Project Name	: Burndell Road, Yapton
Job No	: 18-070
Note Title	: Drainage Strategy Technical Note
Author	: Luke Phillips
Checked	: Luke Hart
Approved	: Ryan Saul
Date	: August 2019

1.0 INTRODUCTION

1.1 Odyssey have been instructed by Bovis Homes to prepare this drainage technical note in support of their Reserved Matters (RM) application for the residential development at Burndell Road, Yapton. This follows the grant of outline planning permission on 13th October 2017 (Ref: Y/19/16/OUT)

1.2 The description of the development at the outline application was:

"*Outline application for the development of a maximum of 108 No. residential dwellings, vehicular access from Burndell Road, public open space, ancillary works & associated infrastructure.*"

1.3 The aim of this report is to support the discharge of Conditions 5, 6, and 24, which are set out below:

Condition 5

"Development shall not commence until full details of the proposed surface water drainage scheme, including maintenance and management, have been submitted to and approved in writing by the Local Planning Authority. No building shall be occupied until the complete surface water drainage system serving that property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in accordance with the scheme in perpetuity."

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Condition 6

"Prior to the commencement of construction works details of a proposed foul drainage system shall be submitted to an approved in writing by the local planning authority. This shall include details of its siting, design and subsequent management/ maintenance. No dwelling shall be occupied until works for the disposal of sewage have been fully implemented in accordance with the approved details."

Condition 24

"No part of the development shall be first occupied until provision has been made within the site in accordance with plans and details to be submitted to and approved by the local planning authority to prevent surface water draining onto the public highway."

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2.0 EXISTING SITE

2.1 The proposed development site comprises of 3.87ha of greenfield land, located South of an existing residential development fronting Burndell Road and Fellows Gardens. The site is relatively flat with a fall of approximately 1.2m across the site from North to South.

2.2 The existing drainage regime relies on surface water infiltrating through the underlying strata, with any excess runoff discharging into the network of ditches abutting the site's southern boundary.

2.3 There are no public surface water sewers in close proximity to the site.

2.4 Existing geology maps and further borehole testing has proven that the underlying geology consists predominantly of sandy, gravelly clay above the Upper Chalk Formation. Making the site unsuitable for the use of an infiltrating surface water drainage strategy.

2.5 Furthermore, infiltration testing carried out proved that the geology of the ground has poor permeability, and therefore the use of any infiltrating SuDS features would not be a viable option for this site.

2.6 There are no existing foul water sewers present within the site. The nearest public foul water sewer is located in Burndell Road and currently serves the existing residential developments on Park Drive and Fairholme Drive.

2.7 In order to safeguard against potential flooding from the surrounding ditches, all structures have been located a minimum of five metres away from the top of any existing ditch bank.

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3.0 PROPOSED SURFACE WATER DRAINAGE STRATEGY

3.1 The surface water drainage strategy for the proposed development is shown on the drawing listed below which can be found in **Appendix A:**

- 18-070/103 – Preliminary Engineering Layout

3.2 The surface water drainage strategy has been designed in accordance with the strategy set out in the Odyssey Flood Risk Assessment (FRA) submitted as part of the outline planning application for the site. The FRA detailed the need for cellular storage attenuation crates, an attenuation basin, and lined permeable paving systems in order to provide surface water storage and treatment, prior to discharging into the ditches surrounding the site.

3.3 The surface water drainage system has been designed to accommodate all rainfall events up to the 1 in 100 year event plus climate change (+40%.) Supporting calculations can be found within **Appendix C.**

3.4 During extreme events, excess flood waters will be predominantly conveyed within the carriageways to the ditches and open space to the East and South of the site. The overland flow routes can be found on drawing **18-070/105** appended in **Appendix B.**

3.5 The proposed drainage strategy splits the development into 5 separate sub-catchments shown on drawing **18-070/113** in **Appendix D**. The Northern catchment drains to the East and utilises an offline concrete storage tank combined with flow control device in order to manage the stormwater. This catchment then discharges into the Eastern ditch at a rate of 7.0 l/s.

3.6 Three of the Southern catchments drain to the South where they utilise two separate offline cellular storage attenuation tanks before discharging into the Southern ditch via a flow control manhole at a rate of 5.0 l/s.

3.7 The remaining Southern catchment is conveyed through the basin and discharges into the Southern ditch through a separate outfall at a controlled rate of 2.0 l/s.

3.8 Generated surface water run-off from roofs and private driveways will be conveyed through permeable paving systems and private pipe networks to the main adopted sewer network. All highway drainage will be captured with trapped road gullies that discharge into the main sewer network.

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3.9 The permeable paving will also ensure that any surface water generated by roofs and private driveways will be contained within the private drainage network without draining onto the public highway.

3.10 The main adopted sewer network will then convey the surface water to the respective attenuation feature before it is discharged at a combined rate of 14 l/s as previously agreed at the outline planning stage. The discharge rates proposed are listed within the table below;

	Discharge Rate
Northern Catchment	7.0 l/s
Southern Catchment A	5.0 l/s
Southern Catchment B	2.0 l/s
Total	14.0 l/s

3.11 Surface water treatment will be provided by the permeable paving via both the grit layer and geotextile that the blocks are bedded on, as well as the underlying gravel media comprising of washed no-fines material. These measures provide filtration and the breakdown of hydrocarbons as the water is conveyed through the system and into the piped network.

3.12 The proposed attenuation basin will also provide treatment through the surface vegetation and ground cover. Nutrients, oils/grease, and metals can all be removed through filtration via the vegetated basin.

3.13 The proposed permeable paving and attenuation basin combined with trapped gullies and catchpits that form part of the piped network will provide sufficient treatment of the surface water prior to discharge into the existing ditches.

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4.0 PROPOSED FOUL WATER DRAINAGE STRATEGY

4.1 The foul water drainage strategy for the proposed development is shown on the drawing listed below which can be found in **Appendix A:**

- 18-070/103 – Preliminary Engineering Layout

4.2 The foul water drainage strategy has been designed in accordance with strategy set out in the Odyssey FRA submitted as part of the outline planning application for the site.

4.3 All foul effluent created by the development is to be discharged through private foul water sewer networks into the main adopted foul water sewer network that runs through the site.

4.4 These main sewers have been designed in accordance with Sewers for Adoption 7th Edition.

4.5 All foul effluent is to be discharged to the adopted pumping station located towards the South West corner of the site. It will then be pumped via rising main to the North before discharging into the existing Southern Water manhole 2003 in Burndell Road.

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5.0 PROPOSED MANAGEMENT AND MAINTENANCE

5.1 All foul and surface water sewer networks shown on drawing **18-070/103** are to be offered for adoption by Southern Water and as such will be maintained by Southern Water in accordance with their maintenance and management program.

5.2 Any surface water drainage systems that take highway drainage only, will be offered for adoption by West Sussex County Council and as such will be maintained by West Sussex County Council in accordance with their maintenance and management program.

5.3 Any drainage solely serving an individual property and located within the property curtilage will be maintained by the property owner. A covenant will be imposed to ensure that the appearance and materials used in the construction of the permeable parking bays are not altered in any way.

5.4 Any drainage features not offered for adoption, including the concrete tank, cellular storage attenuation crates and the attenuation basin, are to be maintained by a private management company in accordance with the following schedule and any recommendations made by manufacturers.

Permeable Paving

Maintenance Category	Maintenance Activity	Comments	Frequency
Routine Maintenance	Visual inspection of paving.	Ensure joints are kept fully filled.	Monthly (depending on local environment)
	Paving should be agitated (e.g. brushed, vacuumed, etc.)	To ensure no vegetation of any sort is allowed to grow and develop in the joints.	Six monthly or as required (Spring and Autumn seasons).
	Paving should be inspected after any heavy precipitations.	Ensure no displacement of any organic matter into the surface of the pavement.	As required.
Corrective Maintenance	Inspection of outfall should be undertaken.	Non-infiltration systems to have outfall checked for debris and blockages.	Six monthly or as required.
	Removal of weeds.	To ensure weeds are killed effectively they should be actively growing so that the glyphosate will go down to the roots. Glyphosate based weed killers include Roundup and Tumbleweed.	As required.

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	Laying material may require cleaning and /or replacing.	Depending on the environment the permeable pavement has received and been exposed to.	25 to 30-year period.

Pipe Systems, Gullies, and Manholes

Maintenance Category	Maintenance Activity	Comments	Frequency
Routine Maintenance	Inspect and identify any areas that are not operating correctly.	Gullies and private manholes and inspection chambers	Monthly (for the first 3 months) then annually.
	Remove debris from gratings, sumps / silt traps.		Annually
Infrequent Maintenance	Clear blockages.	Piped system.	As required.

Cellular Storage Attenuation Tanks

Maintenance Category	Maintenance Activity	Comments	Frequency
Routine Maintenance	Inspect and identify any areas that are not operating correctly.		Monthly (for the first 3 months) then six monthly.
	Remove sediment from upstream and downstream catchpits.	Remove sediment from sump when 50% volume lost.	Six monthly, or as required.
Infrequent Maintenance	Clear blockage via distribution pipe by rodding / jetting via catchpits.		As required.
Corrective Maintenance	Membrane repair.	Membrane to be repaired in accordance with manufactures details.	As required.

Concrete Storage Attenuation Tanks

Maintenance Category	Maintenance Activity	Comments	Frequency
Routine Maintenance	Inspect and identify any areas that are not operating correctly.		Monthly (for the first 3 months) then six monthly.
	Remove sediment from tank floor.	Silt pump should be placed temporarily within a downstream sump/silt trap during maintenance works.	Annually, or as required.
Infrequent Maintenance	Clear blockage by rodding / jetting via catchpits or jetting from within tank itself.		As required.

Attenuation Basin

Maintenance Category	Maintenance Activity	Comments	Frequency
Routine Maintenance	Litter picking and general	Ensure a free-flowing water route is observed	Three times/year at end of winter, mid-summer, after autumn leaf fall, or as required based on site-specific observations of clogging.
Infrequent Maintenance	Stabilise and mow contributing and adjacent grass		As required.
	Removal of weeds		As required
	Remediation works of any landscaping or any other component that is deemed to have an adverse impact on the flow path		As required
	Remove sediment from inlets, outlet and forebay		As required

Flow Control Devices

Maintenance Category	Maintenance Activity	Comments	Frequency
Routine Maintenance	Inspect and identify any areas that are not operating correctly.		Monthly (for the first 3 months) then six monthly.
	Remove sediment from upstream silt trap (sump).		Six monthly, or as required.
	Hose down unit / chamber		Six monthly, or as required.
Infrequent Maintenance	Clear blockages		As required.

Inspection Activity	Comments	Frequency
Inspect all inlets / outlets, to check they are in good condition and operating as designed.		Annually.

6.0 CONCLUSION

6.1 This technical note has provided details of the proposed surface water and foul water drainage systems within the proposed development at Burndell Road, Yapton.

6.2 This technical note, combined with other documents submitted as part of the Reserved Matters application provides the detail required to discharge Conditions 5, 6, and 24.

6.3 This note has demonstrated how the proposals accord with the FRA, NPPF and local Planning Policies with regards to surface and foul water drainage.

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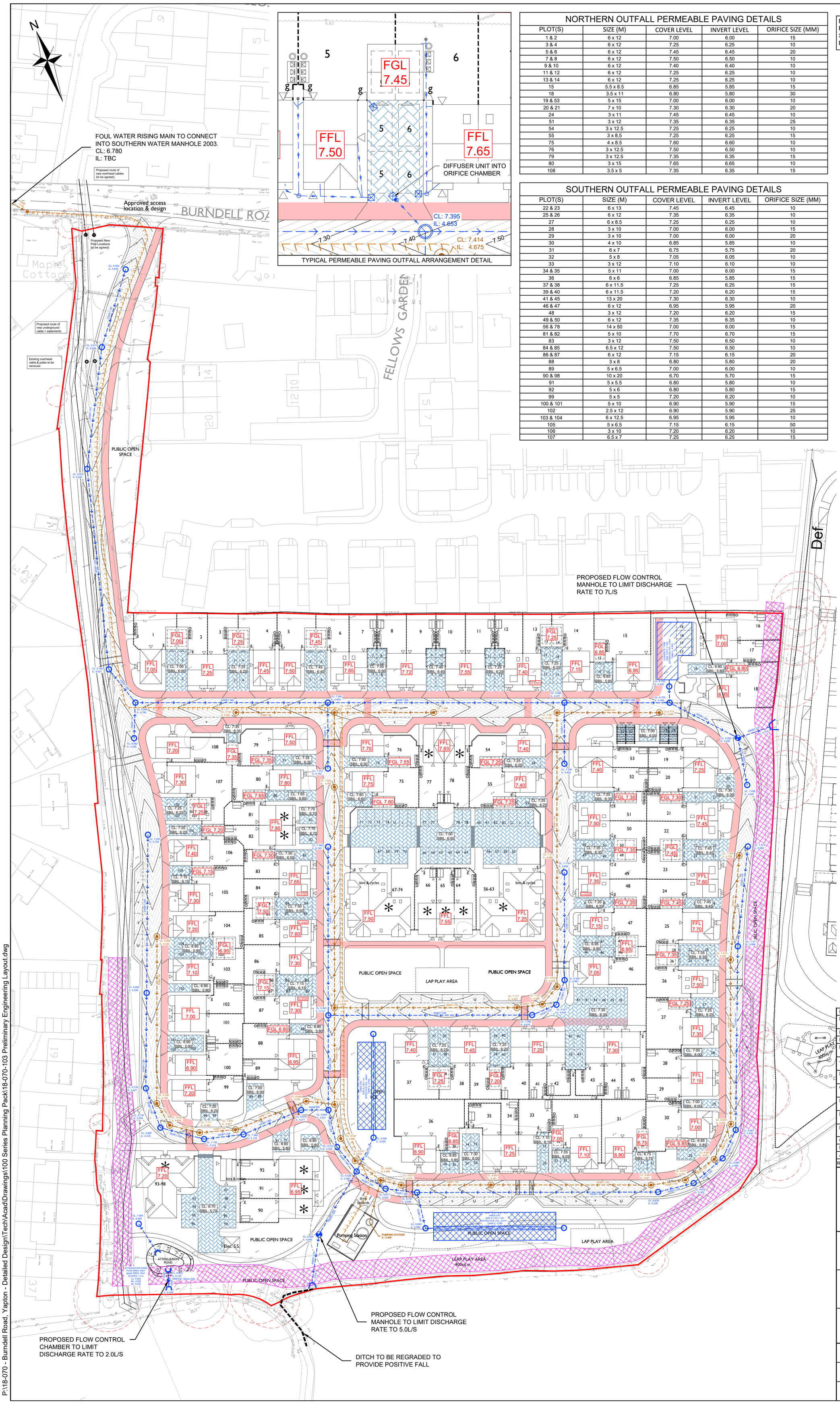
APPENDIX A

Odyssey Preliminary Engineering Layout



TYPICAL PERMEABLE PAVING OUTFALL ARRANGEMENT DETAIL

NORTHERN OUTFALL PERMEABLE PAVING DETAILS

PLOT(S)	SIZE (M)	COVER LEVEL	INVERT LEVEL	ORIFICE SIZE (MM)
1 & 2	6 x 12	7.00	6.00	15
3 & 4	6 x 12	7.25	6.25	10
5 & 6	6 x 12	7.45	6.45	20
7 & 8	6 x 12	7.50	6.50	10
9 & 10	6 x 12	7.40	6.40	10
11 & 12	6 x 12	7.25	6.25	10
13 & 14	6 x 12	7.25	6.25	10
15	5.5 x 8.5	6.85	5.85	15
18	3.5 x 11	6.80	5.80	30
19 & 53	5 x 15	7.00	6.00	10
20 & 21	7 x 10	7.30	6.30	20
24	3 x 11	7.45	6.45	10
51	3 x 12	7.35	6.35	25
54	3 x 12.5	7.25	6.25	10
55	3 x 8.5	7.25	6.25	15
75	4 x 8.5	7.60	6.60	10
76	3 x 12.5	7.50	6.50	10
79	3 x 12.5	7.35	6.35	15
80	3 x 15	7.65	6.65	10
108	3.5 x 5	7.35	6.35	15

SOUTHERN OUTFALL PERMEABLE PAVING DETAILS

PLOT(S)	SIZE (M)	COVER LEVEL	INVERT LEVEL	ORIFICE SIZE (MM)
22 & 23	6 x 13	7.45	6.45	10
25 & 26	6 x 12	7.35	6.35	10
27	6 x 8.5	7.25	6.25	10
28	3 x 10	7.00	6.00	15
29	3 x 10	7.00	6.00	20
30	4 x 10	6.85	5.85	10
31	6 x 7	6.75	5.75	20
32	5 x 8	7.05	6.05	10
33	3 x 12	7.10	6.10	10
34 & 35	5 x 11	7.00	6.00	15
36	6 x 6	6.85	5.85	15
37 & 38	6 x 11.5	7.25	6.25	15
39 & 40	6 x 11.5	7.20	6.20	15
41 & 45	13 x 20	7.30	6.30	10
46 & 47	6 x 12	6.95	5.95	20
48	3 x 12	7.20	6.20	15
49 & 50	6 x 12	7.35	6.35	10
56 & 78	14 x 50	7.00	6.00	15
81 & 82	5 x 10	7.70	6.70	15
83	3 x 12	7.50	6.50	10
84 & 85	6.5 x 12	7.50	6.50	10
86 & 87	6 x 12	7.15	6.15	20
88	3 x 8	6.80	5.80	20
89	5 x 6.5	7.00	6.00	10
90 & 98	10 x 20	6.70	5.70	15
91	5 x 5.5	6.80	5.80	10
92	5 x 6	6.80	5.80	15
99	5 x 5	7.20	6.20	10
100 & 101	5 x 10	6.90	5.90	15
102	2.5 x 12	6.90	5.90	25
103 & 104	6 x 12.5	6.95	5.95	10
105	5 x 6.5	7.15	6.15	50
106	3 x 10	7.20	6.20	10
107	6.5 x 7	7.25	6.25	15

NOTES

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8. FOR OVERLAND FLOW ROUTES REFER TO ODYSSEY DRAWING 18-070/105.
9. FOR LANDSCAPING DETAILS, REFER TO LANDSCAPE ARCHIECTS DRAWINGS.
10. ALL PERMEABLE PAVING TO HAVE A DEPTH OF 1m.

LEGEND

- SITE BOUNDARY
- FFL 7.00 — PROPOSED FINISHED FLOOR LEVEL (mAOD)
- FGL 7.00 — PROPOSED FINISHED GARAGE LEVEL (mAOD)
- × 6.80 — EXISTING LEVEL (mAOD). SEE NOTE 5.
- 7.50 — PROPOSED HIGHWAY CONTOURS.
- FOUL SEWER AND MANHOLE (GRADIENT/PIPE SIZE)
- SURFACE WATER SEWER AND MANHOLE (GRADIENT/PIPE SIZE)
- HYDRO-BRAKE FLOW CONTROL CHAMBER
- ORIFICE FLOW CONTROL CHAMBER
- PROPOSED CELLULAR STORAGE ATTENUATION TANK
- PROPOSED CONCRETE STORAGE ATTENUATION TANK
- PROPOSED HEADWALL
- FOUL RISING MAIN
- 5m BUFFER FROM TOP OF EMBANKMENT
- 15m CLEARANCE FROM CENTRE OF PUMPING STATION WET WELL
- PERMEABLE PAVING
- INDICATIVE SERVICE CORRIDOR
- TREE ROOT PROTECTION ZONE
- EXTENT OF DITCH TO BE REGRADED

FOR PLANNING PURPOSES ONLY

Rev	Amendments	Drn	Chk	App	Date
P	SOUTHERN HYDROBRAKE POSITION UPDATED	RM	RM	RS	28.08.19
N	DISCHARGE RATES ADJUSTED AND STORAGE INCREASED	SG	LH	LH	19.08.19
M	ADDITIONAL SOUTHERN OUTFALL ADDED	JA	SG	RM	14.08.19
L	SITE LAYOUT UPDATED	SOM	SG	LH	07.08.19
K	CELLULAR STORAGE TANK REPLACED WITH CONCRETE TANK	SG	LH	LH	24.07.19
J	PERMEABLE PAVING AND ORIFICE DETAILS ADDED.	JA	SG	LH	12.07.19
H	DRAINAGE UPDATED AS PER ARUN DC COMMENTS	SG	LH	LH	25.06.19
G	DRAINAGE UPDATED AS PER ARUN DC COMMENTS	JA	SG	LH	20.06.19
F	DRAINAGE UPDATED AS PER ARUN DC COMMENTS	JA	LH	LH	07.06.19
E	DRAINAGE UPDATED AS PER ARUN DC COMMENTS	JA	SG	LH	16.05.19
D	DRAINAGE UPDATED AND TYPICAL DETAIL ADDED	JA	LH	LH	26.04.19
C	SITE LAYOUT UPDATED	SG	LH	LH	05.04.19
B	SITE LAYOUT UPDATED	TSB	SG	LH	21.02.19
A	PLANNING ISSUE	JA	LH	RS	23.11.18

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Job Title
LAND SOUTH OF BURNDELL ROAD, YAPTON

Drawing Title
PRELIMINARY ENGINEERING LAYOUT

Client
BOVIS HOMES

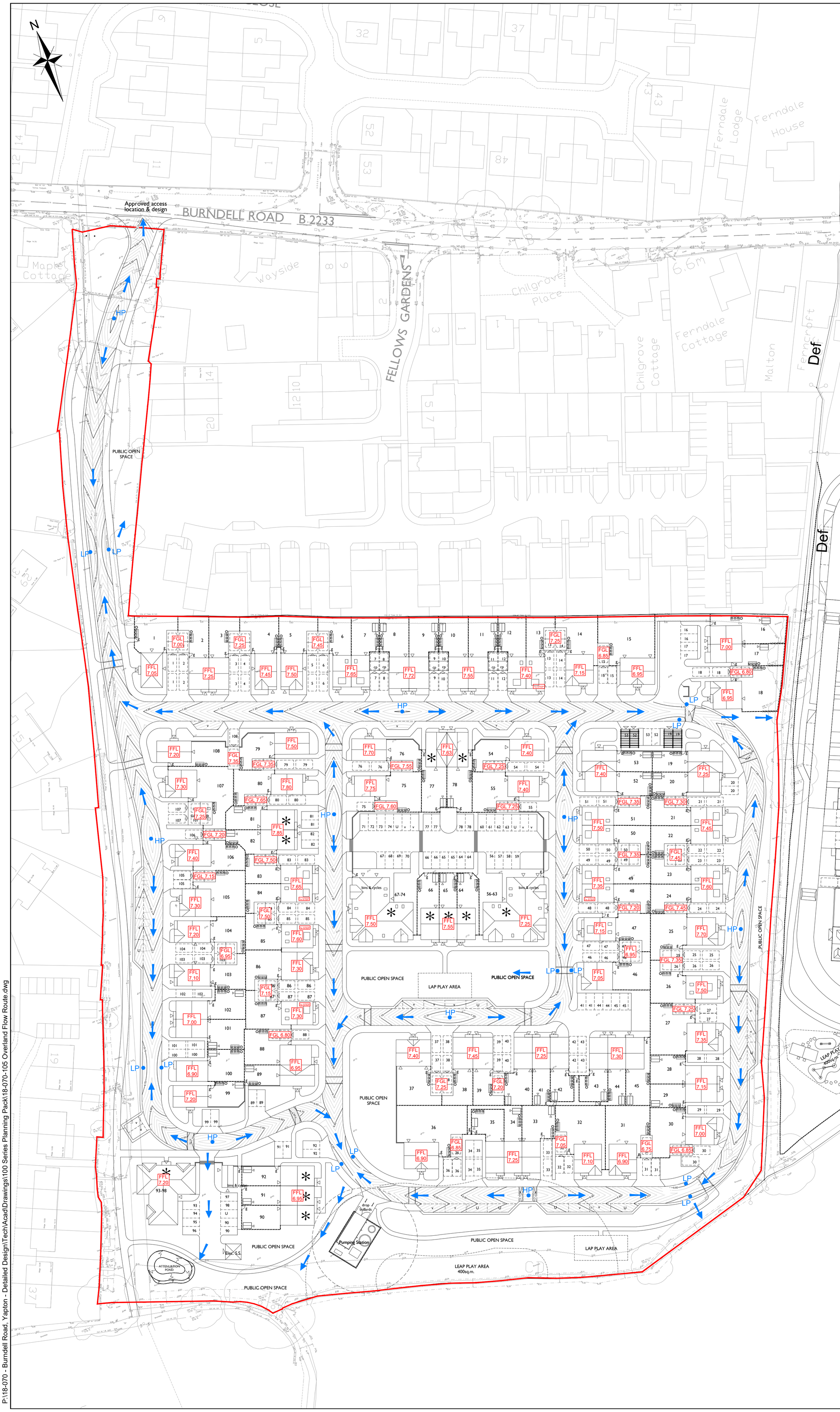
Scale	Date	Designed
1:500 @A1	NOV 18	SG
Drawn	**Checked**	**Approved**
SOM	LH	RS

Job No	Drawing No	Rev
18-070	18-070/103	P

P:\18-070 - Burndell Road, Yapton - Detailed Design\Tech\Acad\Drawings\100 Series Planning Pack\18-070-103 Preliminary Engineering Layout.dwg

APPENDIX B

Odyssey Overland Flow Routes



NOTES

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7. MASTERPLAN IS BASED ON URBAN PULSE DESIGN SITE PLAN DRAWING 18-1065-005D DATED 03/04/19.
8. FOR PROPOSED SURFACE WATER DRAINAGE LAYOUT REFER TO ODYSSEY DRAWING 18-070/103.

