BOORLEY GARDENS, HEDGE END, HAMPSHIRE

DISCHARGE OF PLANNING CONDITIONS 11 & 13 (Rev B)

PLANNING APPLICATION NO. X/19/84943

1. INTRODUCTION

1.1. This Technical Note has been prepared by PFA Consulting to assist in the discharge of planning conditions 11 and condition 13 attached to Planning Application Reference No. X/19/84943 – Boorley Gardens, relating to surface water drainage.

1.2. It provides the additional information requested by Hampshire County Council in its role as the Lead Local Flood Authority (LLFA) in their assessment of the drainage proposals for the planning application (Application No. DC/21/91472), as outlined in their letter dated 25 May 2022, reproduced at **Appendix A**.

2. CONDITION 11

2.1. Condition 11 stipulates that;

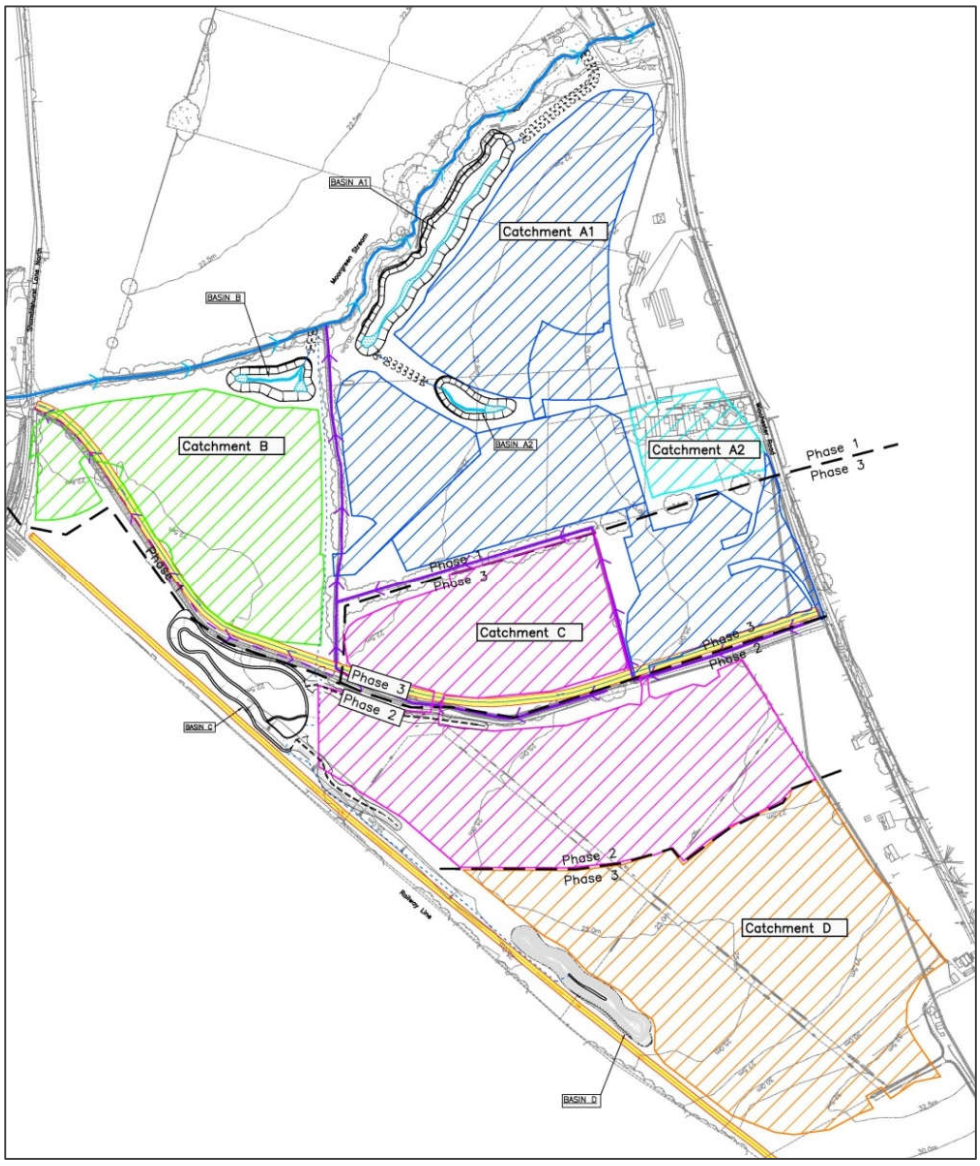
> **"No development shall take place in any phase as shown on phasing plan P1388.PH.01 rev D (or an alternative phasing plan as otherwise agreed by the LPA), until a surface water drainage scheme for that phase, based on sustainable drainage principles and an assessment of the hydrological and hydro-geological context of the development, has been submitted to and approved in writing by the LPA. The drainage strategy should demonstrate the surface water run-off generated up to and including the 1:100-year event critical storm (plus 30% climate change allowance) will not exceed the run-off from the undeveloped site following the corresponding rainfall event. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed.**
>
> **Those details shall include:**
> - **Information about the design storm period and intensity, the method employed to deal and control the surface water discharged from the site and the measures taken to prevent pollution of the receiving groundwater and/or surface waters;**
> - **Control measures to limit pollutants leaving the site;**
> - **A timetable for its implementation; and**
> - **A management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its life to maintain operational water quality.**
>
> **Reason: As listed on the appeal decision for O/15/75953, and as amended to include reference to the phasing plan."**

2.2. On review of the condition, reference should be made to the following to discharge each point;

> **'Information about the design storm period and intensity, the method employed to deal and control the surface water discharged from the site and the measures taken to prevent pollution of the receiving groundwater and/or surface waters;'**

2.3. An overview of the drainage catchments and associated phases is shown in **Figure 1** below. The detailed phasing plan is shown on AAP Architecture's Phasing Plan, Drawing No. P1388.PH.01 Rev G, dated 24/09/21, contained in **Appendix B**. Drainage catchment C and catchment D relate to this discharge of conditions application, these catchments are associated to Phase 2 and Phase 3 of the proposed development.

Figure 1: Drainage Catchments



2.4. The proposed surface water drainage measures incorporate flow balancing facilities, to attenuate and store surface water runoff, comprising a series of linked detention basins and swales. Outflow from detention Basin C is controlled by means of suitable flow control devices.

2.5. Drainage catchment D, serving Phase 3, is partially attenuated by Basin D. The attenuated flows are then conveyed towards the attenuation features within drainage catchment C. Outflows from Basin C are then conveyed north, where flows are restricted by two flow control devices prior to conveying flows through Phase 1, before ultimately being discharged to the Moorgreen Stream. The proposed drainage strategy is shown on the Proposed Drainage drawings, Drawing Nos M380/138 - 140, a copy of which is contained in **Appendix C**. The connecting outfall route from this phase/catchment, which flows north towards the Moorgreen Stream, is shown on the Proposed Drainage Outfall Route drawing, Drawing No. M380/151, reproduced in **Appendix D.** Details of SuDS Basin C are shown on the Surface Water Detention Basin C drawing, Drawing No. M434/56 Revision A, contained in Appendix C.

2.6. The allowable discharge rates are shown on the Allowable Discharge Rates drawing, Drawing No. M380/150, contained in **Appendix E.** The associated supporting text is set out in paragraph 3.4 in the Phase 3 Reserved Matters Application Drainage Statement (the most recent Drainage Statement for the development), reproduced at **Appendix F.**

2.7. The surface water drainage network for Catchments C and D have been modelled in the Network module of MicroDrainage. A copy of the MicroDrainage simulation outputs are contained in **Appendix G.**

2.8. The MicroDrainage simulations are summarised in **Table A**. Simulations have been run for the 1:1, 1:30, 1:100, and 1:100-year (+ climate change) storm events;

Table A: Catchment C + D – Proposed Surface Water Drainage Network Details

	Critical Storm Event				
	1	**30**	**100**	**100 + 20%**	**100 +40%[c]**
Allowable Discharge Rate (l/s) [a]	78.6	78.6	78.6	-	-
Approximate Attenuation Volume Utilised (m^3) [b]	1,170	3,210	4,165	5,265	6,290
Calculated Discharge Rate (l/s)	45.6	54.2	56.7	59.8	63.6

Notes: [a] 5 l/s/ha as per approved FRA.

[b] Includes storage in pipe network.

MicroDrainage Simulation results identify a flood event during the 60minute 1:100+40% storm event (~12m_3) on pipe number 1.015 which is situated to the north of Basin D. This flood event does not occur during longer duration storm events. Inspection of proposed site levels show that the exceedance flow would be directed into Basin D and away from proposed properties. Basin D has sufficient capacity to accommodate the 12m^3 'flood' volume. The design of the site levels ensure that the exceedance flow can be safely managed on the development site and the proposed design is acceptable in terms of flood risk

'Control measures to limit pollutants leaving the site';

2.9. The water quality principles were set out in the Flood Risk Assessment's submitted and approved during the earlier planning stages of the proposed development. For completeness these principles are repeated below.

2.10. Sustainable drainage incorporated within the proposed surface water drainage arrangements provides a range of water quality improvements prior to flows discharging into the local watercourse network. The naturalised treatment features incorporated within the SuDS management train are set out below;

- Above ground detention basins.
- Wetland areas within basins.
- Above ground swales between basin and outfall to watercourse, and between basins.

2.11. As part of the first Reserved Matters application, the details of the detention basins were developed and approved and thus has been extended into Phase 2 application area and again into Phase 3 application area, including the following elements;

- Forebays introduced to each inlet to the basin.
- A filter material introduced into the forebay (Gabions filled with 4-20 crushed stone).
- Wetland areas moved to the outlet end of the basin.

2.12. The proposed SuDS scheme provides treatment of surface water runoff which in turn delivers water quality benefits. With reference to Chapter 26 of the CIRIA SuDS Manual 2015, and using the simple index approach, to deliver adequate treatment the SuDS components should have a total pollution mitigation index (for each contaminant type) that equals or exceeds the pollution hazard index (for each contaminant type):

Total SuDS mitigation index > pollution hazard index

2.13. Where the mitigation index of an individual component is insufficient, two components (or more) in series will be required, where:

Total SuDS mitigation Index = mitigation index$_1$ + 0.5(mitigation index$_2$) + etc

2.14. A factor of 0.5 is used to account for the reduced performance of secondary and tertiary components associated with already reduced inflow concentrations.

2.15. From Table 26.2 in the CIRIA SuDS Manual 2015 the pollution hazard indices for each contaminant type for the proposed land use comprising individual property driveways, residential and school car parks, and low traffic roads are shown in **Table B** below.

Table B: Pollution Hazard Indices

Land Use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Property driveways, residential car parks, and low traffic roads (e.g cul-de-sacs, homezones and general access roads).	Low	0.5	0.4	0.4

2.16. From Table 26.3 in the CIRIA SuDS Manual 2015 the indicative SuDS mitigation indices for discharges to surface waters for a detention basin and swale are shown in **Table C** below.

Table C: Indicative SuDS mitigation indices for discharges to surface waters.

Type of SuDS component	TSS	Metals	Hydrocarbons
Detention Basin	0.5	0.5	0.6
Swale	0.5	0.6	0.6

Table D: Total Mitigation Index

Catchment	Pollution hazard level	SuDS mitigation index					
		Total suspended solids (TSS)		Metals		Hydrocarbons	
		SuDS Mitigation Index *[Min Target]*	Pass / Fail	SuDS Mitigation Index [*Target*]	Pass / Fail	SuDS Mitigation Index [*Target*]	Pass / Fail
Residential (roofs + parking + low traffic roads)	Low	0.5 + (0.5/2) + (0.5/2) = 1.00 *[0.5]*	P	0.5 + (0.5/2) + (0.6/2) = 1.05 *[0.4]*	P	0.6 + (0.6/2) + (0.6/2) = 1.20 *[0.4]*	P

Notes: Runoff from Phases 2 & 3 passes through Basin D, Basin C and an outfall swale.

2.17. With reference to Tables B, C and D above, it can be seen that the total pollution mitigation equals or exceeds the pollution hazard index (for each contaminant type) for discharges to surface waters, and so the proposed attenuation surface water drainage scheme delivers adequate water quality treatment for the residential development.

'A timetable for its implementation';

2.18. Phasing of the works are to be identified in the Works Programme. All control, treatment and outfall elements are to be in place and operational for each construction phase prior to connection of the catchment.

'A management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its life to maintain operational water quality.'

2.19. The maintenance strategy for the SuDS features has been outlined in paragraphs 3.15 – 3.21 of the Phase 3 Reserved Matters Application Drainage Statement (Appendix B). Additional information providing a Management and Maintenance Plan for proposed SuDS features is set out in **Appendix H.**

3. CONDITION 13

3.1. Condition 13 stipulates that;

> **'Prior to the commencement of any phase, as shown on phasing plan P1388.PH.01 rev D (or an alternative phasing plan as otherwise agreed by the LPA), details of the construction proposed for the roads and footways within the development, for that phase, including all relevant horizontal cross sections and longitudinal sections showing the existing and proposed levels together with details of street lighting (designed to minimise spillage and avoid impacting on flight corridors used by bats), the method of disposing of surface water, and details of the programme of implementation for the making up of the roads and footways, including on-going management and maintenance of any roads, footpaths and accesses and any future plans for adoption, must be submitted to and approved by the LPA in writing.**
>
> **Reason: As listed on the appeal decision for O/15/75953, and as amended to include reference to the phasing plan.'**

3.2. From a drainage viewpoint, the method of disposing surface water has been addressed in the above assessment and the Phase 3 Reserved Matters Application Drainage Statement (Appendix F).

4. SUMMARY

This Technical note confirms the overall peak discharge rate from Phases 2 & 3 is below 5 l/s/ha, which is consistent with the drainage strategy approved as part of the Outline Planning consent for Phases 1, 2 and 3. Hydraulic calculations of the proposed surface water drainage network are attached and summarised, which demonstrate compliance with the approved details.

4.1. In conclusion this Technical Note demonstrates that Conditions 11 & 13 can be discharged by the LLFA.

APPENDICES

Appendix A	**Hampshire County Council letter dated 25 May 2022 (LLFA Response)**
Appendix B	**AAP Architecture's Phasing Plan**
Appendix C	**Proposed Drainage, Drawing No M380/138-140 & Drawing M434/56 Rev A**
Appendix D	**Proposed Drainage – Outfall Route, Drawing No. M380/151**
Appendix E	**Allowable Discharge Rates, Drawing No. M380/150**
Appendix F	**Phase 3 Reserved Matters Application Drainage Statement**
Appendix G	**MicroDrainage Outputs**
Appendix H	**Management and Maintenance Plan (Revision C)**

Appendices

Appendix A

Hampshire County Council

Economy, Transport and Environment Department
Elizabeth II Court West, The Castle
Winchester, Hampshire SO23 8UD

Tel: 0300 555 1375 (General Enquiries)
0300 555 1388 (Roads and Transport)
0300 555 1389 (Recycling Waste & Planning)
Textphone 0300 555 1390
Fax 01962 847055
www.hants.gov.uk

Enquiries to	Sarah Reghif	*My reference*	SWM/2022/0299/
Direct Line	0370 779 7497	*Your reference*	DC/21/91472
Date	25 May 2022	*Email*	SWM.consultee@hants.gov.uk

Dear Sir/Madam,

Discharge of conditions application following outline permission O/15/75953, as amended by X/19/84943 for Condition 11 (Drainage) and Condition 13 (Roads and Footways) for Phases 2A and 2C. at Land North West of Winchester Road, Boorley Green, Botley, SO32 2BX(Application No. DC/21/91472

Hampshire County Council as Lead Local Flood Authority has provided comments in relation to the above application in our role as statutory consultee on surface water drainage for major developments.

In order to assist applicants in providing the correct information to their Local Planning Authority for planning permission, Hampshire County Council has set out the information it requires to provide a substantive response at https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/planning

The County Council has reviewed the following documents relating to the above application:

- SuDS Design Statement dated September 2021
- Soft Landscape Management and Maintenance Plan revA
- Surface Water Detention Basin – Phase 2 ref: M380/13 E
- Proposed Drainage and Lighting Plan Sheet 2 of 3 ref: M434/05
- Proposed Drainage and Lighting Plan Sheet 2 of 3 ref: M434/06
- Exceedance Flow Routes ref: M380/80
- Indicative Surface Water Drainage Strategy ref: M380/2 revI
- Headwall Details ref: M434/21

Having reviewed the above information, there is insufficient information to address the wording of the condition. The technical note should be expanded

to confirm the overall discharge rate from this portion of the wider site with narrative to demonstrate its compliance within the overall strategy. Calculations should also be provided to demonstrate the effectiveness of the drainage at the relevant return periods.

As a statutory consultee, the County Council has a duty to respond to consultations within **21 days**. The 21 day period will not begin until we have received sufficient information to enable us to provide a meaningful response.

Please ensure all data is sent to us via the relevant Local Planning Authority.

This response has been provided using the best knowledge and information submitted as part of the planning application at the time of responding and is reliant on the accuracy of that information.

Yours faithfully,



Flood and Water Management Team
Economy, Transport & Environment Department,
Hampshire County Council, 1st Floor, EII Court West,
The Castle, Winchester, Hampshire SO23 8UD
Web:
https://www.hants.gov.uk/landplanningandenvironment/environment/flooding

General guidance for the application

It is important to ensure that the long-term maintenance and responsibility for Sustainable Drainage Systems is agreed between the Local Planning Authority and the applicant before planning permission is granted. This should involve discussions with those adopting and/or maintaining the proposed systems, which could include the Highway Authority, Planning Authority, Parish Councils, Water Companies and private management companies.

For SuDS systems to be adopted by Hampshire Highways it is recommended that you visit the website at:
https://www.hants.gov.uk/transport/developers/constructionstandards for guidance on which drainage features would be suitable for adoption.

Where the proposals are connecting to an existing drainage system it is likely that the authorities responsible for maintaining those systems will have their own design requirements. These requirements will need to be reviewed and agreed as part of any surface water drainage scheme.

Works in relation to ordinary watercourses

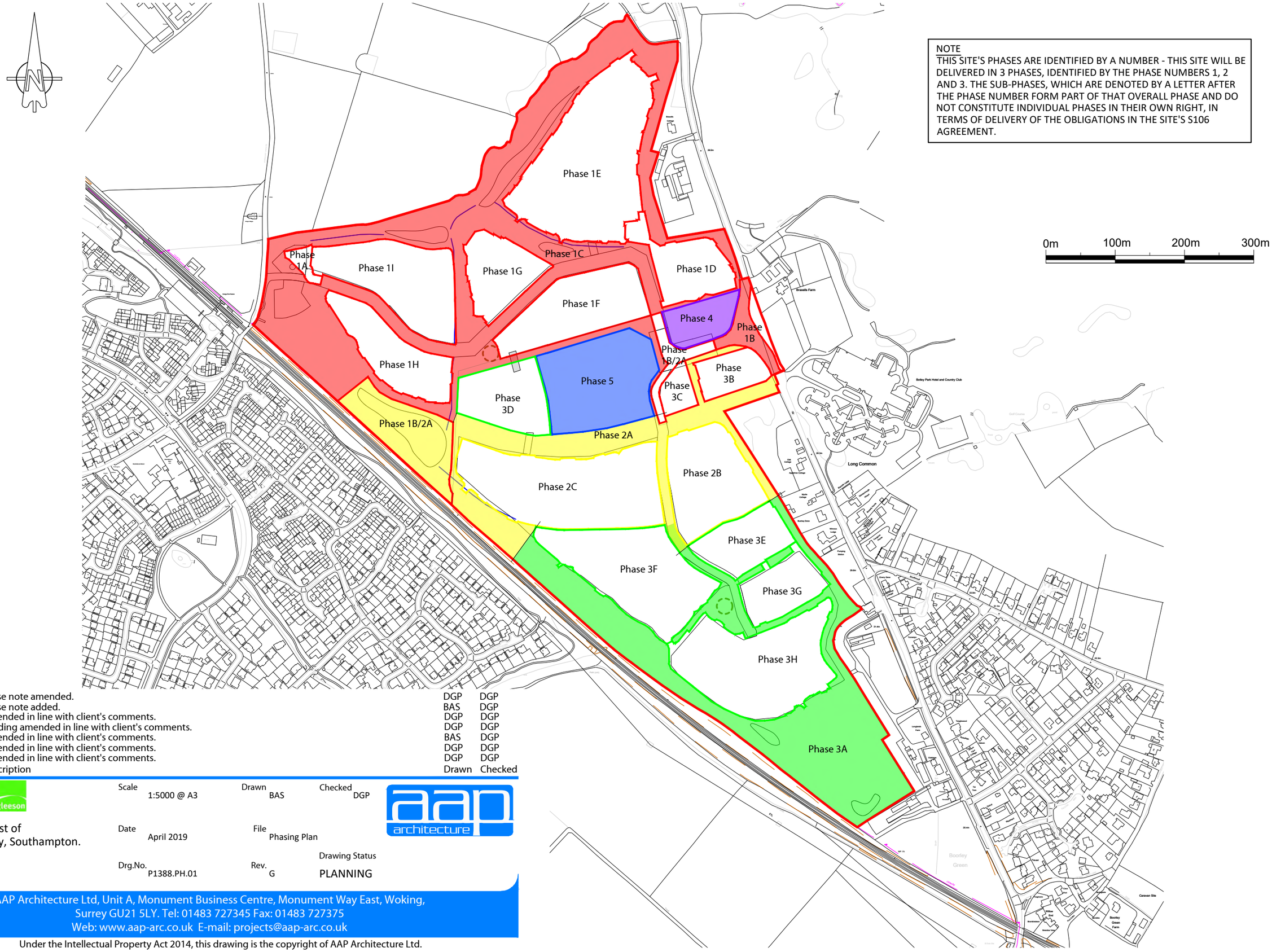
PLEASE NOTE: If the proposals include works to an ordinary watercourse, under the Land Drainage Act 1991, as amended by the Flood and Water Management Act 2010, prior consent from the Lead Local Flood Authority is required. ***This consent is required as a separate permission to planning.***

Information on ordinary watercourse consenting can be found at the following link
https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/changewatercourse

It is strongly recommended that this information is reviewed before Land Drainage consent application is made.

For guidance on providing the correct information, we recommend you use our ***Ordinary Watercourse Consents Pre-application service*** *and help avoid delays occurring at the formal application stage. A Pre-application service for Ordinary Watercourse Consents is available, allowing consents to go through in a smoother, often more timely manner. For full information please visit:*
https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/changewatercourse

Appendix B



NOTE
THIS SITE'S PHASES ARE IDENTIFIED BY A NUMBER - THIS SITE WILL BE DELIVERED IN 3 PHASES, IDENTIFIED BY THE PHASE NUMBERS 1, 2 AND 3. THE SUB-PHASES, WHICH ARE DENOTED BY A LETTER AFTER THE PHASE NUMBER FORM PART OF THAT OVERALL PHASE AND DO NOT CONSTITUTE INDIVIDUAL PHASES IN THEIR OWN RIGHT, IN TERMS OF DELIVERY OF THE OBLIGATIONS IN THE SITE'S S106 AGREEMENT.

Rev.	Date	Description	Drawn	Checked
G	24-09-21	Phase note amended.	DGP	DGP
F	15-07-21	Phase note added.	BAS	DGP
E	21-05-21	Amended in line with client's comments.	DGP	DGP
D	05-08-20	Shading amended in line with client's comments.	DGP	DGP
C	16-07-20	Amended in line with client's comments.	BAS	DGP
B	16-07-20	Amended in line with client's comments.	DGP	DGP
A	25-06-20	Amended in line with client's comments.	DGP	DGP

Client: miller homes / gleeson

Project
Land to the north west of
Boorley Green, Botley, Southampton.

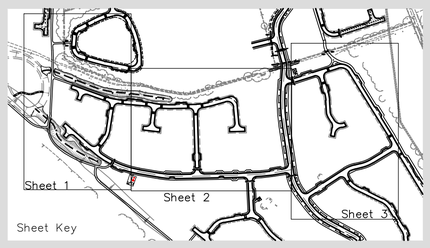
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Phasing Plan

Scale: 1:5000 @ A3
Drawn: BAS
Checked: DGP
Date: April 2019
File: Phasing Plan
Drg.No.: P1388.PH.01
Rev.: G
Drawing Status: PLANNING

AAP Architecture Ltd, Unit A, Monument Business Centre, Monument Way East, Woking,
Surrey GU21 5LY. Tel: 01483 727345 Fax: 01483 727375
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Appendix C



PFA consulting

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For Planning
This drawing is produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

NOTES

1. Drawing based on Topographical Survey by Anthony Brookes Surveys Ltd, drawing number A258/7834/1 dated June 2014.
2. On-site road layout based on AAP Drawing No. P1388.02 Revision T dated 16th May 2019.
3. The works shown on this drawing could affect Statutory Undertaker's apparatus and the Contractor is required to verify the location and depth of all such apparatus prior to commencement of the works and to take any precautions necessary when working in the vicinity of any such apparatus.
4. All adoptable highway works to be in accordance with the Hampshire County Council's 'Companion Document fo Manual for Streets' and the Specification for Highway Works (SHW) November 2009 as amended published by The Stationery Office.
5. **SUBJECT TO TECHNICAL APPROVAL.**

ADOPTABLE 'MAIN' DRAINAGE KEY

- F740 — Foul Water Sewer & Manhole (S104)
- S3163 — Surface Water Sewer & Manhole (S104)
- H323 — Highway Drainage & Manhole (S38)
- F654 — Foul Water Sewer & Manhole (Subsequent Phase)
- S3297 — Surface Water Sewer & Manhole (Subsequent Phase)
- Potential Rising Main from Phase 2 Pumping Station (PS2)
- Proposed Type 1 Gully and Connection (HCC)

0m 10m 20m
Scale 1:200

Rev	Date	Description	Drawn	Check
#	20/07/22	First Issue.	DAB	DRB

Status
FOR PLANNING

Client
miller homes

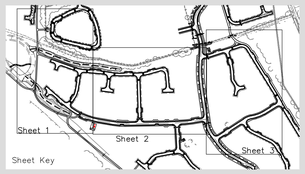
Project
Boorley Gardens
Winchester Road
Hedge End
Phase 2

Drawing Title
Proposed Drainage (Sheet 1 of 3)

Drawing No. **M380/138**

Date: July 2022 | Scale: 1:200 @ A0

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- Proposed Type 1 Gully and Connection (HCC)
- F740c — Foul Water Lateral (PVC-U)
- S3163c — Surface Water Lateral (PVC-U)

Rev	Date	Description	Drawn	Check
#	20/07/22	First Issue.	DAB	DRB

Status
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Client
miller homes

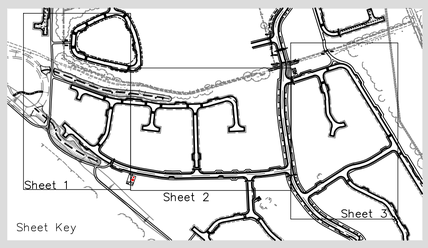
Project
Boorley Gardens
Winchester Road
Hedge End
Phase 2

Drawing Title
Proposed Drainage (Sheet 2 of 3)

Drawing No. **M380/139** #

Date: July 2022 | Scale: 1:200 @ A0
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Scale 1:200



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- Potential Rising Main from Phase 2 Pumping Station (PS2)
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Rev	Date	Description	Drawn	Check
#	20/07/22	First Issue.	DAB	DRB

Status
FOR PLANNING

Client
miller homes

Project
Boorley Gardens
Winchester Road
Hedge End
Phase 2

Drawing Title
Proposed Drainage
(Sheet 3 of 3)

Drawing No.
M380/140

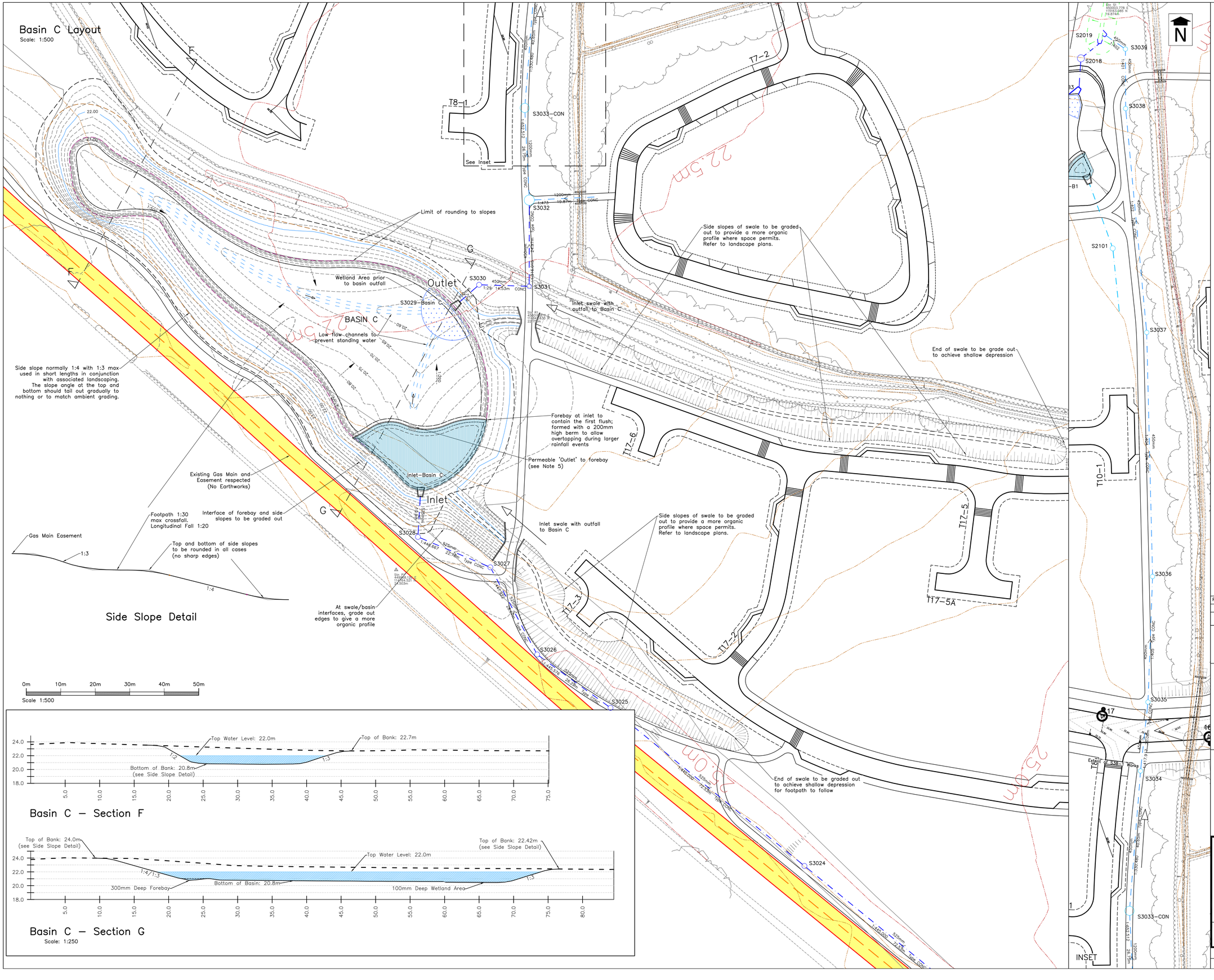
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E-Mail: dbrock@pfaplc.com

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Scale 1:200

Basin C Layout

Scale: 1:500



Gas Main Easement

Top and bottom of side slopes to be rounded in all cases (no sharp edges)

Side Slope Detail

At swale/basin interfaces, grade out edges to give a more organic profile

0m 10m 20m 30m 40m 50m

Scale 1:500

Basin C – Section F

Basin C – Section G

Scale: 1:250

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For Tender

These drawings are intended to provide the contractor/ developer with sufficient information, when read in conjunction with the Specification, to identify materials and to estimate quantities for the purposes of cost estimates. They should not be relied upon for construction purposes.

NOTES

1. To be read in conjunction with Drawing Number M380/2, Indicative Surface Water Drainage Strategy.
2. Top Water Level based on 1 in 100 year rainfall event, + 40% allowance for climate change.
3. Location/design of Swales, Low Flow Channels and Wetland areas and surface water sewers are indicative, as per Drawing M380/2 Rev F, and subject to detailed design.
4. Landscaping of basins, wetlands and swales subject to detailed design.
5. Permeable 'Outlets' to forebays to be constructed using gabion baskets filled with 4–20 crushed stone.

KEY

- Wetlands Area
- Forebay Area
- Swale
- S3030 SW Sewer

Rev	Date	Description	Drawn	Check
#	27/08/21	First Issue.	DRB	CI
A	07/10/21	Connetion pipe to Moorgreen Stream added for additional information.	DRB	CI

Status

FOR TENDER

Client

miller homes Bellway

Project

Boorley Gardens
Winchester Road
Hedge End
Phase 2

Drawing Title

Surface Water Detention Basin C

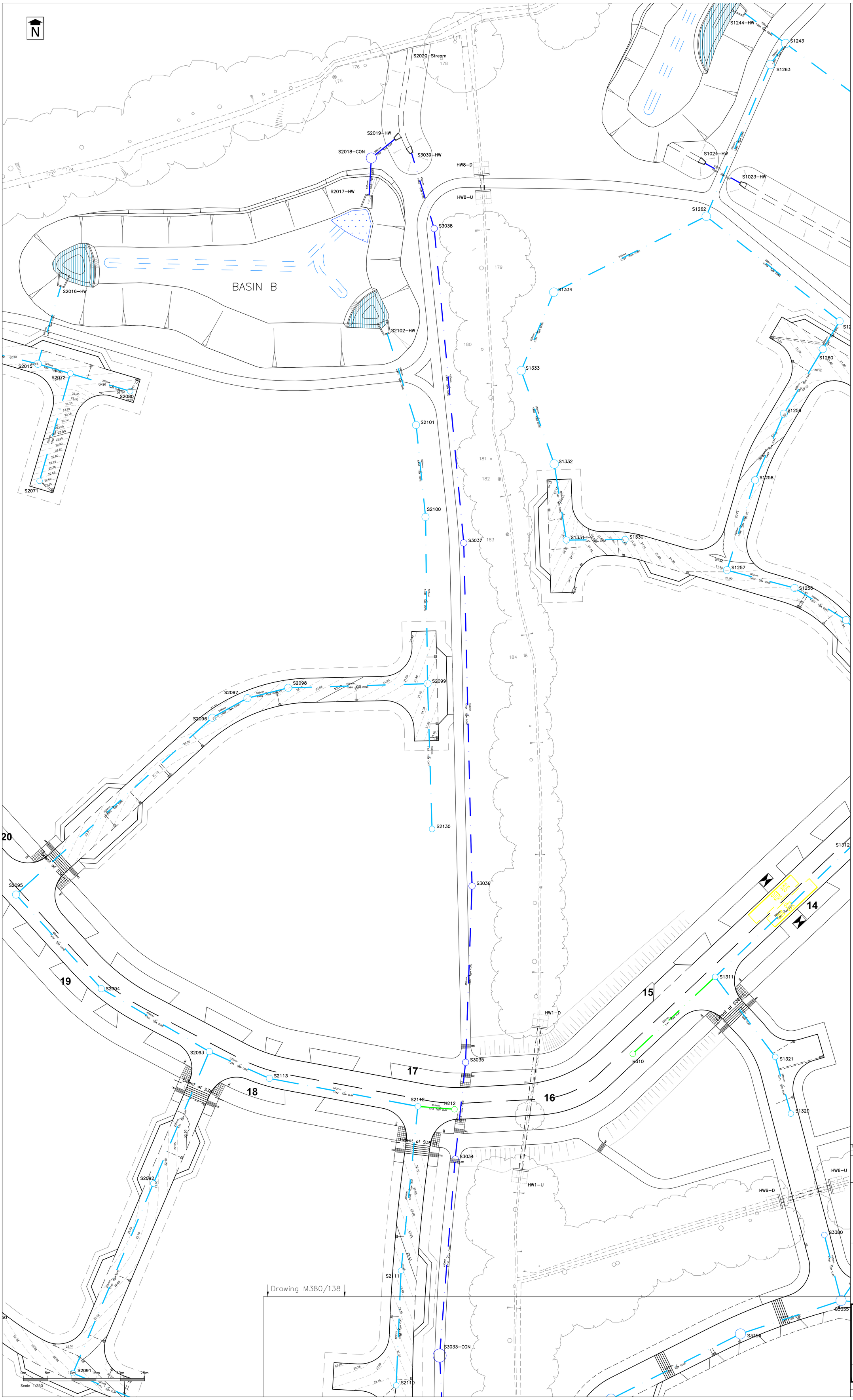
Drawing No.

M434/56 Rev A

Date: August 2021 | Scale: As Shown @ A1

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Appendix D



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NOTES

1. Drawing based on Topographical Survey by Anthony Brookes Surveys Ltd, drawing number A258/7834/1 dated June 2014.
2. On-site road layout based on AAP Drawing No. P1388.02 Revision T dated 16th May 2019.
3. The works shown on this drawing could affect Statutory Undertaker's apparatus and the Contractor is required to verify the location and depth of all such apparatus prior to commencement of the works and to take any precautions necessary when working in the vicinity of any such apparatus.
4. All adoptable highway works to be in accordance with the Hampshire County Council's 'Companion Document fo Manual for Streets' and the Specification for Highway Works (SHW) November 2009 as amended published by The Stationery Office.
5. **SUBJECT TO TECHNICAL APPROVAL.**

ADOPTABLE 'MAIN' DRAINAGE KEY

- F740 — Foul Water Sewer & Manhole (S104)
- S3163 — Surface Water Sewer & Manhole (S104)
- H323 — Highway Drainage & Manhole (S38)
- F654 — Foul Water Sewer & Manhole (Subsequent Phase)
- S3297 — Surface Water Sewer & Manhole (Subsequent Phase)
- Potential Rising Main from Phase 2 Pumping Station (PS2)
- Proposed Type 1 Gully and Connection (HCC)

Rev	Date	Description	Drawn	Check
#	20/07/22	First Issue.	DAB	DRB

Status
FOR PLANNING

Client
miller homes

Project
Boorley Gardens
Winchester Road
Hedge End
Phase 2

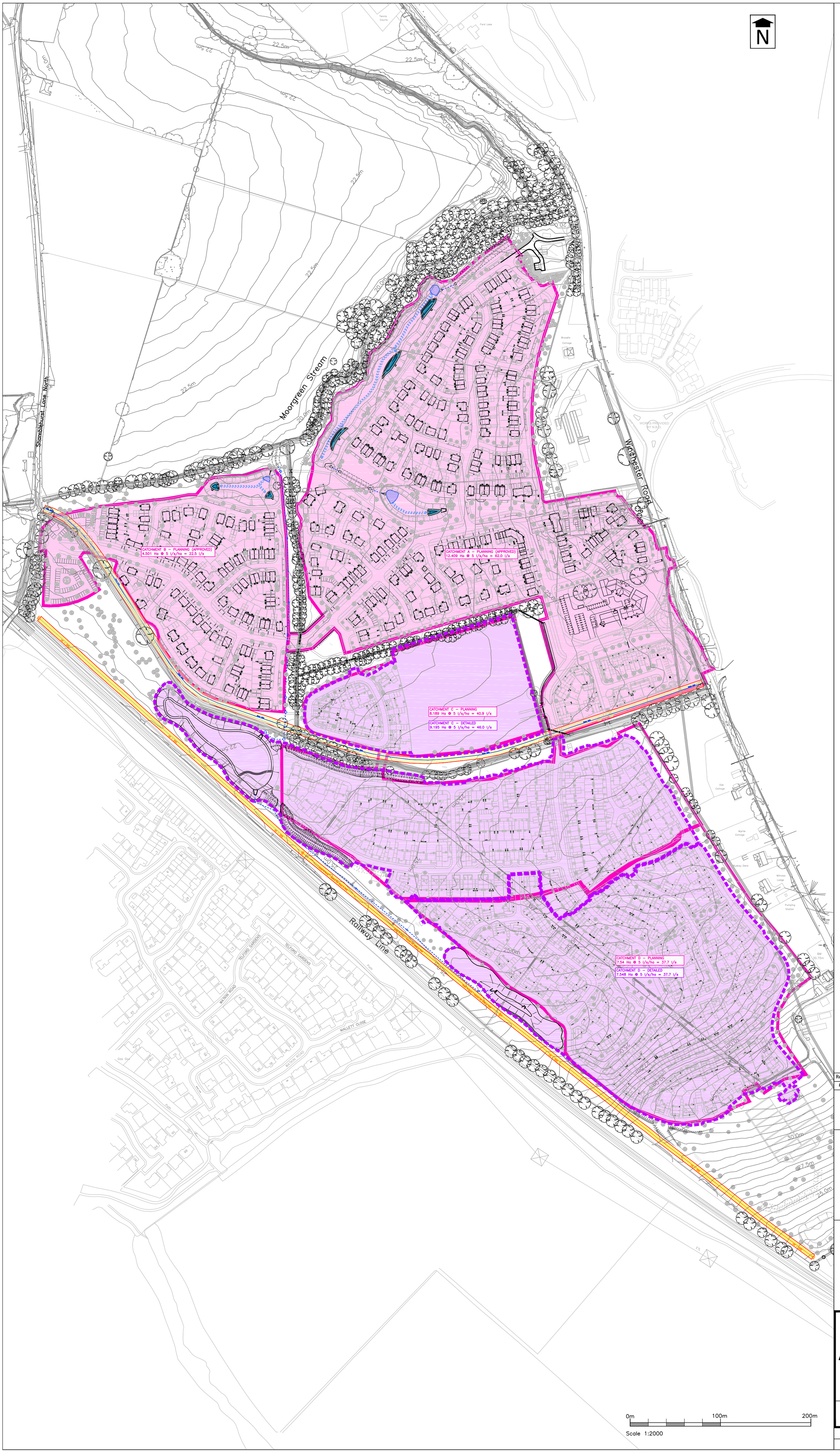
Drawing Title
Proposed Drainage Outfall Route

Drawing No. **M380/151**

Date: July 2022 | Scale: 1:250 @ A0

E-Mail: dbrock@pfaplc.com

Appendix E



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NOTES

1. This drawing is based on Anthony Brookes Topographical Survey Drawing no. A258/7834/1
2. Services easements are based on FMW Affected Utilities Plan, Drawing No. FMW1467U SK01 Revision A, dated 04/09/14 and Gas Main and Water Main Survey, Drawing No. 18031–1250–002, dated July 2017.
3. Layout is based on AAP Architects Appraisal Layout, Drawing No. P1388.APP.01, Rev ZZF dated 01–06–18 and Rev X dated 06–08–20.
4. Ponds, wetland areas, swales and pipes subject to detailed design.
5. Drainage Strategy based on FMW Consulting Flood Risk Assessment and Drainage Strategy, Project No. FMW1467F, and FMW Indicative Surface Water Drainage Strategy, Drawing No. FMW1467F SK03. Refined under PFA Consulting report Flood Risk Assessment and Surface Water And Foul Drainage Strategy Update for Reserved Matters Application Pursuant to Outline Permission O/15/75953 (ref: M380–DOC02–Issue 1, September 2017).
6. In accordance with the outline drainage strategy the detention basins are designed to attenuate water up to the 1:100 year rainfall event including a 40% allowance for climate change with discharge at 5 l/s/ha into the Moorgreen Stream.
7. Allowable discharge rate based on 'developed area' (including back gardens, verges and incidental green space) in accordance with the Wallingford Procedure.

KEY

'Developed Area'
Set at Planning (approved under Phase 1)

'Developed Area'
Refinement based on latest reserved Matters Layout

Easement for services

Rev	Date	Description	Drawn	Check
#	29.01.21	First issue.	BF	CI

Status

FOR INFORMATION

Client

miller homes
gleeson

Project

Winchester Road
Hedge End
Southampton

Drawing Title

Allowable Discharge Rates

Drawing No.

M380/150

Date: January 2021 | Scale: 1:2000 @ A1

E-Mail: cisherwood@pfaplc.com

Appendix F

BOORLEY GARDENS, HEDGE END, HAMPSHIRE

PHASE 3 RESERVED MATTERS APPLICATION - 236 DWELLINGS

DRAINAGE STATEMENT

1. Introduction

1.1. This drainage statement has been prepared by PFA Consulting on behalf of Miller Homes and Gleeson Developments in support of their Reserved Matters planning application for Phase 3 comprising 236 dwellings and associated infrastructure forming the final part of the application site known as Boorley Gardens, Hedge End.

1.2. The first Reserved Matters application (Application Ref. RM/17/81628) comprising 301 dwellings has planning consent. Phase 1 of the proposed development was supported by a Flood Risk Assessment and Surface Water and Foul Drainage Strategy Update (Document reference, M380-DOC02-Issue 1, September 2017). The Phase 2 Reserved Matters application for 145 dwellings (Application Ref O/15/75953) has also been approved by Eastleigh Borough Council. Within the Phase 2 application area is the Waste Water Treatment Works (WWTW) whose location was covered by Phase 1 consent. However, under application reference X/18/82986 consent was granted to vary Condition 12 of outline planning permission (O/15/75953) to enable foul drainage to be carried out in accordance either with the approved Flood Risk Assessment (December 2014), or detailed set out in a Foul Sewerage Assessment (March 2018, ref. M380-DOC05).

2. Foul Water Drainage

2.1. The foul drainage proposals approved under the first Reserved Matters comprise a standard gravity foul sewer network collecting effluent from the properties and discharging it to the WWTW for treatment and subsequent disposal to the Moorgreen Stream. Under application reference X/18/82986, all matters relating to the WWTW and its disposal effluent were thoroughly assessed and subsequently approved. For further information on the WWTW refer to the documents prepared in support of that application.

2.2. The gravity sewer network proposed to serve Phase 3, the subject of this application, will outfall to a Foul Water Pumping Station located within the Phase 2 Reserved Matters application area. That pumping station was identified to be sized to accommodate both Phase 2 and Phase 3. The location and form of the pumping station have been assessed as part of the Phase 2 application. For the record, the pumping station will pump the sewage via a rising main into the gravity sewers and thereafter into the WWTW, or pumped to a point of connection offsite in Winchester Road. The sewers in Phase 3 and those upon which it relies in Phase 2 will be designed in accordance with 'Sewers for Adoption' as required by Icosa Water, the regulated company who will maintain the sewers and/or the WWTW for the development site overall. Icosa will also procure any offsite sewer reinforcement works should the offsite option be followed.

3. Surface Water Drainage and SuDS

Overview

3.1. As with the first and second Reserved Matters applications area, the surface water drainage proposals for Phase 3 will comprise a standard gravity sewer network discharging to surface water SuDS features in the form of swales and a detention basin which in turn control the rate of discharge and aid water quality prior to discharge into the Moorgreen Stream. The overall strategy for the site and thus applicable to Phase 3 Reserved Matters means that the proposals do not increase flood risk downstream and upholds water quality. The detention basin (Basin D) is a landscaped depression which is dry except during the immediate period following storm events. The design of the basin will satisfy the criteria of 1 in 100 year rainfall event plus 40% for climate change. The design of the basin follows that developed for Basin C in Phase 2 where the emphasis is on the side slopes being as organic as possible, which is the preference of Eastleigh Borough Council. The location and layout of the basin is such that during an extreme rainfall event beyond the design event, natural exceedance route is towards the Moorgreen Stream located on the northern boundary, which is the point of discharge for all basins.

3.2. The Phase 3 drainage details can be seen on Drawing Nos. M380/114 Rev A and M380/115 Rev A. These are attached as **Appendix 1**.

Drainage Catchments

3.3. Phase 3 of the proposed development covers a small area of catchments A1 and C and the entirety of catchment D. The location of the catchments are set out on **Figure 1** below.

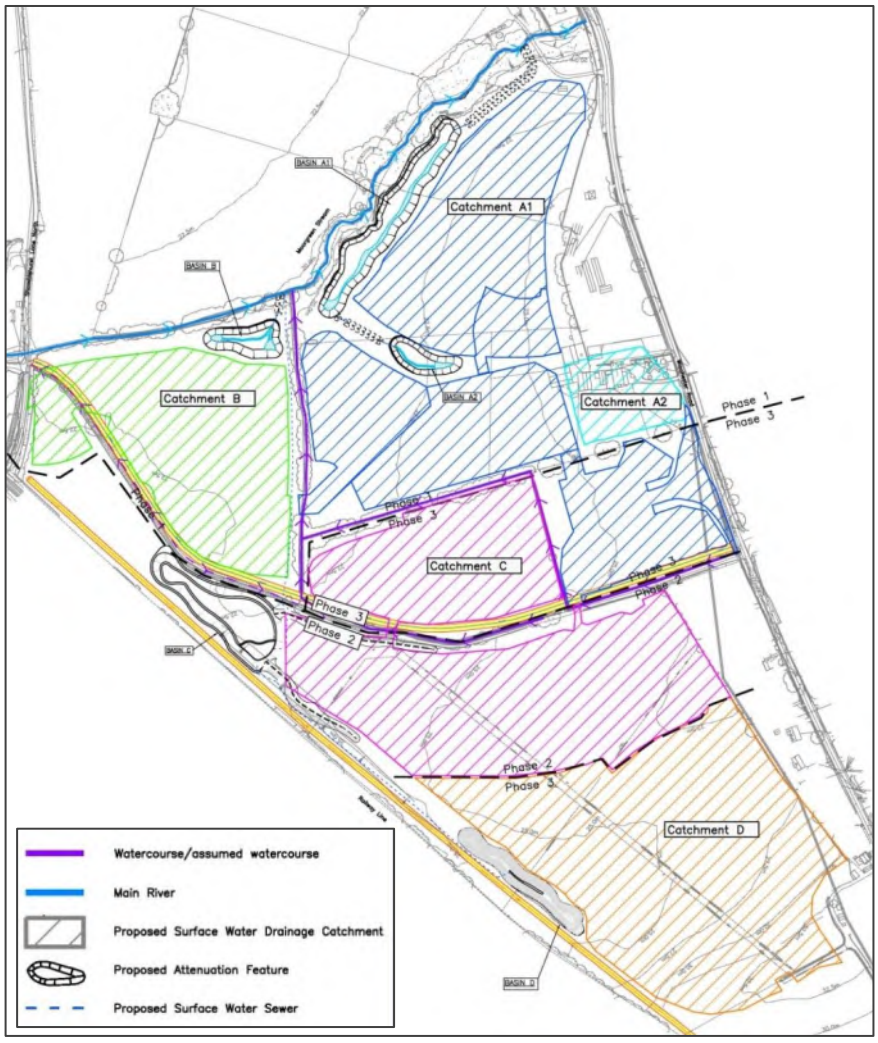


Figure 1: Drainage Catchments

Allowable Discharge Rate

3.4. The outline planning application was supported by a Flood Risk and Surface Water Drainage Strategy report which was prepared by FMW Consultancy Ltd (Document reference: FMW1467F, December 2014). The Flood Risk and Surface Water Drainage Strategy report contains a drainage strategy which proposes that runoff will be attenuated to runoff rates of 5 l/s/ha.

