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Project	Project No.	Sheet No.
Plot 1, Skimmingdish Lane Bicester.	S1344	D-1
	Drawing No.	Rev. 0
Section: Surface Water Drainage	By: P.A.B.	Date: March 2018
	Checked	Date

Calculations

PROPOSED DEVELOPMENT,

PLOT 1 (PHASE 3). SKIMMINGDISH LANE, BICESTER.

SURFACE WATER DRAINAGE CALCULATIONS

1.0 INTRODUCTION

The following calculations have been prepared to justify the design of a below-ground drainage system to serve the above development plot. These calculations are to be read in conjunction with previous calculations ref S1230 to justify the design of retention basins for the wider site including Plots 1-3.

The drainage scheme for the site is developed upon principles agreed with Oxfordshire CC to attenuate surface water outflows from the proposed development site to Langford Brook to a peak figure of 17 litres/second.

These calculations are specifically prepared for the design of below-ground surface water drainage serving Plot 1, but the modelled drainage system includes drain runs for the systems on Plots 2 and 3, and the site access road, already constructed. The drain pipes serving Plot 1 relate to manholes ref 1B.1 to 1B.19 and 1A.1 to 1A.22. Detailed analyses of the drains serving Plots 2 and 3 have been undertaken separately.

2.0 DRAINAGE DESIGN

Development of the entire site has created three large plots to accommodate a series of industrial/commercial buildings, including associated external service yards, access roads, and car parking.

Four retention basins are to be constructed within the landscaped areas surrounding the development plots. Drawings of each basin are appended.

The drainage is designed using the Microdrainage WinDes software package and adopting FEH design rainfall.

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Project	Project No.	Sheet No.
Plot 1, Skimmingdish Lane Bicester.	S1344	D-2
	Drawing No.	Rev. 0
Section: Surface Water Drainage	By P.A.B.	Date March 2018
	Checked	Date

Calculations

Appended to these calculations are drawings as follows:

- S1340-DD01 Plot 3 Drained areas and pipe references.
- S1345-DD01A Plot 2 Drained areas and pipe references.
- S1344-DD01 Plot 1 Drained areas and pipe references.
- S1230-DD03 Basins 1 and 2.
- S1230-DD04 Basin 3.
- S1230-DD05 Basin 4.
- S1344-D02A Plot 1 SW Drainage Plan.

The below-ground drainage system is modelled in the System 1 module of WinDes, and then exported into the Simulation module where the car park retention basins, and Hydrobrake flow controls are included. For the purpose of design zero infiltration flow has been considered, in which case the results are conservative.

3.0 DRAINAGE DESIGN RESULTS

The modelled site as a whole has a total drained area of circa 9ha.

3.1 Source Control 100yr+30%CC storms

In order to establish the critical storm event a simple model is created within the Source Control module of Windes using a 95m x 95m x1m deep pond fitted with an Hydrobrake flow control device to restrict outflows to 17 l/sec.
Microdrainage pages 0-3 indicate that the critical storm is a 2880 minute winter event.

3.2 Simulation 30yr storms

Microdrainage pages 1-20 model details of a 30 year 15 minute winter event and include details of the entire sitewide drainage network, the four principal retention basins, and hydrobrake flow controls.
With the exception of one minor incidence of flooding (<1m ^{3}) at manhole 1A.17 in the service yard to Unit 1A, zero flooding is predicted to occur.

Microdrainage pages 21-68 indicate the results only for models of all 30 year design storms up to and including the critical 2880 minute event.

By inspection no flooding on Plot 1 is predicted to occur during 30 year storm events.

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Project	Project No.	Sheet No.
Plot 1, Skimmingdish Lane Bicester.	S1344	D-3
	Drawing No.	Rev.
		0
Section	By	Date
Surface Water Drainage	P.A.B.	March 2018
	Checked	Date

Calculations

3.3 Simulation 100yr+30%CC storms

Microdrainage pages 100-119 model details of a 100 year +30%CC 30 minute winter event and include details of the entire sitewide drainage network, the four principal retention basins, and hydrobrake flow controls.
22m^3 of flooding is predicted to occur at manhole 1A.17 in the service yard to Unit 1A. 5m^3 of flooding is predicted to occur at manhole 1A.10 in the car park to Unit 1A.
23m^3 of flooding is predicted to occur at manhole 1B.17 and 1B.18 in the service yard to Unit 1B.
These volumes of surface flooding are remote from the buildings and will be temporarily held on the external hard surfaces until the storm abates.

Microdrainage pages 121-123 indicate the results only for a very short duration high intensity 100 year +30%CC 15 minute design storm. However the software highlights that the analysis maybe unstable.
A total of 51m^3 of flooding is predicted to occur at manholes 1A.5, 1A.16, and 1A.17 in the service yard to Unit 1A; a total of 66m^3 of flooding is predicted to occur at manholes 1B.1, 1B.2, 1B.17, and 1B.18 in the service yard to Unit 1B: this floodwater will result in temporary shallow standing water within the service yards.
A total of 40m^3 of flooding is predicted to occur at manholes 1A.6, 1A.7, and 1A.10 in the car park to Unit 1A. This equates to a temporary depth of less than 100mm of standing water over the centre of the car park which is remote from the building and considered acceptable for such extreme circumstances. 8m^3 of flooding is predicted to occur at manholes 1B.4 and 1B.5; this water will spill onto the site access roads where it can be temporarily stored at shallow depth.

Microdrainage pages 124-167 indicate the results only for remaining models of all 100 year +30%CC design storms up to and including the critical 2880 minute event. Zero flooding is predicted on Plot 1 for the 60min design storm and above. The maximum predicted water level in Basin 3 is 69.39m AOD i.e. a depth of circa 765mm.

4.0 Exceedance events

To safeguard the buildings on Plot 1 in the event of exceedance, the access road between Units 1A and 1B is maintained below the building floor levels such that any build-up of surface water will naturally run down the service yard of Unit 1B and in a south easterly direction towards Langford Brook.

APPENDIX A

BAILEY JOHNSON HAYES DRAWINGS

S1340-DD01 – Plot 3 Drained Areas/Pipe Refs

S1345-DD01A – Plot 2 Drained Areas/Pipe Refs

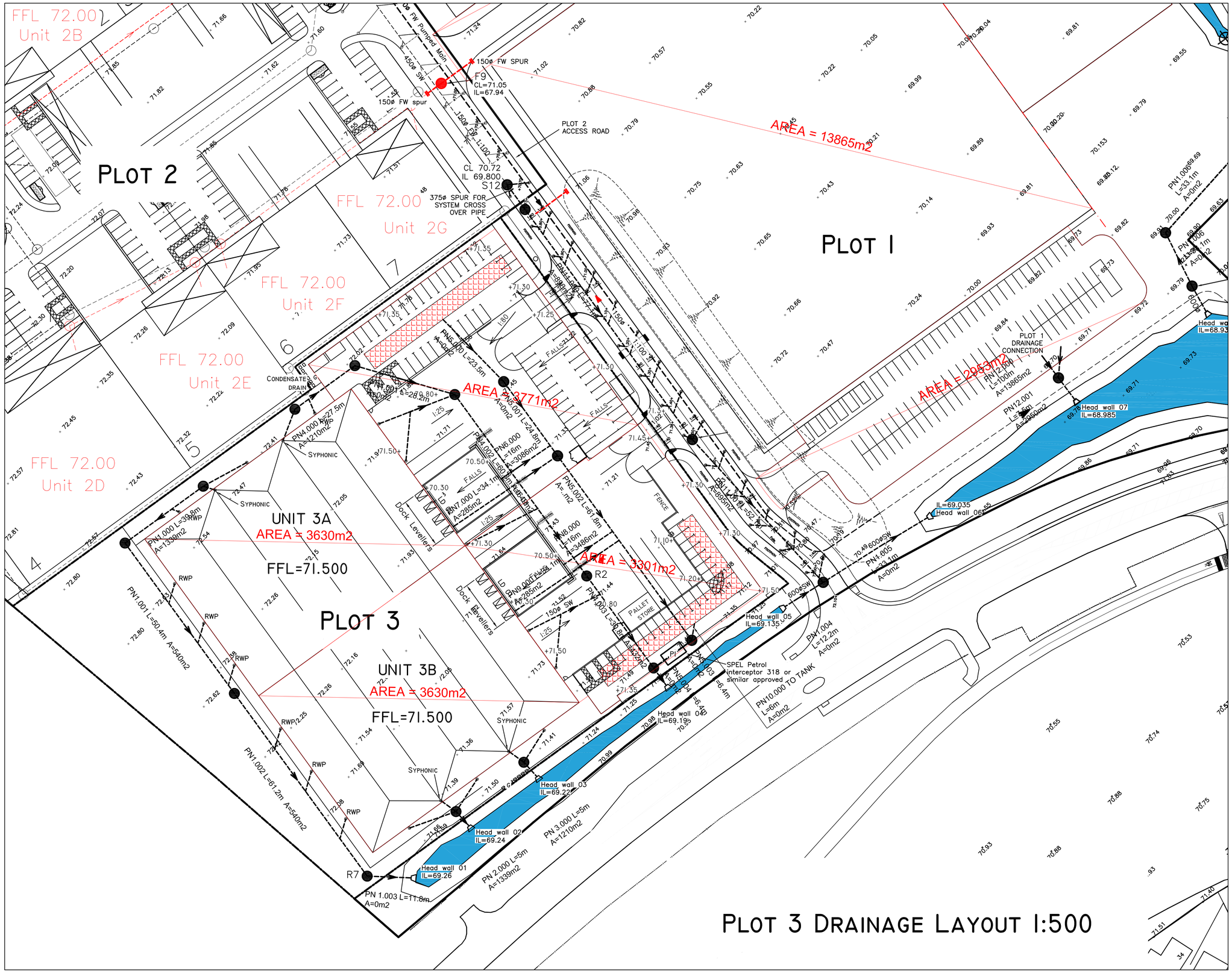
S1344-DD01 – Plot 1 Drained Areas/Pipe Refs

S1230-DD03 – Basins 1 & 2

S1230-DD04 – Basin 3

S1230-DD05 – Basin 4

S1344-D02A – Plot 1 SW Drainage Plan



Rev	Date	Revision Description
.	.	.

Revision Schedule

INFORMATION

PLOT 3. Skimmingdish Lane.
Link 9. Bicester.

Client:-
ALBION LAND (2013) LTD.

Plot 3 - Drained Areas

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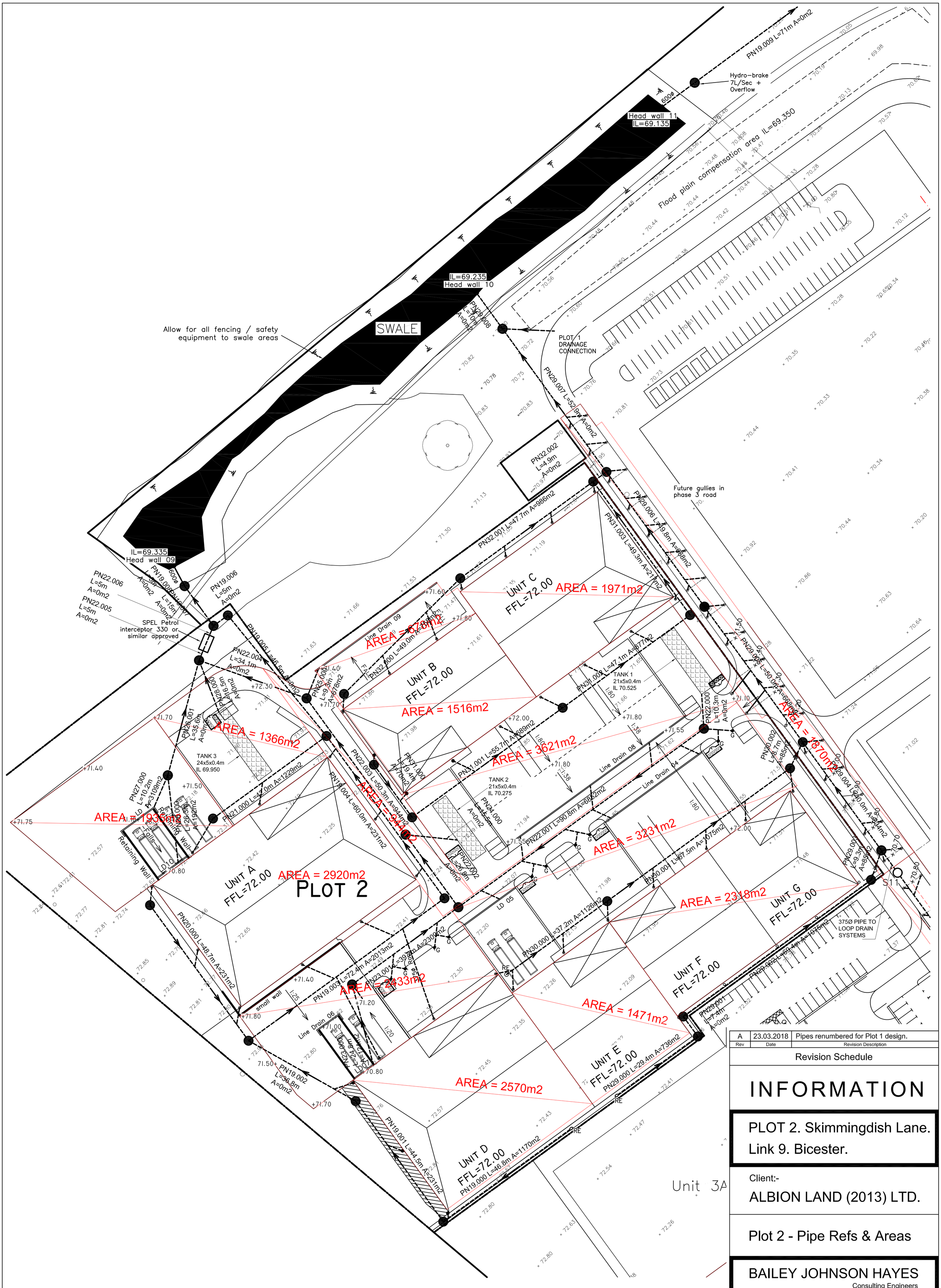
Scale	1:500 at A1	Project Ref.	Drawing No.	Rev.
Date	11.2017	S1340	DD01	.
Drn	BJH	Chkd BJH		



Rev	Date	Revision Description
A	23.03.2018	Pipes renumbered for Plot 1 design.

Revision Schedule

INFORMATION

PLOT 2. Skimmingdish Lane.
Link 9. Bicester.

Client:-
ALBION LAND (2013) LTD.

Plot 2 - Pipe Refs & Areas

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton Street Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale	1:500 at A1	Project Ref.	Drawing No.	Rev.
Date	11.2017	S1345	DD01	A
Drn BJH	Chkd BJH			

Rev	Date	Revision Description
.	.	.

Revision Schedule

INFORMATION

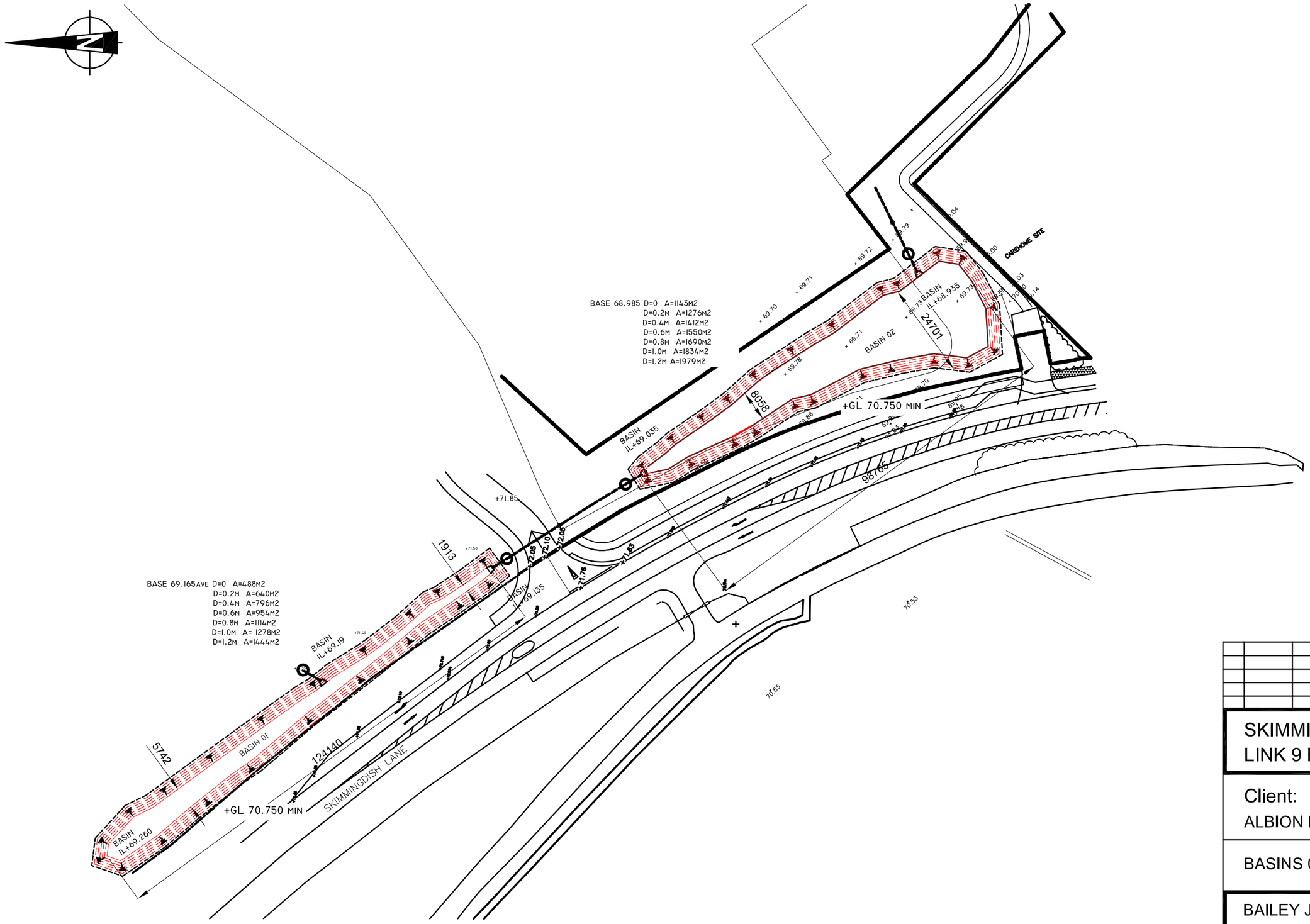
UNITS 1A & 1B
Skimmingdish La. Bicester

Client:-
ALBION LAND (2013) LTD

Plot 1 - SW Pipe Refs & Areas

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton Street . Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 83 Campfield Road. Tel 01727 841172 Fax 01727 841095

Scale	1:500 at A0	Project Ref.	Drawing No.	Rev.
Date	00.00.00	S1344	DD01	.
Drn	BJH	Chkd	BJH	



SKIMMINGDISH LANE
LINK 9 BICESTER

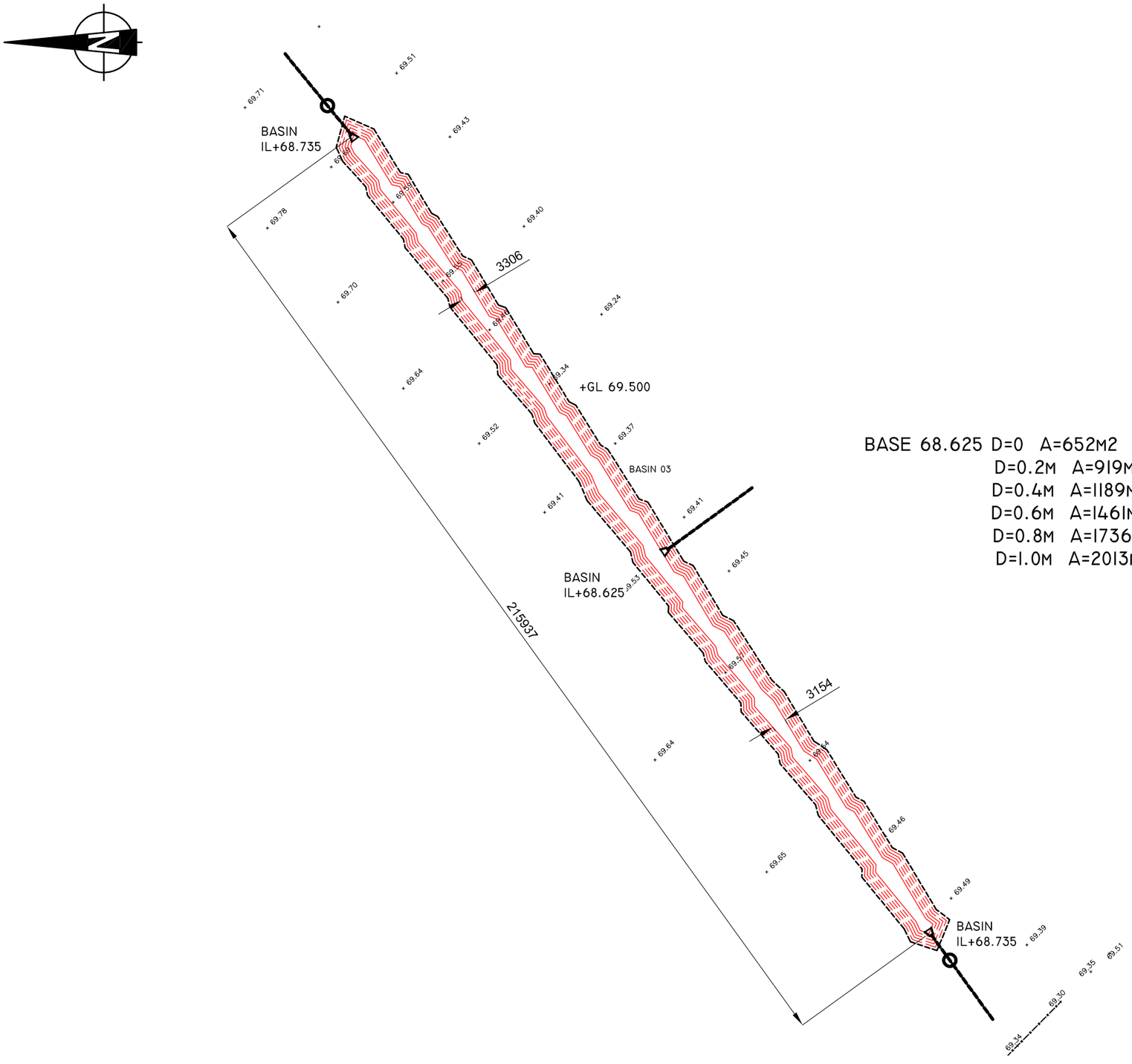
Client:
ALBION LAND (2013) LTD

BASINS 01 & 02 DETAILS

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton St. Tel 0161 279 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale	1:1000 at A3
Date	July 2017
Drawn	

S1230-DD03



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D=0.6M A=1461M2
D=0.8M A=1736M2
D=1.0M A=2013M2

SKIMMINGDISH LANE
LINK 9 BICESTER

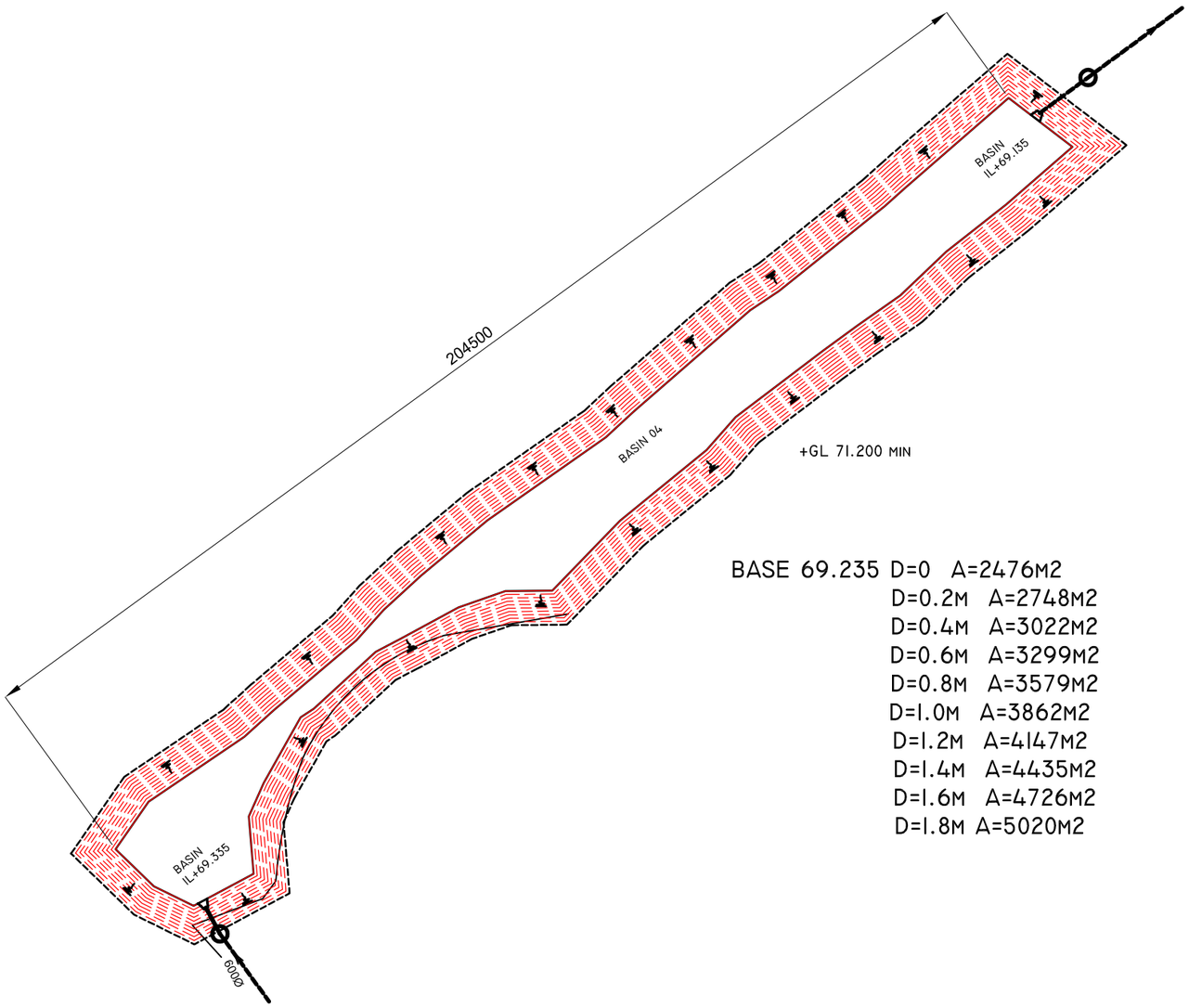
Client:
ALBION LAND (2013) LTD

BASIN 03 DETAILS

BAILEY JOHNSON HAYES
Consulting Engineers
MANCHESTER : Grange House, John Dalton St. Tel 0161 278 7777 Fax 0161 236 3552
ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale 1:1000 at A3
Date July 2017
Drawn

S1230-DD04



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D=1.8M A=5020M2

SKIMMINGDISH LANE
LINK 9 BICESTER

Client:
ALBION LAND (2013) LTD

BASIN 04 DETAILS

BAILEY JOHNSON HAYES
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ST ALBANS : Phoenix House, 63 Campfield Road. Tel 01727 841172 Fax 01727 841085

Scale 1:500 at A3
Date July 2017
Drawn

S1230-DD05

HYDROBRAKE REF
MD-SHE-0112-7000-1800-7000
DISCHARGE 7 l/sec UNDER A 1.8m HEAD

HYDROBRAKE REF
MD-SHE-0111-5000-0600-5000
DISCHARGE 5 l/sec UNDER A 0.6m HEAD

HYDROBRAKE REF
MD-SHE-0096-4000-0900-4000
DISCHARGE 4 l/sec UNDER A 0.9m HEAD

HYDROBRAKE REF
MD-SHE-0111-5000-0600-5000
DISCHARGE 5 l/sec UNDER A 0.6m HEAD

DRAINAGE NOTES

1 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND BAILEY JOHNSON HAYES DRAWINGS AND SPECIFICATIONS.

2 DRAINS TO BE 'HEPWORTH SUPERSLEEVE' LAID IN CLASS S BEDDING TO BS 852 1983; TABLE 4, OR TO BS 8301 1985; APPENDIX D. 450 DIA DRAINS AND ABOVE TO BE HEPWORTH CONCRETE PIPES CLASS H , OR EQUAL APPROVED DRAINS WITHIN THE SITE MAY BE THERMOPLASTIC STRUCTURED WALL PIPE IN ACCORDANCE WITH CLAUSE E/L2/ OF SFA 7th EDITION

3 ALL TRENCHES WITHIN TRAFFICKED AREAS TO BE BACKFILLED WITH 75 MM DOWN GRADED STONE FILL, PLACED AND COMPACTED IN 150 MM LAYERS. ALL PIPES IN ROADWAYS, SERVICE YARDS AND CARPARKS LESS THAN 1200 MM DEEP TO BE ENCASED IN CONCRETE. PROVIDE FLEXIBLE JOINTS AT 3 METRE CENTRES.

4 MANHOLES TO BE CONSTRUCTED IN PRECAST CONCRETE RINGS TO BS 5911; PART 1. RINGS TO BE BEDDED IN SEALANT STRIPS.

5 MANHOLES IN FOOTPATHS OR LANDSCAPED AREAS TO BE BACKFILLED WITH 40 MM DOWN GRADED STONE FILL, COMPACTED IN LAYERS NOT EXCEEDING 150 MM THICK. MANHOLES BENEATH ROADS AND PARKING AREAS TO BE CASED IN 150 MM CONCRETE SURROUND.

6 ALL CONNECTIONS TO RAIN WATER PIPES TO BE PROVIDED WITH RODDING ACCESS.

7 ALL ROAD GULLIES TO BE HEPWORTH ROAD GULLIES., REF RGR4, WITH 150 MM DIAMETER OUTLETS. GULLIES TO BE ENCASED IN 150 MM MINIMUM CONCRETE.

8 DRAINS UNDER BUILDING AND WITHIN 300 MM OF THE UNDERSIDE OF FLOORSLAB TO BE ENCASED IN 150 MM CONCRETE., CASING TO INCORPORATE FLEXIBLE FIBRE BOARD JOINTS AT SPACINGS AS RECOMMENDED BY THE PIPE MANUFACTURER, DRAINS UNDER BUILDINGS GENERALLY TO HAVE MIN 100 FULL GRANULAR SURROUND TO CLASS S BS8301

9 WHERE PIPES RUN THROUGH GROUND BEAMS, FLEXIBLE JOINT CASINGS AT EACH FACE OF THE GROUND BEAM ARE TO BE PROVIDED. PIPES WHICH RUN UNDER GROUND BEAMS TO BE PROTECTED WITH 50 MM MINIMUM POLYSTYRENE PLACED OVER THE CROWN OF THE PIPE.

10 ALL WORK TO EXISTING PUBLIC SEWERS TO BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 7TH EDITION AND BS 8301 ; CODE OF PRACTICE FOR BUILDING DRAINAGE

11 WHERE DRAINS RUN CLOSE TO BUILDINGS AND INVERT LEVELS ARE BELOW FOUNDATIONS THE DRAINS SHOULD BE ENCASED AS FOLLOWS:-

(a) WHERE THE DRAIN TRENCH IS WITHIN 1M OF THE BUILDING THE TRENCH SHOULD BE FILLED WITH CONCRETE UP TO FOUNDATION FORMATION LEVEL or

(b) WHERE THE DRAIN TRENCH IS FURTHER THAN 1M OF THE BUILDING THE TRENCH SHOULD BE FILLED WITH CONCRETE TO A LEVEL BELOW FOUNDATION FORMATION EQUAL TO THE DISTANCE FROM THE BUILDING LESS 150mm.

ALL DRAINS TO BE CONNECTED WITH LEVEL INVERTS

MH REF	CL	IL	DEPTH	DIA	OPENING	COVER	EASTING	NORTHING	COMMENTS
RE1B,1	70,825	70,265	560	225	225	D400	.	.	Rodding Eye
S1B,2	70,800	70,185	615	1000	600x600	D400	.	.	.
S1B,3	70,850	69,895	955	1000	600x600	C250	.	.	.
S1B,4	70,800	69,605	1195	1800	600x600	C250	.	.	.
S1B,5	70,800	69,480	1265	1800	600x600	C250	.	.	.
S1B,6	71,500	69,315	1465	1800	600x600	C250	.	.	.
S1B,7	70,735	69,240	1495	1800	600x600	C250	.	.	Saint Gobain Waterway 2000 open grid cover
S1B,8	70,800	69,475	1325	1000	600x600	B125	.	.	.
S1B,9	70,800	69,300	1500	1800	600x600	C250	.	.	.
S1B,10	70,735	69,100	1635	1800	600x600	C250	.	.	Saint Gobain Waterway 2000 open grid cover
S1B,11	70,855	69,355	1500	1200	600x600	C250	.	.	.
S1B,12	70,855	69,135	1720	1200	600x600	C250	.	.	.
S1B,13	70,855	69,575	2255	1200	600x600	C250	.	.	Hydrobrake IL 69,575, Catchpit Base 68,600,
S5	71,075	69,000	2075	1800	600x600	C250	.	.	.
S1B,14	69,750	69,200	550	1000	600x600	D400	.	.	.
S1B,15	69,750	68,880	870	1000	600x600	D400	.	.	.
S1B,16	69,560	68,665	895	1000	600x600	D400	.	.	.
S1B,17	69,635	68,905	730	1000	600x600	D400	.	.	.
S1B,18	69,490	68,905	585	1000	600x600	D400	.	.	.
S1B,19	69,450	68,800	650	1000	600x600	D400	.	.	.
RE1A,1	70,850	70,175	675	300	300	C250	.	.	.
S1A,2	70,850	69,985	865	1000	600x600	C250	.	.	.
S1A,3	70,800	69,645	1155	1800	600x600	C250	.	.	.
S1A,4	70,850	69,530	1320	1800	600x600	C250	.	.	.
S1A,5	70,800	69,975	825	1000	600x600	D400	.	.	.
S1A,6	70,800	69,900	900	1000	600x600	D400	.	.	.
S1A,7	70,800	69,680	1120	1800	600x600	C250	.	.	Saint Gobain Waterway 2000 open grid cover
S1A,8	70,800	69,560	1240	1800	600x600	C250	.	.	Saint Gobain Waterway 2000 open grid cover
S1A,9	70,925	69,440	1485	1800	600x600	C250	.	.	.
S1A,10	70,850	69,850	1000	1800	600x600	C250	.	.	.
S1A,11	70,975	69,565	1410	1800	600x600	C250	.	.	.
S1A,12	70,875	69,365	1510	1800	600x600	C250	.	.	.
S1A,13	69,750	69,200	550	1000	600x600	D400	.	.	.
S1A,14	69,750	68,880	870	1000	600x600	D400	.	.	.
S1A,15	69,560	68,665	895	1000	600x600	D400	.	.	.
S1A,16	69,635	68,935	700	1000	600x600	D400	.	.	.
S1A,17	69,450	68,880	570	1000	600x600	D400	.	.	.
S1A,18	69,450	68,800	650	1000	600x600	D400	.	.	.
S1A,19	70,700	69,325	1375	1800	600x600	D400	.	.	.
S1A,20	70,785	68,765	2535	1200	600x600	C250	.	.	Hydrobrake IL 69,465, Catchpit Base 68,250
S1A,21	70,785	69,285	1500	1200	600x600	C250	.	.	.
S1A,22	70,785	69,025	2285	1200	600x600	C250	.	.	Catchpit Base 68,500

Rev.	Date	Revision Description
A	28.03.2018	Included to calculation package.

Revision Schedule

INFORMATION

UNITS 1A & 1B
Skimmingdish La. Bicester

Client:-
ALBION LAND (2013) LTD

Plot 1 - Sw Drainage Plan

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Scale	1:500 at A0	Project Ref.	Drawing No.	Rev.
Date	00.00.00	S1344	D02.	A
Drn	BJH Chkd BJH			

APPENDIX B

MICRODRAINAGE CALCULATIONS

Pages 0-3 – 100 yr+30% storms Source Control

Pages 1-68 – 30 yr storms Simulation

Pages 100-167 – 100yr+30% storms Simulation

Summary of Results for 100 year Return Period (+20%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	68.973	0.348	17.0	2821.5	O K
30 min Summer	69.031	0.406	17.0	3286.1	O K
60 min Summer	69.097	0.472	17.0	3820.2	O K
120 min Summer	69.172	0.547	17.0	4426.7	O K
180 min Summer	69.219	0.594	17.0	4814.1	O K
240 min Summer	69.255	0.630	17.0	5101.6	O K
360 min Summer	69.307	0.682	17.0	5521.2	O K
480 min Summer	69.344	0.719	17.0	5825.2	Flood Risk
600 min Summer	69.373	0.748	17.0	6058.3	Flood Risk
720 min Summer	69.396	0.771	17.0	6243.9	Flood Risk
960 min Summer	69.429	0.804	17.0	6512.5	Flood Risk
1440 min Summer	69.468	0.843	17.0	6831.6	Flood Risk
2160 min Summer	69.493	0.868	17.0	7031.9	Flood Risk
2880 min Summer	69.497	0.872	17.0	7061.4	Flood Risk
4320 min Summer	69.453	0.828	17.0	6708.6	Flood Risk
5760 min Summer	69.415	0.790	17.0	6395.6	Flood Risk
7200 min Summer	69.378	0.753	17.0	6099.0	Flood Risk
8640 min Summer	69.342	0.717	17.0	5805.3	Flood Risk
10080 min Summer	69.303	0.678	17.0	5494.2	O K
15 min Winter	69.015	0.390	17.0	3161.5	O K
30 min Winter	69.080	0.455	17.0	3683.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	159.301	0.0	1424.4	27
30 min Summer	92.952	0.0	1441.3	42
60 min Summer	54.237	0.0	2758.4	72
120 min Summer	31.647	0.0	2841.1	132
180 min Summer	23.093	0.0	2808.6	190
240 min Summer	18.466	0.0	2767.0	250
360 min Summer	13.475	0.0	2676.4	370
480 min Summer	10.775	0.0	2587.5	490
600 min Summer	9.059	0.0	2519.6	608
720 min Summer	7.862	0.0	2466.5	728
960 min Summer	6.280	0.0	2386.9	968
1440 min Summer	4.575	0.0	2291.6	1446
2160 min Summer	3.333	0.0	4892.2	2164
2880 min Summer	2.662	0.0	4705.8	2880
4320 min Summer	1.881	0.0	4324.9	3596
5760 min Summer	1.470	0.0	9221.2	4328
7200 min Summer	1.214	0.0	9079.6	5120
8640 min Summer	1.038	0.0	8690.1	5960
10080 min Summer	0.910	0.0	8338.6	6752
15 min Winter	159.301	0.0	1445.2	27
30 min Winter	92.952	0.0	1441.4	41

Summary of Results for 100 year Return Period (+20%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	69.154	0.529	17.0	4282.7	O K
120 min Winter	69.238	0.613	17.0	4966.3	O K
180 min Winter	69.292	0.667	17.0	5404.6	O K
240 min Winter	69.333	0.708	17.0	5731.6	Flood Risk
360 min Winter	69.391	0.766	17.0	6207.9	Flood Risk
480 min Winter	69.434	0.809	17.0	6550.4	Flood Risk
600 min Winter	69.466	0.841	17.0	6814.6	Flood Risk
720 min Winter	69.492	0.867	17.0	7026.3	Flood Risk
960 min Winter	69.531	0.906	17.0	7337.4	Flood Risk
1440 min Winter	69.578	0.953	17.0	7719.3	Flood Risk
2160 min Winter	69.611	0.986	17.1	7986.3	Flood Risk
2880 min Winter	69.621	0.996	17.2	8066.8	Flood Risk
4320 min Winter	69.572	0.947	17.0	7671.9	Flood Risk
5760 min Winter	69.522	0.897	17.0	7265.4	Flood Risk
7200 min Winter	69.476	0.851	17.0	6893.2	Flood Risk
8640 min Winter	69.429	0.804	17.0	6513.9	Flood Risk
10080 min Winter	69.382	0.757	17.0	6128.6	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	54.237	0.0	2858.9	70
120 min Winter	31.647	0.0	2823.4	130
180 min Winter	23.093	0.0	2760.6	188
240 min Winter	18.466	0.0	2691.0	248
360 min Winter	13.475	0.0	2593.9	364
480 min Winter	10.775	0.0	2536.5	482
600 min Winter	9.059	0.0	2499.5	600
720 min Winter	7.862	0.0	2475.9	718
960 min Winter	6.280	0.0	2456.9	952
1440 min Winter	4.575	0.0	2437.8	1418
2160 min Winter	3.333	0.0	5002.1	2104
2880 min Winter	2.662	0.0	4889.1	2772
4320 min Winter	1.881	0.0	4618.8	4024
5760 min Winter	1.470	0.0	9818.2	4552
7200 min Winter	1.214	0.0	9399.0	5480
8640 min Winter	1.038	0.0	8938.5	6400
10080 min Winter	0.910	0.0	8487.7	7360

Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+20

Time Area Diagram

Total Area (ha) 9.500

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	3.167	4	8	3.167	8	12	3.167

Model Details

Storage is Online Cover Level (m) 69.625

Tank or Pond Structure

Invert Level (m) 68.625

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	8100.0	0.400	8100.0	0.800	8100.0
0.200	8100.0	0.600	8100.0	1.000	8100.0

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0185-1700-0975-1700
Design Head (m)	0.975
Design Flow (l/s)	17.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	185
Invert Level (m)	68.625
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.975	17.0
Flush-Flo™	0.325	17.0
Kick-Flo®	0.696	14.5
Mean Flow over Head Range	-	14.3

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	6.5	1.200	18.7	3.000	29.1	7.000	43.7
0.200	16.3	1.400	20.2	3.500	31.3	7.500	45.2
0.300	16.9	1.600	21.5	4.000	33.4	8.000	46.7
0.400	16.8	1.800	22.7	4.500	35.3	8.500	48.1
0.500	16.5	2.000	23.9	5.000	37.2	9.000	49.4
0.600	15.9	2.200	25.0	5.500	38.9	9.500	50.7
0.800	15.5	2.400	26.1	6.000	40.6		
1.000	17.2	2.600	27.1	6.500	42.2		

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	39.800	0.265	150.2	0.134	5.00	0.600	o	300	Pipe/Conduit
1.001	50.400	0.335	150.4	0.054	0.00	0.600	o	300	Pipe/Conduit
1.002	61.200	0.300	204.0	0.054	0.00	0.600	o	375	Pipe/Conduit
1.003	11.800	0.290	40.7	0.000	0.00	0.600	o	450	Pipe/Conduit
2.000	5.000	0.260	19.2	0.134	5.00	0.600	o	450	Pipe/Conduit
3.000	5.000	0.280	17.9	0.121	5.00	0.600	o	450	Pipe/Conduit
4.000	27.500	0.275	100.0	0.121	5.00	0.600	o	300	Pipe/Conduit
4.001	28.200	0.225	125.3	0.000	0.00	0.600	o	300	Pipe/Conduit
4.002	60.200	0.200	301.0	0.065	0.00	0.600	o	300	Pipe/Conduit
4.003	30.800	0.400	77.0	0.043	0.00	0.600	o	300	Pipe/Conduit
5.000	23.500	0.225	104.4	0.000	5.00	0.600	o	225	Pipe/Conduit
5.001	24.800	0.050	496.0	0.000	0.00	0.600	o	450	Pipe/Conduit
6.000	16.000	0.350	45.7	0.349	5.00	0.600	o	300	Pipe/Conduit
7.000	34.100	0.150	227.3	0.029	5.00	0.600	o	150	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.000	R5A	71.300	70.450	0.550	71.300	70.185	0.815		1200
1.001	R5	71.300	70.185	0.815	71.300	69.850	1.150		1200
1.002	R6	71.300	69.850	1.075	71.300	69.550	1.375		1350
1.003	R7	71.300	69.550	1.300	71.500	69.260	1.790		1350
2.000	R8	71.300	69.500	1.350	71.500	69.240	1.810		1350
3.000	R9	71.300	69.500	1.350	71.500	69.220	1.830		1350
4.000	R4A	71.300	70.325	0.675	71.300	70.050	0.950		1200
4.001	R4	71.300	70.050	0.950	71.000	69.825	0.875		1200
4.002	R3	71.000	69.825	0.875	70.600	69.625	0.675		1200
4.003	R2	70.600	69.625	0.675	71.300	69.225	1.775		1200
5.000	Tank 1	71.300	69.750	1.325	71.000	69.525	1.250		1200
5.001	S3	71.000	69.525	1.025	70.900	69.475	0.975		1350
6.000	G1	70.500	69.825	0.375	70.900	69.475	1.125		1200
7.000	G2	70.300	69.625	0.525	70.900	69.475	1.275		1200

