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Flood Risk Assessment Compliance

For
Camp Road, Upper Heyford
Parcel D1b
Rev 1

March 2014

Contents

Appendices

1.0 Introduction

1.1 This Flood Risk Assessment Compliance report has been prepared on behalf of the Dorchester Group in support of their Reserved Matters application for Parcel D1b of the redevelopment off Camp Road, Upper Heyford.

1.2 The purpose of this report is to demonstrate that the proposed drainage design for Parcel D1b complies with the approved Flood Risk Assessment (FRA) carried out by Waterman dated October 2010 (Ref C11234 ES 001).

1.3 Parcel D1b is a Dorchester Group development located to the far east of the development, immediately south of Camp Road (refer to the Site Residential Parcel Plan given in **Appendix A**).

1.4 This report is intended to assist in the discharge of Planning Condition 23 of the Outline Planning Consent (ref 10/01642/OUT) that requires the developer to demonstrate compliance with the approved FRA.

2.0 Overview of Approved FRA

2.1 The entire site is located within Flood Zone 1.

2.2 The FRA sets out a detailed approach to attenuation across the Upper Heyford site which comprises of areas identified for retention, areas for refurbishment and areas for redevelopment to provide new residential dwellings.

2.3 The Environment Agency (EA) has confirmed that areas identified solely for retention and refurbishment do not require attenuation of existing surface water discharge.

2.4 The fundamental principle of the FRA is that runoff from proposed areas of redevelopment should be attenuated to existing 1 in 100 year flows with a 30% allowance for climate change.

2.5 Attenuation is to be provided through the use of balancing ponds, permeable paving and attenuation tanks where necessary. Swales will be incorporated through the site where appropriate.

2.6 The FRA splits the development into four main catchment areas and provides a series of calculations for each.

2.7 The FRA also requires a 10% betterment of existing flows entering the eastern tributary of the Gallos Brook.

3.0 Proposed Development

3.1 Parcel D1b of the proposed development is located to the east of the Upper Heyford Site taking its main access off Camp Road.

3.2 Parcel D1b is a Dorchester Group development and comprises of 30 dwellings and 1.63 hectares (refer to **Appendix B** for proposed layouts).

3.3 The FRA denotes both parcel D1b as being located within Catchment Area 3 as identified in the approved FRA. Catchment 3 comprises a total area of 11.16 hectares.

3.4 Parcel D1b forms only a small part of Catchment Area 3, with the remaining area made up of future development parcels and public open space.

3.5 The Indicative Surface Water Drainage Layout within the approved FRA suggests attenuation of surface water for Catchment 3 is provided with permeable paving, attenuation tanks and a pond immediately ipstream of the outfall to the watercourse.

Discharge Strategy

3.6 Paragraph 3.20 of the FRA states: “In accordance with PPS25, local policy and EA guidance the rate of surface water runoff from new development would be controlled so that it does not increase over the existing situation for the 1 in 100 year even, while taking climate change into account”.

3.7 Paragraph 3.21 also goes on to require a 10% betterment of flows discharging to the east of the site, which includes Parcel D1b.

3.8 A wider strategy for diversion of existing strategic sewers will see a main surface water sewer diverted through part of Parcel D1b. This diversion provides an outfall for existing and new development in the trident to the tributary of the Gallos Brook to the east of the site.

3.9 This division will also provide an outfall for Parcel D1b.

3.10 Despite Parcel D1b being part of a larger catchment it is proposed to restrict flows leaving the parcel to the existing 1 in 100 year runoff rate with a further 10% betterment

3.11 The FRA prescribes the following existing 1 in 100 year runoff rates for use in calculations:

Existing 1 in 100yr Greenfield runoff	10.7 l/s/ha
Existing 1 in 100yr Brownfield runoff	112.8 l/s/ha

3.12 The purpose of this report is not to revisit the calculation of these rates. Further information on how these rates were derived can be found in the approved FRA.

3.13 Following detailed assessment of the topographical survey and site visits the following calculations can be derived:

Parcel D1b		
	Area (m^2)	**Existing 1 in 100yr Discharge (l/s)**
Permeable surfacing	7,905.45	8.46
Impermeable surfacing	8,421.92	95.00
Total	**16,327.37 m^2**	**103.46 l/s**
Allowable		**93.0 l/s (incl 10% betterment)**

Attenuation Strategy

3.14 The FRA suggests parcel D1b is provided with a free discharge and is attenuated off parcel within a pond immediately upstream of the outfall to the watercourse.

3.15 Due to the phasing of the development it is proposed to deal with D1b in a self-contained manner such that the attenuation is provided on-plot.

3.16 Soakaway tests have been undertaken in four locations within the parcel demise and were all terminated due to low infiltration. Therefore, infiltration techniques have not been proposed within this parcel.

3.17 In accordance with the FRA permeable paving is to be provided on driveways. This will be lined and have a positive connection into the drainage system but will provide some at source attenuation and water quality improvement.

3.18 Attenuation crates are to be provided to cater for the majority of the attenuation required. These are to be located within private areas but will be maintained by Albion Water.

3.19 Porous paving will also be provided on some of the development roads further enhancing water quality and providing improvement to water quality.

3.20 The final discharge from the parcel will be controlled using a hydro-brake vortex controller.

3.21 Living roofs have been discounted as they are not in keeping with the strict urban planning requirements within a conservation area. Rain water harvesting has also been discounted due to ongoing maintenance issues and integration into domestic plumbing. Water butts will be provided on social units.

4.0 Hydraulic Performance

Parcel B1

4.1 A detailed WinDes model has been constructed to simulate the 1 in 100 year (+ climate change).

4.2 The WinDes model (refer to **Appendix C**) demonstrates that the 1 in 100 year (+ climate change) discharge rate does not exceed 58.1 l/s (pipe ref 35.004).

4.3 The achieved discharge rate is significantly lower than the calculated allowable discharge. The rate is significantly reduced by the effect of surcharging in the pipe to which Parcel D1b connects.

Exceedance

4.4 During storms in excess of the designated storm, there is the potential for the storage structures and drainage system to be overwhelmed, leading to flooding. Indicative finished floor levels and external levels have been designed so that during these periods, flood water will be directed away from the proposed building entrances and into the roads and soft landscaping areas. The natural topography of the parcel falls from North to South with no low spots within the parcel.

Pollution prevention

4.5 As the parking areas are smaller than 800m sq, PPG3 states that trapped gullies will provide suitable protection against contamination. Permeable areas will filter through granular material.

4.6 It is noted that the offsite sewer passes through a petrol interceptor before discharge into the existing watercourse which meets the requirements of PPG3.

5.0 Summary and Conclusions

5.1 This report has been prepared to allow discharge of planning condition 23 which requires evidence of compliance with the approved Waterman Flood Risk Assessment.

5.2 The FRA confirms no attenuation is required for areas being refurbished or retained.

5.3 The FRA requires surface water runoff from new development to be restricted to existing 1 in 100 year runoff rates, and flows attenuated including a 30% allowance for climate change. A 10% betterment is to be provided on existing flows discharging to the eastern tributary of Gallos Brook.

5.4 A WinDes models have been created and demonstrate a significant betterment in discharge rate.

5.5 The significant reduction in discharge rates provides a betterment on the existing drainage situation and demonstrates a clear reduction in flood risk downstream.

APPENDIX A

Residential Parcel Plan

N

OUTFALL 4

D5d

B4b

D5b

D3b

D2b

B3

B4a

D2d

B1

B2a

B2b

B6

D2c

D1c

D2e

D1a

D1b

SCHOOL

VILLAGE GREEN

OUTFALL 3

B5b

B5a

D4b

D2a

OUTFALL 1

D3a

D4a

OUTFALL 2

N.T.S.

APPENDIX B

Proposed levels and drainage layouts

Notes

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Drawing Notes

Notes

1. All levels relate to Ordnance Datum.
2. For main adoptable sewer details refer to drawings 441, 442 and 445.
3. For S278 details refer to drawings 514 to 517.

Building Drainage

4. All connections to adoptable manholes from private building drainage to be 150mm diameter pipes unless otherwise specified.
5. All house drainage to be 100mm dia unless otherwise stated, and laid in accordance with current Building Regulations and BS8301 : 1985.
6. All private drainage products are to be Polypipe or similar approved.
7. Pipe bedding material is to be Class B with 150mm minimum thickness surround.
8. Backfill is to be be with selected fill free of stones larger than 40mm, lumps of clay over 100mm, timber, frozen material and vegetable matter.
9. Pipe protection of house drainage runs is required in accordance with the Typical House Drainage Details drawing. The contractor shall satisfy themselves and agree with the Site Management the actual extent of pipe protection required.
10. Pipes entering and leaving manholes/inspection chambers shall include a rocker pipe, 600mm in length.
11. Brickwork to chambers shall be Class B Engineering to BS3921.
12. Rainwater pipes are to be sited on side elevations whenever possible.
13. Surfce water attenuation tanks to be Polypipe similar approved.

Regrade

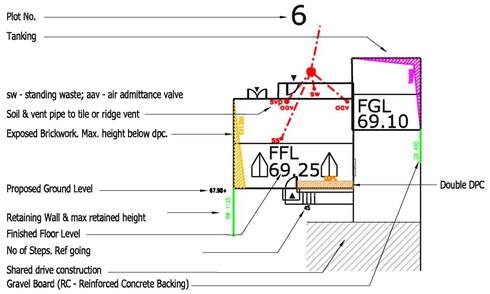
14. All retaining walls with a height of 600mm or greater are to include 1.2m high post and rail fencing unless located in rear gardens. Similar retaining walls in rear gardens are to include 900mm height picket fence as a minimum.
15. All flights of steps to primary level access, with more than 2 steps are to be provided with handrailing, except where the steps are 900mm ar more appart.
16. Brick retaining walls are to be used in preference to gravel boards for front garden areas.

General

17. Drainage and road design subject to Water and Highway Authority approval.
18. Where inspection chambers are deeper than 1.5m, reduced access covers are to be used.