LEGEND

- SITE BOUNDARY
- FFL 7.00 — PROPOSED FINISHED FLOOR LEVEL (mAOD)
- FGL 7.00 — PROPOSED FINISHED GARAGE LEVEL (mAOD)
- × 6.80 — EXISTING LEVEL (mAOD). SEE NOTE 5.
- 7.50 — PROPOSED HIGHWAY CONTOURS.
- INDICATIVE DIRECTION OF OVERLAND FLOW
- LP — LOW POINT
- HP — HIGH POINT

FOR PLANNING PURPOSES ONLY

Rev	Amendments	Drn	Chk	App	Date
F	ATTENUATION POND UPDATED	JA	SG	RM	14.08.19
E	SITE LAYOUT UPDATED	SOM	SG	LH	07.08.19
D	ATTENUATION POND AMENDED	SG	LH	LH	25.06.19
C	SITE LAYOUT UPDATED	SG	LH	LH	05.04.19
B	SITE LAYOUT UPDATED	TSB	SG	LH	21.02.19
A	PLANNING ISSUE	JA	LH	RS	23.11.18

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Job Title
LAND SOUTH OF BURNDELL ROAD, YAPTON

Drawing Title
OVERLAND FLOW ROUTE

Client
BOVIS HOMES

Scale	Date	Designed
1:500 @A1	NOV 18	SG
Drawn	**Checked**	**Approved**
SOM	LH	RS

Job No	Drawing No	Rev
18-070	18-070/105	F

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APPENDIX C

Microdrainage Calculations

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SW Network

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	2
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for SW Network

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	23.258	0.139	167.3	0.015	4.00	0.0	0.600	o	225	Pipe/Conduit	
S1.001	35.092	0.211	166.3	0.040	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.002	57.745	0.243	237.6	0.049	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.003	12.182	0.032	380.7	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	50.00	4.38	5.645	0.015	0.0	0.0	0.0	1.01	40.1	2.0
S1.001	50.00	4.96	5.506	0.055	0.0	0.0	0.0	1.01	40.2	7.4
S1.002	50.00	5.91	5.220	0.104	0.0	0.0	0.0	1.02	71.8	14.1
S1.003	50.00	6.11	4.827	0.104	0.0	0.0	0.0	1.04	164.8	14.1

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S2.000	10.197	0.537	19.0	0.031	4.00	0.0	0.600	o	225	Pipe/Conduit	
S3.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S3.001	7.043	1.095	6.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S4.000	5.000	0.010	500.0	0.024	4.00	0.0	0.600	o	150	Pipe/Conduit	
S4.001	7.655	0.795	9.6	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S5.000	5.000	0.010	500.0	0.009	4.00	0.0	0.600	o	100	Pipe/Conduit	
S5.001	7.655	1.195	6.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S1.004	55.100	0.143	385.3	0.061	0.00	0.0	0.600	o	450	Pipe/Conduit	
S6.000	5.000	0.010	500.0	0.009	4.00	0.0	0.600	o	100	Pipe/Conduit	
S6.001	4.667	0.278	16.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S7.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit	
S7.001	8.420	0.428	19.7	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S8.000	5.000	0.010	500.0	0.014	4.00	0.0	0.600	o	100	Pipe/Conduit	
S8.001	3.333	0.128	26.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S2.000	50.00	4.06	5.558	0.031	0.0	0.0	0.0	3.02	120.0	4.2
S3.000	50.00	4.25	6.250	0.019	0.0	0.0	0.0	0.34	2.7	2.6
S3.001	50.00	4.29	6.240	0.019	0.0	0.0	0.0	3.07	24.1	2.6
S4.000	50.00	4.19	6.000	0.024	0.0	0.0	0.0	0.44	7.8	3.2
S4.001	50.00	4.23	5.990	0.024	0.0	0.0	0.0	3.27	57.7	3.2
S5.000	50.00	4.25	6.350	0.009	0.0	0.0	0.0	0.34	2.7	1.2
S5.001	50.00	4.29	6.340	0.009	0.0	0.0	0.0	3.07	24.2	1.2
S1.004	48.61	7.00	4.795	0.248	0.0	0.0	0.0	1.03	163.8	32.6
S6.000	50.00	4.25	6.500	0.009	0.0	0.0	0.0	0.34	2.7	1.2
S6.001	50.00	4.29	6.490	0.009	0.0	0.0	0.0	1.89	14.9	1.2
S7.000	50.00	4.25	6.650	0.011	0.0	0.0	0.0	0.34	2.7	1.5
S7.001	50.00	4.33	6.640	0.011	0.0	0.0	0.0	1.75	13.7	1.5
S8.000	50.00	4.25	6.350	0.014	0.0	0.0	0.0	0.34	2.7	1.9
S8.001	50.00	4.28	6.340	0.014	0.0	0.0	0.0	1.52	11.9	1.9

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S9.000	4.995	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit	
S9.001	10.012	0.378	26.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S6.002	18.846	1.209	15.6	0.028	0.00	0.0	0.600	o	150	Pipe/Conduit	
S10.000	5.000	0.010	500.0	0.028	4.00	0.0	0.600	o	150	Pipe/Conduit	
S10.001	9.596	1.487	6.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S11.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S11.001	6.862	1.487	4.6	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S12.000	5.000	0.010	500.0	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit	
S12.001	4.482	1.387	3.2	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S13.000	5.000	0.010	500.0	0.014	4.00	0.0	0.600	o	100	Pipe/Conduit	
S13.001	3.330	1.237	2.7	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S1.005	67.722	0.176	384.8	0.033	0.00	0.0	0.600	o	450	Pipe/Conduit	
S14.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit	
S14.001	5.470	1.238	4.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S9.000	50.00	4.25	6.600	0.011	0.0	0.0	0.0	0.34	2.7	1.5
S9.001	50.00	4.36	6.590	0.011	0.0	0.0	0.0	1.51	11.8	1.5
S6.002	50.00	4.48	6.162	0.073	0.0	0.0	0.0	2.56	45.3	9.9
S10.000	50.00	4.19	6.450	0.028	0.0	0.0	0.0	0.44	7.8	3.8
S10.001	50.00	4.23	6.440	0.028	0.0	0.0	0.0	3.99	70.6	3.8
S11.000	50.00	4.25	6.500	0.019	0.0	0.0	0.0	0.34	2.7	2.6
S11.001	50.00	4.28	6.490	0.019	0.0	0.0	0.0	3.63	28.5	2.6
S12.000	50.00	4.25	6.400	0.017	0.0	0.0	0.0	0.34	2.7	2.3
S12.001	50.00	4.26	6.390	0.017	0.0	0.0	0.0	4.33	34.0	2.3
S13.000	50.00	4.25	6.250	0.014	0.0	0.0	0.0	0.34	2.7	1.9
S13.001	50.00	4.26	6.240	0.014	0.0	0.0	0.0	4.75	37.3	1.9
S1.005	44.37	8.09	4.653	0.432	0.0	0.0	0.0	1.03	163.9	51.9
S14.000	50.00	4.25	6.250	0.011	0.0	0.0	0.0	0.34	2.7	1.5
S14.001	50.00	4.27	6.240	0.011	0.0	0.0	0.0	3.71	29.1	1.5

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S15.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit	
S15.001	12.229	1.238	9.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S16.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S16.001	9.808	1.388	7.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S14.002	17.458	0.175	99.8	0.024	0.00	0.0	0.600	o	150	Pipe/Conduit	
S17.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S17.001	4.927	1.463	3.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S18.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S18.001	3.331	1.013	3.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S1.006	30.144	0.078	386.5	0.025	0.00	0.0	0.600	o	450	Pipe/Conduit	
S19.000	4.661	0.051	91.4	0.020	4.00	0.0	0.600	o	450	Pipe/Conduit	
S20.000	5.000	0.010	500.0	0.023	4.00	0.0	0.600	o	150	Pipe/Conduit	
S20.001	7.013	1.041	6.7	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S21.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S15.000	50.00	4.25	6.250	0.010	0.0	0.0	0.0	0.34	2.7	1.4
S15.001	50.00	4.33	6.240	0.010	0.0	0.0	0.0	2.47	19.4	1.4
S16.000	50.00	4.19	6.350	0.020	0.0	0.0	0.0	0.44	7.8	2.7
S16.001	50.00	4.23	6.340	0.020	0.0	0.0	0.0	3.82	67.4	2.7
S14.002	50.00	4.62	4.952	0.065	0.0	0.0	0.0	1.01	17.8	8.9
S17.000	50.00	4.19	6.250	0.020	0.0	0.0	0.0	0.44	7.8	2.7
S17.001	50.00	4.20	6.240	0.020	0.0	0.0	0.0	5.53	97.8	2.7
S18.000	50.00	4.25	5.850	0.019	0.0	0.0	0.0	0.34	2.7	2.6
S18.001	50.00	4.26	5.840	0.019	0.0	0.0	0.0	4.30	33.7	2.6
S1.006	42.77	8.58	4.477	0.562	0.0	0.0	0.0	1.03	163.5	65.0
S19.000	50.00	4.04	4.450	0.020	0.0	0.0	0.0	2.13	338.4	2.7
S20.000	50.00	4.19	5.800	0.023	0.0	0.0	0.0	0.44	7.8	3.1
S20.001	50.00	4.22	5.790	0.023	0.0	0.0	0.0	3.91	69.1	3.1
S21.000	50.00	4.25	6.000	0.013	0.0	0.0	0.0	0.34	2.7	1.8

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S21.001	8.789	1.241	7.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S1.007	21.970	0.059	372.4	0.032	0.00	0.0	0.600	o	450	Pipe/Conduit	
S22.000	4.998	0.010	499.8	0.027	4.00	0.0	0.600	o	150	Pipe/Conduit	
S22.001	4.924	1.568	3.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S22.002	13.744	0.082	167.6	0.034	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.008	11.291	0.030	376.4	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S23.000	5.002	0.010	500.2	0.018	4.00	0.0	0.600	o	100	Pipe/Conduit	
S23.001	6.193	0.247	25.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S24.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit	
S24.001	5.420	0.247	21.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S23.002	28.743	0.172	167.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S25.000	5.000	0.010	500.0	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit	
S25.001	7.936	0.319	24.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S26.000	5.000	0.010	500.0	0.015	4.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S21.001	50.00	4.30	5.990	0.013	0.0	0.0	0.0	2.92	23.0	1.8
S1.007	41.71	8.93	4.399	0.650	0.0	0.0	0.0	1.05	166.6	73.4
S22.000	50.00	4.19	6.300	0.027	0.0	0.0	0.0	0.44	7.8	3.7
S22.001	50.00	4.20	6.290	0.027	0.0	0.0	0.0	5.73	101.2	3.7
S22.002	50.00	4.43	4.647	0.061	0.0	0.0	0.0	1.01	40.0	8.2
S1.008	41.19	9.11	4.340	0.710	0.0	0.0	0.0	1.04	165.7	79.3
S23.000	50.00	4.25	6.450	0.018	0.0	0.0	0.0	0.34	2.7	2.4
S23.001	50.00	4.31	6.440	0.018	0.0	0.0	0.0	1.55	12.2	2.4
S24.000	50.00	4.25	6.450	0.010	0.0	0.0	0.0	0.34	2.7	1.4
S24.001	50.00	4.30	6.440	0.010	0.0	0.0	0.0	1.66	13.0	1.4
S23.002	50.00	4.79	6.068	0.028	0.0	0.0	0.0	1.01	40.1	3.8
S25.000	50.00	4.25	6.350	0.017	0.0	0.0	0.0	0.34	2.7	2.3
S25.001	50.00	4.33	6.340	0.017	0.0	0.0	0.0	1.55	12.2	2.3
S26.000	50.00	4.25	6.250	0.015	0.0	0.0	0.0	0.34	2.7	2.0

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S26.001	6.040	0.219	27.6	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S27.000	4.992	0.010	499.2	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S27.001	5.271	0.219	24.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S23.003	52.563	0.315	166.9	0.041	0.00	0.0	0.600	o	225	Pipe/Conduit	
S28.000	5.000	0.010	500.0	0.014	4.00	0.0	0.600	o	100	Pipe/Conduit	
S28.001	8.947	0.284	31.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S23.004	8.967	0.038	236.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S23.005	10.913	0.046	237.2	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S29.000	5.000	0.010	500.0	0.007	4.00	0.0	0.600	o	100	Pipe/Conduit	
S29.001	5.665	0.218	26.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S23.006	10.494	0.044	238.5	0.029	0.00	0.0	0.600	o	300	Pipe/Conduit	
S30.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S30.001	5.482	0.162	33.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S31.000	5.000	0.010	500.0	0.008	4.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S26.001	50.00	4.32	6.240	0.015	0.0	0.0	0.0	1.48	11.6	2.0
S27.000	50.00	4.25	6.250	0.013	0.0	0.0	0.0	0.34	2.7	1.8
S27.001	50.00	4.30	6.240	0.013	0.0	0.0	0.0	1.58	12.4	1.8
S23.003	50.00	5.66	5.896	0.114	0.0	0.0	0.0	1.01	40.1	15.5
S28.000	50.00	4.25	6.000	0.014	0.0	0.0	0.0	0.34	2.7	1.9
S28.001	50.00	4.35	5.990	0.014	0.0	0.0	0.0	1.38	10.8	1.9
S23.004	50.00	5.80	5.506	0.128	0.0	0.0	0.0	1.02	72.0	17.4
S23.005	50.00	5.98	5.468	0.128	0.0	0.0	0.0	1.02	71.8	17.4
S29.000	50.00	4.25	5.850	0.007	0.0	0.0	0.0	0.34	2.7	0.9
S29.001	50.00	4.31	5.840	0.007	0.0	0.0	0.0	1.52	11.9	0.9
S23.006	50.00	6.15	5.422	0.164	0.0	0.0	0.0	1.01	71.7	22.3
S30.000	50.00	4.25	5.750	0.019	0.0	0.0	0.0	0.34	2.7	2.6
S30.001	50.00	4.32	5.740	0.019	0.0	0.0	0.0	1.33	10.5	2.6
S31.000	50.00	4.25	6.050	0.008	0.0	0.0	0.0	0.34	2.7	1.1

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S31.001	10.296	0.462	22.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S32.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit	
S32.001	7.810	0.512	15.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S33.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S33.001	5.831	0.412	14.2	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S34.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S34.001	5.000	0.262	19.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S23.007	69.027	0.179	385.6	0.026	0.00	0.0	0.600	o	450	Pipe/Conduit	
S35.000	10.506	0.031	338.9	0.000	4.00	0.0	0.600	o	450	Pipe/Conduit	
S23.008	9.072	0.024	378.0	0.027	0.00	0.0	0.600	o	450	Pipe/Conduit	
S23.009	9.664	0.025	386.6	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S36.000	4.998	0.010	499.8	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S36.001	6.863	0.450	15.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S37.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S31.001	50.00	4.35	6.040	0.008	0.0	0.0	0.0	1.64	12.9	1.1
S32.000	50.00	4.25	6.100	0.010	0.0	0.0	0.0	0.34	2.7	1.4
S32.001	50.00	4.31	6.090	0.010	0.0	0.0	0.0	1.99	15.6	1.4
S33.000	50.00	4.25	6.000	0.019	0.0	0.0	0.0	0.34	2.7	2.6
S33.001	50.00	4.29	5.990	0.019	0.0	0.0	0.0	2.06	16.2	2.6
S34.000	50.00	4.25	5.850	0.013	0.0	0.0	0.0	0.34	2.7	1.8
S34.001	50.00	4.29	5.840	0.013	0.0	0.0	0.0	1.78	13.9	1.8
S23.007	47.45	7.27	5.228	0.259	0.0	0.0	0.0	1.03	163.7	33.3
S35.000	50.00	4.16	5.080	0.000	0.0	0.0	0.0	1.10	174.7	0.0
S23.008	46.86	7.42	5.049	0.287	0.0	0.0	0.0	1.04	165.3	36.4
S23.009	46.25	7.57	5.025	0.287	0.0	0.0	0.0	1.03	163.5	36.4
S36.000	50.00	4.25	6.700	0.016	0.0	0.0	0.0	0.34	2.7	2.2
S36.001	50.00	4.30	6.690	0.016	0.0	0.0	0.0	1.99	15.6	2.2
S37.000	50.00	4.25	6.500	0.010	0.0	0.0	0.0	0.34	2.7	1.4

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S37.001	4.482	0.250	17.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S38.000	5.000	0.010	500.0	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S38.001	3.330	0.250	13.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S36.002	48.237	0.619	77.9	0.061	0.00	0.0	0.600	o	150	Pipe/Conduit	
S39.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S39.001	3.330	0.169	19.7	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S40.000	4.999	0.010	499.9	0.026	4.00	0.0	0.600	o	150	Pipe/Conduit	
S40.001	7.886	0.569	13.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S41.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S41.001	5.507	0.400	13.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S42.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S42.001	2.528	0.200	12.6	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S43.000	4.983	0.010	500.0	0.124	4.00	0.0	0.600	o	100	Pipe/Conduit	
S43.001	10.637	0.200	53.2	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S37.001	50.00	4.29	6.490	0.010	0.0	0.0	0.0	1.83	14.4	1.4
S38.000	50.00	4.25	6.500	0.016	0.0	0.0	0.0	0.34	2.7	2.2
S38.001	50.00	4.27	6.490	0.016	0.0	0.0	0.0	2.13	16.7	2.2
S36.002	50.00	5.01	6.190	0.103	0.0	0.0	0.0	1.14	20.1	13.9
S39.000	50.00	4.25	5.800	0.013	0.0	0.0	0.0	0.34	2.7	1.8
S39.001	50.00	4.28	5.790	0.013	0.0	0.0	0.0	1.75	13.7	1.8
S40.000	50.00	4.19	6.150	0.026	0.0	0.0	0.0	0.44	7.8	3.5
S40.001	50.00	4.24	6.140	0.026	0.0	0.0	0.0	2.72	48.1	3.5
S41.000	50.00	4.19	6.350	0.020	0.0	0.0	0.0	0.44	7.8	2.7
S41.001	50.00	4.22	6.340	0.020	0.0	0.0	0.0	2.73	48.2	2.7
S42.000	50.00	4.25	6.200	0.013	0.0	0.0	0.0	0.34	2.7	1.8
S42.001	50.00	4.27	6.190	0.013	0.0	0.0	0.0	2.19	17.2	1.8
S43.000	50.00	4.25	6.200	0.124	0.0	0.0	0.0	0.34	2.7«	16.8
S43.001	50.00	4.41	6.190	0.124	0.0	0.0	0.0	1.06	8.3«	16.8

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S41.002	30.809	0.184	167.4	0.053	0.00	0.0	0.600	o	225	Pipe/Conduit	
S44.000	5.000	0.010	500.0	0.026	4.00	0.0	0.600	o	150	Pipe/Conduit	
S44.001	10.271	0.246	41.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S41.003	7.439	0.045	165.3	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit	
S45.000	5.000	0.010	500.0	0.048	4.00	0.0	0.600	o	100	Pipe/Conduit	
S45.001	6.507	0.529	12.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S41.004	7.565	0.045	168.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S46.000	5.023	0.010	502.3	0.022	4.00	0.0	0.600	o	150	Pipe/Conduit	
S46.001	3.305	0.574	5.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S47.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S47.001	4.481	0.524	8.6	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S41.005	58.355	0.245	238.2	0.035	0.00	0.0	0.600	o	300	Pipe/Conduit	
S36.003	27.089	0.070	387.0	0.039	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S41.002	50.00	4.92	5.865	0.210	0.0	0.0	0.0	1.01	40.1	28.4
S44.000	50.00	4.19	5.950	0.026	0.0	0.0	0.0	0.44	7.8	3.5
S44.001	50.00	4.30	5.940	0.026	0.0	0.0	0.0	1.56	27.6	3.5
S41.003	50.00	5.05	5.681	0.250	0.0	0.0	0.0	1.01	40.3	33.9
S45.000	50.00	4.25	6.300	0.048	0.0	0.0	0.0	0.34	2.7«	6.5
S45.001	50.00	4.30	6.290	0.048	0.0	0.0	0.0	2.22	17.4	6.5
S41.004	50.00	5.17	5.636	0.298	0.0	0.0	0.0	1.01	40.0«	40.4
S46.000	50.00	4.19	6.250	0.022	0.0	0.0	0.0	0.44	7.8	3.0
S46.001	50.00	4.20	6.240	0.022	0.0	0.0	0.0	4.23	74.7	3.0
S47.000	50.00	4.19	6.200	0.020	0.0	0.0	0.0	0.44	7.8	2.7
S47.001	50.00	4.21	6.190	0.020	0.0	0.0	0.0	3.47	61.3	2.7
S41.005	50.00	6.13	5.516	0.375	0.0	0.0	0.0	1.01	71.7	50.8
S36.003	50.00	6.57	5.121	0.556	0.0	0.0	0.0	1.03	163.4	75.3

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S48.000	5.000	0.010	500.0	0.028	4.00	0.0	0.600	o	150	Pipe/Conduit	
S48.001	5.520	0.264	20.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S49.000	5.000	0.010	500.0	0.007	4.00	0.0	0.600	o	100	Pipe/Conduit	
S49.001	6.282	0.264	23.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S50.000	5.000	0.010	500.0	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S50.001	8.153	0.314	26.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S48.002	45.251	0.190	238.2	0.020	0.00	0.0	0.600	o	300	Pipe/Conduit	
S51.000	4.999	0.010	499.9	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S51.001	6.870	0.154	44.6	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S52.000	5.000	0.010	500.0	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit	
S52.001	6.179	0.154	40.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S53.000	5.000	0.010	500.0	0.015	4.00	0.0	0.600	o	100	Pipe/Conduit	
S53.001	8.613	0.204	42.2	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S48.003	27.325	0.115	237.6	0.051	0.00	0.0	0.600	o	300	Pipe/Conduit	
S48.004	12.022	0.051	235.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S48.000	50.00	4.19	6.150	0.028	0.0	0.0	0.0	0.44	7.8	3.8
S48.001	50.00	4.23	6.140	0.028	0.0	0.0	0.0	2.21	39.1	3.8
S49.000	50.00	4.25	6.200	0.007	0.0	0.0	0.0	0.34	2.7	0.9
S49.001	50.00	4.31	6.190	0.007	0.0	0.0	0.0	1.59	12.5	0.9
S50.000	50.00	4.25	6.250	0.016	0.0	0.0	0.0	0.34	2.7	2.2
S50.001	50.00	4.34	6.240	0.016	0.0	0.0	0.0	1.52	11.9	2.2
S48.002	50.00	5.08	5.726	0.071	0.0	0.0	0.0	1.01	71.7	9.6
S51.000	50.00	4.25	5.900	0.016	0.0	0.0	0.0	0.34	2.7	2.2
S51.001	50.00	4.35	5.890	0.016	0.0	0.0	0.0	1.16	9.1	2.2
S52.000	50.00	4.25	5.900	0.017	0.0	0.0	0.0	0.34	2.7	2.3
S52.001	50.00	4.33	5.890	0.017	0.0	0.0	0.0	1.22	9.6	2.3
S53.000	50.00	4.25	5.950	0.015	0.0	0.0	0.0	0.34	2.7	2.0
S53.001	50.00	4.37	5.940	0.015	0.0	0.0	0.0	1.19	9.3	2.0
S48.003	50.00	5.53	5.536	0.170	0.0	0.0	0.0	1.02	71.8	23.0
S48.004	50.00	5.72	5.421	0.170	0.0	0.0	0.0	1.02	72.1	23.0

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S48.005	12.930	0.054	239.4	0.013	0.00	0.0	0.600	o	300	Pipe/Conduit	
S54.000	5.004	0.010	500.4	0.009	4.00	0.0	0.600	o	100	Pipe/Conduit	
S54.001	5.506	0.674	8.2	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S48.006	11.368	0.048	236.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S55.000	5.000	0.010	500.0	0.008	4.00	0.0	0.600	o	100	Pipe/Conduit	
S55.001	5.464	0.522	10.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S56.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit	
S56.001	3.343	0.322	10.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S48.007	17.921	0.047	381.3	0.021	0.00	0.0	0.600	o	450	Pipe/Conduit	
S48.008	7.799	0.020	390.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S36.004	10.873	0.028	385.0	0.007	0.00	0.0	0.600	o	450	Pipe/Conduit	
S57.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit	
S57.001	4.383	0.417	10.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S36.005	8.998	0.023	391.2	0.032	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S48.005	50.00	5.94	5.370	0.183	0.0	0.0	0.0	1.01	71.5	24.8
S54.000	50.00	4.25	6.200	0.009	0.0	0.0	0.0	0.34	2.6	1.2
S54.001	50.00	4.28	6.190	0.009	0.0	0.0	0.0	2.72	21.4	1.2
S48.006	50.00	6.12	5.316	0.192	0.0	0.0	0.0	1.02	71.9	26.0
S55.000	50.00	4.25	6.000	0.008	0.0	0.0	0.0	0.34	2.7	1.1
S55.001	50.00	4.28	5.990	0.008	0.0	0.0	0.0	2.40	18.9	1.1
S56.000	50.00	4.25	5.800	0.011	0.0	0.0	0.0	0.34	2.7	1.5
S56.001	50.00	4.27	5.790	0.011	0.0	0.0	0.0	2.41	18.9	1.5
S48.007	50.00	6.41	5.118	0.231	0.0	0.0	0.0	1.04	164.6	31.3
S48.008	50.00	6.54	5.071	0.231	0.0	0.0	0.0	1.02	162.8	31.3
S36.004	49.75	6.74	5.051	0.794	0.0	0.0	0.0	1.03	163.8	107.0
S57.000	50.00	4.25	5.800	0.011	0.0	0.0	0.0	0.34	2.7	1.5
S57.001	50.00	4.28	5.790	0.011	0.0	0.0	0.0	2.40	18.8	1.5
S36.005	49.08	6.89	5.023	0.838	0.0	0.0	0.0	1.02	162.5	111.4

