins: Winter	13.123	11.964	12.512	0.548	117.2	1.396	0.000	116.3	127.451	Surcharged
S4	Rossett: 100 years: +40 %: 30 mins: Winter	13.401	12.060	12.646	0.586	76.6	1.491	0.000	75.4	86.023	Surcharged
S3	Rossett: 100 years: +40 %: 15 mins: Winter	13.616	12.138	12.708	0.570	59.1	1.008	0.000	61.9	47.704	Surcharged
S2	Rossett: 100 years: +40 %: 15 mins: Winter	13.520	12.184	12.756	0.572	56.2	1.010	0.000	59.1	47.841	Surcharged
S11	Rossett: 100 years: +40 %: 15 mins: Winter	13.097	11.781	12.175	0.394	71.5	0.696	0.000	69.0	42.243	Surcharged
S10	Rossett: 100 years: +40 %: 15 mins: Winter	12.782	11.940	12.243	0.303	26.7	0.535	0.000	24.0	12.353	Surcharged
S6	Rossett: 100 years: +40 %: 30 mins: Winter	13.013	11.917	12.325	0.408	116.3	1.038	0.000	115.9	126.932	Surcharged
Ex Manhole	Rossett: 100 years: +40 %: 1440 mins: Summer	11.258	10.878	10.935	0.057	5.7	0.000	0.000	5.7	829.042	OK
S19HB	Rossett: 100 years: +40 %: 960 mins: Winter	12.500	10.984	11.907	0.923	5.7	1.321	0.000	5.7	523.232	Surcharged
S18 Catchpit	Rossett: 100 years: +40 %: 960 mins: Winter	12.346	11.166	11.927	0.761	24.5	1.089	0.000	24.4	835.221	Surcharged
S17 (Downstream Def)	Rossett: 100 years: +40 %: 960 mins: Winter	12.295	11.195	11.927	0.732	24.6	2.537	0.000	24.5	836.878	Surcharged
S15	Rossett: 100 years: +40 %: 960 mins: Winter	12.374	11.365	11.928	0.563	9.4	0.380	0.000	9.3	428.059	Surcharged
S14	Rossett: 100 years: +40 %: 960 mins: Winter	12.453	11.480	11.929	0.449	9.6	0.303	0.000	9.4	430.398	Surcharged
S13	Rossett: 100 years: +40 %: 960 mins: Winter	12.547	11.593	11.929	0.336	9.7	0.250	0.000	9.6	432.137	Surcharged
S12HB	Rossett: 100 years: +40 %: 960 mins: Winter	12.702	11.616	12.017	0.401	9.8	1.022	0.000	9.7	432.799	Surcharged
S1	Rossett: 100 years: +40 %: 15 mins: Winter	13.518	12.235	12.763	0.528	29.7	0.933	0.000	24.9	20.026	Surcharged
S16	Rossett: 100 years: +40 %: 960 mins: Winter	12.301	11.237	11.928	0.691	20.4	0.466	0.000	20.3	736.398	Surcharged
Catch Pit SA (3)	Rossett: 100 years: +40 %: 60 mins: Winter	13.000	11.866	12.934	1.068	4.3	0.170	0.000	4.0	6.416	Flood Risk

CGH02 - Rossett Road, Rossett: Northern Parcel Surface Water (SAB) Details Rev 4.0	Date: 27/07/0023			
	Designed by: CP	Checked by: RDN	Approved By: RA	
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Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				

Catch Pit SA (2)	Rossett: 100 years: +40 %: 60 mins: Winter	13.007	11.866	12.934	1.068	3.5	0.170	0.000	3.2	5.127	Flood Risk
Catch Pit SA (1)	Rossett: 100 years: +40 %: 60 mins: Winter	13.106	11.866	12.934	1.068	3.5	0.170	0.000	3.2	5.127	Flood Risk
Catch Pit SA	Rossett: 100 years: +40 %: 60 mins: Winter	13.148	11.866	12.934	1.068	2.7	0.170	0.000	2.4	3.861	Flood Risk
Catch Pit (25)	Rossett: 100 years: +40 %: 15 mins: Winter	13.300	11.702	12.350	0.648	14.4	0.103	0.000	12.2	6.819	Surcharged
Plot 55	Rossett: 100 years: +40 %: 60 mins: Winter	12.900	11.949	12.215	0.266	2.8	0.042	0.000	2.7	4.356	Surcharged
Plot 52	Rossett: 100 years: +40 %: 15 mins: Winter	12.763	12.012	12.240	0.228	8.5	0.036	0.000	6.4	3.918	Surcharged
Plot 53-54 (1)	Rossett: 100 years: +40 %: 15 mins: Winter	12.762	12.100	12.322	0.222	12.4	0.035	0.000	10.3	6.517	Surcharged