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
8.000	16.000	0.350	45.7	0.300	5.00	0.600	o	300	Pipe/Conduit
9.000	34.100	0.150	227.3	0.029	5.00	0.600	o	150	Pipe/Conduit
5.002	61.800	0.125	494.4	0.000	0.00	0.600	o	450	Pipe/Conduit
10.000	10.000	0.150	66.7	0.000	5.00	0.600	o	225	Pipe/Conduit
5.003	4.500	0.012	375.0	0.000	0.00	0.600	o	450	Pipe/Conduit
5.004	4.500	0.013	346.2	0.000	0.00	0.600	o	450	Pipe/Conduit
4.004	5.000	0.035	142.9	0.000	0.00	0.600	o	450	Pipe/Conduit
1.004	12.200	0.025	488.0	0.000	0.00	0.600	o	600	Pipe/Conduit
11.000	77.100	0.350	220.3	0.090	5.00	0.600	o	450	Pipe/Conduit
11.001	52.100	0.340	153.2	0.090	0.00	0.600	o	450	Pipe/Conduit
1.005	33.100	0.075	441.3	0.000	0.00	0.600	o	600	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
8.000	G3	70.500	69.825	0.375	70.900	69.475	1.125		1200
9.000	G4	70.300	69.625	0.525	70.900	69.475	1.275		1200
5.002	S2	70.900	69.475	0.975	71.400	69.350	1.600		1350
10.000	Tank 2	71.200	69.500	1.475	71.400	69.350	1.825		1200
5.003	S1	71.400	69.350	1.600	71.400	69.338	1.612		1350
5.004	Interceptor	71.400	69.338	1.512	71.300	69.325	1.425		1350
4.004	R1	71.300	69.225	1.625	71.500	69.190	1.860		1350
1.004	HW05	71.500	69.190	1.710	72.050	69.165	2.285		1500
11.000	S11	70.750	69.800	0.500	71.520	69.450	1.620		1350
11.001	S10	71.520	69.450	1.620	72.050	69.110	2.490		1350
1.005	S4	72.050	69.110	2.340	71.000	69.035	1.365		1500

Existing Network Details for Storm

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
	12.000	15.600	0.100	156.0	0.033	5.00	0.600	o	225	Pipe/Conduit
	12.001	58.000	0.290	200.0	0.078	0.00	0.600	o	375	Pipe/Conduit
	12.002	58.000	0.290	200.0	0.094	0.00	0.600	o	375	Pipe/Conduit
*	12.003	63.600	0.125	508.8	0.086	0.00	0.600	o	600	Pipe/Conduit
	12.004	81.000	0.165	490.9	0.143	0.00	0.600	o	600	Pipe/Conduit
	12.005	36.000	0.075	480.0	0.016	0.00	0.600	o	600	Pipe/Conduit
	12.006	41.200	0.140	294.3	0.472	0.00	0.600	o	600	Pipe/Conduit
	13.000	33.000	0.175	188.6	0.050	5.00	0.600	o	300	Pipe/Conduit
	13.001	38.800	0.200	194.0	0.016	0.00	0.600	o	450	Pipe/Conduit
	12.007	23.300	0.100	233.0	0.456	0.00	0.600	o	600	Pipe/Conduit
	14.000	59.800	0.300	199.3	0.226	5.00	0.600	o	300	Pipe/Conduit
	15.000	15.600	0.300	52.0	0.150	5.00	0.600	o	300	Pipe/Conduit
	14.001	8.000	0.550	14.5	0.000	0.00	0.600	o	150	Pipe/Conduit
	12.008	7.500	0.015	500.0	0.000	0.00	0.600	o	600	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
	12.000	1B.1	70.825	70.285	0.315	70.800	70.185	0.390		1200
	12.001	1B.2	70.800	70.185	0.240	70.850	69.895	0.580		1350
	12.002	1B.3	70.850	69.895	0.580	70.800	69.605	0.820		1350
*	12.003	1B.4	70.800	69.605	0.595	70.800	69.480	0.720		1350
	12.004	1B.5	70.800	69.480	0.720	71.500	69.315	1.585		1500
	12.005	1B.6	71.500	69.315	1.585	70.735	69.240	0.895		1500
	12.006	1B.7	70.735	69.240	0.895	70.735	69.100	1.035		1500
	13.000	1B.8	70.800	69.475	1.025	70.800	69.300	1.200		1200
	13.001	1B.9	70.800	69.300	1.050	70.735	69.100	1.185		1350
	12.007	1B.10	70.735	69.100	1.035	71.075	69.000	1.475		1500
	14.000	1B.11	70.855	69.850	0.705	70.685	69.550	0.835		1200
	15.000	1B.12	70.685	69.850	0.535	70.685	69.550	0.835		1200
	14.001	1B.13	70.685	69.550	0.985	71.075	69.000	1.925	Hydro-Brake®	1200
	12.008	S5	71.075	69.000	1.475	71.000	68.985	1.415		1500

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.006	114.000	0.285	400.0	0.000	0.00	0.600	o	375	Pipe/Conduit
16.000	64.000	0.320	200.0	0.146	5.00	0.600	o	300	Pipe/Conduit
16.001	43.100	0.215	200.5	0.000	0.00	0.600	o	300	Pipe/Conduit
16.002	3.000	0.015	200.0	0.000	0.00	0.600	o	300	Pipe/Conduit
17.000	41.500	0.105	395.2	0.276	5.00	0.600	o	375	Pipe/Conduit
18.000	41.500	0.105	395.2	0.276	5.00	0.600	o	375	Pipe/Conduit
17.001	12.000	0.060	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
17.002	5.000	0.025	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
19.000	46.800	0.235	199.1	0.117	5.00	0.600	o	300	Pipe/Conduit
19.001	44.500	0.200	222.5	0.023	0.00	0.600	o	300	Pipe/Conduit
19.002	36.800	0.175	210.3	0.000	0.00	0.600	o	300	Pipe/Conduit
20.000	48.700	0.475	102.5	0.023	5.00	0.600	o	225	Pipe/Conduit
19.003	72.400	0.375	193.1	0.201	0.00	0.600	o	375	Pipe/Conduit
19.004	60.000	0.400	150.0	0.023	0.00	0.600	o	450	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.006	HW08	71.000	68.985	1.640	70.000	68.700	0.925	Hydro-Brake®	1500
16.000	1B.14	69.750	69.200	0.250	69.750	68.880	0.570		1200
16.001	1B.15	69.750	68.880	0.570	69.575	68.665	0.610		1200
16.002	1B.16	69.575	68.665	0.610	70.000	68.650	1.050		1200
17.000	1B.17	69.635	68.905	0.355	69.450	68.800	0.275		1350
18.000	1B.18	69.490	68.905	0.210	69.450	68.800	0.275		1350
17.001	1B.19	69.450	68.800	0.275	69.800	68.740	0.685		1350
17.002	INTERCEPTOR	69.800	68.650	0.675	70.000	68.625	0.900		1350
19.000	RE2.1	71.800	70.935	0.565	71.800	70.700	0.800		1200
19.001	R2.7	71.800	70.700	0.800	71.800	70.500	1.000		1200
19.002	R2.8	71.800	70.500	1.000	71.800	70.325	1.175		1200
20.000	R2.10	71.800	70.800	0.775	71.800	70.325	1.250		1200
19.003	R2.9	71.800	70.325	1.100	71.700	69.950	1.375		1350
19.004	R2.11	71.700	69.950	1.300	71.800	69.550	1.800		1350

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
21.000	42.000	0.825	50.9	0.123	5.00	0.600	o	225	Pipe/Conduit
19.005	46.500	0.125	372.0	0.000	0.00	0.600	o	450	Pipe/Conduit
19.006	5.000	0.050	100.0	0.000	0.00	0.600	o	450	Pipe/Conduit
22.000	10.300	0.025	412.0	0.000	5.00	0.600	o	225	Pipe/Conduit
22.001	90.800	0.200	454.0	0.685	0.00	0.600	o	450	Pipe/Conduit
23.000	24.800	0.140	177.1	0.012	5.00	0.600	o	150	Pipe/Conduit
23.001	39.200	0.090	435.6	0.231	0.00	0.600	o	375	Pipe/Conduit
22.002	26.800	0.050	536.0	0.000	0.00	0.600	o	600	Pipe/Conduit
24.000	15.500	0.025	620.0	0.000	5.00	0.600	o	225	Pipe/Conduit
22.003	50.300	0.100	503.0	0.094	0.00	0.600	o	600	Pipe/Conduit
25.000	9.300	0.575	16.2	0.068	5.00	0.600	o	225	Pipe/Conduit
22.004	34.100	0.450	75.8	0.000	0.00	0.600	o	600	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
21.000	R2.13	71.800	70.375	1.200	71.800	69.550	2.025		1200
19.005	R2.12	71.800	69.550	1.800	71.600	69.425	1.725		1350
19.006	R2.14	71.600	69.425	1.725	71.600	69.375	1.775		1350
22.000	Tank 2.1	71.700	70.525	0.950	71.620	70.500	0.895		1200
22.001	S2.23	71.620	70.500	0.670	71.700	70.300	0.950		1350
23.000	G2.1	70.800	70.530	0.120	71.700	70.390	1.160		1200
23.001	S2.22	71.700	70.390	0.935	71.700	70.300	1.025		1350
22.002	S2.21	71.700	70.300	0.800	71.700	70.250	0.850		1500
24.000	Tank 2.2	71.700	70.275	1.200	71.700	70.250	1.225		1200
22.003	S2.20	71.700	70.250	0.850	71.700	70.150	0.950		1500
25.000	G2.2	71.400	70.725	0.450	71.700	70.150	1.325		1200
22.004	S2.19	71.700	70.150	0.950	71.600	69.700	1.300		1500

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
26.000	26.300	0.100	263.0	0.019	5.00	0.600	o	225	Pipe/Conduit
27.000	10.200	0.400	25.5	0.311	5.00	0.600	o	300	Pipe/Conduit
26.001	35.600	0.325	109.5	0.000	0.00	0.600	o	375	Pipe/Conduit
28.000	16.500	0.250	66.0	0.000	5.00	0.600	o	225	Pipe/Conduit
22.005	5.000	0.112	44.6	0.000	0.00	0.600	o	600	Pipe/Conduit
22.006	5.000	0.113	44.2	0.000	0.00	0.600	o	600	Pipe/Conduit
19.007	15.000	0.025	600.0	0.000	0.00	0.600	o	600	Pipe/Conduit
19.008	5.000	0.015	333.3	0.000	0.00	0.600	o	600	Pipe/Conduit
29.000	29.400	0.200	147.0	0.074	5.00	0.600	o	225	Pipe/Conduit
29.001	7.400	0.050	148.0	0.000	0.00	0.600	o	225	Pipe/Conduit
29.002	69.400	0.330	210.3	0.108	0.00	0.600	o	300	Pipe/Conduit
29.003	9.300	0.520	17.9	0.009	0.00	0.600	o	300	Pipe/Conduit
29.004	40.000	0.115	347.8	0.053	0.00	0.600	o	450	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
26.000	G2.3	70.800	70.125	0.450	71.500	70.025	1.250		1200
27.000	G2.4	71.100	70.425	0.375	71.500	70.025	1.175		1200
26.001	S2.18	71.500	70.025	1.100	71.600	69.700	1.525		1350
28.000	Tank 2.3	71.700	69.950	1.525	71.600	69.700	1.675		1200
22.005	s2.17	71.600	69.700	1.300	71.600	69.588	1.412		1500
22.006	Interceptor	71.600	69.488	1.412	71.600	69.375	1.525		1500
19.007	S2.16	71.600	69.375	1.625	71.500	69.350	1.550		1500
19.008	S22.15	71.500	69.350	1.550	71.500	69.335	1.565		1500
29.000	RE2.2	71.700	70.900	0.575	71.700	70.700	0.775		1200
29.001	R2.6	71.700	70.700	0.775	71.700	70.650	0.825		1200
29.002	R2.5	71.700	70.650	0.750	71.700	70.320	1.080		1200
29.003	R2.4	71.700	70.320	1.080	70.720	69.800	0.620		1200
29.004	S2.12	70.720	69.800	0.470	71.100	69.685	0.965		1350

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
30.000	37.200	0.275	135.3	0.113	5.00	0.600	o	225	Pipe/Conduit
30.001	67.500	0.400	168.8	0.108	0.00	0.600	o	375	Pipe/Conduit
30.002	8.700	0.415	21.0	0.009	0.00	0.600	o	450	Pipe/Conduit
29.005	50.000	0.140	357.1	0.067	0.00	0.600	o	450	Pipe/Conduit
29.006	49.800	0.140	355.7	0.067	0.00	0.600	o	450	Pipe/Conduit
31.000	19.400	0.150	129.3	0.007	5.00	0.600	o	225	Pipe/Conduit
31.001	55.700	0.425	131.1	0.070	0.00	0.600	o	300	Pipe/Conduit
31.002	47.100	0.375	125.6	0.088	0.00	0.600	o	375	Pipe/Conduit
31.003	49.300	0.375	131.5	0.022	0.00	0.600	o	375	Pipe/Conduit
32.000	49.000	0.490	100.0	0.076	5.00	0.600	o	300	Pipe/Conduit
32.001	47.700	0.480	99.4	0.099	0.00	0.600	o	375	Pipe/Conduit
32.002	4.900	0.245	20.0	0.000	0.00	0.600	o	375	Pipe/Conduit
29.007	52.900	0.155	341.3	0.000	0.00	0.600	o	450	Pipe/Conduit
33.000	38.000	0.190	200.0	0.016	5.00	0.600	o	300	Pipe/Conduit
33.001	68.000	0.340	200.0	0.000	0.00	0.600	o	300	Pipe/Conduit
33.002	56.900	0.115	494.8	0.080	0.00	0.600	o	450	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
30.000	RE2.3	71.900	70.775	0.900	71.700	70.500	0.975		1200
30.001	R2.3	71.700	70.500	0.825	71.700	70.100	1.225		1350
30.002	R2.2	71.700	70.100	1.150	71.100	69.685	0.965		1350
29.005	R2.1	71.100	69.685	0.965	71.620	69.545	1.625		1350
29.006	S2.13	71.620	69.545	1.625	71.700	69.405	1.845		1350
31.000	R2.19	71.800	70.975	0.600	71.800	70.825	0.750		1200
31.001	R2.20	71.800	70.825	0.675	71.800	70.400	1.100		1200
31.002	R2.21	71.800	70.400	1.025	71.700	70.025	1.300		1350
31.003	R2.22	71.700	70.025	1.300	71.700	69.650	1.675		1350
32.000	R2.18	71.800	70.620	0.880	71.800	70.130	1.370		1200
32.001	R2.17	71.800	70.130	1.295	71.700	69.650	1.675		1350
32.002	R2.16	71.700	69.650	1.675	71.700	69.405	1.920		1350
29.007	R2.15	71.700	69.405	1.845	71.800	69.250	2.100		1350
33.000	RE1A.1	70.850	70.175	0.375	70.850	69.985	0.565		1200
33.001	S1A.2	70.850	69.985	0.565	70.800	69.645	0.855		1200
33.002	S1A.3	70.800	69.645	0.705	70.850	69.530	0.870		1350

Existing Network Details for Storm

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
	33.003	45.600	0.090	506.7	0.080	0.00	0.600	o	450	Pipe/Conduit
	34.000	13.600	0.075	181.3	0.022	5.00	0.600	o	225	Pipe/Conduit
	34.001	43.900	0.220	199.5	0.016	0.00	0.600	o	300	Pipe/Conduit
	34.002	36.200	0.120	301.7	0.334	0.00	0.600	o	450	Pipe/Conduit
*	34.003	36.000	0.120	300.0	0.334	0.00	0.600	o	600	Pipe/Conduit
*	33.004	26.600	0.075	354.7	0.000	0.00	0.600	o	600	Pipe/Conduit
*	35.000	86.300	0.285	302.8	0.104	5.00	0.600	o	450	Pipe/Conduit
	35.001	10.000	0.050	200.0	0.000	0.00	0.600	o	450	Pipe/Conduit
	35.002	10.000	0.050	200.0	0.000	0.00	0.600	o	450	Pipe/Conduit
	36.000	98.000	0.485	202.1	0.363	5.00	0.600	o	300	Pipe/Conduit
	36.001	10.000	0.100	100.0	0.000	0.00	0.600	o	150	Pipe/Conduit
	33.005	9.000	0.040	225.0	0.000	0.00	0.600	o	600	Pipe/Conduit
	33.006	13.700	0.075	182.7	0.000	0.00	0.600	o	600	Pipe/Conduit
	29.008	10.000	0.015	666.7	0.000	0.00	0.600	o	600	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
	33.003	S1A.4	70.850	69.530	0.870	70.925	69.440	1.035		1350
	34.000	S1A.5	70.800	69.975	0.600	70.800	69.900	0.675		1200
	34.001	S1A.6	70.800	69.900	0.600	70.800	69.680	0.820		1200
	34.002	S1A.7	70.800	69.680	0.670	70.800	69.560	0.790		1350
*	34.003	S1A.8	70.800	69.560	0.640	70.925	69.440	0.885		1350
*	33.004	S1A.9	70.925	69.440	0.885	70.700	69.365	0.735		1350
*	35.000	S1A.10	70.550	69.850	0.250	70.550	69.565	0.535		1350
	35.001	S1A.11	70.550	69.565	0.535	70.550	69.515	0.585		1350
	35.002	INTERCEPTOR	70.550	69.415	0.585	70.700	69.365	0.785		1350
	36.000	S1A.21	70.785	69.950	0.535	70.785	69.465	1.020		1200
	36.001	S1A.20	70.785	69.465	1.170	70.700	69.365	1.185	Hydro-Brake®	1200
	33.005	S1A.12	70.700	69.365	0.735	71.200	69.325	1.275		1500
	33.006	S1A.19	71.200	69.325	1.275	71.800	69.250	1.950		1500
	29.008	R2.14	71.800	69.250	1.950	71.500	69.235	1.665		1500

Existing Network Details for Storm

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	19.009	87.000	0.435	200.0	0.000	0.00	0.600	o	600	Pipe/Conduit
	19.010	15.000	0.075	200.0	0.000	0.00	0.600	o	450	Pipe/Conduit
	37.000	64.000	0.320	200.0	0.138	5.00	0.600	o	300	Pipe/Conduit
	37.001	42.800	0.195	219.5	0.000	0.00	0.600	o	300	Pipe/Conduit
	37.002	6.600	0.035	188.6	0.000	0.00	0.600	o	300	Pipe/Conduit
	38.000	32.400	0.080	405.0	0.285	5.00	0.600	o	375	Pipe/Conduit
	39.000	32.400	0.080	405.0	0.248	5.00	0.600	o	375	Pipe/Conduit
	38.001	12.000	0.060	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
	38.002	5.000	0.025	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
	1.007	45.000	0.225	200.0	0.000	0.00	0.600	o	225	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	19.009	S2.24	71.500	69.235	1.665	70.000	68.800	0.600	Hydro-Brake®	1500
	19.010	S2.27	70.000	68.800	0.750	70.000	68.725	0.825		1350
	37.000	S1A.13	69.750	69.200	0.250	69.750	68.880	0.570		1200
	37.001	S1A.14	69.750	68.880	0.570	69.560	68.685	0.575		1200
	37.002	S1A.15	69.560	68.685	0.575	70.000	68.650	1.050		1200
	38.000	S1A.16	69.635	68.935	0.325	69.450	68.855	0.220		1350
	39.000	S1A.17	69.450	68.880	0.195	69.450	68.800	0.275		1350
	38.001	S1A.18	69.450	68.800	0.275	69.800	68.740	0.685		1350
	38.002	INTERCEPTOR	69.800	68.650	0.675	70.000	68.625	0.900		1350
	1.007	SOUT	70.000	68.625	1.150	69.800	68.400	1.175	Hydro-Brake®	1350

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007	Outfall to river	69.800	68.400	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	15

Online Controls for Storm

Hydro-Brake® Optimum Manhole: 1B.13, DS/PN: 14.001, Volume (m³): 6.4

Unit Reference	MD-SHE-0111-5000-0600-5000
Design Head (m)	0.600
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	111
Invert Level (m)	69.550
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.600	5.0
Flush-Flo™	0.193	5.0
Kick-Flo®	0.428	4.3
Mean Flow over Head Range	-	4.2

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.9	1.200	6.9	3.000	10.6	7.000	15.9
0.200	5.0	1.400	7.4	3.500	11.4	7.500	16.5
0.300	4.9	1.600	7.9	4.000	12.2	8.000	17.0
0.400	4.5	1.800	8.4	4.500	12.9	8.500	17.6
0.500	4.6	2.000	8.8	5.000	13.6	9.000	18.1
0.600	5.0	2.200	9.2	5.500	14.2	9.500	18.6
0.800	5.7	2.400	9.6	6.000	14.8		
1.000	6.3	2.600	9.9	6.500	15.3		

Hydro-Brake® Optimum Manhole: HW08, DS/PN: 1.006, Volume (m³): 14.2

Unit Reference	MD-SHE-0096-4000-0900-4000
Design Head (m)	0.900
Design Flow (l/s)	4.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	96
Invert Level (m)	68.985
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Hydro-Brake® Optimum Manhole: HW08, DS/PN: 1.006, Volume (m³): 14.2

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.900	4.0
Flush-Flo™	0.266	4.0
Kick-Flo®	0.578	3.3
Mean Flow over Head Range	-	3.5

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.1	1.200	4.6	3.000	7.0	7.000	10.5
0.200	3.9	1.400	4.9	3.500	7.5	7.500	10.8
0.300	4.0	1.600	5.2	4.000	8.0	8.000	11.2
0.400	3.9	1.800	5.5	4.500	8.5	8.500	11.5
0.500	3.7	2.000	5.8	5.000	8.9	9.000	11.8
0.600	3.3	2.200	6.1	5.500	9.3	9.500	12.1
0.800	3.8	2.400	6.3	6.000	9.7		
1.000	4.2	2.600	6.6	6.500	10.1		

Hydro-Brake® Optimum Manhole: S1A.20, DS/PN: 36.001, Volume (m³): 8.3

Unit Reference	MD-SHE-0111-5000-0600-5000
Design Head (m)	0.600
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	111
Invert Level (m)	69.465
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.600	5.0
Flush-Flo™	0.193	5.0
Kick-Flo®	0.428	4.3
Mean Flow over Head Range	-	4.2

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.9	0.300	4.9	0.500	4.6	0.800	5.7
0.200	5.0	0.400	4.5	0.600	5.0	1.000	6.3

Hydro-Brake® Optimum Manhole: S1A.20, DS/PN: 36.001, Volume (m³): 8.3

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
1.200	6.9	2.400	9.6	5.000	13.6	8.000	17.0
1.400	7.4	2.600	9.9	5.500	14.2	8.500	17.6
1.600	7.9	3.000	10.6	6.000	14.8	9.000	18.1
1.800	8.4	3.500	11.4	6.500	15.3	9.500	18.6
2.000	8.8	4.000	12.2	7.000	15.9		
2.200	9.2	4.500	12.9	7.500	16.5		

Hydro-Brake® Optimum Manhole: S2.24, DS/PN: 19.009, Volume (m³): 7.4

Unit Reference	MD-SHE-0112-7000-1800-7000
Design Head (m)	1.800
Design Flow (l/s)	7.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	112
Invert Level (m)	69.235
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.800	7.0
Flush-Flo™	0.487	6.7
Kick-Flo®	0.996	5.3
Mean Flow over Head Range	-	6.0

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.9	1.200	5.8	3.000	8.9	7.000	13.3
0.200	5.9	1.400	6.2	3.500	9.6	7.500	13.7
0.300	6.4	1.600	6.6	4.000	10.2	8.000	14.2
0.400	6.6	1.800	7.0	4.500	10.8	8.500	14.6
0.500	6.7	2.000	7.3	5.000	11.3	9.000	15.0
0.600	6.6	2.200	7.7	5.500	11.9	9.500	15.4
0.800	6.3	2.400	8.0	6.000	12.4		
1.000	5.3	2.600	8.3	6.500	12.8		

Hydro-Brake® Optimum Manhole: SOUT, DS/PN: 1.007, Volume (m³): 17.9

Unit Reference	MD-SHE-0186-1700-0900-1700
Design Head (m)	0.900
Design Flow (l/s)	17.0
Flush-Flo™	Calculated

Hydro-Brake® Optimum Manhole: SOUT, DS/PN: 1.007, Volume (m³): 17.9

Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	186
Invert Level (m)	68.625
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.900	17.0
Flush-Flo™	0.312	17.0
Kick-Flo®	0.654	14.6
Mean Flow over Head Range	-	14.2

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	6.5	1.200	19.5	3.000	30.2	7.000	45.5
0.200	16.4	1.400	21.0	3.500	32.5	7.500	47.1
0.300	17.0	1.600	22.4	4.000	34.7	8.000	48.5
0.400	16.8	1.800	23.7	4.500	36.7	8.500	50.0
0.500	16.4	2.000	24.9	5.000	38.7	9.000	51.4
0.600	15.6	2.200	26.0	5.500	40.5	9.500	52.6
0.800	16.1	2.400	27.1	6.000	42.2		
1.000	17.9	2.600	28.2	6.500	43.9		

Offline Controls for Storm

Pipe Manhole: S2.12, DS/PN: 29.004, Loop to PN: 11.000

Diameter (m)	0.375	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	10000.0	Coefficient of Contraction	0.600
Length (m)	5.000	Upstream Invert Level (m)	69.800

Storage Structures for Storm

Tank or Pond Manhole: HW05, DS/PN: 1.004

Invert Level (m) 69.190

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	488.0	0.400	796.0	0.800	1114.0	1.200	1444.0
0.200	640.0	0.600	954.0	1.000	1278.0		

Infiltration Blanket Manhole: 1B.11, DS/PN: 14.000

Infiltration Coefficient Base (m/hr)	0.00000	Diameter/Width (m)	14.0
Safety Factor	2.0	Length (m)	49.5
Porosity	0.30	Cap Volume Depth (m)	0.525
Invert Level (m)	69.850		

Infiltration Blanket Manhole: 1B.12, DS/PN: 15.000

Infiltration Coefficient Base (m/hr)	0.00000	Diameter/Width (m)	14.0
Safety Factor	2.0	Length (m)	33.0
Porosity	0.30	Cap Volume Depth (m)	0.525
Invert Level (m)	69.850		

Tank or Pond Manhole: HW08, DS/PN: 1.006

Invert Level (m) 68.985

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1143.0	0.400	1412.0	0.800	1690.0	1.200	1979.0
0.200	1276.0	0.600	1550.0	1.000	1834.0		

Infiltration Blanket Manhole: S1A.21, DS/PN: 36.000

Infiltration Coefficient Base (m/hr)	0.00000	Diameter/Width (m)	13.0
Safety Factor	2.0	Length (m)	100.0
Porosity	0.30	Cap Volume Depth (m)	0.450
Invert Level (m)	69.950		

Tank or Pond Manhole: S2.24, DS/PN: 19.009

Invert Level (m) 69.235

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	2476.0	0.600	3299.0	1.200	4147.0	1.800	5020.0
0.200	2748.0	0.800	3579.0	1.400	4435.0		
0.400	3022.0	1.000	3862.0	1.600	4726.0		

Tank or Pond Manhole: SOUT, DS/PN: 1.007

Invert Level (m) 68.625

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	652.0	0.400	1189.0	0.800	1736.0
0.200	919.0	0.600	1461.0	1.000	2013.0

Summary of Results for 15 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.627	-0.123	0.000	0.63		53.1	OK
1.001	R5	70.405	-0.080	0.000	0.86		73.0	OK
1.002	R6	70.084	-0.141	0.000	0.69		89.7	OK
1.003	R7	69.716	-0.284	0.000	0.30		89.6	OK
2.000	R8	69.632	-0.318	0.000	0.19		54.1	OK
3.000	R9	69.622	-0.328	0.000	0.16		48.9	OK
4.000	R4A	70.474	-0.151	0.000	0.48		48.1	OK
4.001	R4	70.236	-0.114	0.000	0.52		46.6	OK
4.002	R3	70.176	0.051	0.000	1.09		65.8	SURCHARGED
4.003	R2	69.972	0.047	0.000	0.59		67.7	SURCHARGED
5.000	Tank 1	70.315	0.340	0.000	0.05		2.1	SURCHARGED
5.001	S3	70.316	0.341	0.000	0.06		7.0	SURCHARGED
6.000	G1	70.496	0.371	0.000	0.79		110.5	FLOOD RISK
7.000	G2	70.297	0.522	0.000	1.18		13.3	FLOOD RISK
8.000	G3	70.467	0.342	0.000	0.68		95.2	FLOOD RISK
9.000	G4	70.297	0.522	0.000	1.18		13.3	FLOOD RISK
5.002	S2	70.316	0.391	0.000	1.48		197.1	SURCHARGED
10.000	Tank 2	70.065	0.340	0.000	0.04		1.9	SURCHARGED
5.003	S1	70.065	0.265	0.000	1.65		193.3	SURCHARGED
5.004	Interceptor	69.946	0.158	0.000	1.65		193.5	SURCHARGED
4.004	R1	69.831	0.156	0.000	1.70		259.1	SURCHARGED
1.004	HW05	69.540	-0.250	0.000	0.64		103.9	OK
11.000	S11	70.116	-0.134	0.000	0.77		156.9	OK
11.001	S10	69.736	-0.164	0.000	0.71		168.5	OK
1.005	S4	69.473	-0.237	0.000	0.67		181.1	OK
12.000	1B.1	70.382	-0.128	0.000	0.36		13.1	OK
12.001	1B.2	70.339	-0.221	0.000	0.34		44.7	OK
12.002	1B.3	70.112	-0.158	0.000	0.60		79.8	OK
12.003	1B.4	69.955	-0.250	0.000	0.35		96.2	OK
12.004	1B.5	69.910	-0.170	0.000	0.46		129.5	OK
12.005	1B.6	69.867	-0.048	0.000	0.60		157.1	OK
12.006	1B.7	69.856	0.016	0.000	0.67		230.2	SURCHARGED
13.000	1B.8	69.840	0.065	0.000	0.24		17.5	SURCHARGED
13.001	1B.9	69.819	0.069	0.000	0.11		22.1	SURCHARGED
12.007	1B.10	69.809	0.109	0.000	1.01		349.1	SURCHARGED
14.000	1B.11	70.025	-0.125	0.000	0.20		14.8	OK
15.000	1B.12	70.020	-0.130	0.000	0.16		20.5	OK
14.001	1B.13	70.019	0.319	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.679	0.079	0.000	1.95		353.8	SURCHARGED
1.006	HW08	69.371	0.011	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.403	-0.097	0.000	0.75		56.1	OK
16.001	1B.15	69.078	-0.102	0.000	0.75		54.7	OK
16.002	1B.16	68.930	-0.035	0.000	1.00		51.1	OK

Summary of Results for 15 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.513	0.233	0.000	1.01		92.3	FLOOD RISK
18.000	1B.18	69.486	0.206	0.000	0.95		86.2	FLOOD RISK
17.001	1B.19	69.395	0.220	0.000	1.66		177.9	FLOOD RISK
17.002	INTERCEPTOR	69.186	0.161	0.000	2.07		177.5	SURCHARGED
19.000	RE2.1	71.111	-0.124	0.000	0.62		46.0	OK
19.001	R2.7	70.901	-0.099	0.000	0.76		53.0	OK
19.002	R2.8	70.715	-0.085	0.000	0.71		50.1	OK
20.000	R2.10	70.866	-0.159	0.000	0.18		9.1	OK
19.003	R2.9	70.636	-0.064	0.000	0.90		122.1	OK
19.004	R2.11	70.482	0.082	0.000	0.41		98.9	SURCHARGED
21.000	R2.13	70.591	-0.009	0.000	0.70		48.5	OK
19.005	R2.12	70.420	0.420	0.000	0.81		122.5	SURCHARGED
19.006	R2.14	70.342	0.467	0.000	0.72		122.2	SURCHARGED
22.000	Tank 2.1	71.299	0.549	0.000	0.16		2.9	SURCHARGED
22.001	S2.23	71.300	0.350	0.000	1.37		196.0	SURCHARGED
23.000	G2.1	70.804	0.124	3.704	1.18		14.9	FLOOD
23.001	S2.22	70.940	0.175	0.000	1.04		90.0	SURCHARGED
22.002	S2.21	70.900	0.000	0.000	1.06		249.2	OK
24.000	Tank 2.2	70.731	0.231	0.000	0.05		0.7	SURCHARGED
22.003	S2.20	70.733	-0.117	0.000	0.98		261.2	OK
25.000	G2.2	70.803	-0.147	0.000	0.26		27.4	OK
22.004	S2.19	70.491	-0.259	0.000	0.41		272.0	OK
26.000	G2.3	70.480	0.130	0.000	0.22		6.6	SURCHARGED
27.000	G2.4	70.630	-0.095	0.000	0.79		124.5	OK
26.001	S2.18	70.470	0.070	0.000	0.73		124.9	SURCHARGED
28.000	Tank 2.3	70.414	0.239	0.000	0.04		2.0	SURCHARGED
22.005	s2.17	70.414	0.114	0.000	0.96		334.3	SURCHARGED
22.006	Interceptor	70.367	0.279	0.000	0.96		333.8	SURCHARGED
19.007	S2.16	70.320	0.345	0.000	3.27		454.2	SURCHARGED
19.008	S22.15	70.113	0.163	0.000	2.11		455.1	SURCHARGED
29.000	RE2.2	71.047	-0.078	0.000	0.74		29.4	OK
29.001	R2.6	70.931	0.006	0.000	0.97		30.4	SURCHARGED
29.002	R2.5	70.896	-0.054	0.000	0.94		68.4	OK
29.003	R2.4	70.452	-0.168	0.000	0.39		71.0	OK
29.004	S2.12	70.275	0.025	0.000	0.39	141.6	60.5	SURCHARGED
30.000	RE2.3	71.027	0.027	0.000	1.04		43.9	SURCHARGED
30.001	R2.3	70.713	-0.162	0.000	0.58		84.8	OK
30.002	R2.2	70.357	-0.193	0.000	0.23		84.8	OK
29.005	R2.1	70.338	0.203	0.000	0.77		118.4	SURCHARGED
29.006	S2.13	70.310	0.315	0.000	0.75		115.9	SURCHARGED
31.000	R2.19	71.014	-0.186	0.000	0.07		2.8	OK
31.001	R2.20	70.949	-0.176	0.000	0.34		31.6	OK
31.002	R2.21	70.571	-0.204	0.000	0.41		67.3	OK
31.003	R2.22	70.317	-0.083	0.000	0.45		73.3	OK
32.000	R2.18	70.731	-0.189	0.000	0.29		30.1	OK
32.001	R2.17	70.321	-0.184	0.000	0.38		69.9	OK
32.002	R2.16	70.277	0.252	0.000	0.27		53.2	SURCHARGED
29.007	R2.15	70.265	0.410	0.000	1.30		206.0	SURCHARGED
33.000	RE1A.1	70.235	-0.240	0.000	0.09		6.3	OK

Summary of Results for 15 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.138	-0.147	0.000	0.08		6.3	OK
33.002	S1A.3	70.130	0.035	0.000	0.18		23.3	SURCHARGED
33.003	S1A.4	70.119	0.139	0.000	0.28		36.3	SURCHARGED
34.000	S1A.5	70.218	0.018	0.000	0.22		7.4	SURCHARGED
34.001	S1A.6	70.207	0.007	0.000	0.15		10.6	SURCHARGED
34.002	S1A.7	70.192	0.062	0.000	0.82		133.7	SURCHARGED
34.003	S1A.8	70.145	-0.015	0.000	0.75		250.4	OK
33.004	S1A.9	70.101	0.061	0.000	0.85		245.8	SURCHARGED
35.000	S1A.10	70.093	-0.207	0.000	0.22		38.3	OK
35.001	S1A.11	70.076	0.061	0.000	0.27		42.8	SURCHARGED
35.002	INTERCEPTOR	70.067	0.202	0.000	0.29		46.5	SURCHARGED
36.000	S1A.21	70.104	-0.146	0.000	0.32		24.3	OK
36.001	S1A.20	70.204	0.589	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.059	0.094	0.000	0.82		229.0	SURCHARGED
33.006	S1A.19	70.031	0.106	0.000	0.66		227.5	SURCHARGED
29.008	R2.14	69.992	0.142	0.000	2.89		431.3	SURCHARGED
19.009	S2.24	69.493	-0.342	0.000	0.01		6.2	OK
19.010	S2.27	68.913	-0.337	0.000	0.04		6.3	OK
37.000	S1A.13	69.395	-0.105	0.000	0.71		53.1	OK
37.001	S1A.14	69.077	-0.103	0.000	0.74		51.5	OK
37.002	S1A.15	68.910	-0.075	0.000	0.89		51.0	OK
38.000	S1A.16	69.500	0.190	0.000	1.11		98.0	FLOOD RISK
39.000	S1A.17	69.451	0.196	0.540	0.91		80.0	FLOOD
38.001	S1A.18	69.392	0.217	0.000	1.65		176.4	FLOOD RISK
38.002	INTERCEPTOR	69.186	0.161	0.000	2.05		176.4	SURCHARGED
1.007	SOUT	68.910	0.060	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

Summary of Results for 30 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.592	-0.158	0.000	0.45		38.2	OK
1.001	R5	70.358	-0.127	0.000	0.62		53.0	OK
1.002	R6	70.042	-0.183	0.000	0.51		66.5	OK
1.003	R7	69.693	-0.307	0.000	0.22		66.6	OK
2.000	R8	69.609	-0.341	0.000	0.13		38.5	OK
3.000	R9	69.602	-0.348	0.000	0.12		34.7	OK
4.000	R4A	70.447	-0.178	0.000	0.35		34.7	OK
4.001	R4	70.179	-0.171	0.000	0.38		34.4	OK
4.002	R3	70.043	-0.082	0.000	0.84		51.1	OK
4.003	R2	69.871	-0.054	0.000	0.49		56.0	OK
5.000	Tank 1	70.068	0.093	0.000	0.02		1.0	SURCHARGED
5.001	S3	70.068	0.093	0.000	0.04		4.8	SURCHARGED
6.000	G1	70.204	0.079	0.000	0.63		88.3	FLOOD RISK
7.000	G2	70.124	0.349	0.000	0.60		6.8	FLOOD RISK
8.000	G3	70.168	0.043	0.000	0.54		75.9	SURCHARGED
9.000	G4	70.124	0.349	0.000	0.60		6.8	FLOOD RISK
5.002	S2	70.068	0.143	0.000	1.28		170.5	SURCHARGED
10.000	Tank 2	69.873	0.148	0.000	0.02		1.1	SURCHARGED
5.003	S1	69.872	0.072	0.000	1.45		169.0	SURCHARGED
5.004	Interceptor	69.819	0.031	0.000	1.44		168.9	SURCHARGED
4.004	R1	69.777	0.102	0.000	1.47		224.6	SURCHARGED
1.004	HW05	69.556	-0.234	0.000	0.69		111.2	OK
11.000	S11	70.051	-0.199	0.000	0.57		116.7	OK
11.001	S10	69.691	-0.209	0.000	0.55		131.5	OK
1.005	S4	69.479	-0.231	0.000	0.69		185.1	OK
12.000	1B.1	70.362	-0.148	0.000	0.26		9.5	OK
12.001	1B.2	70.311	-0.249	0.000	0.24		31.7	OK
12.002	1B.3	70.070	-0.200	0.000	0.44		57.7	OK
12.003	1B.4	69.878	-0.327	0.000	0.28		76.4	OK
12.004	1B.5	69.818	-0.262	0.000	0.36		103.4	OK
12.005	1B.6	69.759	-0.156	0.000	0.44		114.4	OK
12.006	1B.7	69.737	-0.103	0.000	0.58		198.4	OK
13.000	1B.8	69.713	-0.062	0.000	0.18		13.5	OK
13.001	1B.9	69.696	-0.054	0.000	0.08		16.8	OK
12.007	1B.10	69.688	-0.012	0.000	0.91		315.5	OK
14.000	1B.11	70.052	-0.098	0.000	0.16		11.8	OK
15.000	1B.12	70.049	-0.101	0.000	0.12		15.4	OK
14.001	1B.13	70.047	0.347	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.605	0.005	0.000	1.76		320.2	SURCHARGED
1.006	HW08	69.418	0.058	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.361	-0.139	0.000	0.55		40.9	OK
16.001	1B.15	69.040	-0.140	0.000	0.55		40.4	OK
16.002	1B.16	68.948	-0.017	0.000	0.78		40.1	OK

Summary of Results for 30 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.309	0.029	0.000	0.78		70.7	SURCHARGED
18.000	1B.18	69.308	0.028	0.000	0.77		70.0	FLOOD RISK
17.001	1B.19	69.242	0.067	0.000	1.32		141.0	FLOOD RISK
17.002	INTERCEPTOR	69.110	0.085	0.000	1.64		140.7	SURCHARGED
19.000	RE2.1	71.077	-0.158	0.000	0.45		33.1	OK
19.001	R2.7	70.863	-0.137	0.000	0.56		39.0	OK
19.002	R2.8	70.659	-0.141	0.000	0.55		38.6	OK
20.000	R2.10	70.854	-0.171	0.000	0.13		6.5	OK
19.003	R2.9	70.563	-0.137	0.000	0.70		95.5	OK
19.004	R2.11	70.368	-0.032	0.000	0.36		86.8	OK
21.000	R2.13	70.489	-0.111	0.000	0.51		35.2	OK
19.005	R2.12	70.320	0.320	0.000	0.70		105.8	SURCHARGED
19.006	R2.14	70.257	0.382	0.000	0.63		105.8	SURCHARGED
22.000	Tank 2.1	71.058	0.308	0.000	0.07		1.3	SURCHARGED
22.001	S2.23	71.059	0.109	0.000	1.17		167.0	SURCHARGED
23.000	G2.1	70.801	0.121	0.568	0.49		6.3	FLOOD
23.001	S2.22	70.810	0.045	0.000	0.76		65.5	SURCHARGED
22.002	S2.21	70.770	-0.130	0.000	0.93		218.8	OK
24.000	Tank 2.2	70.688	0.188	0.000	0.04		0.5	SURCHARGED
22.003	S2.20	70.689	-0.161	0.000	0.87		233.9	OK
25.000	G2.2	70.790	-0.160	0.000	0.18		19.5	OK
22.004	S2.19	70.415	-0.335	0.000	0.37		243.5	OK
26.000	G2.3	70.369	0.019	0.000	0.18		5.3	SURCHARGED
27.000	G2.4	70.586	-0.139	0.000	0.56		89.3	OK
26.001	S2.18	70.361	-0.039	0.000	0.55		93.8	OK
28.000	Tank 2.3	70.319	0.144	0.000	0.03		1.6	SURCHARGED
22.005	s2.17	70.319	0.019	0.000	0.88		304.8	SURCHARGED
22.006	Interceptor	70.280	0.192	0.000	0.88		304.0	SURCHARGED
19.007	S2.16	70.241	0.266	0.000	2.95		409.6	SURCHARGED
19.008	S22.15	70.073	0.123	0.000	1.90		409.8	SURCHARGED
29.000	RE2.2	71.017	-0.108	0.000	0.53		21.1	OK
29.001	R2.6	70.860	-0.065	0.000	0.68		21.5	OK
29.002	R2.5	70.838	-0.112	0.000	0.69		50.7	OK
29.003	R2.4	70.431	-0.189	0.000	0.29		53.0	OK
29.004	S2.12	70.175	-0.075	0.000	0.33	99.5	50.5	OK
30.000	RE2.3	70.923	-0.077	0.000	0.76		32.2	OK
30.001	R2.3	70.673	-0.202	0.000	0.43		62.0	OK
30.002	R2.2	70.247	-0.303	0.000	0.17		63.5	OK
29.005	R2.1	70.233	0.098	0.000	0.64		98.6	SURCHARGED
29.006	S2.13	70.198	0.203	0.000	0.69		107.2	SURCHARGED
31.000	R2.19	71.007	-0.193	0.000	0.05		2.0	OK
31.001	R2.20	70.926	-0.199	0.000	0.24		22.3	OK
31.002	R2.21	70.538	-0.237	0.000	0.29		47.6	OK
31.003	R2.22	70.192	-0.208	0.000	0.33		52.8	OK
32.000	R2.18	70.712	-0.208	0.000	0.21		21.7	OK
32.001	R2.17	70.263	-0.242	0.000	0.27		50.2	OK
32.002	R2.16	70.161	0.136	0.000	0.22		43.1	SURCHARGED
29.007	R2.15	70.151	0.296	0.000	1.15		183.3	SURCHARGED
33.000	RE1A.1	70.224	-0.251	0.000	0.06		4.6	OK