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S58.000	10.839	0.050	216.8	0.000	4.00	0.0	0.600	o	450	Pipe/Conduit	
S23.010	21.017	0.055	385.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S59.000	5.000	0.010	500.0	0.046	4.00	0.0	0.600	o	150	Pipe/Conduit	
S59.001	17.573	0.745	23.6	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S23.011	13.953	0.045	310.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S58.000	50.00	4.13	5.050	0.000	0.0	0.0	0.0	1.38	219.0	0.0
S23.010	45.00	7.91	5.000	1.124	0.0	0.0	0.0	1.03	163.8	137.0
S59.000	50.00	4.19	6.000	0.046	0.0	0.0	0.0	0.44	7.8	6.2
S59.001	50.00	4.33	5.990	0.046	0.0	0.0	0.0	2.08	36.8	6.2
S23.011	44.29	8.12	4.945	1.170	0.0	0.0	0.0	1.15	182.8	140.4

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Manhole Schedules for SW Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Back (m
S1	6.935	1.290	Open Manhole	1200	S1.000	5.645	225				
S2	6.971	1.465	Open Manhole	1200	S1.001	5.506	225	S1.000	5.506	225	
S3	6.670	1.450	Open Manhole	1200	S1.002	5.220	300	S1.001	5.295	225	
S4	6.780	1.953	Open Manhole	1350	S1.003	4.827	450	S1.002	4.977	300	
S5	6.983	1.425	Open Manhole	1200	S2.000	5.558	225				
PP_3-4	7.250	1.000	Open Manhole	1200	S3.000	6.250	100				
ORI_3-4	7.250	1.010	Open Manhole	1200	S3.001	6.240	100	S3.000	6.240	100	
PP_1-2	7.000	1.000	Open Manhole	1200	S4.000	6.000	150				
ORI_1-2	7.000	1.010	Open Manhole	1200	S4.001	5.990	150	S4.000	5.990	150	
PP_108	7.350	1.000	Open Manhole	1200	S5.000	6.350	100				
ORI_108	7.350	1.010	Open Manhole	1200	S5.001	6.340	100	S5.000	6.340	100	
S6	6.849	2.054	Open Manhole	1350	S1.004	4.795	450	S1.003	4.795	450	
								S2.000	5.021	225	
								S3.001	5.145	100	
								S4.001	5.195	150	
								S5.001	5.145	100	
PP_76	7.500	1.000	Open Manhole	1200	S6.000	6.500	100				
ORI_76	7.500	1.010	Open Manhole	1200	S6.001	6.490	100	S6.000	6.490	100	
PP_80	7.650	1.000	Open Manhole	1200	S7.000	6.650	100				
ORI_80	7.600	0.960	Open Manhole	1200	S7.001	6.640	100	S7.000	6.640	100	
PP_79	7.350	1.000	Open Manhole	1200	S8.000	6.350	100				
ORI_79	7.350	1.010	Open Manhole	1200	S8.001	6.340	100	S8.000	6.340	100	
PP_75	7.600	1.000	Open Manhole	1200	S9.000	6.600	100				
ORI_75	7.600	1.010	Open Manhole	1200	S9.001	6.590	100	S9.000	6.590	100	
S7	7.512	1.350	Open Manhole	1200	S6.002	6.162	150	S6.001	6.212	100	
								S7.001	6.212	100	
								S8.001	6.212	100	
								S9.001	6.212	100	
PP_5-6	7.450	1.000	Open Manhole	1200	S10.000	6.450	150				
ORI_5-6	7.450	1.010	Open Manhole	1200	S10.001	6.440	150	S10.000	6.440	150	
PP_7-8	7.500	1.000	Open Manhole	1200	S11.000	6.500	100				
ORI_7-8	7.500	1.010	Open Manhole	1200	S11.001	6.490	100	S11.000	6.490	100	
PP_9-10	7.400	1.000	Open Manhole	1200	S12.000	6.400	100				
ORI_9-10	7.400	1.010	Open Manhole	1200	S12.001	6.390	100	S12.000	6.390	100	
PP_11-12	7.250	1.000	Open Manhole	1200	S13.000	6.250	100				
ORI_11-12	7.250	1.010	Open Manhole	1200	S13.001	6.240	100	S13.000	6.240	100	
S8	7.395	2.743	Open Manhole	1350	S1.005	4.653	450	S1.004	4.652	450	
								S6.002	4.953	150	

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Manhole Schedules for SW Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Back (m
								S10.001	4.953	150	
								S11.001	5.003	100	
								S12.001	5.003	100	
								S13.001	5.003	100	
PP_54	7.250	1.000	Open Manhole	1200	S14.000	6.250	100				
ORI_54	7.250	1.010	Open Manhole	1200	S14.001	6.240	100	S14.000	6.240	100	
PP_55	7.250	1.000	Open Manhole	1200	S15.000	6.250	100				
ORI_55	7.250	1.010	Open Manhole	1200	S15.001	6.240	100	S15.000	6.240	100	
PP_51	7.350	1.000	Open Manhole	1200	S16.000	6.350	150				
ORI_51	7.350	1.010	Open Manhole	1200	S16.001	6.340	150	S16.000	6.340	150	
S9	7.204	2.252	Open Manhole	1200	S14.002	4.952	150	S14.001	5.002	100	
								S15.001	5.002	100	
								S16.001	4.952	150	
PP_13-14	7.250	1.000	Open Manhole	1200	S17.000	6.250	150				
ORI_13-14	7.250	1.010	Open Manhole	1200	S17.001	6.240	150	S17.000	6.240	150	
PP_15	6.850	1.000	Open Manhole	1200	S18.000	5.850	100				
ORI_15	6.850	1.010	Open Manhole	1200	S18.001	5.840	100	S18.000	5.840	100	
S10	6.960	2.483	Open Manhole	1350	S1.006	4.477	450	S1.005	4.477	450	
								S14.002	4.777	150	
								S17.001	4.777	150	
								S18.001	4.827	100	
S11a	6.700	2.250	Open Manhole	1350	S19.000	4.450	450				
PP_18	6.800	1.000	Open Manhole	1200	S20.000	5.800	150				
ORI_18	6.800	1.010	Open Manhole	1200	S20.001	5.790	150	S20.000	5.790	150	
PP_19-53	7.000	1.000	Open Manhole	1200	S21.000	6.000	100				
ORI_19-53	7.000	1.010	Open Manhole	1200	S21.001	5.990	100	S21.000	5.990	100	
S11	6.702	2.303	Open Manhole	1350	S1.007	4.399	450	S1.006	4.399	450	
								S19.000	4.399	450	
								S20.001	4.749	150	
								S21.001	4.749	100	
PP_20-21	7.300	1.000	Open Manhole	1200	S22.000	6.300	150				
ORI_20-21	7.300	1.010	Open Manhole	1200	S22.001	6.290	150	S22.000	6.290	150	
S12	7.056	2.409	Open Manhole	1200	S22.002	4.647	225	S22.001	4.722	150	
S13	6.950	2.610	Open Manhole	1350	S1.008	4.340	450	S1.007	4.340	450	
								S22.002	4.565	225	
	7.000	2.690	Open Manhole	0		OUTFALL		S1.008	4.310	450	
PP_22-23	7.450	1.000	Open Manhole	1200	S23.000	6.450	100				

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Manhole Schedules for SW Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Back (m
ORI_22-23	7.450	1.010	Open Manhole	1200	S23.001	6.440	100	S23.000	6.440	100	
PP_24	7.450	1.000	Open Manhole	1200	S24.000	6.450	100				
ORI_24	7.450	1.010	Open Manhole	1200	S24.001	6.440	100	S24.000	6.440	100	
S15	7.273	1.205	Open Manhole	1200	S23.002	6.068	225	S23.001	6.193	100	
								S24.001	6.193	100	
PP_25-26	7.350	1.000	Open Manhole	1200	S25.000	6.350	100				
ORI_25-26	7.350	1.010	Open Manhole	1200	S25.001	6.340	100	S25.000	6.340	100	
PP_27	7.250	1.000	Open Manhole	1200	S26.000	6.250	100				
ORI_27	7.250	1.010	Open Manhole	1200	S26.001	6.240	100	S26.000	6.240	100	
PP_28	7.250	1.000	Open Manhole	1200	S27.000	6.250	100				
ORI_28	7.250	1.010	Open Manhole	1200	S27.001	6.240	100	S27.000	6.240	100	
S16	7.471	1.575	Open Manhole	1200	S23.003	5.896	225	S23.002	5.896	225	
								S25.001	6.021	100	
								S26.001	6.021	100	
								S27.001	6.021	100	
PP_29	7.000	1.000	Open Manhole	1200	S28.000	6.000	100				
ORI_29	7.000	1.010	Open Manhole	1200	S28.001	5.990	100	S28.000	5.990	100	
S18	6.807	1.301	Open Manhole	1200	S23.004	5.506	300	S23.003	5.581	225	
								S28.001	5.706	100	
S19	6.695	1.227	Open Manhole	1200	S23.005	5.468	300	S23.004	5.468	300	
PP_30	6.850	1.000	Open Manhole	1200	S29.000	5.850	100				
ORI_30	6.850	1.010	Open Manhole	1200	S29.001	5.840	100	S29.000	5.840	100	
S20	6.610	1.188	Open Manhole	1200	S23.006	5.422	300	S23.005	5.422	300	
								S29.001	5.622	100	
PP_31	6.750	1.000	Open Manhole	1200	S30.000	5.750	100				
ORI_31	6.750	1.010	Open Manhole	1200	S30.001	5.740	100	S30.000	5.740	100	
PP_32	7.050	1.000	Open Manhole	1200	S31.000	6.050	100				
ORI_32	7.050	1.010	Open Manhole	1200	S31.001	6.040	100	S31.000	6.040	100	
PP_33	7.100	1.000	Open Manhole	1200	S32.000	6.100	100				
ORI_33	7.100	1.010	Open Manhole	1200	S32.001	6.090	100	S32.000	6.090	100	
PP_34-35	7.000	1.000	Open Manhole	1200	S33.000	6.000	100				
ORI_34-35	7.000	1.010	Open Manhole	1200	S33.001	5.990	100	S33.000	5.990	100	
PP_36	6.850	1.000	Open Manhole	1200	S34.000	5.850	100				
ORI_36	6.850	1.010	Open Manhole	1200	S34.001	5.840	100	S34.000	5.840	100	
S21	6.639	1.411	Open Manhole	1350	S23.007	5.228	450	S23.006	5.378	300	
								S30.001	5.578	100	
								S31.001	5.578	100	
								S32.001	5.578	100	

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Manhole Schedules for SW Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Back (m
								S33.001	5.578	100	
								S34.001	5.578	100	
S23a	6.600	1.520	Open Manhole	1350	S35.000	5.080	450				
S23	6.727	1.678	Open Manhole	1350	S23.008	5.049	450	S23.007	5.049	450	
								S35.000	5.049	450	
S24	6.617	1.592	Open Manhole	1350	S23.009	5.025	450	S23.008	5.025	450	
PP_81-82	7.700	1.000	Open Manhole	1200	S36.000	6.700	100				
ORI_81-82	7.700	1.010	Open Manhole	1200	S36.001	6.690	100	S36.000	6.690	100	
PP_83	7.500	1.000	Open Manhole	1200	S37.000	6.500	100				
ORI_83	7.500	1.010	Open Manhole	1200	S37.001	6.490	100	S37.000	6.490	100	
PP_84-85	7.500	1.000	Open Manhole	1200	S38.000	6.500	100				
ORI_84-85	7.500	1.010	Open Manhole	1200	S38.001	6.490	100	S38.000	6.490	100	
S29	7.546	1.356	Open Manhole	1200	S36.002	6.190	150	S36.001	6.240	100	
								S37.001	6.240	100	
								S38.001	6.240	100	
PP_88	6.800	1.000	Open Manhole	1200	S39.000	5.800	100				
ORI_88	6.800	1.010	Open Manhole	1200	S39.001	5.790	100	S39.000	5.790	100	
PP_86-87	7.150	1.000	Open Manhole	1200	S40.000	6.150	150				
ORI_86-87	7.150	1.010	Open Manhole	1200	S40.001	6.140	150	S40.000	6.140	150	
PP_49-50	7.350	1.000	Open Manhole	1200	S41.000	6.350	150				
ORI_49-50	7.350	1.010	Open Manhole	1200	S41.001	6.340	150	S41.000	6.340	150	
PP_48	7.200	1.000	Open Manhole	1200	S42.000	6.200	100				
ORI_48	7.200	1.010	Open Manhole	1200	S42.001	6.190	100	S42.000	6.190	100	
PP_56-78	7.200	1.000	Open Manhole	1200	S43.000	6.200	100				
ORI_56-78	7.200	1.010	Open Manhole	1200	S43.001	6.190	100	S43.000	6.190	100	
S25	7.179	1.314	Open Manhole	1200	S41.002	5.865	225	S41.001	5.940	150	
								S42.001	5.990	100	
								S43.001	5.990	100	
PP_46-47	6.950	1.000	Open Manhole	1200	S44.000	5.950	150				
ORI_46-47	6.950	1.010	Open Manhole	1200	S44.001	5.940	150	S44.000	5.940	150	
S26	6.904	1.223	Open Manhole	1200	S41.003	5.681	225	S41.002	5.681	225	
								S44.001	5.694	150	
PP_41-45	7.300	1.000	Open Manhole	1200	S45.000	6.300	100				
ORI_41-45	7.300	1.010	Open Manhole	1200	S45.001	6.290	100	S45.000	6.290	100	
S27	6.977	1.341	Open Manhole	1200	S41.004	5.636	225	S41.003	5.636	225	
								S45.001	5.761	100	
PP_37-38	7.250	1.000	Open Manhole	1200	S46.000	6.250	150				
ORI_37-38	7.250	1.010	Open Manhole	1200	S46.001	6.240	150	S46.000	6.240	150	

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Manhole Schedules for SW Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Ba
PP_39-40	7.200	1.000	Open Manhole	1200	S47.000	6.200	150				
ORI_39-40	7.200	1.010	Open Manhole	1200	S47.001	6.190	150	S47.000	6.190	150	
S28	7.062	1.546	Open Manhole	1200	S41.005	5.516	300	S41.004	5.591	225	
								S46.001	5.666	150	
								S47.001	5.666	150	
S30	6.943	1.822	Open Manhole	1350	S36.003	5.121	450	S36.002	5.571	150	
								S39.001	5.621	100	
								S40.001	5.571	150	
								S41.005	5.271	300	
PP_105	7.150	1.000	Open Manhole	1200	S48.000	6.150	150				
ORI_105	7.150	1.010	Open Manhole	1200	S48.001	6.140	150	S48.000	6.140	150	
PP_106	7.200	1.000	Open Manhole	1200	S49.000	6.200	100				
ORI_106	7.200	1.010	Open Manhole	1200	S49.001	6.190	100	S49.000	6.190	100	
PP_107	7.250	1.000	Open Manhole	1200	S50.000	6.250	100				
ORI_107	7.250	1.010	Open Manhole	1200	S50.001	6.240	100	S50.000	6.240	100	
S31	7.253	1.527	Open Manhole	1200	S48.002	5.726	300	S48.001	5.876	150	
								S49.001	5.926	100	
								S50.001	5.926	100	
PP_102	6.900	1.000	Open Manhole	1200	S51.000	5.900	100				
ORI_102	6.900	1.010	Open Manhole	1200	S51.001	5.890	100	S51.000	5.890	100	
PP_100-101	6.900	1.000	Open Manhole	1200	S52.000	5.900	100				
ORI_100-101	6.900	1.010	Open Manhole	1200	S52.001	5.890	100	S52.000	5.890	100	
PP_103-104	6.950	1.000	Open Manhole	1200	S53.000	5.950	100				
ORI_103-104	6.950	1.010	Open Manhole	1200	S53.001	5.940	100	S53.000	5.940	100	
S32	6.845	1.309	Open Manhole	1200	S48.003	5.536	300	S48.002	5.536	300	
								S51.001	5.736	100	
								S52.001	5.736	100	
								S53.001	5.736	100	
S33	6.732	1.311	Open Manhole	1200	S48.004	5.421	300	S48.003	5.421	300	
S34	6.887	1.517	Open Manhole	1200	S48.005	5.370	300	S48.004	5.370	300	
PP_99	7.200	1.000	Open Manhole	1200	S54.000	6.200	100				
ORI_99	7.200	1.010	Open Manhole	1200	S54.001	6.190	100	S54.000	6.190	100	
S35	7.142	1.826	Open Manhole	1200	S48.006	5.316	300	S48.005	5.316	300	
								S54.001	5.516	100	
PP_89	7.000	1.000	Open Manhole	1200	S55.000	6.000	100				
ORI_89	7.000	1.010	Open Manhole	1200	S55.001	5.990	100	S55.000	5.990	100	
PP_91	6.800	1.000	Open Manhole	1200	S56.000	5.800	100				
ORI_91	6.800	1.010	Open Manhole	1200	S56.001	5.790	100	S56.000	5.790	100	

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Manhole Schedules for SW Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Back (m
S36	7.082	1.964	Open Manhole	1350	S48.007	5.118	450	S48.006	5.268	300	
								S55.001	5.468	100	
								S56.001	5.468	100	
S37	6.678	1.607	Open Manhole	1350	S48.008	5.071	450	S48.007	5.071	450	
S38	6.604	1.553	Open Manhole	1350	S36.004	5.051	450	S36.003	5.051	450	
								S48.008	5.051	450	
PP_92	6.800	1.000	Open Manhole	1200	S57.000	5.800	100				
ORI_92	6.800	1.010	Open Manhole	1200	S57.001	5.790	100	S57.000	5.790	100	
S39	6.510	1.487	Open Manhole	1350	S36.005	5.023	450	S36.004	5.023	450	
								S57.001	5.373	100	
S40a	6.500	1.450	Open Manhole	1350	S58.000	5.050	450				
S40	6.526	1.526	Open Manhole	1350	S23.010	5.000	450	S23.009	5.000	450	
								S36.005	5.000	450	
								S58.000	5.000	450	
PP_90-98	7.000	1.000	Open Manhole	1200	S59.000	6.000	150				
ORI_90-98	7.000	1.010	Open Manhole	1200	S59.001	5.990	150	S59.000	5.990	150	
S42	6.800	1.855	Open Manhole	1350	S23.011	4.945	450	S23.010	4.945	450	
								S59.001	5.245	150	
	7.000	2.100	Open Manhole	0		OUTFALL		S23.011	4.900	450	

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	225	S1	6.935	5.645	1.065	Open Manhole	1200
S1.001	o	225	S2	6.971	5.506	1.240	Open Manhole	1200
S1.002	o	300	S3	6.670	5.220	1.150	Open Manhole	1200
S1.003	o	450	S4	6.780	4.827	1.503	Open Manhole	1350
S2.000	o	225	S5	6.983	5.558	1.200	Open Manhole	1200
S3.000	o	100	PP_3-4	7.250	6.250	0.900	Open Manhole	1200
S3.001	o	100	ORI_3-4	7.250	6.240	0.910	Open Manhole	1200
S4.000	o	150	PP_1-2	7.000	6.000	0.850	Open Manhole	1200
S4.001	o	150	ORI_1-2	7.000	5.990	0.860	Open Manhole	1200
S5.000	o	100	PP_108	7.350	6.350	0.900	Open Manhole	1200
S5.001	o	100	ORI_108	7.350	6.340	0.910	Open Manhole	1200
S1.004	o	450	S6	6.849	4.795	1.604	Open Manhole	1350
S6.000	o	100	PP_76	7.500	6.500	0.900	Open Manhole	1200
S6.001	o	100	ORI_76	7.500	6.490	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	23.258	167.3	S2	6.971	5.506	1.240	Open Manhole	1200
S1.001	35.092	166.3	S3	6.670	5.295	1.150	Open Manhole	1200
S1.002	57.745	237.6	S4	6.780	4.977	1.503	Open Manhole	1350
S1.003	12.182	380.7	S6	6.849	4.795	1.604	Open Manhole	1350
S2.000	10.197	19.0	S6	6.849	5.021	1.603	Open Manhole	1350
S3.000	5.000	500.0	ORI_3-4	7.250	6.240	0.910	Open Manhole	1200
S3.001	7.043	6.4	S6	6.849	5.145	1.604	Open Manhole	1350
S4.000	5.000	500.0	ORI_1-2	7.000	5.990	0.860	Open Manhole	1200
S4.001	7.655	9.6	S6	6.849	5.195	1.504	Open Manhole	1350
S5.000	5.000	500.0	ORI_108	7.350	6.340	0.910	Open Manhole	1200
S5.001	7.655	6.4	S6	6.849	5.145	1.604	Open Manhole	1350
S1.004	55.100	385.3	S8	7.395	4.652	2.293	Open Manhole	1350
S6.000	5.000	500.0	ORI_76	7.500	6.490	0.910	Open Manhole	1200
S6.001	4.667	16.8	S7	7.512	6.212	1.200	Open Manhole	1200

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S7.000	o	100	PP_80	7.650	6.650	0.900	Open Manhole	1200
S7.001	o	100	ORI_80	7.600	6.640	0.860	Open Manhole	1200
S8.000	o	100	PP_79	7.350	6.350	0.900	Open Manhole	1200
S8.001	o	100	ORI_79	7.350	6.340	0.910	Open Manhole	1200
S9.000	o	100	PP_75	7.600	6.600	0.900	Open Manhole	1200
S9.001	o	100	ORI_75	7.600	6.590	0.910	Open Manhole	1200
S6.002	o	150	S7	7.512	6.162	1.200	Open Manhole	1200
S10.000	o	150	PP_5-6	7.450	6.450	0.850	Open Manhole	1200
S10.001	o	150	ORI_5-6	7.450	6.440	0.860	Open Manhole	1200
S11.000	o	100	PP_7-8	7.500	6.500	0.900	Open Manhole	1200
S11.001	o	100	ORI_7-8	7.500	6.490	0.910	Open Manhole	1200
S12.000	o	100	PP_9-10	7.400	6.400	0.900	Open Manhole	1200
S12.001	o	100	ORI_9-10	7.400	6.390	0.910	Open Manhole	1200
S13.000	o	100	PP_11-12	7.250	6.250	0.900	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S7.000	5.000	500.0	ORI_80	7.600	6.640	0.860	Open Manhole	1200
S7.001	8.420	19.7	S7	7.512	6.212	1.200	Open Manhole	1200
S8.000	5.000	500.0	ORI_79	7.350	6.340	0.910	Open Manhole	1200
S8.001	3.333	26.0	S7	7.512	6.212	1.200	Open Manhole	1200
S9.000	4.995	500.0	ORI_75	7.600	6.590	0.910	Open Manhole	1200
S9.001	10.012	26.5	S7	7.512	6.212	1.200	Open Manhole	1200
S6.002	18.846	15.6	S8	7.395	4.953	2.292	Open Manhole	1350
S10.000	5.000	500.0	ORI_5-6	7.450	6.440	0.860	Open Manhole	1200
S10.001	9.596	6.5	S8	7.395	4.953	2.292	Open Manhole	1350
S11.000	5.000	500.0	ORI_7-8	7.500	6.490	0.910	Open Manhole	1200
S11.001	6.862	4.6	S8	7.395	5.003	2.292	Open Manhole	1350
S12.000	5.000	500.0	ORI_9-10	7.400	6.390	0.910	Open Manhole	1200
S12.001	4.482	3.2	S8	7.395	5.003	2.292	Open Manhole	1350
S13.000	5.000	500.0	ORI_11-12	7.250	6.240	0.910	Open Manhole	1200

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S13.001	o	100	ORI_11-12	7.250	6.240	0.910	Open Manhole	1200
S1.005	o	450	S8	7.395	4.653	2.292	Open Manhole	1350
S14.000	o	100	PP_54	7.250	6.250	0.900	Open Manhole	1200
S14.001	o	100	ORI_54	7.250	6.240	0.910	Open Manhole	1200
S15.000	o	100	PP_55	7.250	6.250	0.900	Open Manhole	1200
S15.001	o	100	ORI_55	7.250	6.240	0.910	Open Manhole	1200
S16.000	o	150	PP_51	7.350	6.350	0.850	Open Manhole	1200
S16.001	o	150	ORI_51	7.350	6.340	0.860	Open Manhole	1200
S14.002	o	150	S9	7.204	4.952	2.102	Open Manhole	1200
S17.000	o	150	PP_13-14	7.250	6.250	0.850	Open Manhole	1200
S17.001	o	150	ORI_13-14	7.250	6.240	0.860	Open Manhole	1200
S18.000	o	100	PP_15	6.850	5.850	0.900	Open Manhole	1200
S18.001	o	100	ORI_15	6.850	5.840	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S13.001	3.330	2.7	S8	7.395	5.003	2.292	Open Manhole	1350
S1.005	67.722	384.8	S10	6.960	4.477	2.033	Open Manhole	1350
S14.000	5.000	500.0	ORI_54	7.250	6.240	0.910	Open Manhole	1200
S14.001	5.470	4.4	S9	7.204	5.002	2.102	Open Manhole	1200
S15.000	5.000	500.0	ORI_55	7.250	6.240	0.910	Open Manhole	1200
S15.001	12.229	9.9	S9	7.204	5.002	2.102	Open Manhole	1200
S16.000	5.000	500.0	ORI_51	7.350	6.340	0.860	Open Manhole	1200
S16.001	9.808	7.1	S9	7.204	4.952	2.102	Open Manhole	1200
S14.002	17.458	99.8	S10	6.960	4.777	2.033	Open Manhole	1350
S17.000	5.000	500.0	ORI_13-14	7.250	6.240	0.860	Open Manhole	1200
S17.001	4.927	3.4	S10	6.960	4.777	2.033	Open Manhole	1350
S18.000	5.000	500.0	ORI_15	6.850	5.840	0.910	Open Manhole	1200
S18.001	3.331	3.3	S10	6.960	4.827	2.033	Open Manhole	1350