Plot 50-51	Rossett: 100 years: +40 %: 15 mins: Winter	12.850	12.041	12.531	0.490	13.0	0.078	0.000	9.8	6.002	Surcharged
Plot 50-51 (1)	Rossett: 100 years: +40 %: 15 mins: Winter	12.850	11.938	12.247	0.309	17.1	0.049	0.000	15.4	9.360	Surcharged
Catch Pit (1)	Rossett: 100 years: +40 %: 60 mins: Winter	12.875	11.414	12.199	0.785	9.5	0.125	0.000	9.4	16.144	Surcharged
Catch Pit	Rossett: 100 years: +40 %: 60 mins: Winter	12.927	11.249	12.196	0.947	3.3	0.151	0.000	2.6	5.056	Surcharged
Catch Pit (14)	Rossett: 100 years: +40 %: 60 mins: Winter	12.916	11.254	12.196	0.942	3.2	0.150	0.000	2.6	4.925	Surcharged
Catch Pit (16)	Rossett: 100 years: +40 %: 60 mins: Winter	12.847	11.139	12.196	1.057	3.6	0.168	0.000	3.0	5.580	Surcharged
Catch Pit (17)	Rossett: 100 years: +40 %: 60 mins: Winter	12.795	11.063	12.196	1.133	4.4	0.180	0.000	3.7	6.608	Surcharged
Catch Pit (20)	Rossett: 100 years: +40 %: 60 mins: Winter	12.581	11.013	12.196	1.183	4.3	0.188	0.000	3.7	6.543	Surcharged
Catch Pit (21)	Rossett: 100 years: +40 %: 60 mins: Winter	12.565	10.940	12.196	1.256	3.7	0.200	0.000	3.1	5.462	Surcharged
Catch Pit (22)	Rossett: 100 years: +40 %: 60 mins: Winter	12.459	10.850	12.196	1.346	3.0	0.214	0.000	2.4	4.325	Flood Risk
Catch Pit (36)	Rossett: 100 years: +40 %: 960 mins: Winter	12.444	10.826	11.927	1.101	1.1	0.175	0.000	1.1	25.714	Surcharged
Manhole (20)	Rossett: 100 years: +40 %: 960 mins: Winter	12.331	11.453	11.927	0.474	0.2	0.075	0.000	0.2	3.680	Surcharged
Manhole (21)	Rossett: 100 years: +40 %: 960 mins: Winter	12.300	11.600	11.927	0.327	0.3	0.052	0.000	0.3	6.202	Surcharged
Catch Pit (35)	Rossett: 100 years: +40 %: 960 mins: Winter	12.317	11.255	11.927	0.672	1.1	0.107	0.000	1.1	25.953	Surcharged
Plot27-30	Rossett: 100 years: +40 %: 960 mins: Winter	12.300	11.351	11.927	0.576	0.5	0.092	0.000	0.5	11.626	Surcharged
Catch Pit (23)	Rossett: 100 years: +40 %: 60 mins: Winter	12.399	10.943	12.197	1.254	6.0	0.199	0.000	5.4	8.956	Flood Risk
Catch Pit (19)	Rossett: 100 years: +40 %: 60 mins: Winter	12.600	10.965	12.196	1.231	4.7	0.196	0.000	4.1	6.996	Surcharged
Catch Pit (18)	Rossett: 100 years: +40 %: 60 mins: Winter	12.610	11.022	12.196	1.174	4.5	0.187	0.000	3.9	6.793	Surcharged

CGH02 - Rossett Road, Rossett: Northern Parcel Surface Water (SAB) Details Rev 4.0	Date: 27/07/0023			
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Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				

Catch Pit (15)	Rossett: 100 years: +40 %: 60 mins: Winter	12.750	11.415	12.196	0.781	2.8	0.124	0.000	2.8	4.355	Surcharged
Manhole (28)	Rossett: 100 years: +40 %: 15 mins: Winter	12.850	12.442	12.740	0.298	4.7	0.047	0.000	2.9	2.155	Flood Risk
Manhole (29)	Rossett: 100 years: +40 %: 15 mins: Winter	12.888	12.346	12.714	0.368	2.9	0.058	0.000	4.6	2.204	Flood Risk
Manhole (30)	Rossett: 100 years: +40 %: 30 mins: Winter	12.986	12.275	12.684	0.409	5.0	0.065	0.000	6.4	5.716	Surcharged
Manhole (31)	Rossett: 100 years: +40 %: 30 mins: Winter	13.007	12.204	12.666	0.462	16.1	0.073	0.000	15.6	16.486	Surcharged
Catch Pit (32)	Rossett: 100 years: +40 %: 30 mins: Winter	13.100	11.687	12.576	0.889	19.3	0.141	0.000	18.9	20.064	Surcharged