Summary of Results for 30 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.069	-0.216	0.000	0.06		4.2	OK
33.002	S1A.3	70.063	-0.032	0.000	0.14		18.5	OK
33.003	S1A.4	70.053	0.073	0.000	0.26		33.8	SURCHARGED
34.000	S1A.5	70.123	-0.077	0.000	0.17		5.8	OK
34.001	S1A.6	70.115	-0.085	0.000	0.12		8.9	OK
34.002	S1A.7	70.104	-0.026	0.000	0.60		97.4	OK
34.003	S1A.8	70.068	-0.092	0.000	0.55		184.0	OK
33.004	S1A.9	70.036	-0.004	0.000	0.66		190.7	OK
35.000	S1A.10	70.031	-0.269	0.000	0.16		27.9	OK
35.001	S1A.11	70.015	0.000	0.000	0.23		36.0	OK
35.002	INTERCEPTOR	70.006	0.141	0.000	0.24		38.3	SURCHARGED
36.000	S1A.21	70.128	-0.122	0.000	0.27		20.5	OK
36.001	S1A.20	70.153	0.538	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.001	0.036	0.000	0.69		193.8	SURCHARGED
33.006	S1A.19	69.976	0.051	0.000	0.56		194.0	SURCHARGED
29.008	R2.14	69.944	0.094	0.000	2.50		372.8	SURCHARGED
19.009	S2.24	69.544	-0.291	0.000	0.01		6.4	OK
19.010	S2.27	68.950	-0.300	0.000	0.04		6.5	OK
37.000	S1A.13	69.355	-0.145	0.000	0.52		38.7	OK
37.001	S1A.14	69.039	-0.141	0.000	0.55		38.2	OK
37.002	S1A.15	68.948	-0.037	0.000	0.66		38.0	OK
38.000	S1A.16	69.298	-0.012	0.000	0.85		74.9	OK
39.000	S1A.17	69.286	0.031	0.000	0.73		64.0	FLOOD RISK
38.001	S1A.18	69.238	0.063	0.000	1.29		138.8	FLOOD RISK
38.002	INTERCEPTOR	69.107	0.082	0.000	1.62		139.0	SURCHARGED
1.007	SOUT	68.948	0.098	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	120
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	2

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	60

Summary of Results for 60 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.559	-0.191	0.000	0.29		24.0	OK
1.001	R5	70.316	-0.169	0.000	0.39		33.7	OK
1.002	R6	69.998	-0.227	0.000	0.33		42.9	OK
1.003	R7	69.662	-0.338	0.000	0.14		42.7	OK
2.000	R8	69.587	-0.363	0.000	0.08		24.0	OK
3.000	R9	69.580	-0.370	0.000	0.07		21.7	OK
4.000	R4A	70.420	-0.205	0.000	0.22		21.6	OK
4.001	R4	70.150	-0.200	0.000	0.24		21.7	OK
4.002	R3	69.985	-0.140	0.000	0.55		33.0	OK
4.003	R2	69.748	-0.177	0.000	0.35		40.5	OK
5.000	Tank 1	69.836	-0.139	0.000	0.01		0.3	OK
5.001	S3	69.836	-0.139	0.000	0.01		1.8	OK
6.000	G1	69.966	-0.159	0.000	0.45		62.3	OK
7.000	G2	69.866	0.091	0.000	0.44		4.9	SURCHARGED
8.000	G3	69.954	-0.171	0.000	0.38		53.6	OK
9.000	G4	69.866	0.091	0.000	0.44		4.9	SURCHARGED
5.002	S2	69.836	-0.089	0.000	0.91		121.9	OK
10.000	Tank 2	69.743	0.018	0.000	0.01		0.4	SURCHARGED
5.003	S1	69.743	-0.057	0.000	1.00		117.0	OK
5.004	Interceptor	69.699	-0.089	0.000	1.00		117.0	OK
4.004	R1	69.675	0.000	0.000	1.01		154.1	OK
1.004	HW05	69.550	-0.240	0.000	0.67		108.2	OK
11.000	S11	69.899	-0.351	0.000	0.10		21.4	OK
11.001	S10	69.568	-0.332	0.000	0.15		36.2	OK
1.005	S4	69.466	-0.244	0.000	0.46		124.6	OK
12.000	1B.1	70.345	-0.165	0.000	0.16		5.9	OK
12.001	1B.2	70.283	-0.277	0.000	0.15		19.9	OK
12.002	1B.3	70.030	-0.240	0.000	0.28		36.8	OK
12.003	1B.4	69.808	-0.397	0.000	0.19		50.9	OK
12.004	1B.5	69.741	-0.339	0.000	0.25		70.1	OK
12.005	1B.6	69.689	-0.226	0.000	0.29		75.0	OK
12.006	1B.7	69.673	-0.167	0.000	0.39		132.0	OK
13.000	1B.8	69.654	-0.121	0.000	0.12		8.6	OK
13.001	1B.9	69.645	-0.105	0.000	0.06		11.6	OK
12.007	1B.10	69.641	-0.059	0.000	0.58		203.1	OK
14.000	1B.11	70.077	-0.073	0.000	0.11		8.0	OK
15.000	1B.12	70.074	-0.076	0.000	0.07		8.6	OK
14.001	1B.13	70.073	0.373	0.000	0.12		4.8	SURCHARGED
12.008	S5	69.600	0.000	0.000	1.13		204.3	OK
1.006	HW08	69.465	0.105	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.323	-0.177	0.000	0.35		26.1	OK
16.001	1B.15	69.003	-0.177	0.000	0.35		25.8	OK
16.002	1B.16	68.988	0.023	0.000	0.47		23.9	SURCHARGED

Summary of Results for 60 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.131	-0.149	0.000	0.53		48.7	OK
18.000	1B.18	69.131	-0.149	0.000	0.53		48.6	OK
17.001	1B.19	69.078	-0.097	0.000	0.90		96.1	OK
17.002	INTERCEPTOR	69.025	0.000	0.000	1.12		96.3	OK
19.000	RE2.1	71.044	-0.191	0.000	0.28		20.9	OK
19.001	R2.7	70.825	-0.175	0.000	0.36		24.9	OK
19.002	R2.8	70.623	-0.177	0.000	0.35		24.8	OK
20.000	R2.10	70.844	-0.181	0.000	0.08		4.1	OK
19.003	R2.9	70.506	-0.194	0.000	0.47		63.5	OK
19.004	R2.11	70.137	-0.263	0.000	0.28		66.9	OK
21.000	R2.13	70.462	-0.138	0.000	0.32		22.0	OK
19.005	R2.12	70.075	0.075	0.000	0.58		86.8	SURCHARGED
19.006	R2.14	70.030	0.155	0.000	0.51		86.7	SURCHARGED
22.000	Tank 2.1	70.818	0.068	0.000	0.02		0.3	SURCHARGED
22.001	S2.23	70.818	-0.132	0.000	0.83		117.9	OK
23.000	G2.1	70.717	0.037	0.000	0.16		2.0	FLOOD RISK
23.001	S2.22	70.706	-0.059	0.000	0.49		42.0	OK
22.002	S2.21	70.676	-0.224	0.000	0.66		156.2	OK
24.000	Tank 2.2	70.600	0.100	0.000	0.02		0.3	SURCHARGED
22.003	S2.20	70.600	-0.250	0.000	0.63		169.7	OK
25.000	G2.2	70.776	-0.174	0.000	0.11		12.2	OK
22.004	S2.19	70.363	-0.387	0.000	0.27		180.2	OK
26.000	G2.3	70.193	-0.157	0.000	0.12		3.4	OK
27.000	G2.4	70.548	-0.177	0.000	0.35		55.6	OK
26.001	S2.18	70.177	-0.223	0.000	0.34		59.1	OK
28.000	Tank 2.3	70.063	-0.112	0.000	0.00		0.3	OK
22.005	s2.17	70.063	-0.237	0.000	0.67		232.5	OK
22.006	Interceptor	70.040	-0.048	0.000	0.67		233.0	OK
19.007	S2.16	70.016	0.041	0.000	2.30		319.2	SURCHARGED
19.008	S22.15	69.950	0.000	0.000	1.48		319.6	OK
29.000	RE2.2	70.990	-0.135	0.000	0.33		13.2	OK
29.001	R2.6	70.810	-0.115	0.000	0.42		13.3	OK
29.002	R2.5	70.791	-0.159	0.000	0.44		32.5	OK
29.003	R2.4	70.408	-0.212	0.000	0.19		34.1	OK
29.004	S2.12	70.109	-0.141	0.000	0.24	6.4	36.6	OK
30.000	RE2.3	70.885	-0.115	0.000	0.48		20.2	OK
30.001	R2.3	70.634	-0.241	0.000	0.27		39.5	OK
30.002	R2.2	70.200	-0.350	0.000	0.11		41.2	OK
29.005	R2.1	70.092	-0.043	0.000	0.54		83.7	OK
29.006	S2.13	70.048	0.053	0.000	0.60		92.5	SURCHARGED
31.000	R2.19	71.001	-0.199	0.000	0.03		1.2	OK
31.001	R2.20	70.903	-0.222	0.000	0.15		13.8	OK
31.002	R2.21	70.508	-0.267	0.000	0.18		29.6	OK
31.003	R2.22	70.141	-0.259	0.000	0.21		33.7	OK
32.000	R2.18	70.692	-0.228	0.000	0.13		13.6	OK
32.001	R2.17	70.234	-0.271	0.000	0.17		31.3	OK
32.002	R2.16	70.003	-0.022	0.000	0.15		28.6	OK
29.007	R2.15	69.996	0.141	0.000	0.94		150.1	SURCHARGED
33.000	RE1A.1	70.213	-0.262	0.000	0.04		2.9	OK

Summary of Results for 60 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.023	-0.262	0.000	0.04		2.8	OK
33.002	S1A.3	69.954	-0.141	0.000	0.11		14.5	OK
33.003	S1A.4	69.946	-0.034	0.000	0.20		26.2	OK
34.000	S1A.5	70.029	-0.171	0.000	0.12		3.9	OK
34.001	S1A.6	69.996	-0.204	0.000	0.09		6.5	OK
34.002	S1A.7	69.985	-0.145	0.000	0.39		62.8	OK
34.003	S1A.8	69.957	-0.203	0.000	0.36		118.3	OK
33.004	S1A.9	69.931	-0.109	0.000	0.48		138.1	OK
35.000	S1A.10	69.966	-0.334	0.000	0.10		18.2	OK
35.001	S1A.11	69.911	-0.104	0.000	0.11		17.1	OK
35.002	INTERCEPTOR	69.907	0.042	0.000	0.11		17.6	SURCHARGED
36.000	S1A.21	70.149	-0.101	0.000	0.22		16.3	OK
36.001	S1A.20	70.139	0.524	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.902	-0.063	0.000	0.56		157.5	OK
33.006	S1A.19	69.883	-0.042	0.000	0.45		157.1	OK
29.008	R2.14	69.856	0.006	0.000	2.06		307.6	SURCHARGED
19.009	S2.24	69.602	-0.233	0.000	0.01		6.6	OK
19.010	S2.27	68.990	-0.260	0.000	0.04		6.6	OK
37.000	S1A.13	69.319	-0.181	0.000	0.33		24.6	OK
37.001	S1A.14	69.003	-0.177	0.000	0.35		24.3	OK
37.002	S1A.15	68.988	0.003	0.000	0.39		22.6	SURCHARGED
38.000	S1A.16	69.145	-0.165	0.000	0.58		50.6	OK
39.000	S1A.17	69.113	-0.142	0.000	0.50		43.8	OK
38.001	S1A.18	69.073	-0.102	0.000	0.87		93.6	OK
38.002	INTERCEPTOR	69.025	0.000	0.000	1.08		93.0	OK
1.007	SOUT	68.987	0.137	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	120

Summary of Results for 120 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.534	-0.216	0.000	0.17		14.6	OK
1.001	R5	70.284	-0.201	0.000	0.24		20.4	OK
1.002	R6	69.964	-0.261	0.000	0.20		26.2	OK
1.003	R7	69.639	-0.361	0.000	0.09		26.2	OK
2.000	R8	69.565	-0.385	0.000	0.05		14.6	OK
3.000	R9	69.560	-0.390	0.000	0.04		13.2	OK
4.000	R4A	70.397	-0.228	0.000	0.13		13.2	OK
4.001	R4	70.126	-0.224	0.000	0.15		13.2	OK
4.002	R3	69.944	-0.181	0.000	0.33		20.2	OK
4.003	R2	69.719	-0.206	0.000	0.21		24.8	OK
5.000	Tank 1	69.750	-0.225	0.000	0.00		0.0	OK
5.001	S3	69.723	-0.252	0.000	0.00		0.4	OK
6.000	G1	69.931	-0.194	0.000	0.27		38.1	OK
7.000	G2	69.743	-0.032	0.000	0.28		3.1	OK
8.000	G3	69.923	-0.202	0.000	0.23		32.7	OK
9.000	G4	69.743	-0.032	0.000	0.28		3.1	OK
5.002	S2	69.723	-0.202	0.000	0.57		75.8	OK
10.000	Tank 2	69.617	-0.108	0.000	0.00		0.1	OK
5.003	S1	69.618	-0.182	0.000	0.65		75.5	OK
5.004	Interceptor	69.603	-0.185	0.000	0.65		75.7	OK
4.004	R1	69.533	-0.142	0.000	0.65		99.4	OK
1.004	HW05	69.530	-0.260	0.000	0.59		96.0	OK
11.000	S11	69.869	-0.381	0.000	0.06		11.3	OK
11.001	S10	69.540	-0.360	0.000	0.09		21.0	OK
1.005	S4	69.530	-0.180	0.000	0.40		106.9	OK
12.000	1B.1	70.332	-0.178	0.000	0.10		3.6	OK
12.001	1B.2	70.261	-0.299	0.000	0.09		12.1	OK
12.002	1B.3	69.998	-0.272	0.000	0.17		22.3	OK
12.003	1B.4	69.754	-0.451	0.000	0.12		31.5	OK
12.004	1B.5	69.659	-0.421	0.000	0.16		46.1	OK
12.005	1B.6	69.550	-0.365	0.000	0.18		48.0	OK
12.006	1B.7	69.530	-0.310	0.000	0.28		96.1	OK
13.000	1B.8	69.530	-0.245	0.000	0.07		5.4	OK
13.001	1B.9	69.530	-0.220	0.000	0.03		6.9	OK
12.007	1B.10	69.530	-0.170	0.000	0.43		149.9	OK
14.000	1B.11	70.093	-0.057	0.000	0.08		5.7	OK
15.000	1B.12	70.090	-0.060	0.000	0.05		6.0	OK
14.001	1B.13	70.088	0.388	0.000	0.12		4.8	SURCHARGED
12.008	S5	69.530	-0.070	0.000	0.85		154.6	OK
1.006	HW08	69.530	0.170	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.294	-0.206	0.000	0.21		15.9	OK
16.001	1B.15	69.030	-0.150	0.000	0.22		15.8	OK
16.002	1B.16	69.028	0.063	0.000	0.28		14.5	SURCHARGED

Summary of Results for 120 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.064	-0.216	0.000	0.33		29.9	OK
18.000	1B.18	69.064	-0.216	0.000	0.33		29.9	OK
17.001	1B.19	69.032	-0.143	0.000	0.55		59.4	OK
17.002	INTERCEPTOR	69.029	0.004	0.000	0.69		59.1	SURCHARGED
19.000	RE2.1	71.019	-0.216	0.000	0.17		12.7	OK
19.001	R2.7	70.795	-0.205	0.000	0.22		15.2	OK
19.002	R2.8	70.594	-0.206	0.000	0.21		15.1	OK
20.000	R2.10	70.833	-0.192	0.000	0.05		2.5	OK
19.003	R2.9	70.463	-0.237	0.000	0.29		39.4	OK
19.004	R2.11	70.088	-0.312	0.000	0.17		41.6	OK
21.000	R2.13	70.442	-0.158	0.000	0.19		13.4	OK
19.005	R2.12	70.013	0.013	0.000	0.36		54.4	SURCHARGED
19.006	R2.14	69.984	0.109	0.000	0.32		54.5	SURCHARGED
22.000	Tank 2.1	70.731	-0.019	0.000	0.01		0.1	OK
22.001	S2.23	70.732	-0.218	0.000	0.51		73.4	OK
23.000	G2.1	70.616	-0.064	0.000	0.10		1.3	FLOOD RISK
23.001	S2.22	70.609	-0.156	0.000	0.30		26.2	OK
22.002	S2.21	70.589	-0.311	0.000	0.42		98.9	OK
24.000	Tank 2.2	70.516	0.016	0.000	0.01		0.1	SURCHARGED
22.003	S2.20	70.516	-0.334	0.000	0.41		108.7	OK
25.000	G2.2	70.764	-0.186	0.000	0.07		7.4	OK
22.004	S2.19	70.318	-0.432	0.000	0.18		115.8	OK
26.000	G2.3	70.170	-0.180	0.000	0.07		2.1	OK
27.000	G2.4	70.519	-0.206	0.000	0.21		33.9	OK
26.001	S2.18	70.141	-0.259	0.000	0.21		35.9	OK
28.000	Tank 2.3	70.000	-0.175	0.000	0.00		0.1	OK
22.005	s2.17	70.000	-0.300	0.000	0.43		150.2	OK
22.006	Interceptor	69.988	-0.100	0.000	0.43		150.3	OK
19.007	S2.16	69.975	0.000	0.000	1.47		205.0	OK
19.008	S22.15	69.813	-0.137	0.000	0.95		205.3	OK
29.000	RE2.2	70.968	-0.157	0.000	0.20		8.1	OK
29.001	R2.6	70.779	-0.146	0.000	0.26		8.1	OK
29.002	R2.5	70.756	-0.194	0.000	0.27		19.8	OK
29.003	R2.4	70.387	-0.233	0.000	0.11		20.8	OK
29.004	S2.12	69.966	-0.284	0.000	0.16	1.9	24.8	OK
30.000	RE2.3	70.858	-0.142	0.000	0.29		12.3	OK
30.001	R2.3	70.602	-0.273	0.000	0.17		24.0	OK
30.002	R2.2	70.177	-0.373	0.000	0.07		25.0	OK
29.005	R2.1	69.941	-0.194	0.000	0.35		54.6	OK
29.006	S2.13	69.911	-0.084	0.000	0.37		58.1	OK
31.000	R2.19	70.995	-0.205	0.000	0.02		0.8	OK
31.001	R2.20	70.886	-0.239	0.000	0.09		8.4	OK
31.002	R2.21	70.482	-0.293	0.000	0.11		18.0	OK
31.003	R2.22	70.113	-0.287	0.000	0.13		20.4	OK
32.000	R2.18	70.676	-0.244	0.000	0.08		8.3	OK
32.001	R2.17	70.210	-0.295	0.000	0.10		19.1	OK
32.002	R2.16	69.885	-0.140	0.000	0.09		18.0	OK
29.007	R2.15	69.882	0.027	0.000	0.58		92.0	SURCHARGED
33.000	RE1A.1	70.206	-0.269	0.000	0.02		1.7	OK

Summary of Results for 120 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.016	-0.269	0.000	0.02		1.7	OK
33.002	S1A.3	69.889	-0.206	0.000	0.07		8.7	OK
33.003	S1A.4	69.884	-0.096	0.000	0.13		17.1	OK
34.000	S1A.5	70.014	-0.186	0.000	0.07		2.4	OK
34.001	S1A.6	69.950	-0.250	0.000	0.06		4.1	OK
34.002	S1A.7	69.906	-0.224	0.000	0.24		39.2	OK
34.003	S1A.8	69.890	-0.270	0.000	0.22		72.6	OK
33.004	S1A.9	69.876	-0.164	0.000	0.27		78.0	OK
35.000	S1A.10	69.933	-0.367	0.000	0.06		11.2	OK
35.001	S1A.11	69.867	-0.148	0.000	0.07		11.6	OK
35.002	INTERCEPTOR	69.864	-0.001	0.000	0.08		12.8	OK
36.000	S1A.21	70.161	-0.089	0.000	0.17		13.1	OK
36.001	S1A.20	70.151	0.536	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.860	-0.105	0.000	0.33		92.9	OK
33.006	S1A.19	69.848	-0.077	0.000	0.27		93.8	OK
29.008	R2.14	69.833	-0.017	0.000	1.21		180.0	OK
19.009	S2.24	69.663	-0.172	0.000	0.01		6.6	OK
19.010	S2.27	69.030	-0.220	0.000	0.04		6.7	OK
37.000	S1A.13	69.291	-0.209	0.000	0.20		15.0	OK
37.001	S1A.14	69.030	-0.150	0.000	0.21		14.9	OK
37.002	S1A.15	69.028	0.043	0.000	0.24		13.7	SURCHARGED
38.000	S1A.16	69.089	-0.221	0.000	0.35		31.0	OK
39.000	S1A.17	69.044	-0.211	0.000	0.31		26.9	OK
38.001	S1A.18	69.032	-0.143	0.000	0.54		57.6	OK
38.002	INTERCEPTOR	69.029	0.004	0.000	0.67		57.3	SURCHARGED
1.007	SOUT	69.028	0.178	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	360
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	3

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	180

Summary of Results for 180 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.522	-0.228	0.000	0.13		10.9	OK
1.001	R5	70.270	-0.215	0.000	0.18		15.3	OK
1.002	R6	69.947	-0.278	0.000	0.15		19.6	OK
1.003	R7	69.624	-0.376	0.000	0.06		19.6	OK
2.000	R8	69.573	-0.377	0.000	0.04		10.9	OK
3.000	R9	69.573	-0.377	0.000	0.03		9.9	OK
4.000	R4A	70.388	-0.237	0.000	0.10		9.9	OK
4.001	R4	70.116	-0.234	0.000	0.11		9.9	OK
4.002	R3	69.926	-0.199	0.000	0.25		15.1	OK
4.003	R2	69.705	-0.220	0.000	0.16		18.6	OK
5.000	Tank 1	69.750	-0.225	0.000	0.00		0.0	OK
5.001	S3	69.682	-0.293	0.000	0.00		0.2	OK
6.000	G1	69.917	-0.208	0.000	0.20		28.5	OK
7.000	G2	69.697	-0.078	0.000	0.21		2.3	OK
8.000	G3	69.909	-0.216	0.000	0.18		24.5	OK
9.000	G4	69.697	-0.078	0.000	0.21		2.3	OK
5.002	S2	69.682	-0.243	0.000	0.43		57.3	OK
10.000	Tank 2	69.574	-0.151	0.000	0.00		0.1	OK
5.003	S1	69.574	-0.226	0.000	0.49		57.2	OK
5.004	Interceptor	69.573	-0.215	0.000	0.49		57.1	OK
4.004	R1	69.573	-0.102	0.000	0.49		75.2	OK
1.004	HW05	69.573	-0.217	0.000	0.52		84.0	OK
11.000	S11	69.858	-0.392	0.000	0.04		8.2	OK
11.001	S10	69.573	-0.327	0.000	0.07		15.5	OK
1.005	S4	69.573	-0.137	0.000	0.35		93.2	OK
12.000	1B.1	70.325	-0.185	0.000	0.07		2.7	OK
12.001	1B.2	70.249	-0.311	0.000	0.07		9.0	OK
12.002	1B.3	69.983	-0.287	0.000	0.13		16.7	OK
12.003	1B.4	69.732	-0.473	0.000	0.09		23.6	OK
12.004	1B.5	69.628	-0.452	0.000	0.12		35.0	OK
12.005	1B.6	69.574	-0.341	0.000	0.14		36.2	OK
12.006	1B.7	69.574	-0.266	0.000	0.22		73.5	OK
13.000	1B.8	69.574	-0.201	0.000	0.06		4.1	OK
13.001	1B.9	69.574	-0.176	0.000	0.03		5.3	OK
12.007	1B.10	69.574	-0.126	0.000	0.33		114.9	OK
14.000	1B.11	70.091	-0.059	0.000	0.07		5.3	OK
15.000	1B.12	70.088	-0.062	0.000	0.04		5.0	OK
14.001	1B.13	70.086	0.386	0.000	0.12		4.9	SURCHARGED
12.008	S5	69.574	-0.026	0.000	0.66		119.1	OK
1.006	HW08	69.573	0.213	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.280	-0.220	0.000	0.16		11.9	OK
16.001	1B.15	69.053	-0.127	0.000	0.16		11.8	OK
16.002	1B.16	69.052	0.087	0.000	0.21		10.7	SURCHARGED

Summary of Results for 180 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.056	-0.224	0.000	0.25		22.4	OK
18.000	1B.18	69.056	-0.224	0.000	0.25		22.4	OK
17.001	1B.19	69.054	-0.121	0.000	0.42		44.8	OK
17.002	INTERCEPTOR	69.052	0.027	0.000	0.52		44.3	SURCHARGED
19.000	RE2.1	71.006	-0.229	0.000	0.13		9.5	OK
19.001	R2.7	70.781	-0.219	0.000	0.16		11.4	OK
19.002	R2.8	70.580	-0.220	0.000	0.16		11.4	OK
20.000	R2.10	70.828	-0.197	0.000	0.04		1.9	OK
19.003	R2.9	70.443	-0.257	0.000	0.22		29.5	OK
19.004	R2.11	70.062	-0.338	0.000	0.13		31.3	OK
21.000	R2.13	70.432	-0.168	0.000	0.14		10.0	OK
19.005	R2.12	69.980	-0.020	0.000	0.26		39.3	OK
19.006	R2.14	69.960	0.085	0.000	0.24		41.1	SURCHARGED
22.000	Tank 2.1	70.695	-0.055	0.000	0.00		0.1	OK
22.001	S2.23	70.695	-0.255	0.000	0.39		55.4	OK
23.000	G2.1	70.573	-0.107	0.000	0.08		1.0	FLOOD RISK
23.001	S2.22	70.567	-0.198	0.000	0.23		19.6	OK
22.002	S2.21	70.547	-0.353	0.000	0.32		74.5	OK
24.000	Tank 2.2	70.477	-0.023	0.000	0.01		0.1	OK
22.003	S2.20	70.477	-0.373	0.000	0.31		81.9	OK
25.000	G2.2	70.758	-0.192	0.000	0.05		5.6	OK
22.004	S2.19	70.295	-0.455	0.000	0.13		87.3	OK
26.000	G2.3	70.161	-0.189	0.000	0.05		1.5	OK
27.000	G2.4	70.505	-0.220	0.000	0.16		25.4	OK
26.001	S2.18	70.124	-0.276	0.000	0.16		26.9	OK
28.000	Tank 2.3	69.970	-0.205	0.000	0.00		0.1	OK
22.005	s2.17	69.973	-0.327	0.000	0.32		111.8	OK
22.006	Interceptor	69.963	-0.125	0.000	0.32		111.5	OK
19.007	S2.16	69.954	-0.021	0.000	1.08		149.8	OK
19.008	S22.15	69.719	-0.231	0.000	0.70		149.7	OK
29.000	RE2.2	70.958	-0.167	0.000	0.15		6.0	OK
29.001	R2.6	70.766	-0.159	0.000	0.19		6.0	OK
29.002	R2.5	70.741	-0.209	0.000	0.20		14.8	OK
29.003	R2.4	70.379	-0.241	0.000	0.09		15.5	OK
29.004	S2.12	69.919	-0.331	0.000	0.12	0.9	18.9	OK
30.000	RE2.3	70.846	-0.154	0.000	0.22		9.2	OK
30.001	R2.3	70.587	-0.288	0.000	0.12		18.0	OK
30.002	R2.2	70.165	-0.385	0.000	0.05		18.7	OK
29.005	R2.1	69.861	-0.274	0.000	0.28		42.8	OK
29.006	S2.13	69.788	-0.207	0.000	0.31		47.4	OK
31.000	R2.19	70.990	-0.210	0.000	0.01		0.6	OK
31.001	R2.20	70.876	-0.249	0.000	0.07		6.3	OK
31.002	R2.21	70.471	-0.304	0.000	0.08		13.4	OK
31.003	R2.22	70.102	-0.298	0.000	0.09		15.2	OK
32.000	R2.18	70.667	-0.253	0.000	0.06		6.2	OK
32.001	R2.17	70.199	-0.306	0.000	0.08		14.3	OK
32.002	R2.16	69.763	-0.262	0.000	0.07		14.1	OK
29.007	R2.15	69.760	-0.095	0.000	0.48		75.6	OK
33.000	RE1A.1	70.201	-0.274	0.000	0.02		1.3	OK

Summary of Results for 180 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.010	-0.275	0.000	0.02		1.3	OK
33.002	S1A.3	69.774	-0.321	0.000	0.06		7.4	OK
33.003	S1A.4	69.764	-0.216	0.000	0.11		13.5	OK
34.000	S1A.5	70.008	-0.192	0.000	0.05		1.8	OK
34.001	S1A.6	69.939	-0.261	0.000	0.04		3.1	OK
34.002	S1A.7	69.836	-0.294	0.000	0.18		30.0	OK
34.003	S1A.8	69.790	-0.370	0.000	0.17		56.3	OK
33.004	S1A.9	69.757	-0.283	0.000	0.23		67.8	OK
35.000	S1A.10	69.913	-0.387	0.000	0.05		8.4	OK
35.001	S1A.11	69.746	-0.269	0.000	0.05		8.1	OK
35.002	INTERCEPTOR	69.743	-0.122	0.000	0.05		8.2	OK
36.000	S1A.21	70.160	-0.090	0.000	0.16		12.3	OK
36.001	S1A.20	70.150	0.535	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.741	-0.224	0.000	0.29		80.5	OK
33.006	S1A.19	69.731	-0.194	0.000	0.23		80.6	OK
29.008	R2.14	69.718	-0.132	0.000	1.04		155.6	OK
19.009	S2.24	69.701	-0.134	0.000	0.01		6.7	OK
19.010	S2.27	69.054	-0.196	0.000	0.04		6.8	OK
37.000	S1A.13	69.277	-0.223	0.000	0.15		11.2	OK
37.001	S1A.14	69.053	-0.127	0.000	0.16		11.2	OK
37.002	S1A.15	69.052	0.067	0.000	0.18		10.3	SURCHARGED
38.000	S1A.16	69.066	-0.244	0.000	0.26		23.2	OK
39.000	S1A.17	69.056	-0.199	0.000	0.23		20.1	OK
38.001	S1A.18	69.054	-0.121	0.000	0.40		43.3	OK
38.002	INTERCEPTOR	69.052	0.027	0.000	0.50		42.8	SURCHARGED
1.007	SOUT	69.051	0.201	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	480
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	4

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	240

Summary of Results for 240 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.515	-0.235	0.000	0.10		8.8	OK
1.001	R5	70.261	-0.224	0.000	0.15		12.4	OK
1.002	R6	69.936	-0.289	0.000	0.12		15.9	OK
1.003	R7	69.616	-0.384	0.000	0.05		15.9	OK
2.000	R8	69.607	-0.343	0.000	0.03		8.8	OK
3.000	R9	69.607	-0.343	0.000	0.03		8.0	OK
4.000	R4A	70.381	-0.244	0.000	0.08		8.0	OK
4.001	R4	70.110	-0.240	0.000	0.09		8.0	OK
4.002	R3	69.916	-0.209	0.000	0.20		12.2	OK
4.003	R2	69.697	-0.228	0.000	0.13		15.0	OK
5.000	Tank 1	69.750	-0.225	0.000	0.00		0.0	OK
5.001	S3	69.658	-0.317	0.000	0.00		0.1	OK
6.000	G1	69.906	-0.219	0.000	0.16		23.0	OK
7.000	G2	69.675	-0.100	0.000	0.17		1.9	OK
8.000	G3	69.900	-0.225	0.000	0.14		19.7	OK
9.000	G4	69.675	-0.100	0.000	0.17		1.9	OK
5.002	S2	69.658	-0.267	0.000	0.35		46.3	OK
10.000	Tank 2	69.606	-0.119	0.000	0.00		0.0	OK
5.003	S1	69.606	-0.194	0.000	0.40		46.3	OK
5.004	Interceptor	69.606	-0.182	0.000	0.40		46.3	OK
4.004	R1	69.607	-0.068	0.000	0.40		60.9	OK
1.004	HW05	69.607	-0.183	0.000	0.44		71.9	OK
11.000	S11	69.852	-0.398	0.000	0.03		6.5	OK
11.001	S10	69.607	-0.293	0.000	0.05		12.5	OK
1.005	S4	69.607	-0.103	0.000	0.30		80.8	OK
12.000	1B.1	70.320	-0.190	0.000	0.06		2.2	OK
12.001	1B.2	70.242	-0.318	0.000	0.06		7.3	OK
12.002	1B.3	69.975	-0.295	0.000	0.10		13.5	OK
12.003	1B.4	69.718	-0.487	0.000	0.07		19.1	OK
12.004	1B.5	69.612	-0.468	0.000	0.10		28.3	OK
12.005	1B.6	69.607	-0.308	0.000	0.11		29.0	OK
12.006	1B.7	69.607	-0.233	0.000	0.17		59.3	OK
13.000	1B.8	69.607	-0.168	0.000	0.04		3.3	OK
13.001	1B.9	69.607	-0.143	0.000	0.02		4.2	OK
12.007	1B.10	69.607	-0.093	0.000	0.26		91.1	OK
14.000	1B.11	70.085	-0.065	0.000	0.07		5.0	OK
15.000	1B.12	70.082	-0.068	0.000	0.03		4.3	OK
14.001	1B.13	70.080	0.380	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.607	0.007	0.000	0.52		95.0	SURCHARGED
1.006	HW08	69.607	0.247	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.271	-0.229	0.000	0.13		9.6	OK
16.001	1B.15	69.068	-0.112	0.000	0.13		9.5	OK
16.002	1B.16	69.067	0.102	0.000	0.17		8.6	SURCHARGED

Summary of Results for 240 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.071	-0.209	0.000	0.20		18.1	OK
18.000	1B.18	69.071	-0.209	0.000	0.20		18.1	OK
17.001	1B.19	69.069	-0.106	0.000	0.34		36.1	OK
17.002	INTERCEPTOR	69.068	0.043	0.000	0.42		35.7	SURCHARGED
19.000	RE2.1	70.999	-0.236	0.000	0.10		7.7	OK
19.001	R2.7	70.772	-0.228	0.000	0.13		9.2	OK
19.002	R2.8	70.572	-0.228	0.000	0.13		9.2	OK
20.000	R2.10	70.826	-0.199	0.000	0.03		1.5	OK
19.003	R2.9	70.430	-0.270	0.000	0.18		23.9	OK
19.004	R2.11	70.047	-0.353	0.000	0.10		25.4	OK
21.000	R2.13	70.426	-0.174	0.000	0.12		8.1	OK
19.005	R2.12	69.842	-0.158	0.000	0.22		33.1	OK
19.006	R2.14	69.825	-0.050	0.000	0.20		33.1	OK
22.000	Tank 2.1	70.673	-0.077	0.000	0.00		0.1	OK
22.001	S2.23	70.673	-0.277	0.000	0.31		44.8	OK
23.000	G2.1	70.560	-0.120	0.000	0.06		0.8	FLOOD RISK
23.001	S2.22	70.544	-0.221	0.000	0.18		15.9	OK
22.002	S2.21	70.521	-0.379	0.000	0.26		60.6	OK
24.000	Tank 2.2	70.452	-0.048	0.000	0.00		0.1	OK
22.003	S2.20	70.452	-0.398	0.000	0.25		66.7	OK
25.000	G2.2	70.754	-0.196	0.000	0.04		4.5	OK
22.004	S2.19	70.281	-0.469	0.000	0.11		71.1	OK
26.000	G2.3	70.156	-0.194	0.000	0.04		1.2	OK
27.000	G2.4	70.496	-0.229	0.000	0.13		20.5	OK
26.001	S2.18	70.113	-0.287	0.000	0.13		21.7	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.910	-0.390	0.000	0.27		92.5	OK
22.006	Interceptor	69.827	-0.261	0.000	0.27		92.4	OK
19.007	S2.16	69.819	-0.156	0.000	0.90		125.2	OK
19.008	S22.15	69.730	-0.220	0.000	0.58		125.1	OK
29.000	RE2.2	70.952	-0.173	0.000	0.12		4.9	OK
29.001	R2.6	70.759	-0.166	0.000	0.15		4.9	OK
29.002	R2.5	70.731	-0.219	0.000	0.16		12.0	OK
29.003	R2.4	70.372	-0.248	0.000	0.07		12.6	OK
29.004	S2.12	69.903	-0.347	0.000	0.10	0.6	15.4	OK
30.000	RE2.3	70.838	-0.162	0.000	0.18		7.4	OK
30.001	R2.3	70.579	-0.296	0.000	0.10		14.5	OK
30.002	R2.2	70.159	-0.391	0.000	0.04		15.1	OK
29.005	R2.1	69.834	-0.301	0.000	0.22		34.7	OK
29.006	S2.13	69.745	-0.250	0.000	0.25		38.9	OK
31.000	R2.19	70.987	-0.213	0.000	0.01		0.5	OK
31.001	R2.20	70.870	-0.255	0.000	0.06		5.1	OK
31.002	R2.21	70.463	-0.312	0.000	0.07		10.9	OK
31.003	R2.22	70.093	-0.307	0.000	0.08		12.3	OK
32.000	R2.18	70.662	-0.258	0.000	0.05		5.0	OK
32.001	R2.17	70.190	-0.315	0.000	0.06		11.5	OK
32.002	R2.16	69.733	-0.292	0.000	0.06		11.5	OK
29.007	R2.15	69.733	-0.122	0.000	0.39		62.0	OK
33.000	RE1A.1	70.196	-0.279	0.000	0.01		1.1	OK

Summary of Results for 240 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.005	-0.280	0.000	0.01		1.0	OK
33.002	S1A.3	69.740	-0.355	0.000	0.05		6.2	OK
33.003	S1A.4	69.733	-0.247	0.000	0.09		11.1	OK
34.000	S1A.5	70.005	-0.195	0.000	0.04		1.4	OK
34.001	S1A.6	69.936	-0.264	0.000	0.03		2.5	OK
34.002	S1A.7	69.813	-0.317	0.000	0.15		24.4	OK
34.003	S1A.8	69.754	-0.406	0.000	0.14		46.0	OK
33.004	S1A.9	69.733	-0.307	0.000	0.19		56.2	OK
35.000	S1A.10	69.907	-0.393	0.000	0.04		6.8	OK
35.001	S1A.11	69.732	-0.283	0.000	0.04		6.7	OK
35.002	INTERCEPTOR	69.732	-0.133	0.000	0.04		6.7	OK
36.000	S1A.21	70.156	-0.094	0.000	0.15		11.0	OK
36.001	S1A.20	70.146	0.531	0.000	0.32		5.0	SURCHARGED
33.005	S1A.12	69.732	-0.233	0.000	0.24		67.4	OK
33.006	S1A.19	69.731	-0.194	0.000	0.19		67.5	OK
29.008	R2.14	69.731	-0.119	0.000	0.87		129.1	OK
19.009	S2.24	69.730	-0.105	0.000	0.01		6.7	OK
19.010	S2.27	69.069	-0.181	0.000	0.04		6.8	OK
37.000	S1A.13	69.269	-0.231	0.000	0.12		9.1	OK
37.001	S1A.14	69.069	-0.111	0.000	0.13		9.0	OK
37.002	S1A.15	69.067	0.082	0.000	0.14		8.1	SURCHARGED
38.000	S1A.16	69.071	-0.239	0.000	0.21		18.7	OK
39.000	S1A.17	69.070	-0.185	0.000	0.18		16.3	OK
38.001	S1A.18	69.069	-0.106	0.000	0.32		34.8	OK
38.002	INTERCEPTOR	69.067	0.042	0.000	0.40		34.4	SURCHARGED
1.007	SOUT	69.067	0.217	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	720
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	6

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	360

Summary of Results for 360 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.505	-0.245	0.000	0.08		6.5	OK
1.001	R5	70.250	-0.235	0.000	0.11		9.1	OK
1.002	R6	69.925	-0.300	0.000	0.09		11.8	OK
1.003	R7	69.654	-0.346	0.000	0.04		11.8	OK
2.000	R8	69.654	-0.296	0.000	0.02		6.5	OK
3.000	R9	69.654	-0.296	0.000	0.02		5.9	OK
4.000	R4A	70.372	-0.253	0.000	0.06		5.9	OK
4.001	R4	70.100	-0.250	0.000	0.07		5.9	OK
4.002	R3	69.902	-0.223	0.000	0.15		9.0	OK
4.003	R2	69.687	-0.238	0.000	0.10		11.1	OK
5.000	Tank 1	69.750	-0.225	0.000	0.00		0.0	OK
5.001	S3	69.654	-0.321	0.000	0.00		0.0	OK
6.000	G1	69.894	-0.231	0.000	0.12		17.0	OK
7.000	G2	69.661	-0.114	0.000	0.12		1.4	OK
8.000	G3	69.889	-0.236	0.000	0.10		14.6	OK
9.000	G4	69.661	-0.114	0.000	0.12		1.4	OK
5.002	S2	69.654	-0.271	0.000	0.26		34.3	OK
10.000	Tank 2	69.654	-0.071	0.000	0.00		0.0	OK
5.003	S1	69.654	-0.146	0.000	0.29		34.3	OK
5.004	Interceptor	69.654	-0.134	0.000	0.29		34.3	OK
4.004	R1	69.654	-0.021	0.000	0.30		45.3	OK
1.004	HW05	69.654	-0.136	0.000	0.32		51.2	OK
11.000	S11	69.847	-0.403	0.000	0.02		4.8	OK
11.001	S10	69.654	-0.246	0.000	0.04		9.2	OK
1.005	S4	69.654	-0.056	0.000	0.22		59.3	OK
12.000	1B.1	70.315	-0.195	0.000	0.04		1.6	OK
12.001	1B.2	70.234	-0.326	0.000	0.04		5.4	OK
12.002	1B.3	69.963	-0.307	0.000	0.08		10.0	OK
12.003	1B.4	69.699	-0.506	0.000	0.05		14.1	OK
12.004	1B.5	69.654	-0.426	0.000	0.07		20.9	OK
12.005	1B.6	69.655	-0.260	0.000	0.08		21.1	OK
12.006	1B.7	69.655	-0.185	0.000	0.13		43.1	OK
13.000	1B.8	69.655	-0.120	0.000	0.03		2.4	OK
13.001	1B.9	69.655	-0.095	0.000	0.01		3.0	OK
12.007	1B.10	69.655	-0.045	0.000	0.19		64.8	OK
14.000	1B.11	70.071	-0.079	0.000	0.06		4.6	OK
15.000	1B.12	70.068	-0.082	0.000	0.03		3.5	OK
14.001	1B.13	70.066	0.366	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.655	0.055	0.000	0.37		68.1	SURCHARGED
1.006	HW08	69.654	0.294	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.262	-0.238	0.000	0.09		7.1	OK
16.001	1B.15	69.087	-0.093	0.000	0.10		7.0	OK
16.002	1B.16	69.086	0.121	0.000	0.13		6.4	SURCHARGED

