33 The Point, Market Harborough, Leicestershire LE16 7QU
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Drainage Calculations in support of Application– White Post Road, Bodicote

Infrastructure Design Ltd were commissioned by David Wilson Homes Mercia Ltd to prepare a drainage design for the above site.

The attached calculations show the various drainage calculations and drawings, both adopted and private for the site, along with Permeability testing and zoning plans.

Section 1 Adopted System

- Drawings
- Calculations

Section 2 Private System

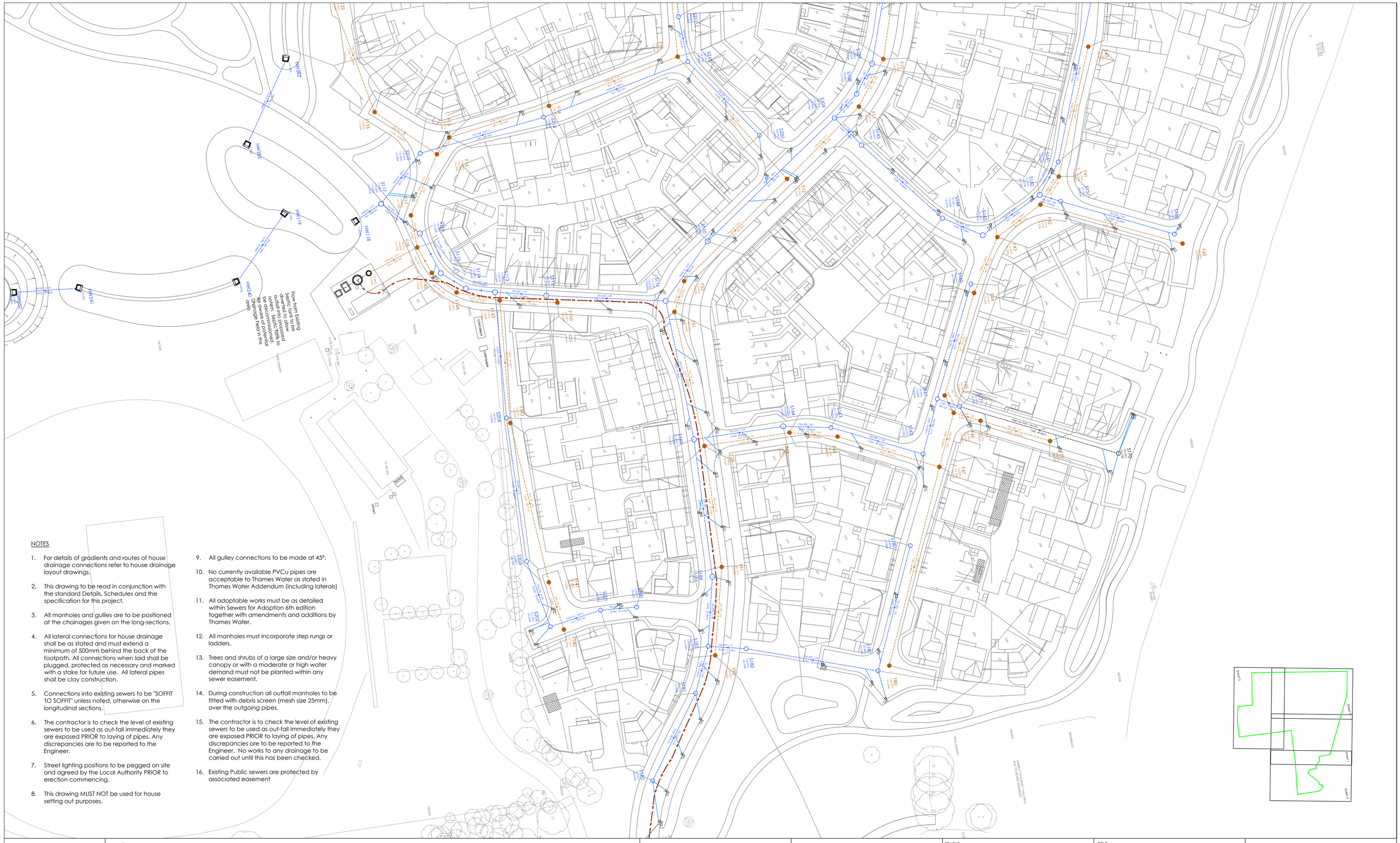
- Drawings
- Calculations

Section 3 Site Investigation

- Report
- Zoning Plan

Rob Hill BSc MCIHT
Director
Infrastructure Design Ltd
January 2020

Section 1 Adoptable System



NOTES

1. For details of gradients and routes of house drainage connections refer to house drainage layout drawings.
2. This drawing to be read in conjunction with the standard Details, Schedules and the specification for this project.
3. All manholes and gullies are to be positioned at the chainages given on the long-sections.
4. All lateral connections for house drainage shall be as stated and must extend a minimum of 500mm behind the back of the footpath. All connections when laid shall be plugged, protected as necessary and marked with a stake for future use. All lateral pipes shall be clay construction.
5. Connections into existing sewers to be "SOFFIT TO SOFFIT" unless noted, otherwise on the longitudinal sections.
6. The contractor is to check the level of existing sewers to be used as out-fall immediately they are exposed PRIOR to laying of pipes. Any discrepancies are to be reported to the Engineer.
7. Street lighting positions to be pegged on site and agreed by the Local Authority PRIOR to erection commencing.
8. This drawing MUST NOT be used for house setting out purposes.
9. All gulley connections to be made at 45°.
10. No currently available PVCu pipes are acceptable to Thames Water as stated in Thames Water Addendum (including laterals)
11. All adoptable works must be as detailed within Sewers for Adoption 6th edition together with amendments and additions by Thames Water.
12. All manholes must incorporate step rungs or ladders.
13. Trees and shrubs of a large size and/or heavy canopy or with a moderate or high water demand must not be planted within any sewer easement.
14. During construction all outfall manholes to be fitted with debris screen (mesh size 25mm), over the outgoing pipes.
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16. Existing Public sewers are protected by associated easement

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

REV	DESCRIPTION

REV	DESCRIPTION	DATE
F	Gullies added, pipe runs 7.000,17.000-17.001 & 22.01.20 18.000-18.002. S109-S111, S120, S217, 279-283, F7, F90-91 & F50 amended S230-231 removed	
E	Redesigned for Replan	20.12.19
D	Attenuation tank removed	13.11.19
C	Air Valve and Washout Chamber added to rising main. Attenuation tank added. Gullies added.	08.10.19
B	Sheet Key added	10.07.19
A	Detailed design	10.06.19

STATUS:

Subject to Approval

SCALE : 1:500 @ A1

DATE : June 2019

DRAWN : IDL

TITLE :

Adoptable Drainage Layout Sheet 1

PROJECT :

White Post Road, Bodicote

DRG. No: 957-03-01 Rev F

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

NOTES

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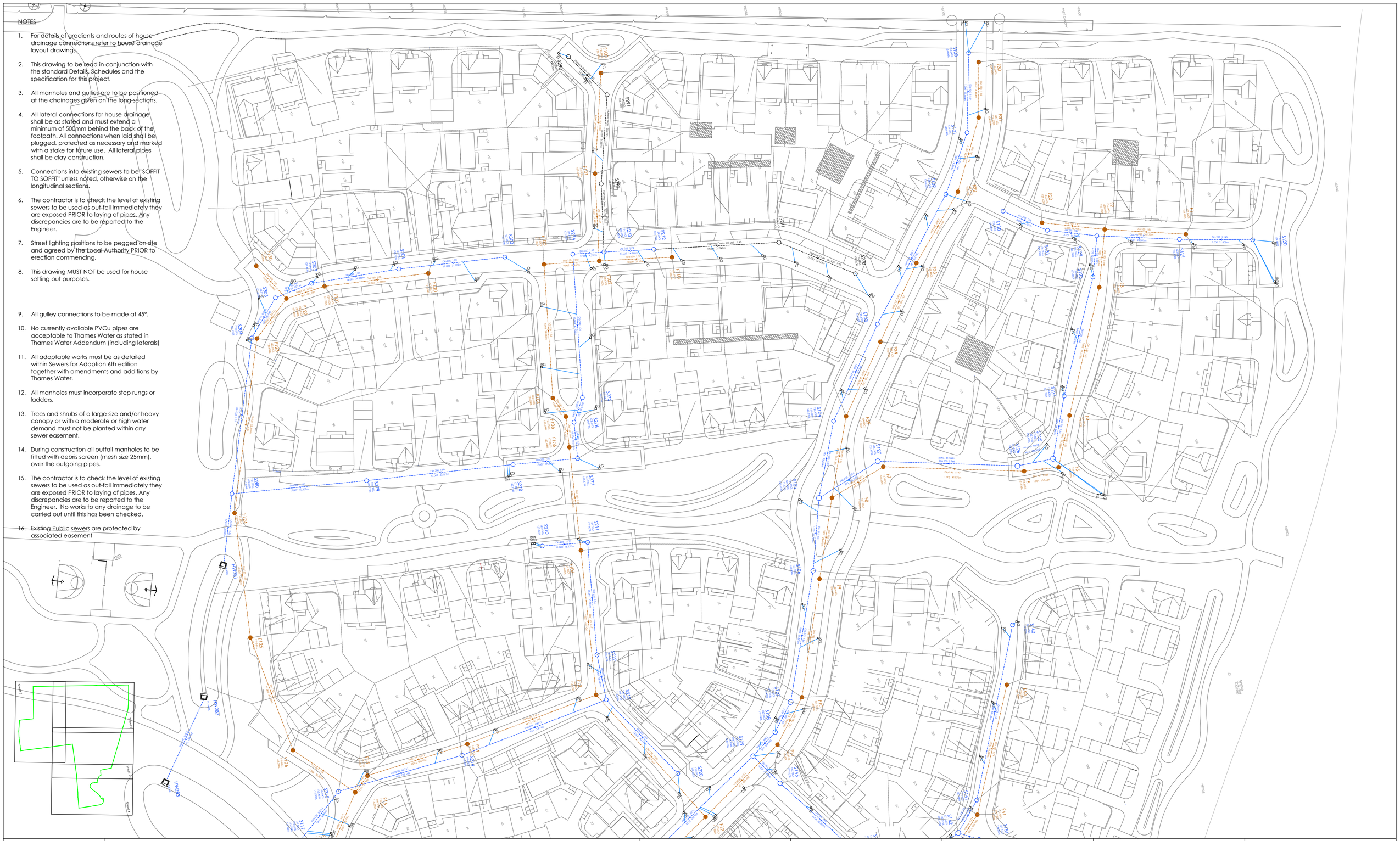

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

S185 Diversion - refer to 957-03-185 for further details.

Adoptable foul manhole (under S104 Agreement).

Adoptable surface water manhole (under S104 Agreement).

Adoptable foul Rising Main (under S104 Agreement).
'AV' Air valve at high point. 'WC' Washout chamber at low point.

Adoptable Highway Drain (under S38 Agreement).

RG Road gully (150mm connection). (under S38 Agreement)

REV	DESCRIPTION

REV	DESCRIPTION	DATE
E	Gullies added. pipe runs 7.000,17.000-17.001 & 18.000-18.002, S109-S111, S120, S217, 279-283, F7, F90-91 & F50 amended S230-231 removed	22.01.20
D	Redesigned for Replan	20.12.19
C	Gullies added.	08.10.19
B	Sheet Key added	10.07.19
A	Detailed design	10.06.19

STATUS:

Subject to Approval

SCALE : 1:500 @ A1

DATE : June 2019

DRAWN : IDL

TITLE :

Adoptable Drainage Layout Sheet 2

PROJECT :

White Post Road, Bodicote

DRG. No:

957-03-02 Rev E

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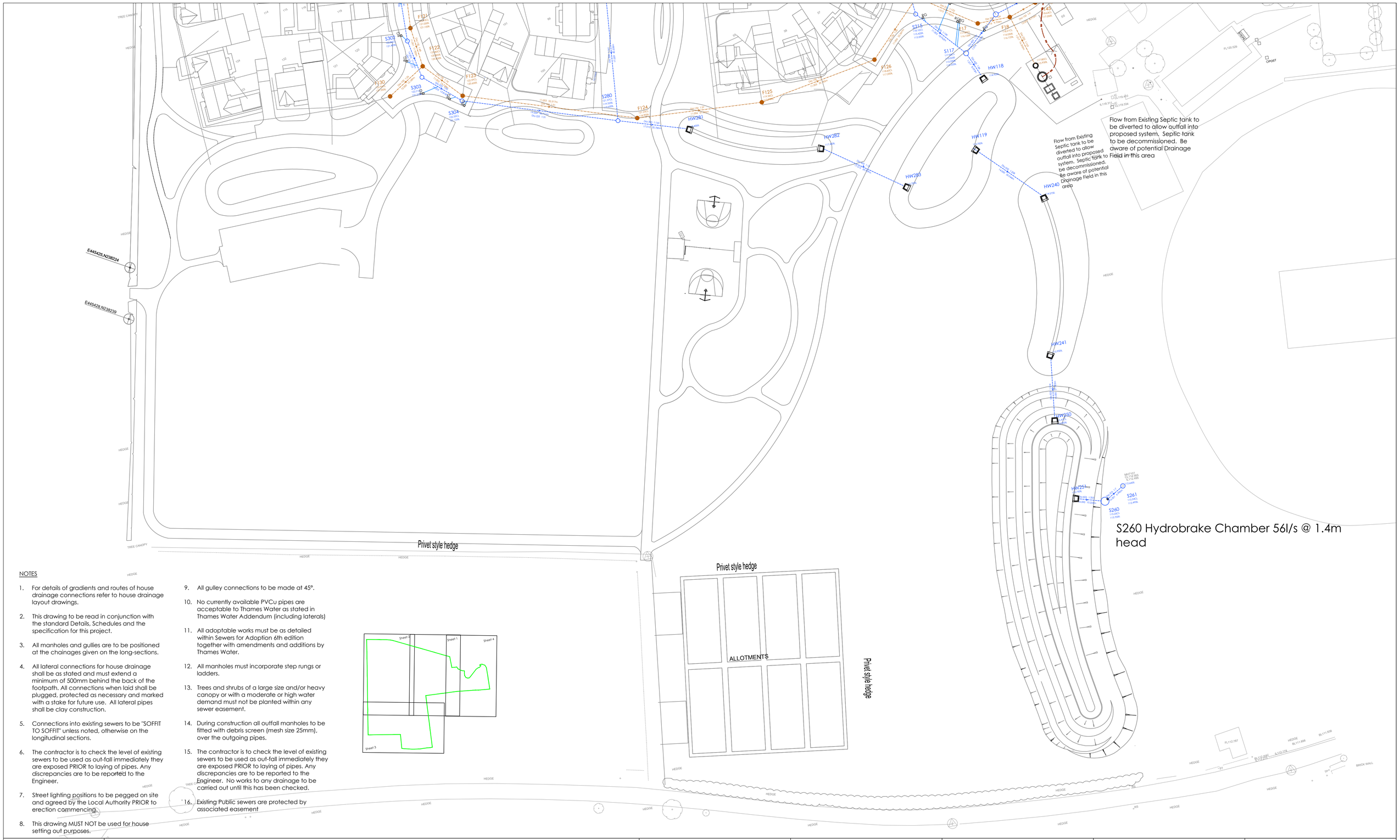

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Adoptable foul manhole (under S104 Agreement).
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'AV' Air valve at high point. 'WC' Washout chamber at low point.
Adoptable Highway Drain (under S38 Agreement).
RG Road gully (150mm connection). (under S38 Agreement)

REV	DESCRIPTION

REV	DESCRIPTION	DATE
F	Gullies added. pipe runs 7.000,17.000-17.001 & 18.000-18.002, S109-S111, S120, S217, 279-283, F7, F90-91 & F50 amended S230-231 removed	22.01.20
E	Redesigned for Replan	20.12.19
D	Attenuation tank removed	13.11.19
C	Attenuation tank and gullies added.	08.10.19
B	Sheet Key added Sewer HW18-EX7101 removed form adoption	10.07.19
A	Detailed design	10.06.19

STATUS:
Subject to Approval

SCALE : 1:500 @ A1
DATE : June 2019
DRAWN : IDL

TITLE :
Adoptable Drainage Layout
Sheet 3

PROJECT :
White Post Road, Bodicote

DRG. No:
957-03-03 Rev F

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INFRASTRUCTURE DESIGN LIMITED
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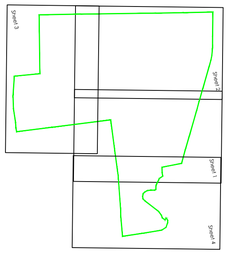

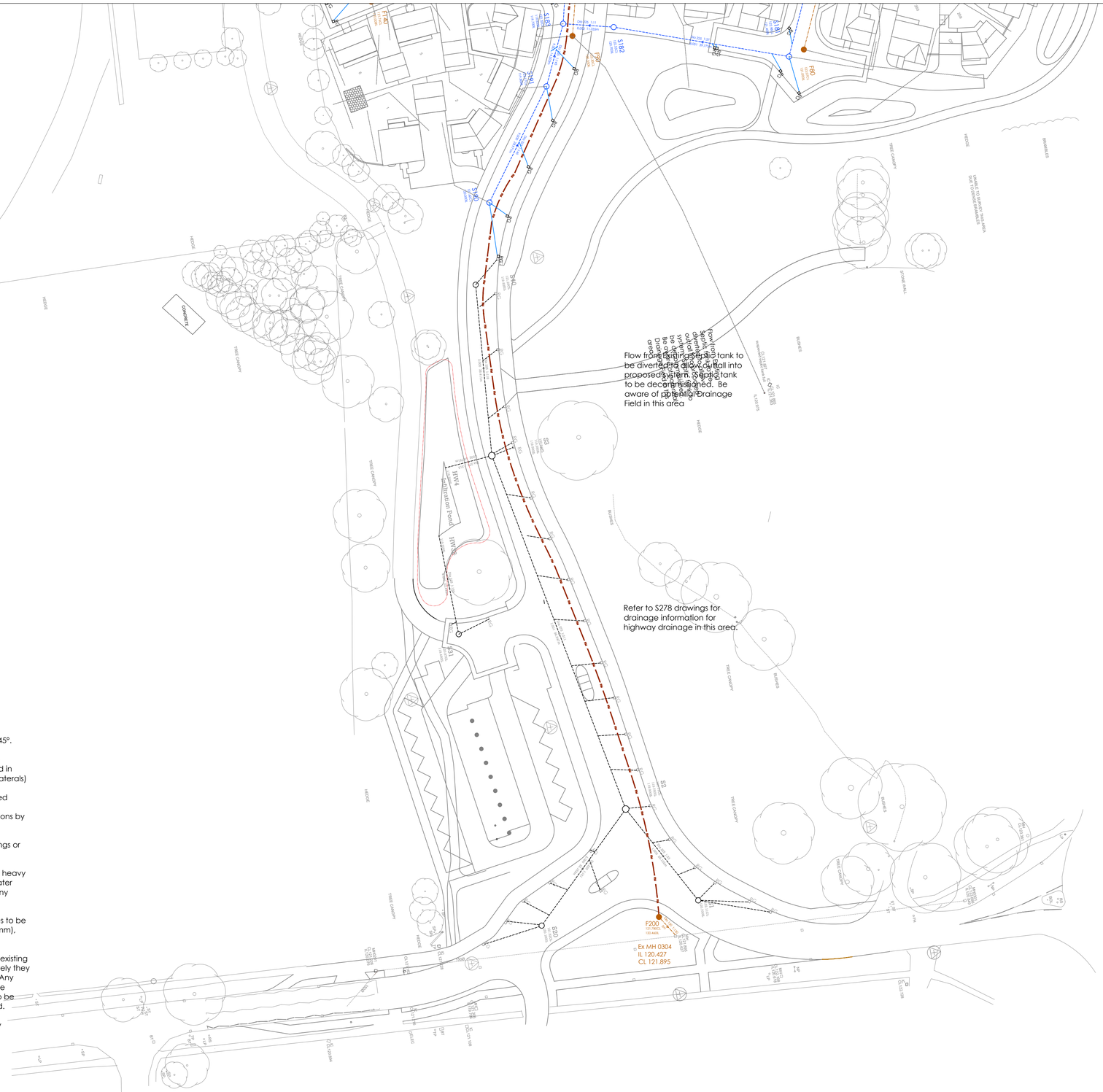

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RG Road gully (150mm connection). (under S38 Agreement)

REV	DESCRIPTION

REV	DESCRIPTION	DATE
D	Gullies added, pipe runs 7.000,17.000-17.001 & 18.000-18.002, 5109-5111, 5120, 5217, 279-283, F7, F90-91 & F50 amended S230-231 removed	22.01.20
C	Redesigned for Replan	20.12.19
B	Air Valve and Washout Chamber added to rising main. F200 added	08.10.19
A	Sheet Key added	10.07.19

STATUS:
Subject to Approval

SCALE : 1:500 @ A1
DATE : June 2019
DRAWN : IDL

TITLE :
Adoptable Drainage Layout Sheet 4

PROJECT :
White Post Road, Bodicote

DRG. No: 957-03-04 Rev D

iD LTD
INFRASTRUCTURE DESIGN LIMITED
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Leicestershire LE16 7QU
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Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	9.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
Time of Entry (mins)	2.00	Enforce best practice design rules	✓

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	100	101	23.804	0.600	124.800	124.650	0.150	158.7	225	2.38	50.0
1.001	101	102	19.357	0.600	124.650	124.450	0.200	96.8	225	2.63	50.0
1.002	102	103	43.621	0.600	124.450	123.350	1.100	39.7	225	2.98	50.0
1.003	103	104	31.674	0.600	123.350	122.500	0.850	37.3	225	3.22	50.0
1.004	104	105	23.254	0.600	122.425	121.725	0.700	33.2	300	3.36	50.0
2.000	120	121	24.299	0.600	124.000	123.850	0.150	162.0	225	2.40	50.0
2.001	121	122	24.551	0.600	123.850	123.700	0.150	163.7	225	2.80	50.0
3.001	130	131	14.351	0.600	124.650	124.250	0.400	35.9	225	2.11	50.0
3.002	131	122	14.789	0.600	124.250	123.700	0.550	26.9	225	2.21	50.0
2.002	122	123	12.287	0.600	123.700	123.600	0.100	122.9	225	2.97	50.0
2.003	123	124	36.425	0.600	123.600	122.950	0.650	56.0	225	3.32	50.0
2.004	124	125	18.945	0.600	122.950	122.400	0.550	34.4	225	3.46	50.0
2.005	125	126	10.791	0.600	122.325	122.225	0.100	107.9	300	3.58	50.0
2.006	126	127	41.538	0.600	122.225	121.975	0.250	166.2	300	4.15	50.0
2.007	127	105	20.603	0.600	121.975	121.675	0.300	68.7	300	4.33	50.0
1.005	105	106	21.709	0.600	121.600	120.900	0.700	31.0	375	4.44	50.0
1.006	106	107	39.576	0.600	120.900	119.400	1.500	26.4	375	4.62	50.0
1.007	107	108	10.055	0.600	119.325	119.100	0.225	44.7	450	4.68	50.0
1.008	108	109	9.709	0.600	119.100	118.900	0.200	48.5	450	4.74	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.035	41.2	13.7	1.217	1.231	0.101	0.0	89	0.933
1.001	1.329	52.8	17.6	1.231	1.227	0.130	0.0	89	1.198
1.002	2.083	82.8	22.2	1.227	1.254	0.164	0.0	80	1.775
1.003	2.149	85.5	28.2	1.254	1.204	0.208	0.0	89	1.938
1.004	2.737	193.5	36.0	1.204	1.229	0.266	0.0	87	2.108
2.000	1.024	40.7	4.1	1.285	1.743	0.030	0.0	48	0.659
2.001	1.019	40.5	6.2	1.743	2.195	0.046	0.0	59	0.741
3.001	2.191	87.1	2.4	1.233	1.723	0.018	0.0	26	0.972
3.002	2.533	100.7	3.7	1.723	2.195	0.027	0.0	29	1.219
2.002	1.178	46.8	14.2	2.195	1.842	0.105	0.0	85	1.036
2.003	1.750	69.6	15.0	1.842	1.222	0.111	0.0	71	1.403
2.004	2.236	88.9	27.1	1.222	1.199	0.200	0.0	85	1.967
2.005	1.513	106.9	31.6	1.199	1.421	0.233	0.0	112	1.323
2.006	1.217	86.0	51.9	1.421	1.725	0.383	0.0	168	1.272
2.007	1.899	134.3	51.9	1.725	1.279	0.383	0.0	129	1.781
1.005	3.263	360.4	92.3	1.279	1.247	0.681	0.0	129	2.745
1.006	3.539	390.9	105.0	1.247	1.256	0.775	0.0	132	3.019
1.007	3.047	484.6	125.6	1.256	1.309	0.927	0.0	155	2.573
1.008	2.923	464.9	127.7	1.309	1.369	0.942	0.0	160	2.509

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.000	140	141	53.133	0.600	121.000	120.300	0.700	75.9	225	2.59	50.0
4.001	141	142	11.222	0.600	120.300	120.150	0.150	74.8	225	2.71	50.0
5.000	150	151	35.244	0.600	120.650	120.300	0.350	100.7	225	2.45	50.0
5.001	151	142	6.525	0.600	120.300	120.150	0.150	43.5	225	2.51	50.0
4.002	142	143	20.727	0.600	120.075	119.875	0.200	103.6	300	2.94	50.0
4.003	143	144	13.054	0.600	119.875	119.675	0.200	65.3	300	3.05	50.0
4.004	144	145	32.360	0.600	119.600	119.100	0.500	64.7	375	3.29	50.0
4.005	145	109	11.389	0.600	119.100	118.975	0.125	91.1	375	3.39	50.0
1.009	109	110	52.570	0.600	118.750	118.450	0.300	175.2	600	5.21	50.0
1.011	110	111	21.709	0.600	118.450	118.200	0.250	86.8	600	5.35	50.0
6.000	160	161	35.587	0.600	120.150	119.925	0.225	158.2	225	2.57	50.0
7.000	170	171	49.206	0.600	122.100	120.100	2.000	24.6	225	2.31	50.0
7.001	171	161	7.018	0.600	120.100	119.925	0.175	40.1	225	2.37	50.0
6.001	161	162	16.945	0.600	119.850	119.700	0.150	113.0	300	2.76	50.0
6.002	162	163	28.520	0.600	119.700	119.500	0.200	142.6	300	3.12	50.0
6.003	163	164	14.224	0.600	119.500	119.325	0.175	81.3	300	3.26	50.0
6.004	164	165	26.828	0.600	119.250	119.050	0.200	134.1	375	3.55	50.0
8.000	180	181	38.446	0.600	121.800	121.400	0.400	96.1	225	2.48	50.0
8.001	181	182	39.775	0.600	121.400	120.700	0.700	56.8	225	2.86	50.0
8.003	182	183	11.335	0.600	120.700	119.700	1.000	11.3	225	2.91	50.0
9.000	190	191	28.971	0.600	120.000	119.800	0.200	144.9	225	2.45	50.0
9.001	191	183	14.502	0.600	119.800	119.700	0.100	145.0	225	2.67	50.0
8.004	183	184	20.687	0.600	119.625	119.475	0.150	137.9	300	3.17	50.0
8.005	184	165	41.198	0.600	119.475	119.125	0.350	117.7	300	3.64	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
4.000	1.502	59.7	8.7	1.248	1.237	0.064	0.0	58	1.076
4.001	1.513	60.2	16.9	1.237	1.275	0.125	0.0	81	1.303
5.000	1.303	51.8	18.4	1.319	1.234	0.136	0.0	93	1.196
5.001	1.988	79.1	30.2	1.234	1.275	0.223	0.0	96	1.858
4.002	1.544	109.1	58.1	1.275	1.199	0.429	0.0	156	1.567
4.003	1.949	137.7	62.1	1.199	1.222	0.458	0.0	141	1.899
4.004	2.255	249.0	70.1	1.222	1.308	0.517	0.0	136	1.949
4.005	1.898	209.7	74.5	1.308	1.369	0.550	0.0	154	1.743
1.009	1.836	519.2	206.3	1.369	1.807	1.522	0.0	262	1.735
1.011	2.614	739.1	233.0	1.807	2.315	1.719	0.0	231	2.329
6.000	1.037	41.2	3.0	1.200	2.187	0.022	0.0	41	0.607
7.000	2.648	105.3	2.2	1.228	1.868	0.016	0.0	22	1.072
7.001	2.072	82.4	20.1	1.868	2.187	0.148	0.0	75	1.714
6.001	1.478	104.5	25.1	2.187	2.672	0.185	0.0	100	1.223
6.002	1.314	92.9	34.8	2.672	1.950	0.257	0.0	127	1.222
6.003	1.745	123.3	43.0	1.950	2.368	0.317	0.0	122	1.594
6.004	1.562	172.6	53.4	2.368	2.226	0.394	0.0	142	1.382
8.000	1.334	53.0	3.3	1.302	1.353	0.024	0.0	37	0.740
8.001	1.738	69.1	12.6	1.353	1.625	0.093	0.0	65	1.327
8.003	3.908	155.4	14.0	1.625	2.397	0.103	0.0	45	2.444
9.000	1.084	43.1	3.7	1.396	2.146	0.027	0.0	44	0.667
9.001	1.083	43.1	9.6	2.146	2.397	0.071	0.0	72	0.873
8.004	1.337	94.5	28.7	2.397	2.396	0.212	0.0	113	1.178
8.005	1.448	102.3	31.0	2.396	2.226	0.229	0.0	113	1.273

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
6.005	165	111	41.962	0.600	119.050	118.425	0.625	67.1	375	3.96	50.0
1.012	111	112	35.552	0.600	118.200	117.600	0.600	59.3	600	5.54	50.0
1.013	112	113	15.282	0.600	117.600	116.800	0.800	19.1	600	5.58	50.0
10.000	200	201	10.736	0.600	120.600	120.450	0.150	71.6	225	2.12	50.0
10.001	201	202	15.737	0.600	120.450	120.250	0.200	78.7	225	2.29	50.0
10.002	202	203	20.647	0.600	120.250	120.100	0.150	137.6	225	2.60	50.0
10.003	203	204	43.037	0.600	120.100	119.500	0.600	71.7	225	3.07	50.0
10.004	204	113	37.530	0.600	119.500	117.175	2.325	16.1	225	3.26	50.0
1.014	113	114	8.698	0.600	116.800	116.375	0.425	20.5	600	5.61	50.0
1.015	114	115	8.755	0.600	116.375	115.900	0.475	18.4	600	5.64	50.0
1.016	115	116	13.363	0.600	115.900	115.125	0.775	17.2	600	5.67	50.0
1.017	116	117	14.535	0.600	115.125	114.975	0.150	96.9	600	5.77	50.0
11.000	210	211	13.537	0.600	120.000	119.900	0.100	135.4	225	2.20	50.0
11.001	211	212	33.564	0.600	119.900	118.900	1.000	33.6	225	2.45	50.0
11.002	212	213	13.641	0.600	118.900	118.650	0.250	54.6	225	2.58	50.0
12.000	220	213	30.530	0.600	119.050	118.650	0.400	76.3	225	2.34	50.0
11.003	213	214	45.959	0.600	118.575	116.000	2.575	17.8	300	2.78	50.0
11.004	214	215	38.217	0.600	116.000	115.425	0.575	66.5	300	3.11	50.0
13.000	230	231	12.148	0.600	116.450	116.350	0.100	121.5	225	2.17	50.0
13.001	231	215	6.172	0.600	116.350	115.500	0.850	7.3	225	2.19	50.0
11.005	215	117	18.962	0.600	115.425	115.325	0.100	189.6	300	3.39	50.0
1.018	117	118	8.593	0.600	114.975	114.875	0.100	85.9	600	5.83	50.0
14.000	270	271	24.562	0.600	123.500	123.150	0.350	70.2	225	2.26	50.0
14.001	271	272	37.247	0.600	123.150	122.750	0.400	93.1	225	2.72	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
6.005	2.214	244.5	97.7	2.226	2.315	0.721	0.0	164	2.093
1.012	3.167	895.5	349.2	2.315	2.095	2.577	0.0	260	2.981
1.013	5.588	1579.9	366.7	2.095	2.285	2.706	0.0	195	4.593
10.000	1.547	61.5	3.9	1.232	1.234	0.029	0.0	38	0.872
10.001	1.475	58.7	6.0	1.234	1.243	0.044	0.0	48	0.951
10.002	1.112	44.2	8.5	1.243	1.552	0.063	0.0	66	0.861
10.003	1.546	61.5	11.1	1.552	1.224	0.082	0.0	65	1.180
10.004	3.273	130.1	24.4	1.224	2.285	0.180	0.0	65	2.520
1.014	5.398	1526.3	393.0	2.285	2.261	2.900	0.0	207	4.562
1.015	5.689	1608.5	395.1	2.261	2.271	2.915	0.0	201	4.746
1.016	5.882	1663.2	395.1	2.271	2.368	2.915	0.0	198	4.864
1.017	2.474	699.4	402.5	2.368	2.275	2.970	0.0	327	2.555
11.000	1.122	44.6	4.1	1.202	1.632	0.030	0.0	46	0.706
11.001	2.266	90.1	15.2	1.632	1.215	0.112	0.0	62	1.692
11.002	1.774	70.5	20.5	1.215	1.226	0.151	0.0	83	1.544
12.000	1.498	59.6	7.5	1.211	1.226	0.055	0.0	53	1.026
11.003	3.738	264.3	33.1	1.226	2.687	0.244	0.0	71	2.580
11.004	1.931	136.5	53.5	2.687	2.370	0.395	0.0	130	1.818
13.000	1.185	47.1	0.0	1.925	1.715	0.000	0.0	0	0.000
13.001	4.886	194.3	7.5	1.715	2.370	0.055	0.0	29	2.357
11.005	1.138	80.4	64.5	2.370	2.225	0.476	0.0	204	1.261
1.018	2.628	743.0	472.3	2.275	1.447	3.485	0.0	348	2.776
14.000	1.563	62.1	0.0	1.239	1.294	0.000	0.0	0	0.000
14.001	1.355	53.9	5.3	1.294	1.221	0.039	0.0	47	0.864

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
14.002	272	273	14.864	0.600	122.750	122.550	0.200	74.3	225	2.88	50.0
15.000	290	291	16.128	0.600	123.250	123.150	0.100	161.3	225	2.26	50.0
15.001	291	292	26.559	0.600	123.150	122.950	0.200	132.8	225	2.65	50.0
15.002	292	273	20.275	0.600	122.950	122.550	0.400	50.7	225	2.84	50.0
14.003	273	274	9.257	0.600	122.475	122.375	0.100	92.6	300	2.98	50.0
14.004	274	275	42.736	0.600	122.375	121.125	1.250	34.2	300	3.24	50.0
14.005	275	276	7.754	0.600	121.125	120.975	0.150	51.7	300	3.30	50.0
14.006	276	277	10.815	0.600	120.975	120.675	0.300	36.1	300	3.37	50.0
14.007	277	278	19.282	0.600	120.675	120.325	0.350	55.1	300	3.52	50.0
14.008	278	279	43.792	0.600	120.325	119.775	0.550	79.6	300	3.93	50.0
14.009	279	280	40.208	0.600	119.775	119.525	0.250	160.8	300	4.48	50.0
16.000	300	301	31.702	0.600	122.200	121.750	0.450	70.4	225	2.34	50.0
16.001	301	302	26.285	0.600	121.750	121.425	0.325	80.9	225	2.64	50.0
16.002	302	303	11.616	0.600	121.425	121.275	0.150	77.4	225	2.77	50.0
16.003	303	304	13.818	0.600	121.275	121.125	0.150	92.1	225	2.94	50.0
16.004	304	280	46.711	0.600	121.125	119.600	1.525	30.6	225	3.27	50.0
14.010	280	281	20.785	0.600	119.525	119.400	0.125	166.0	300	4.76	50.0
14.011	281	282	40.733	0.030	119.400	117.450	1.950	20.9	1000	4.91	50.0
14.012	282	283	26.939	0.030	117.450	115.325	2.125	12.7	450	5.12	50.0
1.021	119	240	26.044	0.600	114.700	114.575	0.125	208.4	600	2.26	50.0
1.023	241	250	21.403	0.600	113.950	113.850	0.100	214.0	825	2.18	50.0
1.025	251	260	10.233	0.600	113.750	113.700	0.050	204.7	825	2.08	50.0
1.026	260	261	6.990	0.600	113.700	112.645	1.055	6.6	375	2.10	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
14.002	1.518	60.4	11.8	1.221	1.237	0.087	0.0	67	1.184
15.000	1.027	40.8	1.1	1.231	1.552	0.008	0.0	25	0.442
15.001	1.133	45.0	3.7	1.552	1.392	0.027	0.0	44	0.689
15.002	1.841	73.2	5.1	1.392	1.237	0.038	0.0	40	1.067
14.003	1.634	115.5	25.2	1.237	1.218	0.186	0.0	95	1.315
14.004	2.698	190.7	25.7	1.218	1.207	0.190	0.0	74	1.903
14.005	2.191	154.9	33.7	1.207	1.234	0.249	0.0	95	1.764
14.006	2.627	185.7	36.6	1.234	1.279	0.270	0.0	90	2.059
14.007	2.122	150.0	39.0	1.279	1.224	0.288	0.0	104	1.793
14.008	1.763	124.6	40.4	1.224	2.025	0.298	0.0	117	1.578
14.009	1.237	87.4	41.7	2.025	1.725	0.308	0.0	146	1.224
16.000	1.560	62.0	2.7	1.223	1.212	0.020	0.0	32	0.789
16.001	1.455	57.8	7.6	1.212	1.208	0.056	0.0	55	1.015
16.002	1.487	59.1	10.6	1.208	1.214	0.078	0.0	64	1.127
16.003	1.362	54.2	12.6	1.214	1.197	0.093	0.0	73	1.113
16.004	2.372	94.3	16.5	1.197	1.725	0.122	0.0	64	1.799
14.010	1.217	86.0	75.6	1.725	0.626	0.558	0.0	219	1.367
14.011	4.503	18016.3	85.1	-0.074	-0.028	0.628	0.0	134	1.181
14.012	2.182	347.0	92.7	0.522	1.111	0.684	0.0	159	1.846
1.021	1.683	475.8	0.0	1.206	1.530	0.000	0.0	0	0.000
1.023	2.025	1082.5	0.0	0.925	0.736	0.000	0.0	0	0.000
1.025	2.071	1107.2	0.0	0.825	0.875	0.000	0.0	0	0.000
1.026	7.076	781.5	0.0	1.325	2.023	0.000	0.0	0	0.000

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Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	30

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node 260 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	113.700	Product Number	CTL-SHE-0304-5600-1400-5600
Design Depth (m)	1.400	Min Outlet Diameter (m)	0.375
Design Flow (l/s)	56.0	Min Node Diameter (mm)	2100

Node 240 Online Orifice Control

Flap Valve	x	Invert Level (m)	114.575	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.750		

Node 118 Online Orifice Control

Flap Valve	x	Invert Level (m)	114.925	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.750		

Node 283 Online Orifice Control

Flap Valve	x	Invert Level (m)	115.325	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.600		

Node 281 Online Orifice Control

Flap Valve	x	Invert Level (m)	119.400	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.450		

Node 251 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	22.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	113.750	Main Channel Slope (1:X)	500.0
Safety Factor	2.0	Time to half empty (mins)	112	Main Channel n	0.030

Inlets

250

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	878.0	0.0	0.800	1712.0	0.0	1.550	2844.0	0.0
0.750	1437.0	0.0	1.500	2392.0	0.0			

Node 241 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	47.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	113.950	Main Channel Slope (1:X)	234.0
Safety Factor	2.0	Time to half empty (mins)	0	Main Channel n	0.030

Inlets

240

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.0	0.0	1.050	351.0	0.0	1.650	614.0	0.0
0.050	12.0	0.0	1.450	523.0	0.0			

Node 119 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	26.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	114.700	Main Channel Slope (1:X)	190.0
Safety Factor	2.0	Time to half empty (mins)	6	Main Channel n	0.030

Inlets

283 | 118

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	427.0	0.0	0.500	632.0	0.0	1.000	861.0	0.0	1.500	1115.0	0.0
0.250	526.0	0.0	0.750	743.0	0.0	1.250	985.0	0.0			