Catch Pit (27)	Rossett: 100 years: +40 %: 30 mins: Winter	13.266	11.787	12.650	0.863	4.9	0.137	0.000	4.4	4.778	Surcharged
Manhole (34)	Rossett: 100 years: +40 %: 15 mins: Winter	13.697	12.446	12.788	0.342	7.0	0.054	0.000	3.9	3.231	Surcharged
Catch Pit (30)	Rossett: 100 years: +40 %: 15 mins: Winter	13.665	11.920	12.769	0.849	10.9	0.135	0.000	7.8	6.762	Surcharged
Catch Pit (31)	Rossett: 100 years: +40 %: 15 mins: Winter	13.300	12.006	12.845	0.839	12.6	0.133	0.000	14.5	10.623	Surcharged
Manhole (37)	Rossett: 100 years: +40 %: 15 mins: Winter	13.300	12.503	12.890	0.387	15.6	0.062	0.000	12.6	10.338	Surcharged
Manhole (38)	Rossett: 100 years: +40 %: 15 mins: Winter	13.250	12.548	12.921	0.373	18.9	0.059	0.000	15.6	10.340	Surcharged
Manhole (39)	Rossett: 100 years: +40 %: 15 mins: Winter	13.250	12.616	12.928	0.312	6.3	0.050	0.000	4.0	2.909	Surcharged
Catch Pit (29)	Rossett: 100 years: +40 %: 15 mins: Winter	13.617	11.942	12.960	1.018	26.2	0.162	0.000	25.5	21.081	Surcharged
Manhole (41)	Rossett: 100 years: +40 %: 15 mins: Winter	13.391	12.453	13.115	0.662	23.5	0.105	0.000	21.7	17.910	Flood Risk
Manhole (42)	Rossett: 100 years: +40 %: 15 mins: Winter	13.350	12.480	13.182	0.702	29.2	0.112	0.000	21.2	17.266	Flood Risk
Manhole (43)	Rossett: 100 years: +40 %: 15 mins: Winter	13.350	12.611	13.231	0.620	6.0	0.099	0.000	8.2	3.827	Flood Risk
Manhole (44)	Rossett: 100 years: +40 %: 15 mins: Winter	13.425	12.656	13.241	0.585	3.8	0.093	0.000	5.8	3.001	Flood Risk
Manhole (45)	Rossett: 100 years: +40 %: 30 mins: Winter	13.528	12.318	12.694	0.376	5.7	0.060	0.000	5.1	5.238	Surcharged
Catch Pit (28)	Rossett: 100 years: +40 %: 30 mins: Winter	13.497	11.800	12.669	0.869	9.9	0.138	0.000	9.4	9.682	Surcharged
Catch Pit (33)	Rossett: 100 years: +40 %: 30 mins: Winter	13.266	11.704	12.520	0.816	5.7	0.130	0.000	5.3	5.243	Surcharged
Manhole (48)	Rossett: 100 years: +40 %: 15 mins: Winter	13.210	12.313	12.446	0.133	6.4	0.021	0.000	3.1	2.943	Surcharged
Catch Pit (34)	Rossett: 100 years: +40 %: 15 mins: Winter	13.204	11.782	12.435	0.653	9.9	0.104	0.000	7.0	6.203	Surcharged
Catch Pit SA (4)	Rossett: 100 years: +40 %: 30 mins: Winter	13.500	12.073	13.020	0.947	5.3	0.151	0.000	5.0	4.511	Surcharged
Catch Pit SA (5)	Rossett: 100 years: +40 %: 30 mins: Winter	13.505	12.063	13.020	0.957	3.3	0.152	0.000	3.0	2.673	Surcharged

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Catch Pit SA (6)	Rossett: 100 years: +40 %: 30 mins: Winter	13.572	12.094	13.020	0.926	3.6	0.147	0.000	3.3	3.017	Surcharged
Catch Pit SA (7)	Rossett: 100 years: +40 %: 30 mins: Winter	13.600	12.071	13.020	0.949	4.6	0.151	0.000	4.3	3.884	Surcharged
Catch Pit SA (8)	Rossett: 100 years: +40 %: 30 mins: Winter	13.700	12.126	13.020	0.894	4.8	0.142	0.000	4.5	4.162	Surcharged
Catch Pit SA (9)	Rossett: 100 years: +40 %: 30 mins: Winter	13.700	12.123	13.020	0.897	3.4	0.143	0.000	3.1	2.825	Surcharged
Manhole	Rossett: 100 years: +40 %: 15 mins: Winter	13.400	12.835	13.293	0.458	6.3	0.073	0.000	3.8	2.912	Flood Risk
Manhole (1)	Rossett: 100 years: +40 %: 15 mins: Winter	12.761	11.990	12.297	0.307	25.9	0.266	0.000	23.7	13.726	Surcharged