3.5. Phases 1, 2 and 3 utilise flow controls which limit runoff rates from the proposed development areas to 5 l/s/ha.

3.6. A small area of Phase 3 falls within Catchment A1. Catchment A1 and A2 drain to the same outfall location into the Moorgreen Stream via Detention Basins A1 and A2. The total development area for Catchment A1 and A2 is 12.409 Ha and the allowable discharge is 62.0 l/s. This has been consented under the Phase 1 Reserved Matters application (Application Ref. RM/17/81628) as set out in the 'Flood Risk Assessment and Surface Water and Foul Drainage Strategy Update' (Document reference, M380-DOC02-Issue 1, September 2017).

3.7. Catchments C and D drain to the same outfall location into the Moorgreen Stream via Detention Basins C and D. The total development area for Catchment C and D is 15.727 Ha and the allowable discharge is 78.6 l/s.

Catchment A1

3.8. The surface water drainage network for Catchments A1 and A2 have been modelled in the Network module of MicroDrainage. A copy of the MicroDrainage simulations are contained in **Appendix 2** and summarised in **Table A**. Simulations have been run for the 1:1, 1:30, 1:100, and 1:100 year (+ climate change) storm events.

Table A: Catchments A1 + A2 - Proposed Surface Water Drainage Network Details

	Critical Storm Event				
	1	**30**	**100**	**100 + 20%**	**100 +40%**
Allowable Discharge Rate (l/s) [a]	62.0	62.0	62.0	-	-
Approximate Attenuation (m^3) [b]	1,436	2,621	3,304	4,070	4,837
Calculated Discharge Rate (l/s)	24.9	51.6	55.2	55.6	55.7

Notes: [a] 5 l/s/ha as per approved FRA.
[b] Includes storage in pipe network.

Catchment C and D

3.9. The surface water drainage network for Catchments C and D have been modelled in the Network module of MicroDrainage. A copy of the MicroDrainage simulations are contained in **Appendix 3** and summarised in **Table B**. Simulations have been run for the 1:1, 1:30, 1:100, and 1:100 year (+ climate change) storm events.

Table B: Catchment C+ D - Proposed Surface Water Drainage Network Details

	Critical Storm Event				
	1	**30**	**100**	**100 + 20%**	**100 +40%[c]**
Allowable Discharge Rate (l/s) [a]	78.6	78.6	78.6	-	-
Approximate Attenuation Volume Utilised (m^3) [b]	1,170	3,210	4,165	5,265	6,290
Calculated Discharge Rate (l/s)	45.6	54.2	56.7	59.8	63.6

Notes: [a] 5 l/s/ha as per approved FRA.
[b] Includes storage in pipe network.
[c] MicroDrainage Simulation results identify a flood event during the 60minute 1:100+40% storm event (~12m^3) on pipe number 1.015 which is situated to the north of Basin D. This flood event does not occur during longer duration storm events. Inspection of proposed site levels show that the exceedance flow would be directed into Basin D and away from proposed properties. Basin D has sufficient capacity to accommodate the 12m^3 'flood' volume. The design of the site levels ensure that the exceedance flow can be safely managed on the development site and the proposed design is acceptable in terms of flood risk.

Water Quality Assessment

3.10. The application site drains into Moorgreen Stream which via Ford Lake is a tributary to the River Hamble, a water body where maintenance and improvement of water quality is a requirement.

3.11. The use of a SuDS based surface water drainage strategy provides water quality benefits when compared with traditional standard gravity pipe network with an uncontrolled outfall.

3.12. The Flood Risk Assessment update dated September 2017 prepared for Phase 1 Reserved Matters covers water quality in paragraphs 3.9-3.11. Paragraph 3.10 sets out the four elements comprising the management train but paragraph 3.11 duly acknowledges that the first element of trapped gullies is not a naturalised treatment, leaving the other three as follows.

- Above ground detention basins.
- Wetland areas within basins.
- Above ground swale between basin and outfall to watercourse, and between basins.

3.13. As part of the first Reserved Matters application, the details of the detention basins were developed and approved and thus has been extended into Phase 2 application area and again now into Phase 3 application area, including the following elements.

- Forebays introduced to each inlet to the basin.
- A filter material introduced into the forebay (Gabions filled with 4-20 crushed stone).
- Wetland areas moved to the outlet end of the basin.

Exceedance Flow Routes

3.14. The location and topographical layout of the basins is such that in an extreme rainfall event beyond the design event, the natural exceedance route is northwards towards the detention basins away from the built development. Indicative exceedance flow routes have been identified on Drawing No. M380/128 and M380/129 contained in **Appendix 4**. The detention basins are designed to attenuate water up to the 1:100 year rainfall event including a 40% allowance for climate change.

Maintenance Strategy

3.15. Paragraph 165 of the NPPF states that for major developments the sustainable drainage systems used should have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development.

3.16. In terms of the maintenance strategy for the proposed drainage measures, the main surface water drainage systems would be adopted by Icosa Water, in its role as sewerage undertaker, under a Section 104 Agreement of the Water Industry Act 1991. Icosa Water would therefore be responsible for the future maintenance of the adopted drainage systems.

3.17. It is proposed that the SuDS system, comprising swales and detention basins, would be adopted and maintained by a Management Company. The Management Company would be responsible for putting in place a suitable maintenance plan in accordance with the requirements of The SuDS Manual 2015 (CIRIA C753).

3.18. Guidance on the operation and maintenance requirements of sustainable drainage systems is contained in The SuDS Manual 2015 (CIRIA C753). There are three categories of maintenance: regular, occasional and remedial.

3.19. Regular maintenance consists of basic tasks including litter and debris removal, grass cutting, and vegetation management, and includes inspections and monitoring to identify potential system failures such as blockages, silt and sediment build-up, eroded or damaged areas, and condition of inlets and outlets.

3.20. Occasional Maintenance comprises tasks that are likely to be required periodically for example sediment removal and vegetation replacement.

3.21. Remedial Maintenance comprises intermittent tasks to rectify faults and would comprise inlet/outlet repairs, erosion repairs, and dealing with a spillage event.

4. Summary

4.1. In summary, this Drainage Statement sets out a strategy proposed for the Phase 3 Reserved Matters application site area, which concurs with that approved under the first and second Reserved Matters, and upholds the key elements of no increase in flood risk downstream with no deterioration in water quality overall as a consequence of the development of this site. The foul drainage strategy for Phase 3 discharges to the network forming part of Phase 2 application area where the pumping station is to be sized to accommodate both phases. All mains foul drainage works will accord with 'Sewers for Adoption'.

5. Appendices

Appendix 1 **Drawing No. M380/114 Rev A – Main Drainage Sheet 1 of 2**
Drawing No. M380/115 Rev A – Main Drainage Sheet 2 of 2
Appendix 2 **Catchments A1 + A2 MicroDrainage Network Details and Simulation Results**
Appendix 3 **Catchments C + D MicroDrainage Network Details and Simulation Results**
Appendix 4 **Drawing No. M380/128 – Phase 3 Exceedance Flow Routes 1 of 2**
Drawing No. M380/129 – Phase 3 Exceedance Flow Routes Sheet 2 of 2

Appendices

Appendix 1



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For Planning
These drawings are produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

NOTES

1. Drawing based on Topographical Survey by Anthony Brookes Surveys Ltd, drawing number A258/7834/1 dated June 2014.
2. On-site road layout based on AAP Architecture's Drawing Number P1388.3000 Revision C dated 4 October 2019
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5. Subject to detailed design.

ADOPTABLE 'MAIN' DRAINAGE KEY

- F238 — Foul Water Sewer & Manhole (S104)
- S140 — Surface Water Sewer & Manhole (S104)
- S114 — Surface Water Sewer & Manhole (Management Company)
- Rising Main to Winchester Road Outfall
- Alternative Rising Main to WWTW
- Potential Rising Main from Phase 1 Pumping Station
- Proposed Pumping Station to serve Phases 2 & 3 (with 15m offset to habitable buildings)

Rev	Date	Description	Drawn	Check
B	24/10/19	First Issue.	BDC	DRB
A	10/03/20	Manhole and pipe numbers added/updated.	BD	DRB

Status
FOR PLANNING

Client
millerhomes

Project
Boorley Gardens
Winchester Road
Hedge End
Phase 3

Drawing Title
Planning Application
Main Drainage
Sheet 1 of 2

Drawing No. **M380/114** Rev A

Date: October 2019 Scale: 1:500 @ A0

E-Mail: dbrock@pfaplc.com



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NOTES

1. Drawing based on Topographical Survey by Anthony Brookes Surveys Ltd, drawing number A258/7834/1 dated June 2014.
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- S114 — Surface Water Sewer & Manhole (Management Company)
- Rising Main to Winchester Road Outfall
- Alternative Rising Main to WWTW
- Potential Rising Main from Phase 1 Pumping Station
- Proposed Pumping Station to serve Phases 2 & 3 (with 15m offset to habitable buildings)

Rev	Date	Description	Drawn	Check
#	24/10/19	First Issue.	BDC	DRB
A	10/03/20	Manhole and pipe numbers added/updated.	BO	DRB

Status
FOR PLANNING

Client
miller homes

Project
Boorley Gardens
Winchester Road
Hedge End
Phase 3

Drawing Title
Planning Application
Main Drainage
Sheet 2 of 2

Drawing No. **M380/115** Rev A

Date: October 2019 | Scale: 1:500 @ A0

E-Mail: dbrock@pfaplc.com

Appendix 2

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

- Indicates pipe length does not match coordinates
« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	92.333	0.540	171.0	0.104	5.00	0.0	0.600		o	225	Pipe/Conduit	
1.001	28.414	0.150	189.4	0.040	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.002	22.012	0.150	146.7	0.072	0.00	0.0	0.600		o	300	Pipe/Conduit	
2.000	31.419	0.500	62.8	0.054	5.00	0.0	0.600		o	225	Pipe/Conduit	
2.001	57.002	1.900	30.0	0.080	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.003	48.298	1.325	36.5	0.063	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.004	42.379	0.994	42.6	0.023	0.00	0.0	0.600		o	300	Pipe/Conduit	
3.000	12.600	0.170	74.1	0.049	5.00	0.0	0.600		o	150	Pipe/Conduit	
4.000	8.746	0.133	65.8	0.082	5.00	0.0	0.600		o	150	Pipe/Conduit	
3.001	69.312	0.945	73.3	0.082	0.00	0.0	0.600		o	225	Pipe/Conduit	
5.000	20.548	0.091	225.8	0.133	5.00	0.0	0.600		o	225	Pipe/Conduit	
3.002	47.297	0.141	335.4	0.153	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.005	16.677	0.150	111.2	0.018	0.00	0.0	0.600		o	525	Pipe/Conduit	
6.000	13.927	0.167	83.3	0.090	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	57.89	6.54	26.365	0.104	0.0	0.0	0.0	1.00	39.6	16.3
1.001	56.28	6.96	25.750	0.144	0.0	0.0	0.0	1.14	80.5	22.0
1.002	55.25	7.24	25.600	0.216	0.0	0.0	0.0	1.30	91.6	32.3
2.000	63.32	5.32	27.925	0.054	0.0	0.0	0.0	1.65	65.7	9.3
2.001	61.44	5.71	27.425	0.134	0.0	0.0	0.0	2.40	95.3	22.3
1.003	54.18	7.55	25.450	0.413	0.0	0.0	0.0	2.61	184.7	60.6
1.004	53.20	7.84	24.125	0.436	0.0	0.0	0.0	2.41	170.7	62.8
3.000	64.01	5.18	24.537	0.049	0.0	0.0	0.0	1.17	20.7	8.5
4.000	64.32	5.12	24.500	0.082	0.0	0.0	0.0	1.24	21.9	14.3
3.001	60.44	5.94	24.292	0.213	0.0	0.0	0.0	1.53	60.8	34.9
5.000	62.94	5.40	23.438	0.133	0.0	0.0	0.0	0.87	34.4	22.7
3.002	57.47	6.65	23.122	0.499	0.0	0.0	0.0	1.10	175.6	77.7
1.005	52.78	7.97	22.906	0.953	0.0	0.0	0.0	2.12	459.7	136.2
6.000	64.10	5.16	23.559	0.090	0.0	0.0	0.0	1.43	57.0	15.6

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
6.001	11.510	0.050	230.2	0.049	0.00	0.0	0.600		o	300	Pipe/Conduit	
6.002	11.510	0.065	177.1	0.007	0.00	0.0	0.600		o	300	Pipe/Conduit	
6.003	16.954	0.089	191.6	0.099	0.00	0.0	0.600		o	450	Pipe/Conduit	
6.004	23.475	0.043	545.9	0.017	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.006	16.001	0.048	336.9	0.116	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.007	25.441	0.048	530.0	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
7.000	66.663	1.244	53.6	0.315	5.00	0.0	0.600		o	300	Pipe/Conduit	
1.008	44.468	0.135	329.4	0.022	0.00	0.0	0.600		o	750	Pipe/Conduit	
8.000	18.163	0.121	150.0	0.000	5.00	0.0	0.600		o	150	Pipe/Conduit	
8.001	22.544	0.150	150.3	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
8.002	25.569	0.170	150.4	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
8.003	12.760	0.085	150.1	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
8.004	26.122	0.154	170.0	0.160	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.005	49.178	0.289	170.0	0.033	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.006	11.357	0.067	170.0	0.003	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.007	9.948	0.059	170.0	0.007	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.008	11.164	0.675	16.5	0.057	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.009	26.506	0.110	241.0	0.011	0.00	0.0	0.600		o	300	Pipe/Conduit	
8.010	19.991	1.393	14.4	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.009	33.101	0.090	367.8	0.033	0.00	0.0	0.600		o	750	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
6.001	63.17	5.35	23.392	0.139	0.0	0.0	0.0	1.03	72.9	23.7
6.002	62.38	5.51	23.342	0.146	0.0	0.0	0.0	1.18	83.3	24.6
6.003	61.48	5.70	23.051	0.245	0.0	0.0	0.0	1.47	233.1	40.8
6.004	59.48	6.16	22.874	0.262	0.0	0.0	0.0	0.86	137.3	42.2
1.006	52.23	8.15	22.756	1.331	0.0	0.0	0.0	1.52	671.1	188.3
1.007	51.16	8.50	22.709	1.331	0.0	0.0	0.0	1.21	533.9	188.3
7.000	62.36	5.52	24.405	0.315	0.0	0.0	0.0	2.15	152.1	53.2
1.008	49.77	8.98	22.661	1.668	0.0	0.0	0.0	1.54	678.7	224.9
8.000	63.06	5.37	26.450	0.000	0.0	0.0	0.0	0.82	14.5	0.0
8.001	60.91	5.83	26.329	0.000	0.0	0.0	0.0	0.82	14.4	0.0
8.002	58.66	6.35	26.179	0.000	0.0	0.0	0.0	0.82	14.4	0.0
8.003	57.62	6.61	26.009	0.000	0.0	0.0	0.0	0.82	14.5	0.0
8.004	55.96	7.05	25.849	0.160	0.0	0.0	0.0	1.00	39.8	24.2
8.005	53.13	7.87	25.695	0.193	0.0	0.0	0.0	1.00	39.8	27.8
8.006	52.52	8.06	25.406	0.196	0.0	0.0	0.0	1.00	39.8	27.9
8.007	52.00	8.22	25.339	0.203	0.0	0.0	0.0	1.00	39.8	28.6
8.008	51.83	8.28	25.205	0.260	0.0	0.0	0.0	3.23	128.6	36.5
8.009	50.53	8.72	24.530	0.271	0.0	0.0	0.0	1.01	71.3	37.1
8.010	50.30	8.80	24.420	0.304	0.0	0.0	0.0	4.17	294.9	41.4
1.009	48.74	9.36	22.526	2.005	0.0	0.0	0.0	1.45	642.0	264.7

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.010	19.233	0.090	213.7	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
9.000	8.554	0.144	59.4	0.034	5.00	0.0	0.600		o	150	Pipe/Conduit	
9.001	6.880	0.174	39.5	0.025	0.00	0.0	0.600		o	150	Pipe/Conduit	
9.002	44.129	2.320	19.0	0.125	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.011	6.947	0.013	534.4	0.135	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.012	9.158	0.017	538.7	0.025	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.013	8.101	0.017	476.5	0.020	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.014	11.725	0.016	732.8	0.016	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.015	47.015	0.839	56.0	0.010	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.016	22.656	0.041	552.6	0.184	0.00	0.0	0.600		o	900	Pipe/Conduit	
10.000	12.582	0.125	100.7	0.028	5.00	0.0	0.600		o	150	Pipe/Conduit	
10.001	13.006	0.401	32.4	0.086	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.017	25.070#	0.150	167.1	0.005	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.018	10.176	0.100	101.8	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.019	7.577	0.080	94.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.020	40.502	0.081	500.0	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	
1.021	9.086	0.050	181.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.022	3.620#	0.012	301.7	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	
11.000	34.361	0.615	55.9	0.109	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.010	48.30	9.53	22.436	2.005	0.0	0.0	0.0	1.91	844.0	264.7
9.000	64.37	5.11	25.635	0.034	0.0	0.0	0.0	1.31	23.1	5.9
9.001	64.00	5.18	25.491	0.059	0.0	0.0	0.0	1.61	28.4	10.2
9.002	62.80	5.42	25.242	0.184	0.0	0.0	0.0	3.01	119.9	31.3
1.011	48.08	9.62	22.247	2.324	0.0	0.0	0.0	1.35	857.8	302.7
1.012	47.79	9.73	22.217	2.349	0.0	0.0	0.0	1.34	854.3	304.1
1.013	47.56	9.82	22.201	2.369	0.0	0.0	0.0	1.43	908.8	305.1
1.014	47.14	9.99	22.184	2.385	0.0	0.0	0.0	1.15	731.4	305.1
1.015	46.69	10.18	22.168	2.395	0.0	0.0	0.0	4.19	2665.9	305.1
1.016	46.03	10.47	21.329	2.579	0.0	0.0	0.0	1.33	843.4	321.6
10.000	63.86	5.21	22.564	0.028	0.0	0.0	0.0	1.00	17.7	4.8
10.001	63.39	5.30	22.364	0.114	0.0	0.0	0.0	2.31	91.7	19.6
1.017	45.65	10.64	21.288	2.698	0.0	0.0	0.0	2.42	1540.2	333.6
1.018	45.41	10.75	21.000	2.698	0.0	0.0	0.0	1.56	110.2«	333.6
1.019	45.24	10.83	20.900	2.698	0.0	0.0	0.0	1.62	114.2«	333.6
1.020	39.11	14.21	20.820	2.698	0.0	0.0	0.0	0.20	22.5«	333.6
1.021	38.91	14.34	20.739	2.698	0.0	0.0	0.0	1.16	82.2«	333.6
1.022	38.56	14.57	20.689	2.698	0.0	0.0	0.0	0.26	28.9«	333.6
11.000	63.27	5.33	22.304	0.109	0.0	0.0	0.0	1.75	69.7	18.7

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
12.000	14.433	0.143	100.9	0.043	5.00	0.0	0.600		o	150	Pipe/Conduit	
11.001	18.287	0.219	83.5	0.025	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.002	11.426	0.304	37.6	0.019	0.00	0.0	0.600		o	225	Pipe/Conduit	
11.003	11.455	0.267	42.9	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.004	39.407	0.960	41.0	0.060	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.005	14.440#	0.363	39.8	0.130	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.000	26.930	0.267	100.9	0.007	5.00	0.0	0.600		o	150	Pipe/Conduit	
13.001	20.549	0.122	168.4	0.088	0.00	0.0	0.600		o	225	Pipe/Conduit	
13.002	10.051	0.060	167.5	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
13.003	38.528	0.230	167.5	0.058	0.00	0.0	0.600		o	300	Pipe/Conduit	
14.000	28.841	0.297	97.1	0.070	5.00	0.0	0.600		o	225	Pipe/Conduit	
15.000	9.235	0.463	19.9	0.041	5.00	0.0	0.600		o	150	Pipe/Conduit	
14.001	44.776	0.755	59.3	0.076	0.00	0.0	0.600		o	300	Pipe/Conduit	
16.000	12.264	0.122	100.5	0.046	5.00	0.0	0.600		o	150	Pipe/Conduit	
14.002	25.201	0.108	233.3	0.026	0.00	0.0	0.600		o	375	Pipe/Conduit	
14.003	14.752	0.044	335.3	0.042	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.004	18.636	0.058	321.3	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.005	10.371	0.032	324.1	0.016	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
12.000	63.70	5.24	21.907	0.043	0.0	0.0	0.0	1.00	17.7	7.4
11.001	62.42	5.50	21.689	0.177	0.0	0.0	0.0	1.72	121.7	29.9
11.002	62.00	5.59	21.469	0.196	0.0	0.0	0.0	2.14	85.1	32.9
11.003	61.63	5.67	21.166	0.229	0.0	0.0	0.0	2.41	170.2	38.2
11.004	60.42	5.94	20.899	0.289	0.0	0.0	0.0	2.46	174.0	47.3
11.005	60.00	6.04	19.863	0.419	0.0	0.0	0.0	2.50	176.7	68.1
13.000	62.68	5.45	21.063	0.007	0.0	0.0	0.0	1.00	17.7	1.2
13.001	61.09	5.79	20.746	0.095	0.0	0.0	0.0	1.00	39.9	15.7
13.002	60.35	5.96	20.624	0.104	0.0	0.0	0.0	1.01	40.1	17.0
13.003	58.12	6.49	20.564	0.162	0.0	0.0	0.0	1.21	85.7	25.5
14.000	63.10	5.36	22.393	0.070	0.0	0.0	0.0	1.33	52.8	12.0
15.000	64.58	5.07	22.559	0.041	0.0	0.0	0.0	2.27	40.0	7.2
14.001	61.37	5.73	22.021	0.187	0.0	0.0	0.0	2.05	144.6	31.1
16.000	63.88	5.20	21.463	0.046	0.0	0.0	0.0	1.00	17.7	8.0
14.002	59.79	6.08	21.117	0.259	0.0	0.0	0.0	1.18	130.5	41.9
14.003	58.86	6.31	21.009	0.301	0.0	0.0	0.0	1.10	175.7	48.0
14.004	57.74	6.58	20.965	0.340	0.0	0.0	0.0	1.13	179.5	53.2
14.005	57.14	6.73	20.907	0.356	0.0	0.0	0.0	1.12	178.7	55.1

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
14.006	19.435	0.065	299.0	0.019	0.00	0.0	0.600		o	450	Pipe/Conduit	
17.000	20.953	0.342	61.3	0.086	5.00	0.0	0.600		o	225	Pipe/Conduit	
17.001	7.032	0.294	23.9	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
14.007	11.915	0.037	322.0	0.012	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.008	46.478	0.318	146.2	0.175	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.009	7.319	0.341	21.5	0.006	0.00	0.0	0.600		o	375	Pipe/Conduit	
18.000	18.630	0.263	70.8	0.045	5.00	0.0	0.600		o	150	Pipe/Conduit	
18.001	24.342	1.064	22.9	0.030	0.00	0.0	0.600		o	150	Pipe/Conduit	
19.000	12.132	0.120	101.1	0.059	5.00	0.0	0.600		o	225	Pipe/Conduit	
19.001	20.642	0.122	169.2	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
18.002	69.434	0.574	121.0	0.110	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.004	34.492	0.078	442.2	0.159	0.00	0.0	0.600		o	675	Pipe/Conduit	
13.005	12.517	0.028	447.0	0.026	0.00	0.0	0.600		o	675	Pipe/Conduit	
13.006	14.415	0.029	497.1	0.038	0.00	0.0	0.600		o	675	Pipe/Conduit	
20.000	11.024	0.080	137.8	0.020	5.00	0.0	0.600		o	225	Pipe/Conduit	
21.000	9.669	0.096	100.7	0.053	5.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
14.006	56.09	7.01	20.875	0.375	0.0	0.0	0.0	1.17	186.2	57.0
17.000	63.86	5.21	21.671	0.086	0.0	0.0	0.0	1.67	66.6	14.9
17.001	63.64	5.25	21.254	0.095	0.0	0.0	0.0	2.69	106.8	16.4
14.007	55.45	7.19	20.810	0.482	0.0	0.0	0.0	1.13	179.3	72.4
14.008	53.85	7.65	20.773	0.657	0.0	0.0	0.0	1.68	267.1	95.8
14.009	53.75	7.68	20.455	0.663	0.0	0.0	0.0	3.93	433.6	96.5
18.000	63.61	5.26	22.310	0.045	0.0	0.0	0.0	1.20	21.1	7.8
18.001	62.67	5.45	22.047	0.075	0.0	0.0	0.0	2.11	37.4	12.7
19.000	64.13	5.16	21.225	0.059	0.0	0.0	0.0	1.30	51.7	10.2
19.001	62.44	5.50	21.030	0.093	0.0	0.0	0.0	1.00	39.9	15.7
18.002	58.84	6.31	20.833	0.278	0.0	0.0	0.0	1.43	101.0	44.3
13.004	52.25	8.14	20.034	1.262	0.0	0.0	0.0	1.24	443.7	178.6
13.005	51.73	8.31	19.956	1.288	0.0	0.0	0.0	1.23	441.2	180.4
13.006	51.11	8.52	19.928	1.326	0.0	0.0	0.0	1.17	418.2	183.5
20.000	64.08	5.17	20.051	0.020	0.0	0.0	0.0	1.11	44.2	3.5
21.000	64.10	5.16	20.117	0.053	0.0	0.0	0.0	1.00	17.7	9.2

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
20.001	12.117	0.072	168.3	0.025	0.00	0.0	0.600		o	225	Pipe/Conduit	
20.002	21.954	0.150	146.4	0.054	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.007	19.439	0.039	498.4	0.018	0.00	0.0	0.600		o	750	Pipe/Conduit	
13.008	14.965	0.030	498.8	0.021	0.00	0.0	0.600		o	750	Pipe/Conduit	
13.009	22.269	0.045	494.9	0.089	0.00	0.0	0.600		o	750	Pipe/Conduit	
13.010	47.812	0.096	498.0	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
22.000	31.242	0.185	168.9	0.047	5.00	0.0	0.600		o	225	Pipe/Conduit	
13.011	10.500#	0.021	500.0	0.000	0.00	0.0	0.600		o	675	Pipe/Conduit	
23.000	35.896	1.035	34.7	0.101	5.00	0.0	0.600		o	225	Pipe/Conduit	
23.001	8.580	0.211	40.7	0.008	0.00	0.0	0.600		o	225	Pipe/Conduit	
23.002	21.319	0.391	54.5	0.067	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.003	9.259	0.299	31.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.004	30.836	0.553	55.8	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
24.000	9.167	0.126	72.8	0.033	5.00	0.0	0.600		o	150	Pipe/Conduit	
23.005	41.037	0.244	168.2	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.006	9.158	0.035	261.7	0.070	0.00	0.0	0.600		o	300	Pipe/Conduit	
25.000	19.893	0.225	88.4	0.038	5.00	0.0	0.600		o	150	Pipe/Conduit	
25.001	19.602	0.246	79.7	0.042	0.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
20.001	63.08	5.37	19.971	0.098	0.0	0.0	0.0	1.00	40.0	16.7
20.002	61.74	5.65	19.899	0.152	0.0	0.0	0.0	1.30	91.7	25.4
13.007	50.35	8.78	19.749	1.496	0.0	0.0	0.0	1.25	550.7	204.0
13.008	49.79	8.98	19.710	1.517	0.0	0.0	0.0	1.25	550.5	204.5
13.009	48.98	9.27	19.680	1.606	0.0	0.0	0.0	1.25	552.7	213.0
13.010	47.33	9.91	19.635	1.606	0.0	0.0	0.0	1.25	551.0	213.0
22.000	62.34	5.52	19.724	0.047	0.0	0.0	0.0	1.00	39.9	7.9
13.011	46.97	10.06	19.539	1.653	0.0	0.0	0.0	1.17	417.0	213.0
23.000	63.56	5.27	22.990	0.101	0.0	0.0	0.0	2.23	88.6	17.4
23.001	63.22	5.34	21.955	0.109	0.0	0.0	0.0	2.06	81.8	18.7
23.002	62.41	5.50	21.744	0.176	0.0	0.0	0.0	2.13	150.8	29.7
23.003	62.15	5.56	21.278	0.176	0.0	0.0	0.0	2.84	200.4	29.7
23.004	61.03	5.80	20.979	0.176	0.0	0.0	0.0	2.11	149.1	29.7
24.000	64.26	5.13	20.703	0.033	0.0	0.0	0.0	1.18	20.9	5.7
23.005	58.60	6.37	20.427	0.209	0.0	0.0	0.0	1.21	85.5	33.2
23.006	57.96	6.53	20.183	0.279	0.0	0.0	0.0	0.97	68.4	43.8
25.000	63.36	5.31	23.694	0.038	0.0	0.0	0.0	1.07	18.9	6.5
25.001	62.28	5.53	23.469	0.080	0.0	0.0	0.0	1.47	58.3	13.5

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
25.002	16.803	0.068	247.1	0.022	0.00	0.0	0.600		o	225	Pipe/Conduit	
26.000	9.248	0.081	114.2	0.025	5.00	0.0	0.600		o	150	Pipe/Conduit	
25.003	28.520	0.688	41.5	0.037	0.00	0.0	0.600		o	225	Pipe/Conduit	
25.004	13.310	0.329	40.5	0.014	0.00	0.0	0.600		o	225	Pipe/Conduit	
25.005	18.021	0.499	36.1	0.021	0.00	0.0	0.600		o	225	Pipe/Conduit	
27.000	10.328	0.074	139.6	0.041	5.00	0.0	0.600		o	150	Pipe/Conduit	
27.001	10.370	0.424	24.5	0.020	0.00	0.0	0.600		o	150	Pipe/Conduit	
25.006	20.225	0.246	82.2	0.069	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.007	13.512	0.105	128.7	0.031	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.008	16.296	0.114	142.9	0.038	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.009	14.567	0.176	82.8	0.025	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.010	14.882	0.700	21.3	0.025	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.007	9.874	0.023	429.3	0.010	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.008	8.787	0.131	67.1	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.009	8.819	0.077	114.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.010	17.779	0.049	362.8	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.011	17.230#	0.168	102.6	0.083	0.00	0.0	0.600		o	450	Pipe/Conduit	
28.000	9.559	0.414	23.1	0.087	5.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
25.002	60.72	5.87	23.148	0.102	0.0	0.0	0.0	0.83	32.9	16.8
26.000	64.09	5.16	23.236	0.025	0.0	0.0	0.0	0.94	16.6	4.3
25.003	59.70	6.10	23.081	0.164	0.0	0.0	0.0	2.04	81.0	26.5
25.004	59.24	6.21	22.392	0.178	0.0	0.0	0.0	2.06	82.0	28.6
25.005	58.67	6.35	22.063	0.199	0.0	0.0	0.0	2.18	86.8	31.6
27.000	63.89	5.20	22.137	0.041	0.0	0.0	0.0	0.85	15.0	7.1
27.001	63.47	5.29	22.063	0.061	0.0	0.0	0.0	2.04	36.1	10.5
25.006	57.99	6.52	21.489	0.329	0.0	0.0	0.0	2.00	220.9	51.7
25.007	57.43	6.66	21.242	0.360	0.0	0.0	0.0	1.60	176.2	56.0
25.008	56.74	6.84	21.137	0.398	0.0	0.0	0.0	1.51	167.2	61.2
25.009	56.28	6.96	21.023	0.423	0.0	0.0	0.0	1.99	220.1	64.5
25.010	56.01	7.03	20.847	0.448	0.0	0.0	0.0	3.42	242.1	68.0
23.007	55.40	7.20	19.997	0.737	0.0	0.0	0.0	0.97	155.0	110.6
23.008	55.19	7.26	19.974	0.737	0.0	0.0	0.0	2.49	395.3	110.6
23.009	54.91	7.34	19.843	0.737	0.0	0.0	0.0	1.90	302.0	110.6
23.010	53.95	7.62	19.766	0.737	0.0	0.0	0.0	1.06	168.8	110.6
23.011	53.48	7.76	19.717	0.820	0.0	0.0	0.0	2.01	319.3	118.8
28.000	64.54	5.08	24.164	0.087	0.0	0.0	0.0	2.10	37.2	15.2

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
29.000	15.520	0.153	101.4	0.031	5.00	0.0	0.600		o	150	Pipe/Conduit	
28.001	21.433	0.440	48.7	0.041	0.00	0.0	0.600		o	225	Pipe/Conduit	
28.002	8.283	0.260	31.9	0.015	0.00	0.0	0.600		o	225	Pipe/Conduit	
28.003	30.938	0.490	63.1	0.036	0.00	0.0	0.600		o	300	Pipe/Conduit	
28.004	13.620	0.098	139.0	0.030	0.00	0.0	0.600		o	300	Pipe/Conduit	
30.000	11.853	0.118	100.4	0.040	5.00	0.0	0.600		o	150	Pipe/Conduit	
30.001	11.835	0.117	101.2	0.030	0.00	0.0	0.600		o	225	Pipe/Conduit	
28.005	57.782	1.524	37.9	0.135	0.00	0.0	0.600		o	300	Pipe/Conduit	
28.006	19.501	0.338	57.7	0.050	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.007	3.946	0.062	63.6	0.018	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.008	4.967	0.096	51.7	0.018	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.009	14.725	0.273	53.9	0.013	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.010	7.909	0.095	83.3	0.004	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.011	3.178	0.184	17.3	0.006	0.00	0.0	0.600		o	375	Pipe/Conduit	
31.000	15.244	0.226	67.5	0.046	5.00	0.0	0.600		o	150	Pipe/Conduit	
28.012	6.826	0.026	262.5	0.006	0.00	0.0	0.600		o	375	Pipe/Conduit	
32.000	18.802	0.186	101.1	0.028	5.00	0.0	0.600		o	150	Pipe/Conduit	
28.013	16.120#	0.140	115.1	0.015	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
29.000	63.61	5.26	23.903	0.031	0.0	0.0	0.0	1.00	17.6	5.3
28.001	62.68	5.45	23.675	0.159	0.0	0.0	0.0	1.88	74.7	27.0
28.002	62.39	5.51	23.235	0.174	0.0	0.0	0.0	2.33	92.5	29.4
28.003	61.18	5.77	22.975	0.210	0.0	0.0	0.0	1.98	140.1	34.8
28.004	60.42	5.94	22.410	0.240	0.0	0.0	0.0	1.33	94.1	39.3
30.000	63.92	5.20	22.697	0.040	0.0	0.0	0.0	1.00	17.7	6.9
30.001	63.16	5.35	22.580	0.070	0.0	0.0	0.0	1.30	51.7	12.0
28.005	58.81	6.32	22.312	0.445	0.0	0.0	0.0	2.56	181.1	70.9
28.006	58.26	6.45	20.788	0.495	0.0	0.0	0.0	2.39	263.9	78.1
28.007	58.14	6.48	20.375	0.513	0.0	0.0	0.0	2.27	251.2	80.8
28.008	58.01	6.51	20.313	0.531	0.0	0.0	0.0	2.52	278.8	83.4
28.009	57.61	6.61	20.218	0.544	0.0	0.0	0.0	2.47	273.0	84.9
28.010	57.35	6.68	19.945	0.548	0.0	0.0	0.0	1.99	219.5	85.1
28.011	57.31	6.69	19.850	0.554	0.0	0.0	0.0	4.38	483.5	86.0
31.000	63.87	5.21	20.042	0.046	0.0	0.0	0.0	1.23	21.7	8.0
28.012	56.91	6.79	19.666	0.606	0.0	0.0	0.0	1.11	123.0	93.4
32.000	63.34	5.31	20.051	0.028	0.0	0.0	0.0	1.00	17.7	4.8
28.013	56.31	6.95	19.640	0.649	0.0	0.0	0.0	1.69	186.4	99.0

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
33.000	37.361	0.386	96.8	0.043	5.00	0.0	0.600		o	150	Pipe/Conduit	
33.001	14.941	0.134	111.5	0.111	0.00	0.0	0.600		o	300	Pipe/Conduit	
33.002	36.246	0.388	93.4	0.085	0.00	0.0	0.600		o	300	Pipe/Conduit	
33.003	31.170#	0.342	91.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.023	8.756	0.050	175.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.024	6.724	0.013	517.2	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	
1.025	38.389	0.077	498.6	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	
1.026	42.073	0.084	500.9	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	
1.027	7.094	0.014	506.7	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	
1.028	5.149	0.010	514.9	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	
1.029	21.813	1.582	13.8	0.000	0.00	0.0		0.045	3 \=/	300	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
33.000	61.92	5.61	20.901	0.043	0.0	0.0	0.0	1.02	18.1	7.2
33.001	61.15	5.78	20.364	0.154	0.0	0.0	0.0	1.49	105.2	25.5
33.002	59.51	6.15	20.230	0.239	0.0	0.0	0.0	1.63	115.0	38.5
33.003	58.21	6.46	19.842	0.239	0.0	0.0	0.0	1.65	116.5	38.5
1.023	38.38	14.69	19.400	6.478	0.0	0.0	0.0	1.19	83.8«	673.4
1.024	37.57	15.26	19.350	6.478	0.0	0.0	0.0	0.20	22.1«	673.4
1.025	33.69	18.46	19.350	6.478	0.0	0.0	0.0	0.20	22.5«	673.4
1.026	30.39	21.98	19.260	6.478	0.0	0.0	0.0	0.20	22.4«	673.4
1.027	29.91	22.57	19.176	6.478	0.0	0.0	0.0	0.20	22.3«	673.4
1.028	29.56	23.01	19.162	6.478	0.0	0.0	0.0	0.20	22.1«	673.4
1.029	29.33	23.31	19.152	6.478	0.0	0.0	0.0	1.20	135.3«	673.4

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

- Indicates pipe length does not match coordinates

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	1000	28.090	26.365	1.500	Open Manhole	1200
1.001	o	300	1001	27.700	25.750	1.650	Open Manhole	1200
1.002	o	300	1002	27.650	25.600	1.750	Open Manhole	1200
2.000	o	225	1003	29.650	27.925	1.500	Open Manhole	1200
2.001	o	225	1004	29.150	27.425	1.500	Open Manhole	1200
1.003	o	300	1005	27.400	25.450	1.650	Open Manhole	1200
1.004	o	300	1006	25.900	24.125	1.475	Open Manhole	1200
3.000	o	150	1010	25.950	24.537	1.263	Open Manhole	1200
4.000	o	150	1011	26.150	24.500	1.500	Open Manhole	1200
3.001	o	225	1012	26.060	24.292	1.543	Open Manhole	1200
5.000	o	225	1014	25.177	23.438	1.514	Open Manhole	1200
3.002	o	450	1015	25.292	23.122	1.720	Open Manhole	1350
1.005	o	525	1016	25.132	22.906	1.701	Open Manhole	1500
6.000	o	225	1017	24.684	23.559	0.900	Open Manhole	1200
6.001	o	300	1018	24.517	23.392	0.825	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	92.333	171.0	1001	27.700	25.825	1.650	Open Manhole	1200
1.001	28.414	189.4	1002	27.650	25.600	1.750	Open Manhole	1200
1.002	22.012	146.7	1005	27.400	25.450	1.650	Open Manhole	1200
2.000	31.419	62.8	1004	29.150	27.425	1.500	Open Manhole	1200
2.001	57.002	30.0	1005	27.400	25.525	1.650	Open Manhole	1200
1.003	48.298	36.5	1006	25.900	24.125	1.475	Open Manhole	1200
1.004	42.379	42.6	1016	25.132	23.131	1.701	Open Manhole	1500
3.000	12.600	74.1	1012	26.060	24.367	1.543	Open Manhole	1200
4.000	8.746	65.8	1012	26.060	24.367	1.543	Open Manhole	1200
3.001	69.312	73.3	1015	25.292	23.347	1.720	Open Manhole	1350
5.000	20.548	225.8	1015	25.292	23.347	1.720	Open Manhole	1350
3.002	47.297	335.4	1016	25.132	22.981	1.701	Open Manhole	1500
1.005	16.677	111.2	1022	24.781	22.756	1.500	Open Manhole	1800
6.000	13.927	83.3	1018	24.517	23.392	0.900	Open Manhole	1200
6.001	11.510	230.2	1019	24.483	23.342	0.841	Open Manhole	1200

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
6.002	o	300	1019	24.483	23.342	0.841	Open Manhole	1200
6.003	o	450	1020	24.401	23.051	0.900	Open Manhole	1350
6.004	o	450	1021	24.792	22.874	1.468	Open Manhole	1350
1.006	o	750	1022	24.781	22.756	1.275	Open Manhole	1800
1.007	o	750	1022-1	24.777	22.709	1.319	Open Manhole	1800
7.000	o	300	1023	26.130	24.405	1.425	Open Manhole	1200
1.008	o	750	1024	24.772	22.661	1.361	Open Manhole	1800
8.000	o	150	1200	27.500	26.450	0.900	Open Manhole	1200
8.001	o	150	1201	27.500	26.329	1.021	Open Manhole	1200
8.002	o	150	1202	27.500	26.179	1.171	Open Manhole	1200
8.003	o	150	1203	27.500	26.009	1.341	Open Manhole	1200
8.004	o	225	1204	29.087	25.849	3.013	Open Manhole	1200
8.005	o	225	1205	27.811	25.695	1.891	Open Manhole	1200
8.006	o	225	1206	27.524	25.406	1.893	Open Manhole	1200
8.007	o	225	1207	27.426	25.339	1.862	Open Manhole	1200
8.008	o	225	1208	26.998	25.205	1.568	Open Manhole	1200
8.009	o	300	1209	26.379	24.530	1.549	Open Manhole	1200
8.010	o	300	1210	26.215	24.420	1.495	Open Manhole	1200
1.009	o	750	1025	25.088	22.526	1.812	Open Manhole	1800
1.010	o	750	1026	25.289	22.436	2.103	Open Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
6.002	11.510	177.1	1020	24.401	23.277	0.824	Open Manhole	1350
6.003	16.954	191.6	1021	24.792	22.963	1.380	Open Manhole	1350
6.004	23.475	545.9	1022	24.781	22.831	1.500	Open Manhole	1800
1.006	16.001	336.9	1022-1	24.777	22.709	1.319	Open Manhole	1800
1.007	25.441	530.0	1024	24.772	22.661	1.362	Open Manhole	1800
7.000	66.663	53.6	1024	24.772	23.161	1.311	Open Manhole	1800
1.008	44.468	329.4	1025	25.088	22.526	1.812	Open Manhole	1800
8.000	18.163	150.0	1201	27.500	26.329	1.021	Open Manhole	1200
8.001	22.544	150.3	1202	27.500	26.179	1.171	Open Manhole	1200
8.002	25.569	150.4	1203	27.500	26.009	1.341	Open Manhole	1200
8.003	12.760	150.1	1204	29.087	25.924	3.013	Open Manhole	1200
8.004	26.122	170.0	1205	27.811	25.695	1.891	Open Manhole	1200
8.005	49.178	170.0	1206	27.524	25.406	1.893	Open Manhole	1200
8.006	11.357	170.0	1207	27.426	25.339	1.862	Open Manhole	1200
8.007	9.948	170.0	1208	26.998	25.280	1.493	Open Manhole	1200
8.008	11.164	16.5	1209	26.379	24.530	1.624	Open Manhole	1200
8.009	26.506	241.0	1210	26.215	24.420	1.495	Open Manhole	1200
8.010	19.991	14.4	1025	25.088	23.027	1.761	Open Manhole	1800
1.009	33.101	367.8	1026	25.289	22.436	2.103	Open Manhole	1800
1.010	19.233	213.7	1027	25.490	22.346	2.394	Open Manhole	1800

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
9.000	o	150	1220	27.285	25.635	1.500	Open Manhole	1200
9.001	o	150	1221	27.141	25.491	1.500	Open Manhole	1200
9.002	o	225	1222	26.967	25.242	1.500	Open Manhole	1200
1.011	o	900	1027	25.490	22.247	2.343	Open Manhole	1800
1.012	o	900	1028	25.502	22.217	2.385	Open Manhole	1800
1.013	o	900	1029	25.379	22.201	2.278	Open Manhole	1800
1.014	o	900	1030	25.208	22.184	2.124	Open Manhole	1800
1.015	o	900	1031	25.038	22.168	1.970	Open Manhole	1800
1.016	o	900	1032	23.804	21.329	1.575	Open Manhole	1800
10.000	o	150	1230	24.214	22.564	1.500	Open Manhole	1200
10.001	o	225	1231	24.092	22.364	1.503	Open Manhole	1200
1.017	o	900	1033	23.962	21.288	1.774	Open Manhole	1800
1.018	o	300	1040-Basin A2	22.300	21.000	1.000	Open Manhole	1800
1.019	o	300	1041-Con	22.043	20.900	0.843	Open Manhole	1200
1.020	3 \=/	300	1042	22.030	20.820	1.060	Junction	
1.021	o	300	1043-GR	21.545	20.739	0.506	Junction	
1.022	3 \=/	300	1044	21.456	20.689	0.617	Junction	
11.000	o	225	1240	24.028	22.304	1.499	Open Manhole	1200
12.000	o	150	1270	23.557	21.907	1.500	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
9.000	8.554	59.4	1221	27.141	25.491	1.500	Open Manhole	1200
9.001	6.880	39.5	1222	26.967	25.317	1.500	Open Manhole	1200
9.002	44.129	19.0	1027	25.490	22.922	2.343	Open Manhole	1800
1.011	6.947	534.4	1028	25.502	22.234	2.368	Open Manhole	1800
1.012	9.158	538.7	1029	25.379	22.200	2.279	Open Manhole	1800
1.013	8.101	476.5	1030	25.208	22.184	2.124	Open Manhole	1800
1.014	11.725	732.8	1031	25.038	22.168	1.970	Open Manhole	1800
1.015	47.015	56.0	1032	23.804	21.329	1.575	Open Manhole	1800
1.016	22.656	552.6	1033	23.962	21.288	1.774	Open Manhole	1800
10.000	12.582	100.7	1231	24.092	22.439	1.503	Open Manhole	1200
10.001	13.006	32.4	1033	23.962	21.963	1.774	Open Manhole	1800
1.017	25.070#	167.1	1040-Basin A2	22.300	21.138	0.262	Open Manhole	1800
1.018	10.176	101.8	1041-Con	22.043	20.900	0.843	Open Manhole	1200
1.019	7.577	94.7	1042	22.030	20.820	0.910	Junction	
1.020	40.502	500.0	1043-GR	21.545	20.739	0.656	Junction	
1.021	9.086	181.7	1044	21.456	20.689	0.467	Junction	
1.022	3.620#	301.7	1100-Basin A1	20.600	20.677	-0.227	Open Manhole	1200
11.000	34.361	55.9	1241	23.690	21.689	1.776	Open Manhole	1200
12.000	14.433	100.9	1241	23.690	21.764	1.776	Open Manhole	1200

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
11.001	o	300	1241	23.690	21.689	1.701	Open Manhole	1200
11.002	o	225	1242	23.194	21.469	1.500	Open Manhole	1200
11.003	o	300	1243	22.891	21.166	1.425	Open Manhole	1200
11.004	o	300	1244	22.624	20.899	1.425	Open Manhole	1200
11.005	o	300	1245	21.663	19.863	1.500	Open Manhole	1200
13.000	o	150	1250	22.519	21.063	1.306	Open Manhole	1200
13.001	o	225	1251	22.756	20.746	1.785	Open Manhole	1200
13.002	o	225	1252	22.692	20.624	1.843	Open Manhole	1200
13.003	o	300	1253	22.582	20.564	1.718	Open Manhole	1200
14.000	o	225	1300	24.043	22.393	1.425	Open Manhole	1200
15.000	o	150	1320	24.209	22.559	1.500	Open Manhole	1200
14.001	o	300	1302	24.056	22.021	1.735	Open Manhole	1200
16.000	o	150	1390	23.113	21.463	1.500	Open Manhole	1200
14.002	o	375	1303	23.316	21.117	1.824	Open Manhole	1350
14.003	o	450	1304	23.510	21.009	2.051	Open Manhole	1350
14.004	o	450	1305	23.373	20.965	1.958	Open Manhole	1350
14.005	o	450	1306	23.150	20.907	1.793	Open Manhole	1350
14.006	o	450	1307	23.042	20.875	1.717	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
11.001	18.287	83.5	1242	23.194	21.470	1.424	Open Manhole	1200
11.002	11.426	37.6	1243	22.891	21.165	1.501	Open Manhole	1200
11.003	11.455	42.9	1244	22.624	20.899	1.425	Open Manhole	1200
11.004	39.407	41.0	1245	21.663	19.939	1.424	Open Manhole	1200
11.005	14.440#	39.8	1100-Basin A1	20.600	19.500	0.800	Open Manhole	1200
13.000	26.930	100.9	1251	22.756	20.796	1.810	Open Manhole	1200
13.001	20.549	168.4	1252	22.692	20.624	1.843	Open Manhole	1200
13.002	10.051	167.5	1253	22.582	20.564	1.793	Open Manhole	1200
13.003	38.528	167.5	1254	22.251	20.334	1.617	Open Manhole	1500
14.000	28.841	97.1	1302	24.056	22.096	1.735	Open Manhole	1200
15.000	9.235	19.9	1302	24.056	22.096	1.810	Open Manhole	1200
14.001	44.776	59.3	1303	23.316	21.266	1.750	Open Manhole	1350
16.000	12.264	100.5	1303	23.316	21.341	1.825	Open Manhole	1350
14.002	25.201	233.3	1304	23.510	21.009	2.126	Open Manhole	1350
14.003	14.752	335.3	1305	23.373	20.965	1.958	Open Manhole	1350
14.004	18.636	321.3	1306	23.150	20.907	1.793	Open Manhole	1350
14.005	10.371	324.1	1307	23.042	20.875	1.717	Open Manhole	1350
14.006	19.435	299.0	1308	22.897	20.810	1.637	Open Manhole	1350