Summary of Results for 360 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.089	-0.191	0.000	0.15		13.3	OK
18.000	1B.18	69.089	-0.191	0.000	0.15		13.3	OK
17.001	1B.19	69.087	-0.088	0.000	0.24		25.7	OK
17.002	INTERCEPTOR	69.086	0.061	0.000	0.30		25.4	SURCHARGED
19.000	RE2.1	70.990	-0.245	0.000	0.08		5.7	OK
19.001	R2.7	70.763	-0.237	0.000	0.10		6.8	OK
19.002	R2.8	70.562	-0.238	0.000	0.10		6.8	OK
20.000	R2.10	70.823	-0.202	0.000	0.02		1.1	OK
19.003	R2.9	70.414	-0.286	0.000	0.13		17.7	OK
19.004	R2.11	70.033	-0.367	0.000	0.08		18.8	OK
21.000	R2.13	70.419	-0.181	0.000	0.09		6.0	OK
19.005	R2.12	69.775	-0.225	0.000	0.16		24.6	OK
19.006	R2.14	69.774	-0.101	0.000	0.15		24.7	OK
22.000	Tank 2.1	70.647	-0.103	0.000	0.00		0.0	OK
22.001	S2.23	70.647	-0.303	0.000	0.23		33.2	OK
23.000	G2.1	70.551	-0.129	0.000	0.05		0.6	FLOOD RISK
23.001	S2.22	70.516	-0.249	0.000	0.14		11.8	OK
22.002	S2.21	70.490	-0.410	0.000	0.19		44.9	OK
24.000	Tank 2.2	70.423	-0.077	0.000	0.00		0.0	OK
22.003	S2.20	70.424	-0.426	0.000	0.18		49.3	OK
25.000	G2.2	70.751	-0.199	0.000	0.03		3.3	OK
22.004	S2.19	70.263	-0.487	0.000	0.08		52.6	OK
26.000	G2.3	70.151	-0.199	0.000	0.03		0.9	OK
27.000	G2.4	70.487	-0.238	0.000	0.10		15.1	OK
26.001	S2.18	70.102	-0.298	0.000	0.09		16.0	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.881	-0.419	0.000	0.20		68.6	OK
22.006	Interceptor	69.774	-0.314	0.000	0.20		68.5	OK
19.007	S2.16	69.773	-0.202	0.000	0.67		93.1	OK
19.008	S22.15	69.773	-0.177	0.000	0.43		93.2	OK
29.000	RE2.2	70.945	-0.180	0.000	0.09		3.6	OK
29.001	R2.6	70.750	-0.175	0.000	0.11		3.6	OK
29.002	R2.5	70.719	-0.231	0.000	0.12		8.8	OK
29.003	R2.4	70.363	-0.257	0.000	0.05		9.3	OK
29.004	S2.12	69.886	-0.364	0.000	0.07	0.4	11.4	OK
30.000	RE2.3	70.829	-0.171	0.000	0.13		5.5	OK
30.001	R2.3	70.567	-0.308	0.000	0.07		10.7	OK
30.002	R2.2	70.151	-0.399	0.000	0.03		11.2	OK
29.005	R2.1	69.808	-0.327	0.000	0.17		25.9	OK
29.006	S2.13	69.776	-0.219	0.000	0.19		29.0	OK
31.000	R2.19	70.984	-0.216	0.000	0.01		0.3	OK
31.001	R2.20	70.864	-0.261	0.000	0.04		3.7	OK
31.002	R2.21	70.453	-0.322	0.000	0.05		8.0	OK
31.003	R2.22	70.082	-0.318	0.000	0.06		9.1	OK
32.000	R2.18	70.656	-0.264	0.000	0.04		3.7	OK
32.001	R2.17	70.181	-0.324	0.000	0.05		8.5	OK
32.002	R2.16	69.775	-0.250	0.000	0.04		8.5	OK
29.007	R2.15	69.775	-0.080	0.000	0.29		46.3	OK
33.000	RE1A.1	70.190	-0.285	0.000	0.01		0.8	OK

Summary of Results for 360 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.000	-0.285	0.000	0.01		0.8	OK
33.002	S1A.3	69.775	-0.320	0.000	0.04		4.7	OK
33.003	S1A.4	69.775	-0.205	0.000	0.07		8.4	OK
34.000	S1A.5	70.001	-0.199	0.000	0.03		1.1	OK
34.001	S1A.6	69.932	-0.268	0.000	0.03		1.8	OK
34.002	S1A.7	69.785	-0.345	0.000	0.11		18.1	OK
34.003	S1A.8	69.775	-0.385	0.000	0.10		34.2	OK
33.004	S1A.9	69.775	-0.265	0.000	0.15		42.2	OK
35.000	S1A.10	69.900	-0.400	0.000	0.03		5.1	OK
35.001	S1A.11	69.775	-0.240	0.000	0.03		5.0	OK
35.002	INTERCEPTOR	69.775	-0.090	0.000	0.03		5.0	OK
36.000	S1A.21	70.145	-0.105	0.000	0.12		9.0	OK
36.001	S1A.20	70.135	0.520	0.000	0.32		5.0	SURCHARGED
33.005	S1A.12	69.775	-0.190	0.000	0.19		52.0	OK
33.006	S1A.19	69.774	-0.151	0.000	0.15		52.0	OK
29.008	R2.14	69.773	-0.077	0.000	0.66		98.3	OK
19.009	S2.24	69.772	-0.063	0.000	0.01		6.7	OK
19.010	S2.27	69.088	-0.162	0.000	0.04		6.7	OK
37.000	S1A.13	69.260	-0.240	0.000	0.09		6.7	OK
37.001	S1A.14	69.087	-0.093	0.000	0.10		6.7	OK
37.002	S1A.15	69.086	0.101	0.000	0.10		6.0	SURCHARGED
38.000	S1A.16	69.089	-0.221	0.000	0.16		13.8	OK
39.000	S1A.17	69.088	-0.167	0.000	0.13		11.9	OK
38.001	S1A.18	69.087	-0.088	0.000	0.23		25.1	OK
38.002	INTERCEPTOR	69.086	0.061	0.000	0.29		24.8	SURCHARGED
1.007	SOUT	69.085	0.235	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	960
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	8

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	480

Summary of Results for 480 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.498	-0.252	0.000	0.06		5.2	OK
1.001	R5	70.244	-0.241	0.000	0.09		7.4	OK
1.002	R6	69.916	-0.309	0.000	0.07		9.5	OK
1.003	R7	69.688	-0.312	0.000	0.03		9.5	OK
2.000	R8	69.688	-0.262	0.000	0.02		5.2	OK
3.000	R9	69.688	-0.262	0.000	0.02		4.7	OK
4.000	R4A	70.367	-0.258	0.000	0.05		4.7	OK
4.001	R4	70.094	-0.256	0.000	0.05		4.7	OK
4.002	R3	69.894	-0.231	0.000	0.12		7.3	OK
4.003	R2	69.688	-0.237	0.000	0.08		9.0	OK
5.000	Tank 1	69.750	-0.225	0.000	0.00		0.0	OK
5.001	S3	69.688	-0.287	0.000	0.00		0.0	OK
6.000	G1	69.888	-0.237	0.000	0.10		13.7	OK
7.000	G2	69.688	-0.087	0.000	0.10		1.1	OK
8.000	G3	69.883	-0.242	0.000	0.08		11.7	OK
9.000	G4	69.688	-0.087	0.000	0.10		1.1	OK
5.002	S2	69.688	-0.237	0.000	0.21		27.7	OK
10.000	Tank 2	69.688	-0.037	0.000	0.00		0.0	OK
5.003	S1	69.688	-0.112	0.000	0.24		27.7	OK
5.004	Interceptor	69.688	-0.100	0.000	0.24		27.7	OK
4.004	R1	69.688	0.013	0.000	0.24		36.4	SURCHARGED
1.004	HW05	69.689	-0.101	0.000	0.24		38.1	OK
11.000	S11	69.840	-0.410	0.000	0.02		3.8	OK
11.001	S10	69.689	-0.211	0.000	0.03		7.3	OK
1.005	S4	69.689	-0.021	0.000	0.16		44.3	OK
12.000	1B.1	70.312	-0.198	0.000	0.04		1.3	OK
12.001	1B.2	70.229	-0.331	0.000	0.03		4.3	OK
12.002	1B.3	69.955	-0.315	0.000	0.06		8.0	OK
12.003	1B.4	69.689	-0.516	0.000	0.04		11.4	OK
12.004	1B.5	69.689	-0.391	0.000	0.06		16.9	OK
12.005	1B.6	69.689	-0.226	0.000	0.06		16.8	OK
12.006	1B.7	69.689	-0.151	0.000	0.10		34.3	OK
13.000	1B.8	69.689	-0.086	0.000	0.03		2.0	OK
13.001	1B.9	69.689	-0.061	0.000	0.01		2.4	OK
12.007	1B.10	69.689	-0.011	0.000	0.15		51.4	OK
14.000	1B.11	70.054	-0.096	0.000	0.06		4.1	OK
15.000	1B.12	70.051	-0.099	0.000	0.02		2.9	OK
14.001	1B.13	70.049	0.349	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.689	0.089	0.000	0.30		54.9	SURCHARGED
1.006	HW08	69.689	0.329	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.255	-0.245	0.000	0.08		5.7	OK
16.001	1B.15	69.096	-0.084	0.000	0.08		5.7	OK
16.002	1B.16	69.095	0.130	0.000	0.10		5.2	SURCHARGED

Summary of Results for 480 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.098	-0.182	0.000	0.12		10.7	OK
18.000	1B.18	69.098	-0.182	0.000	0.12		10.7	OK
17.001	1B.19	69.097	-0.078	0.000	0.19		20.6	OK
17.002	INTERCEPTOR	69.096	0.071	0.000	0.24		20.4	SURCHARGED
19.000	RE2.1	70.983	-0.252	0.000	0.06		4.6	OK
19.001	R2.7	70.756	-0.244	0.000	0.08		5.5	OK
19.002	R2.8	70.555	-0.245	0.000	0.08		5.5	OK
20.000	R2.10	70.819	-0.206	0.000	0.02		0.9	OK
19.003	R2.9	70.406	-0.294	0.000	0.10		14.3	OK
19.004	R2.11	70.023	-0.377	0.000	0.06		15.2	OK
21.000	R2.13	70.414	-0.186	0.000	0.07		4.8	OK
19.005	R2.12	69.805	-0.195	0.000	0.13		19.9	OK
19.006	R2.14	69.805	-0.070	0.000	0.12		19.9	OK
22.000	Tank 2.1	70.631	-0.119	0.000	0.00		0.0	OK
22.001	S2.23	70.631	-0.319	0.000	0.19		26.8	OK
23.000	G2.1	70.549	-0.131	0.000	0.04		0.5	FLOOD RISK
23.001	S2.22	70.499	-0.266	0.000	0.11		9.5	OK
22.002	S2.21	70.470	-0.430	0.000	0.15		36.3	OK
24.000	Tank 2.2	70.404	-0.096	0.000	0.00		0.0	OK
22.003	S2.20	70.404	-0.446	0.000	0.15		40.0	OK
25.000	G2.2	70.749	-0.201	0.000	0.02		2.7	OK
22.004	S2.19	70.249	-0.501	0.000	0.06		42.6	OK
26.000	G2.3	70.149	-0.201	0.000	0.03		0.7	OK
27.000	G2.4	70.480	-0.245	0.000	0.08		12.2	OK
26.001	S2.18	70.093	-0.307	0.000	0.08		12.9	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.860	-0.440	0.000	0.16		55.5	OK
22.006	Interceptor	69.805	-0.283	0.000	0.16		55.5	OK
19.007	S2.16	69.805	-0.170	0.000	0.54		75.3	OK
19.008	S22.15	69.804	-0.146	0.000	0.35		75.3	OK
29.000	RE2.2	70.940	-0.185	0.000	0.07		2.9	OK
29.001	R2.6	70.746	-0.179	0.000	0.09		2.9	OK
29.002	R2.5	70.712	-0.238	0.000	0.10		7.1	OK
29.003	R2.4	70.359	-0.261	0.000	0.04		7.5	OK
29.004	S2.12	69.875	-0.375	0.000	0.06	0.3	9.3	OK
30.000	RE2.3	70.823	-0.177	0.000	0.10		4.4	OK
30.001	R2.3	70.559	-0.316	0.000	0.06		8.7	OK
30.002	R2.2	70.147	-0.403	0.000	0.02		9.0	OK
29.005	R2.1	69.807	-0.328	0.000	0.14		20.9	OK
29.006	S2.13	69.807	-0.188	0.000	0.15		23.4	OK
31.000	R2.19	70.982	-0.218	0.000	0.01		0.3	OK
31.001	R2.20	70.860	-0.265	0.000	0.03		3.0	OK
31.002	R2.21	70.448	-0.327	0.000	0.04		6.5	OK
31.003	R2.22	70.076	-0.324	0.000	0.05		7.3	OK
32.000	R2.18	70.653	-0.267	0.000	0.03		3.0	OK
32.001	R2.17	70.176	-0.329	0.000	0.04		6.9	OK
32.002	R2.16	69.806	-0.219	0.000	0.04		6.9	OK
29.007	R2.15	69.806	-0.049	0.000	0.23		37.2	OK
33.000	RE1A.1	70.187	-0.288	0.000	0.01		0.6	OK

Summary of Results for 480 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	69.997	-0.288	0.000	0.01		0.6	OK
33.002	S1A.3	69.807	-0.288	0.000	0.03		3.8	OK
33.003	S1A.4	69.806	-0.174	0.000	0.05		6.8	OK
34.000	S1A.5	69.999	-0.201	0.000	0.03		0.9	OK
34.001	S1A.6	69.929	-0.271	0.000	0.02		1.5	OK
34.002	S1A.7	69.807	-0.323	0.000	0.09		14.6	OK
34.003	S1A.8	69.807	-0.353	0.000	0.08		27.5	OK
33.004	S1A.9	69.807	-0.233	0.000	0.12		33.8	OK
35.000	S1A.10	69.896	-0.404	0.000	0.02		4.1	OK
35.001	S1A.11	69.806	-0.209	0.000	0.03		4.0	OK
35.002	INTERCEPTOR	69.806	-0.059	0.000	0.03		4.0	OK
36.000	S1A.21	70.130	-0.120	0.000	0.11		8.0	OK
36.001	S1A.20	70.121	0.506	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.806	-0.159	0.000	0.15		42.4	OK
33.006	S1A.19	69.806	-0.119	0.000	0.12		42.3	OK
29.008	R2.14	69.805	-0.045	0.000	0.53		78.7	OK
19.009	S2.24	69.804	-0.031	0.000	0.01		6.7	OK
19.010	S2.27	69.098	-0.152	0.000	0.04		6.7	OK
37.000	S1A.13	69.253	-0.247	0.000	0.07		5.4	OK
37.001	S1A.14	69.096	-0.084	0.000	0.08		5.4	OK
37.002	S1A.15	69.096	0.111	0.000	0.08		4.9	SURCHARGED
38.000	S1A.16	69.098	-0.212	0.000	0.13		11.1	OK
39.000	S1A.17	69.098	-0.157	0.000	0.11		9.5	OK
38.001	S1A.18	69.097	-0.078	0.000	0.19		20.1	OK
38.002	INTERCEPTOR	69.096	0.071	0.000	0.23		19.9	SURCHARGED
1.007	SOUT	69.095	0.245	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	1200
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	10

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	600

Summary of Results for 600 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.494	-0.256	0.000	0.05		4.4	OK
1.001	R5	70.238	-0.247	0.000	0.07		6.2	OK
1.002	R6	69.910	-0.315	0.000	0.06		8.0	OK
1.003	R7	69.716	-0.284	0.000	0.03		8.0	OK
2.000	R8	69.716	-0.234	0.000	0.02		4.4	OK
3.000	R9	69.716	-0.234	0.000	0.01		4.0	OK
4.000	R4A	70.363	-0.262	0.000	0.04		4.0	OK
4.001	R4	70.091	-0.259	0.000	0.04		4.0	OK
4.002	R3	69.889	-0.236	0.000	0.10		6.2	OK
4.003	R2	69.716	-0.209	0.000	0.07		7.6	OK
5.000	Tank 1	69.750	-0.225	0.000	0.00		0.0	OK
5.001	S3	69.716	-0.259	0.000	0.00		0.0	OK
6.000	G1	69.883	-0.242	0.000	0.08		11.6	OK
7.000	G2	69.716	-0.059	0.000	0.09		1.0	OK
8.000	G3	69.877	-0.248	0.000	0.07		9.9	OK
9.000	G4	69.716	-0.059	0.000	0.09		1.0	OK
5.002	S2	69.716	-0.209	0.000	0.18		23.4	OK
10.000	Tank 2	69.716	-0.009	0.000	0.00		0.0	OK
5.003	S1	69.716	-0.084	0.000	0.20		23.4	OK
5.004	Interceptor	69.716	-0.072	0.000	0.20		23.4	OK
4.004	R1	69.716	0.041	0.000	0.20		30.7	SURCHARGED
1.004	HW05	69.716	-0.074	0.000	0.19		30.0	OK
11.000	S11	69.834	-0.416	0.000	0.02		3.2	OK
11.001	S10	69.716	-0.184	0.000	0.03		6.2	OK
1.005	S4	69.716	0.006	0.000	0.13		34.6	SURCHARGED
12.000	1B.1	70.310	-0.200	0.000	0.03		1.1	OK
12.001	1B.2	70.226	-0.334	0.000	0.03		3.7	OK
12.002	1B.3	69.949	-0.321	0.000	0.05		6.8	OK
12.003	1B.4	69.716	-0.489	0.000	0.04		9.6	OK
12.004	1B.5	69.716	-0.364	0.000	0.05		14.3	OK
12.005	1B.6	69.716	-0.199	0.000	0.05		14.1	OK
12.006	1B.7	69.716	-0.124	0.000	0.08		28.8	OK
13.000	1B.8	69.716	-0.059	0.000	0.02		1.7	OK
13.001	1B.9	69.717	-0.033	0.000	0.01		2.0	OK
12.007	1B.10	69.717	0.017	0.000	0.13		43.4	SURCHARGED
14.000	1B.11	70.036	-0.114	0.000	0.05		4.1	OK
15.000	1B.12	70.033	-0.117	0.000	0.02		2.7	OK
14.001	1B.13	70.031	0.331	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.717	0.117	0.000	0.26		47.2	SURCHARGED
1.006	HW08	69.716	0.356	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.249	-0.251	0.000	0.06		4.8	OK
16.001	1B.15	69.101	-0.079	0.000	0.07		4.8	OK
16.002	1B.16	69.100	0.135	0.000	0.09		4.4	SURCHARGED

Summary of Results for 600 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.102	-0.178	0.000	0.10		9.0	OK
18.000	1B.18	69.102	-0.178	0.000	0.10		9.0	OK
17.001	1B.19	69.101	-0.074	0.000	0.16		17.3	OK
17.002	INTERCEPTOR	69.100	0.075	0.000	0.20		17.2	SURCHARGED
19.000	RE2.1	70.979	-0.256	0.000	0.05		3.9	OK
19.001	R2.7	70.750	-0.250	0.000	0.07		4.6	OK
19.002	R2.8	70.550	-0.250	0.000	0.07		4.6	OK
20.000	R2.10	70.816	-0.209	0.000	0.02		0.8	OK
19.003	R2.9	70.400	-0.300	0.000	0.09		12.1	OK
19.004	R2.11	70.016	-0.384	0.000	0.05		12.8	OK
21.000	R2.13	70.410	-0.190	0.000	0.06		4.1	OK
19.005	R2.12	69.829	-0.171	0.000	0.11		16.9	OK
19.006	R2.14	69.829	-0.046	0.000	0.10		16.9	OK
22.000	Tank 2.1	70.619	-0.131	0.000	0.00		0.0	OK
22.001	S2.23	70.619	-0.331	0.000	0.16		22.7	OK
23.000	G2.1	70.547	-0.133	0.000	0.03		0.4	FLOOD RISK
23.001	S2.22	70.487	-0.278	0.000	0.09		8.0	OK
22.002	S2.21	70.456	-0.444	0.000	0.13		30.7	OK
24.000	Tank 2.2	70.391	-0.109	0.000	0.00		0.0	OK
22.003	S2.20	70.391	-0.459	0.000	0.13		33.8	OK
25.000	G2.2	70.747	-0.203	0.000	0.02		2.3	OK
22.004	S2.19	70.240	-0.510	0.000	0.05		36.1	OK
26.000	G2.3	70.148	-0.202	0.000	0.02		0.6	OK
27.000	G2.4	70.475	-0.250	0.000	0.07		10.3	OK
26.001	S2.18	70.086	-0.314	0.000	0.06		10.9	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.846	-0.454	0.000	0.14		47.0	OK
22.006	Interceptor	69.830	-0.258	0.000	0.14		47.0	OK
19.007	S2.16	69.829	-0.146	0.000	0.46		63.8	OK
19.008	S22.15	69.829	-0.121	0.000	0.30		63.6	OK
29.000	RE2.2	70.936	-0.189	0.000	0.06		2.5	OK
29.001	R2.6	70.741	-0.184	0.000	0.08		2.5	OK
29.002	R2.5	70.707	-0.243	0.000	0.08		6.0	OK
29.003	R2.4	70.356	-0.264	0.000	0.04		6.3	OK
29.004	S2.12	69.868	-0.382	0.000	0.05	0.2	7.8	OK
30.000	RE2.3	70.820	-0.180	0.000	0.09		3.7	OK
30.001	R2.3	70.554	-0.321	0.000	0.05		7.3	OK
30.002	R2.2	70.145	-0.405	0.000	0.02		7.6	OK
29.005	R2.1	69.831	-0.304	0.000	0.11		17.7	OK
29.006	S2.13	69.830	-0.165	0.000	0.13		19.8	OK
31.000	R2.19	70.981	-0.219	0.000	0.01		0.2	OK
31.001	R2.20	70.858	-0.267	0.000	0.03		2.6	OK
31.002	R2.21	70.444	-0.331	0.000	0.03		5.5	OK
31.003	R2.22	70.072	-0.328	0.000	0.04		6.2	OK
32.000	R2.18	70.651	-0.269	0.000	0.02		2.5	OK
32.001	R2.17	70.173	-0.332	0.000	0.03		5.8	OK
32.002	R2.16	69.830	-0.195	0.000	0.03		5.8	OK
29.007	R2.15	69.830	-0.025	0.000	0.20		31.3	OK
33.000	RE1A.1	70.185	-0.290	0.000	0.01		0.5	OK

Summary of Results for 600 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	69.995	-0.290	0.000	0.01		0.5	OK
33.002	S1A.3	69.831	-0.264	0.000	0.02		3.2	OK
33.003	S1A.4	69.831	-0.149	0.000	0.04		5.7	OK
34.000	S1A.5	69.998	-0.202	0.000	0.02		0.7	OK
34.001	S1A.6	69.924	-0.276	0.000	0.02		1.3	OK
34.002	S1A.7	69.831	-0.299	0.000	0.08		12.3	OK
34.003	S1A.8	69.831	-0.329	0.000	0.07		23.2	OK
33.004	S1A.9	69.831	-0.209	0.000	0.10		28.3	OK
35.000	S1A.10	69.892	-0.408	0.000	0.02		3.4	OK
35.001	S1A.11	69.831	-0.184	0.000	0.02		3.4	OK
35.002	INTERCEPTOR	69.831	-0.034	0.000	0.02		3.3	OK
36.000	S1A.21	70.114	-0.136	0.000	0.10		7.8	OK
36.001	S1A.20	70.104	0.489	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.831	-0.134	0.000	0.13		35.7	OK
33.006	S1A.19	69.830	-0.095	0.000	0.10		35.5	OK
29.008	R2.14	69.829	-0.021	0.000	0.44		65.8	OK
19.009	S2.24	69.829	-0.006	0.000	0.01		6.7	OK
19.010	S2.27	69.102	-0.148	0.000	0.04		6.7	OK
37.000	S1A.13	69.248	-0.252	0.000	0.06		4.6	OK
37.001	S1A.14	69.101	-0.079	0.000	0.06		4.5	OK
37.002	S1A.15	69.100	0.115	0.000	0.07		4.1	SURCHARGED
38.000	S1A.16	69.102	-0.208	0.000	0.11		9.4	OK
39.000	S1A.17	69.102	-0.153	0.000	0.09		8.1	OK
38.001	S1A.18	69.101	-0.074	0.000	0.16		16.9	OK
38.002	INTERCEPTOR	69.100	0.075	0.000	0.20		16.8	SURCHARGED
1.007	SOUT	69.099	0.249	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	1440
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	12

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	720

Summary of Results for 720 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.491	-0.259	0.000	0.05		3.9	OK
1.001	R5	70.234	-0.251	0.000	0.06		5.4	OK
1.002	R6	69.905	-0.320	0.000	0.05		7.0	OK
1.003	R7	69.739	-0.261	0.000	0.02		7.0	OK
2.000	R8	69.739	-0.211	0.000	0.01		3.9	OK
3.000	R9	69.739	-0.211	0.000	0.01		3.5	OK
4.000	R4A	70.361	-0.264	0.000	0.03		3.5	OK
4.001	R4	70.088	-0.262	0.000	0.04		3.5	OK
4.002	R3	69.885	-0.240	0.000	0.09		5.4	OK
4.003	R2	69.739	-0.186	0.000	0.06		6.6	OK
5.000	Tank 1	69.750	-0.225	0.000	0.00		0.0	OK
5.001	S3	69.739	-0.236	0.000	0.00		0.0	OK
6.000	G1	69.878	-0.247	0.000	0.07		10.1	OK
7.000	G2	69.739	-0.036	0.000	0.07		0.8	OK
8.000	G3	69.873	-0.252	0.000	0.06		8.7	OK
9.000	G4	69.739	-0.036	0.000	0.07		0.8	OK
5.002	S2	69.739	-0.186	0.000	0.15		20.4	OK
10.000	Tank 2	69.739	0.014	0.000	0.00		0.0	SURCHARGED
5.003	S1	69.739	-0.061	0.000	0.17		20.2	OK
5.004	Interceptor	69.739	-0.049	0.000	0.17		20.2	OK
4.004	R1	69.739	0.064	0.000	0.17		26.5	SURCHARGED
1.004	HW05	69.739	-0.051	0.000	0.15		24.9	OK
11.000	S11	69.829	-0.421	0.000	0.01		2.8	OK
11.001	S10	69.739	-0.161	0.000	0.02		5.4	OK
1.005	S4	69.739	0.029	0.000	0.11		28.8	SURCHARGED
12.000	1B.1	70.309	-0.201	0.000	0.03		1.0	OK
12.001	1B.2	70.224	-0.336	0.000	0.02		3.2	OK
12.002	1B.3	69.946	-0.324	0.000	0.04		5.9	OK
12.003	1B.4	69.739	-0.466	0.000	0.03		8.4	OK
12.004	1B.5	69.740	-0.340	0.000	0.04		12.5	OK
12.005	1B.6	69.740	-0.175	0.000	0.05		12.2	OK
12.006	1B.7	69.740	-0.100	0.000	0.07		25.0	OK
13.000	1B.8	69.740	-0.035	0.000	0.02		1.4	OK
13.001	1B.9	69.740	-0.010	0.000	0.01		1.7	OK
12.007	1B.10	69.740	0.040	0.000	0.11		37.8	SURCHARGED
14.000	1B.11	70.017	-0.133	0.000	0.05		3.8	OK
15.000	1B.12	70.014	-0.136	0.000	0.02		2.5	OK
14.001	1B.13	70.012	0.312	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.740	0.140	0.000	0.23		41.8	SURCHARGED
1.006	HW08	69.739	0.379	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.246	-0.254	0.000	0.06		4.2	OK
16.001	1B.15	69.102	-0.078	0.000	0.06		4.2	OK
16.002	1B.16	69.101	0.136	0.000	0.08		3.8	SURCHARGED

Summary of Results for 720 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.103	-0.177	0.000	0.09		7.9	OK
18.000	1B.18	69.103	-0.177	0.000	0.09		7.9	OK
17.001	1B.19	69.102	-0.073	0.000	0.14		15.1	OK
17.002	INTERCEPTOR	69.101	0.076	0.000	0.17		15.0	SURCHARGED
19.000	RE2.1	70.976	-0.259	0.000	0.05		3.4	OK
19.001	R2.7	70.747	-0.253	0.000	0.06		4.0	OK
19.002	R2.8	70.546	-0.254	0.000	0.06		4.0	OK
20.000	R2.10	70.814	-0.211	0.000	0.01		0.7	OK
19.003	R2.9	70.394	-0.306	0.000	0.08		10.5	OK
19.004	R2.11	70.012	-0.388	0.000	0.05		11.2	OK
21.000	R2.13	70.408	-0.192	0.000	0.05		3.6	OK
19.005	R2.12	69.849	-0.151	0.000	0.10		14.7	OK
19.006	R2.14	69.849	-0.026	0.000	0.09		14.5	OK
22.000	Tank 2.1	70.611	-0.139	0.000	0.00		0.0	OK
22.001	S2.23	70.611	-0.339	0.000	0.14		19.8	OK
23.000	G2.1	70.546	-0.134	0.000	0.03		0.3	FLOOD RISK
23.001	S2.22	70.479	-0.286	0.000	0.08		7.0	OK
22.002	S2.21	70.446	-0.454	0.000	0.11		26.8	OK
24.000	Tank 2.2	70.382	-0.118	0.000	0.00		0.0	OK
22.003	S2.20	70.382	-0.468	0.000	0.11		29.5	OK
25.000	G2.2	70.745	-0.205	0.000	0.02		2.0	OK
22.004	S2.19	70.234	-0.516	0.000	0.05		31.5	OK
26.000	G2.3	70.145	-0.205	0.000	0.02		0.5	OK
27.000	G2.4	70.471	-0.254	0.000	0.06		9.0	OK
26.001	S2.18	70.082	-0.318	0.000	0.06		9.5	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.850	-0.450	0.000	0.12		41.0	OK
22.006	Interceptor	69.849	-0.239	0.000	0.12		41.0	OK
19.007	S2.16	69.849	-0.126	0.000	0.40		55.5	OK
19.008	S22.15	69.849	-0.101	0.000	0.26		55.2	OK
29.000	RE2.2	70.933	-0.192	0.000	0.05		2.1	OK
29.001	R2.6	70.738	-0.187	0.000	0.07		2.1	OK
29.002	R2.5	70.703	-0.247	0.000	0.07		5.3	OK
29.003	R2.4	70.354	-0.266	0.000	0.03		5.5	OK
29.004	S2.12	69.863	-0.387	0.000	0.04	0.2	6.9	OK
30.000	RE2.3	70.816	-0.184	0.000	0.08		3.3	OK
30.001	R2.3	70.550	-0.325	0.000	0.04		6.4	OK
30.002	R2.2	70.139	-0.411	0.000	0.02		6.6	OK
29.005	R2.1	69.852	-0.283	0.000	0.10		15.4	OK
29.006	S2.13	69.852	-0.143	0.000	0.11		17.2	OK
31.000	R2.19	70.980	-0.220	0.000	0.00		0.2	OK
31.001	R2.20	70.856	-0.269	0.000	0.02		2.2	OK
31.002	R2.21	70.442	-0.333	0.000	0.03		4.8	OK
31.003	R2.22	70.069	-0.331	0.000	0.03		5.4	OK
32.000	R2.18	70.650	-0.270	0.000	0.02		2.2	OK
32.001	R2.17	70.171	-0.334	0.000	0.03		5.1	OK
32.002	R2.16	69.851	-0.174	0.000	0.03		5.1	OK
29.007	R2.15	69.851	-0.004	0.000	0.17		27.2	OK
33.000	RE1A.1	70.184	-0.291	0.000	0.01		0.5	OK

Summary of Results for 720 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	69.994	-0.291	0.000	0.01		0.5	OK
33.002	S1A.3	69.852	-0.243	0.000	0.02		2.8	OK
33.003	S1A.4	69.852	-0.128	0.000	0.04		5.0	OK
34.000	S1A.5	69.995	-0.205	0.000	0.02		0.6	OK
34.001	S1A.6	69.921	-0.279	0.000	0.01		1.1	OK
34.002	S1A.7	69.852	-0.278	0.000	0.07		10.7	OK
34.003	S1A.8	69.852	-0.308	0.000	0.06		20.2	OK
33.004	S1A.9	69.852	-0.188	0.000	0.08		24.5	OK
35.000	S1A.10	69.887	-0.413	0.000	0.02		3.0	OK
35.001	S1A.11	69.852	-0.163	0.000	0.02		2.9	OK
35.002	INTERCEPTOR	69.852	-0.013	0.000	0.02		2.9	OK
36.000	S1A.21	70.098	-0.152	0.000	0.10		7.3	OK
36.001	S1A.20	70.088	0.473	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.852	-0.113	0.000	0.11		31.5	OK
33.006	S1A.19	69.851	-0.074	0.000	0.09		31.3	OK
29.008	R2.14	69.850	0.000	0.000	0.39		57.5	OK
19.009	S2.24	69.849	0.014	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.103	-0.147	0.000	0.04		6.7	OK
37.000	S1A.13	69.244	-0.256	0.000	0.05		4.0	OK
37.001	S1A.14	69.102	-0.078	0.000	0.06		3.9	OK
37.002	S1A.15	69.101	0.116	0.000	0.06		3.6	SURCHARGED
38.000	S1A.16	69.103	-0.207	0.000	0.09		8.2	OK
39.000	S1A.17	69.103	-0.152	0.000	0.08		7.0	OK
38.001	S1A.18	69.102	-0.073	0.000	0.14		14.7	OK
38.002	INTERCEPTOR	69.101	0.076	0.000	0.17		14.6	SURCHARGED
1.007	SOUT	69.101	0.251	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	1920
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	16

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	960

Summary of Results for 960 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.487	-0.263	0.000	0.04		3.1	OK
1.001	R5	70.228	-0.257	0.000	0.05		4.4	OK
1.002	R6	69.900	-0.325	0.000	0.04		5.6	OK
1.003	R7	69.773	-0.227	0.000	0.02		5.6	OK
2.000	R8	69.773	-0.177	0.000	0.01		3.1	OK
3.000	R9	69.773	-0.177	0.000	0.01		2.8	OK
4.000	R4A	70.358	-0.267	0.000	0.03		2.8	OK
4.001	R4	70.085	-0.265	0.000	0.03		2.8	OK
4.002	R3	69.877	-0.248	0.000	0.07		4.3	OK
4.003	R2	69.773	-0.152	0.000	0.05		5.3	OK
5.000	Tank 1	69.773	-0.202	0.000	0.00		0.0	OK
5.001	S3	69.773	-0.202	0.000	0.00		0.0	OK
6.000	G1	69.872	-0.253	0.000	0.06		8.1	OK
7.000	G2	69.773	-0.002	0.000	0.06		0.7	OK
8.000	G3	69.868	-0.257	0.000	0.05		7.0	OK
9.000	G4	69.773	-0.002	0.000	0.06		0.7	OK
5.002	S2	69.773	-0.152	0.000	0.12		16.4	OK
10.000	Tank 2	69.773	0.048	0.000	0.00		0.0	SURCHARGED
5.003	S1	69.773	-0.027	0.000	0.14		16.0	OK
5.004	Interceptor	69.773	-0.015	0.000	0.14		16.0	OK
4.004	R1	69.773	0.098	0.000	0.14		21.0	SURCHARGED
1.004	HW05	69.773	-0.017	0.000	0.11		18.3	OK
11.000	S11	69.823	-0.427	0.000	0.01		2.2	OK
11.001	S10	69.773	-0.127	0.000	0.02		4.3	OK
1.005	S4	69.773	0.063	0.000	0.08		21.2	SURCHARGED
12.000	1B.1	70.307	-0.203	0.000	0.02		0.8	OK
12.001	1B.2	70.220	-0.340	0.000	0.02		2.6	OK
12.002	1B.3	69.941	-0.329	0.000	0.04		4.8	OK
12.003	1B.4	69.774	-0.431	0.000	0.02		6.8	OK
12.004	1B.5	69.774	-0.306	0.000	0.04		10.0	OK
12.005	1B.6	69.774	-0.141	0.000	0.04		9.7	OK
12.006	1B.7	69.774	-0.066	0.000	0.06		19.9	OK
13.000	1B.8	69.774	-0.001	0.000	0.02		1.1	OK
13.001	1B.9	69.774	0.024	0.000	0.01		1.3	SURCHARGED
12.007	1B.10	69.774	0.074	0.000	0.09		30.2	SURCHARGED
14.000	1B.11	69.979	-0.171	0.000	0.05		3.5	OK
15.000	1B.12	69.976	-0.174	0.000	0.02		2.3	OK
14.001	1B.13	69.974	0.274	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.773	0.173	0.000	0.19		34.5	SURCHARGED
1.006	HW08	69.773	0.413	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.241	-0.259	0.000	0.05		3.4	OK
16.001	1B.15	69.098	-0.082	0.000	0.05		3.3	OK
16.002	1B.16	69.097	0.132	0.000	0.06		3.1	SURCHARGED

Summary of Results for 960 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.099	-0.181	0.000	0.07		6.3	OK
18.000	1B.18	69.099	-0.181	0.000	0.07		6.3	OK
17.001	1B.19	69.098	-0.077	0.000	0.11		12.1	OK
17.002	INTERCEPTOR	69.097	0.072	0.000	0.14		12.0	SURCHARGED
19.000	RE2.1	70.972	-0.263	0.000	0.04		2.7	OK
19.001	R2.7	70.741	-0.259	0.000	0.05		3.3	OK
19.002	R2.8	70.541	-0.259	0.000	0.05		3.3	OK
20.000	R2.10	70.812	-0.213	0.000	0.01		0.5	OK
19.003	R2.9	70.385	-0.315	0.000	0.06		8.5	OK
19.004	R2.11	70.006	-0.394	0.000	0.04		9.0	OK
21.000	R2.13	70.404	-0.196	0.000	0.04		2.9	OK
19.005	R2.12	69.875	-0.125	0.000	0.08		11.8	OK
19.006	R2.14	69.875	0.000	0.000	0.07		11.4	SURCHARGED
22.000	Tank 2.1	70.600	-0.150	0.000	0.00		0.0	OK
22.001	S2.23	70.600	-0.350	0.000	0.11		15.9	OK
23.000	G2.1	70.545	-0.135	0.000	0.02		0.3	FLOOD RISK
23.001	S2.22	70.468	-0.297	0.000	0.07		5.6	OK
22.002	S2.21	70.432	-0.468	0.000	0.09		21.6	OK
24.000	Tank 2.2	70.370	-0.130	0.000	0.00		0.0	OK
22.003	S2.20	70.370	-0.480	0.000	0.09		23.8	OK
25.000	G2.2	70.741	-0.209	0.000	0.01		1.6	OK
22.004	S2.19	70.225	-0.525	0.000	0.04		25.3	OK
26.000	G2.3	70.141	-0.209	0.000	0.01		0.4	OK
27.000	G2.4	70.466	-0.259	0.000	0.05		7.2	OK
26.001	S2.18	70.076	-0.324	0.000	0.04		7.7	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.876	-0.424	0.000	0.10		33.0	OK
22.006	Interceptor	69.876	-0.212	0.000	0.10		33.0	OK
19.007	S2.16	69.875	-0.100	0.000	0.32		44.3	OK
19.008	S22.15	69.875	-0.075	0.000	0.20		44.1	OK
29.000	RE2.2	70.930	-0.195	0.000	0.04		1.7	OK
29.001	R2.6	70.734	-0.191	0.000	0.05		1.7	OK
29.002	R2.5	70.696	-0.254	0.000	0.06		4.2	OK
29.003	R2.4	70.352	-0.268	0.000	0.02		4.4	OK
29.004	S2.12	69.876	-0.374	0.000	0.04	0.3	5.5	OK
30.000	RE2.3	70.811	-0.189	0.000	0.06		2.6	OK
30.001	R2.3	70.545	-0.330	0.000	0.04		5.1	OK
30.002	R2.2	70.131	-0.419	0.000	0.01		5.3	OK
29.005	R2.1	69.875	-0.260	0.000	0.08		12.4	OK
29.006	S2.13	69.875	-0.120	0.000	0.09		13.8	OK
31.000	R2.19	70.979	-0.221	0.000	0.00		0.2	OK
31.001	R2.20	70.853	-0.272	0.000	0.02		1.8	OK
31.002	R2.21	70.439	-0.336	0.000	0.02		3.8	OK
31.003	R2.22	70.066	-0.334	0.000	0.03		4.3	OK
32.000	R2.18	70.644	-0.276	0.000	0.02		1.8	OK
32.001	R2.17	70.168	-0.337	0.000	0.02		4.1	OK
32.002	R2.16	69.876	-0.149	0.000	0.02		4.1	OK
29.007	R2.15	69.876	0.021	0.000	0.14		21.8	SURCHARGED
33.000	RE1A.1	70.182	-0.293	0.000	0.01		0.4	OK

Summary of Results for 960 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	69.992	-0.293	0.000	0.00		0.4	OK
33.002	S1A.3	69.876	-0.219	0.000	0.02		2.2	OK
33.003	S1A.4	69.876	-0.104	0.000	0.03		4.0	OK
34.000	S1A.5	69.991	-0.209	0.000	0.02		0.5	OK
34.001	S1A.6	69.917	-0.283	0.000	0.01		0.9	OK
34.002	S1A.7	69.876	-0.254	0.000	0.05		8.6	OK
34.003	S1A.8	69.876	-0.284	0.000	0.05		16.2	OK
33.004	S1A.9	69.876	-0.164	0.000	0.07		19.5	OK
35.000	S1A.10	69.879	-0.421	0.000	0.01		2.4	OK
35.001	S1A.11	69.876	-0.139	0.000	0.01		2.3	OK
35.002	INTERCEPTOR	69.876	0.011	0.000	0.01		2.3	SURCHARGED
36.000	S1A.21	70.066	-0.184	0.000	0.09		6.6	OK
36.001	S1A.20	70.055	0.440	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.876	-0.089	0.000	0.09		26.0	OK
33.006	S1A.19	69.875	-0.050	0.000	0.07		25.9	OK
29.008	R2.14	69.875	0.025	0.000	0.31		46.8	SURCHARGED
19.009	S2.24	69.874	0.039	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.099	-0.151	0.000	0.04		6.7	OK
37.000	S1A.13	69.240	-0.260	0.000	0.04		3.2	OK
37.001	S1A.14	69.098	-0.082	0.000	0.05		3.2	OK
37.002	S1A.15	69.097	0.112	0.000	0.05		2.9	SURCHARGED
38.000	S1A.16	69.099	-0.211	0.000	0.07		6.6	OK
39.000	S1A.17	69.099	-0.156	0.000	0.06		5.6	OK
38.001	S1A.18	69.098	-0.077	0.000	0.11		11.8	OK
38.002	INTERCEPTOR	69.097	0.072	0.000	0.14		11.7	SURCHARGED
1.007	SOUT	69.097	0.247	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	2880
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	24

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	1440

Summary of Results for 1440 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.483	-0.267	0.000	0.03		2.3	OK
1.001	R5	70.222	-0.263	0.000	0.04		3.2	OK
1.002	R6	69.893	-0.332	0.000	0.03		4.1	OK
1.003	R7	69.810	-0.190	0.000	0.01		4.1	OK
2.000	R8	69.809	-0.141	0.000	0.01		2.3	OK
3.000	R9	69.810	-0.140	0.000	0.01		2.1	OK
4.000	R4A	70.354	-0.271	0.000	0.02		2.1	OK
4.001	R4	70.081	-0.269	0.000	0.02		2.1	OK
4.002	R3	69.869	-0.256	0.000	0.05		3.2	OK
4.003	R2	69.810	-0.115	0.000	0.03		3.9	OK
5.000	Tank 1	69.810	-0.165	0.000	0.00		0.0	OK
5.001	S3	69.810	-0.165	0.000	0.00		0.0	OK
6.000	G1	69.865	-0.260	0.000	0.04		6.0	OK
7.000	G2	69.810	0.035	0.000	0.04		0.5	SURCHARGED
8.000	G3	69.862	-0.263	0.000	0.04		5.1	OK
9.000	G4	69.810	0.035	0.000	0.04		0.5	SURCHARGED
5.002	S2	69.810	-0.115	0.000	0.09		12.0	OK
10.000	Tank 2	69.810	0.085	0.000	0.00		0.0	SURCHARGED
5.003	S1	69.810	0.010	0.000	0.10		11.6	SURCHARGED
5.004	Interceptor	69.810	0.022	0.000	0.10		11.6	SURCHARGED
4.004	R1	69.810	0.135	0.000	0.10		15.3	SURCHARGED
1.004	HW05	69.810	0.020	0.000	0.07		11.8	SURCHARGED
11.000	S11	69.823	-0.427	0.000	0.01		1.6	OK
11.001	S10	69.810	-0.090	0.000	0.01		3.2	OK
1.005	S4	69.810	0.100	0.000	0.05		13.6	SURCHARGED
12.000	1B.1	70.301	-0.209	0.000	0.02		0.6	OK
12.001	1B.2	70.211	-0.349	0.000	0.01		1.9	OK
12.002	1B.3	69.936	-0.334	0.000	0.03		3.5	OK
12.003	1B.4	69.810	-0.395	0.000	0.02		5.0	OK
12.004	1B.5	69.810	-0.270	0.000	0.03		7.4	OK
12.005	1B.6	69.810	-0.105	0.000	0.03		7.0	OK
12.006	1B.7	69.810	-0.030	0.000	0.04		14.4	OK
13.000	1B.8	69.810	0.035	0.000	0.01		0.8	SURCHARGED
13.001	1B.9	69.810	0.060	0.000	0.00		0.9	SURCHARGED
12.007	1B.10	69.810	0.110	0.000	0.06		22.1	SURCHARGED
14.000	1B.11	69.918	-0.232	0.000	0.05		3.4	OK
15.000	1B.12	69.911	-0.239	0.000	0.02		2.2	OK
14.001	1B.13	69.909	0.209	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.810	0.210	0.000	0.15		26.6	SURCHARGED
1.006	HW08	69.810	0.450	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.235	-0.265	0.000	0.03		2.5	OK
16.001	1B.15	69.086	-0.094	0.000	0.03		2.5	OK
16.002	1B.16	69.085	0.120	0.000	0.05		2.3	SURCHARGED