Manhole (2)	Rossett: 100 years: +40 %: 15 mins: Winter	12.752	11.950	12.275	0.325	37.8	0.281	0.000	35.7	20.258	Surcharged
Manhole (3)	Rossett: 100 years: +40 %: 60 mins: Winter	12.898	11.844	12.215	0.371	28.6	0.321	0.000	28.2	46.025	Surcharged
Manhole (4)	Rossett: 100 years: +40 %: 60 mins: Winter	12.725	11.675	12.199	0.524	28.2	0.454	0.000	26.4	46.027	Surcharged
Simple Junction	Rossett: 100 years: +40 %: 30 mins: Winter		11.920	12.234	0.314	33.2			32.5	32.501	Surcharged
Plot 53-54	Rossett: 100 years: +40 %: 15 mins: Winter	12.800	12.279	12.374	0.095	5.5	0.015	0.000	3.8	2.550	OK
Plot27-30 (1)	Rossett: 100 years: +40 %: 960 mins: Winter	12.100	11.685	11.927	0.242	0.1	0.039	0.000	0.1	3.132	Flood Risk
Plot27-30 (2)	Rossett: 100 years: +40 %: 960 mins: Winter	12.100	11.597	11.927	0.330	0.1	0.053	0.000	0.1	3.042	Flood Risk
Plot27-30 (3)	Rossett: 100 years: +40 %: 960 mins: Winter	12.205	11.564	11.927	0.363	0.3	0.058	0.000	0.3	6.069	Flood Risk
Plot27-30 (4)	Rossett: 100 years: +40 %: 960 mins: Winter	12.301	11.364	11.927	0.563	0.6	0.090	0.000	0.5	12.049	Surcharged
Road Gully (1)	Rossett: 100 years: +40 %: 960 mins: Winter	12.080	11.630	11.927	0.297	0.8	0.047	0.000	0.8	18.825	Flood Risk
Road Gully	Rossett: 100 years: +40 %: 960 mins: Winter	12.080	11.630	11.927	0.297	0.8	0.047	0.000	0.8	17.574	Flood Risk
Highway Drain (1)	Rossett: 100 years: +40 %: 960 mins: Winter	12.190	11.454	11.927	0.473	1.6	0.410	0.000	1.5	34.704	Flood Risk
Highway Drain	Rossett: 100 years: +40 %: 960 mins: Winter	12.280	11.557	11.927	0.370	0.8	0.321	0.000	0.8	17.413	Surcharged
Gully	Rossett: 100 years: +40 %: 960 mins: Winter	12.010	11.560	11.927	0.367	0.7	0.058	0.000	0.7	16.380	Flood Risk
IC Plot 53 (1)	Rossett: 100 years: +40 %: 15 mins: Winter	12.650	12.350	12.389	0.039	1.5	0.006	0.000	1.5	0.712	Flood Risk
IC Plot 53	Rossett: 100 years: +40 %: 15 mins: Winter	12.650	12.350	12.386	0.036	1.3	0.006	0.000	1.3	0.619	Flood Risk

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			Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY	



Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Porous Paving	Rossett: 100 years: +40 %: 60 mins: Winter	12.195	12.117	0.532	0.880	96.3	90.899	0.000	0.000	32.7	145.317	29.923	OK
Outlet	Rossett: 100 years: +40 %: 240 mins: Winter	12.173	12.173	0.517	0.517	60.9	256.459	0.000	0.000	10.5	214.578	13.260	OK
Cellular Storage	Rossett: 100 years: +40 %: 960 mins: Winter	11.927	11.927	0.782	0.782	24.4	423.355	0.000	0.000	5.8	526.357	2.376	OK
Plots 1-6 Porous Paving	Rossett: 100 years: +40 %: 30 mins: Winter	13.019	12.643	0.135	0.143	40.9	12.281	0.000	37.467	0.0	0.000	83.972	OK
Plots 58-61 SA	Rossett: 100 years: +40 %: 60 mins: Winter	12.933	12.645	0.274	0.345	24.0	18.138	0.000	37.811	0.0	0.000	46.102	OK
SA Plot 53	Rossett: 100 years: +40 %: 180 mins: Winter	12.192	12.192	0.292	0.292	0.7	2.192	0.000	2.397	0.0	0.000	36.454	OK

CGH02 - Rossett Road, Rossett: Northern Parcel Surface Water (SAB) Details Rev 4.0	Date: 27/07/0023			
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Betts-Associates: Old Marsh Farm Barns, Welsh Road, Sealand Flintshire, CH5 2LY				