Key

- Medium Foul I.C. (450mm dia. Depth to invert 600-1000mm) Non Entry I.C. (330mm dia. Depth to invert 1000-3000mm)
- Foul M.H 1200dia PCC rings unless noted otherwise
- Foul risin main
- Medium Surface Water I.C. (450mm dia. Depth to invert 600-1000mm) Non Entry I.C. (330mm dia. Depth to invert 1000-3000mm)
- Surface Water M.H 1200dia PCC rings unless noted otherwise
- Surface Water Flow Control Chamber
- Gully
- Drainage Channel
- Rodding Eye



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DUE TO PRESENCE OF SHALLOW GROUND WATER, STORAGE TANKS ARE TO HAVE A MIN 250MM CONCRETE SLAB OVER EXTENDING MIN 200MM PAST THE TANK IN ALL DIRECTIONS TO PREVENT FLOATATION. MIN THICKNESS OF BEDDING TO BE 150MM UNLESS A GREATER VALUE IS RECOMMENDED BY THE MANUFACTURER

Revision	Description	Drawn	Checked	Date
D	S5 cover level amended	AT	JF	07.03.14
C	SE17-SE18 (Eastern diversion) pipe size amended, perforated pipes added	AT	JF	28.02.14
B	Foul break chamber at rising main outfall added as per Albion Water comments	AT	JF	21.02.14
A	Diversion drainage cover levels amended to suit proposed road design	AT	JF	22.01.14

Preliminary ☐ Information ☐ Tender ■ Construction ☐ As Built ☐

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Title: UPPER HEYFORD PARCEL D1B

Details: ENGINEERING LAYOUT SHEET 1

Scale: 1:200 @ A1 Date: JAN 2014 Drawn: JGF Chk: IDB

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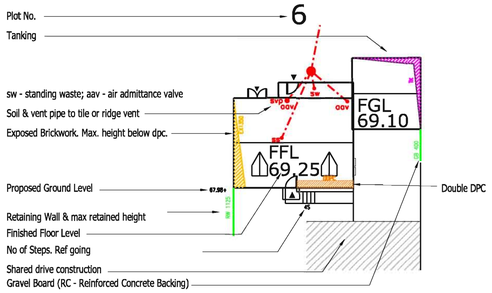

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Revision	Description	Drawn	Checked	Date
D	Perforated pipes added	AT	JF	28.02.14
C	Foul break chamber at rising main outfall added as per Albion Water comments	AT	JF	21.02.14
B	Level out of foul pumpstation (F10) amended	AT	JF	17.02.14
A	Backdrop removed from S15 and S20. RE and IC south of plot 19 deepened	AT	JF	20.01.14

Preliminary ☐ Information ☐ Tender ■ Construction ☐ As Built ☐

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Title: UPPER HEYFORD
PARCEL D1B

Details: ENGINEERING LAYOUT
SHEET 2

Scale: 1:200 @ A1 Date: JAN 2014 Drawn: JGF Chk: IDB

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Key

Surface Finishes

- Adoptable Blacktop Footpath
- Adoptable Blacktop Vehicular Crossover
- Adoptable Blockwork bellmouth
- Private Blockwork Road (to adoptable standard)
- Adoptable Blacktop Road
- Private Blacktop Road (to adoptable standard)
- Porous Paving
- Private Blockwork Areas
- Unbound gravel with reinforced grid system
- Half Battered Kerb 125 X 255mm (HB2) laid with 120mm Upstand
- Bullnosed Kerb 125 x 150mm (BN) laid at 25mm kerbface at crossovers, laid flush or 0mm kerbface at tactile pram crossing points
- Edging 50 x 150mm (EF)

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Revision	Description	Drawn	Checked	Date
A	Hatch description in key amended	AT	JF	18.02.14

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Title: UPPER HEYFORD
PARCEL D1B

Details: SURFACE FINISHES
SHEET 1

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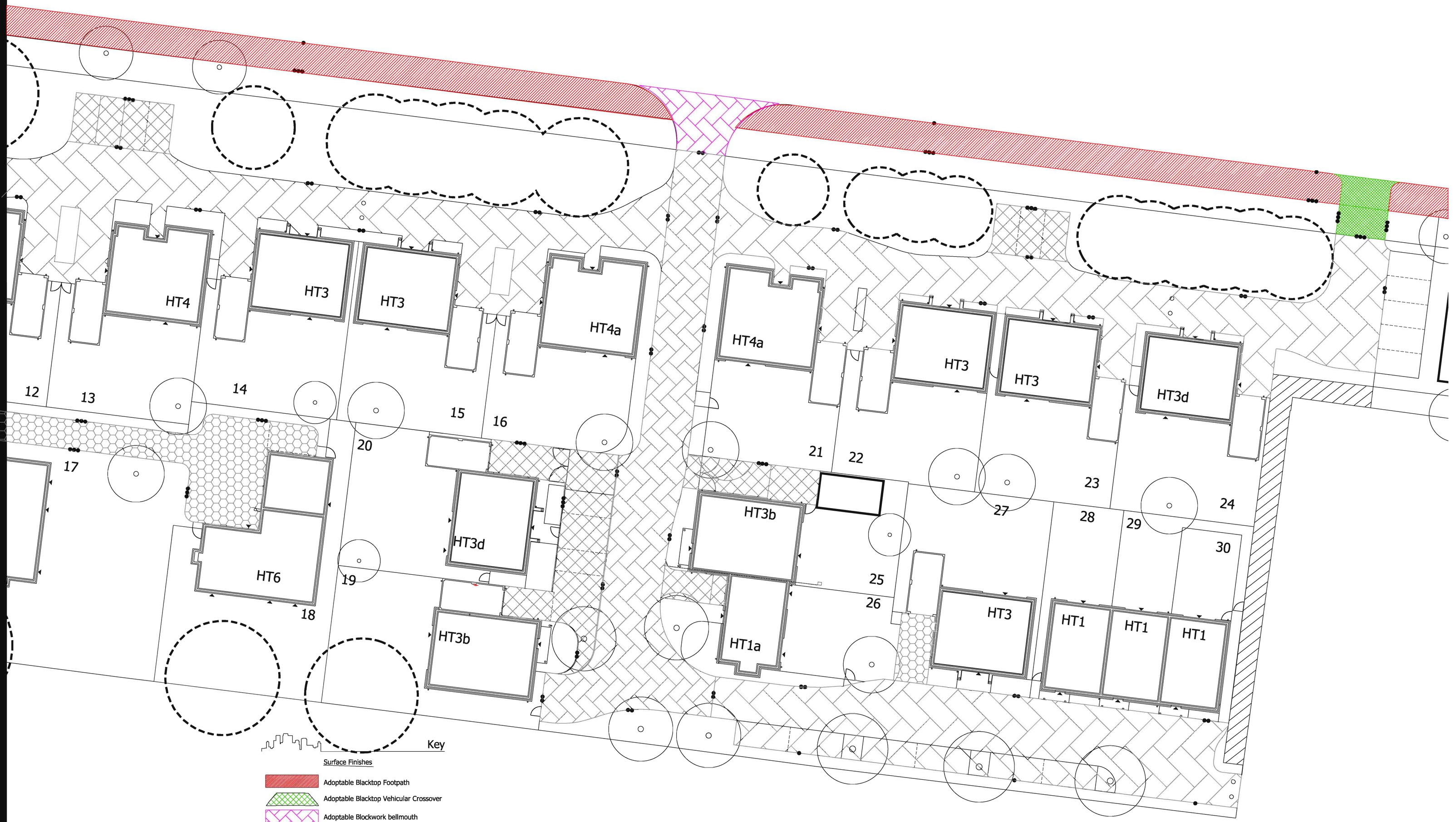

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A	Hatch description in key amended	AT	JF	18.02.14

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Title: UPPER HEYFORD
PARCEL D1B

Details: EXTERNAL FINISHES LAYOUT
SHEET 2

Scale: 1:200 @ A1 Date: JAN 2014 Drawn: JGF Chk: IDB

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APPENDIX C

WinDes Calculations

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SW EAST PROPOSED 23.07.13.SWS

Pipe Sizes SW WEST DEVELOPMENT Manhole Sizes SW WEST DEVELOPMENT

FEH Rainfall Model	
Return Period (years)	2
Site Location	GB 450500 225250 SP 50500 25250
C (1km)	-0.023
D1 (1km)	0.328
D2 (1km)	0.309
D3 (1km)	0.264
E (1km)	0.292
F (1km)	2.461
Maximum Rainfall (mm/hr)	0
Foul Sewage (l/s/ha)	0.00
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.000
Maximum Backdrop Height (m)	0.000
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Inverts

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	48.425	0.442	109.6	0.075	5.00	0.0	0.600	o	150
1.001	22.970	0.291	78.9	0.086	0.00	0.0	0.600	o	225
1.002	37.335	0.452	82.6	0.100	0.00	0.0	0.600	o	225
1.003	22.125	0.316	70.0	0.063	0.00	0.0	0.600	o	225
1.004	51.854	0.429	120.9	0.142	0.00	0.0	0.600	o	225
2.000	41.092	0.280	146.8	0.048	5.00	0.0	0.600	o	150

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	0.00	5.84	126.100	0.075	0.0	0.0	0.0	0.96	17.0	0.0
1.001	0.00	6.10	125.583	0.161	0.0	0.0	0.0	1.47	58.6	0.0
1.002	0.00	6.53	125.292	0.261	0.0	0.0	0.0	1.44	57.2	0.0
1.003	0.00	6.77	124.840	0.324	0.0	0.0	0.0	1.56	62.2	0.0
1.004	0.00	7.50	124.524	0.466	0.0	0.0	0.0	1.19	47.2	0.0
2.000	0.00	5.83	124.970	0.048	0.0	0.0	0.0	0.83	14.6	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
2.001	8.985	0.108	83.2	0.000	0.00	0.0	0.600	o	150
3.000	13.687	0.339	40.4	0.063	5.00	0.0	0.600	o	150
3.001	22.832	0.195	117.1	0.039	0.00	0.0	0.600	o	150
4.000	22.194	0.312	71.1	0.049	5.00	0.0	0.600	o	150
2.002	16.307	0.123	132.6	0.055	0.00	0.0	0.600	o	225
2.003	4.596	0.099	46.4	0.014	0.00	0.0	0.600	o	225
2.004	20.705	0.228	90.8	0.000	0.00	0.0	0.600	o	225
2.005	6.475	0.009	719.4	0.010	0.00	0.0	0.600	o	225
5.000	20.917	0.101	207.1	0.060	5.00	0.0	0.600	o	150
2.006	10.070	0.028	359.6	0.000	0.00	0.0	0.600	o	225
1.005	48.316	0.508	95.1	0.066	0.00	0.0	0.600	o	225
1.006	79.131	0.992	79.8	0.393	0.00	0.0	0.600	o	300
1.007	44.545	0.700	63.6	0.000	0.00	0.0	0.600	o	450
6.000	66.397	0.654	101.5	0.112	5.00	0.0	0.600	o	150
6.001	6.889	0.063	109.3	0.041	0.00	0.0	0.600	o	225

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
2.001	0.00	5.96	124.690	0.048	0.0	0.0	0.0	1.10	19.5	0.0
3.000	0.00	5.14	125.041	0.063	0.0	0.0	0.0	1.59	28.1	0.0
3.001	0.00	5.55	124.702	0.102	0.0	0.0	0.0	0.93	16.4	0.0
4.000	0.00	5.31	124.894	0.049	0.0	0.0	0.0	1.19	21.1	0.0
2.002	0.00	6.20	124.507	0.254	0.0	0.0	0.0	1.13	45.1	0.0
2.003	0.00	6.24	124.384	0.268	0.0	0.0	0.0	1.92	76.5	0.0
2.004	0.00	6.49	124.285	0.268	0.0	0.0	0.0	1.37	54.6	0.0
2.005	0.00	6.72	124.057	0.278	0.0	0.0	0.0	0.48	19.1	0.0
5.000	0.00	5.50	124.149	0.060	0.0	0.0	0.0	0.69	12.3	0.0
2.006	0.00	6.96	124.048	0.338	0.0	0.0	0.0	0.68	27.2	0.0
1.005	0.00	8.10	124.020	0.870	0.0	0.0	0.0	1.34	53.3	0.0
1.006	0.00	8.85	123.512	1.263	0.0	0.0	0.0	1.76	124.5	0.0
1.007	0.00	9.14	122.520	1.263	0.0	0.0	0.0	2.55	405.9	0.0
6.000	0.00	6.11	125.230	0.112	0.0	0.0	0.0	1.00	17.6	0.0
6.001	0.00	6.20	124.576	0.153	0.0	0.0	0.0	1.25	49.7	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
6.002	48.289	0.423	114.2	0.064	0.00	0.0	0.600	o	225
7.000	13.342	0.130	102.6	0.050	5.00	0.0	0.600	o	150
7.001	5.771	0.295	19.6	0.030	0.00	0.0	0.600	o	150
6.003	44.670	0.465	96.1	0.120	0.00	0.0	0.600	o	225
8.000	22.661	0.141	160.7	0.050	5.00	0.0	0.600	o	150
6.004	9.590	0.115	83.4	0.000	0.00	0.0	0.600	o	225
6.005	46.800	0.530	88.3	0.147	0.00	0.0	0.600	o	300
6.006	3.585	0.153	23.4	0.059	0.00	0.0	0.600	o	300
9.000	10.000	0.100	100.0	0.324	5.00	0.0	0.600	o	300
9.001	12.723	0.110	115.7	0.000	0.00	0.0	0.600	o	300
9.002	89.250	0.638	139.9	0.041	0.00	0.0	0.600	o	300
6.007	22.990	0.602	38.2	0.000	0.00	0.0	0.600	o	300
10.000	12.568	0.171	73.5	0.041	5.00	0.0	0.600	o	150
10.001	5.616	0.030	187.2	0.028	0.00	0.0	0.600	o	150
10.002	12.180	0.076	160.3	0.022	0.00	0.0	0.600	o	150