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	100	9	124.932	0.132	24.5	0.3332	0.0000	OK
15 minute summer	101	9	124.784	0.134	31.5	0.2050	0.0000	OK
15 minute summer	102	9	124.560	0.110	39.7	0.1755	0.0000	OK
15 minute summer	103	9	123.476	0.126	50.1	0.2169	0.0000	OK
15 minute summer	104	9	122.547	0.121	60.9	0.2310	0.0000	OK
15 minute summer	120	9	124.065	0.065	7.3	0.0988	0.0000	OK
15 minute summer	121	9	123.929	0.079	11.3	0.1022	0.0000	OK
15 minute summer	130	9	124.684	0.034	4.4	0.0473	0.0000	OK
15 minute summer	131	9	124.289	0.039	6.6	0.0476	0.0000	OK
15 minute summer	122	9	123.824	0.124	25.3	0.1727	0.0000	OK
15 minute summer	123	9	123.693	0.093	25.9	0.1101	0.0000	OK
15 minute summer	124	9	123.072	0.122	46.5	0.2871	0.0000	OK
15 minute summer	125	9	122.510	0.185	52.4	0.4087	0.0000	OK
15 minute summer	126	9	122.473	0.248	87.1	0.8710	0.0000	OK
15 minute summer	127	10	122.162	0.187	82.4	0.3297	0.0000	OK
15 minute summer	105	10	121.779	0.179	144.1	0.3862	0.0000	OK
15 minute summer	106	10	121.077	0.177	163.2	0.5166	0.0000	OK
15 minute summer	107	10	119.567	0.242	193.9	0.8578	0.0000	OK
15 minute summer	108	10	119.350	0.250	193.5	0.4839	0.0000	OK
15 minute summer	140	9	121.077	0.077	15.5	0.1548	0.0000	OK
15 minute summer	141	9	120.425	0.125	30.1	0.2464	0.0000	OK
15 minute summer	150	9	120.784	0.134	33.0	0.3865	0.0000	OK
15 minute summer	151	9	120.473	0.173	54.2	0.4023	0.0000	OK
15 minute summer	142	9	120.334	0.258	102.6	0.7227	0.0000	OK
15 minute summer	143	9	120.105	0.230	107.6	0.4949	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	100	1.000	101	24.5	1.007	0.596	0.5804	
15 minute summer	101	1.001	102	31.5	1.437	0.597	0.4246	
15 minute summer	102	1.002	103	39.4	1.878	0.476	0.9161	
15 minute summer	103	1.003	104	46.9	2.149	0.548	0.6947	
15 minute summer	104	1.004	105	59.0	2.324	0.305	0.5917	
15 minute summer	120	2.000	121	7.4	0.678	0.181	0.2653	
15 minute summer	121	2.001	122	10.9	0.627	0.269	0.4271	
15 minute summer	130	3.001	131	4.4	1.051	0.051	0.0601	
15 minute summer	131	3.002	122	6.6	0.542	0.066	0.1992	
15 minute summer	122	2.002	123	24.4	1.296	0.522	0.2320	
15 minute summer	123	2.003	124	24.9	1.379	0.358	0.6788	
15 minute summer	124	2.004	125	44.4	2.139	0.500	0.3936	
15 minute summer	125	2.005	126	50.8	0.961	0.475	0.5825	
15 minute summer	126	2.006	127	82.4	1.532	0.958	2.2097	
15 minute summer	127	2.007	105	83.4	1.917	0.621	0.8962	
15 minute summer	105	1.005	106	146.2	2.839	0.406	1.1176	
15 minute summer	106	1.006	107	163.3	3.321	0.418	1.9457	
15 minute summer	107	1.007	108	191.4	2.162	0.395	0.8902	
15 minute summer	108	1.008	109	196.5	2.378	0.423	0.8185	
15 minute summer	140	4.000	141	15.4	0.895	0.258	0.9246	
15 minute summer	141	4.001	142	29.7	1.235	0.493	0.3221	
15 minute summer	150	5.000	151	33.2	1.151	0.641	1.0104	
15 minute summer	151	5.001	142	53.3	1.679	0.675	0.2201	
15 minute summer	142	4.002	143	100.6	1.639	0.922	1.2690	
15 minute summer	143	4.003	144	104.5	1.989	0.759	0.6904	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	144	9	119.791	0.191	118.8	0.4795	0.0000	OK
15 minute summer	145	10	119.337	0.237	124.5	0.5124	0.0000	OK
15 minute summer	109	10	119.123	0.373	324.2	0.7728	0.0000	OK
15 minute summer	110	10	118.812	0.362	364.9	1.2335	0.0000	OK
15 minute summer	160	9	120.204	0.054	5.3	0.0774	0.0000	OK
15 minute summer	170	9	122.129	0.029	3.9	0.0398	0.0000	OK
15 minute summer	171	9	120.220	0.120	35.8	0.2867	0.0000	OK
15 minute summer	161	9	120.001	0.151	44.5	0.1890	0.0000	OK
15 minute summer	162	9	119.890	0.190	61.5	0.3064	0.0000	OK
15 minute summer	163	9	119.686	0.186	74.7	0.3088	0.0000	OK
15 minute summer	164	9	119.460	0.210	90.2	0.4882	0.0000	OK
15 minute summer	180	9	121.850	0.050	5.8	0.0718	0.0000	OK
15 minute summer	181	9	121.495	0.095	22.4	0.1907	0.0000	OK
15 minute summer	182	9	120.760	0.060	24.4	0.0741	0.0000	OK
15 minute summer	190	9	120.058	0.058	6.5	0.0856	0.0000	OK
15 minute summer	191	9	119.903	0.103	17.1	0.1552	0.0000	OK
15 minute summer	183	9	119.791	0.166	50.0	0.2349	0.0000	OK
15 minute summer	184	9	119.632	0.157	53.3	0.2969	0.0000	OK
15 minute summer	165	10	119.283	0.233	160.5	0.5867	0.0000	OK
15 minute summer	111	10	118.585	0.385	547.8	1.0430	0.0000	OK
15 minute summer	112	10	117.896	0.296	567.9	0.8055	0.0000	OK
15 minute summer	200	9	120.652	0.052	7.0	0.0800	0.0000	OK
15 minute summer	201	9	120.515	0.065	10.6	0.0870	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	144	4.004	145	116.5	1.805	0.468	2.0874	
15 minute summer	145	4.005	109	123.4	1.834	0.589	0.7662	
15 minute summer	109	1.009	110	336.6	1.860	0.648	9.5148	
15 minute summer	110	1.011	111	368.8	2.025	0.499	4.0064	
15 minute summer	160	6.000	161	5.2	0.598	0.127	0.3386	
15 minute summer	170	7.000	171	3.9	0.336	0.037	0.6036	
15 minute summer	171	7.001	161	35.6	1.821	0.433	0.1374	
15 minute summer	161	6.001	162	44.1	1.068	0.422	0.6987	
15 minute summer	162	6.002	163	60.2	1.299	0.648	1.3221	
15 minute summer	163	6.003	164	71.5	1.705	0.580	0.6014	
15 minute summer	164	6.004	165	87.4	1.332	0.506	1.7593	
15 minute summer	180	8.000	181	5.7	0.520	0.108	0.4313	
15 minute summer	181	8.001	182	22.0	1.821	0.319	0.4850	
15 minute summer	182	8.003	183	24.2	2.331	0.156	0.1333	
15 minute summer	190	9.000	191	6.5	0.503	0.150	0.3759	
15 minute summer	191	9.001	183	16.7	0.982	0.388	0.2466	
15 minute summer	183	8.004	184	49.2	1.273	0.521	0.7997	
15 minute summer	184	8.005	165	50.7	1.392	0.496	1.5014	
15 minute summer	165	6.005	111	159.4	2.312	0.652	2.8925	
15 minute summer	111	1.012	112	549.5	3.330	0.614	5.8566	
15 minute summer	112	1.013	113	567.2	3.604	0.359	2.4170	
15 minute summer	200	10.000	201	7.0	0.852	0.114	0.0885	
15 minute summer	201	10.001	202	10.6	0.841	0.181	0.1999	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	9	120.345	0.095	15.2	0.1320	0.0000	OK
15 minute summer	203	9	120.187	0.087	19.8	0.1175	0.0000	OK
15 minute summer	204	9	119.590	0.090	42.7	0.2224	0.0000	OK
15 minute summer	113	10	117.163	0.363	604.7	0.6759	0.0000	OK
15 minute summer	114	10	116.728	0.353	606.2	0.6615	0.0000	OK
15 minute summer	115	10	116.300	0.400	604.8	0.7066	0.0000	OK
15 minute summer	116	10	116.059	0.934	606.2	1.9962	0.0000	SURCHARGED
15 minute summer	210	9	120.062	0.062	7.3	0.0965	0.0000	OK
15 minute summer	211	9	119.984	0.084	27.2	0.1698	0.0000	OK
15 minute summer	212	9	119.026	0.126	36.7	0.2103	0.0000	OK
15 minute summer	220	9	119.124	0.074	13.3	0.1398	0.0000	OK
15 minute summer	213	9	118.670	0.095	58.8	0.1551	0.0000	OK
15 minute summer	214	9	116.182	0.182	95.0	0.3897	0.0000	OK
15 minute summer	230	1	116.450	0.000	0.0	0.0000	0.0000	OK
15 minute summer	231	9	116.390	0.040	13.3	0.0675	0.0000	OK
15 minute summer	215	10	115.987	0.562	111.1	0.7451	0.0000	SURCHARGED
15 minute summer	117	10	115.827	0.852	694.8	1.7366	0.0000	SURCHARGED
15 minute summer	118	10	115.661	0.824	692.8	0.0000	0.0000	OK
15 minute summer	270	1	123.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	271	9	123.213	0.063	9.5	0.1034	0.0000	OK
15 minute summer	272	9	122.846	0.096	20.9	0.1723	0.0000	OK
15 minute summer	290	9	123.283	0.033	1.9	0.0406	0.0000	OK
15 minute summer	291	9	123.209	0.059	6.5	0.0791	0.0000	OK
15 minute summer	292	9	123.003	0.052	9.1	0.0665	0.0000	OK
15 minute summer	273	9	122.617	0.142	43.9	0.2730	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	15.2	1.010	0.344	0.3112	
15 minute summer	203	10.003	204	18.9	1.334	0.308	0.6227	
15 minute summer	204	10.004	113	41.1	2.861	0.316	0.5394	
15 minute summer	113	1.014	114	604.1	3.456	0.396	1.5250	
15 minute summer	114	1.015	115	604.8	3.625	0.376	1.6290	
15 minute summer	115	1.016	116	598.3	2.300	0.360	3.2151	
15 minute summer	116	1.017	117	600.9	2.134	0.859	4.0942	
15 minute summer	210	11.000	211	7.3	0.653	0.164	0.1523	
15 minute summer	211	11.001	212	27.2	1.517	0.302	0.6104	
15 minute summer	212	11.002	213	36.4	1.696	0.516	0.2928	
15 minute summer	220	12.000	213	13.2	1.193	0.222	0.3378	
15 minute summer	213	11.003	214	58.5	1.840	0.221	1.4682	
15 minute summer	214	11.004	215	91.5	1.429	0.670	2.1997	
15 minute summer	230	13.000	231	0.0	0.000	0.000	0.0286	
15 minute summer	231	13.001	215	13.3	1.572	0.068	0.1373	
15 minute summer	215	11.005	117	97.4	1.383	1.210	1.3353	
15 minute summer	117	1.018	118	692.8	2.460	0.932	2.4205	
15 minute summer	118	Flow through pond	119	611.4	0.246	0.004	166.9622	
15 minute summer	270	14.000	271	0.0	0.000	0.000	0.1113	
15 minute summer	271	14.001	272	9.3	0.744	0.173	0.4695	
15 minute summer	272	14.002	273	20.3	1.320	0.337	0.2290	
15 minute summer	290	15.000	291	1.9	0.326	0.046	0.0952	
15 minute summer	291	15.001	292	6.4	0.834	0.141	0.2027	
15 minute summer	292	15.002	273	8.8	1.177	0.120	0.1711	
15 minute summer	273	14.003	274	43.6	1.667	0.377	0.2429	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	274	9	122.472	0.097	44.6	0.1149	0.0000	OK
15 minute summer	275	9	121.272	0.147	58.0	0.2807	0.0000	OK
15 minute summer	276	9	121.107	0.132	61.2	0.1849	0.0000	OK
15 minute summer	277	9	120.822	0.147	64.8	0.2004	0.0000	OK
15 minute summer	278	9	120.481	0.156	65.6	0.1967	0.0000	OK
15 minute summer	279	10	120.013	0.238	68.4	0.2894	0.0000	OK
15 minute summer	300	9	122.242	0.042	4.8	0.0592	0.0000	OK
15 minute summer	301	9	121.823	0.073	13.5	0.1196	0.0000	OK
15 minute summer	302	9	121.518	0.093	18.7	0.1333	0.0000	OK
15 minute summer	303	9	121.382	0.107	21.9	0.1428	0.0000	OK
15 minute summer	304	9	121.208	0.083	28.5	0.1276	0.0000	OK
15 minute summer	280	10	119.909	0.384	112.4	0.9203	0.0000	SURCHARGED
15 minute winter	281	10	119.707	0.307	112.6	0.4634	0.0000	OK
15 minute winter	282	10	117.635	0.185	122.3	0.2134	0.0000	OK
15 minute winter	283	10	115.593	0.756	122.7	0.0000	0.0000	OK
15 minute winter	119	14	115.135	0.434	512.3	0.0000	0.0000	OK
15 minute winter	240	14	115.064	0.913	378.9	0.0000	0.0000	OK
15 minute winter	241	15	114.299	0.349	377.7	0.0000	0.0000	OK
30 minute winter	250	46	114.103	0.309	372.8	0.7864	0.0000	OK
30 minute winter	251	45	114.103	0.353	214.9	0.0000	0.0000	OK
30 minute winter	260	51	114.113	0.413	83.7	1.4321	0.0000	SURCHARGED
15 minute summer	261	1	112.645	0.000	53.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	274	14.004	275	43.8	1.630	0.229	1.1521	
15 minute summer	275	14.005	276	56.1	1.765	0.362	0.2479	
15 minute summer	276	14.006	277	60.4	1.887	0.325	0.3470	
15 minute summer	277	14.007	278	63.2	1.776	0.421	0.6884	
15 minute summer	278	14.008	279	67.0	1.584	0.538	2.1125	
15 minute summer	279	14.009	280	64.8	0.956	0.741	2.6198	
15 minute summer	300	16.000	301	4.8	0.596	0.077	0.2586	
15 minute summer	301	16.001	302	13.4	1.007	0.231	0.3497	
15 minute summer	302	16.002	303	18.3	1.081	0.310	0.1970	
15 minute summer	303	16.003	304	21.5	1.355	0.397	0.2196	
15 minute summer	304	16.004	280	27.6	1.306	0.292	1.2385	
15 minute summer	280	14.010	281	102.1	1.451	1.187	1.4637	
15 minute winter	281	Orifice	282	112.8				
15 minute winter	282	14.012	283	122.7	1.536	0.354	2.1540	
15 minute winter	283	Flow through pond	119	512.3	0.255	0.003	183.0999	
15 minute winter	119	1.021	240	378.9	1.629	0.796	6.0469	
15 minute winter	240	Flow through pond	241	377.7	0.788	0.008	22.9073	
15 minute winter	241	1.023	250	376.9	1.842	0.348	4.3810	
30 minute winter	250	Flow through pond	251	214.9	0.128	0.002	332.0708	
30 minute winter	251	1.025	260	83.7	0.592	0.076	2.4743	
30 minute winter	260	Hydro-Brake®	261	55.6				438.7

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	100	9	125.085	0.285	46.5	0.7207	0.0000	SURCHARGED
15 minute summer	101	9	124.883	0.233	57.0	0.3561	0.0000	SURCHARGED
15 minute summer	102	9	124.610	0.160	69.3	0.2556	0.0000	OK
15 minute summer	103	10	123.569	0.219	91.0	0.3773	0.0000	OK
15 minute summer	104	9	122.604	0.179	112.2	0.3396	0.0000	OK
15 minute summer	120	9	124.092	0.092	13.8	0.1399	0.0000	OK
15 minute summer	121	9	123.964	0.114	21.3	0.1471	0.0000	OK
15 minute summer	130	9	124.697	0.047	8.3	0.0652	0.0000	OK
15 minute summer	131	9	124.303	0.053	12.4	0.0650	0.0000	OK
15 minute summer	122	9	123.894	0.194	48.1	0.2707	0.0000	OK
15 minute summer	123	10	123.754	0.154	49.5	0.1830	0.0000	OK
15 minute summer	124	10	123.484	0.534	87.9	1.2602	0.0000	SURCHARGED
15 minute summer	125	10	123.016	0.691	81.3	1.5250	0.0000	SURCHARGED
15 minute summer	126	10	122.913	0.688	142.1	2.4153	0.0000	SURCHARGED
15 minute summer	127	10	122.263	0.288	130.6	0.5085	0.0000	OK
15 minute summer	105	9	121.858	0.258	244.7	0.5564	0.0000	OK
15 minute summer	106	9	121.142	0.242	284.5	0.7088	0.0000	OK
15 minute winter	107	11	119.978	0.653	331.9	2.3178	0.0000	SURCHARGED
15 minute winter	108	11	119.810	0.710	331.2	1.3751	0.0000	SURCHARGED
15 minute summer	140	9	121.111	0.111	29.5	0.2213	0.0000	OK
15 minute summer	141	10	120.928	0.628	57.5	1.2343	0.0000	SURCHARGED
15 minute summer	150	10	121.366	0.716	62.5	2.0706	0.0000	SURCHARGED
15 minute summer	151	10	121.044	0.744	86.0	1.7284	0.0000	SURCHARGED
15 minute summer	142	10	120.812	0.737	148.4	2.0616	0.0000	SURCHARGED
15 minute summer	143	10	120.338	0.463	153.1	0.9969	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	100	1.000	101	43.7	1.099	1.062	0.9467	
15 minute summer	101	1.001	102	53.8	1.629	1.018	0.6769	
15 minute summer	102	1.002	103	70.7	2.022	0.853	1.5007	
15 minute summer	103	1.003	104	85.7	2.329	1.003	1.2416	
15 minute summer	104	1.004	105	110.1	2.684	0.569	0.9541	
15 minute summer	120	2.000	121	13.9	0.791	0.342	0.4284	
15 minute summer	121	2.001	122	21.0	0.725	0.518	0.6939	
15 minute summer	130	3.001	131	8.3	1.260	0.095	0.0947	
15 minute summer	131	3.002	122	12.4	0.613	0.123	0.3222	
15 minute summer	122	2.002	123	46.7	1.486	0.998	0.3812	
15 minute summer	123	2.003	124	47.0	1.335	0.675	1.2514	
15 minute summer	124	2.004	125	72.1	2.007	0.811	0.7535	
15 minute summer	125	2.005	126	84.2	1.196	0.788	0.7599	
15 minute summer	126	2.006	127	130.6	1.855	1.519	2.9053	
15 minute summer	127	2.007	105	130.7	2.040	0.973	1.3247	
15 minute summer	105	1.005	106	241.2	3.174	0.669	1.6957	
15 minute summer	106	1.006	107	277.8	3.203	0.711	3.6163	
15 minute winter	107	1.007	108	325.1	2.203	0.671	1.5931	
15 minute winter	108	1.008	109	326.0	2.355	0.701	1.5383	
15 minute summer	140	4.000	141	29.4	0.925	0.493	1.5725	
15 minute summer	141	4.001	142	43.9	1.224	0.729	0.4463	
15 minute summer	150	5.000	151	46.3	1.165	0.894	1.4017	
15 minute summer	151	5.001	142	75.1	1.887	0.949	0.2595	
15 minute summer	142	4.002	143	145.2	2.062	1.330	1.4596	
15 minute summer	143	4.003	144	154.6	2.195	1.122	0.9116	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	144	11	120.021	0.421	169.5	1.0538	0.0000	SURCHARGED
15 minute winter	145	11	119.772	0.672	175.6	1.4518	0.0000	SURCHARGED
15 minute winter	109	11	119.635	0.885	506.0	1.8345	0.0000	SURCHARGED
15 minute winter	110	11	119.313	0.862	570.9	2.9359	0.0000	SURCHARGED
15 minute summer	160	10	120.237	0.087	10.1	0.1258	0.0000	OK
15 minute summer	170	9	122.140	0.040	7.4	0.0544	0.0000	OK
15 minute summer	171	10	120.342	0.242	68.1	0.5777	0.0000	SURCHARGED
15 minute summer	161	10	120.239	0.389	74.5	0.4870	0.0000	SURCHARGED
15 minute summer	162	10	120.176	0.476	100.5	0.7682	0.0000	SURCHARGED
15 minute summer	163	10	119.996	0.496	121.2	0.8248	0.0000	SURCHARGED
15 minute summer	164	10	119.832	0.582	151.1	1.3554	0.0000	SURCHARGED
15 minute summer	180	9	121.869	0.069	11.0	0.0996	0.0000	OK
15 minute summer	181	9	121.541	0.141	42.7	0.2829	0.0000	OK
15 minute summer	182	9	120.784	0.084	46.9	0.1043	0.0000	OK
15 minute summer	190	9	120.082	0.082	12.4	0.1198	0.0000	OK
15 minute summer	191	10	120.020	0.220	32.6	0.3308	0.0000	OK
15 minute summer	183	10	119.986	0.361	95.6	0.5104	0.0000	SURCHARGED
15 minute summer	184	10	119.891	0.416	100.4	0.7876	0.0000	SURCHARGED
15 minute summer	165	10	119.702	0.652	253.2	1.6433	0.0000	SURCHARGED
15 minute winter	111	11	119.101	0.901	845.8	2.4396	0.0000	SURCHARGED
15 minute summer	112	10	118.484	0.884	888.4	2.4083	0.0000	SURCHARGED
15 minute summer	200	9	120.675	0.075	13.3	0.1146	0.0000	OK
15 minute summer	201	9	120.546	0.096	20.2	0.1281	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	144	4.004	145	164.4	1.862	0.660	3.5692	
15 minute winter	145	4.005	109	186.2	1.913	0.888	1.2562	
15 minute winter	109	1.009	110	490.4	1.849	0.945	14.8078	
15 minute winter	110	1.011	111	548.4	2.198	0.742	6.1149	
15 minute summer	160	6.000	161	10.0	0.624	0.243	0.9609	
15 minute summer	170	7.000	171	7.4	0.356	0.070	1.0700	
15 minute summer	171	7.001	161	57.7	1.980	0.701	0.2791	
15 minute summer	161	6.001	162	67.4	1.105	0.645	1.1933	
15 minute summer	162	6.002	163	93.6	1.339	1.008	2.0084	
15 minute summer	163	6.003	164	115.7	1.763	0.938	1.0016	
15 minute summer	164	6.004	165	121.7	1.402	0.705	2.9590	
15 minute summer	180	8.000	181	10.9	0.603	0.207	0.7014	
15 minute summer	181	8.001	182	42.3	2.131	0.613	0.7901	
15 minute summer	182	8.003	183	46.7	2.336	0.301	0.2940	
15 minute summer	190	9.000	191	12.4	0.570	0.287	0.7185	
15 minute summer	191	9.001	183	31.5	0.958	0.730	0.5750	
15 minute summer	183	8.004	184	92.6	1.387	0.980	1.4568	
15 minute summer	184	8.005	165	86.4	1.342	0.845	2.9011	
15 minute summer	165	6.005	111	245.4	2.258	1.004	4.6283	
15 minute winter	111	1.012	112	820.4	3.301	0.916	10.0142	
15 minute summer	112	1.013	113	804.7	3.464	0.509	4.3046	
15 minute summer	200	10.000	201	13.3	0.963	0.216	0.1485	
15 minute summer	201	10.001	202	20.2	0.958	0.345	0.3322	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	9	120.391	0.141	28.9	0.1956	0.0000	OK
15 minute summer	203	9	120.230	0.130	37.7	0.1742	0.0000	OK
15 minute summer	204	9	119.628	0.128	81.8	0.3187	0.0000	OK
15 minute summer	113	10	118.085	1.285	892.7	2.3945	0.0000	SURCHARGED
15 minute summer	114	10	117.716	1.341	860.9	2.5111	0.0000	SURCHARGED
15 minute winter	115	11	117.345	1.445	856.9	2.5530	0.0000	SURCHARGED
15 minute winter	116	11	116.902	1.777	872.3	3.7987	0.0000	SURCHARGED
15 minute summer	210	9	120.090	0.090	13.8	0.1393	0.0000	OK
15 minute summer	211	9	120.021	0.121	51.5	0.2440	0.0000	OK
15 minute summer	212	9	119.116	0.216	69.4	0.3612	0.0000	OK
15 minute summer	220	9	119.156	0.106	25.3	0.2010	0.0000	OK
15 minute summer	213	9	118.709	0.134	110.3	0.2183	0.0000	OK
15 minute summer	214	10	117.493	1.493	178.9	3.1976	0.0000	SURCHARGED
15 minute summer	230	10	116.892	0.442	5.6	0.5002	0.0000	SURCHARGED
15 minute winter	231	11	116.881	0.531	27.9	0.9021	0.0000	SURCHARGED
15 minute winter	215	11	116.868	1.442	147.5	1.9127	0.0000	SURCHARGED
15 minute winter	117	11	116.426	1.451	1027.6	2.9564	0.0000	SURCHARGED
15 minute winter	118	11	116.067	1.230	1028.1	0.0000	0.0000	OK
15 minute summer	270	1	123.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	271	9	123.238	0.088	17.9	0.1449	0.0000	OK
15 minute summer	272	9	122.896	0.146	39.8	0.2615	0.0000	OK
15 minute summer	290	9	123.295	0.045	3.7	0.0563	0.0000	OK
15 minute summer	291	9	123.233	0.083	12.4	0.1121	0.0000	OK
15 minute summer	292	9	123.024	0.074	17.4	0.0936	0.0000	OK
15 minute summer	273	9	122.687	0.212	84.7	0.4084	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	29.0	1.165	0.655	0.5138	
15 minute summer	203	10.003	204	36.7	1.610	0.597	1.0121	
15 minute summer	204	10.004	113	81.6	3.138	0.627	1.1850	
15 minute summer	113	1.014	114	856.8	3.410	0.561	2.4500	
15 minute summer	114	1.015	115	859.4	3.578	0.534	2.4661	
15 minute winter	115	1.016	116	859.0	3.050	0.516	3.7641	
15 minute winter	116	1.017	117	872.9	3.099	1.248	4.0942	
15 minute summer	210	11.000	211	13.8	0.757	0.310	0.2474	
15 minute summer	211	11.001	212	51.5	1.727	0.572	1.0233	
15 minute summer	212	11.002	213	67.6	1.883	0.958	0.4925	
15 minute summer	220	12.000	213	25.3	1.414	0.424	0.5457	
15 minute summer	213	11.003	214	109.4	1.871	0.414	2.3177	
15 minute summer	214	11.004	215	129.1	1.834	0.946	2.6912	
15 minute summer	230	13.000	231	8.2	0.322	0.175	0.4831	
15 minute winter	231	13.001	215	22.7	1.935	0.117	0.2455	
15 minute winter	215	11.005	117	145.2	2.062	1.805	1.3353	
15 minute winter	117	1.018	118	1028.1	3.650	1.384	2.4205	
15 minute winter	118	Flow through pond	119	948.2	0.277	0.006	369.5578	
15 minute summer	270	14.000	271	0.0	0.000	0.000	0.1770	
15 minute summer	271	14.001	272	17.7	0.851	0.329	0.7746	
15 minute summer	272	14.002	273	39.4	1.499	0.652	0.3904	
15 minute summer	290	15.000	291	3.7	0.394	0.090	0.1537	
15 minute summer	291	15.001	292	12.3	1.001	0.274	0.3277	
15 minute summer	292	15.002	273	17.2	1.177	0.235	0.3717	
15 minute summer	273	14.003	274	83.8	1.960	0.726	0.3938	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	274	9	122.514	0.139	85.6	0.1641	0.0000	OK
15 minute summer	275	10	121.516	0.391	111.7	0.7484	0.0000	SURCHARGED
15 minute summer	276	10	121.439	0.464	117.5	0.6515	0.0000	SURCHARGED
15 minute summer	277	10	121.334	0.659	121.3	0.8953	0.0000	SURCHARGED
15 minute summer	278	10	121.165	0.840	90.9	1.0606	0.0000	SURCHARGED
15 minute summer	279	10	120.823	1.048	95.2	1.2750	0.0000	SURCHARGED
15 minute summer	300	9	122.258	0.058	9.2	0.0819	0.0000	OK
15 minute summer	301	9	121.857	0.107	25.8	0.1742	0.0000	OK
15 minute summer	302	9	121.569	0.144	35.8	0.2074	0.0000	OK
15 minute summer	303	9	121.438	0.163	42.3	0.2180	0.0000	OK
15 minute summer	304	9	121.252	0.127	55.0	0.1950	0.0000	OK
15 minute summer	280	10	120.495	0.970	182.4	2.3228	0.0000	SURCHARGED
15 minute winter	281	10	119.850	0.450	200.4	0.6804	0.0000	OK
15 minute winter	282	10	117.710	0.260	218.7	0.2997	0.0000	OK
15 minute winter	283	10	115.719	0.883	219.2	0.0000	0.0000	OK
30 minute winter	119	23	115.431	0.731	810.0	0.0000	0.0000	SURCHARGED
30 minute winter	240	23	115.238	1.088	594.1	0.0000	0.0000	OK
30 minute winter	241	24	114.405	0.455	593.5	0.0000	0.0000	OK
30 minute winter	250	51	114.392	0.598	592.8	1.5206	0.0000	OK
30 minute winter	251	51	114.392	0.642	338.1	0.0000	0.0000	OK
30 minute winter	260	51	114.391	0.691	76.0	2.3947	0.0000	SURCHARGED
15 minute summer	261	1	112.645	0.000	56.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	274	14.004	275	84.6	1.832	0.443	2.1062	
15 minute summer	275	14.005	276	107.8	1.902	0.696	0.5460	
15 minute summer	276	14.006	277	113.0	1.958	0.609	0.7616	
15 minute summer	277	14.007	278	88.2	1.875	0.588	1.3578	
15 minute summer	278	14.008	279	94.1	1.565	0.755	3.0838	
15 minute summer	279	14.009	280	99.4	1.411	1.137	2.8314	
15 minute summer	300	16.000	301	9.2	0.697	0.148	0.4227	
15 minute summer	301	16.001	302	25.7	1.132	0.445	0.5969	
15 minute summer	302	16.002	303	35.4	1.226	0.598	0.3348	
15 minute summer	303	16.003	304	41.7	1.544	0.769	0.3716	
15 minute summer	304	16.004	280	50.9	1.440	0.539	1.4665	
15 minute summer	280	14.010	281	179.6	2.550	2.087	1.4637	
15 minute winter	281	Orifice	282	200.6				
15 minute winter	282	14.012	283	219.2	1.774	0.632	3.2632	
15 minute winter	283	Flow through pond	119	948.2	0.277	0.006	369.5578	
30 minute winter	119	1.021	240	594.1	2.109	1.249	7.3360	
30 minute winter	240	Flow through pond	241	593.5	0.819	0.012	34.4247	
30 minute winter	241	1.023	250	592.8	2.066	0.548	7.0675	
30 minute winter	250	Flow through pond	251	338.1	0.143	0.003	687.5436	
30 minute winter	251	1.025	260	76.0	0.591	0.069	4.7168	
30 minute winter	260	Hydro-Brake®	261	56.0				773.3

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	100	10	126.242	1.442	75.1	3.6511	0.8273	FLOOD
15 minute winter	101	10	126.031	1.381	75.7	2.1109	0.0000	FLOOD RISK
15 minute summer	102	10	125.707	1.257	94.2	2.0105	0.0000	FLOOD RISK
15 minute winter	103	10	124.627	1.277	109.6	2.2033	0.0000	FLOOD RISK
15 minute winter	104	10	123.305	0.880	137.6	1.6736	0.0000	SURCHARGED
15 minute winter	120	11	124.919	0.919	22.3	1.4041	0.0000	SURCHARGED
15 minute winter	121	11	124.905	1.055	33.7	1.3655	0.0000	SURCHARGED
15 minute winter	130	11	124.888	0.238	13.4	0.3280	0.0000	SURCHARGED
15 minute winter	131	11	124.882	0.632	29.9	0.7733	0.0000	SURCHARGED
15 minute winter	122	11	124.866	1.166	55.5	1.6266	0.0000	SURCHARGED
15 minute winter	123	11	124.739	1.139	51.6	1.3546	0.0000	SURCHARGED
15 minute summer	124	10	124.397	1.447	114.0	3.4164	1.4116	FLOOD
15 minute winter	125	9	123.824	1.499	102.5	3.3083	10.4121	FLOOD
15 minute summer	126	9	123.864	1.639	192.7	5.7533	0.0000	FLOOD RISK
15 minute winter	127	10	123.216	1.241	151.3	2.1933	0.0000	SURCHARGED
15 minute winter	105	10	122.883	1.283	300.9	2.7638	0.0000	SURCHARGED
15 minute winter	106	10	122.324	1.424	351.6	4.1662	0.0000	FLOOD RISK
15 minute winter	107	9	121.031	1.706	415.4	6.0546	21.7443	FLOOD
15 minute winter	108	9	120.859	1.759	356.0	3.4089	6.1782	FLOOD
15 minute winter	140	9	122.146	1.146	47.6	2.2924	0.0000	SURCHARGED
15 minute winter	141	9	121.762	1.462	82.1	2.8728	5.1489	FLOOD
15 minute summer	150	9	122.194	1.544	113.6	4.4668	4.4971	FLOOD
15 minute winter	151	9	121.759	1.459	121.6	3.3907	9.9467	FLOOD
15 minute winter	142	9	121.650	1.575	192.9	4.4037	4.6411	FLOOD
15 minute winter	143	9	121.374	1.499	176.0	3.2288	0.5084	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	100	1.000	101	54.1	1.361	1.316	0.9467	
15 minute winter	101	1.001	102	63.8	1.603	1.207	0.7698	
15 minute summer	102	1.002	103	78.1	2.000	0.943	1.7349	
15 minute winter	103	1.003	104	99.7	2.507	1.166	1.2597	
15 minute winter	104	1.004	105	133.6	2.732	0.690	1.6375	
15 minute winter	120	2.000	121	21.8	0.827	0.536	0.9664	
15 minute winter	121	2.001	122	22.7	0.736	0.560	0.9764	
15 minute winter	130	3.001	131	13.4	1.423	0.154	0.5708	
15 minute winter	131	3.002	122	19.2	0.649	0.191	0.5882	
15 minute winter	122	2.002	123	48.1	1.493	1.028	0.4887	
15 minute winter	123	2.003	124	52.3	1.426	0.751	1.4487	
15 minute summer	124	2.004	125	80.0	2.065	0.899	0.7535	
15 minute winter	125	2.005	126	90.0	1.279	0.842	0.7599	
15 minute summer	126	2.006	127	151.8	2.157	1.766	2.9251	
15 minute winter	127	2.007	105	143.5	2.053	1.069	1.4508	
15 minute winter	105	1.005	106	281.7	3.025	0.782	2.3944	
15 minute winter	106	1.006	107	325.4	3.121	0.833	4.3651	
15 minute winter	107	1.007	108	347.2	2.225	0.716	1.5931	
15 minute winter	108	1.008	109	339.7	2.329	0.731	1.5383	
15 minute winter	140	4.000	141	42.4	1.065	0.709	2.1132	
15 minute winter	141	4.001	142	45.7	1.207	0.759	0.4463	
15 minute summer	150	5.000	151	53.5	1.345	1.033	1.4017	
15 minute winter	151	5.001	142	91.6	2.304	1.159	0.2595	
15 minute winter	142	4.002	143	154.4	2.193	1.415	1.4596	
15 minute winter	143	4.003	144	141.8	2.039	1.030	0.9193	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	144	9	121.120	1.520	220.6	3.8100	0.0000	FLOOD RISK
15 minute winter	145	9	120.783	1.683	199.2	3.6336	13.6291	FLOOD
15 minute winter	109	9	120.719	1.969	527.0	4.0798	5.7841	FLOOD
15 minute winter	110	9	120.574	2.124	605.4	7.2308	0.0000	FLOOD RISK
15 minute winter	160	10	121.575	1.425	56.0	2.0520	8.2080	FLOOD
15 minute summer	170	9	122.154	0.054	13.4	0.0730	0.0000	OK
15 minute winter	171	11	122.096	1.995	109.8	4.7732	0.0000	FLOOD RISK
15 minute winter	161	10	121.890	2.040	86.9	2.5543	0.0000	SURCHARGED
15 minute winter	162	10	121.870	2.170	97.1	3.5037	0.0000	SURCHARGED
15 minute winter	163	10	121.729	2.229	128.4	3.7084	0.0000	FLOOD RISK
15 minute winter	164	10	121.553	2.303	167.3	5.3641	0.0000	SURCHARGED
15 minute winter	180	11	122.052	0.252	17.9	0.3640	0.0000	SURCHARGED
15 minute winter	181	11	122.071	0.671	69.1	1.3461	0.0000	SURCHARGED
15 minute winter	182	10	121.814	1.114	70.1	1.3798	0.0000	SURCHARGED
15 minute winter	190	10	121.621	1.621	40.3	2.3731	3.3769	FLOOD
15 minute winter	191	10	121.692	1.892	40.2	2.8422	0.0000	SURCHARGED
15 minute winter	183	10	121.720	2.095	105.8	2.9596	0.0000	SURCHARGED
15 minute winter	184	10	121.621	2.146	103.7	4.0618	0.0000	SURCHARGED
15 minute winter	165	10	121.372	2.321	292.7	5.8525	0.0000	FLOOD RISK
15 minute winter	111	10	120.405	2.205	873.5	5.9689	0.0000	SURCHARGED
15 minute winter	112	10	119.721	2.121	925.9	5.7780	0.0000	SURCHARGED
15 minute summer	200	10	120.894	0.294	24.3	0.4502	0.0000	SURCHARGED
15 minute summer	201	10	120.883	0.433	37.7	0.5783	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	144	4.004	145	175.9	1.864	0.706	3.5692	
15 minute winter	145	4.005	109	184.4	1.958	0.879	1.2562	
15 minute winter	109	1.009	110	492.9	1.826	0.949	14.8078	
15 minute winter	110	1.011	111	551.0	2.037	0.746	6.1149	
15 minute winter	160	6.000	161	-43.8	-1.101	-1.062	1.4153	
15 minute summer	170	7.000	171	13.4	0.473	0.127	1.1582	
15 minute winter	171	7.001	161	75.2	1.930	0.913	0.2791	
15 minute winter	161	6.001	162	74.6	1.215	0.714	1.1933	
15 minute winter	162	6.002	163	93.2	1.382	1.004	2.0084	
15 minute winter	163	6.003	164	122.2	1.748	0.991	1.0016	
15 minute winter	164	6.004	165	146.8	1.365	0.851	2.9590	
15 minute winter	180	8.000	181	17.9	0.657	0.337	1.5290	
15 minute winter	181	8.001	182	62.7	2.137	0.907	1.5819	
15 minute winter	182	8.003	183	60.3	2.339	0.388	0.4508	
15 minute winter	190	9.000	191	-20.2	0.584	-0.468	1.1522	
15 minute winter	191	9.001	183	34.4	1.191	0.798	0.5768	
15 minute winter	183	8.004	184	93.7	1.407	0.992	1.4568	
15 minute winter	184	8.005	165	95.9	1.362	0.937	2.9011	
15 minute winter	165	6.005	111	274.0	2.484	1.121	4.6283	
15 minute winter	111	1.012	112	830.2	3.207	0.927	10.0142	
15 minute winter	112	1.013	113	906.4	3.499	0.574	4.3046	
15 minute summer	200	10.000	201	25.2	1.065	0.410	0.4270	
15 minute summer	201	10.001	202	33.0	1.062	0.562	0.6259	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	10	120.862	0.612	48.8	0.8504	0.0000	SURCHARGED
15 minute summer	203	10	120.770	0.670	57.4	0.9013	0.0000	SURCHARGED
15 minute winter	204	10	120.543	1.043	126.8	2.5898	0.0000	SURCHARGED
15 minute winter	113	10	119.227	2.427	1003.6	4.5243	0.0000	SURCHARGED
15 minute winter	114	10	118.746	2.371	1000.7	4.4381	0.0000	SURCHARGED
15 minute winter	115	10	118.253	2.353	988.8	4.1580	0.0000	SURCHARGED
15 minute winter	116	10	117.666	2.541	1021.8	5.4325	0.0000	SURCHARGED
15 minute summer	210	10	120.739	0.739	25.1	1.1466	0.0000	SURCHARGED
15 minute summer	211	10	120.719	0.819	91.8	1.6493	0.0000	SURCHARGED
15 minute summer	212	10	120.205	1.305	107.5	2.1836	0.0000	FLOOD RISK
15 minute winter	220	10	119.886	0.836	40.9	1.5865	0.0000	SURCHARGED
15 minute summer	213	10	119.757	1.182	160.2	1.9247	0.0000	SURCHARGED
15 minute winter	214	9	118.987	2.987	243.7	6.3982	6.7111	FLOOD
15 minute winter	230	10	118.022	1.572	17.7	1.7774	0.0000	SURCHARGED
15 minute winter	231	10	118.022	1.672	40.9	2.8385	0.0000	FLOOD RISK
15 minute winter	215	10	117.977	2.552	216.8	3.3843	0.0000	FLOOD RISK
30 minute winter	117	20	117.049	2.074	1187.3	4.2270	0.0000	SURCHARGED
30 minute winter	118	21	116.599	1.762	1185.1	0.0000	0.0000	OK
15 minute summer	270	1	123.500	0.000	0.0	0.0000	0.0000	OK
15 minute summer	271	10	123.335	0.185	32.6	0.3046	0.0000	OK
15 minute winter	272	10	123.277	0.527	64.4	0.9460	0.0000	SURCHARGED
15 minute summer	290	9	123.311	0.061	6.7	0.0759	0.0000	OK
15 minute summer	291	9	123.268	0.118	22.6	0.1583	0.0000	OK
15 minute summer	292	10	123.240	0.290	31.8	0.3673	0.0000	SURCHARGED
15 minute summer	273	10	123.164	0.688	135.3	1.3253	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	41.5	1.219	0.938	0.8212	
15 minute summer	203	10.003	204	50.1	1.477	0.816	1.7116	
15 minute winter	204	10.004	113	90.1	3.045	0.692	1.4926	
15 minute winter	113	1.014	114	989.5	3.513	0.648	2.4500	
15 minute winter	114	1.015	115	988.8	3.627	0.615	2.4661	
15 minute winter	115	1.016	116	989.6	3.514	0.595	3.7641	
15 minute winter	116	1.017	117	1022.1	3.629	1.461	4.0942	
15 minute summer	210	11.000	211	23.3	0.742	0.522	0.5384	
15 minute summer	211	11.001	212	74.9	1.885	0.832	1.3349	
15 minute summer	212	11.002	213	89.2	2.242	1.264	0.5425	
15 minute winter	220	12.000	213	39.3	1.431	0.660	1.2142	
15 minute summer	213	11.003	214	137.0	2.076	0.518	3.2364	
15 minute winter	214	11.004	215	175.7	2.495	1.287	2.6912	
15 minute winter	230	13.000	231	-17.7	-0.445	-0.375	0.4831	
15 minute winter	231	13.001	215	33.7	2.091	0.173	0.2455	
15 minute winter	215	11.005	117	213.5	3.032	2.654	1.3353	
30 minute winter	117	1.018	118	1185.1	4.208	1.595	2.4205	
30 minute winter	118	Flow through pond	119	1102.9	0.270	0.007	693.1465	
15 minute summer	270	14.000	271	0.0	0.000	0.000	0.4297	
15 minute summer	271	14.001	272	28.8	0.901	0.535	1.3923	
15 minute winter	272	14.002	273	55.9	1.466	0.927	0.5912	
15 minute summer	290	15.000	291	6.7	0.456	0.164	0.2397	
15 minute summer	291	15.001	292	22.6	1.165	0.502	0.7408	
15 minute summer	292	15.002	273	29.4	1.060	0.402	0.8064	
15 minute summer	273	14.003	274	119.6	2.067	1.035	0.6519	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	274	10	123.042	0.667	122.9	0.7897	0.0000	SURCHARGED
15 minute winter	275	9	122.632	1.507	153.6	2.8844	1.9922	FLOOD
15 minute winter	276	9	122.487	1.512	128.2	2.1238	0.0000	FLOOD RISK
15 minute winter	277	9	122.253	1.578	138.3	2.1443	0.2763	FLOOD
15 minute winter	278	9	121.849	1.524	143.1	1.9233	10.3203	FLOOD
15 minute summer	279	9	121.572	1.797	116.4	2.1872	0.0000	SURCHARGED
15 minute summer	300	9	122.279	0.079	16.7	0.1115	0.0000	OK
15 minute summer	301	10	122.273	0.523	46.7	0.8538	0.0000	SURCHARGED
15 minute summer	302	10	122.177	0.752	57.5	1.0819	0.0000	SURCHARGED
15 minute summer	303	10	122.083	0.808	61.7	1.0815	0.0000	SURCHARGED
15 minute summer	304	10	121.925	0.800	77.9	1.2308	0.0000	SURCHARGED
15 minute summer	280	9	121.248	1.723	250.4	4.1261	0.0000	SURCHARGED
15 minute summer	281	9	120.106	0.705	294.6	1.0667	0.0000	OK
15 minute summer	282	9	117.809	0.359	338.9	0.4141	0.0000	OK
15 minute summer	283	9	115.849	1.012	336.1	0.0000	0.0000	OK
30 minute winter	119	28	115.832	1.132	1102.9	0.0000	0.0000	SURCHARGED
30 minute winter	240	28	115.453	1.302	833.1	0.0000	0.0000	OK
30 minute winter	241	63	114.749	0.799	832.2	0.0000	0.0000	OK
30 minute winter	250	62	114.749	0.955	831.6	2.4311	0.0000	OK
30 minute winter	251	62	114.749	0.999	477.2	0.0000	0.0000	SURCHARGED
30 minute winter	260	62	114.749	1.049	97.0	3.6339	0.0000	SURCHARGED
15 minute summer	261	1	112.645	0.000	56.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	274	14.004	275	115.3	1.841	0.605	3.0094	
15 minute winter	275	14.005	276	118.6	1.899	0.766	0.5460	
15 minute winter	276	14.006	277	127.1	1.991	0.685	0.7616	
15 minute winter	277	14.007	278	137.2	1.949	0.915	1.3578	
15 minute winter	278	14.008	279	115.8	1.645	0.929	3.0838	
15 minute summer	279	14.009	280	118.4	1.682	1.355	2.8314	
15 minute summer	300	16.000	301	16.7	0.780	0.269	0.8280	
15 minute summer	301	16.001	302	39.1	1.198	0.676	1.0454	
15 minute summer	302	16.002	303	49.2	1.266	0.833	0.4620	
15 minute summer	303	16.003	304	53.6	1.445	0.990	0.5496	
15 minute summer	304	16.004	280	65.9	1.657	0.699	1.8577	
15 minute summer	280	14.010	281	236.2	3.355	2.745	1.4637	
15 minute summer	281	Orifice	282	292.2				
15 minute summer	282	14.012	283	336.1	2.162	0.969	3.9623	
15 minute summer	283	Flow through pond	119	1114.9	0.327	0.007	543.7327	
30 minute winter	119	1.021	240	833.1	2.958	1.751	7.3360	
30 minute winter	240	Flow through pond	241	832.2	0.834	0.017	81.2727	
30 minute winter	241	1.023	250	831.6	2.237	0.768	11.3586	
30 minute winter	250	Flow through pond	251	477.2	0.152	0.004	1265.8030	
30 minute winter	251	1.025	260	97.0	0.642	0.088	5.4556	
30 minute winter	260	Hydro-Brake®	261	56.0				790.2