Critical Storm Per Item: Rank By: Total Discharge Volume

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.013	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S17 (Downstream Def)	S18 Catchpit	12.295	11.926	0.300	1006.956	0.5	0.28	19.9	Surcharged
1.012	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S16	S17 (Downstream Def)	12.301	11.926	0.300	893.182	0.5	0.24	16.9	Surcharged
1.011	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S15	S16	12.374	11.927	0.300	529.702	0.4	0.12	8.6	Surcharged
1.000	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S1	S2	13.518	12.271	0.047	77.658	0.3	0.03	2.3	OK
1.002	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S3	S4	13.616	12.194	0.060	185.416	0.5	0.08	5.4	OK
1.004	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S5	S6	13.123	12.064	0.122	370.600	0.7	0.15	10.8	OK
1.001	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S2	S3	13.520	12.242	0.057	185.443	0.6	0.07	5.4	OK
1.003	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S4	S5	13.401	12.124	0.075	249.437	0.5	0.1	7.3	OK
1.008	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S12HB	S13	12.702	11.998	0.300	530.860	0.7	0.13	9.0	Surcharged
1.009	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S13	S14	12.547	11.927	0.300	530.847	0.7	0.12	8.9	Surcharged
2.002	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S9	S11	13.194	12.061	0.158	120.466	0.6	0.05	3.5	OK
3.000	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S10	S11	12.782	12.060	0.200	48.431	0.3	0.04	1.4	OK
2.001	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S8	S9	13.058	12.175	0.036	94.267	0.7	0.07	2.8	OK
2.000	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S7	S8	13.282	12.410	0.037	70.391	0.5	0.04	2.1	OK
1.010	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S14	S15	12.453	11.927	0.300	530.746	0.6	0.12	8.7	Surcharged
Pipe (5)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Porous Paving	S16	12.714	11.714	0.150	364.965	0.5	0.69	9.1	Surcharged
1.015	Rossett: 100 years: +40 %: 1440 mins: Summer	Pipe	S19HB	Ex Manhole	12.500	11.807	0.058	829.042	0.7	0.14	5.7	Surcharged
1.005	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S6	Outlet	13.013	12.061	0.162	370.521	0.7	0.15	10.8	OK
2.003	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S11	Outlet	13.097	12.060	0.225	168.853	0.5	0.12	4.8	Surcharged

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1.007	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Outlet	S12HB	12.542	12.060	0.100	530.950	1.1	1.89	9.0	Surcharged
1.014	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	S18 Catchpit	Cellular Storage	12.346	11.926	0.300	1005.926	0.9	0.36	19.9	Surcharged
1.014 (1)	Rossett: 100 years: +40 %: 1440 mins: Summer	Pipe	Cellular Storage	S19HB	12.402	11.832	0.150	829.832	0.3	0.41	5.7	Surcharged
Pipe	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (9)	Plots 1-6 Porous Paving	13.700	12.885	0.150	8.818	0.0	0.02	0.3	Surcharged
Pipe (1)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (8)	Plots 1-6 Porous Paving	13.700	12.885	0.150	12.691	0.0	0.03	0.4	Surcharged