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
6.002	0.00	6.86	124.513	0.217	0.0	0.0	0.0	1.22	48.6	0.0
7.000	0.00	5.22	124.590	0.050	0.0	0.0	0.0	0.99	17.5	0.0
7.001	0.00	5.27	124.460	0.080	0.0	0.0	0.0	2.29	40.4	0.0
6.003	0.00	7.42	124.015	0.417	0.0	0.0	0.0	1.33	53.0	0.0
8.000	0.00	5.48	123.691	0.050	0.0	0.0	0.0	0.79	14.0	0.0
6.004	0.00	7.53	123.550	0.467	0.0	0.0	0.0	1.43	57.0	0.0
6.005	0.00	8.00	123.435	0.614	0.0	0.0	0.0	1.67	118.3	0.0
6.006	0.00	8.01	122.905	0.673	0.0	0.0	0.0	3.26	230.6	0.0
9.000	0.00	5.11	123.600	0.324	0.0	0.0	0.0	1.57	111.1	0.0
9.001	0.00	5.25	123.500	0.324	0.0	0.0	0.0	1.46	103.3	0.0
9.002	0.00	6.37	123.390	0.365	0.0	0.0	0.0	1.33	93.8	0.0
6.007	0.00	8.16	122.752	1.038	0.0	0.0	0.0	2.55	180.4	0.0
10.000	0.00	5.18	123.172	0.041	0.0	0.0	0.0	1.17	20.7	0.0
10.001	0.00	5.31	123.001	0.069	0.0	0.0	0.0	0.73	12.9	0.0
10.002	0.00	5.56	122.971	0.091	0.0	0.0	0.0	0.79	14.0	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
10.003	17.830	0.032	557.2	0.052	0.00	0.0	0.600	o	150
10.004	15.688	0.099	158.5	0.020	0.00	0.0	0.600	o	150
10.005	6.480	0.371	17.5	0.020	0.00	0.0	0.600	o	150
11.000	16.480	0.393	41.9	0.020	5.00	0.0	0.600	o	150
11.001	12.600	0.210	60.0	0.020	0.00	0.0	0.600	o	150
11.002	20.400	0.342	59.6	0.024	0.00	0.0	0.600	o	150
11.003	3.820	0.180	21.2	0.028	0.00	0.0	0.600	o	150
11.004	3.740	0.011	340.0	0.000	0.00	0.0	0.600	o	150
11.005	5.210	0.015	347.3	0.000	0.00	0.0	0.600	o	150
11.006	4.700	0.040	117.5	0.000	0.00	0.0	0.600	o	150
11.007	26.400	0.216	122.2	0.000	0.00	0.0	0.600	o	150
12.000	40.380	0.227	177.9	0.040	5.00	0.0	0.600	o	300
10.006	26.051	0.243	107.2	0.057	0.00	0.0	0.600	o	300
13.000	25.000	0.250	100.0	0.110	5.00	0.0	0.600	o	300
13.001	13.871	0.300	46.2	0.100	0.00	0.0	0.600	o	300
6.008	57.014	0.770	74.0	0.036	0.00	0.0	0.600	o	450

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
10.003	0.00	6.27	122.895	0.143	0.0	0.0	0.0	0.42	7.4	0.0
10.004	0.00	6.60	122.863	0.163	0.0	0.0	0.0	0.80	14.1	0.0
10.005	0.00	6.65	122.764	0.183	0.0	0.0	0.0	2.42	42.8	0.0
11.000	0.00	5.18	123.800	0.020	0.0	0.0	0.0	1.56	27.5	0.0
11.001	0.00	5.34	123.407	0.040	0.0	0.0	0.0	1.30	23.0	0.0
11.002	0.00	5.60	123.197	0.064	0.0	0.0	0.0	1.30	23.1	0.0
11.003	0.00	5.63	122.855	0.092	0.0	0.0	0.0	2.20	38.8	0.0
11.004	0.00	5.74	122.675	0.092	0.0	0.0	0.0	0.54	9.5	0.0
11.005	0.00	5.91	122.664	0.092	0.0	0.0	0.0	0.53	9.4	0.0
11.006	0.00	5.99	122.649	0.092	0.0	0.0	0.0	0.93	16.4	0.0
11.007	0.00	6.47	122.609	0.092	0.0	0.0	0.0	0.91	16.0	0.0
12.000	0.00	5.57	122.470	0.040	0.0	0.0	0.0	1.18	83.1	0.0
10.006	0.00	6.93	122.243	0.372	0.0	0.0	0.0	1.52	107.3	0.0
13.000	0.00	5.27	122.700	0.110	0.0	0.0	0.0	1.57	111.1	0.0
13.001	0.00	5.36	122.450	0.210	0.0	0.0	0.0	2.32	163.9	0.0
6.008	0.00	8.57	122.000	1.656	0.0	0.0	0.0	2.36	376.1	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
14.000	50.000	0.150	333.3	0.388	5.00	0.0	0.600	o	600
14.001	10.134	0.050	202.7	0.200	0.00	0.0	0.600	o	375
1.008	40.847	0.150	272.3	0.000	0.00	0.0	0.600	o	525
1.009	67.139	0.250	268.6	0.067	0.00	0.0	0.600	o	525
15.000	3.269	0.040	81.7	0.050	5.00	0.0	0.600	o	100
15.001	7.073	0.090	78.6	0.050	0.00	0.0	0.600	o	100
15.002	10.839	0.390	27.8	0.047	0.00	0.0	0.600	o	150
16.000	7.742	0.158	49.0	0.030	5.00	0.0	0.600	o	100
16.001	22.241	0.308	72.2	0.000	0.00	0.0	0.600	o	150
15.003	46.650	0.705	66.2	0.000	0.00	0.0	0.600	o	150
15.004	50.000	0.840	59.5	0.106	0.00	0.0	0.600	o	225
15.005	54.846	0.805	68.1	0.000	0.00	0.0	0.600	o	225
17.000	10.000	0.070	142.9	0.200	5.00	0.0	0.600	o	450
17.001	10.821	0.110	98.4	0.056	0.00	0.0	0.600	o	300
15.006	80.000	0.615	130.1	0.118	0.00	0.0	0.600	o	300

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
14.000	0.00	5.63	121.430	0.388	0.0	0.0	0.0	1.33	375.5	0.0
14.001	0.00	5.76	121.280	0.588	0.0	0.0	0.0	1.27	140.2	0.0
1.008	0.00	9.64	121.230	3.507	0.0	0.0	0.0	1.35	292.8	0.0
1.009	0.00	10.46	121.080	3.574	0.0	0.0	0.0	1.36	294.8	0.0
15.000	0.00	5.06	124.690	0.050	0.0	0.0	0.0	0.85	6.7	0.0
15.001	0.00	5.20	124.650	0.100	0.0	0.0	0.0	0.87	6.8	0.0
15.002	0.00	5.29	124.560	0.147	0.0	0.0	0.0	1.92	33.9	0.0
16.000	0.00	5.12	124.636	0.030	0.0	0.0	0.0	1.10	8.7	0.0
16.001	0.00	5.43	124.478	0.030	0.0	0.0	0.0	1.18	20.9	0.0
15.003	0.00	6.06	124.170	0.177	0.0	0.0	0.0	1.24	21.9	0.0
15.004	0.00	6.55	123.390	0.283	0.0	0.0	0.0	1.70	67.5	0.0
15.005	0.00	7.12	122.550	0.283	0.0	0.0	0.0	1.59	63.1	0.0
17.000	0.00	5.10	121.850	0.200	0.0	0.0	0.0	1.70	270.2	0.0
17.001	0.00	5.21	121.780	0.256	0.0	0.0	0.0	1.59	112.1	0.0
15.006	0.00	8.09	121.670	0.657	0.0	0.0	0.0	1.38	97.3	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
18.000	30.000	0.300	100.0	0.253	5.00	0.0	0.600	o	375
18.001	21.575	0.210	102.7	0.100	0.00	0.0	0.600	o	300
18.002	53.884	0.500	107.8	0.074	0.00	0.0	0.600	o	300
19.000	10.000	0.080	125.0	0.134	5.00	0.0	0.600	o	375
19.001	12.515	0.130	96.3	0.100	0.00	0.0	0.600	o	300
18.003	50.998	0.435	117.2	0.071	0.00	0.0	0.600	o	300
1.010	54.472	0.820	66.4	0.237	0.00	0.0	0.600	o	525
20.000	43.334	0.700	61.9	0.000	5.00	0.0	0.600	o	100
20.001	14.193	0.186	76.3	0.044	0.00	0.0	0.600	o	150
20.002	6.249	0.119	52.5	0.000	0.00	0.0	0.600	o	150
20.003	44.664	0.605	73.8	0.058	0.00	0.0	0.600	o	150
21.000	3.280	0.020	164.0	0.332	5.00	0.0	0.600	o	300
21.001	17.721	0.220	80.6	0.000	0.00	0.0	0.600	o	150
20.004	85.278	0.480	177.7	0.037	0.00	0.0	0.600	o	300
22.000	25.142	0.100	251.4	0.200	5.00	0.0	0.600	o	300