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
17.000	o	225	1330	23.321	21.671	1.425	Open Manhole	1200
17.001	o	225	1331	22.979	21.254	1.500	Open Manhole	1200
14.007	o	450	1308	22.897	20.810	1.637	Open Manhole	1350
14.008	o	450	1309	22.785	20.773	1.562	Open Manhole	1350
14.009	o	375	1310	22.330	20.455	1.500	Open Manhole	1350
18.000	o	150	1340	23.064	22.310	0.604	Open Manhole	1200
18.001	o	150	1341	22.933	22.047	0.736	Open Manhole	1200
19.000	o	225	1350	22.334	21.225	0.884	Open Manhole	1200
19.001	o	225	1351	22.453	21.030	1.198	Open Manhole	1200
18.002	o	300	1352	22.711	20.833	1.578	Open Manhole	1200
13.004	o	675	1254	22.251	20.034	1.542	Open Manhole	1500
13.005	o	675	1255	21.929	19.956	1.298	Open Manhole	1500
13.006	o	675	1256	21.861	19.928	1.258	Open Manhole	1500
20.000	o	225	1360	21.191	20.051	0.915	Open Manhole	1200
21.000	o	150	1370	21.457	20.117	1.190	Open Manhole	1200
20.001	o	225	1361	21.339	19.971	1.143	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
17.000	20.953	61.3	1331	22.979	21.329	1.425	Open Manhole	1200
17.001	7.032	23.9	1308	22.897	20.960	1.712	Open Manhole	1350
14.007	11.915	322.0	1309	22.785	20.773	1.562	Open Manhole	1350
14.008	46.478	146.2	1310	22.330	20.455	1.425	Open Manhole	1350
14.009	7.319	21.5	1254	22.251	20.114	1.762	Open Manhole	1500
18.000	18.630	70.8	1341	22.933	22.047	0.736	Open Manhole	1200
18.001	24.342	22.9	1352	22.711	20.983	1.578	Open Manhole	1200
19.000	12.132	101.1	1351	22.453	21.105	1.123	Open Manhole	1200
19.001	20.642	169.2	1352	22.711	20.908	1.578	Open Manhole	1200
18.002	69.434	121.0	1254	22.251	20.259	1.692	Open Manhole	1500
13.004	34.492	442.2	1255	21.929	19.956	1.298	Open Manhole	1500
13.005	12.517	447.0	1256	21.861	19.928	1.258	Open Manhole	1500
13.006	14.415	497.1	1257	21.952	19.899	1.378	Open Manhole	1500
20.000	11.024	137.8	1361	21.339	19.971	1.143	Open Manhole	1200
21.000	9.669	100.7	1361	21.339	20.021	1.168	Open Manhole	1200
20.001	12.117	168.3	1362	21.676	19.899	1.552	Open Manhole	1200

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
20.002	o	300	1362	21.676	19.899	1.477	Open Manhole	1200
13.007	o	750	1257	21.952	19.749	1.453	Open Manhole	1500
13.008	o	750	1258	22.067	19.710	1.607	Open Manhole	1500
13.009	o	750	1259	21.898	19.680	1.468	Open Manhole	1500
13.010	o	750	1260	21.877	19.635	1.492	Open Manhole	1500
22.000	o	225	1380-GR	20.784	19.724	0.835	Open Manhole	1200
13.011	o	675	1261	21.281	19.539	1.067	Open Manhole	1500
23.000	o	225	1400	24.601	22.990	1.386	Open Manhole	1200
23.001	o	225	1401	23.616	21.955	1.436	Open Manhole	1200
23.002	o	300	1402	23.461	21.744	1.417	Open Manhole	1200
23.003	o	300	1403	22.404	21.278	0.826	Open Manhole	1200
23.004	o	300	1404	22.405	20.979	1.126	Open Manhole	1200
24.000	o	150	1420	21.753	20.703	0.900	Open Manhole	1200
23.005	o	300	1405	21.881	20.427	1.154	Open Manhole	1200
23.006	o	300	1406	22.088	20.183	1.605	Open Manhole	1200
25.000	o	150	1430	25.344	23.694	1.500	Open Manhole	1200
25.001	o	225	1431	25.284	23.469	1.590	Open Manhole	1200
25.002	o	225	1432	24.984	23.148	1.611	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
20.002	21.954	146.4	1257	21.952	19.749	1.903	Open Manhole	1500
13.007	19.439	498.4	1258	22.067	19.710	1.607	Open Manhole	1500
13.008	14.965	498.8	1259	21.898	19.680	1.468	Open Manhole	1500
13.009	22.269	494.9	1260	21.877	19.635	1.492	Open Manhole	1500
13.010	47.812	498.0	1261	21.281	19.539	0.992	Open Manhole	1500
22.000	31.242	168.9	1261	21.281	19.539	1.517	Open Manhole	1500
13.011	10.500#	500.0	1100-Basin A1	20.600	19.518	0.407	Open Manhole	1200
23.000	35.896	34.7	1401	23.616	21.955	1.436	Open Manhole	1200
23.001	8.580	40.7	1402	23.461	21.744	1.492	Open Manhole	1200
23.002	21.319	54.5	1403	22.404	21.353	0.751	Open Manhole	1200
23.003	9.259	31.0	1404	22.405	20.979	1.126	Open Manhole	1200
23.004	30.836	55.8	1405	21.881	20.426	1.155	Open Manhole	1200
24.000	9.167	72.8	1405	21.881	20.577	1.154	Open Manhole	1200
23.005	41.037	168.2	1406	22.088	20.183	1.605	Open Manhole	1200
23.006	9.158	261.7	1407	22.008	20.148	1.560	Open Manhole	1350
25.000	19.893	88.4	1431	25.284	23.469	1.665	Open Manhole	1200
25.001	19.602	79.7	1432	24.984	23.223	1.536	Open Manhole	1200
25.002	16.803	247.1	1433	24.846	23.080	1.541	Open Manhole	1200

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
26.000	o	150	1450	24.890	23.236	1.504	Open Manhole	1200
25.003	o	225	1433	24.846	23.081	1.540	Open Manhole	1200
25.004	o	225	1434	24.117	22.392	1.500	Open Manhole	1200
25.005	o	225	1435	23.788	22.063	1.500	Open Manhole	1200
27.000	o	150	1460	23.295	22.137	1.008	Open Manhole	1200
27.001	o	150	1461	23.213	22.063	1.000	Open Manhole	1200
25.006	o	375	1436	23.289	21.489	1.425	Open Manhole	1200
25.007	o	375	1437	23.164	21.242	1.547	Open Manhole	1200
25.008	o	375	1438	23.066	21.137	1.554	Open Manhole	1200
25.009	o	375	1439	22.833	21.023	1.435	Open Manhole	1200
25.010	o	300	1440	22.579	20.847	1.432	Open Manhole	1200
23.007	o	450	1407	22.008	19.997	1.561	Open Manhole	1350
23.008	o	450	1408	21.925	19.974	1.501	Open Manhole	1350
23.009	o	450	1409	21.794	19.843	1.501	Open Manhole	1350
23.010	o	450	1410	21.717	19.766	1.501	Open Manhole	1350
23.011	o	450	1411	21.740	19.717	1.573	Open Manhole	1350
28.000	o	150	1470	25.814	24.164	1.500	Open Manhole	1200
29.000	o	150	1490	25.553	23.903	1.500	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
26.000	9.248	114.2	1433	24.846	23.155	1.541	Open Manhole	1200
25.003	28.520	41.5	1434	24.117	22.393	1.499	Open Manhole	1200
25.004	13.310	40.5	1435	23.788	22.063	1.500	Open Manhole	1200
25.005	18.021	36.1	1436	23.289	21.564	1.500	Open Manhole	1200
27.000	10.328	139.6	1461	23.213	22.063	1.000	Open Manhole	1200
27.001	10.370	24.5	1436	23.289	21.639	1.500	Open Manhole	1200
25.006	20.225	82.2	1437	23.164	21.243	1.546	Open Manhole	1200
25.007	13.512	128.7	1438	23.066	21.137	1.554	Open Manhole	1200
25.008	16.296	142.9	1439	22.833	21.023	1.435	Open Manhole	1200
25.009	14.567	82.8	1440	22.579	20.847	1.357	Open Manhole	1200
25.010	14.882	21.3	1407	22.008	20.147	1.561	Open Manhole	1350
23.007	9.874	429.3	1408	21.925	19.974	1.501	Open Manhole	1350
23.008	8.787	67.1	1409	21.794	19.843	1.501	Open Manhole	1350
23.009	8.819	114.5	1410	21.717	19.766	1.501	Open Manhole	1350
23.010	17.779	362.8	1411	21.740	19.717	1.573	Open Manhole	1350
23.011	17.230#	102.6	1100-Basin A1	20.600	19.549	0.601	Open Manhole	1200
28.000	9.559	23.1	1471	25.718	23.750	1.818	Open Manhole	1200
29.000	15.520	101.4	1471	25.718	23.750	1.818	Open Manhole	1200

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
28.001	o	225	1471	25.718	23.675	1.818	Open Manhole	1200
28.002	o	225	1472	24.960	23.235	1.500	Open Manhole	1200
28.003	o	300	1473	24.700	22.975	1.425	Open Manhole	1200
28.004	o	300	1474	24.210	22.410	1.500	Open Manhole	1200
30.000	o	150	1500	24.347	22.697	1.500	Open Manhole	1200
30.001	o	225	1501	24.421	22.580	1.616	Open Manhole	1200
28.005	o	300	1475	24.340	22.312	1.728	Open Manhole	1200
28.006	o	375	1476	22.588	20.788	1.425	Open Manhole	1200
28.007	o	375	1477	22.250	20.375	1.500	Open Manhole	1350
28.008	o	375	1478	22.189	20.313	1.501	Open Manhole	1350
28.009	o	375	1479	22.093	20.218	1.500	Open Manhole	1350
28.010	o	375	1480	21.820	19.945	1.500	Open Manhole	1350
28.011	o	375	1481	21.725	19.850	1.500	Open Manhole	1350
31.000	o	150	1510	21.692	20.042	1.500	Open Manhole	1200
28.012	o	375	1482	21.596	19.666	1.555	Open Manhole	1350
32.000	o	150	1520	21.536	20.051	1.335	Open Manhole	1200
28.013	o	375	1483	21.528	19.640	1.513	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
28.001	21.433	48.7	1472	24.960	23.235	1.500	Open Manhole	1200
28.002	8.283	31.9	1473	24.700	22.975	1.500	Open Manhole	1200
28.003	30.938	63.1	1474	24.210	22.485	1.425	Open Manhole	1200
28.004	13.620	139.0	1475	24.340	22.312	1.728	Open Manhole	1200
30.000	11.853	100.4	1501	24.421	22.579	1.692	Open Manhole	1200
30.001	11.835	101.2	1475	24.340	22.463	1.652	Open Manhole	1200
28.005	57.782	37.9	1476	22.588	20.788	1.500	Open Manhole	1200
28.006	19.501	57.7	1477	22.250	20.450	1.425	Open Manhole	1350
28.007	3.946	63.6	1478	22.189	20.313	1.501	Open Manhole	1350
28.008	4.967	51.7	1479	22.093	20.217	1.501	Open Manhole	1350
28.009	14.725	53.9	1480	21.820	19.945	1.500	Open Manhole	1350
28.010	7.909	83.3	1481	21.725	19.850	1.500	Open Manhole	1350
28.011	3.178	17.3	1482	21.596	19.666	1.555	Open Manhole	1350
31.000	15.244	67.5	1482	21.596	19.816	1.630	Open Manhole	1350
28.012	6.826	262.5	1483	21.528	19.640	1.513	Open Manhole	1350
32.000	18.802	101.1	1483	21.528	19.865	1.513	Open Manhole	1350
28.013	16.120#	115.1	1100-Basin A1	20.600	19.500	0.725	Open Manhole	1200

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
33.000	o	150	1530	22.551	20.901	1.500	Open Manhole	1200
33.001	o	300	1531	22.187	20.364	1.523	Open Manhole	1200
33.002	o	300	1532	22.030	20.230	1.500	Open Manhole	1200
33.003	o	300	1533	21.642	19.842	1.500	Open Manhole	1200
1.023	o	300	1100-Basin A1	20.600	19.400	0.900	Open Manhole	1200
1.024	3 \=/	300	1101-Con	21.144	19.350	1.644	Open Manhole	1200
1.025	3 \=/	300	1102	21.298	19.350	1.798	Junction	
1.026	3 \=/	300	1103	21.261	19.260	1.851	Junction	
1.027	3 \=/	300	1104	21.175	19.176	1.849	Junction	
1.028	3 \=/	300	1105	21.018	19.162	1.706	Junction	
1.029	3 \=/	300	1106	20.969	19.152	1.667	Junction	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
33.000	37.361	96.8	1531	22.187	20.515	1.522	Open Manhole	1200
33.001	14.941	111.5	1532	22.030	20.230	1.500	Open Manhole	1200
33.002	36.246	93.4	1533	21.642	19.842	1.500	Open Manhole	1200
33.003	31.170#	91.1	1100-Basin A1	20.600	19.500	0.800	Open Manhole	1200
1.023	8.756	175.1	1101-Con	21.144	19.350	1.494	Open Manhole	1200
1.024	6.724	517.2	1102	21.298	19.337	1.811	Junction	
1.025	38.389	498.6	1103	21.261	19.273	1.838	Junction	
1.026	42.073	500.9	1104	21.175	19.176	1.849	Junction	
1.027	7.094	506.7	1105	21.018	19.162	1.706	Junction	
1.028	5.149	514.9	1106	20.969	19.152	1.667	Junction	
1.029	21.813	13.8	Moorgreen Stream	17.630	17.570	-0.090	Open Manhole	0

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Area Summary for M380-CATCHMENT A-SW.SWS

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.104	0.104	0.104
1.001	-	-	100	0.040	0.040	0.040
1.002	-	-	100	0.072	0.072	0.072
2.000	-	-	100	0.054	0.054	0.054
2.001	-	-	100	0.080	0.080	0.080
1.003	-	-	100	0.063	0.063	0.063
1.004	-	-	100	0.023	0.023	0.023
3.000	-	-	100	0.049	0.049	0.049
4.000	-	-	100	0.082	0.082	0.082
3.001	-	-	100	0.082	0.082	0.082
5.000	-	-	100	0.133	0.133	0.133
3.002	-	-	100	0.153	0.153	0.153
1.005	-	-	100	0.018	0.018	0.018
6.000	-	-	100	0.090	0.090	0.090
6.001	-	-	100	0.049	0.049	0.049
6.002	-	-	100	0.007	0.007	0.007
6.003	-	-	100	0.099	0.099	0.099
6.004	-	-	100	0.017	0.017	0.017
1.006	-	-	100	0.116	0.116	0.116
1.007	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.315	0.315	0.315
1.008	-	-	100	0.022	0.022	0.022
8.000	-	-	100	0.000	0.000	0.000
8.001	-	-	100	0.000	0.000	0.000
8.002	-	-	100	0.000	0.000	0.000
8.003	-	-	100	0.000	0.000	0.000
8.004	-	-	100	0.160	0.160	0.160
8.005	-	-	100	0.033	0.033	0.033
8.006	-	-	100	0.003	0.003	0.003
8.007	-	-	100	0.007	0.007	0.007
8.008	-	-	100	0.057	0.057	0.057
8.009	-	-	100	0.011	0.011	0.011
8.010	-	-	100	0.033	0.033	0.033
1.009	-	-	100	0.033	0.033	0.033
1.010	-	-	100	0.000	0.000	0.000
9.000	-	-	100	0.034	0.034	0.034
9.001	-	-	100	0.025	0.025	0.025
9.002	-	-	100	0.125	0.125	0.125
1.011	-	-	100	0.135	0.135	0.135
1.012	-	-	100	0.025	0.025	0.025
1.013	-	-	100	0.020	0.020	0.020
1.014	-	-	100	0.016	0.016	0.016
1.015	-	-	100	0.010	0.010	0.010
1.016	-	-	100	0.184	0.184	0.184
10.000	-	-	100	0.028	0.028	0.028
10.001	-	-	100	0.086	0.086	0.086
1.017	-	-	100	0.005	0.005	0.005
1.018	-	-	100	0.000	0.000	0.000
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000
11.000	-	-	100	0.109	0.109	0.109
12.000	-	-	100	0.043	0.043	0.043
11.001	-	-	100	0.025	0.025	0.025
11.002	-	-	100	0.019	0.019	0.019
11.003	-	-	100	0.033	0.033	0.033
11.004	-	-	100	0.060	0.060	0.060
11.005	-	-	100	0.130	0.130	0.130
13.000	-	-	100	0.007	0.007	0.007

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Area Summary for M380-CATCHMENT A-SW.SWS

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
13.001	-	-	100	0.088	0.088	0.088
13.002	-	-	100	0.009	0.009	0.009
13.003	-	-	100	0.058	0.058	0.058
14.000	-	-	100	0.070	0.070	0.070
15.000	-	-	100	0.041	0.041	0.041
14.001	-	-	100	0.076	0.076	0.076
16.000	-	-	100	0.046	0.046	0.046
14.002	-	-	100	0.026	0.026	0.026
14.003	-	-	100	0.042	0.042	0.042
14.004	-	-	100	0.039	0.039	0.039
14.005	-	-	100	0.016	0.016	0.016
14.006	-	-	100	0.019	0.019	0.019
17.000	-	-	100	0.086	0.086	0.086
17.001	-	-	100	0.009	0.009	0.009
14.007	-	-	100	0.012	0.012	0.012
14.008	-	-	100	0.175	0.175	0.175
14.009	-	-	100	0.006	0.006	0.006
18.000	-	-	100	0.045	0.045	0.045
18.001	-	-	100	0.030	0.030	0.030
19.000	-	-	100	0.059	0.059	0.059
19.001	-	-	100	0.034	0.034	0.034
18.002	-	-	100	0.110	0.110	0.110
13.004	-	-	100	0.159	0.159	0.159
13.005	-	-	100	0.026	0.026	0.026
13.006	-	-	100	0.038	0.038	0.038
20.000	-	-	100	0.020	0.020	0.020
21.000	-	-	100	0.053	0.053	0.053
20.001	-	-	100	0.025	0.025	0.025
20.002	-	-	100	0.054	0.054	0.054
13.007	-	-	100	0.018	0.018	0.018
13.008	-	-	100	0.021	0.021	0.021
13.009	-	-	100	0.089	0.089	0.089
13.010	-	-	100	0.000	0.000	0.000
22.000	-	-	100	0.047	0.047	0.047
13.011	-	-	100	0.000	0.000	0.000
23.000	-	-	100	0.101	0.101	0.101
23.001	-	-	100	0.008	0.008	0.008
23.002	-	-	100	0.067	0.067	0.067
23.003	-	-	100	0.000	0.000	0.000
23.004	-	-	100	0.000	0.000	0.000
24.000	-	-	100	0.033	0.033	0.033
23.005	-	-	100	0.000	0.000	0.000
23.006	-	-	100	0.070	0.070	0.070
25.000	-	-	100	0.038	0.038	0.038
25.001	-	-	100	0.042	0.042	0.042
25.002	-	-	100	0.022	0.022	0.022
26.000	-	-	100	0.025	0.025	0.025
25.003	-	-	100	0.037	0.037	0.037
25.004	-	-	100	0.014	0.014	0.014
25.005	-	-	100	0.021	0.021	0.021
27.000	-	-	100	0.041	0.041	0.041
27.001	-	-	100	0.020	0.020	0.020
25.006	-	-	100	0.069	0.069	0.069
25.007	-	-	100	0.031	0.031	0.031
25.008	-	-	100	0.038	0.038	0.038
25.009	-	-	100	0.025	0.025	0.025
25.010	-	-	100	0.025	0.025	0.025
23.007	-	-	100	0.010	0.010	0.010
23.008	-	-	100	0.000	0.000	0.000
23.009	-	-	100	0.000	0.000	0.000

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Area Summary for M380-CATCHMENT A-SW.SWS

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
23.010	-	-	100	0.000	0.000	0.000
23.011	-	-	100	0.083	0.083	0.083
28.000	-	-	100	0.087	0.087	0.087
29.000	-	-	100	0.031	0.031	0.031
28.001	-	-	100	0.041	0.041	0.041
28.002	-	-	100	0.015	0.015	0.015
28.003	-	-	100	0.036	0.036	0.036
28.004	-	-	100	0.030	0.030	0.030
30.000	-	-	100	0.040	0.040	0.040
30.001	-	-	100	0.030	0.030	0.030
28.005	-	-	100	0.135	0.135	0.135
28.006	-	-	100	0.050	0.050	0.050
28.007	-	-	100	0.018	0.018	0.018
28.008	-	-	100	0.018	0.018	0.018
28.009	-	-	100	0.013	0.013	0.013
28.010	-	-	100	0.004	0.004	0.004
28.011	-	-	100	0.006	0.006	0.006
31.000	-	-	100	0.046	0.046	0.046
28.012	-	-	100	0.006	0.006	0.006
32.000	-	-	100	0.028	0.028	0.028
28.013	-	-	100	0.015	0.015	0.015
33.000	-	-	100	0.043	0.043	0.043
33.001	-	-	100	0.111	0.111	0.111
33.002	-	-	100	0.085	0.085	0.085
33.003	-	-	100	0.000	0.000	0.000
1.023	-	-	100	0.000	0.000	0.000
1.024	-	-	100	0.000	0.000	0.000
1.025	-	-	100	0.000	0.000	0.000
1.026	-	-	100	0.000	0.000	0.000
1.027	-	-	100	0.000	0.000	0.000
1.028	-	-	100	0.000	0.000	0.000
1.029	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				6.478	6.478	6.478

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Free Flowing Outfall Details for M380-CATCHMENT A-SW.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.029	Moorgreen Stream	17.630	17.570	18.620	0	0

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Online Controls for M380-CATCHMENT A-SW.SWS

Orifice Manhole: 1040-Basin A2, DS/PN: 1.018, Volume (m³): 18.1

Diameter (m) 0.300 Discharge Coefficient 0.600 Invert Level (m) 21.000

Hydro-Brake® Optimum Manhole: 1101-Con, DS/PN: 1.024, Volume (m³): 2.6

Unit Reference	MD-SFF-0308-6200-1250-5580
Design Head (m)	1.250
Design Flow (l/s)	62.0
Flush-Flo™	User Defined
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	308
Invert Level (m)	19.350
Minimum Outlet Pipe Diameter (mm)	375
Suggested Manhole Diameter (mm)	1800

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.250	62.0	Kick-Flo®	0.795	49.8
Flush-Flo™	0.459	55.8	Mean Flow over Head Range	-	47.4

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	9.3	0.800	50.0	2.000	77.8	4.000	109.0	7.000	143.3
0.200	31.6	1.000	55.7	2.200	81.5	4.500	115.5	7.500	148.3
0.300	53.8	1.200	60.8	2.400	85.0	5.000	121.6	8.000	153.0
0.400	55.6	1.400	65.5	2.600	88.4	5.500	127.4	8.500	157.6
0.500	55.7	1.600	69.9	3.000	94.8	6.000	132.9	9.000	162.1
0.600	54.9	1.800	74.0	3.500	102.2	6.500	138.2	9.500	166.5

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Storage Structures for M380-CATCHMENT A-SW.SWS

Tank or Pond Manhole: 1040-Basin A2, DS/PN: 1.018

Invert Level (m) 21.000

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	717.5	0.300	893.0	0.600	1077.9	0.900	1272.3	1.200	1476.1
0.100	775.0	0.400	953.6	0.700	1141.7	1.000	1339.1	1.300	1539.0
0.200	833.5	0.500	1015.2	0.800	1206.4	1.100	1407.1		

Tank or Pond Manhole: 1100-Basin A1, DS/PN: 1.023

Invert Level (m) 19.400

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	3151.7	0.300	3749.5	0.600	4356.5	0.900	4972.8	1.200	5577.3
0.100	3349.9	0.400	3950.8	0.700	4560.9	1.000	5170.3		
0.200	3549.2	0.500	4153.2	0.800	4766.4	1.100	5388.8		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.800 Cv (Summer) 0.750
Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 299.0 DVD Status OFF
Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
DTS Status OFF

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

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.000	1000	15 minute 1 year Winter I+0%	28.090	26.458	-0.132	0.000	0.35	0.099	13.4	OK
1.001	1001	15 minute 1 year Winter I+0%	27.700	25.850	-0.200	0.000	0.24	0.111	17.4	OK
1.002	1002	15 minute 1 year Winter I+0%	27.650	25.714	-0.186	0.000	0.31	0.336	24.8	OK
2.000	1003	15 minute 1 year Winter I+0%	29.650	27.976	-0.174	0.000	0.11	0.052	7.0	OK
2.001	1004	15 minute 1 year Winter I+0%	29.150	27.488	-0.162	0.000	0.17	0.091	15.9	OK
1.003	1005	15 minute 1 year Winter I+0%	27.400	25.556	-0.194	0.000	0.27	0.237	46.4	OK
1.004	1006	15 minute 1 year Winter I+0%	25.900	24.238	-0.187	0.000	0.31	0.163	48.7	OK
3.000	1010	15 minute 1 year Winter I+0%	25.950	24.598	-0.089	0.000	0.34	0.063	6.4	OK
4.000	1011	15 minute 1 year Winter I+0%	26.150	24.581	-0.069	0.000	0.56	0.086	10.7	OK
3.001	1012	15 minute 1 year Winter I+0%	26.060	24.398	-0.119	0.000	0.45	0.118	26.5	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	15 minute 1 year Winter I+0%	25.177	23.559	-0.104	0.000	0.55	0.132	17.3	OK
3.002	1015	15 minute 1 year Winter I+0%	25.292	23.314	-0.258	0.000	0.37	0.268	58.7	OK
1.005	1016	15 minute 1 year Winter I+0%	25.132	23.129	-0.302	0.000	0.36	1.291	108.2	OK
6.000	1017	15 minute 1 year Winter I+0%	24.684	23.634	-0.150	0.000	0.24	0.079	11.8	OK
6.001	1018	15 minute 1 year Winter I+0%	24.517	23.504	-0.188	0.000	0.29	0.191	17.2	OK
6.002	1019	15 minute 1 year Winter I+0%	24.483	23.451	-0.191	0.000	0.28	0.259	18.1	OK
6.003	1020	15 minute 1 year Winter I+0%	24.401	23.176	-0.325	0.000	0.17	0.171	29.0	OK
6.004	1021	15 minute 1 year Winter I+0%	24.792	23.100	-0.224	0.000	0.27	0.682	28.9	OK
1.006	1022	15 minute 1 year Winter I+0%	24.781	23.079	-0.427	0.000	0.33	3.751	144.7	OK
1.007	1022-1	15 minute 1 year Winter I+0%	24.777	23.039	-0.420	0.000	0.37	2.676	143.9	OK
7.000	1023	15 minute 1 year Winter I+0%	26.130	24.515	-0.190	0.000	0.28	0.118	41.2	OK
1.008	1024	15 minute 1 year Winter I+0%	24.772	22.969	-0.442	0.000	0.31	3.484	173.1	OK
8.000	1200	60 minute 1 year Winter I+0%	27.500	26.450	-0.150	0.000	0.00	0.000	0.0	OK
8.001	1201	60 minute 1 year Winter I+0%	27.500	26.329	-0.150	0.000	0.00	0.000	0.0	OK
8.002	1202	60 minute 1 year Winter I+0%	27.500	26.179	-0.150	0.000	0.00	0.000	0.0	OK
8.003	1203	60 minute 1 year Winter I+0%	27.500	26.009	-0.150	0.000	0.00	0.000	0.0	OK
8.004	1204	15 minute 1 year Winter I+0%	29.087	25.960	-0.114	0.000	0.48	0.130	17.8	OK
8.005	1205	15 minute 1 year Winter I+0%	27.811	25.815	-0.105	0.000	0.55	0.312	20.8	OK
8.006	1206	15 minute 1 year Winter I+0%	27.524	25.535	-0.096	0.000	0.62	0.372	21.0	OK
8.007	1207	15 minute 1 year Winter I+0%	27.426	25.473	-0.091	0.000	0.65	0.309	21.7	OK
8.008	1208	15 minute 1 year Winter I+0%	26.998	25.281	-0.149	0.000	0.25	0.083	26.8	OK
8.009	1209	15 minute 1 year Winter I+0%	26.379	24.669	-0.161	0.000	0.44	0.177	27.9	OK
8.010	1210	15 minute 1 year Winter I+0%	26.215	24.489	-0.231	0.000	0.12	0.198	30.9	OK
1.009	1025	15 minute 1 year Winter I+0%	25.088	22.866	-0.410	0.000	0.39	6.712	200.0	OK
1.010	1026	15 minute 1 year Winter I+0%	25.289	22.773	-0.413	0.000	0.33	5.081	196.4	OK
9.000	1220	15 minute 1 year Winter I+0%	27.285	25.683	-0.102	0.000	0.22	0.049	4.5	OK
9.001	1221	15 minute 1 year Winter I+0%	27.141	25.548	-0.093	0.000	0.30	0.073	7.2	OK
9.002	1222	15 minute 1 year Winter I+0%	26.967	25.308	-0.159	0.000	0.18	0.069	21.1	OK
1.011	1027	15 minute 1 year Winter I+0%	25.490	22.734	-0.413	0.000	0.47	4.223	215.6	OK
1.012	1028	15 minute 1 year Winter I+0%	25.502	22.721	-0.396	0.000	0.56	2.642	216.7	OK
1.013	1029	15 minute 1 year Winter I+0%	25.379	22.700	-0.401	0.000	0.52	3.309	216.6	OK
1.014	1030	15 minute 1 year Winter I+0%	25.208	22.684	-0.400	0.000	0.66	3.009	217.4	OK
1.015	1031	15 minute 1 year Winter I+0%	25.038	22.363	-0.705	0.000	0.11	0.916	218.5	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.016	1032	15 minute 1 year Winter I+0%	23.804	21.741	-0.488	0.000	0.43	3.641	225.3	OK
10.000	1230	15 minute 1 year Winter I+0%	24.214	22.613	-0.101	0.000	0.23	0.050	3.7	OK
10.001	1231	15 minute 1 year Winter I+0%	24.092	22.426	-0.163	0.000	0.17	0.066	13.2	OK
1.017	1033	15 minute 1 year Winter I+0%	23.962	21.587	-0.601	0.000	0.24	3.045	229.5	OK
1.018	1040-Basin A2	240 minute 1 year Winter I+0%	22.300	21.308	0.008	0.000	0.65	249.567	51.2	SURCHARGED
1.019	1041-Con	240 minute 1 year Winter I+0%	22.043	21.092	-0.108	0.000	0.72	0.488	51.2	OK
1.020	1042	240 minute 1 year Winter I+0%	22.030	21.049	-0.981	0.000	0.02	0.536	51.2	OK
1.021	1043-GR	240 minute 1 year Winter I+0%	21.545	20.949	-0.090	0.000	0.83	3.909	51.1	OK*
1.022	1044	240 minute 1 year Winter I+0%	21.456	20.880	-0.576	0.000	0.03	0.524	51.1	OK
11.000	1240	15 minute 1 year Winter I+0%	24.028	22.375	-0.154	0.000	0.22	0.075	14.2	OK
12.000	1270	15 minute 1 year Winter I+0%	23.557	21.968	-0.089	0.000	0.35	0.064	5.6	OK
11.001	1241	15 minute 1 year Winter I+0%	23.690	21.784	-0.205	0.000	0.22	0.138	22.5	OK
11.002	1242	15 minute 1 year Winter I+0%	23.194	21.561	-0.133	0.000	0.34	0.154	24.9	OK
11.003	1243	15 minute 1 year Winter I+0%	22.891	21.261	-0.205	0.000	0.22	0.126	28.6	OK
11.004	1244	15 minute 1 year Winter I+0%	22.624	20.994	-0.205	0.000	0.22	0.131	35.2	OK
11.005	1245	15 minute 1 year Winter I+0%	21.663	19.983	-0.180	0.000	0.34	0.139	49.4	OK
13.000	1250	15 minute 1 year Winter I+0%	22.519	21.086	-0.127	0.000	0.05	0.020	0.9	OK
13.001	1251	15 minute 1 year Winter I+0%	22.756	20.830	-0.141	0.000	0.29	0.097	10.7	OK
13.002	1252	15 minute 1 year Winter I+0%	22.692	20.716	-0.133	0.000	0.35	0.198	11.7	OK
13.003	1253	15 minute 1 year Winter I+0%	22.582	20.661	-0.203	0.000	0.23	0.191	18.0	OK
14.000	1300	15 minute 1 year Winter I+0%	24.043	22.459	-0.159	0.000	0.18	0.069	9.1	OK
15.000	1320	15 minute 1 year Winter I+0%	24.209	22.598	-0.111	0.000	0.15	0.039	5.4	OK
14.001	1302	15 minute 1 year Winter I+0%	24.056	22.104	-0.217	0.000	0.17	0.091	23.1	OK
16.000	1390	15 minute 1 year Winter I+0%	23.113	21.527	-0.086	0.000	0.38	0.067	6.0	OK
14.002	1303	15 minute 1 year Winter I+0%	23.316	21.253	-0.239	0.000	0.28	0.190	31.8	OK
14.003	1304	15 minute 1 year Winter I+0%	23.510	21.177	-0.282	0.000	0.28	0.916	35.3	OK
14.004	1305	15 minute 1 year Winter I+0%	23.373	21.136	-0.279	0.000	0.27	0.721	38.9	OK
14.005	1306	15 minute 1 year Winter I+0%	23.150	21.088	-0.269	0.000	0.33	0.946	39.9	OK
14.006	1307	15 minute 1 year Winter I+0%	23.042	21.056	-0.269	0.000	0.28	0.610	41.8	OK
17.000	1330	15 minute 1 year Winter I+0%	23.321	21.737	-0.159	0.000	0.19	0.069	11.3	OK
17.001	1331	15 minute 1 year Winter I+0%	22.979	21.315	-0.164	0.000	0.16	0.064	12.2	OK
14.007	1308	15 minute 1 year Winter I+0%	22.897	21.011	-0.249	0.000	0.41	1.141	52.1	OK
14.008	1309	15 minute 1 year Winter I+0%	22.785	20.937	-0.286	0.000	0.28	0.581	67.7	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.009	1310	15 minute 1 year Winter I+0%	22.330	20.594	-0.236	0.000	0.30	0.573	68.0	OK
18.000	1340	15 minute 1 year Winter I+0%	23.064	22.366	-0.094	0.000	0.29	0.058	5.8	OK
18.001	1341	15 minute 1 year Winter I+0%	22.933	22.099	-0.098	0.000	0.26	0.071	9.2	OK
19.000	1350	15 minute 1 year Winter I+0%	22.334	21.289	-0.161	0.000	0.17	0.066	7.7	OK
19.001	1351	15 minute 1 year Winter I+0%	22.453	21.118	-0.137	0.000	0.32	0.096	11.5	OK
18.002	1352	15 minute 1 year Winter I+0%	22.711	20.954	-0.179	0.000	0.33	0.166	32.1	OK
13.004	1254	15 minute 1 year Winter I+0%	22.251	20.382	-0.327	0.000	0.35	1.028	126.6	OK
13.005	1255	15 minute 1 year Winter I+0%	21.929	20.333	-0.298	0.000	0.54	5.832	125.2	OK
13.006	1256	15 minute 1 year Winter I+0%	21.861	20.300	-0.303	0.000	0.58	2.342	127.1	OK
20.000	1360	15 minute 1 year Winter I+0%	21.191	20.140	-0.136	0.000	0.07	0.095	2.6	OK
21.000	1370	15 minute 1 year Winter I+0%	21.457	20.188	-0.079	0.000	0.44	0.074	6.9	OK
20.001	1361	15 minute 1 year Winter I+0%	21.339	20.138	-0.058	0.000	0.35	0.470	12.0	OK
20.002	1362	15 minute 1 year Winter I+0%	21.676	20.131	-0.068	0.000	0.20	0.619	16.0	OK
13.007	1257	15 minute 1 year Winter I+0%	21.952	20.122	-0.377	0.000	0.40	2.798	136.3	OK
13.008	1258	15 minute 1 year Winter I+0%	22.067	20.081	-0.379	0.000	0.49	3.513	135.9	OK
13.009	1259	15 minute 1 year Winter I+0%	21.898	20.035	-0.395	0.000	0.36	2.613	138.2	OK
13.010	1260	15 minute 1 year Winter I+0%	21.877	19.995	-0.390	0.000	0.29	3.775	132.8	OK
22.000	1380-GR	15 minute 1 year Winter I+0%	20.784	19.940	-0.009	0.000	0.16	0.239	6.0	OK
13.011	1261	15 minute 1 year Winter I+0%	21.281	19.939	-0.275	0.000	0.66	10.210	129.4	OK
23.000	1400	15 minute 1 year Winter I+0%	24.601	23.050	-0.165	0.000	0.16	0.062	13.2	OK
23.001	1401	15 minute 1 year Winter I+0%	23.616	22.027	-0.153	0.000	0.22	0.091	14.0	OK
23.002	1402	15 minute 1 year Winter I+0%	23.461	21.825	-0.219	0.000	0.16	0.106	21.6	OK
23.003	1403	15 minute 1 year Winter I+0%	22.404	21.358	-0.220	0.000	0.16	0.086	21.7	OK
23.004	1404	15 minute 1 year Winter I+0%	22.405	21.059	-0.220	0.000	0.16	0.102	21.7	OK
24.000	1420	15 minute 1 year Winter I+0%	21.753	20.753	-0.100	0.000	0.24	0.050	4.3	OK
23.005	1405	15 minute 1 year Winter I+0%	21.881	20.544	-0.183	0.000	0.32	0.199	25.3	OK
23.006	1406	15 minute 1 year Winter I+0%	22.088	20.363	-0.120	0.000	0.61	0.773	31.8	OK
25.000	1430	15 minute 1 year Winter I+0%	25.344	23.748	-0.096	0.000	0.28	0.056	4.9	OK
25.001	1431	15 minute 1 year Winter I+0%	25.284	23.534	-0.160	0.000	0.18	0.096	9.6	OK
25.002	1432	15 minute 1 year Winter I+0%	24.984	23.249	-0.124	0.000	0.41	0.110	12.1	OK
26.000	1450	15 minute 1 year Winter I+0%	24.890	23.284	-0.102	0.000	0.22	0.049	3.3	OK
25.003	1433	15 minute 1 year Winter I+0%	24.846	23.158	-0.148	0.000	0.26	0.198	19.4	OK
25.004	1434	15 minute 1 year Winter I+0%	24.117	22.475	-0.142	0.000	0.29	0.110	20.9	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
25.005	1435	15 minute 1 year Winter I+0%	23.788	22.147	-0.141	0.000	0.30	0.110	23.1	OK
27.000	1460	15 minute 1 year Winter I+0%	23.295	22.204	-0.083	0.000	0.40	0.070	5.4	OK
27.001	1461	15 minute 1 year Winter I+0%	23.213	22.113	-0.100	0.000	0.23	0.080	7.6	OK
25.006	1436	15 minute 1 year Winter I+0%	23.289	21.604	-0.260	0.000	0.21	0.130	38.2	OK
25.007	1437	15 minute 1 year Winter I+0%	23.164	21.390	-0.227	0.000	0.33	0.370	41.3	OK
25.008	1438	15 minute 1 year Winter I+0%	23.066	21.289	-0.223	0.000	0.34	0.463	45.3	OK
25.009	1439	15 minute 1 year Winter I+0%	22.833	21.162	-0.236	0.000	0.29	0.435	48.2	OK
25.010	1440	15 minute 1 year Winter I+0%	22.579	20.949	-0.198	0.000	0.25	0.181	50.7	OK
23.007	1407	15 minute 1 year Winter I+0%	22.008	20.338	-0.109	0.000	0.92	0.849	82.9	OK
23.008	1408	15 minute 1 year Winter I+0%	21.925	20.174	-0.250	0.000	0.41	0.681	83.2	OK
23.009	1409	15 minute 1 year Winter I+0%	21.794	20.067	-0.226	0.000	0.49	0.674	83.5	OK
23.010	1410	15 minute 1 year Winter I+0%	21.717	20.025	-0.191	0.000	0.62	0.907	82.7	OK
23.011	1411	15 minute 1 year Winter I+0%	21.740	19.912	-0.255	0.000	0.39	1.015	89.6	OK
28.000	1470	15 minute 1 year Winter I+0%	25.814	24.225	-0.089	0.000	0.35	0.064	11.4	OK
29.000	1490	15 minute 1 year Winter I+0%	25.553	23.954	-0.099	0.000	0.25	0.052	4.0	OK
28.001	1471	15 minute 1 year Winter I+0%	25.718	23.759	-0.141	0.000	0.29	0.091	19.9	OK
28.002	1472	15 minute 1 year Winter I+0%	24.960	23.320	-0.140	0.000	0.30	0.118	21.7	OK
28.003	1473	15 minute 1 year Winter I+0%	24.700	23.067	-0.208	0.000	0.20	0.115	25.8	OK
28.004	1474	15 minute 1 year Winter I+0%	24.210	22.537	-0.173	0.000	0.38	0.159	29.2	OK
30.000	1500	15 minute 1 year Winter I+0%	24.347	22.757	-0.090	0.000	0.33	0.062	5.2	OK
30.001	1501	15 minute 1 year Winter I+0%	24.421	22.648	-0.157	0.000	0.19	0.104	8.6	OK
28.005	1475	15 minute 1 year Winter I+0%	24.340	22.425	-0.187	0.000	0.30	0.260	52.3	OK
28.006	1476	15 minute 1 year Winter I+0%	22.588	20.918	-0.245	0.000	0.26	0.206	57.5	OK
28.007	1477	15 minute 1 year Winter I+0%	22.250	20.576	-0.174	0.000	0.55	0.366	59.1	OK
28.008	1478	15 minute 1 year Winter I+0%	22.189	20.503	-0.185	0.000	0.51	0.371	61.3	OK
28.009	1479	15 minute 1 year Winter I+0%	22.093	20.360	-0.233	0.000	0.31	0.279	62.9	OK
28.010	1480	15 minute 1 year Winter I+0%	21.820	20.138	-0.182	0.000	0.52	0.495	63.2	OK
28.011	1481	15 minute 1 year Winter I+0%	21.725	20.010	-0.215	0.000	0.38	0.404	63.5	OK
31.000	1510	15 minute 1 year Winter I+0%	21.692	20.099	-0.093	0.000	0.30	0.059	6.0	OK
28.012	1482	15 minute 1 year Winter I+0%	21.596	19.931	-0.110	0.000	0.84	0.513	68.7	OK
32.000	1520	15 minute 1 year Winter I+0%	21.536	20.099	-0.102	0.000	0.22	0.049	3.6	OK
28.013	1483	15 minute 1 year Winter I+0%	21.528	19.829	-0.186	0.000	0.50	0.484	73.1	OK
33.000	1530	15 minute 1 year Winter I+0%	22.551	20.960	-0.091	0.000	0.32	0.061	5.7	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Maximum Vol (m^3)	Pipe Flow (l/s)	Status
33.001	1531	15 minute 1 year Winter I+0%	22.187	20.456	-0.208	0.000	0.20	0.099	17.9	OK
33.002	1532	15 minute 1 year Winter I+0%	22.030	20.334	-0.196	0.000	0.26	0.198	27.4	OK
33.003	1533	15 minute 1 year Winter I+0%	21.642	19.945	-0.197	0.000	0.26	0.186	27.3	OK
1.023	1100-Basin A1	1440 minute 1 year Winter I+0%	20.600	19.710	0.010	0.000	0.41	1074.662	24.9	SURCHARGED
1.024	1101-Con	1440 minute 1 year Winter I+0%	21.144	19.695	-1.449	0.000	0.00	0.900	24.9	OK
1.025	1102	1440 minute 1 year Winter I+0%	21.298	19.519	-1.779	0.000	0.00	0.222	24.9	OK
1.026	1103	1440 minute 1 year Winter I+0%	21.261	19.431	-1.830	0.000	0.00	0.928	24.9	OK
1.027	1104	1440 minute 1 year Winter I+0%	21.175	19.339	-1.836	0.000	0.00	1.017	24.9	OK
1.028	1105	1440 minute 1 year Winter I+0%	21.018	19.319	-1.699	0.000	0.00	0.190	24.9	OK
1.029	1106	1440 minute 1 year Winter I+0%	20.969	19.215	-1.754	0.000	0.00	0.073	24.9	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 299.0 DVD Status OFF
Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
DTS Status OFF