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Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	9.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
Time of Entry (mins)	2.00	Enforce best practice design rules	✓

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	100	101	23.804	0.600	124.800	124.650	0.150	158.7	225	2.38	50.0
1.001	101	102	19.357	0.600	124.650	124.450	0.200	96.8	225	2.63	50.0
1.002	102	103	43.621	0.600	124.450	123.350	1.100	39.7	225	2.98	50.0
1.003	103	104	31.674	0.600	123.350	122.500	0.850	37.3	225	3.22	50.0
1.004	104	105	23.254	0.600	122.425	121.725	0.700	33.2	300	3.36	50.0
2.000	120	121	24.299	0.600	124.000	123.850	0.150	162.0	225	2.40	50.0
2.001	121	122	24.551	0.600	123.850	123.700	0.150	163.7	225	2.80	50.0
3.001	130	131	14.351	0.600	124.650	124.250	0.400	35.9	225	2.11	50.0
3.002	131	122	14.789	0.600	124.250	123.700	0.550	26.9	225	2.21	50.0
2.002	122	123	12.287	0.600	123.700	123.600	0.100	122.9	225	2.97	50.0
2.003	123	124	36.425	0.600	123.600	122.950	0.650	56.0	225	3.32	50.0
2.004	124	125	18.945	0.600	122.950	122.400	0.550	34.4	225	3.46	50.0
2.005	125	126	10.791	0.600	122.325	122.225	0.100	107.9	300	3.58	50.0
2.006	126	127	41.538	0.600	122.225	121.975	0.250	166.2	300	4.15	50.0
2.007	127	105	20.603	0.600	121.975	121.675	0.300	68.7	300	4.33	50.0
1.005	105	106	21.709	0.600	121.600	120.900	0.700	31.0	375	4.44	50.0
1.006	106	107	39.576	0.600	120.900	119.400	1.500	26.4	375	4.62	50.0
1.007	107	108	10.055	0.600	119.325	119.100	0.225	44.7	450	4.68	50.0
1.008	108	109	9.709	0.600	119.100	118.900	0.200	48.5	450	4.74	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.035	41.2	13.7	1.217	1.231	0.101	0.0	89	0.933
1.001	1.329	52.8	17.6	1.231	1.227	0.130	0.0	89	1.198
1.002	2.083	82.8	22.2	1.227	1.254	0.164	0.0	80	1.775
1.003	2.149	85.5	28.2	1.254	1.204	0.208	0.0	89	1.938
1.004	2.737	193.5	36.0	1.204	1.229	0.266	0.0	87	2.108
2.000	1.024	40.7	4.1	1.285	1.743	0.030	0.0	48	0.659
2.001	1.019	40.5	6.2	1.743	2.195	0.046	0.0	59	0.741
3.001	2.191	87.1	2.4	1.233	1.723	0.018	0.0	26	0.972
3.002	2.533	100.7	3.7	1.723	2.195	0.027	0.0	29	1.219
2.002	1.178	46.8	14.2	2.195	1.842	0.105	0.0	85	1.036
2.003	1.750	69.6	15.0	1.842	1.222	0.111	0.0	71	1.403
2.004	2.236	88.9	27.1	1.222	1.199	0.200	0.0	85	1.967
2.005	1.513	106.9	31.6	1.199	1.421	0.233	0.0	112	1.323
2.006	1.217	86.0	51.9	1.421	1.725	0.383	0.0	168	1.272
2.007	1.899	134.3	51.9	1.725	1.279	0.383	0.0	129	1.781
1.005	3.263	360.4	92.3	1.279	1.247	0.681	0.0	129	2.745
1.006	3.539	390.9	105.0	1.247	1.256	0.775	0.0	132	3.019
1.007	3.047	484.6	125.6	1.256	1.309	0.927	0.0	155	2.573
1.008	2.923	464.9	127.7	1.309	1.369	0.942	0.0	160	2.509

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.000	140	141	53.133	0.600	121.000	120.300	0.700	75.9	225	2.59	50.0
4.001	141	142	11.222	0.600	120.300	120.150	0.150	74.8	225	2.71	50.0
5.000	150	151	35.244	0.600	120.650	120.300	0.350	100.7	225	2.45	50.0
5.001	151	142	6.525	0.600	120.300	120.150	0.150	43.5	225	2.51	50.0
4.002	142	143	20.727	0.600	120.075	119.875	0.200	103.6	300	2.94	50.0
4.003	143	144	13.054	0.600	119.875	119.675	0.200	65.3	300	3.05	50.0
4.004	144	145	32.360	0.600	119.600	119.100	0.500	64.7	375	3.29	50.0
4.005	145	109	11.389	0.600	119.100	118.975	0.125	91.1	375	3.39	50.0
1.009	109	110	52.570	0.600	118.750	118.450	0.300	175.2	600	5.21	50.0
1.011	110	111	21.709	0.600	118.450	118.200	0.250	86.8	600	5.35	50.0
6.000	160	161	35.587	0.600	120.150	119.925	0.225	158.2	225	2.57	50.0
7.000	170	171	49.206	0.600	122.100	120.100	2.000	24.6	225	2.31	50.0
7.001	171	161	7.018	0.600	120.100	119.925	0.175	40.1	225	2.37	50.0
6.001	161	162	16.945	0.600	119.850	119.700	0.150	113.0	300	2.76	50.0
6.002	162	163	28.520	0.600	119.700	119.500	0.200	142.6	300	3.12	50.0
6.003	163	164	14.224	0.600	119.500	119.325	0.175	81.3	300	3.26	50.0
6.004	164	165	26.828	0.600	119.250	119.050	0.200	134.1	375	3.55	50.0
8.000	180	181	38.446	0.600	121.800	121.400	0.400	96.1	225	2.48	50.0
8.001	181	182	39.775	0.600	121.400	120.700	0.700	56.8	225	2.86	50.0
8.003	182	183	11.335	0.600	120.700	119.700	1.000	11.3	225	2.91	50.0
9.000	190	191	28.971	0.600	120.000	119.800	0.200	144.9	225	2.45	50.0
9.001	191	183	14.502	0.600	119.800	119.700	0.100	145.0	225	2.67	50.0
8.004	183	184	20.687	0.600	119.625	119.475	0.150	137.9	300	3.17	50.0
8.005	184	165	41.198	0.600	119.475	119.125	0.350	117.7	300	3.64	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
4.000	1.502	59.7	8.7	1.248	1.237	0.064	0.0	58	1.076
4.001	1.513	60.2	16.9	1.237	1.275	0.125	0.0	81	1.303
5.000	1.303	51.8	18.4	1.319	1.234	0.136	0.0	93	1.196
5.001	1.988	79.1	30.2	1.234	1.275	0.223	0.0	96	1.858
4.002	1.544	109.1	58.1	1.275	1.199	0.429	0.0	156	1.567
4.003	1.949	137.7	62.1	1.199	1.222	0.458	0.0	141	1.899
4.004	2.255	249.0	70.1	1.222	1.308	0.517	0.0	136	1.949
4.005	1.898	209.7	74.5	1.308	1.369	0.550	0.0	154	1.743
1.009	1.836	519.2	206.3	1.369	1.807	1.522	0.0	262	1.735
1.011	2.614	739.1	233.0	1.807	2.315	1.719	0.0	231	2.329
6.000	1.037	41.2	3.0	1.200	2.187	0.022	0.0	41	0.607
7.000	2.648	105.3	2.2	1.228	1.868	0.016	0.0	22	1.072
7.001	2.072	82.4	20.1	1.868	2.187	0.148	0.0	75	1.714
6.001	1.478	104.5	25.1	2.187	2.672	0.185	0.0	100	1.223
6.002	1.314	92.9	34.8	2.672	1.950	0.257	0.0	127	1.222
6.003	1.745	123.3	43.0	1.950	2.368	0.317	0.0	122	1.594
6.004	1.562	172.6	53.4	2.368	2.226	0.394	0.0	142	1.382
8.000	1.334	53.0	3.3	1.302	1.353	0.024	0.0	37	0.740
8.001	1.738	69.1	12.6	1.353	1.625	0.093	0.0	65	1.327
8.003	3.908	155.4	14.0	1.625	2.397	0.103	0.0	45	2.444
9.000	1.084	43.1	3.7	1.396	2.146	0.027	0.0	44	0.667
9.001	1.083	43.1	9.6	2.146	2.397	0.071	0.0	72	0.873
8.004	1.337	94.5	28.7	2.397	2.396	0.212	0.0	113	1.178
8.005	1.448	102.3	31.0	2.396	2.226	0.229	0.0	113	1.273

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
6.005	165	111	41.962	0.600	119.050	118.425	0.625	67.1	375	3.96	50.0
1.012	111	112	35.552	0.600	118.200	117.600	0.600	59.3	600	5.54	50.0
1.013	112	113	15.282	0.600	117.600	116.800	0.800	19.1	600	5.58	50.0
10.000	200	201	10.736	0.600	120.600	120.450	0.150	71.6	225	2.12	50.0
10.001	201	202	15.737	0.600	120.450	120.250	0.200	78.7	225	2.29	50.0
10.002	202	203	20.647	0.600	120.250	120.100	0.150	137.6	225	2.60	50.0
10.003	203	204	43.037	0.600	120.100	119.500	0.600	71.7	225	3.07	50.0
10.004	204	113	37.530	0.600	119.500	117.175	2.325	16.1	225	3.26	50.0
1.014	113	114	8.698	0.600	116.800	116.375	0.425	20.5	600	5.61	50.0
1.015	114	115	8.755	0.600	116.375	115.900	0.475	18.4	600	5.64	50.0
1.016	115	116	13.363	0.600	115.900	115.125	0.775	17.2	600	5.67	50.0
1.017	116	117	14.535	0.600	115.125	114.975	0.150	96.9	600	5.77	50.0
11.000	210	211	13.537	0.600	120.000	119.900	0.100	135.4	225	2.20	50.0
11.001	211	212	33.564	0.600	119.900	118.900	1.000	33.6	225	2.45	50.0
11.002	212	213	13.641	0.600	118.900	118.650	0.250	54.6	225	2.58	50.0
12.000	220	213	30.530	0.600	119.050	118.650	0.400	76.3	225	2.34	50.0
11.003	213	214	45.959	0.600	118.575	116.000	2.575	17.8	300	2.78	50.0
11.004	214	215	38.217	0.600	116.000	115.425	0.575	66.5	300	3.11	50.0
13.000	230	231	12.148	0.600	116.450	116.350	0.100	121.5	225	2.17	50.0
13.001	231	215	6.172	0.600	116.350	115.500	0.850	7.3	225	2.19	50.0
11.005	215	117	18.962	0.600	115.425	115.325	0.100	189.6	300	3.39	50.0
1.018	117	118	8.593	0.600	114.975	114.875	0.100	85.9	600	5.83	50.0
14.000	270	271	24.562	0.600	123.500	123.150	0.350	70.2	225	2.26	50.0
14.001	271	272	37.247	0.600	123.150	122.750	0.400	93.1	225	2.72	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
6.005	2.214	244.5	97.7	2.226	2.315	0.721	0.0	164	2.093
1.012	3.167	895.5	349.2	2.315	2.095	2.577	0.0	260	2.981
1.013	5.588	1579.9	366.7	2.095	2.285	2.706	0.0	195	4.593
10.000	1.547	61.5	3.9	1.232	1.234	0.029	0.0	38	0.872
10.001	1.475	58.7	6.0	1.234	1.243	0.044	0.0	48	0.951
10.002	1.112	44.2	8.5	1.243	1.552	0.063	0.0	66	0.861
10.003	1.546	61.5	11.1	1.552	1.224	0.082	0.0	65	1.180
10.004	3.273	130.1	24.4	1.224	2.285	0.180	0.0	65	2.520
1.014	5.398	1526.3	393.0	2.285	2.261	2.900	0.0	207	4.562
1.015	5.689	1608.5	395.1	2.261	2.271	2.915	0.0	201	4.746
1.016	5.882	1663.2	395.1	2.271	2.368	2.915	0.0	198	4.864
1.017	2.474	699.4	402.5	2.368	2.275	2.970	0.0	327	2.555
11.000	1.122	44.6	4.1	1.202	1.632	0.030	0.0	46	0.706
11.001	2.266	90.1	15.2	1.632	1.215	0.112	0.0	62	1.692
11.002	1.774	70.5	20.5	1.215	1.226	0.151	0.0	83	1.544
12.000	1.498	59.6	7.5	1.211	1.226	0.055	0.0	53	1.026
11.003	3.738	264.3	33.1	1.226	2.687	0.244	0.0	71	2.580
11.004	1.931	136.5	53.5	2.687	2.370	0.395	0.0	130	1.818
13.000	1.185	47.1	0.0	1.925	1.715	0.000	0.0	0	0.000
13.001	4.886	194.3	7.5	1.715	2.370	0.055	0.0	29	2.357
11.005	1.138	80.4	64.5	2.370	2.225	0.476	0.0	204	1.261
1.018	2.628	743.0	472.3	2.275	1.447	3.485	0.0	348	2.776
14.000	1.563	62.1	0.0	1.239	1.294	0.000	0.0	0	0.000
14.001	1.355	53.9	5.3	1.294	1.221	0.039	0.0	47	0.864

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
14.002	272	273	14.864	0.600	122.750	122.550	0.200	74.3	225	2.88	50.0
15.000	290	291	16.128	0.600	123.250	123.150	0.100	161.3	225	2.26	50.0
15.001	291	292	26.559	0.600	123.150	122.950	0.200	132.8	225	2.65	50.0
15.002	292	273	20.275	0.600	122.950	122.550	0.400	50.7	225	2.84	50.0
14.003	273	274	9.257	0.600	122.475	122.375	0.100	92.6	300	2.98	50.0
14.004	274	275	42.736	0.600	122.375	121.125	1.250	34.2	300	3.24	50.0
14.005	275	276	7.754	0.600	121.125	120.975	0.150	51.7	300	3.30	50.0
14.006	276	277	10.815	0.600	120.975	120.675	0.300	36.1	300	3.37	50.0
14.007	277	278	19.282	0.600	120.675	120.325	0.350	55.1	300	3.52	50.0
14.008	278	279	43.792	0.600	120.325	119.775	0.550	79.6	300	3.93	50.0
14.009	279	280	40.208	0.600	119.775	119.525	0.250	160.8	300	4.48	50.0
16.000	300	301	31.702	0.600	122.200	121.750	0.450	70.4	225	2.34	50.0
16.001	301	302	26.285	0.600	121.750	121.425	0.325	80.9	225	2.64	50.0
16.002	302	303	11.616	0.600	121.425	121.275	0.150	77.4	225	2.77	50.0
16.003	303	304	13.818	0.600	121.275	121.125	0.150	92.1	225	2.94	50.0
16.004	304	280	46.711	0.600	121.125	119.600	1.525	30.6	225	3.27	50.0
14.010	280	281	20.785	0.600	119.525	119.400	0.125	166.0	300	4.76	50.0
14.011	281	282	40.733	0.030	119.400	117.450	1.950	20.9	1000	4.91	50.0
14.012	282	283	26.939	0.030	117.450	115.325	2.125	12.7	450	5.12	50.0
1.021	119	240	26.044	0.600	114.700	114.575	0.125	208.4	600	2.26	50.0
1.023	241	250	21.403	0.600	113.950	113.850	0.100	214.0	825	2.18	50.0
1.025	251	260	10.233	0.600	113.750	113.700	0.050	204.7	825	2.08	50.0
1.026	260	261	6.990	0.600	113.700	112.645	1.055	6.6	375	2.10	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
14.002	1.518	60.4	11.8	1.221	1.237	0.087	0.0	67	1.184
15.000	1.027	40.8	1.1	1.231	1.552	0.008	0.0	25	0.442
15.001	1.133	45.0	3.7	1.552	1.392	0.027	0.0	44	0.689
15.002	1.841	73.2	5.1	1.392	1.237	0.038	0.0	40	1.067
14.003	1.634	115.5	25.2	1.237	1.218	0.186	0.0	95	1.315
14.004	2.698	190.7	25.7	1.218	1.207	0.190	0.0	74	1.903
14.005	2.191	154.9	33.7	1.207	1.234	0.249	0.0	95	1.764
14.006	2.627	185.7	36.6	1.234	1.279	0.270	0.0	90	2.059
14.007	2.122	150.0	39.0	1.279	1.224	0.288	0.0	104	1.793
14.008	1.763	124.6	40.4	1.224	2.025	0.298	0.0	117	1.578
14.009	1.237	87.4	41.7	2.025	1.725	0.308	0.0	146	1.224
16.000	1.560	62.0	2.7	1.223	1.212	0.020	0.0	32	0.789
16.001	1.455	57.8	7.6	1.212	1.208	0.056	0.0	55	1.015
16.002	1.487	59.1	10.6	1.208	1.214	0.078	0.0	64	1.127
16.003	1.362	54.2	12.6	1.214	1.197	0.093	0.0	73	1.113
16.004	2.372	94.3	16.5	1.197	1.725	0.122	0.0	64	1.799
14.010	1.217	86.0	75.6	1.725	0.626	0.558	0.0	219	1.367
14.011	4.503	18016.3	85.1	-0.074	-0.028	0.628	0.0	134	1.181
14.012	2.182	347.0	92.7	0.522	1.111	0.684	0.0	159	1.846
1.021	1.683	475.8	0.0	1.206	1.530	0.000	0.0	0	0.000
1.023	2.025	1082.5	0.0	0.925	0.736	0.000	0.0	0	0.000
1.025	2.071	1107.2	0.0	0.825	0.875	0.000	0.0	0	0.000
1.026	7.076	781.5	0.0	1.325	2.023	0.000	0.0	0	0.000

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Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Normal	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

60	180	360	600	2160	7200
120	240	480	960	4320	10080

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node 260 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	113.700	Product Number	CTL-SHE-0304-5600-1400-5600
Design Depth (m)	1.400	Min Outlet Diameter (m)	0.375
Design Flow (l/s)	56.0	Min Node Diameter (mm)	2100

Node 240 Online Orifice Control

Flap Valve	x	Invert Level (m)	114.575	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.750		

Node 118 Online Orifice Control

Flap Valve	x	Invert Level (m)	114.925	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.750		

Node 283 Online Orifice Control

Flap Valve	x	Invert Level (m)	115.325	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.600		

Node 281 Online Orifice Control

Flap Valve	x	Invert Level (m)	119.400	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.450		

Node 251 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	22.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	113.750	Main Channel Slope (1:X)	500.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.030

Inlets

250

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	878.0	0.0	0.800	1712.0	0.0	1.550	2844.0	0.0
0.750	1437.0	0.0	1.500	2392.0	0.0			

Node 241 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	47.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	113.950	Main Channel Slope (1:X)	234.0
Safety Factor	2.0	Time to half empty (mins)	92	Main Channel n	0.030

Inlets

240

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.0	0.0	1.050	351.0	0.0	1.650	614.0	0.0
0.050	12.0	0.0	1.450	523.0	0.0			

Node 119 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	26.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	114.700	Main Channel Slope (1:X)	190.0
Safety Factor	2.0	Time to half empty (mins)	9	Main Channel n	0.030

Inlets

283 | 118

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	427.0	0.0	0.500	632.0	0.0	1.000	861.0	0.0	1.500	1115.0	0.0
0.250	526.0	0.0	0.750	743.0	0.0	1.250	985.0	0.0			

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	31	124.878	0.078	10.3	0.1973	0.0000	OK
60 minute summer	101	32	124.729	0.079	13.1	0.1212	0.0000	OK
60 minute summer	102	32	124.517	0.067	16.2	0.1076	0.0000	OK
60 minute summer	103	32	123.427	0.077	20.5	0.1327	0.0000	OK
60 minute summer	104	32	122.502	0.077	26.0	0.1460	0.0000	OK
60 minute summer	120	31	124.041	0.041	3.1	0.0629	0.0000	OK
60 minute summer	121	32	123.900	0.050	4.6	0.0652	0.0000	OK
60 minute summer	130	31	124.672	0.022	1.8	0.0307	0.0000	OK
60 minute summer	131	31	124.275	0.025	2.7	0.0308	0.0000	OK
60 minute summer	122	32	123.776	0.076	10.3	0.1053	0.0000	OK
60 minute summer	123	32	123.660	0.060	10.9	0.0711	0.0000	OK
60 minute summer	124	32	123.024	0.074	19.4	0.1755	0.0000	OK
60 minute summer	125	32	122.428	0.103	22.5	0.2266	0.0000	OK
60 minute summer	126	32	122.368	0.143	36.9	0.5019	0.0000	OK
60 minute summer	127	32	122.089	0.114	37.1	0.2007	0.0000	OK
60 minute summer	105	32	121.714	0.113	65.8	0.2445	0.0000	OK
60 minute summer	106	32	121.014	0.114	74.7	0.3331	0.0000	OK
60 minute summer	107	32	119.473	0.148	88.5	0.5264	0.0000	OK
60 minute summer	108	32	119.254	0.154	89.7	0.2984	0.0000	OK
60 minute summer	140	31	121.049	0.049	6.5	0.0982	0.0000	OK
60 minute summer	141	32	120.373	0.073	12.5	0.1433	0.0000	OK
60 minute summer	150	31	120.729	0.079	13.9	0.2279	0.0000	OK
60 minute summer	151	31	120.392	0.092	22.5	0.2132	0.0000	OK
60 minute summer	142	32	120.213	0.138	42.2	0.3848	0.0000	OK
60 minute summer	143	32	120.005	0.130	45.2	0.2804	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	10.1	0.816	0.244	0.2934	
60 minute summer	101	1.001	102	12.9	1.154	0.245	0.2171	
60 minute summer	102	1.002	103	16.3	1.486	0.196	0.4780	
60 minute summer	103	1.003	104	20.5	1.747	0.240	0.3715	
60 minute summer	104	1.004	105	26.0	1.882	0.134	0.3211	
60 minute summer	120	2.000	121	3.0	0.528	0.074	0.1400	
60 minute summer	121	2.001	122	4.5	0.499	0.112	0.2246	
60 minute summer	130	3.001	131	1.8	0.802	0.020	0.0318	
60 minute summer	131	3.002	122	2.6	0.408	0.026	0.1042	
60 minute summer	122	2.002	123	10.3	1.025	0.219	0.1235	
60 minute summer	123	2.003	124	10.9	1.096	0.156	0.3617	
60 minute summer	124	2.004	125	19.4	1.751	0.218	0.2100	
60 minute summer	125	2.005	126	22.5	0.831	0.211	0.2936	
60 minute summer	126	2.006	127	37.1	1.292	0.432	1.1950	
60 minute summer	127	2.007	105	36.8	1.574	0.274	0.4816	
60 minute summer	105	1.005	106	65.7	2.333	0.182	0.6112	
60 minute summer	106	1.006	107	74.0	2.699	0.189	1.0856	
60 minute summer	107	1.007	108	88.3	1.892	0.182	0.4695	
60 minute summer	108	1.008	109	89.4	2.070	0.192	0.4198	
60 minute summer	140	4.000	141	6.3	0.730	0.105	0.4641	
60 minute summer	141	4.001	142	12.3	1.149	0.204	0.1197	
60 minute summer	150	5.000	151	13.6	0.987	0.263	0.4858	
60 minute summer	151	5.001	142	22.0	1.578	0.279	0.0912	
60 minute summer	142	4.002	143	42.4	1.394	0.388	0.6303	
60 minute summer	143	4.003	144	45.5	1.659	0.330	0.3582	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	144	32	119.716	0.116	51.1	0.2900	0.0000	OK
60 minute summer	145	32	119.244	0.144	54.4	0.3113	0.0000	OK
60 minute summer	109	32	118.976	0.226	146.4	0.4678	0.0000	OK
60 minute summer	110	33	118.662	0.212	164.2	0.7205	0.0000	OK
60 minute summer	160	32	120.185	0.035	2.2	0.0501	0.0000	OK
60 minute summer	170	31	122.119	0.019	1.6	0.0258	0.0000	OK
60 minute summer	171	31	120.170	0.070	15.0	0.1685	0.0000	OK
60 minute summer	161	31	119.938	0.088	18.2	0.1105	0.0000	OK
60 minute summer	162	32	119.810	0.110	25.2	0.1782	0.0000	OK
60 minute summer	163	32	119.611	0.110	31.1	0.1838	0.0000	OK
60 minute summer	164	32	119.375	0.125	38.5	0.2918	0.0000	OK
60 minute summer	180	31	121.832	0.032	2.4	0.0463	0.0000	OK
60 minute summer	181	32	121.459	0.059	9.3	0.1180	0.0000	OK
60 minute summer	182	32	120.740	0.040	10.1	0.0500	0.0000	OK
60 minute summer	190	31	120.038	0.038	2.8	0.0556	0.0000	OK
60 minute summer	191	32	119.864	0.064	7.2	0.0954	0.0000	OK
60 minute summer	183	32	119.725	0.100	20.8	0.1409	0.0000	OK
60 minute summer	184	32	119.572	0.097	22.5	0.1833	0.0000	OK
60 minute summer	165	32	119.191	0.141	70.1	0.3564	0.0000	OK
60 minute summer	111	33	118.434	0.234	244.1	0.6328	0.0000	OK
60 minute summer	112	33	117.779	0.179	256.5	0.4872	0.0000	OK
60 minute summer	200	31	120.634	0.033	3.0	0.0512	0.0000	OK
60 minute summer	201	31	120.491	0.041	4.5	0.0553	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	144	4.004	145	51.3	1.514	0.206	1.0980	
60 minute summer	145	4.005	109	54.2	1.500	0.258	0.4115	
60 minute summer	109	1.009	110	145.7	1.581	0.281	4.8757	
60 minute summer	110	1.011	111	164.2	1.726	0.222	2.0657	
60 minute summer	160	6.000	161	2.1	0.549	0.051	0.1371	
60 minute summer	170	7.000	171	1.5	0.278	0.015	0.3004	
60 minute summer	171	7.001	161	14.6	1.474	0.178	0.0697	
60 minute summer	161	6.001	162	18.1	0.893	0.174	0.3449	
60 minute summer	162	6.002	163	25.4	1.080	0.273	0.6705	
60 minute summer	163	6.003	164	31.2	1.400	0.253	0.3173	
60 minute summer	164	6.004	165	38.6	1.101	0.224	0.9416	
60 minute summer	180	8.000	181	2.3	0.409	0.044	0.2248	
60 minute summer	181	8.001	182	9.1	1.408	0.132	0.2598	
60 minute summer	182	8.003	183	10.1	2.165	0.065	0.0532	
60 minute summer	190	9.000	191	2.7	0.406	0.063	0.1964	
60 minute summer	191	9.001	183	7.0	0.786	0.163	0.1295	
60 minute summer	183	8.004	184	20.9	1.044	0.221	0.4148	
60 minute summer	184	8.005	165	22.1	1.153	0.216	0.7923	
60 minute summer	165	6.005	111	69.3	1.888	0.283	1.5433	
60 minute summer	111	1.012	112	245.8	2.868	0.274	3.0558	
60 minute summer	112	1.013	113	257.4	3.239	0.163	1.2157	
60 minute summer	200	10.000	201	3.0	0.684	0.048	0.0465	
60 minute summer	201	10.001	202	4.4	0.673	0.074	0.1031	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	32	120.308	0.058	6.3	0.0811	0.0000	OK
60 minute summer	203	32	120.155	0.055	8.0	0.0742	0.0000	OK
60 minute summer	204	32	119.557	0.056	17.6	0.1403	0.0000	OK
60 minute summer	113	33	117.012	0.212	275.0	0.3944	0.0000	OK
60 minute summer	114	33	116.583	0.208	276.7	0.3899	0.0000	OK
60 minute summer	115	33	116.078	0.178	277.0	0.3137	0.0000	OK
60 minute summer	116	33	115.483	0.358	281.9	0.7649	0.0000	OK
60 minute summer	210	31	120.040	0.040	3.1	0.0614	0.0000	OK
60 minute summer	211	31	119.954	0.053	11.4	0.1077	0.0000	OK
60 minute summer	212	32	118.974	0.074	15.2	0.1237	0.0000	OK
60 minute summer	220	31	119.096	0.046	5.6	0.0878	0.0000	OK
60 minute summer	213	32	118.636	0.061	24.0	0.0990	0.0000	OK
60 minute summer	214	32	116.109	0.108	39.1	0.2323	0.0000	OK
60 minute summer	230	1	116.450	0.000	0.0	0.0000	0.0000	OK
60 minute summer	231	31	116.376	0.026	5.6	0.0444	0.0000	OK
60 minute summer	215	32	115.600	0.175	46.6	0.2324	0.0000	OK
60 minute summer	117	33	115.404	0.429	330.4	0.8741	0.0000	OK
60 minute summer	118	33	115.377	0.540	330.3	0.0000	0.0000	OK
60 minute summer	270	1	123.500	0.000	0.0	0.0000	0.0000	OK
60 minute summer	271	32	123.190	0.040	4.0	0.0663	0.0000	OK
60 minute summer	272	32	122.809	0.059	8.7	0.1063	0.0000	OK
60 minute summer	290	32	123.272	0.022	0.8	0.0270	0.0000	OK
60 minute summer	291	32	123.188	0.038	2.7	0.0505	0.0000	OK
60 minute summer	292	32	122.985	0.035	3.7	0.0440	0.0000	OK
60 minute summer	273	32	122.562	0.087	18.0	0.1674	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	6.2	0.794	0.141	0.1619	
60 minute summer	203	10.003	204	8.0	1.049	0.131	0.3295	
60 minute summer	204	10.004	113	17.5	2.271	0.134	0.2887	
60 minute summer	113	1.014	114	275.5	3.138	0.180	0.7636	
60 minute summer	114	1.015	115	277.0	3.545	0.172	0.6850	
60 minute summer	115	1.016	116	277.4	2.287	0.167	1.6361	
60 minute summer	116	1.017	117	282.2	1.442	0.403	2.8400	
60 minute summer	210	11.000	211	3.0	0.514	0.068	0.0805	
60 minute summer	211	11.001	212	11.2	1.218	0.125	0.3109	
60 minute summer	212	11.002	213	14.9	1.368	0.212	0.1490	
60 minute summer	220	12.000	213	5.4	0.931	0.090	0.1767	
60 minute summer	213	11.003	214	24.1	1.478	0.091	0.7616	
60 minute summer	214	11.004	215	38.9	1.196	0.285	1.2552	
60 minute summer	230	13.000	231	0.0	0.000	0.000	0.0155	
60 minute summer	231	13.001	215	5.6	1.548	0.029	0.0603	
60 minute summer	215	11.005	117	46.6	1.144	0.579	0.7717	
60 minute summer	117	1.018	118	330.3	1.408	0.445	2.0087	
60 minute summer	118	Flow through pond	119	305.1	0.153	0.002	126.7538	
60 minute summer	270	14.000	271	0.0	0.000	0.000	0.0591	
60 minute summer	271	14.001	272	3.8	0.589	0.071	0.2446	
60 minute summer	272	14.002	273	8.5	1.056	0.142	0.1204	
60 minute summer	290	15.000	291	0.8	0.260	0.020	0.0508	
60 minute summer	291	15.001	292	2.6	0.643	0.059	0.1091	
60 minute summer	292	15.002	273	3.7	0.959	0.050	0.0775	
60 minute summer	273	14.003	274	18.1	1.320	0.157	0.1277	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	274	32	122.438	0.063	18.5	0.0743	0.0000	OK
60 minute summer	275	32	121.214	0.089	24.2	0.1697	0.0000	OK
60 minute summer	276	32	121.055	0.080	26.2	0.1126	0.0000	OK
60 minute summer	277	32	120.766	0.091	28.0	0.1232	0.0000	OK
60 minute summer	278	32	120.422	0.097	29.0	0.1229	0.0000	OK
60 minute summer	279	33	119.893	0.118	29.8	0.1442	0.0000	OK
60 minute summer	300	31	122.227	0.027	2.0	0.0385	0.0000	OK
60 minute summer	301	32	121.796	0.046	5.7	0.0758	0.0000	OK
60 minute summer	302	32	121.481	0.056	7.6	0.0805	0.0000	OK
60 minute summer	303	32	121.341	0.066	9.0	0.0880	0.0000	OK
60 minute summer	304	32	121.179	0.054	11.9	0.0828	0.0000	OK
60 minute summer	280	33	119.704	0.179	52.8	0.4278	0.0000	OK
60 minute summer	281	33	119.597	0.197	58.0	0.2983	0.0000	OK
60 minute summer	282	33	117.580	0.130	62.8	0.1500	0.0000	OK
60 minute summer	283	33	115.497	0.660	63.0	0.0000	0.0000	OK
60 minute summer	119	37	115.031	0.331	305.1	0.0000	0.0000	OK
60 minute summer	240	37	114.954	0.803	258.6	0.0000	0.0000	OK
60 minute summer	241	38	114.233	0.283	258.6	0.0000	0.0000	OK
180 minute winter	250	144	114.133	0.339	155.6	0.8618	0.0000	OK
180 minute winter	251	140	114.132	0.382	133.0	0.0000	0.0000	OK
180 minute winter	260	128	114.175	0.474	105.0	1.6435	0.0000	SURCHARGED
60 minute summer	261	1	112.645	0.000	54.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	274	14.004	275	18.6	1.332	0.097	0.5995	
60 minute summer	275	14.005	276	24.2	1.494	0.157	0.1259	
60 minute summer	276	14.006	277	26.3	1.592	0.141	0.1786	
60 minute summer	277	14.007	278	28.0	1.483	0.186	0.3639	
60 minute summer	278	14.008	279	28.8	1.275	0.231	0.9916	
60 minute summer	279	14.009	280	29.4	0.846	0.336	1.3987	
60 minute summer	300	16.000	301	2.0	0.462	0.031	0.1366	
60 minute summer	301	16.001	302	5.5	0.809	0.094	0.1785	
60 minute summer	302	16.002	303	7.6	0.883	0.129	0.1006	
60 minute summer	303	16.003	304	9.1	1.078	0.168	0.1167	
60 minute summer	304	16.004	280	11.9	1.317	0.126	0.5797	
60 minute summer	280	14.010	281	52.2	1.125	0.607	0.9650	
60 minute summer	281	Orifice	282	58.2				
60 minute summer	282	14.012	283	63.0	1.352	0.182	1.2597	
60 minute summer	283	Flow through pond	119	305.1	0.153	0.002	126.7538	
60 minute summer	119	1.021	240	258.6	1.491	0.543	4.5155	
60 minute summer	240	Flow through pond	241	258.6	0.736	0.005	17.0584	
60 minute summer	241	1.023	250	257.6	1.666	0.238	3.3149	
180 minute winter	250	Flow through pond	251	133.0	0.056	0.001	365.5175	
180 minute winter	251	1.025	260	105.0	0.487	0.095	2.7888	
180 minute winter	260	Hydro-Brake®	261	55.9				697.6