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
18.000	0.00	5.28	122.500	0.253	0.0	0.0	0.0	1.81	200.1	0.0
18.001	0.00	5.51	122.200	0.353	0.0	0.0	0.0	1.55	109.6	0.0
18.002	0.00	6.10	121.990	0.427	0.0	0.0	0.0	1.51	107.0	0.0
19.000	0.00	5.10	121.700	0.134	0.0	0.0	0.0	1.62	178.8	0.0
19.001	0.00	5.23	121.620	0.234	0.0	0.0	0.0	1.60	113.3	0.0
18.003	0.00	6.69	121.490	0.732	0.0	0.0	0.0	1.45	102.6	0.0
1.010	0.00	10.79	120.830	5.200	0.0	0.0	0.0	2.75	595.6	0.0
20.000	0.00	5.74	123.290	0.000	0.0	0.0	0.0	0.98	7.7	0.0
20.001	0.00	5.94	122.540	0.044	0.0	0.0	0.0	1.15	20.4	0.0
20.002	0.00	6.02	122.354	0.044	0.0	0.0	0.0	1.39	24.6	0.0
20.003	0.00	6.65	122.235	0.102	0.0	0.0	0.0	1.17	20.7	0.0
21.000	0.00	5.04	121.870	0.332	0.0	0.0	0.0	1.22	86.6	0.0
21.001	0.00	5.31	121.850	0.332	0.0	0.0	0.0	1.12	19.8	0.0
20.004	0.00	7.86	121.480	0.471	0.0	0.0	0.0	1.18	83.2	0.0
22.000	0.00	5.42	121.490	0.200	0.0	0.0	0.0	0.99	69.8	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
22.001	15.181	0.240	63.3	0.000	0.00	0.0	0.600	o	150
20.005	29.329	0.690	42.5	0.000	0.00	0.0	0.600	o	300
1.011	40.380	0.320	126.2	0.077	0.00	0.0	0.600	oo	45
1.012	20.689	0.140	147.8	0.000	0.00	0.0	0.600	o	525
1.013	66.711	0.450	148.2	0.016	0.00	0.0	0.600	o	525
1.014	12.068	0.080	150.9	0.000	0.00	0.0	0.600	o	525
1.015	35.286	0.180	196.0	0.000	0.00	0.0	0.600	o	525
23.000	36.042	0.370	97.4	0.121	5.00	0.0	0.600	o	300
23.001	7.249	0.075	96.7	0.000	0.00	0.0	0.600	o	150
1.016	24.253	0.080	303.2	0.000	0.00	0.0	0.600	o	525
1.017	14.929	0.050	298.6	0.000	0.00	0.0	0.600	o	525
24.000	15.016	0.160	93.9	0.068	5.00	0.0	0.600	o	225
24.001	6.820	0.075	90.9	0.000	0.00	0.0	0.600	o	225
24.002	37.903	0.935	40.5	0.000	0.00	0.0	0.600	o	225
25.000	10.000	0.040	250.0	0.066	5.00	0.0	0.600	o	300
25.001	3.130	0.029	107.9	0.000	0.00	0.0	0.600	o	225

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
22.001	0.00	5.62	121.390	0.200	0.0	0.0	0.0	1.27	22.4	0.0
20.005	0.00	8.06	121.000	0.671	0.0	0.0	0.0	2.42	170.9	0.0
1.011	0.00	11.10	120.010	5.948	0.0	0.0	0.0	2.17	1223.4	0.0
1.012	0.00	11.29	119.690	5.948	0.0	0.0	0.0	1.84	398.4	0.0
1.013	0.00	11.89	119.550	5.964	0.0	0.0	0.0	1.84	397.8	0.0
1.014	0.00	12.00	119.100	5.964	0.0	0.0	0.0	1.82	394.3	0.0
1.015	0.00	12.37	119.020	5.964	0.0	0.0	0.0	1.60	345.5	0.0
23.000	0.00	5.38	119.660	0.121	0.0	0.0	0.0	1.59	112.6	0.0
23.001	0.00	5.50	119.290	0.121	0.0	0.0	0.0	1.02	18.1	0.0
1.016	0.00	12.69	118.840	6.085	0.0	0.0	0.0	1.28	277.3	0.0
1.017	0.00	12.88	118.760	6.085	0.0	0.0	0.0	1.29	279.5	0.0
24.000	0.00	5.19	120.810	0.068	0.0	0.0	0.0	1.35	53.7	0.0
24.001	0.00	5.27	120.650	0.068	0.0	0.0	0.0	1.37	54.5	0.0
24.002	0.00	5.57	120.575	0.068	0.0	0.0	0.0	2.06	81.9	0.0
25.000	0.00	5.17	121.200	0.066	0.0	0.0	0.0	0.99	70.0	0.0
25.001	0.00	5.21	121.160	0.066	0.0	0.0	0.0	1.26	50.0	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
25.002	42.106	0.506	83.2	0.018	0.00	0.0	0.600	o	375
25.003	27.683	0.895	30.9	0.000	0.00	0.0	0.600	oo	-3
26.000	37.040	0.170	217.9	0.053	5.00	0.0	0.600	o	225
26.001	11.190	0.165	67.8	0.000	0.00	0.0	0.600	o	300
24.003	20.428	0.630	32.4	0.000	0.00	0.0	0.600	o	375
1.018	18.221	0.410	44.4	0.070	0.00	0.0	0.600	o	525
27.000	5.220	1.139	4.6	0.050	5.00	0.0	0.600	o	375
1.019	57.538	1.280	45.0	0.045	0.00	0.0	0.600	o	525
28.000	43.403	0.550	78.9	0.030	5.00	0.0	0.600	o	100
28.001	15.654	0.110	142.3	0.012	0.00	0.0	0.600	o	150
28.002	25.507	0.170	150.0	0.066	0.00	0.0	0.600	o	150
28.003	14.388	0.100	143.9	0.043	0.00	0.0	0.600	o	150
29.000	42.765	0.540	79.2	0.017	5.00	0.0	0.600	o	100
29.001	7.338	0.050	146.8	0.036	0.00	0.0	0.600	o	150
29.002	42.417	0.290	146.3	0.000	0.00	0.0	0.600	o	150

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
25.002	0.00	5.56	121.131	0.084	0.0	0.0	0.0	1.99	219.5	0.0
25.003	0.00	5.76	120.535	0.084	0.0	0.0	0.0	2.36	188.9	0.0
26.000	0.00	5.70	119.900	0.053	0.0	0.0	0.0	0.88	35.1	0.0
26.001	0.00	5.80	119.730	0.053	0.0	0.0	0.0	1.91	135.1	0.0
24.003	0.00	5.90	119.490	0.205	0.0	0.0	0.0	3.19	352.5	0.0
1.018	0.00	12.97	118.710	6.360	0.0	0.0	0.0	3.37	728.8	0.0
27.000	0.00	5.01	119.589	0.050	0.0	0.0	0.0	8.51	940.1	0.0
1.019	0.00	13.26	118.300	6.455	0.0	0.0	0.0	3.35	724.6	0.0
28.000	0.00	5.83	121.700	0.030	0.0	0.0	0.0	0.87	6.8	0.0
28.001	0.00	6.14	121.150	0.042	0.0	0.0	0.0	0.84	14.8	0.0
28.002	0.00	6.66	121.040	0.108	0.0	0.0	0.0	0.82	14.5	0.0
28.003	0.00	6.95	120.870	0.151	0.0	0.0	0.0	0.84	14.8	0.0
29.000	0.00	5.82	121.650	0.017	0.0	0.0	0.0	0.87	6.8	0.0
29.001	0.00	5.97	121.110	0.053	0.0	0.0	0.0	0.83	14.6	0.0
29.002	0.00	6.82	121.060	0.053	0.0	0.0	0.0	0.83	14.6	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
28.004	16.920	0.120	141.0	0.088	0.00	0.0	0.600	o	150
28.005	29.021	0.200	145.1	0.180	0.00	0.0	0.600	o	150
28.006	29.194	0.200	146.0	0.037	0.00	0.0	0.600	o	150
28.007	4.919	0.038	129.4	0.047	0.00	0.0	0.600	o	150
28.008	4.903	0.038	129.0	0.002	0.00	0.0	0.600	o	150
30.000	21.931	0.327	67.1	0.019	5.00	0.0	0.600	o	100
30.001	20.176	0.324	62.3	0.012	0.00	0.0	0.600	o	150
30.002	14.181	0.226	62.7	0.012	0.00	0.0	0.600	o	150
30.003	22.288	0.800	27.9	0.000	0.00	0.0	0.600	o	150
28.009	17.551	0.119	147.5	0.020	0.00	0.0	0.600	o	150
31.000	29.924	0.395	75.8	0.108	5.00	0.0	0.600	o	150
31.001	28.247	0.250	113.0	0.037	0.00	0.0	0.600	o	150
31.002	14.417	0.195	73.9	0.047	0.00	0.0	0.600	o	150
32.000	37.779	0.329	114.8	0.023	5.00	0.0	0.600	o	100
32.001	27.973	0.669	41.8	0.018	0.00	0.0	0.600	o	150
32.002	42.507	0.133	319.6	0.266	0.00	0.0	0.600	o	225

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
28.004	0.00	7.29	120.770	0.292	0.0	0.0	0.0	0.84	14.9	0.0
28.005	0.00	7.87	120.650	0.472	0.0	0.0	0.0	0.83	14.7	0.0
28.006	0.00	8.45	120.450	0.509	0.0	0.0	0.0	0.83	14.7	0.0
28.007	0.00	8.55	120.250	0.556	0.0	0.0	0.0	0.88	15.6	0.0
28.008	0.00	8.64	120.212	0.558	0.0	0.0	0.0	0.88	15.6	0.0
30.000	0.00	5.39	121.851	0.019	0.0	0.0	0.0	0.94	7.4	0.0
30.001	0.00	5.65	121.524	0.031	0.0	0.0	0.0	1.28	22.6	0.0
30.002	0.00	5.84	121.200	0.043	0.0	0.0	0.0	1.27	22.5	0.0
30.003	0.00	6.03	120.974	0.043	0.0	0.0	0.0	1.91	33.8	0.0
28.009	0.00	8.99	120.174	0.621	0.0	0.0	0.0	0.83	14.6	0.0
31.000	0.00	5.43	121.665	0.108	0.0	0.0	0.0	1.16	20.4	0.0
31.001	0.00	5.93	121.270	0.145	0.0	0.0	0.0	0.94	16.7	0.0
31.002	0.00	6.13	121.020	0.192	0.0	0.0	0.0	1.17	20.7	0.0
32.000	0.00	5.88	121.880	0.023	0.0	0.0	0.0	0.72	5.6	0.0
32.001	0.00	6.18	121.551	0.041	0.0	0.0	0.0	1.56	27.6	0.0
32.002	0.00	7.15	120.882	0.307	0.0	0.0	0.0	0.73	28.9	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
31.003	12.673	0.555	22.8	0.048	0.00	0.0	0.600	o	225
31.004	10.364	0.110	94.2	0.062	0.00	0.0	0.600	o	225
31.005	27.312	0.029	941.8	0.069	0.00	0.0	0.600	o	300
28.010	24.204	0.169	143.2	0.066	0.00	0.0	0.600	o	300
33.000	13.405	0.060	223.4	0.060	5.00	0.0	0.600	o	300
33.001	13.405	0.050	268.1	0.000	0.00	0.0	0.600	o	300
33.002	35.413	0.140	253.0	0.000	0.00	0.0	0.600	o	300
33.003	11.912	0.050	238.2	0.000	0.00	0.0	0.600	o	300
33.004	17.270	0.064	269.8	0.000	0.00	0.0	0.600	o	300
28.011	115.388	1.937	59.6	0.208	0.00	0.0	0.600	o	300
28.012	19.220	0.309	62.2	0.050	0.00	0.0	0.600	o	300
34.000	2.670	0.716	3.7	0.030	5.00	0.0	0.600	o	225
28.013	12.967	0.050	259.3	0.000	0.00	0.0	0.600	o	300
28.014	12.339	0.045	274.2	0.000	0.00	0.0	0.600	o	300
1.020	8.470	0.030	282.3	0.082	0.00	0.0	0.600	o	525
1.021	59.380	0.200	296.9	0.000	0.00	0.0	0.600	o	600