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

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.000	1000	60 minute 30 year Summer I+0%	28.090	26.493	-0.097	0.000	0.59	0.139	22.8	OK
1.001	1001	60 minute 30 year Summer I+0%	27.700	25.889	-0.161	0.000	0.43	0.223	31.4	OK
1.002	1002	60 minute 30 year Summer I+0%	27.650	25.766	-0.134	0.000	0.58	0.713	47.1	OK
2.000	1003	60 minute 30 year Summer I+0%	29.650	27.993	-0.157	0.000	0.20	0.072	12.4	OK
2.001	1004	60 minute 30 year Summer I+0%	29.150	27.516	-0.134	0.000	0.34	0.134	31.1	OK
1.003	1005	60 minute 30 year Summer I+0%	27.400	25.606	-0.144	0.000	0.53	0.548	91.6	OK
1.004	1006	60 minute 30 year Summer I+0%	25.900	24.295	-0.130	0.000	0.61	0.299	96.9	OK
3.000	1010	60 minute 30 year Summer I+0%	25.950	24.621	-0.066	0.000	0.60	0.089	11.3	OK
4.000	1011	60 minute 30 year Summer I+0%	26.150	24.618	-0.032	0.000	0.98	0.128	18.9	OK
3.001	1012	60 minute 30 year Summer I+0%	26.060	24.451	-0.066	0.000	0.83	0.236	48.7	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	60 minute 30 year Summer I+0%	25.177	23.615	-0.048	0.000	0.98	0.195	30.5	OK
3.002	1015	60 minute 30 year Summer I+0%	25.292	23.407	-0.165	0.000	0.71	0.482	112.5	OK
1.005	1016	60 minute 30 year Summer I+0%	25.132	23.312	-0.119	0.000	0.69	5.117	205.9	OK
6.000	1017	60 minute 30 year Summer I+0%	24.684	23.660	-0.124	0.000	0.42	0.108	20.7	OK
6.001	1018	60 minute 30 year Summer I+0%	24.517	23.552	-0.140	0.000	0.55	0.344	32.2	OK
6.002	1019	60 minute 30 year Summer I+0%	24.483	23.497	-0.145	0.000	0.53	0.450	33.8	OK
6.003	1020	60 minute 30 year Summer I+0%	24.401	23.301	-0.201	0.000	0.33	0.379	55.5	OK
6.004	1021	60 minute 30 year Summer I+0%	24.792	23.284	-0.041	0.000	0.52	2.135	55.2	OK
1.006	1022	60 minute 30 year Summer I+0%	24.781	23.263	-0.243	0.000	0.64	7.212	279.1	OK
1.007	1022-1	60 minute 30 year Summer I+0%	24.777	23.230	-0.228	0.000	0.71	5.149	276.0	OK
7.000	1023	60 minute 30 year Summer I+0%	26.130	24.555	-0.150	0.000	0.50	0.164	72.5	OK
1.008	1024	60 minute 30 year Summer I+0%	24.772	23.171	-0.240	0.000	0.60	7.472	339.2	OK
8.000	1200	240 minute 30 year Winter I+0%	27.500	26.450	-0.150	0.000	0.00	0.000	0.0	OK
8.001	1201	240 minute 30 year Winter I+0%	27.500	26.329	-0.150	0.000	0.00	0.000	0.0	OK
8.002	1202	240 minute 30 year Winter I+0%	27.500	26.179	-0.150	0.000	0.00	0.000	0.0	OK
8.003	1203	60 minute 30 year Summer I+0%	27.500	26.100	-0.059	0.000	0.09	0.165	1.2	OK
8.004	1204	60 minute 30 year Summer I+0%	29.087	26.123	0.049	0.000	0.95	0.481	34.9	SURCHARGED
8.005	1205	60 minute 30 year Summer I+0%	27.811	25.994	0.074	0.000	1.05	1.235	39.8	SURCHARGED
8.006	1206	60 minute 30 year Summer I+0%	27.524	25.679	0.048	0.000	1.18	1.333	39.9	SURCHARGED
8.007	1207	60 minute 30 year Summer I+0%	27.426	25.585	0.021	0.000	1.24	0.626	41.1	SURCHARGED
8.008	1208	60 minute 30 year Summer I+0%	26.998	25.315	-0.115	0.000	0.48	0.129	51.7	OK
8.009	1209	60 minute 30 year Summer I+0%	26.379	24.743	-0.087	0.000	0.84	0.291	53.8	OK
8.010	1210	60 minute 30 year Summer I+0%	26.215	24.518	-0.202	0.000	0.24	0.290	60.4	OK
1.009	1025	60 minute 30 year Summer I+0%	25.088	23.095	-0.181	0.000	0.78	14.400	395.2	OK
1.010	1026	60 minute 30 year Summer I+0%	25.289	23.019	-0.167	0.000	0.66	11.290	391.3	OK
9.000	1220	60 minute 30 year Summer I+0%	27.285	25.700	-0.085	0.000	0.39	0.067	7.8	OK
9.001	1221	60 minute 30 year Summer I+0%	27.141	25.572	-0.069	0.000	0.57	0.108	13.7	OK
9.002	1222	60 minute 30 year Summer I+0%	26.967	25.338	-0.129	0.000	0.38	0.104	43.2	OK
1.011	1027	60 minute 30 year Summer I+0%	25.490	22.975	-0.172	0.000	0.95	7.849	435.8	OK
1.012	1028	60 minute 30 year Summer I+0%	25.502	22.956	-0.161	0.000	1.14	4.293	439.2	OK
1.013	1029	60 minute 30 year Summer I+0%	25.379	22.931	-0.170	0.000	1.06	5.364	441.7	OK
1.014	1030	60 minute 30 year Summer I+0%	25.208	22.908	-0.176	0.000	1.34	4.812	443.3	OK
1.015	1031	60 minute 30 year Summer I+0%	25.038	22.450	-0.618	0.000	0.22	1.688	444.2	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.016	1032	60 minute 30 year Summer I+0%	23.804	21.989	-0.240	0.000	0.89	9.510	466.0	OK
10.000	1230	60 minute 30 year Summer I+0%	24.214	22.630	-0.084	0.000	0.40	0.069	6.4	OK
10.001	1231	60 minute 30 year Summer I+0%	24.092	22.454	-0.135	0.000	0.34	0.098	26.7	OK
1.017	1033	60 minute 30 year Summer I+0%	23.962	21.739	-0.449	0.000	0.50	6.043	480.3	OK
1.018	1040-Basin A2	60 minute 30 year Winter I+0%	22.300	21.608	0.308	0.000	1.17	552.174	92.4	SURCHARGED
1.019	1041-Con	60 minute 30 year Winter I+0%	22.043	21.297	0.097	0.000	1.30	1.050	92.4	SURCHARGED
1.020	1042	60 minute 30 year Winter I+0%	22.030	21.161	-0.869	0.000	0.03	0.802	92.4	OK
1.021	1043-GR	60 minute 30 year Winter I+0%	21.545	21.109	0.070	0.000	1.50	14.201	92.1	SURCHARGED*
1.022	1044	60 minute 30 year Winter I+0%	21.456	20.938	-0.518	0.000	0.05	0.722	92.1	OK
11.000	1240	60 minute 30 year Summer I+0%	24.028	22.400	-0.129	0.000	0.38	0.103	25.1	OK
12.000	1270	60 minute 30 year Summer I+0%	23.557	21.992	-0.065	0.000	0.61	0.090	9.9	OK
11.001	1241	60 minute 30 year Summer I+0%	23.690	21.819	-0.170	0.000	0.39	0.240	40.8	OK
11.002	1242	60 minute 30 year Summer I+0%	23.194	21.598	-0.096	0.000	0.63	0.272	45.2	OK
11.003	1243	60 minute 30 year Summer I+0%	22.891	21.299	-0.167	0.000	0.41	0.197	52.8	OK
11.004	1244	60 minute 30 year Summer I+0%	22.624	21.033	-0.166	0.000	0.41	0.218	66.6	OK
11.005	1245	60 minute 30 year Summer I+0%	21.663	20.041	-0.122	0.000	0.66	0.238	96.7	OK
13.000	1250	60 minute 30 year Summer I+0%	22.519	21.094	-0.119	0.000	0.10	0.029	1.6	OK
13.001	1251	60 minute 30 year Summer I+0%	22.756	20.875	-0.096	0.000	0.62	0.179	22.3	OK
13.002	1252	60 minute 30 year Summer I+0%	22.692	20.768	-0.081	0.000	0.73	0.418	24.5	OK
13.003	1253	60 minute 30 year Summer I+0%	22.582	20.727	-0.137	0.000	0.47	0.384	37.6	OK
14.000	1300	60 minute 30 year Summer I+0%	24.043	22.481	-0.137	0.000	0.33	0.094	16.1	OK
15.000	1320	60 minute 30 year Summer I+0%	24.209	22.611	-0.098	0.000	0.27	0.054	9.4	OK
14.001	1302	60 minute 30 year Summer I+0%	24.056	22.138	-0.183	0.000	0.32	0.144	43.2	OK
16.000	1390	60 minute 30 year Summer I+0%	23.113	21.552	-0.061	0.000	0.66	0.095	10.6	OK
14.002	1303	60 minute 30 year Summer I+0%	23.316	21.325	-0.167	0.000	0.52	0.306	59.3	OK
14.003	1304	60 minute 30 year Summer I+0%	23.510	21.264	-0.195	0.000	0.53	1.752	67.6	OK
14.004	1305	60 minute 30 year Summer I+0%	23.373	21.229	-0.186	0.000	0.53	1.374	75.3	OK
14.005	1306	60 minute 30 year Summer I+0%	23.150	21.189	-0.168	0.000	0.64	1.823	77.6	OK
14.006	1307	60 minute 30 year Summer I+0%	23.042	21.160	-0.165	0.000	0.54	1.159	81.5	OK
17.000	1330	60 minute 30 year Summer I+0%	23.321	21.759	-0.137	0.000	0.33	0.094	19.8	OK
17.001	1331	60 minute 30 year Summer I+0%	22.979	21.336	-0.143	0.000	0.29	0.088	21.9	OK
14.007	1308	60 minute 30 year Summer I+0%	22.897	21.123	-0.137	0.000	0.82	2.223	103.8	OK
14.008	1309	60 minute 30 year Summer I+0%	22.785	21.019	-0.204	0.000	0.57	1.052	137.3	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.009	1310	60 minute 30 year Summer I+0%	22.330	20.804	-0.026	0.000	0.59	3.373	134.5	OK
18.000	1340	60 minute 30 year Summer I+0%	23.064	22.387	-0.073	0.000	0.52	0.081	10.3	OK
18.001	1341	60 minute 30 year Summer I+0%	22.933	22.121	-0.076	0.000	0.49	0.104	17.3	OK
19.000	1350	60 minute 30 year Summer I+0%	22.334	21.310	-0.140	0.000	0.31	0.091	13.6	OK
19.001	1351	60 minute 30 year Summer I+0%	22.453	21.156	-0.099	0.000	0.59	0.161	21.5	OK
18.002	1352	60 minute 30 year Summer I+0%	22.711	21.014	-0.119	0.000	0.65	0.347	63.3	OK
13.004	1254	60 minute 30 year Summer I+0%	22.251	20.687	-0.022	0.000	0.68	6.029	244.1	OK
13.005	1255	60 minute 30 year Summer I+0%	21.929	20.633	0.002	0.000	1.06	12.173	247.6	SURCHARGED
13.006	1256	60 minute 30 year Summer I+0%	21.861	20.603	0.000	0.000	1.16	4.844	251.9	OK
20.000	1360	60 minute 30 year Summer I+0%	21.191	20.426	0.150	0.000	0.10	0.419	3.8	SURCHARGED
21.000	1370	60 minute 30 year Summer I+0%	21.457	20.445	0.178	0.000	0.70	0.365	10.9	SURCHARGED
20.001	1361	60 minute 30 year Summer I+0%	21.339	20.422	0.226	0.000	0.57	1.045	19.5	SURCHARGED
20.002	1362	60 minute 30 year Summer I+0%	21.676	20.404	0.205	0.000	0.37	0.999	30.2	SURCHARGED
13.007	1257	60 minute 30 year Summer I+0%	21.952	20.385	-0.114	0.000	0.80	5.524	273.3	OK
13.008	1258	60 minute 30 year Summer I+0%	22.067	20.349	-0.111	0.000	0.97	7.407	270.4	OK
13.009	1259	60 minute 30 year Summer I+0%	21.898	20.308	-0.122	0.000	0.73	5.729	275.8	OK
13.010	1260	60 minute 30 year Summer I+0%	21.877	20.270	-0.115	0.000	0.59	8.340	271.3	OK
22.000	1380-GR	60 minute 30 year Winter I+0%	20.784	20.230	0.281	0.000	0.21	0.567	7.8	SURCHARGED
13.011	1261	60 minute 30 year Summer I+0%	21.281	20.214	0.000	0.000	1.40	19.646	276.4	OK
23.000	1400	60 minute 30 year Summer I+0%	24.601	23.070	-0.145	0.000	0.28	0.085	23.2	OK
23.001	1401	60 minute 30 year Summer I+0%	23.616	22.052	-0.128	0.000	0.39	0.126	25.1	OK
23.002	1402	60 minute 30 year Summer I+0%	23.461	21.858	-0.186	0.000	0.31	0.158	40.7	OK
23.003	1403	60 minute 30 year Summer I+0%	22.404	21.390	-0.188	0.000	0.30	0.127	40.8	OK
23.004	1404	60 minute 30 year Summer I+0%	22.405	21.091	-0.188	0.000	0.30	0.151	40.7	OK
24.000	1420	60 minute 30 year Summer I+0%	21.753	20.770	-0.083	0.000	0.41	0.070	7.6	OK
23.005	1405	60 minute 30 year Summer I+0%	21.881	20.599	-0.128	0.000	0.60	0.370	47.6	OK
23.006	1406	60 minute 30 year Summer I+0%	22.088	20.517	0.034	0.000	1.17	2.297	61.5	SURCHARGED
25.000	1430	60 minute 30 year Summer I+0%	25.344	23.768	-0.076	0.000	0.49	0.078	8.7	OK
25.001	1431	60 minute 30 year Summer I+0%	25.284	23.562	-0.132	0.000	0.35	0.139	18.5	OK
25.002	1432	60 minute 30 year Summer I+0%	24.984	23.303	-0.070	0.000	0.81	0.216	23.7	OK
26.000	1450	60 minute 30 year Summer I+0%	24.890	23.301	-0.085	0.000	0.39	0.068	5.8	OK
25.003	1433	60 minute 30 year Summer I+0%	24.846	23.194	-0.112	0.000	0.50	0.319	38.1	OK
25.004	1434	60 minute 30 year Summer I+0%	24.117	22.515	-0.102	0.000	0.58	0.182	41.2	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
25.005	1435	60 minute 30 year Summer I+0%	23.788	22.188	-0.100	0.000	0.59	0.183	46.0	OK
27.000	1460	60 minute 30 year Summer I+0%	23.295	22.230	-0.057	0.000	0.70	0.100	9.4	OK
27.001	1461	60 minute 30 year Summer I+0%	23.213	22.133	-0.080	0.000	0.44	0.115	14.1	OK
25.006	1436	60 minute 30 year Summer I+0%	23.289	21.656	-0.208	0.000	0.41	0.210	76.0	OK
25.007	1437	60 minute 30 year Summer I+0%	23.164	21.464	-0.153	0.000	0.65	0.737	82.8	OK
25.008	1438	60 minute 30 year Summer I+0%	23.066	21.368	-0.144	0.000	0.69	0.872	91.1	OK
25.009	1439	60 minute 30 year Summer I+0%	22.833	21.231	-0.167	0.000	0.59	0.837	97.0	OK
25.010	1440	60 minute 30 year Summer I+0%	22.579	20.999	-0.148	0.000	0.51	0.386	102.5	OK
23.007	1407	60 minute 30 year Summer I+0%	22.008	20.456	0.009	0.000	1.85	1.365	166.0	SURCHARGED
23.008	1408	60 minute 30 year Summer I+0%	21.925	20.322	-0.102	0.000	0.81	1.435	165.5	OK
23.009	1409	60 minute 30 year Summer I+0%	21.794	20.271	-0.022	0.000	0.98	1.591	165.2	OK
23.010	1410	60 minute 30 year Summer I+0%	21.717	20.220	0.004	0.000	1.25	1.731	165.5	SURCHARGED
23.011	1411	60 minute 30 year Summer I+0%	21.740	20.020	-0.147	0.000	0.78	1.937	181.1	OK
28.000	1470	60 minute 30 year Summer I+0%	25.814	24.248	-0.066	0.000	0.61	0.090	20.0	OK
29.000	1490	60 minute 30 year Summer I+0%	25.553	23.972	-0.081	0.000	0.44	0.073	7.1	OK
28.001	1471	60 minute 30 year Summer I+0%	25.718	23.793	-0.107	0.000	0.54	0.144	36.7	OK
28.002	1472	60 minute 30 year Summer I+0%	24.960	23.356	-0.104	0.000	0.56	0.185	40.3	OK
28.003	1473	60 minute 30 year Summer I+0%	24.700	23.104	-0.171	0.000	0.38	0.177	48.7	OK
28.004	1474	60 minute 30 year Summer I+0%	24.210	22.598	-0.112	0.000	0.72	0.281	55.6	OK
30.000	1500	60 minute 30 year Summer I+0%	24.347	22.779	-0.068	0.000	0.57	0.087	9.2	OK
30.001	1501	60 minute 30 year Summer I+0%	24.421	22.675	-0.130	0.000	0.37	0.148	16.2	OK
28.005	1475	60 minute 30 year Summer I+0%	24.340	22.480	-0.132	0.000	0.60	0.512	103.0	OK
28.006	1476	60 minute 30 year Summer I+0%	22.588	20.980	-0.183	0.000	0.52	0.358	114.4	OK
28.007	1477	60 minute 30 year Summer I+0%	22.250	20.762	0.012	0.000	1.10	1.291	117.4	SURCHARGED
28.008	1478	60 minute 30 year Summer I+0%	22.189	20.645	-0.043	0.000	1.00	0.700	121.2	OK
28.009	1479	60 minute 30 year Summer I+0%	22.093	20.429	-0.164	0.000	0.61	0.459	123.8	OK
28.010	1480	60 minute 30 year Summer I+0%	21.820	20.322	0.002	0.000	1.03	1.473	123.8	SURCHARGED
28.011	1481	60 minute 30 year Summer I+0%	21.725	20.215	-0.010	0.000	0.74	1.140	124.7	OK
31.000	1510	60 minute 30 year Summer I+0%	21.692	20.167	-0.025	0.000	0.51	0.135	10.2	OK
28.012	1482	60 minute 30 year Summer I+0%	21.596	20.115	0.074	0.000	1.64	1.035	134.6	SURCHARGED
32.000	1520	60 minute 30 year Summer I+0%	21.536	20.116	-0.085	0.000	0.39	0.068	6.4	OK
28.013	1483	60 minute 30 year Summer I+0%	21.528	19.936	-0.079	0.000	0.97	0.873	142.5	OK
33.000	1530	60 minute 30 year Summer I+0%	22.551	20.982	-0.069	0.000	0.57	0.086	9.9	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Maximum Vol (m^3)	Pipe Flow (l/s)	Status
33.001	1531	60 minute 30 year Summer I+0%	22.187	20.498	-0.166	0.000	0.41	0.149	35.8	OK
33.002	1532	60 minute 30 year Summer I+0%	22.030	20.386	-0.144	0.000	0.53	0.425	55.9	OK
33.003	1533	60 minute 30 year Summer I+0%	21.642	19.997	-0.145	0.000	0.53	0.404	55.8	OK
1.023	1100-Basin A1	480 minute 30 year Winter I+0%	20.600	19.899	0.199	0.000	0.84	1828.072	51.6	SURCHARGED
1.024	1101-Con	480 minute 30 year Winter I+0%	21.144	19.866	-1.278	0.000	0.01	1.112	51.6	OK
1.025	1102	480 minute 30 year Winter I+0%	21.298	19.576	-1.722	0.000	0.00	0.480	51.6	OK
1.026	1103	480 minute 30 year Winter I+0%	21.261	19.488	-1.773	0.000	0.00	1.888	51.6	OK
1.027	1104	480 minute 30 year Winter I+0%	21.175	19.392	-1.783	0.000	0.00	2.004	51.6	OK
1.028	1105	480 minute 30 year Winter I+0%	21.018	19.371	-1.647	0.000	0.00	0.282	51.6	OK
1.029	1106	480 minute 30 year Winter I+0%	20.969	19.246	-1.723	0.000	0.00	0.111	51.6	OK

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+0%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840
Return Period (years) 100 Site Location GB 450306 114752 Cv (Summer) 0.750

Margin for Flood Risk Warning (mm) 299.0 DVD Status OFF
Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%) 0, +20, +40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.000	1000	60 minute 100 year Summer Q+0%	28.090	26.516	-0.074	0.000	0.75	0.165	29.0	OK
1.001	1001	60 minute 100 year Summer Q+0%	27.700	25.910	-0.140	0.000	0.55	0.290	39.9	OK
1.002	1002	60 minute 100 year Summer Q+0%	27.650	25.795	-0.105	0.000	0.74	0.922	59.9	OK
2.000	1003	60 minute 100 year Summer Q+0%	29.650	28.002	-0.148	0.000	0.26	0.082	15.8	OK
2.001	1004	60 minute 100 year Summer Q+0%	29.150	27.529	-0.121	0.000	0.43	0.155	39.6	OK
1.003	1005	60 minute 100 year Summer Q+0%	27.400	25.632	-0.118	0.000	0.67	0.706	116.3	OK
1.004	1006	60 minute 100 year Summer Q+0%	25.900	24.325	-0.100	0.000	0.77	0.371	123.2	OK
3.000	1010	60 minute 100 year Summer Q+0%	25.950	24.639	-0.048	0.000	0.76	0.110	14.3	OK
4.000	1011	60 minute 100 year Summer Q+0%	26.150	24.738	0.088	0.000	1.21	0.263	23.2	SURCHARGED
3.001	1012	60 minute 100 year Summer Q+0%	26.060	24.546	0.029	0.000	1.01	0.483	59.8	SURCHARGED

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+0%% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	60 minute 100 year Summer Q+0%	25.177	23.702	0.039	0.000	1.24	0.293	38.7	SURCHARGED
3.002	1015	60 minute 100 year Summer Q+0%	25.292	23.601	0.029	0.000	0.85	1.746	134.3	SURCHARGED
1.005	1016	60 minute 100 year Summer Q+0%	25.132	23.520	0.089	0.000	0.84	8.938	248.4	SURCHARGED
6.000	1017	60 minute 100 year Summer Q+0%	24.684	23.675	-0.109	0.000	0.53	0.126	26.3	OK
6.001	1018	60 minute 100 year Summer Q+0%	24.517	23.578	-0.114	0.000	0.70	0.430	40.9	OK
6.002	1019	60 minute 100 year Summer Q+0%	24.483	23.523	-0.119	0.000	0.67	0.553	43.0	OK
6.003	1020	60 minute 100 year Summer Q+0%	24.401	23.492	-0.009	0.000	0.41	1.062	69.2	OK
6.004	1021	60 minute 100 year Summer Q+0%	24.792	23.473	0.149	0.000	0.65	3.305	68.8	SURCHARGED
1.006	1022	60 minute 100 year Summer Q+0%	24.781	23.451	-0.055	0.000	0.78	8.485	339.4	OK
1.007	1022-1	60 minute 100 year Summer Q+0%	24.777	23.417	-0.041	0.000	0.84	7.374	329.1	OK
7.000	1023	60 minute 100 year Summer Q+0%	26.130	24.579	-0.126	0.000	0.63	0.191	92.2	OK
1.008	1024	60 minute 100 year Summer Q+0%	24.772	23.363	-0.048	0.000	0.71	11.226	401.0	OK
8.000	1200	240 minute 100 year Winter Q+0%	27.500	26.450	-0.150	0.000	0.00	0.000	0.0	OK
8.001	1201	60 minute 100 year Summer Q+0%	27.500	26.335	-0.144	0.000	0.00	0.003	0.0	OK
8.002	1202	60 minute 100 year Summer Q+0%	27.500	26.344	0.015	0.000	0.18	0.392	2.4	SURCHARGED
8.003	1203	60 minute 100 year Summer Q+0%	27.500	26.361	0.202	0.000	0.44	0.822	5.8	SURCHARGED
8.004	1204	60 minute 100 year Summer Q+0%	29.087	26.392	0.318	0.000	1.09	0.813	39.9	SURCHARGED
8.005	1205	60 minute 100 year Summer Q+0%	27.811	26.211	0.291	0.000	1.25	1.569	47.7	SURCHARGED
8.006	1206	60 minute 100 year Summer Q+0%	27.524	25.759	0.128	0.000	1.41	1.873	47.6	SURCHARGED
8.007	1207	60 minute 100 year Summer Q+0%	27.426	25.625	0.061	0.000	1.49	0.705	49.2	SURCHARGED
8.008	1208	60 minute 100 year Summer Q+0%	26.998	25.328	-0.102	0.000	0.57	0.163	62.0	OK
8.009	1209	60 minute 100 year Summer Q+0%	26.379	24.814	-0.016	0.000	1.00	0.413	64.0	OK
8.010	1210	60 minute 100 year Summer Q+0%	26.215	24.529	-0.191	0.000	0.28	0.337	72.5	OK
1.009	1025	60 minute 100 year Summer Q+0%	25.088	23.293	0.017	0.000	0.92	19.827	465.3	SURCHARGED
1.010	1026	60 minute 100 year Summer Q+0%	25.289	23.216	0.030	0.000	0.79	15.187	465.8	SURCHARGED
9.000	1220	60 minute 100 year Summer Q+0%	27.285	25.709	-0.076	0.000	0.49	0.078	10.0	OK
9.001	1221	60 minute 100 year Summer Q+0%	27.141	25.586	-0.055	0.000	0.72	0.128	17.4	OK
9.002	1222	60 minute 100 year Summer Q+0%	26.967	25.353	-0.114	0.000	0.48	0.122	54.9	OK
1.011	1027	60 minute 100 year Summer Q+0%	25.490	23.160	0.013	0.000	1.14	9.952	522.4	SURCHARGED
1.012	1028	60 minute 100 year Summer Q+0%	25.502	23.137	0.020	0.000	1.36	5.396	527.4	SURCHARGED
1.013	1029	60 minute 100 year Summer Q+0%	25.379	23.110	0.009	0.000	1.27	6.722	531.2	SURCHARGED
1.014	1030	60 minute 100 year Summer Q+0%	25.208	23.084	0.000	0.000	1.62	6.033	534.0	OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.015	1031	60 minute 100 year Summer Q+0%	25.038	22.478	-0.590	0.000	0.26	1.953	535.3	OK
1.016	1032	60 minute 100 year Summer Q+0%	23.804	22.178	-0.051	0.000	1.02	15.687	533.8	OK
10.000	1230	60 minute 100 year Summer Q+0%	24.214	22.640	-0.074	0.000	0.51	0.080	8.2	OK
10.001	1231	60 minute 100 year Summer Q+0%	24.092	22.467	-0.122	0.000	0.43	0.113	34.0	OK
1.017	1033	60 minute 100 year Summer Q+0%	23.962	21.777	-0.411	0.000	0.57	6.835	548.0	OK
1.018	1040-Basin A2	60 minute 100 year Winter Q+0%	22.300	21.749	0.449	0.000	1.31	714.556	103.5	SURCHARGED
1.019	1041-Con	60 minute 100 year Winter Q+0%	22.043	21.359	0.159	0.000	1.46	1.127	103.5	SURCHARGED
1.020	1042	60 minute 100 year Winter Q+0%	22.030	21.189	-0.841	0.000	0.03	0.842	103.4	OK
1.021	1043-GR	60 minute 100 year Winter Q+0%	21.545	21.143	0.104	0.000	1.68	16.872	103.0	SURCHARGED*
1.022	1044	60 minute 100 year Winter Q+0%	21.456	20.951	-0.505	0.000	0.06	0.762	103.0	OK
11.000	1240	60 minute 100 year Summer Q+0%	24.028	22.415	-0.114	0.000	0.49	0.119	31.9	OK
12.000	1270	60 minute 100 year Summer Q+0%	23.557	22.007	-0.050	0.000	0.77	0.107	12.6	OK
11.001	1241	60 minute 100 year Summer Q+0%	23.690	21.839	-0.150	0.000	0.50	0.308	51.9	OK
11.002	1242	60 minute 100 year Summer Q+0%	23.194	21.622	-0.072	0.000	0.80	0.362	57.5	OK
11.003	1243	60 minute 100 year Summer Q+0%	22.891	21.319	-0.147	0.000	0.52	0.239	67.1	OK
11.004	1244	60 minute 100 year Summer Q+0%	22.624	21.054	-0.145	0.000	0.52	0.270	84.7	OK
11.005	1245	60 minute 100 year Summer Q+0%	21.663	20.074	-0.089	0.000	0.84	0.301	123.1	OK
13.000	1250	60 minute 100 year Summer Q+0%	22.519	21.098	-0.115	0.000	0.12	0.033	2.0	OK
13.001	1251	60 minute 100 year Summer Q+0%	22.756	20.906	-0.065	0.000	0.78	0.251	28.1	OK
13.002	1252	60 minute 100 year Summer Q+0%	22.692	20.836	-0.013	0.000	0.89	0.745	29.8	OK
13.003	1253	60 minute 100 year Summer Q+0%	22.582	20.788	-0.076	0.000	0.57	0.545	45.5	OK
14.000	1300	60 minute 100 year Summer Q+0%	24.043	22.494	-0.124	0.000	0.42	0.109	20.5	OK
15.000	1320	60 minute 100 year Summer Q+0%	24.209	22.619	-0.090	0.000	0.34	0.062	12.0	OK
14.001	1302	60 minute 100 year Summer Q+0%	24.056	22.154	-0.167	0.000	0.41	0.184	55.0	OK
16.000	1390	60 minute 100 year Summer Q+0%	23.113	21.568	-0.045	0.000	0.84	0.114	13.5	OK
14.002	1303	60 minute 100 year Summer Q+0%	23.316	21.371	-0.121	0.000	0.67	0.439	75.2	OK
14.003	1304	60 minute 100 year Summer Q+0%	23.510	21.322	-0.137	0.000	0.67	2.323	85.1	OK
14.004	1305	60 minute 100 year Summer Q+0%	23.373	21.293	-0.122	0.000	0.66	1.835	94.4	OK
14.005	1306	60 minute 100 year Summer Q+0%	23.150	21.260	-0.097	0.000	0.80	2.444	96.1	OK
14.006	1307	60 minute 100 year Summer Q+0%	23.042	21.235	-0.090	0.000	0.66	1.550	99.0	OK
17.000	1330	60 minute 100 year Summer Q+0%	23.321	21.772	-0.124	0.000	0.42	0.108	25.2	OK
17.001	1331	60 minute 100 year Summer Q+0%	22.979	21.348	-0.131	0.000	0.36	0.102	27.8	OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.007	1308	60 minute 100 year Summer Q+0%	22.897	21.197	-0.063	0.000	1.00	2.934	125.9	OK
14.008	1309	60 minute 100 year Summer Q+0%	22.785	21.063	-0.160	0.000	0.71	1.322	172.0	OK
14.009	1310	60 minute 100 year Summer Q+0%	22.330	20.903	0.073	0.000	0.75	5.237	171.8	SURCHARGED
18.000	1340	60 minute 100 year Summer Q+0%	23.064	22.400	-0.060	0.000	0.66	0.096	13.2	OK
18.001	1341	60 minute 100 year Summer Q+0%	22.933	22.133	-0.064	0.000	0.62	0.122	22.1	OK
19.000	1350	60 minute 100 year Summer Q+0%	22.334	21.322	-0.128	0.000	0.39	0.104	17.3	OK
19.001	1351	60 minute 100 year Summer Q+0%	22.453	21.178	-0.077	0.000	0.76	0.210	27.4	OK
18.002	1352	60 minute 100 year Summer Q+0%	22.711	21.101	-0.032	0.000	0.81	0.761	78.7	OK
13.004	1254	60 minute 100 year Summer Q+0%	22.251	20.711	0.002	0.000	0.92	6.464	331.1	SURCHARGED
13.005	1255	60 minute 100 year Summer Q+0%	21.929	20.643	0.012	0.000	1.44	12.346	336.1	SURCHARGED
13.006	1256	60 minute 100 year Summer Q+0%	21.861	20.603	0.000	0.000	1.57	4.844	342.6	OK
20.000	1360	60 minute 100 year Summer Q+0%	21.191	20.587	0.311	0.000	0.13	0.600	4.8	SURCHARGED
21.000	1370	60 minute 100 year Summer Q+0%	21.457	20.646	0.379	0.000	0.87	0.593	13.7	SURCHARGED
20.001	1361	60 minute 100 year Summer Q+0%	21.339	20.580	0.384	0.000	0.70	1.223	23.9	SURCHARGED
20.002	1362	60 minute 100 year Summer Q+0%	21.676	20.547	0.348	0.000	0.48	1.162	38.4	SURCHARGED
13.007	1257	60 minute 100 year Summer Q+0%	21.952	20.513	0.014	0.000	1.11	6.735	379.3	SURCHARGED
13.008	1258	60 minute 100 year Summer Q+0%	22.067	20.471	0.011	0.000	1.37	8.770	381.2	SURCHARGED
13.009	1259	60 minute 100 year Summer Q+0%	21.898	20.430	0.000	0.000	1.04	6.837	394.3	OK
13.010	1260	60 minute 100 year Summer Q+0%	21.877	20.329	-0.056	0.000	0.84	9.217	387.4	OK
22.000	1380-GR	60 minute 100 year Summer Q+0%	20.784	20.244	0.295	0.000	0.32	0.582	12.0	SURCHARGED
13.011	1261	60 minute 100 year Winter Q+0%	21.281	20.214	0.000	0.000	1.80	19.647	354.0	OK
23.000	1400	60 minute 100 year Summer Q+0%	24.601	23.082	-0.133	0.000	0.35	0.099	29.5	OK
23.001	1401	60 minute 100 year Summer Q+0%	23.616	22.067	-0.113	0.000	0.49	0.151	31.9	OK
23.002	1402	60 minute 100 year Summer Q+0%	23.461	21.875	-0.169	0.000	0.39	0.193	51.8	OK
23.003	1403	60 minute 100 year Summer Q+0%	22.404	21.406	-0.172	0.000	0.38	0.158	51.9	OK
23.004	1404	60 minute 100 year Summer Q+0%	22.405	21.107	-0.172	0.000	0.38	0.184	51.8	OK
24.000	1420	60 minute 100 year Summer Q+0%	21.753	20.881	0.028	0.000	0.52	0.196	9.5	SURCHARGED
23.005	1405	60 minute 100 year Summer Q+0%	21.881	20.853	0.126	0.000	0.70	1.646	56.0	SURCHARGED
23.006	1406	60 minute 100 year Summer Q+0%	22.088	20.737	0.254	0.000	1.37	3.427	72.0	SURCHARGED
25.000	1430	60 minute 100 year Summer Q+0%	25.344	23.780	-0.064	0.000	0.63	0.092	11.1	OK
25.001	1431	60 minute 100 year Summer Q+0%	25.284	23.575	-0.119	0.000	0.45	0.161	23.6	OK
25.002	1432	60 minute 100 year Summer Q+0%	24.984	23.362	-0.011	0.000	1.00	0.348	29.3	OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
26.000	1450	60 minute 100 year Summer Q+0%	24.890	23.311	-0.075	0.000	0.50	0.079	7.3	OK
25.003	1433	60 minute 100 year Summer Q+0%	24.846	23.211	-0.095	0.000	0.63	0.408	47.6	OK
25.004	1434	60 minute 100 year Summer Q+0%	24.117	22.536	-0.081	0.000	0.73	0.227	51.8	OK
25.005	1435	60 minute 100 year Summer Q+0%	23.788	22.209	-0.079	0.000	0.75	0.228	58.0	OK
27.000	1460	60 minute 100 year Summer Q+0%	23.295	22.248	-0.039	0.000	0.90	0.120	12.0	OK
27.001	1461	60 minute 100 year Summer Q+0%	23.213	22.143	-0.070	0.000	0.56	0.134	18.0	OK
25.006	1436	60 minute 100 year Summer Q+0%	23.289	21.682	-0.182	0.000	0.52	0.250	96.4	OK
25.007	1437	60 minute 100 year Summer Q+0%	23.164	21.504	-0.113	0.000	0.83	1.015	105.2	OK
25.008	1438	60 minute 100 year Summer Q+0%	23.066	21.411	-0.101	0.000	0.87	1.114	115.6	OK
25.009	1439	60 minute 100 year Summer Q+0%	22.833	21.268	-0.130	0.000	0.75	1.079	123.1	OK
25.010	1440	60 minute 100 year Summer Q+0%	22.579	21.023	-0.124	0.000	0.64	0.490	130.2	OK
23.007	1407	60 minute 100 year Summer Q+0%	22.008	20.655	0.208	0.000	2.22	1.977	200.0	SURCHARGED
23.008	1408	60 minute 100 year Summer Q+0%	21.925	20.526	0.102	0.000	0.98	2.133	200.7	SURCHARGED
23.009	1409	60 minute 100 year Summer Q+0%	21.794	20.398	0.105	0.000	1.19	1.952	200.9	SURCHARGED
23.010	1410	60 minute 100 year Summer Q+0%	21.717	20.270	0.054	0.000	1.51	1.892	199.9	SURCHARGED
23.011	1411	60 minute 100 year Summer Q+0%	21.740	20.064	-0.103	0.000	0.94	2.302	218.1	OK
28.000	1470	60 minute 100 year Summer Q+0%	25.814	24.263	-0.051	0.000	0.77	0.107	25.5	OK
29.000	1490	60 minute 100 year Summer Q+0%	25.553	23.983	-0.070	0.000	0.56	0.085	9.1	OK
28.001	1471	60 minute 100 year Summer Q+0%	25.718	23.813	-0.087	0.000	0.69	0.186	46.7	OK
28.002	1472	60 minute 100 year Summer Q+0%	24.960	23.377	-0.083	0.000	0.71	0.235	51.3	OK
28.003	1473	60 minute 100 year Summer Q+0%	24.700	23.123	-0.152	0.000	0.49	0.214	62.0	OK
28.004	1474	60 minute 100 year Summer Q+0%	24.210	22.634	-0.076	0.000	0.91	0.384	70.8	OK
30.000	1500	60 minute 100 year Summer Q+0%	24.347	22.793	-0.054	0.000	0.73	0.102	11.7	OK
30.001	1501	60 minute 100 year Summer Q+0%	24.421	22.689	-0.116	0.000	0.47	0.174	20.7	OK
28.005	1475	60 minute 100 year Summer Q+0%	24.340	22.510	-0.102	0.000	0.76	0.647	130.9	OK
28.006	1476	60 minute 100 year Summer Q+0%	22.588	21.065	-0.098	0.000	0.65	0.637	143.9	OK
28.007	1477	60 minute 100 year Summer Q+0%	22.250	20.934	0.184	0.000	1.35	2.387	144.8	SURCHARGED
28.008	1478	60 minute 100 year Summer Q+0%	22.189	20.804	0.116	0.000	1.23	0.982	148.6	SURCHARGED
28.009	1479	60 minute 100 year Summer Q+0%	22.093	20.665	0.072	0.000	0.73	1.024	148.4	SURCHARGED
28.010	1480	60 minute 100 year Summer Q+0%	21.820	20.522	0.202	0.000	1.24	2.256	149.2	SURCHARGED
28.011	1481	60 minute 100 year Summer Q+0%	21.725	20.377	0.152	0.000	0.90	1.472	150.4	SURCHARGED
31.000	1510	60 minute 100 year Summer Q+0%	21.692	20.312	0.120	0.000	0.62	0.300	12.3	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
28.012	1482	60 minute 100 year Summer Q+0%	21.596	20.229	0.188	0.000	1.99	1.246	163.4	SURCHARGED
32.000	1520	60 minute 100 year Summer Q+0%	21.536	20.126	-0.075	0.000	0.49	0.079	8.2	OK
28.013	1483	60 minute 100 year Summer Q+0%	21.528	20.054	0.039	0.000	1.19	1.357	174.0	SURCHARGED
33.000	1530	60 minute 100 year Summer Q+0%	22.551	20.996	-0.055	0.000	0.72	0.101	12.6	OK
33.001	1531	60 minute 100 year Summer Q+0%	22.187	20.519	-0.145	0.000	0.52	0.174	45.5	OK
33.002	1532	60 minute 100 year Summer Q+0%	22.030	20.411	-0.119	0.000	0.67	0.539	71.1	OK
33.003	1533	60 minute 100 year Summer Q+0%	21.642	20.022	-0.120	0.000	0.67	0.513	71.0	OK
1.023	1100-Basin A1	480 minute 100 year Winter Q+0%	20.600	20.005	0.305	0.000	0.90	2281.086	55.2	SURCHARGED
1.024	1101-Con	480 minute 100 year Winter Q+0%	21.144	19.967	-1.177	0.000	0.01	1.227	55.2	OK
1.025	1102	480 minute 100 year Winter Q+0%	21.298	19.581	-1.717	0.000	0.00	0.518	55.2	OK
1.026	1103	480 minute 100 year Winter Q+0%	21.261	19.493	-1.768	0.000	0.00	2.017	55.2	OK
1.027	1104	480 minute 100 year Winter Q+0%	21.175	19.397	-1.778	0.000	0.00	2.137	55.2	OK
1.028	1105	480 minute 100 year Winter Q+0%	21.018	19.375	-1.643	0.000	0.00	0.318	55.2	OK
1.029	1106	480 minute 100 year Winter Q+0%	20.969	19.249	-1.720	0.000	0.00	0.115	55.2	OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840
Return Period (years) 100 Site Location GB 450306 114752 Cv (Summer) 0.750

Margin for Flood Risk Warning (mm) 299.0 DVD Status OFF
Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%) 0, +20, +40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.000	1000	60 minute 100 year Summer Q+20%	28.090	26.537	-0.053	0.000	0.90	0.189	34.9	OK
1.001	1001	60 minute 100 year Summer Q+20%	27.700	25.930	-0.120	0.000	0.66	0.352	48.0	OK
1.002	1002	60 minute 100 year Summer Q+20%	27.650	25.823	-0.077	0.000	0.89	1.146	72.0	OK
2.000	1003	60 minute 100 year Summer Q+20%	29.650	28.010	-0.140	0.000	0.31	0.091	19.0	OK
2.001	1004	60 minute 100 year Summer Q+20%	29.150	27.541	-0.109	0.000	0.52	0.187	47.6	OK
1.003	1005	60 minute 100 year Summer Q+20%	27.400	25.657	-0.093	0.000	0.81	0.863	139.8	OK
1.004	1006	60 minute 100 year Summer Q+20%	25.900	24.504	0.079	0.000	0.90	0.986	142.5	SURCHARGED
3.000	1010	60 minute 100 year Summer Q+20%	25.950	24.990	0.303	0.000	0.79	0.506	14.9	SURCHARGED
4.000	1011	60 minute 100 year Summer Q+20%	26.150	25.111	0.461	0.000	1.29	0.685	24.8	SURCHARGED
3.001	1012	60 minute 100 year Summer Q+20%	26.060	24.891	0.374	0.000	1.06	1.007	62.6	SURCHARGED

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PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	60 minute 100 year Summer Q+20%	25.177	23.988	0.325	0.000	1.41	0.616	44.0	SURCHARGED
3.002	1015	60 minute 100 year Summer Q+20%	25.292	23.845	0.273	0.000	0.92	2.884	145.3	SURCHARGED
1.005	1016	60 minute 100 year Summer Q+20%	25.132	23.731	0.300	0.000	0.97	10.045	289.6	SURCHARGED
6.000	1017	60 minute 100 year Summer Q+20%	24.684	23.746	-0.038	0.000	0.64	0.206	31.6	OK
6.001	1018	60 minute 100 year Summer Q+20%	24.517	23.701	0.009	0.000	0.82	0.807	48.3	SURCHARGED
6.002	1019	60 minute 100 year Summer Q+20%	24.483	23.672	0.030	0.000	0.78	1.065	49.9	SURCHARGED
6.003	1020	60 minute 100 year Summer Q+20%	24.401	23.643	0.141	0.000	0.47	1.549	79.0	SURCHARGED
6.004	1021	60 minute 100 year Summer Q+20%	24.792	23.619	0.295	0.000	0.72	3.540	76.4	SURCHARGED
1.006	1022	60 minute 100 year Summer Q+20%	24.781	23.591	0.085	0.000	0.91	8.847	395.7	SURCHARGED
1.007	1022-1	60 minute 100 year Summer Q+20%	24.777	23.548	0.090	0.000	0.99	8.311	388.9	SURCHARGED
7.000	1023	60 minute 100 year Summer Q+20%	26.130	24.602	-0.103	0.000	0.76	0.217	110.4	OK
1.008	1024	60 minute 100 year Summer Q+20%	24.772	23.501	0.090	0.000	0.86	13.108	486.9	SURCHARGED
8.000	1200	60 minute 100 year Summer Q+20%	27.500	26.559	-0.041	0.000	0.07	0.118	0.9	OK
8.001	1201	60 minute 100 year Summer Q+20%	27.500	26.569	0.090	0.000	0.29	0.543	4.0	SURCHARGED
8.002	1202	60 minute 100 year Summer Q+20%	27.500	26.579	0.250	0.000	0.49	0.824	6.7	SURCHARGED
8.003	1203	60 minute 100 year Summer Q+20%	27.500	26.628	0.469	0.000	0.75	1.125	9.9	SURCHARGED
8.004	1204	60 minute 100 year Summer Q+20%	29.087	26.674	0.600	0.000	1.24	1.132	45.4	SURCHARGED
8.005	1205	60 minute 100 year Summer Q+20%	27.811	26.448	0.528	0.000	1.44	1.837	54.9	SURCHARGED
8.006	1206	60 minute 100 year Summer Q+20%	27.524	25.849	0.218	0.000	1.64	2.303	55.3	SURCHARGED
8.007	1207	60 minute 100 year Summer Q+20%	27.426	25.670	0.106	0.000	1.72	0.773	57.0	SURCHARGED
8.008	1208	60 minute 100 year Summer Q+20%	26.998	25.342	-0.088	0.000	0.67	0.196	72.8	OK
8.009	1209	60 minute 100 year Summer Q+20%	26.379	24.862	0.032	0.000	1.18	0.495	75.8	SURCHARGED
8.010	1210	60 minute 100 year Summer Q+20%	26.215	24.539	-0.181	0.000	0.33	0.419	85.1	OK
1.009	1025	60 minute 100 year Summer Q+20%	25.088	23.399	0.123	0.000	1.14	21.132	577.3	SURCHARGED
1.010	1026	60 minute 100 year Summer Q+20%	25.289	23.281	0.095	0.000	0.98	15.788	576.1	SURCHARGED
9.000	1220	60 minute 100 year Summer Q+20%	27.285	25.718	-0.067	0.000	0.59	0.088	12.0	OK
9.001	1221	60 minute 100 year Summer Q+20%	27.141	25.600	-0.041	0.000	0.87	0.149	20.9	OK
9.002	1222	60 minute 100 year Summer Q+20%	26.967	25.366	-0.101	0.000	0.58	0.141	66.0	OK
1.011	1027	60 minute 100 year Summer Q+20%	25.490	23.195	0.048	0.000	1.43	10.125	654.5	SURCHARGED
1.012	1028	60 minute 100 year Summer Q+20%	25.502	23.160	0.043	0.000	1.71	5.498	659.8	SURCHARGED
1.013	1029	60 minute 100 year Summer Q+20%	25.379	23.122	0.021	0.000	1.59	6.781	663.3	SURCHARGED
1.014	1030	60 minute 100 year Summer Q+20%	25.208	23.084	0.000	0.000	2.02	6.033	665.2	OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.015	1031	60 minute 100 year Summer Q+20%	25.038	22.520	-0.548	0.000	0.32	2.394	668.6	OK
1.016	1032	60 minute 100 year Summer Q+20%	23.804	22.229	0.000	0.000	1.34	17.512	707.1	OK
10.000	1230	60 minute 100 year Summer Q+20%	24.214	22.649	-0.065	0.000	0.61	0.090	9.9	OK
10.001	1231	60 minute 100 year Summer Q+20%	24.092	22.479	-0.110	0.000	0.52	0.135	40.8	OK
1.017	1033	60 minute 100 year Winter Q+20%	23.962	21.884	-0.304	0.000	0.71	9.096	675.0	OK
1.018	1040-Basin A2	60 minute 100 year Winter Q+20%	22.300	21.875	0.575	0.000	1.42	870.805	112.6	SURCHARGED
1.019	1041-Con	60 minute 100 year Winter Q+20%	22.043	21.414	0.214	0.000	1.59	1.188	112.6	SURCHARGED
1.020	1042	60 minute 100 year Winter Q+20%	22.030	21.213	-0.817	0.000	0.03	0.876	112.6	OK
1.021	1043-GR	60 minute 100 year Winter Q+20%	21.545	21.174	0.135	0.000	1.82	19.989	111.8	SURCHARGED*
1.022	1044	60 minute 100 year Winter Q+20%	21.456	20.960	-0.496	0.000	0.06	0.793	111.8	OK
11.000	1240	60 minute 100 year Summer Q+20%	24.028	22.428	-0.101	0.000	0.58	0.134	38.3	OK
12.000	1270	60 minute 100 year Summer Q+20%	23.557	22.021	-0.036	0.000	0.93	0.123	15.1	OK
11.001	1241	60 minute 100 year Summer Q+20%	23.690	21.856	-0.133	0.000	0.60	0.369	62.4	OK
11.002	1242	60 minute 100 year Summer Q+20%	23.194	21.644	-0.050	0.000	0.96	0.447	69.1	OK
11.003	1243	60 minute 100 year Summer Q+20%	22.891	21.338	-0.128	0.000	0.62	0.278	80.7	OK
11.004	1244	60 minute 100 year Summer Q+20%	22.624	21.072	-0.127	0.000	0.63	0.316	101.9	OK
11.005	1245	480 minute 100 year Winter Q+20%	21.663	20.132	-0.031	0.000	0.15	0.465	22.7	OK
13.000	1250	60 minute 100 year Summer Q+20%	22.519	21.101	-0.112	0.000	0.15	0.037	2.5	OK
13.001	1251	60 minute 100 year Summer Q+20%	22.756	21.006	0.035	0.000	0.89	0.509	32.2	SURCHARGED
13.002	1252	60 minute 100 year Summer Q+20%	22.692	20.908	0.059	0.000	1.04	1.013	34.7	SURCHARGED
13.003	1253	60 minute 100 year Summer Q+20%	22.582	20.847	-0.017	0.000	0.67	0.651	53.5	OK
14.000	1300	60 minute 100 year Summer Q+20%	24.043	22.506	-0.112	0.000	0.50	0.122	24.6	OK
15.000	1320	60 minute 100 year Summer Q+20%	24.209	22.626	-0.083	0.000	0.41	0.070	14.4	OK
14.001	1302	60 minute 100 year Summer Q+20%	24.056	22.170	-0.151	0.000	0.49	0.221	66.1	OK
16.000	1390	60 minute 100 year Summer Q+20%	23.113	21.593	-0.020	0.000	1.00	0.142	16.0	OK
14.002	1303	60 minute 100 year Summer Q+20%	23.316	21.482	-0.010	0.000	0.78	0.922	88.0	OK
14.003	1304	60 minute 100 year Summer Q+20%	23.510	21.422	-0.037	0.000	0.79	3.094	100.3	OK
14.004	1305	60 minute 100 year Summer Q+20%	23.373	21.389	-0.026	0.000	0.77	2.456	110.3	OK
14.005	1306	60 minute 100 year Summer Q+20%	23.150	21.349	-0.008	0.000	0.94	3.096	113.8	OK
14.006	1307	60 minute 100 year Summer Q+20%	23.042	21.320	-0.005	0.000	0.80	1.924	119.1	OK
17.000	1330	60 minute 100 year Summer Q+20%	23.321	21.784	-0.112	0.000	0.50	0.122	30.3	OK
17.001	1331	60 minute 100 year Summer Q+20%	22.979	21.358	-0.121	0.000	0.44	0.114	33.5	OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.007	1308	60 minute 100 year Summer Q+20%	22.897	21.275	0.015	0.000	1.21	3.493	151.7	SURCHARGED
14.008	1309	60 minute 100 year Summer Q+20%	22.785	21.227	0.004	0.000	0.83	2.181	199.6	SURCHARGED
14.009	1310	60 minute 100 year Summer Q+20%	22.330	21.013	0.183	0.000	0.87	6.917	199.5	SURCHARGED
18.000	1340	60 minute 100 year Summer Q+20%	23.064	22.412	-0.048	0.000	0.80	0.110	15.8	OK
18.001	1341	60 minute 100 year Summer Q+20%	22.933	22.145	-0.052	0.000	0.75	0.139	26.5	OK
19.000	1350	60 minute 100 year Summer Q+20%	22.334	21.376	-0.074	0.000	0.46	0.165	20.4	OK
19.001	1351	60 minute 100 year Summer Q+20%	22.453	21.346	0.091	0.000	0.87	0.697	31.5	SURCHARGED
18.002	1352	60 minute 100 year Summer Q+20%	22.711	21.266	0.133	0.000	0.94	1.334	91.0	SURCHARGED
13.004	1254	60 minute 100 year Summer Q+20%	22.251	20.753	0.044	0.000	1.05	7.152	379.1	SURCHARGED
13.005	1255	60 minute 100 year Summer Q+20%	21.929	20.667	0.036	0.000	1.65	12.666	384.3	SURCHARGED
13.006	1256	60 minute 100 year Summer Q+20%	21.861	20.616	0.013	0.000	1.81	4.927	393.7	SURCHARGED
20.000	1360	60 minute 100 year Summer Q+20%	21.191	20.652	0.376	0.000	0.17	0.674	6.2	SURCHARGED
21.000	1370	60 minute 100 year Summer Q+20%	21.457	20.758	0.491	0.000	1.08	0.719	17.0	SURCHARGED
20.001	1361	60 minute 100 year Summer Q+20%	21.339	20.642	0.446	0.000	0.89	1.294	30.5	SURCHARGED
20.002	1362	60 minute 100 year Summer Q+20%	21.676	20.589	0.390	0.000	0.58	1.209	47.2	SURCHARGED
13.007	1257	60 minute 100 year Summer Q+20%	21.952	20.543	0.044	0.000	1.29	6.997	440.2	SURCHARGED
13.008	1258	60 minute 100 year Summer Q+20%	22.067	20.493	0.033	0.000	1.59	8.974	444.6	SURCHARGED
13.009	1259	60 minute 100 year Summer Q+20%	21.898	20.446	0.016	0.000	1.22	6.951	464.2	SURCHARGED
13.010	1260	60 minute 100 year Summer Q+20%	21.877	20.385	0.000	0.000	1.00	9.831	460.4	OK
22.000	1380-GR	60 minute 100 year Summer Q+20%	20.784	20.270	0.321	0.000	0.40	0.612	15.1	SURCHARGED
13.011	1261	60 minute 100 year Summer Q+20%	21.281	20.247	0.033	0.000	2.36	20.626	466.0	SURCHARGED
23.000	1400	60 minute 100 year Summer Q+20%	24.601	23.092	-0.123	0.000	0.42	0.110	35.5	OK
23.001	1401	60 minute 100 year Summer Q+20%	23.616	22.080	-0.100	0.000	0.59	0.178	38.4	OK
23.002	1402	60 minute 100 year Summer Q+20%	23.461	21.890	-0.154	0.000	0.47	0.224	62.3	OK
23.003	1403	60 minute 100 year Summer Q+20%	22.404	21.420	-0.158	0.000	0.46	0.184	62.3	OK
23.004	1404	60 minute 100 year Summer Q+20%	22.405	21.197	-0.082	0.000	0.45	0.381	61.7	OK
24.000	1420	60 minute 100 year Summer Q+20%	21.753	21.145	0.292	0.000	0.57	0.494	10.5	SURCHARGED
23.005	1405	60 minute 100 year Summer Q+20%	21.881	21.108	0.381	0.000	0.81	2.812	64.6	SURCHARGED
23.006	1406	60 minute 100 year Summer Q+20%	22.088	20.948	0.465	0.000	1.59	3.676	83.7	SURCHARGED
25.000	1430	60 minute 100 year Summer Q+20%	25.344	23.792	-0.052	0.000	0.75	0.105	13.4	OK
25.001	1431	60 minute 100 year Summer Q+20%	25.284	23.588	-0.106	0.000	0.54	0.193	28.4	OK
25.002	1432	60 minute 100 year Summer Q+20%	24.984	23.398	0.025	0.000	1.23	0.478	36.1	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
26.000	1450	60 minute 100 year Summer Q+20%	24.890	23.320	-0.066	0.000	0.60	0.089	8.8	OK
25.003	1433	60 minute 100 year Summer Q+20%	24.846	23.230	-0.076	0.000	0.77	0.505	57.9	OK
25.004	1434	60 minute 100 year Summer Q+20%	24.117	22.557	-0.060	0.000	0.88	0.274	62.7	OK
25.005	1435	60 minute 100 year Summer Q+20%	23.788	22.230	-0.058	0.000	0.90	0.274	69.8	OK
27.000	1460	60 minute 100 year Summer Q+20%	23.295	22.291	0.004	0.000	1.07	0.169	14.3	SURCHARGED
27.001	1461	60 minute 100 year Summer Q+20%	23.213	22.153	-0.060	0.000	0.66	0.151	21.3	OK
25.006	1436	60 minute 100 year Summer Q+20%	23.289	21.705	-0.159	0.000	0.62	0.296	115.1	OK
25.007	1437	60 minute 100 year Summer Q+20%	23.164	21.592	-0.025	0.000	0.96	1.646	121.5	OK
25.008	1438	60 minute 100 year Summer Q+20%	23.066	21.498	-0.014	0.000	1.00	1.544	132.2	OK
25.009	1439	60 minute 100 year Summer Q+20%	22.833	21.311	-0.087	0.000	0.86	1.366	141.0	OK
25.010	1440	60 minute 100 year Summer Q+20%	22.579	21.187	0.040	0.000	0.71	1.384	143.9	SURCHARGED
23.007	1407	60 minute 100 year Summer Q+20%	22.008	20.836	0.389	0.000	2.55	2.483	229.2	SURCHARGED
23.008	1408	60 minute 100 year Summer Q+20%	21.925	20.670	0.246	0.000	1.12	2.344	229.2	SURCHARGED
23.009	1409	60 minute 100 year Summer Q+20%	21.794	20.504	0.211	0.000	1.36	2.122	229.2	SURCHARGED
23.010	1410	60 minute 100 year Summer Q+20%	21.717	20.340	0.124	0.000	1.73	1.999	229.1	SURCHARGED
23.011	1411	60 minute 100 year Summer Q+20%	21.740	20.175	0.008	0.000	1.08	3.058	249.3	SURCHARGED
28.000	1470	60 minute 100 year Summer Q+20%	25.814	24.278	-0.036	0.000	0.93	0.123	30.6	OK
29.000	1490	60 minute 100 year Summer Q+20%	25.553	23.993	-0.060	0.000	0.67	0.096	10.9	OK
28.001	1471	60 minute 100 year Summer Q+20%	25.718	23.832	-0.068	0.000	0.83	0.227	56.2	OK
28.002	1472	60 minute 100 year Summer Q+20%	24.960	23.397	-0.063	0.000	0.86	0.283	61.6	OK
28.003	1473	60 minute 100 year Summer Q+20%	24.700	23.140	-0.135	0.000	0.58	0.247	74.5	OK
28.004	1474	60 minute 100 year Summer Q+20%	24.210	22.717	0.007	0.000	1.10	0.695	85.1	SURCHARGED
30.000	1500	60 minute 100 year Summer Q+20%	24.347	22.806	-0.041	0.000	0.88	0.118	14.1	OK
30.001	1501	60 minute 100 year Summer Q+20%	24.421	22.702	-0.103	0.000	0.56	0.204	24.8	OK
28.005	1475	60 minute 100 year Summer Q+20%	24.340	22.567	-0.045	0.000	0.90	0.976	154.5	OK
28.006	1476	60 minute 100 year Summer Q+20%	22.588	21.466	0.303	0.000	0.73	2.135	161.1	SURCHARGED
28.007	1477	60 minute 100 year Summer Q+20%	22.250	21.295	0.545	0.000	1.53	3.322	164.4	SURCHARGED
28.008	1478	60 minute 100 year Summer Q+20%	22.189	21.122	0.434	0.000	1.39	1.437	168.5	SURCHARGED
28.009	1479	60 minute 100 year Summer Q+20%	22.093	20.937	0.344	0.000	0.84	1.423	171.5	SURCHARGED
28.010	1480	60 minute 100 year Summer Q+20%	21.820	20.745	0.425	0.000	1.43	2.615	172.3	SURCHARGED
28.011	1481	60 minute 100 year Summer Q+20%	21.725	20.550	0.325	0.000	1.04	1.720	174.0	SURCHARGED
31.000	1510	60 minute 100 year Summer Q+20%	21.692	20.455	0.263	0.000	0.72	0.461	14.4	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
28.012	1482	60 minute 100 year Summer Q+20%	21.596	20.353	0.312	0.000	2.29	1.425	188.6	SURCHARGED
32.000	1520	60 minute 100 year Summer Q+20%	21.536	20.166	-0.035	0.000	0.58	0.124	9.6	OK
28.013	1483	480 minute 100 year Winter Q+20%	21.528	20.132	0.117	0.000	0.24	1.579	34.9	SURCHARGED
33.000	1530	60 minute 100 year Summer Q+20%	22.551	21.009	-0.042	0.000	0.86	0.116	15.0	OK
33.001	1531	60 minute 100 year Summer Q+20%	22.187	20.537	-0.127	0.000	0.62	0.196	54.6	OK
33.002	1532	60 minute 100 year Summer Q+20%	22.030	20.436	-0.094	0.000	0.80	0.651	85.4	OK
33.003	1533	480 minute 100 year Winter Q+20%	21.642	20.132	-0.010	0.000	0.12	1.195	12.9	OK
1.023	1100-Basin A1	480 minute 100 year Winter Q+20%	20.600	20.130	0.430	0.000	0.91	2843.905	55.6	SURCHARGED
1.024	1101-Con	480 minute 100 year Winter Q+20%	21.144	20.092	-1.052	0.000	0.01	1.367	55.6	OK
1.025	1102	480 minute 100 year Winter Q+20%	21.298	19.582	-1.716	0.000	0.00	0.522	55.6	OK
1.026	1103	480 minute 100 year Winter Q+20%	21.261	19.493	-1.768	0.000	0.00	2.031	55.6	OK
1.027	1104	480 minute 100 year Winter Q+20%	21.175	19.398	-1.777	0.000	0.00	2.151	55.6	OK
1.028	1105	480 minute 100 year Winter Q+20%	21.018	19.376	-1.642	0.000	0.00	0.321	55.6	OK
1.029	1106	480 minute 100 year Winter Q+20%	20.969	19.249	-1.720	0.000	0.00	0.115	55.6	OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840
Return Period (years) 100 Site Location GB 450306 114752 Cv (Summer) 0.750