Pipe (2)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (7)	Plots 1-6 Porous Paving	13.600	12.885	0.150	11.903	0.0	0.02	0.4	Surcharged
Pipe (3)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (6)	Plots 1-6 Porous Paving	13.572	12.885	0.150	9.275	0.0	0.02	0.3	Surcharged
Pipe (4)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (5)	Plots 1-6 Porous Paving	13.505	12.885	0.150	8.388	0.0	0.02	0.3	Surcharged
Pipe (6)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (4)	Plots 1-6 Porous Paving	13.500	12.885	0.150	13.685	0.0	0.03	0.4	Surcharged
Pipe (7)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA	Plots 58-61 SA	13.148	12.660	0.150	9.188	0.0	0.02	0.3	Surcharged
Pipe (8)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (1)	Plots 58-61 SA	13.106	12.660	0.150	12.005	0.0	0.02	0.4	Surcharged
Pipe (9)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (2)	Plots 58-61 SA	13.007	12.660	0.150	12.005	0.0	0.02	0.4	Surcharged
Pipe (10)	Rossett: 1 years: +0 %: 15 mins: Summer	Pipe	Catch Pit (25)	S9	13.300	12.152	0.150	0.000	0.2	0.22	2.9	Surcharged
Pipe (11)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (48)	Catch Pit (34)	13.210	12.320	0.100	11.484	0.0	0.01	0.3	OK
Pipe (12)	Rossett: 1 years: +0 %: 15 mins: Summer	Pipe	Catch Pit (34)	S8	13.204	12.232	0.150	0.000	0.2	0.2	2.7	Surcharged
Pipe (17)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot 50-51	Plot 50-51 (1)	12.850	12.064	0.023	23.567	0.5	0.11	0.7	OK
Pipe (18)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot 50-51 (1)	Catch Pit (1)	12.850	11.961	0.036	36.725	0.7	0.1	1.1	OK
Pipe (19)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (1)	Porous Paving	12.875	11.928	0.075	36.724	0.5	0.07	1.1	OK
Pipe (20)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit	Porous Paving	12.927	11.928	0.150	11.444	0.2	0.02	0.3	Surcharged
Pipe (21)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (14)	Porous Paving	12.916	11.928	0.150	11.082	0.2	0.02	0.3	Surcharged
Pipe (22)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (15)	Porous Paving	12.750	11.928	0.079	9.887	0.3	0.02	0.3	OK
Pipe (23)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (16)	Porous Paving	12.847	11.928	0.150	12.688	0.0	0.03	0.4	Surcharged
Pipe (24)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (17)	Porous Paving	12.795	11.928	0.150	15.275	0.0	0.03	0.5	Surcharged
Pipe (25)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (18)	Porous Paving	12.610	11.928	0.150	15.701	0.0	0.03	0.5	Surcharged
Pipe (26)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (19)	Porous Paving	12.600	11.928	0.150	16.373	0.0	0.03	0.5	Surcharged

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Pipe (27)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (20)	Porous Paving	12.581	11.928	0.150	15.217	0.0	0.03	0.5	Surcharged
Pipe (28)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (21)	Porous Paving	12.565	11.928	0.150	12.833	0.0	0.03	0.4	Surcharged
Pipe (29)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (22)	Porous Paving	12.459	11.928	0.150	10.244	0.0	0.02	0.3	Surcharged
Pipe (31)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (20)	Catch Pit (36)	12.331	11.926	0.100	4.229	0.0	0.01	0.1	Surcharged