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
31.003	0.00	7.23	120.749	0.547	0.0	0.0	0.0	2.75	109.3	0.0
31.004	0.00	7.36	120.194	0.609	0.0	0.0	0.0	1.35	53.6	0.0
31.005	0.00	8.26	120.084	0.678	0.0	0.0	0.0	0.50	35.6	0.0
28.010	0.00	9.30	120.055	1.365	0.0	0.0	0.0	1.31	92.7	0.0
33.000	0.00	5.21	120.250	0.060	0.0	0.0	0.0	1.05	74.1	0.0
33.001	0.00	5.45	120.190	0.060	0.0	0.0	0.0	0.96	67.5	0.0
33.002	0.00	6.05	120.140	0.060	0.0	0.0	0.0	0.98	69.6	0.0
33.003	0.00	6.24	120.000	0.060	0.0	0.0	0.0	1.01	71.7	0.0
33.004	0.00	6.54	119.950	0.060	0.0	0.0	0.0	0.95	67.3	0.0
28.011	0.00	10.24	119.886	1.633	0.0	0.0	0.0	2.04	144.3	0.0
28.012	0.00	10.40	117.949	1.683	0.0	0.0	0.0	2.00	141.2	0.0
34.000	0.00	5.01	118.131	0.030	0.0	0.0	0.0	6.82	271.3	0.0
28.013	0.00	10.63	117.340	1.713	0.0	0.0	0.0	0.97	68.7	0.0
28.014	0.00	10.84	117.290	1.713	0.0	0.0	0.0	0.94	66.8	0.0
1.020	0.00	13.36	117.020	8.250	0.0	0.0	0.0	1.33	287.5	0.0
1.021	0.00	14.07	115.470	8.250	0.0	0.0	0.0	1.41	398.1	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
1.022	24.610	0.110	223.7	0.036	0.00	0.0	0.600	o	600
35.000	24.960	0.060	416.0	0.074	5.00	0.0	0.600	o	525
35.001	18.620	0.050	372.4	0.038	0.00	0.0	0.600	o	525
35.002	8.190	0.020	409.5	0.080	0.00	0.0	0.600	o	525
36.000	10.000	0.100	100.0	0.028	5.00	0.0	0.600	o	150
36.001	17.775	0.225	79.0	0.030	0.00	0.0	0.600	o	150
36.002	34.234	0.400	85.6	0.013	0.00	0.0	0.600	o	225
36.003	7.171	0.050	143.4	0.000	0.00	0.0	0.600	o	225
36.004	15.504	0.150	103.4	0.010	0.00	0.0	0.600	o	225
36.005	12.485	0.120	104.0	0.005	0.00	0.0	0.600	o	225
36.006	18.239	0.170	107.3	0.005	0.00	0.0	0.600	o	225
36.007	31.070	1.190	26.1	0.040	0.00	0.0	0.600	o	225
36.008	4.394	0.445	9.9	0.030	0.00	0.0	0.600	o	225
37.000	12.990	0.125	103.9	0.018	5.00	0.0	0.600	o	225
38.000	14.165	0.750	18.9	0.050	5.00	0.0	0.600	o	150
36.009	20.164	0.200	100.8	0.025	0.00	0.0	0.600	o	300
36.010	17.357	0.325	53.4	0.010	0.00	0.0	0.600	o	300

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.022	0.00	14.32	115.270	8.286	0.0	0.0	0.0	1.62	459.2	0.0
35.000	0.00	5.38	115.420	0.074	0.0	0.0	0.0	1.09	236.4	0.0
35.001	0.00	5.65	115.360	0.112	0.0	0.0	0.0	1.15	250.0	0.0
35.002	0.00	5.77	115.310	0.192	0.0	0.0	0.0	1.10	238.3	0.0
36.000	0.00	5.17	119.600	0.028	0.0	0.0	0.0	1.00	17.8	0.0
36.001	0.00	5.43	119.500	0.058	0.0	0.0	0.0	1.13	20.0	0.0
36.002	0.00	5.83	119.200	0.071	0.0	0.0	0.0	1.41	56.2	0.0
36.003	0.00	5.94	118.800	0.071	0.0	0.0	0.0	1.09	43.3	0.0
36.004	0.00	6.14	118.750	0.081	0.0	0.0	0.0	1.29	51.1	0.0
36.005	0.00	6.30	118.600	0.086	0.0	0.0	0.0	1.28	51.0	0.0
36.006	0.00	6.54	118.480	0.091	0.0	0.0	0.0	1.26	50.2	0.0
36.007	0.00	6.75	118.310	0.131	0.0	0.0	0.0	2.57	102.2	0.0
36.008	0.00	6.76	117.120	0.161	0.0	0.0	0.0	4.19	166.5	0.0
37.000	0.00	5.17	116.800	0.018	0.0	0.0	0.0	1.28	51.0	0.0
38.000	0.00	5.10	117.500	0.050	0.0	0.0	0.0	2.33	41.1	0.0
36.009	0.00	6.98	116.600	0.254	0.0	0.0	0.0	1.57	110.7	0.0
36.010	0.00	7.11	116.400	0.264	0.0	0.0	0.0	2.16	152.4	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
36.011	8.051	0.050	161.0	0.014	0.00	0.0	0.600	o	525
36.012	22.785	0.280	81.4	0.017	0.00	0.0	0.600	o	525
36.013	19.464	0.230	84.6	0.017	0.00	0.0	0.600	o	525
35.003	17.590	0.050	351.8	0.040	0.00	0.0	0.600	o	525
35.004	2.690	0.080	33.6	0.018	0.00	0.0	0.600	o	300
39.000	179.697	1.980	90.8	0.050	5.00	0.0	0.600	o	225
39.001	22.560	2.335	9.7	0.089	0.00	0.0	0.600	o	225
1.023	66.440	0.130	511.1	0.047	0.00	0.0	0.600	o	600
1.024	12.470	0.020	623.5	0.030	0.00	0.0	0.600	o	750
40.000	103.884	0.570	182.3	0.083	5.00	0.0	0.600	o	225
40.001	114.526	0.520	220.2	0.155	0.00	0.0	0.600	o	300
40.002	23.331	0.111	210.2	0.046	0.00	0.0	0.600	o	300
40.003	11.890	2.689	4.4	0.005	0.00	0.0	0.600	o	300
1.025	173.300	0.337	514.2	0.030	0.00	0.0	0.600	o	750
41.000	8.136	0.027	301.3	0.000	5.00	0.0	0.600	o	750

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
36.011	0.00	7.19	115.850	0.278	0.0	0.0	0.0	1.76	381.6	0.0
36.012	0.00	7.34	115.800	0.295	0.0	0.0	0.0	2.48	537.8	0.0
36.013	0.00	7.47	115.520	0.312	0.0	0.0	0.0	2.44	527.4	0.0
35.003	0.00	7.72	115.290	0.544	0.0	0.0	0.0	1.19	257.3	0.0
35.004	0.00	7.74	115.240	0.562	0.0	0.0	0.0	2.72	192.3	0.0
39.000	0.00	7.18	120.110	0.050	0.0	0.0	0.0	1.37	54.6	0.0
39.001	0.00	7.27	118.130	0.139	0.0	0.0	0.0	4.23	168.4	0.0
1.023	0.00	15.35	115.160	9.034	0.0	0.0	0.0	1.07	302.6	0.0
1.024	0.00	15.54	115.030	9.064	0.0	0.0	0.0	1.11	491.8	0.0
40.000	0.00	6.79	119.350	0.083	0.0	0.0	0.0	0.97	38.4	0.0
40.001	0.00	8.60	118.780	0.238	0.0	0.0	0.0	1.06	74.6	0.0
40.002	0.00	8.96	118.260	0.284	0.0	0.0	0.0	1.08	76.4	0.0
40.003	0.00	8.99	118.149	0.289	0.0	0.0	0.0	7.53	532.0	0.0
1.025	0.00	17.90	115.010	9.383	0.0	0.0	0.0	1.23	542.1	0.0
41.000	0.00	5.08	114.700	0.000	0.0	0.0	0.0	1.61	709.9	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
1.026	6.000	0.010	600.0	0.000	0.00	0.0	0.600	o	750
1.027	21.139	0.303	69.8	0.000	0.00	0.0	0.600	o	450
1.028	6.726	0.360	18.7	0.000	0.00	0.0	0.600	o	450

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.026	0.00	17.98	114.673	9.383	0.0	0.0	0.0	1.14	501.5	0.0
1.027	0.00	18.13	114.663	9.383	0.0	0.0	0.0	2.44	387.5	0.0
1.028	0.00	18.15	114.360	9.383	0.0	0.0	0.0	4.72	750.8	0.0

Free Flowing Outfall Details for SW EAST PROPOSED 23.07.13.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.028	25	115.000	114.000	0.000	0	0

Simulation Criteria for SW EAST PROPOSED 23.07.13.SWS

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	4.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	240
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	4

Number of Input Hydrographs	0	Number of Storage Structures	24
Number of Online Controls	15	Number of Time/Area Diagrams	0
Number of Offline Controls	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
Site Location GB 450500 225250 SP 50500 25250	
C (1km)	-0.023
D1 (1km)	0.328
D2 (1km)	0.309
D3 (1km)	0.264
E (1km)	0.292
F (1km)	2.461
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840

Synthetic Rainfall Details

Storm Duration (mins) 120

Online Controls for SW EAST PROPOSED 23.07.13.SWS

Orifice Manhole: 47 (B4b), DS/PN: 9.001, Volume (m³): 5.4

Diameter (m) 0.160 Discharge Coefficient 0.600 Invert Level (m) 123.500

Orifice Manhole: 63 (D2b), DS/PN: 13.001, Volume (m³): 6.4

Diameter (m) 0.059 Discharge Coefficient 0.600 Invert Level (m) 122.450

Orifice Manhole: 65 (D3b), DS/PN: 14.001, Volume (m³): 18.3

Diameter (m) 0.300 Discharge Coefficient 0.600 Invert Level (m) 121.280

Orifice Manhole: 76 (B4a), DS/PN: 17.001, Volume (m³): 6.5

Diameter (m) 0.150 Discharge Coefficient 0.600 Invert Level (m) 121.780

Orifice Manhole: 78 (B4a), DS/PN: 18.001, Volume (m³): 8.3

Diameter (m) 0.147 Discharge Coefficient 0.600 Invert Level (m) 122.200

Orifice Manhole: 82 (D2b), DS/PN: 19.001, Volume (m³): 4.7

Diameter (m) 0.130 Discharge Coefficient 0.600 Invert Level (m) 121.620

Orifice Manhole: 91 (D2c), DS/PN: 21.001, Volume (m³): 5.3

Diameter (m) 0.079 Discharge Coefficient 0.600 Invert Level (m) 121.850

Orifice Manhole: 94 (D2c), DS/PN: 22.001, Volume (m³): 6.3

Diameter (m) 0.069 Discharge Coefficient 0.600 Invert Level (m) 121.390

Hydro-Brake® Manhole: 12a, DS/PN: 1.012, Volume (m³): 33.1

Design Head (m) 1.450 Hydro-Brake® Type Md4 Invert Level (m) 119.690
Design Flow (l/s) 365.0 Diameter (mm) 525