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	31	124.939	0.139	26.8	0.3509	0.0000	OK
60 minute summer	101	31	124.789	0.139	33.9	0.2131	0.0000	OK
60 minute summer	102	32	124.563	0.113	42.3	0.1810	0.0000	OK
60 minute summer	103	32	123.486	0.136	53.3	0.2344	0.0000	OK
60 minute summer	104	32	122.556	0.131	68.1	0.2491	0.0000	OK
60 minute summer	120	31	124.067	0.067	8.0	0.1023	0.0000	OK
60 minute summer	121	32	123.932	0.082	12.0	0.1067	0.0000	OK
60 minute summer	130	31	124.686	0.036	4.8	0.0492	0.0000	OK
60 minute summer	131	31	124.290	0.040	7.2	0.0493	0.0000	OK
60 minute summer	122	32	123.830	0.130	27.2	0.1819	0.0000	OK
60 minute summer	123	32	123.700	0.100	28.5	0.1186	0.0000	OK
60 minute summer	124	31	123.079	0.129	51.0	0.3053	0.0000	OK
60 minute summer	125	33	122.567	0.242	59.8	0.5345	0.0000	OK
60 minute summer	126	32	122.536	0.311	96.6	1.0907	0.0000	SURCHARGED
60 minute summer	127	33	122.177	0.202	91.7	0.3565	0.0000	OK
60 minute summer	105	32	121.798	0.198	168.0	0.4255	0.0000	OK
60 minute summer	106	32	121.093	0.193	191.6	0.5638	0.0000	OK
60 minute summer	107	32	119.605	0.280	229.9	0.9924	0.0000	OK
60 minute summer	108	32	119.387	0.287	234.1	0.5554	0.0000	OK
60 minute summer	140	31	121.081	0.081	17.0	0.1613	0.0000	OK
60 minute summer	141	31	120.431	0.131	32.8	0.2569	0.0000	OK
60 minute summer	150	31	120.789	0.139	36.1	0.4030	0.0000	OK
60 minute summer	151	32	120.496	0.196	58.8	0.4564	0.0000	OK
60 minute summer	142	32	120.386	0.311	110.2	0.8702	0.0000	SURCHARGED
60 minute summer	143	32	120.124	0.249	116.0	0.5368	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	26.3	1.020	0.638	0.6128	
60 minute summer	101	1.001	102	33.4	1.464	0.633	0.4427	
60 minute summer	102	1.002	103	42.3	1.879	0.511	0.9822	
60 minute summer	103	1.003	104	53.7	2.217	0.628	0.7671	
60 minute summer	104	1.004	105	68.3	2.421	0.353	0.6560	
60 minute summer	120	2.000	121	7.8	0.684	0.192	0.2784	
60 minute summer	121	2.001	122	11.8	0.639	0.291	0.4543	
60 minute summer	130	3.001	131	4.8	1.076	0.055	0.0634	
60 minute summer	131	3.002	122	7.1	0.516	0.070	0.2110	
60 minute summer	122	2.002	123	27.0	1.321	0.576	0.2508	
60 minute summer	123	2.003	124	28.6	1.433	0.411	0.7325	
60 minute summer	124	2.004	125	51.6	2.137	0.580	0.5181	
60 minute summer	125	2.005	126	56.8	0.941	0.531	0.7087	
60 minute summer	126	2.006	127	91.7	1.554	1.066	2.5089	
60 minute summer	127	2.007	105	92.3	1.949	0.687	0.9749	
60 minute summer	105	1.005	106	168.3	2.906	0.467	1.2575	
60 minute summer	106	1.006	107	192.2	3.292	0.492	2.3446	
60 minute summer	107	1.007	108	230.4	2.194	0.475	1.0559	
60 minute summer	108	1.008	109	234.2	2.460	0.504	0.9883	
60 minute summer	140	4.000	141	16.6	0.908	0.278	0.9748	
60 minute summer	141	4.001	142	32.1	1.180	0.534	0.3571	
60 minute summer	150	5.000	151	35.8	1.152	0.690	1.0827	
60 minute summer	151	5.001	142	56.6	1.712	0.717	0.2498	
60 minute summer	142	4.002	143	108.8	1.640	0.997	1.3781	
60 minute summer	143	4.003	144	115.9	2.013	0.841	0.7481	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	144	32	119.803	0.203	130.5	0.5084	0.0000	OK
60 minute summer	145	32	119.359	0.259	138.6	0.5598	0.0000	OK
60 minute summer	109	32	119.165	0.415	380.2	0.8598	0.0000	OK
60 minute summer	110	32	118.857	0.407	429.0	1.3841	0.0000	OK
60 minute summer	160	31	120.206	0.056	5.8	0.0806	0.0000	OK
60 minute summer	170	31	122.130	0.030	4.2	0.0410	0.0000	OK
60 minute summer	171	31	120.226	0.126	39.1	0.3007	0.0000	OK
60 minute summer	161	32	120.008	0.158	47.9	0.1972	0.0000	OK
60 minute summer	162	32	119.901	0.201	66.1	0.3239	0.0000	OK
60 minute summer	163	32	119.701	0.201	81.2	0.3346	0.0000	OK
60 minute summer	164	32	119.478	0.228	100.8	0.5315	0.0000	OK
60 minute summer	180	31	121.852	0.052	6.4	0.0747	0.0000	OK
60 minute summer	181	31	121.499	0.099	24.5	0.1992	0.0000	OK
60 minute summer	182	32	120.763	0.063	26.5	0.0774	0.0000	OK
60 minute summer	190	31	120.061	0.061	7.2	0.0894	0.0000	OK
60 minute summer	191	31	119.908	0.108	18.7	0.1626	0.0000	OK
60 minute summer	183	32	119.801	0.176	54.3	0.2489	0.0000	OK
60 minute summer	184	32	119.645	0.170	58.8	0.3211	0.0000	OK
60 minute summer	165	32	119.311	0.261	184.7	0.6585	0.0000	OK
60 minute summer	111	32	118.631	0.431	643.4	1.1672	0.0000	OK
60 minute summer	112	32	117.934	0.334	672.0	0.9093	0.0000	OK
60 minute summer	200	31	120.655	0.055	7.7	0.0840	0.0000	OK
60 minute summer	201	31	120.518	0.068	11.6	0.0912	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	144	4.004	145	130.4	1.830	0.523	2.2993	
60 minute summer	145	4.005	109	138.6	1.871	0.661	0.8426	
60 minute summer	109	1.009	110	380.2	1.860	0.732	10.8089	
60 minute summer	110	1.011	111	425.5	2.051	0.576	4.5596	
60 minute summer	160	6.000	161	5.7	0.637	0.137	0.3711	
60 minute summer	170	7.000	171	4.1	0.339	0.039	0.6394	
60 minute summer	171	7.001	161	38.2	1.846	0.464	0.1453	
60 minute summer	161	6.001	162	47.6	1.085	0.455	0.7414	
60 minute summer	162	6.002	163	66.3	1.322	0.713	1.4293	
60 minute summer	163	6.003	164	81.7	1.752	0.662	0.6626	
60 minute summer	164	6.004	165	101.1	1.328	0.586	2.0408	
60 minute summer	180	8.000	181	6.2	0.532	0.117	0.4568	
60 minute summer	181	8.001	182	23.8	1.861	0.344	0.5135	
60 minute summer	182	8.003	183	26.4	2.359	0.170	0.1489	
60 minute summer	190	9.000	191	7.0	0.515	0.163	0.3994	
60 minute summer	191	9.001	183	18.2	1.008	0.422	0.2616	
60 minute summer	183	8.004	184	54.6	1.299	0.578	0.8696	
60 minute summer	184	8.005	165	59.3	1.369	0.579	1.7922	
60 minute summer	165	6.005	111	183.9	2.363	0.752	3.2690	
60 minute summer	111	1.012	112	640.0	3.397	0.715	6.7162	
60 minute summer	112	1.013	113	668.7	3.591	0.423	2.9681	
60 minute summer	200	10.000	201	7.6	0.867	0.124	0.0946	
60 minute summer	201	10.001	202	11.4	0.858	0.195	0.2107	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	31	120.348	0.098	16.4	0.1366	0.0000	OK
60 minute summer	203	32	120.192	0.092	21.1	0.1238	0.0000	OK
60 minute summer	204	32	119.595	0.095	46.5	0.2357	0.0000	OK
60 minute summer	113	33	117.253	0.453	718.1	0.8444	0.0000	OK
60 minute summer	114	33	116.934	0.559	717.2	1.0473	0.0000	OK
60 minute summer	115	33	116.698	0.798	716.4	1.4106	0.0000	SURCHARGED
60 minute summer	116	33	116.390	1.264	728.1	2.7034	0.0000	SURCHARGED
60 minute summer	210	31	120.065	0.065	8.0	0.1009	0.0000	OK
60 minute summer	211	31	119.988	0.088	29.7	0.1767	0.0000	OK
60 minute summer	212	31	119.031	0.131	39.6	0.2195	0.0000	OK
60 minute summer	220	31	119.127	0.077	14.6	0.1456	0.0000	OK
60 minute summer	213	31	118.674	0.099	63.0	0.1605	0.0000	OK
60 minute summer	214	33	116.600	0.600	102.5	1.2853	0.0000	SURCHARGED
60 minute summer	230	1	116.450	0.000	0.0	0.0000	0.0000	OK
60 minute summer	231	31	116.392	0.042	14.6	0.0705	0.0000	OK
60 minute summer	215	33	116.300	0.875	107.1	1.1603	0.0000	SURCHARGED
60 minute summer	117	33	116.058	1.083	843.2	2.2065	0.0000	SURCHARGED
60 minute summer	118	33	115.815	0.978	843.2	0.0000	0.0000	OK
60 minute summer	270	1	123.500	0.000	0.0	0.0000	0.0000	OK
60 minute summer	271	31	123.216	0.066	10.4	0.1077	0.0000	OK
60 minute summer	272	31	122.851	0.101	22.8	0.1808	0.0000	OK
60 minute summer	290	31	123.284	0.034	2.1	0.0424	0.0000	OK
60 minute summer	291	31	123.211	0.061	7.1	0.0823	0.0000	OK
60 minute summer	292	32	123.005	0.055	9.8	0.0697	0.0000	OK
60 minute summer	273	31	122.624	0.149	47.8	0.2868	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	16.2	1.020	0.367	0.3285	
60 minute summer	203	10.003	204	21.2	1.359	0.344	0.6705	
60 minute summer	204	10.004	113	45.9	2.953	0.353	0.5840	
60 minute summer	113	1.014	114	714.0	3.432	0.468	2.1824	
60 minute summer	114	1.015	115	716.4	3.866	0.445	2.4305	
60 minute summer	115	1.016	116	716.3	2.543	0.431	3.7641	
60 minute summer	116	1.017	117	727.8	2.584	1.041	4.0942	
60 minute summer	210	11.000	211	7.9	0.663	0.176	0.1612	
60 minute summer	211	11.001	212	29.3	1.527	0.325	0.6435	
60 minute summer	212	11.002	213	38.7	1.725	0.549	0.3077	
60 minute summer	220	12.000	213	14.2	1.216	0.238	0.3565	
60 minute summer	213	11.003	214	62.5	1.775	0.237	2.0805	
60 minute summer	214	11.004	215	89.2	1.307	0.654	2.6912	
60 minute summer	230	13.000	231	0.0	0.000	0.000	0.0305	
60 minute summer	231	13.001	215	14.5	1.511	0.075	0.1382	
60 minute summer	215	11.005	117	107.0	1.520	1.330	1.3353	
60 minute summer	117	1.018	118	843.2	2.994	1.135	2.4205	
60 minute summer	118	Flow through pond	119	754.7	0.199	0.005	345.8022	
60 minute summer	270	14.000	271	0.0	0.000	0.000	0.1178	
60 minute summer	271	14.001	272	10.1	0.757	0.187	0.4988	
60 minute summer	272	14.002	273	22.3	1.356	0.369	0.2443	
60 minute summer	290	15.000	291	2.1	0.336	0.050	0.1009	
60 minute summer	291	15.001	292	6.9	0.852	0.153	0.2146	
60 minute summer	292	15.002	273	9.7	1.143	0.132	0.1904	
60 minute summer	273	14.003	274	47.4	1.701	0.410	0.2587	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	274	32	122.478	0.102	48.5	0.1213	0.0000	OK
60 minute summer	275	32	121.283	0.158	63.5	0.3025	0.0000	OK
60 minute summer	276	32	121.117	0.142	69.0	0.2000	0.0000	OK
60 minute summer	277	32	120.836	0.161	73.7	0.2185	0.0000	OK
60 minute summer	278	33	120.518	0.193	76.6	0.2433	0.0000	OK
60 minute summer	279	33	120.340	0.565	74.9	0.6871	0.0000	SURCHARGED
60 minute summer	300	31	122.244	0.044	5.3	0.0617	0.0000	OK
60 minute summer	301	31	121.827	0.076	14.8	0.1248	0.0000	OK
60 minute summer	302	32	121.522	0.097	20.2	0.1400	0.0000	OK
60 minute summer	303	32	121.388	0.113	23.8	0.1510	0.0000	OK
60 minute summer	304	32	121.214	0.089	31.2	0.1368	0.0000	OK
60 minute summer	280	33	120.119	0.594	133.6	1.4233	0.0000	SURCHARGED
60 minute summer	281	33	119.767	0.367	147.5	0.5545	0.0000	OK
60 minute summer	282	32	117.665	0.215	160.9	0.2481	0.0000	OK
60 minute summer	283	33	115.645	0.808	160.1	0.0000	0.0000	OK
60 minute summer	119	38	115.391	0.691	754.7	0.0000	0.0000	SURCHARGED
60 minute summer	240	38	115.217	1.067	566.9	0.0000	0.0000	OK
180 minute winter	241	180	114.619	0.669	343.2	0.0000	0.0000	OK
180 minute winter	250	180	114.619	0.825	337.1	2.1006	0.0000	OK
180 minute winter	251	180	114.619	0.869	283.4	0.0000	0.0000	SURCHARGED
180 minute winter	260	180	114.619	0.919	194.0	3.1839	0.0000	SURCHARGED
60 minute summer	261	1	112.645	0.000	56.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	274	14.004	275	48.6	1.659	0.255	1.2576	
60 minute summer	275	14.005	276	63.8	1.809	0.412	0.2735	
60 minute summer	276	14.006	277	69.2	1.940	0.373	0.3859	
60 minute summer	277	14.007	278	74.1	1.857	0.494	0.8087	
60 minute summer	278	14.008	279	72.2	1.488	0.580	2.5894	
60 minute summer	279	14.009	280	75.3	1.070	0.861	2.8314	
60 minute summer	300	16.000	301	5.2	0.611	0.084	0.2745	
60 minute summer	301	16.001	302	14.4	1.021	0.249	0.3716	
60 minute summer	302	16.002	303	20.1	1.106	0.340	0.2111	
60 minute summer	303	16.003	304	24.0	1.394	0.443	0.2381	
60 minute summer	304	16.004	280	31.4	1.287	0.333	1.2690	
60 minute summer	280	14.010	281	132.5	1.881	1.539	1.4637	
60 minute summer	281	Orifice	282	147.6				
60 minute summer	282	14.012	283	160.1	1.639	0.461	2.6338	
60 minute summer	283	Flow through pond	119	754.7	0.199	0.005	345.8022	
60 minute summer	119	1.021	240	566.9	2.013	1.191	7.3360	
60 minute summer	240	Flow through pond	241	566.8	0.816	0.012	32.9922	
180 minute winter	241	1.023	250	337.1	1.710	0.311	10.4978	
180 minute winter	250	Flow through pond	251	242.5	0.074	0.002	1029.4646	
180 minute winter	251	1.025	260	194.0	0.422	0.175	5.4556	
180 minute winter	260	Hydro-Brake®	261	56.0				1190.5

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	32	125.177	0.377	49.1	0.9536	0.0000	SURCHARGED
60 minute summer	101	32	124.947	0.297	59.2	0.4535	0.0000	SURCHARGED
60 minute summer	102	33	124.629	0.179	74.7	0.2868	0.0000	OK
60 minute summer	103	33	123.807	0.457	92.9	0.7885	0.0000	SURCHARGED
60 minute summer	104	34	122.644	0.219	113.3	0.4170	0.0000	OK
60 minute summer	120	34	124.185	0.184	14.6	0.2819	0.0000	OK
60 minute summer	121	34	124.180	0.330	22.2	0.4274	0.0000	SURCHARGED
60 minute summer	130	31	124.699	0.049	8.8	0.0670	0.0000	OK
60 minute summer	131	31	124.304	0.054	13.1	0.0666	0.0000	OK
60 minute summer	122	34	124.155	0.455	50.2	0.6347	0.0000	SURCHARGED
60 minute summer	123	34	124.080	0.480	48.4	0.5706	0.0000	SURCHARGED
60 minute summer	124	34	123.876	0.926	83.9	2.1868	0.0000	SURCHARGED
60 minute summer	125	34	123.488	1.163	86.7	2.5663	0.0000	SURCHARGED
60 minute summer	126	34	123.404	1.179	151.1	4.1378	0.0000	SURCHARGED
60 minute summer	127	34	122.758	0.783	144.6	1.3838	0.0000	SURCHARGED
60 minute summer	105	34	122.399	0.798	270.3	1.7199	0.0000	SURCHARGED
60 minute summer	106	34	121.948	1.048	303.1	3.0656	0.0000	SURCHARGED
60 minute summer	107	34	121.031	1.706	360.6	6.0546	1.0318	FLOOD
60 minute summer	108	34	120.842	1.742	323.9	3.3756	0.0000	FLOOD RISK
60 minute summer	140	34	121.848	0.848	31.1	1.6959	0.0000	SURCHARGED
60 minute summer	141	34	121.744	1.444	55.7	2.8377	0.0000	FLOOD RISK
60 minute summer	150	33	122.134	1.484	66.1	4.2942	0.0000	FLOOD RISK
60 minute summer	151	33	121.759	1.459	92.0	3.3907	3.1960	FLOOD
60 minute summer	142	34	121.640	1.565	153.5	4.3759	0.0000	FLOOD RISK
60 minute summer	143	34	121.302	1.427	151.7	3.0728	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	46.1	1.158	1.119	0.9467	
60 minute summer	101	1.001	102	59.3	1.555	1.122	0.7134	
60 minute summer	102	1.002	103	72.9	2.019	0.880	1.6077	
60 minute summer	103	1.003	104	90.0	2.342	1.054	1.2596	
60 minute summer	104	1.004	105	115.1	2.703	0.595	1.4603	
60 minute summer	120	2.000	121	14.4	0.794	0.352	0.9066	
60 minute summer	121	2.001	122	22.0	0.713	0.543	0.9764	
60 minute summer	130	3.001	131	8.7	1.275	0.100	0.0982	
60 minute summer	131	3.002	122	13.0	0.568	0.129	0.3472	
60 minute summer	122	2.002	123	45.5	1.465	0.972	0.4887	
60 minute summer	123	2.003	124	50.7	1.425	0.729	1.4487	
60 minute summer	124	2.004	125	72.5	2.123	0.816	0.7535	
60 minute summer	125	2.005	126	85.1	1.209	0.796	0.7599	
60 minute summer	126	2.006	127	144.6	2.053	1.681	2.9251	
60 minute summer	127	2.007	105	140.8	2.038	1.048	1.4508	
60 minute summer	105	1.005	106	257.4	3.110	0.714	2.3944	
60 minute summer	106	1.006	107	286.7	3.211	0.734	4.3651	
60 minute summer	107	1.007	108	317.8	2.211	0.656	1.5931	
60 minute summer	108	1.008	109	320.3	2.392	0.689	1.5383	
60 minute summer	140	4.000	141	28.0	0.925	0.469	2.1132	
60 minute summer	141	4.001	142	48.8	1.256	0.810	0.4463	
60 minute summer	150	5.000	151	49.7	1.249	0.959	1.4017	
60 minute summer	151	5.001	142	78.6	1.976	0.994	0.2595	
60 minute summer	142	4.002	143	138.5	1.967	1.269	1.4596	
60 minute summer	143	4.003	144	148.2	2.105	1.076	0.9193	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	144	34	121.020	1.420	175.0	3.5594	0.0000	FLOOD RISK
60 minute summer	145	34	120.782	1.682	190.5	3.6309	0.0000	FLOOD RISK
60 minute summer	109	34	120.650	1.900	491.6	3.9360	0.0000	FLOOD RISK
60 minute summer	110	34	120.314	1.864	556.8	6.3453	0.0000	SURCHARGED
60 minute summer	160	35	121.184	1.034	22.4	1.4891	0.0000	SURCHARGED
60 minute summer	170	31	122.141	0.041	7.8	0.0554	0.0000	OK
60 minute summer	171	35	121.256	1.156	71.8	2.7657	0.0000	SURCHARGED
60 minute summer	161	35	121.173	1.323	78.4	1.6569	0.0000	SURCHARGED
60 minute summer	162	35	121.113	1.413	94.3	2.2827	0.0000	SURCHARGED
60 minute summer	163	35	120.943	1.443	112.9	2.4006	0.0000	SURCHARGED
60 minute summer	164	35	120.790	1.540	138.5	3.5867	0.0000	SURCHARGED
60 minute summer	180	31	121.871	0.071	11.7	0.1020	0.0000	OK
60 minute summer	181	31	121.545	0.145	45.0	0.2900	0.0000	OK
60 minute summer	182	35	121.031	0.331	49.1	0.4104	0.0000	SURCHARGED
60 minute summer	190	35	121.011	1.011	16.2	1.4799	0.0000	SURCHARGED
60 minute summer	191	35	121.001	1.201	31.8	1.8045	0.0000	SURCHARGED
60 minute summer	183	35	120.968	1.343	90.6	1.8975	0.0000	SURCHARGED
60 minute summer	184	35	120.871	1.396	93.7	2.6420	0.0000	SURCHARGED
60 minute summer	165	35	120.666	1.616	251.7	4.0730	0.0000	SURCHARGED
60 minute summer	111	34	120.078	1.878	811.2	5.0844	0.0000	SURCHARGED
60 minute summer	112	34	119.377	1.777	854.7	4.8414	0.0000	SURCHARGED
60 minute summer	200	31	120.677	0.077	14.1	0.1184	0.0000	OK
60 minute summer	201	31	120.549	0.098	21.3	0.1316	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	144	4.004	145	175.5	1.852	0.705	3.5692	
60 minute summer	145	4.005	109	183.4	1.939	0.875	1.2562	
60 minute summer	109	1.009	110	495.2	1.845	0.954	14.8078	
60 minute summer	110	1.011	111	552.3	2.039	0.747	6.1149	
60 minute summer	160	6.000	161	12.3	0.619	0.297	1.4153	
60 minute summer	170	7.000	171	7.7	0.353	0.073	1.0998	
60 minute summer	171	7.001	161	62.0	1.982	0.753	0.2791	
60 minute summer	161	6.001	162	67.8	1.119	0.649	1.1933	
60 minute summer	162	6.002	163	89.6	1.362	0.965	2.0084	
60 minute summer	163	6.003	164	108.2	1.825	0.877	1.0016	
60 minute summer	164	6.004	165	134.5	1.375	0.779	2.9590	
60 minute summer	180	8.000	181	11.5	0.632	0.216	0.7230	
60 minute summer	181	8.001	182	44.6	2.135	0.646	1.1723	
60 minute summer	182	8.003	183	46.8	2.334	0.301	0.4508	
60 minute summer	190	9.000	191	16.6	0.559	0.386	1.1522	
60 minute summer	191	9.001	183	31.9	1.034	0.740	0.5768	
60 minute summer	183	8.004	184	86.0	1.377	0.910	1.4568	
60 minute summer	184	8.005	165	83.4	1.367	0.815	2.9011	
60 minute summer	165	6.005	111	232.7	2.508	0.952	4.6283	
60 minute summer	111	1.012	112	811.1	3.361	0.906	10.0142	
60 minute summer	112	1.013	113	854.4	3.558	0.541	4.3046	
60 minute summer	200	10.000	201	14.0	0.973	0.227	0.1544	
60 minute summer	201	10.001	202	21.0	0.967	0.358	0.3416	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	31	120.394	0.144	30.2	0.1995	0.0000	OK
60 minute summer	203	31	120.230	0.130	38.8	0.1753	0.0000	OK
60 minute summer	204	33	119.675	0.175	85.8	0.4339	0.0000	OK
60 minute summer	113	34	118.909	2.109	930.0	3.9320	0.0000	SURCHARGED
60 minute summer	114	34	118.478	2.103	930.8	3.9375	0.0000	SURCHARGED
60 minute summer	115	34	118.042	2.142	930.2	3.7848	0.0000	SURCHARGED
60 minute summer	116	35	117.527	2.402	948.1	5.1359	0.0000	SURCHARGED
60 minute summer	210	31	120.093	0.093	14.6	0.1435	0.0000	OK
60 minute summer	211	31	120.024	0.124	54.3	0.2505	0.0000	OK
60 minute summer	212	32	119.185	0.285	72.7	0.4768	0.0000	SURCHARGED
60 minute summer	220	31	119.158	0.108	26.7	0.2056	0.0000	OK
60 minute summer	213	34	118.848	0.273	112.4	0.4454	0.0000	OK
60 minute summer	214	33	118.509	2.509	180.1	5.3733	0.0000	SURCHARGED
60 minute summer	230	34	117.643	1.193	7.9	1.3489	0.0000	SURCHARGED
60 minute summer	231	34	117.642	1.292	26.7	2.1942	0.0000	SURCHARGED
60 minute summer	215	34	117.628	2.203	183.5	2.9213	0.0000	SURCHARGED
60 minute summer	117	35	116.977	2.002	1139.9	4.0805	0.0000	SURCHARGED
60 minute summer	118	36	116.555	1.718	1137.1	0.0000	0.0000	OK
60 minute summer	270	1	123.500	0.000	0.0	0.0000	0.0000	OK
60 minute summer	271	31	123.240	0.090	19.0	0.1485	0.0000	OK
60 minute summer	272	31	122.900	0.150	41.8	0.2690	0.0000	OK
60 minute summer	290	31	123.296	0.046	3.9	0.0573	0.0000	OK
60 minute summer	291	31	123.235	0.085	13.0	0.1141	0.0000	OK
60 minute summer	292	32	123.025	0.075	18.0	0.0952	0.0000	OK
60 minute summer	273	32	122.693	0.218	88.1	0.4199	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	29.7	1.187	0.671	0.5218	
60 minute summer	203	10.003	204	39.2	1.504	0.637	1.2091	
60 minute summer	204	10.004	113	81.1	3.082	0.623	1.3671	
60 minute summer	113	1.014	114	925.7	3.417	0.607	2.4500	
60 minute summer	114	1.015	115	930.2	3.711	0.578	2.4661	
60 minute summer	115	1.016	116	929.4	3.300	0.559	3.7641	
60 minute summer	116	1.017	117	947.0	3.362	1.354	4.0942	
60 minute summer	210	11.000	211	14.4	0.761	0.323	0.2563	
60 minute summer	211	11.001	212	53.7	1.665	0.596	1.0450	
60 minute summer	212	11.002	213	69.3	1.859	0.983	0.5337	
60 minute summer	220	12.000	213	26.1	1.422	0.438	0.7847	
60 minute summer	213	11.003	214	106.7	1.754	0.404	3.1664	
60 minute summer	214	11.004	215	155.6	2.210	1.140	2.6912	
60 minute summer	230	13.000	231	-7.9	-0.385	-0.167	0.4831	
60 minute summer	231	13.001	215	20.3	1.646	0.105	0.2455	
60 minute summer	215	11.005	117	181.8	2.582	2.260	1.3353	
60 minute summer	117	1.018	118	1137.1	4.037	1.530	2.4205	
60 minute summer	118	Flow through pond	119	1044.9	0.255	0.006	690.4274	
60 minute summer	270	14.000	271	0.0	0.000	0.000	0.1828	
60 minute summer	271	14.001	272	18.5	0.859	0.343	0.8001	
60 minute summer	272	14.002	273	40.8	1.497	0.676	0.4059	
60 minute summer	290	15.000	291	3.8	0.398	0.093	0.1575	
60 minute summer	291	15.001	292	12.7	1.007	0.282	0.3351	
60 minute summer	292	15.002	273	17.8	1.144	0.243	0.3876	
60 minute summer	273	14.003	274	86.9	1.973	0.752	0.4337	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	274	33	122.547	0.172	88.8	0.2039	0.0000	OK
60 minute summer	275	34	122.335	1.209	116.6	2.3149	0.0000	FLOOD RISK
60 minute summer	276	34	122.234	1.259	102.7	1.7688	0.0000	FLOOD RISK
60 minute summer	277	34	122.091	1.416	106.7	1.9244	0.0000	FLOOD RISK
60 minute summer	278	34	121.848	1.523	109.7	1.9225	0.0000	FLOOD RISK
60 minute summer	279	34	121.337	1.562	114.5	1.9006	0.0000	SURCHARGED
60 minute summer	300	31	122.259	0.059	9.7	0.0836	0.0000	OK
60 minute summer	301	31	121.859	0.109	27.0	0.1777	0.0000	OK
60 minute summer	302	32	121.574	0.149	37.1	0.2137	0.0000	OK
60 minute summer	303	32	121.449	0.174	43.6	0.2334	0.0000	OK
60 minute summer	304	33	121.306	0.181	56.8	0.2789	0.0000	OK
60 minute summer	280	33	120.856	1.331	213.0	3.1880	0.0000	SURCHARGED
60 minute summer	281	33	119.947	0.547	239.9	0.8277	0.0000	OK
60 minute summer	282	32	117.744	0.294	264.2	0.3391	0.0000	OK
60 minute winter	283	44	115.892	1.055	227.5	0.0000	0.0000	OK
60 minute winter	119	44	115.876	1.176	1030.4	0.0000	0.0000	SURCHARGED
60 minute winter	240	44	115.478	1.327	853.5	0.0000	0.0000	OK
240 minute winter	241	236	115.103	1.153	469.3	0.0000	0.0000	SURCHARGED
240 minute winter	250	236	115.103	1.309	443.7	3.3316	0.0000	OK
240 minute winter	251	236	115.103	1.353	283.1	0.0000	0.0000	FLOOD RISK
240 minute winter	260	236	115.103	1.403	179.9	4.8594	0.0000	FLOOD RISK
60 minute summer	261	1	112.645	0.000	56.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	274	14.004	275	87.9	1.765	0.461	2.3985	
60 minute summer	275	14.005	276	94.1	1.866	0.608	0.5460	
60 minute summer	276	14.006	277	100.1	1.975	0.539	0.7616	
60 minute summer	277	14.007	278	106.8	1.858	0.712	1.3578	
60 minute summer	278	14.008	279	111.6	1.585	0.896	3.0838	
60 minute summer	279	14.009	280	116.5	1.654	1.332	2.8314	
60 minute summer	300	16.000	301	9.6	0.706	0.154	0.4341	
60 minute summer	301	16.001	302	26.4	1.130	0.457	0.6133	
60 minute summer	302	16.002	303	36.7	1.216	0.621	0.3533	
60 minute summer	303	16.003	304	43.6	1.493	0.805	0.4595	
60 minute summer	304	16.004	280	54.8	1.432	0.582	1.7295	
60 minute summer	280	14.010	281	212.3	3.016	2.468	1.4637	
60 minute summer	281	Orifice	282	240.1				
60 minute summer	282	14.012	283	263.7	1.846	0.760	3.6140	
60 minute winter	283	Flow through pond	119	1030.4	0.263	0.006	733.1257	
60 minute winter	119	1.021	240	853.5	3.030	1.794	7.3360	
60 minute winter	240	Flow through pond	241	843.5	0.830	0.018	141.3417	
240 minute winter	241	1.023	250	443.7	1.598	0.410	11.4106	
240 minute winter	250	Flow through pond	251	276.1	0.075	0.002	1992.7822	
240 minute winter	251	1.025	260	179.9	0.458	0.162	5.4556	
240 minute winter	260	Hydro-Brake®	261	56.1				1393.8

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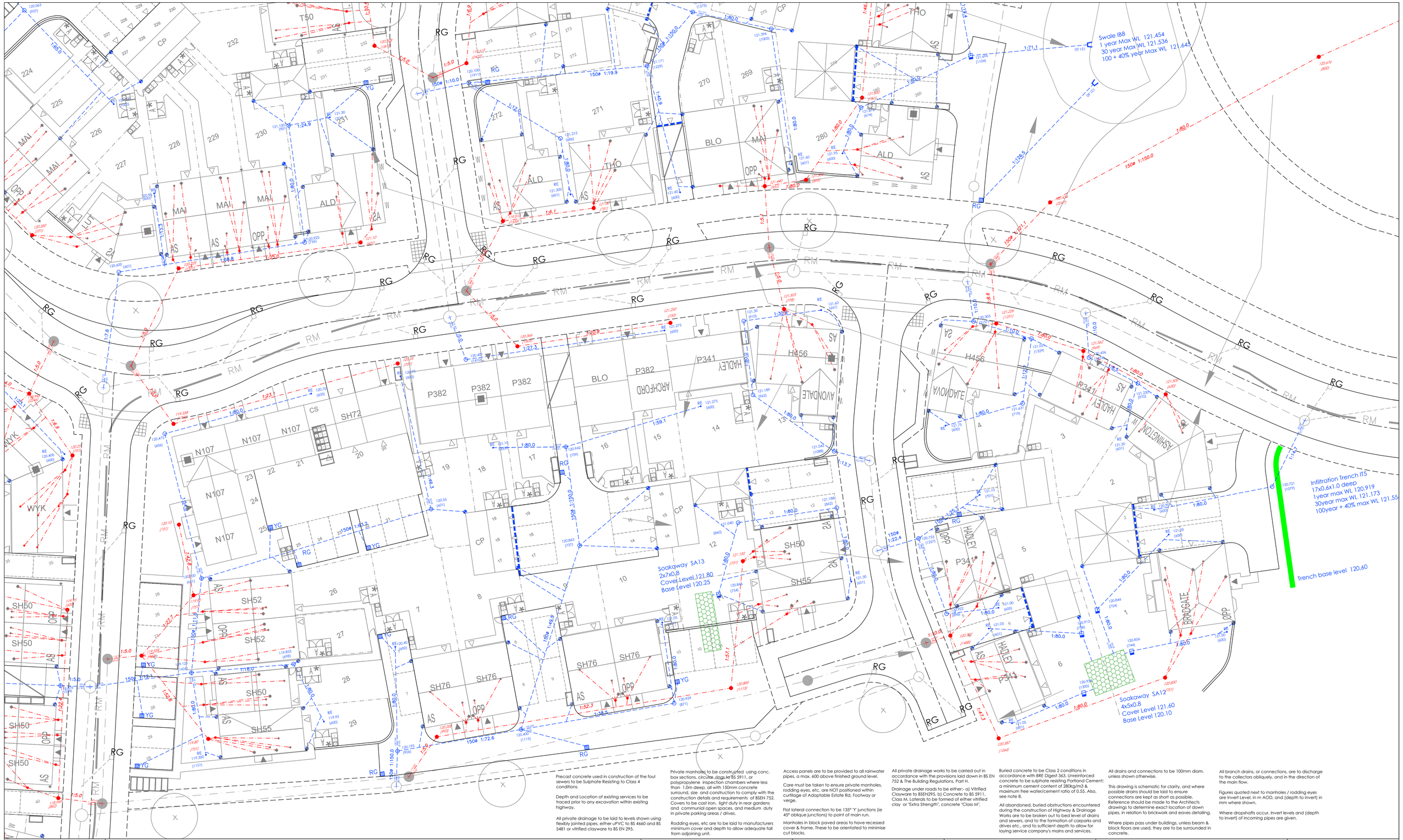
Section 2 Private System



Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) — Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG — Road gully (150mm connection).
- YG — Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain it range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) — Storm rodding eye.
- 123.456 (750) — Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) — Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 — Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
B	Amended following new site layout	23.01.20
A	Saltway House foul connection added	12.07.19

STATUS:

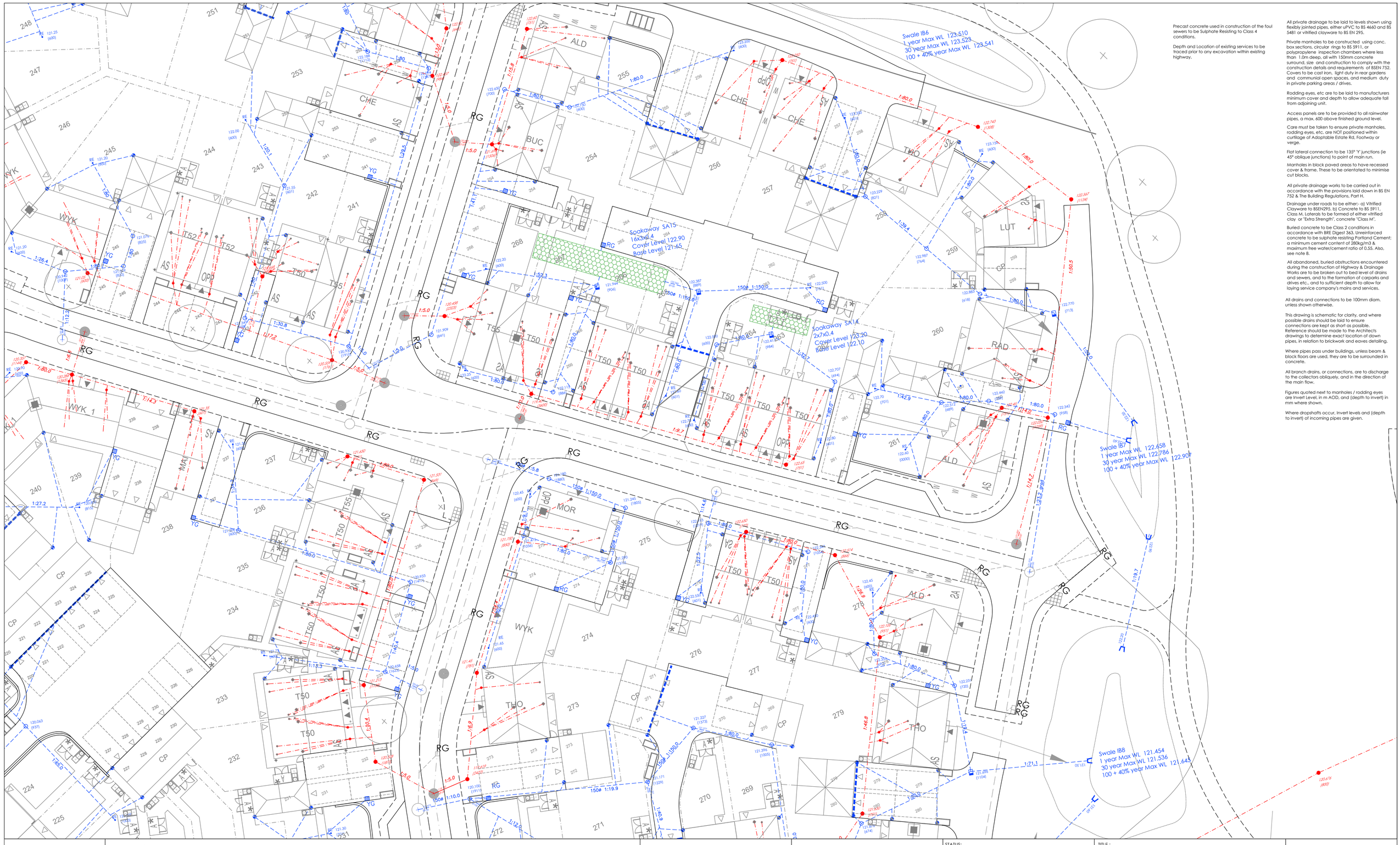
SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 1

PROJECT :
White Post Road, Bodicote

DRG. No:
957-07-01 Rev B

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Acces panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc, are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
B	Amended following new site layout	23.01.20
A	Saltway House foul connection added	12.07.19

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :

Private Drainage Layout Sheet 2

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-02 Rev B

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
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Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron. light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain K range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 3

PROJECT :
White Post Road, Bodicote

DRG. No:
957-07-03 Rev A

iD LTD
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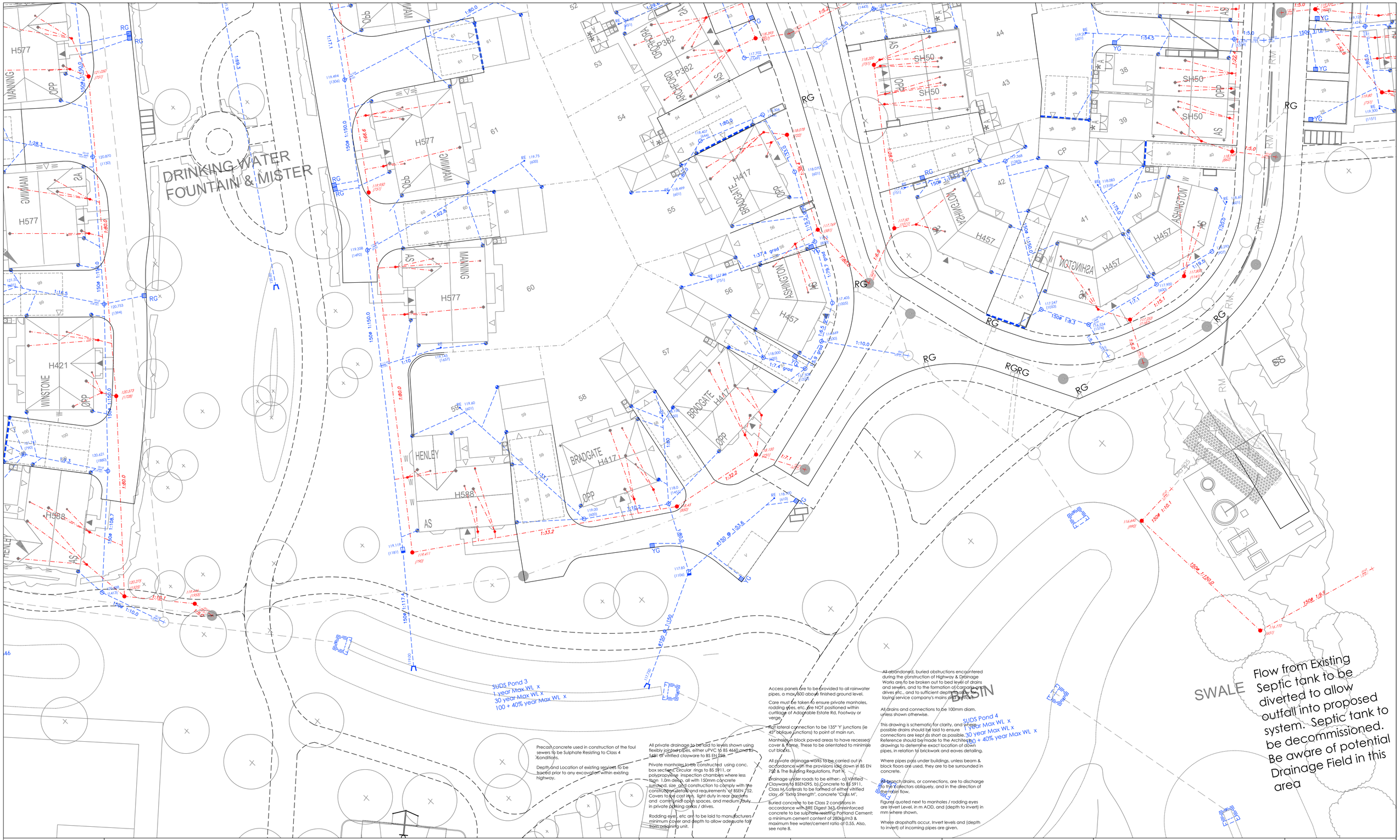
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



Access panels are to be provided to all rainwater pipes, a max 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adaptable Estate Rd, Footway or verge.

All lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a). Vitrified Clayware to BSEN295, b).Concrete to BS 5911, Class M, Laterals to be formed of either vitrified clay, or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363.-Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge into the collectors obliquely, and in the direction of internal flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 Xconditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexible joint pipes, either uPVC to BS 4660, cast BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from rodding unit.