Pipe (32)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (21)	Catch Pit (36)	12.300	11.926	0.100	6.589	0.0	0.02	0.2	Surcharged
Pipe (33)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (36)	S17 (Downstream Def)	12.444	11.926	0.150	28.334	0.2	0.04	0.8	Surcharged
Pipe (34)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot27-30	Catch Pit (35)	12.300	11.926	0.150	13.699	0.2	0.02	0.3	Surcharged
Pipe (35)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (35)	S17 (Downstream Def)	12.317	11.926	0.150	29.640	0.1	0.06	0.8	Surcharged
Pipe (30)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (23)	Porous Paving	12.399	11.928	0.150	20.871	0.0	0.04	0.6	Surcharged
Pipe (36)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit SA (3)	Plots 58-61 SA	13.000	12.660	0.150	15.021	0.0	0.03	0.5	Surcharged
Pipe (37)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (33)	S5	13.266	12.173	0.018	15.365	0.4	0.03	0.4	OK
Pipe (38)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (45)	Catch Pit (28)	13.528	12.326	0.100	15.312	0.1	0.02	0.4	OK
Pipe (39)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Catch Pit (28)	S4	13.497	12.275	0.025	28.199	0.4	0.06	0.8	OK
Pipe (40)	Rossett: 1 years: +0 %: 15 mins: Summer	Pipe	Catch Pit (27)	S4	13.266	12.237	0.150	0.000	0.1	0.09	1.3	Surcharged
Pipe (41)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (44)	Manhole (43)	13.425	12.672	0.016	11.477	0.3	0.02	0.3	OK
Pipe (42)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (43)	Manhole (42)	13.350	12.627	0.027	12.964	0.2	0.03	0.4	OK
Pipe (43)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (42)	Manhole (41)	13.350	12.517	0.030	66.022	0.8	0.13	1.9	OK
Pipe (44)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (41)	Catch Pit (29)	13.391	12.474	0.150	70.312	0.1	0.05	2.0	OK
Pipe (45)	Rossett: 1 years: +0 %: 15 mins: Summer	Pipe	Catch Pit (29)	S2	13.617	12.392	0.150	0.000	0.5	0.66	8.8	Surcharged
Pipe (46)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (34)	Catch Pit (30)	13.697	12.454	0.100	12.732	0.0	0.02	0.4	OK
Pipe (47)	Rossett: 1 years: +0 %: 15 mins: Summer	Pipe	Catch Pit (30)	S2	13.665	12.370	0.150	0.000	0.2	0.21	2.8	Surcharged
Pipe (48)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (39)	Manhole (38)	13.250	12.631	0.023	11.435	0.2	0.02	0.3	OK
Pipe (49)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (38)	Manhole (37)	13.250	12.579	0.023	40.577	0.7	0.08	1.2	OK
Pipe (50)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (37)	Catch Pit (31)	13.300	12.518	0.140	40.577	0.1	0.02	1.2	OK

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Pipe (51)	Rossett: 1 years: +0 %: 15 mins: Summer	Pipe	Catch Pit (31)	S1	13.300	12.456	0.150	0.000	0.2	0.33	4.3	Surcharged
Pipe (52)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (28)	Manhole (29)	12.850	12.456	0.014	8.387	0.4	0.04	0.3	OK
Pipe (53)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (29)	Manhole (30)	12.888	12.360	0.014	8.386	0.4	0.04	0.3	OK
Pipe (54)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (30)	Manhole (31)	12.986	12.289	0.016	16.576	0.6	0.04	0.5	OK