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	5.4	1.200	394.4	3.000	373.2	7.000	568.3
0.200	26.8	1.400	370.1	3.500	402.1	7.500	588.2
0.300	64.6	1.600	345.6	4.000	429.6	8.000	607.5
0.400	115.3	1.800	331.8	4.500	455.6	8.500	626.2
0.500	173.9	2.000	328.5	5.000	480.3	9.000	644.4
0.600	234.6	2.200	332.3	5.500	503.7	9.500	662.0
0.800	339.7	2.400	340.2	6.000	526.1		
1.000	392.4	2.600	350.4	6.500	547.6		

Orifice Manhole: 91, DS/PN: 23.001, Volume (m³): 7.8

Diameter (m) 0.055 Discharge Coefficient 0.600 Invert Level (m) 119.290

Orifice Manhole: 99b (D1c), DS/PN: 25.001, Volume (m³): 3.0

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 121.160

Orifice Manhole: 97 (D1c), DS/PN: 26.001, Volume (m³): 3.8

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 119.730

Orifice Manhole: 116b (D5b), DS/PN: 33.001, Volume (m³): 3.3

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 120.190

Hydro-Brake® Manhole: 145 (D1b), DS/PN: 35.004, Volume (m³): 14.1

Design Head (m) 1.200 Hydro-Brake® Type Md6 SW Only Invert Level (m) 115.240
Design Flow (l/s) 69.0 Diameter (mm) 300

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	9.8	1.200	68.6	3.000	89.1	7.000	135.9
0.200	28.0	1.400	68.4	3.500	96.1	7.500	140.6
0.300	47.4	1.600	69.6	4.000	102.7	8.000	145.2
0.400	63.1	1.800	71.7	4.500	108.9	8.500	149.7
0.500	71.6	2.000	74.3	5.000	114.8	9.000	154.0
0.600	74.0	2.200	77.2	5.500	120.4	9.500	158.3
0.800	73.5	2.400	80.1	6.000	125.8		
1.000	70.5	2.600	83.2	6.500	130.9		

Orifice Manhole: 24 (PI), DS/PN: 1.028, Volume (m³): 6.7

Diameter (m) 0.450 Discharge Coefficient 0.600 Invert Level (m) 114.360

Offline Controls for SW EAST PROPOSED 23.07.13.SWS

Pipe Manhole: Ex MH, DS/PN: 27.000, Loop to PN: 34.000

Diameter (m)	0.225	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	50.0	Coefficient of Contraction	0.600
Length (m)	77.412	Upstream Invert Level (m)	119.589

Pipe Manhole: Ex MH, DS/PN: 34.000, Loop to PN: 28.012

Diameter (m)	0.225	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	150.0	Coefficient of Contraction	0.600
Length (m)	20.000	Upstream Invert Level (m)	118.131

Storage Structures for SW EAST PROPOSED 23.07.13.SWS

Tank or Pond Manhole: 47 (B4b), DS/PN: 9.001

Invert Level (m) 123.800

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	60.0	1.000	60.0	1.001	0.0

Porous Car Park Manhole: 62 (D2b), DS/PN: 13.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.5
Membrane Percolation (mm/hr)	1000	Length (m)	47.0
Max Percolation (l/s)	137.1	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	5
Invert Level (m)	123.850	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 63 (D2b), DS/PN: 13.001

Invert Level (m) 122.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	30.0	1.000	30.0	1.001	0.0

Porous Car Park Manhole: 64 (D3b), DS/PN: 14.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.5
Membrane Percolation (mm/hr)	1000	Length (m)	85.0
Max Percolation (l/s)	153.5	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	5
Invert Level (m)	122.030	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 65 (D3b), DS/PN: 14.001

Invert Level (m) 121.300

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	280.0	1.200	280.0	1.201	0.0

Tank or Pond Manhole: 76 (B4a), DS/PN: 17.001

Invert Level (m) 121.780

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	65.0	1.200	65.0	1.201	0.0

Porous Car Park Manhole: 77 (B4a), DS/PN: 18.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	13.6
Membrane Percolation (mm/hr)	1000	Length (m)	118.0
Max Percolation (l/s)	445.8	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	5
Invert Level (m)	123.550	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 78 (B4a), DS/PN: 18.001

Invert Level (m) 122.200

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	20.0	1.000	20.0	1.001	0.0

Tank or Pond Manhole: 82 (D2b), DS/PN: 19.001

Invert Level (m) 121.620

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	236.6	0.500	236.6	0.501	0.0

Tank or Pond Manhole: 91 (D2c), DS/PN: 21.001

Invert Level (m) 121.850

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	72.0	1.200	72.0	1.201	0.0

Tank or Pond Manhole: 94a (D2c), DS/PN: 22.000

Invert Level (m) 121.490

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	18.0	0.500	18.0	0.501	0.0

Tank or Pond Manhole: 94 (D2c), DS/PN: 22.001

Invert Level (m) 121.390

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	36.0	1.200	36.0	1.201	0.0

Tank or Pond Manhole: 12a, DS/PN: 1.012

Invert Level (m) 119.690

Tank or Pond Manhole: 12a, DS/PN: 1.012

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	400.0	1.200	400.0	1.201	0.0

Tank or Pond Manhole: 90, DS/PN: 23.000

Invert Level (m) 119.660

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	65.0	1.000	65.0	1.001	0.0

Tank or Pond Manhole: 99b (D1c), DS/PN: 25.001

Invert Level (m) 121.160

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	25.0	0.500	25.0	0.501	0.0

Tank or Pond Manhole: 97 (D1c), DS/PN: 26.001

Invert Level (m) 120.080

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	102.0	0.400	102.0	0.401	0.0

Tank or Pond Manhole: 116b (D5b), DS/PN: 33.001

Invert Level (m) 120.190

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	35.0	0.500	35.0	0.501	0.0

Complex Manhole: 18 (D1b), DS/PN: 35.000

Tank or Pond

Invert Level (m) 115.420

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	192.0	1.001	0.0	1.350	0.0
1.000	192.0	1.349	0.0	1.470	60.0

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.4
Membrane Percolation (mm/hr)	1000	Length (m)	49.6
Max Percolation (l/s)	115.7	Slope (1:X)	150.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	5
Invert Level (m)	116.420	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 20 (D1b), DS/PN: 35.002

Invert Level (m) 115.310

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	70.0	1.000	70.0	1.001	0.0

Tank or Pond Manhole: 12 (D1b), DS/PN: 36.011

Invert Level (m) 115.850

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	23.0	1.000	23.0	1.001	0.0

Tank or Pond Manhole: 144 (D1b), DS/PN: 35.003

Invert Level (m) 115.290

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	25.0	1.000	25.0	1.001	0.0

Porous Car Park Manhole: 145 (D1b), DS/PN: 35.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	146.0
Max Percolation (l/s)	162.2	Slope (1:X)	150.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	5
Invert Level (m)	117.670	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 21, DS/PN: 1.024

Invert Level (m) 115.030

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	52.0	2.000	52.0	2.001	0.0

Tank or Pond Manhole: Pond, DS/PN: 41.000

Invert Level (m) 114.700

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	406.9	0.800	608.9

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST PROPOSED 23.07.13.SWS

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960
Return Period(s) (years)	100
Climate Change (%)	30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
1.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
1.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
1.003	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
1.004	15 Summer	100	+30%	100/15 Summer				
2.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
2.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
3.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
3.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
4.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
2.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
2.003	15 Winter	100	+30%	100/15 Summer				
2.004	15 Winter	100	+30%	100/15 Summer				
2.005	15 Winter	100	+30%	100/15 Summer				
5.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
2.006	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
1.005	30 Winter	100	+30%	100/15 Summer	100/15 Summer			10
1.006	15 Winter	100	+30%	100/15 Summer	100/15 Summer			5
1.007	60 Winter	100	+30%					
6.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
6.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			5
6.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
7.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
7.001	30 Winter	100	+30%	100/15 Summer	100/15 Summer			6
6.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			5
8.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
6.004	15 Winter	100	+30%	100/15 Summer	100/15 Winter			1
6.005	120 Winter	100	+30%					
6.006	15 Winter	100	+30%	100/15 Summer				
9.000	15 Winter	100	+30%	100/15 Summer				
9.001	15 Winter	100	+30%	100/15 Summer	100/15 Winter			1
9.002	15 Winter	100	+30%	100/15 Summer				
6.007	15 Winter	100	+30%	100/15 Summer				
10.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
10.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
10.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
10.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST PROPOSED 23.07.13.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
10.004	15 Winter	100	+30%	100/15 Summer				
10.005	15 Winter	100	+30%	100/15 Summer				
11.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
11.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			3
11.002	15 Winter	100	+30%	100/15 Summer				
11.003	15 Winter	100	+30%	100/15 Summer				
11.004	15 Winter	100	+30%	100/15 Summer				
11.005	15 Winter	100	+30%	100/15 Summer				
11.006	15 Winter	100	+30%	100/15 Summer				
11.007	15 Winter	100	+30%	100/15 Summer				
12.000	15 Winter	100	+30%	100/15 Summer				
10.006	15 Winter	100	+30%	100/15 Summer				
13.000	60 Winter	100	+30%	100/15 Summer				
13.001	60 Winter	100	+30%	100/15 Summer				
6.008	15 Winter	100	+30%	100/15 Summer				
14.000	120 Winter	100	+30%	100/15 Summer	100/60 Winter			2
14.001	120 Winter	100	+30%	100/15 Summer				
1.008	60 Winter	100	+30%	100/15 Summer				
1.009	60 Winter	100	+30%	100/15 Summer				
15.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
15.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			3
15.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			5
16.000	15 Winter	100	+30%	100/15 Summer				
16.001	15 Winter	100	+30%	100/15 Summer				
15.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
15.004	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
15.005	15 Winter	100	+30%	100/15 Summer				
17.000	15 Winter	100	+30%	100/15 Summer				
17.001	15 Winter	100	+30%	100/15 Summer				
15.006	15 Winter	100	+30%	100/15 Summer				
18.000	15 Winter	100	+30%	100/15 Summer				
18.001	15 Winter	100	+30%	100/15 Summer				
18.002	15 Winter	100	+30%	100/15 Summer				
19.000	120 Winter	100	+30%	100/30 Winter				
19.001	120 Winter	100	+30%	100/15 Summer				
18.003	120 Winter	100	+30%	100/15 Summer				
1.010	60 Winter	100	+30%	100/15 Summer	100/30 Winter			3
20.000	15 Winter	100	+30%	100/15 Summer				
20.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
20.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
20.003	15 Summer	100	+30%	100/15 Summer	100/15 Summer			2
21.000	120 Winter	100	+30%	100/15 Summer	100/30 Winter			3
21.001	60 Winter	100	+30%	100/15 Summer	100/30 Winter			3
20.004	60 Winter	100	+30%	100/30 Summer				
22.000	60 Winter	100	+30%	100/15 Summer	100/30 Winter			3
22.001	60 Winter	100	+30%	100/15 Summer				
20.005	60 Winter	100	+30%	100/15 Summer				
1.011	120 Winter	100	+30%	100/15 Summer				
1.012	120 Winter	100	+30%	100/15 Summer	100/30 Winter			5
1.013	120 Winter	100	+30%	100/15 Summer				