Margin for Flood Risk Warning (mm) 299.0 DVD Status OFF
Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%) 0, +20, +40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.000	1000	60 minute 100 year Summer Q+40%	28.090	26.671	0.081	0.000	1.04	0.341	40.3	SURCHARGED
1.001	1001	60 minute 100 year Summer Q+40%	27.700	25.992	-0.058	0.000	0.73	0.679	53.5	OK
1.002	1002	60 minute 100 year Summer Q+40%	27.650	25.913	0.013	0.000	0.98	1.892	79.1	SURCHARGED
2.000	1003	60 minute 100 year Summer Q+40%	29.650	28.018	-0.132	0.000	0.36	0.100	22.2	OK
2.001	1004	60 minute 100 year Summer Q+40%	29.150	27.552	-0.098	0.000	0.61	0.220	55.6	OK
1.003	1005	60 minute 100 year Summer Q+40%	27.400	25.785	0.035	0.000	0.89	1.786	153.7	SURCHARGED
1.004	1006	60 minute 100 year Summer Q+40%	25.900	24.876	0.451	0.000	0.96	2.340	152.9	SURCHARGED
3.000	1010	60 minute 100 year Summer Q+40%	25.950	25.487	0.800	0.000	0.87	1.069	16.4	SURCHARGED
4.000	1011	60 minute 100 year Summer Q+40%	26.150	25.631	0.981	0.000	1.40	1.273	27.0	SURCHARGED
3.001	1012	60 minute 100 year Summer Q+40%	26.060	25.368	0.851	0.000	1.14	1.546	67.3	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	60 minute 100 year Summer Q+40%	25.177	24.318	0.655	0.000	1.51	0.990	47.2	SURCHARGED
3.002	1015	60 minute 100 year Summer Q+40%	25.292	24.125	0.553	0.000	1.01	4.089	160.2	SURCHARGED
1.005	1016	60 minute 100 year Summer Q+40%	25.132	23.981	0.550	0.000	1.06	11.216	316.3	SURCHARGED
6.000	1017	60 minute 100 year Summer Q+40%	24.684	24.006	0.222	0.000	0.70	0.500	34.6	SURCHARGED
6.001	1018	60 minute 100 year Summer Q+40%	24.517	23.943	0.251	0.000	0.89	1.124	52.3	SURCHARGED
6.002	1019	60 minute 100 year Summer Q+40%	24.483	23.909	0.267	0.000	0.83	1.364	52.9	SURCHARGED
6.003	1020	60 minute 100 year Summer Q+40%	24.401	23.873	0.372	0.000	0.50	1.893	83.9	SURCHARGED
6.004	1021	60 minute 100 year Summer Q+40%	24.792	23.845	0.521	0.000	0.79	3.864	83.9	SURCHARGED
1.006	1022	60 minute 100 year Summer Q+40%	24.781	23.811	0.305	0.000	0.99	9.408	431.3	SURCHARGED
1.007	1022-1	60 minute 100 year Summer Q+40%	24.777	23.764	0.305	0.000	1.10	8.946	431.0	SURCHARGED
7.000	1023	60 minute 100 year Summer Q+40%	26.130	24.625	-0.080	0.000	0.89	0.244	128.9	OK
1.008	1024	60 minute 100 year Summer Q+40%	24.772	23.707	0.296	0.000	0.97	14.545	545.7	SURCHARGED
8.000	1200	60 minute 100 year Summer Q+40%	27.500	26.865	0.265	0.000	0.15	0.464	2.1	SURCHARGED
8.001	1201	60 minute 100 year Summer Q+40%	27.500	26.868	0.389	0.000	0.40	0.904	5.4	SURCHARGED
8.002	1202	60 minute 100 year Summer Q+40%	27.500	26.879	0.550	0.000	0.63	1.164	8.6	SURCHARGED
8.003	1203	60 minute 100 year Summer Q+40%	27.500	26.932	0.773	0.000	0.91	1.469	12.0	SURCHARGED
8.004	1204	60 minute 100 year Summer Q+40%	29.087	26.996	0.922	0.000	1.38	1.496	50.7	SURCHARGED
8.005	1205	60 minute 100 year Summer Q+40%	27.811	26.710	0.790	0.000	1.61	2.133	61.4	SURCHARGED
8.006	1206	60 minute 100 year Summer Q+40%	27.524	25.949	0.318	0.000	1.85	2.515	62.5	SURCHARGED
8.007	1207	60 minute 100 year Summer Q+40%	27.426	25.719	0.155	0.000	1.96	0.828	64.8	SURCHARGED
8.008	1208	60 minute 100 year Summer Q+40%	26.998	25.356	-0.074	0.000	0.77	0.233	83.8	OK
8.009	1209	60 minute 100 year Summer Q+40%	26.379	24.916	0.086	0.000	1.37	0.589	87.7	SURCHARGED
8.010	1210	60 minute 100 year Summer Q+40%	26.215	24.549	-0.171	0.000	0.38	0.498	98.7	OK
1.009	1025	60 minute 100 year Summer Q+40%	25.088	23.580	0.304	0.000	1.29	21.893	652.6	SURCHARGED
1.010	1026	60 minute 100 year Summer Q+40%	25.289	23.405	0.219	0.000	1.11	16.282	652.8	SURCHARGED
9.000	1220	60 minute 100 year Summer Q+40%	27.285	25.727	-0.058	0.000	0.69	0.098	14.0	OK
9.001	1221	60 minute 100 year Summer Q+40%	27.141	25.626	-0.015	0.000	1.00	0.198	24.1	OK
9.002	1222	60 minute 100 year Summer Q+40%	26.967	25.378	-0.089	0.000	0.67	0.158	77.0	OK
1.011	1027	60 minute 100 year Summer Q+40%	25.490	23.231	0.084	0.000	1.63	10.300	746.6	SURCHARGED
1.012	1028	60 minute 100 year Summer Q+40%	25.502	23.185	0.068	0.000	1.95	5.609	755.0	SURCHARGED
1.013	1029	60 minute 100 year Summer Q+40%	25.379	23.134	0.033	0.000	1.82	6.840	761.7	SURCHARGED
1.014	1030	60 minute 100 year Summer Q+40%	25.208	23.084	0.000	0.000	2.33	6.033	766.7	OK

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PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.015	1031	60 minute 100 year Summer Q+40%	25.038	22.547	-0.521	0.000	0.37	2.685	769.8	OK
1.016	1032	60 minute 100 year Winter Q+40%	23.804	22.229	0.000	0.000	1.45	17.513	763.3	OK
10.000	1230	60 minute 100 year Summer Q+40%	24.214	22.658	-0.056	0.000	0.71	0.101	11.5	OK
10.001	1231	60 minute 100 year Summer Q+40%	24.092	22.491	-0.098	0.000	0.60	0.158	47.7	OK
1.017	1033	60 minute 100 year Winter Q+40%	23.962	22.006	-0.182	0.000	0.83	11.574	796.9	OK
1.018	1040-Basin A2	60 minute 100 year Winter Q+40%	22.300	21.995	0.695	0.000	1.52	1029.050	120.6	SURCHARGED
1.019	1041-Con	60 minute 100 year Winter Q+40%	22.043	21.467	0.267	0.000	1.70	1.249	120.5	SURCHARGED
1.020	1042	60 minute 100 year Winter Q+40%	22.030	21.238	-0.792	0.000	0.04	0.906	120.5	OK
1.021	1043-GR	60 minute 100 year Winter Q+40%	21.545	21.206	0.167	0.000	1.95	23.275	119.4	SURCHARGED*
1.022	1044	60 minute 100 year Winter Q+40%	21.456	20.968	-0.488	0.000	0.07	0.820	119.4	OK
11.000	1240	60 minute 100 year Summer Q+40%	24.028	22.441	-0.088	0.000	0.68	0.149	44.8	OK
12.000	1270	60 minute 100 year Summer Q+40%	23.557	22.075	0.018	0.000	1.08	0.185	17.5	SURCHARGED
11.001	1241	60 minute 100 year Summer Q+40%	23.690	21.873	-0.116	0.000	0.69	0.428	72.6	OK
11.002	1242	60 minute 100 year Summer Q+40%	23.194	21.746	0.052	0.000	1.10	0.968	79.3	SURCHARGED
11.003	1243	60 minute 100 year Summer Q+40%	22.891	21.355	-0.111	0.000	0.71	0.312	91.8	OK
11.004	1244	60 minute 100 year Summer Q+40%	22.624	21.089	-0.110	0.000	0.71	0.358	114.7	OK
11.005	1245	60 minute 100 year Summer Q+40%	21.663	20.263	0.100	0.000	1.14	0.922	167.2	SURCHARGED
13.000	1250	60 minute 100 year Summer Q+40%	22.519	21.160	-0.053	0.000	0.17	0.104	2.8	OK
13.001	1251	60 minute 100 year Summer Q+40%	22.756	21.147	0.176	0.000	1.00	0.875	36.3	SURCHARGED
13.002	1252	60 minute 100 year Summer Q+40%	22.692	21.037	0.188	0.000	1.17	1.231	39.0	SURCHARGED
13.003	1253	60 minute 100 year Summer Q+40%	22.582	20.974	0.110	0.000	0.77	0.810	60.8	SURCHARGED
14.000	1300	60 minute 100 year Summer Q+40%	24.043	22.517	-0.101	0.000	0.58	0.134	28.7	OK
15.000	1320	60 minute 100 year Summer Q+40%	24.209	22.632	-0.077	0.000	0.48	0.077	16.8	OK
14.001	1302	60 minute 100 year Summer Q+40%	24.056	22.184	-0.137	0.000	0.57	0.256	77.2	OK
16.000	1390	60 minute 100 year Summer Q+40%	23.113	21.849	0.236	0.000	1.09	0.431	17.6	SURCHARGED
14.002	1303	60 minute 100 year Summer Q+40%	23.316	21.732	0.240	0.000	0.84	2.331	95.2	SURCHARGED
14.003	1304	60 minute 100 year Summer Q+40%	23.510	21.667	0.208	0.000	0.85	3.569	108.4	SURCHARGED
14.004	1305	60 minute 100 year Summer Q+40%	23.373	21.631	0.216	0.000	0.83	3.078	118.5	SURCHARGED
14.005	1306	60 minute 100 year Summer Q+40%	23.150	21.587	0.230	0.000	1.02	3.716	123.1	SURCHARGED
14.006	1307	60 minute 100 year Summer Q+40%	23.042	21.555	0.230	0.000	0.86	2.401	128.5	SURCHARGED
17.000	1330	60 minute 100 year Summer Q+40%	23.321	21.795	-0.101	0.000	0.58	0.134	35.3	OK
17.001	1331	60 minute 100 year Summer Q+40%	22.979	21.554	0.075	0.000	0.50	0.584	38.4	SURCHARGED

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PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.007	1308	60 minute 100 year Summer Q+40%	22.897	21.507	0.247	0.000	1.31	4.095	165.2	SURCHARGED
14.008	1309	60 minute 100 year Summer Q+40%	22.785	21.450	0.227	0.000	0.92	2.642	221.6	SURCHARGED
14.009	1310	60 minute 100 year Summer Q+40%	22.330	21.191	0.361	0.000	0.97	8.182	221.4	SURCHARGED
18.000	1340	60 minute 100 year Summer Q+40%	23.064	22.424	-0.036	0.000	0.93	0.123	18.5	OK
18.001	1341	60 minute 100 year Summer Q+40%	22.933	22.190	-0.007	0.000	0.85	0.234	30.2	OK
19.000	1350	60 minute 100 year Summer Q+40%	22.334	21.629	0.179	0.000	0.50	0.451	22.2	SURCHARGED
19.001	1351	60 minute 100 year Summer Q+40%	22.453	21.594	0.339	0.000	0.95	1.067	34.4	SURCHARGED
18.002	1352	60 minute 100 year Summer Q+40%	22.711	21.486	0.353	0.000	1.06	1.668	102.7	SURCHARGED
13.004	1254	60 minute 100 year Summer Q+40%	22.251	20.876	0.167	0.000	1.18	8.592	427.5	SURCHARGED
13.005	1255	60 minute 100 year Summer Q+40%	21.929	20.777	0.146	0.000	1.85	13.247	431.9	SURCHARGED
13.006	1256	60 minute 100 year Summer Q+40%	21.861	20.716	0.113	0.000	2.02	5.301	441.2	SURCHARGED
20.000	1360	60 minute 100 year Summer Q+40%	21.191	20.756	0.480	0.000	0.19	0.791	7.2	SURCHARGED
21.000	1370	60 minute 100 year Summer Q+40%	21.457	20.890	0.623	0.000	1.28	0.869	20.1	SURCHARGED
20.001	1361	60 minute 100 year Summer Q+40%	21.339	20.747	0.551	0.000	1.05	1.413	36.1	SURCHARGED
20.002	1362	60 minute 100 year Summer Q+40%	21.676	20.694	0.495	0.000	0.69	1.327	56.0	SURCHARGED
13.007	1257	60 minute 100 year Summer Q+40%	21.952	20.646	0.147	0.000	1.45	7.590	494.9	SURCHARGED
13.008	1258	60 minute 100 year Summer Q+40%	22.067	20.585	0.125	0.000	1.78	9.411	496.4	SURCHARGED
13.009	1259	60 minute 100 year Summer Q+40%	21.898	20.528	0.098	0.000	1.37	7.366	519.7	SURCHARGED
13.010	1260	60 minute 100 year Summer Q+40%	21.877	20.453	0.068	0.000	1.11	10.441	515.5	SURCHARGED
22.000	1380-GR	60 minute 100 year Summer Q+40%	20.784	20.368	0.419	0.000	0.49	0.722	18.4	SURCHARGED
13.011	1261	60 minute 100 year Summer Q+40%	21.281	20.333	0.119	0.000	2.68	22.392	527.7	SURCHARGED
23.000	1400	60 minute 100 year Summer Q+40%	24.601	23.102	-0.113	0.000	0.50	0.121	41.5	OK
23.001	1401	60 minute 100 year Summer Q+40%	23.616	22.093	-0.087	0.000	0.69	0.206	44.8	OK
23.002	1402	60 minute 100 year Summer Q+40%	23.461	21.904	-0.140	0.000	0.55	0.254	72.7	OK
23.003	1403	60 minute 100 year Summer Q+40%	22.404	21.546	-0.032	0.000	0.53	0.511	72.0	OK
23.004	1404	60 minute 100 year Summer Q+40%	22.405	21.489	0.210	0.000	0.48	1.120	65.8	SURCHARGED
24.000	1420	60 minute 100 year Summer Q+40%	21.753	21.421	0.568	0.000	0.60	0.807	11.1	SURCHARGED
23.005	1405	60 minute 100 year Summer Q+40%	21.881	21.375	0.648	0.000	0.92	3.304	73.3	SURCHARGED
23.006	1406	60 minute 100 year Summer Q+40%	22.088	21.169	0.686	0.000	1.81	3.926	94.9	SURCHARGED
25.000	1430	60 minute 100 year Summer Q+40%	25.344	23.803	-0.041	0.000	0.88	0.118	15.6	OK
25.001	1431	60 minute 100 year Summer Q+40%	25.284	23.600	-0.094	0.000	0.63	0.223	33.1	OK
25.002	1432	60 minute 100 year Summer Q+40%	24.984	23.435	0.062	0.000	1.44	0.611	42.1	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
26.000	1450	60 minute 100 year Summer Q+40%	24.890	23.329	-0.057	0.000	0.70	0.099	10.3	OK
25.003	1433	60 minute 100 year Summer Q+40%	24.846	23.247	-0.059	0.000	0.90	0.598	67.5	OK
25.004	1434	60 minute 100 year Summer Q+40%	24.117	22.671	0.054	0.000	1.00	0.565	70.8	SURCHARGED
25.005	1435	60 minute 100 year Summer Q+40%	23.788	22.365	0.077	0.000	0.99	0.607	77.4	SURCHARGED
27.000	1460	60 minute 100 year Summer Q+40%	23.295	22.322	0.035	0.000	1.25	0.204	16.8	SURCHARGED
27.001	1461	60 minute 100 year Summer Q+40%	23.213	22.163	-0.050	0.000	0.78	0.170	25.1	OK
25.006	1436	60 minute 100 year Summer Q+40%	23.289	21.913	0.049	0.000	0.69	0.858	128.5	SURCHARGED
25.007	1437	60 minute 100 year Summer Q+40%	23.164	21.814	0.197	0.000	1.08	2.702	136.8	SURCHARGED
25.008	1438	60 minute 100 year Summer Q+40%	23.066	21.708	0.196	0.000	1.13	2.000	149.6	SURCHARGED
25.009	1439	60 minute 100 year Summer Q+40%	22.833	21.581	0.183	0.000	0.90	2.292	148.4	SURCHARGED
25.010	1440	60 minute 100 year Summer Q+40%	22.579	21.438	0.291	0.000	0.77	2.137	155.8	SURCHARGED
23.007	1407	60 minute 100 year Summer Q+40%	22.008	21.025	0.578	0.000	2.81	2.944	253.0	SURCHARGED
23.008	1408	60 minute 100 year Summer Q+40%	21.925	20.822	0.398	0.000	1.24	2.563	252.7	SURCHARGED
23.009	1409	60 minute 100 year Summer Q+40%	21.794	20.620	0.327	0.000	1.50	2.288	252.9	SURCHARGED
23.010	1410	60 minute 100 year Summer Q+40%	21.717	20.420	0.204	0.000	1.91	2.116	252.6	SURCHARGED
23.011	1411	480 minute 100 year Winter Q+40%	21.740	20.247	0.080	0.000	0.22	3.348	51.5	SURCHARGED
28.000	1470	60 minute 100 year Summer Q+40%	25.814	24.371	0.057	0.000	1.06	0.228	35.0	SURCHARGED
29.000	1490	60 minute 100 year Summer Q+40%	25.553	24.003	-0.050	0.000	0.78	0.108	12.7	OK
28.001	1471	60 minute 100 year Summer Q+40%	25.718	23.849	-0.051	0.000	0.95	0.263	64.6	OK
28.002	1472	60 minute 100 year Summer Q+40%	24.960	23.445	-0.015	0.000	0.98	0.402	70.7	OK
28.003	1473	60 minute 100 year Summer Q+40%	24.700	23.227	-0.048	0.000	0.67	0.423	85.1	OK
28.004	1474	60 minute 100 year Summer Q+40%	24.210	23.048	0.338	0.000	1.14	2.430	88.4	SURCHARGED
30.000	1500	60 minute 100 year Summer Q+40%	24.347	23.051	0.204	0.000	0.97	0.394	15.6	SURCHARGED
30.001	1501	60 minute 100 year Summer Q+40%	24.421	22.966	0.161	0.000	0.61	0.620	26.7	SURCHARGED
28.005	1475	60 minute 100 year Summer Q+40%	24.340	22.930	0.318	0.000	0.92	1.994	157.8	SURCHARGED
28.006	1476	60 minute 100 year Summer Q+40%	22.588	21.710	0.547	0.000	0.77	3.054	169.0	SURCHARGED
28.007	1477	60 minute 100 year Summer Q+40%	22.250	21.512	0.762	0.000	1.62	3.633	174.1	SURCHARGED
28.008	1478	60 minute 100 year Summer Q+40%	22.189	21.314	0.626	0.000	1.48	1.712	179.2	SURCHARGED
28.009	1479	60 minute 100 year Summer Q+40%	22.093	21.103	0.510	0.000	0.90	1.661	183.1	SURCHARGED
28.010	1480	60 minute 100 year Summer Q+40%	21.820	20.883	0.563	0.000	1.53	2.813	184.4	SURCHARGED
28.011	1481	60 minute 100 year Summer Q+40%	21.725	20.662	0.437	0.000	1.11	1.879	186.1	SURCHARGED
31.000	1510	60 minute 100 year Summer Q+40%	21.692	20.591	0.399	0.000	0.85	0.616	17.0	SURCHARGED

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PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
28.012	1482	60 minute 100 year Summer Q+40%	21.596	20.436	0.395	0.000	2.47	1.544	203.2	SURCHARGED
32.000	1520	480 minute 100 year Winter Q+40%	21.536	20.247	0.046	0.000	0.11	0.216	1.8	SURCHARGED
28.013	1483	480 minute 100 year Winter Q+40%	21.528	20.247	0.232	0.000	0.28	1.776	40.6	SURCHARGED
33.000	1530	60 minute 100 year Summer Q+40%	22.551	21.034	-0.017	0.000	1.00	0.145	17.4	OK
33.001	1531	60 minute 100 year Summer Q+40%	22.187	20.556	-0.108	0.000	0.72	0.219	63.7	OK
33.002	1532	60 minute 100 year Summer Q+40%	22.030	20.461	-0.069	0.000	0.94	0.771	99.6	OK
33.003	1533	480 minute 100 year Winter Q+40%	21.642	20.246	0.104	0.000	0.14	2.045	15.1	SURCHARGED
1.023	1100-Basin A1	480 minute 100 year Winter Q+40%	20.600	20.247	0.547	0.000	0.91	3397.828	55.7	SURCHARGED
1.024	1101-Con	480 minute 100 year Winter Q+40%	21.144	20.208	-0.936	0.000	0.01	1.499	55.7	OK
1.025	1102	960 minute 100 year Winter Q+40%	21.298	19.582	-1.716	0.000	0.00	0.523	55.7	OK
1.026	1103	960 minute 100 year Winter Q+40%	21.261	19.494	-1.767	0.000	0.00	2.034	55.7	OK
1.027	1104	960 minute 100 year Winter Q+40%	21.175	19.398	-1.777	0.000	0.00	2.154	55.7	OK
1.028	1105	960 minute 100 year Winter Q+40%	21.018	19.376	-1.642	0.000	0.00	0.322	55.7	OK
1.029	1106	960 minute 100 year Winter Q+40%	20.969	19.249	-1.720	0.000	0.00	0.115	55.7	OK

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Appendix 3

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

- Indicates pipe length does not match coordinates
« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	35.949	0.512	70.2	0.096	5.00	0.0	0.600		o	225	Pipe/Conduit	
S1.001	37.616	0.156	241.1	0.066	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.002	60.836	0.190	320.2	0.126	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.003	15.123	0.048	317.4	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	
S2.000	19.287	0.115	167.7	0.105	5.00	0.0	0.600		o	225	Pipe/Conduit	
S2.001	33.215	1.103	30.1	0.060	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.002	15.620	0.797	19.6	0.024	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.003	21.369	1.015	21.1	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.004	36.334	1.246	29.2	0.043	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.005	13.620	0.436	31.2	0.018	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.006	14.675	2.323	6.3	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.004	14.479	0.029	499.3	0.022	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.005	45.757	0.093	492.0	0.138	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.006	10.237	0.843	12.1	0.017	0.00	0.0	0.600		o	525	Pipe/Conduit	
S3.000	53.557	0.659	81.3	0.147	5.00	0.0	0.600		o	225	Pipe/Conduit	
S3.001	41.576	0.211	197.0	0.082	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.002	14.948	0.047	318.0	0.047	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.003	36.706	0.114	322.0	0.070	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.004	12.697	0.041	309.7	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	80.71	5.38	26.053	0.096	0.0	0.0	0.0	1.56	62.1	20.9
S1.001	77.08	6.01	25.466	0.161	0.0	0.0	0.0	1.01	71.3	33.7
S1.002	71.96	7.01	25.235	0.287	0.0	0.0	0.0	1.01	111.2	56.0
S1.003	70.81	7.26	25.045	0.296	0.0	0.0	0.0	1.01	111.7	56.8
S2.000	81.11	5.32	32.182	0.105	0.0	0.0	0.0	1.01	40.0	23.1
S2.001	79.69	5.55	32.067	0.165	0.0	0.0	0.0	2.39	95.1	35.6
S2.002	79.17	5.64	30.964	0.189	0.0	0.0	0.0	2.97	118.1	40.5
S2.003	78.45	5.76	30.167	0.228	0.0	0.0	0.0	2.86	113.9	48.4
S2.004	77.05	6.01	29.152	0.271	0.0	0.0	0.0	2.43	96.7	56.5
S2.005	76.52	6.11	27.906	0.289	0.0	0.0	0.0	2.35	93.4	59.8
S2.006	76.27	6.15	27.470	0.298	0.0	0.0	0.0	5.24	208.3	61.5
S1.004	69.73	7.50	24.847	0.616	0.0	0.0	0.0	1.00	215.5	116.3
S1.005	66.58	8.26	24.818	0.754	0.0	0.0	0.0	1.00	217.1	136.0
S1.006	66.48	8.29	24.725	0.771	0.0	0.0	0.0	6.45	1396.5	138.8
S3.000	79.31	5.61	25.255	0.147	0.0	0.0	0.0	1.45	57.7	31.5
S3.001	76.28	6.15	24.446	0.229	0.0	0.0	0.0	1.29	142.2	47.3
S3.002	74.97	6.40	24.235	0.275	0.0	0.0	0.0	1.01	111.6	55.9
S3.003	71.97	7.01	24.188	0.345	0.0	0.0	0.0	1.00	110.9	67.3
S3.004	71.01	7.22	24.074	0.354	0.0	0.0	0.0	1.02	113.1	68.1

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.007	59.337	0.144	412.8	0.163	0.00	0.0	0.600		o	675	Pipe/Conduit	
S4.000	16.938	0.101	167.7	0.117	5.00	0.0	0.600		o	225	Pipe/Conduit	
S4.001	48.638	0.199	244.4	0.101	0.00	0.0	0.600		o	300	Pipe/Conduit	
S4.002	9.863	0.040	246.6	0.022	0.00	0.0	0.600		o	300	Pipe/Conduit	
S4.003	31.323	0.096	326.3	0.072	0.00	0.0	0.600		o	375	Pipe/Conduit	
S4.004	38.232	0.118	324.0	0.065	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.008	12.810	0.026	492.7	0.016	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.009	9.391	0.019	494.3	0.018	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.010	64.152	1.036	61.9	0.130	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.011	10.287	0.170	60.5	0.074	0.00	0.0	0.600		o	750	Pipe/Conduit	
S5.000	24.808	0.378	65.6	0.061	5.00	0.0	0.600		o	150	Pipe/Conduit	
S5.001	73.068	1.114	65.6	0.189	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.012	26.687	0.053	503.5	0.040	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.013	15.378	0.031	496.1	0.030	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.014	16.427	0.014	1173.4	0.012	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.000	33.176	1.660	20.0	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	
S6.001	15.082	0.640	23.6	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S6.002	30.161	0.580	52.0	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S7.000	41.909	0.965	43.4	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.007	63.62	9.06	23.733	1.288	0.0	0.0	0.0	1.28	459.4	222.0
S4.000	81.36	5.28	24.593	0.117	0.0	0.0	0.0	1.01	40.0	25.7
S4.001	76.62	6.09	24.417	0.218	0.0	0.0	0.0	1.00	70.8	45.2
S4.002	75.73	6.25	24.218	0.240	0.0	0.0	0.0	1.00	70.5	49.2
S4.003	73.07	6.78	24.103	0.312	0.0	0.0	0.0	1.00	110.2	61.8
S4.004	70.12	7.41	24.007	0.377	0.0	0.0	0.0	1.00	110.6	71.6
S1.008	63.02	9.23	23.514	1.682	0.0	0.0	0.0	1.25	554.0	287.1
S1.009	62.60	9.36	23.488	1.700	0.0	0.0	0.0	1.25	553.1	288.2
S1.010	61.60	9.66	23.469	1.830	0.0	0.0	0.0	3.56	1572.8	305.3
S1.011	61.44	9.70	22.433	1.904	0.0	0.0	0.0	3.60	1591.1	316.9
S5.000	81.03	5.33	24.355	0.061	0.0	0.0	0.0	1.24	22.0	13.3
S5.001	77.34	5.96	23.827	0.250	0.0	0.0	0.0	1.94	137.4	52.4
S1.012	60.42	10.02	22.113	2.194	0.0	0.0	0.0	1.39	883.9	359.1
S1.013	59.86	10.21	22.060	2.224	0.0	0.0	0.0	1.40	890.6	360.6
S1.014	58.95	10.51	22.029	2.236	0.0	0.0	0.0	0.91	576.4	360.6
S6.000	81.95	5.19	29.800	0.136	0.0	0.0	0.0	2.94	116.9	30.3
S6.001	81.35	5.28	28.140	0.164	0.0	0.0	0.0	2.71	107.6	36.2
S6.002	79.65	5.56	27.500	0.203	0.0	0.0	0.0	1.82	72.3	43.7
S7.000	80.91	5.35	28.985	0.136	0.0	0.0	0.0	1.99	79.1	29.7

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S7.001	32.312	0.325	99.4	0.105	0.00	0.0	0.600		o	300	Pipe/Conduit	
S7.002	15.058	0.150	100.4	0.032	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.003	23.125	0.230	100.5	0.074	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.004	35.652	0.395	90.3	0.044	0.00	0.0	0.600		o	375	Pipe/Conduit	
S6.003	24.959	0.490	50.9	0.036	0.00	0.0	0.600		o	375	Pipe/Conduit	
S6.004	43.011	3.072	14.0	0.085	0.00	0.0	0.600		o	375	Pipe/Conduit	
S8.000	27.733	0.275	100.8	0.048	5.00	0.0	0.600		o	150	Pipe/Conduit	
S8.001	26.245	0.177	148.3	0.082	0.00	0.0	0.600		o	225	Pipe/Conduit	
S8.002	22.377	0.093	240.6	0.028	0.00	0.0	0.600		o	300	Pipe/Conduit	
S6.005	31.872	0.064	498.0	0.054	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.006	8.022	0.533	15.1	0.009	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.007	12.185	0.024	507.7	0.012	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.008	9.943	0.046	216.2	0.012	0.00	0.0	0.600		o	750	Pipe/Conduit	
S6.009	7.177	0.007	1025.3	0.051	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.010	9.883	0.010	988.3	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.015	11.514	0.012	959.5	0.025	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.016	14.009	0.015	933.9	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.017	12.204	0.013	938.8	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S9.000	40.635	0.590	68.9	0.085	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.001	38.986	0.249	156.6	0.100	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S7.001	78.86	5.69	27.945	0.241	0.0	0.0	0.0	1.58	111.5	51.4
S7.002	78.06	5.83	27.545	0.272	0.0	0.0	0.0	1.81	199.7	57.6
S7.003	76.87	6.04	27.395	0.347	0.0	0.0	0.0	1.81	199.6	72.2
S7.004	75.20	6.36	27.165	0.391	0.0	0.0	0.0	1.91	210.7	79.6
S6.003	74.36	6.52	26.770	0.629	0.0	0.0	0.0	2.54	281.0	126.8
S6.004	73.62	6.67	26.280	0.715	0.0	0.0	0.0	4.86	537.2	142.5
S8.000	80.23	5.46	23.978	0.048	0.0	0.0	0.0	1.00	17.7	10.5
S8.001	77.84	5.87	23.628	0.131	0.0	0.0	0.0	1.07	42.6	27.6
S8.002	75.81	6.24	23.376	0.159	0.0	0.0	0.0	1.01	71.3	32.6
S6.005	71.28	7.16	22.983	0.927	0.0	0.0	0.0	1.08	306.6	179.0
S6.006	71.19	7.18	22.919	0.936	0.0	0.0	0.0	6.30	1780.7	180.4
S6.007	70.33	7.37	22.386	0.947	0.0	0.0	0.0	1.07	303.6	180.4
S6.008	69.94	7.45	22.212	0.960	0.0	0.0	0.0	1.90	839.2	181.8
S6.009	69.41	7.58	22.002	1.010	0.0	0.0	0.0	0.97	617.1	189.9
S6.010	68.69	7.74	21.995	1.010	0.0	0.0	0.0	0.99	628.7	189.9
S1.015	58.40	10.70	21.985	3.271	0.0	0.0	0.0	1.00	638.2	517.3
S1.016	57.75	10.93	21.973	3.271	0.0	0.0	0.0	1.02	647.0	517.3
S1.017	57.19	11.13	21.958	3.271	0.0	0.0	0.0	1.01	645.3	517.3
S9.000	80.43	5.43	24.927	0.085	0.0	0.0	0.0	1.58	62.7	18.4
S9.001	77.40	5.95	24.262	0.185	0.0	0.0	0.0	1.25	88.6	38.7

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S9.002	8.268	0.074	111.7	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.003	23.600	0.229	103.1	0.047	0.00	0.0	0.600		o	300	Pipe/Conduit	
S10.000	16.795	0.218	77.0	0.075	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.004	19.671	0.247	79.6	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.005	9.366	0.111	84.4	0.039	0.00	0.0	0.600		o	375	Pipe/Conduit	
S9.006	12.815	0.232	55.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.007	24.711	0.322	76.7	0.045	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.008	19.546	0.204	95.8	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.009	12.446	0.044	282.9	0.034	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.018	5.521	0.014	394.4	0.038	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.019	12.487#	0.021	594.6	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.020	17.627	0.131	134.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.021	37.615	0.098	383.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.022	66.231	0.149	444.5	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.023	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.024	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.025	26.289	0.059	445.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.026	28.667	0.064	447.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.027	22.780	0.051	446.7	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.028	14.238#	0.032	444.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.000	41.451	0.622	66.6	0.097	5.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S9.002	76.89	6.04	24.013	0.212	0.0	0.0	0.0	1.49	105.1	44.2
S9.003	75.53	6.29	23.939	0.259	0.0	0.0	0.0	1.55	109.5	53.1
S10.000	81.95	5.19	24.003	0.075	0.0	0.0	0.0	1.49	59.3	16.6
S9.004	74.56	6.48	23.710	0.367	0.0	0.0	0.0	1.76	124.6	74.2
S9.005	74.16	6.56	23.388	0.406	0.0	0.0	0.0	1.97	218.0	81.6
S9.006	73.77	6.64	23.202	0.406	0.0	0.0	0.0	2.74	435.8	81.6
S9.007	72.90	6.81	22.970	0.451	0.0	0.0	0.0	2.32	369.4	89.1
S9.008	72.15	6.97	22.648	0.490	0.0	0.0	0.0	2.08	330.4	95.7
S9.009	71.34	7.14	22.444	0.524	0.0	0.0	0.0	1.20	191.5	101.2
S1.018	57.03	11.19	21.945	3.832	0.0	0.0	0.0	1.57	999.8	591.9
S1.019	56.59	11.35	21.931	3.832	0.0	0.0	0.0	1.28	812.8	591.9
S1.020	56.19	11.50	21.810	3.832	0.0	0.0	0.0	1.93	417.6«	591.9
S1.021	54.78	12.06	21.679	3.832	0.0	0.0	0.0	1.14	246.2«	591.9
S1.022	52.34	13.10	21.581	3.832	0.0	0.0	0.0	1.06	228.6«	591.9
S1.023	49.94	14.25	21.432	3.832	0.0	0.0	0.0	1.06	228.4«	591.9
S1.024	47.78	15.39	21.269	3.832	0.0	0.0	0.0	1.06	228.4«	591.9
S1.025	47.05	15.81	21.106	3.832	0.0	0.0	0.0	1.05	228.3«	591.9
S1.026	46.29	16.26	21.047	3.832	0.0	0.0	0.0	1.05	227.7«	591.9
S1.027	45.70	16.62	20.983	3.832	0.0	0.0	0.0	1.05	228.0«	591.9
S1.028	45.34	16.85	20.932	3.832	0.0	0.0	0.0	1.06	228.5«	591.9
S11.000	81.38	5.28	26.212	0.097	0.0	0.0	0.0	2.49	396.6	21.4

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S11.001	31.067	0.833	37.3	0.046	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.002	10.303	0.193	53.4	0.054	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.003	10.303	0.192	53.6	0.010	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.004	23.248	0.563	41.3	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
S12.000	7.032	0.194	36.3	0.057	5.00	0.0	0.600		o	150	Pipe/Conduit	
S13.000	9.073	0.240	37.8	0.082	5.00	0.0	0.600		o	225	Pipe/Conduit	
S12.001	19.266	0.207	93.1	0.014	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.002	17.962	0.522	34.4	0.076	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.003	11.800	0.230	51.2	0.043	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.004	28.031	0.521	53.8	0.019	0.00	0.0	0.600		o	375	Pipe/Conduit	
S11.005	39.725	0.071	559.5	0.045	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.006	8.588	0.061	140.8	0.060	0.00	0.0	0.600		o	600	Pipe/Conduit	
S14.000	27.512	0.288	95.5	0.148	5.00	0.0	0.600		o	300	Pipe/Conduit	
S14.001	24.054	0.738	32.6	0.100	0.00	0.0	0.600		o	300	Pipe/Conduit	
S14.002	23.286	0.595	39.1	0.064	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.007	12.441	0.031	401.3	0.051	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.008	50.277	0.126	399.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.009	16.281	0.033	493.4	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S11.001	80.41	5.43	25.590	0.144	0.0	0.0	0.0	3.34	530.7	31.3
S11.002	80.03	5.49	24.757	0.198	0.0	0.0	0.0	2.79	443.4	42.9
S11.003	79.66	5.56	24.564	0.208	0.0	0.0	0.0	2.78	442.6	44.8
S11.004	78.94	5.68	24.372	0.246	0.0	0.0	0.0	3.17	504.2	52.7
S12.000	82.73	5.07	25.784	0.057	0.0	0.0	0.0	1.68	29.6	12.7
S13.000	82.72	5.07	25.755	0.082	0.0	0.0	0.0	2.13	84.8	18.3
S12.001	81.60	5.24	25.365	0.152	0.0	0.0	0.0	1.88	207.5	33.7
S12.002	80.99	5.34	25.158	0.228	0.0	0.0	0.0	3.10	342.2	50.0
S12.003	80.51	5.42	24.636	0.271	0.0	0.0	0.0	2.54	280.2	59.0
S12.004	79.37	5.60	24.405	0.290	0.0	0.0	0.0	2.48	273.4	62.3
S11.005	75.36	6.33	23.659	0.581	0.0	0.0	0.0	1.02	289.1	118.6
S11.006	75.00	6.40	23.588	0.641	0.0	0.0	0.0	2.05	579.8	130.2
S14.000	81.33	5.28	25.448	0.148	0.0	0.0	0.0	1.61	113.7	32.5
S14.001	80.42	5.43	25.160	0.247	0.0	0.0	0.0	2.76	195.3	53.9
S14.002	79.49	5.58	24.422	0.311	0.0	0.0	0.0	2.52	178.2	67.0
S11.007	74.12	6.57	23.527	1.003	0.0	0.0	0.0	1.21	341.9	201.4
S11.008	70.82	7.26	23.496	1.003	0.0	0.0	0.0	1.21	342.9	201.4
S11.009	69.71	7.51	23.370	1.003	0.0	0.0	0.0	1.09	308.1	201.4

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S15.000	6.404	0.572	11.2	0.049	5.00	0.0	0.600		o	150	Pipe/Conduit	
S16.000	9.571	0.413	23.2	0.044	5.00	0.0	0.600		o	150	Pipe/Conduit	
S15.001	34.118	0.394	86.6	0.024	0.00	0.0	0.600		o	225	Pipe/Conduit	
S15.002	10.486	0.062	169.1	0.077	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.010	31.952	0.080	399.4	0.037	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.011	12.436	0.093	133.7	0.041	0.00	0.0	0.600		o	600	Pipe/Conduit	
S17.000	49.705	0.291	170.8	0.112	5.00	0.0	0.600		o	225	Pipe/Conduit	
S11.012	43.134	0.074	582.9	0.028	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.013	10.732	0.019	564.8	0.074	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.014	9.000	0.143	62.9	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S18.000	10.468	0.043	243.4	0.047	5.00	0.0	0.600		o	300	Pipe/Conduit	
S19.000	7.532	0.031	243.0	0.055	5.00	0.0	0.600		o	300	Pipe/Conduit	
S18.001	25.289	0.103	245.5	0.041	0.00	0.0	0.600		o	300	Pipe/Conduit	
S18.002	16.213	0.066	245.7	0.026	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.015	22.426	0.262	85.6	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S11.016	12.703	0.115	110.5	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S15.000	82.97	5.04	24.815	0.049	0.0	0.0	0.0	3.03	53.5	11.1
S16.000	82.69	5.08	24.656	0.044	0.0	0.0	0.0	2.10	37.1	9.9
S15.001	80.12	5.48	24.168	0.118	0.0	0.0	0.0	1.41	55.9	25.6
S15.002	79.08	5.65	23.774	0.195	0.0	0.0	0.0	1.00	39.9«	41.8
S11.010	67.86	7.95	23.337	1.235	0.0	0.0	0.0	1.21	342.8	227.0
S11.011	67.45	8.04	23.257	1.276	0.0	0.0	0.0	2.10	595.0	233.1
S17.000	78.06	5.83	23.830	0.112	0.0	0.0	0.0	1.00	39.7	23.8
S11.012	64.69	8.76	23.164	1.417	0.0	0.0	0.0	1.00	283.1	248.2
S11.013	64.05	8.94	23.090	1.490	0.0	0.0	0.0	1.02	287.7	258.5
S11.014	63.24	9.17	22.971	1.490	0.0	0.0	0.0	0.65	141.2«	258.5
S18.000	82.04	5.17	23.140	0.047	0.0	0.0	0.0	1.00	70.9	10.4
S19.000	82.36	5.13	23.128	0.055	0.0	0.0	0.0	1.00	71.0	12.3
S18.001	79.42	5.60	23.097	0.143	0.0	0.0	0.0	1.00	70.6	30.7
S18.002	77.86	5.87	22.994	0.169	0.0	0.0	0.0	1.00	70.6	35.5
S11.015	61.00	9.84	22.828	1.659	0.0	0.0	0.0	0.56	121.1«	274.1
S11.016	59.66	10.27	22.566	1.659	0.0	0.0	0.0	0.49	106.6«	274.1

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S20.000	15.822	0.093	170.1	0.027	5.00	0.0	0.600		o	225	Pipe/Conduit	
S20.001	11.323	0.067	169.0	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.017	22.290	0.226	98.6	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S21.000	22.392	0.093	240.8	0.048	5.00	0.0	0.600		o	300	Pipe/Conduit	
S21.001	22.392	0.093	240.8	0.043	0.00	0.0	0.600		o	300	Pipe/Conduit	
S21.002	11.234	0.047	239.0	0.044	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.018	1.710	0.021	81.4	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S11.019	20.296	0.226	89.8	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S11.020	28.551	0.288	99.1	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S22.000	36.485	0.215	169.7	0.052	5.00	0.0	0.600		o	225	Pipe/Conduit	
S22.001	9.144	0.054	169.3	0.065	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.021	30.393	0.224	135.7	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S11.022	4.573	0.027	169.4	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.023	5.237#	0.039	134.3	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.000	14.348	0.164	87.5	0.016	5.00	0.0	0.600		o	300	Pipe/Conduit	
S23.001	38.017	0.660	57.6	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	
S23.002	16.044	0.117	137.1	0.066	0.00	0.0	0.600		o	375	Pipe/Conduit	
S23.003	15.071	0.177	85.3	0.045	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S20.000	81.46	5.26	22.711	0.027	0.0	0.0	0.0	1.00	39.7	5.9
S20.001	80.29	5.45	22.618	0.066	0.0	0.0	0.0	1.00	39.9	14.3
S11.017	57.58	10.99	22.451	1.725	0.0	0.0	0.0	0.52	112.8«	274.1
S21.000	80.79	5.37	22.558	0.048	0.0	0.0	0.0	1.01	71.3	10.5
S21.001	78.58	5.74	22.465	0.091	0.0	0.0	0.0	1.01	71.3	19.4
S21.002	77.53	5.92	22.372	0.135	0.0	0.0	0.0	1.01	71.6	28.4
S11.018	57.44	11.04	22.225	1.860	0.0	0.0	0.0	0.57	124.2«	289.4
S11.019	55.78	11.66	22.204	1.860	0.0	0.0	0.0	0.54	118.2«	289.4
S11.020	53.52	12.58	21.978	1.860	0.0	0.0	0.0	0.52	112.5«	289.4
S22.000	79.35	5.61	22.059	0.052	0.0	0.0	0.0	1.00	39.8	11.2
S22.001	78.47	5.76	21.844	0.118	0.0	0.0	0.0	1.00	39.8	25.0
S11.021	51.00	13.73	21.690	1.978	0.0	0.0	0.0	0.44	96.2«	289.4
S11.022	50.90	13.77	21.466	1.978	0.0	0.0	0.0	1.72	372.0	289.4
S11.023	50.50	13.97	21.439	1.978	0.0	0.0	0.0	0.44	96.7«	289.4
S23.000	82.25	5.14	26.162	0.016	0.0	0.0	0.0	1.68	118.9	3.6
S23.001	80.32	5.45	25.998	0.043	0.0	0.0	0.0	2.08	146.7	9.4
S23.002	79.28	5.62	25.263	0.110	0.0	0.0	0.0	1.55	170.7	23.6
S23.003	78.53	5.75	25.146	0.154	0.0	0.0	0.0	1.96	216.8	32.8

