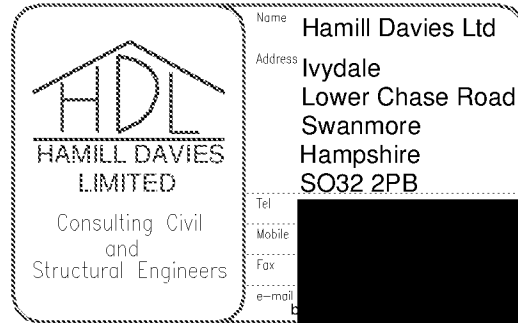


APPENDICES

Appendix A Geotechnical Investigation

Mr Graham Foreman
Foreman Homes
Unit 1
Station Industrial Park
Duncan Road
Park Gate
Hampshire
SO31 1BX



23rd March 2020

Dear Graham,

Land South of Summer Lane, Pagham, West Sussex

I confirm that I have reviewed the Ashdown Site Investigation Limited report reference R18-13402 dated 22nd January 2019 and comment with regard to proposed foundations as follows:-

1.0 Ground Investigation

- 1.1 50 no. boreholes were drilled to depths of between 3.0m and 5.0m depths below existing ground level. Continuous dynamic probe tests were undertaken adjacent to boreholes to depths of between 3.6m and 5.0m below ground level. Disturbed samples were taken for testing. Undrained shear strength determinations were made in-situ and testing to determine CBR values were conducted at shallow depth.
- 1.2 Groundwater monitoring standpipes were installed to depth of between 3.5m and 5.0m in six boreholes.

2.0 Ground Conditions

- 2.1 A surface cover of topsoil between 100mm and 400mm depth was found above River Terrace Deposits.
- 2.2 The River Terrace Deposits underlying the topsoil comprised a variable sequence of undisturbed natural soils predominated by gravelly or sandy soil deposits to depths of between 3.3m and 4.0m below ground levels.
- 2.3 The London Clay Formation was encountered below the River Terrace Deposits.
- 2.4 Instability was recorded locally within the soils encountered and groundwater was recorded at depths of between 0.2m and 2.8m below ground level. Standing water depths of between 0.2m and 1.7m were recorded in standpipes.

3.0 Geotechnical Assessment

- 3.1 The fine grained soils of the River Terrace Deposits have been classified as clays of low to intermediate plasticity with medium volume change potential. The indicative maximum foundation depths for broad leaved and coniferous trees will need to be 2.0m depth.
- 3.2 The bearing capacity recommended for spread footings at 1.0m depth is 100 kN/m².

4.0 Foundation Requirements

- 4.1 The site investigation report indicates that shallow foundations could be used.
- 4.2 We however recommend the use of piled foundations to overcome problems and costs associated with the prevailing high water table and the instability of excavations indicated above.

Yours sincerely,
for Hamill Davies Limited

Brian Hamill

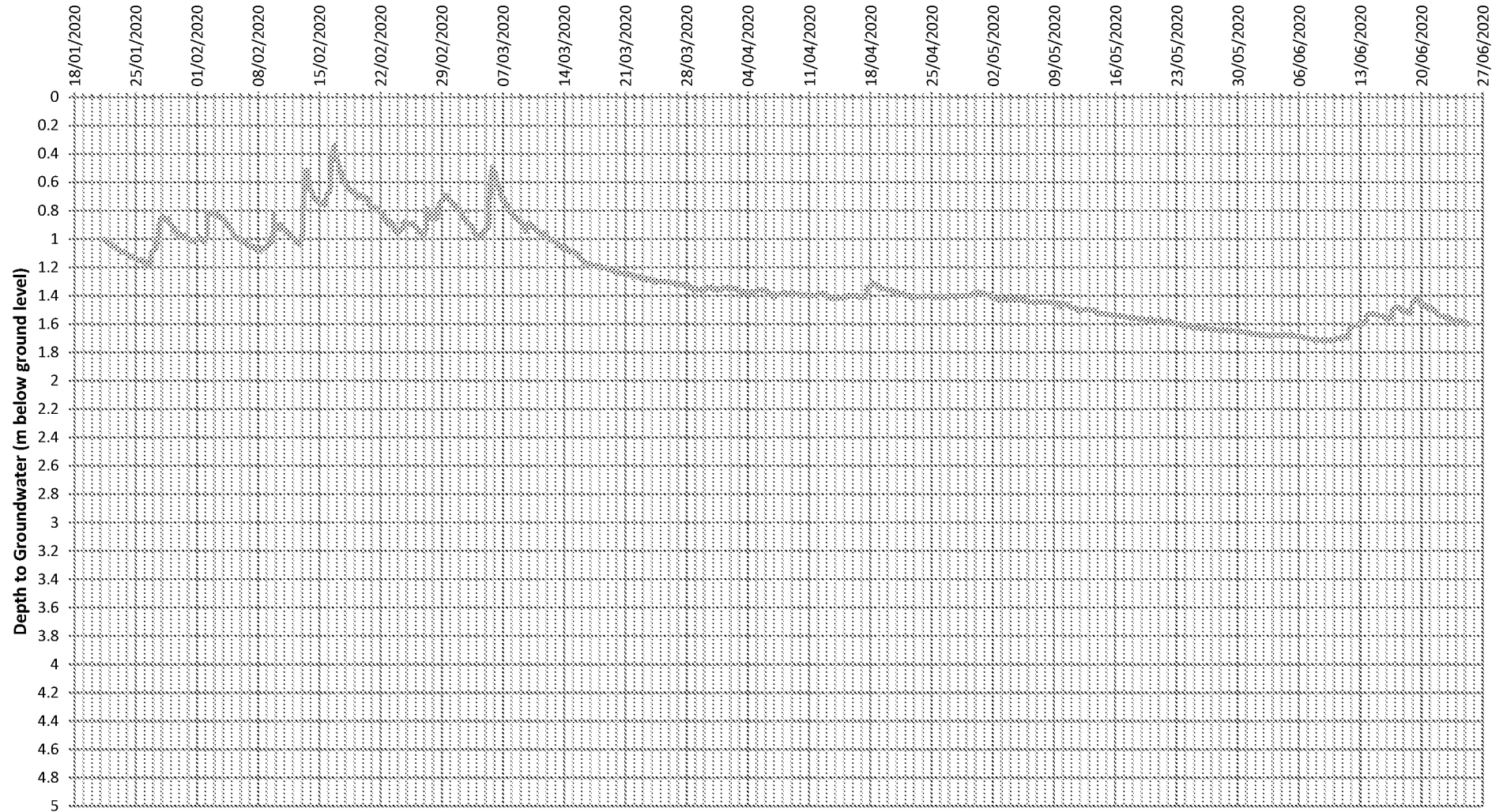
Cc – Neil Calderwood / Michael Avery – Foreman Homes Limited

Ashdown Site Investigation Limited

Site: Land South of Summer Lane, Pagham, West Sussex

Report No. P14405

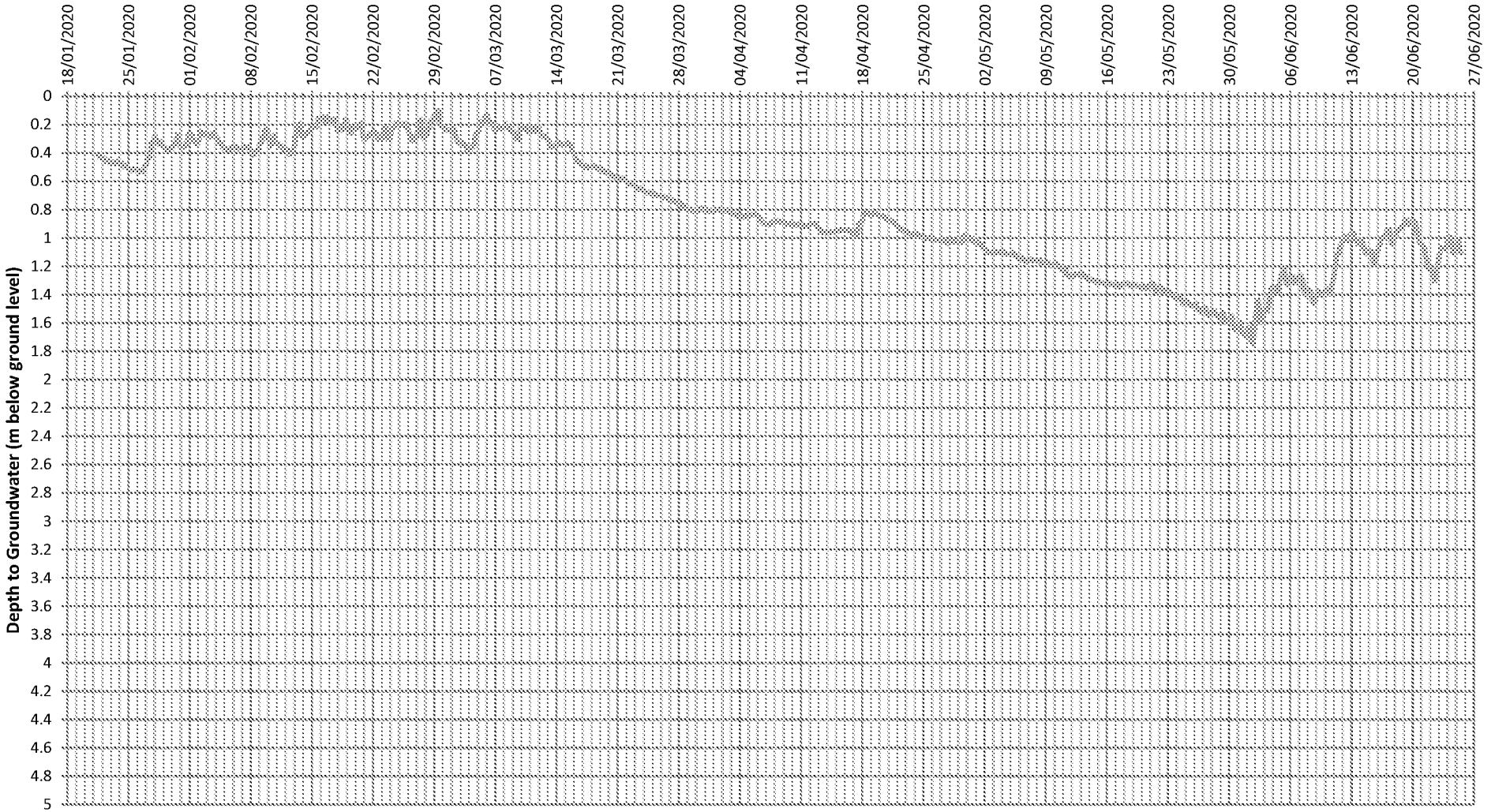
Groundwater Monitoring Results - WS101



Ashdown Site Investigation Limited

Site: Land South of Summer Lane, Pagham, West Sussex	Report No. P14405
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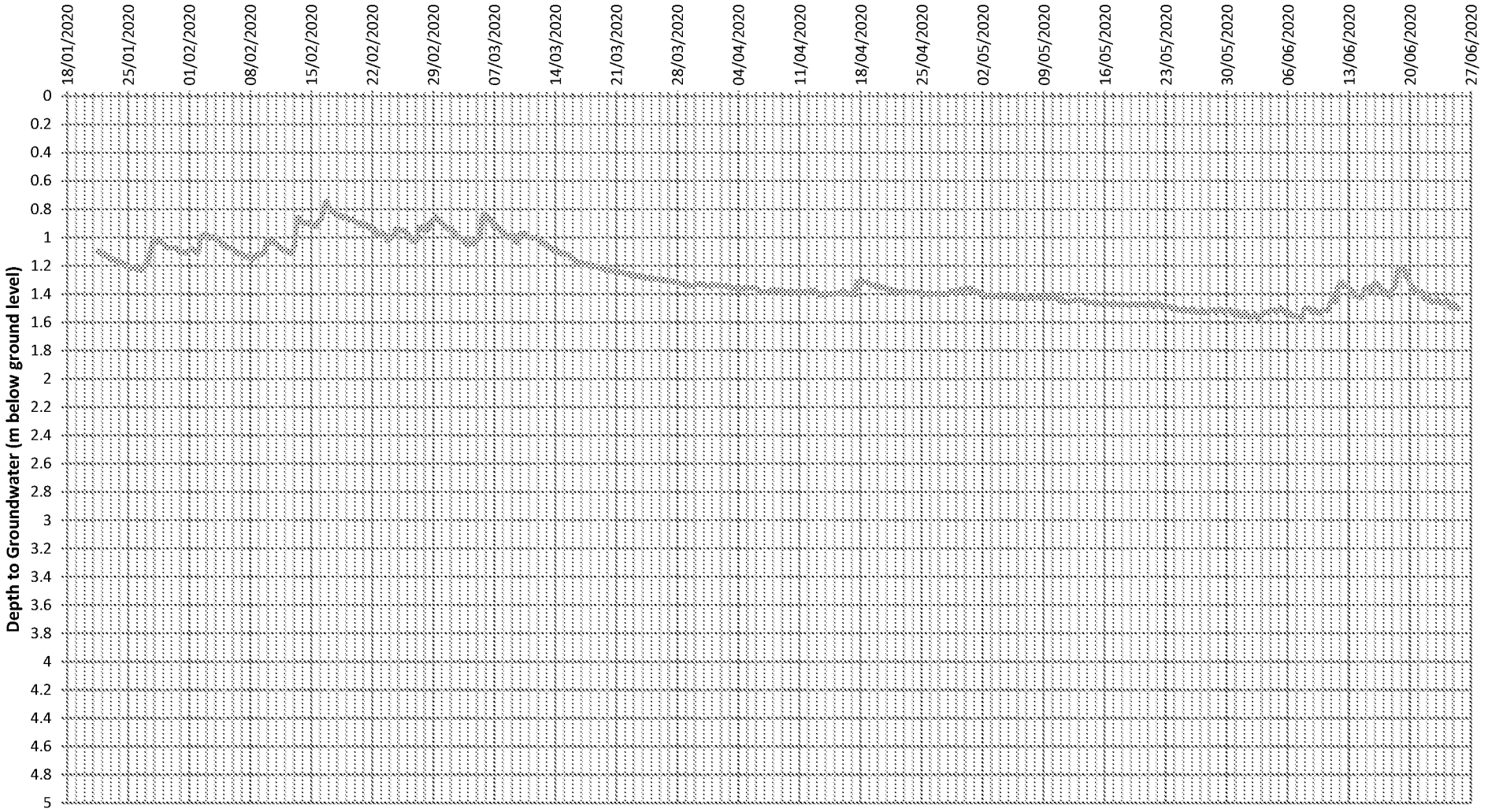
Groundwater Monitoring Results - WS114



Ashdown Site Investigation Limited

Site: Land South of Summer Lane, Pagham, West Sussex	Report No. P14405
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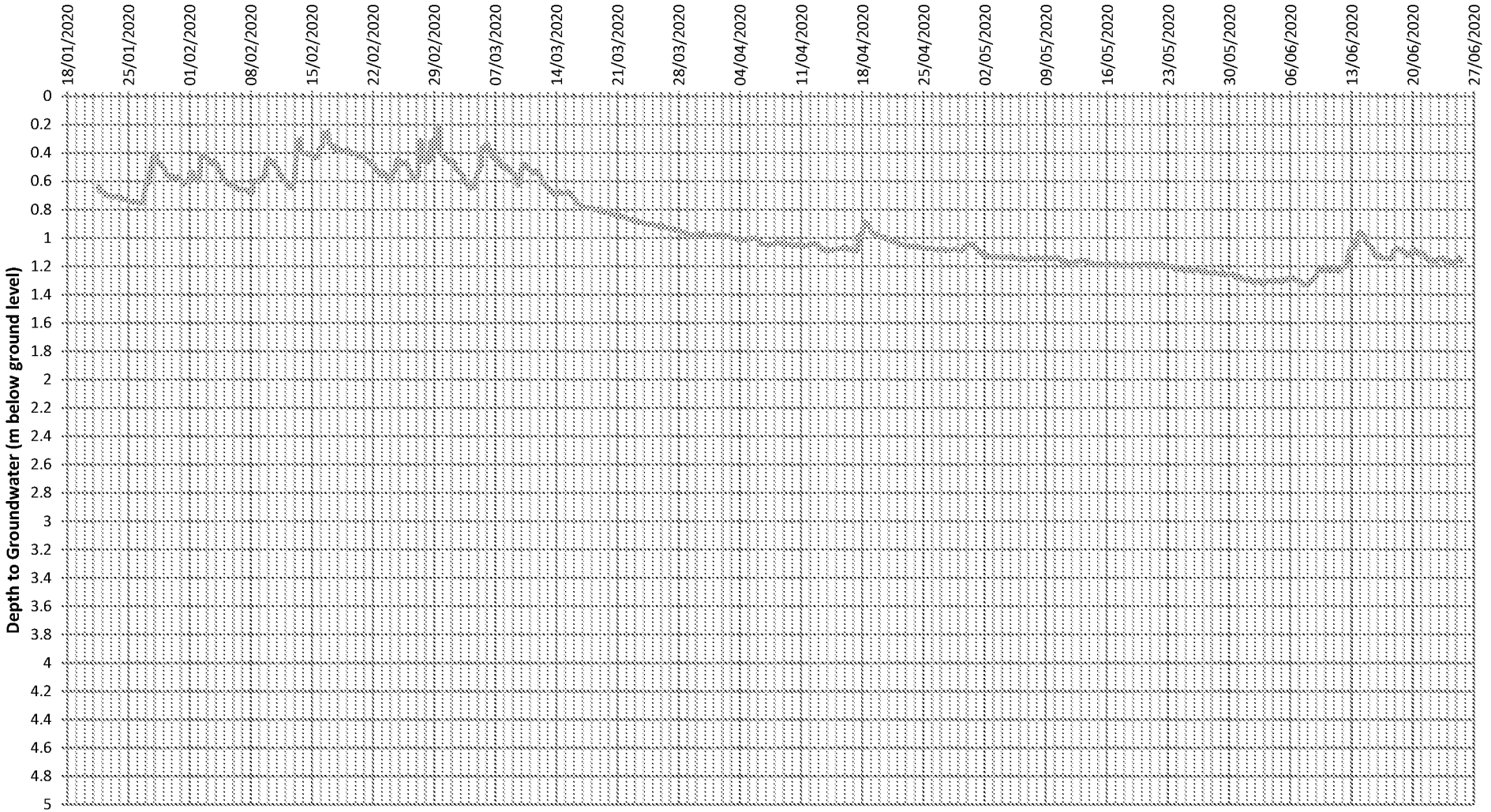
Groundwater Monitoring Results - WS123



Ashdown Site Investigation Limited

Site: Land South of Summer Lane, Pagham, West Sussex	Report No. P14405
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Groundwater Monitoring Results - WS134

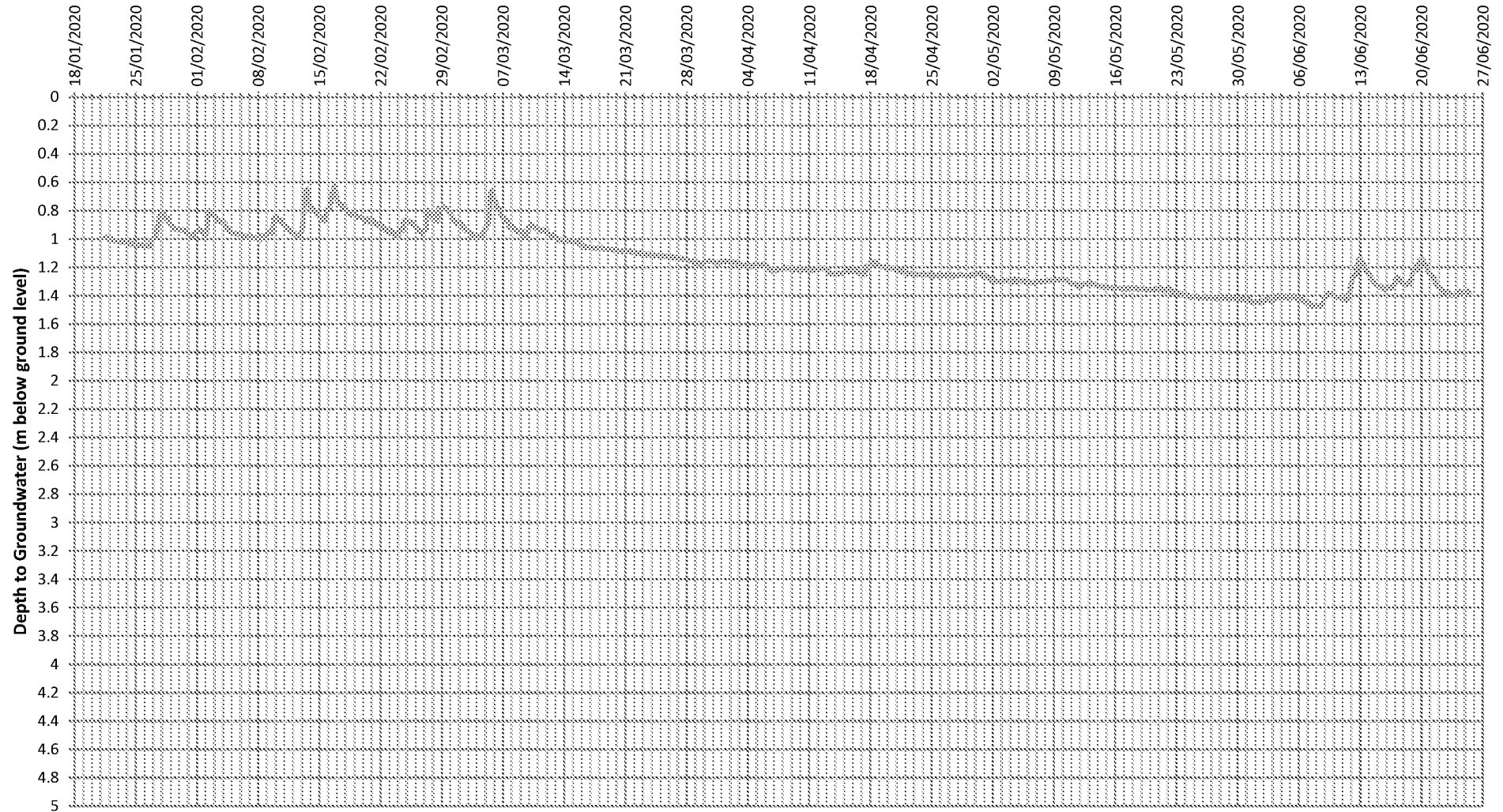


Ashdown Site Investigation Limited

Site: Land South of Summer Lane, Pagham, West Sussex

Report No. P14405

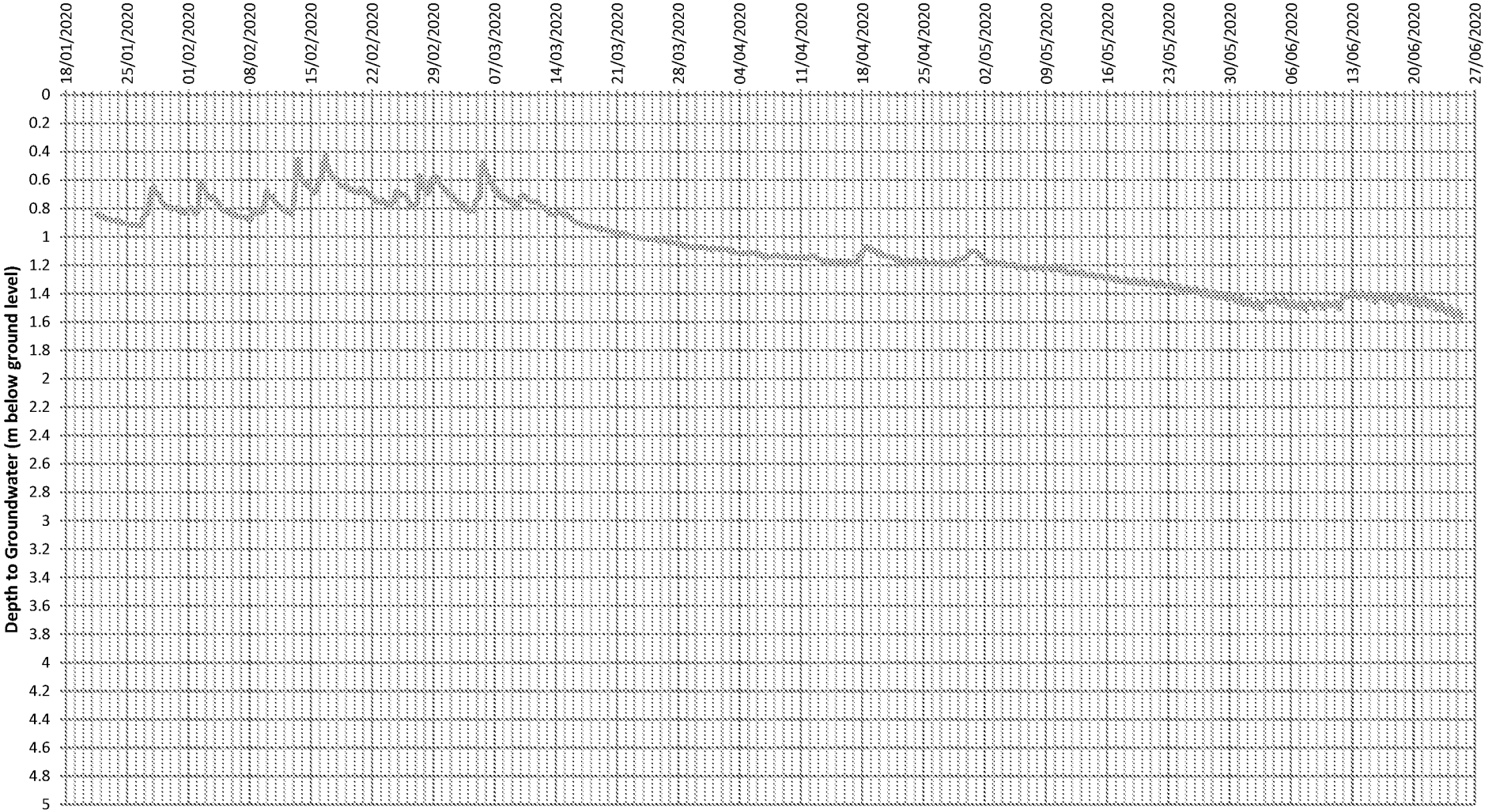
Groundwater Monitoring Results - WS135



Ashdown Site Investigation Limited

Site: Land South of Summer Lane, Pagham, West Sussex	Report No. P14405
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Groundwater Monitoring Results - WS150



Appendix B Existing Drainage Findings



Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
0001	F	5.73	0.00	
0101	F	5.42	4.68	
0102	F	5.24	4.36	
0103	F	5.94	4.28	
0201	F	5.77	5.11	
0301	F	5.73	4.05	
0302	F	5.10	4.49	
0401	F	4.87	4.20	
0401	F	5.35	0.00	
0402	F	5.00	3.78	
0403	F	4.93	3.63	
0404	F	4.95	3.16	
0405	F	4.88	2.94	
0406	F	4.87	3.26	
0407	F	4.78	0.00	
0501	F	4.98	1.60	
0502	F	4.83	2.03	
0503	F	4.80	2.62	
0504	F	0.00	0.00	
0601	F	4.77	2.16	
0602	F	0.00	0.00	
0603	F	0.00	0.00	
0701	F	4.93	2.52	
0702	F	0.00	0.00	
0703	F	0.00	0.00	
0704	F	0.00	0.00	
0705	F	0.00	0.00	
0801	F	4.78	2.59	
0802	F	4.93	3.03	
0901	F	5.50	3.05	
0902	F	5.13	2.83	
0903	F	5.51	3.60	
0904	F	5.18	3.66	
1001	F	5.75	0.00	
1002	F	0.00	3.55	
1101	F	6.06	4.83	
1102	F	6.09	4.62	
1104	F	6.24	4.05	
1105	F	6.08	4.41	
1201	F	0.00	4.40	
1301	F	5.47	3.51	
1302	F	5.45	3.33	
1303	F	5.91	5.12	
1304	F	6.23	5.46	
1305	F	0.00	0.00	
1401	F	0.00	3.05	
1401	F	5.68	3.99	
1402	F	4.86	3.48	
1402	F	5.68	3.70	
1403	F	4.86	3.37	
1403	F	5.73	4.44	
1404	F	4.87	3.23	
1404	F	5.67	3.68	
1405	F	4.88	3.95	
1405	F	0.00	3.64	
1406	F	4.91	3.59	
1406	F	5.41	3.95	
1407	F	4.88	3.14	
1407	F	5.64	3.75	
1408	F	4.93	3.35	
1409	F	4.88	4.23	
1409	F	0.00	0.00	
1501	F	4.73	1.81	
1501	F	5.21	4.25	
1502	F	4.81	2.59	
1502	F	0.00	4.45	
1503	F	4.85	2.77	
1503	F	5.16	4.22	
1504	F	0.00	2.97	
1504	F	0.00	0.00	
1505	F	4.88	3.66	
1505	F	0.00	0.00	
1506	F	0.00	0.00	
1507	F	0.00	0.00	
1508	F	0.00	0.00	
1509	F	0.00	0.00	
1601	F	4.95	1.93	
1602	F	4.54	1.87	
1603	F	4.53	1.88	
1604	F	5.29	1.99	
1605	F	5.18	2.01	
1606	F	5.16	2.11	
1607	F	0.00	2.30	
1701	F	5.27	4.09	
1702	F	5.20	3.76	
1703	F	5.18	3.52	
1801	F	5.15	3.85	
1802	F	5.10	3.78	
1803	F	5.31	3.41	
1804	F	5.30	3.78	
1901	F	5.42	3.78	
1902	F	5.64	3.62	
1903	F	5.28	3.46	
1904	F	5.27	3.19	
2001	F	5.57	3.85	
2002	F	5.66	4.30	
2101	F	5.94	4.72	
2201	F	6.23	5.21	
2202	F	6.35	5.07	
2203	F	6.22	4.87	
2204	F	6.11	4.73	
2206	F	6.08	5.29	
2301	F	5.57	3.21	
2401	F	4.89	3.77	
2402	F	0.00	4.01	
2404	F	0.00	0.00	
2501	F	4.77	3.31	
2501	F	6.17	3.33	
2502	F	4.88	0.00	
2503	F	4.95	3.14	
2504	F	4.74	3.58	
2505	F	4.69	2.69	
2506	F	0.00	0.00	
2601	F	4.92	2.04	
2601	F	6.33	3.60	
2602	F	4.92	2.21	
2602	F	6.31	3.47	
2603	F	4.82	2.33	
2603	F	5.96	3.80	
2604	F	4.90	3.17	
2605	F	4.81	3.56	
2606	F	4.81	3.30	
2608	F	5.13	2.56	
2609	F	0.00	0.00	
2610	F	0.00	0.00	
2611	F	0.00	0.00	
2612	F	0.00	0.00	
2701	F	5.20	3.35	
2701	F	6.06	4.52	
2702	F	5.19	3.93	
2702	F	6.23	4.99	
2703	F	5.23	3.62	
2703	F	5.84	4.42	
2704	F	5.19	3.78	
2704	F	5.63	4.81	
2705	F	0.00	0.00	
2801	F	5.31	2.76	
2802	F	5.23	3.05	
2803	F	5.39	2.89	
2804	F	5.46	3.08	
2805	F	0.00	3.28	
2806	F	5.35	3.23	
2807	F	3.70	1.68	
2901	F	5.60	4.10	
2902	F	5.60	4.33	
2903	F	5.56	4.14	
2904	F	5.56	3.78	
2905	F	5.41	3.29	
2906	F	5.32	3.12	
2907	F	5.27	3.27	
3501	F	4.67	3.13	
3502	F	4.72	2.73	
3505	F	0.00	0.00	
4401	F	3.07	0.00	
4403	F	3.80	1.90	
4501	F	4.27	2.24	
5401	F	2.97	1.43	
5402	F	2.86	1.29	
5403	F	2.49	0.00	
5404	F	0.00	0.00	
5501	F	2.83	1.29	
5502	F	2.67	1.53	
6401	F	4.19	3.18	
6501	F	3.61	2.05	
6502	F	2.88	1.46	
6503	F	3.64	2.10	
6504	F	3.81	0.00	
6505	F	2.98	1.72	
6506	F	0.00	1.95	
6601	F	3.74	2.18	
7405	F	4.23	0.00	
7406	F	4.56	2.93	
7501	F	4.00	2.83	
7601	F	3.66	2.73	
7602	F	4.23	2.65	
7603	F	4.05	2.85	
7701	F	0.00	2.53	
7702	F	3.89	2.78	
7703	F	3.90	2.82	
7704	F	3.95	2.87	
7705	F	4.05	2.93	
7706	F	4.24	3.06	
7707	F	0.00	3.20	
8402	F	4.46	2.68	
8403	F	4.59	2.63	
8404	F	4.61	2.78	
8501	F	4.32	2.46	
8502	F	4.44	2.31	
8503	F	4.37	2.49	
8504	F	0.00	3.03	
8505	F	4.65	3.55	
8506	F	0.00	3.10	
8507	F	0.00	3.20	
8601	F	0.00	0.00	
8702	F	4.33	3.10	
8703	F	4.48	3.32	
9001	F	5.24	4.06	
9402	F	4.59	3.42	
9501	F	4.69	2.16	
9502	F	0.00	0.00	
9503	F	0.00	0.00	
9504	F	0.00	0.00	
9701	F	4.58	3.36	
9702	F	0.00	3.59	
9703	F	4.74	2.66	
9704	F	0.00	0.00	
9801	F	0.00	3.12	
9901	F	5.17	3.55	
9902	F	5.29	3.59	
9903	F	0.00	3.85	
0051	S	5.84	4.08	
0052	S	5.87	4.47	
0053	S	5.76	4.89	
0054	S	5.56	3.99	
0055	S	5.73	4.71	

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
0151	S	0.00	5.07	
0152	S	6.03	4.80	
0451	S	4.67	3.16	
0452	S	4.90	3.18	
0453	S	4.83	3.23	
0454	S	4.87	3.37	
0455	S	4.87	3.48	
0751	S	4.93	3.89	
0851	S	5.05	3.61	
0852	S	5.23	4.01	
0853	S	5.16	4.21	
0854	S	4.99	3.73	
0855	S	5.00	3.57	
0856	S	5.02	3.59	
0951	S	5.58	3.85	
0952	S	5.28	3.79	
0953	S	5.31	4.31	
0954	S	5.26	4.21	
0955	S	5.26	4.02	
0956	S	4.97	4.34	
1051	S	5.68	3.82	
1052	S	5.72	4.23	
1053	S	5.64	4.24	
1151	S	5.97	4.35	
1152	S	6.05	5.32	
1153	S	5.97	4.80	
1251	S	6.15	4.53	
1252	S	6.19	5.62	
1253	S	6.07	5.15	
1254	S	6.09	5.28	
1451	S	4.86	3.54	
1452	S	4.84	3.40	
1453	S	4.91	3.92	
1454	S	4.84	3.78	
1455	S	4.88	3.79	
1456	S	4.91	3.59	
1457	S	4.98	3.52	
1458	S	4.87	4.15	
1459	S	4.85	3.72	
1460	S	4.92	4.04	
1551	S	4.64	3.38	
1551	S	5.15	4.41	
1552	S	4.85	4.04	
1552	S	5.39	4.61	
1553	S	4.85	3.92	
1651	S	0.00	3.94	
1651	S	5.50	4.69	
1652	S	4.58	3.39	
1751	S	5.23	3.42	
1851	S	4.98	3.60	
1852	S	5.15	3.85	
1853	S	5.13	3.69	
1854	S	5.22	4.04	
1951	S	5.31	3.71	
1952	S	5.42	3.77	
1953	S	5.24	3.65	
1954	S	5.34	3.56	
1955	S	5.36	0.00	
1956	S	5.33	4.17	
2051	S	5.71	3.91	
2052	S	5.68	4.85	
2054	S	5.78	4.80	
2151	S	5.87	4.93	
2153	S	5.87	4.09	
2154	S	5.95	4.25	
2155	S	5.90	4.26	
2251	S	6.21	5.01	
2252	S	6.22	4.92	
2253	S	6.17	5.27	
2254	S	6.07	4.95	
2255	S	6.02	4.77	
2451	S	4.86	3.96	
2452	S	4.84	3.89	
2453	S	4.91	4.11	
2551	S	4.77	4.21	
2551	S	5.39	4.30	
2552	S	4.74	3.81	
2553	S	5.03	4.25	
2554	S	4.94	3.98	
2555	S	4.86	3.79	
2556	S	4.82	4.16	
2557	S	4.99	4.23	
2558	S	4.90	4.17	
2559	S	4.88	3.76	
2651	S	5.11	3.31	
2652	S	4.83	3.43	
2653	S	4.79	3.61	
2654	S	4.68	3.76	
2655	S	4.66	3.95	
2656	S	4.73	3.41	
2657	S	4.82	3.45	
2658	S	4.94	3.48	
2659	S	0.00	0.00	
2660	S	0.00	0.00	
2661	S	0.00	0.00	
2662	S	0.00	0.00	
2664	S	0.00	0.00	
2751	S	5.38	3.33	
2751	S	5.60	4.37	
2752	S	5.36	3.74	
2752	S	5.86	4.44	
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2852	S	5.29	0.00	
2853	S	5.35	0.00	
2854	S	5.37	3.56	
2951	S	5.61	4.61	
2952	S	5.66	0.00	
2953	S	5.53	0.00	
5451	S	2.94	1.54	
5452	S	2.66	1.48	
5552	S	2.80	1.41	
5553	S	2.91	1.66	
5554	S	2.96	1.70	
6451	S	0.00	3.39	
6454	S	3.89	3.14	
6551	S	2.96	1.70	
6552	S	2.85	1.74	
6553	S	2.99	1.80	
6554	S	3.40	2.18	
6555	S	3.50	2.34	
6556	S	3.66	2.36	
7551	S	3.69	2.44	
7552	S	3.55	2.66	
8451	S	4.60	2.79	
9750	S	0.00	0.00	

Appendix C Flood Risk Assessment Extracts

Stuart Burnett
Bright Plan Civils,
2 West Barn,
Norton Lane,
Chichester,
PO20 3AF

Our ref: SSD191065
Date: 12/11/2020

Dear Stuart,

Enquiry Regarding Product 4 for Flood Risk Assessment for Summer Lane, Pagham, PO21 4NJ

Thank you for your enquiry which was received on 28 October 2020.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. The information is attached.