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.006	o	450	S10	6.960	4.477	2.033	Open Manhole	1350
S19.000	o	450	S11a	6.700	4.450	1.800	Open Manhole	1350
S20.000	o	150	PP_18	6.800	5.800	0.850	Open Manhole	1200
S20.001	o	150	ORI_18	6.800	5.790	0.860	Open Manhole	1200
S21.000	o	100	PP_19-53	7.000	6.000	0.900	Open Manhole	1200
S21.001	o	100	ORI_19-53	7.000	5.990	0.910	Open Manhole	1200
S1.007	o	450	S11	6.702	4.399	1.853	Open Manhole	1350
S22.000	o	150	PP_20-21	7.300	6.300	0.850	Open Manhole	1200
S22.001	o	150	ORI_20-21	7.300	6.290	0.860	Open Manhole	1200
S22.002	o	225	S12	7.056	4.647	2.184	Open Manhole	1200
S1.008	o	450	S13	6.950	4.340	2.160	Open Manhole	1350
S23.000	o	100	PP_22-23	7.450	6.450	0.900	Open Manhole	1200
S23.001	o	100	ORI_22-23	7.450	6.440	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.006	30.144	386.5	S11	6.702	4.399	1.853	Open Manhole	1350
S19.000	4.661	91.4	S11	6.702	4.399	1.853	Open Manhole	1350
S20.000	5.000	500.0	ORI_18	6.800	5.790	0.860	Open Manhole	1200
S20.001	7.013	6.7	S11	6.702	4.749	1.803	Open Manhole	1350
S21.000	5.000	500.0	ORI_19-53	7.000	5.990	0.910	Open Manhole	1200
S21.001	8.789	7.1	S11	6.702	4.749	1.853	Open Manhole	1350
S1.007	21.970	372.4	S13	6.950	4.340	2.160	Open Manhole	1350
S22.000	4.998	499.8	ORI_20-21	7.300	6.290	0.860	Open Manhole	1200
S22.001	4.924	3.1	S12	7.056	4.722	2.184	Open Manhole	1200
S22.002	13.744	167.6	S13	6.950	4.565	2.160	Open Manhole	1350
S1.008	11.291	376.4		7.000	4.310	2.240	Open Manhole	0
S23.000	5.002	500.2	ORI_22-23	7.450	6.440	0.910	Open Manhole	1200
S23.001	6.193	25.1	S15	7.273	6.193	0.980	Open Manhole	1200

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S24.000	o	100	PP_24	7.450	6.450	0.900	Open Manhole	1200
S24.001	o	100	ORI_24	7.450	6.440	0.910	Open Manhole	1200
S23.002	o	225	S15	7.273	6.068	0.980	Open Manhole	1200
S25.000	o	100	PP_25-26	7.350	6.350	0.900	Open Manhole	1200
S25.001	o	100	ORI_25-26	7.350	6.340	0.910	Open Manhole	1200
S26.000	o	100	PP_27	7.250	6.250	0.900	Open Manhole	1200
S26.001	o	100	ORI_27	7.250	6.240	0.910	Open Manhole	1200
S27.000	o	100	PP_28	7.250	6.250	0.900	Open Manhole	1200
S27.001	o	100	ORI_28	7.250	6.240	0.910	Open Manhole	1200
S23.003	o	225	S16	7.471	5.896	1.350	Open Manhole	1200
S28.000	o	100	PP_29	7.000	6.000	0.900	Open Manhole	1200
S28.001	o	100	ORI_29	7.000	5.990	0.910	Open Manhole	1200
S23.004	o	300	S18	6.807	5.506	1.001	Open Manhole	1200
S23.005	o	300	S19	6.695	5.468	0.927	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S24.000	5.000	500.0	ORI_24	7.450	6.440	0.910	Open Manhole	1200
S24.001	5.420	21.9	S15	7.273	6.193	0.980	Open Manhole	1200
S23.002	28.743	167.1	S16	7.471	5.896	1.350	Open Manhole	1200
S25.000	5.000	500.0	ORI_25-26	7.350	6.340	0.910	Open Manhole	1200
S25.001	7.936	24.9	S16	7.471	6.021	1.350	Open Manhole	1200
S26.000	5.000	500.0	ORI_27	7.250	6.240	0.910	Open Manhole	1200
S26.001	6.040	27.6	S16	7.471	6.021	1.350	Open Manhole	1200
S27.000	4.992	499.2	ORI_28	7.250	6.240	0.910	Open Manhole	1200
S27.001	5.271	24.1	S16	7.471	6.021	1.350	Open Manhole	1200
S23.003	52.563	166.9	S18	6.807	5.581	1.001	Open Manhole	1200
S28.000	5.000	500.0	ORI_29	7.000	5.990	0.910	Open Manhole	1200
S28.001	8.947	31.5	S18	6.807	5.706	1.001	Open Manhole	1200
S23.004	8.967	236.0	S19	6.695	5.468	0.927	Open Manhole	1200
S23.005	10.913	237.2	S20	6.610	5.422	0.888	Open Manhole	1200

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S29.000	o	100	PP_30	6.850	5.850	0.900	Open Manhole	1200
S29.001	o	100	ORI_30	6.850	5.840	0.910	Open Manhole	1200
S23.006	o	300	S20	6.610	5.422	0.888	Open Manhole	1200
S30.000	o	100	PP_31	6.750	5.750	0.900	Open Manhole	1200
S30.001	o	100	ORI_31	6.750	5.740	0.910	Open Manhole	1200
S31.000	o	100	PP_32	7.050	6.050	0.900	Open Manhole	1200
S31.001	o	100	ORI_32	7.050	6.040	0.910	Open Manhole	1200
S32.000	o	100	PP_33	7.100	6.100	0.900	Open Manhole	1200
S32.001	o	100	ORI_33	7.100	6.090	0.910	Open Manhole	1200
S33.000	o	100	PP_34-35	7.000	6.000	0.900	Open Manhole	1200
S33.001	o	100	ORI_34-35	7.000	5.990	0.910	Open Manhole	1200
S34.000	o	100	PP_36	6.850	5.850	0.900	Open Manhole	1200
S34.001	o	100	ORI_36	6.850	5.840	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S29.000	5.000	500.0	ORI_30	6.850	5.840	0.910	Open Manhole	1200
S29.001	5.665	26.0	S20	6.610	5.622	0.888	Open Manhole	1200
S23.006	10.494	238.5	S21	6.639	5.378	0.961	Open Manhole	1350
S30.000	5.000	500.0	ORI_31	6.750	5.740	0.910	Open Manhole	1200
S30.001	5.482	33.8	S21	6.639	5.578	0.961	Open Manhole	1350
S31.000	5.000	500.0	ORI_32	7.050	6.040	0.910	Open Manhole	1200
S31.001	10.296	22.3	S21	6.639	5.578	0.961	Open Manhole	1350
S32.000	5.000	500.0	ORI_33	7.100	6.090	0.910	Open Manhole	1200
S32.001	7.810	15.3	S21	6.639	5.578	0.961	Open Manhole	1350
S33.000	5.000	500.0	ORI_34-35	7.000	5.990	0.910	Open Manhole	1200
S33.001	5.831	14.2	S21	6.639	5.578	0.961	Open Manhole	1350
S34.000	5.000	500.0	ORI_36	6.850	5.840	0.910	Open Manhole	1200
S34.001	5.000	19.1	S21	6.639	5.578	0.961	Open Manhole	1350

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S23.007	o	450	S21	6.639	5.228	0.961	Open Manhole	1350
S35.000	o	450	S23a	6.600	5.080	1.070	Open Manhole	1350
S23.008	o	450	S23	6.727	5.049	1.228	Open Manhole	1350
S23.009	o	450	S24	6.617	5.025	1.142	Open Manhole	1350
S36.000	o	100	PP_81-82	7.700	6.700	0.900	Open Manhole	1200
S36.001	o	100	ORI_81-82	7.700	6.690	0.910	Open Manhole	1200
S37.000	o	100	PP_83	7.500	6.500	0.900	Open Manhole	1200
S37.001	o	100	ORI_83	7.500	6.490	0.910	Open Manhole	1200
S38.000	o	100	PP_84-85	7.500	6.500	0.900	Open Manhole	1200
S38.001	o	100	ORI_84-85	7.500	6.490	0.910	Open Manhole	1200
S36.002	o	150	S29	7.546	6.190	1.206	Open Manhole	1200
S39.000	o	100	PP_88	6.800	5.800	0.900	Open Manhole	1200
S39.001	o	100	ORI_88	6.800	5.790	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S23.007	69.027	385.6	S23	6.727	5.049	1.228	Open Manhole	1350
S35.000	10.506	338.9	S23	6.727	5.049	1.228	Open Manhole	1350
S23.008	9.072	378.0	S24	6.617	5.025	1.142	Open Manhole	1350
S23.009	9.664	386.6	S40	6.526	5.000	1.076	Open Manhole	1350
S36.000	4.998	499.8	ORI_81-82	7.700	6.690	0.910	Open Manhole	1200
S36.001	6.863	15.3	S29	7.546	6.240	1.206	Open Manhole	1200
S37.000	5.000	500.0	ORI_83	7.500	6.490	0.910	Open Manhole	1200
S37.001	4.482	17.9	S29	7.546	6.240	1.206	Open Manhole	1200
S38.000	5.000	500.0	ORI_84-85	7.500	6.490	0.910	Open Manhole	1200
S38.001	3.330	13.3	S29	7.546	6.240	1.206	Open Manhole	1200
S36.002	48.237	77.9	S30	6.943	5.571	1.222	Open Manhole	1350
S39.000	5.000	500.0	ORI_88	6.800	5.790	0.910	Open Manhole	1200
S39.001	3.330	19.7	S30	6.943	5.621	1.222	Open Manhole	1350

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S40.000	o	150	PP_86-87	7.150	6.150	0.850	Open Manhole	1200
S40.001	o	150	ORI_86-87	7.150	6.140	0.860	Open Manhole	1200
S41.000	o	150	PP_49-50	7.350	6.350	0.850	Open Manhole	1200
S41.001	o	150	ORI_49-50	7.350	6.340	0.860	Open Manhole	1200
S42.000	o	100	PP_48	7.200	6.200	0.900	Open Manhole	1200
S42.001	o	100	ORI_48	7.200	6.190	0.910	Open Manhole	1200
S43.000	o	100	PP_56-78	7.200	6.200	0.900	Open Manhole	1200
S43.001	o	100	ORI_56-78	7.200	6.190	0.910	Open Manhole	1200
S41.002	o	225	S25	7.179	5.865	1.089	Open Manhole	1200
S44.000	o	150	PP_46-47	6.950	5.950	0.850	Open Manhole	1200
S44.001	o	150	ORI_46-47	6.950	5.940	0.860	Open Manhole	1200
S41.003	o	225	S26	6.904	5.681	0.998	Open Manhole	1200
S45.000	o	100	PP_41-45	7.300	6.300	0.900	Open Manhole	1200
S45.001	o	100	ORI_41-45	7.300	6.290	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S40.000	4.999	499.9	ORI_86-87	7.150	6.140	0.860	Open Manhole	1200
S40.001	7.886	13.9	S30	6.943	5.571	1.222	Open Manhole	1350
S41.000	5.000	500.0	ORI_49-50	7.350	6.340	0.860	Open Manhole	1200
S41.001	5.507	13.8	S25	7.179	5.940	1.089	Open Manhole	1200
S42.000	5.000	500.0	ORI_48	7.200	6.190	0.910	Open Manhole	1200
S42.001	2.528	12.6	S25	7.179	5.990	1.089	Open Manhole	1200
S43.000	4.983	500.0	ORI_56-78	7.200	6.190	0.910	Open Manhole	1200
S43.001	10.637	53.2	S25	7.179	5.990	1.089	Open Manhole	1200
S41.002	30.809	167.4	S26	6.904	5.681	0.998	Open Manhole	1200
S44.000	5.000	500.0	ORI_46-47	6.950	5.940	0.860	Open Manhole	1200
S44.001	10.271	41.8	S26	6.904	5.694	1.060	Open Manhole	1200
S41.003	7.439	165.3	S27	6.977	5.636	1.116	Open Manhole	1200
S45.000	5.000	500.0	ORI_41-45	7.300	6.290	0.910	Open Manhole	1200
S45.001	6.507	12.3	S27	6.977	5.761	1.116	Open Manhole	1200

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S41.004	o	225	S27	6.977	5.636	1.116	Open Manhole	1200
S46.000	o	150	PP_37-38	7.250	6.250	0.850	Open Manhole	1200
S46.001	o	150	ORI_37-38	7.250	6.240	0.860	Open Manhole	1200
S47.000	o	150	PP_39-40	7.200	6.200	0.850	Open Manhole	1200
S47.001	o	150	ORI_39-40	7.200	6.190	0.860	Open Manhole	1200
S41.005	o	300	S28	7.062	5.516	1.246	Open Manhole	1200
S36.003	o	450	S30	6.943	5.121	1.372	Open Manhole	1350
S48.000	o	150	PP_105	7.150	6.150	0.850	Open Manhole	1200
S48.001	o	150	ORI_105	7.150	6.140	0.860	Open Manhole	1200
S49.000	o	100	PP_106	7.200	6.200	0.900	Open Manhole	1200
S49.001	o	100	ORI_106	7.200	6.190	0.910	Open Manhole	1200
S50.000	o	100	PP_107	7.250	6.250	0.900	Open Manhole	1200
S50.001	o	100	ORI_107	7.250	6.240	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S41.004	7.565	168.1	S28	7.062	5.591	1.246	Open Manhole	1200
S46.000	5.023	502.3	ORI_37-38	7.250	6.240	0.860	Open Manhole	1200
S46.001	3.305	5.8	S28	7.062	5.666	1.246	Open Manhole	1200
S47.000	5.000	500.0	ORI_39-40	7.200	6.190	0.860	Open Manhole	1200
S47.001	4.481	8.6	S28	7.062	5.666	1.246	Open Manhole	1200
S41.005	58.355	238.2	S30	6.943	5.271	1.372	Open Manhole	1350
S36.003	27.089	387.0	S38	6.604	5.051	1.103	Open Manhole	1350
S48.000	5.000	500.0	ORI_105	7.150	6.140	0.860	Open Manhole	1200
S48.001	5.520	20.9	S31	7.253	5.876	1.227	Open Manhole	1200
S49.000	5.000	500.0	ORI_106	7.200	6.190	0.910	Open Manhole	1200
S49.001	6.282	23.8	S31	7.253	5.926	1.227	Open Manhole	1200
S50.000	5.000	500.0	ORI_107	7.250	6.240	0.910	Open Manhole	1200
S50.001	8.153	26.0	S31	7.253	5.926	1.227	Open Manhole	1200

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S48.002	o	300	S31	7.253	5.726	1.227	Open Manhole	1200
S51.000	o	100	PP_102	6.900	5.900	0.900	Open Manhole	1200
S51.001	o	100	ORI_102	6.900	5.890	0.910	Open Manhole	1200
S52.000	o	100	PP_100-101	6.900	5.900	0.900	Open Manhole	1200
S52.001	o	100	ORI_100-101	6.900	5.890	0.910	Open Manhole	1200
S53.000	o	100	PP_103-104	6.950	5.950	0.900	Open Manhole	1200
S53.001	o	100	ORI_103-104	6.950	5.940	0.910	Open Manhole	1200
S48.003	o	300	S32	6.845	5.536	1.009	Open Manhole	1200
S48.004	o	300	S33	6.732	5.421	1.011	Open Manhole	1200
S48.005	o	300	S34	6.887	5.370	1.217	Open Manhole	1200
S54.000	o	100	PP_99	7.200	6.200	0.900	Open Manhole	1200
S54.001	o	100	ORI_99	7.200	6.190	0.910	Open Manhole	1200
S48.006	o	300	S35	7.142	5.316	1.526	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S48.002	45.251	238.2	S32	6.845	5.536	1.009	Open Manhole	1200
S51.000	4.999	499.9	ORI_102	6.900	5.890	0.910	Open Manhole	1200
S51.001	6.870	44.6	S32	6.845	5.736	1.009	Open Manhole	1200
S52.000	5.000	500.0	ORI_100-101	6.900	5.890	0.910	Open Manhole	1200
S52.001	6.179	40.1	S32	6.845	5.736	1.009	Open Manhole	1200
S53.000	5.000	500.0	ORI_103-104	6.950	5.940	0.910	Open Manhole	1200
S53.001	8.613	42.2	S32	6.845	5.736	1.009	Open Manhole	1200
S48.003	27.325	237.6	S33	6.732	5.421	1.011	Open Manhole	1200
S48.004	12.022	235.7	S34	6.887	5.370	1.217	Open Manhole	1200
S48.005	12.930	239.4	S35	7.142	5.316	1.526	Open Manhole	1200
S54.000	5.004	500.4	ORI_99	7.200	6.190	0.910	Open Manhole	1200
S54.001	5.506	8.2	S35	7.142	5.516	1.526	Open Manhole	1200
S48.006	11.368	236.8	S36	7.082	5.268	1.514	Open Manhole	1350

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S55.000	o	100	PP_89	7.000	6.000	0.900	Open Manhole	1200
S55.001	o	100	ORI_89	7.000	5.990	0.910	Open Manhole	1200
S56.000	o	100	PP_91	6.800	5.800	0.900	Open Manhole	1200
S56.001	o	100	ORI_91	6.800	5.790	0.910	Open Manhole	1200
S48.007	o	450	S36	7.082	5.118	1.514	Open Manhole	1350
S48.008	o	450	S37	6.678	5.071	1.157	Open Manhole	1350
S36.004	o	450	S38	6.604	5.051	1.103	Open Manhole	1350
S57.000	o	100	PP_92	6.800	5.800	0.900	Open Manhole	1200
S57.001	o	100	ORI_92	6.800	5.790	0.910	Open Manhole	1200
S36.005	o	450	S39	6.510	5.023	1.037	Open Manhole	1350
S58.000	o	450	S40a	6.500	5.050	1.000	Open Manhole	1350
S23.010	o	450	S40	6.526	5.000	1.076	Open Manhole	1350
S59.000	o	150	PP_90-98	7.000	6.000	0.850	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S55.000	5.000	500.0	ORI_89	7.000	5.990	0.910	Open Manhole	1200
S55.001	5.464	10.5	S36	7.082	5.468	1.514	Open Manhole	1350
S56.000	5.000	500.0	ORI_91	6.800	5.790	0.910	Open Manhole	1200
S56.001	3.343	10.4	S36	7.082	5.468	1.514	Open Manhole	1350
S48.007	17.921	381.3	S37	6.678	5.071	1.157	Open Manhole	1350
S48.008	7.799	390.0	S38	6.604	5.051	1.103	Open Manhole	1350
S36.004	10.873	385.0	S39	6.510	5.023	1.037	Open Manhole	1350
S57.000	5.000	500.0	ORI_92	6.800	5.790	0.910	Open Manhole	1200
S57.001	4.383	10.5	S39	6.510	5.373	1.037	Open Manhole	1350
S36.005	8.998	391.2	S40	6.526	5.000	1.076	Open Manhole	1350
S58.000	10.839	216.8	S40	6.526	5.000	1.076	Open Manhole	1350
S23.010	21.017	385.0	S42	6.800	4.945	1.405	Open Manhole	1350
S59.000	5.000	500.0	ORI_90-98	7.000	5.990	0.860	Open Manhole	1200

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PIPELINE SCHEDULES for SW Network

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S59.001	o	150	ORI_90-98	7.000	5.990	0.860	Open Manhole	1200
S23.011	o	450	S42	6.800	4.945	1.405	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S59.001	17.573	23.6	S42	6.800	5.245	1.405	Open Manhole	1350
S23.011	13.953	310.1		7.000	4.900	1.650	Open Manhole	0

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Area Summary for SW Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.006	0.006	0.006
	User	-	100	0.009	0.009	0.015
1.001	User	-	100	0.008	0.008	0.008
	User	-	100	0.013	0.013	0.020
	User	-	100	0.007	0.007	0.028
	User	-	100	0.012	0.012	0.040
1.002	User	-	100	0.012	0.012	0.012
	User	-	100	0.015	0.015	0.027
	User	-	100	0.008	0.008	0.035
	User	-	100	0.014	0.014	0.049
1.003	-	-	100	0.000	0.000	0.000
2.000	User	-	100	0.013	0.013	0.013
	User	-	100	0.012	0.012	0.024
	User	-	100	0.007	0.007	0.031
3.000	-	-	100	0.019	0.019	0.019
3.001	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.024	0.024	0.024
4.001	-	-	100	0.000	0.000	0.000
5.000	-	-	100	0.009	0.009	0.009
5.001	-	-	100	0.000	0.000	0.000
1.004	User	-	100	0.007	0.007	0.007
	User	-	100	0.011	0.011	0.018
	User	-	100	0.014	0.014	0.032
	User	-	100	0.017	0.017	0.049
	User	-	100	0.011	0.011	0.061
6.000	-	-	100	0.009	0.009	0.009
6.001	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.011	0.011	0.011
7.001	-	-	100	0.000	0.000	0.000
8.000	-	-	100	0.014	0.014	0.014
8.001	-	-	100	0.000	0.000	0.000
9.000	-	-	100	0.011	0.011	0.011
9.001	-	-	100	0.000	0.000	0.000
6.002	User	-	100	0.014	0.014	0.014
	User	-	100	0.006	0.006	0.020
	User	-	100	0.008	0.008	0.028
10.000	-	-	100	0.028	0.028	0.028
10.001	-	-	100	0.000	0.000	0.000
11.000	-	-	100	0.019	0.019	0.019
11.001	-	-	100	0.000	0.000	0.000
12.000	-	-	100	0.017	0.017	0.017
12.001	-	-	100	0.000	0.000	0.000
13.000	-	-	100	0.014	0.014	0.014
13.001	-	-	100	0.000	0.000	0.000
1.005	User	-	100	0.015	0.015	0.015
	User	-	100	0.018	0.018	0.033
14.000	-	-	100	0.011	0.011	0.011
14.001	-	-	100	0.000	0.000	0.000
15.000	-	-	100	0.010	0.010	0.010
15.001	-	-	100	0.000	0.000	0.000
16.000	-	-	100	0.020	0.020	0.020

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Area Summary for SW Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
16.001	-	-	100	0.000	0.000	0.000
14.002	User	-	100	0.006	0.006	0.006
	User	-	100	0.008	0.008	0.014
	User	-	100	0.011	0.011	0.024
17.000	-	-	100	0.020	0.020	0.020
17.001	-	-	100	0.000	0.000	0.000
18.000	-	-	100	0.019	0.019	0.019
18.001	-	-	100	0.000	0.000	0.000
1.006	User	-	100	0.014	0.014	0.014
	User	-	100	0.011	0.011	0.025
19.000	User	-	100	0.020	0.020	0.020
20.000	-	-	100	0.023	0.023	0.023
20.001	-	-	100	0.000	0.000	0.000
21.000	-	-	100	0.013	0.013	0.013
21.001	-	-	100	0.000	0.000	0.000
1.007	User	-	100	0.014	0.014	0.014
	User	-	100	0.018	0.018	0.032
22.000	-	-	100	0.027	0.027	0.027
22.001	-	-	100	0.000	0.000	0.000
22.002	User	-	100	0.008	0.008	0.008
	User	-	100	0.014	0.014	0.022
	User	-	100	0.005	0.005	0.026
	User	-	100	0.007	0.007	0.034
1.008	-	-	100	0.000	0.000	0.000
23.000	-	-	100	0.018	0.018	0.018
23.001	-	-	100	0.000	0.000	0.000
24.000	-	-	100	0.010	0.010	0.010
24.001	-	-	100	0.000	0.000	0.000
23.002	-	-	100	0.000	0.000	0.000
25.000	-	-	100	0.017	0.017	0.017
25.001	-	-	100	0.000	0.000	0.000
26.000	-	-	100	0.015	0.015	0.015
26.001	-	-	100	0.000	0.000	0.000
27.000	-	-	100	0.013	0.013	0.013
27.001	-	-	100	0.000	0.000	0.000
23.003	User	-	100	0.014	0.014	0.014
	User	-	100	0.017	0.017	0.031
	User	-	100	0.004	0.004	0.034
	User	-	100	0.007	0.007	0.041
28.000	-	-	100	0.014	0.014	0.014
28.001	-	-	100	0.000	0.000	0.000
23.004	-	-	100	0.000	0.000	0.000
23.005	-	-	100	0.000	0.000	0.000
29.000	-	-	100	0.007	0.007	0.007
29.001	-	-	100	0.000	0.000	0.000
23.006	User	-	100	0.018	0.018	0.018
	User	-	100	0.011	0.011	0.029
30.000	-	-	100	0.019	0.019	0.019
30.001	-	-	100	0.000	0.000	0.000
31.000	-	-	100	0.008	0.008	0.008
31.001	-	-	100	0.000	0.000	0.000