Summary of Results for 1440 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.087	-0.193	0.000	0.05		4.7	OK
18.000	1B.18	69.087	-0.193	0.000	0.05		4.6	OK
17.001	1B.19	69.086	-0.089	0.000	0.08		9.0	OK
17.002	INTERCEPTOR	69.085	0.060	0.000	0.10		8.9	SURCHARGED
19.000	RE2.1	70.968	-0.267	0.000	0.03		2.0	OK
19.001	R2.7	70.736	-0.264	0.000	0.03		2.4	OK
19.002	R2.8	70.536	-0.264	0.000	0.03		2.4	OK
20.000	R2.10	70.809	-0.216	0.000	0.01		0.4	OK
19.003	R2.9	70.376	-0.324	0.000	0.05		6.2	OK
19.004	R2.11	69.999	-0.401	0.000	0.03		6.6	OK
21.000	R2.13	70.401	-0.199	0.000	0.03		2.1	OK
19.005	R2.12	69.900	-0.100	0.000	0.06		8.7	OK
19.006	R2.14	69.900	0.025	0.000	0.05		8.4	SURCHARGED
22.000	Tank 2.1	70.586	-0.164	0.000	0.00		0.0	OK
22.001	S2.23	70.586	-0.364	0.000	0.08		11.7	OK
23.000	G2.1	70.542	-0.138	0.000	0.02		0.2	FLOOD RISK
23.001	S2.22	70.454	-0.311	0.000	0.05		4.2	OK
22.002	S2.21	70.413	-0.487	0.000	0.07		15.9	OK
24.000	Tank 2.2	70.349	-0.151	0.000	0.00		0.0	OK
22.003	S2.20	70.349	-0.501	0.000	0.07		17.5	OK
25.000	G2.2	70.737	-0.213	0.000	0.01		1.2	OK
22.004	S2.19	70.216	-0.534	0.000	0.03		18.7	OK
26.000	G2.3	70.137	-0.213	0.000	0.01		0.3	OK
27.000	G2.4	70.461	-0.264	0.000	0.03		5.3	OK
26.001	S2.18	70.069	-0.331	0.000	0.03		5.7	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.900	-0.400	0.000	0.07		24.3	OK
22.006	Interceptor	69.900	-0.188	0.000	0.07		24.3	OK
19.007	S2.16	69.900	-0.075	0.000	0.23		32.5	OK
19.008	S22.15	69.899	-0.051	0.000	0.15		32.3	OK
29.000	RE2.2	70.926	-0.199	0.000	0.03		1.3	OK
29.001	R2.6	70.729	-0.196	0.000	0.04		1.3	OK
29.002	R2.5	70.690	-0.260	0.000	0.04		3.1	OK
29.003	R2.4	70.346	-0.274	0.000	0.02		3.3	OK
29.004	S2.12	69.899	-0.351	0.000	0.03	0.6	4.1	OK
30.000	RE2.3	70.806	-0.194	0.000	0.05		1.9	OK
30.001	R2.3	70.540	-0.335	0.000	0.03		3.8	OK
30.002	R2.2	70.123	-0.427	0.000	0.01		3.9	OK
29.005	R2.1	69.899	-0.236	0.000	0.06		9.1	OK
29.006	S2.13	69.899	-0.096	0.000	0.07		10.2	OK
31.000	R2.19	70.978	-0.222	0.000	0.00		0.1	OK
31.001	R2.20	70.845	-0.280	0.000	0.01		1.3	OK
31.002	R2.21	70.430	-0.345	0.000	0.02		2.8	OK
31.003	R2.22	70.060	-0.340	0.000	0.02		3.2	OK
32.000	R2.18	70.638	-0.282	0.000	0.01		1.3	OK
32.001	R2.17	70.159	-0.346	0.000	0.02		3.0	OK
32.002	R2.16	69.899	-0.126	0.000	0.02		3.0	OK
29.007	R2.15	69.899	0.044	0.000	0.10		15.9	SURCHARGED
33.000	RE1A.1	70.180	-0.295	0.000	0.00		0.3	OK

Summary of Results for 1440 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	69.990	-0.295	0.000	0.00		0.3	OK
33.002	S1A.3	69.900	-0.195	0.000	0.01		1.6	OK
33.003	S1A.4	69.900	-0.080	0.000	0.02		2.9	OK
34.000	S1A.5	69.987	-0.213	0.000	0.01		0.4	OK
34.001	S1A.6	69.913	-0.287	0.000	0.01		0.7	OK
34.002	S1A.7	69.900	-0.230	0.000	0.04		6.4	OK
34.003	S1A.8	69.900	-0.260	0.000	0.04		12.0	OK
33.004	S1A.9	69.900	-0.140	0.000	0.05		14.2	OK
35.000	S1A.10	69.900	-0.400	0.000	0.01		1.8	OK
35.001	S1A.11	69.900	-0.115	0.000	0.01		1.7	OK
35.002	INTERCEPTOR	69.900	0.035	0.000	0.01		1.7	SURCHARGED
36.000	S1A.21	70.016	-0.234	0.000	0.08		5.8	OK
36.001	S1A.20	69.977	0.362	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	69.900	-0.065	0.000	0.07		20.5	OK
33.006	S1A.19	69.900	-0.025	0.000	0.06		20.3	OK
29.008	R2.14	69.899	0.049	0.000	0.24		35.6	SURCHARGED
19.009	S2.24	69.899	0.064	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.087	-0.163	0.000	0.04		6.6	OK
37.000	S1A.13	69.235	-0.265	0.000	0.03		2.4	OK
37.001	S1A.14	69.086	-0.094	0.000	0.03		2.3	OK
37.002	S1A.15	69.085	0.100	0.000	0.04		2.2	SURCHARGED
38.000	S1A.16	69.087	-0.223	0.000	0.05		4.8	OK
39.000	S1A.17	69.087	-0.168	0.000	0.05		4.2	OK
38.001	S1A.18	69.086	-0.089	0.000	0.08		8.7	OK
38.002	INTERCEPTOR	69.085	0.060	0.000	0.10		8.6	SURCHARGED
1.007	SOUT	69.085	0.235	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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)	5760
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	24

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	2880

Summary of Results for 2880 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.473	-0.277	0.000	0.02		1.4	OK
1.001	R5	70.216	-0.269	0.000	0.02		1.9	OK
1.002	R6	69.883	-0.342	0.000	0.02		2.5	OK
1.003	R7	69.848	-0.152	0.000	0.01		2.5	OK
2.000	R8	69.848	-0.102	0.000	0.00		1.4	OK
3.000	R9	69.848	-0.102	0.000	0.00		1.2	OK
4.000	R4A	70.342	-0.283	0.000	0.01		1.2	OK
4.001	R4	70.070	-0.280	0.000	0.01		1.2	OK
4.002	R3	69.860	-0.265	0.000	0.03		1.9	OK
4.003	R2	69.848	-0.077	0.000	0.02		2.3	OK
5.000	Tank 1	69.848	-0.127	0.000	0.00		0.0	OK
5.001	S3	69.848	-0.127	0.000	0.00		0.0	OK
6.000	G1	69.857	-0.268	0.000	0.03		3.6	OK
7.000	G2	69.848	0.073	0.000	0.03		0.3	SURCHARGED
8.000	G3	69.855	-0.270	0.000	0.02		3.1	OK
9.000	G4	69.848	0.073	0.000	0.03		0.3	SURCHARGED
5.002	S2	69.848	-0.077	0.000	0.05		7.2	OK
10.000	Tank 2	69.848	0.123	0.000	0.00		0.0	SURCHARGED
5.003	S1	69.848	0.048	0.000	0.06		6.9	SURCHARGED
5.004	Interceptor	69.848	0.060	0.000	0.06		6.8	SURCHARGED
4.004	R1	69.848	0.173	0.000	0.06		9.1	SURCHARGED
1.004	HW05	69.848	0.058	0.000	0.04		6.8	SURCHARGED
11.000	S11	69.850	-0.400	0.000	0.00		1.0	OK
11.001	S10	69.848	-0.052	0.000	0.01		1.8	OK
1.005	S4	69.848	0.138	0.000	0.03		7.7	SURCHARGED
12.000	1B.1	70.295	-0.215	0.000	0.01		0.3	OK
12.001	1B.2	70.200	-0.360	0.000	0.01		1.1	OK
12.002	1B.3	69.923	-0.347	0.000	0.02		2.1	OK
12.003	1B.4	69.848	-0.357	0.000	0.01		3.0	OK
12.004	1B.5	69.848	-0.232	0.000	0.02		4.4	OK
12.005	1B.6	69.848	-0.067	0.000	0.02		4.1	OK
12.006	1B.7	69.848	0.008	0.000	0.03		8.6	SURCHARGED
13.000	1B.8	69.848	0.073	0.000	0.01		0.5	SURCHARGED
13.001	1B.9	69.848	0.098	0.000	0.00		0.5	SURCHARGED
12.007	1B.10	69.848	0.148	0.000	0.04		13.2	SURCHARGED
14.000	1B.11	69.884	-0.266	0.000	0.03		2.3	OK
15.000	1B.12	69.867	-0.283	0.000	0.01		1.5	OK
14.001	1B.13	69.860	0.160	0.000	0.09		3.8	SURCHARGED
12.008	S5	69.848	0.248	0.000	0.09		16.8	SURCHARGED
1.006	HW08	69.848	0.488	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.228	-0.272	0.000	0.02		1.5	OK
16.001	1B.15	69.015	-0.165	0.000	0.02		1.5	OK
16.002	1B.16	69.014	0.049	0.000	0.03		1.4	SURCHARGED

Summary of Results for 2880 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.016	-0.264	0.000	0.03		2.8	OK
18.000	1B.18	69.016	-0.264	0.000	0.03		2.8	OK
17.001	1B.19	69.015	-0.160	0.000	0.05		5.4	OK
17.002	INTERCEPTOR	69.014	-0.011	0.000	0.06		5.4	OK
19.000	RE2.1	70.958	-0.277	0.000	0.02		1.2	OK
19.001	R2.7	70.729	-0.271	0.000	0.02		1.4	OK
19.002	R2.8	70.529	-0.271	0.000	0.02		1.4	OK
20.000	R2.10	70.805	-0.220	0.000	0.00		0.2	OK
19.003	R2.9	70.366	-0.334	0.000	0.03		3.7	OK
19.004	R2.11	69.985	-0.415	0.000	0.02		3.9	OK
21.000	R2.13	70.394	-0.206	0.000	0.02		1.3	OK
19.005	R2.12	69.914	-0.086	0.000	0.03		5.2	OK
19.006	R2.14	69.914	0.039	0.000	0.03		4.9	SURCHARGED
22.000	Tank 2.1	70.564	-0.186	0.000	0.00		0.0	OK
22.001	S2.23	70.564	-0.386	0.000	0.05		7.0	OK
23.000	G2.1	70.537	-0.143	0.000	0.01		0.1	FLOOD RISK
23.001	S2.22	70.436	-0.329	0.000	0.03		2.5	OK
22.002	S2.21	70.385	-0.515	0.000	0.04		9.5	OK
24.000	Tank 2.2	70.326	-0.174	0.000	0.00		0.0	OK
22.003	S2.20	70.326	-0.524	0.000	0.04		10.4	OK
25.000	G2.2	70.732	-0.218	0.000	0.01		0.7	OK
22.004	S2.19	70.198	-0.552	0.000	0.02		11.1	OK
26.000	G2.3	70.132	-0.218	0.000	0.01		0.2	OK
27.000	G2.4	70.453	-0.272	0.000	0.02		3.2	OK
26.001	S2.18	70.060	-0.340	0.000	0.02		3.4	OK
28.000	Tank 2.3	69.950	-0.225	0.000	0.00		0.0	OK
22.005	s2.17	69.914	-0.386	0.000	0.04		14.5	OK
22.006	Interceptor	69.914	-0.174	0.000	0.04		14.5	OK
19.007	S2.16	69.914	-0.061	0.000	0.14		19.3	OK
19.008	S22.15	69.913	-0.037	0.000	0.09		19.2	OK
29.000	RE2.2	70.920	-0.205	0.000	0.02		0.8	OK
29.001	R2.6	70.723	-0.202	0.000	0.02		0.8	OK
29.002	R2.5	70.682	-0.268	0.000	0.03		1.9	OK
29.003	R2.4	70.335	-0.285	0.000	0.01		1.9	OK
29.004	S2.12	69.913	-0.337	0.000	0.02	0.8	2.4	OK
30.000	RE2.3	70.800	-0.200	0.000	0.03		1.2	OK
30.001	R2.3	70.528	-0.347	0.000	0.02		2.3	OK
30.002	R2.2	70.114	-0.436	0.000	0.01		2.3	OK
29.005	R2.1	69.913	-0.222	0.000	0.04		5.5	OK
29.006	S2.13	69.913	-0.082	0.000	0.04		6.0	OK
31.000	R2.19	70.977	-0.223	0.000	0.00		0.1	OK
31.001	R2.20	70.837	-0.288	0.000	0.01		0.8	OK
31.002	R2.21	70.418	-0.357	0.000	0.01		1.7	OK
31.003	R2.22	70.046	-0.354	0.000	0.01		1.9	OK
32.000	R2.18	70.631	-0.289	0.000	0.01		0.8	OK
32.001	R2.17	70.147	-0.358	0.000	0.01		1.8	OK
32.002	R2.16	69.913	-0.112	0.000	0.01		1.8	OK
29.007	R2.15	69.913	0.058	0.000	0.06		9.5	SURCHARGED
33.000	RE1A.1	70.178	-0.297	0.000	0.00		0.2	OK

Summary of Results for 2880 minute 30 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	69.988	-0.297	0.000	0.00		0.2	OK
33.002	S1A.3	69.914	-0.181	0.000	0.01		1.0	OK
33.003	S1A.4	69.914	-0.066	0.000	0.01		1.7	OK
34.000	S1A.5	69.982	-0.218	0.000	0.01		0.2	OK
34.001	S1A.6	69.914	-0.286	0.000	0.01		0.4	OK
34.002	S1A.7	69.914	-0.216	0.000	0.02		3.8	OK
34.003	S1A.8	69.914	-0.246	0.000	0.02		7.1	OK
33.004	S1A.9	69.914	-0.126	0.000	0.03		8.4	OK
35.000	S1A.10	69.914	-0.386	0.000	0.01		1.1	OK
35.001	S1A.11	69.914	-0.101	0.000	0.01		1.0	OK
35.002	INTERCEPTOR	69.914	0.049	0.000	0.01		1.0	SURCHARGED
36.000	S1A.21	69.992	-0.258	0.000	0.05		3.7	OK
36.001	S1A.20	69.931	0.316	0.000	0.22		3.5	SURCHARGED
33.005	S1A.12	69.914	-0.051	0.000	0.04		12.5	OK
33.006	S1A.19	69.914	-0.011	0.000	0.04		12.4	OK
29.008	R2.14	69.913	0.063	0.000	0.14		21.5	SURCHARGED
19.009	S2.24	69.913	0.078	0.000	0.01		6.6	SURCHARGED
19.010	S2.27	69.016	-0.234	0.000	0.04		6.6	OK
37.000	S1A.13	69.227	-0.273	0.000	0.02		1.4	OK
37.001	S1A.14	69.015	-0.165	0.000	0.02		1.4	OK
37.002	S1A.15	69.014	0.029	0.000	0.02		1.3	SURCHARGED
38.000	S1A.16	69.017	-0.293	0.000	0.03		2.9	OK
39.000	S1A.17	69.016	-0.239	0.000	0.03		2.5	OK
38.001	S1A.18	69.015	-0.160	0.000	0.05		5.3	OK
38.002	INTERCEPTOR	69.014	-0.011	0.000	0.06		5.3	OK
1.007	SOUT	69.013	0.163	0.000	0.49		17.0	SURCHARGED

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	39.800	0.265	150.2	0.134	5.00	0.600	o	300	Pipe/Conduit
1.001	50.400	0.335	150.4	0.054	0.00	0.600	o	300	Pipe/Conduit
1.002	61.200	0.300	204.0	0.054	0.00	0.600	o	375	Pipe/Conduit
1.003	11.800	0.290	40.7	0.000	0.00	0.600	o	450	Pipe/Conduit
2.000	5.000	0.260	19.2	0.134	5.00	0.600	o	450	Pipe/Conduit
3.000	5.000	0.280	17.9	0.121	5.00	0.600	o	450	Pipe/Conduit
4.000	27.500	0.275	100.0	0.121	5.00	0.600	o	300	Pipe/Conduit
4.001	28.200	0.225	125.3	0.000	0.00	0.600	o	300	Pipe/Conduit
4.002	60.200	0.200	301.0	0.065	0.00	0.600	o	300	Pipe/Conduit
4.003	30.800	0.400	77.0	0.043	0.00	0.600	o	300	Pipe/Conduit
5.000	23.500	0.225	104.4	0.000	5.00	0.600	o	225	Pipe/Conduit
5.001	24.800	0.050	496.0	0.000	0.00	0.600	o	450	Pipe/Conduit
6.000	16.000	0.350	45.7	0.349	5.00	0.600	o	300	Pipe/Conduit
7.000	34.100	0.150	227.3	0.029	5.00	0.600	o	150	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.000	R5A	71.300	70.450	0.550	71.300	70.185	0.815		1200
1.001	R5	71.300	70.185	0.815	71.300	69.850	1.150		1200
1.002	R6	71.300	69.850	1.075	71.300	69.550	1.375		1350
1.003	R7	71.300	69.550	1.300	71.500	69.260	1.790		1350
2.000	R8	71.300	69.500	1.350	71.500	69.240	1.810		1350
3.000	R9	71.300	69.500	1.350	71.500	69.220	1.830		1350
4.000	R4A	71.300	70.325	0.675	71.300	70.050	0.950		1200
4.001	R4	71.300	70.050	0.950	71.000	69.825	0.875		1200
4.002	R3	71.000	69.825	0.875	70.600	69.625	0.675		1200
4.003	R2	70.600	69.625	0.675	71.300	69.225	1.775		1200
5.000	Tank 1	71.300	69.750	1.325	71.000	69.525	1.250		1200
5.001	S3	71.000	69.525	1.025	70.900	69.475	0.975		1350
6.000	G1	70.500	69.825	0.375	70.900	69.475	1.125		1200
7.000	G2	70.300	69.625	0.525	70.900	69.475	1.275		1200

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
8.000	16.000	0.350	45.7	0.300	5.00	0.600	o	300	Pipe/Conduit
9.000	34.100	0.150	227.3	0.029	5.00	0.600	o	150	Pipe/Conduit
5.002	61.800	0.125	494.4	0.000	0.00	0.600	o	450	Pipe/Conduit
10.000	10.000	0.150	66.7	0.000	5.00	0.600	o	225	Pipe/Conduit
5.003	4.500	0.012	375.0	0.000	0.00	0.600	o	450	Pipe/Conduit
5.004	4.500	0.013	346.2	0.000	0.00	0.600	o	450	Pipe/Conduit
4.004	5.000	0.035	142.9	0.000	0.00	0.600	o	450	Pipe/Conduit
1.004	12.200	0.025	488.0	0.000	0.00	0.600	o	600	Pipe/Conduit
11.000	77.100	0.350	220.3	0.090	5.00	0.600	o	450	Pipe/Conduit
11.001	52.100	0.340	153.2	0.090	0.00	0.600	o	450	Pipe/Conduit
1.005	33.100	0.075	441.3	0.000	0.00	0.600	o	600	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
8.000	G3	70.500	69.825	0.375	70.900	69.475	1.125		1200
9.000	G4	70.300	69.625	0.525	70.900	69.475	1.275		1200
5.002	S2	70.900	69.475	0.975	71.400	69.350	1.600		1350
10.000	Tank 2	71.200	69.500	1.475	71.400	69.350	1.825		1200
5.003	S1	71.400	69.350	1.600	71.400	69.338	1.612		1350
5.004	Interceptor	71.400	69.338	1.512	71.300	69.325	1.425		1350
4.004	R1	71.300	69.225	1.625	71.500	69.190	1.860		1350
1.004	HW05	71.500	69.190	1.710	72.050	69.165	2.285		1500
11.000	S11	70.750	69.800	0.500	71.520	69.450	1.620		1350
11.001	S10	71.520	69.450	1.620	72.050	69.110	2.490		1350
1.005	S4	72.050	69.110	2.340	71.000	69.035	1.365		1500

Existing Network Details for Storm

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
	12.000	15.600	0.100	156.0	0.033	5.00	0.600	o	225	Pipe/Conduit
	12.001	58.000	0.290	200.0	0.078	0.00	0.600	o	375	Pipe/Conduit
	12.002	58.000	0.290	200.0	0.094	0.00	0.600	o	375	Pipe/Conduit
*	12.003	63.600	0.125	508.8	0.086	0.00	0.600	o	600	Pipe/Conduit
	12.004	81.000	0.165	490.9	0.143	0.00	0.600	o	600	Pipe/Conduit
	12.005	36.000	0.075	480.0	0.016	0.00	0.600	o	600	Pipe/Conduit
	12.006	41.200	0.140	294.3	0.472	0.00	0.600	o	600	Pipe/Conduit
	13.000	33.000	0.175	188.6	0.050	5.00	0.600	o	300	Pipe/Conduit
	13.001	38.800	0.200	194.0	0.016	0.00	0.600	o	450	Pipe/Conduit
	12.007	23.300	0.100	233.0	0.456	0.00	0.600	o	600	Pipe/Conduit
	14.000	59.800	0.300	199.3	0.226	5.00	0.600	o	300	Pipe/Conduit
	15.000	15.600	0.300	52.0	0.150	5.00	0.600	o	300	Pipe/Conduit
	14.001	8.000	0.550	14.5	0.000	0.00	0.600	o	150	Pipe/Conduit
	12.008	7.500	0.015	500.0	0.000	0.00	0.600	o	600	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
	12.000	1B.1	70.825	70.285	0.315	70.800	70.185	0.390		1200
	12.001	1B.2	70.800	70.185	0.240	70.850	69.895	0.580		1350
	12.002	1B.3	70.850	69.895	0.580	70.800	69.605	0.820		1350
*	12.003	1B.4	70.800	69.605	0.595	70.800	69.480	0.720		1350
	12.004	1B.5	70.800	69.480	0.720	71.500	69.315	1.585		1500
	12.005	1B.6	71.500	69.315	1.585	70.735	69.240	0.895		1500
	12.006	1B.7	70.735	69.240	0.895	70.735	69.100	1.035		1500
	13.000	1B.8	70.800	69.475	1.025	70.800	69.300	1.200		1200
	13.001	1B.9	70.800	69.300	1.050	70.735	69.100	1.185		1350
	12.007	1B.10	70.735	69.100	1.035	71.075	69.000	1.475		1500
	14.000	1B.11	70.855	69.850	0.705	70.685	69.550	0.835		1200
	15.000	1B.12	70.685	69.850	0.535	70.685	69.550	0.835		1200
	14.001	1B.13	70.685	69.550	0.985	71.075	69.000	1.925	Hydro-Brake®	1200
	12.008	S5	71.075	69.000	1.475	71.000	68.985	1.415		1500

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.006	114.000	0.285	400.0	0.000	0.00	0.600	o	375	Pipe/Conduit
16.000	64.000	0.320	200.0	0.146	5.00	0.600	o	300	Pipe/Conduit
16.001	43.100	0.215	200.5	0.000	0.00	0.600	o	300	Pipe/Conduit
16.002	3.000	0.015	200.0	0.000	0.00	0.600	o	300	Pipe/Conduit
17.000	41.500	0.105	395.2	0.276	5.00	0.600	o	375	Pipe/Conduit
18.000	41.500	0.105	395.2	0.276	5.00	0.600	o	375	Pipe/Conduit
17.001	12.000	0.060	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
17.002	5.000	0.025	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
19.000	46.800	0.235	199.1	0.117	5.00	0.600	o	300	Pipe/Conduit
19.001	44.500	0.200	222.5	0.023	0.00	0.600	o	300	Pipe/Conduit
19.002	36.800	0.175	210.3	0.000	0.00	0.600	o	300	Pipe/Conduit
20.000	48.700	0.475	102.5	0.023	5.00	0.600	o	225	Pipe/Conduit
19.003	72.400	0.375	193.1	0.201	0.00	0.600	o	375	Pipe/Conduit
19.004	60.000	0.400	150.0	0.023	0.00	0.600	o	450	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.006	HW08	71.000	68.985	1.640	70.000	68.700	0.925	Hydro-Brake®	1500
16.000	1B.14	69.750	69.200	0.250	69.750	68.880	0.570		1200
16.001	1B.15	69.750	68.880	0.570	69.575	68.665	0.610		1200
16.002	1B.16	69.575	68.665	0.610	70.000	68.650	1.050		1200
17.000	1B.17	69.635	68.905	0.355	69.450	68.800	0.275		1350
18.000	1B.18	69.490	68.905	0.210	69.450	68.800	0.275		1350
17.001	1B.19	69.450	68.800	0.275	69.800	68.740	0.685		1350
17.002	INTERCEPTOR	69.800	68.650	0.675	70.000	68.625	0.900		1350
19.000	RE2.1	71.800	70.935	0.565	71.800	70.700	0.800		1200
19.001	R2.7	71.800	70.700	0.800	71.800	70.500	1.000		1200
19.002	R2.8	71.800	70.500	1.000	71.800	70.325	1.175		1200
20.000	R2.10	71.800	70.800	0.775	71.800	70.325	1.250		1200
19.003	R2.9	71.800	70.325	1.100	71.700	69.950	1.375		1350
19.004	R2.11	71.700	69.950	1.300	71.800	69.550	1.800		1350

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
21.000	42.000	0.825	50.9	0.123	5.00	0.600	o	225	Pipe/Conduit
19.005	46.500	0.125	372.0	0.000	0.00	0.600	o	450	Pipe/Conduit
19.006	5.000	0.050	100.0	0.000	0.00	0.600	o	450	Pipe/Conduit
22.000	10.300	0.025	412.0	0.000	5.00	0.600	o	225	Pipe/Conduit
22.001	90.800	0.200	454.0	0.685	0.00	0.600	o	450	Pipe/Conduit
23.000	24.800	0.140	177.1	0.012	5.00	0.600	o	150	Pipe/Conduit
23.001	39.200	0.090	435.6	0.231	0.00	0.600	o	375	Pipe/Conduit
22.002	26.800	0.050	536.0	0.000	0.00	0.600	o	600	Pipe/Conduit
24.000	15.500	0.025	620.0	0.000	5.00	0.600	o	225	Pipe/Conduit
22.003	50.300	0.100	503.0	0.094	0.00	0.600	o	600	Pipe/Conduit
25.000	9.300	0.575	16.2	0.068	5.00	0.600	o	225	Pipe/Conduit
22.004	34.100	0.450	75.8	0.000	0.00	0.600	o	600	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
21.000	R2.13	71.800	70.375	1.200	71.800	69.550	2.025		1200
19.005	R2.12	71.800	69.550	1.800	71.600	69.425	1.725		1350
19.006	R2.14	71.600	69.425	1.725	71.600	69.375	1.775		1350
22.000	Tank 2.1	71.700	70.525	0.950	71.620	70.500	0.895		1200
22.001	S2.23	71.620	70.500	0.670	71.700	70.300	0.950		1350
23.000	G2.1	70.800	70.530	0.120	71.700	70.390	1.160		1200
23.001	S2.22	71.700	70.390	0.935	71.700	70.300	1.025		1350
22.002	S2.21	71.700	70.300	0.800	71.700	70.250	0.850		1500
24.000	Tank 2.2	71.700	70.275	1.200	71.700	70.250	1.225		1200
22.003	S2.20	71.700	70.250	0.850	71.700	70.150	0.950		1500
25.000	G2.2	71.400	70.725	0.450	71.700	70.150	1.325		1200
22.004	S2.19	71.700	70.150	0.950	71.600	69.700	1.300		1500

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
26.000	26.300	0.100	263.0	0.019	5.00	0.600	o	225	Pipe/Conduit
27.000	10.200	0.400	25.5	0.311	5.00	0.600	o	300	Pipe/Conduit
26.001	35.600	0.325	109.5	0.000	0.00	0.600	o	375	Pipe/Conduit
28.000	16.500	0.250	66.0	0.000	5.00	0.600	o	225	Pipe/Conduit
22.005	5.000	0.112	44.6	0.000	0.00	0.600	o	600	Pipe/Conduit
22.006	5.000	0.113	44.2	0.000	0.00	0.600	o	600	Pipe/Conduit
19.007	15.000	0.025	600.0	0.000	0.00	0.600	o	600	Pipe/Conduit
19.008	5.000	0.015	333.3	0.000	0.00	0.600	o	600	Pipe/Conduit
29.000	29.400	0.200	147.0	0.074	5.00	0.600	o	225	Pipe/Conduit
29.001	7.400	0.050	148.0	0.000	0.00	0.600	o	225	Pipe/Conduit
29.002	69.400	0.330	210.3	0.108	0.00	0.600	o	300	Pipe/Conduit
29.003	9.300	0.520	17.9	0.009	0.00	0.600	o	300	Pipe/Conduit
29.004	40.000	0.115	347.8	0.053	0.00	0.600	o	450	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
26.000	G2.3	70.800	70.125	0.450	71.500	70.025	1.250		1200
27.000	G2.4	71.100	70.425	0.375	71.500	70.025	1.175		1200
26.001	S2.18	71.500	70.025	1.100	71.600	69.700	1.525		1350
28.000	Tank 2.3	71.700	69.950	1.525	71.600	69.700	1.675		1200
22.005	s2.17	71.600	69.700	1.300	71.600	69.588	1.412		1500
22.006	Interceptor	71.600	69.488	1.412	71.600	69.375	1.525		1500
19.007	S2.16	71.600	69.375	1.625	71.500	69.350	1.550		1500
19.008	S22.15	71.500	69.350	1.550	71.500	69.335	1.565		1500
29.000	RE2.2	71.700	70.900	0.575	71.700	70.700	0.775		1200
29.001	R2.6	71.700	70.700	0.775	71.700	70.650	0.825		1200
29.002	R2.5	71.700	70.650	0.750	71.700	70.320	1.080		1200
29.003	R2.4	71.700	70.320	1.080	70.720	69.800	0.620		1200
29.004	S2.12	70.720	69.800	0.470	71.100	69.685	0.965		1350

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
30.000	37.200	0.275	135.3	0.113	5.00	0.600	o	225	Pipe/Conduit
30.001	67.500	0.400	168.8	0.108	0.00	0.600	o	375	Pipe/Conduit
30.002	8.700	0.415	21.0	0.009	0.00	0.600	o	450	Pipe/Conduit
29.005	50.000	0.140	357.1	0.067	0.00	0.600	o	450	Pipe/Conduit
29.006	49.800	0.140	355.7	0.067	0.00	0.600	o	450	Pipe/Conduit
31.000	19.400	0.150	129.3	0.007	5.00	0.600	o	225	Pipe/Conduit
31.001	55.700	0.425	131.1	0.070	0.00	0.600	o	300	Pipe/Conduit
31.002	47.100	0.375	125.6	0.088	0.00	0.600	o	375	Pipe/Conduit
31.003	49.300	0.375	131.5	0.022	0.00	0.600	o	375	Pipe/Conduit
32.000	49.000	0.490	100.0	0.076	5.00	0.600	o	300	Pipe/Conduit
32.001	47.700	0.480	99.4	0.099	0.00	0.600	o	375	Pipe/Conduit
32.002	4.900	0.245	20.0	0.000	0.00	0.600	o	375	Pipe/Conduit
29.007	52.900	0.155	341.3	0.000	0.00	0.600	o	450	Pipe/Conduit
33.000	38.000	0.190	200.0	0.016	5.00	0.600	o	300	Pipe/Conduit
33.001	68.000	0.340	200.0	0.000	0.00	0.600	o	300	Pipe/Conduit
33.002	56.900	0.115	494.8	0.080	0.00	0.600	o	450	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
30.000	RE2.3	71.900	70.775	0.900	71.700	70.500	0.975		1200
30.001	R2.3	71.700	70.500	0.825	71.700	70.100	1.225		1350
30.002	R2.2	71.700	70.100	1.150	71.100	69.685	0.965		1350
29.005	R2.1	71.100	69.685	0.965	71.620	69.545	1.625		1350
29.006	S2.13	71.620	69.545	1.625	71.700	69.405	1.845		1350
31.000	R2.19	71.800	70.975	0.600	71.800	70.825	0.750		1200
31.001	R2.20	71.800	70.825	0.675	71.800	70.400	1.100		1200
31.002	R2.21	71.800	70.400	1.025	71.700	70.025	1.300		1350
31.003	R2.22	71.700	70.025	1.300	71.700	69.650	1.675		1350
32.000	R2.18	71.800	70.620	0.880	71.800	70.130	1.370		1200
32.001	R2.17	71.800	70.130	1.295	71.700	69.650	1.675		1350
32.002	R2.16	71.700	69.650	1.675	71.700	69.405	1.920		1350
29.007	R2.15	71.700	69.405	1.845	71.800	69.250	2.100		1350
33.000	RE1A.1	70.850	70.175	0.375	70.850	69.985	0.565		1200
33.001	S1A.2	70.850	69.985	0.565	70.800	69.645	0.855		1200
33.002	S1A.3	70.800	69.645	0.705	70.850	69.530	0.870		1350

Existing Network Details for Storm

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
	33.003	45.600	0.090	506.7	0.080	0.00	0.600	o	450	Pipe/Conduit
	34.000	13.600	0.075	181.3	0.022	5.00	0.600	o	225	Pipe/Conduit
	34.001	43.900	0.220	199.5	0.016	0.00	0.600	o	300	Pipe/Conduit
	34.002	36.200	0.120	301.7	0.334	0.00	0.600	o	450	Pipe/Conduit
*	34.003	36.000	0.120	300.0	0.334	0.00	0.600	o	600	Pipe/Conduit
*	33.004	26.600	0.075	354.7	0.000	0.00	0.600	o	600	Pipe/Conduit
*	35.000	86.300	0.285	302.8	0.104	5.00	0.600	o	450	Pipe/Conduit
	35.001	10.000	0.050	200.0	0.000	0.00	0.600	o	450	Pipe/Conduit
	35.002	10.000	0.050	200.0	0.000	0.00	0.600	o	450	Pipe/Conduit
	36.000	98.000	0.485	202.1	0.363	5.00	0.600	o	300	Pipe/Conduit
	36.001	10.000	0.100	100.0	0.000	0.00	0.600	o	150	Pipe/Conduit
	33.005	9.000	0.040	225.0	0.000	0.00	0.600	o	600	Pipe/Conduit
	33.006	13.700	0.075	182.7	0.000	0.00	0.600	o	600	Pipe/Conduit
	29.008	10.000	0.015	666.7	0.000	0.00	0.600	o	600	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
	33.003	S1A.4	70.850	69.530	0.870	70.925	69.440	1.035		1350
	34.000	S1A.5	70.800	69.975	0.600	70.800	69.900	0.675		1200
	34.001	S1A.6	70.800	69.900	0.600	70.800	69.680	0.820		1200
	34.002	S1A.7	70.800	69.680	0.670	70.800	69.560	0.790		1350
*	34.003	S1A.8	70.800	69.560	0.640	70.925	69.440	0.885		1350
*	33.004	S1A.9	70.925	69.440	0.885	70.700	69.365	0.735		1350
*	35.000	S1A.10	70.550	69.850	0.250	70.550	69.565	0.535		1350
	35.001	S1A.11	70.550	69.565	0.535	70.550	69.515	0.585		1350
	35.002	INTERCEPTOR	70.550	69.415	0.585	70.700	69.365	0.785		1350
	36.000	S1A.21	70.785	69.950	0.535	70.785	69.465	1.020		1200
	36.001	S1A.20	70.785	69.465	1.170	70.700	69.365	1.185	Hydro-Brake®	1200
	33.005	S1A.12	70.700	69.365	0.735	71.200	69.325	1.275		1500
	33.006	S1A.19	71.200	69.325	1.275	71.800	69.250	1.950		1500
	29.008	R2.14	71.800	69.250	1.950	71.500	69.235	1.665		1500

Existing Network Details for Storm

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	19.009	87.000	0.435	200.0	0.000	0.00	0.600	o	600	Pipe/Conduit
	19.010	15.000	0.075	200.0	0.000	0.00	0.600	o	450	Pipe/Conduit
	37.000	64.000	0.320	200.0	0.138	5.00	0.600	o	300	Pipe/Conduit
	37.001	42.800	0.195	219.5	0.000	0.00	0.600	o	300	Pipe/Conduit
	37.002	6.600	0.035	188.6	0.000	0.00	0.600	o	300	Pipe/Conduit
	38.000	32.400	0.080	405.0	0.285	5.00	0.600	o	375	Pipe/Conduit
	39.000	32.400	0.080	405.0	0.248	5.00	0.600	o	375	Pipe/Conduit
	38.001	12.000	0.060	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
	38.002	5.000	0.025	200.0	0.000	0.00	0.600	o	375	Pipe/Conduit
	1.007	45.000	0.225	200.0	0.000	0.00	0.600	o	225	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	19.009	S2.24	71.500	69.235	1.665	70.000	68.800	0.600	Hydro-Brake®	1500
	19.010	S2.27	70.000	68.800	0.750	70.000	68.725	0.825		1350
	37.000	S1A.13	69.750	69.200	0.250	69.750	68.880	0.570		1200
	37.001	S1A.14	69.750	68.880	0.570	69.560	68.685	0.575		1200
	37.002	S1A.15	69.560	68.685	0.575	70.000	68.650	1.050		1200
	38.000	S1A.16	69.635	68.935	0.325	69.450	68.855	0.220		1350
	39.000	S1A.17	69.450	68.880	0.195	69.450	68.800	0.275		1350
	38.001	S1A.18	69.450	68.800	0.275	69.800	68.740	0.685		1350
	38.002	INTERCEPTOR	69.800	68.650	0.675	70.000	68.625	0.900		1350
	1.007	SOUT	70.000	68.625	1.150	69.800	68.400	1.175	Hydro-Brake®	1350

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007	Outfall to river	69.800	68.400	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

Online Controls for Storm

Hydro-Brake® Optimum Manhole: 1B.13, DS/PN: 14.001, Volume (m³): 6.4

Unit Reference	MD-SHE-0111-5000-0600-5000
Design Head (m)	0.600
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	111
Invert Level (m)	69.550
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.600	5.0
Flush-Flo™	0.193	5.0
Kick-Flo®	0.428	4.3
Mean Flow over Head Range	-	4.2

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.9	1.200	6.9	3.000	10.6	7.000	15.9
0.200	5.0	1.400	7.4	3.500	11.4	7.500	16.5
0.300	4.9	1.600	7.9	4.000	12.2	8.000	17.0
0.400	4.5	1.800	8.4	4.500	12.9	8.500	17.6
0.500	4.6	2.000	8.8	5.000	13.6	9.000	18.1
0.600	5.0	2.200	9.2	5.500	14.2	9.500	18.6
0.800	5.7	2.400	9.6	6.000	14.8		
1.000	6.3	2.600	9.9	6.500	15.3		

Hydro-Brake® Optimum Manhole: HW08, DS/PN: 1.006, Volume (m³): 14.2

Unit Reference	MD-SHE-0096-4000-0900-4000
Design Head (m)	0.900
Design Flow (l/s)	4.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	96
Invert Level (m)	68.985
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Hydro-Brake® Optimum Manhole: HW08, DS/PN: 1.006, Volume (m³): 14.2

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.900	4.0
Flush-Flo™	0.266	4.0
Kick-Flo®	0.578	3.3
Mean Flow over Head Range	-	3.5

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.1	1.200	4.6	3.000	7.0	7.000	10.5
0.200	3.9	1.400	4.9	3.500	7.5	7.500	10.8
0.300	4.0	1.600	5.2	4.000	8.0	8.000	11.2
0.400	3.9	1.800	5.5	4.500	8.5	8.500	11.5
0.500	3.7	2.000	5.8	5.000	8.9	9.000	11.8
0.600	3.3	2.200	6.1	5.500	9.3	9.500	12.1
0.800	3.8	2.400	6.3	6.000	9.7		
1.000	4.2	2.600	6.6	6.500	10.1		

Hydro-Brake® Optimum Manhole: S1A.20, DS/PN: 36.001, Volume (m³): 8.3

Unit Reference	MD-SHE-0111-5000-0600-5000
Design Head (m)	0.600
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	111
Invert Level (m)	69.465
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.600	5.0
Flush-Flo™	0.193	5.0
Kick-Flo®	0.428	4.3
Mean Flow over Head Range	-	4.2

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.9	0.300	4.9	0.500	4.6	0.800	5.7
0.200	5.0	0.400	4.5	0.600	5.0	1.000	6.3

Hydro-Brake® Optimum Manhole: S1A.20, DS/PN: 36.001, Volume (m³): 8.3

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
1.200	6.9	2.400	9.6	5.000	13.6	8.000	17.0
1.400	7.4	2.600	9.9	5.500	14.2	8.500	17.6
1.600	7.9	3.000	10.6	6.000	14.8	9.000	18.1
1.800	8.4	3.500	11.4	6.500	15.3	9.500	18.6
2.000	8.8	4.000	12.2	7.000	15.9		
2.200	9.2	4.500	12.9	7.500	16.5		

Hydro-Brake® Optimum Manhole: S2.24, DS/PN: 19.009, Volume (m³): 7.4

Unit Reference	MD-SHE-0112-7000-1800-7000
Design Head (m)	1.800
Design Flow (l/s)	7.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	112
Invert Level (m)	69.235
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.800	7.0
Flush-Flo™	0.487	6.7
Kick-Flo®	0.996	5.3
Mean Flow over Head Range	-	6.0

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.9	1.200	5.8	3.000	8.9	7.000	13.3
0.200	5.9	1.400	6.2	3.500	9.6	7.500	13.7
0.300	6.4	1.600	6.6	4.000	10.2	8.000	14.2
0.400	6.6	1.800	7.0	4.500	10.8	8.500	14.6
0.500	6.7	2.000	7.3	5.000	11.3	9.000	15.0
0.600	6.6	2.200	7.7	5.500	11.9	9.500	15.4
0.800	6.3	2.400	8.0	6.000	12.4		
1.000	5.3	2.600	8.3	6.500	12.8		

Hydro-Brake® Optimum Manhole: SOUT, DS/PN: 1.007, Volume (m³): 17.9

Unit Reference	MD-SHE-0186-1700-0900-1700
Design Head (m)	0.900
Design Flow (l/s)	17.0
Flush-Flo™	Calculated

Hydro-Brake® Optimum Manhole: SOUT, DS/PN: 1.007, Volume (m³): 17.9

Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	186
Invert Level (m)	68.625
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.900	17.0
Flush-Flo™	0.312	17.0
Kick-Flo®	0.654	14.6
Mean Flow over Head Range	-	14.2

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	6.5	1.200	19.5	3.000	30.2	7.000	45.5
0.200	16.4	1.400	21.0	3.500	32.5	7.500	47.1
0.300	17.0	1.600	22.4	4.000	34.7	8.000	48.5
0.400	16.8	1.800	23.7	4.500	36.7	8.500	50.0
0.500	16.4	2.000	24.9	5.000	38.7	9.000	51.4
0.600	15.6	2.200	26.0	5.500	40.5	9.500	52.6
0.800	16.1	2.400	27.1	6.000	42.2		
1.000	17.9	2.600	28.2	6.500	43.9		