The information on Flood Zones in the area relating to this address is as follows:

The site is in an area located within Flood Zone 1 and 2 as shown on our Flood Map for Planning (Rivers and Sea).

Note - This information relates to the area that the above named property is in and is not specific to the property itself as it is influenced by factors such as the height of door steps, air bricks or the height of surrounding walls. We do not have access to this information and is not currently used in our flood modelling.

Flood Zone definitions can be found at www.gov.uk/guidance/flood-risk-and-coastal-change#Table-1-Flood-Zones

Flood Defences

There are flood defences in the form of a beach and an embankment. The assets are maintained by Environment Agency.

Model Information

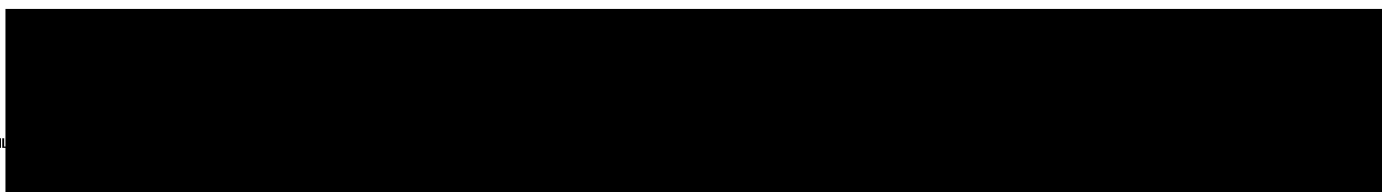
The model used was the River Arun to East Head Coastal Modelling (2D) which was completed by JBA Consulting in 2016.

Flood History

We hold no record of previous flooding events affecting this site.

Please note our records are not comprehensive and may not include all events. I recommend contacting the Lead Local Flood Authority, **West Sussex County Council** or the Local Authority, **Arun District Council** for a more comprehensive flood history check.

FRA advisory text



Name	Product 4
Description	Detailed Flood Risk Assessment Map for Summer Lane, Pagham, PO21 4NJ
Licence	<u>Open Government Licence</u>
Information Warning - OS background mapping	<i>The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply to this background mapping. You are granted a non-exclusive, royalty free, revocable licence solely to view the Licensed Data for non-commercial purposes for the period during which the Environment Agency makes it available. You are not permitted to copy, sub-license, distribute, sell or otherwise make available the Licensed Data to third parties in any form. Third party rights to enforce the terms of this licence shall be reserved to OS.</i>
Attribution	Contains Environment Agency information © Environment Agency and/or database rights. Contains Ordnance Survey data © Crown copyright 2019 Ordnance Survey 100024198.

Data Available Online

Many of our flood datasets are available online:

- [Flood Map For Planning \(Flood Zone 2, Flood Zone 3 ,Flood Storage Areas, Flood Defences, Areas Benefiting from Defences\)](#)
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)
- [Current Flood Warnings](#)

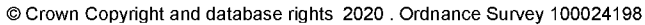
Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Yours sincerely,

Oli Haydon

FCRM Officer, Partnership & Strategic Overview | Solent and South Downs Environment Agency | Guildbourne House, Chatsworth Road, Worthing, West Sussex, BN11 1LD

SSD191065 - Flood Map for Planning (Rivers and Sea)



- Defences
- Flood Storage Areas
- Areas benefiting from flood defences
- Flood Zone 3
- Flood Zone 2

Flood Zone 3 shows the area that could be affected by flooding:

- Flood Zone 2** shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

Product 4 Flood Risk Data Requested by: Bright Plan Civils

Site: Summer Lane, Pagham

Table 1: Water Levels: Tidal Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD			
			Undefended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)	0.5% (2115)	0.1%
1	488570.2	97797.1	-	4.11	4.73	-
2	488686.4	97770.9	-	-	4.74	-

Table 2: Water Levels: Tidal Defended

Node Ref	NGR		Modelled Flood Levels in Metres AOD			
			Defended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)	0.5% (2115)	0.1%
1	488570.2	97797.1	-	0.34	0.96	-
2	488686.4	97770.9	-	-	0.49	-

Table 3: Water Depths: Tidal Undefended

Node Ref	NGR		Modelled Flood Depths in Metres			
			Undefended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)	0.5% (2115)	0.1%
1	488570.2	97797.1	-	-	4.25	-
2	488686.4	97770.9	-	-	4.25	-

Table 4: Water Depths: Tidal Defended

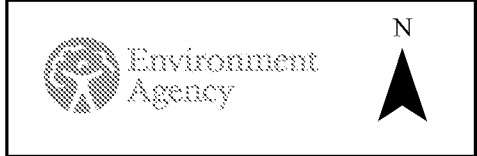
Node Ref	NGR		Modelled Flood Depths in Metres			
			Defended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)	0.5% (2115)	0.1%
1	488570.2	97797.1	-	-	0.48	-
2	488686.4	97770.9	-	-	0.03	-

All levels taken from: River Arun to East Head Coastal Modelling (2D) (2016)

Produced on: 12/11/2020

The flood risk data provided is based on existing EA hydraulic models for existing 0.5% annual probability events with an allowance for climate change. Please note the climate change allowances provided are not up to date. These were updated on 17 December 2019. You should refer to 'Flood risk assessments: climate change allowances' for the most up to date allowances. You will need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

There is no additional information or health warnings for these levels/depths or the model from which they have been produced.

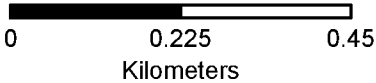


Legend

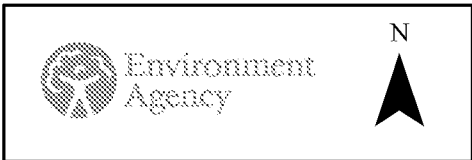
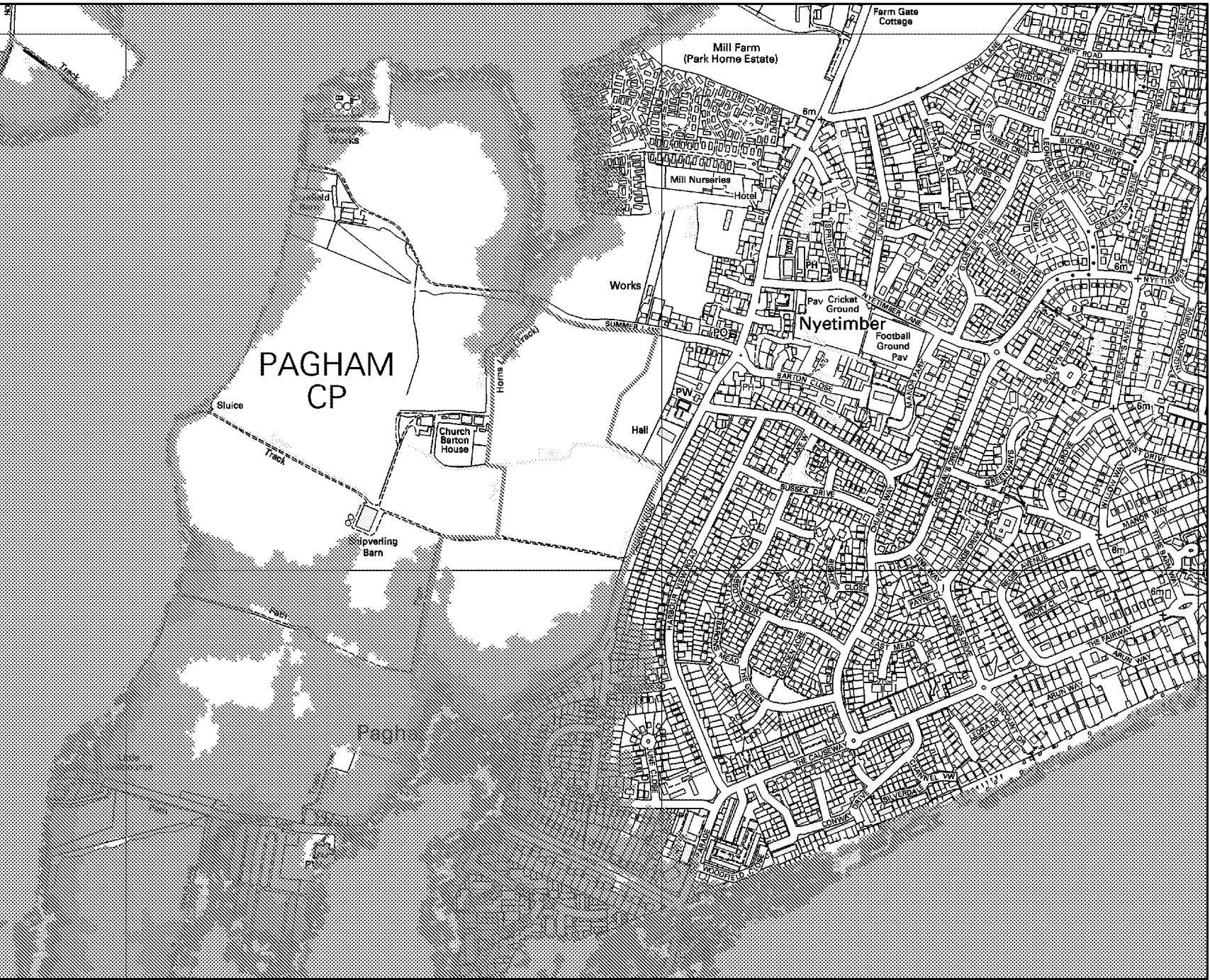
- Site Boundary
- 20% AEP (Defended Tidal)
- 5% AEP (Defended Tidal)
- 3.3% AEP (Defended Tidal)
- 1.3% AEP (Defended Tidal)
- 1% AEP (Defended Tidal)
- 0.5% AEP (Defended Tidal)
- 0.5% AEP (2070) NPPF (Defended Tidal)
- 0.5% AEP (2115) NPPF (Defended Tidal)
- 0.2% AEP (Defended Tidal)
- 0.1% AEP (Defended Tidal)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000



SSD191065 - Modelled Flood Outlines (undefended tidal)

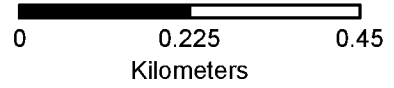


Legend

- Site Boundary
- 20% AEP (Undefended Tidal)
- 5% AEP (Undefended Tidal)
- 3.3% AEP (Undefended Tidal)
- 1.3% AEP (Undefended Tidal)
- 1% AEP (Undefended Tidal)
- 0.5% AEP (Undefended Tidal)
- 0.5% AEP (2070) NPPF (Undefended Tidal)
- 0.5% AEP (2115) NPPF (Undefended Tidal)
- 0.2% AEP (Undefended Tidal)
- 0.1% AEP (Undefended Tidal)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000



SSD191065 - Risk of Flooding from Surface Water



1: 10,000

0 Metres 250



Likelihood of flooding from Surface Water

- High ($\geq 3.3\%$)
- Medium (3.3% - 1%)
- Low (1% - 0.1%)
- Very Low
- Flood Extent 1 in 30
- Flood Extent 1 in 100
- Flood Extent 1 in 1000

Likelihood of flooding from Surface Water

- High:** Greater than or equal to 3.3% (1 in 30) chance in any given year
- Medium:** Less than 3.3% (1 in 30) but greater than or equal to 1% (1 in 100) chance in any given year
- Low:** Less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1,000) chance in any given year
- Very Low:** Less than 0.1% (1 in 1,000) chance in any given year

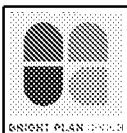
This information is shown on the Risk of Flooding from Surface Water map on GOV.UK.

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Appendix D Approved Planning Extracts

Appendix E Surface Water Hydraulic Modelling Results

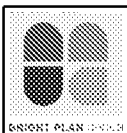


Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	10	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	0.700
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	250.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.054	5.00	5.538		488590.333	97882.131	0.850
2	0.037	5.00	5.511		488691.984	98036.685	0.829
3			5.738	1200	488686.232	98049.186	0.850
4			5.621	1200	488664.961	98049.078	0.894
5			5.537	1200	488655.295	98048.753	0.906
6			5.374	1200	488634.163	98037.693	0.980
7			5.234	1200	488620.444	98019.596	1.314
8			5.050	1200	488599.859	98036.542	1.280
9	0.027	5.00	5.050		488596.764	98037.857	1.300
10			5.050	1200	488591.261	98039.461	1.335
11			4.798	1200	488583.728	98041.334	1.129
12	0.069	5.00	5.259		488617.083	98015.409	0.850
13	0.111	5.00	5.733		488644.331	97924.741	0.850
14	0.066	5.00	6.143		488665.886	97977.209	0.850
15			6.002	1200	488655.657	97956.104	0.942
16			5.783	1200	488646.404	97923.479	1.137
17			5.518	1200	488645.846	97881.146	0.915
18	0.073	5.00	5.336	1200	488649.701	97872.159	1.293
19	0.031	5.00	5.247	1200	488631.969	97866.995	1.280
20	0.042	5.00	5.367	1350	488597.779	97863.308	1.645
21			5.423	1350	488588.776	97870.730	1.730
22			5.515	1350	488588.848	97885.298	1.858
23	0.005	5.00	5.545	1350	488595.450	97967.610	2.091
24			5.447	1350	488598.701	97986.565	2.041
25			5.100		488590.702	97987.190	1.714
26	0.094	5.00	4.900	1200	488580.907	97922.911	1.525
27			4.900	1200	488573.178	97923.189	1.572
28			4.499	1200	488558.021	97925.539	1.262
29	0.013	5.00	5.717	1200	488712.169	97908.391	0.925
30	0.050	5.00	5.554	1200	488684.789	97890.873	1.034
31	0.018	5.00	5.406	1200	488673.408	97735.015	0.925
32	0.051	5.00	5.242	1200	488652.614	97734.584	1.000
33	0.019	5.00	5.056	1200	488628.246	97746.701	1.006
34			5.270	1200	488582.162	97773.009	1.438
35			5.400	1350	488571.358	97787.061	1.770
36			5.000		488563.680	97784.866	1.480
37	0.109	5.00	5.271		488587.346	97771.553	0.925
38			5.370	1200	488567.988	97801.995	1.497
39	0.074	5.00	4.500		488559.869	97785.676	1.000
40			4.500	1200	488557.679	97779.896	1.037
41			3.750	1200	488557.281	97773.325	0.600
42	0.020	5.00	6.187	1200	488803.256	98026.610	1.187



Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
43	0.059	5.00	5.838		488660.429	97794.343	0.850
44			5.235	1200	488633.916	97758.551	0.947
45	0.077	5.00	5.908	1200	488820.498	97988.439	1.230
47	0.116	5.00	5.081		488746.427	97871.307	1.321
48	0.185	5.00	4.607	1350	488765.526	97843.918	1.145
49			4.279	1350	488779.543	97824.517	0.977
50	0.021	5.00	4.300	1500	488777.933	97811.079	1.167
51			4.300		488778.036	97807.278	1.175
52	0.036	5.00	5.336	1200	488695.575	97745.431	0.925
53			5.216	1200	488705.468	97757.867	1.060
54	0.065	5.00	5.029	1200	488719.395	97774.294	1.095
55			4.701	1200	488748.785	97799.802	1.160
56	0.121	5.00	4.435	1200	488768.957	97813.333	0.994
57	0.082	5.00	4.100		488738.569	97773.138	1.000
58			4.100	1200	488741.056	97770.125	1.032
59			4.190		488743.161	97767.205	1.144
60		5.00	5.649	1200	488721.724	97905.569	0.850
61	0.034	5.00	6.001	1200	488730.709	97926.187	0.925
62	0.066	5.00	5.827	1200	488763.966	97945.157	1.746
63			5.795	1200	488770.866	97940.299	1.764
64			5.556	1200	488784.286	97915.489	1.692
65			5.202	1200	488808.294	97883.742	1.573
66			4.735	1200	488834.044	97849.959	1.438
67			4.400	1200	488840.493	97841.676	1.180
68		5.00	5.650		488751.845	97952.501	1.485
74	0.104	5.00	5.504		488738.206	98002.001	1.000
75	0.026	5.00	5.613		488755.457	97969.198	1.263
76			5.650		488747.386	97964.905	1.465
78	0.077	5.00	5.749		488768.806	97976.539	0.850
79		5.00	5.500		488655.448	97889.615	1.150
80			5.500	1200	488653.241	97885.635	1.222
81			5.650	1200	488652.552	97919.618	1.116
82			5.500		488659.554	97896.997	1.140
83			4.759		488907.407	97977.665	0.774
84	0.043	5.00	4.992	1200	488862.890	97871.679	0.925
85	0.148	5.00	5.587		488898.367	98015.249	1.206
86			4.847		488918.064	98009.533	0.862
87	0.172	5.00	4.846		488829.137	97852.776	0.806
88	0.055	5.00	5.382		488901.202	97979.311	0.838
89	0.071	5.00	5.202		488891.476	97943.957	0.851
90			4.800		488897.167	97942.568	0.815
91	0.041	5.00	4.750		488899.097	97939.628	0.800
92			4.500		488896.189	97931.786	1.095
93	0.059	5.00	5.550	1200	488783.668	97919.724	0.850
94	0.039	5.00	5.081		488885.217	97920.817	0.850
95			4.500	1200	488891.816	97919.091	1.095
96	0.047	5.00	4.500	1200	488875.259	97874.561	1.125
97			4.500	1200	488873.753	97871.706	1.157
98			4.400		488865.875	97862.959	1.180
99	0.043	5.00	4.350	1200	488852.947	97848.219	1.150
100			4.350	1200	488856.352	97844.136	1.182
101			4.055	1200	488858.594	97841.560	0.925



Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
103	0.130	5.00	5.528	1800	488836.164	97953.685	1.178
104	0.129	5.00	5.266	1200	488856.421	97909.125	1.208
105			5.047	1350	488868.349	97882.157	1.615
106			4.550	1350	488876.515	97879.932	1.145
107	0.034	5.00	4.698		488829.208	97847.159	0.850
108	0.063	5.00	5.483		488643.492	97883.030	0.850
109	0.219	5.00	5.400	1200	488616.973	97855.347	1.200
110	0.105	5.00	5.285	1350	488615.760	97865.207	1.518
111			4.750	1200	488900.394	97935.946	0.850
112	0.049	5.00	4.900		488924.930	98030.410	0.800
113			4.934	1200	488923.569	98026.083	0.861
114			4.916		488920.277	98015.349	0.931
115	0.100	5.00	5.493		488599.086	97982.671	0.925
116	0.079	5.00	5.288		488623.626	98021.991	0.850
117	0.042	5.00	5.619		488668.908	98050.307	0.850
118		5.00	5.037	1200	488947.695	98092.012	0.737
119			5.003		488945.589	98087.495	0.843
120	0.188	5.00	5.033		488742.862	97868.401	1.013
121	0.048	5.00	5.249		488634.716	97762.054	0.850
122	0.091	5.00	4.986		488564.220	97833.583	0.925
46		5.00	4.300	1200	488793.419	97815.981	0.950
77		5.00	4.300	1200	488832.117	97836.214	0.800
102			4.300	1200	488829.461	97834.709	0.930
123		5.00	4.800		488869.405	97892.725	1.150
124			4.800	1200	488870.866	97889.391	1.172
125		5.00	4.800	1200	488876.159	97903.054	0.800
126			4.800	1200	488872.912	97901.685	1.145

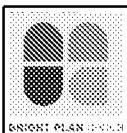
Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
5.000	1	22	3.498	0.600	4.688	4.653	0.035	99.9	150	5.06	58.2
20.000	2	3	13.761	0.600	5.082	4.938	0.144	95.6	150	5.22	57.4
20.001	3	4	21.271	0.600	4.938	4.727	0.211	100.8	150	5.58	55.7
20.002	4	5	9.671	0.600	4.727	4.631	0.096	100.7	150	5.74	54.9
20.003	5	6	23.851	0.600	4.631	4.394	0.237	100.6	150	6.14	53.1
20.004	6	7	22.709	0.600	4.394	4.070	0.324	70.1	150	6.45	51.9
20.005	7	8	26.663	0.600	3.920	3.811	0.109	244.6	300	6.89	50.1
36.000	9	10	5.732	0.600	3.750	3.715	0.035	163.8	225	5.09	53.1
36.001	10	11	7.762	0.600	3.715	3.669	0.046	168.7	225	5.22	57.4
22.000	12	7	5.369	0.600	4.409	4.355	0.054	99.4	150	5.09	58.1
29.000	13	16	2.427	0.600	4.830	4.822	0.008	39.8	150	5.03	53.4
28.000	14	15	23.453	0.600	5.293	5.060	0.233	100.7	150	5.39	56.6
28.001	15	16	33.912	0.600	5.060	4.721	0.339	100.0	150	5.95	53.9
28.002	16	81	7.260	0.600	4.646	4.534	0.112	64.8	225	6.03	53.5
3.001	17	18	9.779	0.600	4.603	4.436	0.167	83.6	150	5.20	57.6
1.002	18	19	12.469	0.600	4.043	3.967	0.076	243.0	300	6.23	52.7
1.003	19	110	16.307	0.600	3.967	3.917	0.050	326.1	300	6.54	51.5
1.005	20	21	11.668	0.600	3.722	3.693	0.029	402.3	450	7.03	49.6
1.006	21	22	14.568	0.600	3.693	3.657	0.036	404.7	450	7.27	48.8
1.007	22	23	82.576	0.600	3.657	3.454	0.203	406.8	450	8.65	44.7



Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.008	23	24	19.232	0.600	3.454	3.406	0.048	400.7	450	8.96	43.8
1.009	24	25	8.023	0.600	3.406	3.388	0.020	401.2	450	9.10	43.6
32.000	26	27	7.734	0.600	3.375	3.328	0.047	164.6	225	5.13	57.9
32.001	27	28	15.338	0.600	3.328	3.237	0.091	168.6	225	5.38	56.7
1.000	29	30	32.505	0.600	4.792	4.595	0.197	165.0	225	5.53	55.9
1.001	30	18	39.767	0.600	4.520	4.043	0.477	83.4	300	5.92	54.0
17.000	31	32	20.798	0.600	4.481	4.317	0.164	126.8	225	5.30	57.1
17.001	32	33	27.214	0.600	4.242	4.050	0.192	141.8	300	5.64	55.4
15.002	33	34	53.065	0.600	4.050	3.832	0.218	243.4	300	6.65	51.1
15.003	34	35	17.725	0.600	3.832	3.759	0.073	242.8	300	6.95	49.9
15.004	35	36	7.986	0.600	3.630	3.605	0.025	319.4	375	7.00	49.6
18.000	37	34	5.385	0.600	4.346	4.314	0.032	168.3	225	5.09	58.1
19.001	38	35	15.310	0.600	3.873	3.780	0.093	164.6	225	5.78	54.7
37.000	39	40	6.181	0.600	3.500	3.463	0.037	167.1	225	5.10	53.0
37.001	40	41	6.583	0.600	3.463	3.150	0.313	21.0	225	5.14	57.8
12.000	42	45	41.885	0.600	5.000	4.753	0.247	169.6	225	5.70	55.1
15.000	43	44	44.542	0.600	4.988	4.363	0.625	71.3	150	5.62	55.5
15.001	44	33	13.137	0.600	4.283	4.125	0.158	30.6	225	5.77	54.7
12.001	45	103	38.122	0.600	4.678	4.450	0.228	167.2	300	6.22	52.8
8.000	68	62	14.172	0.600	4.165	4.081	0.084	168.7	225	5.24	57.4
24.001	47	48	33.391	0.600	3.760	3.537	0.223	149.7	300	6.04	53.5
24.002	48	49	23.935	0.600	3.462	3.302	0.160	149.6	375	6.31	52.4
24.003	49	50	13.534	0.600	3.302	3.257	0.045	300.8	375	6.52	51.6
24.004	50	51	3.802	0.600	3.133	3.125	0.008	475.3	525	6.59	51.3
26.000	52	53	15.891	0.600	4.411	4.231	0.180	88.1	225	5.19	57.6
26.001	53	54	21.536	0.600	4.156	3.934	0.222	96.9	300	5.41	56.5
26.002	54	55	38.916	0.600	3.934	3.541	0.392	99.2	300	5.83	54.6
26.003	55	56	24.290	0.600	3.541	3.441	0.100	242.9	300	6.23	52.7
26.004	56	50	9.255	0.600	3.441	3.403	0.038	243.5	300	6.38	52.1
40.000	57	58	3.907	0.600	3.100	3.068	0.032	120.9	225	5.05	58.3
40.001	58	59	3.600	0.600	3.068	3.046	0.022	163.6	225	5.11	58.0
24.000	60	47	42.239	0.600	4.799	4.231	0.568	74.4	150	5.60	55.6
7.000	61	62	38.287	0.600	5.076	4.438	0.638	60.0	225	5.38	56.7
7.001	62	63	8.439	0.600	4.081	4.031	0.050	168.8	225	5.52	56.0
7.002	63	64	28.207	0.600	4.031	3.864	0.167	168.9	225	5.99	53.7
7.003	64	65	39.803	0.600	3.864	3.629	0.235	169.4	225	6.65	51.1
7.004	65	66	42.478	0.600	3.629	3.372	0.257	165.3	225	7.35	48.6
7.005	66	67	10.498	0.600	3.297	3.245	0.052	201.9	300	7.51	48.1
30.000	74	75	37.063	0.600	4.504	4.350	0.154	240.7	300	5.61	55.5
30.001	75	76	9.142	0.600	4.350	4.312	0.038	240.6	300	5.76	54.8
2.000	79	80	4.551	0.600	4.350	4.278	0.072	62.9	225	5.05	58.3
31.000	78	75	15.234	0.600	4.899	4.743	0.151	100.9	150	5.25	57.3
2.001	80	18	13.933	0.600	4.278	4.194	0.084	165.9	225	5.28	57.2
28.003	81	82	23.680	0.600	4.534	4.394	0.140	169.1	225	6.42	52.0
42.000	88	83	6.420	0.600	4.544	4.223	0.321	20.0	150	5.05	58.3
13.000	84	105	11.315	0.600	4.067	3.831	0.236	50.1	225	5.11	58.0
32.000	85	86	20.510	0.600	4.381	4.088	0.293	70.0	225	5.22	57.5
10.000	87	66	5.658	0.600	4.040	3.810	0.230	24.6	225	5.04	58.4
9.000	93	64	4.280	0.600	4.700	4.657	0.043	99.5	150	5.07	58.2
43.000	89	90	5.858	0.600	4.351	4.117	0.234	25.0	150	5.05	58.3
38.000	91	111	3.904	0.600	3.950	3.900	0.050	78.1	150	5.06	58.3
3.000	108	17	3.015	0.600	4.633	4.603	0.030	100.5	150	5.05	58.3
41.000	94	95	6.821	0.600	4.231	3.650	0.581	11.7	150	5.04	58.3



Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
35.000	96	97	3.228	0.600	3.375	3.343	0.032	100.9	150	5.05	58.3
35.001	97	98	11.772	0.600	3.343	3.228	0.117	100.6	150	5.25	57.3
39.000	99	100	5.316	0.600	3.200	3.168	0.032	166.1	225	5.09	58.1
39.001	100	101	3.415	0.600	3.168	3.130	0.038	89.9	225	5.13	57.9
12.002	103	104	48.948	0.600	4.450	4.058	0.392	124.9	300	6.80	50.5
12.003	104	105	29.488	0.600	4.058	3.730	0.328	89.9	300	7.10	49.4
12.004	105	106	3.464	0.600	3.432	3.405	0.027	313.5	375	7.24	49.0
11.000	107	66	5.588	0.600	3.848	3.624	0.224	24.9	150	5.05	58.3
6.000	115	24	3.913	0.600	4.568	4.522	0.046	85.1	225	5.05	58.3
4.000	109	110	9.934	0.600	4.200	4.034	0.166	59.8	300	5.08	58.1
1.004	110	20	18.081	0.600	3.767	3.722	0.045	401.8	450	6.84	50.4
38.001	111	92	5.915	0.600	3.900	3.841	0.059	100.3	150	5.16	57.8
34.000	112	113	4.536	0.600	4.100	4.073	0.027	168.0	225	5.08	58.2
34.001	113	114	11.227	0.600	4.073	3.991	0.082	136.9	225	5.24	57.3
23.000	116	7	3.983	0.600	4.433	4.384	0.054	73.6	150	5.06	58.3
21.000	117	4	4.134	0.600	4.769	4.727	0.042	98.4	150	5.07	58.2
44.000	118	119	4.984	0.600	4.300	4.200	0.100	49.8	150	5.06	58.2
25.000	120	47	4.599	0.600	4.020	3.835	0.185	24.9	225	5.03	58.4
16.000	121	44	3.593	0.600	4.399	4.363	0.036	99.8	150	5.06	58.2
19.000	122	38	31.812	0.600	4.061	3.873	0.188	169.2	225	5.53	55.9
27.000	46	50	16.243	0.600	3.350	3.283	0.067	242.4	300	5.27	57.2
46.000	77	102	3.053	0.600	3.500	3.448	0.052	58.7	100	5.05	58.3
14.000	123	124	3.640	0.600	3.650	3.628	0.022	165.5	225	5.06	58.2
14.001	124	105	7.659	0.600	3.628	3.582	0.046	166.5	225	5.19	57.6
45.000	125	126	3.524	0.600	4.000	3.940	0.060	58.7	100	5.06	58.2

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Analysis Speed	Detailed	Additional Storage (m³/ha)	0.0		

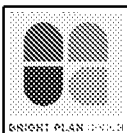
Storm Durations

15 30 60 120 180 240 360 480 600 720 960 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	0	0	0
30	40	0	0
100	45	10	0

Node 10 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.715	Product Number	CTL-SHE-0044-1000-1335-1000
Design Depth (m)	1.335	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200



Node 27 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.328	Product Number	CTL-SHE-0087-4000-1572-4000
Design Depth (m)	1.572	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	4.0	Min Node Diameter (mm)	1200

Node 40 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.463	Product Number	CTL-SHE-0032-5000-1037-5000
Design Depth (m)	1.037	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.5	Min Node Diameter (mm)	1200

Node 58 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.068	Product Number	CTL-SHE-0094-4000-1032-4000
Design Depth (m)	1.032	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	4.0	Min Node Diameter (mm)	1200

Node 100 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.168	Product Number	CTL-SHE-0080-3000-1182-3000
Design Depth (m)	1.182	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.0	Min Node Diameter (mm)	1200

Node 64 Online Hydro-Brake® Control

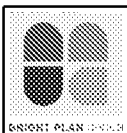
Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.864	Product Number	CTL-SHE-0041-1000-1692-1000
Design Depth (m)	1.692	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node 80 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	4.278	Product Number	CTL-SHE-0072-2500-1222-2500
Design Depth (m)	1.222	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.5	Min Node Diameter (mm)	1200