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S23.004	34.848	0.366	95.3	0.043	0.00	0.0	0.600		o	375	Pipe/Conduit	
S23.005	34.848	0.108	321.4	0.099	0.00	0.0	0.600		o	375	Pipe/Conduit	
S23.006	16.578	0.082	202.2	0.075	0.00	0.0	0.600		o	450	Pipe/Conduit	
S23.007	14.379	0.036	402.6	0.026	0.00	0.0	0.600		o	450	Pipe/Conduit	
S23.008	10.673	0.027	402.6	0.028	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.000	9.164	1.068	8.6	0.072	5.00	0.0	0.600		o	150	Pipe/Conduit	
S23.009	41.724	0.104	401.2	0.069	0.00	0.0	0.600		o	450	Pipe/Conduit	
S23.010	81.518	0.691	118.0	0.053	0.00	0.0	0.600		o	450	Pipe/Conduit	
S25.000	13.781	0.512	26.9	0.048	5.00	0.0	0.600		o	300	Pipe/Conduit	
S23.011	36.953	0.074	499.4	0.262	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.012	56.999	0.114	500.0	0.163	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.013	38.681	0.078	495.9	0.119	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.014	15.856	0.032	495.5	0.039	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.015	15.562	0.232	67.1	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.016	26.215	0.328	79.9	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.017	7.830	0.082	95.5	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.018	7.038	0.101	69.7	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S26.000	8.972	0.041	218.8	0.007	5.00	0.0	0.600		o	300	Pipe/Conduit	
S26.001	47.357	0.215	220.3	0.062	0.00	0.0	0.600		o	300	Pipe/Conduit	
S26.002	13.843	0.063	219.7	0.064	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S23.004	76.77	6.06	24.969	0.197	0.0	0.0	0.0	1.86	205.0	41.1
S23.005	73.76	6.64	24.604	0.297	0.0	0.0	0.0	1.01	111.0	59.3
S23.006	72.81	6.83	24.420	0.371	0.0	0.0	0.0	1.43	226.8	73.3
S23.007	71.68	7.07	24.338	0.398	0.0	0.0	0.0	1.01	160.2	77.2
S23.008	70.87	7.25	24.303	0.426	0.0	0.0	0.0	1.01	160.2	81.8
S24.000	82.90	5.04	25.644	0.072	0.0	0.0	0.0	3.46	61.2	16.3
S23.009	67.89	7.94	24.276	0.568	0.0	0.0	0.0	1.01	160.4	104.5
S23.010	65.06	8.66	24.172	0.621	0.0	0.0	0.0	1.87	297.5	109.4
S25.000	82.69	5.08	24.143	0.048	0.0	0.0	0.0	3.04	215.1	10.8
S23.011	62.85	9.28	23.406	0.930	0.0	0.0	0.0	1.00	215.5	158.4
S23.012	59.77	10.24	23.332	1.093	0.0	0.0	0.0	0.99	215.4	177.0
S23.013	57.88	10.88	23.218	1.213	0.0	0.0	0.0	1.00	216.3	190.1
S23.014	57.15	11.15	23.140	1.252	0.0	0.0	0.0	1.00	216.4	193.7
S23.015	56.05	11.56	23.008	1.252	0.0	0.0	0.0	0.63	136.8«	193.7
S23.016	54.15	12.32	22.776	1.252	0.0	0.0	0.0	0.58	125.3«	193.7
S23.017	53.56	12.56	22.448	1.252	0.0	0.0	0.0	0.53	114.7«	193.7
S23.018	53.12	12.75	22.366	1.252	0.0	0.0	0.0	0.62	134.2«	193.7
S26.000	82.25	5.14	22.683	0.007	0.0	0.0	0.0	1.06	74.8	1.6
S26.001	77.73	5.89	22.642	0.069	0.0	0.0	0.0	1.06	74.6	14.5
S26.002	76.52	6.11	22.427	0.132	0.0	0.0	0.0	1.06	74.7	27.4

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S23.019	8.133	0.110	73.9	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.020	4.890	0.152	32.2	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.021	4.890	0.012	407.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S23.022	19.341#	0.193	100.2	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S1.029	7.696	0.263	29.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.030	14.529	0.503	28.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.031	24.965	0.079	316.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S27.000	87.610	0.618	141.8	0.498	5.00	0.0	0.600		o	525	Pipe/Conduit	
S27.001	90.939	0.373	243.8	0.523	0.00	0.0	0.600		o	525	Pipe/Conduit	
S27.002	17.829	0.373	47.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S27.003	21.428	0.120	178.6	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S27.004	11.970	0.028	427.5	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S28.000	19.137	0.064	299.0	0.117	5.00	0.0	0.600		o	300	Pipe/Conduit	
S28.001	17.051	0.070	243.6	0.050	0.00	0.0	0.600		o	300	Pipe/Conduit	
S28.002	12.702	0.052	244.3	0.034	0.00	0.0	0.600		o	300	Pipe/Conduit	
S28.003	7.714	0.032	241.1	0.009	0.00	0.0	0.600		o	300	Pipe/Conduit	
S28.004	8.191	0.034	240.9	0.046	0.00	0.0	0.600		o	300	Pipe/Conduit	
S29.000	13.965	0.138	101.2	0.000	5.00	0.0	0.600		o	150	Pipe/Conduit	
S27.005	21.863	0.050	437.3	0.060	0.00	0.0	0.600		o	1200	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S23.019	52.61	12.98	22.264	1.384	0.0	0.0	0.0	0.60	130.3«	197.2
S23.020	52.41	13.07	22.147	1.384	0.0	0.0	0.0	0.91	197.5	197.2
S23.021	52.23	13.15	21.995	1.384	0.0	0.0	0.0	1.00	159.2«	197.2
S23.022	50.89	13.78	21.983	1.384	0.0	0.0	0.0	0.51	111.9«	197.2
S1.029	45.29	16.88	20.550	7.194	0.0	0.0	0.0	3.77	599.5«	882.4
S1.030	45.19	16.95	20.287	7.194	0.0	0.0	0.0	3.79	603.4«	882.4
S1.031	44.63	17.31	19.784	7.194	0.0	0.0	0.0	1.14	181.0«	882.4
S27.000	78.37	5.78	22.086	0.498	0.0	0.0	0.0	1.88	406.8	105.8
S27.001	72.79	6.84	21.468	1.021	0.0	0.0	0.0	1.43	309.6	201.3
S27.002	72.35	6.93	21.095	1.021	0.0	0.0	0.0	3.25	702.6	201.3
S27.003	71.63	7.08	20.347	1.021	0.0	0.0	0.0	2.34	1489.8	201.3
S27.004	71.02	7.21	20.227	1.021	0.0	0.0	0.0	1.51	960.0	201.3
S28.000	80.90	5.35	21.135	0.117	0.0	0.0	0.0	0.90	63.9	25.6
S28.001	79.19	5.64	21.071	0.167	0.0	0.0	0.0	1.00	70.9	35.8
S28.002	77.96	5.85	21.001	0.201	0.0	0.0	0.0	1.00	70.8	42.4
S28.003	77.25	5.98	20.949	0.210	0.0	0.0	0.0	1.01	71.3	43.9
S28.004	76.51	6.11	20.917	0.256	0.0	0.0	0.0	1.01	71.3	53.0
S29.000	81.66	5.23	21.087	0.000	0.0	0.0	0.0	1.00	17.7	0.0
S27.005	70.11	7.42	19.899	1.337	0.0	0.0	0.0	1.78	2016.1	253.9

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S27.006	29.864	0.050	597.3	0.043	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S27.007	8.032	0.016	502.0	0.007	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S27.008	10.831	0.017	637.1	0.034	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S30.000	29.691	0.369	80.5	0.053	5.00	0.0	0.600		o	225	Pipe/Conduit	
S30.001	12.611	0.075	168.1	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
S30.002	22.843	0.136	168.0	0.023	0.00	0.0	0.600		o	225	Pipe/Conduit	
S30.003	7.180	0.043	167.0	0.012	0.00	0.0	0.600		o	225	Pipe/Conduit	
S30.004	8.808	0.052	169.4	0.017	0.00	0.0	0.600		o	225	Pipe/Conduit	
S27.009	8.968	0.020	448.4	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S27.010	19.865	0.042	473.0	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.032	26.753	0.041	652.5	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.033	40.649	0.123	330.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.034	20.060	0.048	417.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.035	36.421	0.090	404.7	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.036	70.745	0.175	404.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.037	65.150	0.162	402.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.038	17.227	0.043	400.6	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.039	8.038	0.020	401.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.040	15.185	0.043	353.1	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S27.006	68.69	7.74	19.850	1.380	0.0	0.0	0.0	1.52	1723.0	256.8
S27.007	68.36	7.82	19.800	1.387	0.0	0.0	0.0	1.66	1880.7	256.8
S27.008	67.85	7.95	19.784	1.421	0.0	0.0	0.0	1.47	1667.8	261.2
S30.000	80.99	5.34	21.638	0.053	0.0	0.0	0.0	1.46	58.0	11.6
S30.001	79.71	5.55	21.269	0.087	0.0	0.0	0.0	1.01	40.0	18.8
S30.002	77.52	5.93	21.194	0.110	0.0	0.0	0.0	1.01	40.0	23.1
S30.003	76.86	6.05	21.058	0.122	0.0	0.0	0.0	1.01	40.1	25.4
S30.004	76.07	6.19	21.015	0.139	0.0	0.0	0.0	1.00	39.8	28.6
S27.009	67.50	8.03	19.767	1.560	0.0	0.0	0.0	1.76	1990.7	285.3
S27.010	66.73	8.23	19.747	1.560	0.0	0.0	0.0	1.71	1938.0	285.3
S1.032	44.17	17.62	19.705	8.754	0.0	0.0	0.0	1.46	1647.8	1047.2
S1.033	43.29	18.23	19.664	8.754	0.0	0.0	0.0	1.11	177.0«	1047.2
S1.034	42.82	18.56	19.542	8.754	0.0	0.0	0.0	0.99	157.2«	1047.2
S1.035	42.01	19.17	19.494	8.754	0.0	0.0	0.0	1.00	159.7«	1047.2
S1.036	40.53	20.34	19.403	8.754	0.0	0.0	0.0	1.00	159.8«	1047.2
S1.037	39.28	21.42	19.228	8.754	0.0	0.0	0.0	1.01	160.2«	1047.2
S1.038	38.96	21.70	19.066	8.754	0.0	0.0	0.0	1.01	160.6«	1047.2
S1.039	38.82	21.84	19.023	8.754	0.0	0.0	0.0	1.01	160.3«	1047.2
S1.040	37.84	22.76	19.003	8.754	0.0	0.0	0.0	0.27	59.6«	1047.2

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Manhole Schedules for Catch C+D

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S4001	27.478	1.425	Open Manhole	1200	S1.000	26.053	225				
S4002	26.966	1.500	Open Manhole	1200	S1.001	25.466	300	S1.000	25.541	225	
S4003	26.704	1.469	Open Manhole	1350	S1.002	25.235	375	S1.001	25.310	300	
S4004	28.014	2.969	Open Manhole	1350	S1.003	25.045	375	S1.002	25.045	375	
S4005	33.607	1.425	Open Manhole	1200	S2.000	32.182	225				
S4006	33.552	1.485	Open Manhole	1200	S2.001	32.067	225	S2.000	32.067	225	
S4007	32.390	1.426	Open Manhole	1200	S2.002	30.964	225	S2.001	30.964	225	
S4008	31.592	1.425	Open Manhole	1200	S2.003	30.167	225	S2.002	30.167	225	
S4009	30.545	1.393	Open Manhole	1200	S2.004	29.152	225	S2.003	29.152	225	
S4010	29.217	1.311	Open Manhole	1200	S2.005	27.906	225	S2.004	27.906	225	
S4011	28.782	1.312	Open Manhole	1200	S2.006	27.470	225	S2.005	27.470	225	
S4012	28.294	3.447	Open Manhole	1500	S1.004	24.847	525	S1.003	24.997	375	
								S2.006	25.147	225	
S4013	28.322	3.504	Open Manhole	1500	S1.005	24.818	525	S1.004	24.818	525	
S4014	27.532	2.806	Open Manhole	1500	S1.006	24.725	525	S1.005	24.725	525	
S4015	26.680	1.425	Open Manhole	1200	S3.000	25.255	225				
S4016	26.141	1.695	Open Manhole	1350	S3.001	24.446	375	S3.000	24.596	225	
S4017	26.114	1.879	Open Manhole	1350	S3.002	24.235	375	S3.001	24.235	375	
S4018	26.410	2.222	Open Manhole	1350	S3.003	24.188	375	S3.002	24.188	375	
S4019	27.500	3.426	Open Manhole	1350	S3.004	24.074	375	S3.003	24.074	375	
S4020	27.348	3.616	Open Manhole	1500	S1.007	23.733	675	S1.006	23.883	525	
								S3.004	24.033	375	
S4021	26.080	1.487	Open Manhole	1200	S4.000	24.593	225				
S4022	25.790	1.373	Open Manhole	1200	S4.001	24.417	300	S4.000	24.492	225	
S4023	25.325	1.107	Open Manhole	1200	S4.002	24.218	300	S4.001	24.218	300	
S4024	25.456	1.353	Open Manhole	1350	S4.003	24.103	375	S4.002	24.178	300	
S4025	25.586	1.579	Open Manhole	1350	S4.004	24.007	375	S4.003	24.007	375	
S4026	26.600	3.086	Open Manhole	1800	S1.008	23.514	750	S1.007	23.589	675	
								S4.004	23.889	375	
S4027	26.345	2.857	Open Manhole	1800	S1.009	23.488	750	S1.008	23.488	750	
S4028	26.150	2.681	Open Manhole	1800	S1.010	23.469	750	S1.009	23.469	750	
S4029	24.845	2.412	Open Manhole	1800	S1.011	22.433	750	S1.010	22.433	750	
S4030	25.677	1.322	Open Manhole	1200	S5.000	24.355	150				
S4031	25.276	1.449	Open Manhole	1200	S5.001	23.827	300	S5.000	23.977	150	
S4032	24.078	1.965	Open Manhole	1800	S1.012	22.113	900	S1.011	22.263	750	
								S5.001	22.713	300	
S4033	23.942	1.882	Open Manhole	1800	S1.013	22.060	900	S1.012	22.060	900	
S4034	23.833	1.804	Open Manhole	1800	S1.014	22.029	900	S1.013	22.029	900	
S4035	31.555	1.755	Open Manhole	1200	S6.000	29.800	225				
S4036	29.895	1.755	Open Manhole	1200	S6.001	28.140	225	S6.000	28.140	225	
S4037	29.250	1.750	Open Manhole	1200	S6.002	27.500	225	S6.001	27.500	225	
S4038	30.720	1.735	Open Manhole	1200	S7.000	28.985	225				
S4039	29.740	1.795	Open Manhole	1200	S7.001	27.945	300	S7.000	28.020	225	
S4040	29.410	1.865	Open Manhole	1350	S7.002	27.545	375	S7.001	27.620	300	

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Manhole Schedules for Catch C+D

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S4041	29.250	1.855	Open Manhole	1350	S7.003	27.395	375	S7.002	27.395	375	
S4042	29.025	1.860	Open Manhole	1350	S7.004	27.165	375	S7.003	27.165	375	
S4043	28.650	1.880	Open Manhole	1350	S6.003	26.770	375	S6.002	26.920	225	
								S7.004	26.770	375	
S4044	28.150	1.870	Open Manhole	1350	S6.004	26.280	375	S6.003	26.280	375	
S4045	26.200	2.222	Open Manhole	1200	S8.000	23.978	150				
S4046	26.500	2.872	Open Manhole	1200	S8.001	23.628	225	S8.000	23.703	150	
S4047	26.440	3.064	Open Manhole	1200	S8.002	23.376	300	S8.001	23.451	225	
S4048	26.160	3.177	Open Manhole	1500	S6.005	22.983	600	S6.004	23.208	375	
								S8.002	23.283	300	
S4049	24.555	1.636	Open Manhole	1500	S6.006	22.919	600	S6.005	22.919	600	
S4050	24.220	1.834	Open Manhole	1500	S6.007	22.386	600	S6.006	22.386	600	
S4051	23.845	1.633	Open Manhole	1800	S6.008	22.212	750	S6.007	22.362	600	
S4052	23.675	1.673	Open Manhole	1800	S6.009	22.002	900	S6.008	22.166	750	14
S4053	23.600	1.605	Open Manhole	1800	S6.010	21.995	900	S6.009	21.995	900	
S4054	23.565	1.580	Open Manhole	1800	S1.015	21.985	900	S1.014	22.015	900	30
								S6.010	21.985	900	
S4055	23.660	1.687	Open Manhole	1800	S1.016	21.973	900	S1.015	21.973	900	
S4056	23.840	1.882	Open Manhole	1800	S1.017	21.958	900	S1.016	21.958	900	
S4057	26.352	1.425	Open Manhole	1200	S9.000	24.927	225				
S4058	25.763	1.501	Open Manhole	1200	S9.001	24.262	300	S9.000	24.337	225	
S4059	25.576	1.563	Open Manhole	1200	S9.002	24.013	300	S9.001	24.013	300	
S4060	25.493	1.554	Open Manhole	1200	S9.003	23.939	300	S9.002	23.939	300	
S4061	25.428	1.425	Open Manhole	1200	S10.000	24.003	225				
S4062	25.210	1.500	Open Manhole	1200	S9.004	23.710	300	S9.003	23.710	300	
								S10.000	23.785	225	
S4063	24.964	1.576	Open Manhole	1350	S9.005	23.388	375	S9.004	23.463	300	
S4064	24.852	1.650	Open Manhole	1350	S9.006	23.202	450	S9.005	23.277	375	
S4065	24.696	1.726	Open Manhole	1350	S9.007	22.970	450	S9.006	22.970	450	
S4066	24.374	1.726	Open Manhole	1350	S9.008	22.648	450	S9.007	22.648	450	
S4067	24.123	1.679	Open Manhole	1350	S9.009	22.444	450	S9.008	22.444	450	
S4068	23.970	2.025	Open Manhole	1800	S1.018	21.945	900	S1.017	21.945	900	
								S9.009	22.400	450	5
S4069	23.988	2.057	Open Manhole	1800	S1.019	21.931	900	S1.018	21.931	900	
S4069-BASIN D	23.500	1.690	Open Manhole	1800	S1.020	21.810	525	S1.019	21.910	900	475
S3001-CON	23.971	2.292	Open Manhole	1500	S1.021	21.679	525	S1.020	21.679	525	
S3002	24.693	3.112	Open Manhole	1500	S1.022	21.581	525	S1.021	21.581	525	
S3003	25.302	3.870	Open Manhole	1500	S1.023	21.432	525	S1.022	21.432	525	
S3004	25.496	4.227	Open Manhole	1500	S1.024	21.269	525	S1.023	21.269	525	
S3005	25.233	4.127	Open Manhole	1500	S1.025	21.106	525	S1.024	21.106	525	
S3006	24.970	3.923	Open Manhole	1500	S1.026	21.047	525	S1.025	21.047	525	
S3007	24.235	3.252	Open Manhole	1500	S1.027	20.983	525	S1.026	20.983	525	
S3008	24.282	3.350	Open Manhole	1500	S1.028	20.932	525	S1.027	20.932	525	
S3010	27.983	1.771	Open Manhole	1350	S11.000	26.212	450				

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Manhole Schedules for Catch C+D

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S3011	27.329	1.739	Open Manhole	1350	S11.001	25.590	450	S11.000	25.590	450	
S3012	26.707	1.950	Open Manhole	1350	S11.002	24.757	450	S11.001	24.757	450	
S3013	26.514	1.950	Open Manhole	1350	S11.003	24.564	450	S11.002	24.564	450	
S3014	26.322	1.950	Open Manhole	1350	S11.004	24.372	450	S11.003	24.372	450	
S3015	27.434	1.650	Open Manhole	1200	S12.000	25.784	150				
S3016	27.405	1.650	Open Manhole	1200	S13.000	25.755	225				
S3017	27.355	1.990	Open Manhole	1350	S12.001	25.365	375	S12.000	25.590	150	
								S13.000	25.515	225	
S3018	26.944	1.786	Open Manhole	1350	S12.002	25.158	375	S12.001	25.158	375	
S3019	26.586	1.950	Open Manhole	1350	S12.003	24.636	375	S12.002	24.636	375	
S3020	26.355	1.950	Open Manhole	1350	S12.004	24.405	375	S12.003	24.405	375	
S3021	25.834	2.175	Open Manhole	1500	S11.005	23.659	600	S11.004	23.809	450	
								S12.004	23.884	375	
S3022	26.132	2.544	Open Manhole	1500	S11.006	23.588	600	S11.005	23.588	600	
S3023	27.248	1.800	Open Manhole	1200	S14.000	25.448	300				
S3024	26.960	1.800	Open Manhole	1200	S14.001	25.160	300	S14.000	25.160	300	
S3025	26.657	2.235	Open Manhole	1200	S14.002	24.422	300	S14.001	24.422	300	
S3026	26.356	2.829	Open Manhole	1500	S11.007	23.527	600	S11.006	23.527	600	
								S14.002	23.827	300	
S3027	25.760	2.264	Open Manhole	1500	S11.008	23.496	600	S11.007	23.496	600	
S3028	25.205	1.835	Open Manhole	1500	S11.009	23.370	600	S11.008	23.370	600	
S3029	26.390	1.575	Open Manhole	1200	S15.000	24.815	150				
S3030	26.231	1.575	Open Manhole	1200	S16.000	24.656	150				
S3031	26.202	2.034	Open Manhole	1200	S15.001	24.168	225	S15.000	24.243	150	
								S16.000	24.243	150	
S3032	25.813	2.039	Open Manhole	1200	S15.002	23.774	225	S15.001	23.774	225	
S3033	25.672	2.335	Open Manhole	1500	S11.010	23.337	600	S11.009	23.337	600	
								S15.002	23.712	225	
S3034-GR	25.057	1.800	Open Manhole	1500	S11.011	23.257	600	S11.010	23.257	600	
S3035	25.408	1.578	Open Manhole	1200	S17.000	23.830	225				
S3036-GR	24.964	1.800	Open Manhole	1500	S11.012	23.164	600	S11.011	23.164	600	
								S17.000	23.539	225	
S3037-GR	24.890	1.800	Open Manhole	1500	S11.013	23.090	600	S11.012	23.090	600	
S3038	24.022	1.051	Junction		S11.014	22.971	1000	S11.013	23.071	600	550
S3039-GR	24.640	1.500	Open Manhole	1200	S18.000	23.140	300				
S3040-GR	24.628	1.500	Open Manhole	1200	S19.000	23.128	300				
S3041-GR	24.597	1.500	Open Manhole	1200	S18.001	23.097	300	S18.000	23.097	300	
								S19.000	23.097	300	
S3042-GR	24.494	1.500	Open Manhole	1200	S18.002	22.994	300	S18.001	22.994	300	
S3043	23.922	1.094	Junction		S11.015	22.828	1000	S11.014	22.828	1000	
								S18.002	22.928	300	250
S3045	23.652	1.086	Junction		S11.016	22.566	1000	S11.015	22.566	1000	
S3045-1-GR	24.136	1.425	Open Manhole	1200	S20.000	22.711	225				
S3045-2-GR	24.043	1.425	Open Manhole	1200	S20.001	22.618	225	S20.000	22.618	225	

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Manhole Schedules for Catch C+D

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S3046	23.459	1.008	Junction		S11.017	22.451	1000	S11.016	22.451	1000	
								S20.001	22.551	225	175
S3047-GR	24.058	1.500	Open Manhole	1200	S21.000	22.558	300				
S3048-GR	23.965	1.500	Open Manhole	1200	S21.001	22.465	300	S21.000	22.465	300	
S3049-GR	23.872	1.500	Open Manhole	1200	S21.002	22.372	300	S21.001	22.372	300	
S3050	23.365	1.140	Junction		S11.018	22.225	1000	S11.017	22.225	1000	
								S21.002	22.325	300	250
S3051	23.316	1.112	Junction		S11.019	22.204	1000	S11.018	22.204	1000	
S3053	22.996	1.018	Junction		S11.020	21.978	1000	S11.019	21.978	1000	
S3053-1-GR	23.484	1.425	Open Manhole	1200	S22.000	22.059	225				
S3054-GR	23.269	1.425	Open Manhole	1200	S22.001	21.844	225	S22.000	21.844	225	
S3055	22.739	1.049	Junction		S11.021	21.690	1000	S11.020	21.690	1000	
								S22.001	21.790	225	175
S3056	22.621	1.155	Junction		S11.022	21.466	525	S11.021	21.466	1000	
S3057	22.633	1.194	Junction		S11.023	21.439	1000	S11.022	21.439	525	
S3058	27.878	1.716	Open Manhole	1200	S23.000	26.162	300				
S3059	27.725	1.727	Open Manhole	1200	S23.001	25.998	300	S23.000	25.998	300	
S3060	27.292	2.029	Open Manhole	1350	S23.002	25.263	375	S23.001	25.338	300	
S3061	27.136	1.990	Open Manhole	1350	S23.003	25.146	375	S23.002	25.146	375	
S3062	26.998	2.029	Open Manhole	1350	S23.004	24.969	375	S23.003	24.969	375	
S3063	26.633	2.029	Open Manhole	1350	S23.005	24.604	375	S23.004	24.604	375	
S3064	26.623	2.203	Open Manhole	1350	S23.006	24.420	450	S23.005	24.495	375	
S3065	26.942	2.603	Open Manhole	1350	S23.007	24.338	450	S23.006	24.338	450	
S3066	27.141	2.838	Open Manhole	1350	S23.008	24.303	450	S23.007	24.303	450	
S3067	27.294	1.650	Open Manhole	1200	S24.000	25.644	150				
S3068	27.239	2.963	Open Manhole	1350	S23.009	24.276	450	S23.008	24.276	450	
								S24.000	24.576	150	
S3069	26.728	2.556	Open Manhole	1350	S23.010	24.172	450	S23.009	24.172	450	
S3070	25.706	1.563	Open Manhole	1200	S25.000	24.143	300				
S3071	25.786	2.380	Open Manhole	1500	S23.011	23.406	525	S23.010	23.481	450	
								S25.000	23.631	300	
S3072	25.341	2.009	Open Manhole	1500	S23.012	23.332	525	S23.011	23.332	525	
S3073-GR	24.943	1.725	Open Manhole	1500	S23.013	23.218	525	S23.012	23.218	525	
S3074-GR	24.865	1.725	Open Manhole	1500	S23.014	23.140	525	S23.013	23.140	525	
S3075	24.643	1.635	Open Manhole	1200	S23.015	23.008	1000	S23.014	23.108	525	475
S3076	24.775	1.999	Junction		S23.016	22.776	1000	S23.015	22.776	1000	
S3077	24.194	1.746	Junction		S23.017	22.448	1000	S23.016	22.448	1000	
S3078	24.085	1.719	Junction		S23.018	22.366	1000	S23.017	22.366	1000	
S3079-GR	24.183	1.500	Open Manhole	1200	S26.000	22.683	300				
S3080-GR	24.142	1.500	Open Manhole	1200	S26.001	22.642	300	S26.000	22.642	300	
S3081-GR	23.927	1.500	Open Manhole	1200	S26.002	22.427	300	S26.001	22.427	300	
S3082	23.831	1.567	Junction		S23.019	22.264	1000	S23.018	22.265	1000	1
								S26.002	22.364	300	250
S3083	23.455	1.308	Junction		S23.020	22.147	1000	S23.019	22.154	1000	7

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Manhole Schedules for Catch C+D

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S3084	23.461	1.466	Junction		S23.021	21.995	450	S23.020	21.995	1000	
S3085	23.546	1.563	Junction		S23.022	21.983	1000	S23.021	21.983	450	
S3086-Basin C	22.300	1.750	Open Manhole	2700	S1.029	20.550	450	S1.028	20.900	525	425
								S11.023	21.400	1000	550
								S23.022	21.790	1000	940
S3087-1	22.439	2.152	Open Manhole	1350	S1.030	20.287	450	S1.029	20.287	450	
S3087	22.646	2.862	Open Manhole	1350	S1.031	19.784	450	S1.030	19.784	450	
S3088	24.098	2.012	Open Manhole	1500	S27.000	22.086	525				
S3089	23.359	1.891	Open Manhole	1500	S27.001	21.468	525	S27.000	21.468	525	
S3090	22.742	1.647	Open Manhole	1500	S27.002	21.095	525	S27.001	21.095	525	
S3091	22.519	2.172	Open Manhole	1800	S27.003	20.347	900	S27.002	20.722	525	
S3092	22.616	2.389	Open Manhole	1800	S27.004	20.227	900	S27.003	20.227	900	
S3093	23.318	2.183	Open Manhole	1200	S28.000	21.135	300				
S3094	23.170	2.099	Open Manhole	1200	S28.001	21.071	300	S28.000	21.071	300	
S3095	22.964	1.963	Open Manhole	1200	S28.002	21.001	300	S28.001	21.001	300	
S3096	22.764	1.815	Open Manhole	1200	S28.003	20.949	300	S28.002	20.949	300	
S3097	22.667	1.750	Open Manhole	1200	S28.004	20.917	300	S28.003	20.917	300	
S3098	22.437	1.350	Open Manhole	1200	S29.000	21.087	150				
S3099	22.561	2.662	Open Manhole	2100	S27.005	19.899	1200	S27.004	20.199	900	
								S28.004	20.883	300	84
								S29.000	20.949	150	
S3100	22.401	2.552	Open Manhole	2100	S27.006	19.850	1200	S27.005	19.849	1200	
S3101	22.379	2.579	Open Manhole	2100	S27.007	19.800	1200	S27.006	19.800	1200	
S3102	22.415	2.631	Open Manhole	2100	S27.008	19.784	1200	S27.007	19.784	1200	
S3103	23.337	1.699	Open Manhole	1200	S30.000	21.638	225				
S3104	23.137	1.868	Open Manhole	1200	S30.001	21.269	225	S30.000	21.269	225	
S3105	22.984	1.790	Open Manhole	1200	S30.002	21.194	225	S30.001	21.194	225	
S3106	22.666	1.608	Open Manhole	1200	S30.003	21.058	225	S30.002	21.058	225	
S3107	22.568	1.553	Open Manhole	1200	S30.004	21.015	225	S30.003	21.015	225	
S3108	22.484	2.717	Open Manhole	2100	S27.009	19.767	1200	S27.008	19.767	1200	
								S30.004	20.963	225	221
S3109	22.471	2.724	Open Manhole	2100	S27.010	19.747	1200	S27.009	19.747	1200	
S3110	22.286	2.581	Open Manhole	3000	S1.032	19.705	1200	S1.031	19.705	450	
								S27.010	19.705	1200	
S3111-CON	22.317	2.653	Open Manhole	2700	S1.033	19.664	450	S1.032	19.664	1200	
S3112	22.361	2.820	Open Manhole	1350	S1.034	19.542	450	S1.033	19.541	450	
S3113	22.443	2.949	Open Manhole	1350	S1.035	19.494	450	S1.034	19.494	450	
S3114	21.748	2.345	Open Manhole	1350	S1.036	19.403	450	S1.035	19.404	450	1
S3115	21.314	2.086	Open Manhole	1350	S1.037	19.228	450	S1.036	19.228	450	
S3116	20.779	1.713	Open Manhole	1350	S1.038	19.066	450	S1.037	19.066	450	
S3117	20.378	1.355	Open Manhole	1350	S1.039	19.023	450	S1.038	19.023	450	
S3118-HW	20.192	1.189	Junction		S1.040	19.003	1000	S1.039	19.003	450	
SStream	19.460	0.500	Open Manhole	0		OUTFALL		S1.040	18.960	1000	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4001	450464.415	114723.865	450464.415	114723.865	Required	
S4002	450483.060	114693.129	450483.060	114693.129	Required	
S4003	450503.055	114661.268	450503.055	114661.268	Required	
S4004	450543.122	114615.489	450543.122	114615.489	Required	
S4005	450552.938	114469.226	450552.938	114469.226	Required	
S4006	450567.477	114481.899	450567.477	114481.899	Required	
S4007	450546.100	114507.322	450546.100	114507.322	Required	
S4008	450541.244	114522.167	450541.244	114522.167	Required	
S4009	450544.704	114543.254	450544.704	114543.254	Required	
S4010	450559.329	114576.514	450559.329	114576.514	Required	
S4011	450558.572	114590.113	450558.572	114590.113	Required	
S4012	450549.982	114602.011	450549.982	114602.011	Required	
S4013	450538.266	114593.504	450538.266	114593.504	Required	
S4014	450498.628	114570.646	450498.628	114570.646	Required	
S4015	450396.124	114686.429	450396.124	114686.429	Required	
S4016	450443.433	114661.324	450443.433	114661.324	Required	
S4017	450465.007	114625.784	450465.007	114625.784	Required	
S4018	450468.186	114611.178	450468.186	114611.178	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4019	450484.257	114578.178	450484.257	114578.178	Required	
S4020	450489.264	114566.509	450489.264	114566.509	Required	
S4021	450350.603	114651.039	450350.603	114651.039	Required	
S4022	450364.069	114640.765	450364.069	114640.765	Required	
S4023	450406.698	114617.347	450406.698	114617.347	Required	
S4024	450411.569	114608.771	450411.569	114608.771	Required	
S4025	450419.406	114578.444	450419.406	114578.444	Required	
S4026	450434.625	114543.371	450434.625	114543.371	Required	
S4027	450422.896	114538.220	450422.896	114538.220	Required	
S4028	450413.509	114537.953	450413.509	114537.953	Required	
S4029	450361.765	114575.875	450361.765	114575.875	Required	
S4030	450278.110	114640.734	450278.110	114640.734	Required	
S4031	450293.806	114621.522	450293.806	114621.522	Required	
S4032	450351.511	114576.700	450351.511	114576.700	Required	
S4033	450336.487	114554.644	450336.487	114554.644	Required	
S4034	450324.719	114544.744	450324.719	114544.744	Required	
S4035	450481.673	114426.929	450481.673	114426.929	Required	
S4036	450448.793	114422.501	450448.793	114422.501	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4037	450433.740	114423.433	450433.740	114423.433	Required	
S4038	450521.909	114517.389	450521.909	114517.389	Required	
S4039	450484.910	114497.705	450484.910	114497.705	Required	
S4040	450454.224	114487.583	450454.224	114487.583	Required	
S4041	450440.594	114481.183	450440.594	114481.183	Required	
S4042	450423.505	114465.603	450423.505	114465.603	Required	
S4043	450405.755	114434.683	450405.755	114434.683	Required	
S4044	450384.176	114447.224	450384.176	114447.224	Required	
S4045	450404.857	114527.219	450404.857	114527.219	Required	
S4046	450387.067	114505.943	450387.067	114505.943	Required	
S4047	450365.085	114491.606	450365.085	114491.606	Required	
S4048	450350.813	114474.371	450350.813	114474.371	Required	
S4049	450325.834	114494.166	450325.834	114494.166	Required	
S4050	450323.243	114501.758	450323.243	114501.758	Required	
S4051	450322.882	114513.938	450322.882	114513.938	Required	
S4052	450322.616	114523.877	450322.616	114523.877	Required	
S4053	450319.210	114530.194	450319.210	114530.194	Required	
S4054	450311.005	114535.702	450311.005	114535.702	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4055	450302.074	114542.970	450302.074	114542.970	Required	
S4056	450293.458	114554.016	450293.458	114554.016	Required	
S4057	450263.410	114688.266	450263.410	114688.266	Required	
S4058	450265.529	114647.686	450265.529	114647.686	Required	
S4059	450227.126	114640.972	450227.126	114640.972	Required	
S4060	450219.886	114636.980	450219.886	114636.980	Required	
S4061	450192.060	114629.807	450192.060	114629.807	Required	
S4062	450204.784	114618.844	450204.784	114618.844	Required	
S4063	450219.930	114606.292	450219.930	114606.292	Required	
S4064	450228.153	114601.810	450228.153	114601.810	Required	
S4065	450238.944	114594.898	450238.944	114594.898	Required	
S4066	450255.670	114576.708	450255.670	114576.708	Required	
S4067	450271.589	114565.367	450271.589	114565.367	Required	
S4068	450282.799	114559.959	450282.799	114559.959	Required	
S4069	450280.338	114555.017	450280.338	114555.017	Required	
S4069-BASIN D	450238.905	114566.190	450238.905	114566.190	Required	
S3001-CON	450221.312	114565.085	450221.312	114565.085	Required	
S3002	450192.017	114588.678	450192.017	114588.678	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3003	450142.724	114632.914	450142.724	114632.914	Required	
S3004	450086.491	114678.731	450086.491	114678.731	Required	
S3005	450030.259	114724.547	450030.259	114724.547	Required	
S3006	450008.995	114740.007	450008.995	114740.007	Required	
S3007	449995.435	114765.263	449995.435	114765.263	Required	
S3008	449974.426	114774.069	449974.426	114774.069	Required	
S3010	450434.780	114774.367	450434.780	114774.367	Required	
S3011	450412.907	114809.578	450412.907	114809.578	Required	
S3012	450396.598	114836.020	450396.598	114836.020	Required	
S3013	450388.625	114842.546	450388.625	114842.546	Required	
S3014	450378.324	114842.770	450378.324	114842.770	Required	
S3015	450385.119	114763.350	450385.119	114763.350	Required	
S3016	450374.123	114754.850	450374.123	114754.850	Required	
S3017	450378.095	114763.007	450378.095	114763.007	Required	
S3018	450368.066	114779.457	450368.066	114779.457	Required	
S3019	450366.937	114797.384	450366.937	114797.384	Required	
S3020	450364.748	114808.979	450364.748	114808.979	Required	
S3021	450356.187	114835.670	450356.187	114835.670	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3022	450318.360	114823.538	450318.360	114823.538	Required	
S3023	450313.094	114749.701	450313.094	114749.701	Required	
S3024	450309.000	114776.907	450309.000	114776.907	Required	
S3025	450308.086	114800.944	450308.086	114800.944	Required	
S3026	450309.795	114824.168	450309.795	114824.168	Required	
S3027	450297.388	114825.081	450297.388	114825.081	Required	
S3028	450248.701	114812.537	450248.701	114812.537	Required	
S3029	450255.464	114760.571	450255.464	114760.571	Required	
S3030	450239.541	114760.115	450239.541	114760.115	Required	
S3031	450249.073	114760.979	450249.073	114760.979	Required	
S3032	450245.993	114794.957	450245.993	114794.957	Required	
S3033	450237.338	114800.877	450237.338	114800.877	Required	
S3034-GR	450206.625	114792.063	450206.625	114792.063	Required	
S3035	450195.664	114741.250	450195.664	114741.250	Required	
S3036-GR	450194.240	114790.935	450194.240	114790.935	Required	
S3037-GR	450151.111	114790.272	450151.111	114790.272	Required	
S3038	450150.901	114801.002			No Entry	
S3039-GR	450126.761	114762.256	450126.761	114762.256	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3040-GR	450144.631	114760.093	450144.631	114760.093	Required	
S3041-GR	450137.154	114760.998	450137.154	114760.998	Required	
S3042-GR	450140.192	114786.103	450140.192	114786.103	Required	
S3043	450141.983	114802.217			No Entry	
S3045	450119.757	114805.204			No Entry	
S3045-1-GR	450121.775	114794.060	450121.775	114794.060	Required	
S3045-2-GR	450106.032	114795.637	450106.032	114795.637	Required	
S3046	450107.168	114806.903			No Entry	
S3047-GR	450076.659	114753.448	450076.659	114753.448	Required	
S3048-GR	450080.327	114775.538	450080.327	114775.538	Required	
S3049-GR	450083.995	114797.628	450083.995	114797.628	Required	
S3050	450084.961	114808.820			No Entry	
S3051	450083.258	114808.967			No Entry	
S3053	450063.521	114813.698			No Entry	
S3053-1-GR	450067.920	114803.242	450067.920	114803.242	Required	
S3054-GR	450033.604	114815.632	450033.604	114815.632	Required	
S3055	450036.949	114824.143			No Entry	
S3056	450008.662	114835.261			No Entry	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3057	450004.259	114836.496			No Entry	
S3058	450450.143	114749.046	450450.143	114749.046	Required	
S3059	450457.110	114736.504	450457.110	114736.504	Required	
S3060	450424.644	114716.724	450424.644	114716.724	Required	
S3061	450409.787	114710.668	450409.787	114710.668	Required	
S3062	450395.102	114707.278	450395.102	114707.278	Required	
S3063	450365.892	114688.273	450365.892	114688.273	Required	
S3064	450336.681	114669.268	450336.681	114669.268	Required	
S3065	450326.761	114682.550	450326.761	114682.550	Required	
S3066	450321.204	114695.812	450321.204	114695.812	Required	
S3067	450318.055	114715.396	450318.055	114715.396	Required	
S3068	450319.400	114706.331	450319.400	114706.331	Required	
S3069	450278.277	114699.278	450278.277	114699.278	Required	
S3070	450196.475	114711.261	450196.475	114711.261	Required	
S3071	450196.779	114697.484	450196.779	114697.484	Required	
S3072	450159.835	114696.670	450159.835	114696.670	Required	
S3073-GR	450103.644	114706.231	450103.644	114706.231	Required	
S3074-GR	450069.048	114723.532	450069.048	114723.532	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3075	450053.191	114723.597	450053.191	114723.597	Required	
S3076	450039.443	114730.888			No Entry	
S3077	450017.261	114744.860			No Entry	
S3078	450012.584	114751.139			No Entry	
S3079-GR	450065.109	114737.892	450065.109	114737.892	Required	
S3080-GR	450059.314	114731.042	450059.314	114731.042	Required	
S3081-GR	450023.573	114762.111	450023.573	114762.111	Required	
S3082	450010.408	114757.831			No Entry	
S3083	450007.893	114765.566			No Entry	
S3084	450004.236	114768.812			No Entry	
S3085	450000.578	114772.058			No Entry	
S3086-Basin C	449985.955	114851.661	449985.955	114851.661	Required	
S3087-1	449992.174	114847.128	449992.174	114847.128	Required	
S3087	450006.696	114846.679	450006.696	114846.679	Required	
S3088	450238.755	114869.587	450238.755	114869.587	Required	
S3089	450219.779	114955.118	450219.779	114955.118	Required	
S3090	450131.317	114934.040	450131.317	114934.040	Required	
S3091	450114.121	114929.332	450114.121	114929.332	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3092	450095.075	114919.513	450095.075	114919.513	Required	
S3093	450118.094	114858.186	450118.094	114858.186	Required	
S3094	450114.437	114876.970	450114.437	114876.970	Required	
S3095	450108.509	114892.957	450108.509	114892.957	Required	
S3096	450102.221	114903.994	450102.221	114903.994	Required	
S3097	450096.367	114909.017	450096.367	114909.017	Required	
S3098	450084.775	114923.248	450084.775	114923.248	Required	
S3099	450088.206	114909.711	450088.206	114909.711	Required	
S3100	450067.448	114902.846	450067.448	114902.846	Required	
S3101	450040.771	114889.424	450040.771	114889.424	Required	
S3102	450036.309	114882.745	450036.309	114882.745	Required	
S3103	450103.081	114841.560	450103.081	114841.560	Required	
S3104	450073.980	114847.454	450073.980	114847.454	Required	
S3105	450061.756	114850.550	450061.756	114850.550	Required	
S3106	450039.908	114857.218	450039.908	114857.218	Required	
S3107	450035.850	114863.142	450035.850	114863.142	Required	
S3108	450035.515	114871.943	450035.515	114871.943	Required	
S3109	450026.571	114872.601	450026.571	114872.601	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3110	450006.729	114871.644	450006.729	114871.644	Required	
S3111-CON	450005.401	114898.364	450005.401	114898.364	Required	
S3112	450008.605	114938.887	450008.605	114938.887	Required	
S3113	450010.758	114958.831	450010.758	114958.831	Required	
S3114	450012.088	114995.227	450012.088	114995.227	Required	
S3115	450010.383	115065.952	450010.383	115065.952	Required	
S3116	450004.283	115130.816	450004.283	115130.816	Required	
S3117	450004.218	115148.043	450004.218	115148.043	Required	
S3118-HW	449997.630	115152.649			No Entry	
SStream	449999.830	115167.673			No Entry	

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Time Area Diagram for Catch C+D

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.000	4-8	0.197	8-12	1.826	12-16	3.445	16-20	3.070	20-24	0.217

Total Area Contributing (ha) = 8.754

Total Pipe Volume (m^3) = 2526.341

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.007	0.007	0.007
	User	-	100	0.084	0.084	0.091
	User	-	100	0.005	0.005	0.096
1.001	User	-	100	0.061	0.061	0.061
	User	-	100	0.005	0.005	0.066
1.002	User	-	100	0.118	0.118	0.118
	User	-	100	0.003	0.003	0.120
	User	-	100	0.001	0.001	0.122
	User	-	100	0.002	0.002	0.123
	User	-	100	0.001	0.001	0.125
	User	-	100	0.001	0.001	0.126
1.003	User	-	100	0.009	0.009	0.009
2.000	User	-	100	0.037	0.037	0.037
	User	-	100	0.040	0.040	0.078
	User	-	100	0.017	0.017	0.095
	User	-	100	0.004	0.004	0.099
	User	-	100	0.002	0.002	0.101
	User	-	100	0.002	0.002	0.103
	User	-	100	0.002	0.002	0.105
2.001	User	-	100	0.049	0.049	0.049
	User	-	100	0.006	0.006	0.055
	User	-	100	0.005	0.005	0.060
2.002	User	-	100	0.018	0.018	0.018
	User	-	100	0.006	0.006	0.024
2.003	User	-	100	0.023	0.023	0.023
	User	-	100	0.008	0.008	0.031
	User	-	100	0.008	0.008	0.039
2.004	User	-	100	0.043	0.043	0.043
2.005	User	-	100	0.018	0.018	0.018
2.006	User	-	100	0.009	0.009	0.009
1.004	User	-	100	0.022	0.022	0.022
1.005	User	-	100	0.138	0.138	0.138
1.006	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
3.000	User	-	100	0.132	0.132	0.132
	User	-	100	0.002	0.002	0.133
	User	-	100	0.003	0.003	0.136
	User	-	100	0.002	0.002	0.138
	User	-	100	0.002	0.002	0.141
	User	-	100	0.001	0.001	0.141
	User	-	100	0.001	0.001	0.142
	User	-	100	0.001	0.001	0.143
	User	-	100	0.000	0.000	0.144
	User	-	100	0.003	0.003	0.147
3.001	User	-	100	0.056	0.056	0.056
	User	-	100	0.006	0.006	0.062
	User	-	100	0.007	0.007	0.070
	User	-	100	0.007	0.007	0.077
	User	-	100	0.005	0.005	0.082
3.002	User	-	100	0.043	0.043	0.043
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.047
3.003	User	-	100	0.059	0.059	0.059
	User	-	100	0.006	0.006	0.065
	User	-	100	0.005	0.005	0.070
3.004	User	-	100	0.009	0.009	0.009
1.007	User	-	100	0.163	0.163	0.163
4.000	User	-	100	0.021	0.021	0.021
	User	-	100	0.033	0.033	0.054

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.006	0.006	0.060
	User	-	100	0.027	0.027	0.087
	User	-	100	0.024	0.024	0.111
	User	-	100	0.006	0.006	0.117
4.001	User	-	100	0.029	0.029	0.029
	User	-	100	0.005	0.005	0.034
	User	-	100	0.012	0.012	0.047
	User	-	100	0.011	0.011	0.058
	User	-	100	0.012	0.012	0.070
	User	-	100	0.011	0.011	0.080
	User	-	100	0.014	0.014	0.094
	User	-	100	0.006	0.006	0.100
	User	-	100	0.000	0.000	0.101
	User	-	100	0.000	0.000	0.101
4.002	User	-	100	0.022	0.022	0.022
4.003	User	-	100	0.043	0.043	0.043
	User	-	100	0.029	0.029	0.072
4.004	User	-	100	0.052	0.052	0.052
	User	-	100	0.010	0.010	0.062
	User	-	100	0.003	0.003	0.065
1.008	User	-	100	0.016	0.016	0.016
1.009	User	-	100	0.009	0.009	0.009
	User	-	100	0.009	0.009	0.018
1.010	User	-	100	0.017	0.017	0.017
	User	-	100	0.113	0.113	0.130
1.011	User	-	100	0.074	0.074	0.074
5.000	User	-	100	0.059	0.059	0.059
	User	-	100	0.002	0.002	0.061
5.001	User	-	100	0.189	0.189	0.189
1.012	User	-	100	0.040	0.040	0.040
1.013	User	-	100	0.030	0.030	0.030
1.014	User	-	100	0.012	0.012	0.012
6.000	User	-	100	0.072	0.072	0.072
	User	-	100	0.052	0.052	0.123
	User	-	100	0.003	0.003	0.127
	User	-	100	0.004	0.004	0.131
	User	-	100	0.006	0.006	0.136
6.001	User	-	100	0.022	0.022	0.022
	User	-	100	0.002	0.002	0.024
	User	-	100	0.003	0.003	0.028
6.002	User	-	100	0.033	0.033	0.033
	User	-	100	0.006	0.006	0.039
7.000	User	-	100	0.136	0.136	0.136
7.001	User	-	100	0.105	0.105	0.105
7.002	User	-	100	0.032	0.032	0.032
7.003	User	-	100	0.068	0.068	0.068
	User	-	100	0.006	0.006	0.074
7.004	User	-	100	0.044	0.044	0.044
6.003	User	-	100	0.029	0.029	0.029
	User	-	100	0.007	0.007	0.036
6.004	User	-	100	0.085	0.085	0.085
8.000	User	-	100	0.000	0.000	0.000
	User	-	100	0.035	0.035	0.035
	User	-	100	0.013	0.013	0.048
8.001	User	-	100	0.082	0.082	0.082
8.002	User	-	100	0.028	0.028	0.028
6.005	User	-	100	0.054	0.054	0.054
6.006	User	-	100	0.009	0.009	0.009
6.007	User	-	100	0.012	0.012	0.012
6.008	User	-	100	0.012	0.012	0.012

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
6.009	User	-	100	0.051	0.051	0.051
6.010	-	-	100	0.000	0.000	0.000
1.015	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
	User	-	100	0.008	0.008	0.025
1.016	-	-	100	0.000	0.000	0.000
1.017	-	-	100	0.000	0.000	0.000
9.000	User	-	100	0.080	0.080	0.080
	User	-	100	0.005	0.005	0.085
9.001	User	-	100	0.033	0.033	0.033
	User	-	100	0.003	0.003	0.036
	User	-	100	0.057	0.057	0.093
	User	-	100	0.007	0.007	0.100
9.002	User	-	100	0.021	0.021	0.021
	User	-	100	0.006	0.006	0.027
9.003	User	-	100	0.047	0.047	0.047
10.000	User	-	100	0.058	0.058	0.058
	User	-	100	0.017	0.017	0.075
9.004	User	-	100	0.033	0.033	0.033
9.005	User	-	100	0.039	0.039	0.039
9.006	-	-	100	0.000	0.000	0.000
9.007	User	-	100	0.045	0.045	0.045
9.008	User	-	100	0.039	0.039	0.039
9.009	User	-	100	0.034	0.034	0.034
1.018	User	-	100	0.038	0.038	0.038
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000
1.023	-	-	100	0.000	0.000	0.000
1.024	-	-	100	0.000	0.000	0.000
1.025	-	-	100	0.000	0.000	0.000
1.026	-	-	100	0.000	0.000	0.000
1.027	-	-	100	0.000	0.000	0.000
1.028	-	-	100	0.000	0.000	0.000
11.000	User	-	100	0.097	0.097	0.097
11.001	User	-	100	0.046	0.046	0.046
11.002	User	-	100	0.054	0.054	0.054
11.003	User	-	100	0.010	0.010	0.010
11.004	User	-	100	0.039	0.039	0.039
12.000	User	-	100	0.057	0.057	0.057
13.000	User	-	100	0.082	0.082	0.082
12.001	User	-	100	0.014	0.014	0.014
12.002	User	-	100	0.076	0.076	0.076
12.003	User	-	100	0.043	0.043	0.043
12.004	User	-	100	0.019	0.019	0.019
11.005	User	-	100	0.045	0.045	0.045
11.006	User	-	100	0.060	0.060	0.060
14.000	User	-	100	0.148	0.148	0.148
14.001	User	-	100	0.100	0.100	0.100
14.002	User	-	100	0.064	0.064	0.064
11.007	User	-	100	0.051	0.051	0.051
11.008	-	-	100	0.000	0.000	0.000
11.009	-	-	100	0.000	0.000	0.000
15.000	User	-	100	0.049	0.049	0.049
16.000	User	-	100	0.044	0.044	0.044
15.001	User	-	100	0.024	0.024	0.024
15.002	User	-	100	0.077	0.077	0.077
11.010	User	-	100	0.037	0.037	0.037
11.011	User	-	100	0.041	0.041	0.041