Offline Controls for Storm

Pipe Manhole: S2.12, DS/PN: 29.004, Loop to PN: 11.000

Diameter (m)	0.375	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	10000.0	Coefficient of Contraction	0.600
Length (m)	5.000	Upstream Invert Level (m)	69.800

Storage Structures for Storm

Tank or Pond Manhole: HW05, DS/PN: 1.004

Invert Level (m) 69.190

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	488.0	0.400	796.0	0.800	1114.0	1.200	1444.0
0.200	640.0	0.600	954.0	1.000	1278.0		

Infiltration Blanket Manhole: 1B.11, DS/PN: 14.000

Infiltration Coefficient Base (m/hr)	0.00000	Diameter/Width (m)	14.0
Safety Factor	2.0	Length (m)	49.5
Porosity	0.30	Cap Volume Depth (m)	0.525
Invert Level (m)	69.850		

Infiltration Blanket Manhole: 1B.12, DS/PN: 15.000

Infiltration Coefficient Base (m/hr)	0.00000	Diameter/Width (m)	14.0
Safety Factor	2.0	Length (m)	33.0
Porosity	0.30	Cap Volume Depth (m)	0.525
Invert Level (m)	69.850		

Tank or Pond Manhole: HW08, DS/PN: 1.006

Invert Level (m) 68.985

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1143.0	0.400	1412.0	0.800	1690.0	1.200	1979.0
0.200	1276.0	0.600	1550.0	1.000	1834.0		

Infiltration Blanket Manhole: S1A.21, DS/PN: 36.000

Infiltration Coefficient Base (m/hr)	0.00000	Diameter/Width (m)	13.0
Safety Factor	2.0	Length (m)	100.0
Porosity	0.30	Cap Volume Depth (m)	0.450
Invert Level (m)	69.950		

Tank or Pond Manhole: S2.24, DS/PN: 19.009

Invert Level (m) 69.235

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	2476.0	0.600	3299.0	1.200	4147.0	1.800	5020.0
0.200	2748.0	0.800	3579.0	1.400	4435.0		
0.400	3022.0	1.000	3862.0	1.600	4726.0		

Tank or Pond Manhole: SOUT, DS/PN: 1.007

Invert Level (m) 68.625

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	652.0	0.400	1189.0	0.800	1736.0
0.200	919.0	0.600	1461.0	1.000	2013.0

Summary of Results for 30 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.713	-0.037	0.000	0.81		68.0	OK
1.001	R5	70.541	0.056	0.000	1.09		92.8	SURCHARGED
1.002	R6	70.129	-0.096	0.000	0.89		117.0	OK
1.003	R7	69.773	-0.227	0.000	0.39		116.9	OK
2.000	R8	69.771	-0.179	0.000	0.25		72.5	OK
3.000	R9	69.771	-0.179	0.000	0.22		65.4	OK
4.000	R4A	70.737	0.112	0.000	0.63		62.6	SURCHARGED
4.001	R4	70.608	0.258	0.000	0.58		51.9	SURCHARGED
4.002	R3	70.486	0.361	0.000	1.28		77.7	SURCHARGED
4.003	R2	70.153	0.228	0.000	0.83		95.5	SURCHARGED
5.000	Tank 1	70.346	0.371	0.000	0.03		1.2	SURCHARGED
5.001	S3	70.346	0.371	0.000	0.02		2.4	SURCHARGED
6.000	G1	70.521	0.396	20.573	0.74		102.7	FLOOD
7.000	G2	70.306	0.531	6.269	1.29		14.5	FLOOD
8.000	G3	70.513	0.388	12.841	0.69		96.6	FLOOD
9.000	G4	70.306	0.531	6.269	1.29		14.5	FLOOD
5.002	S2	70.346	0.421	0.000	1.44		191.8	SURCHARGED
10.000	Tank 2	70.102	0.377	0.000	0.02		1.2	SURCHARGED
5.003	S1	70.102	0.302	0.000	1.63		190.1	SURCHARGED
5.004	Interceptor	69.995	0.207	0.000	1.62		189.8	SURCHARGED
4.004	R1	69.892	0.217	0.000	1.87		284.6	SURCHARGED
1.004	HW05	69.770	-0.020	0.000	1.08		174.5	OK
11.000	S11	70.313	0.063	0.000	1.05		214.2	SURCHARGED
11.001	S10	69.943	0.043	0.000	0.97		231.0	SURCHARGED
1.005	S4	69.713	0.003	0.000	1.19		320.0	SURCHARGED
12.000	1B.1	70.715	0.205	0.000	0.47		17.1	FLOOD RISK
12.001	1B.2	70.691	0.131	0.000	0.42		55.9	FLOOD RISK
12.002	1B.3	70.583	0.313	0.000	0.62		82.3	FLOOD RISK
12.003	1B.4	70.470	0.265	0.000	0.39		107.0	SURCHARGED
12.004	1B.5	70.441	0.361	0.000	0.56		157.7	SURCHARGED
12.005	1B.6	70.391	0.476	0.000	0.63		164.3	SURCHARGED
12.006	1B.7	70.356	0.516	0.000	1.01		345.8	SURCHARGED
13.000	1B.8	70.301	0.526	0.000	0.30		22.4	SURCHARGED
13.001	1B.9	70.235	0.485	0.000	0.14		29.0	SURCHARGED
12.007	1B.10	70.212	0.512	0.000	1.64		567.8	SURCHARGED
14.000	1B.11	70.242	0.092	0.000	0.17		12.4	SURCHARGED
15.000	1B.12	70.240	0.090	0.000	0.14		18.6	SURCHARGED
14.001	1B.13	70.284	0.584	0.000	0.13		5.3	SURCHARGED
12.008	S5	69.883	0.283	0.000	3.15		572.2	SURCHARGED
1.006	HW08	69.663	0.303	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.479	-0.021	0.000	0.98		73.1	FLOOD RISK
16.001	1B.15	69.204	0.024	0.000	0.94		68.8	SURCHARGED
16.002	1B.16	69.130	0.165	0.000	1.33		68.1	SURCHARGED

Summary of Results for 30 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.637	0.357	2.498	1.34		122.0	FLOOD
18.000	1B.18	69.511	0.231	20.854	0.91		83.1	FLOOD
17.001	1B.19	69.450	0.275	0.031	1.77		189.5	FLOOD
17.002	INTERCEPTOR	69.216	0.191	0.000	2.21		189.5	SURCHARGED
19.000	RE2.1	71.641	0.406	0.000	0.78		57.2	FLOOD RISK
19.001	R2.7	71.543	0.543	0.000	0.78		54.0	FLOOD RISK
19.002	R2.8	71.439	0.639	0.000	0.72		50.9	SURCHARGED
20.000	R2.10	71.370	0.345	0.000	0.22		10.8	SURCHARGED
19.003	R2.9	71.345	0.645	0.000	0.93		126.8	SURCHARGED
19.004	R2.11	71.011	0.611	0.000	0.55		134.5	SURCHARGED
21.000	R2.13	71.313	0.713	0.000	0.76		52.8	SURCHARGED
19.005	R2.12	70.863	0.863	0.000	1.23		184.4	SURCHARGED
19.006	R2.14	70.675	0.800	0.000	1.09		184.8	SURCHARGED
22.000	Tank 2.1	71.648	0.898	0.000	0.18		3.2	FLOOD RISK
22.001	S2.23	71.648	0.698	27.805	1.68		239.6	FLOOD
23.000	G2.1	70.822	0.142	22.036	1.41		17.8	FLOOD
23.001	S2.22	71.395	0.630	0.000	1.15		99.0	SURCHARGED
22.002	S2.21	71.326	0.426	0.000	1.29		305.0	SURCHARGED
24.000	Tank 2.2	71.263	0.763	0.000	0.17		2.3	SURCHARGED
22.003	S2.20	71.262	0.412	0.000	1.19		319.3	SURCHARGED
25.000	G2.2	71.191	0.241	0.000	0.34		36.8	FLOOD RISK
22.004	S2.19	71.121	0.371	0.000	0.53		350.0	SURCHARGED
26.000	G2.3	70.814	0.464	14.002	1.55		45.6	FLOOD
27.000	G2.4	71.109	0.384	8.535	0.78		123.5	FLOOD
26.001	S2.18	71.018	0.618	0.000	0.69		119.2	SURCHARGED
28.000	Tank 2.3	70.886	0.711	0.000	0.05		2.7	SURCHARGED
22.005	s2.17	70.886	0.586	0.000	1.16		401.5	SURCHARGED
22.006	Interceptor	70.729	0.641	0.000	1.15		399.7	SURCHARGED
19.007	S2.16	70.571	0.596	0.000	4.15		577.5	SURCHARGED
19.008	S22.15	70.237	0.287	0.000	2.68		576.9	SURCHARGED
29.000	RE2.2	71.327	0.202	0.000	0.90		35.8	SURCHARGED
29.001	R2.6	71.164	0.239	0.000	1.14		35.8	SURCHARGED
29.002	R2.5	71.092	0.142	0.000	1.15		84.2	SURCHARGED
29.003	R2.4	70.744	0.124	0.000	0.47		84.2	SURCHARGED
29.004	S2.12	70.508	0.258	0.000	0.34	179.0	52.4	FLOOD RISK
30.000	RE2.3	71.354	0.354	0.000	1.27		53.6	SURCHARGED
30.001	R2.3	70.974	0.099	0.000	0.71		102.7	SURCHARGED
30.002	R2.2	70.813	0.263	0.000	0.26		95.4	SURCHARGED
29.005	R2.1	70.598	0.463	0.000	0.68		104.7	SURCHARGED
29.006	S2.13	70.573	0.578	0.000	0.78		121.4	SURCHARGED
31.000	R2.19	71.021	-0.179	0.000	0.09		3.8	OK
31.001	R2.20	70.969	-0.156	0.000	0.46		42.0	OK
31.002	R2.21	70.726	-0.049	0.000	0.52		86.1	OK
31.003	R2.22	70.636	0.236	0.000	0.50		80.9	SURCHARGED
32.000	R2.18	70.937	0.017	0.000	0.38		39.5	SURCHARGED
32.001	R2.17	70.826	0.321	0.000	0.41		76.7	SURCHARGED
32.002	R2.16	70.665	0.640	0.000	0.40		77.0	SURCHARGED
29.007	R2.15	70.493	0.638	0.000	1.44		228.4	SURCHARGED
33.000	RE1A.1	70.679	0.204	0.000	0.10		7.2	FLOOD RISK

Summary of Results for 30 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.670	0.385	0.000	0.16		12.1	FLOOD RISK
33.002	S1A.3	70.658	0.563	0.000	0.26		34.0	FLOOD RISK
33.003	S1A.4	70.635	0.655	0.000	0.50		64.2	FLOOD RISK
34.000	S1A.5	70.799	0.599	0.000	0.72		24.0	FLOOD RISK
34.001	S1A.6	70.801	0.601	0.562	0.37		27.2	FLOOD
34.002	S1A.7	70.800	0.670	0.337	0.95		154.8	FLOOD
34.003	S1A.8	70.696	0.536	0.000	0.91		302.9	FLOOD RISK
33.004	S1A.9	70.600	0.560	0.000	1.25		361.8	SURCHARGED
35.000	S1A.10	70.555	0.255	4.785	0.25		42.9	FLOOD
35.001	S1A.11	70.545	0.530	0.000	0.29		46.5	FLOOD RISK
35.002	INTERCEPTOR	70.529	0.664	0.000	0.30		48.0	FLOOD RISK
36.000	S1A.21	70.301	0.051	0.000	0.34		25.7	SURCHARGED
36.001	S1A.20	70.447	0.832	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.470	0.505	0.000	1.37		381.7	FLOOD RISK
33.006	S1A.19	70.325	0.400	0.000	1.10		381.9	SURCHARGED
29.008	R2.14	70.179	0.329	0.000	4.09		609.7	SURCHARGED
19.009	S2.24	69.743	-0.092	0.000	0.01		6.7	OK
19.010	S2.27	69.133	-0.117	0.000	0.04		6.8	OK
37.000	S1A.13	69.439	-0.061	0.000	0.97		72.4	OK
37.001	S1A.14	69.187	0.007	0.000	0.94		65.5	SURCHARGED
37.002	S1A.15	69.130	0.145	0.000	1.13		65.0	SURCHARGED
38.000	S1A.16	69.635	0.325	0.342	1.59		139.8	FLOOD
39.000	S1A.17	69.472	0.217	21.842	0.85		74.9	FLOOD
38.001	S1A.18	69.433	0.258	0.000	1.73		185.9	FLOOD RISK
38.002	INTERCEPTOR	69.208	0.183	0.000	2.16		185.8	SURCHARGED
1.007	SOUT	69.130	0.280	0.000	0.48		16.9	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	15

Summary of Results for 15 minute 100 year Winter (Storm)

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

WARNING: The analysis maybe unstable. Please see the method of analysis help for more details.

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	71.116	0.366	0.000	1.00		83.8	FLOOD RISK
1.001	R5	70.856	0.371	0.000	1.31		112.0	SURCHARGED
1.002	R6	70.254	0.029	0.000	1.06		138.3	SURCHARGED
1.003	R7	69.762	-0.238	0.000	0.46		138.3	OK
2.000	R8	69.722	-0.228	0.000	0.36		103.8	OK
3.000	R9	69.722	-0.228	0.000	0.31		93.7	OK
4.000	R4A	71.130	0.505	0.000	0.72		71.7	FLOOD RISK
4.001	R4	70.994	0.644	0.000	0.76		67.9	SURCHARGED
4.002	R3	70.856	0.731	0.000	1.59		96.5	FLOOD RISK
4.003	R2	70.346	0.421	0.000	1.02		117.6	FLOOD RISK
5.000	Tank 1	70.360	0.385	0.000	0.03		1.4	SURCHARGED
5.001	S3	70.360	0.385	0.000	0.03		3.1	SURCHARGED
6.000	G1	70.536	0.411	36.076	0.85		118.9	FLOOD
7.000	G2	70.307	0.532	7.023	1.28		14.4	FLOOD
8.000	G3	70.526	0.401	26.236	0.79		109.8	FLOOD
9.000	G4	70.307	0.532	7.023	1.28		14.4	FLOOD
5.002	S2	70.360	0.435	0.000	1.52		203.4	SURCHARGED
10.000	Tank 2	70.136	0.411	0.000	0.03		1.5	SURCHARGED
5.003	S1	70.136	0.336	0.000	1.65		193.1	SURCHARGED
5.004	Interceptor	70.026	0.238	0.000	1.66		193.8	SURCHARGED
4.004	R1	69.915	0.240	0.000	2.00		305.6	SURCHARGED
1.004	HW05	69.722	-0.068	0.000	1.03		167.1	OK
11.000	S11	70.480	0.230	0.000	1.20		244.3	FLOOD RISK
11.001	S10	69.989	0.089	0.000	1.12		265.3	SURCHARGED
1.005	S4	69.689	-0.021	0.000	1.00		269.9	OK
12.000	1B.1	70.827	0.317	2.069	0.75		27.4	FLOOD
12.001	1B.2	70.817	0.257	16.794	0.74		97.4	FLOOD
12.002	1B.3	70.847	0.577	0.000	0.84		110.3	FLOOD RISK
12.003	1B.4	70.807	0.602	7.315	0.44		121.0	FLOOD
12.004	1B.5	70.800	0.720	0.797	0.52		148.7	FLOOD
12.005	1B.6	70.768	0.853	0.000	0.70		184.7	SURCHARGED
12.006	1B.7	70.732	0.892	0.000	1.17		398.6	FLOOD RISK
13.000	1B.8	70.723	0.948	0.000	0.40		29.9	FLOOD RISK
13.001	1B.9	70.638	0.888	0.000	0.20		40.3	FLOOD RISK
12.007	1B.10	70.531	0.831	0.000	1.98		687.0	FLOOD RISK
14.000	1B.11	70.194	0.044	0.000	0.23		17.1	SURCHARGED
15.000	1B.12	70.187	0.037	0.000	0.24		31.5	SURCHARGED
14.001	1B.13	70.229	0.529	0.000	0.13		5.2	SURCHARGED
12.008	S5	70.036	0.436	0.000	3.80		689.8	SURCHARGED
1.006	HW08	69.598	0.238	0.000	0.04		4.0	SURCHARGED

Summary of Results for 15 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
16.000	1B.14	69.729	0.229	0.000	1.21		90.5	FLOOD RISK
16.001	1B.15	69.323	0.143	0.000	1.13		82.6	SURCHARGED
16.002	1B.16	69.077	0.112	0.000	1.61		82.3	SURCHARGED
17.000	1B.17	69.649	0.369	14.296	1.37		125.2	FLOOD
18.000	1B.18	69.523	0.243	32.529	0.91		83.1	FLOOD
17.001	1B.19	69.451	0.276	1.518	1.77		189.8	FLOOD
17.002	INTERCEPTOR	69.216	0.191	0.000	2.21		189.8	SURCHARGED
19.000	RE2.1	71.807	0.572	7.549	0.90		66.1	FLOOD
19.001	R2.7	71.800	0.800	0.108	0.91		63.2	FLOOD
19.002	R2.8	71.750	0.950	0.000	0.90		63.8	FLOOD RISK
20.000	R2.10	71.696	0.671	0.000	0.28		13.6	FLOOD RISK
19.003	R2.9	71.671	0.971	0.000	1.15		156.5	FLOOD RISK
19.004	R2.11	71.260	0.860	0.000	0.66		159.5	SURCHARGED
21.000	R2.13	71.745	1.145	0.000	0.95		65.9	FLOOD RISK
19.005	R2.12	71.087	1.087	0.000	1.43		215.6	SURCHARGED
19.006	R2.14	70.831	0.956	0.000	1.28		216.8	SURCHARGED
22.000	Tank 2.1	71.680	0.930	0.000	0.17		3.1	FLOOD RISK
22.001	S2.23	71.680	0.730	59.718	1.61		229.9	FLOOD
23.000	G2.1	70.819	0.139	19.218	1.39		17.6	FLOOD
23.001	S2.22	71.573	0.808	0.000	1.59		137.6	FLOOD RISK
22.002	S2.21	71.549	0.649	0.000	1.48		349.2	FLOOD RISK
24.000	Tank 2.2	71.415	0.915	0.000	0.18		2.4	FLOOD RISK
22.003	S2.20	71.429	0.579	0.000	1.32		352.8	FLOOD RISK
25.000	G2.2	71.355	0.405	0.000	0.49		52.5	FLOOD RISK
22.004	S2.19	71.258	0.508	0.000	0.57		375.7	SURCHARGED
26.000	G2.3	70.813	0.463	13.304	1.52		44.8	FLOOD
27.000	G2.4	71.119	0.394	19.064	0.96		151.5	FLOOD
26.001	S2.18	71.037	0.637	0.000	0.88		150.5	SURCHARGED
28.000	Tank 2.3	71.005	0.830	0.000	0.04		2.5	SURCHARGED
22.005	s2.17	71.005	0.705	0.000	1.22		422.5	SURCHARGED
22.006	Interceptor	70.843	0.755	0.000	1.18		410.3	SURCHARGED
19.007	S2.16	70.682	0.707	0.000	4.46		620.3	SURCHARGED
19.008	S22.15	70.294	0.344	0.000	2.89		621.5	SURCHARGED
29.000	RE2.2	71.701	0.576	1.458	1.06		42.5	FLOOD
29.001	R2.6	71.578	0.653	0.000	1.43		45.0	FLOOD RISK
29.002	R2.5	71.501	0.551	0.000	1.36		99.1	FLOOD RISK
29.003	R2.4	71.083	0.463	0.000	0.56		100.4	SURCHARGED
29.004	S2.12	70.725	0.475	5.007	0.45	205.0	69.1	FLOOD
30.000	RE2.3	71.901	0.901	0.590	1.48		62.3	FLOOD
30.001	R2.3	71.373	0.498	0.000	0.83		119.8	SURCHARGED
30.002	R2.2	71.085	0.535	0.000	0.33		120.2	SURCHARGED
29.005	R2.1	70.856	0.721	0.000	0.79		122.5	FLOOD RISK
29.006	S2.13	70.824	0.829	0.000	0.88		135.7	SURCHARGED
31.000	R2.19	71.161	-0.039	0.000	0.13		5.3	OK
31.001	R2.20	71.154	0.029	0.000	0.65		60.2	SURCHARGED
31.002	R2.21	71.038	0.263	0.000	0.67		110.1	SURCHARGED
31.003	R2.22	70.891	0.491	0.000	0.59		94.5	SURCHARGED
32.000	R2.18	71.232	0.312	0.000	0.48		49.7	SURCHARGED
32.001	R2.17	71.088	0.583	0.000	0.60		110.4	SURCHARGED

Summary of Results for 15 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
32.002	R2.16	70.922	0.897	0.000	0.50		96.7	SURCHARGED
29.007	R2.15	70.741	0.886	0.000	1.76		280.0	SURCHARGED
33.000	RE1A.1	70.821	0.346	0.000	0.14		10.2	FLOOD RISK
33.001	S1A.2	70.805	0.520	0.000	0.20		15.0	FLOOD RISK
33.002	S1A.3	70.792	0.697	0.000	0.30		39.9	FLOOD RISK
33.003	S1A.4	70.739	0.759	0.000	0.60		77.7	FLOOD RISK
34.000	S1A.5	70.804	0.604	3.982	1.32		44.2	FLOOD
34.001	S1A.6	70.805	0.605	4.904	0.59		43.3	FLOOD
34.002	S1A.7	70.825	0.695	24.727	1.08		175.8	FLOOD
34.003	S1A.8	70.801	0.641	1.684	1.11		368.0	FLOOD
33.004	S1A.9	70.687	0.647	0.000	1.34		389.4	FLOOD RISK
35.000	S1A.10	70.560	0.260	10.344	0.31		54.2	FLOOD
35.001	S1A.11	70.547	0.532	0.000	0.34		54.2	FLOOD RISK
35.002	INTERCEPTOR	70.550	0.685	0.140	0.35		54.8	FLOOD
36.000	S1A.21	70.250	0.000	0.000	0.45		34.1	SURCHARGED
36.001	S1A.20	70.676	1.061	0.044	0.31		5.0	FLOOD
33.005	S1A.12	70.529	0.564	0.000	1.39		387.3	FLOOD RISK
33.006	S1A.19	70.381	0.456	0.000	1.11		383.6	SURCHARGED
29.008	R2.14	70.237	0.387	0.000	4.42		659.8	SURCHARGED
19.009	S2.24	69.679	-0.156	0.000	0.01		6.7	OK
19.010	S2.27	69.080	-0.170	0.000	0.04		6.7	OK
37.000	S1A.13	69.683	0.183	0.000	1.18		88.2	FLOOD RISK
37.001	S1A.14	69.294	0.114	0.000	1.14		79.4	SURCHARGED
37.002	S1A.15	69.077	0.092	0.000	1.38		79.2	SURCHARGED
38.000	S1A.16	69.647	0.337	12.070	1.60		141.0	FLOOD
39.000	S1A.17	69.485	0.230	35.181	0.80		70.5	FLOOD
38.001	S1A.18	69.449	0.274	0.000	1.76		189.0	FLOOD RISK
38.002	INTERCEPTOR	69.216	0.191	0.000	2.20		188.9	SURCHARGED
1.007	SOUT	69.077	0.227	0.000	0.48		16.9	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	120
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	2

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	60

Summary of Results for 60 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.606	-0.144	0.000	0.53		44.4	OK
1.001	R5	70.377	-0.108	0.000	0.73		62.2	OK
1.002	R6	70.062	-0.163	0.000	0.60		79.1	OK
1.003	R7	69.774	-0.226	0.000	0.26		78.7	OK
2.000	R8	69.770	-0.180	0.000	0.15		44.5	OK
3.000	R9	69.770	-0.180	0.000	0.13		40.2	OK
4.000	R4A	70.457	-0.168	0.000	0.40		40.0	OK
4.001	R4	70.195	-0.155	0.000	0.45		40.0	OK
4.002	R3	70.144	0.019	0.000	0.95		57.4	SURCHARGED
4.003	R2	70.023	0.098	0.000	0.59		67.6	SURCHARGED
5.000	Tank 1	70.273	0.298	0.000	0.02		0.9	SURCHARGED
5.001	S3	70.274	0.299	0.000	0.02		2.0	SURCHARGED
6.000	G1	70.450	0.325	0.000	0.67		93.5	FLOOD RISK
7.000	G2	70.296	0.521	0.000	0.89		10.0	FLOOD RISK
8.000	G3	70.450	0.325	0.000	0.56		78.4	FLOOD RISK
9.000	G4	70.296	0.521	0.000	0.89		10.0	FLOOD RISK
5.002	S2	70.275	0.350	0.000	1.35		180.0	SURCHARGED
10.000	Tank 2	70.051	0.326	0.000	0.01		0.7	SURCHARGED
5.003	S1	70.051	0.251	0.000	1.54		179.7	SURCHARGED
5.004	Interceptor	69.953	0.165	0.000	1.54		179.7	SURCHARGED
4.004	R1	69.870	0.195	0.000	1.60		244.6	SURCHARGED
1.004	HW05	69.771	-0.019	0.000	1.08		174.2	OK
11.000	S11	70.109	-0.141	0.000	0.80		162.9	OK
11.001	S10	69.842	-0.058	0.000	0.75		177.6	OK
1.005	S4	69.767	0.057	0.000	1.04		280.1	SURCHARGED
12.000	1B.1	70.370	-0.140	0.000	0.30		10.9	OK
12.001	1B.2	70.336	-0.224	0.000	0.28		36.9	OK
12.002	1B.3	70.297	0.027	0.000	0.45		59.8	SURCHARGED
12.003	1B.4	70.185	-0.020	0.000	0.28		75.7	OK
12.004	1B.5	70.080	0.000	0.000	0.39		110.0	OK
12.005	1B.6	69.987	0.072	0.000	0.45		117.0	SURCHARGED
12.006	1B.7	69.962	0.122	0.000	0.72		246.8	SURCHARGED
13.000	1B.8	69.919	0.144	0.000	0.21		15.5	SURCHARGED
13.001	1B.9	69.899	0.149	0.000	0.10		20.4	SURCHARGED
12.007	1B.10	69.889	0.189	0.000	1.16		402.3	SURCHARGED
14.000	1B.11	70.293	0.143	0.000	0.10		7.5	SURCHARGED
15.000	1B.12	70.293	0.143	0.000	0.07		9.2	SURCHARGED
14.001	1B.13	70.342	0.642	0.000	0.13		5.1	SURCHARGED
12.008	S5	69.767	0.167	0.000	2.24		407.2	SURCHARGED
1.006	HW08	69.767	0.407	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.377	-0.123	0.000	0.64		48.1	OK
16.001	1B.15	69.234	0.054	0.000	0.64		46.7	SURCHARGED
16.002	1B.16	69.187	0.222	0.000	0.79		40.6	SURCHARGED

Summary of Results for 60 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.428	0.148	0.000	0.91		83.1	FLOOD RISK
18.000	1B.18	69.428	0.148	0.000	0.90		81.7	FLOOD RISK
17.001	1B.19	69.343	0.168	0.000	1.54		164.7	FLOOD RISK
17.002	INTERCEPTOR	69.189	0.164	0.000	1.91		164.5	SURCHARGED
19.000	RE2.1	71.133	-0.102	0.000	0.53		38.7	OK
19.001	R2.7	71.085	0.085	0.000	0.63		43.7	SURCHARGED
19.002	R2.8	70.997	0.197	0.000	0.53		37.1	SURCHARGED
20.000	R2.10	70.923	-0.102	0.000	0.15		7.5	OK
19.003	R2.9	70.904	0.204	0.000	0.69		93.8	SURCHARGED
19.004	R2.11	70.717	0.317	0.000	0.41		99.6	SURCHARGED
21.000	R2.13	70.794	0.194	0.000	0.52		36.2	SURCHARGED
19.005	R2.12	70.570	0.570	0.000	0.89		134.6	SURCHARGED
19.006	R2.14	70.469	0.594	0.000	0.80		134.6	SURCHARGED
22.000	Tank 2.1	71.322	0.572	0.000	0.08		1.4	SURCHARGED
22.001	S2.23	71.323	0.373	0.000	1.41		201.4	FLOOD RISK
23.000	G2.1	70.813	0.133	12.923	1.31		16.6	FLOOD
23.001	S2.22	70.981	0.216	0.000	0.81		70.4	SURCHARGED
22.002	S2.21	70.945	0.045	0.000	1.07		252.7	SURCHARGED
24.000	Tank 2.2	70.894	0.394	0.000	0.08		1.1	SURCHARGED
22.003	S2.20	70.894	0.044	0.000	1.00		268.3	SURCHARGED
25.000	G2.2	70.817	-0.133	0.000	0.21		22.5	OK
22.004	S2.19	70.798	0.048	0.000	0.42		274.9	SURCHARGED
26.000	G2.3	70.734	0.384	0.000	0.22		6.4	FLOOD RISK
27.000	G2.4	70.929	0.204	0.000	0.58		92.7	FLOOD RISK
26.001	S2.18	70.726	0.326	0.000	0.51		87.9	SURCHARGED
28.000	Tank 2.3	70.580	0.405	0.000	0.02		1.1	SURCHARGED
22.005	s2.17	70.582	0.282	0.000	1.00		347.4	SURCHARGED
22.006	Interceptor	70.465	0.377	0.000	1.00		347.1	SURCHARGED
19.007	S2.16	70.367	0.392	0.000	3.46		481.5	SURCHARGED
19.008	S22.15	70.136	0.186	0.000	2.24		481.3	SURCHARGED
29.000	RE2.2	71.028	-0.097	0.000	0.61		24.5	OK
29.001	R2.6	70.888	-0.037	0.000	0.78		24.6	OK
29.002	R2.5	70.860	-0.090	0.000	0.82		59.8	OK
29.003	R2.4	70.442	-0.178	0.000	0.35		62.7	OK
29.004	S2.12	70.267	0.017	0.000	0.26	138.1	40.1	SURCHARGED
30.000	RE2.3	70.941	-0.059	0.000	0.89		37.4	OK
30.001	R2.3	70.690	-0.185	0.000	0.50		73.1	OK
30.002	R2.2	70.366	-0.184	0.000	0.20		71.6	OK
29.005	R2.1	70.336	0.201	0.000	0.61		93.7	SURCHARGED
29.006	S2.13	70.308	0.313	0.000	0.69		106.4	SURCHARGED
31.000	R2.19	71.009	-0.191	0.000	0.06		2.3	OK
31.001	R2.20	70.934	-0.191	0.000	0.28		25.6	OK
31.002	R2.21	70.550	-0.225	0.000	0.33		54.9	OK
31.003	R2.22	70.297	-0.103	0.000	0.38		60.5	OK
32.000	R2.18	70.720	-0.200	0.000	0.24		25.1	OK
32.001	R2.17	70.558	0.053	0.000	0.29		53.2	SURCHARGED
32.002	R2.16	70.403	0.378	0.000	0.28		53.8	SURCHARGED
29.007	R2.15	70.228	0.373	0.000	1.15		182.3	SURCHARGED
33.000	RE1A.1	70.316	-0.159	0.000	0.07		5.3	OK

Summary of Results for 60 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.309	0.024	0.000	0.11		8.3	SURCHARGED
33.002	S1A.3	70.300	0.205	0.000	0.22		29.6	SURCHARGED
33.003	S1A.4	70.283	0.303	0.000	0.41		52.7	SURCHARGED
34.000	S1A.5	70.439	0.239	0.000	0.22		7.3	SURCHARGED
34.001	S1A.6	70.426	0.226	0.000	0.17		12.4	SURCHARGED
34.002	S1A.7	70.409	0.279	0.000	0.70		114.3	SURCHARGED
34.003	S1A.8	70.310	0.150	0.000	0.66		220.8	SURCHARGED
33.004	S1A.9	70.255	0.215	0.000	0.93		270.9	SURCHARGED
35.000	S1A.10	70.385	0.085	0.000	0.17		29.5	FLOOD RISK
35.001	S1A.11	70.319	0.304	0.000	0.18		29.3	FLOOD RISK
35.002	INTERCEPTOR	70.239	0.374	0.000	0.19		30.1	SURCHARGED
36.000	S1A.21	70.345	0.095	0.000	0.22		17.0	SURCHARGED
36.001	S1A.20	70.453	0.838	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.189	0.224	0.000	1.07		299.0	SURCHARGED
33.006	S1A.19	70.143	0.218	0.000	0.86		299.3	SURCHARGED
29.008	R2.14	70.031	0.181	0.000	3.20		476.8	SURCHARGED
19.009	S2.24	69.825	-0.010	0.000	0.01		6.7	OK
19.010	S2.27	69.191	-0.059	0.000	0.04		6.8	OK
37.000	S1A.13	69.371	-0.129	0.000	0.61		45.5	OK
37.001	S1A.14	69.234	0.054	0.000	0.64		44.7	SURCHARGED
37.002	S1A.15	69.187	0.202	0.000	0.65		37.3	SURCHARGED
38.000	S1A.16	69.404	0.094	0.000	0.99		87.1	FLOOD RISK
39.000	S1A.17	69.388	0.133	0.000	0.84		74.2	FLOOD RISK
38.001	S1A.18	69.326	0.151	0.000	1.51		161.4	FLOOD RISK
38.002	INTERCEPTOR	69.189	0.164	0.000	1.88		161.2	SURCHARGED
1.007	SOUT	69.187	0.337	0.000	0.48		16.9	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	120

Summary of Results for 120 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.565	-0.185	0.000	0.32		26.5	OK
1.001	R5	70.323	-0.162	0.000	0.43		37.1	OK
1.002	R6	70.007	-0.218	0.000	0.36		47.6	OK
1.003	R7	69.840	-0.160	0.000	0.16		47.5	OK
2.000	R8	69.840	-0.110	0.000	0.09		26.1	OK
3.000	R9	69.840	-0.110	0.000	0.08		23.4	OK
4.000	R4A	70.424	-0.201	0.000	0.24		23.9	OK
4.001	R4	70.155	-0.195	0.000	0.27		23.9	OK
4.002	R3	69.994	-0.131	0.000	0.60		36.6	OK
4.003	R2	69.842	-0.083	0.000	0.39		44.6	OK
5.000	Tank 1	69.936	-0.039	0.000	0.00		0.2	OK
5.001	S3	69.936	-0.039	0.000	0.00		0.6	OK
6.000	G1	70.016	-0.109	0.000	0.48		66.8	OK
7.000	G2	69.972	0.197	0.000	0.48		5.4	SURCHARGED
8.000	G3	69.996	-0.129	0.000	0.41		57.6	OK
9.000	G4	69.972	0.197	0.000	0.48		5.4	SURCHARGED
5.002	S2	69.936	0.011	0.000	0.98		131.1	SURCHARGED
10.000	Tank 2	69.844	0.119	0.000	0.00		0.0	SURCHARGED
5.003	S1	69.842	0.042	0.000	1.12		131.0	SURCHARGED
5.004	Interceptor	69.840	0.052	0.000	1.12		130.9	SURCHARGED
4.004	R1	69.840	0.165	0.000	1.14		173.3	SURCHARGED
1.004	HW05	69.840	0.050	0.000	0.95		153.4	SURCHARGED
11.000	S11	69.995	-0.255	0.000	0.39		79.4	OK
11.001	S10	69.840	-0.060	0.000	0.40		95.5	OK
1.005	S4	69.840	0.130	0.000	0.88		236.3	SURCHARGED
12.000	1B.1	70.349	-0.161	0.000	0.18		6.5	OK
12.001	1B.2	70.287	-0.273	0.000	0.17		22.0	OK
12.002	1B.3	70.101	-0.169	0.000	0.30		39.9	OK
12.003	1B.4	70.055	-0.150	0.000	0.19		51.4	OK
12.004	1B.5	70.004	-0.076	0.000	0.25		70.5	OK
12.005	1B.6	69.915	0.000	0.000	0.28		72.8	OK
12.006	1B.7	69.840	0.000	0.000	0.44		148.8	SURCHARGED
13.000	1B.8	69.840	0.065	0.000	0.13		9.5	SURCHARGED
13.001	1B.9	69.840	0.090	0.000	0.06		12.5	SURCHARGED
12.007	1B.10	69.841	0.141	0.000	0.69		238.4	SURCHARGED
14.000	1B.11	70.335	0.185	0.000	0.08		5.8	SURCHARGED
15.000	1B.12	70.336	0.186	0.000	0.04		5.7	SURCHARGED
14.001	1B.13	70.373	0.673	0.000	0.12		5.0	SURCHARGED
12.008	S5	69.841	0.241	0.000	1.34		242.9	SURCHARGED
1.006	HW08	69.840	0.480	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.329	-0.171	0.000	0.38		28.8	OK
16.001	1B.15	69.248	0.068	0.000	0.37		26.8	SURCHARGED
16.002	1B.16	69.246	0.281	0.000	0.49		25.0	SURCHARGED

Summary of Results for 120 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.314	0.034	0.000	0.58		53.1	SURCHARGED
18.000	1B.18	69.311	0.031	0.000	0.58		52.7	FLOOD RISK
17.001	1B.19	69.292	0.117	0.000	0.97		104.0	FLOOD RISK
17.002	INTERCEPTOR	69.247	0.222	0.000	1.21		103.6	SURCHARGED
19.000	RE2.1	71.050	-0.185	0.000	0.31		23.1	OK
19.001	R2.7	70.831	-0.169	0.000	0.40		27.5	OK
19.002	R2.8	70.630	-0.170	0.000	0.39		27.4	OK
20.000	R2.10	70.846	-0.179	0.000	0.09		4.5	OK
19.003	R2.9	70.541	-0.159	0.000	0.52		71.2	OK
19.004	R2.11	70.472	0.072	0.000	0.28		68.4	SURCHARGED
21.000	R2.13	70.467	-0.133	0.000	0.35		24.3	OK
19.005	R2.12	70.324	0.324	0.000	0.59		88.8	SURCHARGED
19.006	R2.14	70.256	0.381	0.000	0.52		88.4	SURCHARGED
22.000	Tank 2.1	70.884	0.134	0.000	0.01		0.2	SURCHARGED
22.001	S2.23	70.884	-0.066	0.000	0.92		131.3	OK
23.000	G2.1	70.784	0.104	0.000	0.18		2.3	FLOOD RISK
23.001	S2.22	70.772	0.007	0.000	0.55		47.7	SURCHARGED
22.002	S2.21	70.710	-0.190	0.000	0.75		177.1	OK
24.000	Tank 2.2	70.631	0.131	0.000	0.01		0.2	SURCHARGED
22.003	S2.20	70.631	-0.219	0.000	0.73		194.3	OK
25.000	G2.2	70.778	-0.172	0.000	0.13		13.5	OK
22.004	S2.19	70.380	-0.370	0.000	0.31		206.9	OK
26.000	G2.3	70.292	-0.058	0.000	0.12		3.7	OK
27.000	G2.4	70.555	-0.170	0.000	0.39		61.5	OK
26.001	S2.18	70.284	-0.116	0.000	0.38		64.9	OK
28.000	Tank 2.3	70.218	0.043	0.000	0.01		0.4	SURCHARGED
22.005	s2.17	70.218	-0.082	0.000	0.76		262.9	OK
22.006	Interceptor	70.183	0.095	0.000	0.76		262.9	SURCHARGED
19.007	S2.16	70.153	0.178	0.000	2.52		350.1	SURCHARGED
19.008	S22.15	70.029	0.079	0.000	1.63		350.4	SURCHARGED
29.000	RE2.2	70.994	-0.131	0.000	0.37		14.6	OK
29.001	R2.6	70.817	-0.108	0.000	0.46		14.6	OK
29.002	R2.5	70.799	-0.151	0.000	0.49		35.9	OK
29.003	R2.4	70.413	-0.207	0.000	0.21		37.6	OK
29.004	S2.12	70.175	-0.075	0.000	0.21	62.5	31.5	OK
30.000	RE2.3	70.892	-0.108	0.000	0.53		22.3	OK
30.001	R2.3	70.641	-0.234	0.000	0.30		43.6	OK
30.002	R2.2	70.206	-0.344	0.000	0.12		45.4	OK
29.005	R2.1	70.177	0.042	0.000	0.48		74.7	SURCHARGED
29.006	S2.13	70.144	0.149	0.000	0.56		86.5	SURCHARGED
31.000	R2.19	71.002	-0.198	0.000	0.03		1.4	OK
31.001	R2.20	70.907	-0.218	0.000	0.17		15.3	OK
31.002	R2.21	70.513	-0.262	0.000	0.20		32.7	OK
31.003	R2.22	70.146	-0.254	0.000	0.23		37.1	OK
32.000	R2.18	70.695	-0.225	0.000	0.14		15.0	OK
32.001	R2.17	70.239	-0.266	0.000	0.19		34.6	OK
32.002	R2.16	70.140	0.115	0.000	0.19		36.0	SURCHARGED
29.007	R2.15	70.050	0.195	0.000	0.92		146.8	SURCHARGED
33.000	RE1A.1	70.215	-0.260	0.000	0.04		3.2	OK

Summary of Results for 120 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.100	-0.185	0.000	0.04		3.1	OK
33.002	S1A.3	70.095	0.000	0.000	0.14		18.9	OK
33.003	S1A.4	70.062	0.082	0.000	0.27		34.7	SURCHARGED
34.000	S1A.5	70.277	0.077	0.000	0.13		4.4	SURCHARGED
34.001	S1A.6	70.269	0.069	0.000	0.10		7.5	SURCHARGED
34.002	S1A.7	70.259	0.129	0.000	0.45		73.7	SURCHARGED
34.003	S1A.8	70.160	0.000	0.000	0.42		139.9	OK
33.004	S1A.9	70.051	0.011	0.000	0.60		174.0	SURCHARGED
35.000	S1A.10	70.045	-0.255	0.000	0.12		20.8	OK
35.001	S1A.11	70.027	0.012	0.000	0.14		21.5	SURCHARGED
35.002	INTERCEPTOR	70.024	0.159	0.000	0.14		22.0	SURCHARGED
36.000	S1A.21	70.373	0.123	0.000	0.19		14.0	SURCHARGED
36.001	S1A.20	70.511	0.896	0.000	0.31		5.0	FLOOD RISK
33.005	S1A.12	70.023	0.058	0.000	0.72		201.0	SURCHARGED
33.006	S1A.19	69.987	0.062	0.000	0.58		201.0	SURCHARGED
29.008	R2.14	69.927	0.077	0.000	2.33		346.9	SURCHARGED
19.009	S2.24	69.926	0.091	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.250	0.000	0.000	0.04		6.9	OK
37.000	S1A.13	69.325	-0.175	0.000	0.36		27.2	OK
37.001	S1A.14	69.249	0.069	0.000	0.35		24.7	SURCHARGED
37.002	S1A.15	69.246	0.261	0.000	0.40		22.8	SURCHARGED
38.000	S1A.16	69.315	0.005	0.000	0.62		54.9	SURCHARGED
39.000	S1A.17	69.301	0.046	0.000	0.52		46.0	FLOOD RISK
38.001	S1A.18	69.293	0.118	0.000	0.93		99.2	FLOOD RISK
38.002	INTERCEPTOR	69.246	0.221	0.000	1.16		99.3	SURCHARGED
1.007	SOUT	69.246	0.396	0.000	0.48		16.9	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	360
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	3