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Area Summary for SW Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
32.000	-	-	100	0.010	0.010	0.010
32.001	-	-	100	0.000	0.000	0.000
33.000	-	-	100	0.019	0.019	0.019
33.001	-	-	100	0.000	0.000	0.000
34.000	-	-	100	0.013	0.013	0.013
34.001	-	-	100	0.000	0.000	0.000
23.007	User	-	100	0.013	0.013	0.013
	User	-	100	0.013	0.013	0.026
35.000	-	-	100	0.000	0.000	0.000
23.008	User	-	100	0.014	0.014	0.014
	User	-	100	0.014	0.014	0.027
23.009	-	-	100	0.000	0.000	0.000
36.000	-	-	100	0.016	0.016	0.016
36.001	-	-	100	0.000	0.000	0.000
37.000	-	-	100	0.010	0.010	0.010
37.001	-	-	100	0.000	0.000	0.000
38.000	-	-	100	0.016	0.016	0.016
38.001	-	-	100	0.000	0.000	0.000
36.002	User	-	100	0.017	0.017	0.017
	User	-	100	0.004	0.004	0.022
	User	-	100	0.013	0.013	0.035
	User	-	100	0.016	0.016	0.050
	User	-	100	0.011	0.011	0.061
39.000	-	-	100	0.013	0.013	0.013
39.001	-	-	100	0.000	0.000	0.000
40.000	-	-	100	0.026	0.026	0.026
40.001	-	-	100	0.000	0.000	0.000
41.000	-	-	100	0.020	0.020	0.020
41.001	-	-	100	0.000	0.000	0.000
42.000	-	-	100	0.013	0.013	0.013
42.001	-	-	100	0.000	0.000	0.000
43.000	-	-	100	0.124	0.124	0.124
43.001	-	-	100	0.000	0.000	0.000
41.002	User	-	100	0.015	0.015	0.015
	User	-	100	0.014	0.014	0.029
	User	-	100	0.011	0.011	0.040
	User	-	100	0.013	0.013	0.053
44.000	-	-	100	0.026	0.026	0.026
44.001	-	-	100	0.000	0.000	0.000
41.003	User	-	100	0.012	0.012	0.012
	User	-	100	0.003	0.003	0.014
45.000	-	-	100	0.048	0.048	0.048
45.001	-	-	100	0.000	0.000	0.000
41.004	-	-	100	0.000	0.000	0.000
46.000	-	-	100	0.022	0.022	0.022
46.001	-	-	100	0.000	0.000	0.000
47.000	-	-	100	0.020	0.020	0.020
47.001	-	-	100	0.000	0.000	0.000
41.005	User	-	100	0.010	0.010	0.010
	User	-	100	0.009	0.009	0.018
	User	-	100	0.008	0.008	0.026

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Area Summary for SW Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.009	0.009	0.035
36.003	User	-	100	0.009	0.009	0.009
	User	-	100	0.016	0.016	0.025
	User	-	100	0.014	0.014	0.039
48.000	-	-	100	0.028	0.028	0.028
48.001	-	-	100	0.000	0.000	0.000
49.000	-	-	100	0.007	0.007	0.007
49.001	-	-	100	0.000	0.000	0.000
50.000	-	-	100	0.016	0.016	0.016
50.001	-	-	100	0.000	0.000	0.000
48.002	User	-	100	0.009	0.009	0.009
	User	-	100	0.011	0.011	0.020
51.000	-	-	100	0.016	0.016	0.016
51.001	-	-	100	0.000	0.000	0.000
52.000	-	-	100	0.017	0.017	0.017
52.001	-	-	100	0.000	0.000	0.000
53.000	-	-	100	0.015	0.015	0.015
53.001	-	-	100	0.000	0.000	0.000
48.003	User	-	100	0.010	0.010	0.010
	User	-	100	0.011	0.011	0.021
	User	-	100	0.013	0.013	0.035
	User	-	100	0.016	0.016	0.051
48.004	-	-	100	0.000	0.000	0.000
48.005	User	-	100	0.006	0.006	0.006
	User	-	100	0.007	0.007	0.013
54.000	-	-	100	0.009	0.009	0.009
54.001	-	-	100	0.000	0.000	0.000
48.006	-	-	100	0.000	0.000	0.000
55.000	-	-	100	0.008	0.008	0.008
55.001	-	-	100	0.000	0.000	0.000
56.000	-	-	100	0.011	0.011	0.011
56.001	-	-	100	0.000	0.000	0.000
48.007	User	-	100	0.010	0.010	0.010
	User	-	100	0.011	0.011	0.021
48.008	-	-	100	0.000	0.000	0.000
36.004	User	-	100	0.007	0.007	0.007
57.000	-	-	100	0.011	0.011	0.011
57.001	-	-	100	0.000	0.000	0.000
36.005	User	-	100	0.016	0.016	0.016
	User	-	100	0.017	0.017	0.032
58.000	-	-	100	0.000	0.000	0.000
23.010	-	-	100	0.000	0.000	0.000
59.000	-	-	100	0.046	0.046	0.046
59.001	-	-	100	0.000	0.000	0.000
23.011	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				1.881	1.881	1.881

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Free Flowing Outfall Details for SW Network

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.008		7.000	4.310	0.000	0	0

Free Flowing Outfall Details for SW Network

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S23.011		7.000	4.900	0.000	0	0

Simulation Criteria for SW Network

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet 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	57
Number of Online Controls	56	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	2
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

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Online Controls for SW Network

Orifice Manhole: ORI_3-4, DS/PN: S3.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_1-2, DS/PN: S4.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.990

Orifice Manhole: ORI_108, DS/PN: S5.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.340

Orifice Manhole: ORI_76, DS/PN: S6.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.490

Orifice Manhole: ORI_80, DS/PN: S7.001, Volume (m³): 1.1

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.640

Orifice Manhole: ORI_79, DS/PN: S8.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.340

Orifice Manhole: ORI_75, DS/PN: S9.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.590

Orifice Manhole: ORI_5-6, DS/PN: S10.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 6.440

Orifice Manhole: ORI_7-8, DS/PN: S11.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.490

Orifice Manhole: ORI_9-10, DS/PN: S12.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.390

Orifice Manhole: ORI_11-12, DS/PN: S13.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240

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Orifice Manhole: ORI_54, DS/PN: S14.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_55, DS/PN: S15.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_51, DS/PN: S16.001, Volume (m³): 1.2

Diameter (m) 0.025 Discharge Coefficient 0.600 Invert Level (m) 6.340

Orifice Manhole: ORI_13-14, DS/PN: S17.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_15, DS/PN: S18.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.840

Orifice Manhole: ORI_18, DS/PN: S20.001, Volume (m³): 1.2

Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 5.790

Orifice Manhole: ORI_19-53, DS/PN: S21.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.990

Orifice Manhole: ORI_20-21, DS/PN: S22.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 6.290

Hydro-Brake® Optimum Manhole: S13, DS/PN: S1.008, Volume (m³): 7.5

Unit Reference	MD-SHE-0105-7000-2300-7000
Design Head (m)	2.300
Design Flow (l/s)	7.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	105
Invert Level (m)	4.340
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	**Head (m)**	**Flow (l/s)**
Design Point (Calculated)	2.300	7.0
Flush-Flo™	0.459	5.8
Kick-Flo®	0.944	4.6

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Hydro-Brake® Optimum Manhole: S13, DS/PN: S1.008, Volume (m³): 7.5

Control Points	**Head (m)**	**Flow (l/s)**
Mean Flow over Head Range	-	5.5

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	3.6	1.200	5.2	3.000	7.9	7.000	11.8
0.200	5.2	1.400	5.5	3.500	8.5	7.500	12.2
0.300	5.6	1.600	5.9	4.000	9.1	8.000	12.6
0.400	5.8	1.800	6.2	4.500	9.6	8.500	13.0
0.500	5.8	2.000	6.6	5.000	10.1	9.000	13.4
0.600	5.7	2.200	6.9	5.500	10.6	9.500	13.7
0.800	5.4	2.400	7.1	6.000	11.0		
1.000	4.7	2.600	7.4	6.500	11.4		

Orifice Manhole: ORI_22-23, DS/PN: S23.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.440

Orifice Manhole: ORI_24, DS/PN: S24.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.440

Orifice Manhole: ORI_25-26, DS/PN: S25.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.340

Orifice Manhole: ORI_27, DS/PN: S26.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_28, DS/PN: S27.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_29, DS/PN: S28.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.990

Orifice Manhole: ORI_30, DS/PN: S29.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.840

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Orifice Manhole: ORI_31, DS/PN: S30.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.740

Orifice Manhole: ORI_32, DS/PN: S31.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.040

Orifice Manhole: ORI_33, DS/PN: S32.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.090

Orifice Manhole: ORI_34-35, DS/PN: S33.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.990

Orifice Manhole: ORI_36, DS/PN: S34.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.840

Orifice Manhole: ORI_81-82, DS/PN: S36.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.690

Orifice Manhole: ORI_83, DS/PN: S37.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.490

Orifice Manhole: ORI_84-85, DS/PN: S38.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.490

Orifice Manhole: ORI_88, DS/PN: S39.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.790

Orifice Manhole: ORI_86-87, DS/PN: S40.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 6.140

Orifice Manhole: ORI_49-50, DS/PN: S41.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.340

Orifice Manhole: ORI_48, DS/PN: S42.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.190

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Orifice Manhole: ORI_56-78, DS/PN: S43.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.190

Orifice Manhole: ORI_46-47, DS/PN: S44.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.940

Orifice Manhole: ORI_41-45, DS/PN: S45.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.290

Orifice Manhole: ORI_37-38, DS/PN: S46.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_39-40, DS/PN: S47.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.190

Orifice Manhole: ORI_105, DS/PN: S48.001, Volume (m³): 1.2

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 6.140

Orifice Manhole: ORI_106, DS/PN: S49.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.190

Orifice Manhole: ORI_107, DS/PN: S50.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_102, DS/PN: S51.001, Volume (m³): 1.2

Diameter (m) 0.025 Discharge Coefficient 0.600 Invert Level (m) 5.890

Orifice Manhole: ORI_100-101, DS/PN: S52.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.890

Orifice Manhole: ORI_103-104, DS/PN: S53.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.940

Orifice Manhole: ORI_99, DS/PN: S54.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.190

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Orifice Manhole: ORI_89, DS/PN: S55.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.990

Orifice Manhole: ORI_91, DS/PN: S56.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.790

Orifice Manhole: ORI_92, DS/PN: S57.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.790

Orifice Manhole: ORI_90-98, DS/PN: S59.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.990

Hydro-Brake® Optimum Manhole: S42, DS/PN: S23.011, Volume (m³): 6.1

Unit Reference	MD-SHE-0098-5000-1510-5000
Design Head (m)	1.510
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	98
Invert Level (m)	4.945
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.510	5.0
Flush-Flo™	0.428	4.9
Kick-Flo®	0.876	3.9
Mean Flow over Head Range	-	4.3

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	3.2	1.200	4.5	3.000	6.9	7.000	10.3
0.200	4.4	1.400	4.8	3.500	7.4	7.500	10.6
0.300	4.8	1.600	5.1	4.000	7.9	8.000	11.0
0.400	4.9	1.800	5.4	4.500	8.3	8.500	11.3
0.500	4.8	2.000	5.7	5.000	8.8	9.000	11.6
0.600	4.8	2.200	5.9	5.500	9.2	9.500	11.9
0.800	4.3	2.400	6.2	6.000	9.6		
1.000	4.1	2.600	6.4	6.500	9.9		

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Storage Structures for SW Network

Porous Car Park Manhole: PP_3-4, DS/PN: S3.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.250	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_1-2, DS/PN: S4.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_108, DS/PN: S5.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	5.0
Max Percolation (l/s)	4.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.350	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_76, DS/PN: S6.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.5
Max Percolation (l/s)	10.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.500	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_80, DS/PN: S7.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	12.5	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.650	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_79, DS/PN: S8.000

Infiltration Coefficient Base (m/hr)	0.00000	Max Percolation (l/s)	10.4
Membrane Percolation (mm/hr)	1000	Safety Factor	2.0

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Porous Car Park Manhole: PP_79, DS/PN: S8.000

Porosity	0.30	Slope (1:X)	500.0
Invert Level (m)	6.350	Depression Storage (mm)	5
Width (m)	3.0	Evaporation (mm/day)	3
Length (m)	12.5	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_75, DS/PN: S9.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.5
Max Percolation (l/s)	9.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.600	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_5-6, DS/PN: S10.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.450	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_7-8, DS/PN: S11.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.500	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_9-10, DS/PN: S12.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.400	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_11-12, DS/PN: S13.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.250	Membrane Depth (mm)	300

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Porous Car Park Manhole: PP_54, DS/PN: S14.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.5
Max Percolation (l/s)	10.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.250	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_55, DS/PN: S15.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.5
Max Percolation (l/s)	7.1	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.250	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_51, DS/PN: S16.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	10.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.350	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_13-14, DS/PN: S17.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_15, DS/PN: S18.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.5
Membrane Percolation (mm/hr)	1000	Length (m)	8.5
Max Percolation (l/s)	13.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.850	Membrane Depth (mm)	300

Cellular Storage Manhole: S11a, DS/PN: S19.000

Invert Level (m)	4.450	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

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Cellular Storage Manhole: S11a, DS/PN: S19.000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	132.0	132.0	1.626	0.0	210.4
1.625	132.0	210.4			

Porous Car Park Manhole: PP_18, DS/PN: S20.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	10.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.800	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_19-53, DS/PN: S21.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	20.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_20-21, DS/PN: S22.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	7.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	19.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.300	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_22-23, DS/PN: S23.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	21.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.450	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_24, DS/PN: S24.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	11.0
Max Percolation (l/s)	9.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.450	Membrane Depth (mm)	300

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Porous Car Park Manhole: PP_25-26, DS/PN: S25.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.350	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_27, DS/PN: S26.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.5
Max Percolation (l/s)	14.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.250	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_28, DS/PN: S27.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	8.3	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_29, DS/PN: S28.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	8.3	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_30, DS/PN: S29.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	11.1	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.850	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_31, DS/PN: S30.000

Infiltration Coefficient Base (m/hr)	0.00000	Invert Level (m)	5.750
Membrane Percolation (mm/hr)	1000	Width (m)	6.0
Max Percolation (l/s)	11.7	Length (m)	7.0
Safety Factor	2.0	Slope (1:X)	500.0
Porosity	0.30	Depression Storage (mm)	5

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Porous Car Park Manhole: PP_31, DS/PN: S30.000

Evaporation (mm/day) 3 Membrane Depth (mm) 300

Porous Car Park Manhole: PP_32, DS/PN: S31.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.0
Max Percolation (l/s)	11.1	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.050	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_33, DS/PN: S32.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	10.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.100	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_34-35, DS/PN: S33.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	11.0
Max Percolation (l/s)	15.3	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_36, DS/PN: S34.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	6.0
Max Percolation (l/s)	10.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Cellular Storage Manhole: S23a, DS/PN: S35.000

Invert Level (m) 5.080 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	264.0	264.0	1.001	0.0	346.0
1.000	264.0	346.0			

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Porous Car Park Manhole: PP_81-82, DS/PN: S36.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	9.5
Max Percolation (l/s)	13.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.700	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_83, DS/PN: S37.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.0
Max Percolation (l/s)	6.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.500	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_84-85, DS/PN: S38.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.5
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	21.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.500	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_88, DS/PN: S39.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.0
Max Percolation (l/s)	6.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.800	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_86-87, DS/PN: S40.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.150	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_49-50, DS/PN: S41.000

Infiltration Coefficient Base (m/hr)	0.00000	Invert Level (m)	6.350
Membrane Percolation (mm/hr)	1000	Width (m)	6.0
Max Percolation (l/s)	20.0	Length (m)	12.0
Safety Factor	2.0	Slope (1:X)	500.0
Porosity	0.30	Depression Storage (mm)	5

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Porous Car Park Manhole: PP_49-50, DS/PN: S41.000

Evaporation (mm/day) 3 Membrane Depth (mm) 300

Porous Car Park Manhole: PP_48, DS/PN: S42.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	10.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.200	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_56-78, DS/PN: S43.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	14.0
Membrane Percolation (mm/hr)	1000	Length (m)	50.0
Max Percolation (l/s)	194.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.200	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_46-47, DS/PN: S44.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	20.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.950	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_41-45, DS/PN: S45.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	13.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	72.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.300	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_37-38, DS/PN: S46.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	11.5
Max Percolation (l/s)	19.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.250	Membrane Depth (mm)	300

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Porous Car Park Manhole: PP_39-40, DS/PN: S47.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	11.5
Max Percolation (l/s)	19.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.200	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_105, DS/PN: S48.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	6.5
Max Percolation (l/s)	9.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.150	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_106, DS/PN: S49.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	8.3	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.200	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_107, DS/PN: S50.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.5
Membrane Percolation (mm/hr)	1000	Length (m)	7.0
Max Percolation (l/s)	12.6	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.250	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_102, DS/PN: S51.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	2.5
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	8.3	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.900	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_100-101, DS/PN: S52.000

Infiltration Coefficient Base (m/hr)	0.00000	Invert Level (m)	5.900
Membrane Percolation (mm/hr)	1000	Width (m)	5.0
Max Percolation (l/s)	13.9	Length (m)	10.0
Safety Factor	2.0	Slope (1:X)	500.0
Porosity	0.30	Depression Storage (mm)	5

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Porous Car Park Manhole: PP_100-101, DS/PN: S52.000

Evaporation (mm/day) 3 Membrane Depth (mm) 300

Porous Car Park Manhole: PP_103-104, DS/PN: S53.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	12.5
Max Percolation (l/s)	20.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.950	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_99, DS/PN: S54.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	5.0
Max Percolation (l/s)	6.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.200	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_89, DS/PN: S55.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	6.5
Max Percolation (l/s)	9.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_91, DS/PN: S56.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	5.5
Max Percolation (l/s)	7.6	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.800	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_92, DS/PN: S57.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	6.0
Max Percolation (l/s)	8.3	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.800	Membrane Depth (mm)	300

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Cellular Storage Manhole: S40a, DS/PN: S58.000

Invert Level (m) 5.050 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	208.0	208.0	1.001	0.0	276.0
1.000	208.0	276.0			

Porous Car Park Manhole: PP_90-98, DS/PN: S59.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	55.6	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 57
Number of Online Controls 56 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Cv (Summer)	0.750
Cv (Winter)	0.840

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

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	S1	15 Winter	1	+0%	100/240 Summer			
S1.001	S2	15 Winter	1	+0%	100/15 Summer			
S1.002	S3	15 Winter	1	+0%	100/15 Summer			
S1.003	S4	15 Winter	1	+0%	100/15 Summer			
S2.000	S5	15 Winter	1	+0%	100/120 Winter			
S3.000	PP_3-4	960 Winter	1	+0%	1/480 Winter			
S3.001	ORI_3-4	960 Winter	1	+0%	1/360 Winter			
S4.000	PP_1-2	480 Winter	1	+0%	30/30 Summer			
S4.001	ORI_1-2	480 Winter	1	+0%	30/15 Winter			
S5.000	PP_108	120 Winter	1	+0%	30/15 Summer			
S5.001	ORI_108	120 Winter	1	+0%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	5.676	-0.194	0.000	0.05		1.7	OK	
S1.001	S2	5.562	-0.169	0.000	0.14		5.3	OK	
S1.002	S3	5.295	-0.225	0.000	0.14		9.7	OK	
S1.003	S4	4.926	-0.351	0.000	0.09		9.7	OK	
S2.000	S5	5.585	-0.198	0.000	0.04		3.6	OK	
S3.000	PP_3-4	6.352	0.002	0.000	0.02		0.1	SURCHARGED	
S3.001	ORI_3-4	6.352	0.012	0.000	0.00		0.1	SURCHARGED	
S4.000	PP_1-2	6.098	-0.052	0.000	0.02		0.2	OK	
S4.001	ORI_1-2	6.098	-0.042	0.000	0.00		0.1	OK	
S5.000	PP_108	6.417	-0.033	0.000	0.04		0.1	OK	
S5.001	ORI_108	6.416	-0.024	0.000	0.01		0.1	OK	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.004	S6	15 Winter	1	+0%	100/15 Summer			
S6.000	PP_76	480 Winter	1	+0%	30/30 Summer			
S6.001	ORI_76	480 Winter	1	+0%	30/15 Winter			
S7.000	PP_80	480 Winter	1	+0%	30/15 Winter			
S7.001	ORI_80	480 Winter	1	+0%	30/15 Summer			
S8.000	PP_79	240 Winter	1	+0%	30/15 Summer			
S8.001	ORI_79	240 Winter	1	+0%	30/15 Summer			
S9.000	PP_75	480 Winter	1	+0%	30/15 Summer			
S9.001	ORI_75	480 Winter	1	+0%	30/15 Summer			
S6.002	S7	15 Winter	1	+0%	100/360 Winter			
S10.000	PP_5-6	240 Winter	1	+0%	30/15 Winter			
S10.001	ORI_5-6	240 Winter	1	+0%	30/15 Summer			
S11.000	PP_7-8	960 Winter	1	+0%	1/480 Winter			
S11.001	ORI_7-8	960 Winter	1	+0%	1/360 Winter			
S12.000	PP_9-10	960 Winter	1	+0%	30/15 Winter			
S12.001	ORI_9-10	960 Winter	1	+0%	30/15 Summer			
S13.000	PP_11-12	480 Winter	1	+0%	30/30 Winter			
S13.001	ORI_11-12	480 Winter	1	+0%	30/30 Summer			
S1.005	S8	15 Winter	1	+0%	30/360 Winter			
S14.000	PP_54	480 Winter	1	+0%	30/15 Summer			
S14.001	ORI_54	480 Winter	1	+0%	30/15 Summer			
S15.000	PP_55	120 Winter	1	+0%	30/15 Summer			
S15.001	ORI_55	120 Winter	1	+0%	30/15 Summer			
S16.000	PP_51	120 Winter	1	+0%	30/15 Summer			
S16.001	ORI_51	120 Winter	1	+0%	30/15 Summer			
S14.002	S9	15 Winter	1	+0%	30/360 Winter			
S17.000	PP_13-14	1440 Winter	1	+0%	100/60 Winter			
S17.001	ORI_13-14	960 Summer	1	+0%	100/60 Winter			
S18.000	PP_15	360 Winter	1	+0%	30/15 Summer			
S18.001	ORI_15	360 Winter	1	+0%	1/240 Winter			
S1.006	S10	30 Winter	1	+0%	30/60 Winter			
S19.000	S11a	240 Winter	1	+0%	30/60 Winter			
S20.000	PP_18	60 Winter	1	+0%	30/15 Summer			
S20.001	ORI_18	60 Winter	1	+0%	30/15 Summer			
S21.000	PP_19-53	480 Winter	1	+0%	30/60 Summer			
S21.001	ORI_19-53	480 Winter	1	+0%	30/30 Winter			
S1.007	S11	30 Winter	1	+0%	30/30 Winter			
S22.000	PP_20-21	240 Winter	1	+0%	30/15 Winter			
S22.001	ORI_20-21	240 Winter	1	+0%	30/15 Summer			
S22.002	S12	15 Winter	1	+0%	30/60 Winter			
S1.008	S13	30 Winter	1	+0%	30/15 Summer			
S23.000	PP_22-23	960 Winter	1	+0%	30/15 Winter			
S23.001	ORI_22-23	960 Winter	1	+0%	1/960 Winter			
S24.000	PP_24	480 Winter	1	+0%	30/15 Summer			
S24.001	ORI_24	480 Winter	1	+0%	30/15 Summer			
S23.002	S15	480 Winter	1	+0%	100/960 Winter			
S25.000	PP_25-26	960 Winter	1	+0%	30/15 Winter			
S25.001	ORI_25-26	960 Winter	1	+0%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.004	S6	4.898	-0.347	0.000	0.11		17.1	OK	
S6.000	PP_76	6.566	-0.034	0.000	0.02		0.1	OK	
S6.001	ORI_76	6.566	-0.024	0.000	0.00		0.1	OK	
S7.000	PP_80	6.726	-0.024	0.000	0.02		0.1	OK	
S7.001	ORI_80	6.726	-0.014	0.000	0.00		0.1	OK	
S8.000	PP_79	6.428	-0.022	0.000	0.04		0.1	OK	
S8.001	ORI_79	6.427	-0.013	0.000	0.01		0.1	OK	
S9.000	PP_75	6.687	-0.013	0.000	0.02		0.1	OK	
S9.001	ORI_75	6.687	-0.003	0.000	0.01		0.1	OK	
S6.002	S7	6.186	-0.126	0.000	0.06		2.7	OK	
S10.000	PP_5-6	6.541	-0.059	0.000	0.03		0.3	OK	
S10.001	ORI_5-6	6.541	-0.049	0.000	0.00		0.3	OK	
S11.000	PP_7-8	6.602	0.002	0.000	0.02		0.1	SURCHARGED	
S11.001	ORI_7-8	6.602	0.012	0.000	0.00		0.1	SURCHARGED	
S12.000	PP_9-10	6.490	-0.010	0.000	0.02		0.1	OK	
S12.001	ORI_9-10	6.489	-0.001	0.000	0.00		0.1	OK	
S13.000	PP_11-12	6.321	-0.029	0.000	0.02		0.1	OK	
S13.001	ORI_11-12	6.321	-0.019	0.000	0.00		0.1	OK	
S1.005	S8	4.767	-0.336	0.000	0.14		21.3	OK	
S14.000	PP_54	6.334	-0.016	0.000	0.02		0.1	OK	
S14.001	ORI_54	6.334	-0.006	0.000	0.00		0.1	OK	
S15.000	PP_55	6.312	-0.038	0.000	0.04		0.1	OK	
S15.001	ORI_55	6.312	-0.028	0.000	0.01		0.1	OK	
S16.000	PP_51	6.427	-0.073	0.000	0.04		0.4	OK	
S16.001	ORI_51	6.426	-0.064	0.000	0.01		0.4	OK	
S14.002	S9	4.991	-0.111	0.000	0.15		2.5	OK	
S17.000	PP_13-14	6.227	-0.173	0.000	0.00		0.0	OK	
S17.001	ORI_13-14	6.241	-0.149	0.000	0.00		0.0	OK	
S18.000	PP_15	5.946	-0.004	0.000	0.05		0.2	OK	
S18.001	ORI_15	5.946	0.006	0.000	0.01		0.1	SURCHARGED	
S1.006	S10	4.666	-0.261	0.000	0.14		20.2	OK	
S19.000	S11a	4.608	-0.292	0.000	0.02		2.9	OK	
S20.000	PP_18	5.876	-0.074	0.000	0.06		0.5	OK	
S20.001	ORI_18	5.875	-0.065	0.000	0.01		0.5	OK	
S21.000	PP_19-53	6.065	-0.035	0.000	0.02		0.1	OK	
S21.001	ORI_19-53	6.065	-0.025	0.000	0.00		0.1	OK	
S1.007	S11	4.647	-0.202	0.000	0.05		6.3	OK	
S22.000	PP_20-21	6.388	-0.062	0.000	0.03		0.3	OK	
S22.001	ORI_20-21	6.388	-0.052	0.000	0.00		0.2	OK	
S22.002	S12	4.693	-0.179	0.000	0.09		3.1	OK	
S1.008	S13	4.645	-0.145	0.000	0.05		5.6	OK	
S23.000	PP_22-23	6.542	-0.008	0.000	0.02		0.1	OK	
S23.001	ORI_22-23	6.541	0.001	0.000	0.01		0.1	SURCHARGED	
S24.000	PP_24	6.530	-0.020	0.000	0.02		0.1	OK	
S24.001	ORI_24	6.530	-0.010	0.000	0.01		0.1	OK	
S23.002	S15	6.072	-0.221	0.000	0.00		0.1	OK	
S25.000	PP_25-26	6.440	-0.010	0.000	0.02		0.1	OK	