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
C	Amended following new site layout	23.01.20
B	Note re septic tank added	8.10.19
A	Cricket Club foul connection added	12.07.19

STATUS:

SCALE : 1:200 @ A1

DATE : May 2019

DRAWN : IDL

TITLE : Private Drainage Layout Sheet 4

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-04 Rev C

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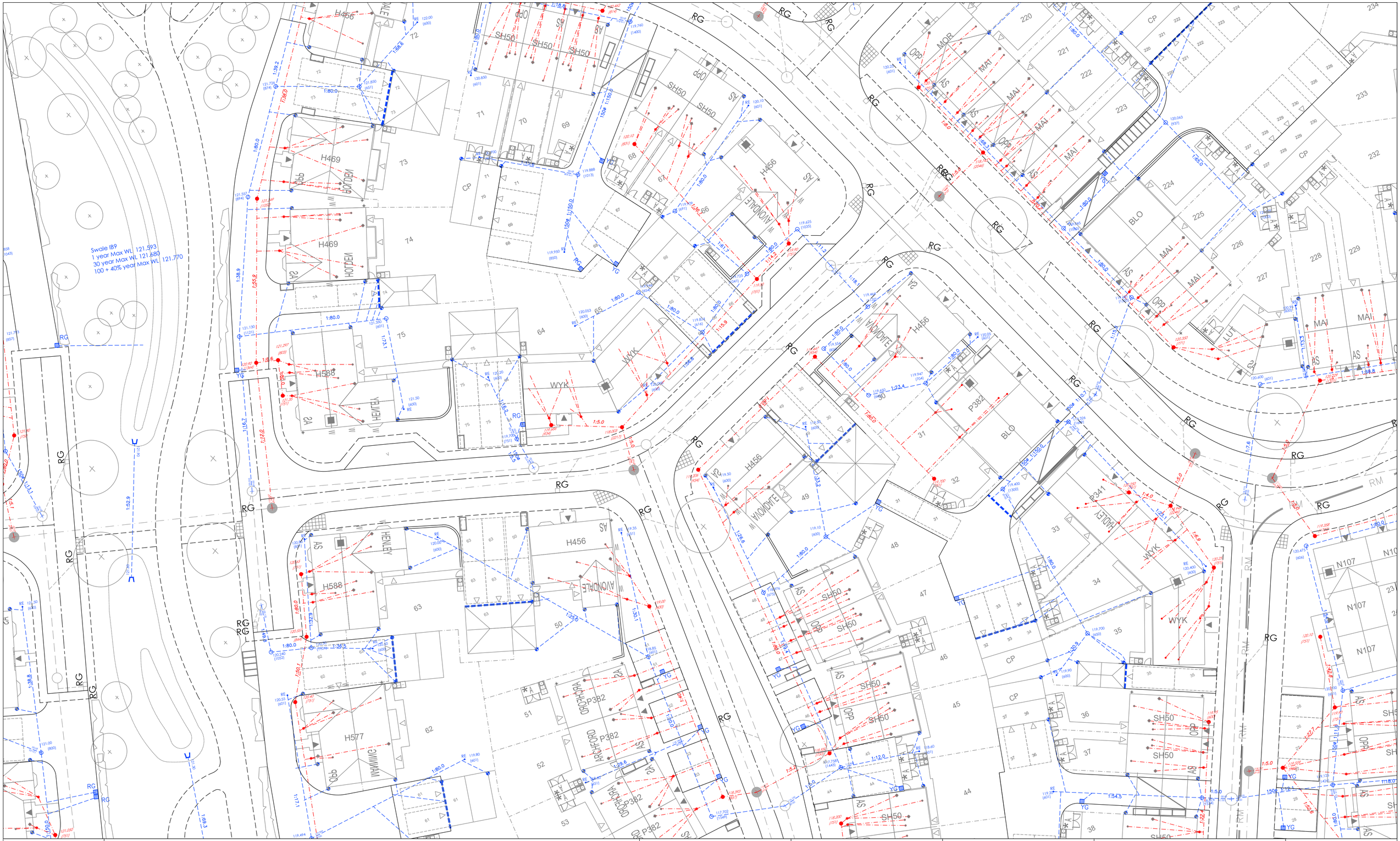

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) — Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG — Road gully (150mm connection).
- YG — Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) — Storm rodding eye.
- 123.456 (750) — Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) — Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 — Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

For Notes refer to drawing 957-07-01

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 5

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-05 Rev A

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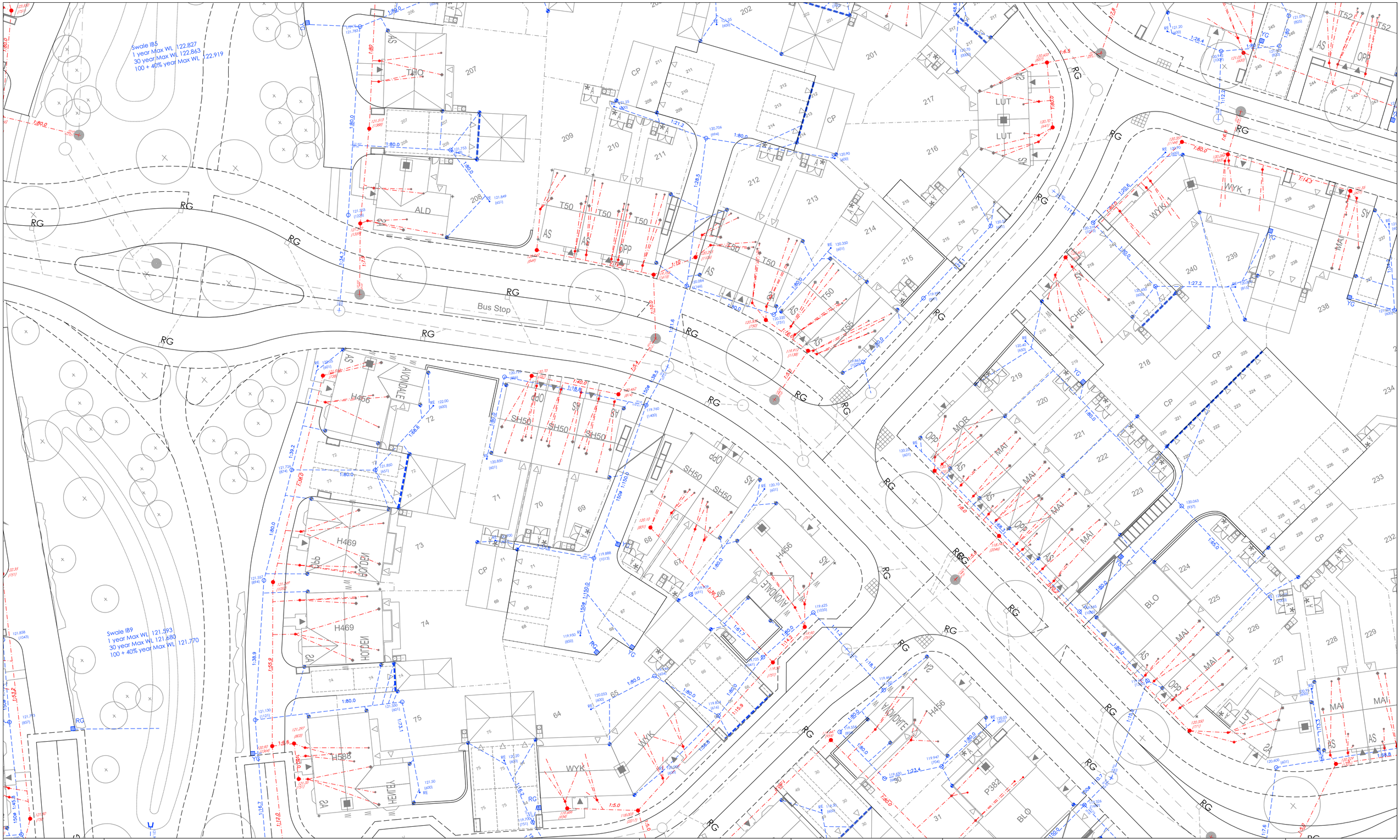
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

For Notes refer to drawing 957-07-01

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 6

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-06 Rev A

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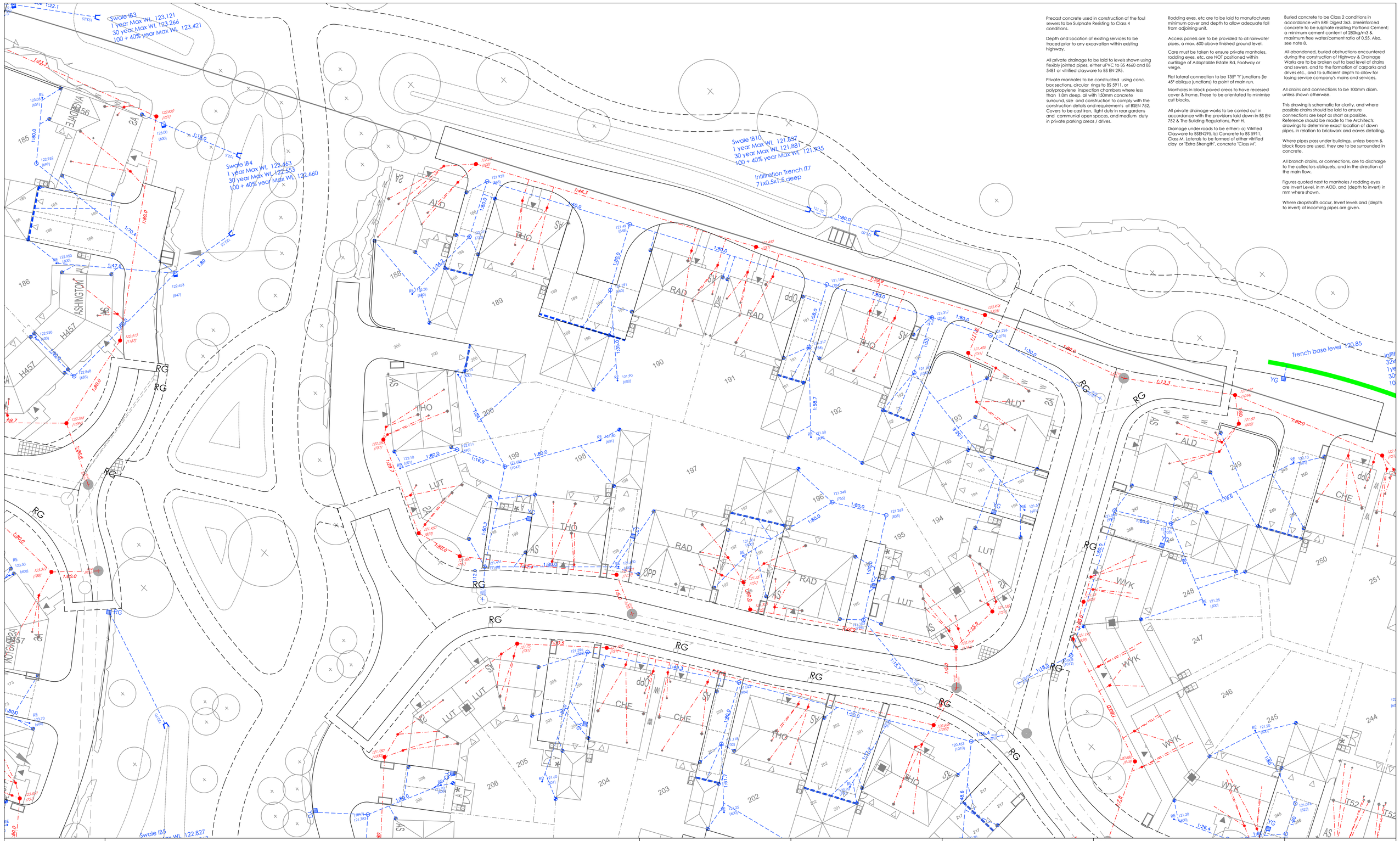
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adaptable Estate Rd. Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295, b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain K range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 7

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-07 Rev A

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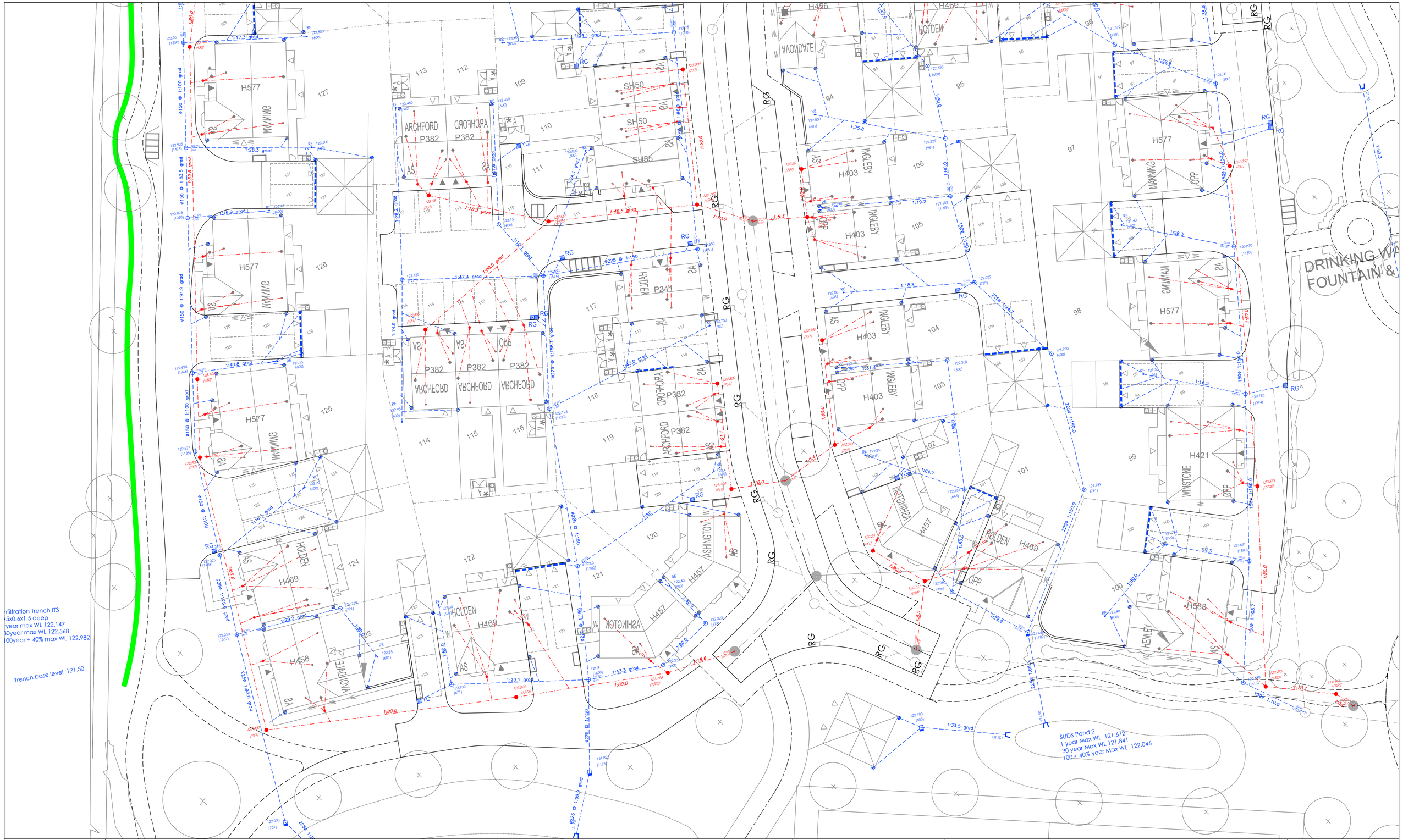

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

For Notes refer to drawing 957-07-01

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 8

PROJECT :
White Post Road, Bodicote

DRG. No:
957-07-08 Rev A

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Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M", minimum 150mm diameter.

Bedding and Haunching to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be subject to a mix containing Portland Cement; minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also see note 9.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

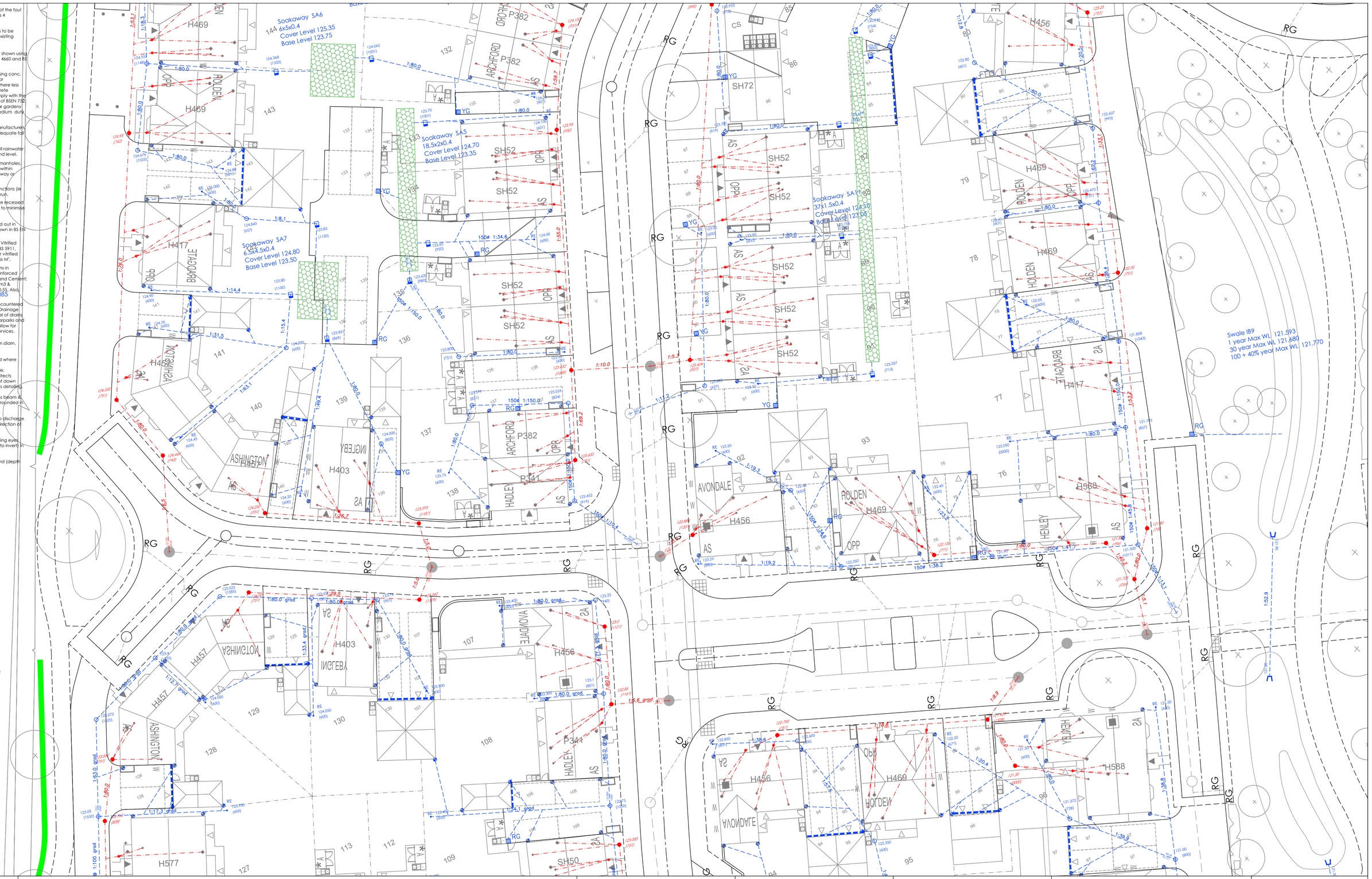
This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, entail discharge to the collectors obliquely and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.



DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 9

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-09 Rev A

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Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adaptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° "Y" junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

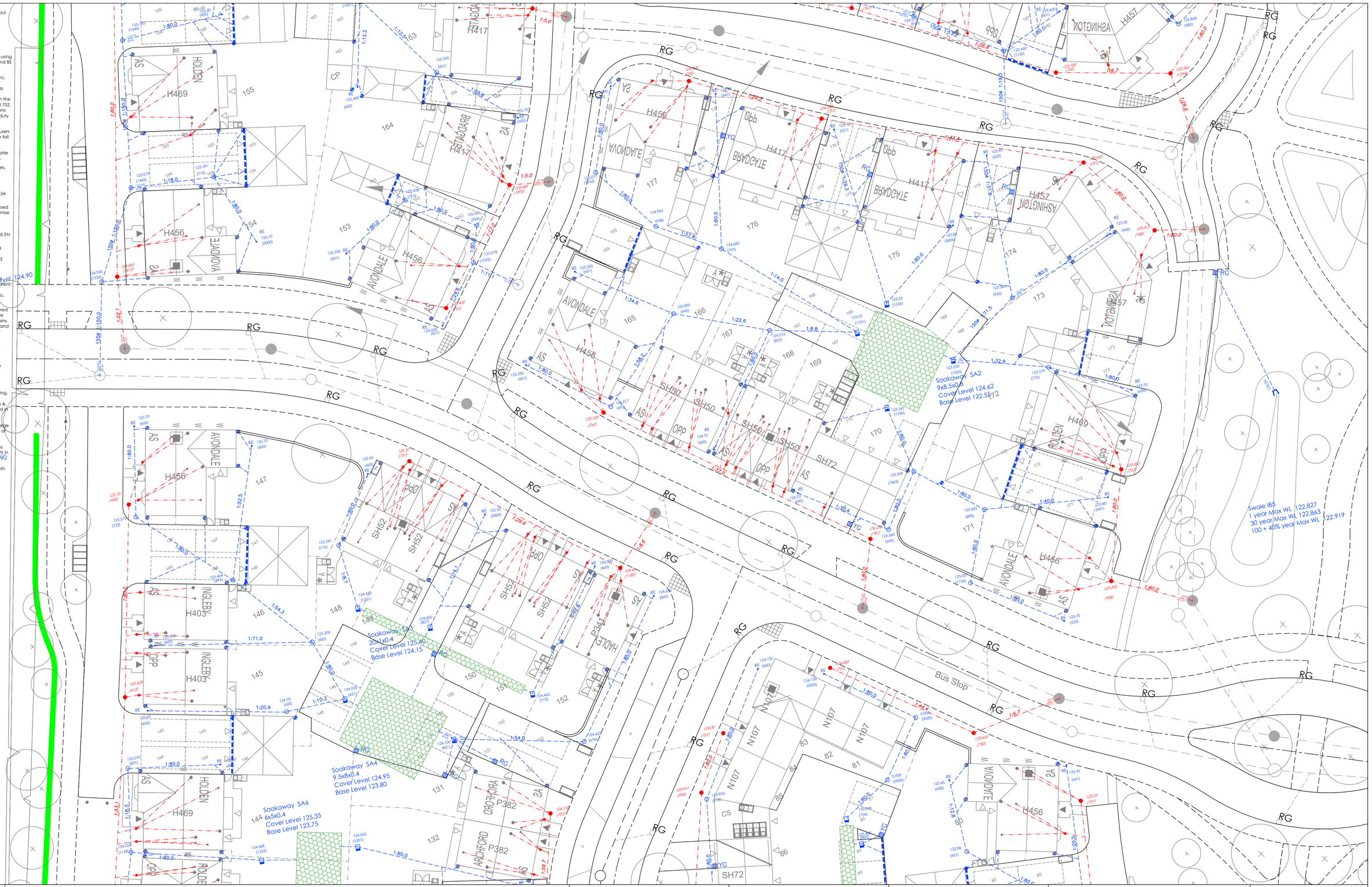
This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, invert levels and (depth to invert) of incoming pipes are given.



DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG — Road gully (150mm connection).
- YG — Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- Storm rodding eye.
- Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 10

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-10 Rev A

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam, unless shown otherwise.

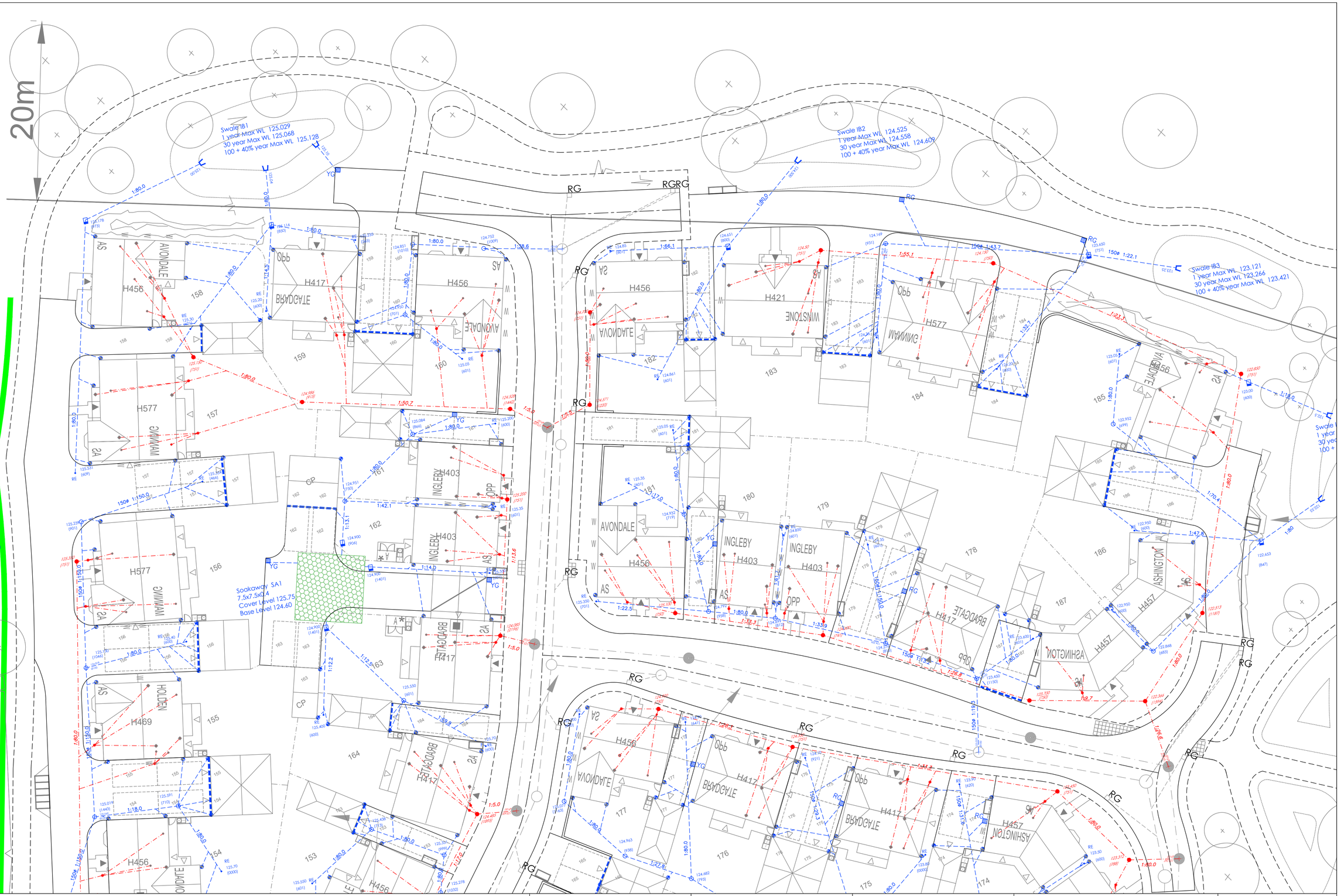
This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.



DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- Road gully (150mm connection).
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- Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 11

PROJECT :
White Post Road, Bodicote

DRG. No:
957-07-11 Rev A

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 55 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.780	0.280	15.5	68.0	O K
30 min Summer	121.830	0.330	16.9	82.8	O K
60 min Summer	121.851	0.351	17.5	89.3	O K
120 min Summer	121.846	0.346	17.4	87.7	O K
180 min Summer	121.828	0.328	16.9	82.1	O K
240 min Summer	121.808	0.308	16.3	76.0	O K
360 min Summer	121.769	0.269	15.2	64.9	O K
480 min Summer	121.736	0.236	14.3	55.6	O K
600 min Summer	121.707	0.207	13.4	47.8	O K
720 min Summer	121.681	0.181	12.7	41.2	O K
960 min Summer	121.639	0.139	11.6	30.6	O K
1440 min Summer	121.581	0.081	10.0	17.1	O K
2160 min Summer	121.547	0.047	8.5	9.7	O K
2880 min Summer	121.538	0.038	6.8	7.8	O K
4320 min Summer	121.528	0.028	4.9	5.6	O K
5760 min Summer	121.522	0.022	3.9	4.5	O K
7200 min Summer	121.519	0.019	3.3	3.8	O K
8640 min Summer	121.516	0.016	2.8	3.2	O K
10080 min Summer	121.514	0.014	2.5	2.9	O K
15 min Winter	121.811	0.311	16.4	77.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	20
30 min Summer	89.559	0.0	32
60 min Summer	55.837	0.0	52
120 min Summer	33.645	0.0	86
180 min Summer	24.691	0.0	120
240 min Summer	19.711	0.0	154
360 min Summer	14.285	0.0	220
480 min Summer	11.371	0.0	284
600 min Summer	9.521	0.0	346
720 min Summer	8.231	0.0	408
960 min Summer	6.537	0.0	528
1440 min Summer	4.717	0.0	764
2160 min Summer	3.398	0.0	1104
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2872
7200 min Summer	1.272	0.0	3640
8640 min Summer	1.095	0.0	4384
10080 min Summer	0.964	0.0	4984
15 min Winter	136.827	0.0	20

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.867	0.367	18.0	94.3	O K
60 min Winter	121.891	0.391	18.7	102.1	O K
120 min Winter	121.881	0.381	18.4	99.0	O K
180 min Winter	121.855	0.355	17.6	90.6	O K
240 min Winter	121.826	0.326	16.8	81.6	O K
360 min Winter	121.771	0.271	15.2	65.5	O K
480 min Winter	121.725	0.225	13.9	52.7	O K
600 min Winter	121.686	0.186	12.9	42.4	O K
720 min Winter	121.652	0.152	11.9	33.9	O K
960 min Winter	121.599	0.099	10.5	21.1	O K
1440 min Winter	121.547	0.047	8.6	9.7	O K
2160 min Winter	121.535	0.035	6.2	7.1	O K
2880 min Winter	121.528	0.028	5.0	5.7	O K
4320 min Winter	121.521	0.021	3.6	4.2	O K
5760 min Winter	121.516	0.016	2.8	3.3	O K
7200 min Winter	121.514	0.014	2.4	2.7	O K
8640 min Winter	121.512	0.012	2.0	2.3	O K
10080 min Winter	121.511	0.011	1.8	2.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	32
60 min Winter	55.837	0.0	54
120 min Winter	33.645	0.0	92
180 min Winter	24.691	0.0	128
240 min Winter	19.711	0.0	164
360 min Winter	14.285	0.0	234
480 min Winter	11.371	0.0	300
600 min Winter	9.521	0.0	362
720 min Winter	8.231	0.0	424
960 min Winter	6.537	0.0	542
1440 min Winter	4.717	0.0	738
2160 min Winter	3.398	0.0	1104
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2920
7200 min Winter	1.272	0.0	3656
8640 min Winter	1.095	0.0	4360
10080 min Winter	0.964	0.0	5112

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.312

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	0.153	4	8	0.159

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Model Details

Storage is Offline Dividing Weir Level (m) 121.500
Cover Level (m) 122.300

Infiltration Basin Structure

Invert Level (m) 121.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	199.7	0.800	496.7

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 2245 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.738	0.238	0.2	27.8	O K
30 min Summer	121.795	0.295	0.2	36.3	O K
60 min Summer	121.849	0.349	0.3	45.0	O K
120 min Summer	121.898	0.398	0.3	53.6	O K
180 min Summer	121.924	0.424	0.3	58.4	O K
240 min Summer	121.940	0.440	0.3	61.5	O K
360 min Summer	121.961	0.461	0.3	65.5	O K
480 min Summer	121.974	0.474	0.3	68.2	O K
600 min Summer	121.983	0.483	0.3	70.0	O K
720 min Summer	121.989	0.489	0.3	71.2	O K
960 min Summer	121.995	0.495	0.3	72.6	O K
1440 min Summer	121.997	0.497	0.3	72.9	O K
2160 min Summer	121.992	0.492	0.3	71.8	O K
2880 min Summer	121.985	0.485	0.3	70.5	O K
4320 min Summer	121.970	0.470	0.3	67.3	O K
5760 min Summer	121.952	0.452	0.3	63.9	O K
7200 min Summer	121.935	0.435	0.3	60.6	O K
8640 min Summer	121.919	0.419	0.3	57.5	O K
10080 min Summer	121.903	0.403	0.3	54.6	O K
15 min Winter	121.761	0.261	0.2	31.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	19
30 min Summer	89.559	0.0	34
60 min Summer	55.837	0.0	64
120 min Summer	33.645	0.0	124
180 min Summer	24.691	0.0	184
240 min Summer	19.711	0.0	244
360 min Summer	14.285	0.0	362
480 min Summer	11.371	0.0	482
600 min Summer	9.521	0.0	602
720 min Summer	8.231	0.0	722
960 min Summer	6.537	0.0	962
1440 min Summer	4.717	0.0	1430
2160 min Summer	3.398	0.0	1756
2880 min Summer	2.690	0.0	2132
4320 min Summer	1.933	0.0	2940
5760 min Summer	1.528	0.0	3752
7200 min Summer	1.272	0.0	4608
8640 min Summer	1.095	0.0	5440
10080 min Summer	0.964	0.0	6248
15 min Winter	136.827	0.0	19

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.823	0.323	0.3	40.7	O K
60 min Winter	121.880	0.380	0.3	50.4	O K
120 min Winter	121.933	0.433	0.3	60.2	O K
180 min Winter	121.961	0.461	0.3	65.6	O K
240 min Winter	121.979	0.479	0.3	69.1	O K
360 min Winter	122.001	0.501	0.3	73.7	Flood Risk
480 min Winter	122.016	0.516	0.4	76.8	Flood Risk
600 min Winter	122.026	0.526	0.4	79.0	Flood Risk
720 min Winter	122.033	0.533	0.4	80.5	Flood Risk
960 min Winter	122.041	0.541	0.4	82.4	Flood Risk
1440 min Winter	122.046	0.546	0.4	83.4	Flood Risk
2160 min Winter	122.039	0.539	0.4	81.9	Flood Risk
2880 min Winter	122.031	0.531	0.4	80.2	Flood Risk
4320 min Winter	122.012	0.512	0.4	76.0	Flood Risk
5760 min Winter	121.989	0.489	0.3	71.3	O K
7200 min Winter	121.966	0.466	0.3	66.6	O K
8640 min Winter	121.944	0.444	0.3	62.2	O K
10080 min Winter	121.923	0.423	0.3	58.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	34
60 min Winter	55.837	0.0	64
120 min Winter	33.645	0.0	122
180 min Winter	24.691	0.0	182
240 min Winter	19.711	0.0	240
360 min Winter	14.285	0.0	358
480 min Winter	11.371	0.0	476
600 min Winter	9.521	0.0	590
720 min Winter	8.231	0.0	708
960 min Winter	6.537	0.0	934
1440 min Winter	4.717	0.0	1384
2160 min Winter	3.398	0.0	1988
2880 min Winter	2.690	0.0	2248
4320 min Winter	1.933	0.0	3156
5760 min Winter	1.528	0.0	4088
7200 min Winter	1.272	0.0	4968
8640 min Winter	1.095	0.0	5800
10080 min Winter	0.964	0.0	6656

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.109

Time (mins) From:	To:	Area (ha)
0	4	0.109

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Model Details

Storage is Offline Dividing Weir Level (m) 121.500
Cover Level (m) 122.100

Infiltration Basin Structure

Invert Level (m) 121.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.01123 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.01123

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	92.9	0.600	237.9

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 76 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.853	0.253	2.5	13.5	O K
30 min Summer	124.910	0.310	2.6	16.5	O K
60 min Summer	124.937	0.337	2.6	18.0	O K
120 min Summer	124.932	0.332	2.6	17.7	O K
180 min Summer	124.911	0.311	2.6	16.6	O K
240 min Summer	124.888	0.288	2.6	15.4	O K
360 min Summer	124.843	0.243	2.5	13.0	O K
480 min Summer	124.804	0.204	2.5	10.9	O K
600 min Summer	124.769	0.169	2.4	9.0	O K
720 min Summer	124.739	0.139	2.4	7.4	O K
960 min Summer	124.693	0.093	2.3	4.9	O K
1440 min Summer	124.649	0.049	2.2	2.6	O K
2160 min Summer	124.636	0.036	1.6	1.9	O K
2880 min Summer	124.629	0.029	1.3	1.6	O K
4320 min Summer	124.621	0.021	1.0	1.1	O K
5760 min Summer	124.617	0.017	0.8	0.9	O K
7200 min Summer	124.614	0.014	0.6	0.7	O K
8640 min Summer	124.612	0.012	0.6	0.6	O K
10080 min Summer	124.611	0.011	0.5	0.6	O K
15 min Winter	124.887	0.287	2.6	15.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	31
60 min Summer	56.129	0.0	56
120 min Summer	33.850	0.0	88
180 min Summer	24.849	0.0	122
240 min Summer	19.839	0.0	156
360 min Summer	14.389	0.0	222
480 min Summer	11.459	0.0	288
600 min Summer	9.597	0.0	350
720 min Summer	8.298	0.0	408
960 min Summer	6.593	0.0	522
1440 min Summer	4.760	0.0	736
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2200
5760 min Summer	1.544	0.0	2920
7200 min Summer	1.286	0.0	3640
8640 min Summer	1.107	0.0	4328
10080 min Summer	0.975	0.0	5024
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.954	0.354	2.6	18.9	O K
60 min Winter	124.991	0.391	2.7	20.9	O K
120 min Winter	124.982	0.382	2.7	20.4	O K
180 min Winter	124.953	0.353	2.6	18.8	O K
240 min Winter	124.918	0.318	2.6	17.0	O K
360 min Winter	124.850	0.250	2.5	13.3	O K
480 min Winter	124.791	0.191	2.4	10.2	O K
600 min Winter	124.740	0.140	2.4	7.5	O K
720 min Winter	124.699	0.099	2.3	5.3	O K
960 min Winter	124.651	0.051	2.3	2.7	O K
1440 min Winter	124.637	0.037	1.7	2.0	O K
2160 min Winter	124.627	0.027	1.2	1.4	O K
2880 min Winter	124.621	0.021	1.0	1.1	O K
4320 min Winter	124.615	0.015	0.7	0.8	O K
5760 min Winter	124.612	0.012	0.6	0.6	O K
7200 min Winter	124.610	0.010	0.5	0.5	O K
8640 min Winter	124.609	0.009	0.4	0.5	O K
10080 min Winter	124.608	0.008	0.4	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	31
60 min Winter	56.129	0.0	58
120 min Winter	33.850	0.0	94
180 min Winter	24.849	0.0	132
240 min Winter	19.839	0.0	170
360 min Winter	14.389	0.0	240
480 min Winter	11.459	0.0	304
600 min Winter	9.597	0.0	366
720 min Winter	8.298	0.0	420
960 min Winter	6.593	0.0	502
1440 min Winter	4.760	0.0	738
2160 min Winter	3.431	0.0	1080
2880 min Winter	2.717	0.0	1444
4320 min Winter	1.953	0.0	2196
5760 min Winter	1.544	0.0	2856
7200 min Winter	1.286	0.0	3544
8640 min Winter	1.107	0.0	4400
10080 min Winter	0.975	0.0	5008

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.060

Time (mins) From:	To:	Area (ha)
0	4	0.060

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Model Details

Storage is Online Cover Level (m) 125.750

Cellular Storage Structure

Invert Level (m) 124.600 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	56.3	56.3	0.500	0.0	68.3
0.400	56.3	68.3			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 95 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.037	0.487	5.4	35.4	O K
30 min Summer	123.151	0.601	5.6	43.6	O K
60 min Summer	123.213	0.663	5.7	48.2	O K
120 min Summer	123.204	0.654	5.7	47.6	O K
180 min Summer	123.172	0.622	5.7	45.2	O K
240 min Summer	123.133	0.583	5.6	42.4	O K
360 min Summer	123.059	0.509	5.5	37.0	O K
480 min Summer	122.992	0.442	5.4	32.1	O K
600 min Summer	122.929	0.379	5.3	27.6	O K
720 min Summer	122.873	0.323	5.2	23.5	O K
960 min Summer	122.779	0.229	5.0	16.6	O K
1440 min Summer	122.654	0.104	4.8	7.5	O K
2160 min Summer	122.596	0.046	4.3	3.3	O K
2880 min Summer	122.587	0.037	3.4	2.7	O K
4320 min Summer	122.576	0.026	2.5	1.9	O K
5760 min Summer	122.571	0.021	2.0	1.5	O K
7200 min Summer	122.568	0.018	1.7	1.3	O K
8640 min Summer	122.565	0.015	1.4	1.1	O K
10080 min Summer	122.563	0.013	1.2	1.0	O K
15 min Winter	123.102	0.552	5.6	40.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	18
30 min Summer	89.929	0.0	32
60 min Summer	56.129	0.0	60
120 min Summer	33.850	0.0	92
180 min Summer	24.849	0.0	126
240 min Summer	19.839	0.0	160
360 min Summer	14.389	0.0	228
480 min Summer	11.459	0.0	294
600 min Summer	9.597	0.0	360
720 min Summer	8.298	0.0	420
960 min Summer	6.593	0.0	540
1440 min Summer	4.760	0.0	766
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1456
4320 min Summer	1.953	0.0	2200
5760 min Summer	1.544	0.0	2896
7200 min Summer	1.286	0.0	3648
8640 min Summer	1.107	0.0	4376
10080 min Summer	0.975	0.0	5056
15 min Winter	137.234	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.236	0.686	5.8	49.9	O K
60 min Winter	123.319	0.769	5.9	55.9	O K
120 min Winter	123.311	0.761	5.9	55.3	O K
180 min Winter	123.267	0.717	5.8	52.1	O K
240 min Winter	123.211	0.661	5.7	48.1	O K
360 min Winter	123.100	0.550	5.6	39.9	O K
480 min Winter	122.998	0.448	5.4	32.6	O K
600 min Winter	122.907	0.357	5.2	25.9	O K
720 min Winter	122.826	0.276	5.1	20.1	O K
960 min Winter	122.698	0.148	4.9	10.7	O K
1440 min Winter	122.596	0.046	4.3	3.4	O K
2160 min Winter	122.584	0.034	3.2	2.4	O K
2880 min Winter	122.577	0.027	2.5	1.9	O K
4320 min Winter	122.569	0.019	1.8	1.4	O K
5760 min Winter	122.565	0.015	1.4	1.1	O K
7200 min Winter	122.563	0.013	1.2	0.9	O K
8640 min Winter	122.561	0.011	1.1	0.8	O K
10080 min Winter	122.560	0.010	0.9	0.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	31
60 min Winter	56.129	0.0	60
120 min Winter	33.850	0.0	98
180 min Winter	24.849	0.0	136
240 min Winter	19.839	0.0	174
360 min Winter	14.389	0.0	248
480 min Winter	11.459	0.0	316
600 min Winter	9.597	0.0	382
720 min Winter	8.298	0.0	444
960 min Winter	6.593	0.0	558
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1104
2880 min Winter	2.717	0.0	1468
4320 min Winter	1.953	0.0	2196
5760 min Winter	1.544	0.0	2904
7200 min Winter	1.286	0.0	3616
8640 min Winter	1.107	0.0	4360
10080 min Winter	0.975	0.0	4968