Node 97 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.343	Product Number	CTL-SHE-0083-3200-1157-3200
Design Depth (m)	1.157	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.2	Min Node Diameter (mm)	1200



Node 111 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	3.900	Product Number	CTL-SHE-0034-5000-0850-5000
Design Depth (m)	0.850	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.5	Min Node Diameter (mm)	1200

Node 94 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.231	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.030		

Node 89 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.351	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.110		

Node 88 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.544	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.060		

Node 85 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.381	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.030		

Node 107 Online Orifice Control

Flap Valve	x	Invert Level (m)	3.848	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.040		

Node 87 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.040	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.185		

Node 74 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.504	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 78 Online Orifice Control

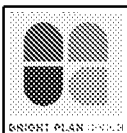
Flap Valve	x	Invert Level (m)	4.899	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 93 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.700	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.100		

Node 120 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.020	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.150		



Node 43 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.988	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.130		

Node 121 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.399	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.030		

Node 122 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.061	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.150		

Node 37 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.346	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.175		

Node 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.688	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.065		

Node 115 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.568	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.175		

Node 12 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.409	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.105		

Node 116 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.438	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.090		

Node 117 Online Orifice Control

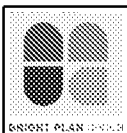
Flap Valve	x	Invert Level (m)	4.769	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.045		

Node 2 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.082	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.030		

Node 14 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.293	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.125		



Node 108 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.633	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.120		

Node 103 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	4.450	Product Number	CTL-SHE-0159-1250-1178-1250
Design Depth (m)	1.178	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	12.5	Min Node Diameter (mm)	1200

Node 46 Online Orifice Control

Flap Valve	x	Invert Level (m)	3.350	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.300		

Node 9 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	20.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.750	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

8

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	31.0	0.0	1.250	256.0	3.8

Node 26 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	65.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.375	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

25

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	165.0	0.0	1.525	919.0	1409.2

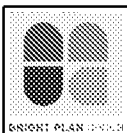
Node 39 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	20.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.500	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

36

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	345.2	0.0	1.000	741.3	5.1



Node 57 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.100	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

51

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	300.0	0.0	1.000	818.0	907.7

Node 99 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	20.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.200	Main Channel Slope (1:X)	1000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

98 67

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	172.0	0.0	1.000	437.0	66.0

Node 68 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Main Channel Length (m)	20.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.165	Main Channel Slope (1:X)	1000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.005

Inlets

76

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	600.0	0.0	0.800	600.0	0.0	0.801	0.0	0.0

Node 79 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	10.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.350	Main Channel Slope (1:X)	1000.0
Safety Factor	1.0	Time to half empty (mins)	632	Main Channel n	0.025

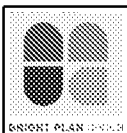
Inlets

82

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	34.0	0.0	1.150	161.4	23.8

Node 96 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	60.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.375	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.025



Inlets

92 : 95 : 106

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	78.0	0.0	1.000	466.2	28.0

Node 91 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	70.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.950	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

114 : 86 : 83 : 90

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	68.0	0.0	0.750	447.1	117.5

Node 112 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	60.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.100	Main Channel Slope (1:X)	1000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

119

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	168.0	0.0	0.800	485.9	1228.5

Node 94 Carpark Storage Structure

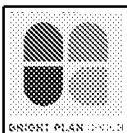
Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.550	Slope (1:X)	270.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	138	Depth (m)	0.450
Safety Factor	1.0	Width (m)	12.825	Inf Depth (m)	
Porosity	0.30	Length (m)	23.000		

Node 89 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.351	Slope (1:X)	270.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	20	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.400	Inf Depth (m)	
Porosity	0.30	Length (m)	35.500		

Node 88 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.544	Slope (1:X)	270.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	68	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.575	Inf Depth (m)	
Porosity	0.30	Length (m)	40.000		



Node 85 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.381	Slope (1:X)	185.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	696	Depth (m)	0.450
Safety Factor	1.0	Width (m)	8.360	Inf Depth (m)	
Porosity	0.30	Length (m)	91.500		

Node 107 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.848	Slope (1:X)	165.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	77	Depth (m)	0.450
Safety Factor	1.0	Width (m)	4.400	Inf Depth (m)	
Porosity	0.30	Length (m)	41.000		

Node 87 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.040	Slope (1:X)	270.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	17	Depth (m)	0.525
Safety Factor	1.0	Width (m)	10.200	Inf Depth (m)	
Porosity	0.30	Length (m)	38.000		

Node 74 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.850	Slope (1:X)	170.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	51	Depth (m)	0.450
Safety Factor	1.0	Width (m)	18.000	Inf Depth (m)	
Porosity	0.30	Length (m)	25.500		

Node 78 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.899	Slope (1:X)	170.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	60	Depth (m)	0.450
Safety Factor	1.0	Width (m)	8.900	Inf Depth (m)	
Porosity	0.30	Length (m)	38.000		

Node 93 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.700	Slope (1:X)	150.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	22	Depth (m)	0.450
Safety Factor	1.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	36.700		

Node 120 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.020	Slope (1:X)	140.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	20	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.250	Inf Depth (m)	
Porosity	0.30	Length (m)	81.000		

Node 43 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.988	Slope (1:X)	85.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	12	Depth (m)	0.450
Safety Factor	1.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	34.000		



Node 121 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.399	Slope (1:X)	85.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	168	Depth (m)	0.450
Safety Factor	1.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	45.500		

Node 122 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.061	Slope (1:X)	105.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	14	Depth (m)	0.450
Safety Factor	1.0	Width (m)	7.250	Inf Depth (m)	
Porosity	0.30	Length (m)	42.000		

Node 37 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.346	Slope (1:X)	170.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	14	Depth (m)	0.450
Safety Factor	1.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	68.000		

Node 109 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.200	Slope (1:X)	160.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	13	Depth (m)	0.525
Safety Factor	1.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	65.000		

Node 1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.688	Slope (1:X)	290.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	59	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.700	Inf Depth (m)	
Porosity	0.30	Length (m)	58.000		

Node 115 Carpark Storage Structure

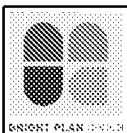
Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.568	Slope (1:X)	180.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	13	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.700	Inf Depth (m)	
Porosity	0.30	Length (m)	36.000		

Node 12 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.409	Slope (1:X)	210.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	29	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.700	Inf Depth (m)	
Porosity	0.30	Length (m)	36.000		

Node 116 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.438	Slope (1:X)	190.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	45	Depth (m)	0.450
Safety Factor	1.0	Width (m)	6.000	Inf Depth (m)	
Porosity	0.30	Length (m)	56.000		



Node 117 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.769	Slope (1:X)	165.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	89	Depth (m)	0.450
Safety Factor	1.0	Width (m)	6.000	Inf Depth (m)	
Porosity	0.30	Length (m)	33.000		

Node 2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.082	Slope (1:X)	210.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	184	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.500	Inf Depth (m)	
Porosity	0.30	Length (m)	42.000		

Node 14 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.293	Slope (1:X)	230.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	20	Depth (m)	0.450
Safety Factor	1.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	35.500		

Node 13 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.883	Slope (1:X)	190.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	504	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.400	Inf Depth (m)	
Porosity	0.30	Length (m)	56.500		

Node 108 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.633	Slope (1:X)	190.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	21	Depth (m)	0.450
Safety Factor	1.0	Width (m)	5.400	Inf Depth (m)	
Porosity	0.30	Length (m)	47.000		

Node 46 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Main Channel Length (m)	40.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.350	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.005

Inlets

102

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	516.0	0.0	0.400	516.0	0.0	0.401	0.0	0.0

Node 123 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Main Channel Length (m)	10.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.650	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.005

Inlets

126



Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	115.0	0.0	0.400	115.0	0.0	0.401	0.0	0.0

Node 103 Depth/Area Storage Structure

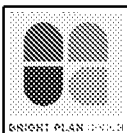
Base Inf Coefficient (m/hr)	0.00000	Safety Factor	1.0	Invert Level (m)	4.450
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	130

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	310.0	0.0	0.400	310.0	0.0	0.401	0.0	0.0

Node 105 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	1.0	Invert Level (m)	3.432
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

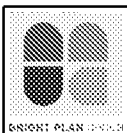
Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	160.0	0.0	0.400	160.0	0.0	0.401	0.0	0.0



Results for 10 year Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	1	43	4.860	0.172	12.8	7.3573	0.0000	SURCHARGED
120 minute summer	2	94	5.290	0.208	5.8	7.4754	0.0000	SURCHARGED
120 minute summer	3	96	4.960	0.022	0.8	0.0247	0.0000	OK
60 minute summer	4	48	4.767	0.040	2.6	0.0451	0.0000	OK
60 minute summer	5	50	4.671	0.040	2.6	0.0450	0.0000	OK
600 minute summer	6	615	4.483	0.089	2.1	0.1007	0.0000	OK
600 minute summer	7	615	4.483	0.563	8.7	0.6367	0.0000	SURCHARGED
600 minute summer	8	615	4.483	0.713	8.5	0.8063	0.0000	OK
600 minute summer	9	615	4.483	0.733	4.6	0.0000	0.0000	SURCHARGED
600 minute summer	10	615	4.483	0.768	2.2	0.8685	0.0000	SURCHARGED
15 minute summer	11	1	3.669	0.000	0.7	0.0000	0.0000	OK
30 minute summer	12	22	4.606	0.197	22.1	6.8287	0.0000	SURCHARGED
15 minute summer	13	12	5.050	0.167	39.9	4.3146	0.0000	SURCHARGED
30 minute summer	14	21	5.476	0.183	21.2	5.4153	0.0000	SURCHARGED
30 minute summer	15	22	5.144	0.084	10.3	0.0947	0.0000	OK
180 minute summer	16	180	4.918	0.272	19.2	0.3072	0.0000	SURCHARGED
30 minute summer	17	22	4.682	0.079	9.4	0.0895	0.0000	OK
15 minute summer	18	12	4.383	0.340	57.8	0.3842	0.0000	SURCHARGED
15 minute summer	19	12	4.326	0.359	62.2	0.4057	0.0000	SURCHARGED
15 minute summer	20	12	4.189	0.467	170.6	0.6689	0.0000	SURCHARGED
720 minute summer	21	735	4.157	0.464	25.6	0.6640	0.0000	SURCHARGED
720 minute summer	22	735	4.157	0.500	27.1	0.7155	0.0000	SURCHARGED
720 minute summer	23	735	4.157	0.703	25.9	1.0061	0.0000	SURCHARGED
720 minute summer	24	735	4.157	0.751	28.8	1.0748	0.0000	SURCHARGED
720 minute summer	25	735	4.157	0.771	28.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	1	5.000	22	3.1	0.739	0.177	0.0149	
120 minute summer	2	20.000	3	0.8	0.515	0.045	0.0217	
120 minute summer	3	20.001	4	0.8	0.471	0.046	0.0565	
60 minute summer	4	20.002	5	2.6	0.688	0.145	0.0362	
60 minute summer	5	20.003	6	2.6	0.748	0.145	0.0826	
600 minute summer	6	20.004	7	2.1	0.701	0.099	0.3236	
600 minute summer	7	20.005	8	8.5	0.396	0.120	1.8776	
600 minute summer	8	Flow through pond	9	4.6	0.053	0.001	69.4929	
600 minute summer	9	36.000	10	2.2	0.286	0.056	0.2280	
600 minute summer	10	Hydro-Brake®	11	0.8				83.8
30 minute summer	12	22.000	7	8.0	0.955	0.452	0.0452	
15 minute summer	13	29.000	16	28.1	1.657	0.993	0.0423	
30 minute summer	14	28.000	15	10.3	1.029	0.582	0.2363	
30 minute summer	15	28.001	16	10.4	1.027	0.589	0.3803	
180 minute summer	16	28.002	81	19.3	1.078	0.298	0.2887	
30 minute summer	17	3.001	18	9.5	1.049	0.487	0.0881	
15 minute summer	18	1.002	19	53.1	0.838	0.749	1.3006	
15 minute summer	19	1.003	110	62.3	0.917	1.019	1.1483	
15 minute summer	20	1.005	21	169.2	1.076	1.056	1.8428	
720 minute summer	21	1.006	22	25.2	0.668	0.158	2.3082	
720 minute summer	22	1.007	23	25.7	0.471	0.161	13.0836	
720 minute summer	23	1.008	24	24.8	0.366	0.155	3.0472	
720 minute summer	24	1.009	25	28.7	0.293	0.179	1.2712	
720 minute summer	25	Flow through pond	26	16.4	0.080	0.001	263.1246	



Results for 10 year Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	26	735	4.157	0.782	16.4	0.8846	0.0000	SURCHARGED
720 minute summer	27	735	4.157	0.829	3.7	0.9373	0.0000	SURCHARGED
15 minute summer	28	1	3.237	0.000	3.6	0.0000	0.0000	OK
15 minute summer	29	11	4.844	0.052	4.7	0.0583	0.0000	OK
15 minute summer	30	10	4.606	0.086	22.3	0.0969	0.0000	OK
15 minute summer	31	10	4.539	0.058	6.5	0.0655	0.0000	OK
15 minute summer	32	10	4.346	0.104	24.6	0.1171	0.0000	OK
15 minute summer	33	11	4.216	0.166	43.3	0.1879	0.0000	OK
15 minute summer	34	12	4.065	0.233	63.3	0.2637	0.0000	OK
1440 minute summer	35	1470	3.920	0.290	8.8	0.4149	0.0000	OK
1440 minute summer	36	1470	3.920	0.400	8.8	0.0000	0.0000	OK
15 minute summer	37	13	4.585	0.239	39.0	7.0152	0.0000	SURCHARGED
15 minute summer	38	14	3.980	0.107	16.9	0.1206	0.0000	OK
1440 minute summer	39	1470	3.920	0.420	4.5	0.0000	0.0000	SURCHARGED
1440 minute summer	40	1470	3.920	0.457	1.2	0.5168	0.0000	SURCHARGED
15 minute summer	41	1	3.150	0.000	0.3	0.0000	0.0000	OK
15 minute summer	42	10	5.064	0.064	7.3	0.0728	0.0000	OK
15 minute summer	43	13	5.211	0.223	21.3	3.0465	0.0000	SURCHARGED
15 minute summer	44	13	4.368	0.080	14.1	0.0901	0.0000	OK
15 minute summer	45	10	4.826	0.148	35.0	0.1673	0.0000	OK
15 minute summer	47	11	3.953	0.193	65.0	0.0000	0.0000	OK
15 minute summer	48	11	3.762	0.300	130.7	0.4297	0.0000	OK
15 minute summer	49	11	3.641	0.339	129.3	0.4847	0.0000	OK
180 minute summer	50	124	3.510	0.377	81.4	0.6657	0.0000	OK
180 minute summer	51	124	3.510	0.385	76.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	26	32.000	27	3.7	0.264	0.091	0.3076	
720 minute summer	27	Hydro-Brake®	28	3.6				412.6
15 minute summer	29	1.000	30	4.6	0.675	0.113	0.2201	
15 minute summer	30	1.001	18	22.1	0.596	0.181	1.7273	
15 minute summer	31	17.000	32	6.4	0.808	0.138	0.1641	
15 minute summer	32	17.001	33	24.3	0.821	0.261	0.8338	
15 minute summer	33	15.002	34	43.0	0.899	0.607	2.5903	
15 minute summer	34	15.003	35	63.1	1.171	0.889	0.9525	
1440 minute summer	35	15.004	36	8.8	0.571	0.079	0.7598	
1440 minute summer	36	Flow through pond	39	4.5	0.007	0.000	175.0064	
15 minute summer	37	18.000	34	21.7	1.000	0.542	0.1167	
15 minute summer	38	19.001	35	16.8	0.944	0.416	0.2725	
1440 minute summer	39	37.000	40	1.2	0.139	0.031	0.2458	
1440 minute summer	40	Hydro-Brake®	41	0.4				56.4
15 minute summer	42	12.000	45	7.2	0.741	0.180	0.4291	
15 minute summer	43	15.000	44	13.0	1.254	0.619	0.4633	
15 minute summer	44	15.001	33	14.0	1.164	0.242	0.1753	
15 minute summer	45	12.001	103	34.9	1.700	0.407	0.8652	
15 minute summer	47	24.001	48	65.0	1.336	0.717	1.7457	
15 minute summer	48	24.002	49	129.3	1.297	0.792	2.3865	
15 minute summer	49	24.003	50	129.7	1.363	1.130	1.2745	
180 minute summer	50	24.004	51	76.6	1.316	0.347	0.6377	
180 minute summer	51	Flow through pond	57	40.6	0.071	0.005	160.1974	



Results for 10 year Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	52	10	4.487	0.076	12.7	0.0863	0.0000	OK
15 minute summer	53	10	4.222	0.067	12.6	0.0756	0.0000	OK
15 minute summer	54	10	4.048	0.115	35.8	0.1298	0.0000	OK
15 minute summer	55	11	3.737	0.196	35.4	0.2212	0.0000	OK
15 minute summer	56	11	3.712	0.271	76.3	0.3066	0.0000	OK
180 minute summer	57	124	3.510	0.410	40.6	0.0000	0.0000	SURCHARGED
180 minute summer	58	124	3.509	0.441	11.7	0.4993	0.0000	SURCHARGED
15 minute summer	59	1	3.046	0.000	4.0	0.0000	0.0000	OK
15 minute summer	60	1	4.799	0.000	0.0	0.0000	0.0000	OK
15 minute summer	61	10	5.141	0.065	12.2	0.0737	0.0000	OK
1440 minute summer	62	1440	4.426	0.345	3.1	0.3899	0.0000	SURCHARGED
1440 minute summer	63	1440	4.426	0.395	0.8	0.4465	0.0000	SURCHARGED
1440 minute summer	64	1440	4.426	0.562	1.4	0.6353	0.0000	SURCHARGED
960 minute summer	65	975	3.659	0.030	0.6	0.0335	0.0000	OK
960 minute summer	66	975	3.659	0.362	7.0	0.4089	0.0000	SURCHARGED
960 minute summer	67	975	3.659	0.439	7.0	0.4969	0.0000	OK
1440 minute summer	68	1440	4.426	0.261	4.4	0.0000	0.0000	SURCHARGED
30 minute summer	74	24	5.000	0.496	33.3	10.2807	0.0000	SURCHARGED
15 minute summer	75	11	4.458	0.108	20.3	0.0000	0.0000	OK
1440 minute summer	76	1440	4.426	0.241	4.8	0.0000	0.0000	OK
60 minute summer	78	42	5.111	0.212	18.3	10.2265	0.0000	SURCHARGED
120 minute summer	79	122	4.915	0.565	28.8	0.0000	0.0000	SURCHARGED
120 minute summer	80	122	4.914	0.636	10.3	0.7199	0.0000	SURCHARGED
180 minute summer	81	172	4.917	0.383	19.3	0.4332	0.0000	SURCHARGED
120 minute summer	82	122	4.915	0.555	23.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	52	26.000	53	12.6	1.100	0.227	0.1818	
15 minute summer	53	26.001	54	12.5	0.695	0.111	0.3924	
15 minute summer	54	26.002	55	35.4	1.126	0.317	1.4247	
15 minute summer	55	26.003	56	35.2	0.677	0.496	1.4040	
15 minute summer	56	26.004	50	76.2	1.245	1.074	0.5605	
180 minute summer	57	40.000	58	11.7	0.494	0.249	0.1554	
180 minute summer	58	Hydro-Brake®	59	4.0				250.8
15 minute summer	60	24.000	47	0.0	0.000	0.000	0.0000	
15 minute summer	61	7.000	62	11.9	1.271	0.177	0.3590	
1440 minute summer	62	7.001	63	-0.8	0.378	-0.020	0.3356	
1440 minute summer	63	7.002	64	-0.8	0.098	-0.021	1.1218	
1440 minute summer	64	Hydro-Brake®	65	0.6				
960 minute summer	65	7.004	66	0.6	0.374	0.015	0.9099	
960 minute summer	66	7.005	67	6.8	0.448	0.087	0.7393	
960 minute summer	67	Flow through pond	99	6.2	0.017	0.000	103.9569	
1440 minute summer	68	8.000	62	-3.1	0.252	-0.077	0.5636	
30 minute summer	74	30.000	75	7.7	0.560	0.108	0.6179	
15 minute summer	75	30.001	76	20.3	0.888	0.284	0.2086	
1440 minute summer	76	Flow through pond	68	1.3	0.004	0.000	142.9855	
60 minute summer	78	31.000	75	4.7	0.852	0.266	0.0839	
120 minute summer	79	2.000	80	10.3	0.533	0.157	0.1810	
120 minute summer	80	Hydro-Brake®	18	2.3				
180 minute summer	81	28.003	82	18.3	0.723	0.459	0.9418	
120 minute summer	82	Flow through pond	79	21.6	0.066	0.003	36.4250	



Results for 10 year Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	83	1740	4.338	0.353	1.3	0.0000	0.0000	OK
15 minute summer	84	10	4.141	0.074	15.3	0.0834	0.0000	OK
240 minute summer	85	240	4.824	0.443	14.4	41.4254	0.0000	SURCHARGED
1440 minute summer	86	1740	4.338	0.353	1.1	0.0000	0.0000	OK
30 minute summer	87	22	4.255	0.215	55.3	16.7898	0.0000	OK
60 minute summer	88	43	4.736	0.192	13.2	7.8687	0.0000	SURCHARGED
30 minute summer	89	22	4.535	0.184	22.7	6.8225	0.0000	SURCHARGED
1440 minute summer	90	1740	4.338	0.353	1.6	0.0000	0.0000	OK
1440 minute summer	91	1740	4.338	0.388	1.7	0.0000	0.0000	SURCHARGED
480 minute summer	92	488	3.755	0.350	0.4	0.0000	0.0000	OK
30 minute summer	93	22	4.916	0.216	19.0	5.2748	0.0000	SURCHARGED
60 minute summer	94	51	4.660	0.429	9.4	5.9599	0.0000	SURCHARGED
480 minute summer	95	480	3.755	0.350	1.2	0.3959	0.0000	OK
480 minute summer	96	480	3.755	0.380	6.7	0.4297	0.0000	SURCHARGED
480 minute summer	97	488	3.754	0.411	2.9	0.4643	0.0000	SURCHARGED
960 minute summer	98	975	3.659	0.439	2.8	0.0000	0.0000	OK
960 minute summer	99	975	3.659	0.459	6.2	0.5189	0.0000	SURCHARGED
960 minute summer	100	975	3.658	0.490	3.0	0.5547	0.0000	SURCHARGED
15 minute summer	101	1	3.130	0.000	2.9	0.0000	0.0000	OK
120 minute summer	103	80	4.600	0.150	35.6	44.6679	0.0000	OK
15 minute summer	104	10	4.197	0.139	48.1	0.1578	0.0000	OK
480 minute summer	105	480	3.755	0.323	16.4	49.5395	0.0000	OK
600 minute summer	106	570	3.756	0.351	11.4	0.5019	0.0000	OK
60 minute summer	107	45	4.064	0.216	8.0	5.1076	0.0000	SURCHARGED
30 minute summer	108	21	4.816	0.183	20.1	5.1890	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	83	Flow through pond	91	1.3	0.038	0.001	60.1050	
15 minute summer	84	13.000	105	15.2	1.407	0.206	0.1276	
240 minute summer	85	33.000	86	1.2	0.578	0.020	0.3854	
1440 minute summer	86	Flow through pond	91	1.3	0.038	0.001	60.1050	
30 minute summer	87	10.000	66	25.0	2.075	0.238	0.0682	
60 minute summer	88	42.000	83	3.0	1.336	0.076	0.0145	
30 minute summer	89	43.000	90	9.1	1.693	0.254	0.0314	
1440 minute summer	90	Flow through pond	91	1.3	0.038	0.001	60.1050	
1440 minute summer	91	38.000	111	1.5	0.232	0.074	0.0687	
480 minute summer	92	Flow through pond	96	6.7	0.049	0.002	54.3820	
30 minute summer	93	9.000	64	7.8	0.910	0.437	0.0365	
60 minute summer	94	41.000	95	1.2	1.214	0.023	0.0068	
480 minute summer	95	Flow through pond	96	6.7	0.049	0.002	54.3820	
480 minute summer	96	35.000	97	2.9	0.319	0.166	0.0568	
480 minute summer	97	Hydro-Brake®	98	2.9				
960 minute summer	98	Flow through pond	99	6.2	0.017	0.000	103.9569	
960 minute summer	99	39.000	100	3.0	0.242	0.074	0.2114	
960 minute summer	100	Hydro-Brake®	101	3.0				390.7
120 minute summer	103	Hydro-Brake®	104	10.0				
15 minute summer	104	12.003	105	47.4	1.541	0.405	0.9088	
480 minute summer	105	12.004	106	9.1	0.400	0.081	0.8805	
600 minute summer	106	Flow through pond	96	6.2	0.049	0.002	54.3351	
60 minute summer	107	11.000	66	1.5	0.987	0.041	0.0084	
30 minute summer	108	3.000	17	9.4	0.962	0.534	0.0296	



Results for 10 year Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	109	12	4.372	0.172	78.5	7.2783	0.0000	OK
15 minute summer	110	12	4.254	0.487	158.8	0.6966	0.0000	SURCHARGED
1440 minute summer	111	1740	4.338	0.438	1.5	0.4955	0.0000	SURCHARGED
1440 minute summer	112	1740	4.338	0.238	1.8	0.0000	0.0000	SURCHARGED
1440 minute summer	113	1740	4.338	0.265	1.8	0.2999	0.0000	SURCHARGED
1440 minute summer	114	1740	4.338	0.353	5.0	0.0000	0.0000	OK
15 minute summer	115	13	4.774	0.206	35.8	6.5271	0.0000	OK
30 minute summer	116	23	4.667	0.229	25.4	8.9922	0.0000	SURCHARGED
60 minute summer	117	46	4.979	0.210	10.0	6.5242	0.0000	SURCHARGED
1440 minute summer	118	1740	4.338	0.038	0.0	0.0433	0.0000	OK
1440 minute summer	119	1740	4.338	0.178	0.9	0.0000	0.0000	OK
30 minute summer	120	22	4.431	0.411	60.3	14.5114	0.0000	SURCHARGED
120 minute summer	121	90	4.822	0.423	7.5	9.2443	0.0000	SURCHARGED
15 minute summer	122	13	4.293	0.232	32.7	6.1464	0.0000	SURCHARGED
360 minute summer	46	360	3.495	0.145	16.6	0.1641	0.0000	OK
15 minute summer	77	1	3.500	0.000	0.0	0.0000	0.0000	OK
360 minute summer	102	360	3.495	0.125	8.0	0.1415	0.0000	OK
480 minute summer	123	480	3.755	0.105	2.9	0.0000	0.0000	OK
480 minute summer	124	480	3.755	0.127	2.9	0.1435	0.0000	OK
15 minute summer	125	1	4.000	0.000	0.0	0.0000	0.0000	OK
480 minute summer	126	480	3.755	0.100	1.5	0.1130	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	109	4.000	110	63.2	1.755	0.439	0.4818	
15 minute summer	110	1.004	20	156.4	0.987	0.976	2.8648	
1440 minute summer	111	Hydro-Brake®	92	0.4				
1440 minute summer	112	34.000	113	-1.8	-0.212	-0.046	0.1804	
1440 minute summer	113	34.001	114	-1.8	-0.066	-0.042	0.4465	
1440 minute summer	114	Flow through pond	91	1.3	0.038	0.001	60.1050	
15 minute summer	115	6.000	24	20.6	1.245	0.365	0.0648	
30 minute summer	116	23.000	7	6.9	1.016	0.333	0.0270	
60 minute summer	117	21.000	4	1.8	0.538	0.099	0.0137	
1440 minute summer	118	44.000	119	0.0	-0.003	-0.001	0.0511	
1440 minute summer	119	Flow through pond	112	-0.9	-0.007	0.000	43.8764	
30 minute summer	120	25.000	47	27.1	2.232	0.259	0.0711	
120 minute summer	121	16.000	44	1.2	0.563	0.067	0.0076	
15 minute summer	122	19.000	38	16.9	0.933	0.423	0.5752	
360 minute summer	46	27.000	50	-16.6	-0.406	-0.234	0.7064	
15 minute summer	77	46.000	102	0.0	0.000	0.000	0.0000	
360 minute summer	102	Flow through pond	46	-8.0	-0.022	-0.001	66.2338	
480 minute summer	123	14.000	124	-2.9	-0.558	-0.072	0.0750	
480 minute summer	124	14.001	105	-2.9	-0.184	-0.073	0.2137	
15 minute summer	125	45.000	126	0.0	0.000	0.000	0.0000	
480 minute summer	126	Flow through pond	123	-1.5	-0.015	0.000	11.1862	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	1	46	4.946	0.258	23.5	15.7193	0.0000	SURCHARGED
120 minute summer	2	112	5.400	0.318	10.3	15.1125	0.0000	SURCHARGED
120 minute summer	3	112	4.962	0.024	1.0	0.0276	0.0000	OK
60 minute summer	4	58	4.772	0.045	3.3	0.0514	0.0000	OK
960 minute summer	5	960	4.720	0.089	2.5	0.1008	0.0000	OK
960 minute summer	6	975	4.720	0.326	2.5	0.3686	0.0000	SURCHARGED
960 minute summer	7	975	4.720	0.800	10.1	0.9045	0.0000	SURCHARGED
960 minute summer	8	975	4.720	0.950	10.0	1.0742	0.0000	OK
960 minute summer	9	975	4.720	0.970	5.4	0.0000	0.0000	SURCHARGED
960 minute summer	10	975	4.720	1.005	2.0	1.1363	0.0000	SURCHARGED
15 minute summer	11	1	3.669	0.000	0.7	0.0000	0.0000	OK
30 minute summer	12	23	4.731	0.322	40.5	14.5228	0.0000	SURCHARGED
240 minute summer	13	240	5.180	0.297	19.0	13.5697	0.0000	SURCHARGED
30 minute summer	14	22	5.600	0.307	38.7	11.7352	0.0000	SURCHARGED
60 minute summer	15	42	5.299	0.239	13.9	0.2706	0.0000	SURCHARGED
240 minute summer	16	240	5.180	0.534	25.1	0.6034	0.0000	SURCHARGED
15 minute summer	17	12	4.839	0.236	12.7	0.2666	0.0000	SURCHARGED
15 minute summer	18	11	4.833	0.790	84.2	0.8934	0.0000	SURCHARGED
15 minute summer	19	11	4.700	0.733	98.3	0.8293	0.0000	SURCHARGED
1440 minute summer	20	1440	4.517	0.795	25.1	1.1379	0.0000	SURCHARGED
1440 minute summer	21	1440	4.517	0.824	24.7	1.1793	0.0000	SURCHARGED
1440 minute summer	22	1440	4.517	0.860	26.3	1.2308	0.0000	SURCHARGED
1440 minute summer	23	1440	4.517	1.063	26.4	1.5211	0.0000	SURCHARGED
1440 minute summer	24	1440	4.517	1.111	30.2	1.5897	0.0000	SURCHARGED
1440 minute summer	25	1440	4.517	1.131	30.1	0.0000	0.0000	OK

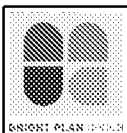
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	1	5.000	22	4.0	0.789	0.226	0.0178	
120 minute summer	2	20.000	3	1.0	0.551	0.056	0.0254	
120 minute summer	3	20.001	4	1.0	0.498	0.058	0.0675	
60 minute summer	4	20.002	5	3.3	0.739	0.186	0.0433	
960 minute summer	5	20.003	6	2.5	0.714	0.141	0.3400	
960 minute summer	6	20.004	7	2.5	0.639	0.116	0.3998	
960 minute summer	7	20.005	8	10.0	0.394	0.141	1.8776	
960 minute summer	8	Flow through pond	9	5.4	0.050	0.001	112.6979	
960 minute summer	9	36.000	10	2.0	0.277	0.049	0.2280	
960 minute summer	10	Hydro-Brake®	11	0.9				115.2
30 minute summer	12	22.000	7	11.1	1.029	0.621	0.0577	
240 minute summer	13	29.000	16	16.7	1.533	0.591	0.0427	
30 minute summer	14	28.000	15	14.7	1.101	0.829	0.3823	
60 minute summer	15	28.001	16	13.3	0.998	0.748	0.5970	
240 minute summer	16	28.002	81	24.4	0.978	0.377	0.2887	
15 minute summer	17	3.001	18	15.0	1.122	0.773	0.1722	
15 minute summer	18	1.002	19	79.3	1.127	1.118	1.3006	
15 minute summer	19	1.003	110	97.2	1.380	1.590	1.1483	
1440 minute summer	20	1.005	21	24.7	0.564	0.154	1.8487	
1440 minute summer	21	1.006	22	24.3	0.580	0.152	2.3082	
1440 minute summer	22	1.007	23	26.2	0.431	0.164	13.0836	
1440 minute summer	23	1.008	24	26.3	0.350	0.164	3.0472	
1440 minute summer	24	1.009	25	30.1	0.272	0.188	1.2712	
1440 minute summer	25	Flow through pond	26	16.8	0.082	0.001	487.8342	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	26	1440	4.517	1.142	16.8	1.2914	0.0000	SURCHARGED
1440 minute summer	27	1440	4.516	1.188	3.6	1.3440	0.0000	SURCHARGED
15 minute summer	28	1	3.237	0.000	3.6	0.0000	0.0000	OK
15 minute summer	29	12	4.887	0.095	8.6	0.1076	0.0000	OK
15 minute summer	30	11	4.885	0.365	41.0	0.4134	0.0000	SURCHARGED
15 minute summer	31	10	4.561	0.080	11.9	0.0906	0.0000	OK
15 minute summer	32	12	4.405	0.163	44.7	0.1839	0.0000	OK
15 minute summer	33	12	4.382	0.332	71.9	0.3752	0.0000	SURCHARGED
15 minute summer	34	12	4.177	0.345	93.0	0.3902	0.0000	SURCHARGED
1440 minute summer	35	1470	4.176	0.546	14.4	0.7818	0.0000	SURCHARGED
1440 minute summer	36	1470	4.176	0.656	14.2	0.0000	0.0000	OK
30 minute summer	37	22	4.706	0.360	63.8	15.8975	0.0000	SURCHARGED
1440 minute summer	38	1470	4.176	0.303	3.6	0.3431	0.0000	SURCHARGED
1440 minute summer	39	1470	4.176	0.676	7.3	0.0000	0.0000	SURCHARGED
1440 minute summer	40	1470	4.176	0.713	1.2	0.8068	0.0000	SURCHARGED
15 minute summer	41	1	3.150	0.000	0.3	0.0000	0.0000	OK
15 minute summer	42	10	5.088	0.088	13.3	0.0994	0.0000	OK
15 minute summer	43	13	5.337	0.349	38.6	7.4887	0.0000	SURCHARGED
15 minute summer	44	12	4.392	0.104	18.6	0.1174	0.0000	OK
15 minute summer	45	10	4.882	0.204	63.5	0.2312	0.0000	OK
15 minute summer	47	11	4.423	0.663	89.6	0.0000	0.0000	SURCHARGED
15 minute summer	48	11	4.172	0.710	205.2	1.0161	0.0000	SURCHARGED
15 minute summer	49	11	3.826	0.524	205.5	0.7505	0.0000	SURCHARGED
480 minute summer	50	488	3.703	0.570	70.3	1.0072	0.0000	SURCHARGED
480 minute summer	51	480	3.703	0.578	42.9	0.0000	0.0000	OK