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	180

Summary of Results for 180 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.548	-0.202	0.000	0.23		19.6	OK
1.001	R5	70.302	-0.183	0.000	0.32		27.4	OK
1.002	R6	69.982	-0.243	0.000	0.27		35.3	OK
1.003	R7	69.891	-0.109	0.000	0.12		35.3	OK
2.000	R8	69.891	-0.059	0.000	0.07		19.4	OK
3.000	R9	69.891	-0.059	0.000	0.06		17.4	OK
4.000	R4A	70.410	-0.215	0.000	0.18		17.7	OK
4.001	R4	70.140	-0.210	0.000	0.20		17.7	OK
4.002	R3	69.966	-0.159	0.000	0.45		27.1	OK
4.003	R2	69.921	-0.004	0.000	0.29		33.2	OK
5.000	Tank 1	69.926	-0.049	0.000	0.00		0.1	OK
5.001	S3	69.926	-0.049	0.000	0.00		0.3	OK
6.000	G1	69.958	-0.167	0.000	0.37		51.1	OK
7.000	G2	69.943	0.168	0.000	0.36		4.1	SURCHARGED
8.000	G3	69.953	-0.172	0.000	0.32		43.9	OK
9.000	G4	69.943	0.168	0.000	0.36		4.1	SURCHARGED
5.002	S2	69.926	0.001	0.000	0.76		101.8	SURCHARGED
10.000	Tank 2	69.914	0.189	0.000	0.00		0.1	SURCHARGED
5.003	S1	69.914	0.114	0.000	0.86		100.3	SURCHARGED
5.004	Interceptor	69.911	0.123	0.000	0.86		100.1	SURCHARGED
4.004	R1	69.908	0.233	0.000	0.87		132.2	SURCHARGED
1.004	HW05	69.891	0.101	0.000	0.77		125.5	SURCHARGED
11.000	S11	69.940	-0.310	0.000	0.19		37.9	OK
11.001	S10	69.895	-0.005	0.000	0.20		47.9	OK
1.005	S4	69.891	0.181	0.000	0.57		154.5	SURCHARGED
12.000	1B.1	70.339	-0.171	0.000	0.13		4.8	OK
12.001	1B.2	70.272	-0.288	0.000	0.12		16.2	OK
12.002	1B.3	70.066	-0.204	0.000	0.23		29.9	OK
12.003	1B.4	70.052	-0.153	0.000	0.15		42.2	OK
12.004	1B.5	70.004	-0.076	0.000	0.21		60.9	OK
12.005	1B.6	69.915	0.000	0.000	0.23		59.7	OK
12.006	1B.7	69.892	0.052	0.000	0.37		125.8	SURCHARGED
13.000	1B.8	69.892	0.117	0.000	0.10		7.2	SURCHARGED
13.001	1B.9	69.892	0.142	0.000	0.04		8.6	SURCHARGED
12.007	1B.10	69.892	0.192	0.000	0.57		197.0	SURCHARGED
14.000	1B.11	70.350	0.200	0.000	0.07		5.2	SURCHARGED
15.000	1B.12	70.351	0.201	0.000	0.04		4.6	SURCHARGED
14.001	1B.13	70.404	0.704	0.000	0.12		5.0	FLOOD RISK
12.008	S5	69.892	0.292	0.000	1.11		200.7	SURCHARGED
1.006	HW08	69.891	0.531	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.309	-0.191	0.000	0.28		21.3	OK
16.001	1B.15	69.283	0.103	0.000	0.28		20.2	SURCHARGED
16.002	1B.16	69.282	0.317	0.000	0.37		19.1	FLOOD RISK

Summary of Results for 180 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.323	0.043	0.000	0.40		36.4	SURCHARGED
18.000	1B.18	69.323	0.043	0.000	0.40		36.1	FLOOD RISK
17.001	1B.19	69.314	0.139	0.000	0.65		69.2	FLOOD RISK
17.002	INTERCEPTOR	69.282	0.257	0.000	0.81		69.2	SURCHARGED
19.000	RE2.1	71.033	-0.202	0.000	0.23		17.1	OK
19.001	R2.7	70.811	-0.189	0.000	0.29		20.4	OK
19.002	R2.8	70.610	-0.190	0.000	0.29		20.4	OK
20.000	R2.10	70.838	-0.187	0.000	0.07		3.4	OK
19.003	R2.9	70.487	-0.213	0.000	0.39		52.9	OK
19.004	R2.11	70.264	-0.136	0.000	0.23		55.2	OK
21.000	R2.13	70.453	-0.147	0.000	0.26		18.0	OK
19.005	R2.12	70.189	0.189	0.000	0.48		72.4	SURCHARGED
19.006	R2.14	70.102	0.227	0.000	0.43		72.4	SURCHARGED
22.000	Tank 2.1	70.778	0.028	0.000	0.01		0.1	SURCHARGED
22.001	S2.23	70.778	-0.172	0.000	0.70		99.4	OK
23.000	G2.1	70.702	0.022	0.000	0.14		1.7	FLOOD RISK
23.001	S2.22	70.693	-0.072	0.000	0.40		34.7	OK
22.002	S2.21	70.642	-0.258	0.000	0.56		133.4	OK
24.000	Tank 2.2	70.568	0.068	0.000	0.01		0.1	SURCHARGED
22.003	S2.20	70.568	-0.282	0.000	0.55		146.8	OK
25.000	G2.2	70.771	-0.179	0.000	0.09		10.0	OK
22.004	S2.19	70.347	-0.403	0.000	0.24		156.4	OK
26.000	G2.3	70.186	-0.164	0.000	0.09		2.8	OK
27.000	G2.4	70.534	-0.191	0.000	0.29		45.5	OK
26.001	S2.18	70.170	-0.230	0.000	0.28		48.2	OK
28.000	Tank 2.3	70.109	-0.066	0.000	0.01		0.6	OK
22.005	s2.17	70.109	-0.191	0.000	0.59		203.2	OK
22.006	Interceptor	70.095	0.007	0.000	0.59		203.3	SURCHARGED
19.007	S2.16	70.000	0.025	0.000	1.98		275.2	SURCHARGED
19.008	S22.15	69.987	0.037	0.000	1.28		275.3	SURCHARGED
29.000	RE2.2	70.980	-0.145	0.000	0.27		10.8	OK
29.001	R2.6	70.796	-0.129	0.000	0.34		10.8	OK
29.002	R2.5	70.775	-0.175	0.000	0.36		26.5	OK
29.003	R2.4	70.398	-0.222	0.000	0.15		27.8	OK
29.004	S2.12	70.175	-0.075	0.000	0.18	26.8	28.0	OK
30.000	RE2.3	70.873	-0.127	0.000	0.39		16.5	OK
30.001	R2.3	70.620	-0.255	0.000	0.22		32.3	OK
30.002	R2.2	70.192	-0.358	0.000	0.09		33.5	OK
29.005	R2.1	70.142	0.007	0.000	0.45		69.2	SURCHARGED
29.006	S2.13	70.074	0.079	0.000	0.50		77.1	SURCHARGED
31.000	R2.19	70.999	-0.201	0.000	0.02		1.0	OK
31.001	R2.20	70.895	-0.230	0.000	0.12		11.3	OK
31.002	R2.21	70.495	-0.280	0.000	0.15		24.1	OK
31.003	R2.22	70.128	-0.272	0.000	0.17		27.3	OK
32.000	R2.18	70.685	-0.235	0.000	0.11		11.1	OK
32.001	R2.17	70.222	-0.283	0.000	0.14		25.6	OK
32.002	R2.16	70.025	0.000	0.000	0.13		25.6	OK
29.007	R2.15	70.019	0.164	0.000	0.80		127.4	SURCHARGED
33.000	RE1A.1	70.210	-0.265	0.000	0.03		2.3	OK

Summary of Results for 180 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.099	-0.186	0.000	0.03		2.3	OK
33.002	S1A.3	70.095	0.000	0.000	0.10		13.8	OK
33.003	S1A.4	70.053	0.073	0.000	0.20		25.1	SURCHARGED
34.000	S1A.5	70.265	0.065	0.000	0.09		3.1	SURCHARGED
34.001	S1A.6	70.260	0.060	0.000	0.07		5.3	SURCHARGED
34.002	S1A.7	70.252	0.122	0.000	0.32		51.8	SURCHARGED
34.003	S1A.8	70.153	-0.007	0.000	0.30		98.5	OK
33.004	S1A.9	70.040	0.000	0.000	0.43		123.6	SURCHARGED
35.000	S1A.10	70.028	-0.272	0.000	0.09		15.3	OK
35.001	S1A.11	70.015	0.000	0.000	0.11		17.3	OK
35.002	INTERCEPTOR	70.002	0.137	0.000	0.11		17.4	SURCHARGED
36.000	S1A.21	70.385	0.135	0.000	0.17		12.6	SURCHARGED
36.001	S1A.20	70.535	0.920	0.000	0.31		5.0	FLOOD RISK
33.005	S1A.12	69.995	0.030	0.000	0.52		146.1	SURCHARGED
33.006	S1A.19	69.989	0.064	0.000	0.42		146.6	SURCHARGED
29.008	R2.14	69.987	0.137	0.000	1.84		273.8	SURCHARGED
19.009	S2.24	69.987	0.152	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.284	0.034	0.000	0.04		6.8	SURCHARGED
37.000	S1A.13	69.306	-0.194	0.000	0.27		20.1	OK
37.001	S1A.14	69.283	0.103	0.000	0.27		19.1	SURCHARGED
37.002	S1A.15	69.282	0.297	0.000	0.31		18.0	FLOOD RISK
38.000	S1A.16	69.320	0.010	0.000	0.45		39.2	SURCHARGED
39.000	S1A.17	69.319	0.064	0.000	0.36		31.8	FLOOD RISK
38.001	S1A.18	69.310	0.135	0.000	0.63		67.9	FLOOD RISK
38.002	INTERCEPTOR	69.282	0.257	0.000	0.79		67.9	SURCHARGED
1.007	SOUT	69.282	0.432	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	480
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	4

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	240

Summary of Results for 240 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.537	-0.213	0.000	0.19		15.7	OK
1.001	R5	70.288	-0.197	0.000	0.26		22.0	OK
1.002	R6	69.968	-0.257	0.000	0.22		28.3	OK
1.003	R7	69.938	-0.062	0.000	0.09		28.3	OK
2.000	R8	69.938	-0.012	0.000	0.05		15.6	OK
3.000	R9	69.938	-0.012	0.000	0.05		14.0	OK
4.000	R4A	70.400	-0.225	0.000	0.14		14.2	OK
4.001	R4	70.129	-0.221	0.000	0.16		14.2	OK
4.002	R3	69.949	-0.176	0.000	0.36		21.8	OK
4.003	R2	69.938	0.013	0.000	0.23		26.8	SURCHARGED
5.000	Tank 1	69.944	-0.031	0.000	0.00		0.1	OK
5.001	S3	69.944	-0.031	0.000	0.00		0.1	OK
6.000	G1	69.955	-0.170	0.000	0.29		40.9	OK
7.000	G2	69.950	0.175	0.000	0.30		3.4	SURCHARGED
8.000	G3	69.953	-0.172	0.000	0.25		35.2	OK
9.000	G4	69.950	0.175	0.000	0.30		3.4	SURCHARGED
5.002	S2	69.944	0.019	0.000	0.62		82.2	SURCHARGED
10.000	Tank 2	69.938	0.213	0.000	0.00		0.1	SURCHARGED
5.003	S1	69.938	0.138	0.000	0.70		81.7	SURCHARGED
5.004	Interceptor	69.938	0.150	0.000	0.70		81.6	SURCHARGED
4.004	R1	69.938	0.263	0.000	0.70		107.3	SURCHARGED
1.004	HW05	69.938	0.148	0.000	0.65		104.6	SURCHARGED
11.000	S11	69.942	-0.308	0.000	0.08		16.8	OK
11.001	S10	69.940	0.040	0.000	0.11		25.7	SURCHARGED
1.005	S4	69.939	0.229	0.000	0.47		127.3	SURCHARGED
12.000	1B.1	70.334	-0.176	0.000	0.11		3.9	OK
12.001	1B.2	70.264	-0.296	0.000	0.10		13.0	OK
12.002	1B.3	70.062	-0.208	0.000	0.18		24.0	OK
12.003	1B.4	70.049	-0.156	0.000	0.12		33.5	OK
12.004	1B.5	70.004	-0.076	0.000	0.17		47.3	OK
12.005	1B.6	69.939	0.024	0.000	0.17		44.1	SURCHARGED
12.006	1B.7	69.939	0.099	0.000	0.27		93.0	SURCHARGED
13.000	1B.8	69.939	0.164	0.000	0.07		5.5	SURCHARGED
13.001	1B.9	69.939	0.189	0.000	0.03		7.0	SURCHARGED
12.007	1B.10	69.939	0.239	0.000	0.41		140.9	SURCHARGED
14.000	1B.11	70.353	0.203	0.000	0.07		4.9	SURCHARGED
15.000	1B.12	70.354	0.204	0.000	0.03		3.9	SURCHARGED
14.001	1B.13	70.407	0.707	0.000	0.12		5.0	FLOOD RISK
12.008	S5	69.939	0.339	0.000	0.79		143.3	SURCHARGED
1.006	HW08	69.939	0.579	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.310	-0.190	0.000	0.23		17.1	OK
16.001	1B.15	69.308	0.128	0.000	0.22		16.2	SURCHARGED
16.002	1B.16	69.306	0.341	0.000	0.30		15.2	FLOOD RISK

Summary of Results for 240 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.334	0.054	0.000	0.32		29.5	SURCHARGED
18.000	1B.18	69.334	0.054	0.000	0.32		28.9	FLOOD RISK
17.001	1B.19	69.330	0.155	0.000	0.52		56.1	FLOOD RISK
17.002	INTERCEPTOR	69.307	0.282	0.000	0.65		56.1	SURCHARGED
19.000	RE2.1	71.022	-0.213	0.000	0.19		13.7	OK
19.001	R2.7	70.798	-0.202	0.000	0.24		16.4	OK
19.002	R2.8	70.598	-0.202	0.000	0.23		16.4	OK
20.000	R2.10	70.834	-0.191	0.000	0.05		2.7	OK
19.003	R2.9	70.469	-0.231	0.000	0.31		42.5	OK
19.004	R2.11	70.230	-0.170	0.000	0.18		44.5	OK
21.000	R2.13	70.444	-0.156	0.000	0.21		14.4	OK
19.005	R2.12	70.168	0.168	0.000	0.39		58.2	SURCHARGED
19.006	R2.14	70.092	0.217	0.000	0.34		58.2	SURCHARGED
22.000	Tank 2.1	70.742	-0.008	0.000	0.00		0.1	OK
22.001	S2.23	70.742	-0.208	0.000	0.56		79.7	OK
23.000	G2.1	70.648	-0.032	0.000	0.11		1.4	FLOOD RISK
23.001	S2.22	70.640	-0.125	0.000	0.33		28.2	OK
22.002	S2.21	70.602	-0.298	0.000	0.46		107.8	OK
24.000	Tank 2.2	70.529	0.029	0.000	0.01		0.1	SURCHARGED
22.003	S2.20	70.529	-0.321	0.000	0.44		118.6	OK
25.000	G2.2	70.765	-0.185	0.000	0.07		8.0	OK
22.004	S2.19	70.327	-0.423	0.000	0.19		126.4	OK
26.000	G2.3	70.177	-0.173	0.000	0.08		2.2	OK
27.000	G2.4	70.522	-0.203	0.000	0.23		36.5	OK
26.001	S2.18	70.158	-0.242	0.000	0.23		38.7	OK
28.000	Tank 2.3	70.106	-0.069	0.000	0.01		0.5	OK
22.005	s2.17	70.105	-0.195	0.000	0.47		164.6	OK
22.006	Interceptor	70.093	0.005	0.000	0.47		164.6	SURCHARGED
19.007	S2.16	70.032	0.057	0.000	1.60		222.9	SURCHARGED
19.008	S22.15	70.028	0.078	0.000	1.04		222.9	SURCHARGED
29.000	RE2.2	70.971	-0.154	0.000	0.22		8.7	OK
29.001	R2.6	70.782	-0.143	0.000	0.28		8.7	OK
29.002	R2.5	70.760	-0.190	0.000	0.29		21.3	OK
29.003	R2.4	70.390	-0.230	0.000	0.12		22.4	OK
29.004	S2.12	70.172	-0.078	0.000	0.15	7.1	23.1	OK
30.000	RE2.3	70.861	-0.139	0.000	0.31		13.2	OK
30.001	R2.3	70.606	-0.269	0.000	0.18		25.9	OK
30.002	R2.2	70.181	-0.369	0.000	0.07		27.0	OK
29.005	R2.1	70.149	0.014	0.000	0.37		56.5	SURCHARGED
29.006	S2.13	70.096	0.101	0.000	0.42		64.3	SURCHARGED
31.000	R2.19	70.996	-0.204	0.000	0.02		0.8	OK
31.001	R2.20	70.888	-0.237	0.000	0.10		9.0	OK
31.002	R2.21	70.485	-0.290	0.000	0.12		19.4	OK
31.003	R2.22	70.117	-0.283	0.000	0.14		21.9	OK
32.000	R2.18	70.679	-0.241	0.000	0.09		8.9	OK
32.001	R2.17	70.213	-0.292	0.000	0.11		20.5	OK
32.002	R2.16	70.045	0.020	0.000	0.11		20.6	SURCHARGED
29.007	R2.15	70.044	0.189	0.000	0.66		104.6	SURCHARGED
33.000	RE1A.1	70.207	-0.268	0.000	0.03		1.9	OK

Summary of Results for 240 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.091	-0.194	0.000	0.02		1.8	OK
33.002	S1A.3	70.088	-0.007	0.000	0.08		10.2	OK
33.003	S1A.4	70.050	0.070	0.000	0.14		18.5	SURCHARGED
34.000	S1A.5	70.261	0.061	0.000	0.07		2.4	SURCHARGED
34.001	S1A.6	70.257	0.057	0.000	0.05		3.9	SURCHARGED
34.002	S1A.7	70.252	0.122	0.000	0.23		37.6	SURCHARGED
34.003	S1A.8	70.153	-0.007	0.000	0.22		74.5	OK
33.004	S1A.9	70.040	0.000	0.000	0.32		92.4	OK
35.000	S1A.10	70.031	-0.269	0.000	0.07		11.7	OK
35.001	S1A.11	70.031	0.016	0.000	0.08		13.5	SURCHARGED
35.002	INTERCEPTOR	70.031	0.166	0.000	0.09		13.6	SURCHARGED
36.000	S1A.21	70.386	0.136	0.000	0.15		11.2	SURCHARGED
36.001	S1A.20	70.535	0.920	0.000	0.31		5.0	FLOOD RISK
33.005	S1A.12	70.030	0.065	0.000	0.39		109.0	SURCHARGED
33.006	S1A.19	70.029	0.104	0.000	0.31		109.3	SURCHARGED
29.008	R2.14	70.028	0.178	0.000	1.38		205.6	SURCHARGED
19.009	S2.24	70.028	0.193	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.308	0.058	0.000	0.04		6.8	SURCHARGED
37.000	S1A.13	69.310	-0.190	0.000	0.22		16.2	OK
37.001	S1A.14	69.308	0.128	0.000	0.22		15.3	SURCHARGED
37.002	S1A.15	69.306	0.321	0.000	0.25		14.4	FLOOD RISK
38.000	S1A.16	69.333	0.023	0.000	0.35		30.8	SURCHARGED
39.000	S1A.17	69.330	0.075	0.000	0.30		26.1	FLOOD RISK
38.001	S1A.18	69.322	0.147	0.000	0.51		54.7	FLOOD RISK
38.002	INTERCEPTOR	69.307	0.282	0.000	0.64		54.7	SURCHARGED
1.007	SOUT	69.306	0.456	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	720
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	6

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	360

Summary of Results for 360 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.523	-0.227	0.000	0.14		11.5	OK
1.001	R5	70.273	-0.212	0.000	0.19		16.1	OK
1.002	R6	70.017	-0.208	0.000	0.16		20.7	OK
1.003	R7	70.017	0.017	0.000	0.07		20.6	SURCHARGED
2.000	R8	70.017	0.067	0.000	0.04		11.0	SURCHARGED
3.000	R9	70.017	0.067	0.000	0.03		9.9	SURCHARGED
4.000	R4A	70.389	-0.236	0.000	0.10		10.4	OK
4.001	R4	70.118	-0.232	0.000	0.12		10.4	OK
4.002	R3	70.017	-0.108	0.000	0.26		15.9	OK
4.003	R2	70.017	0.092	0.000	0.17		19.4	SURCHARGED
5.000	Tank 1	70.016	0.041	0.000	0.00		0.1	SURCHARGED
5.001	S3	70.017	0.042	0.000	0.00		0.2	SURCHARGED
6.000	G1	70.016	-0.109	0.000	0.21		29.8	OK
7.000	G2	70.016	0.241	0.000	0.20		2.3	FLOOD RISK
8.000	G3	70.017	-0.108	0.000	0.18		25.6	OK
9.000	G4	70.016	0.241	0.000	0.20		2.3	FLOOD RISK
5.002	S2	70.017	0.092	0.000	0.44		58.3	SURCHARGED
10.000	Tank 2	70.017	0.292	0.000	0.00		0.1	SURCHARGED
5.003	S1	70.017	0.217	0.000	0.48		55.6	SURCHARGED
5.004	Interceptor	70.017	0.229	0.000	0.47		55.4	SURCHARGED
4.004	R1	70.017	0.342	0.000	0.48		73.2	SURCHARGED
1.004	HW05	70.017	0.227	0.000	0.51		83.3	SURCHARGED
11.000	S11	70.020	-0.230	0.000	0.06		12.7	OK
11.001	S10	70.018	0.118	0.000	0.08		18.4	SURCHARGED
1.005	S4	70.017	0.307	0.000	0.38		102.2	SURCHARGED
12.000	1B.1	70.326	-0.184	0.000	0.08		2.8	OK
12.001	1B.2	70.251	-0.309	0.000	0.07		9.5	OK
12.002	1B.3	70.051	-0.219	0.000	0.13		17.6	OK
12.003	1B.4	70.039	-0.166	0.000	0.09		23.9	OK
12.004	1B.5	70.017	-0.063	0.000	0.12		32.7	OK
12.005	1B.6	70.017	0.102	0.000	0.11		28.2	SURCHARGED
12.006	1B.7	70.017	0.177	0.000	0.18		61.3	SURCHARGED
13.000	1B.8	70.017	0.242	0.000	0.06		4.1	SURCHARGED
13.001	1B.9	70.017	0.267	0.000	0.03		5.3	SURCHARGED
12.007	1B.10	70.017	0.317	0.000	0.29		100.6	SURCHARGED
14.000	1B.11	70.340	0.190	0.000	0.06		4.4	SURCHARGED
15.000	1B.12	70.341	0.191	0.000	0.02		3.2	SURCHARGED
14.001	1B.13	70.392	0.692	0.000	0.12		5.0	FLOOD RISK
12.008	S5	70.017	0.417	0.000	0.58		105.0	SURCHARGED
1.006	HW08	70.017	0.657	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.342	-0.158	0.000	0.17		12.5	OK
16.001	1B.15	69.340	0.160	0.000	0.16		11.8	SURCHARGED
16.002	1B.16	69.338	0.373	0.000	0.22		11.3	FLOOD RISK

Summary of Results for 360 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.343	0.063	0.000	0.24		21.7	FLOOD RISK
18.000	1B.18	69.343	0.063	0.000	0.23		21.2	FLOOD RISK
17.001	1B.19	69.340	0.165	0.000	0.39		41.9	FLOOD RISK
17.002	INTERCEPTOR	69.339	0.314	0.000	0.49		41.9	SURCHARGED
19.000	RE2.1	71.008	-0.227	0.000	0.14		10.0	OK
19.001	R2.7	70.783	-0.217	0.000	0.17		12.0	OK
19.002	R2.8	70.583	-0.217	0.000	0.17		12.0	OK
20.000	R2.10	70.829	-0.196	0.000	0.04		2.0	OK
19.003	R2.9	70.446	-0.254	0.000	0.23		31.2	OK
19.004	R2.11	70.162	-0.238	0.000	0.14		32.9	OK
21.000	R2.13	70.433	-0.167	0.000	0.15		10.5	OK
19.005	R2.12	70.135	0.135	0.000	0.29		43.0	SURCHARGED
19.006	R2.14	70.087	0.212	0.000	0.25		42.9	SURCHARGED
22.000	Tank 2.1	70.700	-0.050	0.000	0.00		0.0	OK
22.001	S2.23	70.700	-0.250	0.000	0.41		58.5	OK
23.000	G2.1	70.582	-0.098	0.000	0.08		1.0	FLOOD RISK
23.001	S2.22	70.576	-0.189	0.000	0.24		20.7	OK
22.002	S2.21	70.555	-0.345	0.000	0.33		78.9	OK
24.000	Tank 2.2	70.485	-0.015	0.000	0.00		0.1	OK
22.003	S2.20	70.485	-0.365	0.000	0.32		86.9	OK
25.000	G2.2	70.759	-0.191	0.000	0.05		5.8	OK
22.004	S2.19	70.299	-0.451	0.000	0.14		92.6	OK
26.000	G2.3	70.167	-0.183	0.000	0.05		1.6	OK
27.000	G2.4	70.507	-0.218	0.000	0.17		26.6	OK
26.001	S2.18	70.144	-0.256	0.000	0.16		28.0	OK
28.000	Tank 2.3	70.098	-0.077	0.000	0.01		0.3	OK
22.005	s2.17	70.098	-0.202	0.000	0.35		120.4	OK
22.006	Interceptor	70.088	0.000	0.000	0.35		120.4	OK
19.007	S2.16	70.087	0.112	0.000	1.17		163.1	SURCHARGED
19.008	S22.15	70.085	0.135	0.000	0.76		162.7	SURCHARGED
29.000	RE2.2	70.960	-0.165	0.000	0.16		6.3	OK
29.001	R2.6	70.768	-0.157	0.000	0.20		6.3	OK
29.002	R2.5	70.743	-0.207	0.000	0.21		15.6	OK
29.003	R2.4	70.381	-0.239	0.000	0.09		16.4	OK
29.004	S2.12	70.150	-0.100	0.000	0.13	6.9	19.6	OK
30.000	RE2.3	70.848	-0.152	0.000	0.23		9.7	OK
30.001	R2.3	70.590	-0.285	0.000	0.13		18.9	OK
30.002	R2.2	70.167	-0.383	0.000	0.05		19.7	OK
29.005	R2.1	70.140	0.005	0.000	0.29		44.3	SURCHARGED
29.006	S2.13	70.095	0.100	0.000	0.31		48.6	SURCHARGED
31.000	R2.19	70.990	-0.210	0.000	0.01		0.6	OK
31.001	R2.20	70.878	-0.247	0.000	0.07		6.6	OK
31.002	R2.21	70.474	-0.301	0.000	0.09		14.1	OK
31.003	R2.22	70.104	-0.296	0.000	0.10		16.0	OK
32.000	R2.18	70.668	-0.252	0.000	0.06		6.5	OK
32.001	R2.17	70.201	-0.304	0.000	0.08		15.0	OK
32.002	R2.16	70.085	0.060	0.000	0.08		14.7	SURCHARGED
29.007	R2.15	70.085	0.230	0.000	0.49		78.1	SURCHARGED
33.000	RE1A.1	70.202	-0.273	0.000	0.02		1.4	OK

Summary of Results for 360 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.090	-0.195	0.000	0.02		1.4	OK
33.002	S1A.3	70.090	-0.005	0.000	0.06		7.7	OK
33.003	S1A.4	70.089	0.109	0.000	0.10		13.4	SURCHARGED
34.000	S1A.5	70.172	-0.028	0.000	0.06		1.9	OK
34.001	S1A.6	70.169	-0.031	0.000	0.04		3.2	OK
34.002	S1A.7	70.165	0.035	0.000	0.19		31.0	SURCHARGED
34.003	S1A.8	70.153	-0.007	0.000	0.17		58.1	OK
33.004	S1A.9	70.089	0.049	0.000	0.24		69.7	SURCHARGED
35.000	S1A.10	70.088	-0.212	0.000	0.05		8.9	OK
35.001	S1A.11	70.088	0.073	0.000	0.06		8.8	SURCHARGED
35.002	INTERCEPTOR	70.088	0.223	0.000	0.06		8.9	SURCHARGED
36.000	S1A.21	70.376	0.126	0.000	0.12		9.3	SURCHARGED
36.001	S1A.20	70.515	0.900	0.000	0.31		5.0	FLOOD RISK
33.005	S1A.12	70.088	0.123	0.000	0.29		81.4	SURCHARGED
33.006	S1A.19	70.086	0.161	0.000	0.23		81.1	SURCHARGED
29.008	R2.14	70.085	0.235	0.000	1.06		158.4	SURCHARGED
19.009	S2.24	70.084	0.249	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.340	0.090	0.000	0.04		6.8	SURCHARGED
37.000	S1A.13	69.341	-0.159	0.000	0.16		11.8	OK
37.001	S1A.14	69.340	0.160	0.000	0.16		11.1	SURCHARGED
37.002	S1A.15	69.338	0.353	0.000	0.18		10.5	FLOOD RISK
38.000	S1A.16	69.342	0.032	0.000	0.26		22.9	FLOOD RISK
39.000	S1A.17	69.342	0.087	0.000	0.22		19.6	FLOOD RISK
38.001	S1A.18	69.340	0.165	0.000	0.38		41.2	FLOOD RISK
38.002	INTERCEPTOR	69.339	0.314	0.000	0.48		41.1	SURCHARGED
1.007	SOUT	69.338	0.488	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	960
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	8

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	480

Summary of Results for 480 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.516	-0.234	0.000	0.11		9.2	OK
1.001	R5	70.262	-0.223	0.000	0.15		12.9	OK
1.002	R6	70.065	-0.160	0.000	0.13		16.6	OK
1.003	R7	70.065	0.065	0.000	0.05		16.3	SURCHARGED
2.000	R8	70.065	0.115	0.000	0.03		8.8	SURCHARGED
3.000	R9	70.065	0.115	0.000	0.03		7.9	SURCHARGED
4.000	R4A	70.382	-0.243	0.000	0.08		8.3	OK
4.001	R4	70.111	-0.239	0.000	0.09		8.3	OK
4.002	R3	70.065	-0.060	0.000	0.21		12.7	OK
4.003	R2	70.065	0.140	0.000	0.13		15.1	SURCHARGED
5.000	Tank 1	70.065	0.090	0.000	0.00		0.1	SURCHARGED
5.001	S3	70.065	0.090	0.000	0.00		0.1	SURCHARGED
6.000	G1	70.065	-0.060	0.000	0.17		23.8	OK
7.000	G2	70.065	0.290	0.000	0.16		1.9	FLOOD RISK
8.000	G3	70.065	-0.060	0.000	0.15		20.5	OK
9.000	G4	70.065	0.290	0.000	0.16		1.9	FLOOD RISK
5.002	S2	70.065	0.140	0.000	0.35		46.6	SURCHARGED
10.000	Tank 2	70.065	0.340	0.000	0.00		0.1	SURCHARGED
5.003	S1	70.065	0.265	0.000	0.39		46.1	SURCHARGED
5.004	Interceptor	70.065	0.277	0.000	0.39		46.2	SURCHARGED
4.004	R1	70.065	0.390	0.000	0.39		60.1	SURCHARGED
1.004	HW05	70.065	0.275	0.000	0.39		63.0	SURCHARGED
11.000	S11	70.068	-0.182	0.000	0.06		11.9	OK
11.001	S10	70.066	0.166	0.000	0.07		16.4	SURCHARGED
1.005	S4	70.065	0.355	0.000	0.30		80.6	SURCHARGED
12.000	1B.1	70.321	-0.189	0.000	0.06		2.3	OK
12.001	1B.2	70.243	-0.317	0.000	0.06		7.6	OK
12.002	1B.3	70.065	-0.205	0.000	0.11		14.0	OK
12.003	1B.4	70.065	-0.140	0.000	0.07		18.6	OK
12.004	1B.5	70.065	-0.015	0.000	0.09		25.0	OK
12.005	1B.6	70.065	0.150	0.000	0.09		24.6	SURCHARGED
12.006	1B.7	70.065	0.225	0.000	0.16		53.4	SURCHARGED
13.000	1B.8	70.065	0.290	0.000	0.05		3.3	SURCHARGED
13.001	1B.9	70.065	0.315	0.000	0.02		4.4	SURCHARGED
12.007	1B.10	70.065	0.365	0.000	0.25		86.8	SURCHARGED
14.000	1B.11	70.319	0.169	0.000	0.06		4.2	SURCHARGED
15.000	1B.12	70.320	0.170	0.000	0.02		2.9	SURCHARGED
14.001	1B.13	70.372	0.672	0.000	0.12		5.0	SURCHARGED
12.008	S5	70.065	0.465	0.000	0.50		91.1	SURCHARGED
1.006	HW08	70.065	0.705	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.361	-0.139	0.000	0.13		10.0	OK
16.001	1B.15	69.359	0.179	0.000	0.13		9.4	SURCHARGED
16.002	1B.16	69.358	0.393	0.000	0.18		9.1	FLOOD RISK

Summary of Results for 480 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.362	0.082	0.000	0.19		17.7	FLOOD RISK
18.000	1B.18	69.362	0.082	0.000	0.19		17.5	FLOOD RISK
17.001	1B.19	69.360	0.185	0.000	0.32		34.3	FLOOD RISK
17.002	INTERCEPTOR	69.359	0.334	0.000	0.40		34.2	SURCHARGED
19.000	RE2.1	71.001	-0.234	0.000	0.11		8.0	OK
19.001	R2.7	70.774	-0.226	0.000	0.14		9.6	OK
19.002	R2.8	70.573	-0.227	0.000	0.14		9.6	OK
20.000	R2.10	70.826	-0.199	0.000	0.03		1.6	OK
19.003	R2.9	70.433	-0.267	0.000	0.18		24.9	OK
19.004	R2.11	70.129	-0.271	0.000	0.11		26.5	OK
21.000	R2.13	70.427	-0.173	0.000	0.12		8.4	OK
19.005	R2.12	70.127	0.127	0.000	0.23		34.5	SURCHARGED
19.006	R2.14	70.126	0.251	0.000	0.20		34.5	SURCHARGED
22.000	Tank 2.1	70.677	-0.073	0.000	0.00		0.0	OK
22.001	S2.23	70.677	-0.273	0.000	0.33		46.9	OK
23.000	G2.1	70.562	-0.118	0.000	0.06		0.8	FLOOD RISK
23.001	S2.22	70.548	-0.217	0.000	0.19		16.6	OK
22.002	S2.21	70.527	-0.373	0.000	0.27		63.5	OK
24.000	Tank 2.2	70.457	-0.043	0.000	0.00		0.0	OK
22.003	S2.20	70.458	-0.392	0.000	0.26		69.8	OK
25.000	G2.2	70.755	-0.195	0.000	0.04		4.7	OK
22.004	S2.19	70.284	-0.466	0.000	0.11		74.5	OK
26.000	G2.3	70.157	-0.193	0.000	0.04		1.3	OK
27.000	G2.4	70.498	-0.227	0.000	0.13		21.3	OK
26.001	S2.18	70.131	-0.269	0.000	0.13		22.6	OK
28.000	Tank 2.3	70.127	-0.048	0.000	0.00		0.0	OK
22.005	s2.17	70.127	-0.173	0.000	0.28		97.0	OK
22.006	Interceptor	70.126	0.038	0.000	0.28		97.0	SURCHARGED
19.007	S2.16	70.125	0.150	0.000	0.95		131.5	SURCHARGED
19.008	S22.15	70.124	0.174	0.000	0.61		130.7	SURCHARGED
29.000	RE2.2	70.953	-0.172	0.000	0.13		5.1	OK
29.001	R2.6	70.760	-0.165	0.000	0.16		5.1	OK
29.002	R2.5	70.733	-0.217	0.000	0.17		12.5	OK
29.003	R2.4	70.373	-0.247	0.000	0.07		13.1	OK
29.004	S2.12	70.141	-0.109	0.000	0.10	6.8	15.6	OK
30.000	RE2.3	70.840	-0.160	0.000	0.18		7.7	OK
30.001	R2.3	70.581	-0.294	0.000	0.10		15.1	OK
30.002	R2.2	70.160	-0.390	0.000	0.04		15.8	OK
29.005	R2.1	70.135	0.000	0.000	0.22		34.7	OK
29.006	S2.13	70.120	0.125	0.000	0.24		36.6	SURCHARGED
31.000	R2.19	70.987	-0.213	0.000	0.01		0.5	OK
31.001	R2.20	70.871	-0.254	0.000	0.06		5.3	OK
31.002	R2.21	70.464	-0.311	0.000	0.07		11.3	OK
31.003	R2.22	70.123	-0.277	0.000	0.08		12.8	OK
32.000	R2.18	70.663	-0.257	0.000	0.05		5.2	OK
32.001	R2.17	70.192	-0.313	0.000	0.06		12.0	OK
32.002	R2.16	70.123	0.098	0.000	0.06		11.4	SURCHARGED
29.007	R2.15	70.123	0.268	0.000	0.37		58.2	SURCHARGED
33.000	RE1A.1	70.196	-0.279	0.000	0.02		1.1	OK

Summary of Results for 480 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.127	-0.158	0.000	0.01		1.1	OK
33.002	S1A.3	70.127	0.032	0.000	0.04		5.9	SURCHARGED
33.003	S1A.4	70.127	0.147	0.000	0.08		10.1	SURCHARGED
34.000	S1A.5	70.169	-0.031	0.000	0.05		1.5	OK
34.001	S1A.6	70.167	-0.033	0.000	0.04		2.6	OK
34.002	S1A.7	70.164	0.034	0.000	0.15		23.9	SURCHARGED
34.003	S1A.8	70.153	-0.007	0.000	0.13		44.1	OK
33.004	S1A.9	70.127	0.087	0.000	0.17		50.4	SURCHARGED
35.000	S1A.10	70.126	-0.174	0.000	0.04		7.1	OK
35.001	S1A.11	70.126	0.111	0.000	0.05		7.5	SURCHARGED
35.002	INTERCEPTOR	70.126	0.261	0.000	0.05		7.6	SURCHARGED
36.000	S1A.21	70.359	0.109	0.000	0.11		8.6	SURCHARGED
36.001	S1A.20	70.494	0.879	0.000	0.31		5.0	FLOOD RISK
33.005	S1A.12	70.126	0.161	0.000	0.23		63.2	SURCHARGED
33.006	S1A.19	70.125	0.200	0.000	0.18		63.5	SURCHARGED
29.008	R2.14	70.124	0.274	0.000	0.77		114.9	SURCHARGED
19.009	S2.24	70.123	0.288	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.360	0.110	0.000	0.04		6.8	SURCHARGED
37.000	S1A.13	69.361	-0.139	0.000	0.13		9.5	OK
37.001	S1A.14	69.360	0.180	0.000	0.13		8.8	SURCHARGED
37.002	S1A.15	69.358	0.373	0.000	0.15		8.5	FLOOD RISK
38.000	S1A.16	69.362	0.052	0.000	0.21		18.5	FLOOD RISK
39.000	S1A.17	69.362	0.107	0.000	0.18		15.8	FLOOD RISK
38.001	S1A.18	69.360	0.185	0.000	0.31		33.7	FLOOD RISK
38.002	INTERCEPTOR	69.359	0.334	0.000	0.39		33.6	SURCHARGED
1.007	SOUT	69.358	0.508	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	1200
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	10

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	600

Summary of Results for 600 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.511	-0.239	0.000	0.09		7.7	OK
1.001	R5	70.256	-0.229	0.000	0.13		10.8	OK
1.002	R6	70.100	-0.125	0.000	0.11		13.9	OK
1.003	R7	70.100	0.100	0.000	0.05		13.7	SURCHARGED
2.000	R8	70.100	0.150	0.000	0.03		7.4	SURCHARGED
3.000	R9	70.100	0.150	0.000	0.02		6.6	SURCHARGED
4.000	R4A	70.377	-0.248	0.000	0.07		7.0	OK
4.001	R4	70.105	-0.245	0.000	0.08		7.0	OK
4.002	R3	70.100	-0.025	0.000	0.18		10.7	OK
4.003	R2	70.100	0.175	0.000	0.11		12.4	SURCHARGED
5.000	Tank 1	70.100	0.125	0.000	0.00		0.0	SURCHARGED
5.001	S3	70.100	0.125	0.000	0.00		0.1	SURCHARGED
6.000	G1	70.100	-0.025	0.000	0.14		20.1	OK
7.000	G2	70.100	0.325	0.000	0.15		1.7	FLOOD RISK
8.000	G3	70.100	-0.025	0.000	0.12		17.3	OK
9.000	G4	70.100	0.325	0.000	0.15		1.7	FLOOD RISK
5.002	S2	70.100	0.175	0.000	0.30		40.7	SURCHARGED
10.000	Tank 2	70.100	0.375	0.000	0.00		0.0	SURCHARGED
5.003	S1	70.100	0.300	0.000	0.35		40.6	SURCHARGED
5.004	Interceptor	70.100	0.312	0.000	0.35		40.6	SURCHARGED
4.004	R1	70.100	0.425	0.000	0.34		52.4	SURCHARGED
1.004	HW05	70.100	0.310	0.000	0.34		55.5	SURCHARGED
11.000	S11	70.104	-0.146	0.000	0.05		10.3	OK
11.001	S10	70.102	0.202	0.000	0.06		14.5	SURCHARGED
1.005	S4	70.100	0.390	0.000	0.26		70.2	SURCHARGED
12.000	1B.1	70.318	-0.192	0.000	0.05		1.9	OK
12.001	1B.2	70.238	-0.322	0.000	0.05		6.4	OK
12.002	1B.3	70.100	-0.170	0.000	0.09		11.7	OK
12.003	1B.4	70.100	-0.105	0.000	0.06		15.4	OK
12.004	1B.5	70.101	0.021	0.000	0.07		21.2	SURCHARGED
12.005	1B.6	70.101	0.186	0.000	0.08		21.8	SURCHARGED
12.006	1B.7	70.101	0.261	0.000	0.14		46.8	SURCHARGED
13.000	1B.8	70.101	0.326	0.000	0.04		2.9	SURCHARGED
13.001	1B.9	70.101	0.351	0.000	0.02		3.8	SURCHARGED
12.007	1B.10	70.101	0.401	0.000	0.22		76.0	SURCHARGED
14.000	1B.11	70.299	0.149	0.000	0.05		4.0	SURCHARGED
15.000	1B.12	70.300	0.150	0.000	0.02		2.6	SURCHARGED
14.001	1B.13	70.350	0.650	0.000	0.12		5.0	SURCHARGED
12.008	S5	70.101	0.501	0.000	0.44		80.4	SURCHARGED
1.006	HW08	70.101	0.741	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.374	-0.126	0.000	0.11		8.4	OK
16.001	1B.15	69.372	0.192	0.000	0.11		7.9	SURCHARGED
16.002	1B.16	69.371	0.406	0.000	0.15		7.7	FLOOD RISK

Summary of Results for 600 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.375	0.095	0.000	0.16		14.5	FLOOD RISK
18.000	1B.18	69.375	0.095	0.000	0.16		14.4	FLOOD RISK
17.001	1B.19	69.373	0.198	0.000	0.26		28.4	FLOOD RISK
17.002	INTERCEPTOR	69.372	0.347	0.000	0.33		28.3	SURCHARGED
19.000	RE2.1	70.996	-0.239	0.000	0.09		6.7	OK
19.001	R2.7	70.768	-0.232	0.000	0.12		8.1	OK
19.002	R2.8	70.567	-0.233	0.000	0.11		8.1	OK
20.000	R2.10	70.824	-0.201	0.000	0.03		1.3	OK
19.003	R2.9	70.423	-0.277	0.000	0.15		21.0	OK
19.004	R2.11	70.158	-0.242	0.000	0.09		22.3	OK
21.000	R2.13	70.423	-0.177	0.000	0.10		7.1	OK
19.005	R2.12	70.157	0.157	0.000	0.19		28.0	SURCHARGED
19.006	R2.14	70.155	0.280	0.000	0.16		27.0	SURCHARGED
22.000	Tank 2.1	70.660	-0.090	0.000	0.00		0.0	OK
22.001	S2.23	70.660	-0.290	0.000	0.28		39.5	OK
23.000	G2.1	70.555	-0.125	0.000	0.05		0.7	FLOOD RISK
23.001	S2.22	70.531	-0.234	0.000	0.16		14.0	OK
22.002	S2.21	70.507	-0.393	0.000	0.23		53.4	OK
24.000	Tank 2.2	70.440	-0.060	0.000	0.00		0.0	OK
22.003	S2.20	70.440	-0.410	0.000	0.22		58.8	OK
25.000	G2.2	70.753	-0.197	0.000	0.04		3.9	OK
22.004	S2.19	70.274	-0.476	0.000	0.10		62.7	OK
26.000	G2.3	70.158	-0.192	0.000	0.04		1.1	OK
27.000	G2.4	70.492	-0.233	0.000	0.11		17.9	OK
26.001	S2.18	70.158	-0.242	0.000	0.11		19.0	OK
28.000	Tank 2.3	70.156	-0.019	0.000	0.00		0.0	OK
22.005	s2.17	70.156	-0.144	0.000	0.24		81.7	OK
22.006	Interceptor	70.156	0.068	0.000	0.23		81.6	SURCHARGED
19.007	S2.16	70.155	0.180	0.000	0.77		107.1	SURCHARGED
19.008	S22.15	70.154	0.204	0.000	0.49		106.5	SURCHARGED
29.000	RE2.2	70.949	-0.176	0.000	0.11		4.3	OK
29.001	R2.6	70.755	-0.170	0.000	0.14		4.3	OK
29.002	R2.5	70.725	-0.225	0.000	0.14		10.5	OK
29.003	R2.4	70.368	-0.252	0.000	0.06		11.0	OK
29.004	S2.12	70.142	-0.108	0.000	0.08	6.8	12.9	OK
30.000	RE2.3	70.834	-0.166	0.000	0.15		6.5	OK
30.001	R2.3	70.575	-0.300	0.000	0.09		12.7	OK
30.002	R2.2	70.155	-0.395	0.000	0.04		13.2	OK
29.005	R2.1	70.147	0.012	0.000	0.18		28.5	SURCHARGED
29.006	S2.13	70.150	0.155	0.000	0.19		30.1	SURCHARGED
31.000	R2.19	70.985	-0.215	0.000	0.01		0.4	OK
31.001	R2.20	70.867	-0.258	0.000	0.05		4.4	OK
31.002	R2.21	70.458	-0.317	0.000	0.06		9.5	OK
31.003	R2.22	70.153	-0.247	0.000	0.07		10.8	OK
32.000	R2.18	70.659	-0.261	0.000	0.04		4.4	OK
32.001	R2.17	70.186	-0.319	0.000	0.05		10.1	OK
32.002	R2.16	70.152	0.127	0.000	0.05		9.5	SURCHARGED
29.007	R2.15	70.152	0.297	0.000	0.30		47.8	SURCHARGED
33.000	RE1A.1	70.193	-0.282	0.000	0.01		0.9	OK