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST PROPOSED 23.07.13.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.014	120 Winter	100	+30%	100/15 Summer				
1.015	120 Winter	100	+30%	100/15 Summer				
23.000	60 Winter	100	+30%	100/15 Summer				
23.001	60 Winter	100	+30%	100/15 Summer				
1.016	120 Winter	100	+30%	100/15 Summer				
1.017	120 Winter	100	+30%	100/15 Summer				
24.000	15 Winter	100	+30%	100/15 Summer				
24.001	15 Winter	100	+30%	100/15 Summer				
24.002	15 Winter	100	+30%					
25.000	60 Winter	100	+30%	100/15 Summer	100/15 Winter			5
25.001	30 Winter	100	+30%	100/15 Summer	100/15 Winter			2
25.002	15 Winter	100	+30%					
25.003	15 Summer	100	+30%					
26.000	15 Winter	100	+30%	100/15 Summer				
26.001	30 Winter	100	+30%	100/15 Summer				
24.003	15 Winter	100	+30%					
1.018	120 Winter	100	+30%					
27.000	15 Winter	100	+30%			100/15 Summer	16	
1.019	120 Winter	100	+30%					
28.000	120 Winter	100	+30%	100/15 Summer	100/15 Summer			14
28.001	60 Winter	100	+30%	100/15 Summer	100/15 Summer			13
28.002	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
28.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
29.000	120 Winter	100	+30%	100/15 Summer	100/15 Summer			14
29.001	60 Winter	100	+30%	100/15 Summer	100/15 Summer			14
29.002	15 Summer	100	+30%	100/15 Summer				
28.004	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
28.005	60 Winter	100	+30%	100/15 Summer	100/15 Summer			14
28.006	60 Winter	100	+30%	100/15 Summer	100/15 Summer			11
28.007	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
28.008	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
30.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
30.001	15 Winter	100	+30%	100/15 Summer				
30.002	15 Winter	100	+30%	100/15 Summer				
30.003	15 Winter	100	+30%	100/15 Summer				
28.009	15 Winter	100	+30%	100/15 Summer	100/15 Summer			5
31.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
31.001	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
31.002	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
32.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
32.001	15 Winter	100	+30%	100/15 Summer				
32.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			8
31.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
31.004	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
31.005	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
28.010	15 Winter	100	+30%	100/15 Summer				
33.000	60 Winter	100	+30%	100/15 Summer				
33.001	60 Winter	100	+30%	100/15 Summer				
33.002	15 Winter	100	+30%	100/15 Summer				
33.003	15 Winter	100	+30%	100/15 Summer				

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST PROPOSED 23.07.13.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
33.004	15 Winter	100	+30%	100/15 Summer				
28.011	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
28.012	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
34.000	15 Winter	100	+30%	100/15 Summer		100/15 Summer	16	
28.013	120 Winter	100	+30%	100/15 Summer				
28.014	120 Winter	100	+30%	100/15 Summer				
1.020	120 Winter	100	+30%	100/15 Summer				
1.021	120 Winter	100	+30%	100/15 Summer				
1.022	120 Winter	100	+30%	100/15 Summer				
35.000	240 Winter	100	+30%	100/15 Summer				
35.001	240 Winter	100	+30%	100/15 Summer				
35.002	240 Winter	100	+30%	100/15 Summer				
36.000	15 Winter	100	+30%	100/15 Summer				
36.001	15 Winter	100	+30%	100/15 Summer				
36.002	15 Winter	100	+30%					
36.003	15 Winter	100	+30%	100/15 Summer				
36.004	15 Winter	100	+30%	100/15 Summer				
36.005	15 Winter	100	+30%	100/15 Summer				
36.006	15 Winter	100	+30%	100/15 Summer				
36.007	15 Winter	100	+30%					
36.008	15 Winter	100	+30%	100/15 Summer				
37.000	15 Winter	100	+30%	100/15 Summer				
38.000	15 Winter	100	+30%	100/15 Summer				
36.009	15 Winter	100	+30%	100/15 Summer				
36.010	15 Winter	100	+30%	100/15 Summer				
36.011	240 Winter	100	+30%	100/15 Summer				
36.012	240 Winter	100	+30%	100/15 Summer				
36.013	240 Winter	100	+30%	100/15 Summer				
35.003	240 Winter	100	+30%	100/15 Summer				
35.004	240 Winter	100	+30%	100/15 Summer				
39.000	15 Winter	100	+30%					
39.001	15 Winter	100	+30%					
1.023	120 Winter	100	+30%	100/15 Summer				
1.024	120 Winter	100	+30%	100/15 Summer				
40.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
40.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
40.002	15 Winter	100	+30%	100/15 Summer				
40.003	15 Winter	100	+30%					
1.025	120 Winter	100	+30%	100/15 Summer				
41.000	240 Winter	100	+30%	100/15 Summer	100/15 Winter			14
1.026	240 Winter	100	+30%	100/15 Summer	100/60 Winter			9
1.027	240 Winter	100	+30%	100/15 Summer	100/60 Winter			8
1.028	240 Winter	100	+30%	100/15 Summer				

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m^3)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	Ex MH	127.112	0.862	12.484	1.10	0.0	18.1	FLOOD
1.001	0883	126.929	1.121	5.593	0.92	0.0	49.1	FLOOD

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST PROPOSED 23.07.13.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.002	0810	126.697	1.180	22.857	0.93	0.0	50.3	FLOOD
1.003	0923	126.315	1.250	41.071	1.04	0.0	59.0	FLOOD
1.004	0822	126.455	1.706	0.000	1.70	0.0	77.0	FLOOD RISK
2.000	0961	125.682	0.562	12.237	0.69	0.0	9.8	FLOOD
2.001	0859	125.671	0.831	8.578	0.86	0.0	14.8	FLOOD
3.000	0799	125.734	0.543	22.636	0.50	0.0	12.8	FLOOD
3.001	0797	125.767	0.915	7.849	1.03	0.0	16.1	FLOOD
4.000	0860	126.363	1.319	1.215	1.35	0.0	27.0	FLOOD
2.002	0805	125.814	1.082	1.580	0.95	0.0	38.1	FLOOD
2.003	0825	125.747	1.138	0.000	1.01	0.0	45.0	FLOOD RISK
2.004	0824	125.648	1.138	0.000	0.88	0.0	43.8	FLOOD RISK
2.005	0804	125.458	1.176	0.000	2.46	0.0	52.4	FLOOD RISK
5.000	0863	125.333	1.034	14.268	0.84	0.0	9.8	FLOOD
2.006	0865	125.314	1.041	1.072	2.43	0.0	50.4	FLOOD
1.005	0816	125.248	1.003	91.806	1.73	0.0	88.4	FLOOD
1.006	0908	125.112	1.300	31.884	1.52	0.0	182.6	FLOOD
1.007	8	122.903	-0.067	0.000	0.47	0.0	170.8	OK
6.000	Ex MH	125.741	0.361	30.544	1.24	0.0	21.4	FLOOD
6.001	0991	125.743	0.942	2.301	0.76	0.0	26.9	FLOOD
6.002	0992	125.703	0.965	9.873	0.81	0.0	37.8	FLOOD
7.000	0827	125.596	0.856	6.473	1.20	0.0	19.3	FLOOD
7.001	0826	125.536	0.926	16.367	1.42	0.0	47.6	FLOOD
6.003	0662	125.542	1.302	16.042	1.48	0.0	75.1	FLOOD
8.000	0801	124.981	1.140	11.648	2.04	0.0	26.9	FLOOD
6.004	27	125.250	1.475	0.121	2.12	0.0	100.0	FLOOD
6.005	Ex blind	123.735	0.000	0.000	0.88	0.0	104.1	SURCHARGED*
6.006	0823	124.647	1.442	0.000	1.85	0.0	181.5	SURCHARGED
9.000	46 (B4b)	125.571	1.671	0.000	2.78	0.0	220.2	FLOOD RISK
9.001	47 (B4b)	125.423	1.623	2.817	0.74	0.0	61.4	FLOOD
9.002	48	124.389	0.699	0.000	0.73	0.0	66.6	SURCHARGED
6.007	41	124.217	1.165	0.000	1.33	0.0	213.1	SURCHARGED
10.000	0666	124.570	1.248	2.504	0.92	0.0	17.4	FLOOD
10.001	0668	124.427	1.276	6.918	2.00	0.0	21.3	FLOOD
10.002	0667	124.376	1.255	0.869	1.97	0.0	25.0	FLOOD
10.003	0930	124.091	1.046	15.568	4.28	0.0	29.6	FLOOD
10.004	0931	124.021	1.008	0.000	2.47	0.0	32.2	FLOOD RISK
10.005	0963	123.739	0.825	0.000	1.10	0.0	39.7	FLOOD RISK
11.000	Ex MH	124.300	0.350	0.088	0.52	0.0	13.3	FLOOD
11.001	0686	124.198	0.641	6.457	0.91	0.0	19.1	FLOOD
11.002	0681	124.238	0.891	0.000	0.91	0.0	19.8	SURCHARGED
11.003	0929	124.166	1.161	0.000	1.29	0.0	34.4	FLOOD RISK
11.004	0928	124.047	1.222	0.000	2.99	0.0	29.6	FLOOD RISK
11.005	0665	123.958	1.144	0.000	2.79	0.0	24.9	FLOOD RISK
11.006	0669	123.863	1.064	0.000	1.76	0.0	22.0	SURCHARGED
11.007	55 (0673)	123.764	1.005	0.000	1.50	0.0	23.0	SURCHARGED
12.000	56a	123.501	0.731	0.000	0.28	0.0	21.9	FLOOD RISK
10.006	56 (0927)	123.468	0.925	0.000	1.06	0.0	102.4	FLOOD RISK
13.000	62 (D2b)	124.189	1.189	0.000	0.29	0.0	28.6	FLOOD RISK
13.001	63 (D2b)	124.185	1.435	0.000	0.07	0.0	9.3	FLOOD RISK