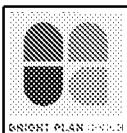
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	26	32.000	27	3.6	0.249	0.090	0.3076	
1440 minute summer	27	Hydro-Brake®	28	3.6				556.9
15 minute summer	29	1.000	30	9.2	0.756	0.228	0.9055	
15 minute summer	30	1.001	18	35.5	0.631	0.292	2.8004	
15 minute summer	31	17.000	32	11.7	0.952	0.254	0.2589	
15 minute summer	32	17.001	33	44.4	0.947	0.476	1.4884	
15 minute summer	33	15.002	34	65.0	0.982	0.916	3.7368	
15 minute summer	34	15.003	35	93.0	1.348	1.309	1.1538	
1440 minute summer	35	15.004	36	14.2	0.507	0.128	0.8808	
1440 minute summer	36	Flow through pond	39	7.3	0.016	0.000	318.1127	
30 minute summer	37	18.000	34	29.2	1.068	0.731	0.1472	
1440 minute summer	38	19.001	35	3.6	0.588	0.089	0.6089	
1440 minute summer	39	37.000	40	1.2	0.154	0.030	0.2458	
1440 minute summer	40	Hydro-Brake®	41	0.4				66.5
15 minute summer	42	12.000	45	13.1	0.793	0.328	0.7952	
15 minute summer	43	15.000	44	17.4	1.329	0.825	0.5828	
15 minute summer	44	15.001	33	18.6	1.248	0.320	0.3787	
15 minute summer	45	12.001	103	63.2	1.852	0.737	1.5066	
15 minute summer	47	24.001	48	92.8	1.346	1.023	2.3514	
15 minute summer	48	24.002	49	205.5	1.863	1.258	2.6400	
15 minute summer	49	24.003	50	205.7	1.870	1.792	1.4387	
480 minute summer	50	24.004	51	42.9	1.089	0.194	0.8214	
480 minute summer	51	Flow through pond	57	23.5	0.063	0.003	267.4554	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	52	10	4.519	0.108	23.1	0.1217	0.0000	OK
15 minute summer	53	10	4.246	0.091	22.9	0.1024	0.0000	OK
15 minute summer	54	11	4.133	0.199	65.0	0.2254	0.0000	OK
15 minute summer	55	11	4.029	0.488	62.1	0.5518	0.0000	SURCHARGED
15 minute summer	56	11	3.929	0.488	137.4	0.5515	0.0000	SURCHARGED
480 minute summer	57	480	3.703	0.603	23.5	0.0000	0.0000	SURCHARGED
480 minute summer	58	480	3.702	0.635	10.6	0.7178	0.0000	SURCHARGED
15 minute summer	59	1	3.046	0.000	4.0	0.0000	0.0000	OK
15 minute summer	60	1	4.799	0.000	0.0	0.0000	0.0000	OK
15 minute summer	61	10	5.164	0.088	22.1	0.0993	0.0000	OK
15 minute summer	62	11	4.676	0.595	70.0	0.6734	0.0000	SURCHARGED
15 minute summer	63	11	4.677	0.646	13.5	0.7302	0.0000	SURCHARGED
15 minute summer	64	11	4.688	0.824	10.0	0.9324	0.0000	SURCHARGED
1440 minute summer	65	1470	3.960	0.331	0.7	0.3738	0.0000	SURCHARGED
1440 minute summer	66	1470	3.959	0.662	8.5	0.7492	0.0000	SURCHARGED
1440 minute summer	67	1470	3.960	0.740	8.4	0.8375	0.0000	OK
1440 minute summer	68	1470	4.649	0.484	6.7	0.0000	0.0000	SURCHARGED
60 minute summer	74	45	5.106	0.602	45.7	24.9809	0.0000	SURCHARGED
1440 minute summer	75	1470	4.649	0.299	8.0	0.0000	0.0000	OK
1440 minute summer	76	1470	4.649	0.464	7.8	0.0000	0.0000	OK
60 minute summer	78	46	5.228	0.329	33.6	21.9927	0.0000	SURCHARGED
240 minute summer	79	244	5.179	0.829	25.0	0.0000	0.0000	SURCHARGED
240 minute summer	80	244	5.179	0.901	11.2	1.0191	0.0000	SURCHARGED
240 minute summer	81	244	5.179	0.645	24.4	0.7299	0.0000	SURCHARGED
240 minute summer	82	244	5.179	0.819	24.0	0.0000	0.0000	OK

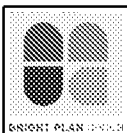
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	52	26.000	53	22.9	1.280	0.413	0.2842	
15 minute summer	53	26.001	54	22.7	0.792	0.201	0.7261	
15 minute summer	54	26.002	55	62.1	1.135	0.557	2.3373	
15 minute summer	55	26.003	56	64.9	0.921	0.914	1.7105	
15 minute summer	56	26.004	50	137.5	1.953	1.940	0.6396	
480 minute summer	57	40.000	58	10.6	0.486	0.224	0.1554	
480 minute summer	58	Hydro-Brake®	59	4.0				420.5
15 minute summer	60	24.000	47	0.0	0.000	0.000	0.3718	
15 minute summer	61	7.000	62	21.9	1.325	0.326	1.0292	
15 minute summer	62	7.001	63	-14.2	0.808	-0.356	0.3356	
15 minute summer	63	7.002	64	-11.6	0.627	-0.292	1.1218	
15 minute summer	64	Hydro-Brake®	65	0.7				
1440 minute summer	65	7.004	66	0.7	0.374	0.017	1.6894	
1440 minute summer	66	7.005	67	8.4	0.438	0.108	0.7393	
1440 minute summer	67	Flow through pond	99	6.9	0.017	0.000	203.4463	
1440 minute summer	68	8.000	62	-5.5	0.239	-0.138	0.5636	
60 minute summer	74	30.000	75	8.6	0.563	0.120	0.7004	
1440 minute summer	75	30.001	76	7.8	0.648	0.109	0.6434	
1440 minute summer	76	Flow through pond	68	1.5	0.006	0.000	269.9745	
60 minute summer	78	31.000	75	6.1	0.915	0.344	0.1013	
240 minute summer	79	2.000	80	11.2	0.517	0.171	0.1810	
240 minute summer	80	Hydro-Brake®	18	2.3				
240 minute summer	81	28.003	82	24.0	0.640	0.603	0.9418	
240 minute summer	82	Flow through pond	79	18.3	0.076	0.003	65.7369	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	83	2310	4.479	0.494	2.0	0.0000	0.0000	OK
15 minute summer	84	10	4.171	0.104	27.8	0.1178	0.0000	OK
360 minute summer	85	360	5.012	0.631	18.8	80.1825	0.0000	SURCHARGED
1440 minute summer	86	2310	4.479	0.494	1.4	0.0000	0.0000	OK
30 minute summer	87	22	4.400	0.360	101.1	33.6738	0.0000	SURCHARGED
60 minute summer	88	47	4.866	0.322	24.3	16.5949	0.0000	SURCHARGED
30 minute summer	89	23	4.667	0.316	41.5	14.3447	0.0000	SURCHARGED
1440 minute summer	90	2310	4.479	0.494	2.8	0.0000	0.0000	OK
1440 minute summer	91	2310	4.479	0.529	2.0	0.0000	0.0000	FLOOD RISK
720 minute summer	92	720	4.046	0.641	0.4	0.0000	0.0000	OK
30 minute summer	93	23	5.035	0.335	34.7	11.6472	0.0000	SURCHARGED
60 minute summer	94	61	4.748	0.517	17.3	13.7212	0.0000	SURCHARGED
720 minute summer	95	720	4.045	0.640	1.2	0.7242	0.0000	OK
720 minute summer	96	735	4.045	0.670	9.0	0.7580	0.0000	SURCHARGED
720 minute summer	97	735	4.044	0.701	3.0	0.7926	0.0000	SURCHARGED
1440 minute summer	98	1470	3.960	0.740	2.8	0.0000	0.0000	OK
1440 minute summer	99	1470	3.960	0.760	6.9	0.8592	0.0000	SURCHARGED
1440 minute summer	100	1470	3.959	0.791	3.0	0.8951	0.0000	SURCHARGED
15 minute summer	101	1	3.130	0.000	3.0	0.0000	0.0000	OK
120 minute summer	103	86	4.727	0.277	63.6	82.2324	0.0000	OK
15 minute summer	104	10	4.267	0.209	89.4	0.2369	0.0000	OK
720 minute summer	105	735	4.045	0.613	22.4	61.7535	0.0000	SURCHARGED
720 minute summer	106	720	4.047	0.642	11.5	0.9186	0.0000	OK
60 minute summer	107	53	4.174	0.326	14.8	10.9132	0.0000	SURCHARGED
30 minute summer	108	23	4.917	0.284	36.7	12.1929	0.0000	SURCHARGED

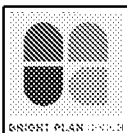
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	83	Flow through pond	91	1.8	0.052	0.001	101.2057	
15 minute summer	84	13.000	105	27.6	1.632	0.375	0.1999	
360 minute summer	85	33.000	86	1.5	0.562	0.024	0.4591	
1440 minute summer	86	Flow through pond	91	1.8	0.052	0.001	101.2057	
30 minute summer	87	10.000	66	36.4	2.275	0.346	0.0906	
60 minute summer	88	42.000	83	4.0	1.457	0.101	0.0424	
30 minute summer	89	43.000	90	12.7	1.857	0.356	0.0516	
1440 minute summer	90	Flow through pond	91	1.8	0.052	0.001	101.2057	
1440 minute summer	91	38.000	111	-1.3	0.202	-0.064	0.0687	
720 minute summer	92	Flow through pond	96	9.0	0.053	0.003	134.4825	
30 minute summer	93	9.000	64	10.3	0.972	0.578	0.0453	
60 minute summer	94	41.000	95	1.3	1.244	0.025	0.0635	
720 minute summer	95	Flow through pond	96	9.0	0.053	0.003	134.4825	
720 minute summer	96	35.000	97	3.0	0.320	0.167	0.0568	
720 minute summer	97	Hydro-Brake®	98	2.9				
1440 minute summer	98	Flow through pond	99	6.9	0.017	0.000	203.4463	
1440 minute summer	99	39.000	100	3.0	0.236	0.074	0.2114	
1440 minute summer	100	Hydro-Brake®	101	3.0				417.6
120 minute summer	103	Hydro-Brake®	104	12.4				
15 minute summer	104	12.003	105	88.5	1.767	0.755	1.4759	
720 minute summer	105	12.004	106	11.5	0.394	0.102	0.9336	
720 minute summer	106	Flow through pond	96	9.0	0.053	0.003	134.4825	
60 minute summer	107	11.000	66	1.8	1.053	0.051	0.0133	
30 minute summer	108	3.000	17	12.8	1.022	0.720	0.0531	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	109	13	4.573	0.373	142.5	33.7666	0.0000	SURCHARGED
15 minute summer	110	12	4.538	0.771	189.4	1.1037	0.0000	SURCHARGED
1440 minute summer	111	2310	4.479	0.579	1.1	0.6547	0.0000	FLOOD RISK
1440 minute summer	112	2280	4.479	0.379	2.8	0.0000	0.0000	SURCHARGED
1440 minute summer	113	2280	4.479	0.406	2.8	0.4591	0.0000	SURCHARGED
1440 minute summer	114	2280	4.479	0.494	5.3	0.0000	0.0000	OK
30 minute summer	115	21	4.900	0.332	58.4	14.2968	0.0000	SURCHARGED
60 minute summer	116	43	4.777	0.339	34.8	19.3569	0.0000	SURCHARGED
60 minute summer	117	52	5.100	0.331	18.4	13.7195	0.0000	SURCHARGED
1440 minute summer	118	2280	4.479	0.179	0.0	0.2024	0.0000	SURCHARGED
1440 minute summer	119	2280	4.479	0.319	1.4	0.0000	0.0000	OK
30 minute summer	120	23	4.672	0.652	110.2	36.0364	0.0000	SURCHARGED
120 minute summer	121	108	5.012	0.613	13.4	19.0332	0.0000	FLOOD RISK
30 minute summer	122	22	4.412	0.351	53.4	14.1220	0.0000	SURCHARGED
480 minute summer	46	488	3.703	0.353	37.0	0.3995	0.0000	SURCHARGED
480 minute summer	77	488	3.703	0.203	0.1	0.2295	0.0000	SURCHARGED
480 minute summer	102	488	3.703	0.333	19.7	0.3768	0.0000	OK
720 minute summer	123	720	4.046	0.396	7.2	0.0000	0.0000	SURCHARGED
720 minute summer	124	720	4.045	0.417	7.3	0.4721	0.0000	SURCHARGED
720 minute summer	125	720	4.046	0.046	0.0	0.0515	0.0000	OK
720 minute summer	126	720	4.046	0.391	3.9	0.4418	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	109	4.000	110	113.8	1.844	0.791	0.6995	
15 minute summer	110	1.004	20	188.4	1.189	1.176	2.8648	
1440 minute summer	111	Hydro-Brake®	92	0.4				
1440 minute summer	112	34.000	113	-2.8	-0.169	-0.070	0.1804	
1440 minute summer	113	34.001	114	-2.8	-0.072	-0.064	0.4465	
1440 minute summer	114	Flow through pond	91	1.8	0.052	0.001	101.2057	
30 minute summer	115	6.000	24	29.0	1.353	0.515	0.0839	
60 minute summer	116	23.000	7	8.7	1.078	0.422	0.0595	
60 minute summer	117	21.000	4	2.3	0.574	0.128	0.0165	
1440 minute summer	118	44.000	119	0.0	0.002	0.001	0.0877	
1440 minute summer	119	Flow through pond	112	-1.4	-0.005	0.000	83.0916	
30 minute summer	120	25.000	47	36.6	2.393	0.349	0.1829	
120 minute summer	121	16.000	44	1.4	0.595	0.081	0.0087	
30 minute summer	122	19.000	38	22.5	0.992	0.564	0.7235	
480 minute summer	46	27.000	50	-37.1	-0.549	-0.522	1.1438	
480 minute summer	77	46.000	102	-0.1	-0.051	-0.013	0.0239	
480 minute summer	102	Flow through pond	46	-19.7	-0.049	-0.003	168.2314	
720 minute summer	123	14.000	124	-7.2	-0.733	-0.179	0.1448	
720 minute summer	124	14.001	105	-7.3	-0.315	-0.182	0.3046	
720 minute summer	125	45.000	126	0.0	0.007	0.004	0.0199	
720 minute summer	126	Flow through pond	123	-3.9	-0.023	-0.001	42.2640	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	1	50	5.037	0.349	34.2	24.6611	0.0000	SURCHARGED
120 minute summer	2	120	5.513	0.431	14.7	22.9530	0.0000	SURCHARGED
120 minute summer	3	122	4.964	0.026	1.2	0.0299	0.0000	OK
1440 minute summer	4	1440	4.922	0.195	2.7	0.2209	0.0000	SURCHARGED
1440 minute summer	5	1440	4.922	0.291	2.7	0.3294	0.0000	SURCHARGED
1440 minute summer	6	1440	4.922	0.528	2.6	0.5973	0.0000	SURCHARGED
1440 minute summer	7	1440	4.922	1.002	7.8	1.1332	0.0000	SURCHARGED
1440 minute summer	8	1440	4.922	1.152	7.7	1.3028	0.0000	OK
1440 minute summer	9	1440	4.922	1.172	4.3	0.0000	0.0000	FLOOD RISK
1440 minute summer	10	1440	4.922	1.207	2.4	1.3650	0.0000	FLOOD RISK
15 minute summer	11	1	3.669	0.000	0.8	0.0000	0.0000	OK
60 minute summer	12	40	4.963	0.554	44.0	22.4433	0.0000	FLOOD RISK
360 minute summer	13	360	5.398	0.515	20.0	27.6315	0.0000	SURCHARGED
30 minute summer	14	23	5.782	0.489	55.7	19.0752	0.0000	SURCHARGED
60 minute summer	15	44	5.431	0.371	15.0	0.4193	0.0000	SURCHARGED
360 minute summer	16	360	5.397	0.751	19.8	0.8497	0.0000	SURCHARGED
30 minute summer	17	21	5.185	0.582	19.2	0.6581	0.0000	SURCHARGED
30 minute summer	18	21	5.245	1.202	111.5	1.3590	0.0000	FLOOD RISK
30 minute summer	19	21	5.173	1.206	121.5	1.3639	0.0000	FLOOD RISK
30 minute summer	20	21	4.970	1.248	259.8	1.7859	0.0000	SURCHARGED
30 minute summer	21	21	4.852	1.159	238.2	1.6590	0.0000	SURCHARGED
1440 minute summer	22	1470	4.795	1.138	33.4	1.6284	0.0000	SURCHARGED
1440 minute summer	23	1470	4.795	1.341	33.6	1.9190	0.0000	SURCHARGED
1440 minute summer	24	1470	4.795	1.389	38.9	1.9877	0.0000	SURCHARGED
1440 minute summer	25	1470	4.795	1.409	38.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	1	5.000	22	4.8	0.826	0.269	0.0202	
120 minute summer	2	20.000	3	1.2	0.577	0.066	0.0285	
120 minute summer	3	20.001	4	1.2	0.521	0.068	0.0764	
1440 minute summer	4	20.002	5	2.7	0.700	0.154	0.1703	
1440 minute summer	5	20.003	6	2.6	0.684	0.149	0.4199	
1440 minute summer	6	20.004	7	2.6	0.579	0.123	0.3998	
1440 minute summer	7	20.005	8	7.7	0.394	0.109	1.8776	
1440 minute summer	8	Flow through pond	9	4.3	0.026	0.001	157.5750	
1440 minute summer	9	36.000	10	2.4	0.121	0.059	0.2280	
1440 minute summer	10	Hydro-Brake®	11	1.0				147.2
60 minute summer	12	22.000	7	15.3	1.099	0.859	0.0945	
360 minute summer	13	29.000	16	12.2	1.400	0.433	0.0427	
30 minute summer	14	28.000	15	15.4	1.109	0.871	0.4129	
60 minute summer	15	28.001	16	13.2	0.982	0.745	0.5970	
360 minute summer	16	28.002	81	19.4	0.869	0.300	0.2887	
30 minute summer	17	3.001	18	21.4	1.216	1.101	0.1722	
30 minute summer	18	1.002	19	95.7	1.359	1.349	1.3006	
30 minute summer	19	1.003	110	119.8	1.702	1.960	1.1483	
30 minute summer	20	1.005	21	238.2	1.503	1.487	1.8487	
30 minute summer	21	1.006	22	241.3	1.523	1.511	2.3082	
1440 minute summer	22	1.007	23	33.3	0.454	0.209	13.0836	
1440 minute summer	23	1.008	24	33.5	0.392	0.209	3.0472	
1440 minute summer	24	1.009	25	38.8	0.327	0.242	1.2712	
1440 minute summer	25	Flow through pond	26	21.3	0.073	0.002	705.5554	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	26	1470	4.795	1.420	21.3	1.6060	0.0000	FLOOD RISK
1440 minute summer	27	1470	4.794	1.466	3.9	1.6584	0.0000	FLOOD RISK
15 minute summer	28	1	3.237	0.000	3.6	0.0000	0.0000	OK
15 minute summer	29	11	5.329	0.537	12.2	0.6079	0.0000	SURCHARGED
30 minute summer	30	21	5.327	0.807	51.6	0.9122	0.0000	FLOOD RISK
15 minute summer	31	11	4.758	0.277	16.9	0.3136	0.0000	SURCHARGED
15 minute summer	32	12	4.740	0.498	60.4	0.5632	0.0000	SURCHARGED
15 minute summer	33	12	4.667	0.617	89.2	0.6979	0.0000	SURCHARGED
1440 minute summer	34	1470	4.379	0.547	15.5	0.6189	0.0000	SURCHARGED
1440 minute summer	35	1470	4.379	0.749	20.1	1.0722	0.0000	SURCHARGED
1440 minute summer	36	1470	4.379	0.859	19.9	0.0000	0.0000	OK
30 minute summer	37	21	5.250	0.904	91.8	24.5490	0.0000	FLOOD RISK
1440 minute summer	38	1470	4.379	0.506	5.1	0.5726	0.0000	SURCHARGED
1440 minute summer	39	1470	4.379	0.879	10.2	0.0000	0.0000	FLOOD RISK
1440 minute summer	40	1470	4.379	0.916	1.2	1.0363	0.0000	FLOOD RISK
15 minute summer	41	1	3.150	0.000	0.3	0.0000	0.0000	OK
120 minute summer	42	96	5.579	0.579	8.1	0.6544	0.0000	SURCHARGED
30 minute summer	43	22	5.711	0.723	50.1	12.2845	0.0000	FLOOD RISK
15 minute summer	44	12	4.699	0.411	23.7	0.4647	0.0000	SURCHARGED
120 minute summer	45	96	5.582	0.904	38.9	1.0219	0.0000	SURCHARGED
15 minute summer	47	11	4.798	1.038	107.7	0.0000	0.0000	FLOOD RISK
15 minute summer	48	11	4.541	1.079	257.5	1.5448	0.0000	FLOOD RISK
15 minute summer	49	11	4.003	0.701	255.8	1.0029	0.0000	FLOOD RISK
720 minute summer	50	720	3.982	0.849	70.2	1.5005	0.0000	SURCHARGED
720 minute summer	51	720	3.982	0.857	34.1	0.0000	0.0000	OK

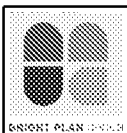
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	26	32.000	27	3.9	0.285	0.096	0.3076	
1440 minute summer	27	Hydro-Brake®	28	3.9				617.4
15 minute summer	29	1.000	30	12.3	0.754	0.306	1.2928	
30 minute summer	30	1.001	18	50.2	0.713	0.412	2.8004	
15 minute summer	31	17.000	32	15.6	0.928	0.338	0.8272	
15 minute summer	32	17.001	33	58.4	0.986	0.627	1.9164	
15 minute summer	33	15.002	34	86.3	1.226	1.218	3.7368	
1440 minute summer	34	15.003	35	15.2	0.681	0.214	1.2482	
1440 minute summer	35	15.004	36	19.9	0.501	0.179	0.8808	
1440 minute summer	36	Flow through pond	39	10.2	0.016	0.000	449.8417	
30 minute summer	37	18.000	34	52.5	1.334	1.313	0.2034	
1440 minute summer	38	19.001	35	4.9	0.582	0.121	0.6089	
1440 minute summer	39	37.000	40	1.2	0.144	0.030	0.2458	
1440 minute summer	40	Hydro-Brake®	41	0.5				73.0
120 minute summer	42	12.000	45	8.1	0.786	0.203	1.6658	
30 minute summer	43	15.000	44	22.6	1.351	1.074	0.7842	
15 minute summer	44	15.001	33	27.3	1.290	0.471	0.5225	
120 minute summer	45	12.001	103	38.9	1.027	0.454	2.6845	
15 minute summer	47	24.001	48	107.0	1.520	1.181	2.3514	
15 minute summer	48	24.002	49	255.8	2.320	1.566	2.6400	
15 minute summer	49	24.003	50	256.2	2.323	2.232	1.4928	
720 minute summer	50	24.004	51	34.1	0.971	0.155	0.8214	
720 minute summer	51	Flow through pond	57	19.0	0.062	0.003	456.7368	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	52	11	4.734	0.323	33.0	0.3658	0.0000	SURCHARGED
15 minute summer	53	11	4.663	0.508	30.3	0.5742	0.0000	SURCHARGED
15 minute summer	54	11	4.641	0.707	87.0	0.7999	0.0000	SURCHARGED
15 minute summer	55	11	4.360	0.818	86.0	0.9254	0.0000	SURCHARGED
15 minute summer	56	11	4.168	0.726	192.8	0.8213	0.0000	FLOOD RISK
720 minute summer	57	720	3.982	0.882	19.0	0.0000	0.0000	FLOOD RISK
720 minute summer	58	720	3.982	0.914	11.0	1.0336	0.0000	FLOOD RISK
15 minute summer	59	1	3.046	0.000	4.0	0.0000	0.0000	OK
15 minute summer	60	1	4.799	0.000	0.0	0.0000	0.0000	OK
15 minute summer	61	10	5.183	0.107	31.4	0.1209	0.0000	OK
15 minute summer	62	11	4.961	0.880	92.1	0.9958	0.0000	SURCHARGED
15 minute summer	63	11	4.970	0.939	17.3	1.0618	0.0000	SURCHARGED
15 minute summer	64	11	4.973	1.109	13.9	1.2543	0.0000	SURCHARGED
1440 minute summer	65	1710	4.190	0.561	0.7	0.6348	0.0000	SURCHARGED
1440 minute summer	66	1710	4.190	0.893	11.5	1.0101	0.0000	SURCHARGED
1440 minute summer	67	1740	4.192	0.972	11.4	1.0992	0.0000	OK
1440 minute summer	68	1470	4.880	0.715	9.0	0.0000	0.0000	SURCHARGED
60 minute summer	74	49	5.234	0.730	66.4	42.5029	0.0000	FLOOD RISK
1440 minute summer	75	1470	4.880	0.530	11.1	0.0000	0.0000	SURCHARGED
1440 minute summer	76	1470	4.880	0.695	10.8	0.0000	0.0000	OK
60 minute summer	78	47	5.453	0.554	48.9	34.3554	0.0000	FLOOD RISK
360 minute summer	79	360	5.396	1.046	25.3	0.0000	0.0000	FLOOD RISK
360 minute summer	80	360	5.396	1.118	9.1	1.2648	0.0000	FLOOD RISK
360 minute summer	81	360	5.397	0.863	19.4	0.9761	0.0000	FLOOD RISK
360 minute summer	82	360	5.396	1.036	19.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	52	26.000	53	30.3	1.358	0.547	0.6320	
15 minute summer	53	26.001	54	39.4	0.803	0.349	1.5166	
15 minute summer	54	26.002	55	86.0	1.222	0.771	2.7404	
15 minute summer	55	26.003	56	87.3	1.241	1.231	1.7105	
15 minute summer	56	26.004	50	192.3	2.731	2.713	0.6451	
720 minute summer	57	40.000	58	11.0	0.415	0.233	0.1554	
720 minute summer	58	Hydro-Brake®	59	4.0				448.1
15 minute summer	60	24.000	47	0.0	0.000	0.000	0.3718	
15 minute summer	61	7.000	62	31.2	1.279	0.463	1.1170	
15 minute summer	62	7.001	63	-21.3	0.883	-0.533	0.3356	
15 minute summer	63	7.002	64	-17.3	0.635	-0.434	1.1218	
15 minute summer	64	Hydro-Brake®	65	0.8				
1440 minute summer	65	7.004	66	0.9	0.373	0.022	1.6894	
1440 minute summer	66	7.005	67	11.4	0.456	0.146	0.7393	
1440 minute summer	67	Flow through pond	99	8.4	0.017	0.001	295.8128	
1440 minute summer	68	8.000	62	-8.0	-0.201	-0.200	0.5636	
60 minute summer	74	30.000	75	9.5	0.548	0.133	1.3712	
1440 minute summer	75	30.001	76	10.8	0.641	0.152	0.6438	
1440 minute summer	76	Flow through pond	68	2.6	0.007	0.000	402.0656	
60 minute summer	78	31.000	75	8.2	0.988	0.462	0.1259	
360 minute summer	79	2.000	80	9.1	0.470	0.138	0.1810	
360 minute summer	80	Hydro-Brake®	18	2.3				
360 minute summer	81	28.003	82	19.2	0.616	0.482	0.9418	
360 minute summer	82	Flow through pond	79	18.8	0.072	0.003	95.5676	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	83	2820	4.591	0.606	2.6	0.0000	0.0000	OK
960 minute summer	84	960	4.364	0.297	3.4	0.3360	0.0000	SURCHARGED
360 minute summer	85	360	5.205	0.824	26.6	120.3566	0.0000	SURCHARGED
1440 minute summer	86	2820	4.591	0.606	1.6	0.0000	0.0000	OK
30 minute summer	87	23	4.555	0.515	145.6	51.7223	0.0000	FLOOD RISK
60 minute summer	88	46	5.299	0.755	35.4	25.1802	0.0000	FLOOD RISK
30 minute summer	89	23	4.880	0.529	59.8	22.1007	0.0000	SURCHARGED
1440 minute summer	90	2820	4.591	0.606	4.0	0.0000	0.0000	OK
1440 minute summer	91	2820	4.591	0.641	2.2	0.0000	0.0000	FLOOD RISK
960 minute summer	92	960	4.364	0.959	0.4	0.0000	0.0000	OK
30 minute summer	93	23	5.439	0.739	50.0	18.1817	0.0000	FLOOD RISK
120 minute summer	94	120	4.840	0.609	15.7	21.8393	0.0000	FLOOD RISK
960 minute summer	95	960	4.364	0.959	1.3	1.0844	0.0000	OK
960 minute summer	96	960	4.364	0.989	12.2	1.1182	0.0000	FLOOD RISK
960 minute summer	97	960	4.362	1.019	3.2	1.1523	0.0000	FLOOD RISK
1440 minute summer	98	1710	4.191	0.971	3.1	0.0000	0.0000	OK
1440 minute summer	99	1710	4.190	0.990	8.4	1.1199	0.0000	FLOOD RISK
1440 minute summer	100	1710	4.190	1.022	3.0	1.1557	0.0000	FLOOD RISK
15 minute summer	101	1	3.130	0.000	3.0	0.0000	0.0000	OK
120 minute summer	103	96	5.579	1.129	90.7	120.8215	0.0000	FLOOD RISK
15 minute summer	104	10	4.453	0.395	128.5	0.4465	0.0000	SURCHARGED
960 minute summer	105	960	4.364	0.932	25.3	62.2100	0.0000	SURCHARGED
960 minute summer	106	960	4.365	0.960	17.4	1.3743	0.0000	OK
60 minute summer	107	60	4.288	0.440	21.5	17.1109	0.0000	SURCHARGED
30 minute summer	108	23	5.469	0.836	61.8	24.8847	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	83	Flow through pond	91	2.2	0.060	0.001	140.8357	
960 minute summer	84	13.000	105	3.4	0.934	0.046	0.4699	
360 minute summer	85	33.000	86	1.7	0.565	0.027	0.6574	
1440 minute summer	86	Flow through pond	91	2.2	0.060	0.001	140.8357	
30 minute summer	87	10.000	66	45.2	2.392	0.430	0.1071	
60 minute summer	88	42.000	83	6.4	1.660	0.159	0.0565	
30 minute summer	89	43.000	90	17.0	2.000	0.476	0.0532	
1440 minute summer	90	Flow through pond	91	2.2	0.060	0.001	140.8357	
1440 minute summer	91	38.000	111	2.2	0.263	0.108	0.0687	
960 minute summer	92	Flow through pond	96	12.2	0.050	0.005	260.0297	
30 minute summer	93	9.000	64	16.4	1.056	0.920	0.0753	
120 minute summer	94	41.000	95	1.4	1.235	0.028	0.0639	
960 minute summer	95	Flow through pond	96	12.2	0.050	0.005	260.0297	
960 minute summer	96	35.000	97	3.2	0.318	0.179	0.0568	
960 minute summer	97	Hydro-Brake®	98	3.2				
1440 minute summer	98	Flow through pond	99	8.4	0.017	0.001	295.8128	
1440 minute summer	99	39.000	100	3.0	0.239	0.074	0.2114	
1440 minute summer	100	Hydro-Brake®	101	3.0				455.0
120 minute summer	103	Hydro-Brake®	104	12.5				
15 minute summer	104	12.003	105	126.4	1.796	1.078	2.0193	
960 minute summer	105	12.004	106	17.4	0.392	0.155	0.9336	
960 minute summer	106	Flow through pond	96	12.2	0.050	0.005	260.0297	
60 minute summer	107	11.000	66	2.2	1.101	0.060	0.0528	
30 minute summer	108	3.000	17	19.2	1.088	1.082	0.0531	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	109	20	5.266	1.066	219.0	64.0825	0.0000	FLOOD RISK
30 minute summer	110	21	5.094	1.327	274.6	1.8992	0.0000	FLOOD RISK
1440 minute summer	111	2820	4.591	0.691	2.2	0.7811	0.0000	FLOOD RISK
1440 minute summer	112	2880	4.591	0.491	3.7	0.0000	0.0000	SURCHARGED
1440 minute summer	113	2880	4.591	0.518	3.7	0.5856	0.0000	SURCHARGED
1440 minute summer	114	2850	4.592	0.607	5.0	0.0000	0.0000	OK
30 minute summer	115	21	5.355	0.787	84.2	21.5868	0.0000	FLOOD RISK
60 minute summer	116	42	5.170	0.732	50.7	30.5572	0.0000	FLOOD RISK
60 minute summer	117	52	5.475	0.706	26.8	20.8297	0.0000	FLOOD RISK
1440 minute summer	118	2850	4.591	0.291	0.0	0.3287	0.0000	SURCHARGED
1440 minute summer	119	2850	4.591	0.431	1.8	0.0000	0.0000	OK
30 minute summer	120	23	4.959	0.939	163.4	64.4510	0.0000	FLOOD RISK
120 minute summer	121	120	5.197	0.798	19.1	29.2488	0.0000	FLOOD RISK
30 minute summer	122	22	4.644	0.583	76.9	22.9032	0.0000	SURCHARGED
600 minute summer	46	615	3.982	0.632	41.5	0.7149	0.0000	SURCHARGED
720 minute summer	77	720	3.982	0.482	0.1	0.5448	0.0000	SURCHARGED
720 minute summer	102	720	3.982	0.612	17.4	0.6919	0.0000	OK
720 minute summer	123	780	4.399	0.749	25.5	0.0000	0.0000	SURCHARGED
960 minute summer	124	960	4.364	0.736	7.5	0.8323	0.0000	SURCHARGED
960 minute summer	125	960	4.362	0.362	0.3	0.4100	0.0000	SURCHARGED
600 minute summer	126	675	4.386	0.731	27.5	0.8265	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	109	4.000	110	130.7	1.856	0.908	0.6995	
30 minute summer	110	1.004	20	234.2	1.478	1.461	2.8648	
1440 minute summer	111	Hydro-Brake®	92	0.4				
1440 minute summer	112	34.000	113	-3.7	-0.181	-0.093	0.1804	
1440 minute summer	113	34.001	114	-3.7	-0.093	-0.084	0.4465	
1440 minute summer	114	Flow through pond	91	2.2	0.060	0.001	140.8357	
30 minute summer	115	6.000	24	50.6	1.532	0.897	0.1290	
60 minute summer	116	23.000	7	13.4	1.190	0.649	0.0701	
60 minute summer	117	21.000	4	3.4	0.650	0.192	0.0218	
1440 minute summer	118	44.000	119	0.0	-0.003	-0.002	0.0877	
1440 minute summer	119	Flow through pond	112	-1.8	-0.005	-0.001	119.9301	
30 minute summer	120	25.000	47	49.5	2.511	0.472	0.1829	
120 minute summer	121	16.000	44	1.6	0.618	0.093	0.0096	
30 minute summer	122	19.000	38	30.3	1.042	0.759	0.9234	
600 minute summer	46	27.000	50	-41.6	-0.591	-0.586	1.1438	
720 minute summer	77	46.000	102	-0.1	-0.019	-0.015	0.0239	
720 minute summer	102	Flow through pond	46	-17.4	-0.017	-0.002	198.2159	
720 minute summer	123	14.000	124	-8.6	-0.704	-0.213	0.1448	
960 minute summer	124	14.001	105	-7.5	-0.245	-0.187	0.3046	
960 minute summer	125	45.000	126	-0.3	-0.036	-0.035	0.0276	
600 minute summer	126	Flow through pond	123	29.3	-0.012	0.005	44.3121	



Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	10	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	0.700
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	250.0		

Nodes

Name	Area (ha)	T of E (mins)	Add Inflow (l/s)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.163	5.00		4.600	1200	488779.748	98481.631	1.300
2				4.600	1200	488779.143	98488.374	1.340
3				4.300	1200	488781.230	98496.719	1.091
4		5.00	1.0	5.848	1200	488972.550	98441.262	1.245
5				5.851	1200	488961.872	98442.715	2.536
6	0.042	5.00		5.400	1200	488781.165	98219.396	1.300
7				5.400	1200	488780.557	98211.470	1.347
8				5.100	1200	488780.441	98208.203	1.067
9	0.062	5.00		5.600	1200	488855.483	98262.642	1.250
10				5.550	1200	488847.064	98252.484	1.254
11				5.600	1200	488816.342	98227.165	1.482
12	0.068	5.00		5.681	1200	488887.669	98385.510	1.201
13	0.039	5.00		5.411	1200	488919.403	98382.125	1.062
14				5.504	1200	488930.658	98389.789	1.259
15				5.781	1200	488937.751	98431.975	1.899
16				5.857	1200	488928.868	98440.657	2.013
17				5.750	1200	488909.466	98438.511	1.966
18				5.535	1200	488876.682	98438.213	1.853
19				5.262	1200	488838.522	98443.414	1.699
20				5.097	1350	488798.255	98449.954	1.660
21				5.000	1350	488801.257	98459.865	1.685
22	0.038	5.00		5.108	1200	488772.062	98462.120	0.850
23	0.037	5.00		5.704	1200	488838.057	98381.132	0.873
24	0.065	5.00		5.419	1200	488805.854	98397.618	1.223
25	0.019	5.00		5.463	1200	488786.242	98408.147	1.358
26	0.097	5.00		5.466	1200	488770.033	98369.704	0.925
27				5.395	1200	488783.889	98378.038	0.950
28	0.059	5.00		6.487	1200	488767.974	98300.172	0.737
29				6.072	1200	488788.681	98253.959	0.903
30				6.052	1200	488800.101	98249.633	0.955
31				5.862	1200	488831.150	98265.817	0.972
32	0.025	5.00		5.527	1200	488849.624	98366.244	0.652
33	0.027	5.00		5.358	1200	488842.944	98351.255	0.580
34	0.056	5.00		5.297	1200	488834.825	98342.063	0.592
35				5.435	1200	488847.502	98325.291	0.816
36				5.588	1350	488859.752	98298.982	1.088
37				5.326	1350	488872.472	98299.906	0.878
38				5.650	1350	488873.371	98284.904	1.285
39	0.030	5.00		5.103	1200	488922.178	98366.970	0.603
44				5.639	1200	488857.926	98289.886	1.036
45	0.054	5.00		6.499	1200	488786.360	98313.434	1.044
46	0.016	5.00		5.806	1200	488812.732	98327.292	0.873



Nodes

Name	Area (ha)	T of E (mins)	Add Inflow (l/s)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
47		5.00		6.412	1200	488754.285	98299.541	0.800
48	0.032	5.00		6.234	1200	488729.717	98290.650	1.111
49	0.065	5.00		5.476	1200	488696.674	98279.860	1.187
50	0.032	5.00		5.150	1200	488699.180	98220.717	1.300
51	0.091	5.00		5.029	1200	488712.315	98214.823	1.264
52				4.997	1200	488718.811	98200.533	1.325
53				4.999	1200	488720.098	98197.565	1.347
54	0.071	5.00		5.260	1200	488699.653	98249.990	1.224
55				5.150	1200	488694.191	98231.122	1.294
56	0.004	5.00		5.657	1200	488696.529	98306.180	0.800
57	0.023	5.00		5.633	1200	488697.602	98320.509	0.800
58	0.165	5.00		5.544	1200	488695.301	98358.161	1.545
59				5.472	1200	488690.570	98388.479	1.983
60				5.474	1200	488694.741	98400.159	2.058
61				4.900	1200	488688.306	98407.292	1.541
62	0.023	5.00		6.272	1200	488761.019	98328.186	0.850
63	0.003	5.00		6.115	1200	488754.760	98353.805	0.955
64	0.077	5.00		6.032	1200	488752.748	98372.622	1.704
65				5.846	1200	488739.912	98403.273	1.852
66	0.049	5.00		5.709	1200	488729.505	98408.196	1.783
67				5.499	1200	488701.265	98404.484	1.832
68				5.200	1200	488722.053	98416.349	1.345
69	0.012	5.00		5.200	1200	488715.944	98415.369	1.350
70	0.056	5.00		5.800	1200	488741.098	98409.902	0.800
71	0.100	5.00		5.323	1200	488700.889	98252.909	0.850
72	0.082	5.00		6.074	1200	488793.738	98249.325	0.674
73	0.122	5.00		5.643	1200	488856.160	98286.307	0.743
74	0.112	5.00		5.322	1200	488877.245	98301.609	0.722
75	0.031	5.00		5.398	1200	488847.010	98327.708	0.598
77	0.054	5.00		5.581	1200	488880.914	98437.316	0.853
78	0.167	5.00		5.053	1200	488802.213	98450.447	0.925
79	0.116	5.00		5.118	1200	488793.687	98449.157	0.925
80		5.00		5.148	1200	488686.413	98378.970	1.598
81	0.026	5.00		6.073	1200	488754.349	98368.470	0.800
82	0.026	5.00		6.175	1200	488756.891	98350.623	0.800
83	0.024	5.00		6.230	1200	488763.024	98326.470	0.801
84	0.066	5.00		5.905	1200	488810.490	98324.942	0.605
85	0.028	5.00		6.170	1200	488866.051	98387.748	0.810
86	0.099	5.00		5.537	1200	488887.368	98375.954	0.925
87	0.041	5.00		5.805	1200	488935.770	98429.452	0.850
88		5.00		5.600	1200	488749.307	98403.646	1.550
89				5.700	1200	488760.539	98378.204	1.635
90		5.00		5.487	1200	488691.506	98383.731	0.800
91				5.147	1200	488688.184	98357.667	1.572
92	0.052	5.00		6.229	1200	488732.933	98293.081	0.850



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
34.000	1	2	6.770	0.600	3.300	3.260	0.040	169.0	225	5.11	58.0
34.001	2	3	8.602	0.600	3.260	3.209	0.051	168.7	225	5.26	57.3
36.000	4	5	10.776	0.600	4.600	4.470	0.130	82.9	300	5.10	58.0
35.000	6	7	7.949	0.600	4.100	4.053	0.047	169.1	225	5.13	57.9
35.001	7	8	3.269	0.600	4.053	4.033	0.020	163.5	225	5.19	57.6
26.000	9	10	13.193	0.600	4.350	4.296	0.054	244.2	300	5.22	57.5
26.001	10	11	39.811	0.600	4.296	4.133	0.163	244.2	300	5.88	54.2
1.001	12	13	31.914	0.600	4.480	4.349	0.131	244.0	300	5.77	54.7
1.002	13	14	13.617	0.600	4.349	4.245	0.104	130.9	300	5.94	53.9
1.003	14	15	42.778	0.600	4.245	3.957	0.288	148.5	300	6.49	51.7
1.004	15	16	12.421	0.600	3.882	3.844	0.038	323.0	375	6.70	50.9
1.005	16	17	19.520	0.600	3.844	3.784	0.060	323.0	375	7.02	49.6
1.006	17	18	32.785	0.600	3.784	3.682	0.102	323.0	375	7.57	47.9
1.007	18	19	38.513	0.600	3.682	3.563	0.119	323.0	375	8.21	45.9
1.008	19	20	40.795	0.600	3.563	3.437	0.126	323.0	375	8.89	44.0
1.009	20	21	10.356	0.600	3.437	3.405	0.032	323.0	375	9.06	43.6
8.000	22	20	28.881	0.600	4.258	3.971	0.287	100.6	225	5.37	56.7
7.000	23	24	36.178	0.600	4.831	4.271	0.560	64.6	225	5.37	56.7
6.002	24	25	22.260	0.600	4.196	4.105	0.091	244.6	300	6.13	53.1
6.003	25	20	43.489	0.600	4.105	3.927	0.178	244.4	300	6.85	50.3
6.000	26	27	16.169	0.600	4.541	4.445	0.096	168.4	225	5.27	57.2
6.001	27	24	29.425	0.600	4.445	4.271	0.174	169.1	225	5.76	54.8
11.000	28	29	50.640	0.600	5.750	5.244	0.506	100.0	150	5.84	54.4
11.001	29	30	12.212	0.600	5.169	5.097	0.072	169.6	225	6.04	53.5

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
34.000	1	2	1.003	39.9	0.0	1.075	1.115
34.001	2	3	1.004	39.9	0.0	1.115	0.866
36.000	4	5	1.728	122.1	1.1	0.945	1.081
35.000	6	7	1.002	39.8	0.0	1.075	1.122
35.001	7	8	1.020	40.5	0.0	1.122	0.842
26.000	9	10	1.001	70.8	0.0	0.950	0.954
26.001	10	11	1.001	70.8	0.0	0.954	1.167
1.001	12	13	1.002	70.8	42.3	0.901	0.762
1.002	13	14	1.372	97.0	50.0	0.762	0.959
1.003	14	15	1.288	91.0	54.2	0.959	1.524
1.004	15	16	1.002	110.7	61.7	1.524	1.638
1.005	16	17	1.002	110.7	60.1	1.638	1.591
1.006	17	18	1.002	110.7	58.0	1.591	1.478
1.007	18	19	1.002	110.7	65.4	1.478	1.324
1.008	19	20	1.002	110.7	62.7	1.324	1.285
1.009	20	21	1.002	110.7	155.6	1.285	1.220
8.000	22	20	1.303	51.8	8.5	0.625	0.901
7.000	23	24	1.629	64.8	8.3	0.648	0.923
6.002	24	25	1.001	70.7	42.0	0.923	1.058
6.003	25	20	1.001	70.8	43.7	1.058	0.870
6.000	26	27	1.004	39.9	22.1	0.700	0.725
6.001	27	24	1.002	39.9	21.2	0.725	0.923
11.000	28	29	1.005	17.8	12.7	0.587	0.678
11.001	29	30	1.001	39.8	12.4	0.678	0.730



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
11.002	30	31	35.014	0.600	5.097	4.890	0.207	169.1	225	6.63	51.2
11.003	31	44	36.004	0.600	4.890	4.678	0.212	169.8	225	7.23	49.0
16.000	32	33	16.410	0.600	4.875	4.778	0.097	169.0	300	5.23	57.4
16.001	33	34	12.264	0.600	4.778	4.705	0.073	168.0	300	5.40	56.6
14.002	34	35	21.024	0.600	4.705	4.619	0.086	244.0	300	5.96	53.8
14.003	35	36	29.021	0.600	4.619	4.500	0.119	243.9	300	6.45	51.9
11.005	36	37	12.754	0.600	4.500	4.448	0.052	244.0	300	7.53	48.0
11.006	37	38	15.029	0.600	4.448	4.385	0.062	244.0	300	7.78	47.2
3.000	39	14	24.344	0.600	4.500	4.257	0.243	100.0	150	5.40	56.6
11.004	44	36	9.277	0.600	4.603	4.500	0.103	90.1	300	7.32	48.7
14.000	45	46	29.791	0.600	5.455	5.008	0.447	66.6	225	5.31	57.0
14.001	46	34	26.576	0.600	4.933	4.705	0.228	116.6	300	5.61	55.5
19.000	47	48	26.127	0.600	5.612	5.173	0.439	59.5	100	5.44	56.4
19.001	48	49	34.760	0.600	5.123	4.626	0.497	69.9	150	5.92	54.0
31.000	50	51	14.397	0.600	3.850	3.765	0.085	169.4	225	5.24	57.4
31.001	51	52	15.697	0.600	3.765	3.672	0.092	168.8	225	5.50	56.1
31.002	52	53	3.235	0.600	3.672	3.652	0.020	161.8	225	5.55	55.8
19.002	49	54	30.018	0.600	4.289	4.111	0.178	169.0	225	6.42	52.0
19.003	54	55	19.643	0.600	4.036	3.955	0.081	242.5	300	6.74	50.7
21.000	56	49	26.320	0.600	4.857	4.414	0.443	59.4	100	5.44	56.4
27.000	57	58	37.722	0.600	4.833	4.149	0.684	55.1	150	5.46	56.3
30.000	90	59	4.839	0.600	4.687	4.605	0.082	59.0	100	5.08	58.1
29.001	59	60	12.402	0.600	3.489	3.416	0.073	169.0	225	5.38	56.7
28.002	60	61	9.607	0.600	3.416	3.359	0.057	169.0	225	5.55	55.8

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
11.002	30	31	1.002	39.8	28.6	0.730	0.747
11.003	31	44	1.000	39.8	27.4	0.747	0.736
16.000	32	33	1.206	85.3	5.6	0.352	0.280
16.001	33	34	1.210	85.5	11.6	0.280	0.292
14.002	34	35	1.002	70.8	52.0	0.292	0.516
14.003	35	36	1.002	70.8	56.6	0.516	0.788
11.005	36	37	1.002	70.8	102.5	0.788	0.578
11.006	37	38	1.002	70.8	121.7	0.578	0.964
3.000	39	14	1.005	17.8	6.8	0.453	1.097
11.004	44	36	1.657	117.1	50.9	0.736	0.788
14.000	45	46	1.604	63.8	12.3	0.819	0.573
14.001	46	34	1.455	102.9	30.0	0.573	0.292
19.000	47	48	1.000	7.9	0.0	0.700	0.961
19.001	48	49	1.204	21.3	18.0	0.961	0.700
31.000	50	51	1.002	39.8	0.0	1.075	1.039
31.001	51	52	1.003	39.9	20.3	1.039	1.100
31.002	52	53	1.025	40.8	20.2	1.100	1.122
19.002	49	54	1.003	39.9	31.6	0.962	0.924
19.003	54	55	1.005	71.0	65.3	0.924	0.895
21.000	56	49	1.001	7.9	0.9	0.700	0.962
27.000	57	58	1.357	24.0	5.1	0.650	1.245
30.000	90	59	1.004	7.9	0.0	0.700	0.767
29.001	59	60	1.003	39.9	0.0	1.758	1.833
28.002	60	61	1.003	39.9	0.0	1.833	1.316



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
23.001	62	63	26.972	0.600	5.422	5.160	0.262	100.7	150	5.48	56.2
23.002	63	64	12.924	0.600	5.160	4.403	0.757	25.0	150	5.64	55.4
23.003	64	89	9.584	0.600	4.328	4.271	0.057	168.1	225	5.80	54.6
32.001	65	66	11.513	0.600	3.994	3.926	0.068	169.0	225	5.35	56.8
32.002	66	68	11.046	0.600	3.926	3.861	0.065	169.0	225	5.53	55.9
28.001	67	60	7.827	0.600	3.667	3.491	0.176	44.5	150	5.39	56.6
28.000	69	67	18.274	0.600	3.850	3.667	0.183	100.0	150	5.30	57.0
33.000	70	66	11.718	0.600	5.000	4.883	0.117	100.2	150	5.19	57.6
22.000	71	54	3.170	0.600	4.473	4.410	0.063	50.3	150	5.04	58.4
12.000	72	30	6.370	0.600	5.400	5.188	0.212	30.0	150	5.06	58.3
13.000	73	44	3.991	0.600	4.900	4.767	0.133	30.0	150	5.04	58.4
18.000	74	37	5.068	0.600	4.600	4.570	0.030	169.0	225	5.08	58.1
17.000	75	35	2.467	0.600	4.800	4.775	0.025	100.0	150	5.04	58.3
5.000	77	18	4.326	0.600	4.728	4.685	0.043	100.6	150	5.07	58.2
10.000	78	20	3.989	0.600	4.128	4.104	0.024	166.2	225	5.07	58.2
9.000	79	20	4.637	0.600	4.193	4.165	0.028	165.6	225	5.08	58.2
29.000	80	59	10.378	0.600	3.550	3.489	0.061	169.0	225	5.17	57.7
25.000	81	64	4.450	0.600	5.273	5.198	0.075	59.3	100	5.07	58.2
24.000	82	63	3.830	0.600	5.375	5.210	0.165	23.2	100	5.04	58.3
23.000	83	62	2.639	0.600	5.519	5.472	0.047	56.2	100	5.04	58.3
15.000	84	46	3.248	0.600	5.300	5.235	0.065	50.0	150	5.04	58.3
1.000	85	12	21.734	0.600	5.360	4.881	0.479	45.4	150	5.24	57.3
2.000	86	12	9.561	0.600	4.612	4.555	0.057	167.7	225	5.16	57.8
4.000	87	15	3.208	0.600	4.955	4.923	0.032	100.2	150	5.05	58.3

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
23.001	62	63	1.001	17.7	10.4	0.700	0.805
23.002	63	64	2.022	35.7	16.6	0.805	1.479
23.003	64	89	1.005	40.0	38.8	1.479	1.204
32.001	65	66	1.003	39.9	0.0	1.627	1.558
32.002	66	68	1.003	39.9	23.4	1.558	1.114
28.001	67	60	1.513	26.7	0.0	1.682	1.833
28.000	69	67	1.005	17.8	0.0	1.200	1.682
33.000	70	66	1.004	17.7	12.8	0.650	0.676
22.000	71	54	1.421	25.1	23.2	0.700	0.700
12.000	72	30	1.845	32.6	19.0	0.524	0.714
13.000	73	44	1.845	32.6	28.4	0.593	0.722
18.000	74	37	1.003	39.9	25.8	0.497	0.531
17.000	75	35	1.005	17.8	7.2	0.448	0.510
5.000	77	18	1.002	17.7	12.4	0.703	0.700
10.000	78	20	1.011	40.2	38.7	0.700	0.768
9.000	79	20	1.013	40.3	26.8	0.700	0.707
29.000	80	59	1.003	39.9	0.0	1.373	1.758
25.000	81	64	1.002	7.9	6.1	0.700	0.734
24.000	82	63	1.609	12.6	6.0	0.700	0.805
23.000	83	62	1.030	8.1	5.5	0.701	0.700
15.000	84	46	1.426	25.2	15.2	0.455	0.421
1.000	85	12	1.497	26.5	6.3	0.660	0.650
2.000	86	12	1.006	40.0	22.7	0.700	0.901
4.000	87	15	1.003	17.7	9.5	0.700	0.708



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
32.000	88	65	9.402	0.600	4.050	3.994	0.056	169.0	225	5.16	57.8
27.001	58	91	7.134	0.600	3.999	3.969	0.030	237.8	300	5.58	55.7
20.000	92	48	4.031	0.600	5.379	5.339	0.040	100.8	150	5.07	58.2

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
32.000	88	65	1.003	39.9	0.0	1.325	1.627
27.001	58	91	1.015	71.7	41.7	1.245	0.878
20.000	92	48	1.001	17.7	12.0	0.700	0.745

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
34.000	6.770	169.0	225	Circular	4.600	3.300	1.075	4.600	3.260	1.115
34.001	3.602	168.7	225	Circular	4.600	3.260	1.115	4.300	3.209	0.866
36.000	10.776	82.9	300	Circular	5.845	4.600	0.945	5.851	4.470	1.081
35.000	7.949	169.1	225	Circular	5.400	4.100	1.075	5.400	4.053	1.122
35.001	3.269	163.5	225	Circular	5.400	4.053	1.122	5.100	4.033	0.842
26.000	13.193	244.2	300	Circular	5.600	4.350	0.950	5.550	4.296	0.954
26.001	39.811	244.2	300	Circular	5.550	4.296	0.954	5.600	4.133	1.167
1.001	31.914	244.0	300	Circular	5.681	4.480	0.901	5.411	4.349	0.762
1.002	13.617	130.9	300	Circular	5.411	4.349	0.762	5.504	4.345	0.959
1.003	42.778	148.5	300	Circular	5.504	4.245	0.959	5.781	3.957	1.524
1.004	12.421	323.0	375	Circular	5.781	3.882	1.524	5.857	3.844	1.638
1.005	19.520	323.0	375	Circular	5.857	3.844	1.638	5.750	3.784	1.591
1.006	32.785	323.0	375	Circular	5.750	3.784	1.591	5.535	3.682	1.478
1.007	38.513	323.0	375	Circular	5.535	3.682	1.478	5.262	3.563	1.324
1.008	40.795	323.0	375	Circular	5.262	3.563	1.324	5.097	3.437	1.285
1.009	10.356	323.0	375	Circular	5.097	3.437	1.285	5.000	3.405	1.220
8.000	28.881	100.6	225	Circular	5.103	4.258	0.625	5.097	3.971	0.901

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
34.000	1	1200	Manhole	Adoptable	2	1200	Manhole	Adoptable
34.001	2	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
36.000	4	1200	Manhole	Adoptable	5	1200	Manhole	Adoptable
35.000	6	1200	Manhole	Adoptable	7	1200	Manhole	Adoptable
35.001	7	1200	Manhole	Adoptable	8	1200	Manhole	Adoptable
26.000	9	1200	Manhole	Adoptable	10	1200	Manhole	Adoptable
26.001	10	1200	Manhole	Adoptable	11	1200	Manhole	Adoptable
1.001	12	1200	Manhole	Adoptable	13	1200	Manhole	Adoptable
1.002	13	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
1.003	14	1200	Manhole	Adoptable	15	1200	Manhole	Adoptable
1.004	15	1200	Manhole	Adoptable	16	1200	Manhole	Adoptable
1.005	16	1200	Manhole	Adoptable	17	1200	Manhole	Adoptable
1.006	17	1200	Manhole	Adoptable	18	1200	Manhole	Adoptable
1.007	18	1200	Manhole	Adoptable	19	1200	Manhole	Adoptable
1.008	19	1200	Manhole	Adoptable	20	1350	Manhole	Adoptable
1.009	20	1350	Manhole	Adoptable	21	1350	Manhole	Adoptable
8.000	22	1200	Manhole	Adoptable	20	1350	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
7.000	36.178	64.6	225	Circular	5.704	4.831	0.648	5.419	4.271	0.923
6.002	22.260	244.6	300	Circular	5.419	4.196	0.923	5.463	4.105	1.058
6.003	43.499	244.4	300	Circular	5.463	4.105	1.058	5.097	3.927	0.870
6.000	16.169	163.4	225	Circular	5.466	4.541	0.700	5.395	4.445	0.725
6.001	29.425	169.1	225	Circular	5.395	4.445	0.725	5.419	4.271	0.923
11.000	50.640	100.0	150	Circular	6.487	5.750	0.587	6.072	5.244	0.678
11.001	12.212	169.6	225	Circular	6.072	5.169	0.678	6.052	5.097	0.730
11.002	95.014	169.1	225	Circular	6.052	5.097	0.730	5.862	4.890	0.747
11.003	36.004	169.8	225	Circular	5.862	4.890	0.747	5.639	4.678	0.736
16.000	16.410	169.0	300	Circular	5.527	4.875	0.352	5.358	4.778	0.280
16.001	12.264	168.0	300	Circular	5.358	4.778	0.280	5.297	4.705	0.292
14.002	21.024	244.0	300	Circular	5.297	4.705	0.292	5.435	4.619	0.516
14.003	29.021	243.9	300	Circular	5.435	4.619	0.516	5.588	4.500	0.788
11.005	12.754	244.0	300	Circular	5.588	4.500	0.788	5.326	4.448	0.578
11.006	15.029	244.0	300	Circular	5.326	4.448	0.578	5.650	4.386	0.964
3.000	24.344	100.0	150	Circular	5.103	4.500	0.453	5.504	4.257	1.097
11.004	9.277	90.1	300	Circular	5.639	4.603	0.736	5.588	4.500	0.788
14.000	29.791	66.6	225	Circular	6.490	5.455	0.819	5.806	5.008	0.573
14.001	26.576	116.6	300	Circular	5.806	4.933	0.573	5.297	4.705	0.292
19.000	26.127	59.5	100	Circular	6.412	5.612	0.700	6.234	5.173	0.961
19.001	34.760	69.9	150	Circular	6.234	5.123	0.961	5.476	4.626	0.700
31.000	14.397	169.4	225	Circular	5.150	3.850	1.075	5.029	3.765	1.039
31.001	15.697	168.8	225	Circular	5.029	3.765	1.039	4.997	3.672	1.100
31.002	3.235	161.8	225	Circular	4.997	3.672	1.100	4.999	3.652	1.122
19.002	90.018	169.0	225	Circular	5.476	4.289	0.962	5.260	4.111	0.924

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
7.000	23	1200	Manhole	Adoptable	24	1200	Manhole	Adoptable
6.002	24	1200	Manhole	Adoptable	25	1200	Manhole	Adoptable
6.003	25	1200	Manhole	Adoptable	20	1350	Manhole	Adoptable
6.000	26	1200	Manhole	Adoptable	27	1200	Manhole	Adoptable
6.001	27	1200	Manhole	Adoptable	24	1200	Manhole	Adoptable
11.000	28	1200	Manhole	Adoptable	29	1200	Manhole	Adoptable
11.001	29	1200	Manhole	Adoptable	30	1200	Manhole	Adoptable
11.002	30	1200	Manhole	Adoptable	31	1200	Manhole	Adoptable
11.003	31	1200	Manhole	Adoptable	44	1200	Manhole	Adoptable
16.000	32	1200	Sealed Manhole	Adoptable	33	1200	Sealed Manhole	Adoptable
16.001	33	1200	Sealed Manhole	Adoptable	34	1200	Sealed Manhole	Adoptable
14.002	34	1200	Sealed Manhole	Adoptable	35	1200	Manhole	Adoptable
14.003	35	1200	Manhole	Adoptable	36	1350	Manhole	Adoptable
11.005	36	1350	Manhole	Adoptable	37	1350	Manhole	Adoptable
11.006	37	1350	Manhole	Adoptable	38	1350	Manhole	Adoptable
3.000	39	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
11.004	44	1200	Manhole	Adoptable	36	1350	Manhole	Adoptable
14.000	45	1200	Manhole	Adoptable	46	1200	Manhole	Adoptable
14.001	46	1200	Manhole	Adoptable	34	1200	Sealed Manhole	Adoptable
19.000	47	1200	Manhole	Adoptable	48	1200	Manhole	Adoptable
19.001	48	1200	Manhole	Adoptable	49	1200	Manhole	Adoptable
31.000	50	1200	Manhole	Adoptable	51	1200	Manhole	Adoptable
31.001	51	1200	Manhole	Adoptable	52	1200	Manhole	Adoptable
31.002	52	1200	Manhole	Adoptable	53	1200	Manhole	Adoptable
19.002	49	1200	Manhole	Adoptable	54	1200	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
19.000	19.643	242.5	300	Circular	5.260	4.036	0.924	5.150	3.955	0.895
21.000	26.320	59.4	100	Circular	5.657	4.857	0.700	5.476	4.414	0.962
27.000	37.722	55.1	150	Circular	5.633	4.833	0.650	5.544	4.149	1.245
30.000	4.839	59.0	100	Circular	5.487	4.687	0.700	5.472	4.605	0.767
29.001	12.402	169.0	225	Circular	5.472	3.489	1.758	5.474	3.416	1.833
28.002	9.607	169.0	225	Circular	5.474	3.416	1.833	4.900	3.359	1.316
23.001	26.372	100.7	150	Circular	6.272	5.422	0.700	6.115	5.160	0.805
23.002	18.924	25.0	150	Circular	6.115	5.160	0.805	6.032	4.403	1.479
23.003	9.584	188.1	225	Circular	6.032	4.328	1.479	5.700	4.271	1.204
32.001	11.513	169.0	225	Circular	5.846	3.994	1.627	5.709	3.926	1.558
32.002	11.046	169.0	225	Circular	5.709	3.926	1.558	5.200	3.861	1.114
28.001	7.827	44.5	150	Circular	5.499	3.667	1.682	5.474	3.491	1.833
28.000	18.274	100.0	150	Circular	5.200	3.850	1.200	5.499	3.667	1.682
33.000	11.718	100.2	150	Circular	5.800	5.000	0.650	5.709	4.833	0.676
22.000	3.170	50.3	150	Circular	5.323	4.473	0.700	5.260	4.410	0.700
12.000	6.370	30.0	150	Circular	6.074	5.400	0.524	6.052	5.188	0.714
13.000	3.991	30.0	150	Circular	5.643	4.900	0.593	5.639	4.767	0.722
16.000	5.068	169.0	225	Circular	5.322	4.600	0.497	5.326	4.570	0.531
17.000	2.467	100.0	150	Circular	5.398	4.800	0.448	5.435	4.775	0.510
5.000	4.326	100.6	150	Circular	5.581	4.728	0.703	5.535	4.685	0.700
10.000	3.989	166.2	225	Circular	5.053	4.128	0.700	5.097	4.104	0.768
9.000	4.637	165.6	225	Circular	5.113	4.193	0.700	5.097	4.165	0.707
29.000	10.578	169.0	225	Circular	5.148	3.550	1.373	5.472	3.489	1.758
25.000	4.450	59.3	100	Circular	6.073	5.273	0.700	6.032	5.198	0.734
24.000	3.830	23.2	100	Circular	6.175	5.375	0.700	6.115	5.210	0.805

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
19.000	54	1200	Manhole	Adoptable	55	1200	Manhole	Adoptable
21.000	56	1200	Manhole	Adoptable	49	1200	Manhole	Adoptable
27.000	57	1200	Manhole	Adoptable	58	1200	Manhole	Adoptable
30.000	90	1200	Manhole	Adoptable	59	1200	Manhole	Adoptable
29.001	59	1200	Manhole	Adoptable	60	1200	Manhole	Adoptable
28.002	60	1200	Manhole	Adoptable	61	1200	Manhole	Adoptable
23.001	62	1200	Manhole	Adoptable	63	1200	Manhole	Adoptable
23.002	63	1200	Manhole	Adoptable	64	1200	Manhole	Adoptable
23.003	64	1200	Manhole	Adoptable	89	1200	Manhole	Adoptable
32.001	65	1200	Manhole	Adoptable	66	1200	Manhole	Adoptable
32.002	66	1200	Manhole	Adoptable	68	1200	Manhole	Adoptable
28.001	67	1200	Manhole	Adoptable	60	1200	Manhole	Adoptable
23.000	69	1200	Manhole	Adoptable	67	1200	Manhole	Adoptable
33.000	70	1200	Manhole	Adoptable	66	1200	Manhole	Adoptable
22.000	71	1200	Manhole	Adoptable	54	1200	Manhole	Adoptable
12.000	72	1200	Manhole	Adoptable	30	1200	Manhole	Adoptable
13.000	73	1200	Manhole	Adoptable	44	1200	Manhole	Adoptable
16.000	74	1200	Manhole	Adoptable	37	1350	Manhole	Adoptable
17.000	75	1200	Manhole	Adoptable	35	1200	Manhole	Adoptable
5.000	77	1200	Manhole	Adoptable	18	1200	Manhole	Adoptable
10.000	78	1200	Manhole	Adoptable	20	1350	Manhole	Adoptable
9.000	79	1200	Manhole	Adoptable	20	1350	Manhole	Adoptable
29.000	80	1200	Manhole	Adoptable	59	1200	Manhole	Adoptable
25.000	81	1200	Manhole	Adoptable	64	1200	Manhole	Adoptable
24.000	82	1200	Manhole	Adoptable	63	1200	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
23.000	2.629	56.2	100	Circular	6.320	5.519	0.701	6.272	5.472	0.700
15.000	3.248	50.0	150	Circular	5.905	5.300	0.455	5.806	5.255	0.421
1.000	21.734	45.4	150	Circular	6.170	5.360	0.660	5.681	4.881	0.650
2.000	9.561	167.7	225	Circular	5.597	4.612	0.700	5.681	4.585	0.901
4.000	3.208	100.2	150	Circular	5.805	4.955	0.700	5.781	4.923	0.708
32.000	9.402	169.0	225	Circular	5.600	4.050	1.325	5.846	3.994	1.627
27.001	7.134	237.8	300	Circular	5.544	3.999	1.245	5.147	3.969	0.878
20.000	4.031	100.8	150	Circular	6.229	5.379	0.700	6.234	5.399	0.745

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
23.000	83	1200	Manhole	Adoptable	62	1200	Manhole	Adoptable
15.000	84	1200	Manhole	Adoptable	46	1200	Manhole	Adoptable
1.000	85	1200	Manhole	Adoptable	12	1200	Manhole	Adoptable
2.000	86	1200	Manhole	Adoptable	12	1200	Manhole	Adoptable
4.000	87	1200	Manhole	Adoptable	15	1200	Manhole	Adoptable
32.000	88	1200	Manhole	Adoptable	65	1200	Manhole	Adoptable
27.001	58	1200	Manhole	Adoptable	91	1200	Manhole	Adoptable
20.000	92	1200	Manhole	Adoptable	48	1200	Manhole	Adoptable