Pipe (55)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (31)	Catch Pit (32)	13.007	12.222	0.150	48.046	0.1	0.03	1.4	OK
Pipe (56)	Rossett: 1 years: +0 %: 15 mins: Summer	Pipe	Catch Pit (32)	S5	13.100	12.137	0.150	0.000	0.3	0.47	6.2	Surcharged
Pipe (57)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole	Manhole (44)	13.400	12.850	0.015	11.477	0.4	0.05	0.3	OK
Pipe (13)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (1)	Manhole (2)	12.761	12.021	0.035	53.877	0.4	0.04	1.6	OK
Pipe (15)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (3)	Manhole (4)	12.898	11.928	0.168	104.824	0.5	0.08	3.1	OK
Pipe (16)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (4)	Porous Paving	12.725	11.928	0.225	104.799	0.4	0.07	3.1	Surcharged
Pipe (58)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot 53-54 (1)	Manhole (1)	12.762	12.124	0.023	25.623	0.4	0.05	0.7	OK
Pipe (14)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Manhole (2)	Simple Junction	12.752	11.989	0.040	79.509	0.5	0.06	2.3	OK
Pipe (14) (1)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Simple Junction	Manhole (3)	12.807	11.961	0.050	94.916	0.5	0.07	2.8	OK
Pipe (59)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot 52	Simple Junction	12.763	12.031	0.019	15.407	0.4	0.03	0.4	OK
Pipe (60)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot 55	Manhole (3)	12.900	11.960	0.044	9.888	0.1	0.01	0.3	OK
Pipe (61)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot 53-54	Plot 53-54 (1)	12.800	12.294	0.015	10.018	0.4	0.05	0.3	OK
Pipe (62)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot27-30 (1)	Plot27-30 (2)	12.100	11.926	0.100	3.517	0.3	0.02	0.1	Flood Risk
Pipe (63)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot27-30 (2)	Plot27-30 (3)	12.100	11.926	0.100	3.516	0.2	0.02	0.1	Flood Risk
Pipe (64)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot27-30 (3)	Plot27-30 (4)	12.205	11.926	0.100	7.054	0.3	0.03	0.2	Flood Risk
Pipe (65)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Plot27-30 (4)	Plot27-30	12.301	11.926	0.150	14.248	0.3	0.03	0.4	Surcharged
Pipe (66)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Road Gully (1)	Highway Drain (1)	12.080	11.926	0.150	20.677	0.4	0.02	0.6	Flood Risk
Pipe (67)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Highway Drain (1)	S17 (Downstream Def)	12.190	11.926	0.150	38.581	0.5	0.08	1.1	Flood Risk
Pipe (68)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Road Gully	Highway Drain	12.080	11.926	0.150	19.308	0.5	0.04	0.6	Flood Risk
Pipe (69)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Highway Drain	S17 (Downstream Def)	12.280	11.926	0.150	19.303	0.1	0.01	0.6	Surcharged

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Pipe (70)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	Gully	Highway Drain (1)	12.010	11.926	0.150	18.060	0.3	0.03	0.5	Flood Risk
Pipe (71)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	IC Plot 53 (1)	SA Plot 53	12.650	12.359	0.009	2.704	0.2	0.02	0.1	Flood Risk
Pipe (72)	Rossett: 100 years: +40 %: 1440 mins: Winter	Pipe	IC Plot 53	SA Plot 53	12.650	12.359	0.008	2.380	0.2	0.01	0.1	Flood Risk