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST PROPOSED 23.07.13.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
6.008	42	123.231	0.781	0.000	0.94	0.0	326.3	SURCHARGED
14.000	64 (D3b)	122.702	0.672	21.887	0.23	0.0	75.3	FLOOD
14.001	65 (D3b)	122.709	1.054	0.000	1.39	0.0	143.4	SURCHARGED
1.008	9	122.758	1.003	0.000	1.24	0.0	316.7	SURCHARGED
1.009	10	122.600	0.995	0.000	1.22	0.0	328.8	FLOOD RISK
15.000	0786	125.279	0.489	19.474	2.34	0.0	12.9	FLOOD
15.001	0785	125.360	0.610	4.800	2.15	0.0	13.3	FLOOD
15.002	0875	125.064	0.354	6.459	0.78	0.0	23.6	FLOOD
16.000	0874	125.338	0.602	0.000	1.49	0.0	11.8	FLOOD RISK
16.001	74	124.994	0.366	0.000	0.59	0.0	11.7	FLOOD RISK
15.003	69	124.888	0.568	7.995	1.35	0.0	28.7	FLOOD
15.004	70	124.691	1.076	1.131	1.18	0.0	76.1	FLOOD
15.005	71	123.816	1.041	0.000	1.12	0.0	68.0	SURCHARGED
17.000	75 (B4a)	122.941	0.641	0.000	0.79	0.0	134.4	SURCHARGED
17.001	76 (B4a)	122.933	0.853	0.000	0.49	0.0	40.5	SURCHARGED
15.006	72	122.794	0.824	0.000	1.25	0.0	117.0	SURCHARGED
18.000	77 (B4a)	123.874	0.999	0.000	0.61	0.0	107.2	FLOOD RISK
18.001	78 (B4a)	123.853	1.353	0.000	0.56	0.0	53.9	SURCHARGED
18.002	79	122.767	0.477	0.000	0.90	0.0	91.5	SURCHARGED
19.000	81 (D2b)	122.643	0.568	0.000	0.23	0.0	25.3	FLOOD RISK
19.001	82 (D2b)	122.640	0.720	0.000	0.25	0.0	22.4	SURCHARGED
18.003	80	122.524	0.734	0.000	0.72	0.0	69.2	SURCHARGED
1.010	11	122.363	1.008	33.170	1.03	0.0	553.3	FLOOD
20.000	83	124.186	0.796	0.000	0.57	0.0	4.3	SURCHARGED
20.001	Ex MH	124.187	1.497	1.125	0.98	0.0	18.3	FLOOD
20.002	S85 (Ex MH)	124.080	1.576	1.386	1.24	0.0	25.7	FLOOD
20.003	86	124.100	1.715	0.026	1.92	0.0	38.7	FLOOD
21.000	Spur (D2c)	124.001	1.831	0.520	1.20	0.0	60.4	FLOOD
21.001	91 (D2c)	123.953	1.953	14.179	0.93	0.0	17.1	FLOOD
20.004	87	122.208	0.428	0.000	0.65	0.0	52.2	SURCHARGED
22.000	94a (D2c)	122.883	1.093	5.594	0.87	0.0	54.4	FLOOD
22.001	94 (D2c)	122.873	1.333	0.000	0.49	0.0	10.1	SURCHARGED
20.005	88	122.089	0.789	0.000	0.40	0.0	61.7	SURCHARGED
1.011	12	121.995	1.385	0.000	0.51	0.0	526.9	SURCHARGED
1.012	12a	121.817	1.602	67.760	1.32	0.0	378.4	FLOOD
1.013	13	120.735	0.660	0.000	1.04	0.0	378.9	SURCHARGED
1.014	13a	120.248	0.623	0.000	1.52	0.0	378.9	SURCHARGED
1.015	13b	120.004	0.459	0.000	1.28	0.0	378.9	SURCHARGED
23.000	90	120.251	0.291	0.000	0.10	0.0	10.2	SURCHARGED
23.001	91	120.245	0.805	0.000	0.33	0.0	5.1	SURCHARGED
1.016	13c	119.708	0.343	0.000	1.71	0.0	383.5	SURCHARGED
1.017	14	119.459	0.174	0.000	1.87	0.0	383.5	SURCHARGED
24.000	95	121.104	0.069	0.000	1.07	0.0	50.5	SURCHARGED
24.001	96	120.917	0.042	0.000	1.30	0.0	50.3	SURCHARGED
24.002	97	120.708	-0.092	0.000	0.65	0.0	50.2	OK
25.000	99a (D1c)	122.103	0.603	2.851	0.35	0.0	19.4	FLOOD
25.001	99b (D1c)	122.102	0.717	0.038	0.15	0.0	4.6	FLOOD
25.002	99 (ex MH)	121.204	-0.302	0.000	0.08	0.0	16.3	OK
25.003	Ex MH	120.578	-0.182	0.000	0.09	0.0	16.3	OK

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST PROPOSED 23.07.13.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
26.000	96 (D1c)	120.368	0.243	0.000	1.14	0.0	37.9	SURCHARGED
26.001	97 (D1c)	120.214	0.184	0.000	0.03	0.0	3.5	SURCHARGED
24.003	98	119.612	-0.253	0.000	0.23	0.0	68.6	OK
1.018	15	119.079	-0.156	0.000	0.84	0.0	411.5	OK
27.000	Ex MH	119.651	-0.313	0.000	0.06	11.3	27.1	OK
1.019	16 (blind)	118.589	-0.236	0.000	0.59	0.0	424.6	OK*
28.000	Ex MH	122.324	0.524	24.205	1.38	0.0	9.2	FLOOD
28.001	0704	122.415	1.115	14.855	0.47	0.0	6.5	FLOOD
28.002	Ex MH	122.469	1.279	19.293	0.73	0.0	10.1	FLOOD
28.003	1222	122.525	1.505	5.087	0.68	0.0	9.2	FLOOD
29.000	Ex MH	122.357	0.607	7.053	1.05	0.0	7.0	FLOOD
29.001	Ex MH	122.363	1.103	22.656	0.48	0.0	6.0	FLOOD
29.002	0947	122.404	1.194	0.000	0.30	0.0	4.3	FLOOD RISK
28.004	0703	122.494	1.574	13.582	1.43	0.0	19.9	FLOOD
28.005	1223	122.287	1.487	66.910	1.80	0.0	25.4	FLOOD
28.006	0702	121.965	1.365	14.568	2.02	0.0	28.4	FLOOD
28.007	0701	121.696	1.296	6.489	2.27	0.0	27.7	FLOOD
28.008	0700	121.517	1.155	16.929	2.49	0.0	30.4	FLOOD
30.000	0946	122.282	0.331	1.034	1.20	0.0	8.6	FLOOD
30.001	0943	122.077	0.403	0.000	0.67	0.0	14.3	FLOOD RISK
30.002	0940	121.962	0.612	0.000	0.92	0.0	19.1	FLOOD RISK
30.003	0706	121.765	0.641	0.000	0.59	0.0	18.9	SURCHARGED
28.009	Ex MH	121.484	1.160	3.810	2.48	0.0	33.8	FLOOD
31.000	0698	122.643	0.828	16.681	1.07	0.0	21.0	FLOOD
31.001	1202	122.194	0.774	14.894	1.13	0.0	18.0	FLOOD
31.002	1201	121.878	0.708	13.392	1.67	0.0	31.8	FLOOD
32.000	0937	122.633	0.653	2.741	1.14	0.0	6.3	FLOOD
32.001	0999	122.462	0.761	0.000	0.66	0.0	17.4	FLOOD RISK
32.002	1195	122.178	1.071	49.754	1.99	0.0	54.7	FLOOD
31.003	0998	121.706	0.732	4.313	0.90	0.0	84.9	FLOOD
31.004	0939	121.271	0.852	25.912	1.79	0.0	80.1	FLOOD
31.005	0994	120.962	0.578	71.789	3.89	0.0	95.4	FLOOD
28.010	0995	121.131	0.776	0.000	1.54	0.0	127.4	FLOOD RISK
33.000	116a (D5b)	121.099	0.549	0.000	0.32	0.0	19.4	FLOOD RISK
33.001	116b (D5b)	121.096	0.606	0.000	0.07	0.0	4.1	FLOOD RISK
33.002	116c	121.082	0.642	0.000	0.08	0.0	4.9	SURCHARGED
33.003	116d	121.092	0.792	0.000	0.16	0.0	9.4	SURCHARGED
33.004	116e	121.099	0.849	0.000	0.23	0.0	13.4	SURCHARGED
28.011	116 (0993)	121.109	0.923	1.573	1.06	0.0	148.3	FLOOD
28.012	Ex MH	118.949	0.700	9.147	1.00	0.0	122.1	FLOOD
34.000	Ex MH	118.846	0.490	0.000	0.46	2.2	55.3	FLOOD RISK
28.013	114	118.715	1.075	0.000	2.67	0.0	150.2	FLOOD RISK
28.014	114a	118.388	0.798	0.000	2.76	0.0	150.0	SURCHARGED
1.020	17	118.083	0.538	0.000	3.21	0.0	580.6	SURCHARGED
1.021	18	117.607	1.537	0.000	1.62	0.0	576.5	SURCHARGED
1.022	19	117.165	1.295	0.000	1.67	0.0	580.6	SURCHARGED
35.000	18 (D1b)	116.809	0.864	0.000	0.14	0.0	27.2	FLOOD RISK
35.001	19 (D1b)	116.809	0.924	0.000	0.15	0.0	28.6	FLOOD RISK
35.002	20 (D1b)	116.810	0.975	0.000	0.31	0.0	39.9	SURCHARGED

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PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
36.000	1 (D1b)	120.464	0.714	0.000	1.20	0.0	19.0	SURCHARGED
36.001	2 (D1b)	120.326	0.676	0.000	1.98	0.0	37.0	SURCHARGED
36.002	3 (D1b)	119.414	-0.011	0.000	0.83	0.0	44.2	OK
36.003	4 (D1b)	119.151	0.126	0.000	1.37	0.0	43.1	SURCHARGED
36.004	5 (D1b)	119.060	0.085	0.000	1.04	0.0	46.9	SURCHARGED
36.005	6 (D1b)	118.896	0.071	0.000	1.12	0.0	49.1	SURCHARGED
36.006	7 (D1b)	118.744	0.039	0.000	1.13	0.0	51.0	SURCHARGED
36.007	8 (D1b)	118.524	-0.011	0.000	0.80	0.0	76.6	OK
36.008	9 (D1b)	117.816	0.471	0.000	0.99	0.0	93.5	SURCHARGED
37.000	17 (D1b)	117.401	0.376	0.000	0.29	0.0	12.8	SURCHARGED
38.000	21 (D1b)	117.986	0.336	0.000	0.89	0.0	33.7	SURCHARGED
36.009	10 (D1b)	117.381	0.481	0.000	1.60	0.0	154.0	SURCHARGED
36.010	11 (D1b)	116.861	0.161	0.000	1.23	0.0	160.4	SURCHARGED
36.011	12 (D1b)	116.816	0.441	0.000	0.14	0.0	32.1	SURCHARGED
36.012	13 (D1b)	116.815	0.490	0.000	0.08	0.0	34.1	SURCHARGED
36.013	14 (D1b)	116.812	0.767	0.000	0.10	0.0	35.9	SURCHARGED
35.003	144 (D1b)	116.810	0.995	0.000	0.29	0.0	57.2	SURCHARGED
35.004	145 (D1b)	116.808	1.268	0.000	0.82	0.0	58.1	SURCHARGED
39.000	Ex GY	120.252	-0.083	0.000	0.61	0.0	32.8	OK
39.001	Ex MH	118.266	-0.089	0.000	0.65	0.0	100.3	OK
1.023	20	116.886	1.126	0.000	2.06	0.0	561.4	SURCHARGED
1.024	21	116.410	0.630	0.000	2.62	0.0	553.9	SURCHARGED
40.000	Ex MH	120.256	0.681	5.978	1.17	0.0	44.1	FLOOD
40.001	Ex MH	120.022	0.942	2.074	1.48	0.0	107.4	FLOOD
40.002	Ex MH	118.798	0.238	0.000	1.80	0.0	122.1	FLOOD RISK
40.003	Ex MH	118.261	-0.188	0.000	0.30	0.0	123.5	OK
1.025	22	116.351	0.591	0.000	1.16	0.0	595.5	SURCHARGED
41.000	Pond	116.042	0.592	330.199	0.18	0.0	68.2	FLOOD
1.026	23a	116.042	0.619	117.324	1.32	0.0	449.1	FLOOD
1.027	23 (0498)	116.014	0.901	94.007	1.30	0.0	404.2	FLOOD
1.028	24 (PI)	115.500	0.690	0.000	1.20	0.0	404.2	SURCHARGED