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Analysis Speed	Normal	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	0	0	0
30	40	0	0
100	45	10	0

Node 2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	3.260	Product Number	CTL-SHE-0084-3500-1340-3500
Design Depth (m)	1.340	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.5	Min Node Diameter (mm)	1200

Node 7 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	4.053	Product Number	CTL-SHE-0063-2000-1347-2000
Design Depth (m)	1.347	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200



Node 52 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	3.672	Product Number	CTL-SHE-0063-2000-1325-2000
Design Depth (m)	1.325	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200

Node 60 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	3.416	Product Number	CTL-SHE-0039-1000-2058-1000
Design Depth (m)	2.058	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node 70 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.000	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 90 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.687	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 71 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.473	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.100		

Node 73 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.900	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.125		

Node 72 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.400	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 28 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.750	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.080		

Node 84 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.300	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 83 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.519	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		



Node 82 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.375	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 81 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.273	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 26 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.541	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 92 Online Orifice Control

Flap Valve	x	Invert Level (m)	5.379	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.150		

Node 39 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.500	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 86 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.612	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 87 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.955	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 77 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.728	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 78 Online Orifice Control

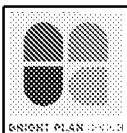
Flap Valve	x	Invert Level (m)	4.128	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.075		

Node 79 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.193	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.150		

Node 5 Online Orifice Control

Flap Valve	x	Invert Level (m)	3.315	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.300		



Node 21 Online Orifice Control

Flap Valve	x	Invert Level (m)	3.315	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.375		

Node 50 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	12.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.850	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)	1215	Main Channel n	0.025

Inlets

55

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	123.0	0.0	1.150	317.8	0.0

Node 6 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	36.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.100	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

11

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	80.0	0.0	1.200	416.5	0.0

Node 9 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	30.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.350	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)	1080	Main Channel n	0.025

Inlets

38

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	231.0	0.0	1.250	623.9	0.0

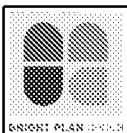
Node 1 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	30.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.300	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.025

Inlets

5 : 21

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	384.0	0.0	0.600	1003.0	0.0	1.300	1627.9	0.0



Node 69 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Main Channel Length (m)	5.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.850	Main Channel Slope (1:X)	1000.0
Safety Factor	1.0	Time to half empty (mins)	15	Main Channel n	0.025

Inlets

68

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	8.0	0.0	1.250	116.8	0.0

Node 88 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Main Channel Length (m)	30.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.050	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)	255	Main Channel n	0.005

Inlets

89

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	390.0	0.0	0.800	390.0	0.0	0.801	0.0	0.0

Node 80 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	3.550	Main Channel Slope (1:X)	2000.0
Safety Factor	1.0	Time to half empty (mins)		Main Channel n	0.005

Inlets

91

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	200.0	0.0	0.800	200.0	0.0	0.801	0.0	0.0

Node 78 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.128	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	104	Depth (m)	0.450
Safety Factor	1.0	Width (m)	8.850	Inf Depth (m)	
Porosity	0.30	Length (m)	87.000		

Node 77 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.728	Slope (1:X)	178.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	39	Depth (m)	0.450
Safety Factor	1.0	Width (m)	8.000	Inf Depth (m)	
Porosity	0.30	Length (m)	26.550		



Node 72 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.400	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	56	Depth (m)	0.450
Safety Factor	1.0	Width (m)	12.600	Inf Depth (m)	
Porosity	0.30	Length (m)	52.000		

Node 28 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.750	Slope (1:X)	260.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	42	Depth (m)	0.450
Safety Factor	1.0	Width (m)	14.000	Inf Depth (m)	
Porosity	0.30	Length (m)	13.400		

Node 74 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.600	Slope (1:X)	70.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.450
Safety Factor	1.0	Width (m)	12.000	Inf Depth (m)	
Porosity	0.30	Length (m)	20.000		

Node 75 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.800	Slope (1:X)	270.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.450
Safety Factor	1.0	Width (m)	12.000	Inf Depth (m)	
Porosity	0.30	Length (m)	40.000		

Node 87 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.955	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.450
Safety Factor	1.0	Width (m)	8.750	Inf Depth (m)	
Porosity	0.30	Length (m)	40.000		

Node 79 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.193	Slope (1:X)	74.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	19	Depth (m)	0.450
Safety Factor	1.0	Width (m)	14.800	Inf Depth (m)	
Porosity	0.30	Length (m)	30.000		

Node 86 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.612	Slope (1:X)	130.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	55	Depth (m)	0.450
Safety Factor	1.0	Width (m)	26.200	Inf Depth (m)	
Porosity	0.30	Length (m)	24.000		

Node 39 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.500	Slope (1:X)	125.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	25	Depth (m)	0.450
Safety Factor	1.0	Width (m)	7.020	Inf Depth (m)	
Porosity	0.30	Length (m)	50.000		



Node 92 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.379	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	16	Depth (m)	0.450
Safety Factor	1.0	Width (m)	13.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 71 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.473	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1005	Depth (m)	0.450
Safety Factor	1.0	Width (m)	10.350	Inf Depth (m)	
Porosity	0.30	Length (m)	40.000		

Node 81 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.273	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	14	Depth (m)	0.450
Safety Factor	1.0	Width (m)	10.600	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 82 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.375	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	8	Depth (m)	0.450
Safety Factor	1.0	Width (m)	12.250	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 83 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.519	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.450
Safety Factor	1.0	Width (m)	13.850	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 84 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.300	Slope (1:X)	160.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	71	Depth (m)	0.450
Safety Factor	1.0	Width (m)	16.000	Inf Depth (m)	
Porosity	0.30	Length (m)	15.650		

Node 90 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.687	Slope (1:X)	100.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.450
Safety Factor	1.0	Width (m)	10.600	Inf Depth (m)	
Porosity	0.30	Length (m)	10.500		

Node 70 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	5.000	Slope (1:X)	175.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	15	Depth (m)	0.450
Safety Factor	1.0	Width (m)	14.350	Inf Depth (m)	
Porosity	0.30	Length (m)	30.000		



Node 73 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.900	Slope (1:X)	163.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	34	Depth (m)	0.450
Safety Factor	1.0	Width (m)	10.300	Inf Depth (m)	
Porosity	0.30	Length (m)	65.000		

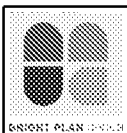
Node 26 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.541	Slope (1:X)	275.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	54	Depth (m)	0.450
Safety Factor	1.0	Width (m)	14.850	Inf Depth (m)	
Porosity	0.30	Length (m)	38.000		

Node 51 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	1.0	Invert Level (m)	3.765
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

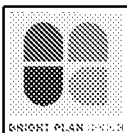
Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	270.0	0.0	0.400	270.0	0.0	0.401	0.0	0.0



Results for 10 year Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	1	735	3.820	0.520	34.7	0.5882	0.0000	SURCHARGED
720 minute summer	2	735	3.820	0.560	3.4	0.6329	0.0000	SURCHARGED
120 minute summer	3	490	3.253	0.044	3.3	0.0000	0.0000	OK
15 minute summer	4	7	4.620	0.020	1.0	0.0223	0.0000	OK
960 minute summer	5	915	3.831	0.516	7.2	0.5835	0.0000	OK
720 minute summer	6	735	4.755	0.655	6.3	0.7405	0.0000	SURCHARGED
720 minute summer	7	735	4.755	0.702	1.7	0.7935	0.0000	SURCHARGED
15 minute summer	8	649	4.064	0.031	1.6	0.0000	0.0000	OK
720 minute summer	9	735	4.755	0.405	18.1	0.4578	0.0000	SURCHARGED
720 minute summer	10	735	4.755	0.459	11.2	0.5188	0.0000	SURCHARGED
720 minute summer	11	735	4.755	0.637	10.9	0.7201	0.0000	OK
15 minute summer	12	10	4.641	0.161	37.3	0.1818	0.0000	OK
15 minute summer	13	11	4.521	0.172	50.7	0.1948	0.0000	OK
15 minute summer	14	11	4.416	0.171	53.6	0.1940	0.0000	OK
15 minute summer	15	12	4.096	0.214	56.2	0.2420	0.0000	OK
15 minute summer	16	12	4.050	0.206	55.8	0.2333	0.0000	OK
15 minute summer	17	12	3.983	0.199	56.1	0.2255	0.0000	OK
15 minute summer	18	13	3.888	0.206	59.7	0.2329	0.0000	OK
15 minute summer	19	13	3.826	0.263	58.2	0.2973	0.0000	OK
720 minute summer	20	720	3.823	0.386	31.6	0.5518	0.0000	SURCHARGED
480 minute summer	21	480	3.842	0.527	39.8	0.7546	0.0000	OK
15 minute summer	22	10	4.338	0.080	13.6	0.0905	0.0000	OK
15 minute summer	23	10	4.899	0.068	13.2	0.0771	0.0000	OK
15 minute summer	24	11	4.366	0.170	39.0	0.1922	0.0000	OK
15 minute summer	25	11	4.284	0.179	45.1	0.2029	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	1	34.000	2	3.4	0.197	0.086	0.2693	
720 minute summer	2	34.001	3	3.3	0.599	0.083	0.0479	399.1
15 minute summer	4	36.000	5	1.0	0.522	0.008	0.0206	
960 minute summer	5	Flow through pond	1	23.5	0.029	0.000	330.7795	
720 minute summer	6	35.000	7	1.7	0.147	0.043	0.3161	
720 minute summer	7	35.001	8	1.6	0.484	0.041	0.0111	178.6
720 minute summer	9	26.000	10	11.2	0.662	0.158	0.9290	
720 minute summer	10	26.001	11	10.9	0.487	0.155	2.8035	
720 minute summer	11	Flow through pond	6	6.3	0.036	0.001	110.2588	
15 minute summer	12	1.001	13	36.7	0.921	0.518	1.2732	
15 minute summer	13	1.002	14	50.4	1.238	0.519	0.5683	
15 minute summer	14	1.003	15	53.2	1.324	0.585	1.7246	
15 minute summer	15	1.004	16	55.8	0.888	0.504	0.7889	
15 minute summer	16	1.005	17	56.1	0.928	0.507	1.1868	
15 minute summer	17	1.006	18	56.0	0.932	0.505	1.9693	
15 minute summer	18	1.007	19	58.2	0.870	0.526	2.7819	
15 minute summer	19	1.008	20	60.6	0.685	0.547	3.8694	
720 minute summer	20	1.009	21	31.2	0.729	0.282	1.1422	
480 minute summer	21	Flow through pond	1	33.8	0.035	0.000	325.7381	
15 minute summer	22	8.000	20	13.3	1.082	0.258	0.3569	
15 minute summer	23	7.000	24	13.1	1.104	0.202	0.4675	
15 minute summer	24	6.002	25	38.4	0.922	0.543	0.9471	
15 minute summer	25	6.003	20	44.6	1.076	0.630	1.8078	



Results for 10 year Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	26	46	4.704	0.163	23.2	16.1270	0.0000	OK
60 minute summer	27	47	4.493	0.048	4.0	0.0548	0.0000	OK
60 minute summer	28	41	5.913	0.163	14.0	7.8919	0.0000	SURCHARGED
60 minute summer	29	42	5.219	0.050	4.5	0.0571	0.0000	OK
60 minute summer	30	42	5.170	0.073	9.0	0.0831	0.0000	OK
60 minute summer	31	44	4.964	0.074	9.0	0.0833	0.0000	OK
15 minute summer	32	12	4.975	0.100	8.8	0.1130	0.0000	OK
15 minute summer	33	12	4.970	0.192	17.6	0.2172	0.0000	OK
15 minute summer	34	12	4.968	0.263	63.3	0.2970	0.0000	OK
15 minute summer	35	12	4.912	0.293	63.2	0.3309	0.0000	OK
15 minute summer	36	13	4.848	0.348	66.1	0.4976	0.0000	SURCHARGED
15 minute summer	37	13	4.778	0.330	90.6	0.4729	0.0000	SURCHARGED
720 minute summer	38	735	4.755	0.390	24.9	0.5577	0.0000	OK
30 minute summer	39	22	4.644	0.144	9.7	2.9228	0.0000	OK
15 minute summer	44	13	4.852	0.249	20.6	0.2817	0.0000	OK
15 minute summer	45	10	5.542	0.087	19.4	0.0985	0.0000	OK
15 minute summer	46	11	5.038	0.105	27.9	0.1191	0.0000	OK
15 minute summer	47	1	5.612	0.000	0.0	0.0000	0.0000	OK
15 minute summer	48	12	5.231	0.108	17.9	0.1219	0.0000	OK
15 minute summer	49	11	4.495	0.206	41.0	0.2329	0.0000	OK
480 minute summer	50	480	4.136	0.286	13.7	0.3238	0.0000	SURCHARGED
480 minute summer	51	480	4.136	0.371	15.2	95.6222	0.0000	SURCHARGED
480 minute summer	52	480	4.136	0.464	2.2	0.5247	0.0000	SURCHARGED
30 minute summer	53	42	3.683	0.031	1.7	0.0000	0.0000	OK
15 minute summer	54	11	4.295	0.259	71.9	0.2928	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	26	6.000	27	4.0	0.630	0.099	0.1019	
60 minute summer	27	6.001	24	4.0	0.642	0.100	0.2105	
60 minute summer	28	11.000	29	4.5	0.836	0.251	0.2699	
60 minute summer	29	11.001	30	4.5	0.502	0.112	0.1092	
60 minute summer	30	11.002	31	9.0	0.806	0.225	0.3940	
60 minute summer	31	11.003	44	8.9	0.806	0.225	0.6509	
15 minute summer	32	16.000	33	8.1	0.481	0.095	0.5591	
15 minute summer	33	16.001	34	16.2	0.405	0.189	0.6930	
15 minute summer	34	14.002	35	60.2	1.000	0.850	1.4228	
15 minute summer	35	14.003	36	58.1	0.897	0.821	2.0370	
15 minute summer	36	11.005	37	66.0	0.938	0.932	0.8981	
15 minute summer	37	11.006	38	90.9	1.321	1.283	0.9736	
720 minute summer	38	Flow through pond	9	18.1	0.027	0.002	116.5741	
30 minute summer	39	3.000	14	3.7	0.651	0.207	0.2675	
15 minute summer	44	11.004	36	23.7	0.767	0.202	0.6167	
15 minute summer	45	14.000	46	19.1	1.382	0.300	0.4118	
15 minute summer	46	14.001	34	27.7	0.674	0.270	1.1419	
15 minute summer	47	19.000	48	0.0	0.000	0.000	0.0612	
15 minute summer	48	19.001	49	17.6	1.325	0.827	0.4612	
15 minute summer	49	19.002	54	40.7	1.134	1.020	1.0935	
480 minute summer	50	31.000	51	10.7	0.681	0.268	0.5726	
480 minute summer	51	31.001	52	2.2	0.144	0.056	0.6243	
480 minute summer	52	31.002	53	1.7	0.487	0.041	0.0111	173.9
15 minute summer	54	19.003	55	71.6	1.216	1.009	1.1492	



Results for 10 year Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	55	480	4.136	0.280	17.5	0.3170	0.0000	OK
15 minute summer	56	10	4.886	0.029	1.5	0.0329	0.0000	OK
15 minute summer	57	10	4.893	0.060	8.2	0.0678	0.0000	OK
15 minute summer	58	10	4.244	0.245	67.5	0.2766	0.0000	OK
1440 minute summer	59	1440	4.232	0.743	4.6	0.8402	0.0000	SURCHARGED
1440 minute summer	60	1440	4.232	0.816	5.2	0.9227	0.0000	SURCHARGED
1440 minute summer	61	1440	3.379	0.020	0.7	0.0000	0.0000	OK
15 minute summer	62	11	5.505	0.083	9.6	0.0940	0.0000	OK
15 minute summer	63	11	5.222	0.062	13.0	0.0707	0.0000	OK
15 minute summer	64	11	4.543	0.215	41.8	0.2430	0.0000	OK
1440 minute summer	65	1410	4.240	0.246	3.8	0.2787	0.0000	SURCHARGED
1440 minute summer	66	1410	4.240	0.314	6.0	0.3548	0.0000	SURCHARGED
1440 minute summer	67	1440	4.234	0.567	5.3	0.6408	0.0000	SURCHARGED
1440 minute summer	68	1410	4.253	0.398	5.8	0.4498	0.0000	OK
1440 minute summer	69	1440	4.237	0.387	5.5	0.4381	0.0000	SURCHARGED
60 minute summer	70	42	5.141	0.141	13.3	7.6581	0.0000	OK
30 minute summer	71	24	4.682	0.209	32.0	12.1370	0.0000	SURCHARGED
60 minute summer	72	43	5.587	0.187	19.5	11.8009	0.0000	SURCHARGED
30 minute summer	73	23	5.126	0.226	39.2	13.1357	0.0000	SURCHARGED
15 minute summer	74	13	4.797	0.197	40.1	5.1256	0.0000	OK
15 minute summer	75	14	4.897	0.097	17.0	4.6605	0.0000	OK
30 minute summer	77	24	4.903	0.175	17.2	6.5973	0.0000	SURCHARGED
60 minute summer	78	47	4.485	0.357	39.9	27.2348	0.0000	SURCHARGED
30 minute summer	79	22	4.435	0.242	37.2	9.9124	0.0000	SURCHARGED
1440 minute summer	80	1440	4.232	0.682	4.5	0.7713	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	55	Flow through pond	50	13.7	0.015	0.001	41.6919	
15 minute summer	56	21.000	49	1.4	0.639	0.184	0.1140	
15 minute summer	57	27.000	58	8.1	1.078	0.337	0.3446	
15 minute summer	58	27.001	91	66.7	1.188	0.930	0.3989	
1440 minute summer	59	29.001	60	-4.6	-0.115	-0.115	0.4932	
1440 minute summer	60	28.002	61	0.7	0.375	0.016	0.0168	103.7
15 minute summer	62	23.001	63	9.6	1.134	0.540	0.2235	
15 minute summer	63	23.002	64	13.0	1.626	0.363	0.2274	
15 minute summer	64	23.003	89	41.9	1.154	1.048	0.3430	
1440 minute summer	65	32.001	66	3.6	0.461	0.091	0.4579	
1440 minute summer	66	32.002	68	5.8	0.641	0.146	0.4393	
1440 minute summer	67	28.001	60	5.2	0.460	0.195	0.1378	
1440 minute summer	68	Flow through pond	69	5.5	0.130	0.002	2.8577	
1440 minute summer	69	28.000	67	5.3	0.671	0.297	0.3217	
60 minute summer	70	33.000	66	3.6	0.772	0.202	0.0545	
30 minute summer	71	22.000	54	7.9	1.146	0.314	0.0218	
60 minute summer	72	12.000	30	4.5	1.248	0.138	0.0230	
30 minute summer	73	13.000	44	12.7	1.566	0.388	0.0362	
15 minute summer	74	18.000	37	24.9	0.972	0.624	0.1909	
15 minute summer	75	17.000	35	10.0	0.951	0.564	0.0341	
30 minute summer	77	5.000	18	4.1	0.773	0.231	0.0229	
60 minute summer	78	10.000	20	6.3	0.701	0.158	0.0361	
30 minute summer	79	9.000	20	16.9	0.912	0.420	0.0860	
1440 minute summer	80	29.000	59	-4.5	0.253	-0.114	0.4127	



Results for 10 year Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	81	22	5.388	0.115	8.5	2.8866	0.0000	SURCHARGED
30 minute summer	82	22	5.479	0.104	8.3	2.8739	0.0000	SURCHARGED
30 minute summer	83	22	5.612	0.093	7.7	2.7724	0.0000	OK
60 minute summer	84	42	5.469	0.169	15.7	9.2114	0.0000	SURCHARGED
15 minute summer	85	10	5.426	0.066	10.0	0.0742	0.0000	OK
60 minute summer	86	46	4.788	0.176	23.6	16.0794	0.0000	OK
30 minute summer	87	24	5.090	0.135	13.2	4.9786	0.0000	OK
1440 minute summer	88	1410	4.240	0.190	3.9	0.2150	0.0000	OK
1440 minute summer	89	1410	4.240	0.175	4.1	0.1980	0.0000	OK
15 minute summer	90	1	4.687	0.000	0.0	0.0000	0.0000	OK
1440 minute summer	91	1440	4.232	0.657	4.4	0.7431	0.0000	OK
30 minute summer	92	21	5.522	0.143	16.7	4.6214	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	81	25.000	64	3.1	0.893	0.390	0.0153	
30 minute summer	82	24.000	63	3.0	1.251	0.239	0.0092	
30 minute summer	83	23.000	62	2.6	0.855	0.322	0.0081	
60 minute summer	84	15.000	46	4.1	0.982	0.164	0.0137	
15 minute summer	85	1.000	12	9.9	1.362	0.373	0.1573	
60 minute summer	86	2.000	12	4.2	0.640	0.104	0.0645	
30 minute summer	87	4.000	15	3.4	0.732	0.195	0.0151	
1440 minute summer	88	32.000	65	3.8	0.582	0.095	0.3553	
1440 minute summer	89	Flow through pond	88	3.9	0.010	0.000	67.6688	
15 minute summer	90	30.000	59	0.0	0.000	0.000	0.0000	
1440 minute summer	91	Flow through pond	80	1.9	0.019	0.000	127.2518	
30 minute summer	92	20.000	48	9.3	0.944	0.528	0.0399	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	1	1470	4.121	0.821	18.0	0.9281	0.0000	SURCHARGED
1440 minute summer	2	1470	4.120	0.860	3.4	0.9729	0.0000	SURCHARGED
60 minute summer	3	1454	3.253	0.044	3.3	0.0000	0.0000	OK
15 minute summer	4	7	4.620	0.020	1.0	0.0223	0.0000	OK
1440 minute summer	5	1410	4.125	0.810	6.4	0.9166	0.0000	OK
960 minute summer	6	975	5.002	0.902	7.6	1.0198	0.0000	SURCHARGED
960 minute summer	7	975	5.002	0.949	1.7	1.0728	0.0000	SURCHARGED
960 minute summer	8	975	4.064	0.031	1.7	0.0000	0.0000	OK
960 minute summer	9	975	5.002	0.652	22.1	0.7371	0.0000	SURCHARGED
960 minute summer	10	975	5.002	0.706	13.7	0.7982	0.0000	SURCHARGED
960 minute summer	11	975	5.002	0.884	13.7	0.9994	0.0000	OK
15 minute summer	12	11	4.728	0.248	63.3	0.2804	0.0000	OK
15 minute summer	13	11	4.623	0.274	87.9	0.3103	0.0000	OK
15 minute summer	14	13	4.556	0.311	91.0	0.3518	0.0000	SURCHARGED
15 minute summer	15	13	4.376	0.494	93.0	0.5584	0.0000	SURCHARGED
15 minute summer	16	12	4.362	0.518	92.3	0.5855	0.0000	SURCHARGED
15 minute summer	17	12	4.314	0.530	91.1	0.5992	0.0000	SURCHARGED
15 minute summer	18	13	4.255	0.573	82.1	0.6476	0.0000	SURCHARGED
15 minute summer	19	13	4.183	0.620	85.3	0.7012	0.0000	SURCHARGED
1440 minute summer	20	1470	4.120	0.683	31.5	0.9773	0.0000	SURCHARGED
1440 minute summer	21	1440	4.122	0.807	31.4	1.1549	0.0000	OK
15 minute summer	22	10	4.371	0.113	24.7	0.1276	0.0000	OK
15 minute summer	23	10	4.925	0.094	24.0	0.1060	0.0000	OK
15 minute summer	24	11	4.475	0.279	69.5	0.3156	0.0000	OK
15 minute summer	25	11	4.388	0.283	78.0	0.3205	0.0000	OK

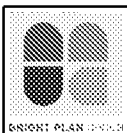
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	1	34.000	2	3.4	0.170	0.084	0.2693	
1440 minute summer	2	34.001	3	3.3	0.598	0.083	0.0479	466.5
15 minute summer	4	36.000	5	1.0	0.522	0.008	0.0206	
1440 minute summer	5	Flow through pond	1	18.0	0.021	0.000	649.9529	
960 minute summer	6	35.000	7	1.7	0.245	0.042	0.3161	
960 minute summer	7	35.001	8	1.7	0.487	0.041	0.0113	224.2
960 minute summer	9	26.000	10	13.7	0.569	0.194	0.9290	
960 minute summer	10	26.001	11	13.7	0.516	0.193	2.8035	
960 minute summer	11	Flow through pond	6	7.6	0.048	0.001	183.3132	
15 minute summer	12	1.001	13	62.6	0.991	0.884	2.0710	
15 minute summer	13	1.002	14	86.9	1.359	0.896	0.9194	
15 minute summer	14	1.003	15	89.3	1.442	0.981	3.0124	
15 minute summer	15	1.004	16	92.3	0.983	0.834	1.3700	
15 minute summer	16	1.005	17	91.1	1.021	0.823	2.1530	
15 minute summer	17	1.006	18	77.0	1.026	0.695	3.6161	
15 minute summer	18	1.007	19	85.3	0.888	0.771	4.2479	
15 minute summer	19	1.008	20	87.4	0.793	0.790	4.4996	
1440 minute summer	20	1.009	21	31.4	0.543	0.284	1.1422	
1440 minute summer	21	Flow through pond	1	18.0	0.021	0.000	649.9529	
15 minute summer	22	8.000	20	24.3	1.259	0.469	0.5573	
15 minute summer	23	7.000	24	23.8	1.140	0.367	0.9612	
15 minute summer	24	6.002	25	65.9	1.013	0.932	1.5273	
15 minute summer	25	6.003	20	76.2	1.223	1.077	2.6774	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	26	53	4.801	0.260	42.6	32.6163	0.0000	SURCHARGED
60 minute summer	27	53	4.501	0.056	5.3	0.0635	0.0000	OK
60 minute summer	28	43	6.052	0.302	25.7	15.8657	0.0000	SURCHARGED
60 minute summer	29	43	5.230	0.061	6.5	0.0695	0.0000	OK
60 minute summer	30	44	5.184	0.087	12.1	0.0981	0.0000	OK
15 minute summer	31	13	5.031	0.141	11.1	0.1592	0.0000	OK
15 minute summer	32	11	5.400	0.525	16.0	0.5939	0.0000	FLOOD RISK
15 minute summer	33	11	5.358	0.580	31.0	0.6985	0.0000	FLOOD RISK
15 minute summer	34	11	5.297	0.592	107.2	0.7677	0.0000	FLOOD RISK
15 minute summer	35	12	5.137	0.518	105.8	0.5854	0.0000	FLOOD RISK
1440 minute summer	36	1440	5.001	0.501	20.0	0.7174	0.0000	SURCHARGED
960 minute summer	37	975	5.002	0.554	30.8	0.7930	0.0000	SURCHARGED
960 minute summer	38	975	5.002	0.637	30.7	0.9112	0.0000	OK
30 minute summer	39	23	4.714	0.214	17.7	6.2928	0.0000	SURCHARGED
15 minute summer	44	13	5.009	0.406	30.0	0.4597	0.0000	SURCHARGED
15 minute summer	45	11	5.575	0.120	35.3	0.1361	0.0000	OK
15 minute summer	46	11	5.445	0.512	50.1	0.5785	0.0000	SURCHARGED
15 minute summer	47	1	5.612	0.000	0.0	0.0000	0.0000	OK
15 minute summer	48	12	5.602	0.479	27.6	0.5414	0.0000	SURCHARGED
15 minute summer	49	11	5.030	0.741	63.6	0.8383	0.0000	SURCHARGED
720 minute summer	50	720	4.643	0.793	16.0	0.8973	0.0000	SURCHARGED
720 minute summer	51	720	4.643	0.878	17.1	103.7216	0.0000	SURCHARGED
720 minute summer	52	720	4.643	0.971	2.2	1.0983	0.0000	SURCHARGED
720 minute summer	53	720	3.683	0.031	1.7	0.0000	0.0000	OK
720 minute summer	54	720	4.643	0.607	21.5	0.6869	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	26	6.000	27	5.3	0.682	0.133	0.1258	
60 minute summer	27	6.001	24	5.3	0.696	0.133	0.4292	
60 minute summer	28	11.000	29	6.5	0.926	0.367	0.3567	
60 minute summer	29	11.001	30	6.5	0.573	0.164	0.1396	
60 minute summer	30	11.002	31	12.1	0.875	0.304	0.4846	
15 minute summer	31	11.003	44	14.7	0.842	0.370	1.1863	
15 minute summer	32	16.000	33	14.2	0.488	0.166	1.1556	
15 minute summer	33	16.001	34	29.2	0.415	0.342	0.8636	
15 minute summer	34	14.002	35	105.8	1.503	1.494	1.4805	
15 minute summer	35	14.003	36	70.5	1.002	0.996	2.0436	
1440 minute summer	36	11.005	37	19.9	0.623	0.281	0.8981	
960 minute summer	37	11.006	38	30.7	0.728	0.434	1.0583	
960 minute summer	38	Flow through pond	9	22.1	0.030	0.002	214.0714	
30 minute summer	39	3.000	14	4.7	0.765	0.266	0.2811	
15 minute summer	44	11.004	36	31.2	0.764	0.266	0.6533	
15 minute summer	45	14.000	46	35.2	1.561	0.552	0.9140	
15 minute summer	46	14.001	34	45.1	0.725	0.439	1.8715	
15 minute summer	47	19.000	48	0.0	0.000	0.000	0.1022	
15 minute summer	48	19.001	49	25.5	1.450	1.200	0.6119	
15 minute summer	49	19.002	54	63.3	1.592	1.588	1.1938	
720 minute summer	50	31.000	51	10.8	0.693	0.271	0.5726	
720 minute summer	51	31.001	52	2.2	0.142	0.054	0.6243	
720 minute summer	52	31.002	53	1.7	0.491	0.042	0.0113	194.8
720 minute summer	54	19.003	55	21.4	0.818	0.301	1.3832	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	55	720	4.643	0.787	21.4	0.8905	0.0000	OK
15 minute summer	56	11	5.071	0.214	4.2	0.2415	0.0000	SURCHARGED
15 minute summer	57	10	4.918	0.085	14.8	0.0956	0.0000	OK
960 minute summer	58	705	4.488	0.489	10.6	0.5535	0.0000	SURCHARGED
600 minute summer	59	555	4.484	0.995	15.4	1.1255	0.0000	SURCHARGED
600 minute summer	60	555	4.489	1.073	11.3	1.2138	0.0000	SURCHARGED
480 minute summer	61	488	3.380	0.021	0.7	0.0000	0.0000	OK
15 minute summer	62	10	5.549	0.127	17.3	0.1439	0.0000	OK
15 minute summer	63	11	5.256	0.096	22.5	0.1081	0.0000	OK
15 minute summer	64	11	4.771	0.443	74.5	0.5013	0.0000	SURCHARGED
600 minute summer	65	555	4.480	0.486	9.9	0.5496	0.0000	SURCHARGED
600 minute summer	66	555	4.480	0.554	10.8	0.6265	0.0000	SURCHARGED
600 minute summer	67	555	4.485	0.818	9.3	0.9255	0.0000	SURCHARGED
600 minute summer	68	555	4.480	0.625	11.5	0.7069	0.0000	OK
600 minute summer	69	555	4.480	0.630	16.9	0.7126	0.0000	SURCHARGED
60 minute summer	70	45	5.209	0.209	24.5	16.1114	0.0000	SURCHARGED
60 minute summer	71	43	4.793	0.320	43.8	25.8982	0.0000	SURCHARGED
60 minute summer	72	48	5.673	0.273	36.0	24.9648	0.0000	SURCHARGED
30 minute summer	73	24	5.232	0.332	71.7	28.1846	0.0000	SURCHARGED
960 minute summer	74	960	5.002	0.402	6.2	19.1015	0.0000	SURCHARGED
30 minute summer	75	24	5.005	0.205	50.0	19.0297	0.0000	SURCHARGED
60 minute summer	77	43	5.017	0.289	23.5	13.9613	0.0000	SURCHARGED
60 minute summer	78	57	4.647	0.519	73.4	57.2074	0.0000	SURCHARGED
30 minute summer	79	23	4.554	0.361	68.0	21.8336	0.0000	SURCHARGED
600 minute summer	80	555	4.482	0.932	43.8	1.0540	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	55	Flow through pond	50	16.0	0.015	0.001	150.1380	
15 minute summer	56	21.000	49	4.9	0.675	0.626	0.2059	
15 minute summer	57	27.000	58	14.6	1.107	0.611	0.5250	
960 minute summer	58	27.001	91	10.5	0.625	0.146	0.5024	
600 minute summer	59	29.001	60	-15.4	-0.387	-0.386	0.4932	
600 minute summer	60	28.002	61	0.7	0.388	0.019	0.0183	82.3
15 minute summer	62	23.001	63	17.1	1.253	0.965	0.3655	
15 minute summer	63	23.002	64	22.5	1.695	0.630	0.2786	
15 minute summer	64	23.003	89	74.1	1.863	1.854	0.3763	
600 minute summer	65	32.001	66	10.0	0.467	0.250	0.4579	
600 minute summer	66	32.002	68	10.6	0.738	0.266	0.4393	
600 minute summer	67	28.001	60	11.3	0.644	0.424	0.1378	
600 minute summer	68	Flow through pond	69	16.9	0.155	0.005	6.6374	
600 minute summer	69	28.000	67	9.3	0.816	0.522	0.3217	
60 minute summer	70	33.000	66	4.6	0.825	0.260	0.0655	
60 minute summer	71	22.000	54	10.3	1.218	0.409	0.0267	
60 minute summer	72	12.000	30	5.6	1.322	0.172	0.0270	
30 minute summer	73	13.000	44	16.1	1.636	0.494	0.0691	
960 minute summer	74	18.000	37	5.1	0.645	0.128	0.2016	
30 minute summer	75	17.000	35	-32.0	-1.822	-1.805	0.0434	
60 minute summer	77	5.000	18	5.6	0.836	0.315	0.0288	
60 minute summer	78	10.000	20	7.8	0.742	0.195	0.0422	
30 minute summer	79	9.000	20	22.4	0.974	0.555	0.1065	
600 minute summer	80	29.000	59	-18.8	-0.472	-0.470	0.4127	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	81	23	5.476	0.203	15.5	5.7712	0.0000	SURCHARGED
30 minute summer	82	23	5.554	0.179	15.3	5.7418	0.0000	SURCHARGED
30 minute summer	83	23	5.675	0.156	14.0	5.4493	0.0000	SURCHARGED
60 minute summer	84	45	5.596	0.296	28.8	18.8975	0.0000	SURCHARGED
15 minute summer	85	10	5.455	0.095	18.1	0.1076	0.0000	OK
60 minute summer	86	53	4.878	0.266	43.4	32.9606	0.0000	SURCHARGED
60 minute summer	87	43	5.153	0.198	18.1	10.5562	0.0000	SURCHARGED
720 minute summer	88	615	4.481	0.431	9.8	0.4870	0.0000	SURCHARGED
720 minute summer	89	615	4.481	0.416	12.1	0.4702	0.0000	OK
15 minute summer	90	1	4.687	0.000	0.0	0.0000	0.0000	OK
960 minute summer	91	705	4.512	0.937	224.7	1.0601	0.0000	OK
30 minute summer	92	21	5.657	0.278	30.5	10.0478	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	81	25.000	64	4.4	0.972	0.565	0.0204	
30 minute summer	82	24.000	63	4.3	1.365	0.341	0.0121	
30 minute summer	83	23.000	62	3.7	0.931	0.462	0.0129	
60 minute summer	84	15.000	46	5.8	1.066	0.229	0.0176	
15 minute summer	85	1.000	12	17.9	1.564	0.675	0.2482	
60 minute summer	86	2.000	12	5.4	0.685	0.134	0.1316	
60 minute summer	87	4.000	15	4.4	0.780	0.249	0.0182	
720 minute summer	88	32.000	65	8.5	0.633	0.213	0.3739	
720 minute summer	89	Flow through pond	88	6.7	0.021	0.000	156.8150	
15 minute summer	90	30.000	59	0.0	0.000	0.000	0.0000	
960 minute summer	91	Flow through pond	80	-224.7	-0.078	-0.038	153.4663	
30 minute summer	92	20.000	48	17.0	1.048	0.960	0.0710	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	1	1470	4.353	1.053	23.3	1.1905	0.0000	FLOOD RISK
1440 minute summer	2	1470	4.352	1.092	3.4	1.2353	0.0000	FLOOD RISK
15 minute summer	3	1017	3.253	0.044	3.3	0.0000	0.0000	OK
15 minute summer	4	7	4.620	0.020	1.0	0.0223	0.0000	OK
1440 minute summer	5	1470	4.353	1.038	7.7	1.1738	0.0000	OK
1440 minute summer	6	1470	5.212	1.112	7.1	1.2580	0.0000	FLOOD RISK
1440 minute summer	7	1470	5.212	1.159	1.8	1.3110	0.0000	FLOOD RISK
1440 minute summer	8	1470	4.065	0.032	1.8	0.0000	0.0000	OK
1440 minute summer	9	1470	5.212	0.862	19.8	0.9752	0.0000	SURCHARGED
1440 minute summer	10	1470	5.212	0.916	12.5	1.0363	0.0000	SURCHARGED
1440 minute summer	11	1470	5.212	1.094	12.5	1.2376	0.0000	OK
15 minute summer	12	12	5.296	0.816	88.6	0.9227	0.0000	SURCHARGED
15 minute summer	13	12	5.171	0.822	113.1	0.9299	0.0000	FLOOD RISK
15 minute summer	14	12	5.034	0.789	110.7	0.8926	0.0000	SURCHARGED
15 minute summer	15	12	4.744	0.862	108.0	0.9754	0.0000	SURCHARGED
15 minute summer	16	12	4.702	0.858	106.5	0.9699	0.0000	SURCHARGED
15 minute summer	17	12	4.646	0.862	104.8	0.9751	0.0000	SURCHARGED
15 minute summer	18	12	4.569	0.887	91.7	1.0036	0.0000	SURCHARGED
15 minute summer	19	12	4.468	0.905	92.9	1.0234	0.0000	SURCHARGED
15 minute summer	20	12	4.361	0.924	231.7	1.3217	0.0000	SURCHARGED
1440 minute summer	21	1440	4.354	1.039	42.5	1.4875	0.0000	OK
15 minute summer	22	12	4.415	0.157	35.2	0.1779	0.0000	OK
15 minute summer	23	10	4.946	0.115	34.1	0.1296	0.0000	OK
15 minute summer	24	12	4.818	0.622	94.3	0.7038	0.0000	SURCHARGED
15 minute summer	25	12	4.687	0.582	95.4	0.6578	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	1	34.000	2	3.4	0.170	0.084	0.2693	
1440 minute summer	2	34.001	3	3.3	0.599	0.083	0.0479	506.4
15 minute summer	4	36.000	5	1.0	0.522	0.008	0.0206	
1440 minute summer	5	Flow through pond	1	23.3	0.021	0.000	950.5264	
1440 minute summer	6	35.000	7	1.8	0.129	0.046	0.3161	
1440 minute summer	7	35.001	8	1.8	0.500	0.045	0.0121	290.6
1440 minute summer	9	26.000	10	12.5	0.549	0.177	0.9290	
1440 minute summer	10	26.001	11	12.5	0.502	0.177	2.8035	
1440 minute summer	11	Flow through pond	6	7.1	0.032	0.001	259.1564	
15 minute summer	12	1.001	13	76.8	1.091	1.084	2.2474	
15 minute summer	13	1.002	14	110.7	1.572	1.141	0.9589	
15 minute summer	14	1.003	15	104.2	1.481	1.145	3.0124	
15 minute summer	15	1.004	16	106.5	1.037	0.962	1.3700	
15 minute summer	16	1.005	17	104.8	1.042	0.947	2.1530	
15 minute summer	17	1.006	18	85.8	1.037	0.775	3.6161	
15 minute summer	18	1.007	19	92.9	0.851	0.839	4.2479	
15 minute summer	19	1.008	20	94.1	0.853	0.850	4.4996	
15 minute summer	20	1.009	21	229.4	2.080	2.072	1.1422	
1440 minute summer	21	Flow through pond	1	23.3	0.021	0.000	950.5264	
15 minute summer	22	8.000	20	34.6	1.363	0.668	1.0024	
15 minute summer	23	7.000	24	33.8	1.128	0.522	1.0869	
15 minute summer	24	6.002	25	77.5	1.101	1.096	1.5675	
15 minute summer	25	6.003	20	91.0	1.324	1.286	3.0632	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	26	59	4.904	0.363	62.0	50.0592	0.0000	SURCHARGED
15 minute summer	27	12	4.826	0.381	10.0	0.4311	0.0000	SURCHARGED
60 minute summer	28	44	6.199	0.449	37.4	24.3199	0.0000	FLOOD RISK
60 minute summer	29	44	5.240	0.071	8.2	0.0806	0.0000	OK
30 minute summer	30	21	5.220	0.123	14.1	0.1393	0.0000	OK
1440 minute summer	31	1470	5.212	0.322	7.0	0.3644	0.0000	SURCHARGED
15 minute summer	32	10	5.527	0.652	22.8	1.0497	0.0000	FLOOD RISK
15 minute summer	33	9	5.358	0.580	46.1	1.1492	0.0000	FLOOD RISK
15 minute summer	34	9	5.297	0.592	137.5	1.1947	0.0000	FLOOD RISK
30 minute summer	35	19	5.355	0.736	132.5	0.8320	0.0000	FLOOD RISK
1440 minute summer	36	1440	5.212	0.712	23.7	1.0192	0.0000	SURCHARGED
1440 minute summer	37	1470	5.213	0.765	27.3	1.0944	0.0000	FLOOD RISK
1440 minute summer	38	1470	5.212	0.847	27.3	1.2124	0.0000	OK
30 minute summer	39	24	4.802	0.302	28.6	12.3585	0.0000	SURCHARGED
1440 minute summer	44	1470	5.215	0.612	13.8	0.6917	0.0000	SURCHARGED
15 minute summer	45	11	6.115	0.660	50.3	0.7464	0.0000	SURCHARGED
15 minute summer	46	11	5.806	0.873	63.0	0.9874	0.9701	FLOOD
30 minute summer	47	22	6.042	0.430	3.0	0.4864	0.0000	SURCHARGED
30 minute summer	48	21	6.040	0.917	30.8	1.0368	0.0000	FLOOD RISK
15 minute summer	49	11	5.450	1.161	76.3	1.3127	0.0000	FLOOD RISK
960 minute summer	50	960	4.976	1.126	15.6	1.2732	0.0000	FLOOD RISK
960 minute summer	51	960	4.976	1.211	14.6	104.0977	0.0000	FLOOD RISK
960 minute summer	52	960	4.976	1.304	2.2	1.4745	0.0000	FLOOD RISK
960 minute summer	53	960	3.685	0.033	2.0	0.0000	0.0000	OK
960 minute summer	54	960	4.976	0.940	23.7	1.0629	0.0000	FLOOD RISK