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
17.000	User	-	100	0.112	0.112	0.112
11.012	User	-	100	0.028	0.028	0.028
11.013	User	-	100	0.074	0.074	0.074
11.014	-	-	100	0.000	0.000	0.000
18.000	User	-	100	0.047	0.047	0.047
19.000	User	-	100	0.055	0.055	0.055
18.001	User	-	100	0.041	0.041	0.041
18.002	User	-	100	0.026	0.026	0.026
11.015	-	-	100	0.000	0.000	0.000
11.016	-	-	100	0.000	0.000	0.000
20.000	User	-	100	0.027	0.027	0.027
20.001	User	-	100	0.039	0.039	0.039
11.017	-	-	100	0.000	0.000	0.000
21.000	User	-	100	0.048	0.048	0.048
21.001	User	-	100	0.043	0.043	0.043
21.002	User	-	100	0.044	0.044	0.044
11.018	-	-	100	0.000	0.000	0.000
11.019	-	-	100	0.000	0.000	0.000
11.020	-	-	100	0.000	0.000	0.000
22.000	User	-	100	0.023	0.023	0.023
	User	-	100	0.007	0.007	0.030
	User	-	100	0.007	0.007	0.036
	User	-	100	0.008	0.008	0.044
	User	-	100	0.008	0.008	0.052
22.001	User	-	100	0.065	0.065	0.065
11.021	-	-	100	0.000	0.000	0.000
11.022	-	-	100	0.000	0.000	0.000
11.023	-	-	100	0.000	0.000	0.000
23.000	User	-	100	0.016	0.016	0.016
23.001	User	-	100	0.027	0.027	0.027
23.002	User	-	100	0.049	0.049	0.049
	User	-	100	0.006	0.006	0.054
	User	-	100	0.012	0.012	0.066
23.003	User	-	100	0.038	0.038	0.038
	User	-	100	0.006	0.006	0.045
23.004	User	-	100	0.043	0.043	0.043
23.005	User	-	100	0.071	0.071	0.071
	User	-	100	0.025	0.025	0.096
	User	-	100	0.003	0.003	0.099
23.006	User	-	100	0.047	0.047	0.047
	User	-	100	0.011	0.011	0.059
	User	-	100	0.014	0.014	0.073
	User	-	100	0.002	0.002	0.075
23.007	User	-	100	0.007	0.007	0.007
	User	-	100	0.017	0.017	0.024
	User	-	100	0.002	0.002	0.026
23.008	User	-	100	0.028	0.028	0.028
24.000	User	-	100	0.072	0.072	0.072
23.009	User	-	100	0.054	0.054	0.054
	User	-	100	0.016	0.016	0.069
23.010	User	-	100	0.053	0.053	0.053
25.000	User	-	100	0.048	0.048	0.048
23.011	User	-	100	0.209	0.209	0.209
	User	-	100	0.022	0.022	0.231
	User	-	100	0.008	0.008	0.239
	User	-	100	0.023	0.023	0.262
23.012	User	-	100	0.116	0.116	0.116
	User	-	100	0.041	0.041	0.157
	User	-	100	0.005	0.005	0.163
23.013	User	-	100	0.119	0.119	0.119

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
23.014	User	-	100	0.039	0.039	0.039
23.015	-	-	100	0.000	0.000	0.000
23.016	-	-	100	0.000	0.000	0.000
23.017	-	-	100	0.000	0.000	0.000
23.018	-	-	100	0.000	0.000	0.000
26.000	User	-	100	0.007	0.007	0.007
26.001	User	-	100	0.062	0.062	0.062
26.002	User	-	100	0.064	0.064	0.064
23.019	-	-	100	0.000	0.000	0.000
23.020	-	-	100	0.000	0.000	0.000
23.021	-	-	100	0.000	0.000	0.000
23.022	-	-	100	0.000	0.000	0.000
1.029	-	-	100	0.000	0.000	0.000
1.030	-	-	100	0.000	0.000	0.000
1.031	-	-	100	0.000	0.000	0.000
27.000	User	-	50	0.997	0.498	0.498
27.001	User	-	50	1.046	0.523	0.523
27.002	-	-	100	0.000	0.000	0.000
27.003	-	-	100	0.000	0.000	0.000
27.004	-	-	100	0.000	0.000	0.000
28.000	-	-	100	0.117	0.117	0.117
28.001	-	-	100	0.050	0.050	0.050
28.002	-	-	100	0.034	0.034	0.034
28.003	-	-	100	0.009	0.009	0.009
28.004	-	-	100	0.046	0.046	0.046
29.000	-	-	100	0.000	0.000	0.000
27.005	-	-	100	0.060	0.060	0.060
27.006	-	-	100	0.043	0.043	0.043
27.007	-	-	100	0.007	0.007	0.007
27.008	-	-	100	0.034	0.034	0.034
30.000	-	-	100	0.053	0.053	0.053
30.001	-	-	100	0.034	0.034	0.034
30.002	-	-	100	0.023	0.023	0.023
30.003	-	-	100	0.012	0.012	0.012
30.004	-	-	100	0.017	0.017	0.017
27.009	-	-	100	0.000	0.000	0.000
27.010	-	-	100	0.000	0.000	0.000
1.032	-	-	100	0.000	0.000	0.000
1.033	-	-	100	0.000	0.000	0.000
1.034	-	-	100	0.000	0.000	0.000
1.035	-	-	100	0.000	0.000	0.000
1.036	-	-	100	0.000	0.000	0.000
1.037	-	-	100	0.000	0.000	0.000
1.038	-	-	100	0.000	0.000	0.000
1.039	-	-	100	0.000	0.000	0.000
1.040	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				9.776	8.754	8.754

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Free Flowing Outfall Details for Catch C+D

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.040	SStream	19.460	18.960	18.620	0	0

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Online Controls for Catch C+D

Complex Manhole: S3001-CON, DS/PN: S1.021, Volume (m³): 7.5

Orifice

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 21.679

Weir

Discharge Coef 0.544 Width (m) 1.500 Invert Level (m) 22.300

Hydro-Brake® Optimum Manhole: S3111-CON, DS/PN: S1.033, Volume (m³): 42.2

Unit Reference	MD-SFF-0239-7040-2551-2790
Design Head (m)	2.551
Design Flow (l/s)	70.4
Flush-Flo™	User Defined
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	239
Invert Level (m)	19.664
Minimum Outlet Pipe Diameter (mm)	300
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.551	70.4	Kick-Flo®	0.362	27.5
Flush-Flo™	0.300	27.9	Mean Flow over Head Range	-	47.3

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.9	0.800	40.2	2.000	62.5	4.000	87.6	7.000	115.2
0.200	24.1	1.000	44.7	2.200	65.5	4.500	92.8	7.500	119.2
0.300	27.9	1.200	48.8	2.400	68.3	5.000	97.7	8.000	123.0
0.400	28.8	1.400	52.6	2.600	71.0	5.500	102.4	8.500	126.7
0.500	32.0	1.600	56.1	3.000	76.2	6.000	106.8	9.000	130.3
0.600	35.0	1.800	59.4	3.500	82.1	6.500	111.1	9.500	133.8

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Storage Structures for Catch C+D

Tank or Pond Manhole: S4069-BASIN D, DS/PN: S1.020

Invert Level (m) 21.810

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	73.7	0.390	472.8	0.890	1116.3	1.290	1645.1
0.090	160.7	0.490	581.7	0.990	1249.9	1.490	1920.5
0.190	256.2	0.590	693.1	1.090	1380.3	1.590	2101.9
0.290	356.4	0.690	841.9	1.190	1513.6	1.690	2292.5

Tank or Pond Manhole: S3086-Basin C, DS/PN: S1.029

Invert Level (m) 20.600

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	173.9	0.400	3815.8	0.800	4467.3	1.200	5149.0	1.600	5914.0
0.100	1267.8	0.500	3988.0	0.900	4628.0	1.300	5341.0	1.700	6110.0
0.200	2672.8	0.600	4148.5	1.000	4790.0	1.400	5537.0		
0.300	3228.6	0.700	4307.7	1.100	4954.0	1.500	5725.0		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 19.800	Cv (Summer) 0.750
Region England and Wales		Ratio R 0.350	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	299.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

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

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m³)	Pipe Flow (l/s)
S1.000	S4001	60 minute 1 year Summer I+0%	27.478	26.110	-0.168	0.000	0.15		0.059	8.6
S1.001	S4002	60 minute 1 year Summer I+0%	26.966	25.559	-0.207	0.000	0.21		0.102	13.9
S1.002	S4003	60 minute 1 year Summer I+0%	26.704	25.357	-0.253	0.000	0.23		0.231	23.7
S1.003	S4004	60 minute 1 year Summer I+0%	28.014	25.179	-0.241	0.000	0.28		0.863	24.1
S2.000	S4005	60 minute 1 year Summer I+0%	33.607	32.260	-0.147	0.000	0.26		0.082	9.4
S2.001	S4006	60 minute 1 year Summer I+0%	33.552	32.127	-0.165	0.000	0.16		0.125	14.3
S2.002	S4007	60 minute 1 year Summer I+0%	32.390	31.023	-0.166	0.000	0.16		0.073	16.3
S2.003	S4008	60 minute 1 year Summer I+0%	31.592	30.233	-0.159	0.000	0.19		0.077	19.5
S2.004	S4009	60 minute 1 year Summer I+0%	30.545	29.229	-0.148	0.000	0.25		0.091	23.1
S2.005	S4010	60 minute 1 year Summer I+0%	29.217	27.991	-0.140	0.000	0.30		0.106	24.6
S2.006	S4011	60 minute 1 year Summer I+0%	28.782	27.525	-0.170	0.000	0.14		0.067	25.3
S1.004	S4012	60 minute 1 year Summer I+0%	28.294	25.082	-0.291	0.000	0.41		0.542	50.3
S1.005	S4013	60 minute 1 year Summer I+0%	28.322	25.021	-0.323	0.000	0.31		0.989	60.2
S1.006	S4014	60 minute 1 year Summer I+0%	27.532	24.829	-0.421	0.000	0.09		0.663	61.2
S3.000	S4015	60 minute 1 year Summer I+0%	26.680	25.329	-0.151	0.000	0.24		0.078	13.1
S3.001	S4016	60 minute 1 year Summer I+0%	26.141	24.544	-0.277	0.000	0.15		0.133	19.8
S3.002	S4017	60 minute 1 year Summer I+0%	26.114	24.371	-0.239	0.000	0.27		0.613	23.3
S3.003	S4018	60 minute 1 year Summer I+0%	26.410	24.325	-0.238	0.000	0.29		0.506	28.7
S3.004	S4019	60 minute 1 year Summer I+0%	27.500	24.224	-0.225	0.000	0.34		0.991	29.1
S1.007	S4020	60 minute 1 year Summer I+0%	27.348	23.992	-0.415	0.000	0.25		0.469	100.6
S4.000	S4021	60 minute 1 year Summer I+0%	26.080	24.676	-0.142	0.000	0.29		0.088	10.4
S4.001	S4022	60 minute 1 year Summer I+0%	25.790	24.525	-0.192	0.000	0.28		0.127	18.6
S4.002	S4023	60 minute 1 year Summer I+0%	25.325	24.344	-0.174	0.000	0.37		0.516	20.2
S4.003	S4024	60 minute 1 year Summer I+0%	25.456	24.234	-0.244	0.000	0.26		0.227	25.8
S4.004	S4025	60 minute 1 year Summer I+0%	25.586	24.149	-0.233	0.000	0.31		0.853	30.7
S1.008	S4026	60 minute 1 year Summer I+0%	26.600	23.901	-0.363	0.000	0.48		7.453	128.8
S1.009	S4027	60 minute 1 year Summer I+0%	26.345	23.866	-0.372	0.000	0.51		2.760	129.7
S1.010	S4028	60 minute 1 year Summer I+0%	26.150	23.627	-0.592	0.000	0.10		0.624	136.6
S1.011	S4029	60 minute 1 year Summer I+0%	24.845	22.670	-0.513	0.000	0.22		1.303	140.4
S5.000	S4030	60 minute 1 year Summer I+0%	25.677	24.407	-0.098	0.000	0.26		0.053	5.4
S5.001	S4031	60 minute 1 year Summer I+0%	25.276	23.907	-0.220	0.000	0.16		0.085	21.1

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S1.000	S4001	OK
S1.001	S4002	OK
S1.002	S4003	OK
S1.003	S4004	OK
S2.000	S4005	OK
S2.001	S4006	OK
S2.002	S4007	OK
S2.003	S4008	OK
S2.004	S4009	OK
S2.005	S4010	OK
S2.006	S4011	OK
S1.004	S4012	OK
S1.005	S4013	OK
S1.006	S4014	OK
S3.000	S4015	OK
S3.001	S4016	OK
S3.002	S4017	OK
S3.003	S4018	OK
S3.004	S4019	OK
S1.007	S4020	OK
S4.000	S4021	OK
S4.001	S4022	OK
S4.002	S4023	OK
S4.003	S4024	OK
S4.004	S4025	OK
S1.008	S4026	OK
S1.009	S4027	OK
S1.010	S4028	OK
S1.011	S4029	OK
S5.000	S4030	OK
S5.001	S4031	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)
S1.012	S4032	60 minute 1 year Summer I+0%	24.078	22.623	-0.390	0.000	0.25	
S1.013	S4033	60 minute 1 year Summer I+0%	23.942	22.603	-0.357	0.000	0.36	
S1.014	S4034	60 minute 1 year Summer I+0%	23.833	22.588	-0.341	0.000	0.57	
S6.000	S4035	60 minute 1 year Summer I+0%	31.555	29.850	-0.175	0.000	0.11	
S6.001	S4036	60 minute 1 year Summer I+0%	29.895	28.198	-0.167	0.000	0.15	
S6.002	S4037	60 minute 1 year Summer I+0%	29.250	27.578	-0.147	0.000	0.26	
S7.000	S4038	60 minute 1 year Summer I+0%	30.720	29.045	-0.165	0.000	0.16	
S7.001	S4039	60 minute 1 year Summer I+0%	29.740	28.037	-0.208	0.000	0.20	
S7.002	S4040	60 minute 1 year Summer I+0%	29.410	27.643	-0.277	0.000	0.15	
S7.003	S4041	60 minute 1 year Summer I+0%	29.250	27.500	-0.270	0.000	0.17	
S7.004	S4042	60 minute 1 year Summer I+0%	29.025	27.270	-0.270	0.000	0.18	
S6.003	S4043	60 minute 1 year Summer I+0%	28.650	26.889	-0.256	0.000	0.22	
S6.004	S4044	60 minute 1 year Summer I+0%	28.150	26.367	-0.288	0.000	0.12	
S8.000	S4045	60 minute 1 year Summer I+0%	26.200	24.029	-0.099	0.000	0.26	
S8.001	S4046	60 minute 1 year Summer I+0%	26.500	23.709	-0.144	0.000	0.28	
S8.002	S4047	60 minute 1 year Summer I+0%	26.440	23.470	-0.206	0.000	0.21	
S6.005	S4048	60 minute 1 year Summer I+0%	26.160	23.211	-0.372	0.000	0.31	
S6.006	S4049	60 minute 1 year Summer I+0%	24.555	23.050	-0.469	0.000	0.11	
S6.007	S4050	60 minute 1 year Summer I+0%	24.220	22.689	-0.297	0.000	0.51	
S6.008	S4051	60 minute 1 year Summer I+0%	23.845	22.579	-0.383	0.000	0.16	
S6.009	S4052	60 minute 1 year Summer I+0%	23.675	22.570	-0.332	0.000	0.17	
S6.010	S4053	60 minute 1 year Summer I+0%	23.600	22.566	-0.329	0.000	0.20	
S1.015	S4054	60 minute 1 year Summer I+0%	23.565	22.563	-0.322	0.000	0.65	
S1.016	S4055	60 minute 1 year Summer I+0%	23.660	22.542	-0.331	0.000	0.75	
S1.017	S4056	60 minute 1 year Summer I+0%	23.840	22.506	-0.352	0.000	0.68	
S9.000	S4057	60 minute 1 year Summer I+0%	26.352	24.980	-0.172	0.000	0.13	
S9.001	S4058	60 minute 1 year Summer I+0%	25.763	24.351	-0.211	0.000	0.19	
S9.002	S4059	60 minute 1 year Summer I+0%	25.576	24.118	-0.195	0.000	0.27	
S9.003	S4060	60 minute 1 year Summer I+0%	25.493	24.035	-0.204	0.000	0.23	
S10.000	S4061	60 minute 1 year Summer I+0%	25.428	24.056	-0.172	0.000	0.13	
S9.004	S4062	60 minute 1 year Summer I+0%	25.210	23.819	-0.191	0.000	0.29	
S9.005	S4063	60 minute 1 year Summer I+0%	24.964	23.518	-0.245	0.000	0.26	
S9.006	S4064	60 minute 1 year Summer I+0%	24.852	23.308	-0.344	0.000	0.13	
S9.007	S4065	60 minute 1 year Summer I+0%	24.696	23.074	-0.346	0.000	0.12	
S9.008	S4066	60 minute 1 year Summer I+0%	24.374	22.768	-0.330	0.000	0.16	
S9.009	S4067	60 minute 1 year Summer I+0%	24.123	22.615	-0.279	0.000	0.31	
S1.018	S4068	240 minute 1 year Winter I+0%	23.970	22.495	-0.350	0.000	0.21	
S1.019	S4069	240 minute 1 year Winter I+0%	23.988	22.491	-0.340	0.000	0.31	
S1.020	S4069-BASIN D	240 minute 1 year Winter I+0%	23.500	22.486	0.151	0.000	0.22	
S1.021	S3001-CON	120 minute 1 year Winter I+0%	23.971	22.465	0.261	0.000	0.29	
S1.022	S3002	120 minute 1 year Winter I+0%	24.693	21.776	-0.330	0.000	0.30	
S1.023	S3003	120 minute 1 year Winter I+0%	25.302	21.626	-0.331	0.000	0.29	
S1.024	S3004	120 minute 1 year Winter I+0%	25.496	21.463	-0.331	0.000	0.29	
S1.025	S3005	120 minute 1 year Winter I+0%	25.233	21.336	-0.295	0.000	0.32	
S1.026	S3006	120 minute 1 year Winter I+0%	24.970	21.279	-0.293	0.000	0.32	
S1.027	S3007	120 minute 1 year Winter I+0%	24.235	21.221	-0.287	0.000	0.33	
S1.028	S3008	120 minute 1 year Winter I+0%	24.282	21.176	-0.281	0.000	0.44	
S11.000	S3010	60 minute 1 year Summer I+0%	27.983	26.259	-0.403	0.000	0.02	
S11.001	S3011	60 minute 1 year Summer I+0%	27.329	25.639	-0.401	0.000	0.03	
S11.002	S3012	60 minute 1 year Summer I+0%	26.707	24.834	-0.373	0.000	0.07	
S11.003	S3013	60 minute 1 year Summer I+0%	26.514	24.644	-0.371	0.000	0.07	
S11.004	S3014	60 minute 1 year Summer I+0%	26.322	24.437	-0.385	0.000	0.05	
S12.000	S3015	60 minute 1 year Summer I+0%	27.434	25.829	-0.105	0.000	0.20	
S13.000	S3016	60 minute 1 year Summer I+0%	27.405	25.803	-0.176	0.000	0.11	
S12.001	S3017	60 minute 1 year Summer I+0%	27.355	25.434	-0.305	0.000	0.08	
S12.002	S3018	60 minute 1 year Summer I+0%	26.944	25.223	-0.310	0.000	0.07	
S12.003	S3019	60 minute 1 year Summer I+0%	26.586	24.723	-0.287	0.000	0.12	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.012	S4032	2.510	155.8	OK
S1.013	S4033	9.231	155.2	OK
S1.014	S4034	5.899	155.7	OK
S6.000	S4035	0.051	12.2	OK
S6.001	S4036	0.068	14.5	OK
S6.002	S4037	0.094	17.7	OK
S7.000	S4038	0.062	12.2	OK
S7.001	S4039	0.099	20.8	OK
S7.002	S4040	0.136	23.4	OK
S7.003	S4041	0.231	29.6	OK
S7.004	S4042	0.236	33.2	OK
S6.003	S4043	0.299	53.7	OK
S6.004	S4044	0.156	60.6	OK
S8.000	S4045	0.052	4.3	OK
S8.001	S4046	0.088	11.1	OK
S8.002	S4047	0.104	13.5	OK
S6.005	S4048	0.396	77.7	OK
S6.006	S4049	0.855	78.6	OK
S6.007	S4050	0.745	79.4	OK
S6.008	S4051	1.536	77.6	OK
S6.009	S4052	2.928	77.4	OK
S6.010	S4053	3.278	74.9	OK
S1.015	S4054	8.950	218.5	OK
S1.016	S4055	4.728	218.4	OK
S1.017	S4056	5.303	218.4	OK
S9.000	S4057	0.054	7.6	OK
S9.001	S4058	0.097	15.8	OK
S9.002	S4059	0.242	18.1	OK
S9.003	S4060	0.175	21.9	OK
S10.000	S4061	0.054	6.7	OK
S9.004	S4062	0.223	31.1	OK
S9.005	S4063	0.208	34.3	OK
S9.006	S4064	0.147	34.2	OK
S9.007	S4065	0.195	37.7	OK
S9.008	S4066	0.295	40.9	OK
S9.009	S4067	0.610	43.6	OK
S1.018	S4068	4.881	105.0	OK
S1.019	S4069	2.645	104.4	OK
S1.020	S4069-BASIN D	289.789	61.2	SURCHARGED
S1.021	S3001-CON	4.839	62.3	SURCHARGED
S1.022	S3002	2.009	62.0	OK
S1.023	S3003	2.738	61.7	OK
S1.024	S3004	2.796	61.1	OK
S1.025	S3005	3.952	60.5	OK
S1.026	S3006	1.988	60.3	OK
S1.027	S3007	2.231	60.1	OK
S1.028	S3008	1.903	60.0	OK
S11.000	S3010	0.061	8.7	OK
S11.001	S3011	0.094	12.6	OK
S11.002	S3012	0.131	17.1	OK
S11.003	S3013	0.144	17.8	OK
S11.004	S3014	0.115	21.0	OK
S12.000	S3015	0.046	5.1	OK
S13.000	S3016	0.049	7.3	OK
S12.001	S3017	0.092	13.6	OK
S12.002	S3018	0.136	19.8	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m^3)	Pipe Flow (l/s)	Status
S12.003	S3019	0.144	23.3	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m³)
S12.004	S3020	60 minute 1 year Summer I+0%	26.355	24.486	-0.294	0.000	0.10		0.141
S11.005	S3021	60 minute 1 year Summer I+0%	25.834	23.872	-0.387	0.000	0.20		0.386
S11.006	S3022	60 minute 1 year Summer I+0%	26.132	23.805	-0.383	0.000	0.15		2.574
S14.000	S3023	60 minute 1 year Summer I+0%	27.248	25.519	-0.229	0.000	0.13		0.075
S14.001	S3024	60 minute 1 year Summer I+0%	26.960	25.230	-0.230	0.000	0.12		0.124
S14.002	S3025	60 minute 1 year Summer I+0%	26.657	24.505	-0.217	0.000	0.17		0.108
S11.007	S3026	60 minute 1 year Summer I+0%	26.356	23.797	-0.330	0.000	0.42		1.080
S11.008	S3027	60 minute 1 year Summer I+0%	25.760	23.734	-0.362	0.000	0.27		1.169
S11.009	S3028	60 minute 1 year Summer I+0%	25.205	23.652	-0.318	0.000	0.44		4.964
S15.000	S3029	60 minute 1 year Summer I+0%	26.390	24.846	-0.119	0.000	0.10		0.030
S16.000	S3030	60 minute 1 year Summer I+0%	26.231	24.690	-0.116	0.000	0.12		0.033
S15.001	S3031	60 minute 1 year Summer I+0%	26.202	24.236	-0.157	0.000	0.20		0.071
S15.002	S3032	60 minute 1 year Summer I+0%	25.813	23.887	-0.112	0.000	0.50		0.201
S11.010	S3033	60 minute 1 year Summer I+0%	25.672	23.602	-0.335	0.000	0.33		1.699
S11.011	S3034-GR	60 minute 1 year Summer I+0%	25.057	23.535	-0.322	0.000	0.27		3.258
S17.000	S3035	60 minute 1 year Summer I+0%	25.408	23.908	-0.147	0.000	0.26		0.083
S11.012	S3036-GR	60 minute 1 year Summer I+0%	24.964	23.520	-0.244	0.000	0.41		2.109
S11.013	S3037-GR	60 minute 1 year Summer I+0%	24.890	23.471	-0.219	0.000	0.73		6.946
S11.014	S3038	60 minute 1 year Summer I+0%	24.022	23.094	-0.928	0.000	0.01		0.138
S18.000	S3039-GR	60 minute 1 year Summer I+0%	24.640	23.205	-0.235	0.000	0.07		0.068
S19.000	S3040-GR	60 minute 1 year Summer I+0%	24.628	23.200	-0.228	0.000	0.09		0.076
S18.001	S3041-GR	60 minute 1 year Summer I+0%	24.597	23.187	-0.210	0.000	0.20		0.266
S18.002	S3042-GR	60 minute 1 year Summer I+0%	24.494	23.094	-0.200	0.000	0.24		0.297
S11.015	S3043	60 minute 1 year Summer I+0%	23.922	22.967	-0.955	0.000	0.01		0.608
S11.016	S3045	60 minute 1 year Summer I+0%	23.652	22.715	-0.937	0.000	0.02		1.483
S20.000	S3045-1-GR	60 minute 1 year Summer I+0%	24.136	22.749	-0.187	0.000	0.07		0.038
S20.001	S3045-2-GR	60 minute 1 year Summer I+0%	24.043	22.679	-0.164	0.000	0.17		0.127
S11.017	S3046	60 minute 1 year Summer I+0%	23.459	22.598	-0.861	0.000	0.02		1.142
S21.000	S3047-GR	60 minute 1 year Summer I+0%	24.058	22.609	-0.249	0.000	0.07		0.052
S21.001	S3048-GR	60 minute 1 year Summer I+0%	23.965	22.535	-0.230	0.000	0.12		0.201
S21.002	S3049-GR	60 minute 1 year Summer I+0%	23.872	22.463	-0.209	0.000	0.20		0.264
S11.018	S3050	60 minute 1 year Summer I+0%	23.365	22.368	-0.997	0.000	0.01		1.605
S11.019	S3051	60 minute 1 year Summer I+0%	23.316	22.351	-0.965	0.000	0.02		0.178
S11.020	S3053	60 minute 1 year Summer I+0%	22.996	22.129	-0.867	0.000	0.02		1.601
S22.000	S3053-1-GR	60 minute 1 year Summer I+0%	23.484	22.111	-0.173	0.000	0.12		0.054
S22.001	S3054-GR	60 minute 1 year Summer I+0%	23.269	21.929	-0.140	0.000	0.31		0.186
S11.021	S3055	60 minute 1 year Summer I+0%	22.739	21.859	-0.880	0.000	0.02		2.207
S11.022	S3056	60 minute 1 year Summer I+0%	22.621	21.729	-0.262	0.000	0.50		7.085
S11.023	S3057	60 minute 1 year Summer I+0%	22.633	21.605	-1.028	0.000	0.02		0.321
S23.000	S3058	60 minute 1 year Summer I+0%	27.878	26.183	-0.279	0.000	0.01		0.018
S23.001	S3059	60 minute 1 year Summer I+0%	27.725	26.031	-0.267	0.000	0.03		0.051
S23.002	S3060	60 minute 1 year Summer I+0%	27.292	25.327	-0.311	0.000	0.07		0.086
S23.003	S3061	60 minute 1 year Summer I+0%	27.136	25.216	-0.305	0.000	0.08		0.171
S23.004	S3062	60 minute 1 year Summer I+0%	26.998	25.045	-0.300	0.000	0.09		0.154
S23.005	S3063	60 minute 1 year Summer I+0%	26.633	24.729	-0.249	0.000	0.24		0.340
S23.006	S3064	60 minute 1 year Summer I+0%	26.623	24.560	-0.310	0.000	0.18		0.377
S23.007	S3065	60 minute 1 year Summer I+0%	26.942	24.522	-0.267	0.000	0.30		0.877
S23.008	S3066	60 minute 1 year Summer I+0%	27.141	24.486	-0.267	0.000	0.35		0.785
S24.000	S3067	60 minute 1 year Summer I+0%	27.294	25.679	-0.116	0.000	0.12		0.033
S23.009	S3068	60 minute 1 year Summer I+0%	27.239	24.448	-0.278	0.000	0.31		0.580
S23.010	S3069	60 minute 1 year Summer I+0%	26.728	24.296	-0.326	0.000	0.17		0.868
S25.000	S3070	60 minute 1 year Summer I+0%	25.706	24.174	-0.269	0.000	0.02		0.030
S23.011	S3071	60 minute 1 year Summer I+0%	25.786	23.657	-0.274	0.000	0.37		0.960
S23.012	S3072	60 minute 1 year Summer I+0%	25.341	23.588	-0.269	0.000	0.40		3.132
S23.013	S3073-GR	60 minute 1 year Summer I+0%	24.943	23.508	-0.235	0.000	0.44		5.532
S23.014	S3074-GR	60 minute 1 year Summer I+0%	24.865	23.448	-0.217	0.000	0.65		4.316
S23.015	S3075	60 minute 1 year Summer I+0%	24.643	23.123	-1.520	0.000	0.00		0.140

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.004	S3020	24.9	OK
S11.005	S3021	48.9	OK
S11.006	S3022	53.5	OK
S14.000	S3023	13.2	OK
S14.001	S3024	21.5	OK
S14.002	S3025	26.7	OK
S11.007	S3026	82.8	OK
S11.008	S3027	81.3	OK
S11.009	S3028	78.9	OK
S15.000	S3029	4.4	OK
S16.000	S3030	4.0	OK
S15.001	S3031	10.4	OK
S15.002	S3032	16.7	OK
S11.010	S3033	93.5	OK
S11.011	S3034-GR	93.9	OK
S17.000	S3035	10.1	OK
S11.012	S3036-GR	100.3	OK
S11.013	S3037-GR	102.9	OK
S11.014	S3038	103.0	OK
S18.000	S3039-GR	4.2	OK
S19.000	S3040-GR	4.9	OK
S18.001	S3041-GR	12.4	OK
S18.002	S3042-GR	14.5	OK
S11.015	S3043	111.5	OK
S11.016	S3045	111.7	OK
S20.000	S3045-1-GR	2.4	OK
S20.001	S3045-2-GR	5.6	OK
S11.017	S3046	114.6	OK
S21.000	S3047-GR	4.3	OK
S21.001	S3048-GR	7.8	OK
S21.002	S3049-GR	11.4	OK
S11.018	S3050	121.2	OK
S11.019	S3051	121.2	OK
S11.020	S3053	120.9	OK
S22.000	S3053-1-GR	4.6	OK
S22.001	S3054-GR	10.0	OK
S11.021	S3055	125.8	OK
S11.022	S3056	124.6	OK*
S11.023	S3057	124.5	OK
S23.000	S3058	1.5	OK
S23.001	S3059	3.7	OK
S23.002	S3060	9.2	OK
S23.003	S3061	12.8	OK
S23.004	S3062	16.4	OK
S23.005	S3063	24.3	OK
S23.006	S3064	30.1	OK
S23.007	S3065	31.9	OK
S23.008	S3066	34.0	OK
S24.000	S3067	6.5	OK
S23.009	S3068	44.4	OK
S23.010	S3069	47.7	OK
S25.000	S3070	4.3	OK
S23.011	S3071	68.2	OK
S23.012	S3072	77.0	OK
S23.013	S3073-GR	81.6	OK
S23.014	S3074-GR	83.0	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.015	S3075	83.0	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S23.016	S3076	60 minute 1 year Summer I+0%	24.775	22.895	-1.880	0.000	0.00	
S23.017	S3077	60 minute 1 year Summer I+0%	24.194	22.574	-1.620	0.000	0.00	
S23.018	S3078	60 minute 1 year Summer I+0%	24.085	22.481	-1.604	0.000	0.00	
S26.000	S3079-GR	60 minute 1 year Summer I+0%	24.183	22.710	-0.273	0.000	0.01	
S26.001	S3080-GR	60 minute 1 year Summer I+0%	24.142	22.699	-0.243	0.000	0.08	
S26.002	S3081-GR	60 minute 1 year Summer I+0%	23.927	22.511	-0.216	0.000	0.18	
S23.019	S3082	60 minute 1 year Summer I+0%	23.831	22.386	-1.445	0.000	0.00	
S23.020	S3083	60 minute 1 year Summer I+0%	23.455	22.244	-1.211	0.000	0.01	
S23.021	S3084	60 minute 1 year Summer I+0%	23.461	22.227	-0.218	0.000	0.53	
S23.022	S3085	60 minute 1 year Summer I+0%	23.546	22.115	-1.431	0.000	0.01	
S1.029	S3086-Basin C	360 minute 1 year Winter I+0%	22.300	20.893	-0.107	0.000	0.19	
S1.030	S3087-1	360 minute 1 year Winter I+0%	22.439	20.870	0.133	0.000	0.14	
S1.031	S3087	360 minute 1 year Winter I+0%	22.646	20.861	0.627	0.000	0.35	
S27.000	S3088	60 minute 1 year Summer I+0%	24.098	22.205	-0.406	0.000	0.12	
S27.001	S3089	60 minute 1 year Summer I+0%	23.359	21.663	-0.330	0.000	0.29	
S27.002	S3090	60 minute 1 year Summer I+0%	22.742	21.244	-0.376	0.000	0.18	
S27.003	S3091	240 minute 1 year Winter I+0%	22.519	20.932	-0.315	0.000	0.03	
S27.004	S3092	240 minute 1 year Winter I+0%	22.616	20.924	-0.203	0.000	0.06	
S28.000	S3093	60 minute 1 year Summer I+0%	23.318	21.226	-0.209	0.000	0.19	
S28.001	S3094	60 minute 1 year Summer I+0%	23.170	21.170	-0.201	0.000	0.24	
S28.002	S3095	60 minute 1 year Summer I+0%	22.964	21.114	-0.187	0.000	0.30	
S28.003	S3096	60 minute 1 year Summer I+0%	22.764	21.073	-0.176	0.000	0.34	
S28.004	S3097	60 minute 1 year Summer I+0%	22.667	21.050	-0.167	0.000	0.40	
S29.000	S3098	240 minute 1 year Winter I+0%	22.437	21.087	-0.150	0.000	0.00	
S27.005	S3099	240 minute 1 year Winter I+0%	22.561	20.916	-0.183	0.000	0.03	
S27.006	S3100	240 minute 1 year Winter I+0%	22.401	20.892	-0.158	0.000	0.03	
S27.007	S3101	240 minute 1 year Winter I+0%	22.379	20.865	-0.135	0.000	0.04	
S27.008	S3102	240 minute 1 year Winter I+0%	22.415	20.859	-0.125	0.000	0.05	
S30.000	S3103	60 minute 1 year Summer I+0%	23.337	21.683	-0.180	0.000	0.09	
S30.001	S3104	60 minute 1 year Summer I+0%	23.137	21.340	-0.154	0.000	0.22	
S30.002	S3105	60 minute 1 year Summer I+0%	22.984	21.271	-0.148	0.000	0.26	
S30.003	S3106	60 minute 1 year Summer I+0%	22.666	21.150	-0.133	0.000	0.35	
S30.004	S3107	60 minute 1 year Summer I+0%	22.568	21.109	-0.131	0.000	0.37	
S27.009	S3108	240 minute 1 year Winter I+0%	22.484	20.855	-0.112	0.000	0.05	
S27.010	S3109	240 minute 1 year Winter I+0%	22.471	20.848	-0.099	0.000	0.04	
S1.032	S3110	240 minute 1 year Winter I+0%	22.286	20.826	-0.079	0.000	0.05	
S1.033	S3111-CON	240 minute 1 year Winter I+0%	22.317	20.782	0.668	0.000	0.29	
S1.034	S3112	240 minute 1 year Winter I+0%	22.361	19.733	-0.259	0.000	0.37	
S1.035	S3113	240 minute 1 year Winter I+0%	22.443	19.670	-0.274	0.000	0.32	
S1.036	S3114	240 minute 1 year Winter I+0%	21.748	19.573	-0.280	0.000	0.31	
S1.037	S3115	240 minute 1 year Winter I+0%	21.314	19.398	-0.280	0.000	0.31	
S1.038	S3116	240 minute 1 year Winter I+0%	20.779	19.286	-0.230	0.000	0.39	
S1.039	S3117	240 minute 1 year Winter I+0%	20.378	19.248	-0.225	0.000	0.50	
S1.040	S3118-HW	240 minute 1 year Winter I+0%	20.192	19.131	-1.061	0.000	0.01	

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S23.016	S3076	0.279	83.0	OK
S23.017	S3077	0.911	82.9	OK
S23.018	S3078	0.194	83.0	OK
S26.000	S3079-GR	0.025	0.6	OK
S26.001	S3080-GR	0.111	5.7	OK
S26.002	S3081-GR	0.235	10.9	OK
S23.019	S3082	0.268	88.7	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S23.020	S3083	0.115	88.8	OK
S23.021	S3084	0.890	88.8	OK*
S23.022	S3085	0.233	88.8	OK
S1.029	S3086-Basin C	529.680	55.9	OK
S1.030	S3087-1	1.672	54.3	SURCHARGED
S1.031	S3087	3.630	53.3	SURCHARGED
S27.000	S3088	0.202	43.8	OK
S27.001	S3089	1.140	84.3	OK
S27.002	S3090	1.083	83.9	OK
S27.003	S3091	1.782	30.0	OK
S27.004	S3092	10.606	27.9	OK
S28.000	S3093	0.097	10.4	OK
S28.001	S3094	0.315	14.5	OK
S28.002	S3095	0.339	17.3	OK
S28.003	S3096	0.342	17.9	OK
S28.004	S3097	0.279	21.5	OK
S29.000	S3098	0.000	0.0	OK
S27.005	S3099	8.210	36.3	OK
S27.006	S3100	21.794	36.0	OK
S27.007	S3101	29.770	34.2	OK
S27.008	S3102	9.338	34.9	OK
S30.000	S3103	0.045	4.7	OK
S30.001	S3104	0.112	7.5	OK
S30.002	S3105	0.158	9.4	OK
S30.003	S3106	0.197	10.4	OK
S30.004	S3107	0.166	11.8	OK
S27.009	S3108	12.133	38.4	OK
S27.010	S3109	10.474	38.1	OK
S1.032	S3110	28.658	53.6	OK
S1.033	S3111-CON	29.976	45.6	SURCHARGED
S1.034	S3112	1.722	45.6	OK
S1.035	S3113	0.954	45.6	OK
S1.036	S3114	1.477	45.6	OK
S1.037	S3115	1.857	45.6	OK
S1.038	S3116	2.929	45.6	OK
S1.039	S3117	1.232	45.6	OK
S1.040	S3118-HW	0.272	45.6	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Point
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 450306 114752	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	299.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

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

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m³)	Pipe Flow (l/s)
S1.000	S4001	60 minute 30 year Summer I+0%	27.478	26.148	-0.130	0.000	0.38		0.102	22.0
S1.001	S4002	60 minute 30 year Summer I+0%	26.966	25.628	-0.138	0.000	0.56		0.226	36.8
S1.002	S4003	60 minute 30 year Summer I+0%	26.704	25.452	-0.158	0.000	0.61		0.756	64.1
S1.003	S4004	60 minute 30 year Summer I+0%	28.014	25.388	-0.032	0.000	0.79		4.867	69.1
S2.000	S4005	60 minute 30 year Summer I+0%	33.607	32.317	-0.090	0.000	0.67		0.147	24.1
S2.001	S4006	60 minute 30 year Summer I+0%	33.552	32.170	-0.122	0.000	0.43		0.221	38.1
S2.002	S4007	60 minute 30 year Summer I+0%	32.390	31.066	-0.123	0.000	0.42		0.130	43.7
S2.003	S4008	60 minute 30 year Summer I+0%	31.592	30.281	-0.111	0.000	0.51		0.141	52.8
S2.004	S4009	60 minute 30 year Summer I+0%	30.545	29.290	-0.087	0.000	0.69		0.183	62.9
S2.005	S4010	60 minute 30 year Summer I+0%	29.217	28.062	-0.069	0.000	0.83		0.232	67.0
S2.006	S4011	60 minute 30 year Summer I+0%	28.782	27.566	-0.129	0.000	0.38		0.121	68.9
S1.004	S4012	60 minute 30 year Summer I+0%	28.294	25.341	-0.032	0.000	1.00		2.169	121.6
S1.005	S4013	60 minute 30 year Summer I+0%	28.322	25.175	-0.169	0.000	0.78		2.265	149.3
S1.006	S4014	60 minute 30 year Summer I+0%	27.532	24.891	-0.360	0.000	0.22		1.823	152.9
S3.000	S4015	60 minute 30 year Summer I+0%	26.680	25.382	-0.098	0.000	0.61		0.138	33.8
S3.001	S4016	60 minute 30 year Summer I+0%	26.141	24.613	-0.208	0.000	0.40		0.238	52.1
S3.002	S4017	60 minute 30 year Summer I+0%	26.114	24.480	-0.130	0.000	0.71		1.856	61.9
S3.003	S4018	60 minute 30 year Summer I+0%	26.410	24.436	-0.127	0.000	0.76		1.183	75.6
S3.004	S4019	60 minute 30 year Summer I+0%	27.500	24.349	-0.100	0.000	0.89		2.665	76.8
S1.007	S4020	60 minute 30 year Summer I+0%	27.348	24.311	-0.097	0.000	0.63		2.206	252.4
S4.000	S4021	60 minute 30 year Summer I+0%	26.080	24.739	-0.079	0.000	0.75		0.160	26.8
S4.001	S4022	60 minute 30 year Summer I+0%	25.790	24.614	-0.103	0.000	0.74		0.388	49.3
S4.002	S4023	60 minute 30 year Summer I+0%	25.325	24.454	-0.064	0.000	0.98		1.704	53.8
S4.003	S4024	60 minute 30 year Summer I+0%	25.456	24.341	-0.137	0.000	0.70		0.582	68.3
S4.004	S4025	60 minute 30 year Summer I+0%	25.586	24.275	-0.107	0.000	0.80		2.325	80.6
S1.008	S4026	60 minute 30 year Summer I+0%	26.600	24.221	-0.043	0.000	1.17		22.928	314.1
S1.009	S4027	60 minute 30 year Summer I+0%	26.345	24.100	-0.138	0.000	1.24		5.223	316.2
S1.010	S4028	60 minute 30 year Summer I+0%	26.150	23.718	-0.501	0.000	0.24		1.212	331.7
S1.011	S4029	60 minute 30 year Summer I+0%	24.845	23.187	0.004	0.000	0.53		11.860	342.7
S5.000	S4030	60 minute 30 year Summer I+0%	25.677	24.445	-0.060	0.000	0.67		0.096	14.0