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.155

Time (mins) From:	To:	Area (ha)
0	4	0.155

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Model Details

Storage is Online Cover Level (m) 125.400

Cellular Storage Structure

Invert Level (m) 122.550 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	76.5	117.0	0.900	0.0	152.2
0.800	76.5	152.2			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 32 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.433	0.283	2.0	5.4	O K
30 min Summer	124.476	0.326	2.1	6.2	O K
60 min Summer	124.487	0.337	2.1	6.4	O K
120 min Summer	124.459	0.309	2.0	5.9	O K
180 min Summer	124.423	0.273	1.9	5.2	O K
240 min Summer	124.388	0.238	1.8	4.5	O K
360 min Summer	124.329	0.179	1.7	3.4	O K
480 min Summer	124.285	0.135	1.6	2.6	O K
600 min Summer	124.251	0.101	1.5	1.9	O K
720 min Summer	124.226	0.076	1.4	1.4	O K
960 min Summer	124.200	0.050	1.4	0.9	O K
1440 min Summer	124.187	0.037	1.0	0.7	O K
2160 min Summer	124.177	0.027	0.7	0.5	O K
2880 min Summer	124.171	0.021	0.6	0.4	O K
4320 min Summer	124.165	0.015	0.4	0.3	O K
5760 min Summer	124.162	0.012	0.3	0.2	O K
7200 min Summer	124.160	0.010	0.3	0.2	O K
8640 min Summer	124.159	0.009	0.2	0.2	O K
10080 min Summer	124.158	0.008	0.2	0.1	O K
15 min Winter	124.471	0.321	2.1	6.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	16
30 min Summer	89.929	0.0	27
60 min Summer	56.129	0.0	44
120 min Summer	33.850	0.0	78
180 min Summer	24.849	0.0	112
240 min Summer	19.839	0.0	144
360 min Summer	14.389	0.0	208
480 min Summer	11.459	0.0	268
600 min Summer	9.597	0.0	326
720 min Summer	8.298	0.0	382
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1092
2880 min Summer	2.717	0.0	1444
4320 min Summer	1.953	0.0	2160
5760 min Summer	1.544	0.0	2880
7200 min Summer	1.286	0.0	3640
8640 min Summer	1.107	0.0	4392
10080 min Summer	0.975	0.0	5088
15 min Winter	137.234	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.524	0.374	2.2	7.1	O K
60 min Winter	124.532	0.382	2.2	7.3	O K
120 min Winter	124.488	0.338	2.1	6.4	O K
180 min Winter	124.433	0.283	2.0	5.4	O K
240 min Winter	124.382	0.232	1.8	4.4	O K
360 min Winter	124.302	0.152	1.6	2.9	O K
480 min Winter	124.245	0.095	1.5	1.8	O K
600 min Winter	124.208	0.058	1.4	1.1	O K
720 min Winter	124.196	0.046	1.3	0.9	O K
960 min Winter	124.187	0.037	1.0	0.7	O K
1440 min Winter	124.177	0.027	0.7	0.5	O K
2160 min Winter	124.169	0.019	0.5	0.4	O K
2880 min Winter	124.165	0.015	0.4	0.3	O K
4320 min Winter	124.161	0.011	0.3	0.2	O K
5760 min Winter	124.159	0.009	0.2	0.2	O K
7200 min Winter	124.157	0.007	0.2	0.1	O K
8640 min Winter	124.156	0.006	0.2	0.1	O K
10080 min Winter	124.156	0.006	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	29
60 min Winter	56.129	0.0	46
120 min Winter	33.850	0.0	84
180 min Winter	24.849	0.0	120
240 min Winter	19.839	0.0	154
360 min Winter	14.389	0.0	216
480 min Winter	11.459	0.0	274
600 min Winter	9.597	0.0	324
720 min Winter	8.298	0.0	370
960 min Winter	6.593	0.0	492
1440 min Winter	4.760	0.0	734
2160 min Winter	3.431	0.0	1100
2880 min Winter	2.717	0.0	1468
4320 min Winter	1.953	0.0	2248
5760 min Winter	1.544	0.0	2920
7200 min Winter	1.286	0.0	3640
8640 min Winter	1.107	0.0	4304
10080 min Winter	0.975	0.0	5168

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 125.400

Cellular Storage Structure

Invert Level (m) 124.150 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	20.0	20.0	0.500	0.0	36.8
0.400	20.0	36.8			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 49 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.073	0.273	5.3	19.7	O K
30 min Summer	124.124	0.324	5.4	23.4	O K
60 min Summer	124.139	0.339	5.4	24.5	O K
120 min Summer	124.119	0.319	5.4	23.0	O K
180 min Summer	124.087	0.287	5.3	20.7	O K
240 min Summer	124.053	0.253	5.2	18.3	O K
360 min Summer	123.993	0.193	5.1	13.9	O K
480 min Summer	123.944	0.144	5.0	10.4	O K
600 min Summer	123.906	0.106	4.9	7.7	O K
720 min Summer	123.878	0.078	4.9	5.7	O K
960 min Summer	123.850	0.050	4.8	3.6	O K
1440 min Summer	123.837	0.037	3.5	2.7	O K
2160 min Summer	123.827	0.027	2.6	1.9	O K
2880 min Summer	123.821	0.021	2.0	1.5	O K
4320 min Summer	123.815	0.015	1.5	1.1	O K
5760 min Summer	123.812	0.012	1.2	0.9	O K
7200 min Summer	123.810	0.010	1.0	0.7	O K
8640 min Summer	123.809	0.009	0.8	0.6	O K
10080 min Summer	123.808	0.008	0.7	0.6	O K
15 min Winter	124.111	0.311	5.4	22.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	30
60 min Summer	56.129	0.0	48
120 min Summer	33.850	0.0	82
180 min Summer	24.849	0.0	116
240 min Summer	19.839	0.0	150
360 min Summer	14.389	0.0	214
480 min Summer	11.459	0.0	274
600 min Summer	9.597	0.0	332
720 min Summer	8.298	0.0	386
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2200
5760 min Summer	1.544	0.0	2928
7200 min Summer	1.286	0.0	3672
8640 min Summer	1.107	0.0	4368
10080 min Summer	0.975	0.0	5008
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.173	0.373	5.5	27.0	O K
60 min Winter	124.192	0.392	5.5	28.3	O K
120 min Winter	124.161	0.361	5.5	26.1	O K
180 min Winter	124.112	0.312	5.4	22.5	O K
240 min Winter	124.061	0.261	5.2	18.8	O K
360 min Winter	123.971	0.171	5.1	12.3	O K
480 min Winter	123.903	0.103	4.9	7.4	O K
600 min Winter	123.859	0.059	4.8	4.3	O K
720 min Winter	123.846	0.046	4.4	3.3	O K
960 min Winter	123.837	0.037	3.6	2.7	O K
1440 min Winter	123.827	0.027	2.6	1.9	O K
2160 min Winter	123.820	0.020	1.9	1.4	O K
2880 min Winter	123.816	0.016	1.5	1.1	O K
4320 min Winter	123.811	0.011	1.1	0.8	O K
5760 min Winter	123.809	0.009	0.8	0.6	O K
7200 min Winter	123.807	0.007	0.7	0.5	O K
8640 min Winter	123.806	0.006	0.6	0.5	O K
10080 min Winter	123.806	0.006	0.6	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	52
120 min Winter	33.850	0.0	90
180 min Winter	24.849	0.0	126
240 min Winter	19.839	0.0	160
360 min Winter	14.389	0.0	224
480 min Winter	11.459	0.0	282
600 min Winter	9.597	0.0	326
720 min Winter	8.298	0.0	374
960 min Winter	6.593	0.0	490
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1096
2880 min Winter	2.717	0.0	1464
4320 min Winter	1.953	0.0	2180
5760 min Winter	1.544	0.0	2832
7200 min Winter	1.286	0.0	3672
8640 min Winter	1.107	0.0	4408
10080 min Winter	0.975	0.0	5240

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.092

Time (mins) From:	To:	Area (ha)
0	4	0.092

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Model Details

Storage is Online Cover Level (m) 125.400

Cellular Storage Structure

Invert Level (m) 123.800 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	76.0	76.0	0.500	0.0	90.0
0.400	76.0	90.0			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 41 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.633	0.283	3.0	9.9	O K
30 min Summer	123.682	0.332	3.1	11.7	O K
60 min Summer	123.696	0.346	3.2	12.2	O K
120 min Summer	123.673	0.323	3.1	11.3	O K
180 min Summer	123.639	0.289	3.0	10.1	O K
240 min Summer	123.604	0.254	2.9	8.9	O K
360 min Summer	123.544	0.194	2.8	6.8	O K
480 min Summer	123.496	0.146	2.7	5.1	O K
600 min Summer	123.459	0.109	2.6	3.8	O K
720 min Summer	123.431	0.081	2.5	2.9	O K
960 min Summer	123.401	0.051	2.4	1.8	O K
1440 min Summer	123.387	0.037	1.8	1.3	O K
2160 min Summer	123.377	0.027	1.3	1.0	O K
2880 min Summer	123.372	0.022	1.0	0.8	O K
4320 min Summer	123.366	0.016	0.8	0.5	O K
5760 min Summer	123.363	0.013	0.6	0.4	O K
7200 min Summer	123.360	0.010	0.5	0.4	O K
8640 min Summer	123.359	0.009	0.4	0.3	O K
10080 min Summer	123.358	0.008	0.4	0.3	O K
15 min Winter	123.672	0.322	3.1	11.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	30
60 min Summer	56.129	0.0	46
120 min Summer	33.850	0.0	80
180 min Summer	24.849	0.0	114
240 min Summer	19.839	0.0	148
360 min Summer	14.389	0.0	212
480 min Summer	11.459	0.0	272
600 min Summer	9.597	0.0	330
720 min Summer	8.298	0.0	384
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	736
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1460
4320 min Summer	1.953	0.0	2192
5760 min Summer	1.544	0.0	2920
7200 min Summer	1.286	0.0	3552
8640 min Summer	1.107	0.0	4352
10080 min Summer	0.975	0.0	5136
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.732	0.382	3.2	13.4	O K
60 min Winter	123.747	0.397	3.3	14.0	O K
120 min Winter	123.711	0.361	3.2	12.7	O K
180 min Winter	123.659	0.309	3.1	10.8	O K
240 min Winter	123.607	0.257	2.9	9.0	O K
360 min Winter	123.521	0.171	2.7	6.0	O K
480 min Winter	123.456	0.106	2.5	3.7	O K
600 min Winter	123.412	0.062	2.4	2.2	O K
720 min Winter	123.397	0.047	2.3	1.7	O K
960 min Winter	123.388	0.038	1.8	1.3	O K
1440 min Winter	123.377	0.027	1.3	1.0	O K
2160 min Winter	123.370	0.020	1.0	0.7	O K
2880 min Winter	123.366	0.016	0.8	0.5	O K
4320 min Winter	123.361	0.011	0.5	0.4	O K
5760 min Winter	123.359	0.009	0.4	0.3	O K
7200 min Winter	123.358	0.008	0.4	0.3	O K
8640 min Winter	123.357	0.007	0.3	0.2	O K
10080 min Winter	123.356	0.006	0.3	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	48
120 min Winter	33.850	0.0	88
180 min Winter	24.849	0.0	124
240 min Winter	19.839	0.0	158
360 min Winter	14.389	0.0	222
480 min Winter	11.459	0.0	280
600 min Winter	9.597	0.0	330
720 min Winter	8.298	0.0	370
960 min Winter	6.593	0.0	492
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1100
2880 min Winter	2.717	0.0	1428
4320 min Winter	1.953	0.0	2240
5760 min Winter	1.544	0.0	2848
7200 min Winter	1.286	0.0	3736
8640 min Winter	1.107	0.0	4416
10080 min Winter	0.975	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.047

Time (mins) From:	To:	Area (ha)
0	4	0.047

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Model Details

Storage is Online Cover Level (m) 124.700

Cellular Storage Structure

Invert Level (m) 123.350 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	37.0	37.0	0.500	0.0	53.4
0.400	37.0	53.4			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 56 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.019	0.269	1.8	7.7	O K
30 min Summer	124.073	0.323	1.9	9.2	O K
60 min Summer	124.093	0.343	1.9	9.8	O K
120 min Summer	124.080	0.330	1.9	9.4	O K
180 min Summer	124.053	0.303	1.9	8.6	O K
240 min Summer	124.024	0.274	1.8	7.8	O K
360 min Summer	123.971	0.221	1.8	6.3	O K
480 min Summer	123.926	0.176	1.7	5.0	O K
600 min Summer	123.889	0.139	1.7	4.0	O K
720 min Summer	123.859	0.109	1.6	3.1	O K
960 min Summer	123.818	0.068	1.6	1.9	O K
1440 min Summer	123.793	0.043	1.3	1.2	O K
2160 min Summer	123.782	0.032	1.0	0.9	O K
2880 min Summer	123.775	0.025	0.8	0.7	O K
4320 min Summer	123.768	0.018	0.6	0.5	O K
5760 min Summer	123.764	0.014	0.4	0.4	O K
7200 min Summer	123.762	0.012	0.4	0.3	O K
8640 min Summer	123.760	0.010	0.3	0.3	O K
10080 min Summer	123.759	0.009	0.3	0.3	O K
15 min Winter	124.056	0.306	1.9	8.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	31
60 min Summer	56.129	0.0	50
120 min Summer	33.850	0.0	84
180 min Summer	24.849	0.0	118
240 min Summer	19.839	0.0	152
360 min Summer	14.389	0.0	216
480 min Summer	11.459	0.0	280
600 min Summer	9.597	0.0	338
720 min Summer	8.298	0.0	398
960 min Summer	6.593	0.0	508
1440 min Summer	4.760	0.0	736
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1452
4320 min Summer	1.953	0.0	2164
5760 min Summer	1.544	0.0	2936
7200 min Summer	1.286	0.0	3672
8640 min Summer	1.107	0.0	4400
10080 min Summer	0.975	0.0	5096
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.120	0.370	1.9	10.6	O K
60 min Winter	124.146	0.396	2.0	11.3	O K
120 min Winter	124.125	0.375	1.9	10.7	O K
180 min Winter	124.084	0.334	1.9	9.5	O K
240 min Winter	124.041	0.291	1.8	8.3	O K
360 min Winter	123.962	0.212	1.7	6.0	O K
480 min Winter	123.898	0.148	1.7	4.2	O K
600 min Winter	123.848	0.098	1.6	2.8	O K
720 min Winter	123.813	0.063	1.6	1.8	O K
960 min Winter	123.794	0.044	1.3	1.2	O K
1440 min Winter	123.782	0.032	1.0	0.9	O K
2160 min Winter	123.773	0.023	0.7	0.7	O K
2880 min Winter	123.768	0.018	0.6	0.5	O K
4320 min Winter	123.763	0.013	0.4	0.4	O K
5760 min Winter	123.761	0.011	0.3	0.3	O K
7200 min Winter	123.759	0.009	0.3	0.2	O K
8640 min Winter	123.758	0.008	0.2	0.2	O K
10080 min Winter	123.757	0.007	0.2	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	31
60 min Winter	56.129	0.0	56
120 min Winter	33.850	0.0	90
180 min Winter	24.849	0.0	128
240 min Winter	19.839	0.0	164
360 min Winter	14.389	0.0	230
480 min Winter	11.459	0.0	292
600 min Winter	9.597	0.0	350
720 min Winter	8.298	0.0	398
960 min Winter	6.593	0.0	492
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1104
2880 min Winter	2.717	0.0	1452
4320 min Winter	1.953	0.0	2136
5760 min Winter	1.544	0.0	2928
7200 min Winter	1.286	0.0	3632
8640 min Winter	1.107	0.0	4440
10080 min Winter	0.975	0.0	5008

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.035

Time (mins) From:	To:	Area (ha)
0	4	0.035

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Model Details

Storage is Online Cover Level (m) 125.350

Cellular Storage Structure

Invert Level (m) 123.750 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	30.0	24.0	0.500	0.0	32.0
0.400	30.0	32.0			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 43 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.767	0.267	2.2	7.4	O K
30 min Summer	123.814	0.314	2.2	8.7	O K
60 min Summer	123.828	0.328	2.2	9.1	O K
120 min Summer	123.806	0.306	2.2	8.5	O K
180 min Summer	123.773	0.273	2.2	7.6	O K
240 min Summer	123.740	0.240	2.1	6.7	O K
360 min Summer	123.681	0.181	2.0	5.0	O K
480 min Summer	123.634	0.134	2.0	3.7	O K
600 min Summer	123.599	0.099	1.9	2.7	O K
720 min Summer	123.573	0.073	1.9	2.0	O K
960 min Summer	123.549	0.049	1.8	1.3	O K
1440 min Summer	123.536	0.036	1.3	1.0	O K
2160 min Summer	123.526	0.026	1.0	0.7	O K
2880 min Summer	123.521	0.021	0.8	0.6	O K
4320 min Summer	123.515	0.015	0.6	0.4	O K
5760 min Summer	123.512	0.012	0.4	0.3	O K
7200 min Summer	123.510	0.010	0.4	0.3	O K
8640 min Summer	123.509	0.009	0.3	0.2	O K
10080 min Summer	123.508	0.008	0.3	0.2	O K
15 min Winter	123.804	0.304	2.2	8.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	30
60 min Summer	56.129	0.0	46
120 min Summer	33.850	0.0	80
180 min Summer	24.849	0.0	114
240 min Summer	19.839	0.0	148
360 min Summer	14.389	0.0	212
480 min Summer	11.459	0.0	272
600 min Summer	9.597	0.0	328
720 min Summer	8.298	0.0	384
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1440
4320 min Summer	1.953	0.0	2164
5760 min Summer	1.544	0.0	2936
7200 min Summer	1.286	0.0	3616
8640 min Summer	1.107	0.0	4408
10080 min Summer	0.975	0.0	5080
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.863	0.363	2.3	10.1	O K
60 min Winter	123.877	0.377	2.3	10.5	O K
120 min Winter	123.844	0.344	2.3	9.5	O K
180 min Winter	123.793	0.293	2.2	8.1	O K
240 min Winter	123.743	0.243	2.1	6.7	O K
360 min Winter	123.657	0.157	2.0	4.4	O K
480 min Winter	123.593	0.093	1.9	2.6	O K
600 min Winter	123.555	0.055	1.9	1.5	O K
720 min Winter	123.545	0.045	1.7	1.3	O K
960 min Winter	123.536	0.036	1.4	1.0	O K
1440 min Winter	123.526	0.026	1.0	0.7	O K
2160 min Winter	123.519	0.019	0.7	0.5	O K
2880 min Winter	123.515	0.015	0.6	0.4	O K
4320 min Winter	123.511	0.011	0.4	0.3	O K
5760 min Winter	123.509	0.009	0.3	0.2	O K
7200 min Winter	123.507	0.007	0.3	0.2	O K
8640 min Winter	123.506	0.006	0.2	0.2	O K
10080 min Winter	123.506	0.006	0.2	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	50
120 min Winter	33.850	0.0	88
180 min Winter	24.849	0.0	124
240 min Winter	19.839	0.0	158
360 min Winter	14.389	0.0	222
480 min Winter	11.459	0.0	278
600 min Winter	9.597	0.0	322
720 min Winter	8.298	0.0	372
960 min Winter	6.593	0.0	490
1440 min Winter	4.760	0.0	734
2160 min Winter	3.431	0.0	1100
2880 min Winter	2.717	0.0	1436
4320 min Winter	1.953	0.0	2204
5760 min Winter	1.544	0.0	2856
7200 min Winter	1.286	0.0	3584
8640 min Winter	1.107	0.0	4256
10080 min Winter	0.975	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.035

Time (mins) From:	To:	Area (ha)
0	4	0.035

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Model Details

Storage is Online Cover Level (m) 124.800

Cellular Storage Structure

Invert Level (m) 123.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	29.3	29.3	0.500	0.0	38.1
0.400	29.3	38.1			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 35 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.868	0.268	1.6	4.6	O K
30 min Summer	123.911	0.311	1.6	5.3	O K
60 min Summer	123.922	0.322	1.6	5.5	O K
120 min Summer	123.897	0.297	1.6	5.1	O K
180 min Summer	123.862	0.262	1.5	4.5	O K
240 min Summer	123.829	0.229	1.5	3.9	O K
360 min Summer	123.771	0.171	1.4	2.9	O K
480 min Summer	123.727	0.127	1.3	2.2	O K
600 min Summer	123.694	0.094	1.3	1.6	O K
720 min Summer	123.670	0.070	1.2	1.2	O K
960 min Summer	123.648	0.048	1.1	0.8	O K
1440 min Summer	123.635	0.035	0.8	0.6	O K
2160 min Summer	123.626	0.026	0.6	0.4	O K
2880 min Summer	123.621	0.021	0.5	0.4	O K
4320 min Summer	123.615	0.015	0.4	0.2	O K
5760 min Summer	123.612	0.012	0.3	0.2	O K
7200 min Summer	123.610	0.010	0.2	0.2	O K
8640 min Summer	123.609	0.009	0.2	0.1	O K
10080 min Summer	123.608	0.008	0.2	0.1	O K
15 min Winter	123.905	0.305	1.6	5.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	16
30 min Summer	89.929	0.0	28
60 min Summer	56.129	0.0	44
120 min Summer	33.850	0.0	80
180 min Summer	24.849	0.0	112
240 min Summer	19.839	0.0	146
360 min Summer	14.389	0.0	208
480 min Summer	11.459	0.0	268
600 min Summer	9.597	0.0	326
720 min Summer	8.298	0.0	382
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2152
5760 min Summer	1.544	0.0	2880
7200 min Summer	1.286	0.0	3672
8640 min Summer	1.107	0.0	4376
10080 min Summer	0.975	0.0	5120
15 min Winter	137.234	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.958	0.358	1.7	6.1	O K
60 min Winter	123.968	0.368	1.7	6.3	O K
120 min Winter	123.928	0.328	1.7	5.6	O K
180 min Winter	123.875	0.275	1.6	4.7	O K
240 min Winter	123.825	0.225	1.5	3.9	O K
360 min Winter	123.744	0.144	1.4	2.5	O K
480 min Winter	123.687	0.087	1.3	1.5	O K
600 min Winter	123.653	0.053	1.2	0.9	O K
720 min Winter	123.645	0.045	1.1	0.8	O K
960 min Winter	123.636	0.036	0.9	0.6	O K
1440 min Winter	123.626	0.026	0.6	0.4	O K
2160 min Winter	123.619	0.019	0.4	0.3	O K
2880 min Winter	123.615	0.015	0.4	0.3	O K
4320 min Winter	123.611	0.011	0.3	0.2	O K
5760 min Winter	123.609	0.009	0.2	0.1	O K
7200 min Winter	123.607	0.007	0.2	0.1	O K
8640 min Winter	123.606	0.006	0.1	0.1	O K
10080 min Winter	123.606	0.006	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	48
120 min Winter	33.850	0.0	86
180 min Winter	24.849	0.0	122
240 min Winter	19.839	0.0	156
360 min Winter	14.389	0.0	218
480 min Winter	11.459	0.0	274
600 min Winter	9.597	0.0	320
720 min Winter	8.298	0.0	370
960 min Winter	6.593	0.0	490
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1084
2880 min Winter	2.717	0.0	1468
4320 min Winter	1.953	0.0	2120
5760 min Winter	1.544	0.0	2904
7200 min Winter	1.286	0.0	3704
8640 min Winter	1.107	0.0	4368
10080 min Winter	0.975	0.0	5128

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.022

Time (mins) From:	To:	Area (ha)
0	4	0.022

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Model Details

Storage is Online Cover Level (m) 124.700

Cellular Storage Structure

Invert Level (m) 123.600 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	18.0	18.0	0.500	0.0	28.8
0.400	18.0	28.8			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 47 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.878	0.278	4.9	18.0	O K
30 min Summer	122.929	0.329	5.0	21.3	O K
60 min Summer	122.944	0.344	5.1	22.2	O K
120 min Summer	122.924	0.324	5.0	20.9	O K
180 min Summer	122.891	0.291	4.9	18.8	O K
240 min Summer	122.857	0.257	4.9	16.6	O K
360 min Summer	122.796	0.196	4.7	12.7	O K
480 min Summer	122.748	0.148	4.6	9.5	O K
600 min Summer	122.709	0.109	4.5	7.1	O K
720 min Summer	122.681	0.081	4.4	5.2	O K
960 min Summer	122.651	0.051	4.3	3.3	O K
1440 min Summer	122.637	0.037	3.2	2.4	O K
2160 min Summer	122.627	0.027	2.4	1.8	O K
2880 min Summer	122.622	0.022	1.9	1.4	O K
4320 min Summer	122.616	0.016	1.4	1.0	O K
5760 min Summer	122.612	0.012	1.1	0.8	O K
7200 min Summer	122.610	0.010	0.9	0.7	O K
8640 min Summer	122.609	0.009	0.8	0.6	O K
10080 min Summer	122.608	0.008	0.7	0.5	O K
15 min Winter	122.917	0.317	5.0	20.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	30
60 min Summer	56.129	0.0	48
120 min Summer	33.850	0.0	82
180 min Summer	24.849	0.0	116
240 min Summer	19.839	0.0	148
360 min Summer	14.389	0.0	212
480 min Summer	11.459	0.0	274
600 min Summer	9.597	0.0	332
720 min Summer	8.298	0.0	386
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1096
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2156
5760 min Summer	1.544	0.0	2848
7200 min Summer	1.286	0.0	3632
8640 min Summer	1.107	0.0	4400
10080 min Summer	0.975	0.0	5072
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.979	0.379	5.2	24.5	O K
60 min Winter	122.997	0.397	5.2	25.7	O K
120 min Winter	122.966	0.366	5.1	23.6	O K
180 min Winter	122.915	0.315	5.0	20.4	O K
240 min Winter	122.864	0.264	4.9	17.1	O K
360 min Winter	122.775	0.175	4.6	11.3	O K
480 min Winter	122.707	0.107	4.5	6.9	O K
600 min Winter	122.662	0.062	4.4	4.0	O K
720 min Winter	122.647	0.047	4.1	3.0	O K
960 min Winter	122.638	0.038	3.3	2.4	O K
1440 min Winter	122.627	0.027	2.4	1.7	O K
2160 min Winter	122.620	0.020	1.7	1.3	O K
2880 min Winter	122.616	0.016	1.4	1.0	O K
4320 min Winter	122.611	0.011	1.0	0.7	O K
5760 min Winter	122.609	0.009	0.8	0.6	O K
7200 min Winter	122.608	0.008	0.7	0.5	O K
8640 min Winter	122.607	0.007	0.6	0.4	O K
10080 min Winter	122.606	0.006	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	50
120 min Winter	33.850	0.0	88
180 min Winter	24.849	0.0	126
240 min Winter	19.839	0.0	160
360 min Winter	14.389	0.0	224
480 min Winter	11.459	0.0	282
600 min Winter	9.597	0.0	330
720 min Winter	8.298	0.0	372
960 min Winter	6.593	0.0	492
1440 min Winter	4.760	0.0	734
2160 min Winter	3.431	0.0	1084
2880 min Winter	2.717	0.0	1468
4320 min Winter	1.953	0.0	2156
5760 min Winter	1.544	0.0	2904
7200 min Winter	1.286	0.0	3560
8640 min Winter	1.107	0.0	4456
10080 min Winter	0.975	0.0	5104

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.084

Time (mins) From:	To:	Area (ha)
0	4	0.084

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Model Details

Storage is Online Cover Level (m) 124.000

Cellular Storage Structure

Invert Level (m) 122.600 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	68.0	68.0	0.500	0.0	84.8
0.400	68.0	84.8			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 44 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.523	0.273	3.4	11.7	O K
30 min Summer	122.572	0.322	3.5	13.8	O K
60 min Summer	122.586	0.336	3.5	14.4	O K
120 min Summer	122.564	0.314	3.5	13.4	O K
180 min Summer	122.531	0.281	3.4	12.0	O K
240 min Summer	122.497	0.247	3.3	10.6	O K
360 min Summer	122.437	0.187	3.2	8.0	O K
480 min Summer	122.390	0.140	3.1	6.0	O K
600 min Summer	122.354	0.104	3.0	4.4	O K
720 min Summer	122.327	0.077	2.9	3.3	O K
960 min Summer	122.299	0.049	2.8	2.1	O K
1440 min Summer	122.287	0.037	2.1	1.6	O K
2160 min Summer	122.277	0.027	1.5	1.1	O K
2880 min Summer	122.271	0.021	1.2	0.9	O K
4320 min Summer	122.265	0.015	0.9	0.6	O K
5760 min Summer	122.262	0.012	0.7	0.5	O K
7200 min Summer	122.260	0.010	0.6	0.4	O K
8640 min Summer	122.259	0.009	0.5	0.4	O K
10080 min Summer	122.258	0.008	0.4	0.3	O K
15 min Winter	122.561	0.311	3.5	13.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	30
60 min Summer	56.129	0.0	46
120 min Summer	33.850	0.0	80
180 min Summer	24.849	0.0	114
240 min Summer	19.839	0.0	148
360 min Summer	14.389	0.0	212
480 min Summer	11.459	0.0	272
600 min Summer	9.597	0.0	330
720 min Summer	8.298	0.0	384
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1448
4320 min Summer	1.953	0.0	2164
5760 min Summer	1.544	0.0	2904
7200 min Summer	1.286	0.0	3672
8640 min Summer	1.107	0.0	4328
10080 min Summer	0.975	0.0	5136
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.621	0.371	3.6	15.9	O K
60 min Winter	122.637	0.387	3.6	16.5	O K
120 min Winter	122.603	0.353	3.6	15.1	O K
180 min Winter	122.552	0.302	3.4	12.9	O K
240 min Winter	122.501	0.251	3.3	10.7	O K
360 min Winter	122.414	0.164	3.1	7.0	O K
480 min Winter	122.349	0.099	3.0	4.2	O K
600 min Winter	122.308	0.058	2.9	2.5	O K
720 min Winter	122.296	0.046	2.7	2.0	O K
960 min Winter	122.287	0.037	2.1	1.6	O K
1440 min Winter	122.277	0.027	1.5	1.1	O K
2160 min Winter	122.269	0.019	1.1	0.8	O K
2880 min Winter	122.265	0.015	0.9	0.6	O K
4320 min Winter	122.261	0.011	0.6	0.5	O K
5760 min Winter	122.259	0.009	0.5	0.4	O K
7200 min Winter	122.257	0.007	0.4	0.3	O K
8640 min Winter	122.256	0.006	0.4	0.3	O K
10080 min Winter	122.256	0.006	0.3	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	50
120 min Winter	33.850	0.0	88
180 min Winter	24.849	0.0	124
240 min Winter	19.839	0.0	158
360 min Winter	14.389	0.0	222
480 min Winter	11.459	0.0	280
600 min Winter	9.597	0.0	326
720 min Winter	8.298	0.0	372
960 min Winter	6.593	0.0	492
1440 min Winter	4.760	0.0	734
2160 min Winter	3.431	0.0	1100
2880 min Winter	2.717	0.0	1468
4320 min Winter	1.953	0.0	2172
5760 min Winter	1.544	0.0	2904
7200 min Winter	1.286	0.0	3624
8640 min Winter	1.107	0.0	4320
10080 min Winter	0.975	0.0	5024

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.055

Time (mins) From:	To:	Area (ha)
0	4	0.055

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Model Details

Storage is Online Cover Level (m) 123.820

Cellular Storage Structure

Invert Level (m) 122.250 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	45.0	45.0	0.500	0.0	59.4
0.400	45.0	59.4			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 38 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.328	0.278	4.7	14.7	O K
30 min Summer	123.374	0.324	5.0	17.1	O K
60 min Summer	123.387	0.337	5.0	17.8	O K
120 min Summer	123.363	0.313	4.9	16.5	O K
180 min Summer	123.328	0.278	4.7	14.7	O K
240 min Summer	123.294	0.244	4.6	12.9	O K
360 min Summer	123.234	0.184	4.3	9.7	O K
480 min Summer	123.188	0.138	4.1	7.3	O K
600 min Summer	123.153	0.103	3.9	5.4	O K
720 min Summer	123.127	0.077	3.8	4.1	O K
960 min Summer	123.100	0.050	3.6	2.6	O K
1440 min Summer	123.087	0.037	2.7	1.9	O K
2160 min Summer	123.077	0.027	2.0	1.4	O K
2880 min Summer	123.071	0.021	1.6	1.1	O K
4320 min Summer	123.065	0.015	1.1	0.8	O K
5760 min Summer	123.062	0.012	0.9	0.6	O K
7200 min Summer	123.060	0.010	0.8	0.5	O K
8640 min Summer	123.059	0.009	0.6	0.5	O K
10080 min Summer	123.058	0.008	0.6	0.4	O K
15 min Winter	123.367	0.317	4.9	16.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	16
30 min Summer	89.929	0.0	29
60 min Summer	56.129	0.0	46
120 min Summer	33.850	0.0	80
180 min Summer	24.849	0.0	114
240 min Summer	19.839	0.0	146
360 min Summer	14.389	0.0	210
480 min Summer	11.459	0.0	270
600 min Summer	9.597	0.0	328
720 min Summer	8.298	0.0	384
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1440
4320 min Summer	1.953	0.0	2200
5760 min Summer	1.544	0.0	2928
7200 min Summer	1.286	0.0	3584
8640 min Summer	1.107	0.0	4336
10080 min Summer	0.975	0.0	5048
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.424	0.374	5.2	19.7	O K
60 min Winter	123.436	0.386	5.3	20.3	O K
120 min Winter	123.397	0.347	5.1	18.3	O K
180 min Winter	123.344	0.294	4.8	15.5	O K
240 min Winter	123.293	0.243	4.6	12.8	O K
360 min Winter	123.209	0.159	4.2	8.4	O K
480 min Winter	123.148	0.098	3.9	5.2	O K
600 min Winter	123.108	0.058	3.7	3.1	O K
720 min Winter	123.096	0.046	3.4	2.4	O K
960 min Winter	123.087	0.037	2.7	2.0	O K
1440 min Winter	123.077	0.027	2.0	1.4	O K
2160 min Winter	123.069	0.019	1.4	1.0	O K
2880 min Winter	123.065	0.015	1.1	0.8	O K
4320 min Winter	123.061	0.011	0.8	0.6	O K
5760 min Winter	123.059	0.009	0.6	0.5	O K
7200 min Winter	123.057	0.007	0.5	0.4	O K
8640 min Winter	123.056	0.006	0.5	0.3	O K
10080 min Winter	123.056	0.006	0.4	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	48
120 min Winter	33.850	0.0	86
180 min Winter	24.849	0.0	122
240 min Winter	19.839	0.0	156
360 min Winter	14.389	0.0	220
480 min Winter	11.459	0.0	278
600 min Winter	9.597	0.0	326
720 min Winter	8.298	0.0	372
960 min Winter	6.593	0.0	492
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1104
2880 min Winter	2.717	0.0	1468
4320 min Winter	1.953	0.0	2140
5760 min Winter	1.544	0.0	2880
7200 min Winter	1.286	0.0	3672
8640 min Winter	1.107	0.0	4312
10080 min Winter	0.975	0.0	5288

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.070

Time (mins) From:	To:	Area (ha)
0	4	0.070

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Model Details

Storage is Online Cover Level (m) 124.100

Cellular Storage Structure

Invert Level (m) 123.050 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.66600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.66600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	55.5	55.5	0.500	0.0	86.3
0.400	55.5	86.3			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 347 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	120.440	0.340	0.3	6.5	O K
30 min Summer	120.537	0.437	0.3	8.3	O K
60 min Summer	120.627	0.527	0.3	10.0	O K
120 min Summer	120.695	0.595	0.3	11.3	O K
180 min Summer	120.714	0.614	0.3	11.7	O K
240 min Summer	120.713	0.613	0.3	11.7	O K
360 min Summer	120.698	0.598	0.3	11.4	O K
480 min Summer	120.681	0.581	0.3	11.0	O K
600 min Summer	120.664	0.564	0.3	10.7	O K
720 min Summer	120.646	0.546	0.3	10.4	O K
960 min Summer	120.612	0.512	0.3	9.7	O K
1440 min Summer	120.549	0.449	0.3	8.5	O K
2160 min Summer	120.466	0.366	0.3	7.0	O K
2880 min Summer	120.397	0.297	0.3	5.6	O K
4320 min Summer	120.289	0.189	0.3	3.6	O K
5760 min Summer	120.216	0.116	0.2	2.2	O K
7200 min Summer	120.170	0.070	0.2	1.3	O K
8640 min Summer	120.150	0.050	0.2	0.9	O K
10080 min Summer	120.144	0.044	0.2	0.8	O K
15 min Winter	120.482	0.382	0.3	7.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	19
30 min Summer	89.929	0.0	33
60 min Summer	56.129	0.0	62
120 min Summer	33.850	0.0	122
180 min Summer	24.849	0.0	180
240 min Summer	19.839	0.0	240
360 min Summer	14.389	0.0	294
480 min Summer	11.459	0.0	358
600 min Summer	9.597	0.0	424
720 min Summer	8.298	0.0	492
960 min Summer	6.593	0.0	628
1440 min Summer	4.760	0.0	906
2160 min Summer	3.431	0.0	1300
2880 min Summer	2.717	0.0	1676
4320 min Summer	1.953	0.0	2416
5760 min Summer	1.544	0.0	3112
7200 min Summer	1.286	0.0	3752
8640 min Summer	1.107	0.0	4408
10080 min Summer	0.975	0.0	5136
15 min Winter	137.234	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	120.592	0.492	0.3	9.4	O K
60 min Winter	120.696	0.596	0.3	11.3	O K
120 min Winter	120.777	0.677	0.4	12.9	O K
180 min Winter	120.804	0.704	0.4	13.4	O K
240 min Winter	120.809	0.709	0.4	13.5	O K
360 min Winter	120.792	0.692	0.4	13.1	O K
480 min Winter	120.771	0.671	0.4	12.7	O K
600 min Winter	120.749	0.649	0.4	12.3	O K
720 min Winter	120.725	0.625	0.3	11.9	O K
960 min Winter	120.676	0.576	0.3	10.9	O K
1440 min Winter	120.583	0.483	0.3	9.2	O K
2160 min Winter	120.464	0.364	0.3	6.9	O K
2880 min Winter	120.365	0.265	0.3	5.0	O K
4320 min Winter	120.223	0.123	0.2	2.3	O K
5760 min Winter	120.150	0.050	0.2	1.0	O K
7200 min Winter	120.142	0.042	0.2	0.8	O K
8640 min Winter	120.136	0.036	0.2	0.7	O K
10080 min Winter	120.132	0.032	0.1	0.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	33
60 min Winter	56.129	0.0	62
120 min Winter	33.850	0.0	120
180 min Winter	24.849	0.0	176
240 min Winter	19.839	0.0	232
360 min Winter	14.389	0.0	334
480 min Winter	11.459	0.0	378
600 min Winter	9.597	0.0	454
720 min Winter	8.298	0.0	532
960 min Winter	6.593	0.0	684
1440 min Winter	4.760	0.0	978
2160 min Winter	3.431	0.0	1384
2880 min Winter	2.717	0.0	1764
4320 min Winter	1.953	0.0	2464
5760 min Winter	1.544	0.0	2944
7200 min Winter	1.286	0.0	3672
8640 min Winter	1.107	0.0	4400
10080 min Winter	0.975	0.0	5144

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 121.600

Cellular Storage Structure

Invert Level (m) 120.100 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.12096 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.12096

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	20.0	20.0	0.900	0.0	34.4
0.800	20.0	34.4			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 313 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	120.623	0.373	0.2	5.0	O K
30 min Summer	120.730	0.480	0.3	6.4	O K
60 min Summer	120.828	0.578	0.3	7.7	O K
120 min Summer	120.900	0.650	0.3	8.6	O K
180 min Summer	120.918	0.668	0.3	8.9	O K
240 min Summer	120.915	0.665	0.3	8.8	O K
360 min Summer	120.900	0.650	0.3	8.6	O K
480 min Summer	120.882	0.632	0.3	8.4	O K
600 min Summer	120.863	0.613	0.3	8.2	O K
720 min Summer	120.844	0.594	0.3	7.9	O K
960 min Summer	120.807	0.557	0.3	7.4	O K
1440 min Summer	120.739	0.489	0.3	6.5	O K
2160 min Summer	120.653	0.403	0.2	5.4	O K
2880 min Summer	120.581	0.331	0.2	4.4	O K
4320 min Summer	120.470	0.220	0.2	2.9	O K
5760 min Summer	120.392	0.142	0.2	1.9	O K
7200 min Summer	120.339	0.089	0.2	1.2	O K
8640 min Summer	120.308	0.058	0.2	0.8	O K
10080 min Summer	120.297	0.047	0.2	0.6	O K
15 min Winter	120.669	0.419	0.2	5.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	19
30 min Summer	89.929	0.0	33
60 min Summer	56.129	0.0	62
120 min Summer	33.850	0.0	122
180 min Summer	24.849	0.0	180
240 min Summer	19.839	0.0	226
360 min Summer	14.389	0.0	284
480 min Summer	11.459	0.0	348
600 min Summer	9.597	0.0	416
720 min Summer	8.298	0.0	486
960 min Summer	6.593	0.0	624
1440 min Summer	4.760	0.0	896
2160 min Summer	3.431	0.0	1296
2880 min Summer	2.717	0.0	1672
4320 min Summer	1.953	0.0	2420
5760 min Summer	1.544	0.0	3112
7200 min Summer	1.286	0.0	3816
8640 min Summer	1.107	0.0	4416
10080 min Summer	0.975	0.0	5136
15 min Winter	137.234	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	120.790	0.540	0.3	7.2	O K
60 min Winter	120.902	0.652	0.3	8.7	O K
120 min Winter	120.989	0.739	0.3	9.8	O K
180 min Winter	121.015	0.765	0.3	10.2	O K
240 min Winter	121.017	0.767	0.3	10.2	O K
360 min Winter	120.997	0.747	0.3	9.9	O K
480 min Winter	120.976	0.726	0.3	9.7	O K
600 min Winter	120.951	0.701	0.3	9.3	O K
720 min Winter	120.925	0.675	0.3	9.0	O K
960 min Winter	120.872	0.622	0.3	8.3	O K
1440 min Winter	120.773	0.523	0.3	7.0	O K
2160 min Winter	120.649	0.399	0.2	5.3	O K
2880 min Winter	120.550	0.300	0.2	4.0	O K
4320 min Winter	120.406	0.156	0.2	2.1	O K
5760 min Winter	120.317	0.067	0.2	0.9	O K
7200 min Winter	120.295	0.045	0.2	0.6	O K
8640 min Winter	120.289	0.039	0.1	0.5	O K
10080 min Winter	120.285	0.035	0.1	0.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	33
60 min Winter	56.129	0.0	62
120 min Winter	33.850	0.0	120
180 min Winter	24.849	0.0	176
240 min Winter	19.839	0.0	230
360 min Winter	14.389	0.0	296
480 min Winter	11.459	0.0	370
600 min Winter	9.597	0.0	446
720 min Winter	8.298	0.0	524
960 min Winter	6.593	0.0	674
1440 min Winter	4.760	0.0	966
2160 min Winter	3.431	0.0	1380
2880 min Winter	2.717	0.0	1760
4320 min Winter	1.953	0.0	2504
5760 min Winter	1.544	0.0	3112
7200 min Winter	1.286	0.0	3672
8640 min Winter	1.107	0.0	4376
10080 min Winter	0.975	0.0	5120