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S25.001	ORI_25-26	6.439	-0.001	0.000	0.01		0.1	OK	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S26.000	PP_27	480 Winter	1	+0%	30/15 Summer		
S26.001	ORI_27	480 Winter	1	+0%	1/360 Winter		
S27.000	PP_28	1440 Winter	1	+0%	30/240 Winter		
S27.001	ORI_28	1440 Winter	1	+0%	30/240 Winter		
S23.003	S16	15 Winter	1	+0%	100/960 Winter		
S28.000	PP_29	120 Winter	1	+0%	30/15 Summer		
S28.001	ORI_29	120 Winter	1	+0%	30/15 Summer		
S23.004	S18	15 Winter	1	+0%	100/15 Winter		
S23.005	S19	15 Winter	1	+0%	100/15 Winter		
S29.000	PP_30	480 Winter	1	+0%	30/60 Winter		
S29.001	ORI_30	480 Winter	1	+0%	30/60 Winter		
S23.006	S20	15 Winter	1	+0%	100/15 Winter		
S30.000	PP_31	120 Winter	1	+0%	30/15 Summer		
S30.001	ORI_31	120 Winter	1	+0%	30/15 Summer		
S31.000	PP_32	480 Winter	1	+0%	30/60 Summer		
S31.001	ORI_32	480 Winter	1	+0%	30/30 Winter		
S32.000	PP_33	480 Winter	1	+0%	30/15 Winter		
S32.001	ORI_33	480 Winter	1	+0%	30/15 Summer		
S33.000	PP_34-35	360 Winter	1	+0%	30/15 Summer		
S33.001	ORI_34-35	360 Winter	1	+0%	30/15 Summer		
S34.000	PP_36	120 Winter	1	+0%	1/15 Summer		
S34.001	ORI_36	120 Winter	1	+0%	1/15 Summer		
S23.007	S21	30 Winter	1	+0%	100/15 Summer		
S35.000	S23a	480 Winter	1	+0%	100/60 Winter		
S23.008	S23	30 Winter	1	+0%	30/960 Winter		
S23.009	S24	30 Winter	1	+0%	30/15 Winter		
S36.000	PP_81-82	360 Winter	1	+0%	30/15 Summer		
S36.001	ORI_81-82	360 Winter	1	+0%	30/15 Summer		
S37.000	PP_83	360 Winter	1	+0%	30/15 Summer		
S37.001	ORI_83	360 Winter	1	+0%	1/240 Winter		
S38.000	PP_84-85	960 Winter	1	+0%	30/30 Summer		
S38.001	ORI_84-85	960 Winter	1	+0%	30/15 Winter		
S36.002	S29	15 Winter	1	+0%	30/15 Summer	100/15 Summer	
S39.000	PP_88	120 Winter	1	+0%	30/15 Summer		
S39.001	ORI_88	120 Winter	1	+0%	30/15 Summer		
S40.000	PP_86-87	240 Winter	1	+0%	30/15 Winter		
S40.001	ORI_86-87	240 Winter	1	+0%	30/15 Winter		
S41.000	PP_49-50	960 Winter	1	+0%	30/30 Winter		
S41.001	ORI_49-50	960 Winter	1	+0%	30/30 Winter		
S42.000	PP_48	240 Winter	1	+0%	30/15 Summer		
S42.001	ORI_48	240 Winter	1	+0%	30/15 Summer		
S43.000	PP_56-78	1440 Winter	1	+0%	1/240 Summer		
S43.001	ORI_56-78	1440 Winter	1	+0%	1/120 Winter		
S41.002	S25	15 Winter	1	+0%	100/15 Summer		
S44.000	PP_46-47	240 Winter	1	+0%	30/15 Winter		
S44.001	ORI_46-47	240 Winter	1	+0%	30/15 Winter		
S41.003	S26	15 Winter	1	+0%	100/15 Summer		
S45.000	PP_41-45	1440 Winter	1	+0%	1/480 Winter		

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

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S26.000	PP_27		6.347	-0.003	0.000	0.02		0.1	OK
S26.001	ORI_27		6.346	0.006	0.000	0.01		0.1	SURCHARGED
S27.000	PP_28		6.261	-0.089	0.000	0.01		0.0	OK
S27.001	ORI_28		6.258	-0.082	0.000	0.00		0.0	OK
S23.003	S16		5.943	-0.178	0.000	0.10		3.7	OK
S28.000	PP_29		6.068	-0.032	0.000	0.07		0.2	OK
S28.001	ORI_29		6.067	-0.023	0.000	0.02		0.2	OK
S23.004	S18		5.558	-0.248	0.000	0.07		3.9	OK
S23.005	S19		5.521	-0.247	0.000	0.07		3.9	OK
S29.000	PP_30		5.896	-0.054	0.000	0.01		0.0	OK
S29.001	ORI_30		5.895	-0.045	0.000	0.00		0.0	OK
S23.006	S20		5.489	-0.233	0.000	0.11		6.3	OK
S30.000	PP_31		5.828	-0.022	0.000	0.07		0.2	OK
S30.001	ORI_31		5.827	-0.013	0.000	0.03		0.2	OK
S31.000	PP_32		6.103	-0.047	0.000	0.02		0.1	OK
S31.001	ORI_32		6.102	-0.038	0.000	0.00		0.1	OK
S32.000	PP_33		6.176	-0.024	0.000	0.02		0.1	OK
S32.001	ORI_33		6.176	-0.014	0.000	0.00		0.1	OK
S33.000	PP_34-35		6.088	-0.012	0.000	0.04		0.1	OK
S33.001	ORI_34-35		6.087	-0.003	0.000	0.01		0.1	OK
S34.000	PP_36		6.021	0.071	0.000	0.10		0.3	SURCHARGED
S34.001	ORI_36		6.020	0.080	0.000	0.02		0.2	SURCHARGED
S23.007	S21		5.299	-0.379	0.000	0.05		7.7	OK
S35.000	S23a		5.181	-0.349	0.000	0.01		1.4	OK
S23.008	S23		5.234	-0.265	0.000	0.03		3.1	OK
S23.009	S24		5.238	-0.237	0.000	0.02		2.0	OK
S36.000	PP_81-82		6.778	-0.022	0.000	0.04		0.1	OK
S36.001	ORI_81-82		6.777	-0.013	0.000	0.01		0.1	OK
S37.000	PP_83		6.594	-0.006	0.000	0.02		0.1	OK
S37.001	ORI_83		6.594	0.004	0.000	0.01		0.1	SURCHARGED
S38.000	PP_84-85		6.579	-0.021	0.000	0.02		0.1	OK
S38.001	ORI_84-85		6.579	-0.011	0.000	0.00		0.1	OK
S36.002	S29		6.245	-0.095	0.000	0.29		5.6	OK
S39.000	PP_88		5.870	-0.030	0.000	0.07		0.2	OK
S39.001	ORI_88		5.869	-0.021	0.000	0.02		0.2	OK
S40.000	PP_86-87		6.234	-0.066	0.000	0.03		0.2	OK
S40.001	ORI_86-87		6.233	-0.057	0.000	0.01		0.2	OK
S41.000	PP_49-50		6.458	-0.042	0.000	0.01		0.1	OK
S41.001	ORI_49-50		6.458	-0.032	0.000	0.00		0.1	OK
S42.000	PP_48		6.273	-0.027	0.000	0.04		0.1	OK
S42.001	ORI_48		6.272	-0.018	0.000	0.01		0.1	OK
S43.000	PP_56-78		6.344	0.044	0.000	0.05		0.2	SURCHARGED
S43.001	ORI_56-78		6.343	0.053	0.000	0.02		0.2	SURCHARGED
S41.002	S25		5.919	-0.171	0.000	0.13		4.8	OK
S44.000	PP_46-47		6.034	-0.066	0.000	0.03		0.2	OK
S44.001	ORI_46-47		6.033	-0.057	0.000	0.01		0.2	OK
S41.003	S26		5.750	-0.156	0.000	0.21		6.2	OK

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

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S45.000	PP_41-45		6.416	0.016	0.000	0.02		0.1	SURCHARGED

PN	US/MH Name	Level Exceeded
S26.000	PP_27	
S26.001	ORI_27	
S27.000	PP_28	
S27.001	ORI_28	
S23.003	S16	
S28.000	PP_29	
S28.001	ORI_29	
S23.004	S18	
S23.005	S19	
S29.000	PP_30	
S29.001	ORI_30	
S23.006	S20	
S30.000	PP_31	
S30.001	ORI_31	
S31.000	PP_32	
S31.001	ORI_32	
S32.000	PP_33	
S32.001	ORI_33	
S33.000	PP_34-35	
S33.001	ORI_34-35	
S34.000	PP_36	
S34.001	ORI_36	
S23.007	S21	
S35.000	S23a	
S23.008	S23	
S23.009	S24	
S36.000	PP_81-82	
S36.001	ORI_81-82	
S37.000	PP_83	
S37.001	ORI_83	
S38.000	PP_84-85	
S38.001	ORI_84-85	
S36.002	S29	2
S39.000	PP_88	
S39.001	ORI_88	
S40.000	PP_86-87	
S40.001	ORI_86-87	
S41.000	PP_49-50	
S41.001	ORI_49-50	
S42.000	PP_48	
S42.001	ORI_48	

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

PN	US/MH Name	Level Exceeded
S43.000	PP_56-78	
S43.001	ORI_56-78	
S41.002	S25	
S44.000	PP_46-47	
S44.001	ORI_46-47	
S41.003	S26	
S45.000	PP_41-45	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S45.001	ORI_41-45	1440 Winter	1	+0%	1/360 Winter			
S41.004	S27	15 Winter	1	+0%	100/15 Summer			
S46.000	PP_37-38	480 Winter	1	+0%	30/30 Winter			
S46.001	ORI_37-38	480 Winter	1	+0%	30/30 Summer			
S47.000	PP_39-40	360 Winter	1	+0%	30/30 Winter			
S47.001	ORI_39-40	360 Winter	1	+0%	30/30 Winter			
S41.005	S28	15 Winter	1	+0%	100/15 Summer			
S36.003	S30	30 Winter	1	+0%	30/15 Winter			
S48.000	PP_105	30 Winter	1	+0%	30/15 Summer			
S48.001	ORI_105	30 Winter	1	+0%	30/15 Summer			
S49.000	PP_106	360 Winter	1	+0%	30/30 Winter			
S49.001	ORI_106	360 Winter	1	+0%	30/30 Summer			
S50.000	PP_107	360 Winter	1	+0%	30/15 Summer			
S50.001	ORI_107	360 Winter	1	+0%	30/15 Summer			
S48.002	S31	15 Winter	1	+0%	100/15 Summer			
S51.000	PP_102	60 Winter	1	+0%	30/15 Summer			
S51.001	ORI_102	60 Winter	1	+0%	30/15 Summer			
S52.000	PP_100-101	360 Winter	1	+0%	30/15 Summer			
S52.001	ORI_100-101	360 Winter	1	+0%	30/15 Summer			
S53.000	PP_103-104	960 Winter	1	+0%	30/30 Winter			
S53.001	ORI_103-104	960 Winter	1	+0%	30/30 Summer			
S48.003	S32	15 Winter	1	+0%	100/15 Summer			
S48.004	S33	15 Winter	1	+0%	100/15 Summer			
S48.005	S34	15 Winter	1	+0%	100/15 Summer			
S54.000	PP_99	360 Winter	1	+0%	30/15 Summer			
S54.001	ORI_99	360 Winter	1	+0%	30/15 Summer			
S48.006	S35	15 Winter	1	+0%	100/15 Summer			
S55.000	PP_89	480 Winter	1	+0%	30/30 Winter			
S55.001	ORI_89	480 Winter	1	+0%	30/15 Winter			
S56.000	PP_91	480 Winter	1	+0%	30/15 Summer			
S56.001	ORI_91	480 Winter	1	+0%	1/240 Winter			
S48.007	S36	30 Winter	1	+0%	100/15 Summer			
S48.008	S37	30 Winter	1	+0%	30/15 Winter			
S36.004	S38	30 Winter	1	+0%	30/15 Winter			
S57.000	PP_92	240 Winter	1	+0%	30/15 Summer			
S57.001	ORI_92	240 Winter	1	+0%	30/15 Summer			
S36.005	S39	30 Winter	1	+0%	30/15 Winter			
S58.000	S40a	480 Winter	1	+0%	30/960 Winter			
S23.010	S40	30 Winter	1	+0%	30/15 Winter			
S59.000	PP_90-98	960 Winter	1	+0%	30/60 Summer			
S59.001	ORI_90-98	960 Winter	1	+0%	30/30 Winter			
S23.011	S42	30 Winter	1	+0%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S45.001	ORI_41-45	6.416	0.026	0.000	0.00		0.1	SURCHARGED	
S41.004	S27	5.705	-0.156	0.000	0.21		6.2	OK	
S46.000	PP_37-38	6.340	-0.060	0.000	0.02		0.1	OK	
S46.001	ORI_37-38	6.340	-0.050	0.000	0.00		0.1	OK	
S47.000	PP_39-40	6.281	-0.069	0.000	0.02		0.1	OK	
S47.001	ORI_39-40	6.280	-0.060	0.000	0.00		0.1	OK	
S41.005	S28	5.590	-0.226	0.000	0.14		9.3	OK	
S36.003	S30	5.269	-0.302	0.000	0.11		15.9	OK	
S48.000	PP_105	6.221	-0.079	0.000	0.14		1.2	OK	
S48.001	ORI_105	6.219	-0.071	0.000	0.04		1.2	OK	
S49.000	PP_106	6.254	-0.046	0.000	0.02		0.1	OK	
S49.001	ORI_106	6.254	-0.036	0.000	0.00		0.1	OK	
S50.000	PP_107	6.329	-0.021	0.000	0.04		0.1	OK	
S50.001	ORI_107	6.328	-0.012	0.000	0.01		0.1	OK	
S48.002	S31	5.766	-0.260	0.000	0.04		2.7	OK	
S51.000	PP_102	5.967	-0.033	0.000	0.11		0.4	OK	
S51.001	ORI_102	5.965	-0.025	0.000	0.04		0.3	OK	
S52.000	PP_100-101	5.981	-0.019	0.000	0.04		0.1	OK	
S52.001	ORI_100-101	5.981	-0.009	0.000	0.02		0.1	OK	
S53.000	PP_103-104	6.025	-0.025	0.000	0.02		0.1	OK	
S53.001	ORI_103-104	6.025	-0.015	0.000	0.01		0.1	OK	
S48.003	S32	5.603	-0.233	0.000	0.11		7.2	OK	
S48.004	S33	5.491	-0.230	0.000	0.12		7.2	OK	
S48.005	S34	5.445	-0.225	0.000	0.14		8.2	OK	
S54.000	PP_99	6.280	-0.020	0.000	0.02		0.1	OK	
S54.001	ORI_99	6.279	-0.011	0.000	0.00		0.1	OK	
S48.006	S35	5.391	-0.225	0.000	0.14		8.3	OK	
S55.000	PP_89	6.059	-0.041	0.000	0.02		0.1	OK	
S55.001	ORI_89	6.059	-0.031	0.000	0.00		0.1	OK	
S56.000	PP_91	5.897	-0.003	0.000	0.02		0.1	OK	
S56.001	ORI_91	5.897	0.007	0.000	0.00		0.1	SURCHARGED	
S48.007	S36	5.262	-0.306	0.000	0.07		8.9	OK	
S48.008	S37	5.257	-0.264	0.000	0.09		8.1	OK	
S36.004	S38	5.255	-0.246	0.000	0.22		22.2	OK	
S57.000	PP_92	5.864	-0.036	0.000	0.04		0.1	OK	
S57.001	ORI_92	5.863	-0.027	0.000	0.01		0.1	OK	
S36.005	S39	5.247	-0.226	0.000	0.24		23.4	OK	
S58.000	S40a	5.186	-0.314	0.000	0.01		1.7	OK	
S23.010	S40	5.241	-0.209	0.000	0.06		7.4	OK	
S59.000	PP_90-98	6.107	-0.043	0.000	0.02		0.2	OK	
S59.001	ORI_90-98	6.106	-0.034	0.000	0.00		0.2	OK	
S23.011	S42	5.239	-0.156	0.000	0.03		4.7	OK	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 57
Number of Online Controls 56 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Cv (Summer)	0.750
Cv (Winter)	0.840

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

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	S1	15 Winter	30	+0%	100/240 Summer			
S1.001	S2	15 Winter	30	+0%	100/15 Summer			
S1.002	S3	15 Winter	30	+0%	100/15 Summer			
S1.003	S4	360 Winter	30	+0%	100/15 Summer			
S2.000	S5	15 Winter	30	+0%	100/120 Winter			
S3.000	PP_3-4	480 Winter	30	+0%	1/480 Winter			
S3.001	ORI_3-4	480 Winter	30	+0%	1/360 Winter			
S4.000	PP_1-2	480 Winter	30	+0%	30/30 Summer			
S4.001	ORI_1-2	480 Winter	30	+0%	30/15 Winter			
S5.000	PP_108	120 Winter	30	+0%	30/15 Summer			
S5.001	ORI_108	120 Winter	30	+0%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	5.702	-0.168	0.000	0.15		5.4	OK	
S1.001	S2	5.622	-0.109	0.000	0.51		19.2	OK	
S1.002	S3	5.379	-0.141	0.000	0.52		35.5	OK	
S1.003	S4	5.112	-0.165	0.000	0.05		5.1	OK	
S2.000	S5	5.608	-0.175	0.000	0.11		11.4	OK	
S3.000	PP_3-4	6.524	0.174	0.000	0.04		0.1	SURCHARGED	
S3.001	ORI_3-4	6.524	0.184	0.000	0.01		0.1	SURCHARGED	
S4.000	PP_1-2	6.281	0.131	0.000	0.03		0.3	SURCHARGED	
S4.001	ORI_1-2	6.280	0.140	0.000	0.01		0.2	SURCHARGED	
S5.000	PP_108	6.573	0.123	0.000	0.09		0.3	SURCHARGED	
S5.001	ORI_108	6.572	0.132	0.000	0.01		0.2	SURCHARGED	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.004	S6	360 Winter	30	+0%	100/15 Summer			
S6.000	PP_76	480 Winter	30	+0%	30/30 Summer			
S6.001	ORI_76	480 Winter	30	+0%	30/15 Winter			
S7.000	PP_80	480 Winter	30	+0%	30/15 Winter			
S7.001	ORI_80	480 Winter	30	+0%	30/15 Summer			
S8.000	PP_79	240 Winter	30	+0%	30/15 Summer			
S8.001	ORI_79	240 Winter	30	+0%	30/15 Summer			
S9.000	PP_75	480 Winter	30	+0%	30/15 Summer			
S9.001	ORI_75	480 Winter	30	+0%	30/15 Summer			
S6.002	S7	15 Winter	30	+0%	100/360 Winter			
S10.000	PP_5-6	240 Winter	30	+0%	30/15 Winter			
S10.001	ORI_5-6	240 Winter	30	+0%	30/15 Summer			
S11.000	PP_7-8	480 Winter	30	+0%	1/480 Winter			
S11.001	ORI_7-8	480 Winter	30	+0%	1/360 Winter			
S12.000	PP_9-10	480 Winter	30	+0%	30/15 Winter			
S12.001	ORI_9-10	480 Winter	30	+0%	30/15 Summer			
S13.000	PP_11-12	480 Winter	30	+0%	30/30 Winter			
S13.001	ORI_11-12	480 Winter	30	+0%	30/30 Summer			
S1.005	S8	360 Winter	30	+0%	30/360 Winter			
S14.000	PP_54	480 Winter	30	+0%	30/15 Summer			
S14.001	ORI_54	480 Winter	30	+0%	30/15 Summer			
S15.000	PP_55	240 Winter	30	+0%	30/15 Summer			
S15.001	ORI_55	240 Winter	30	+0%	30/15 Summer			
S16.000	PP_51	120 Winter	30	+0%	30/15 Summer			
S16.001	ORI_51	120 Winter	30	+0%	30/15 Summer			
S14.002	S9	360 Winter	30	+0%	30/360 Winter			
S17.000	PP_13-14	1440 Winter	30	+0%	100/60 Winter			
S17.001	ORI_13-14	1440 Winter	30	+0%	100/60 Winter			
S18.000	PP_15	360 Winter	30	+0%	30/15 Summer			
S18.001	ORI_15	360 Winter	30	+0%	1/240 Winter			
S1.006	S10	360 Winter	30	+0%	30/60 Winter			
S19.000	S11a	360 Winter	30	+0%	30/60 Winter			
S20.000	PP_18	60 Winter	30	+0%	30/15 Summer			
S20.001	ORI_18	60 Winter	30	+0%	30/15 Summer			
S21.000	PP_19-53	480 Winter	30	+0%	30/60 Summer			
S21.001	ORI_19-53	480 Winter	30	+0%	30/30 Winter			
S1.007	S11	360 Winter	30	+0%	30/30 Winter			
S22.000	PP_20-21	240 Winter	30	+0%	30/15 Winter			
S22.001	ORI_20-21	240 Winter	30	+0%	30/15 Summer			
S22.002	S12	360 Winter	30	+0%	30/60 Winter			
S1.008	S13	360 Winter	30	+0%	30/15 Summer			
S23.000	PP_22-23	480 Winter	30	+0%	30/15 Winter			
S23.001	ORI_22-23	480 Winter	30	+0%	1/960 Winter			
S24.000	PP_24	480 Winter	30	+0%	30/15 Summer			
S24.001	ORI_24	480 Winter	30	+0%	30/15 Summer			
S23.002	S15	480 Winter	30	+0%	100/960 Winter			
S25.000	PP_25-26	480 Winter	30	+0%	30/15 Winter			
S25.001	ORI_25-26	480 Winter	30	+0%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.004	S6	5.112	-0.133	0.000	0.07		10.0	OK	
S6.000	PP_76	6.689	0.089	0.000	0.03		0.1	SURCHARGED	
S6.001	ORI_76	6.688	0.098	0.000	0.01		0.1	SURCHARGED	
S7.000	PP_80	6.861	0.111	0.000	0.03		0.1	SURCHARGED	
S7.001	ORI_80	6.861	0.121	0.000	0.01		0.1	SURCHARGED	
S8.000	PP_79	6.588	0.138	0.000	0.08		0.3	SURCHARGED	
S8.001	ORI_79	6.586	0.146	0.000	0.02		0.2	SURCHARGED	
S9.000	PP_75	6.853	0.153	0.000	0.04		0.1	SURCHARGED	
S9.001	ORI_75	6.852	0.162	0.000	0.01		0.1	SURCHARGED	
S6.002	S7	6.213	-0.099	0.000	0.25		10.7	OK	
S10.000	PP_5-6	6.724	0.124	0.000	0.05		0.5	SURCHARGED	
S10.001	ORI_5-6	6.723	0.133	0.000	0.01		0.4	SURCHARGED	
S11.000	PP_7-8	6.774	0.174	0.000	0.04		0.1	SURCHARGED	
S11.001	ORI_7-8	6.774	0.184	0.000	0.00		0.1	SURCHARGED	
S12.000	PP_9-10	6.642	0.142	0.000	0.03		0.1	SURCHARGED	
S12.001	ORI_9-10	6.641	0.151	0.000	0.00		0.1	SURCHARGED	
S13.000	PP_11-12	6.444	0.094	0.000	0.03		0.1	SURCHARGED	
S13.001	ORI_11-12	6.444	0.104	0.000	0.00		0.1	SURCHARGED	
S1.005	S8	5.114	0.011	0.000	0.09		13.0	SURCHARGED	
S14.000	PP_54	6.488	0.138	0.000	0.03		0.1	SURCHARGED	
S14.001	ORI_54	6.488	0.148	0.000	0.00		0.1	SURCHARGED	
S15.000	PP_55	6.452	0.102	0.000	0.07		0.2	SURCHARGED	
S15.001	ORI_55	6.451	0.111	0.000	0.01		0.2	SURCHARGED	
S16.000	PP_51	6.604	0.104	0.000	0.08		0.7	SURCHARGED	
S16.001	ORI_51	6.603	0.113	0.000	0.01		0.7	SURCHARGED	
S14.002	S9	5.118	0.016	0.000	0.12		2.0	SURCHARGED	
S17.000	PP_13-14	6.382	-0.018	0.000	0.01		0.1	OK	
S17.001	ORI_13-14	6.382	-0.008	0.000	0.00		0.1	OK	
S18.000	PP_15	6.140	0.190	0.000	0.08		0.3	SURCHARGED	
S18.001	ORI_15	6.139	0.199	0.000	0.01		0.3	SURCHARGED	
S1.006	S10	5.128	0.201	0.000	0.10		14.3	SURCHARGED	
S19.000	S11a	5.104	0.204	0.000	0.02		4.1	SURCHARGED	
S20.000	PP_18	6.051	0.101	0.000	0.12		1.1	SURCHARGED	
S20.001	ORI_18	6.050	0.110	0.000	0.02		0.9	SURCHARGED	
S21.000	PP_19-53	6.175	0.075	0.000	0.03		0.1	SURCHARGED	
S21.001	ORI_19-53	6.174	0.084	0.000	0.00		0.1	SURCHARGED	
S1.007	S11	5.124	0.275	0.000	0.04		6.1	SURCHARGED	
S22.000	PP_20-21	6.567	0.117	0.000	0.05		0.4	SURCHARGED	
S22.001	ORI_20-21	6.566	0.126	0.000	0.01		0.4	SURCHARGED	
S22.002	S12	5.122	0.250	0.000	0.05		1.9	SURCHARGED	
S1.008	S13	5.128	0.338	0.000	0.05		5.8	SURCHARGED	
S23.000	PP_22-23	6.693	0.143	0.000	0.03		0.1	SURCHARGED	
S23.001	ORI_22-23	6.693	0.153	0.000	0.01		0.1	SURCHARGED	
S24.000	PP_24	6.682	0.132	0.000	0.03		0.1	SURCHARGED	
S24.001	ORI_24	6.681	0.141	0.000	0.01		0.1	SURCHARGED	
S23.002	S15	6.074	-0.219	0.000	0.01		0.2	OK	
S25.000	PP_25-26	6.592	0.142	0.000	0.03		0.1	SURCHARGED	