Summary of Results for 600 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.157	-0.128	0.000	0.01		0.9	OK
33.002	S1A.3	70.157	0.062	0.000	0.04		4.9	SURCHARGED
33.003	S1A.4	70.157	0.177	0.000	0.07		9.0	SURCHARGED
34.000	S1A.5	70.168	-0.032	0.000	0.04		1.3	OK
34.001	S1A.6	70.165	-0.035	0.000	0.03		2.2	OK
34.002	S1A.7	70.163	0.033	0.000	0.12		19.6	SURCHARGED
34.003	S1A.8	70.160	0.000	0.000	0.11		35.9	OK
33.004	S1A.9	70.157	0.117	0.000	0.15		44.9	SURCHARGED
35.000	S1A.10	70.156	-0.144	0.000	0.03		5.9	OK
35.001	S1A.11	70.156	0.141	0.000	0.04		6.5	SURCHARGED
35.002	INTERCEPTOR	70.156	0.291	0.000	0.04		6.6	SURCHARGED
36.000	S1A.21	70.343	0.093	0.000	0.11		8.2	SURCHARGED
36.001	S1A.20	70.451	0.836	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.156	0.191	0.000	0.20		56.7	SURCHARGED
33.006	S1A.19	70.155	0.230	0.000	0.16		57.0	SURCHARGED
29.008	R2.14	70.154	0.304	0.000	0.67		100.3	SURCHARGED
19.009	S2.24	70.153	0.318	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.374	0.124	0.000	0.04		6.8	SURCHARGED
37.000	S1A.13	69.374	-0.126	0.000	0.11		7.9	OK
37.001	S1A.14	69.372	0.192	0.000	0.11		7.4	SURCHARGED
37.002	S1A.15	69.372	0.387	0.000	0.13		7.2	FLOOD RISK
38.000	S1A.16	69.375	0.065	0.000	0.17		15.0	FLOOD RISK
39.000	S1A.17	69.374	0.119	0.000	0.15		13.1	FLOOD RISK
38.001	S1A.18	69.373	0.198	0.000	0.26		27.6	FLOOD RISK
38.002	INTERCEPTOR	69.372	0.347	0.000	0.32		27.6	SURCHARGED
1.007	SOUT	69.371	0.521	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	1440
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	12

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	720

Summary of Results for 720 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.506	-0.244	0.000	0.08		6.7	OK
1.001	R5	70.251	-0.234	0.000	0.11		9.4	OK
1.002	R6	70.130	-0.095	0.000	0.09		12.1	OK
1.003	R7	70.130	0.130	0.000	0.04		11.7	SURCHARGED
2.000	R8	70.130	0.180	0.000	0.02		6.4	SURCHARGED
3.000	R9	70.130	0.180	0.000	0.02		5.8	SURCHARGED
4.000	R4A	70.372	-0.253	0.000	0.06		6.0	OK
4.001	R4	70.130	-0.220	0.000	0.07		6.0	OK
4.002	R3	70.130	0.005	0.000	0.15		9.3	SURCHARGED
4.003	R2	70.130	0.205	0.000	0.09		10.7	SURCHARGED
5.000	Tank 1	70.130	0.155	0.000	0.00		0.0	SURCHARGED
5.001	S3	70.130	0.155	0.000	0.00		0.1	SURCHARGED
6.000	G1	70.130	0.005	0.000	0.12		17.2	SURCHARGED
7.000	G2	70.130	0.355	0.000	0.12		1.4	FLOOD RISK
8.000	G3	70.130	0.005	0.000	0.11		14.8	SURCHARGED
9.000	G4	70.130	0.355	0.000	0.12		1.4	FLOOD RISK
5.002	S2	70.130	0.205	0.000	0.26		34.7	SURCHARGED
10.000	Tank 2	70.130	0.405	0.000	0.00		0.0	SURCHARGED
5.003	S1	70.130	0.330	0.000	0.29		34.3	SURCHARGED
5.004	Interceptor	70.130	0.342	0.000	0.29		34.3	SURCHARGED
4.004	R1	70.130	0.455	0.000	0.29		44.6	SURCHARGED
1.004	HW05	70.130	0.340	0.000	0.26		42.7	SURCHARGED
11.000	S11	70.134	-0.116	0.000	0.05		9.6	OK
11.001	S10	70.132	0.232	0.000	0.05		13.0	SURCHARGED
1.005	S4	70.130	0.420	0.000	0.20		53.8	SURCHARGED
12.000	1B.1	70.315	-0.195	0.000	0.04		1.6	OK
12.001	1B.2	70.234	-0.326	0.000	0.04		5.5	OK
12.002	1B.3	70.130	-0.140	0.000	0.08		10.2	OK
12.003	1B.4	70.130	-0.075	0.000	0.05		13.6	OK
12.004	1B.5	70.130	0.050	0.000	0.07		19.6	SURCHARGED
12.005	1B.6	70.130	0.215	0.000	0.07		19.5	SURCHARGED
12.006	1B.7	70.130	0.290	0.000	0.12		41.7	SURCHARGED
13.000	1B.8	70.130	0.355	0.000	0.03		2.5	SURCHARGED
13.001	1B.9	70.130	0.380	0.000	0.02		3.3	SURCHARGED
12.007	1B.10	70.130	0.430	0.000	0.19		66.7	SURCHARGED
14.000	1B.11	70.278	0.128	0.000	0.05		4.0	SURCHARGED
15.000	1B.12	70.279	0.129	0.000	0.02		2.6	SURCHARGED
14.001	1B.13	70.318	0.618	0.000	0.12		5.0	SURCHARGED
12.008	S5	70.131	0.531	0.000	0.39		71.1	SURCHARGED
1.006	HW08	70.130	0.770	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.383	-0.117	0.000	0.10		7.3	OK
16.001	1B.15	69.381	0.201	0.000	0.09		6.8	SURCHARGED
16.002	1B.16	69.380	0.415	0.000	0.13		6.7	FLOOD RISK

Summary of Results for 720 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.383	0.103	0.000	0.14		12.5	FLOOD RISK
18.000	1B.18	69.383	0.103	0.000	0.14		12.4	FLOOD RISK
17.001	1B.19	69.382	0.207	0.000	0.23		24.3	FLOOD RISK
17.002	INTERCEPTOR	69.381	0.356	0.000	0.28		24.2	SURCHARGED
19.000	RE2.1	70.991	-0.244	0.000	0.08		5.8	OK
19.001	R2.7	70.763	-0.237	0.000	0.10		7.0	OK
19.002	R2.8	70.563	-0.237	0.000	0.10		7.0	OK
20.000	R2.10	70.823	-0.202	0.000	0.02		1.1	OK
19.003	R2.9	70.416	-0.284	0.000	0.13		18.2	OK
19.004	R2.11	70.182	-0.218	0.000	0.08		19.3	OK
21.000	R2.13	70.420	-0.180	0.000	0.09		6.1	OK
19.005	R2.12	70.181	0.181	0.000	0.16		24.7	SURCHARGED
19.006	R2.14	70.180	0.305	0.000	0.15		24.6	SURCHARGED
22.000	Tank 2.1	70.649	-0.101	0.000	0.00		0.0	OK
22.001	S2.23	70.649	-0.301	0.000	0.24		34.2	OK
23.000	G2.1	70.551	-0.129	0.000	0.05		0.6	FLOOD RISK
23.001	S2.22	70.518	-0.247	0.000	0.14		12.1	OK
22.002	S2.21	70.493	-0.407	0.000	0.20		46.4	OK
24.000	Tank 2.2	70.427	-0.073	0.000	0.00		0.0	OK
22.003	S2.20	70.427	-0.423	0.000	0.19		51.1	OK
25.000	G2.2	70.751	-0.199	0.000	0.03		3.4	OK
22.004	S2.19	70.265	-0.485	0.000	0.08		54.5	OK
26.000	G2.3	70.182	-0.168	0.000	0.03		0.9	OK
27.000	G2.4	70.488	-0.237	0.000	0.10		15.5	OK
26.001	S2.18	70.182	-0.218	0.000	0.10		16.5	OK
28.000	Tank 2.3	70.181	0.006	0.000	0.00		0.0	SURCHARGED
22.005	s2.17	70.181	-0.119	0.000	0.20		71.0	OK
22.006	Interceptor	70.180	0.092	0.000	0.20		70.8	SURCHARGED
19.007	S2.16	70.180	0.205	0.000	0.68		94.1	SURCHARGED
19.008	S22.15	70.178	0.228	0.000	0.43		93.6	SURCHARGED
29.000	RE2.2	70.946	-0.179	0.000	0.09		3.7	OK
29.001	R2.6	70.751	-0.174	0.000	0.12		3.7	OK
29.002	R2.5	70.720	-0.230	0.000	0.12		9.1	OK
29.003	R2.4	70.364	-0.256	0.000	0.05		9.5	OK
29.004	S2.12	70.168	-0.082	0.000	0.07	6.7	11.1	OK
30.000	RE2.3	70.829	-0.171	0.000	0.13		5.6	OK
30.001	R2.3	70.568	-0.307	0.000	0.08		11.0	OK
30.002	R2.2	70.172	-0.378	0.000	0.03		11.5	OK
29.005	R2.1	70.172	0.037	0.000	0.16		24.3	SURCHARGED
29.006	S2.13	70.174	0.179	0.000	0.16		25.5	SURCHARGED
31.000	R2.19	70.984	-0.216	0.000	0.01		0.3	OK
31.001	R2.20	70.864	-0.261	0.000	0.04		3.8	OK
31.002	R2.21	70.454	-0.321	0.000	0.05		8.2	OK
31.003	R2.22	70.177	-0.223	0.000	0.06		9.3	OK
32.000	R2.18	70.657	-0.263	0.000	0.04		3.8	OK
32.001	R2.17	70.182	-0.323	0.000	0.05		8.7	OK
32.002	R2.16	70.177	0.152	0.000	0.04		8.2	SURCHARGED
29.007	R2.15	70.177	0.322	0.000	0.26		40.6	SURCHARGED
33.000	RE1A.1	70.191	-0.284	0.000	0.01		0.8	OK

Summary of Results for 720 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.181	-0.104	0.000	0.01		0.8	OK
33.002	S1A.3	70.181	0.086	0.000	0.03		4.3	SURCHARGED
33.003	S1A.4	70.181	0.201	0.000	0.06		7.9	SURCHARGED
34.000	S1A.5	70.182	-0.018	0.000	0.03		1.1	OK
34.001	S1A.6	70.182	-0.018	0.000	0.03		1.9	OK
34.002	S1A.7	70.182	0.052	0.000	0.10		16.7	SURCHARGED
34.003	S1A.8	70.182	0.022	0.000	0.09		31.2	SURCHARGED
33.004	S1A.9	70.181	0.141	0.000	0.13		39.1	SURCHARGED
35.000	S1A.10	70.180	-0.120	0.000	0.03		5.1	OK
35.001	S1A.11	70.181	0.166	0.000	0.03		4.9	SURCHARGED
35.002	INTERCEPTOR	70.181	0.316	0.000	0.03		4.8	SURCHARGED
36.000	S1A.21	70.323	0.073	0.000	0.10		7.4	SURCHARGED
36.001	S1A.20	70.381	0.766	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.181	0.216	0.000	0.17		48.7	SURCHARGED
33.006	S1A.19	70.180	0.255	0.000	0.14		48.8	SURCHARGED
29.008	R2.14	70.178	0.328	0.000	0.59		88.6	SURCHARGED
19.009	S2.24	70.178	0.343	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.382	0.132	0.000	0.04		6.7	SURCHARGED
37.000	S1A.13	69.383	-0.117	0.000	0.09		6.9	OK
37.001	S1A.14	69.381	0.201	0.000	0.09		6.4	SURCHARGED
37.002	S1A.15	69.380	0.395	0.000	0.11		6.3	FLOOD RISK
38.000	S1A.16	69.383	0.073	0.000	0.15		12.9	FLOOD RISK
39.000	S1A.17	69.383	0.128	0.000	0.13		11.1	FLOOD RISK
38.001	S1A.18	69.382	0.207	0.000	0.22		23.6	FLOOD RISK
38.002	INTERCEPTOR	69.380	0.355	0.000	0.27		23.5	SURCHARGED
1.007	SOUT	69.380	0.530	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	1920
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	16

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	960

Summary of Results for 960 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.499	-0.251	0.000	0.06		5.4	OK
1.001	R5	70.245	-0.240	0.000	0.09		7.5	OK
1.002	R6	70.184	-0.041	0.000	0.07		9.7	OK
1.003	R7	70.184	0.184	0.000	0.03		9.3	SURCHARGED
2.000	R8	70.184	0.234	0.000	0.02		5.2	SURCHARGED
3.000	R9	70.184	0.234	0.000	0.02		4.6	SURCHARGED
4.000	R4A	70.367	-0.258	0.000	0.05		4.8	OK
4.001	R4	70.184	-0.166	0.000	0.05		4.8	OK
4.002	R3	70.184	0.059	0.000	0.12		7.4	SURCHARGED
4.003	R2	70.184	0.259	0.000	0.07		8.6	SURCHARGED
5.000	Tank 1	70.184	0.209	0.000	0.00		0.0	SURCHARGED
5.001	S3	70.184	0.209	0.000	0.00		0.0	SURCHARGED
6.000	G1	70.185	0.060	0.000	0.10		13.6	SURCHARGED
7.000	G2	70.184	0.409	0.000	0.10		1.1	FLOOD RISK
8.000	G3	70.185	0.060	0.000	0.08		11.6	SURCHARGED
9.000	G4	70.184	0.409	0.000	0.10		1.1	FLOOD RISK
5.002	S2	70.184	0.259	0.000	0.20		26.5	SURCHARGED
10.000	Tank 2	70.184	0.459	0.000	0.00		0.0	SURCHARGED
5.003	S1	70.184	0.384	0.000	0.22		26.2	SURCHARGED
5.004	Interceptor	70.184	0.396	0.000	0.22		26.2	SURCHARGED
4.004	R1	70.184	0.509	0.000	0.22		33.9	SURCHARGED
1.004	HW05	70.184	0.394	0.000	0.15		24.5	SURCHARGED
11.000	S11	70.191	-0.059	0.000	0.05		10.4	OK
11.001	S10	70.186	0.286	0.000	0.05		11.0	SURCHARGED
1.005	S4	70.184	0.474	0.000	0.13		34.7	SURCHARGED
12.000	1B.1	70.312	-0.198	0.000	0.04		1.3	OK
12.001	1B.2	70.229	-0.331	0.000	0.03		4.4	OK
12.002	1B.3	70.183	-0.087	0.000	0.06		8.2	OK
12.003	1B.4	70.183	-0.022	0.000	0.04		11.2	OK
12.004	1B.5	70.183	0.103	0.000	0.06		16.0	SURCHARGED
12.005	1B.6	70.183	0.268	0.000	0.06		16.0	SURCHARGED
12.006	1B.7	70.183	0.343	0.000	0.10		34.5	SURCHARGED
13.000	1B.8	70.183	0.408	0.000	0.03		2.0	SURCHARGED
13.001	1B.9	70.183	0.433	0.000	0.01		2.6	SURCHARGED
12.007	1B.10	70.183	0.483	0.000	0.16		54.9	SURCHARGED
14.000	1B.11	70.235	0.085	0.000	0.05		3.7	SURCHARGED
15.000	1B.12	70.236	0.086	0.000	0.02		2.4	SURCHARGED
14.001	1B.13	70.280	0.580	0.000	0.12		5.0	SURCHARGED
12.008	S5	70.183	0.583	0.000	0.33		59.4	SURCHARGED
1.006	HW08	70.183	0.823	0.000	0.04		4.0	SURCHARGED
16.000	1B.14	69.390	-0.110	0.000	0.08		5.8	OK
16.001	1B.15	69.389	0.209	0.000	0.07		5.4	SURCHARGED
16.002	1B.16	69.388	0.423	0.000	0.10		5.3	FLOOD RISK

Summary of Results for 960 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.391	0.111	0.000	0.12		10.7	FLOOD RISK
18.000	1B.18	69.391	0.111	0.000	0.12		10.7	FLOOD RISK
17.001	1B.19	69.390	0.215	0.000	0.20		21.4	FLOOD RISK
17.002	INTERCEPTOR	69.389	0.364	0.000	0.25		21.3	SURCHARGED
19.000	RE2.1	70.984	-0.251	0.000	0.06		4.7	OK
19.001	R2.7	70.756	-0.244	0.000	0.08		5.6	OK
19.002	R2.8	70.556	-0.244	0.000	0.08		5.6	OK
20.000	R2.10	70.820	-0.205	0.000	0.02		0.9	OK
19.003	R2.9	70.406	-0.294	0.000	0.11		14.5	OK
19.004	R2.11	70.211	-0.189	0.000	0.06		15.4	OK
21.000	R2.13	70.414	-0.186	0.000	0.07		4.9	OK
19.005	R2.12	70.211	0.211	0.000	0.13		19.4	SURCHARGED
19.006	R2.14	70.210	0.335	0.000	0.11		18.8	SURCHARGED
22.000	Tank 2.1	70.633	-0.117	0.000	0.00		0.0	OK
22.001	S2.23	70.633	-0.317	0.000	0.19		27.4	OK
23.000	G2.1	70.549	-0.131	0.000	0.04		0.5	FLOOD RISK
23.001	S2.22	70.500	-0.265	0.000	0.11		9.7	OK
22.002	S2.21	70.472	-0.428	0.000	0.16		37.1	OK
24.000	Tank 2.2	70.405	-0.095	0.000	0.00		0.0	OK
22.003	S2.20	70.405	-0.445	0.000	0.15		40.8	OK
25.000	G2.2	70.749	-0.201	0.000	0.03		2.7	OK
22.004	S2.19	70.250	-0.500	0.000	0.07		43.5	OK
26.000	G2.3	70.212	-0.138	0.000	0.03		0.8	OK
27.000	G2.4	70.480	-0.245	0.000	0.08		12.4	OK
26.001	S2.18	70.212	-0.188	0.000	0.08		13.2	OK
28.000	Tank 2.3	70.211	0.036	0.000	0.00		0.0	SURCHARGED
22.005	s2.17	70.211	-0.089	0.000	0.16		56.5	OK
22.006	Interceptor	70.211	0.123	0.000	0.16		56.4	SURCHARGED
19.007	S2.16	70.210	0.235	0.000	0.53		74.3	SURCHARGED
19.008	S22.15	70.209	0.259	0.000	0.34		74.0	SURCHARGED
29.000	RE2.2	70.940	-0.185	0.000	0.07		3.0	OK
29.001	R2.6	70.746	-0.179	0.000	0.09		3.0	OK
29.002	R2.5	70.713	-0.237	0.000	0.10		7.3	OK
29.003	R2.4	70.359	-0.261	0.000	0.04		7.6	OK
29.004	S2.12	70.193	-0.057	0.000	0.06	9.9	8.6	OK
30.000	RE2.3	70.824	-0.176	0.000	0.11		4.5	OK
30.001	R2.3	70.560	-0.315	0.000	0.06		8.8	OK
30.002	R2.2	70.198	-0.352	0.000	0.03		9.2	OK
29.005	R2.1	70.198	0.063	0.000	0.12		18.9	SURCHARGED
29.006	S2.13	70.202	0.207	0.000	0.13		19.9	SURCHARGED
31.000	R2.19	70.982	-0.218	0.000	0.01		0.3	OK
31.001	R2.20	70.860	-0.265	0.000	0.03		3.1	OK
31.002	R2.21	70.448	-0.327	0.000	0.04		6.6	OK
31.003	R2.22	70.206	-0.194	0.000	0.05		7.5	OK
32.000	R2.18	70.654	-0.266	0.000	0.03		3.0	OK
32.001	R2.17	70.206	-0.299	0.000	0.04		7.0	OK
32.002	R2.16	70.206	0.181	0.000	0.03		6.6	SURCHARGED
29.007	R2.15	70.206	0.351	0.000	0.21		33.5	SURCHARGED
33.000	RE1A.1	70.211	-0.264	0.000	0.01		0.6	OK

Summary of Results for 960 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.211	-0.074	0.000	0.01		0.6	OK
33.002	S1A.3	70.211	0.116	0.000	0.03		3.6	SURCHARGED
33.003	S1A.4	70.211	0.231	0.000	0.05		6.6	SURCHARGED
34.000	S1A.5	70.212	0.012	0.000	0.03		0.9	SURCHARGED
34.001	S1A.6	70.212	0.012	0.000	0.02		1.5	SURCHARGED
34.002	S1A.7	70.212	0.082	0.000	0.09		14.0	SURCHARGED
34.003	S1A.8	70.211	0.051	0.000	0.08		26.5	SURCHARGED
33.004	S1A.9	70.211	0.171	0.000	0.11		33.2	SURCHARGED
35.000	S1A.10	70.210	-0.090	0.000	0.02		4.1	OK
35.001	S1A.11	70.210	0.195	0.000	0.02		3.9	SURCHARGED
35.002	INTERCEPTOR	70.210	0.345	0.000	0.02		3.9	SURCHARGED
36.000	S1A.21	70.288	0.038	0.000	0.09		7.1	SURCHARGED
36.001	S1A.20	70.303	0.688	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.210	0.245	0.000	0.15		42.0	SURCHARGED
33.006	S1A.19	70.210	0.285	0.000	0.12		42.0	SURCHARGED
29.008	R2.14	70.209	0.359	0.000	0.49		73.0	SURCHARGED
19.009	S2.24	70.208	0.373	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.390	0.140	0.000	0.04		6.7	SURCHARGED
37.000	S1A.13	69.390	-0.110	0.000	0.07		5.5	OK
37.001	S1A.14	69.389	0.209	0.000	0.07		5.1	SURCHARGED
37.002	S1A.15	69.389	0.404	0.000	0.09		5.0	FLOOD RISK
38.000	S1A.16	69.391	0.081	0.000	0.13		11.0	FLOOD RISK
39.000	S1A.17	69.391	0.136	0.000	0.11		9.6	FLOOD RISK
38.001	S1A.18	69.390	0.215	0.000	0.19		20.6	FLOOD RISK
38.002	INTERCEPTOR	69.389	0.364	0.000	0.24		20.5	SURCHARGED
1.007	SOUT	69.388	0.538	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	2880
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	24

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	1440

Summary of Results for 1440 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.491	-0.259	0.000	0.05		3.9	OK
1.001	R5	70.244	-0.241	0.000	0.06		5.5	OK
1.002	R6	70.244	0.019	0.000	0.05		7.0	SURCHARGED
1.003	R7	70.244	0.244	0.000	0.02		6.7	SURCHARGED
2.000	R8	70.244	0.294	0.000	0.01		3.7	SURCHARGED
3.000	R9	70.244	0.294	0.000	0.01		3.4	SURCHARGED
4.000	R4A	70.361	-0.264	0.000	0.04		3.5	OK
4.001	R4	70.245	-0.105	0.000	0.04		3.5	OK
4.002	R3	70.245	0.120	0.000	0.09		5.4	SURCHARGED
4.003	R2	70.245	0.320	0.000	0.06		6.4	SURCHARGED
5.000	Tank 1	70.245	0.270	0.000	0.00		0.0	SURCHARGED
5.001	S3	70.245	0.270	0.000	0.00		0.0	SURCHARGED
6.000	G1	70.246	0.121	0.000	0.07		10.1	FLOOD RISK
7.000	G2	70.245	0.470	0.000	0.07		0.8	FLOOD RISK
8.000	G3	70.245	0.120	0.000	0.06		8.7	FLOOD RISK
9.000	G4	70.245	0.470	0.000	0.07		0.8	FLOOD RISK
5.002	S2	70.245	0.320	0.000	0.15		19.6	SURCHARGED
10.000	Tank 2	70.245	0.520	0.000	0.00		0.0	SURCHARGED
5.003	S1	70.245	0.445	0.000	0.17		19.4	SURCHARGED
5.004	Interceptor	70.245	0.457	0.000	0.17		19.4	SURCHARGED
4.004	R1	70.244	0.569	0.000	0.17		25.5	SURCHARGED
1.004	HW05	70.244	0.454	0.000	0.08		13.5	SURCHARGED
11.000	S11	70.248	-0.002	0.000	0.06		11.9	OK
11.001	S10	70.244	0.344	0.000	0.05		12.5	SURCHARGED
1.005	S4	70.244	0.534	0.000	0.07		19.1	SURCHARGED
12.000	1B.1	70.309	-0.201	0.000	0.03		1.0	OK
12.001	1B.2	70.244	-0.316	0.000	0.02		3.2	OK
12.002	1B.3	70.244	-0.026	0.000	0.05		6.0	OK
12.003	1B.4	70.244	0.039	0.000	0.03		8.3	SURCHARGED
12.004	1B.5	70.244	0.164	0.000	0.04		11.9	SURCHARGED
12.005	1B.6	70.244	0.329	0.000	0.05		11.9	SURCHARGED
12.006	1B.7	70.244	0.404	0.000	0.07		25.2	SURCHARGED
13.000	1B.8	70.244	0.469	0.000	0.02		1.4	SURCHARGED
13.001	1B.9	70.244	0.494	0.000	0.01		1.9	SURCHARGED
12.007	1B.10	70.244	0.544	0.000	0.11		39.9	SURCHARGED
14.000	1B.11	70.255	0.105	0.000	0.05		3.5	SURCHARGED
15.000	1B.12	70.254	0.104	0.000	0.02		2.2	SURCHARGED
14.001	1B.13	70.254	0.554	0.000	0.12		5.0	SURCHARGED
12.008	S5	70.244	0.644	0.000	0.25		44.7	SURCHARGED
1.006	HW08	70.244	0.884	0.000	0.04		4.2	SURCHARGED
16.000	1B.14	69.386	-0.114	0.000	0.06		4.2	OK
16.001	1B.15	69.386	0.206	0.000	0.05		4.0	SURCHARGED
16.002	1B.16	69.385	0.420	0.000	0.08		3.9	FLOOD RISK

Summary of Results for 1440 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.388	0.108	0.000	0.08		7.7	FLOOD RISK
18.000	1B.18	69.388	0.108	0.000	0.08		7.6	FLOOD RISK
17.001	1B.19	69.387	0.212	0.000	0.14		15.2	FLOOD RISK
17.002	INTERCEPTOR	69.386	0.361	0.000	0.18		15.1	SURCHARGED
19.000	RE2.1	70.976	-0.259	0.000	0.05		3.4	OK
19.001	R2.7	70.747	-0.253	0.000	0.06		4.1	OK
19.002	R2.8	70.546	-0.254	0.000	0.06		4.1	OK
20.000	R2.10	70.814	-0.211	0.000	0.01		0.7	OK
19.003	R2.9	70.394	-0.306	0.000	0.08		10.6	OK
19.004	R2.11	70.250	-0.150	0.000	0.05		11.2	OK
21.000	R2.13	70.408	-0.192	0.000	0.05		3.6	OK
19.005	R2.12	70.250	0.250	0.000	0.09		14.0	SURCHARGED
19.006	R2.14	70.250	0.375	0.000	0.08		13.9	SURCHARGED
22.000	Tank 2.1	70.611	-0.139	0.000	0.00		0.0	OK
22.001	S2.23	70.611	-0.339	0.000	0.14		19.9	OK
23.000	G2.1	70.546	-0.134	0.000	0.03		0.3	FLOOD RISK
23.001	S2.22	70.479	-0.286	0.000	0.08		7.1	OK
22.002	S2.21	70.446	-0.454	0.000	0.11		27.0	OK
24.000	Tank 2.2	70.383	-0.117	0.000	0.00		0.0	OK
22.003	S2.20	70.383	-0.467	0.000	0.11		29.7	OK
25.000	G2.2	70.745	-0.205	0.000	0.02		2.0	OK
22.004	S2.19	70.252	-0.498	0.000	0.05		31.7	OK
26.000	G2.3	70.251	-0.099	0.000	0.02		0.6	OK
27.000	G2.4	70.471	-0.254	0.000	0.06		9.0	OK
26.001	S2.18	70.252	-0.148	0.000	0.06		9.6	OK
28.000	Tank 2.3	70.251	0.076	0.000	0.00		0.0	SURCHARGED
22.005	s2.17	70.251	-0.049	0.000	0.12		40.7	OK
22.006	Interceptor	70.250	0.162	0.000	0.12		40.6	SURCHARGED
19.007	S2.16	70.250	0.275	0.000	0.39		54.1	SURCHARGED
19.008	S22.15	70.249	0.299	0.000	0.25		53.8	SURCHARGED
29.000	RE2.2	70.933	-0.192	0.000	0.05		2.2	OK
29.001	R2.6	70.738	-0.187	0.000	0.07		2.2	OK
29.002	R2.5	70.703	-0.247	0.000	0.07		5.3	OK
29.003	R2.4	70.354	-0.266	0.000	0.03		5.6	OK
29.004	S2.12	70.248	-0.002	0.000	0.04	11.2	6.2	OK
30.000	RE2.3	70.816	-0.184	0.000	0.08		3.3	OK
30.001	R2.3	70.550	-0.325	0.000	0.04		6.4	OK
30.002	R2.2	70.250	-0.300	0.000	0.02		6.7	OK
29.005	R2.1	70.249	0.114	0.000	0.09		14.4	SURCHARGED
29.006	S2.13	70.249	0.254	0.000	0.10		16.0	SURCHARGED
31.000	R2.19	70.980	-0.220	0.000	0.00		0.2	OK
31.001	R2.20	70.856	-0.269	0.000	0.02		2.2	OK
31.002	R2.21	70.442	-0.333	0.000	0.03		4.8	OK
31.003	R2.22	70.249	-0.151	0.000	0.03		5.4	OK
32.000	R2.18	70.650	-0.270	0.000	0.02		2.2	OK
32.001	R2.17	70.250	-0.255	0.000	0.03		5.1	OK
32.002	R2.16	70.250	0.225	0.000	0.03		5.0	SURCHARGED
29.007	R2.15	70.249	0.394	0.000	0.16		26.1	SURCHARGED
33.000	RE1A.1	70.250	-0.225	0.000	0.01		0.5	OK

Summary of Results for 1440 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.250	-0.035	0.000	0.01		0.5	OK
33.002	S1A.3	70.250	0.155	0.000	0.02		2.6	SURCHARGED
33.003	S1A.4	70.250	0.270	0.000	0.04		4.8	SURCHARGED
34.000	S1A.5	70.250	0.050	0.000	0.02		0.6	SURCHARGED
34.001	S1A.6	70.250	0.050	0.000	0.01		1.1	SURCHARGED
34.002	S1A.7	70.250	0.120	0.000	0.06		10.2	SURCHARGED
34.003	S1A.8	70.250	0.090	0.000	0.06		19.3	SURCHARGED
33.004	S1A.9	70.250	0.210	0.000	0.08		24.1	SURCHARGED
35.000	S1A.10	70.250	-0.050	0.000	0.02		2.9	FLOOD RISK
35.001	S1A.11	70.250	0.235	0.000	0.02		2.9	FLOOD RISK
35.002	INTERCEPTOR	70.250	0.385	0.000	0.02		2.9	FLOOD RISK
36.000	S1A.21	70.278	0.028	0.000	0.08		6.2	SURCHARGED
36.001	S1A.20	70.276	0.661	0.000	0.31		5.0	SURCHARGED
33.005	S1A.12	70.250	0.285	0.000	0.11		31.5	SURCHARGED
33.006	S1A.19	70.250	0.325	0.000	0.09		31.4	SURCHARGED
29.008	R2.14	70.250	0.400	0.000	0.36		54.3	SURCHARGED
19.009	S2.24	70.249	0.414	0.000	0.01		6.7	SURCHARGED
19.010	S2.27	69.387	0.137	0.000	0.04		6.5	SURCHARGED
37.000	S1A.13	69.386	-0.114	0.000	0.05		4.0	OK
37.001	S1A.14	69.386	0.206	0.000	0.05		3.7	SURCHARGED
37.002	S1A.15	69.386	0.401	0.000	0.06		3.7	FLOOD RISK
38.000	S1A.16	69.388	0.078	0.000	0.09		7.9	FLOOD RISK
39.000	S1A.17	69.388	0.133	0.000	0.08		6.8	FLOOD RISK
38.001	S1A.18	69.387	0.212	0.000	0.14		14.6	FLOOD RISK
38.002	INTERCEPTOR	69.386	0.361	0.000	0.17		14.5	SURCHARGED
1.007	SOUT	69.385	0.535	0.000	0.49		17.0	SURCHARGED

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	5.000
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)	5760
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	24

Number of Input Hydrographs	0	Number of Storage Structures	7
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	460200 223700 SP 60200 23700
C (1km)	-0.022
D1 (1km)	0.324
D2 (1km)	0.320
D3 (1km)	0.244
E (1km)	0.290
F (1km)	2.477
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	2880

Summary of Results for 2880 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	R5A	70.483	-0.267	0.000	0.03		2.3	OK
1.001	R5	70.307	-0.178	0.000	0.04		3.2	OK
1.002	R6	70.307	0.082	0.000	0.03		4.1	SURCHARGED
1.003	R7	70.307	0.307	0.000	0.01		3.9	SURCHARGED
2.000	R8	70.307	0.357	0.000	0.01		2.2	SURCHARGED
3.000	R9	70.307	0.357	0.000	0.01		2.0	SURCHARGED
4.000	R4A	70.354	-0.271	0.000	0.02		2.1	OK
4.001	R4	70.307	-0.043	0.000	0.02		2.1	OK
4.002	R3	70.307	0.182	0.000	0.05		3.2	SURCHARGED
4.003	R2	70.307	0.382	0.000	0.03		3.7	FLOOD RISK
5.000	Tank 1	70.307	0.332	0.000	0.00		0.0	SURCHARGED
5.001	S3	70.307	0.332	0.000	0.00		0.0	SURCHARGED
6.000	G1	70.308	0.183	0.000	0.04		5.9	FLOOD RISK
7.000	G2	70.305	0.530	5.150	0.04		0.5	FLOOD
8.000	G3	70.308	0.183	0.000	0.04		5.1	FLOOD RISK
9.000	G4	70.305	0.530	5.150	0.04		0.5	FLOOD
5.002	S2	70.307	0.382	0.000	0.09		11.6	SURCHARGED
10.000	Tank 2	70.307	0.582	0.000	0.00		0.0	SURCHARGED
5.003	S1	70.307	0.507	0.000	0.10		11.4	SURCHARGED
5.004	Interceptor	70.307	0.519	0.000	0.10		11.4	SURCHARGED
4.004	R1	70.307	0.632	0.000	0.10		15.0	SURCHARGED
1.004	HW05	70.307	0.517	0.000	0.06		10.2	SURCHARGED
11.000	S11	70.307	0.057	0.000	0.05		10.2	SURCHARGED
11.001	S10	70.307	0.407	0.000	0.05		10.9	SURCHARGED
1.005	S4	70.307	0.597	0.000	0.05		13.0	SURCHARGED
12.000	1B.1	70.308	-0.202	0.000	0.02		0.6	OK
12.001	1B.2	70.308	-0.252	0.000	0.01		1.9	OK
12.002	1B.3	70.308	0.038	0.000	0.03		3.5	SURCHARGED
12.003	1B.4	70.308	0.103	0.000	0.02		4.9	SURCHARGED
12.004	1B.5	70.308	0.228	0.000	0.03		7.2	SURCHARGED
12.005	1B.6	70.308	0.393	0.000	0.03		7.4	SURCHARGED
12.006	1B.7	70.308	0.468	0.000	0.04		15.2	SURCHARGED
13.000	1B.8	70.308	0.533	0.000	0.01		0.8	SURCHARGED
13.001	1B.9	70.308	0.558	0.000	0.01		1.1	SURCHARGED
12.007	1B.10	70.308	0.608	0.000	0.07		23.6	SURCHARGED
14.000	1B.11	70.323	0.173	0.000	0.04		3.2	SURCHARGED
15.000	1B.12	70.322	0.172	0.000	0.02		2.1	SURCHARGED
14.001	1B.13	70.323	0.623	0.000	0.12		5.0	SURCHARGED
12.008	S5	70.308	0.708	0.000	0.15		27.6	SURCHARGED
1.006	HW08	70.307	0.947	0.000	0.05		4.6	SURCHARGED
16.000	1B.14	69.333	-0.167	0.000	0.03		2.5	OK
16.001	1B.15	69.333	0.153	0.000	0.03		2.4	SURCHARGED
16.002	1B.16	69.333	0.368	0.000	0.05		2.3	FLOOD RISK

Summary of Results for 2880 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.000	1B.17	69.335	0.055	0.000	0.05		4.4	SURCHARGED
18.000	1B.18	69.335	0.055	0.000	0.05		4.4	FLOOD RISK
17.001	1B.19	69.334	0.159	0.000	0.08		8.5	FLOOD RISK
17.002	INTERCEPTOR	69.333	0.308	0.000	0.10		8.4	SURCHARGED
19.000	RE2.1	70.968	-0.267	0.000	0.03		2.0	OK
19.001	R2.7	70.736	-0.264	0.000	0.03		2.4	OK
19.002	R2.8	70.536	-0.264	0.000	0.03		2.4	OK
20.000	R2.10	70.808	-0.217	0.000	0.01		0.4	OK
19.003	R2.9	70.376	-0.324	0.000	0.05		6.2	OK
19.004	R2.11	70.307	-0.093	0.000	0.03		6.6	OK
21.000	R2.13	70.400	-0.200	0.000	0.03		2.1	OK
19.005	R2.12	70.307	0.307	0.000	0.06		8.6	SURCHARGED
19.006	R2.14	70.307	0.432	0.000	0.05		8.6	SURCHARGED
22.000	Tank 2.1	70.585	-0.165	0.000	0.00		0.0	OK
22.001	S2.23	70.585	-0.365	0.000	0.08		11.7	OK
23.000	G2.1	70.541	-0.139	0.000	0.02		0.2	FLOOD RISK
23.001	S2.22	70.453	-0.312	0.000	0.05		4.1	OK
22.002	S2.21	70.412	-0.488	0.000	0.07		15.8	OK
24.000	Tank 2.2	70.349	-0.151	0.000	0.00		0.0	OK
22.003	S2.20	70.349	-0.501	0.000	0.07		17.4	OK
25.000	G2.2	70.737	-0.213	0.000	0.01		1.2	OK
22.004	S2.19	70.307	-0.443	0.000	0.03		18.6	OK
26.000	G2.3	70.307	-0.043	0.000	0.01		0.3	OK
27.000	G2.4	70.460	-0.265	0.000	0.03		5.3	OK
26.001	S2.18	70.307	-0.093	0.000	0.03		5.6	OK
28.000	Tank 2.3	70.307	0.132	0.000	0.00		0.0	SURCHARGED
22.005	s2.17	70.307	0.007	0.000	0.07		24.0	SURCHARGED
22.006	Interceptor	70.307	0.219	0.000	0.07		24.0	SURCHARGED
19.007	S2.16	70.307	0.332	0.000	0.23		32.6	SURCHARGED
19.008	S22.15	70.306	0.356	0.000	0.15		32.6	SURCHARGED
29.000	RE2.2	70.926	-0.199	0.000	0.03		1.3	OK
29.001	R2.6	70.729	-0.196	0.000	0.04		1.3	OK
29.002	R2.5	70.689	-0.261	0.000	0.04		3.1	OK
29.003	R2.4	70.346	-0.274	0.000	0.02		3.3	OK
29.004	S2.12	70.307	0.057	0.000	0.02	9.4	3.7	SURCHARGED
30.000	RE2.3	70.806	-0.194	0.000	0.05		1.9	OK
30.001	R2.3	70.540	-0.335	0.000	0.03		3.8	OK
30.002	R2.2	70.307	-0.243	0.000	0.01		3.9	OK
29.005	R2.1	70.307	0.172	0.000	0.06		8.5	SURCHARGED
29.006	S2.13	70.307	0.312	0.000	0.06		9.6	SURCHARGED
31.000	R2.19	70.978	-0.222	0.000	0.00		0.1	OK
31.001	R2.20	70.845	-0.280	0.000	0.01		1.3	OK
31.002	R2.21	70.430	-0.345	0.000	0.02		2.8	OK
31.003	R2.22	70.307	-0.093	0.000	0.02		3.2	OK
32.000	R2.18	70.638	-0.282	0.000	0.01		1.3	OK
32.001	R2.17	70.307	-0.198	0.000	0.02		3.0	OK
32.002	R2.16	70.307	0.282	0.000	0.01		2.9	SURCHARGED
29.007	R2.15	70.307	0.452	0.000	0.10		15.5	SURCHARGED
33.000	RE1A.1	70.307	-0.168	0.000	0.00		0.3	OK

Summary of Results for 2880 minute 100 year Winter (Storm)

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
33.001	S1A.2	70.307	0.022	0.000	0.00		0.3	SURCHARGED
33.002	S1A.3	70.307	0.212	0.000	0.01		1.6	SURCHARGED
33.003	S1A.4	70.307	0.327	0.000	0.02		2.9	SURCHARGED
34.000	S1A.5	70.307	0.107	0.000	0.01		0.4	SURCHARGED
34.001	S1A.6	70.307	0.107	0.000	0.01		0.6	SURCHARGED
34.002	S1A.7	70.307	0.177	0.000	0.04		6.2	SURCHARGED
34.003	S1A.8	70.307	0.147	0.000	0.04		11.7	SURCHARGED
33.004	S1A.9	70.307	0.267	0.000	0.05		14.6	SURCHARGED
35.000	S1A.10	70.307	0.007	0.000	0.01		1.7	FLOOD RISK
35.001	S1A.11	70.307	0.292	0.000	0.01		1.7	FLOOD RISK
35.002	INTERCEPTOR	70.307	0.442	0.000	0.01		1.7	FLOOD RISK
36.000	S1A.21	70.321	0.071	0.000	0.06		4.9	SURCHARGED
36.001	S1A.20	70.321	0.706	0.000	0.29		4.5	SURCHARGED
33.005	S1A.12	70.307	0.342	0.000	0.07		19.7	SURCHARGED
33.006	S1A.19	70.307	0.382	0.000	0.06		19.7	SURCHARGED
29.008	R2.14	70.307	0.457	0.000	0.22		33.1	SURCHARGED
19.009	S2.24	70.306	0.471	0.000	0.01		6.6	SURCHARGED
19.010	S2.27	69.335	0.085	0.000	0.04		6.5	SURCHARGED
37.000	S1A.13	69.333	-0.167	0.000	0.03		2.3	OK
37.001	S1A.14	69.333	0.153	0.000	0.03		2.2	SURCHARGED
37.002	S1A.15	69.333	0.348	0.000	0.04		2.1	FLOOD RISK
38.000	S1A.16	69.335	0.025	0.000	0.05		4.6	SURCHARGED
39.000	S1A.17	69.334	0.079	0.000	0.04		3.9	FLOOD RISK
38.001	S1A.18	69.334	0.159	0.000	0.08		8.2	FLOOD RISK
38.002	INTERCEPTOR	69.333	0.308	0.000	0.10		8.2	SURCHARGED
1.007	SOUT	69.332	0.482	0.000	0.49		17.0	SURCHARGED