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.020

Time (mins) From:	To:	Area (ha)
0	4	0.020

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Model Details

Storage is Online Cover Level (m) 121.800

Cellular Storage Structure

Invert Level (m) 120.250 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.12096 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.12096

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	14.0	14.0	0.900	0.0	28.4
0.800	14.0	28.4			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 50 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.313	0.213	0.7	2.8	O K
30 min Summer	122.355	0.255	0.8	3.4	O K
60 min Summer	122.370	0.270	0.8	3.6	O K
120 min Summer	122.359	0.259	0.8	3.4	O K
180 min Summer	122.337	0.237	0.7	3.2	O K
240 min Summer	122.314	0.214	0.7	2.8	O K
360 min Summer	122.271	0.171	0.7	2.3	O K
480 min Summer	122.236	0.136	0.7	1.8	O K
600 min Summer	122.208	0.108	0.6	1.4	O K
720 min Summer	122.185	0.085	0.6	1.1	O K
960 min Summer	122.157	0.057	0.6	0.8	O K
1440 min Summer	122.140	0.040	0.5	0.5	O K
2160 min Summer	122.130	0.030	0.4	0.4	O K
2880 min Summer	122.124	0.024	0.3	0.3	O K
4320 min Summer	122.117	0.017	0.2	0.2	O K
5760 min Summer	122.114	0.014	0.2	0.2	O K
7200 min Summer	122.111	0.011	0.1	0.1	O K
8640 min Summer	122.110	0.010	0.1	0.1	O K
10080 min Summer	122.109	0.009	0.1	0.1	O K
15 min Winter	122.342	0.242	0.7	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	30
60 min Summer	56.129	0.0	48
120 min Summer	33.850	0.0	82
180 min Summer	24.849	0.0	116
240 min Summer	19.839	0.0	150
360 min Summer	14.389	0.0	214
480 min Summer	11.459	0.0	276
600 min Summer	9.597	0.0	336
720 min Summer	8.298	0.0	392
960 min Summer	6.593	0.0	502
1440 min Summer	4.760	0.0	736
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2176
5760 min Summer	1.544	0.0	2920
7200 min Summer	1.286	0.0	3672
8640 min Summer	1.107	0.0	4344
10080 min Summer	0.975	0.0	5040
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.392	0.292	0.8	3.9	O K
60 min Winter	122.410	0.310	0.8	4.1	O K
120 min Winter	122.392	0.292	0.8	3.9	O K
180 min Winter	122.358	0.258	0.8	3.4	O K
240 min Winter	122.323	0.223	0.7	3.0	O K
360 min Winter	122.261	0.161	0.7	2.1	O K
480 min Winter	122.212	0.112	0.7	1.5	O K
600 min Winter	122.175	0.075	0.6	1.0	O K
720 min Winter	122.152	0.052	0.6	0.7	O K
960 min Winter	122.141	0.041	0.5	0.5	O K
1440 min Winter	122.130	0.030	0.4	0.4	O K
2160 min Winter	122.122	0.022	0.3	0.3	O K
2880 min Winter	122.117	0.017	0.2	0.2	O K
4320 min Winter	122.113	0.013	0.2	0.2	O K
5760 min Winter	122.110	0.010	0.1	0.1	O K
7200 min Winter	122.108	0.008	0.1	0.1	O K
8640 min Winter	122.107	0.007	0.1	0.1	O K
10080 min Winter	122.106	0.006	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	30
60 min Winter	56.129	0.0	52
120 min Winter	33.850	0.0	88
180 min Winter	24.849	0.0	126
240 min Winter	19.839	0.0	162
360 min Winter	14.389	0.0	228
480 min Winter	11.459	0.0	288
600 min Winter	9.597	0.0	342
720 min Winter	8.298	0.0	384
960 min Winter	6.593	0.0	494
1440 min Winter	4.760	0.0	738
2160 min Winter	3.431	0.0	1080
2880 min Winter	2.717	0.0	1432
4320 min Winter	1.953	0.0	2200
5760 min Winter	1.544	0.0	2936
7200 min Winter	1.286	0.0	3592
8640 min Winter	1.107	0.0	4504
10080 min Winter	0.975	0.0	5024

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.013

Time (mins) From:	To:	Area (ha)
0	4	0.013

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Model Details

Storage is Online Cover Level (m) 123.200

Cellular Storage Structure

Invert Level (m) 122.100 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.43920 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.43920

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	14.0	14.0	0.500	0.0	21.2
0.400	14.0	21.2			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 69 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.911	0.261	2.4	11.9	O K
30 min Summer	121.967	0.317	2.4	14.5	O K
60 min Summer	121.992	0.342	2.5	15.6	O K
120 min Summer	121.986	0.336	2.5	15.3	O K
180 min Summer	121.964	0.314	2.4	14.3	O K
240 min Summer	121.940	0.290	2.4	13.2	O K
360 min Summer	121.893	0.243	2.3	11.1	O K
480 min Summer	121.852	0.202	2.3	9.2	O K
600 min Summer	121.817	0.167	2.2	7.6	O K
720 min Summer	121.787	0.137	2.2	6.2	O K
960 min Summer	121.741	0.091	2.1	4.1	O K
1440 min Summer	121.699	0.049	2.0	2.2	O K
2160 min Summer	121.686	0.036	1.5	1.6	O K
2880 min Summer	121.679	0.029	1.2	1.3	O K
4320 min Summer	121.671	0.021	0.8	0.9	O K
5760 min Summer	121.667	0.017	0.7	0.8	O K
7200 min Summer	121.664	0.014	0.6	0.6	O K
8640 min Summer	121.662	0.012	0.5	0.5	O K
10080 min Summer	121.661	0.011	0.4	0.5	O K
15 min Winter	121.945	0.295	2.4	13.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	31
60 min Summer	56.129	0.0	54
120 min Summer	33.850	0.0	86
180 min Summer	24.849	0.0	120
240 min Summer	19.839	0.0	154
360 min Summer	14.389	0.0	220
480 min Summer	11.459	0.0	286
600 min Summer	9.597	0.0	346
720 min Summer	8.298	0.0	406
960 min Summer	6.593	0.0	520
1440 min Summer	4.760	0.0	736
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2200
5760 min Summer	1.544	0.0	2912
7200 min Summer	1.286	0.0	3616
8640 min Summer	1.107	0.0	4400
10080 min Summer	0.975	0.0	5120
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.013	0.363	2.5	16.5	O K
60 min Winter	122.047	0.397	2.6	18.1	O K
120 min Winter	122.035	0.385	2.5	17.6	O K
180 min Winter	122.003	0.353	2.5	16.1	O K
240 min Winter	121.966	0.316	2.4	14.4	O K
360 min Winter	121.896	0.246	2.3	11.2	O K
480 min Winter	121.837	0.187	2.2	8.5	O K
600 min Winter	121.787	0.137	2.2	6.2	O K
720 min Winter	121.746	0.096	2.1	4.4	O K
960 min Winter	121.700	0.050	2.0	2.3	O K
1440 min Winter	121.686	0.036	1.5	1.7	O K
2160 min Winter	121.676	0.026	1.1	1.2	O K
2880 min Winter	121.671	0.021	0.9	1.0	O K
4320 min Winter	121.665	0.015	0.6	0.7	O K
5760 min Winter	121.662	0.012	0.5	0.5	O K
7200 min Winter	121.660	0.010	0.4	0.5	O K
8640 min Winter	121.659	0.009	0.4	0.4	O K
10080 min Winter	121.658	0.008	0.3	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	31
60 min Winter	56.129	0.0	58
120 min Winter	33.850	0.0	92
180 min Winter	24.849	0.0	130
240 min Winter	19.839	0.0	168
360 min Winter	14.389	0.0	236
480 min Winter	11.459	0.0	302
600 min Winter	9.597	0.0	362
720 min Winter	8.298	0.0	418
960 min Winter	6.593	0.0	500
1440 min Winter	4.760	0.0	738
2160 min Winter	3.431	0.0	1104
2880 min Winter	2.717	0.0	1464
4320 min Winter	1.953	0.0	2248
5760 min Winter	1.544	0.0	2888
7200 min Winter	1.286	0.0	3736
8640 min Winter	1.107	0.0	4360
10080 min Winter	0.975	0.0	5128

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.053

Time (mins) From:	To:	Area (ha)
0	4	0.053

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Model Details

Storage is Online Cover Level (m) 122.900

Cellular Storage Structure

Invert Level (m) 121.650 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.43920 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.43920

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	48.0	48.0	0.500	0.0	63.2
0.400	48.0	63.2			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 21 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	125.584	1.184	6.1	10.2	O K
30 min Summer	125.690	1.290	6.7	11.6	O K
60 min Summer	125.700	1.300	6.8	11.7	O K
120 min Summer	125.593	1.193	6.2	10.4	O K
180 min Summer	125.482	1.082	5.6	9.0	O K
240 min Summer	125.389	0.989	5.1	7.8	O K
360 min Summer	125.252	0.852	4.3	6.1	O K
480 min Summer	125.160	0.760	3.8	5.0	O K
600 min Summer	125.097	0.697	3.4	4.2	O K
720 min Summer	125.049	0.649	3.1	3.6	O K
960 min Summer	124.974	0.574	2.6	2.8	O K
1440 min Summer	124.876	0.476	1.9	2.0	O K
2160 min Summer	124.785	0.385	1.4	1.3	O K
2880 min Summer	124.728	0.328	1.2	0.9	O K
4320 min Summer	124.657	0.257	0.8	0.6	O K
5760 min Summer	124.614	0.214	0.7	0.4	O K
7200 min Summer	124.585	0.185	0.6	0.3	O K
8640 min Summer	124.563	0.163	0.5	0.2	O K
10080 min Summer	124.547	0.147	0.4	0.2	O K
15 min Winter	125.692	1.292	6.7	11.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	15
30 min Summer	89.559	0.0	23
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	74
180 min Summer	24.691	0.0	106
240 min Summer	19.711	0.0	136
360 min Summer	14.285	0.0	198
480 min Summer	11.371	0.0	258
600 min Summer	9.521	0.0	318
720 min Summer	8.231	0.0	378
960 min Summer	6.537	0.0	500
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2904
7200 min Summer	1.272	0.0	3648
8640 min Summer	1.095	0.0	4328
10080 min Summer	0.964	0.0	5136
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	125.800	1.400	7.3	12.9	O K
60 min Winter	125.778	1.378	7.2	12.7	O K
120 min Winter	125.609	1.209	6.3	10.6	O K
180 min Winter	125.456	1.056	5.4	8.7	O K
240 min Winter	125.337	0.937	4.8	7.2	O K
360 min Winter	125.172	0.772	3.9	5.1	O K
480 min Winter	125.078	0.678	3.3	4.0	O K
600 min Winter	125.013	0.613	2.8	3.2	O K
720 min Winter	124.961	0.561	2.5	2.7	O K
960 min Winter	124.885	0.485	2.0	2.0	O K
1440 min Winter	124.789	0.389	1.5	1.3	O K
2160 min Winter	124.707	0.307	1.1	0.8	O K
2880 min Winter	124.658	0.258	0.8	0.6	O K
4320 min Winter	124.599	0.199	0.6	0.3	O K
5760 min Winter	124.564	0.164	0.5	0.2	O K
7200 min Winter	124.541	0.141	0.4	0.2	O K
8640 min Winter	124.524	0.124	0.3	0.1	O K
10080 min Winter	124.512	0.112	0.3	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	25
60 min Winter	55.837	0.0	44
120 min Winter	33.645	0.0	78
180 min Winter	24.691	0.0	110
240 min Winter	19.711	0.0	142
360 min Winter	14.285	0.0	204
480 min Winter	11.371	0.0	262
600 min Winter	9.521	0.0	322
720 min Winter	8.231	0.0	382
960 min Winter	6.537	0.0	502
1440 min Winter	4.717	0.0	738
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2856
7200 min Winter	1.272	0.0	3616
8640 min Winter	1.095	0.0	4320
10080 min Winter	0.964	0.0	5096

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.053

Time (mins) From:	To:	Area (ha)
0	4	0.053

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Model Details

Storage is Online Cover Level (m) 126.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.42480	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	0.42480	Trench Length (m)	69.0
Safety Factor	3.0	Slope (1:X)	96.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	124.400	Cap Infiltration Depth (m)	0.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 12 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.960	1.260	11.0	10.9	O K
30 min Summer	125.019	1.319	11.7	11.9	O K
60 min Summer	124.986	1.286	11.3	11.3	O K
120 min Summer	124.868	1.168	9.7	9.3	O K
180 min Summer	124.767	1.067	8.4	7.8	O K
240 min Summer	124.686	0.986	7.4	6.7	O K
360 min Summer	124.563	0.863	6.0	5.1	O K
480 min Summer	124.476	0.776	5.0	4.1	O K
600 min Summer	124.409	0.709	4.4	3.4	O K
720 min Summer	124.355	0.655	3.9	2.9	O K
960 min Summer	124.275	0.575	3.2	2.3	O K
1440 min Summer	124.170	0.470	2.4	1.5	O K
2160 min Summer	124.077	0.377	1.7	1.0	O K
2880 min Summer	124.019	0.319	1.4	0.7	O K
4320 min Summer	123.948	0.248	1.0	0.4	O K
5760 min Summer	123.906	0.206	0.8	0.3	O K
7200 min Summer	123.878	0.178	0.7	0.2	O K
8640 min Summer	123.857	0.157	0.6	0.2	O K
10080 min Summer	123.842	0.142	0.5	0.1	O K
15 min Winter	125.039	1.339	11.9	12.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	13
30 min Summer	89.559	0.0	22
60 min Summer	55.837	0.0	38
120 min Summer	33.645	0.0	70
180 min Summer	24.691	0.0	102
240 min Summer	19.711	0.0	132
360 min Summer	14.285	0.0	192
480 min Summer	11.371	0.0	252
600 min Summer	9.521	0.0	314
720 min Summer	8.231	0.0	372
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2196
5760 min Summer	1.528	0.0	2896
7200 min Summer	1.272	0.0	3624
8640 min Summer	1.095	0.0	4288
10080 min Summer	0.964	0.0	5056
15 min Winter	136.827	0.0	14

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	125.085	1.385	12.5	13.0	O K
60 min Winter	125.011	1.311	11.6	11.7	O K
120 min Winter	124.841	1.141	9.3	8.9	O K
180 min Winter	124.710	1.010	7.7	7.0	O K
240 min Winter	124.611	0.911	6.5	5.7	O K
360 min Winter	124.470	0.770	5.0	4.1	O K
480 min Winter	124.375	0.675	4.1	3.1	O K
600 min Winter	124.305	0.605	3.4	2.5	O K
720 min Winter	124.252	0.552	3.0	2.1	O K
960 min Winter	124.174	0.474	2.4	1.5	O K
1440 min Winter	124.078	0.378	1.7	1.0	O K
2160 min Winter	123.998	0.298	1.3	0.6	O K
2880 min Winter	123.949	0.249	1.0	0.4	O K
4320 min Winter	123.892	0.192	0.7	0.3	O K
5760 min Winter	123.858	0.158	0.6	0.2	O K
7200 min Winter	123.836	0.136	0.5	0.1	O K
8640 min Winter	123.820	0.120	0.4	0.1	O K
10080 min Winter	123.807	0.107	0.4	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	23
60 min Winter	55.837	0.0	40
120 min Winter	33.645	0.0	74
180 min Winter	24.691	0.0	104
240 min Winter	19.711	0.0	136
360 min Winter	14.285	0.0	196
480 min Winter	11.371	0.0	256
600 min Winter	9.521	0.0	314
720 min Winter	8.231	0.0	376
960 min Winter	6.537	0.0	492
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1460
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2864
7200 min Winter	1.272	0.0	3640
8640 min Winter	1.095	0.0	4328
10080 min Winter	0.964	0.0	5008

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.063

Time (mins) From:	To:	Area (ha)
0	4	0.063

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Model Details

Storage is Online Cover Level (m) 125.200

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.66600	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	0.66600	Trench Length (m)	95.0
Safety Factor	3.0	Slope (1:X)	76.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	123.700	Cap Infiltration Depth (m)	0.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 12 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.855	1.355	9.0	9.0	O K
30 min Summer	122.917	1.417	9.7	9.9	Flood Risk
60 min Summer	122.886	1.386	9.3	9.4	O K
120 min Summer	122.763	1.263	8.0	7.8	O K
180 min Summer	122.655	1.155	6.9	6.6	O K
240 min Summer	122.569	1.069	6.0	5.6	O K
360 min Summer	122.437	0.937	4.9	4.3	O K
480 min Summer	122.344	0.844	4.1	3.5	O K
600 min Summer	122.272	0.772	3.6	2.9	O K
720 min Summer	122.215	0.715	3.2	2.5	O K
960 min Summer	122.129	0.629	2.6	1.9	O K
1440 min Summer	122.016	0.516	2.0	1.3	O K
2160 min Summer	121.915	0.415	1.4	0.8	O K
2880 min Summer	121.852	0.352	1.1	0.6	O K
4320 min Summer	121.775	0.275	0.8	0.4	O K
5760 min Summer	121.729	0.229	0.6	0.3	O K
7200 min Summer	121.698	0.198	0.5	0.2	O K
8640 min Summer	121.676	0.176	0.5	0.2	O K
10080 min Summer	121.658	0.158	0.4	0.1	O K
15 min Winter	122.935	1.435	9.9	10.1	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	13
30 min Summer	89.559	0.0	22
60 min Summer	55.837	0.0	38
120 min Summer	33.645	0.0	70
180 min Summer	24.691	0.0	102
240 min Summer	19.711	0.0	132
360 min Summer	14.285	0.0	192
480 min Summer	11.371	0.0	252
600 min Summer	9.521	0.0	314
720 min Summer	8.231	0.0	374
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2188
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3632
8640 min Summer	1.095	0.0	4344
10080 min Summer	0.964	0.0	5136
15 min Winter	136.827	0.0	14

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.982	1.482	10.4	10.8	Flood Risk
60 min Winter	122.912	1.412	9.6	9.8	Flood Risk
120 min Winter	122.735	1.235	7.7	7.5	O K
180 min Winter	122.596	1.096	6.3	5.9	O K
240 min Winter	122.489	0.989	5.3	4.8	O K
360 min Winter	122.338	0.838	4.1	3.5	O K
480 min Winter	122.237	0.737	3.3	2.7	O K
600 min Winter	122.162	0.662	2.8	2.2	O K
720 min Winter	122.105	0.605	2.5	1.8	O K
960 min Winter	122.020	0.520	2.0	1.3	O K
1440 min Winter	121.917	0.417	1.4	0.9	O K
2160 min Winter	121.829	0.329	1.0	0.5	O K
2880 min Winter	121.776	0.276	0.8	0.4	O K
4320 min Winter	121.714	0.214	0.6	0.2	O K
5760 min Winter	121.677	0.177	0.5	0.2	O K
7200 min Winter	121.652	0.152	0.4	0.1	O K
8640 min Winter	121.634	0.134	0.3	0.1	O K
10080 min Winter	121.620	0.120	0.3	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	23
60 min Winter	55.837	0.0	40
120 min Winter	33.645	0.0	74
180 min Winter	24.691	0.0	104
240 min Winter	19.711	0.0	136
360 min Winter	14.285	0.0	196
480 min Winter	11.371	0.0	256
600 min Winter	9.521	0.0	316
720 min Winter	8.231	0.0	376
960 min Winter	6.537	0.0	494
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2148
5760 min Winter	1.528	0.0	2920
7200 min Winter	1.272	0.0	3560
8640 min Winter	1.095	0.0	4368
10080 min Winter	0.964	0.0	5072

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.052

Time (mins) From:	To:	Area (ha)
0	4	0.052

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Model Details

Storage is Online Cover Level (m) 123.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.66600	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	0.66600	Trench Length (m)	90.0
Safety Factor	3.0	Slope (1:X)	54.6
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	121.500	Cap Infiltration Depth (m)	0.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 30 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	1.293	1.293	2.1	5.0	O K
30 min Summer	1.398	1.398	2.4	5.7	O K
60 min Summer	1.439	1.439	2.5	6.0	O K
120 min Summer	1.388	1.388	2.4	5.7	O K
180 min Summer	1.313	1.313	2.2	5.1	O K
240 min Summer	1.243	1.243	2.0	4.6	O K
360 min Summer	1.135	1.135	1.8	3.9	O K
480 min Summer	1.053	1.053	1.6	3.3	O K
600 min Summer	0.986	0.986	1.4	2.9	O K
720 min Summer	0.930	0.930	1.3	2.6	O K
960 min Summer	0.841	0.841	1.1	2.1	O K
1440 min Summer	0.717	0.717	0.8	1.5	O K
2160 min Summer	0.601	0.601	0.6	1.1	O K
2880 min Summer	0.524	0.524	0.5	0.8	O K
4320 min Summer	0.425	0.425	0.4	0.5	O K
5760 min Summer	0.362	0.362	0.3	0.4	O K
7200 min Summer	0.319	0.319	0.2	0.3	O K
8640 min Summer	0.286	0.286	0.2	0.2	O K
10080 min Summer	0.260	0.260	0.2	0.2	O K
15 min Winter	1.382	1.382	2.3	5.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	25
60 min Summer	55.837	0.0	42
120 min Summer	33.645	0.0	76
180 min Summer	24.691	0.0	108
240 min Summer	19.711	0.0	140
360 min Summer	14.285	0.0	202
480 min Summer	11.371	0.0	264
600 min Summer	9.521	0.0	326
720 min Summer	8.231	0.0	384
960 min Summer	6.537	0.0	508
1440 min Summer	4.717	0.0	750
2160 min Summer	3.398	0.0	1104
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2204
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4392
10080 min Summer	0.964	0.0	5128
15 min Winter	136.827	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	1.498	1.498	2.6	6.5	O K
60 min Winter	1.523	1.523	2.7	6.6	Flood Risk
120 min Winter	1.428	1.428	2.5	6.0	O K
180 min Winter	1.317	1.317	2.2	5.2	O K
240 min Winter	1.224	1.224	2.0	4.5	O K
360 min Winter	1.087	1.087	1.6	3.5	O K
480 min Winter	0.985	0.985	1.4	2.9	O K
600 min Winter	0.906	0.906	1.2	2.5	O K
720 min Winter	0.842	0.842	1.1	2.1	O K
960 min Winter	0.743	0.743	0.9	1.7	O K
1440 min Winter	0.614	0.614	0.7	1.1	O K
2160 min Winter	0.499	0.499	0.5	0.7	O K
2880 min Winter	0.428	0.428	0.4	0.5	O K
4320 min Winter	0.341	0.341	0.3	0.3	O K
5760 min Winter	0.287	0.287	0.2	0.2	O K
7200 min Winter	0.251	0.251	0.2	0.2	O K
8640 min Winter	0.224	0.224	0.2	0.2	O K
10080 min Winter	0.203	0.203	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	26
60 min Winter	55.837	0.0	44
120 min Winter	33.645	0.0	80
180 min Winter	24.691	0.0	114
240 min Winter	19.711	0.0	146
360 min Winter	14.285	0.0	210
480 min Winter	11.371	0.0	272
600 min Winter	9.521	0.0	332
720 min Winter	8.231	0.0	392
960 min Winter	6.537	0.0	512
1440 min Winter	4.717	0.0	752
2160 min Winter	3.398	0.0	1108
2880 min Winter	2.690	0.0	1472
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2936
7200 min Winter	1.272	0.0	3656
8640 min Winter	1.095	0.0	4320
10080 min Winter	0.964	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.024

Time (mins) From:	To:	Area (ha)
0	4	0.024

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Model Details

Storage is Online Cover Level (m) 1.600

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.25416	Trench Width (m)	0.5
Infiltration Coefficient Side (m/hr)	0.25416	Trench Length (m)	48.0
Safety Factor	3.0	Slope (1:X)	40.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	0.000	Cap Infiltration Depth (m)	0.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 59 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.298	0.698	0.3	1.6	O K
30 min Summer	121.409	0.809	0.4	1.9	O K
60 min Summer	121.465	0.865	0.4	2.1	O K
120 min Summer	121.472	0.872	0.4	2.1	O K
180 min Summer	121.444	0.844	0.4	2.0	O K
240 min Summer	121.407	0.807	0.4	1.9	O K
360 min Summer	121.335	0.735	0.3	1.7	O K
480 min Summer	121.274	0.674	0.3	1.5	O K
600 min Summer	121.223	0.623	0.3	1.4	O K
720 min Summer	121.180	0.580	0.3	1.2	O K
960 min Summer	121.110	0.510	0.2	1.0	O K
1440 min Summer	121.013	0.413	0.2	0.7	O K
2160 min Summer	120.936	0.336	0.2	0.5	O K
2880 min Summer	120.891	0.291	0.1	0.4	O K
4320 min Summer	120.835	0.235	0.1	0.2	O K
5760 min Summer	120.798	0.198	0.1	0.2	O K
7200 min Summer	120.772	0.172	0.1	0.1	O K
8640 min Summer	120.752	0.152	0.1	0.1	O K
10080 min Summer	120.737	0.137	0.1	0.1	O K
15 min Winter	121.365	0.765	0.3	1.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	17
30 min Summer	89.559	0.0	31
60 min Summer	55.837	0.0	50
120 min Summer	33.645	0.0	82
180 min Summer	24.691	0.0	118
240 min Summer	19.711	0.0	152
360 min Summer	14.285	0.0	218
480 min Summer	11.371	0.0	284
600 min Summer	9.521	0.0	346
720 min Summer	8.231	0.0	410
960 min Summer	6.537	0.0	530
1440 min Summer	4.717	0.0	768
2160 min Summer	3.398	0.0	1124
2880 min Summer	2.690	0.0	1476
4320 min Summer	1.933	0.0	2204
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4400
10080 min Summer	0.964	0.0	5136
15 min Winter	136.827	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.493	0.893	0.4	2.2	O K
60 min Winter	121.556	0.956	0.4	2.4	O K
120 min Winter	121.553	0.953	0.4	2.4	O K
180 min Winter	121.506	0.906	0.4	2.2	O K
240 min Winter	121.451	0.851	0.4	2.1	O K
360 min Winter	121.349	0.749	0.3	1.8	O K
480 min Winter	121.267	0.667	0.3	1.5	O K
600 min Winter	121.200	0.600	0.3	1.3	O K
720 min Winter	121.144	0.544	0.3	1.1	O K
960 min Winter	121.057	0.457	0.2	0.9	O K
1440 min Winter	120.952	0.352	0.2	0.5	O K
2160 min Winter	120.883	0.283	0.1	0.3	O K
2880 min Winter	120.839	0.239	0.1	0.2	O K
4320 min Winter	120.785	0.185	0.1	0.1	O K
5760 min Winter	120.753	0.153	0.1	0.1	O K
7200 min Winter	120.731	0.131	0.1	0.1	O K
8640 min Winter	120.716	0.116	0.0	0.1	O K
10080 min Winter	120.704	0.104	0.0	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	31
60 min Winter	55.837	0.0	52
120 min Winter	33.645	0.0	88
180 min Winter	24.691	0.0	126
240 min Winter	19.711	0.0	162
360 min Winter	14.285	0.0	232
480 min Winter	11.371	0.0	298
600 min Winter	9.521	0.0	362
720 min Winter	8.231	0.0	426
960 min Winter	6.537	0.0	550
1440 min Winter	4.717	0.0	778
2160 min Winter	3.398	0.0	1128
2880 min Winter	2.690	0.0	1496
4320 min Winter	1.933	0.0	2204
5760 min Winter	1.528	0.0	2936
7200 min Winter	1.272	0.0	3672
8640 min Winter	1.095	0.0	4376
10080 min Winter	0.964	0.0	5088

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.007

Time (mins) From:	To:	Area (ha)
0	4	0.007

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Model Details

Storage is Online Cover Level (m) 121.700

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.12096	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	0.12096	Trench Length (m)	17.0
Safety Factor	3.0	Slope (1:X)	48.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	120.600	Cap Infiltration Depth (m)	0.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 19 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.935	1.085	1.9	2.8	O K
30 min Summer	122.009	1.159	2.1	3.2	O K
60 min Summer	122.008	1.158	2.1	3.2	O K
120 min Summer	121.919	1.069	1.9	2.7	O K
180 min Summer	121.835	0.985	1.7	2.4	O K
240 min Summer	121.769	0.919	1.6	2.1	O K
360 min Summer	121.667	0.817	1.3	1.6	O K
480 min Summer	121.592	0.742	1.1	1.3	O K
600 min Summer	121.533	0.683	1.0	1.1	O K
720 min Summer	121.485	0.635	0.9	1.0	O K
960 min Summer	121.410	0.560	0.7	0.8	O K
1440 min Summer	121.313	0.463	0.6	0.5	O K
2160 min Summer	121.224	0.374	0.4	0.3	O K
2880 min Summer	121.168	0.318	0.3	0.2	O K
4320 min Summer	121.098	0.248	0.2	0.1	O K
5760 min Summer	121.056	0.206	0.2	0.1	O K
7200 min Summer	121.028	0.178	0.2	0.1	O K
8640 min Summer	121.007	0.157	0.1	0.1	O K
10080 min Summer	120.991	0.141	0.1	0.0	O K
15 min Winter	122.014	1.164	2.1	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	14
30 min Summer	89.559	0.0	23
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	72
180 min Summer	24.691	0.0	104
240 min Summer	19.711	0.0	134
360 min Summer	14.285	0.0	196
480 min Summer	11.371	0.0	256
600 min Summer	9.521	0.0	316
720 min Summer	8.231	0.0	376
960 min Summer	6.537	0.0	498
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3632
8640 min Summer	1.095	0.0	4400
10080 min Summer	0.964	0.0	5040
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.086	1.236	2.3	3.5	O K
60 min Winter	122.058	1.208	2.2	3.4	O K
120 min Winter	121.919	1.069	1.9	2.8	O K
180 min Winter	121.806	0.956	1.7	2.2	O K
240 min Winter	121.723	0.873	1.4	1.9	O K
360 min Winter	121.599	0.749	1.1	1.4	O K
480 min Winter	121.513	0.663	0.9	1.1	O K
600 min Winter	121.448	0.598	0.8	0.9	O K
720 min Winter	121.397	0.547	0.7	0.7	O K
960 min Winter	121.322	0.472	0.6	0.5	O K
1440 min Winter	121.227	0.377	0.4	0.3	O K
2160 min Winter	121.147	0.297	0.3	0.2	O K
2880 min Winter	121.099	0.249	0.2	0.2	O K
4320 min Winter	121.042	0.192	0.2	0.1	O K
5760 min Winter	121.008	0.158	0.1	0.1	O K
7200 min Winter	120.986	0.136	0.1	0.0	O K
8640 min Winter	120.969	0.119	0.1	0.0	O K
10080 min Winter	120.957	0.107	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	24
60 min Winter	55.837	0.0	42
120 min Winter	33.645	0.0	76
180 min Winter	24.691	0.0	108
240 min Winter	19.711	0.0	140
360 min Winter	14.285	0.0	202
480 min Winter	11.371	0.0	262
600 min Winter	9.521	0.0	320
720 min Winter	8.231	0.0	382
960 min Winter	6.537	0.0	500
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2936
7200 min Winter	1.272	0.0	3624
8640 min Winter	1.095	0.0	4344
10080 min Winter	0.964	0.0	5112

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.015

Time (mins) From:	To:	Area (ha)
0	4	0.015

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Model Details

Storage is Online Cover Level (m) 122.550

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.43920	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	0.43920	Trench Length (m)	26.0
Safety Factor	3.0	Slope (1:X)	27.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	120.850	Cap Infiltration Depth (m)	0.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 17 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	1.197	1.197	4.3	5.8	O K
30 min Summer	1.267	1.267	4.7	6.5	O K
60 min Summer	1.262	1.262	4.6	6.4	O K
120 min Summer	1.173	1.173	4.2	5.6	O K
180 min Summer	1.088	1.088	3.7	4.8	O K
240 min Summer	1.017	1.017	3.3	4.2	O K
360 min Summer	0.905	0.905	2.7	3.3	O K
480 min Summer	0.824	0.824	2.3	2.7	O K
600 min Summer	0.760	0.760	2.0	2.3	O K
720 min Summer	0.708	0.708	1.8	2.0	O K
960 min Summer	0.628	0.628	1.5	1.6	O K
1440 min Summer	0.523	0.523	1.1	1.1	O K
2160 min Summer	0.427	0.427	0.8	0.7	O K
2880 min Summer	0.366	0.366	0.7	0.5	O K
4320 min Summer	0.289	0.289	0.5	0.3	O K
5760 min Summer	0.243	0.243	0.4	0.2	O K
7200 min Summer	0.211	0.211	0.3	0.2	O K
8640 min Summer	0.188	0.188	0.3	0.1	O K
10080 min Summer	0.170	0.170	0.2	0.1	O K
15 min Winter	1.273	1.273	4.7	6.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	14
30 min Summer	89.559	0.0	23
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	72
180 min Summer	24.691	0.0	104
240 min Summer	19.711	0.0	134
360 min Summer	14.285	0.0	196
480 min Summer	11.371	0.0	256
600 min Summer	9.521	0.0	316
720 min Summer	8.231	0.0	376
960 min Summer	6.537	0.0	498
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2920
7200 min Summer	1.272	0.0	3616
8640 min Summer	1.095	0.0	4392
10080 min Summer	0.964	0.0	5080
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	1.341	1.341	5.0	7.2	O K
60 min Winter	1.306	1.306	4.9	6.8	O K
120 min Winter	1.168	1.168	4.1	5.5	O K
180 min Winter	1.055	1.055	3.5	4.5	O K
240 min Winter	0.963	0.963	3.0	3.7	O K
360 min Winter	0.830	0.830	2.4	2.8	O K
480 min Winter	0.737	0.737	1.9	2.2	O K
600 min Winter	0.667	0.667	1.7	1.8	O K
720 min Winter	0.613	0.613	1.5	1.5	O K
960 min Winter	0.532	0.532	1.2	1.1	O K
1440 min Winter	0.430	0.430	0.9	0.7	O K
2160 min Winter	0.344	0.344	0.6	0.5	O K
2880 min Winter	0.291	0.291	0.5	0.3	O K
4320 min Winter	0.227	0.227	0.4	0.2	O K
5760 min Winter	0.189	0.189	0.3	0.1	O K
7200 min Winter	0.164	0.164	0.2	0.1	O K
8640 min Winter	0.145	0.145	0.2	0.1	O K
10080 min Winter	0.131	0.131	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	24
60 min Winter	55.837	0.0	42
120 min Winter	33.645	0.0	76
180 min Winter	24.691	0.0	108
240 min Winter	19.711	0.0	138
360 min Winter	14.285	0.0	200
480 min Winter	11.371	0.0	260
600 min Winter	9.521	0.0	320
720 min Winter	8.231	0.0	382
960 min Winter	6.537	0.0	500
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1460
4320 min Winter	1.933	0.0	2176
5760 min Winter	1.528	0.0	2936
7200 min Winter	1.272	0.0	3632
8640 min Winter	1.095	0.0	4336
10080 min Winter	0.964	0.0	5080

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.031

Time (mins) From:	To:	Area (ha)
0	4	0.031

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Model Details

Storage is Online Cover Level (m) 1.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.42480	Trench Width (m)	0.5
Infiltration Coefficient Side (m/hr)	0.42480	Trench Length (m)	64.0
Safety Factor	3.0	Slope (1:X)	53.8
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	0.000	Cap Infiltration Depth (m)	0.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 22 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.104	0.104	3.7	6.4	O K
30 min Summer	0.116	0.116	3.9	7.2	O K
60 min Summer	0.116	0.116	4.0	7.2	O K
120 min Summer	0.103	0.103	3.7	6.3	O K
180 min Summer	0.088	0.088	3.5	5.3	O K
240 min Summer	0.075	0.075	3.3	4.4	O K
360 min Summer	0.056	0.056	3.0	3.2	O K
480 min Summer	0.047	0.047	2.7	2.6	O K
600 min Summer	0.041	0.041	2.3	2.3	O K
720 min Summer	0.037	0.037	2.0	2.1	O K
960 min Summer	0.031	0.031	1.7	1.7	O K
1440 min Summer	0.024	0.024	1.2	1.3	O K
2160 min Summer	0.018	0.018	0.9	1.0	O K
2880 min Summer	0.014	0.014	0.7	0.8	O K
4320 min Summer	0.011	0.011	0.5	0.6	O K
5760 min Summer	0.009	0.009	0.4	0.5	O K
7200 min Summer	0.007	0.007	0.4	0.4	O K
8640 min Summer	0.006	0.006	0.3	0.3	O K
10080 min Summer	0.006	0.006	0.3	0.3	O K
15 min Winter	0.116	0.116	3.9	7.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	15
30 min Summer	89.559	0.0	24
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	74
180 min Summer	24.691	0.0	106
240 min Summer	19.711	0.0	136
360 min Summer	14.285	0.0	194
480 min Summer	11.371	0.0	252
600 min Summer	9.521	0.0	314
720 min Summer	8.231	0.0	372
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2176
5760 min Summer	1.528	0.0	2912
7200 min Summer	1.272	0.0	3592
8640 min Summer	1.095	0.0	4376
10080 min Summer	0.964	0.0	5064
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.128	0.128	4.1	8.1	O K
60 min Winter	0.125	0.125	4.1	7.9	O K
120 min Winter	0.103	0.103	3.7	6.3	O K
180 min Winter	0.082	0.082	3.4	4.9	O K
240 min Winter	0.065	0.065	3.1	3.8	O K
360 min Winter	0.046	0.046	2.6	2.6	O K
480 min Winter	0.039	0.039	2.1	2.1	O K
600 min Winter	0.033	0.033	1.8	1.8	O K
720 min Winter	0.030	0.030	1.6	1.6	O K
960 min Winter	0.024	0.024	1.3	1.3	O K
1440 min Winter	0.018	0.018	0.9	1.0	O K
2160 min Winter	0.013	0.013	0.7	0.7	O K
2880 min Winter	0.011	0.011	0.5	0.6	O K
4320 min Winter	0.008	0.008	0.4	0.4	O K
5760 min Winter	0.006	0.006	0.3	0.3	O K
7200 min Winter	0.005	0.005	0.3	0.3	O K
8640 min Winter	0.005	0.005	0.2	0.2	O K
10080 min Winter	0.004	0.004	0.2	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	25
60 min Winter	55.837	0.0	44
120 min Winter	33.645	0.0	78
180 min Winter	24.691	0.0	110
240 min Winter	19.711	0.0	140
360 min Winter	14.285	0.0	196
480 min Winter	11.371	0.0	254
600 min Winter	9.521	0.0	316
720 min Winter	8.231	0.0	376
960 min Winter	6.537	0.0	490
1440 min Winter	4.717	0.0	748
2160 min Winter	3.398	0.0	1080
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2128
5760 min Winter	1.528	0.0	2856
7200 min Winter	1.272	0.0	3608
8640 min Winter	1.095	0.0	4376
10080 min Winter	0.964	0.0	5128

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.033

Time (mins) From:	To:	Area (ha)
0	4	0.033

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Model Details

Storage is Online Cover Level (m) 0.600

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	52.4	0.600	193.9

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 18 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.089	0.089	2.5	3.7	O K
30 min Summer	0.099	0.099	2.7	4.2	O K
60 min Summer	0.099	0.099	2.7	4.2	O K
120 min Summer	0.085	0.085	2.5	3.6	O K
180 min Summer	0.072	0.072	2.3	2.9	O K
240 min Summer	0.061	0.061	2.2	2.5	O K
360 min Summer	0.048	0.048	1.9	1.9	O K
480 min Summer	0.041	0.041	1.6	1.6	O K
600 min Summer	0.036	0.036	1.4	1.4	O K
720 min Summer	0.032	0.032	1.2	1.2	O K
960 min Summer	0.027	0.027	1.0	1.0	O K
1440 min Summer	0.021	0.021	0.8	0.8	O K
2160 min Summer	0.015	0.015	0.5	0.6	O K
2880 min Summer	0.013	0.013	0.4	0.5	O K
4320 min Summer	0.009	0.009	0.3	0.3	O K
5760 min Summer	0.007	0.007	0.2	0.3	O K
7200 min Summer	0.006	0.006	0.2	0.2	O K
8640 min Summer	0.005	0.005	0.2	0.2	O K
10080 min Summer	0.005	0.005	0.2	0.2	O K
15 min Winter	0.100	0.100	2.7	4.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	15
30 min Summer	89.559	0.0	23
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	72
180 min Summer	24.691	0.0	104
240 min Summer	19.711	0.0	134
360 min Summer	14.285	0.0	192
480 min Summer	11.371	0.0	252
600 min Summer	9.521	0.0	312
720 min Summer	8.231	0.0	372
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1460
4320 min Summer	1.933	0.0	2184
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3584
8640 min Summer	1.095	0.0	4320
10080 min Summer	0.964	0.0	5128
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.109	0.109	2.8	4.7	O K
60 min Winter	0.105	0.105	2.7	4.5	O K
120 min Winter	0.084	0.084	2.5	3.5	O K
180 min Winter	0.065	0.065	2.2	2.6	O K
240 min Winter	0.052	0.052	2.1	2.0	O K
360 min Winter	0.041	0.041	1.6	1.6	O K
480 min Winter	0.034	0.034	1.3	1.3	O K
600 min Winter	0.029	0.029	1.1	1.1	O K
720 min Winter	0.026	0.026	1.0	1.0	O K
960 min Winter	0.021	0.021	0.8	0.8	O K
1440 min Winter	0.016	0.016	0.6	0.6	O K
2160 min Winter	0.012	0.012	0.4	0.4	O K
2880 min Winter	0.009	0.009	0.3	0.3	O K
4320 min Winter	0.007	0.007	0.2	0.2	O K
5760 min Winter	0.005	0.005	0.2	0.2	O K
7200 min Winter	0.005	0.005	0.2	0.2	O K
8640 min Winter	0.004	0.004	0.1	0.1	O K
10080 min Winter	0.004	0.004	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	25
60 min Winter	55.837	0.0	44
120 min Winter	33.645	0.0	78
180 min Winter	24.691	0.0	108
240 min Winter	19.711	0.0	136
360 min Winter	14.285	0.0	194
480 min Winter	11.371	0.0	254
600 min Winter	9.521	0.0	314
720 min Winter	8.231	0.0	374
960 min Winter	6.537	0.0	500
1440 min Winter	4.717	0.0	734
2160 min Winter	3.398	0.0	1124
2880 min Winter	2.690	0.0	1456
4320 min Winter	1.933	0.0	2136
5760 min Winter	1.528	0.0	2944
7200 min Winter	1.272	0.0	3728
8640 min Winter	1.095	0.0	4384
10080 min Winter	0.964	0.0	5224