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S25.001	ORI_25-26	6.591	0.151	0.000	0.01		0.1	SURCHARGED	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S26.000	PP_27	480 Winter	30	+0%	30/15 Summer		
S26.001	ORI_27	480 Winter	30	+0%	1/360 Winter		
S27.000	PP_28	480 Winter	30	+0%	30/240 Winter		
S27.001	ORI_28	480 Winter	30	+0%	30/240 Winter		
S23.003	S16	15 Winter	30	+0%	100/960 Winter		
S28.000	PP_29	120 Winter	30	+0%	30/15 Summer		
S28.001	ORI_29	120 Winter	30	+0%	30/15 Summer		
S23.004	S18	15 Winter	30	+0%	100/15 Winter		
S23.005	S19	15 Winter	30	+0%	100/15 Winter		
S29.000	PP_30	480 Winter	30	+0%	30/60 Winter		
S29.001	ORI_30	480 Winter	30	+0%	30/60 Winter		
S23.006	S20	15 Winter	30	+0%	100/15 Winter		
S30.000	PP_31	120 Winter	30	+0%	30/15 Summer		
S30.001	ORI_31	120 Winter	30	+0%	30/15 Summer		
S31.000	PP_32	480 Winter	30	+0%	30/60 Summer		
S31.001	ORI_32	480 Winter	30	+0%	30/30 Winter		
S32.000	PP_33	480 Winter	30	+0%	30/15 Winter		
S32.001	ORI_33	480 Winter	30	+0%	30/15 Summer		
S33.000	PP_34-35	360 Winter	30	+0%	30/15 Summer		
S33.001	ORI_34-35	360 Winter	30	+0%	30/15 Summer		
S34.000	PP_36	120 Winter	30	+0%	1/15 Summer		
S34.001	ORI_36	120 Winter	30	+0%	1/15 Summer		
S23.007	S21	960 Winter	30	+0%	100/15 Summer		
S35.000	S23a	960 Winter	30	+0%	100/60 Winter		
S23.008	S23	960 Winter	30	+0%	30/960 Winter		
S23.009	S24	960 Winter	30	+0%	30/15 Winter		
S36.000	PP_81-82	360 Winter	30	+0%	30/15 Summer		
S36.001	ORI_81-82	360 Winter	30	+0%	30/15 Summer		
S37.000	PP_83	480 Winter	30	+0%	30/15 Summer		
S37.001	ORI_83	480 Winter	30	+0%	1/240 Winter		
S38.000	PP_84-85	480 Winter	30	+0%	30/30 Summer		
S38.001	ORI_84-85	480 Winter	30	+0%	30/15 Winter		
S36.002	S29	15 Winter	30	+0%	30/15 Summer	100/15 Summer	
S39.000	PP_88	120 Winter	30	+0%	30/15 Summer		
S39.001	ORI_88	120 Winter	30	+0%	30/15 Summer		
S40.000	PP_86-87	240 Winter	30	+0%	30/15 Winter		
S40.001	ORI_86-87	240 Winter	30	+0%	30/15 Winter		
S41.000	PP_49-50	480 Winter	30	+0%	30/30 Winter		
S41.001	ORI_49-50	480 Winter	30	+0%	30/30 Winter		
S42.000	PP_48	240 Winter	30	+0%	30/15 Summer		
S42.001	ORI_48	240 Winter	30	+0%	30/15 Summer		
S43.000	PP_56-78	960 Winter	30	+0%	1/240 Summer		
S43.001	ORI_56-78	960 Winter	30	+0%	1/120 Winter		
S41.002	S25	15 Winter	30	+0%	100/15 Summer		
S44.000	PP_46-47	240 Winter	30	+0%	30/15 Winter		
S44.001	ORI_46-47	240 Winter	30	+0%	30/15 Winter		
S41.003	S26	15 Winter	30	+0%	100/15 Summer		
S45.000	PP_41-45	960 Winter	30	+0%	1/480 Winter		

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

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S26.000	PP_27		6.520	0.170	0.000	0.04		0.1	SURCHARGED
S26.001	ORI_27		6.519	0.179	0.000	0.01		0.1	SURCHARGED
S27.000	PP_28		6.388	0.038	0.000	0.05		0.2	SURCHARGED
S27.001	ORI_28		6.387	0.047	0.000	0.02		0.2	SURCHARGED
S23.003	S16		5.994	-0.127	0.000	0.38		14.7	OK
S28.000	PP_29		6.224	0.124	0.000	0.13		0.4	SURCHARGED
S28.001	ORI_29		6.222	0.132	0.000	0.04		0.4	SURCHARGED
S23.004	S18		5.614	-0.192	0.000	0.27		15.0	OK
S23.005	S19		5.586	-0.182	0.000	0.27		15.2	OK
S29.000	PP_30		5.983	0.033	0.000	0.03		0.1	SURCHARGED
S29.001	ORI_30		5.983	0.043	0.000	0.01		0.1	SURCHARGED
S23.006	S20		5.563	-0.159	0.000	0.44		24.8	OK
S30.000	PP_31		6.002	0.152	0.000	0.14		0.5	SURCHARGED
S30.001	ORI_31		6.000	0.160	0.000	0.05		0.4	SURCHARGED
S31.000	PP_32		6.205	0.055	0.000	0.03		0.1	SURCHARGED
S31.001	ORI_32		6.204	0.064	0.000	0.01		0.1	SURCHARGED
S32.000	PP_33		6.319	0.119	0.000	0.03		0.1	SURCHARGED
S32.001	ORI_33		6.318	0.128	0.000	0.01		0.1	SURCHARGED
S33.000	PP_34-35		6.260	0.160	0.000	0.08		0.3	SURCHARGED
S33.001	ORI_34-35		6.259	0.169	0.000	0.02		0.2	SURCHARGED
S34.000	PP_36		6.162	0.212	0.000	0.12		0.4	SURCHARGED
S34.001	ORI_36		6.161	0.221	0.000	0.02		0.3	SURCHARGED
S23.007	S21		5.533	-0.145	0.000	0.03		3.9	OK
S35.000	S23a		5.509	-0.021	0.000	0.05		6.0	OK
S23.008	S23		5.534	0.035	0.000	0.15		15.1	SURCHARGED
S23.009	S24		5.607	0.132	0.000	0.12		12.3	SURCHARGED
S36.000	PP_81-82		6.935	0.135	0.000	0.07		0.2	SURCHARGED
S36.001	ORI_81-82		6.933	0.143	0.000	0.02		0.2	SURCHARGED
S37.000	PP_83		6.782	0.182	0.000	0.04		0.1	SURCHARGED
S37.001	ORI_83		6.782	0.192	0.000	0.01		0.1	SURCHARGED
S38.000	PP_84-85		6.712	0.112	0.000	0.03		0.1	SURCHARGED
S38.001	ORI_84-85		6.712	0.122	0.000	0.01		0.1	SURCHARGED
S36.002	S29		6.420	0.080	0.000	1.06		20.8	SURCHARGED
S39.000	PP_88		6.035	0.135	0.000	0.14		0.5	SURCHARGED
S39.001	ORI_88		6.033	0.143	0.000	0.04		0.4	SURCHARGED
S40.000	PP_86-87		6.401	0.101	0.000	0.05		0.4	SURCHARGED
S40.001	ORI_86-87		6.401	0.111	0.000	0.01		0.4	SURCHARGED
S41.000	PP_49-50		6.639	0.139	0.000	0.01		0.1	SURCHARGED
S41.001	ORI_49-50		6.639	0.149	0.000	0.00		0.1	SURCHARGED
S42.000	PP_48		6.424	0.124	0.000	0.07		0.2	SURCHARGED
S42.001	ORI_48		6.423	0.133	0.000	0.02		0.2	SURCHARGED
S43.000	PP_56-78		6.503	0.203	0.000	0.08		0.3	SURCHARGED
S43.001	ORI_56-78		6.501	0.211	0.000	0.03		0.3	SURCHARGED
S41.002	S25		5.981	-0.109	0.000	0.51		19.3	OK
S44.000	PP_46-47		6.201	0.101	0.000	0.05		0.4	SURCHARGED
S44.001	ORI_46-47		6.201	0.111	0.000	0.02		0.4	SURCHARGED
S41.003	S26		5.838	-0.068	0.000	0.81		24.3	OK

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

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S45.000	PP_41-45		6.576	0.176	0.000	0.03		0.1	SURCHARGED

PN	US/MH Name	Level Exceeded
S26.000	PP_27	
S26.001	ORI_27	
S27.000	PP_28	
S27.001	ORI_28	
S23.003	S16	
S28.000	PP_29	
S28.001	ORI_29	
S23.004	S18	
S23.005	S19	
S29.000	PP_30	
S29.001	ORI_30	
S23.006	S20	
S30.000	PP_31	
S30.001	ORI_31	
S31.000	PP_32	
S31.001	ORI_32	
S32.000	PP_33	
S32.001	ORI_33	
S33.000	PP_34-35	
S33.001	ORI_34-35	
S34.000	PP_36	
S34.001	ORI_36	
S23.007	S21	
S35.000	S23a	
S23.008	S23	
S23.009	S24	
S36.000	PP_81-82	
S36.001	ORI_81-82	
S37.000	PP_83	
S37.001	ORI_83	
S38.000	PP_84-85	
S38.001	ORI_84-85	
S36.002	S29	2
S39.000	PP_88	
S39.001	ORI_88	
S40.000	PP_86-87	
S40.001	ORI_86-87	
S41.000	PP_49-50	
S41.001	ORI_49-50	
S42.000	PP_48	
S42.001	ORI_48	

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

PN	US/MH Name	Level Exceeded
S43.000	PP_56-78	
S43.001	ORI_56-78	
S41.002	S25	
S44.000	PP_46-47	
S44.001	ORI_46-47	
S41.003	S26	
S45.000	PP_41-45	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S45.001	ORI_41-45	960 Winter	30	+0%	1/360 Winter			
S41.004	S27	15 Winter	30	+0%	100/15 Summer			
S46.000	PP_37-38	480 Winter	30	+0%	30/30 Winter			
S46.001	ORI_37-38	480 Winter	30	+0%	30/30 Summer			
S47.000	PP_39-40	480 Winter	30	+0%	30/30 Winter			
S47.001	ORI_39-40	480 Winter	30	+0%	30/30 Winter			
S41.005	S28	15 Winter	30	+0%	100/15 Summer			
S36.003	S30	15 Winter	30	+0%	30/15 Winter			
S48.000	PP_105	30 Winter	30	+0%	30/15 Summer			
S48.001	ORI_105	30 Winter	30	+0%	30/15 Summer			
S49.000	PP_106	360 Winter	30	+0%	30/30 Winter			
S49.001	ORI_106	360 Winter	30	+0%	30/30 Summer			
S50.000	PP_107	360 Winter	30	+0%	30/15 Summer			
S50.001	ORI_107	360 Winter	30	+0%	30/15 Summer			
S48.002	S31	15 Winter	30	+0%	100/15 Summer			
S51.000	PP_102	60 Winter	30	+0%	30/15 Summer			
S51.001	ORI_102	60 Winter	30	+0%	30/15 Summer			
S52.000	PP_100-101	360 Winter	30	+0%	30/15 Summer			
S52.001	ORI_100-101	360 Winter	30	+0%	30/15 Summer			
S53.000	PP_103-104	480 Winter	30	+0%	30/30 Winter			
S53.001	ORI_103-104	480 Winter	30	+0%	30/30 Summer			
S48.003	S32	15 Winter	30	+0%	100/15 Summer			
S48.004	S33	15 Winter	30	+0%	100/15 Summer			
S48.005	S34	15 Winter	30	+0%	100/15 Summer			
S54.000	PP_99	480 Winter	30	+0%	30/15 Summer			
S54.001	ORI_99	480 Winter	30	+0%	30/15 Summer			
S48.006	S35	15 Winter	30	+0%	100/15 Summer			
S55.000	PP_89	480 Winter	30	+0%	30/30 Winter			
S55.001	ORI_89	480 Winter	30	+0%	30/15 Winter			
S56.000	PP_91	480 Winter	30	+0%	30/15 Summer			
S56.001	ORI_91	480 Winter	30	+0%	1/240 Winter			
S48.007	S36	15 Winter	30	+0%	100/15 Summer			
S48.008	S37	960 Winter	30	+0%	30/15 Winter			
S36.004	S38	960 Winter	30	+0%	30/15 Winter			
S57.000	PP_92	240 Winter	30	+0%	30/15 Summer			
S57.001	ORI_92	240 Winter	30	+0%	30/15 Summer			
S36.005	S39	960 Winter	30	+0%	30/15 Winter			
S58.000	S40a	960 Winter	30	+0%	30/960 Winter			
S23.010	S40	960 Winter	30	+0%	30/15 Winter			
S59.000	PP_90-98	960 Winter	30	+0%	30/60 Summer			
S59.001	ORI_90-98	960 Winter	30	+0%	30/30 Winter			
S23.011	S42	960 Winter	30	+0%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S45.001	ORI_41-45	6.576	0.186	0.000	0.01		0.1	SURCHARGED	
S41.004	S27	5.792	-0.069	0.000	0.82		24.6	OK	
S46.000	PP_37-38	6.511	0.111	0.000	0.03		0.2	SURCHARGED	
S46.001	ORI_37-38	6.511	0.121	0.000	0.01		0.2	SURCHARGED	
S47.000	PP_39-40	6.433	0.083	0.000	0.03		0.2	SURCHARGED	
S47.001	ORI_39-40	6.433	0.093	0.000	0.01		0.2	SURCHARGED	
S41.005	S28	5.674	-0.142	0.000	0.50		34.3	OK	
S36.003	S30	5.577	0.006	0.000	0.41		56.5	SURCHARGED	
S48.000	PP_105	6.399	0.099	0.000	0.29		2.6	SURCHARGED	
S48.001	ORI_105	6.394	0.104	0.000	0.08		2.5	SURCHARGED	
S49.000	PP_106	6.361	0.061	0.000	0.03		0.1	SURCHARGED	
S49.001	ORI_106	6.361	0.071	0.000	0.01		0.1	SURCHARGED	
S50.000	PP_107	6.491	0.141	0.000	0.07		0.2	SURCHARGED	
S50.001	ORI_107	6.489	0.149	0.000	0.02		0.2	SURCHARGED	
S48.002	S31	5.801	-0.225	0.000	0.13		9.0	OK	
S51.000	PP_102	6.124	0.124	0.000	0.21		0.7	SURCHARGED	
S51.001	ORI_102	6.120	0.130	0.000	0.07		0.6	SURCHARGED	
S52.000	PP_100-101	6.144	0.144	0.000	0.07		0.2	SURCHARGED	
S52.001	ORI_100-101	6.142	0.152	0.000	0.03		0.2	SURCHARGED	
S53.000	PP_103-104	6.154	0.104	0.000	0.03		0.1	SURCHARGED	
S53.001	ORI_103-104	6.153	0.113	0.000	0.01		0.1	SURCHARGED	
S48.003	S32	5.674	-0.162	0.000	0.42		27.1	OK	
S48.004	S33	5.643	-0.078	0.000	0.45		26.4	OK	
S48.005	S34	5.629	-0.041	0.000	0.50		29.2	OK	
S54.000	PP_99	6.442	0.142	0.000	0.04		0.1	SURCHARGED	
S54.001	ORI_99	6.441	0.151	0.000	0.01		0.1	SURCHARGED	
S48.006	S35	5.602	-0.014	0.000	0.44		25.2	OK	
S55.000	PP_89	6.178	0.078	0.000	0.03		0.1	SURCHARGED	
S55.001	ORI_89	6.177	0.087	0.000	0.01		0.1	SURCHARGED	
S56.000	PP_91	6.089	0.189	0.000	0.04		0.1	SURCHARGED	
S56.001	ORI_91	6.089	0.199	0.000	0.01		0.1	SURCHARGED	
S48.007	S36	5.568	0.000	0.000	0.21		26.8	OK	
S48.008	S37	5.558	0.037	0.000	0.07		6.1	SURCHARGED	
S36.004	S38	5.575	0.074	0.000	0.13		13.6	SURCHARGED	
S57.000	PP_92	6.004	0.104	0.000	0.07		0.2	SURCHARGED	
S57.001	ORI_92	6.003	0.113	0.000	0.01		0.2	SURCHARGED	
S36.005	S39	5.599	0.126	0.000	0.14		13.6	SURCHARGED	
S58.000	S40a	5.526	0.026	0.000	0.12		18.6	SURCHARGED	
S23.010	S40	5.627	0.177	0.000	0.16		21.4	SURCHARGED	
S59.000	PP_90-98	6.268	0.118	0.000	0.03		0.2	SURCHARGED	
S59.001	ORI_90-98	6.268	0.128	0.000	0.01		0.2	SURCHARGED	
S23.011	S42	5.686	0.291	0.000	0.04		4.9	SURCHARGED	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 57
Number of Online Controls 56 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Cv (Summer)	0.750
Cv (Winter)	0.840

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

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	S1	480 Winter	100	+40%	100/240 Summer			
S1.001	S2	480 Winter	100	+40%	100/15 Summer			
S1.002	S3	480 Winter	100	+40%	100/15 Summer			
S1.003	S4	480 Winter	100	+40%	100/15 Summer			
S2.000	S5	480 Winter	100	+40%	100/120 Winter			
S3.000	PP_3-4	480 Winter	100	+40%	1/480 Winter			
S3.001	ORI_3-4	480 Winter	100	+40%	1/360 Winter			
S4.000	PP_1-2	480 Winter	100	+40%	30/30 Summer			
S4.001	ORI_1-2	480 Winter	100	+40%	30/15 Winter			
S5.000	PP_108	120 Winter	100	+40%	30/15 Summer			
S5.001	ORI_108	120 Winter	100	+40%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	6.641	0.771	0.000	0.03		1.2	FLOOD RISK	
S1.001	S2	6.641	0.910	0.000	0.11		4.2	SURCHARGED	
S1.002	S3	6.640	1.120	0.000	0.12		8.0	FLOOD RISK	
S1.003	S4	6.638	1.361	0.000	0.07		7.1	FLOOD RISK	
S2.000	S5	6.638	0.855	0.000	0.02		2.4	SURCHARGED	
S3.000	PP_3-4	6.832	0.482	0.000	0.06		0.2	SURCHARGED	
S3.001	ORI_3-4	6.832	0.492	0.000	0.01		0.2	SURCHARGED	
S4.000	PP_1-2	6.670	0.520	0.000	0.04		0.4	SURCHARGED	
S4.001	ORI_1-2	6.670	0.530	0.000	0.01		0.4	SURCHARGED	
S5.000	PP_108	6.850	0.400	0.000	0.15		0.5	SURCHARGED	
S5.001	ORI_108	6.849	0.409	0.000	0.02		0.3	SURCHARGED	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.004	S6	480 Winter	100	+40%	100/15 Summer			
S6.000	PP_76	480 Winter	100	+40%	30/30 Summer			
S6.001	ORI_76	480 Winter	100	+40%	30/15 Winter			
S7.000	PP_80	480 Winter	100	+40%	30/15 Winter			
S7.001	ORI_80	480 Winter	100	+40%	30/15 Summer			
S8.000	PP_79	360 Winter	100	+40%	30/15 Summer			
S8.001	ORI_79	360 Winter	100	+40%	30/15 Summer			
S9.000	PP_75	480 Winter	100	+40%	30/15 Summer			
S9.001	ORI_75	480 Winter	100	+40%	30/15 Summer			
S6.002	S7	480 Winter	100	+40%	100/360 Winter			
S10.000	PP_5-6	360 Winter	100	+40%	30/15 Winter			
S10.001	ORI_5-6	360 Winter	100	+40%	30/15 Summer			
S11.000	PP_7-8	480 Winter	100	+40%	1/480 Winter			
S11.001	ORI_7-8	480 Winter	100	+40%	1/360 Winter			
S12.000	PP_9-10	480 Winter	100	+40%	30/15 Winter			
S12.001	ORI_9-10	480 Winter	100	+40%	30/15 Summer			
S13.000	PP_11-12	480 Winter	100	+40%	30/30 Winter			
S13.001	ORI_11-12	480 Winter	100	+40%	30/30 Summer			
S1.005	S8	480 Winter	100	+40%	30/360 Winter			
S14.000	PP_54	480 Winter	100	+40%	30/15 Summer			
S14.001	ORI_54	480 Winter	100	+40%	30/15 Summer			
S15.000	PP_55	240 Winter	100	+40%	30/15 Summer			
S15.001	ORI_55	240 Winter	100	+40%	30/15 Summer			
S16.000	PP_51	120 Winter	100	+40%	30/15 Summer			
S16.001	ORI_51	120 Winter	100	+40%	30/15 Summer			
S14.002	S9	480 Winter	100	+40%	30/360 Winter			
S17.000	PP_13-14	960 Winter	100	+40%	100/60 Winter			
S17.001	ORI_13-14	960 Winter	100	+40%	100/60 Winter			
S18.000	PP_15	480 Winter	100	+40%	30/15 Summer			
S18.001	ORI_15	480 Winter	100	+40%	1/240 Winter			
S1.006	S10	480 Winter	100	+40%	30/60 Winter			
S19.000	S11a	480 Winter	100	+40%	30/60 Winter			
S20.000	PP_18	480 Winter	100	+40%	30/15 Summer			
S20.001	ORI_18	480 Winter	100	+40%	30/15 Summer			
S21.000	PP_19-53	960 Winter	100	+40%	30/60 Summer			
S21.001	ORI_19-53	480 Winter	100	+40%	30/30 Winter			
S1.007	S11	480 Winter	100	+40%	30/30 Winter			
S22.000	PP_20-21	360 Winter	100	+40%	30/15 Winter			
S22.001	ORI_20-21	360 Winter	100	+40%	30/15 Summer			
S22.002	S12	480 Winter	100	+40%	30/60 Winter			
S1.008	S13	480 Winter	100	+40%	30/15 Summer			
S23.000	PP_22-23	480 Winter	100	+40%	30/15 Winter			
S23.001	ORI_22-23	480 Winter	100	+40%	1/960 Winter			
S24.000	PP_24	480 Winter	100	+40%	30/15 Summer			
S24.001	ORI_24	480 Winter	100	+40%	30/15 Summer			
S23.002	S15	960 Winter	100	+40%	100/960 Winter			
S25.000	PP_25-26	480 Winter	100	+40%	30/15 Winter			
S25.001	ORI_25-26	480 Winter	100	+40%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.004	S6	6.637	1.392	0.000	0.09		13.7	FLOOD RISK	
S6.000	PP_76	6.905	0.305	0.000	0.05		0.2	SURCHARGED	
S6.001	ORI_76	6.904	0.314	0.000	0.01		0.1	SURCHARGED	
S7.000	PP_80	7.096	0.346	0.000	0.05		0.2	SURCHARGED	
S7.001	ORI_80	7.095	0.355	0.000	0.01		0.1	SURCHARGED	
S8.000	PP_79	6.869	0.419	0.000	0.11		0.4	SURCHARGED	
S8.001	ORI_79	6.867	0.427	0.000	0.03		0.3	SURCHARGED	
S9.000	PP_75	7.139	0.439	0.000	0.06		0.2	SURCHARGED	
S9.001	ORI_75	7.138	0.448	0.000	0.01		0.2	SURCHARGED	
S6.002	S7	6.640	0.328	0.000	0.07		2.8	SURCHARGED	
S10.000	PP_5-6	7.048	0.448	0.000	0.07		0.7	SURCHARGED	
S10.001	ORI_5-6	7.046	0.456	0.000	0.01		0.6	SURCHARGED	
S11.000	PP_7-8	7.071	0.471	0.000	0.06		0.2	SURCHARGED	
S11.001	ORI_7-8	7.070	0.480	0.000	0.01		0.2	SURCHARGED	
S12.000	PP_9-10	6.910	0.410	0.000	0.05		0.2	SURCHARGED	
S12.001	ORI_9-10	6.910	0.420	0.000	0.01		0.1	SURCHARGED	
S13.000	PP_11-12	6.681	0.331	0.000	0.05		0.2	SURCHARGED	
S13.001	ORI_11-12	6.681	0.341	0.000	0.00		0.1	SURCHARGED	
S1.005	S8	6.636	1.533	0.000	0.12		18.6	SURCHARGED	
S14.000	PP_54	6.781	0.431	0.000	0.05		0.2	SURCHARGED	
S14.001	ORI_54	6.781	0.441	0.000	0.01		0.1	SURCHARGED	
S15.000	PP_55	6.704	0.354	0.000	0.11		0.4	SURCHARGED	
S15.001	ORI_55	6.702	0.362	0.000	0.02		0.3	SURCHARGED	
S16.000	PP_51	6.929	0.429	0.000	0.12		1.1	SURCHARGED	
S16.001	ORI_51	6.927	0.437	0.000	0.02		1.0	SURCHARGED	
S14.002	S9	6.636	1.534	0.000	0.18		3.0	SURCHARGED	
S17.000	PP_13-14	6.707	0.307	0.000	0.02		0.1	SURCHARGED	
S17.001	ORI_13-14	6.707	0.317	0.000	0.00		0.1	SURCHARGED	
S18.000	PP_15	6.723	0.773	0.000	0.12		0.4	FLOOD RISK	
S18.001	ORI_15	6.722	0.782	0.000	0.01		0.4	FLOOD RISK	
S1.006	S10	6.633	1.706	0.000	0.16		23.2	SURCHARGED	
S19.000	S11a	6.631	1.731	0.000	0.03		4.3	FLOOD RISK	
S20.000	PP_18	6.672	0.722	0.000	0.13		1.2	FLOOD RISK	
S20.001	ORI_18	6.672	0.732	0.000	0.02		1.2	FLOOD RISK	
S21.000	PP_19-53	6.425	0.325	0.000	0.04		0.1	SURCHARGED	
S21.001	ORI_19-53	6.424	0.334	0.000	0.01		0.1	SURCHARGED	
S1.007	S11	6.631	1.782	0.000	0.05		6.9	FLOOD RISK	
S22.000	PP_20-21	6.884	0.434	0.000	0.07		0.7	SURCHARGED	
S22.001	ORI_20-21	6.883	0.443	0.000	0.01		0.6	SURCHARGED	
S22.002	S12	6.630	1.758	0.000	0.10		3.4	SURCHARGED	
S1.008	S13	6.628	1.838	0.000	0.07		7.0	SURCHARGED	
S23.000	PP_22-23	6.952	0.402	0.000	0.05		0.2	SURCHARGED	
S23.001	ORI_22-23	6.951	0.411	0.000	0.01		0.1	SURCHARGED	
S24.000	PP_24	6.945	0.395	0.000	0.05		0.2	SURCHARGED	
S24.001	ORI_24	6.945	0.405	0.000	0.01		0.1	SURCHARGED	
S23.002	S15	6.350	0.057	0.000	0.01		0.3	SURCHARGED	
S25.000	PP_25-26	6.853	0.403	0.000	0.05		0.2	SURCHARGED	