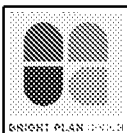
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	26	6.000	27	6.4	0.720	0.161	0.1722	
15 minute summer	27	6.001	24	20.7	0.705	0.520	1.1703	
60 minute summer	28	11.000	29	8.2	0.982	0.462	0.4229	
60 minute summer	29	11.001	30	8.2	0.625	0.206	0.1607	
30 minute summer	30	11.002	31	16.4	0.905	0.412	1.0854	
1440 minute summer	31	11.003	44	6.9	0.670	0.174	1.4319	
15 minute summer	32	16.000	33	22.2	0.498	0.261	1.1556	
15 minute summer	33	16.001	34	46.7	0.664	0.546	0.8636	
15 minute summer	34	14.002	35	137.7	1.955	1.944	1.4805	
30 minute summer	35	14.003	36	86.8	1.233	1.226	2.0436	
1440 minute summer	36	11.005	37	23.6	0.592	0.333	0.8981	
1440 minute summer	37	11.006	38	27.3	0.602	0.385	1.0583	
1440 minute summer	38	Flow through pond	9	19.8	0.026	0.002	312.2567	
30 minute summer	39	3.000	14	7.2	0.829	0.404	0.4286	
1440 minute summer	44	11.004	36	13.7	0.475	0.117	0.6533	
15 minute summer	45	14.000	46	48.6	1.578	0.763	1.1848	
15 minute summer	46	14.001	34	49.2	0.708	0.478	1.8715	
30 minute summer	47	19.000	48	-3.0	-0.388	-0.381	0.2044	
30 minute summer	48	19.001	49	31.1	1.766	1.462	0.6119	
15 minute summer	49	19.002	54	76.0	1.912	1.907	1.1938	
960 minute summer	50	31.000	51	9.1	0.729	0.228	0.5726	
960 minute summer	51	31.001	52	2.2	0.144	0.055	0.6243	
960 minute summer	52	31.002	53	2.0	0.511	0.048	0.0125	248.3
960 minute summer	54	19.003	55	23.4	0.737	0.330	1.3832	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	55	945	4.977	1.121	23.4	1.2677	0.0000	OK
15 minute summer	56	11	5.518	0.661	7.0	0.7479	0.0000	FLOOD RISK
15 minute summer	57	11	5.108	0.275	21.1	0.3107	0.0000	SURCHARGED
720 minute summer	58	690	4.881	0.882	96.0	0.9980	0.0000	SURCHARGED
720 minute summer	59	690	4.880	1.391	34.1	1.5737	0.0000	SURCHARGED
720 minute summer	60	690	4.879	1.463	23.3	1.6551	0.0000	SURCHARGED
720 minute summer	61	690	3.382	0.023	0.9	0.0000	0.0000	OK
15 minute summer	62	11	5.700	0.278	20.9	0.3145	0.0000	SURCHARGED
15 minute summer	63	11	5.395	0.235	25.0	0.2663	0.0000	SURCHARGED
15 minute summer	64	10	4.977	0.649	97.5	0.7337	0.0000	SURCHARGED
1440 minute summer	65	1020	4.879	0.885	34.0	1.0013	0.0000	SURCHARGED
720 minute summer	66	690	4.881	0.955	22.5	1.0799	0.0000	SURCHARGED
720 minute summer	67	690	4.880	1.213	18.7	1.3716	0.0000	SURCHARGED
480 minute summer	68	656	4.936	1.081	1167.8	1.2222	0.0000	OK
960 minute summer	69	855	4.979	1.129	276.7	1.2774	0.0000	FLOOD RISK
60 minute summer	70	48	5.278	0.278	35.6	25.1314	0.0000	SURCHARGED
960 minute summer	71	960	4.977	0.504	7.9	42.3127	0.0000	SURCHARGED
60 minute summer	72	53	5.746	0.346	52.3	39.2115	0.0000	SURCHARGED
60 minute summer	73	44	5.333	0.433	78.1	47.4260	0.0000	SURCHARGED
1440 minute summer	74	1440	5.213	0.613	6.3	22.8473	0.0000	FLOOD RISK
1440 minute summer	75	1440	5.213	0.413	4.4	49.1958	0.0000	FLOOD RISK
60 minute summer	77	44	5.140	0.412	34.2	21.9914	0.0000	SURCHARGED
60 minute summer	78	61	4.800	0.672	106.8	89.2303	0.0000	FLOOD RISK
30 minute summer	79	22	5.066	0.873	98.0	34.0116	0.0000	FLOOD RISK
720 minute summer	80	690	4.880	1.330	821.8	1.5044	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	55	Flow through pond	50	13.5	0.012	0.001	244.8118	
15 minute summer	56	21.000	49	6.1	0.777	0.773	0.2059	
15 minute summer	57	27.000	58	19.9	1.131	0.830	0.6641	
720 minute summer	58	27.001	91	-96.0	-1.387	-1.337	0.5024	
720 minute summer	59	29.001	60	-34.1	-0.857	-0.855	0.4932	
720 minute summer	60	28.002	61	0.9	0.405	0.021	0.0203	90.3
15 minute summer	62	23.001	63	18.8	1.252	1.061	0.4643	
15 minute summer	63	23.002	64	29.6	1.768	0.829	0.3332	
15 minute summer	64	23.003	89	96.7	2.433	2.420	0.3773	
1440 minute summer	65	32.001	66	30.1	0.756	0.754	0.4579	
720 minute summer	66	32.002	68	22.8	0.677	0.571	0.4393	
720 minute summer	67	28.001	60	23.3	1.324	0.872	0.1378	
480 minute summer	68	Flow through pond	69	1318.6	0.516	0.379	14.6017	
960 minute summer	69	28.000	67	20.6	1.171	1.161	0.3217	
60 minute summer	70	33.000	66	5.5	0.863	0.309	0.0745	
960 minute summer	71	22.000	54	6.6	1.099	0.264	0.0558	
60 minute summer	72	12.000	30	6.4	1.368	0.197	0.0298	
60 minute summer	73	13.000	44	17.4	1.543	0.534	0.0703	
1440 minute summer	74	18.000	37	3.7	0.565	0.093	0.2016	
1440 minute summer	75	17.000	35	-2.7	0.578	-0.155	0.0434	
60 minute summer	77	5.000	18	6.9	0.880	0.387	0.0337	
60 minute summer	78	10.000	20	9.0	0.771	0.225	0.0962	
30 minute summer	79	9.000	20	38.4	1.116	0.954	0.1613	
720 minute summer	80	29.000	59	-50.1	-1.259	-1.256	0.4127	

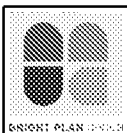


Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 93.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	81	41	5.570	0.297	16.9	8.8683	0.0000	SURCHARGED
60 minute summer	82	41	5.637	0.262	16.6	8.8707	0.0000	SURCHARGED
30 minute summer	83	24	5.752	0.233	20.2	8.7290	0.0000	SURCHARGED
60 minute summer	84	46	5.739	0.439	41.9	29.8328	0.0000	FLOOD RISK
15 minute summer	85	12	5.657	0.297	25.8	0.3355	0.0000	SURCHARGED
60 minute summer	86	59	4.979	0.367	63.1	52.2386	0.0000	SURCHARGED
60 minute summer	87	45	5.212	0.257	26.3	16.7689	0.0000	SURCHARGED
600 minute summer	88	600	4.885	0.835	18.7	0.9441	0.0000	SURCHARGED
720 minute summer	89	690	4.890	0.825	440.9	0.9335	0.0000	OK
720 minute summer	90	690	4.880	0.193	0.7	4.9225	0.0000	SURCHARGED
180 minute summer	91	592	4.980	1.405	588.7	1.5896	0.0000	OK
30 minute summer	92	21	6.229	0.850	48.1	17.4004	0.3954	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	81	25.000	64	5.6	1.018	0.712	0.0244	
60 minute summer	82	24.000	63	5.4	1.436	0.427	0.0152	
30 minute summer	83	23.000	62	5.7	0.984	0.704	0.0206	
60 minute summer	84	15.000	46	8.1	1.126	0.320	0.0572	
15 minute summer	85	1.000	12	25.8	1.625	0.975	0.3826	
60 minute summer	86	2.000	12	7.5	0.721	0.189	0.3803	
60 minute summer	87	4.000	15	5.2	0.813	0.292	0.0205	
600 minute summer	88	32.000	65	20.7	0.649	0.518	0.3739	
720 minute summer	89	Flow through pond	88	-440.9	-0.060	-0.020	299.0074	
720 minute summer	90	30.000	59	3.2	0.910	0.410	0.0379	
180 minute summer	91	Flow through pond	80	776.7	0.258	0.132	153.4663	
30 minute summer	92	20.000	48	20.3	1.152	1.147	0.0710	

Appendix F Foul Network Models



Design Settings

Frequency of use (kDU)	0.90	Minimum Velocity (m/s)	1.00
Flow per dwelling per day (l/day)	4000	Connection Type	Level Soffits
Domestic Flow (l/s/ha)	0.6	Minimum Backdrop Height (m)	0.200
Industrial Flow (l/s/ha)	0.8	Preferred Cover Depth (m)	1.200
Additional Flow (%)	0	Include Intermediate Ground	✓

Nodes

Name	Dwellings	Cover Level (m)	Manhole Type	Easting (m)	Northing (m)	Depth (m)
1		4.312	Adoptable	488782.843	97823.812	1.491
2		4.673	Adoptable	488767.951	97845.352	2.027
3		5.083	Adoptable	488750.650	97869.344	2.635
4		5.367	Adoptable	488717.703	97916.655	3.804
5		5.252	Adoptable	488704.184	97938.039	3.358
6		5.243	Adoptable	488700.648	97988.246	3.685
7		5.218	Adoptable	488702.309	98053.120	4.168
8		4.965	Adoptable	488752.109	98173.417	4.494
9		4.946	Adoptable	488757.216	98189.976	4.552
10		5.492	Adoptable	488661.296	97881.167	1.615
11		5.619	Adoptable	488683.273	97893.027	1.909
12		5.781	Adoptable	488710.803	97910.540	2.289
13	30	6.196	Adoptable	488677.446	97988.033	1.350
14		6.082	Adoptable	488663.735	97978.325	1.350
15		5.940	Adoptable	488653.364	97956.954	1.367
16		5.759	Adoptable	488645.543	97927.593	1.399
17		5.518	Adoptable	488644.454	97884.383	1.526
18		5.325	Adoptable	488627.670	97869.671	1.350
19		5.453	Adoptable	488597.803	97866.666	1.679
20		5.485	Adoptable	488591.749	97870.649	2.704
21	30	5.586	Adoptable	488591.619	97885.437	2.904
22		5.772	Adoptable	488594.731	97938.984	3.448
23		5.604	Adoptable	488597.863	97967.508	3.472
24		5.491	Adoptable	488601.644	97988.675	3.503
25		5.386	Adoptable	488608.442	98002.705	3.502
26		5.298	Adoptable	488622.568	98018.219	3.554
27		5.454	Adoptable	488636.430	98035.546	3.858
28		5.610	Adoptable	488655.782	98045.815	4.161
29		5.788	Adoptable	488685.367	98045.950	4.537
30	30	5.800	Adoptable	488651.410	97815.457	1.100
31		5.700	Adoptable	488636.743	97837.817	1.178
32		5.600	Adoptable	488628.669	97861.166	1.243
33	30	5.408	Adoptable	488693.499	97747.277	1.350
34		5.263	Adoptable	488704.112	97759.543	1.385
35		5.085	Adoptable	488718.035	97776.294	1.417
36		4.749	Adoptable	488747.842	97801.664	1.651
37		6.125	Adoptable	488786.080	98037.655	1.991
38		5.981	Adoptable	488761.598	98037.327	1.991
39		5.753	Adoptable	488736.032	98029.235	2.874
40	30	5.796	Adoptable	488755.277	97942.905	1.350
41		5.955	Adoptable	488728.110	97927.216	1.719
42	30	5.586	Adoptable	488781.090	97926.853	1.371
43		5.451	Adoptable	488788.992	97912.863	1.354
44		5.108	Adoptable	488812.572	97882.112	1.415



Nodes

Name	Dwellings	Cover Level (m)	Manhole Type	Easting (m)	Northing (m)	Depth (m)
45		4.810	Adoptable	488834.900	97853.219	1.558
46		5.574	Adoptable	488747.773	97988.711	1.970
47		5.578	Adoptable	488738.957	98005.728	2.294
48		5.593	Adoptable	488734.732	98020.318	2.663
49		6.400	Adoptable	488795.100	98016.299	2.111
50		6.400	Adoptable	488788.491	98031.066	2.219
51		6.045	Adoptable	488799.679	97994.182	1.350
52		5.575	Adoptable	488756.689	97973.476	1.776
53	30	5.929	Adoptable	488831.438	98032.209	1.350
54	30	5.758	Adoptable	488875.750	98019.456	1.058
55		5.522	Adoptable	488901.123	98011.944	1.098
56		5.557	Adoptable	488905.220	98002.750	1.100
57		5.139	Adoptable	488882.992	97921.429	1.244
58		5.100	Adoptable	488880.272	97909.126	1.289
59	30	5.800	Adoptable	488828.970	97975.115	1.350
60		5.600	Adoptable	488840.025	97950.266	1.331
61		5.200	Adoptable	488862.198	97901.069	1.521
62		4.996	Adoptable	488868.190	97887.148	1.419
63		5.038	Adoptable	488860.583	97872.368	1.572
64	30	6.171	Adoptable	488687.129	97822.206	1.350
65		5.751	Adoptable	488707.407	97839.819	1.350
66		5.518	Adoptable	488720.294	97849.497	1.673
67	30	6.095	Adoptable	488670.887	97805.613	1.055
68		5.780	Adoptable	488658.631	97795.736	1.080
69		5.244	Adoptable	488634.802	97764.391	1.244
70		5.088	Adoptable	488626.053	97750.390	1.205
71	30	5.390	Adoptable	488662.982	97736.282	1.240
72		5.292	Adoptable	488651.449	97737.463	1.219
73		5.341	Adoptable	488582.851	97775.678	1.792
74		5.452	Adoptable	488572.589	97789.026	2.016
75		5.042	Adoptable	488566.686	97834.510	1.912
76		5.100	Adoptable	488564.212	97854.842	2.107

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.009	1	2	26.187	1.500	2.821	2.646	0.175	149.6	150
1.010	2	3	29.579	1.500	2.646	2.448	0.198	149.4	150
1.011	3	4	57.653	1.500	2.448	2.063	0.385	149.7	150
1.012	4	5	25.299	1.500	2.063	1.894	0.169	149.7	150
1.013	5	6	50.931	1.500	1.894	1.558	0.336	149.8	150

Name	US Node	DS Node	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
1.009	1	2	0.508	0.715	12.6	5.6	1.341	1.877
1.010	2	3	0.508	0.716	12.6	5.6	1.877	2.485
1.011	3	4	0.542	0.715	12.6	6.9	2.485	3.654
1.012	4	5	0.597	0.715	12.6	9.7	3.654	3.208
1.013	5	6	0.597	0.715	12.6	9.7	3.208	3.535



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.014	6	7	64.895	1.500	1.558	1.125	0.433	149.9	150
1.015	7	8	130.198	1.500	1.050	0.471	0.579	225.0	225
1.016	8	9	17.329	1.500	0.471	0.394	0.077	225.0	225
6.005	10	11	24.973	1.500	3.877	3.710	0.167	149.5	150
6.006	11	12	32.628	1.500	3.710	3.492	0.218	149.7	150
6.007	12	4	9.220	1.500	3.492	3.430	0.062	148.7	150
6.008	13	14	16.800	1.500	4.846	4.732	0.114	147.4	150
6.001	14	15	23.755	1.500	4.732	4.573	0.159	149.4	150
6.002	15	16	30.385	1.500	4.573	4.370	0.203	149.7	150
6.003	16	17	43.224	1.500	4.370	3.992	0.378	114.2	150
6.004	17	10	17.146	1.500	3.992	3.877	0.115	149.1	150
10.003	18	19	30.018	1.500	3.975	3.774	0.201	149.3	150
10.004	19	20	7.247	1.500	3.774	3.725	0.049	147.9	150
8.008	20	21	14.739	1.500	2.731	2.682	0.049	149.4	150
8.009	21	22	53.637	1.500	2.682	2.324	0.358	149.8	150
8.010	22	23	28.695	1.500	2.324	2.132	0.192	149.5	150
8.011	23	24	21.502	1.500	2.132	1.988	0.144	149.3	150
8.012	24	25	15.590	1.500	1.988	1.834	0.154	149.9	150
8.013	25	26	20.982	1.500	1.834	1.744	0.140	149.9	150
8.014	26	27	22.190	1.500	1.744	1.596	0.148	149.9	150
8.015	27	28	21.908	1.500	1.596	1.449	0.147	149.0	150
8.016	28	29	29.585	1.500	1.449	1.251	0.198	149.4	150
8.017	29	7	18.397	1.500	1.251	1.125	0.126	145.9	150
10.000	30	31	26.741	1.500	4.700	4.522	0.178	150.0	150

Name	US Node	DS Node	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
1.014	6	7	0.596	0.714	12.6	9.7	3.535	3.943
1.015	7	8	0.582	0.763	30.4	16.7	3.943	4.289
1.016	8	9	0.582	0.763	30.4	16.7	4.289	4.327
6.005	10	11	0.329	0.715	12.6	1.4	1.465	1.759
6.006	11	12	0.336	0.715	12.6	1.4	1.759	2.139
6.007	12	4	0.330	0.717	12.7	1.4	2.139	2.287
6.008	13	14	0.332	0.720	12.7	1.4	1.200	1.200
6.001	14	15	0.329	0.716	12.6	1.4	1.200	1.217
6.002	15	16	0.336	0.715	12.6	1.4	1.217	1.249
6.003	16	17	0.362	0.819	14.5	1.4	1.249	1.376
6.004	17	10	0.330	0.716	12.7	1.4	1.376	1.465
10.003	18	19	0.329	0.716	12.6	1.4	1.200	1.529
10.004	19	20	0.331	0.719	12.7	1.4	1.529	1.610
8.008	20	21	0.466	0.716	12.6	4.2	2.554	2.754
8.009	21	22	0.508	0.714	12.6	5.6	2.754	3.298
8.010	22	23	0.508	0.715	12.6	5.6	3.298	3.322
8.011	23	24	0.508	0.716	12.6	5.6	3.322	3.353
8.012	24	25	0.507	0.714	12.6	5.6	3.353	3.352
8.013	25	26	0.508	0.714	12.6	5.6	3.352	3.404
8.014	26	27	0.507	0.714	12.6	5.6	3.404	3.708
8.015	27	28	0.509	0.716	12.7	5.6	3.708	4.011
8.016	28	29	0.508	0.715	12.6	5.6	4.011	4.387
8.017	29	7	0.514	0.724	12.8	5.6	4.387	3.943
10.000	30	31	0.335	0.714	12.6	1.4	0.950	1.028



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
10.001	31	32	24.706	1.500	4.522	4.357	0.165	149.7	150
10.002	32	18	8.563	1.500	4.357	4.300	0.057	150.2	150
4.000	33	34	16.220	1.500	4.058	3.878	0.180	89.9	150
4.001	34	35	21.782	1.500	3.878	3.668	0.210	103.9	150
4.002	35	36	39.142	1.500	3.668	3.098	0.570	68.7	150
4.003	36	1	41.420	1.500	3.098	2.821	0.277	149.5	150
11.003	37	38	24.484	1.500	4.134	3.970	0.164	149.3	150
11.004	38	39	26.816	1.500	3.970	3.791	0.179	149.8	150
11.005	39	7	41.325	1.500	2.879	2.603	0.276	149.7	150
7.000	40	41	31.372	1.500	4.446	4.236	0.210	149.4	150
7.001	41	4	14.827	1.500	4.236	4.137	0.099	149.8	150
3.000	42	43	16.067	1.500	4.215	4.097	0.118	136.6	150
3.001	43	44	38.751	1.500	4.097	3.693	0.405	95.8	150
3.002	44	45	36.515	1.500	3.693	3.252	0.441	82.8	150
1.008	45	1	59.789	1.500	3.252	2.821	0.431	138.7	150
12.002	46	47	19.165	1.500	3.604	3.284	0.320	59.9	150
12.003	47	48	15.189	1.500	3.284	3.030	0.254	59.8	150
12.004	48	39	9.011	1.500	3.030	2.379	0.651	59.7	150
11.001	49	50	16.178	1.500	4.289	4.181	0.108	149.8	150
11.002	50	37	7.016	1.500	4.181	4.134	0.047	149.3	150
12.000	51	52	47.717	1.500	4.695	3.899	0.796	59.9	150
12.001	52	46	17.652	1.500	3.899	3.604	0.295	59.8	150
11.000	53	49	39.668	1.500	4.579	4.289	0.290	137.0	150
1.000	54	55	26.462	1.500	4.700	4.524	0.176	150.0	150

Name	US Node	DS Node	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
10.001	31	32	0.336	0.715	12.6	1.4	1.028	1.093
10.002	32	18	0.335	0.714	12.6	1.4	1.093	0.875
4.000	33	34	0.400	0.924	16.3	1.4	1.200	1.235
4.001	34	35	0.380	0.859	15.2	1.4	1.235	1.267
4.002	35	36	0.438	1.058	18.7	1.4	1.267	1.501
4.003	36	1	0.329	0.715	12.6	1.4	1.501	1.341
11.003	37	38	0.329	0.716	12.6	1.4	1.841	1.841
11.004	38	39	0.335	0.715	12.6	1.4	1.841	1.812
11.005	39	7	0.335	0.715	12.6	1.4	2.724	2.465
7.000	40	41	0.329	0.716	12.6	1.4	1.200	1.569
7.001	41	4	0.335	0.715	12.6	1.4	1.569	1.580
3.000	42	43	0.345	0.749	13.2	1.4	1.221	1.204
3.001	43	44	0.387	0.895	15.8	1.4	1.204	1.265
3.002	44	45	0.407	0.963	17.0	1.4	1.265	1.408
1.008	45	1	0.479	0.743	13.1	4.2	1.408	1.341
12.002	46	47	0.000	1.133	20.0	0.0	1.820	2.144
12.003	47	48	0.000	1.134	20.0	0.0	2.144	2.513
12.004	48	39	0.000	1.135	20.1	0.0	2.513	2.724
11.001	49	50	0.335	0.715	12.6	1.4	1.961	2.069
11.002	50	37	0.329	0.716	12.6	1.4	2.069	1.841
12.000	51	52	0.000	1.133	20.0	0.0	1.200	1.626
12.001	52	46	0.000	1.134	20.0	0.0	1.626	1.820
11.000	53	49	0.344	0.747	13.2	1.4	1.200	1.961
1.000	54	55	0.335	0.714	12.6	1.4	0.908	0.948



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.001	55	56	10.066	1.500	4.524	4.457	0.067	150.2	150
1.002	56	57	84.304	1.500	4.457	3.895	0.562	150.0	150
1.003	57	58	12.600	1.500	3.895	3.811	0.084	150.0	150
2.000	59	60	27.197	1.500	4.450	4.269	0.181	150.0	150
2.001	60	61	53.963	1.500	4.269	3.679	0.590	91.6	150
1.004	58	61	19.788	1.500	3.811	3.679	0.132	149.9	150
1.005	61	62	15.156	1.500	3.679	3.577	0.102	148.6	150
1.006	62	63	16.623	1.500	3.577	3.466	0.111	149.8	150
1.007	63	45	32.036	1.500	3.466	3.252	0.214	149.7	150
5.000	64	65	26.859	1.500	4.821	4.411	0.410	65.5	150
5.001	65	66	16.116	1.500	4.411	3.845	0.566	78.5	150
5.002	66	3	36.268	1.500	3.845	3.603	0.242	149.9	150
8.000	67	68	15.741	1.500	5.000	4.700	0.300	52.5	150
8.001	68	69	39.374	1.500	4.700	4.000	0.700	56.2	150
8.002	69	70	16.510	1.500	4.000	3.883	0.117	141.1	150
9.000	71	72	11.593	1.500	4.150	4.073	0.077	150.0	150
9.001	72	70	28.497	1.500	4.073	3.883	0.190	150.0	150
8.003	70	73	50.059	1.500	3.883	3.549	0.334	149.9	150
8.004	73	74	16.837	1.500	3.549	3.436	0.113	149.0	150
8.005	74	75	45.865	1.500	3.436	3.130	0.306	150.0	150
8.006	75	76	20.482	1.500	3.130	2.993	0.137	149.5	150
8.007	76	20	31.751	1.500	2.993	2.781	0.212	149.8	150

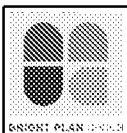
Name	US Node	DS Node	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
1.001	55	56	0.335	0.714	12.6	1.4	0.948	0.950
1.002	56	57	0.335	0.714	12.6	1.4	0.950	1.094
1.003	57	58	0.335	0.714	12.6	1.4	1.094	1.139
2.000	59	60	0.335	0.714	12.6	1.4	1.200	1.181
2.001	60	61	0.396	0.916	16.2	1.4	1.181	1.371
1.004	58	61	0.335	0.714	12.6	1.4	1.139	1.371
1.005	61	62	0.415	0.717	12.7	2.8	1.371	1.269
1.006	62	63	0.413	0.715	12.6	2.8	1.269	1.422
1.007	63	45	0.413	0.715	12.6	2.8	1.422	1.408
5.000	64	65	0.437	1.083	19.1	1.4	1.200	1.200
5.001	65	66	0.598	1.646	29.1	1.4	1.200	1.523
5.002	66	3	0.335	0.714	12.6	1.4	1.523	1.330
8.000	67	68	0.477	1.211	21.4	1.4	0.905	0.930
8.001	68	69	0.461	1.169	20.7	1.4	0.930	1.094
8.002	69	70	0.339	0.736	13.0	1.4	1.094	1.055
9.000	71	72	0.335	0.714	12.6	1.4	1.090	1.069
9.001	72	70	0.335	0.714	12.6	1.4	1.069	1.055
8.003	70	73	0.413	0.714	12.6	2.8	1.055	1.642
8.004	73	74	0.414	0.716	12.7	2.8	1.642	1.866
8.005	74	75	0.413	0.714	12.6	2.8	1.866	1.762
8.006	75	76	0.414	0.715	12.6	2.8	1.762	1.957
8.007	76	20	0.413	0.715	12.6	2.8	1.957	2.554