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.020

Time (mins) From:	To:	Area (ha)
0	4	0.020

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.500

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	36.0	0.500	126.5

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 44 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.341	0.341	3.8	12.0	Flood Risk
30 min Summer	0.376	0.376	4.2	14.1	Flood Risk
60 min Summer	0.391	0.391	4.3	14.9	Flood Risk
120 min Summer	0.380	0.380	4.2	14.3	Flood Risk
180 min Summer	0.360	0.360	4.0	13.1	Flood Risk
240 min Summer	0.339	0.339	3.8	11.9	Flood Risk
360 min Summer	0.301	0.301	3.4	9.9	Flood Risk
480 min Summer	0.270	0.270	3.1	8.5	O K
600 min Summer	0.243	0.243	2.9	7.3	O K
720 min Summer	0.221	0.221	2.7	6.4	O K
960 min Summer	0.184	0.184	2.3	5.0	O K
1440 min Summer	0.132	0.132	1.9	3.2	O K
2160 min Summer	0.084	0.084	1.4	1.9	O K
2880 min Summer	0.056	0.056	1.2	1.2	O K
4320 min Summer	0.040	0.040	0.9	0.8	O K
5760 min Summer	0.033	0.033	0.7	0.7	O K
7200 min Summer	0.028	0.028	0.6	0.6	O K
8640 min Summer	0.025	0.025	0.5	0.5	O K
10080 min Summer	0.022	0.022	0.4	0.4	O K
15 min Winter	0.368	0.368	4.1	13.6	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	28
60 min Summer	55.837	0.0	44
120 min Summer	33.645	0.0	78
180 min Summer	24.691	0.0	112
240 min Summer	19.711	0.0	146
360 min Summer	14.285	0.0	210
480 min Summer	11.371	0.0	272
600 min Summer	9.521	0.0	332
720 min Summer	8.231	0.0	392
960 min Summer	6.537	0.0	512
1440 min Summer	4.717	0.0	752
2160 min Summer	3.398	0.0	1108
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2192
5760 min Summer	1.528	0.0	2872
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4352
10080 min Summer	0.964	0.0	5072
15 min Winter	136.827	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.408	0.408	4.5	16.0	Flood Risk
60 min Winter	0.421	0.421	4.7	16.8	Flood Risk
120 min Winter	0.402	0.402	4.5	15.6	Flood Risk
180 min Winter	0.373	0.373	4.2	13.8	Flood Risk
240 min Winter	0.343	0.343	3.9	12.1	Flood Risk
360 min Winter	0.291	0.291	3.3	9.5	O K
480 min Winter	0.250	0.250	2.9	7.6	O K
600 min Winter	0.217	0.217	2.6	6.2	O K
720 min Winter	0.189	0.189	2.4	5.2	O K
960 min Winter	0.146	0.146	2.0	3.7	O K
1440 min Winter	0.090	0.090	1.5	2.1	O K
2160 min Winter	0.049	0.049	1.1	1.0	O K
2880 min Winter	0.040	0.040	0.9	0.8	O K
4320 min Winter	0.030	0.030	0.6	0.6	O K
5760 min Winter	0.025	0.025	0.5	0.5	O K
7200 min Winter	0.021	0.021	0.4	0.4	O K
8640 min Winter	0.018	0.018	0.4	0.4	O K
10080 min Winter	0.016	0.016	0.3	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	29
60 min Winter	55.837	0.0	48
120 min Winter	33.645	0.0	84
180 min Winter	24.691	0.0	120
240 min Winter	19.711	0.0	154
360 min Winter	14.285	0.0	220
480 min Winter	11.371	0.0	282
600 min Winter	9.521	0.0	344
720 min Winter	8.231	0.0	404
960 min Winter	6.537	0.0	522
1440 min Winter	4.717	0.0	764
2160 min Winter	3.398	0.0	1104
2880 min Winter	2.690	0.0	1448
4320 min Winter	1.933	0.0	2176
5760 min Winter	1.528	0.0	2936
7200 min Winter	1.272	0.0	3672
8640 min Winter	1.095	0.0	4288
10080 min Winter	0.964	0.0	5032

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.056

Time (mins) From:	To:	Area (ha)
0	4	0.056

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.600

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	19.1	0.600	93.6

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 33 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.211	0.211	3.3	8.0	Flood Risk
30 min Summer	0.234	0.234	3.5	9.2	Flood Risk
60 min Summer	0.240	0.240	3.6	9.6	Flood Risk
120 min Summer	0.227	0.227	3.5	8.9	Flood Risk
180 min Summer	0.208	0.208	3.2	7.9	Flood Risk
240 min Summer	0.190	0.190	3.0	7.0	O K
360 min Summer	0.159	0.159	2.7	5.6	O K
480 min Summer	0.135	0.135	2.4	4.5	O K
600 min Summer	0.115	0.115	2.2	3.7	O K
720 min Summer	0.099	0.099	2.0	3.1	O K
960 min Summer	0.074	0.074	1.8	2.2	O K
1440 min Summer	0.048	0.048	1.5	1.4	O K
2160 min Summer	0.037	0.037	1.1	1.0	O K
2880 min Summer	0.030	0.030	0.9	0.8	O K
4320 min Summer	0.023	0.023	0.6	0.6	O K
5760 min Summer	0.018	0.018	0.5	0.5	O K
7200 min Summer	0.016	0.016	0.4	0.4	O K
8640 min Summer	0.014	0.014	0.4	0.4	O K
10080 min Summer	0.012	0.012	0.3	0.3	O K
15 min Winter	0.231	0.231	3.5	9.1	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	26
60 min Summer	55.837	0.0	42
120 min Summer	33.645	0.0	76
180 min Summer	24.691	0.0	110
240 min Summer	19.711	0.0	142
360 min Summer	14.285	0.0	204
480 min Summer	11.371	0.0	266
600 min Summer	9.521	0.0	326
720 min Summer	8.231	0.0	386
960 min Summer	6.537	0.0	502
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2172
5760 min Summer	1.528	0.0	2864
7200 min Summer	1.272	0.0	3664
8640 min Summer	1.095	0.0	4392
10080 min Summer	0.964	0.0	5072
15 min Winter	136.827	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.256	0.256	3.8	10.5	Flood Risk
60 min Winter	0.260	0.260	3.8	10.8	Flood Risk
120 min Winter	0.238	0.238	3.6	9.5	Flood Risk
180 min Winter	0.211	0.211	3.3	8.1	Flood Risk
240 min Winter	0.187	0.187	3.0	6.8	O K
360 min Winter	0.146	0.146	2.5	5.0	O K
480 min Winter	0.115	0.115	2.2	3.7	O K
600 min Winter	0.091	0.091	1.9	2.8	O K
720 min Winter	0.072	0.072	1.8	2.1	O K
960 min Winter	0.049	0.049	1.5	1.4	O K
1440 min Winter	0.037	0.037	1.1	1.0	O K
2160 min Winter	0.028	0.028	0.8	0.8	O K
2880 min Winter	0.023	0.023	0.6	0.6	O K
4320 min Winter	0.017	0.017	0.4	0.4	O K
5760 min Winter	0.014	0.014	0.4	0.4	O K
7200 min Winter	0.011	0.011	0.3	0.3	O K
8640 min Winter	0.010	0.010	0.3	0.3	O K
10080 min Winter	0.009	0.009	0.2	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	27
60 min Winter	55.837	0.0	46
120 min Winter	33.645	0.0	82
180 min Winter	24.691	0.0	116
240 min Winter	19.711	0.0	150
360 min Winter	14.285	0.0	214
480 min Winter	11.371	0.0	274
600 min Winter	9.521	0.0	334
720 min Winter	8.231	0.0	392
960 min Winter	6.537	0.0	492
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1464
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2872
7200 min Winter	1.272	0.0	3672
8640 min Winter	1.095	0.0	4408
10080 min Winter	0.964	0.0	5088

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.039

Time (mins) From:	To:	Area (ha)
0	4	0.039

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.500

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	26.1	0.500	100.1

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 33 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.091	0.091	1.7	4.2	O K
30 min Summer	0.104	0.104	1.8	4.8	O K
60 min Summer	0.108	0.108	1.8	5.1	O K
120 min Summer	0.102	0.102	1.8	4.8	O K
180 min Summer	0.093	0.093	1.7	4.2	O K
240 min Summer	0.083	0.083	1.6	3.7	O K
360 min Summer	0.067	0.067	1.5	3.0	O K
480 min Summer	0.056	0.056	1.4	2.4	O K
600 min Summer	0.049	0.049	1.3	2.1	O K
720 min Summer	0.044	0.044	1.2	1.9	O K
960 min Summer	0.038	0.038	1.0	1.6	O K
1440 min Summer	0.029	0.029	0.7	1.2	O K
2160 min Summer	0.022	0.022	0.5	0.9	O K
2880 min Summer	0.018	0.018	0.4	0.7	O K
4320 min Summer	0.014	0.014	0.3	0.5	O K
5760 min Summer	0.011	0.011	0.3	0.4	O K
7200 min Summer	0.009	0.009	0.2	0.4	O K
8640 min Summer	0.008	0.008	0.2	0.3	O K
10080 min Summer	0.007	0.007	0.2	0.3	O K
15 min Winter	0.102	0.102	1.8	4.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	26
60 min Summer	55.837	0.0	42
120 min Summer	33.645	0.0	76
180 min Summer	24.691	0.0	110
240 min Summer	19.711	0.0	142
360 min Summer	14.285	0.0	202
480 min Summer	11.371	0.0	260
600 min Summer	9.521	0.0	318
720 min Summer	8.231	0.0	378
960 min Summer	6.537	0.0	500
1440 min Summer	4.717	0.0	738
2160 min Summer	3.398	0.0	1104
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2196
5760 min Summer	1.528	0.0	2920
7200 min Summer	1.272	0.0	3600
8640 min Summer	1.095	0.0	4320
10080 min Summer	0.964	0.0	5080
15 min Winter	136.827	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.115	0.115	1.9	5.5	O K
60 min Winter	0.119	0.119	1.9	5.7	O K
120 min Winter	0.108	0.108	1.8	5.1	O K
180 min Winter	0.093	0.093	1.7	4.3	O K
240 min Winter	0.079	0.079	1.6	3.6	O K
360 min Winter	0.058	0.058	1.4	2.5	O K
480 min Winter	0.047	0.047	1.2	2.0	O K
600 min Winter	0.041	0.041	1.1	1.7	O K
720 min Winter	0.037	0.037	0.9	1.5	O K
960 min Winter	0.030	0.030	0.7	1.3	O K
1440 min Winter	0.023	0.023	0.5	0.9	O K
2160 min Winter	0.017	0.017	0.4	0.7	O K
2880 min Winter	0.014	0.014	0.3	0.5	O K
4320 min Winter	0.010	0.010	0.2	0.4	O K
5760 min Winter	0.008	0.008	0.2	0.3	O K
7200 min Winter	0.007	0.007	0.2	0.3	O K
8640 min Winter	0.006	0.006	0.1	0.2	O K
10080 min Winter	0.005	0.005	0.1	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	28
60 min Winter	55.837	0.0	46
120 min Winter	33.645	0.0	82
180 min Winter	24.691	0.0	116
240 min Winter	19.711	0.0	148
360 min Winter	14.285	0.0	208
480 min Winter	11.371	0.0	262
600 min Winter	9.521	0.0	322
720 min Winter	8.231	0.0	384
960 min Winter	6.537	0.0	508
1440 min Winter	4.717	0.0	750
2160 min Winter	3.398	0.0	1096
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2216
5760 min Winter	1.528	0.0	2960
7200 min Winter	1.272	0.0	3664
8640 min Winter	1.095	0.0	4416
10080 min Winter	0.964	0.0	5112

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.020

Time (mins) From:	To:	Area (ha)
0	4	0.020

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.600

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.25416 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.25416

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	39.4	0.600	159.8

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 11 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.035	0.035	3.6	3.5	Flood Risk
30 min Summer	0.038	0.038	3.9	3.9	Flood Risk
60 min Summer	0.037	0.037	3.8	3.8	Flood Risk
120 min Summer	0.032	0.032	3.2	3.2	Flood Risk
180 min Summer	0.028	0.028	2.8	2.7	Flood Risk
240 min Summer	0.024	0.024	2.4	2.4	Flood Risk
360 min Summer	0.020	0.020	1.9	1.9	Flood Risk
480 min Summer	0.017	0.017	1.6	1.6	Flood Risk
600 min Summer	0.015	0.015	1.4	1.4	Flood Risk
720 min Summer	0.013	0.013	1.3	1.3	Flood Risk
960 min Summer	0.011	0.011	1.0	1.0	Flood Risk
1440 min Summer	0.008	0.008	0.8	0.8	Flood Risk
2160 min Summer	0.006	0.006	0.6	0.6	Flood Risk
2880 min Summer	0.005	0.005	0.4	0.4	Flood Risk
4320 min Summer	0.004	0.004	0.3	0.3	Flood Risk
5760 min Summer	0.003	0.003	0.3	0.3	Flood Risk
7200 min Summer	0.002	0.002	0.2	0.2	Flood Risk
8640 min Summer	0.002	0.002	0.2	0.2	Flood Risk
10080 min Summer	0.002	0.002	0.2	0.2	Flood Risk
15 min Winter	0.039	0.039	4.0	3.9	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	13
30 min Summer	89.559	0.0	22
60 min Summer	55.837	0.0	38
120 min Summer	33.645	0.0	70
180 min Summer	24.691	0.0	100
240 min Summer	19.711	0.0	132
360 min Summer	14.285	0.0	192
480 min Summer	11.371	0.0	252
600 min Summer	9.521	0.0	312
720 min Summer	8.231	0.0	374
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	734
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2160
5760 min Summer	1.528	0.0	2840
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4408
10080 min Summer	0.964	0.0	4952
15 min Winter	136.827	0.0	14

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.041	0.041	4.3	4.2	Flood Risk
60 min Winter	0.038	0.038	3.9	3.9	Flood Risk
120 min Winter	0.031	0.031	3.1	3.0	Flood Risk
180 min Winter	0.025	0.025	2.5	2.5	Flood Risk
240 min Winter	0.021	0.021	2.1	2.1	Flood Risk
360 min Winter	0.017	0.017	1.6	1.6	Flood Risk
480 min Winter	0.014	0.014	1.3	1.3	Flood Risk
600 min Winter	0.012	0.012	1.1	1.1	Flood Risk
720 min Winter	0.010	0.010	1.0	1.0	Flood Risk
960 min Winter	0.008	0.008	0.8	0.8	Flood Risk
1440 min Winter	0.006	0.006	0.6	0.6	Flood Risk
2160 min Winter	0.004	0.004	0.4	0.4	Flood Risk
2880 min Winter	0.004	0.004	0.3	0.3	Flood Risk
4320 min Winter	0.003	0.003	0.3	0.2	Flood Risk
5760 min Winter	0.002	0.002	0.2	0.2	Flood Risk
7200 min Winter	0.002	0.002	0.2	0.2	Flood Risk
8640 min Winter	0.002	0.002	0.2	0.1	Flood Risk
10080 min Winter	0.001	0.001	0.1	0.1	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	23
60 min Winter	55.837	0.0	40
120 min Winter	33.645	0.0	72
180 min Winter	24.691	0.0	104
240 min Winter	19.711	0.0	136
360 min Winter	14.285	0.0	194
480 min Winter	11.371	0.0	254
600 min Winter	9.521	0.0	312
720 min Winter	8.231	0.0	374
960 min Winter	6.537	0.0	492
1440 min Winter	4.717	0.0	728
2160 min Winter	3.398	0.0	1128
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2176
5760 min Winter	1.528	0.0	2808
7200 min Winter	1.272	0.0	3648
8640 min Winter	1.095	0.0	4440
10080 min Winter	0.964	0.0	5280

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.020

Time (mins) From:	To:	Area (ha)
0	4	0.020

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.300

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.43920 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.43920

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	95.0	0.300	212.0

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 30 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.355	0.355	4.2	9.6	Flood Risk
30 min Summer	0.379	0.379	4.6	10.9	Flood Risk
60 min Summer	0.386	0.386	4.7	11.4	Flood Risk
120 min Summer	0.370	0.370	4.5	10.4	Flood Risk
180 min Summer	0.348	0.348	4.2	9.2	Flood Risk
240 min Summer	0.327	0.327	3.9	8.2	Flood Risk
360 min Summer	0.292	0.292	3.4	6.5	Flood Risk
480 min Summer	0.263	0.263	3.1	5.4	Flood Risk
600 min Summer	0.239	0.239	2.8	4.5	Flood Risk
720 min Summer	0.220	0.220	2.5	3.9	Flood Risk
960 min Summer	0.188	0.188	2.2	3.0	Flood Risk
1440 min Summer	0.144	0.144	1.7	1.9	Flood Risk
2160 min Summer	0.104	0.104	1.3	1.2	Flood Risk
2880 min Summer	0.080	0.080	1.0	0.8	O K
4320 min Summer	0.051	0.051	0.7	0.5	O K
5760 min Summer	0.043	0.043	0.6	0.4	O K
7200 min Summer	0.037	0.037	0.5	0.3	O K
8640 min Summer	0.033	0.033	0.4	0.3	O K
10080 min Summer	0.030	0.030	0.4	0.2	O K
15 min Winter	0.377	0.377	4.6	10.8	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	25
60 min Summer	55.837	0.0	42
120 min Summer	33.645	0.0	76
180 min Summer	24.691	0.0	108
240 min Summer	19.711	0.0	140
360 min Summer	14.285	0.0	202
480 min Summer	11.371	0.0	264
600 min Summer	9.521	0.0	324
720 min Summer	8.231	0.0	384
960 min Summer	6.537	0.0	502
1440 min Summer	4.717	0.0	738
2160 min Summer	3.398	0.0	1104
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2180
5760 min Summer	1.528	0.0	2920
7200 min Summer	1.272	0.0	3616
8640 min Summer	1.095	0.0	4352
10080 min Summer	0.964	0.0	5088
15 min Winter	136.827	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.403	0.403	4.9	12.4	FLOOD
60 min Winter	0.407	0.407	4.9	12.6	FLOOD
120 min Winter	0.381	0.381	4.6	11.0	Flood Risk
180 min Winter	0.350	0.350	4.2	9.3	Flood Risk
240 min Winter	0.321	0.321	3.8	7.9	Flood Risk
360 min Winter	0.274	0.274	3.2	5.8	Flood Risk
480 min Winter	0.237	0.237	2.7	4.5	Flood Risk
600 min Winter	0.209	0.209	2.4	3.5	Flood Risk
720 min Winter	0.185	0.185	2.1	2.9	Flood Risk
960 min Winter	0.150	0.150	1.7	2.1	Flood Risk
1440 min Winter	0.107	0.107	1.3	1.2	Flood Risk
2160 min Winter	0.071	0.071	0.9	0.7	O K
2880 min Winter	0.051	0.051	0.7	0.5	O K
4320 min Winter	0.040	0.040	0.5	0.3	O K
5760 min Winter	0.034	0.034	0.4	0.3	O K
7200 min Winter	0.029	0.029	0.4	0.2	O K
8640 min Winter	0.026	0.026	0.3	0.2	O K
10080 min Winter	0.023	0.023	0.3	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.2	26
60 min Winter	55.837	0.4	46
120 min Winter	33.645	0.0	82
180 min Winter	24.691	0.0	116
240 min Winter	19.711	0.0	148
360 min Winter	14.285	0.0	210
480 min Winter	11.371	0.0	272
600 min Winter	9.521	0.0	332
720 min Winter	8.231	0.0	390
960 min Winter	6.537	0.0	510
1440 min Winter	4.717	0.0	748
2160 min Winter	3.398	0.0	1104
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2172
5760 min Winter	1.528	0.0	2904
7200 min Winter	1.272	0.0	3640
8640 min Winter	1.095	0.0	4240
10080 min Winter	0.964	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.047

Time (mins) From:	To:	Area (ha)
0	4	0.047

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.400

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.43920 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.43920

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	7.1	0.400	63.3

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 120 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.157	0.157	1.3	11.7	O K
30 min Summer	0.190	0.190	1.4	14.7	O K
60 min Summer	0.213	0.213	1.5	16.8	O K
120 min Summer	0.221	0.221	1.6	17.6	O K
180 min Summer	0.219	0.219	1.6	17.4	O K
240 min Summer	0.215	0.215	1.5	17.0	O K
360 min Summer	0.202	0.202	1.5	15.8	O K
480 min Summer	0.190	0.190	1.4	14.7	O K
600 min Summer	0.179	0.179	1.4	13.6	O K
720 min Summer	0.167	0.167	1.4	12.6	O K
960 min Summer	0.147	0.147	1.3	10.9	O K
1440 min Summer	0.115	0.115	1.1	8.2	O K
2160 min Summer	0.080	0.080	1.0	5.5	O K
2880 min Summer	0.058	0.058	0.9	3.9	O K
4320 min Summer	0.042	0.042	0.7	2.8	O K
5760 min Summer	0.035	0.035	0.6	2.3	O K
7200 min Summer	0.029	0.029	0.5	1.9	O K
8640 min Summer	0.026	0.026	0.4	1.7	O K
10080 min Summer	0.023	0.023	0.4	1.5	O K
15 min Winter	0.173	0.173	1.4	13.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	18
30 min Summer	89.559	0.0	32
60 min Summer	55.837	0.0	60
120 min Summer	33.645	0.0	98
180 min Summer	24.691	0.0	130
240 min Summer	19.711	0.0	164
360 min Summer	14.285	0.0	234
480 min Summer	11.371	0.0	302
600 min Summer	9.521	0.0	368
720 min Summer	8.231	0.0	434
960 min Summer	6.537	0.0	560
1440 min Summer	4.717	0.0	808
2160 min Summer	3.398	0.0	1168
2880 min Summer	2.690	0.0	1500
4320 min Summer	1.933	0.0	2204
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4400
10080 min Summer	0.964	0.0	5136
15 min Winter	136.827	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.211	0.211	1.5	16.6	O K
60 min Winter	0.237	0.237	1.6	19.2	O K
120 min Winter	0.245	0.245	1.7	20.0	O K
180 min Winter	0.243	0.243	1.7	19.7	O K
240 min Winter	0.236	0.236	1.6	19.1	O K
360 min Winter	0.219	0.219	1.6	17.4	O K
480 min Winter	0.201	0.201	1.5	15.7	O K
600 min Winter	0.185	0.185	1.4	14.2	O K
720 min Winter	0.169	0.169	1.4	12.8	O K
960 min Winter	0.141	0.141	1.3	10.4	O K
1440 min Winter	0.097	0.097	1.1	6.8	O K
2160 min Winter	0.055	0.055	0.9	3.7	O K
2880 min Winter	0.043	0.043	0.8	2.9	O K
4320 min Winter	0.032	0.032	0.6	2.1	O K
5760 min Winter	0.026	0.026	0.4	1.7	O K
7200 min Winter	0.022	0.022	0.4	1.4	O K
8640 min Winter	0.019	0.019	0.3	1.2	O K
10080 min Winter	0.017	0.017	0.3	1.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	32
60 min Winter	55.837	0.0	60
120 min Winter	33.645	0.0	110
180 min Winter	24.691	0.0	138
240 min Winter	19.711	0.0	178
360 min Winter	14.285	0.0	252
480 min Winter	11.371	0.0	324
600 min Winter	9.521	0.0	394
720 min Winter	8.231	0.0	462
960 min Winter	6.537	0.0	594
1440 min Winter	4.717	0.0	838
2160 min Winter	3.398	0.0	1168
2880 min Winter	2.690	0.0	1496
4320 min Winter	1.933	0.0	2208
5760 min Winter	1.528	0.0	2928
7200 min Winter	1.272	0.0	3664
8640 min Winter	1.095	0.0	4328
10080 min Winter	0.964	0.0	5144

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.049

Time (mins) From:	To:	Area (ha)
0	4	0.049

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.800

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.12096 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.12096

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	63.4	0.800	218.3

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 38 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.227	0.227	1.8	5.1	Flood Risk
30 min Summer	0.246	0.246	2.0	5.9	Flood Risk
60 min Summer	0.253	0.253	2.1	6.2	Flood Risk
120 min Summer	0.246	0.246	2.0	5.9	Flood Risk
180 min Summer	0.232	0.232	1.9	5.3	Flood Risk
240 min Summer	0.219	0.219	1.8	4.8	Flood Risk
360 min Summer	0.196	0.196	1.6	3.9	Flood Risk
480 min Summer	0.176	0.176	1.4	3.3	Flood Risk
600 min Summer	0.160	0.160	1.3	2.8	Flood Risk
720 min Summer	0.147	0.147	1.2	2.5	Flood Risk
960 min Summer	0.125	0.125	1.0	1.9	Flood Risk
1440 min Summer	0.094	0.094	0.8	1.3	O K
2160 min Summer	0.066	0.066	0.6	0.8	O K
2880 min Summer	0.050	0.050	0.5	0.6	O K
4320 min Summer	0.039	0.039	0.4	0.4	O K
5760 min Summer	0.033	0.033	0.3	0.3	O K
7200 min Summer	0.029	0.029	0.3	0.3	O K
8640 min Summer	0.026	0.026	0.2	0.3	O K
10080 min Summer	0.023	0.023	0.2	0.2	O K
15 min Winter	0.243	0.243	2.0	5.7	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	26
60 min Summer	55.837	0.0	44
120 min Summer	33.645	0.0	78
180 min Summer	24.691	0.0	110
240 min Summer	19.711	0.0	144
360 min Summer	14.285	0.0	206
480 min Summer	11.371	0.0	268
600 min Summer	9.521	0.0	328
720 min Summer	8.231	0.0	390
960 min Summer	6.537	0.0	510
1440 min Summer	4.717	0.0	750
2160 min Summer	3.398	0.0	1104
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2888
7200 min Summer	1.272	0.0	3648
8640 min Summer	1.095	0.0	4376
10080 min Summer	0.964	0.0	5032
15 min Winter	136.827	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.264	0.264	2.2	6.7	Flood Risk
60 min Winter	0.270	0.270	2.2	6.9	Flood Risk
120 min Winter	0.256	0.256	2.1	6.3	Flood Risk
180 min Winter	0.237	0.237	1.9	5.5	Flood Risk
240 min Winter	0.218	0.218	1.8	4.8	Flood Risk
360 min Winter	0.187	0.187	1.5	3.6	Flood Risk
480 min Winter	0.162	0.162	1.3	2.9	Flood Risk
600 min Winter	0.142	0.142	1.2	2.3	Flood Risk
720 min Winter	0.126	0.126	1.1	1.9	Flood Risk
960 min Winter	0.100	0.100	0.9	1.4	Flood Risk
1440 min Winter	0.069	0.069	0.7	0.8	O K
2160 min Winter	0.047	0.047	0.5	0.5	O K
2880 min Winter	0.040	0.040	0.4	0.4	O K
4320 min Winter	0.031	0.031	0.3	0.3	O K
5760 min Winter	0.026	0.026	0.2	0.3	O K
7200 min Winter	0.022	0.022	0.2	0.2	O K
8640 min Winter	0.020	0.020	0.2	0.2	O K
10080 min Winter	0.018	0.018	0.1	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	28
60 min Winter	55.837	0.0	46
120 min Winter	33.645	0.0	84
180 min Winter	24.691	0.0	118
240 min Winter	19.711	0.0	152
360 min Winter	14.285	0.0	216
480 min Winter	11.371	0.0	278
600 min Winter	9.521	0.0	338
720 min Winter	8.231	0.0	398
960 min Winter	6.537	0.0	518
1440 min Winter	4.717	0.0	750
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1456
4320 min Winter	1.933	0.0	2204
5760 min Winter	1.528	0.0	2856
7200 min Winter	1.272	0.0	3664
8640 min Winter	1.095	0.0	4304
10080 min Winter	0.964	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.024

Time (mins) From:	To:	Area (ha)
0	4	0.024

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.400

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.25416 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.25416

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	8.9	0.400	77.5

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 16 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.117	0.117	4.4	5.6	Flood Risk
30 min Summer	0.125	0.125	4.6	6.3	Flood Risk
60 min Summer	0.123	0.123	4.6	6.1	Flood Risk
120 min Summer	0.108	0.108	4.1	5.1	Flood Risk
180 min Summer	0.094	0.094	3.7	4.2	Flood Risk
240 min Summer	0.082	0.082	3.4	3.5	Flood Risk
360 min Summer	0.064	0.064	2.9	2.5	Flood Risk
480 min Summer	0.052	0.052	2.6	2.0	Flood Risk
600 min Summer	0.046	0.046	2.3	1.7	Flood Risk
720 min Summer	0.042	0.042	2.0	1.5	Flood Risk
960 min Summer	0.035	0.035	1.6	1.2	Flood Risk
1440 min Summer	0.027	0.027	1.2	0.9	Flood Risk
2160 min Summer	0.021	0.021	0.9	0.7	Flood Risk
2880 min Summer	0.017	0.017	0.7	0.6	Flood Risk
4320 min Summer	0.013	0.013	0.5	0.4	Flood Risk
5760 min Summer	0.010	0.010	0.4	0.3	Flood Risk
7200 min Summer	0.009	0.009	0.3	0.3	Flood Risk
8640 min Summer	0.008	0.008	0.3	0.2	Flood Risk
10080 min Summer	0.007	0.007	0.2	0.2	Flood Risk
15 min Winter	0.127	0.127	4.7	6.4	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	14
30 min Summer	89.559	0.0	23
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	72
180 min Summer	24.691	0.0	104
240 min Summer	19.711	0.0	134
360 min Summer	14.285	0.0	194
480 min Summer	11.371	0.0	250
600 min Summer	9.521	0.0	310
720 min Summer	8.231	0.0	370
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1448
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3560
8640 min Summer	1.095	0.0	4392
10080 min Summer	0.964	0.0	5024
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.135	0.135	4.9	7.0	Flood Risk
60 min Winter	0.129	0.129	4.7	6.5	Flood Risk
120 min Winter	0.106	0.106	4.1	4.9	Flood Risk
180 min Winter	0.087	0.087	3.5	3.7	Flood Risk
240 min Winter	0.071	0.071	3.1	2.9	Flood Risk
360 min Winter	0.050	0.050	2.5	1.9	Flood Risk
480 min Winter	0.043	0.043	2.0	1.6	Flood Risk
600 min Winter	0.037	0.037	1.7	1.3	Flood Risk
720 min Winter	0.033	0.033	1.5	1.2	Flood Risk
960 min Winter	0.028	0.028	1.2	0.9	Flood Risk
1440 min Winter	0.021	0.021	0.9	0.7	Flood Risk
2160 min Winter	0.016	0.016	0.6	0.5	Flood Risk
2880 min Winter	0.013	0.013	0.5	0.4	Flood Risk
4320 min Winter	0.010	0.010	0.4	0.3	Flood Risk
5760 min Winter	0.008	0.008	0.3	0.2	Flood Risk
7200 min Winter	0.007	0.007	0.2	0.2	Flood Risk
8640 min Winter	0.006	0.006	0.2	0.2	Flood Risk
10080 min Winter	0.005	0.005	0.2	0.2	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	24
60 min Winter	55.837	0.0	42
120 min Winter	33.645	0.0	76
180 min Winter	24.691	0.0	108
240 min Winter	19.711	0.0	138
360 min Winter	14.285	0.0	192
480 min Winter	11.371	0.0	250
600 min Winter	9.521	0.0	312
720 min Winter	8.231	0.0	372
960 min Winter	6.537	0.0	490
1440 min Winter	4.717	0.0	738
2160 min Winter	3.398	0.0	1104
2880 min Winter	2.690	0.0	1472
4320 min Winter	1.933	0.0	2184
5760 min Winter	1.528	0.0	2872
7200 min Winter	1.272	0.0	3712
8640 min Winter	1.095	0.0	4272
10080 min Winter	0.964	0.0	5096

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.031

Time (mins) From:	To:	Area (ha)
0	4	0.031

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Model Details

Storage is Offline Dividing Weir Level (m) 0.000
Cover Level (m) 0.200

Infiltration Basin Structure

Invert Level (m) 0.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.42480 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.42480

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	30.7	0.200	104.4

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Section 3 Site Investigation

GRM Development Solutions Ltd
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DE14 2WH

Tel: 01283 551249
Web: www.grm-uk.com
Our Ref: P6194-SOAK.1
Date: 10th June 2015

Mr Andy Green
Gladman Developments Ltd
Gladman House
Alexandria Way
Congleton Business Park
Congleton
Cheshire
CW12 1LB

Dear Mr Green

RE: Infiltration Rate Testing on Land to the South of Salt Way Banbury.

Further to our instruction from Gladman Developments Ltd (Client), GRM Development Solutions have attended the above site on 8th and 9th June 2015 to carry out infiltration tests from trial pits. This investigation took the form of the excavation of ten trial pits and subsequent infiltration testing. A soakaway test location plan is provided in Appendix A.

The geological map indicates that the northern part of the site is underlain by the Marlstone Formation, which comprises limestone and ironstone and the southern part is underlain by the Dyrham Formation, which comprises mudstone and siltstone. The boundary between the two formations undulates from the east to the west of the site as shown on the sketch presented in Appendix B.

Weathered Marlstone was encountered in the infiltration test pits Soak 1, 2, 4, 5, 9 and 10. Infiltration test pits Soak 3, 6, 7 and 8 encountered clays, silts and very clayey sands, typical of the Dyrham Formation.

Infiltration test pits Soak 1, 2, 3, 4, 5, 8 and 9 were targeted within the area of proposed residential development, where soakaways might be considered for domestic and highways surface water drainage. Infiltration test pits Soak 6 and 7 were targeted in the south of the site where it is proposed to construct an attenuation feature. Infiltration test Soak 10 was completed in the extreme south west corner of the site in case attenuation might be considered in this area of POS.

The following table summarises the results of infiltration tests:

Infiltration Test	1st Test	2nd Test	3rd Test	Main Geology
Soak 1	2.51×10^{-4} m/s	1.50×10^{-4} m/s	1.22×10^{-4} m/s	Marlstone
Soak 2	4.35×10^{-5} m/s	3.99×10^{-5} m/s	3.36×10^{-5} m/s	Marlstone
Soak 3	8% infiltration recorded after 3½ hours			Dyrham
Soak 4	1.03×10^{-4} m/s	9.09×10^{-5} m/s	7.06×10^{-5} m/s	Marlstone
Soak 5	1.46×10^{-4} m/s	1.24×10^{-4} m/s	1.18×10^{-4} m/s	Marlstone

Infiltration Test	1st Test	2nd Test	3rd Test	Main Geology
Soak 6	1% infiltration recorded after 4 hours 20 minutes			Dyrham
Soak 7	2.04×10^{-6} m/s	Dyrham		Dyrham
Soak 8	3.12×10^{-6} m/s	Dyrham		Dyrham s
Soak 9	2.68×10^{-4} m/s	1.85×10^{-4} m/s	2.13×10^{-4} m/s	Marlstone
Soak 10	4.71×10^{-5} m/s	4.55×10^{-5} m/s	3.77×10^{-5} m/s	Marlstone

Where the Marlstone Rock was encountered, infiltration rates ranged from 2.68×10^{-4} m/s to 3.36×10^{-5} m/s, which indicates a good possibility that conventional soakaways will work..

Where the Dyrham Formation was encountered, infiltration rates were generally much poorer, ranging from 3.12×10^{-6} m/s (which was an interpolated rate) to a point that insufficient infiltration occurred to permit the calculation of an infiltration rate. The results indicate that it is unlikely that conventional soakaways will work in the Dyrham Formation.

I trust that the above is sufficient for your current purposes, however if you have any queries please do not hesitate to contact us.

Yours sincerely

pp [redacted]

Clive Kirby FGS CGeol
Principal Engineering Geologist

<u>Attached</u>

Appendix A – Infiltration Test Location Plan
Appendix B – Summary of the Geology

APPENDIX A

GRM Development Solutions provides multi-disciplinary consultancy services, UK-wide:

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

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DO NOT SCALE

NOTES:

Infiltration test locations

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CLIENT:
Gladman

PROJECT:
Land to South of Salt Way Banbury

TITLE:
Infiltration Test Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
AJHR	June 2015
PROJECT No:	DRAWING No:
P6194	ITLP-01

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APPENDIX B

GRM Development Solutions provides multi-disciplinary consultancy services, UK-wide:

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

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N

DO NOT SCALE

NOTES:

Infiltration test locations

Estimated Geological Boundary

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CLIENT:
Gladman

PROJECT:
Land to South of Salt Way Banbury

TITLE:
Infiltration Test Location Plan And Geological Boundary

SCALE@SIZE : NTS	ISSUE: FINAL
DESIGN/DRAWN : AJHR	DATE: June 2015
PROJECT No: P6194	DRAWING No: ITLP-01

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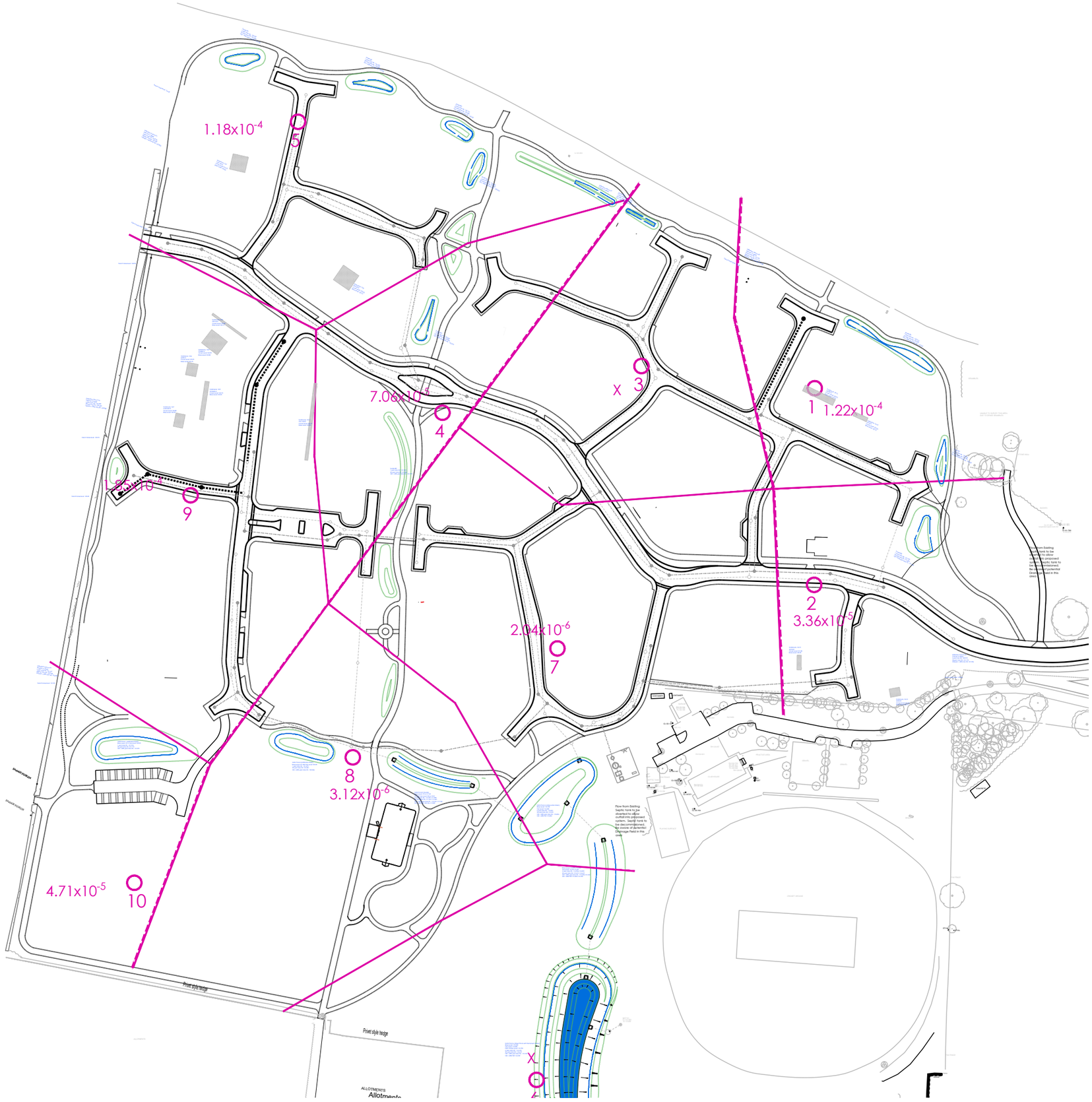
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