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S25.001	ORI_25-26	6.852	0.412	0.000	0.01		0.1	SURCHARGED	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S26.000	PP_27	480 Winter	100	+40%	30/15 Summer		
S26.001	ORI_27	480 Winter	100	+40%	1/360 Winter		
S27.000	PP_28	480 Winter	100	+40%	30/240 Winter		
S27.001	ORI_28	480 Winter	100	+40%	30/240 Winter		
S23.003	S16	960 Winter	100	+40%	100/960 Winter		
S28.000	PP_29	120 Winter	100	+40%	30/15 Summer		
S28.001	ORI_29	120 Winter	100	+40%	30/15 Summer		
S23.004	S18	960 Winter	100	+40%	100/15 Winter		
S23.005	S19	960 Winter	100	+40%	100/15 Winter		
S29.000	PP_30	960 Winter	100	+40%	30/60 Winter		
S29.001	ORI_30	960 Winter	100	+40%	30/60 Winter		
S23.006	S20	960 Winter	100	+40%	100/15 Winter		
S30.000	PP_31	240 Winter	100	+40%	30/15 Summer		
S30.001	ORI_31	240 Winter	100	+40%	30/15 Summer		
S31.000	PP_32	480 Winter	100	+40%	30/60 Summer		
S31.001	ORI_32	480 Winter	100	+40%	30/30 Winter		
S32.000	PP_33	480 Winter	100	+40%	30/15 Winter		
S32.001	ORI_33	480 Winter	100	+40%	30/15 Summer		
S33.000	PP_34-35	480 Winter	100	+40%	30/15 Summer		
S33.001	ORI_34-35	480 Winter	100	+40%	30/15 Summer		
S34.000	PP_36	240 Winter	100	+40%	1/15 Summer		
S34.001	ORI_36	240 Winter	100	+40%	1/15 Summer		
S23.007	S21	960 Winter	100	+40%	100/15 Summer		
S35.000	S23a	960 Winter	100	+40%	100/60 Winter		
S23.008	S23	960 Winter	100	+40%	30/960 Winter		
S23.009	S24	960 Winter	100	+40%	30/15 Winter		
S36.000	PP_81-82	360 Winter	100	+40%	30/15 Summer		
S36.001	ORI_81-82	360 Winter	100	+40%	30/15 Summer		
S37.000	PP_83	480 Winter	100	+40%	30/15 Summer		
S37.001	ORI_83	480 Winter	100	+40%	1/240 Winter		
S38.000	PP_84-85	480 Winter	100	+40%	30/30 Summer		
S38.001	ORI_84-85	480 Winter	100	+40%	30/15 Winter		
S36.002	S29	15 Winter	100	+40%	30/15 Summer	100/15 Summer	
S39.000	PP_88	120 Winter	100	+40%	30/15 Summer		
S39.001	ORI_88	120 Winter	100	+40%	30/15 Summer		
S40.000	PP_86-87	360 Winter	100	+40%	30/15 Winter		
S40.001	ORI_86-87	360 Winter	100	+40%	30/15 Winter		
S41.000	PP_49-50	480 Winter	100	+40%	30/30 Winter		
S41.001	ORI_49-50	480 Winter	100	+40%	30/30 Winter		
S42.000	PP_48	240 Winter	100	+40%	30/15 Summer		
S42.001	ORI_48	240 Winter	100	+40%	30/15 Summer		
S43.000	PP_56-78	1440 Winter	100	+40%	1/240 Summer		
S43.001	ORI_56-78	1440 Winter	100	+40%	1/120 Winter		
S41.002	S25	960 Winter	100	+40%	100/15 Summer		
S44.000	PP_46-47	360 Winter	100	+40%	30/15 Winter		
S44.001	ORI_46-47	360 Winter	100	+40%	30/15 Winter		
S41.003	S26	960 Winter	100	+40%	100/15 Summer		
S45.000	PP_41-45	960 Winter	100	+40%	1/480 Winter		

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

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S26.000	PP_27		6.822	0.472	0.000	0.06		0.2	SURCHARGED
S26.001	ORI_27		6.821	0.481	0.000	0.02		0.2	SURCHARGED
S27.000	PP_28		6.690	0.340	0.000	0.10		0.3	SURCHARGED
S27.001	ORI_28		6.688	0.348	0.000	0.03		0.3	SURCHARGED
S23.003	S16		6.349	0.228	0.000	0.07		2.6	SURCHARGED
S28.000	PP_29		6.501	0.401	0.000	0.22		0.7	SURCHARGED
S28.001	ORI_29		6.498	0.408	0.000	0.06		0.6	SURCHARGED
S23.004	S18		6.346	0.540	0.000	0.33		18.0	SURCHARGED
S23.005	S19		6.346	0.578	0.000	0.27		15.6	SURCHARGED
S29.000	PP_30		6.206	0.256	0.000	0.04		0.1	SURCHARGED
S29.001	ORI_30		6.206	0.266	0.000	0.01		0.1	SURCHARGED
S23.006	S20		6.345	0.623	0.000	0.26		14.9	FLOOD RISK
S30.000	PP_31		6.315	0.465	0.000	0.20		0.7	SURCHARGED
S30.001	ORI_31		6.312	0.472	0.000	0.07		0.6	SURCHARGED
S31.000	PP_32		6.384	0.234	0.000	0.04		0.1	SURCHARGED
S31.001	ORI_32		6.383	0.243	0.000	0.01		0.1	SURCHARGED
S32.000	PP_33		6.567	0.367	0.000	0.05		0.2	SURCHARGED
S32.001	ORI_33		6.566	0.376	0.000	0.01		0.1	SURCHARGED
S33.000	PP_34-35		6.562	0.462	0.000	0.11		0.4	SURCHARGED
S33.001	ORI_34-35		6.560	0.470	0.000	0.02		0.4	SURCHARGED
S34.000	PP_36		6.422	0.472	0.000	0.13		0.4	SURCHARGED
S34.001	ORI_36		6.420	0.480	0.000	0.03		0.4	SURCHARGED
S23.007	S21		6.345	0.667	0.000	0.06		9.1	FLOOD RISK
S35.000	S23a		6.345	0.815	0.000	0.28		32.0	FLOOD RISK
S23.008	S23		6.345	0.846	0.000	0.28		27.5	SURCHARGED
S23.009	S24		6.345	0.870	0.000	0.16		15.7	FLOOD RISK
S36.000	PP_81-82		7.212	0.412	0.000	0.11		0.4	SURCHARGED
S36.001	ORI_81-82		7.210	0.420	0.000	0.02		0.3	SURCHARGED
S37.000	PP_83		7.110	0.510	0.000	0.06		0.2	SURCHARGED
S37.001	ORI_83		7.110	0.520	0.000	0.01		0.2	SURCHARGED
S38.000	PP_84-85		6.941	0.341	0.000	0.05		0.2	SURCHARGED
S38.001	ORI_84-85		6.940	0.350	0.000	0.01		0.1	SURCHARGED
S36.002	S29		7.547	1.207	0.842	1.68		33.0	FLOOD
S39.000	PP_88		6.334	0.434	0.000	0.23		0.7	SURCHARGED
S39.001	ORI_88		6.331	0.441	0.000	0.05		0.6	SURCHARGED
S40.000	PP_86-87		6.699	0.399	0.000	0.07		0.6	SURCHARGED
S40.001	ORI_86-87		6.697	0.407	0.000	0.01		0.6	SURCHARGED
S41.000	PP_49-50		6.949	0.449	0.000	0.02		0.2	SURCHARGED
S41.001	ORI_49-50		6.948	0.458	0.000	0.00		0.2	SURCHARGED
S42.000	PP_48		6.689	0.389	0.000	0.12		0.4	SURCHARGED
S42.001	ORI_48		6.688	0.398	0.000	0.03		0.3	SURCHARGED
S43.000	PP_56-78		6.764	0.464	0.000	0.11		0.4	SURCHARGED
S43.001	ORI_56-78		6.763	0.473	0.000	0.05		0.4	SURCHARGED
S41.002	S25		6.354	0.264	0.000	0.08		3.2	SURCHARGED
S44.000	PP_46-47		6.499	0.399	0.000	0.07		0.6	SURCHARGED
S44.001	ORI_46-47		6.497	0.407	0.000	0.03		0.6	SURCHARGED
S41.003	S26		6.352	0.446	0.000	0.45		13.6	SURCHARGED

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

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S45.000	PP_41-45		6.839	0.439	0.000	0.05		0.2	SURCHARGED

PN	US/MH Name	Level Exceeded
S26.000	PP_27	
S26.001	ORI_27	
S27.000	PP_28	
S27.001	ORI_28	
S23.003	S16	
S28.000	PP_29	
S28.001	ORI_29	
S23.004	S18	
S23.005	S19	
S29.000	PP_30	
S29.001	ORI_30	
S23.006	S20	
S30.000	PP_31	
S30.001	ORI_31	
S31.000	PP_32	
S31.001	ORI_32	
S32.000	PP_33	
S32.001	ORI_33	
S33.000	PP_34-35	
S33.001	ORI_34-35	
S34.000	PP_36	
S34.001	ORI_36	
S23.007	S21	
S35.000	S23a	
S23.008	S23	
S23.009	S24	
S36.000	PP_81-82	
S36.001	ORI_81-82	
S37.000	PP_83	
S37.001	ORI_83	
S38.000	PP_84-85	
S38.001	ORI_84-85	
S36.002	S29	2
S39.000	PP_88	
S39.001	ORI_88	
S40.000	PP_86-87	
S40.001	ORI_86-87	
S41.000	PP_49-50	
S41.001	ORI_49-50	
S42.000	PP_48	
S42.001	ORI_48	

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

PN	US/MH Name	Level Exceeded
S43.000	PP_56-78	
S43.001	ORI_56-78	
S41.002	S25	
S44.000	PP_46-47	
S44.001	ORI_46-47	
S41.003	S26	
S45.000	PP_41-45	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S45.001	ORI_41-45	960 Winter	100	+40%	1/360 Winter			
S41.004	S27	960 Winter	100	+40%	100/15 Summer			
S46.000	PP_37-38	480 Winter	100	+40%	30/30 Winter			
S46.001	ORI_37-38	480 Winter	100	+40%	30/30 Summer			
S47.000	PP_39-40	480 Winter	100	+40%	30/30 Winter			
S47.001	ORI_39-40	480 Winter	100	+40%	30/30 Winter			
S41.005	S28	960 Winter	100	+40%	100/15 Summer			
S36.003	S30	960 Winter	100	+40%	30/15 Winter			
S48.000	PP_105	30 Winter	100	+40%	30/15 Summer			
S48.001	ORI_105	30 Winter	100	+40%	30/15 Summer			
S49.000	PP_106	480 Winter	100	+40%	30/30 Winter			
S49.001	ORI_106	480 Winter	100	+40%	30/30 Summer			
S50.000	PP_107	360 Winter	100	+40%	30/15 Summer			
S50.001	ORI_107	360 Winter	100	+40%	30/15 Summer			
S48.002	S31	960 Winter	100	+40%	100/15 Summer			
S51.000	PP_102	60 Winter	100	+40%	30/15 Summer			
S51.001	ORI_102	60 Winter	100	+40%	30/15 Summer			
S52.000	PP_100-101	360 Winter	100	+40%	30/15 Summer			
S52.001	ORI_100-101	360 Winter	100	+40%	30/15 Summer			
S53.000	PP_103-104	960 Winter	100	+40%	30/30 Winter			
S53.001	ORI_103-104	960 Winter	100	+40%	30/30 Summer			
S48.003	S32	960 Winter	100	+40%	100/15 Summer			
S48.004	S33	960 Winter	100	+40%	100/15 Summer			
S48.005	S34	960 Winter	100	+40%	100/15 Summer			
S54.000	PP_99	480 Winter	100	+40%	30/15 Summer			
S54.001	ORI_99	480 Winter	100	+40%	30/15 Summer			
S48.006	S35	960 Winter	100	+40%	100/15 Summer			
S55.000	PP_89	480 Winter	100	+40%	30/30 Winter			
S55.001	ORI_89	480 Winter	100	+40%	30/15 Winter			
S56.000	PP_91	480 Winter	100	+40%	30/15 Summer			
S56.001	ORI_91	480 Winter	100	+40%	1/240 Winter			
S48.007	S36	960 Winter	100	+40%	100/15 Summer			
S48.008	S37	960 Winter	100	+40%	30/15 Winter			
S36.004	S38	960 Winter	100	+40%	30/15 Winter			
S57.000	PP_92	960 Winter	100	+40%	30/15 Summer			
S57.001	ORI_92	960 Winter	100	+40%	30/15 Summer			
S36.005	S39	960 Winter	100	+40%	30/15 Winter			
S58.000	S40a	960 Winter	100	+40%	30/960 Winter			
S23.010	S40	960 Winter	100	+40%	30/15 Winter			
S59.000	PP_90-98	960 Winter	100	+40%	30/60 Summer			
S59.001	ORI_90-98	960 Winter	100	+40%	30/30 Winter			
S23.011	S42	480 Winter	100	+40%	30/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S45.001	ORI_41-45	6.838	0.448	0.000	0.01		0.2	SURCHARGED	
S41.004	S27	6.351	0.490	0.000	0.42		12.7	SURCHARGED	
S46.000	PP_37-38	6.811	0.411	0.000	0.04		0.4	SURCHARGED	
S46.001	ORI_37-38	6.810	0.420	0.000	0.01		0.4	SURCHARGED	
S47.000	PP_39-40	6.703	0.353	0.000	0.04		0.3	SURCHARGED	
S47.001	ORI_39-40	6.702	0.362	0.000	0.01		0.3	SURCHARGED	
S41.005	S28	6.350	0.534	0.000	0.11		7.7	SURCHARGED	
S36.003	S30	6.347	0.776	0.000	0.15		20.1	SURCHARGED	
S48.000	PP_105	6.738	0.438	0.000	0.48		4.3	SURCHARGED	
S48.001	ORI_105	6.730	0.440	0.000	0.12		3.9	SURCHARGED	
S49.000	PP_106	6.551	0.251	0.000	0.04		0.1	SURCHARGED	
S49.001	ORI_106	6.550	0.260	0.000	0.01		0.1	SURCHARGED	
S50.000	PP_107	6.777	0.427	0.000	0.11		0.4	SURCHARGED	
S50.001	ORI_107	6.775	0.435	0.000	0.03		0.3	SURCHARGED	
S48.002	S31	6.348	0.322	0.000	0.04		2.8	SURCHARGED	
S51.000	PP_102	6.408	0.408	0.000	0.36		1.2	SURCHARGED	
S51.001	ORI_102	6.403	0.413	0.000	0.11		0.9	SURCHARGED	
S52.000	PP_100-101	6.429	0.429	0.000	0.11		0.4	SURCHARGED	
S52.001	ORI_100-101	6.427	0.437	0.000	0.04		0.3	SURCHARGED	
S53.000	PP_103-104	6.390	0.340	0.000	0.04		0.1	SURCHARGED	
S53.001	ORI_103-104	6.390	0.350	0.000	0.02		0.1	SURCHARGED	
S48.003	S32	6.348	0.512	0.000	0.24		15.6	SURCHARGED	
S48.004	S33	6.348	0.627	0.000	0.22		12.9	SURCHARGED	
S48.005	S34	6.347	0.677	0.000	0.20		11.7	SURCHARGED	
S54.000	PP_99	6.726	0.426	0.000	0.06		0.2	SURCHARGED	
S54.001	ORI_99	6.725	0.435	0.000	0.01		0.2	SURCHARGED	
S48.006	S35	6.347	0.731	0.000	0.20		11.7	SURCHARGED	
S55.000	PP_89	6.386	0.286	0.000	0.05		0.2	SURCHARGED	
S55.001	ORI_89	6.386	0.296	0.000	0.01		0.1	SURCHARGED	
S56.000	PP_91	6.428	0.528	0.000	0.06		0.2	SURCHARGED	
S56.001	ORI_91	6.427	0.537	0.000	0.01		0.2	SURCHARGED	
S48.007	S36	6.346	0.778	0.000	0.12		14.6	SURCHARGED	
S48.008	S37	6.346	0.825	0.000	0.20		18.2	SURCHARGED	
S36.004	S38	6.346	0.845	0.000	0.38		38.7	FLOOD RISK	
S57.000	PP_92	6.270	0.370	0.000	0.09		0.3	SURCHARGED	
S57.001	ORI_92	6.270	0.380	0.000	0.02		0.3	SURCHARGED	
S36.005	S39	6.345	0.872	0.000	0.39		37.9	FLOOD RISK	
S58.000	S40a	6.344	0.844	0.000	0.26		40.3	FLOOD RISK	
S23.010	S40	6.344	0.894	0.000	0.36		47.6	FLOOD RISK	
S59.000	PP_90-98	6.563	0.413	0.000	0.04		0.4	SURCHARGED	
S59.001	ORI_90-98	6.562	0.422	0.000	0.01		0.3	SURCHARGED	
S23.011	S42	6.431	1.036	0.000	0.04		4.9	SURCHARGED	

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SW Network

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	2
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for SW Network

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.011	4-8	0.001

Total Area Contributing (ha) = 0.012

Total Pipe Volume (m³) = 0.285

Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)

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Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	9.154	0.200	45.8	0.012	4.00	0.0	0.600	o	100	Pipe/Conduit	
S1.001	7.594	0.075	101.3	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.002	4.449	0.095	46.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	50.00	4.13	6.400	0.012	0.0	0.0	0.0	1.14	9.0	1.6
S1.001	50.00	4.26	6.200	0.012	0.0	0.0	0.0	1.00	17.6	1.6
S1.002	50.00	4.31	6.125	0.012	0.0	0.0	0.0	1.47	26.0	1.6

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Manhole Schedules for SW Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	7.000	0.600	Open Manhole	1200	S1.000	6.400	100				
1	6.800	0.600	Open Manhole	1200	S1.001	6.200	150	S1.000	6.200	100	
2	6.650	0.525	Open Manhole	1200	S1.002	6.125	150	S1.001	6.125	150	
'B'	6.650	0.620	Open Manhole	0		OUTFALL		S1.002	6.030	150	

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Area Summary for SW Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.012	0.012	0.012
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.012	0.012	0.012

Free Flowing Outfall Details for SW Network

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.002	'B'	6.650	6.030	0.000	0	0

Simulation Criteria for SW Network

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet 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	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	2
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

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Online Controls for SW Network

Orifice Manhole: 2, DS/PN: S1.002, Volume (m³): 0.7

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 6.125

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Storage Structures for SW Network

Tank or Pond Manhole: 1, DS/PN: S1.001

Invert Level (m) 6.200

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	20.0	0.600	85.0

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 498650 101750 SU 98650 01750
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Cv (Summer)	0.750
Cv (Winter)	0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 100
Climate Change (%) 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	1	15 Winter	100	+40%	100/15 Summer				6.534
S1.001	1	15 Winter	100	+40%					6.307
S1.002	2	15 Winter	100	+40%	100/15 Summer				6.301

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	1	0.034	0.000	1.07		8.9	SURCHARGED	
S1.001	1	-0.043	0.000	0.17		2.6	OK	

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

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.002	2	0.026	0.000	0.11		2.0	SURCHARGED	

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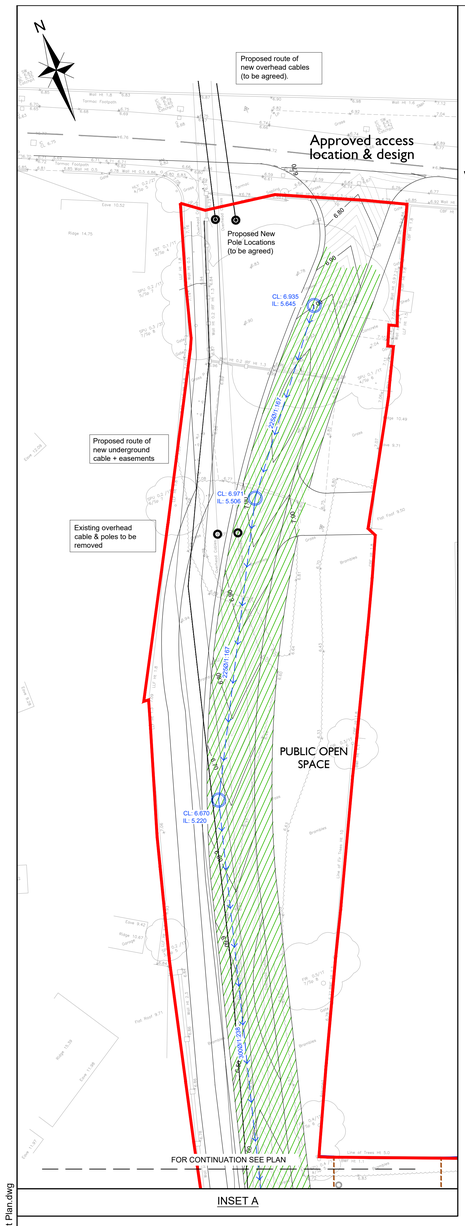
APPENDIX D

Odyssey Outfall Catchment Plan



NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELATED DRAWINGS ISSUED BY THE ARCHITECT AND ENGINEER, SEWERS FOR ADOPTION SIXTH/SEVENTH EDITION, WEST SUSSEX COUNTY COUNCIL STANDARDS AND BOVIS HOMES STANDARDS.
2. DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY.
3. ALL DIMENSIONS SHOWN IN METRES UNLESS NOTED OTHERWISE.

LEGEND

- NORTHERN OUTFALL CATCHMENT TOTAL AREA = (7090m²)
- SOUTHERN OUTFALL CATCHMENT (OUTFALL A) TOTAL AREA = (11,697m²)
- SOUTHERN OUTFALL CATCHMENT (OUTFALL B) TOTAL AREA = (123m²)
- SURFACE WATER SEWER AND MANHOLE (GRADIENT/ PIPE SIZE)
- ADOPTABLE SURFACE WATER FLOW CONTROL MANHOLE
- PROPOSED HEADWALL (REFER TO ODYSSEY DRAWING 18-070/109)
- PROPOSED CELLULAR STORAGE TANK (REFER TO ODYSSEY DRAWING 18-070/111)
- PROPOSED CONCRETE STORAGE TANK
- PROPOSED PERMEABLE BLOCK PAVING (REFER TO ODYSSEY DRAWING 18-070/112)

FOR PLANNING PURPOSES ONLY

Rev	Amendments	Drn	Chk	App	Date
E	CATCHMENT AREAS UPDATED. COVER LEVELS ADJUSTED.	RM	RM	RS	28.08.19
D	DISCHARGE RATES ADJUSTED AND STORAGE INCREASED	SG	LH	LH	19.08.19
C	CATCHMENT AREAS UPDATED TO SUIT ADDITIONAL OUTFALL	JA	SG	RM	14.08.19
B	CATCHMENT AREAS UPDATED	SG	LH	LH	25.06.19
A	IMPERMEABLE AREAS ADDED TO PLAN	JA	SG	LH	16.05.19

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Job Title
LAND SOUTH OF BURNDELL ROAD, YAPTON

Drawing Title
OUTFALL CATCHMENT PLAN

Client
BOVIS HOMES

Scale	Date	Designed
1:250 @A0	APRIL 19	SG
Drawn	**Checked**	**Approved**
JA	SG	LH
Job No	**Drawing No**	**Rev**
18-070	18-070/113	E

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