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.009	26.187	149.6	150	Circular	4.312	2.321	1.341	4.673	2.646	1.877
1.010	29.579	149.4	150	Circular	4.673	2.646	1.877	5.083	2.448	2.485
1.011	57.653	149.7	150	Circular	5.083	2.448	2.485	5.867	2.063	3.654
1.012	25.299	149.7	150	Circular	5.867	2.063	3.654	5.252	1.894	3.203
1.013	50.331	149.8	150	Circular	5.252	1.894	3.203	5.243	1.558	3.535
1.014	64.895	149.9	150	Circular	5.243	1.558	3.535	5.218	1.125	3.943
1.015	130.198	225.0	225	Circular	5.218	1.050	3.943	4.965	0.471	4.269
1.016	17.329	225.0	225	Circular	4.965	0.471	4.269	4.946	0.394	4.327
6.005	24.973	149.5	150	Circular	5.492	3.877	1.465	5.619	3.710	1.759
6.006	32.628	149.7	150	Circular	5.619	3.710	1.759	5.781	3.492	2.139
6.007	9.220	148.7	150	Circular	5.781	3.492	2.139	5.867	3.430	2.287
6.008	18.800	147.4	150	Circular	6.196	4.846	1.200	6.082	4.732	1.200
6.001	23.755	149.4	150	Circular	6.082	4.732	1.200	5.940	4.573	1.217
6.002	30.385	149.7	150	Circular	5.940	4.573	1.217	5.769	4.370	1.249
6.003	43.224	114.2	150	Circular	5.769	4.370	1.249	5.518	3.992	1.376
6.004	17.146	149.1	150	Circular	5.518	3.992	1.376	5.492	3.877	1.465
10.003	30.018	149.3	150	Circular	5.325	3.975	1.200	5.453	3.774	1.529
10.004	7.247	147.9	150	Circular	5.453	3.774	1.529	5.485	3.725	1.610
8.008	14.789	149.4	150	Circular	5.485	2.781	2.554	5.586	2.682	2.754
8.009	53.637	149.8	150	Circular	5.586	2.682	2.754	5.772	2.324	3.298
8.010	28.695	149.5	150	Circular	5.772	2.324	3.298	5.604	2.132	3.322
8.011	21.502	149.3	150	Circular	5.604	2.132	3.322	5.491	1.988	3.353
8.012	19.590	149.9	150	Circular	5.491	1.988	3.353	5.386	1.894	3.352
8.013	20.982	149.9	150	Circular	5.386	1.884	3.352	5.298	1.744	3.404
8.014	32.190	149.9	150	Circular	5.298	1.744	3.404	5.454	1.596	3.708

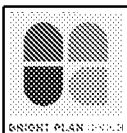
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.009	1	1200	Manhole	Adoptable	2	1200	Manhole	Adoptable
1.010	2	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
1.011	3	1200	Manhole	Adoptable	4	1200	Manhole	Adoptable
1.012	4	1200	Manhole	Adoptable	5	1200	Manhole	Adoptable
1.013	5	1200	Manhole	Adoptable	6	1200	Manhole	Adoptable
1.014	6	1200	Manhole	Adoptable	7	1200	Manhole	Adoptable
1.015	7	1200	Manhole	Adoptable	8	1200	Manhole	Adoptable
1.016	8	1200	Manhole	Adoptable	9	1200	Manhole	Adoptable
6.005	10	1200	Manhole	Adoptable	11	1200	Manhole	Adoptable
6.006	11	1200	Manhole	Adoptable	12	1200	Manhole	Adoptable
6.007	12	1200	Manhole	Adoptable	4	1200	Manhole	Adoptable
6.008	13	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
6.001	14	1200	Manhole	Adoptable	15	1200	Manhole	Adoptable
6.002	15	1200	Manhole	Adoptable	16	1200	Manhole	Adoptable
6.003	16	1200	Manhole	Adoptable	17	1200	Manhole	Adoptable
6.004	17	1200	Manhole	Adoptable	10	1200	Manhole	Adoptable
10.003	18	1200	Manhole	Adoptable	19	1200	Manhole	Adoptable
10.004	19	1200	Manhole	Adoptable	20	1200	Manhole	Adoptable
8.008	20	1200	Manhole	Adoptable	21	1200	Manhole	Adoptable
8.009	21	1200	Manhole	Adoptable	22	1200	Manhole	Adoptable
8.010	22	1200	Manhole	Adoptable	23	1200	Manhole	Adoptable
8.011	23	1200	Manhole	Adoptable	24	1200	Manhole	Adoptable
8.012	24	1200	Manhole	Adoptable	25	1200	Manhole	Adoptable
8.013	25	1200	Manhole	Adoptable	26	1200	Manhole	Adoptable
8.014	26	1200	Manhole	Adoptable	27	1200	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
8.015	21.908	149.0	150	Circular	5.454	1.596	3.703	5.610	1.449	4.011
8.016	29.585	149.4	150	Circular	5.610	1.449	4.011	5.788	1.251	4.387
8.017	18.397	145.9	150	Circular	5.788	1.251	4.387	5.218	1.125	3.943
10.000	26.741	150.0	150	Circular	5.800	4.700	0.950	5.700	4.522	1.028
10.001	24.706	149.7	150	Circular	5.700	4.522	1.028	5.600	4.357	1.093
10.002	8.563	150.2	150	Circular	5.600	4.357	1.093	5.325	4.300	0.875
4.000	16.220	89.9	150	Circular	5.408	4.058	1.200	5.263	3.878	1.235
4.001	21.782	103.9	150	Circular	5.263	3.878	1.235	5.085	3.668	1.267
4.002	39.142	68.7	150	Circular	5.085	3.668	1.267	4.749	3.098	1.501
4.003	41.420	149.5	150	Circular	4.749	3.098	1.501	4.312	2.821	1.341
11.003	24.484	149.3	150	Circular	6.125	4.134	1.841	5.961	3.970	1.841
11.004	26.816	149.8	150	Circular	5.961	3.970	1.841	5.753	3.791	1.812
11.005	41.325	149.7	150	Circular	5.753	2.879	2.724	5.218	2.603	2.465
7.000	31.372	149.4	150	Circular	5.796	4.446	1.200	5.955	4.236	1.569
7.001	14.827	149.8	150	Circular	5.955	4.236	1.569	5.867	4.137	1.580
3.000	16.067	136.6	150	Circular	5.586	4.215	1.221	5.451	4.097	1.204
3.001	38.751	95.8	150	Circular	5.451	4.097	1.204	5.108	3.693	1.265
3.002	36.515	82.8	150	Circular	5.108	3.693	1.265	4.810	3.252	1.408
1.008	59.789	138.7	150	Circular	4.810	3.252	1.408	4.312	2.821	1.341
12.002	19.165	59.9	150	Circular	5.574	3.604	1.820	5.578	3.284	2.144
12.003	15.189	59.8	150	Circular	5.578	3.284	2.144	5.693	3.030	2.513
12.004	9.011	59.7	150	Circular	5.693	3.030	2.513	5.753	2.879	2.724
11.001	16.178	149.8	150	Circular	6.400	4.289	1.961	6.400	4.181	2.069
11.002	7.016	149.3	150	Circular	6.400	4.181	2.069	6.125	4.134	1.841
12.000	47.717	59.9	150	Circular	6.045	4.695	1.200	5.675	3.899	1.626

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
8.015	27	1200	Manhole	Adoptable	28	1200	Manhole	Adoptable
8.016	28	1200	Manhole	Adoptable	29	1200	Manhole	Adoptable
8.017	29	1200	Manhole	Adoptable	7	1200	Manhole	Adoptable
10.000	30	1200	Manhole	Adoptable	31	1200	Manhole	Adoptable
10.001	31	1200	Manhole	Adoptable	32	1200	Manhole	Adoptable
10.002	32	1200	Manhole	Adoptable	18	1200	Manhole	Adoptable
4.000	33	1200	Manhole	Adoptable	34	1200	Manhole	Adoptable
4.001	34	1200	Manhole	Adoptable	35	1200	Manhole	Adoptable
4.002	35	1200	Manhole	Adoptable	36	1200	Manhole	Adoptable
4.003	36	1200	Manhole	Adoptable	1	1200	Manhole	Adoptable
11.003	37	1200	Manhole	Adoptable	38	1200	Manhole	Adoptable
11.004	38	1200	Manhole	Adoptable	39	1200	Manhole	Adoptable
11.005	39	1200	Manhole	Adoptable	7	1200	Manhole	Adoptable
7.000	40	1200	Manhole	Adoptable	41	1200	Manhole	Adoptable
7.001	41	1200	Manhole	Adoptable	4	1200	Manhole	Adoptable
3.000	42	1200	Manhole	Adoptable	43	1200	Manhole	Adoptable
3.001	43	1200	Manhole	Adoptable	44	1200	Manhole	Adoptable
3.002	44	1200	Manhole	Adoptable	45	1200	Manhole	Adoptable
1.008	45	1200	Manhole	Adoptable	1	1200	Manhole	Adoptable
12.002	46	1200	Manhole	Adoptable	47	1200	Manhole	Adoptable
12.003	47	1200	Manhole	Adoptable	48	1200	Manhole	Adoptable
12.004	48	1200	Manhole	Adoptable	39	1200	Manhole	Adoptable
11.001	49	1200	Manhole	Adoptable	50	1200	Manhole	Adoptable
11.002	50	1200	Manhole	Adoptable	37	1200	Manhole	Adoptable
12.000	51	1200	Manhole	Adoptable	52	1200	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
12.001	17.652	59.8	150	Circular	5.675	3.899	1.626	5.574	3.604	1.820
11.000	39.668	137.0	150	Circular	5.929	4.579	1.200	6.400	4.269	1.961
1.000	26.462	150.0	150	Circular	5.758	4.700	0.908	5.622	4.524	0.948
1.001	10.066	150.2	150	Circular	5.622	4.524	0.943	5.557	4.457	0.950
1.002	84.304	150.0	150	Circular	5.557	4.457	0.950	5.139	3.895	1.094
1.003	12.600	150.0	150	Circular	5.139	3.895	1.094	5.100	3.811	1.139
2.000	27.197	150.0	150	Circular	5.800	4.450	1.200	5.600	4.269	1.181
2.001	53.963	91.5	150	Circular	5.600	4.269	1.181	5.200	3.679	1.371
1.004	19.788	149.9	150	Circular	5.100	3.811	1.129	5.200	3.679	1.371
1.005	15.156	148.6	150	Circular	5.200	3.679	1.371	4.996	3.577	1.269
1.006	16.623	149.8	150	Circular	4.996	3.577	1.269	5.038	3.466	1.422
1.007	32.036	149.7	150	Circular	5.038	3.466	1.422	4.810	3.252	1.408
5.000	26.859	65.5	150	Circular	6.171	4.821	1.200	5.761	4.411	1.200
5.001	16.116	28.5	150	Circular	5.761	4.411	1.200	5.518	3.845	1.523
5.002	36.268	149.9	150	Circular	5.518	3.845	1.523	5.083	3.603	1.330
8.000	15.741	52.5	150	Circular	6.055	5.000	0.905	5.780	4.700	0.930
8.001	39.374	56.2	150	Circular	5.780	4.700	0.930	5.244	4.000	1.094
8.002	16.510	141.1	150	Circular	5.244	4.000	1.094	5.088	3.883	1.055
9.000	11.593	150.0	150	Circular	5.390	4.150	1.090	5.292	4.073	1.069
9.001	28.497	150.0	150	Circular	5.292	4.073	1.069	5.088	3.883	1.055
8.003	50.059	149.9	150	Circular	5.088	3.883	1.055	5.341	3.549	1.642
8.004	16.837	149.0	150	Circular	5.341	3.549	1.642	5.452	3.436	1.866
8.005	45.865	150.0	150	Circular	5.452	3.436	1.866	5.042	3.130	1.762
8.006	20.482	149.5	150	Circular	5.042	3.130	1.762	5.100	2.993	1.957
8.007	91.751	149.8	150	Circular	5.100	2.993	1.957	5.485	2.761	2.554

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
12.001	52	1200	Manhole	Adoptable	46	1200	Manhole	Adoptable
11.000	53	1200	Manhole	Adoptable	49	1200	Manhole	Adoptable
1.000	54	1200	Manhole	Adoptable	55	1200	Manhole	Adoptable
1.001	55	1200	Manhole	Adoptable	56	1200	Manhole	Adoptable
1.002	56	1200	Manhole	Adoptable	57	1200	Manhole	Adoptable
1.003	57	1200	Manhole	Adoptable	58	1200	Manhole	Adoptable
2.000	59	1200	Manhole	Adoptable	60	1200	Manhole	Adoptable
2.001	60	1200	Manhole	Adoptable	61	1200	Manhole	Adoptable
1.004	58	1200	Manhole	Adoptable	61	1200	Manhole	Adoptable
1.005	61	1200	Manhole	Adoptable	62	1200	Manhole	Adoptable
1.006	62	1200	Manhole	Adoptable	63	1200	Manhole	Adoptable
1.007	63	1200	Manhole	Adoptable	45	1200	Manhole	Adoptable
5.000	64	1200	Manhole	Adoptable	65	1200	Manhole	Adoptable
5.001	65	1200	Manhole	Adoptable	66	1200	Manhole	Adoptable
5.002	66	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
8.000	67	1200	Manhole	Adoptable	68	1200	Manhole	Adoptable
8.001	68	1200	Manhole	Adoptable	69	1200	Manhole	Adoptable
8.002	69	1200	Manhole	Adoptable	70	1200	Manhole	Adoptable
9.000	71	1200	Manhole	Adoptable	72	1200	Manhole	Adoptable
9.001	72	1200	Manhole	Adoptable	70	1200	Manhole	Adoptable
8.003	70	1200	Manhole	Adoptable	73	1200	Manhole	Adoptable
8.004	73	1200	Manhole	Adoptable	74	1200	Manhole	Adoptable
8.005	74	1200	Manhole	Adoptable	75	1200	Manhole	Adoptable
8.006	75	1200	Manhole	Adoptable	76	1200	Manhole	Adoptable
8.007	76	1200	Manhole	Adoptable	20	1200	Manhole	Adoptable

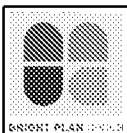


Design Settings

Frequency of use (kDU)	0.90	Minimum Velocity (m/s)	1.00
Flow per dwelling per day (l/day)	4000	Connection Type	Level Soffits
Domestic Flow (l/s/ha)	0.6	Minimum Backdrop Height (m)	0.300
Industrial Flow (l/s/ha)	0.8	Preferred Cover Depth (m)	1.200
Additional Flow (%)	0	Include Intermediate Ground	✓

Nodes

Name	Dwellings	Cover Level (m)	Manhole Type	Easting (m)	Northing (m)	Depth (m)
1	5	5.928	Adoptable	488856.987	98386.354	1.528
2	5	5.601	Adoptable	488845.027	98375.050	2.014
3	5	5.480	Adoptable	488847.292	98368.181	1.941
4	5	5.286	Adoptable	488840.849	98353.994	1.851
5	5	5.255	Adoptable	488829.859	98341.473	1.931
6	5	5.376	Adoptable	488835.091	98337.203	2.097
7	10	5.523	Adoptable	488847.054	98320.897	2.379
8		5.640	Adoptable	488856.655	98300.874	3.820
9	5	5.693	Adoptable	488856.241	98291.813	3.933
10	5	5.897	Adoptable	488832.419	98269.304	4.355
11	5	6.115	Adoptable	488798.769	98251.705	4.826
12		5.345	Adoptable	488792.118	98244.102	4.123
13		5.076	Adoptable	488717.178	98211.038	4.400
14		5.107	Adoptable	488725.496	98195.451	4.549
15		4.946	Adoptable	488757.216	98189.976	4.603
16	10	6.459	Adoptable	488773.859	98292.882	1.359
17	5	6.107	Adoptable	488789.754	98256.798	1.350
18	10	6.446	Adoptable	488783.090	98315.416	1.350
19		5.656	Adoptable	488813.822	98331.440	1.426
20	10	5.064	Adoptable	488775.598	98462.439	0.964
21		5.028	Adoptable	488796.630	98453.424	1.081
22	5	5.249	Adoptable	488843.072	98444.325	1.617
23	5	5.527	Adoptable	488884.326	98439.849	2.182
24	5	5.811	Adoptable	488931.200	98442.125	2.769
25		5.751	Adoptable	488939.152	98433.479	2.787
26		5.458	Adoptable	488932.251	98389.004	2.794
27	5	5.355	Adoptable	488920.931	98379.772	2.796
28	10	5.357	Adoptable	488918.011	98350.869	2.984
29	10	5.689	Adoptable	488899.151	98335.680	3.477
30		5.418	Adoptable	488876.235	98305.277	3.460
31	10	5.384	Adoptable	488870.575	98301.637	3.471
32	15	5.960	Adoptable	488874.822	98384.661	1.560
33		5.523	Adoptable	488770.270	98367.388	1.350
34		5.389	Adoptable	488797.609	98385.483	1.435
35	10	5.350	Adoptable	488807.721	98393.890	1.484
36	15	5.530	Adoptable	488788.315	98423.717	1.377
37		5.509	Adoptable	488699.849	98274.100	2.210
38	20	5.313	Adoptable	488703.433	98247.182	2.195
39		6.280	Adoptable	488744.837	98299.001	1.350
40		5.964	Adoptable	488715.347	98288.801	1.554
41		5.572	Adoptable	488699.387	98283.800	2.208
42	20	6.105	Adoptable	488754.021	98345.282	1.350
43		5.980	Adoptable	488750.706	98367.211	1.373
44	10	5.795	Adoptable	488739.852	98396.907	1.399



Nodes

Name	Dwellings	Cover Level (m)	Manhole Type	Easting (m)	Northing (m)	Depth (m)
45	10	5.532	Adoptable	488693.249	98391.371	1.449
46	5	5.612	Adoptable	488697.905	98361.096	1.733
47	5	5.656	Adoptable	488699.814	98341.033	1.911
48	10	5.700	Adoptable	488700.367	98321.506	2.085

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
5.000	1	2	16.457	1.500	4.500	4.226	0.274	60.0	150
4.003	2	3	7.233	1.500	3.527	3.539	0.048	150.0	150
4.004	3	4	15.582	1.500	3.539	3.435	0.104	150.0	150
4.005	4	5	16.660	1.500	3.435	3.324	0.111	150.0	150
4.006	5	6	6.753	1.500	3.324	3.279	0.045	150.0	150
4.007	6	7	20.224	1.500	3.279	3.144	0.135	150.0	150
4.008	7	8	22.206	1.500	3.144	2.996	0.148	150.0	150
1.012	8	9	9.070	1.500	1.820	1.760	0.060	150.0	150
1.013	9	10	32.774	1.500	1.760	1.542	0.218	150.0	150
1.014	10	11	37.974	1.500	1.542	1.289	0.253	150.0	150
1.015	11	12	10.102	1.500	1.289	1.222	0.067	150.0	150
1.016	12	13	61.910	1.500	1.222	0.676	0.546	150.0	150
1.017	13	14	17.668	1.500	0.676	0.558	0.118	150.0	150
1.018	14	15	32.189	1.500	0.558	0.343	0.215	150.0	150
7.000	16	17	39.430	1.500	5.100	4.757	0.343	115.0	150
7.001	17	11	10.354	1.500	4.757	4.688	0.069	150.0	150
6.000	18	19	34.659	1.500	5.096	4.230	0.866	40.0	150
6.001	19	5	18.917	1.500	4.230	3.915	0.315	60.1	150
2.000	20	21	22.683	1.500	4.100	3.947	0.153	150.0	150

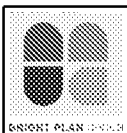
Name	US Node	DS Node	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
5.000	1	2	0.259	1.132	20.0	0.2	1.378	1.225
4.003	2	3	0.294	0.714	12.6	0.9	1.864	1.791
4.004	3	4	0.315	0.714	12.6	1.2	1.791	1.701
4.005	4	5	0.335	0.714	12.6	1.4	1.701	1.781
4.006	5	6	0.379	0.714	12.6	2.1	1.781	1.947
4.007	6	7	0.390	0.714	12.6	2.3	1.947	2.229
4.008	7	8	0.413	0.714	12.6	2.8	2.229	2.494
1.012	8	9	0.542	0.714	12.6	6.9	3.670	3.783
1.013	9	10	0.546	0.714	12.6	7.2	3.783	4.205
1.014	10	11	0.550	0.714	12.6	7.4	4.205	4.676
1.015	11	12	0.570	0.714	12.6	8.3	4.676	3.973
1.016	12	13	0.570	0.714	12.6	8.3	3.973	4.250
1.017	13	14	0.634	0.714	12.6	12.0	4.250	4.890
1.018	14	15	0.634	0.714	12.6	12.0	4.399	4.453
7.000	16	17	0.258	0.816	14.4	0.5	1.209	1.200
7.001	17	11	0.265	0.714	12.6	0.7	1.200	1.277
6.000	18	19	0.374	1.388	24.5	0.5	1.200	1.276
6.001	19	5	0.318	1.131	20.0	0.5	1.276	1.190
2.000	20	21	0.234	0.714	12.6	0.5	0.814	0.931



Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.001	21	22	47.325	1.500	3.947	3.632	0.315	150.2	150
1.002	22	23	41.496	1.500	3.632	3.355	0.277	150.0	150
1.003	23	24	46.929	1.500	3.355	3.042	0.313	150.0	150
1.004	24	25	11.747	1.500	3.042	2.964	0.078	150.0	150
1.005	25	26	45.007	1.500	2.964	2.664	0.300	150.0	150
1.006	26	27	14.607	1.500	2.664	2.567	0.097	150.0	150
1.007	27	28	29.050	1.500	2.567	2.373	0.194	150.0	150
1.008	28	29	24.216	1.500	2.373	2.212	0.161	150.0	150
1.009	29	30	38.072	1.500	2.212	1.958	0.254	150.0	150
1.010	30	31	6.729	1.500	1.958	1.913	0.045	150.0	150
1.011	31	8	13.941	1.500	1.913	1.820	0.092	150.0	150
3.000	32	27	46.367	1.500	4.400	3.820	0.580	80.0	150
4.000	33	34	32.785	1.500	4.173	3.954	0.219	150.0	150
4.001	34	35	13.150	1.500	3.954	3.866	0.088	150.0	150
4.002	35	2	41.793	1.500	3.866	3.587	0.279	150.0	150
1.000	36	21	30.849	1.500	4.153	3.947	0.206	150.0	150
8.008	37	38	27.156	1.500	3.299	3.118	0.181	150.0	150
8.009	38	13	38.669	1.500	3.118	2.860	0.258	150.0	150
9.000	39	40	31.204	1.500	4.990	4.410	0.520	60.0	150
9.001	40	41	16.725	1.500	4.410	4.131	0.279	60.0	150
8.007	41	37	9.711	1.500	3.364	3.299	0.065	150.0	150
8.000	42	43	22.178	1.500	4.755	4.607	0.148	150.0	150
8.001	43	44	31.617	1.500	4.607	4.396	0.211	150.0	150
8.002	44	45	46.931	1.500	4.396	4.083	0.313	149.9	150

Name	US Node	DS Node	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
1.001	21	22	0.315	0.714	12.6	1.2	0.931	1.467
1.002	22	23	0.335	0.714	12.6	1.4	1.467	2.032
1.003	23	24	0.348	0.714	12.6	1.6	2.032	2.619
1.004	24	25	0.360	0.714	12.6	1.9	2.619	2.637
1.005	25	26	0.360	0.714	12.6	1.9	2.637	2.644
1.006	26	27	0.360	0.714	12.6	1.9	2.644	2.646
1.007	27	28	0.413	0.714	12.6	2.8	2.646	2.834
1.008	28	29	0.434	0.714	12.6	3.2	2.834	3.327
1.009	29	30	0.450	0.714	12.6	3.7	3.327	3.310
1.010	30	31	0.450	0.714	12.6	3.7	3.310	3.321
1.011	31	8	0.465	0.714	12.6	4.2	3.321	3.670
3.000	32	27	0.333	0.980	17.3	0.7	1.410	1.393
4.000	33	34	0.000	0.714	12.6	0.0	1.200	1.285
4.001	34	35	0.000	0.714	12.6	0.0	1.285	1.334
4.002	35	2	0.234	0.714	12.6	0.5	1.334	1.864
1.000	36	21	0.265	0.714	12.6	0.7	1.227	0.931
8.008	37	38	0.413	0.714	12.6	2.8	2.060	2.045
8.009	38	13	0.450	0.714	12.6	3.7	2.045	2.066
9.000	39	40	0.000	1.132	20.0	0.0	1.200	1.404
9.001	40	41	0.000	1.132	20.0	0.0	1.404	1.291
8.007	41	37	0.413	0.714	12.6	2.8	2.058	2.060
8.000	42	43	0.294	0.714	12.6	0.9	1.200	1.223
8.001	43	44	0.294	0.714	12.6	0.9	1.223	1.249
8.002	44	45	0.335	0.714	12.6	1.4	1.249	1.299



Links

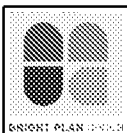
Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
8.003	45	46	30.631	1.500	4.083	3.879	0.204	150.0	150
8.004	46	47	20.154	1.500	3.879	3.745	0.134	150.0	150
8.005	47	48	19.535	1.500	3.745	3.615	0.130	150.0	150
8.006	48	41	37.719	1.500	3.615	3.364	0.251	150.0	150

Name	US Node	DS Node	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)
8.003	45	46	0.360	0.714	12.6	1.9	1.299	1.583
8.004	46	47	0.379	0.714	12.6	2.1	1.583	1.761
8.005	47	48	0.390	0.714	12.6	2.3	1.761	1.935
8.006	48	41	0.413	0.714	12.6	2.8	1.935	2.058

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
5.000	16.457	60.0	150	Circular	5.028	4.500	1.378	5.601	4.226	1.225
4.003	7.233	150.0	150	Circular	5.601	3.587	1.864	5.480	3.539	1.791
4.004	15.582	150.0	150	Circular	5.480	3.539	1.791	5.286	3.435	1.701
4.005	16.660	150.0	150	Circular	5.286	3.435	1.701	5.255	3.324	1.781
4.006	6.753	150.0	150	Circular	5.255	3.324	1.781	5.376	3.279	1.947
4.007	20.224	150.0	150	Circular	5.376	3.279	1.947	5.523	3.144	2.229
4.008	22.306	150.0	150	Circular	5.523	3.144	2.229	5.640	2.995	2.404
1.012	9.070	150.0	150	Circular	5.640	1.820	3.670	5.693	1.760	3.763
1.013	32.774	150.0	150	Circular	5.693	1.760	3.783	5.897	1.542	4.205
1.014	37.974	150.0	150	Circular	5.897	1.542	4.205	6.115	1.289	4.676
1.015	10.102	150.0	150	Circular	6.115	1.289	4.676	5.945	1.222	3.973
1.016	81.910	150.0	150	Circular	5.945	1.222	3.973	5.076	0.676	4.250
1.017	17.668	150.0	150	Circular	5.076	0.676	4.250	5.107	0.558	4.399
1.018	32.189	150.0	150	Circular	5.107	0.558	4.399	4.946	0.343	4.453
7.000	39.430	115.0	150	Circular	6.459	5.100	1.209	6.107	4.757	1.200
7.001	10.354	150.0	150	Circular	6.107	4.757	1.200	6.115	4.688	1.277

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
5.000	1	1200	Manhole	Adoptable	2	1200	Manhole	Adoptable
4.003	2	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
4.004	3	1200	Manhole	Adoptable	4	1200	Manhole	Adoptable
4.005	4	1200	Manhole	Adoptable	5	1200	Manhole	Adoptable
4.006	5	1200	Manhole	Adoptable	6	1200	Manhole	Adoptable
4.007	6	1200	Manhole	Adoptable	7	1200	Manhole	Adoptable
4.008	7	1200	Manhole	Adoptable	8	1200	Manhole	Adoptable
1.012	8	1200	Manhole	Adoptable	9	1200	Manhole	Adoptable
1.013	9	1200	Manhole	Adoptable	10	1200	Manhole	Adoptable
1.014	10	1200	Manhole	Adoptable	11	1200	Manhole	Adoptable
1.015	11	1200	Manhole	Adoptable	12	1200	Manhole	Adoptable
1.016	12	1200	Manhole	Adoptable	13	1200	Manhole	Adoptable
1.017	13	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
1.018	14	1200	Manhole	Adoptable	15	1200	Manhole	Adoptable
7.000	16	1200	Manhole	Adoptable	17	1200	Manhole	Adoptable
7.001	17	1200	Manhole	Adoptable	11	1200	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
6.000	34.659	40.0	150	Circular	6.446	5.096	1.200	5.656	4.230	1.276
6.001	18.917	60.1	150	Circular	5.656	4.230	1.276	5.255	3.915	1.190
2.000	22.883	150.0	150	Circular	5.054	4.100	0.814	5.028	3.947	0.931
1.001	47.325	150.2	150	Circular	5.028	3.947	0.931	5.249	3.632	1.467
1.002	41.496	150.0	150	Circular	5.249	3.632	1.467	5.537	3.355	2.032
1.003	46.929	150.0	150	Circular	5.537	3.355	2.032	5.811	3.042	2.619
1.004	11.747	150.0	150	Circular	5.811	3.042	2.619	5.751	2.964	2.637
1.005	45.007	150.0	150	Circular	5.751	2.964	2.637	5.458	2.664	2.644
1.006	14.607	150.0	150	Circular	5.458	2.664	2.644	5.363	2.567	2.646
1.007	29.050	150.0	150	Circular	5.363	2.567	2.646	5.357	2.373	2.834
1.008	24.216	150.0	150	Circular	5.357	2.373	2.834	5.689	2.212	3.327
1.009	38.072	150.0	150	Circular	5.689	2.212	3.327	5.418	1.958	3.310
1.010	6.729	150.0	150	Circular	5.418	1.958	3.310	5.384	1.913	3.321
1.011	13.941	150.0	150	Circular	5.384	1.913	3.321	5.640	1.820	3.670
3.000	46.367	80.0	150	Circular	5.960	4.400	1.410	5.363	3.820	1.393
4.000	32.785	150.0	150	Circular	5.523	4.173	1.200	5.389	3.954	1.285
4.001	13.150	150.0	150	Circular	5.389	3.954	1.285	5.350	3.866	1.334
4.002	41.793	150.0	150	Circular	5.350	3.866	1.334	5.601	3.537	1.864
1.000	30.849	150.0	150	Circular	5.530	4.153	1.227	5.028	3.947	0.931
8.008	27.156	150.0	150	Circular	5.509	3.299	2.060	5.313	3.118	2.045
8.009	38.669	150.0	150	Circular	5.313	3.118	2.045	5.076	2.860	2.066
9.000	31.204	60.0	150	Circular	6.280	4.930	1.200	5.964	4.410	1.404
9.001	16.725	60.0	150	Circular	5.964	4.410	1.404	5.572	4.131	1.291
8.007	9.711	150.0	150	Circular	5.572	3.364	2.058	5.509	3.299	2.060
8.000	22.178	150.0	150	Circular	6.105	4.755	1.200	5.960	4.607	1.223

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
6.000	18	1200	Manhole	Adoptable	19	1200	Manhole	Adoptable
6.001	19	1200	Manhole	Adoptable	5	1200	Manhole	Adoptable
2.000	20	1200	Manhole	Adoptable	21	1200	Manhole	Adoptable
1.001	21	1200	Manhole	Adoptable	22	1200	Manhole	Adoptable
1.002	22	1200	Manhole	Adoptable	23	1200	Manhole	Adoptable
1.003	23	1200	Manhole	Adoptable	24	1200	Manhole	Adoptable
1.004	24	1200	Manhole	Adoptable	25	1200	Manhole	Adoptable
1.005	25	1200	Manhole	Adoptable	26	1200	Manhole	Adoptable
1.006	26	1200	Manhole	Adoptable	27	1200	Manhole	Adoptable
1.007	27	1200	Manhole	Adoptable	28	1200	Manhole	Adoptable
1.008	28	1200	Manhole	Adoptable	29	1200	Manhole	Adoptable
1.009	29	1200	Manhole	Adoptable	30	1200	Manhole	Adoptable
1.010	30	1200	Manhole	Adoptable	31	1200	Manhole	Adoptable
1.011	31	1200	Manhole	Adoptable	8	1200	Manhole	Adoptable
3.000	32	1200	Manhole	Adoptable	27	1200	Manhole	Adoptable
4.000	33	1200	Manhole	Adoptable	34	1200	Manhole	Adoptable
4.001	34	1200	Manhole	Adoptable	35	1200	Manhole	Adoptable
4.002	35	1200	Manhole	Adoptable	2	1200	Manhole	Adoptable
1.000	36	1200	Manhole	Adoptable	21	1200	Manhole	Adoptable
8.008	37	1200	Manhole	Adoptable	38	1200	Manhole	Adoptable
8.009	38	1200	Manhole	Adoptable	13	1200	Manhole	Adoptable
9.000	39	1200	Manhole	Adoptable	40	1200	Manhole	Adoptable
9.001	40	1200	Manhole	Adoptable	41	1200	Manhole	Adoptable
8.007	41	1200	Manhole	Adoptable	37	1200	Manhole	Adoptable
8.000	42	1200	Manhole	Adoptable	43	1200	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
8.001	31.617	150.0	150	Circular	5.980	4.607	1.223	5.795	4.396	1.249
8.002	46.931	149.9	150	Circular	5.795	4.396	1.249	5.532	4.083	1.299
8.003	30.631	150.0	150	Circular	5.532	4.083	1.299	5.612	3.879	1.583
8.004	20.154	150.0	150	Circular	5.612	3.879	1.583	5.656	3.745	1.761
8.005	19.535	150.0	150	Circular	5.656	3.745	1.761	5.700	3.615	1.935
8.006	37.719	150.0	150	Circular	5.700	3.615	1.935	5.572	3.364	2.058

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
8.001	43	1200	Manhole	Adoptable	44	1200	Manhole	Adoptable
8.002	44	1200	Manhole	Adoptable	45	1200	Manhole	Adoptable
8.003	45	1200	Manhole	Adoptable	46	1200	Manhole	Adoptable
8.004	46	1200	Manhole	Adoptable	47	1200	Manhole	Adoptable
8.005	47	1200	Manhole	Adoptable	48	1200	Manhole	Adoptable
8.006	48	1200	Manhole	Adoptable	41	1200	Manhole	Adoptable