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S1.000	S4001	OK
S1.001	S4002	OK
S1.002	S4003	OK
S1.003	S4004	OK
S2.000	S4005	OK
S2.001	S4006	OK
S2.002	S4007	OK
S2.003	S4008	OK
S2.004	S4009	OK
S2.005	S4010	OK
S2.006	S4011	OK
S1.004	S4012	OK
S1.005	S4013	OK
S1.006	S4014	OK
S3.000	S4015	OK
S3.001	S4016	OK
S3.002	S4017	OK
S3.003	S4018	OK
S3.004	S4019	OK
S1.007	S4020	OK
S4.000	S4021	OK
S4.001	S4022	OK
S4.002	S4023	OK
S4.003	S4024	OK
S4.004	S4025	OK
S1.008	S4026	OK
S1.009	S4027	OK
S1.010	S4028	OK
S1.011	S4029	SURCHARGED
S5.000	S4030	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)
S5.001	S4031	60 minute 30 year Summer I+0%	25.276	23.968	-0.159	0.000	0.44	
S1.012	S4032	60 minute 30 year Summer I+0%	24.078	23.061	0.048	0.000	0.60	
S1.013	S4033	60 minute 30 year Summer I+0%	23.942	23.032	0.072	0.000	0.89	
S1.014	S4034	60 minute 30 year Summer I+0%	23.833	23.006	0.077	0.000	1.40	
S6.000	S4035	60 minute 30 year Summer I+0%	31.555	29.882	-0.143	0.000	0.29	
S6.001	S4036	60 minute 30 year Summer I+0%	29.895	28.239	-0.126	0.000	0.40	
S6.002	S4037	60 minute 30 year Summer I+0%	29.250	27.639	-0.086	0.000	0.69	
S7.000	S4038	60 minute 30 year Summer I+0%	30.720	29.086	-0.124	0.000	0.41	
S7.001	S4039	60 minute 30 year Summer I+0%	29.740	28.104	-0.141	0.000	0.55	
S7.002	S4040	60 minute 30 year Summer I+0%	29.410	27.713	-0.207	0.000	0.42	
S7.003	S4041	60 minute 30 year Summer I+0%	29.250	27.576	-0.194	0.000	0.47	
S7.004	S4042	60 minute 30 year Summer I+0%	29.025	27.347	-0.193	0.000	0.47	
S6.003	S4043	60 minute 30 year Summer I+0%	28.650	26.979	-0.166	0.000	0.59	
S6.004	S4044	60 minute 30 year Summer I+0%	28.150	26.430	-0.225	0.000	0.33	
S8.000	S4045	60 minute 30 year Summer I+0%	26.200	24.067	-0.061	0.000	0.65	
S8.001	S4046	60 minute 30 year Summer I+0%	26.500	23.778	-0.075	0.000	0.77	
S8.002	S4047	60 minute 30 year Summer I+0%	26.440	23.541	-0.135	0.000	0.58	
S6.005	S4048	60 minute 30 year Summer I+0%	26.160	23.408	-0.175	0.000	0.84	
S6.006	S4049	60 minute 30 year Summer I+0%	24.555	23.139	-0.380	0.000	0.29	
S6.007	S4050	60 minute 30 year Summer I+0%	24.220	23.046	0.060	0.000	1.37	
S6.008	S4051	60 minute 30 year Summer I+0%	23.845	23.015	0.053	0.000	0.44	
S6.009	S4052	60 minute 30 year Summer I+0%	23.675	23.000	0.098	0.000	0.48	
S6.010	S4053	60 minute 30 year Summer I+0%	23.600	22.991	0.096	0.000	0.58	
S1.015	S4054	60 minute 30 year Summer I+0%	23.565	22.980	0.095	0.000	1.72	
S1.016	S4055	60 minute 30 year Summer I+0%	23.660	22.945	0.072	0.000	1.97	
S1.017	S4056	60 minute 30 year Summer I+0%	23.840	22.905	0.047	0.000	1.80	
S9.000	S4057	60 minute 30 year Summer I+0%	26.352	25.015	-0.137	0.000	0.33	
S9.001	S4058	60 minute 30 year Summer I+0%	25.763	24.417	-0.145	0.000	0.52	
S9.002	S4059	60 minute 30 year Summer I+0%	25.576	24.202	-0.111	0.000	0.71	
S9.003	S4060	60 minute 30 year Summer I+0%	25.493	24.110	-0.129	0.000	0.61	
S10.000	S4061	60 minute 30 year Summer I+0%	25.428	24.091	-0.137	0.000	0.33	
S9.004	S4062	60 minute 30 year Summer I+0%	25.210	23.911	-0.099	0.000	0.77	
S9.005	S4063	60 minute 30 year Summer I+0%	24.964	23.624	-0.139	0.000	0.71	
S9.006	S4064	60 minute 30 year Summer I+0%	24.852	23.384	-0.268	0.000	0.34	
S9.007	S4065	60 minute 30 year Summer I+0%	24.696	23.149	-0.271	0.000	0.33	
S9.008	S4066	60 minute 30 year Winter I+0%	24.374	23.004	-0.094	0.000	0.35	
S9.009	S4067	60 minute 30 year Winter I+0%	24.123	22.939	0.045	0.000	0.66	
S1.018	S4068	60 minute 30 year Summer I+0%	23.970	22.869	0.024	0.000	1.35	
S1.019	S4069	60 minute 30 year Winter I+0%	23.988	22.831	0.000	0.000	1.94	
S1.020	S4069-BASIN D	60 minute 30 year Winter I+0%	23.500	22.806	0.471	0.000	0.68	
S1.021	S3001-CON	60 minute 30 year Winter I+0%	23.971	22.755	0.551	0.000	0.89	
S1.022	S3002	60 minute 30 year Winter I+0%	24.693	21.970	-0.136	0.000	0.90	
S1.023	S3003	60 minute 30 year Winter I+0%	25.302	21.850	-0.107	0.000	0.87	
S1.024	S3004	60 minute 30 year Winter I+0%	25.496	21.742	-0.052	0.000	0.81	
S1.025	S3005	120 minute 30 year Winter I+0%	25.233	21.632	0.001	0.000	0.90	
S1.026	S3006	60 minute 30 year Winter I+0%	24.970	21.572	0.000	0.000	0.90	
S1.027	S3007	60 minute 30 year Winter I+0%	24.235	21.508	0.000	0.000	0.93	
S1.028	S3008	120 minute 30 year Winter I+0%	24.282	21.457	0.000	0.000	1.24	
S11.000	S3010	60 minute 30 year Summer I+0%	27.983	26.285	-0.377	0.000	0.06	
S11.001	S3011	60 minute 30 year Summer I+0%	27.329	25.670	-0.370	0.000	0.07	
S11.002	S3012	60 minute 30 year Summer I+0%	26.707	24.889	-0.319	0.000	0.19	
S11.003	S3013	60 minute 30 year Summer I+0%	26.514	24.699	-0.315	0.000	0.20	
S11.004	S3014	60 minute 30 year Summer I+0%	26.322	24.482	-0.340	0.000	0.14	
S12.000	S3015	60 minute 30 year Summer I+0%	27.434	25.860	-0.074	0.000	0.52	
S13.000	S3016	60 minute 30 year Summer I+0%	27.405	25.834	-0.145	0.000	0.27	
S12.001	S3017	60 minute 30 year Summer I+0%	27.355	25.479	-0.261	0.000	0.20	
S12.002	S3018	60 minute 30 year Summer I+0%	26.944	25.268	-0.265	0.000	0.19	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S5.001	S4031	0.156	58.2	OK
S1.012	S4032	6.866	382.7	SURCHARGED
S1.013	S4033	17.910	384.4	SURCHARGED
S1.014	S4034	10.925	385.1	SURCHARGED
S6.000	S4035	0.087	31.4	OK
S6.001	S4036	0.119	37.8	OK
S6.002	S4037	0.188	46.9	OK
S7.000	S4038	0.108	31.2	OK
S7.001	S4039	0.202	55.6	OK
S7.002	S4040	0.324	63.0	OK
S7.003	S4041	0.615	80.2	OK
S7.004	S4042	0.649	89.8	OK
S6.003	S4043	0.777	144.4	OK
S6.004	S4044	0.343	163.4	OK
S8.000	S4045	0.095	11.1	OK
S8.001	S4046	0.204	30.3	OK
S8.002	S4047	0.285	36.6	OK
S6.005	S4048	1.116	211.2	OK
S6.006	S4049	2.177	212.3	OK
S6.007	S4050	2.351	213.0	SURCHARGED
S6.008	S4051	4.954	210.6	SURCHARGED
S6.009	S4052	6.080	214.1	SURCHARGED
S6.010	S4053	5.899	214.1	SURCHARGED
S1.015	S4054	16.675	574.1	SURCHARGED
S1.016	S4055	8.490	576.0	SURCHARGED
S1.017	S4056	9.880	576.8	SURCHARGED
S9.000	S4057	0.094	19.4	OK
S9.001	S4058	0.210	42.6	OK
S9.002	S4059	0.788	48.7	OK
S9.003	S4060	0.397	59.4	OK
S10.000	S4061	0.094	17.2	OK
S9.004	S4062	0.718	83.7	OK
S9.005	S4063	0.536	92.5	OK
S9.006	S4064	0.345	92.8	OK
S9.007	S4065	0.473	102.5	OK
S9.008	S4066	2.039	88.6	OK
S9.009	S4067	3.257	92.6	SURCHARGED
S1.018	S4068	10.271	684.7	SURCHARGED
S1.019	S4069	4.496	644.7	OK
S1.020	S4069-BASIN D	625.936	188.6	SURCHARGED
S1.021	S3001-CON	5.350	188.6	SURCHARGED
S1.022	S3002	5.857	187.7	OK
S1.023	S3003	10.200	184.2	OK
S1.024	S3004	12.783	171.1	OK
S1.025	S3005	14.353	169.1	SURCHARGED
S1.026	S3006	5.869	170.5	OK
S1.027	S3007	6.344	170.1	OK
S1.028	S3008	5.169	168.8	OK
S11.000	S3010	0.098	22.3	OK
S11.001	S3011	0.159	33.2	OK
S11.002	S3012	0.263	46.0	OK
S11.003	S3013	0.300	48.4	OK
S11.004	S3014	0.212	57.3	OK
S12.000	S3015	0.081	13.0	OK
S13.000	S3016	0.084	18.8	OK
S12.001	S3017	0.157	35.1	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m^3)	Pipe Flow (l/s)	Status
S12.002	S3018	0.253	52.9	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m³)
S12.003	S3019	60 minute 30 year Summer I+0%	26.586	24.786	-0.225	0.000	0.33		0.298
S12.004	S3020	60 minute 30 year Summer I+0%	26.355	24.540	-0.240	0.000	0.28		0.286
S11.005	S3021	60 minute 30 year Summer I+0%	25.834	24.280	0.021	0.000	0.51		3.723
S11.006	S3022	60 minute 30 year Winter I+0%	26.132	24.255	0.067	0.000	0.33		11.734
S14.000	S3023	60 minute 30 year Summer I+0%	27.248	25.567	-0.181	0.000	0.33		0.129
S14.001	S3024	60 minute 30 year Summer I+0%	26.960	25.279	-0.181	0.000	0.33		0.252
S14.002	S3025	60 minute 30 year Summer I+0%	26.657	24.565	-0.157	0.000	0.46		0.224
S11.007	S3026	60 minute 30 year Winter I+0%	26.356	24.127	0.000	0.000	0.88		3.303
S11.008	S3027	60 minute 30 year Summer I+0%	25.760	24.096	0.000	0.000	0.62		3.939
S11.009	S3028	60 minute 30 year Summer I+0%	25.205	23.988	0.018	0.000	1.03		14.128
S15.000	S3029	60 minute 30 year Summer I+0%	26.390	24.866	-0.099	0.000	0.25		0.052
S16.000	S3030	60 minute 30 year Summer I+0%	26.231	24.713	-0.093	0.000	0.31		0.059
S15.001	S3031	60 minute 30 year Summer I+0%	26.202	24.283	-0.110	0.000	0.52		0.128
S15.002	S3032	60 minute 30 year Summer I+0%	25.813	24.041	0.042	0.000	1.35		0.793
S11.010	S3033	60 minute 30 year Summer I+0%	25.672	23.956	0.019	0.000	0.78		5.389
S11.011	S3034-GR	60 minute 30 year Summer I+0%	25.057	23.910	0.053	0.000	0.66		9.490
S17.000	S3035	60 minute 30 year Summer I+0%	25.408	23.966	-0.089	0.000	0.67		0.149
S11.012	S3036-GR	60 minute 30 year Summer I+0%	24.964	23.769	0.005	0.000	1.01		4.713
S11.013	S3037-GR	60 minute 30 year Summer I+0%	24.890	23.690	0.000	0.000	1.80		12.046
S11.014	S3038	60 minute 30 year Summer I+0%	24.022	23.177	-0.845	0.000	0.03		0.308
S18.000	S3039-GR	60 minute 30 year Summer I+0%	24.640	23.261	-0.179	0.000	0.19		0.132
S19.000	S3040-GR	60 minute 30 year Summer I+0%	24.628	23.260	-0.168	0.000	0.24		0.144
S18.001	S3041-GR	60 minute 30 year Summer I+0%	24.597	23.251	-0.146	0.000	0.52		0.584
S18.002	S3042-GR	60 minute 30 year Summer I+0%	24.494	23.170	-0.124	0.000	0.64		0.846
S11.015	S3043	60 minute 30 year Summer I+0%	23.922	23.061	-0.861	0.000	0.04		2.155
S11.016	S3045	60 minute 30 year Summer I+0%	23.652	22.813	-0.839	0.000	0.04		4.202
S20.000	S3045-1-GR	60 minute 30 year Summer I+0%	24.136	22.774	-0.162	0.000	0.18		0.066
S20.001	S3045-2-GR	60 minute 30 year Summer I+0%	24.043	22.725	-0.118	0.000	0.45		0.233
S11.017	S3046	60 minute 30 year Summer I+0%	23.459	22.694	-0.765	0.000	0.05		3.122
S21.000	S3047-GR	60 minute 30 year Summer I+0%	24.058	22.644	-0.214	0.000	0.17		0.092
S21.001	S3048-GR	60 minute 30 year Summer I+0%	23.965	22.587	-0.178	0.000	0.33		0.424
S21.002	S3049-GR	60 minute 30 year Summer I+0%	23.872	22.530	-0.142	0.000	0.54		0.670
S11.018	S3050	60 minute 30 year Summer I+0%	23.365	22.466	-0.899	0.000	0.03		4.642
S11.019	S3051	60 minute 30 year Summer I+0%	23.316	22.450	-0.866	0.000	0.04		0.485
S11.020	S3053	60 minute 30 year Summer I+0%	22.996	22.229	-0.767	0.000	0.05		4.457
S22.000	S3053-1-GR	60 minute 30 year Summer I+0%	23.484	22.146	-0.138	0.000	0.32		0.093
S22.001	S3054-GR	60 minute 30 year Summer I+0%	23.269	22.069	0.000	0.000	0.83		0.937
S11.021	S3055	60 minute 30 year Summer I+0%	22.739	22.063	-0.676	0.000	0.05		12.149
S11.022	S3056	60 minute 30 year Summer I+0%	22.621	22.045	0.054	0.000	1.00		34.222
S11.023	S3057	60 minute 30 year Winter I+0%	22.633	21.684	-0.949	0.000	0.03		0.561
S23.000	S3058	60 minute 30 year Summer I+0%	27.878	26.199	-0.263	0.000	0.04		0.037
S23.001	S3059	60 minute 30 year Summer I+0%	27.725	26.052	-0.246	0.000	0.07		0.089
S23.002	S3060	60 minute 30 year Summer I+0%	27.292	25.375	-0.263	0.000	0.19		0.160
S23.003	S3061	60 minute 30 year Summer I+0%	27.136	25.265	-0.256	0.000	0.22		0.350
S23.004	S3062	60 minute 30 year Summer I+0%	26.998	25.097	-0.247	0.000	0.25		0.324
S23.005	S3063	60 minute 30 year Summer I+0%	26.633	24.835	-0.144	0.000	0.69		0.979
S23.006	S3064	60 minute 30 year Summer I+0%	26.623	24.716	-0.154	0.000	0.49		1.960
S23.007	S3065	60 minute 30 year Summer I+0%	26.942	24.686	-0.102	0.000	0.83		2.175
S23.008	S3066	60 minute 30 year Summer I+0%	27.141	24.650	-0.103	0.000	0.95		1.926
S24.000	S3067	60 minute 30 year Summer I+0%	27.294	25.701	-0.093	0.000	0.31		0.059
S23.009	S3068	60 minute 30 year Summer I+0%	27.239	24.597	-0.129	0.000	0.84		1.380
S23.010	S3069	60 minute 30 year Summer I+0%	26.728	24.387	-0.235	0.000	0.46		2.334
S25.000	S3070	60 minute 30 year Summer I+0%	25.706	24.191	-0.252	0.000	0.06		0.049
S23.011	S3071	60 minute 30 year Summer I+0%	25.786	23.968	0.037	0.000	0.97		6.041
S23.012	S3072	60 minute 30 year Summer I+0%	25.341	23.899	0.042	0.000	1.04		8.378
S23.013	S3073-GR	60 minute 30 year Summer I+0%	24.943	23.775	0.032	0.000	1.16		12.360
S23.014	S3074-GR	60 minute 30 year Summer I+0%	24.865	23.668	0.003	0.000	1.72		8.373

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.003	S3019	62.9	OK
S12.004	S3020	67.3	OK
S11.005	S3021	124.8	SURCHARGED
S11.006	S3022	113.0	SURCHARGED
S14.000	S3023	33.9	OK
S14.001	S3024	57.2	OK
S14.002	S3025	72.2	OK
S11.007	S3026	174.3	OK
S11.008	S3027	184.9	OK
S11.009	S3028	184.8	SURCHARGED
S15.000	S3029	11.4	OK
S16.000	S3030	10.2	OK
S15.001	S3031	27.2	OK
S15.002	S3032	45.3	SURCHARGED
S11.010	S3033	220.9	SURCHARGED
S11.011	S3034-GR	227.8	SURCHARGED
S17.000	S3035	25.3	OK
S11.012	S3036-GR	247.1	SURCHARGED
S11.013	S3037-GR	256.1	OK
S11.014	S3038	256.8	OK
S18.000	S3039-GR	10.8	OK
S19.000	S3040-GR	12.7	OK
S18.001	S3041-GR	32.6	OK
S18.002	S3042-GR	38.3	OK
S11.015	S3043	283.9	OK
S11.016	S3045	284.6	OK
S20.000	S3045-1-GR	6.2	OK
S20.001	S3045-2-GR	15.3	OK
S11.017	S3046	292.7	OK
S21.000	S3047-GR	11.0	OK
S21.001	S3048-GR	20.8	OK
S21.002	S3049-GR	30.7	OK
S11.018	S3050	310.6	OK
S11.019	S3051	309.7	OK
S11.020	S3053	310.3	OK
S22.000	S3053-1-GR	11.9	OK
S22.001	S3054-GR	27.1	OK
S11.021	S3055	300.7	OK
S11.022	S3056	248.6	SURCHARGED*
S11.023	S3057	248.6	OK
S23.000	S3058	3.7	OK
S23.001	S3059	10.1	OK
S23.002	S3060	25.7	OK
S23.003	S3061	36.3	OK
S23.004	S3062	46.5	OK
S23.005	S3063	68.4	OK
S23.006	S3064	82.6	OK
S23.007	S3065	86.8	OK
S23.008	S3066	92.7	OK
S24.000	S3067	16.7	OK
S23.009	S3068	120.7	OK
S23.010	S3069	128.8	OK
S25.000	S3070	11.1	OK
S23.011	S3071	179.2	SURCHARGED
S23.012	S3072	201.7	SURCHARGED
S23.013	S3073-GR	217.5	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.014	S3074-GR	221.9	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S23.015	S3075	60 minute 30 year Summer I+0%	24.643	23.199	-1.444	0.000	0.01	
S23.016	S3076	60 minute 30 year Summer I+0%	24.775	22.978	-1.797	0.000	0.01	
S23.017	S3077	60 minute 30 year Summer I+0%	24.194	22.654	-1.540	0.000	0.01	
S23.018	S3078	60 minute 30 year Summer I+0%	24.085	22.595	-1.490	0.000	0.01	
S26.000	S3079-GR	60 minute 30 year Summer I+0%	24.183	22.743	-0.240	0.000	0.03	
S26.001	S3080-GR	60 minute 30 year Summer I+0%	24.142	22.740	-0.202	0.000	0.23	
S26.002	S3081-GR	60 minute 30 year Summer I+0%	23.927	22.595	-0.132	0.000	0.50	
S23.019	S3082	60 minute 30 year Summer I+0%	23.831	22.585	-1.246	0.000	0.01	
S23.020	S3083	60 minute 30 year Summer I+0%	23.455	22.580	-0.875	0.000	0.01	
S23.021	S3084	60 minute 30 year Summer I+0%	23.461	22.576	0.131	0.000	1.35	
S23.022	S3085	60 minute 30 year Summer I+0%	23.546	22.193	-1.353	0.000	0.01	
S1.029	S3086-Basin C	480 minute 30 year Winter I+0%	22.300	21.240	0.240	0.000	0.17	
S1.030	S3087-1	360 minute 30 year Winter I+0%	22.439	21.225	0.488	0.000	0.12	
S1.031	S3087	360 minute 30 year Winter I+0%	22.646	21.206	0.972	0.000	0.32	
S27.000	S3088	60 minute 30 year Summer I+0%	24.098	22.283	-0.328	0.000	0.30	
S27.001	S3089	60 minute 30 year Summer I+0%	23.359	21.815	-0.178	0.000	0.75	
S27.002	S3090	60 minute 30 year Winter I+0%	22.742	21.449	-0.171	0.000	0.39	
S27.003	S3091	60 minute 30 year Winter I+0%	22.519	21.389	0.142	0.000	0.19	
S27.004	S3092	60 minute 30 year Winter I+0%	22.616	21.380	0.253	0.000	0.40	
S28.000	S3093	60 minute 30 year Winter I+0%	23.318	21.559	0.124	0.000	0.39	
S28.001	S3094	60 minute 30 year Winter I+0%	23.170	21.544	0.173	0.000	0.51	
S28.002	S3095	60 minute 30 year Winter I+0%	22.964	21.526	0.225	0.000	0.64	
S28.003	S3096	60 minute 30 year Winter I+0%	22.764	21.462	0.213	0.000	0.73	
S28.004	S3097	60 minute 30 year Winter I+0%	22.667	21.445	0.228	0.000	0.88	
S29.000	S3098	60 minute 30 year Winter I+0%	22.437	21.369	0.132	0.000	0.08	
S27.005	S3099	60 minute 30 year Winter I+0%	22.561	21.372	0.273	0.000	0.19	
S27.006	S3100	60 minute 30 year Winter I+0%	22.401	21.366	0.316	0.000	0.18	
S27.007	S3101	60 minute 30 year Winter I+0%	22.379	21.359	0.359	0.000	0.26	
S27.008	S3102	60 minute 30 year Winter I+0%	22.415	21.355	0.371	0.000	0.31	
S30.000	S3103	60 minute 30 year Summer I+0%	23.337	21.710	-0.153	0.000	0.22	
S30.001	S3104	60 minute 30 year Winter I+0%	23.137	21.418	-0.076	0.000	0.47	
S30.002	S3105	60 minute 30 year Winter I+0%	22.984	21.399	-0.020	0.000	0.56	
S30.003	S3106	60 minute 30 year Winter I+0%	22.666	21.378	0.095	0.000	0.76	
S30.004	S3107	60 minute 30 year Winter I+0%	22.568	21.366	0.126	0.000	0.80	
S27.009	S3108	60 minute 30 year Winter I+0%	22.484	21.350	0.383	0.000	0.29	
S27.010	S3109	60 minute 30 year Winter I+0%	22.471	21.345	0.398	0.000	0.20	
S1.032	S3110	60 minute 30 year Winter I+0%	22.286	21.337	0.432	0.000	0.10	
S1.033	S3111-CON	60 minute 30 year Winter I+0%	22.317	21.335	1.221	0.000	0.35	
S1.034	S3112	60 minute 30 year Winter I+0%	22.361	19.753	-0.239	0.000	0.44	
S1.035	S3113	60 minute 30 year Winter I+0%	22.443	19.688	-0.256	0.000	0.39	
S1.036	S3114	60 minute 30 year Winter I+0%	21.748	19.591	-0.262	0.000	0.37	
S1.037	S3115	60 minute 30 year Winter I+0%	21.314	19.417	-0.261	0.000	0.37	
S1.038	S3116	60 minute 30 year Winter I+0%	20.779	19.311	-0.205	0.000	0.46	
S1.039	S3117	60 minute 30 year Winter I+0%	20.378	19.273	-0.200	0.000	0.60	
S1.040	S3118-HW	60 minute 30 year Winter I+0%	20.192	19.142	-1.050	0.000	0.01	

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S23.015	S3075	0.350	222.1	OK
S23.016	S3076	1.219	222.4	OK
S23.017	S3077	2.321	222.3	OK
S23.018	S3078	1.103	220.2	OK
S26.000	S3079-GR	0.062	1.7	OK
S26.001	S3080-GR	0.197	16.0	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m^3)	Pipe Flow (l/s)	Status
S26.002	S3081-GR	0.849	30.7	OK
S23.019	S3082	2.750	231.3	OK
S23.020	S3083	5.051	228.9	OK
S23.021	S3084	5.505	228.9	SURCHARGED*
S23.022	S3085	0.455	228.6	OK
S1.029	S3086-Basin C	1873.161	47.8	SURCHARGED
S1.030	S3087-1	2.238	49.4	SURCHARGED
S1.031	S3087	4.125	49.1	SURCHARGED
S27.000	S3088	0.339	112.6	OK
S27.001	S3089	3.805	217.9	OK
S27.002	S3090	6.352	184.8	OK
S27.003	S3091	5.670	185.6	SURCHARGED
S27.004	S3092	15.382	184.1	SURCHARGED
S28.000	S3093	0.474	21.7	SURCHARGED
S28.001	S3094	1.798	30.8	SURCHARGED
S28.002	S3095	1.708	37.0	SURCHARGED
S28.003	S3096	1.388	38.7	SURCHARGED
S28.004	S3097	1.052	47.0	SURCHARGED
S29.000	S3098	0.313	1.3	SURCHARGED
S27.005	S3099	12.140	230.3	SURCHARGED
S27.006	S3100	27.583	210.7	SURCHARGED
S27.007	S3101	36.779	198.6	SURCHARGED
S27.008	S3102	12.133	201.0	SURCHARGED
S30.000	S3103	0.076	12.2	OK
S30.001	S3104	0.313	16.2	OK
S30.002	S3105	0.573	20.5	OK
S30.003	S3106	1.187	22.7	SURCHARGED
S30.004	S3107	0.629	25.8	SURCHARGED
S27.009	S3108	15.619	214.0	SURCHARGED
S27.010	S3109	13.285	209.6	SURCHARGED
S1.032	S3110	34.707	93.4	SURCHARGED
S1.033	S3111-CON	36.572	55.2	SURCHARGED
S1.034	S3112	2.037	54.9	OK
S1.035	S3113	1.111	54.8	OK
S1.036	S3114	1.741	54.7	OK
S1.037	S3115	2.242	54.4	OK
S1.038	S3116	3.628	54.2	OK
S1.039	S3117	1.443	54.2	OK
S1.040	S3118-HW	0.313	54.2	OK

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+0%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Point
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 450306 114752		

Margin for Flood Risk Warning (mm)	299.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%)	0, +20, +40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S1.000	S4001	60 minute 100 year Summer Q+0%	27.478	26.162	-0.116	0.000	0.48	0.118	28.0
S1.001	S4002	60 minute 100 year Summer Q+0%	26.966	25.656	-0.110	0.000	0.71	0.279	46.9
S1.002	S4003	60 minute 100 year Summer Q+0%	26.704	25.556	-0.054	0.000	0.74	1.851	77.5
S1.003	S4004	60 minute 100 year Summer Q+0%	28.014	25.450	0.030	0.000	0.90	6.119	78.9
S2.000	S4005	60 minute 100 year Summer Q+0%	33.607	32.342	-0.065	0.000	0.85	0.175	30.7
S2.001	S4006	60 minute 100 year Summer Q+0%	33.552	32.186	-0.106	0.000	0.54	0.291	48.5
S2.002	S4007	60 minute 100 year Summer Q+0%	32.390	31.082	-0.107	0.000	0.53	0.158	55.7
S2.003	S4008	60 minute 100 year Summer Q+0%	31.592	30.299	-0.093	0.000	0.65	0.171	67.1
S2.004	S4009	60 minute 100 year Summer Q+0%	30.545	29.316	-0.061	0.000	0.88	0.226	79.9
S2.005	S4010	60 minute 100 year Summer Q+0%	29.217	28.166	0.035	0.000	1.04	0.449	84.4
S2.006	S4011	60 minute 100 year Summer Q+0%	28.782	27.580	-0.115	0.000	0.48	0.143	87.1
S1.004	S4012	60 minute 100 year Summer Q+0%	28.294	25.386	0.013	0.000	1.38	2.369	167.8
S1.005	S4013	60 minute 100 year Summer Q+0%	28.322	25.344	0.001	0.000	1.01	3.514	194.6
S1.006	S4014	60 minute 100 year Summer Q+0%	27.532	24.915	-0.335	0.000	0.28	2.294	198.8
S3.000	S4015	60 minute 100 year Summer Q+0%	26.680	25.404	-0.076	0.000	0.77	0.163	42.6
S3.001	S4016	60 minute 100 year Summer Q+0%	26.141	24.644	-0.177	0.000	0.51	0.286	66.0
S3.002	S4017	60 minute 100 year Summer Q+0%	26.114	24.592	-0.018	0.000	0.87	3.496	75.1
S3.003	S4018	60 minute 100 year Summer Q+0%	26.410	24.539	-0.024	0.000	0.91	1.778	90.7
S3.004	S4019	60 minute 100 year Winter Q+0%	27.500	24.461	0.012	0.000	0.90	4.045	77.9
S1.007	S4020	60 minute 100 year Summer Q+0%	27.348	24.406	-0.002	0.000	0.78	2.882	313.5
S4.000	S4021	60 minute 100 year Summer Q+0%	26.080	24.794	-0.024	0.000	0.93	0.222	33.2
S4.001	S4022	60 minute 100 year Summer Q+0%	25.790	24.709	-0.008	0.000	0.90	0.795	59.8
S4.002	S4023	60 minute 100 year Summer Q+0%	25.325	24.547	0.029	0.000	1.21	2.884	66.7
S4.003	S4024	60 minute 100 year Summer Q+0%	25.456	24.459	-0.019	0.000	0.83	1.013	81.2
S4.004	S4025	60 minute 100 year Summer Q+0%	25.586	24.386	0.004	0.000	0.94	3.496	93.9
S1.008	S4026	60 minute 100 year Summer Q+0%	26.600	24.279	0.015	0.000	1.52	24.832	410.2
S1.009	S4027	60 minute 100 year Summer Q+0%	26.345	24.238	0.000	0.000	1.61	6.410	412.7
S1.010	S4028	60 minute 100 year Summer Q+0%	26.150	23.760	-0.459	0.000	0.32	1.515	436.5

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+0%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S1.000	S4001	OK
S1.001	S4002	OK
S1.002	S4003	OK
S1.003	S4004	SURCHARGED
S2.000	S4005	OK
S2.001	S4006	OK
S2.002	S4007	OK
S2.003	S4008	OK
S2.004	S4009	OK
S2.005	S4010	SURCHARGED
S2.006	S4011	OK
S1.004	S4012	SURCHARGED
S1.005	S4013	SURCHARGED
S1.006	S4014	OK
S3.000	S4015	OK
S3.001	S4016	OK
S3.002	S4017	OK
S3.003	S4018	OK
S3.004	S4019	SURCHARGED
S1.007	S4020	OK
S4.000	S4021	OK
S4.001	S4022	OK
S4.002	S4023	SURCHARGED
S4.003	S4024	OK
S4.004	S4025	SURCHARGED
S1.008	S4026	SURCHARGED
S1.009	S4027	OK
S1.010	S4028	OK

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+0%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S1.011	S4029	60 minute 100 year Summer Q+0%	24.845	23.247	0.064	0.000	0.70	13.596
S5.000	S4030	60 minute 100 year Summer Q+0%	25.677	24.462	-0.043	0.000	0.85	0.115
S5.001	S4031	60 minute 100 year Summer Q+0%	25.276	23.990	-0.137	0.000	0.56	0.182
S1.012	S4032	60 minute 100 year Summer Q+0%	24.078	23.193	0.180	0.000	0.81	7.946
S1.013	S4033	60 minute 100 year Summer Q+0%	23.942	23.153	0.193	0.000	1.20	18.531
S1.014	S4034	60 minute 100 year Summer Q+0%	23.833	23.117	0.188	0.000	1.88	11.353
S6.000	S4035	60 minute 100 year Summer Q+0%	31.555	29.894	-0.131	0.000	0.36	0.100
S6.001	S4036	60 minute 100 year Summer Q+0%	29.895	28.254	-0.111	0.000	0.51	0.142
S6.002	S4037	60 minute 100 year Summer Q+0%	29.250	27.665	-0.060	0.000	0.88	0.233
S7.000	S4038	60 minute 100 year Summer Q+0%	30.720	29.101	-0.109	0.000	0.53	0.126
S7.001	S4039	60 minute 100 year Summer Q+0%	29.740	28.131	-0.114	0.000	0.69	0.246
S7.002	S4040	60 minute 100 year Summer Q+0%	29.410	27.739	-0.181	0.000	0.53	0.396
S7.003	S4041	60 minute 100 year Summer Q+0%	29.250	27.604	-0.166	0.000	0.60	0.765
S7.004	S4042	60 minute 100 year Summer Q+0%	29.025	27.376	-0.164	0.000	0.60	0.823
S6.003	S4043	60 minute 100 year Summer Q+0%	28.650	27.016	-0.129	0.000	0.76	1.110
S6.004	S4044	60 minute 100 year Summer Q+0%	28.150	26.451	-0.204	0.000	0.42	0.416
S8.000	S4045	60 minute 100 year Summer Q+0%	26.200	24.083	-0.045	0.000	0.83	0.113
S8.001	S4046	60 minute 100 year Summer Q+0%	26.500	23.807	-0.046	0.000	0.98	0.261
S8.002	S4047	60 minute 100 year Summer Q+0%	26.440	23.640	-0.036	0.000	0.70	0.728
S6.005	S4048	60 minute 100 year Summer Q+0%	26.160	23.583	0.000	0.000	1.03	2.621
S6.006	S4049	60 minute 100 year Summer Q+0%	24.555	23.183	-0.336	0.000	0.36	2.994
S6.007	S4050	60 minute 100 year Summer Q+0%	24.220	23.154	0.168	0.000	1.70	2.824
S6.008	S4051	60 minute 100 year Summer Q+0%	23.845	23.119	0.157	0.000	0.55	5.275
S6.009	S4052	60 minute 100 year Summer Q+0%	23.675	23.102	0.200	0.000	0.61	6.371
S6.010	S4053	60 minute 100 year Summer Q+0%	23.600	23.092	0.197	0.000	0.75	6.185
S1.015	S4054	60 minute 100 year Summer Q+0%	23.565	23.079	0.194	0.000	2.30	17.107
S1.016	S4055	60 minute 100 year Summer Q+0%	23.660	23.023	0.150	0.000	2.63	8.801
S1.017	S4056	60 minute 100 year Winter Q+0%	23.840	22.983	0.125	0.000	2.13	10.307
S9.000	S4057	60 minute 100 year Summer Q+0%	26.352	25.028	-0.124	0.000	0.41	0.108
S9.001	S4058	60 minute 100 year Summer Q+0%	25.763	24.442	-0.120	0.000	0.66	0.259
S9.002	S4059	60 minute 100 year Summer Q+0%	25.576	24.238	-0.075	0.000	0.90	1.094
S9.003	S4060	60 minute 100 year Summer Q+0%	25.493	24.140	-0.099	0.000	0.77	0.491
S10.000	S4061	60 minute 100 year Summer Q+0%	25.428	24.104	-0.124	0.000	0.42	0.108
S9.004	S4062	60 minute 100 year Summer Q+0%	25.210	23.948	-0.062	0.000	0.98	1.049
S9.005	S4063	60 minute 100 year Summer Q+0%	24.964	23.667	-0.096	0.000	0.90	0.736
S9.006	S4064	60 minute 100 year Summer Q+0%	24.852	23.409	-0.243	0.000	0.43	0.413
S9.007	S4065	60 minute 100 year Summer Q+0%	24.696	23.181	-0.239	0.000	0.42	0.607
S9.008	S4066	60 minute 100 year Summer Q+0%	24.374	23.113	0.015	0.000	0.53	3.170
S9.009	S4067	60 minute 100 year Winter Q+0%	24.123	22.975	0.081	0.000	0.90	3.437
S1.018	S4068	60 minute 100 year Winter Q+0%	23.970	22.967	0.122	0.000	1.61	10.889
S1.019	S4069	60 minute 100 year Winter Q+0%	23.988	22.959	0.128	0.000	2.44	4.954
S1.020	S4069-BASIN D	60 minute 100 year Winter Q+0%	23.500	22.948	0.613	0.000	0.78	817.794
S1.021	S3001-CON	60 minute 100 year Winter Q+0%	23.971	22.892	0.688	0.000	1.01	5.593
S1.022	S3002	60 minute 100 year Winter Q+0%	24.693	22.098	-0.008	0.000	1.00	8.061
S1.023	S3003	60 minute 100 year Winter Q+0%	25.302	21.960	0.003	0.000	0.97	13.385
S1.024	S3004	60 minute 100 year Winter Q+0%	25.496	21.811	0.017	0.000	0.96	14.699
S1.025	S3005	60 minute 100 year Winter Q+0%	25.233	21.661	0.030	0.000	1.08	14.987
S1.026	S3006	60 minute 100 year Winter Q+0%	24.970	21.592	0.020	0.000	1.07	6.007
S1.027	S3007	60 minute 100 year Winter Q+0%	24.235	21.519	0.011	0.000	1.11	6.428
S1.028	S3008	120 minute 100 year Winter Q+0%	24.282	21.457	0.000	0.000	1.44	5.169
S11.000	S3010	60 minute 100 year Summer Q+0%	27.983	26.297	-0.365	0.000	0.08	0.114
S11.001	S3011	60 minute 100 year Summer Q+0%	27.329	25.682	-0.358	0.000	0.09	0.185
S11.002	S3012	60 minute 100 year Summer Q+0%	26.707	24.906	-0.302	0.000	0.24	0.316
S11.003	S3013	60 minute 100 year Summer Q+0%	26.514	24.716	-0.298	0.000	0.25	0.363
S11.004	S3014	60 minute 100 year Summer Q+0%	26.322	24.498	-0.324	0.000	0.17	0.269
S12.000	S3015	60 minute 100 year Summer Q+0%	27.434	25.872	-0.061	0.000	0.66	0.095

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S1.011	S4029	453.5	SURCHARGED
S5.000	S4030	17.8	OK
S5.001	S4031	74.0	OK
S1.012	S4032	513.0	SURCHARGED
S1.013	S4033	516.3	SURCHARGED
S1.014	S4034	514.6	SURCHARGED
S6.000	S4035	39.9	OK
S6.001	S4036	48.2	OK
S6.002	S4037	59.7	OK
S7.000	S4038	39.7	OK
S7.001	S4039	70.8	OK
S7.002	S4040	80.2	OK
S7.003	S4041	102.1	OK
S7.004	S4042	114.1	OK
S6.003	S4043	183.4	OK
S6.004	S4044	207.6	OK
S8.000	S4045	14.1	OK
S8.001	S4046	38.6	OK
S8.002	S4047	44.4	OK
S6.005	S4048	259.6	OK
S6.006	S4049	262.4	OK
S6.007	S4050	264.2	SURCHARGED
S6.008	S4051	266.2	SURCHARGED
S6.009	S4052	276.7	SURCHARGED
S6.010	S4053	275.6	SURCHARGED
S1.015	S4054	768.4	SURCHARGED
S1.016	S4055	768.6	SURCHARGED
S1.017	S4056	685.4	SURCHARGED
S9.000	S4057	24.7	OK
S9.001	S4058	54.3	OK
S9.002	S4059	61.6	OK
S9.003	S4060	75.1	OK
S10.000	S4061	21.9	OK
S9.004	S4062	106.2	OK
S9.005	S4063	117.3	OK
S9.006	S4064	117.5	OK
S9.007	S4065	129.1	OK
S9.008	S4066	135.3	SURCHARGED
S9.009	S4067	126.5	SURCHARGED
S1.018	S4068	811.5	SURCHARGED
S1.019	S4069	811.5	SURCHARGED
S1.020	S4069-BASIN D	217.5	SURCHARGED
S1.021	S3001-CON	215.1	SURCHARGED
S1.022	S3002	209.2	OK
S1.023	S3003	204.7	SURCHARGED
S1.024	S3004	202.5	SURCHARGED
S1.025	S3005	201.9	SURCHARGED
S1.026	S3006	201.9	SURCHARGED
S1.027	S3007	201.8	SURCHARGED
S1.028	S3008	196.0	OK
S11.000	S3010	28.4	OK
S11.001	S3011	42.2	OK
S11.002	S3012	58.5	OK
S11.003	S3013	61.5	OK
S11.004	S3014	73.0	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.000	S3015	16.6	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S13.000	S3016	60 minute 100 year Summer Q+0%	27.405	25.846	-0.134	0.000	0.35	0.098	23.9
S12.001	S3017	60 minute 100 year Summer Q+0%	27.355	25.494	-0.246	0.000	0.26	0.179	44.7
S12.002	S3018	60 minute 100 year Summer Q+0%	26.944	25.282	-0.251	0.000	0.24	0.325	67.3
S12.003	S3019	60 minute 100 year Summer Q+0%	26.586	24.807	-0.204	0.000	0.43	0.357	80.0
S12.004	S3020	60 minute 100 year Summer Q+0%	26.355	24.560	-0.220	0.000	0.36	0.352	85.7
S11.005	S3021	60 minute 100 year Summer Q+0%	25.834	24.347	0.088	0.000	0.66	4.629	161.9
S11.006	S3022	60 minute 100 year Summer Q+0%	26.132	24.308	0.120	0.000	0.51	12.065	177.5
S14.000	S3023	60 minute 100 year Summer Q+0%	27.248	25.583	-0.165	0.000	0.42	0.148	43.2
S14.001	S3024	60 minute 100 year Summer Q+0%	26.960	25.296	-0.164	0.000	0.42	0.326	72.8
S14.002	S3025	60 minute 100 year Summer Q+0%	26.657	24.588	-0.134	0.000	0.58	0.274	91.8
S11.007	S3026	60 minute 100 year Summer Q+0%	26.356	24.273	0.146	0.000	1.38	4.071	272.6
S11.008	S3027	60 minute 100 year Summer Q+0%	25.760	24.234	0.138	0.000	0.88	4.387	265.7
S11.009	S3028	60 minute 100 year Summer Q+0%	25.205	24.140	0.170	0.000	1.47	15.137	263.7
S15.000	S3029	60 minute 100 year Summer Q+0%	26.390	24.873	-0.092	0.000	0.32	0.060	14.4
S16.000	S3030	60 minute 100 year Summer Q+0%	26.231	24.721	-0.085	0.000	0.39	0.068	13.0
S15.001	S3031	60 minute 100 year Summer Q+0%	26.202	24.328	-0.065	0.000	0.65	0.190	34.4
S15.002	S3032	60 minute 100 year Summer Q+0%	25.813	24.204	0.205	0.000	1.62	1.502	54.3
S11.010	S3033	60 minute 100 year Summer Q+0%	25.672	24.091	0.154	0.000	1.12	5.865	315.8
S11.011	S3034-GR	60 minute 100 year Summer Q+0%	25.057	23.989	0.132	0.000	0.93	9.891	323.7
S17.000	S3035	60 minute 100 year Summer Q+0%	25.408	24.012	-0.043	0.000	0.85	0.200	32.2
S11.012	S3036-GR	60 minute 100 year Summer Q+0%	24.964	23.918	0.154	0.000	1.42	6.023	346.3
S11.013	S3037-GR	60 minute 100 year Summer Q+0%	24.890	23.769	0.079	0.000	2.51	12.781	356.5
S11.014	S3038	60 minute 100 year Summer Q+0%	24.022	23.212	-0.810	0.000	0.04	0.488	356.8
S18.000	S3039-GR	60 minute 100 year Summer Q+0%	24.640	23.285	-0.155	0.000	0.24	0.159	13.7
S19.000	S3040-GR	60 minute 100 year Summer Q+0%	24.628	23.284	-0.144	0.000	0.31	0.171	16.2
S18.001	S3041-GR	60 minute 100 year Summer Q+0%	24.597	23.276	-0.121	0.000	0.66	0.723	41.5
S18.002	S3042-GR	60 minute 100 year Summer Q+0%	24.494	23.202	-0.092	0.000	0.82	1.087	48.8
S11.015	S3043	60 minute 100 year Summer Q+0%	23.922	23.102	-0.820	0.000	0.05	3.046	392.4
S11.016	S3045	60 minute 100 year Summer Q+0%	23.652	22.857	-0.795	0.000	0.06	5.866	393.3
S20.000	S3045-1-GR	60 minute 100 year Summer Q+0%	24.136	22.784	-0.152	0.000	0.22	0.077	7.9
S20.001	S3045-2-GR	60 minute 100 year Summer Q+0%	24.043	22.755	-0.088	0.000	0.58	0.358	19.5
S11.017	S3046	60 minute 100 year Summer Q+0%	23.459	22.740	-0.719	0.000	0.07	4.356	402.3
S21.000	S3047-GR	60 minute 100 year Summer Q+0%	24.058	22.659	-0.199	0.000	0.22	0.108	14.0
S21.001	S3048-GR	60 minute 100 year Summer Q+0%	23.965	22.608	-0.157	0.000	0.42	0.571	26.5
S21.002	S3049-GR	60 minute 100 year Summer Q+0%	23.872	22.556	-0.116	0.000	0.68	0.850	39.1
S11.018	S3050	60 minute 100 year Summer Q+0%	23.365	22.505	-0.860	0.000	0.05	6.386	424.9
S11.019	S3051	60 minute 100 year Summer Q+0%	23.316	22.491	-0.825	0.000	0.05	0.725	424.7
S11.020	S3053	60 minute 100 year Summer Q+0%	22.996	22.275	-0.721	0.000	0.07	6.188	425.1
S22.000	S3053-1-GR	60 minute 100 year Winter Q+0%	23.484	22.229	-0.055	0.000	0.33	0.187	12.3
S22.001	S3054-GR	60 minute 100 year Winter Q+0%	23.269	22.212	0.143	0.000	0.84	1.709	27.5
S11.021	S3055	60 minute 100 year Summer Q+0%	22.739	22.198	-0.541	0.000	0.07	22.740	398.4
S11.022	S3056	60 minute 100 year Summer Q+0%	22.621	22.176	0.185	0.000	1.50	50.688	373.0
S11.023	S3057	60 minute 100 year Summer Q+0%	22.633	21.736	-0.897	0.000	0.05	0.733	373.3
S23.000	S3058	60 minute 100 year Summer Q+0%	27.878	26.204	-0.258	0.000	0.05	0.042	4.8
S23.001	S3059	60 minute 100 year Summer Q+0%	27.725	26.060	-0.238	0.000	0.09	0.104	12.9
S23.002	S3060	60 minute 100 year Summer Q+0%	27.292	25.389	-0.249	0.000	0.24	0.192	32.7
S23.003	S3061	60 minute 100 year Summer Q+0%	27.136	25.282	-0.239	0.000	0.28	0.445	46.2
S23.004	S3062	60 minute 100 year Summer Q+0%	26.998	25.115	-0.229	0.000	0.32	0.409	59.1
S23.005	S3063	60 minute 100 year Summer Q+0%	26.633	24.969	-0.009	0.000	0.85	2.284	85.2
S23.006	S3064	60 minute 100 year Summer Q+0%	26.623	24.891	0.021	0.000	0.55	4.022	92.2
S23.007	S3065	60 minute 100 year Summer Q+0%	26.942	24.788	0.000	0.000	0.94	2.841	98.1
S23.008	S3066	60 minute 100 year Summer Q+0%	27.141	24.753	0.000	0.000	1.07	2.523	104.5
S24.000	S3067	60 minute 100 year Summer Q+0%	27.294	25.709	-0.085	0.000	0.39	0.068	21.2
S23.009	S3068	60 minute 100 year Summer Q+0%	27.239	24.631	-0.095	0.000	0.97	1.563	139.1
S23.010	S3069	60 minute 100 year Summer Q+0%	26.728	24.409	-0.213	0.000	0.54	2.751	151.1
S25.000	S3070	60 minute 100 year Summer Q+0%	25.706	24.202	-0.241	0.000	0.08	0.061	14.1

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S13.000	S3016	OK
S12.001	S3017	OK
S12.002	S3018	OK
S12.003	S3019	OK
S12.004	S3020	OK
S11.005	S3021	SURCHARGED
S11.006	S3022	SURCHARGED
S14.000	S3023	OK
S14.001	S3024	OK
S14.002	S3025	OK
S11.007	S3026	SURCHARGED
S11.008	S3027	SURCHARGED
S11.009	S3028	SURCHARGED
S15.000	S3029	OK
S16.000	S3030	OK
S15.001	S3031	OK
S15.002	S3032	SURCHARGED
S11.010	S3033	SURCHARGED
S11.011	S3034-GR	SURCHARGED
S17.000	S3035	OK
S11.012	S3036-GR	SURCHARGED
S11.013	S3037-GR	SURCHARGED
S11.014	S3038	OK
S18.000	S3039-GR	OK
S19.000	S3040-GR	OK
S18.001	S3041-GR	OK
S18.002	S3042-GR	OK
S11.015	S3043	OK
S11.016	S3045	OK
S20.000	S3045-1-GR	OK
S20.001	S3045-2-GR	OK
S11.017	S3046	OK
S21.000	S3047-GR	OK
S21.001	S3048-GR	OK
S21.002	S3049-GR	OK
S11.018	S3050	OK
S11.019	S3051	OK
S11.020	S3053	OK
S22.000	S3053-1-GR	OK
S22.001	S3054-GR	SURCHARGED
S11.021	S3055	OK
S11.022	S3056	SURCHARGED*
S11.023	S3057	OK
S23.000	S3058	OK
S23.001	S3059	OK
S23.002	S3060	OK
S23.003	S3061	OK
S23.004	S3062	OK
S23.005	S3063	OK
S23.006	S3064	SURCHARGED
S23.007	S3065	OK
S23.008	S3066	OK
S24.000	S3067	OK
S23.009	S3068	OK
S23.010	S3069	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S25.000	S3070	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S23.011	S3071	60 minute 100 year Summer Q+0%	25.786	24.175	0.244	0.000	1.15	10.567
S23.012	S3072	60 minute 100 year Summer Q+0%	25.341	24.076	0.219	0.000	1.25	8.982
S23.013	S3073-GR	60 minute 100 year Summer Q+0%	24.943	23.893	0.150	0.000	1.42	13.182
S23.014	S3074-GR	60 minute 100 year Summer Q+0%	24.865	23.734	0.069	0.000	2.12	8.986
S23.015	S3075	60 minute 100 year Summer Q+0%	24.643	23.219	-1.424	0.000	0.01	0.428
S23.016	S3076	60 minute 100 year Summer Q+0%	24.775	22.996	-1.779	0.000	0.01	1.511
S23.017	S3077	60 minute 100 year Summer Q+0%	24.194	22.687	-1.507	0.000	0.01	3.472
S23.018	S3078	60 minute 100 year Summer Q+0%	24.085	22.668	-1.417	0.000	0.01	1.908
S26.000	S3079-GR	60 minute 100 year Summer Q+0%	24.183	22.756	-0.227	0.000	0.04	0.076
S26.001	S3080-GR	60 minute 100 year Summer Q+0%	24.142	22.753	-0.189	0.000	0.29	0.233
S26.002	S3081-GR	60 minute 100 year Summer Q+0%	23.927	22.691	-0.036	0.000	0.63	1.946
S23.019	S3082	60 minute 100 year Summer Q+0%	23.831	22.663	-1.168	0.000	0.01	4.274
S23.020	S3083	60 minute 100 year Summer Q+0%	23.455	22.658	-0.797	0.000	0.02	6.977
S23.021	S3084	60 minute 100 year Summer Q+0%	23.461	22.653	0.208	0.000	1.64	7.029
S23.022	S3085	60 minute 100 year Summer Q+0%	23.546	22.215	-1.331	0.000	0.02	0.524
S1.029	S3086-Basin C	480 minute 100 year Winter Q+0%	22.300	21.385	0.385	0.000	0.17	2503.580
S1.030	S3087-1	360 minute 100 year Winter Q+0%	22.439	21.373	0.636	0.000	0.12	2.449
S1.031	S3087	360 minute 100 year Winter Q+0%	22.646	21.347	1.113	0.000	0.32	4.327
S27.000	S3088	60 minute 100 year Summer Q+0%	24.098	22.311	-0.300	0.000	0.38	0.389
S27.001	S3089	60 minute 100 year Summer Q+0%	23.359	21.968	-0.025	0.000	0.96	7.898
S27.002	S3090	60 minute 100 year Summer Q+0%	22.742	21.797	0.177	0.000	0.57	19.046
S27.003	S3091	60 minute 100 year Summer Q+0%	22.519	21.593	0.346	0.000	0.28	6.641
S27.004	S3092	60 minute 100 year Summer Q+0%	22.616	21.571	0.444	0.000	0.57	15.894
S28.000	S3093	60 minute 100 year Winter Q+0%	23.318	21.878	0.443	0.000	0.48	0.835
S28.001	S3094	60 minute 100 year Winter Q+0%	23.170	21.855	0.484	0.000	0.60	2.150
S28.002	S3095	60 minute 100 year Winter Q+0%	22.964	21.770	0.469	0.000	0.74	1.984
S28.003	S3096	60 minute 100 year Winter Q+0%	22.764	21.682	0.433	0.000	0.83	1.637
S28.004	S3097	60 minute 100 year Winter Q+0%	22.667	21.609	0.392	0.000	1.00	1.238
S29.000	S3098	60 minute 100 year Summer Q+0%	22.437	21.558	0.321	0.000	0.13	0.527
S27.005	S3099	60 minute 100 year Summer Q+0%	22.561	21.560	0.461	0.000	0.26	12.792
S27.006	S3100	60 minute 100 year Summer Q+0%	22.401	21.552	0.502	0.000	0.24	28.231
S27.007	S3101	60 minute 100 year Summer Q+0%	22.379	21.542	0.542	0.000	0.34	37.415
S27.008	S3102	60 minute 100 year Summer Q+0%	22.415	21.535	0.551	0.000	0.40	12.758
S30.000	S3103	60 minute 100 year Summer Q+0%	23.337	21.720	-0.143	0.000	0.29	0.087
S30.001	S3104	60 minute 100 year Winter Q+0%	23.137	21.671	0.177	0.000	0.60	1.322
S30.002	S3105	60 minute 100 year Winter Q+0%	22.984	21.650	0.231	0.000	0.70	0.964
S30.003	S3106	60 minute 100 year Winter Q+0%	22.666	21.604	0.321	0.000	0.94	1.473
S30.004	S3107	60 minute 100 year Winter Q+0%	22.568	21.565	0.325	0.000	0.99	0.855
S27.009	S3108	60 minute 100 year Summer Q+0%	22.484	21.528	0.561	0.000	0.38	16.241
S27.010	S3109	60 minute 100 year Summer Q+0%	22.471	21.520	0.573	0.000	0.26	13.893
S1.032	S3110	60 minute 100 year Summer Q+0%	22.286	21.510	0.605	0.000	0.11	35.929
S1.033	S3111-CON	60 minute 100 year Summer Q+0%	22.317	21.507	1.393	0.000	0.37	37.560
S1.034	S3112	60 minute 100 year Summer Q+0%	22.361	19.759	-0.233	0.000	0.46	2.142
S1.035	S3113	60 minute 100 year Summer Q+0%	22.443	19.694	-0.250	0.000	0.41	1.157
S1.036	S3114	60 minute 100 year Summer Q+0%	21.748	19.596	-0.257	0.000	0.38	1.812
S1.037	S3115	60 minute 100 year Winter Q+0%	21.314	19.423	-0.255	0.000	0.38	2.353
S1.038	S3116	60 minute 100 year Winter Q+0%	20.779	19.318	-0.198	0.000	0.48	3.831
S1.039	S3117	60 minute 100 year Winter Q+0%	20.378	19.281	-0.192	0.000	0.62	1.505
S1.040	S3118-HW	60 minute 100 year Winter Q+0%	20.192	19.145	-1.047	0.000	0.01	0.324

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.011	S3071	213.5	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.012	S3072	243.6	SURCHARGED
S23.013	S3073-GR	265.5	SURCHARGED
S23.014	S3074-GR	272.8	SURCHARGED
S23.015	S3075	272.8	OK
S23.016	S3076	272.7	OK
S23.017	S3077	271.0	OK
S23.018	S3078	267.0	OK
S26.000	S3079-GR	2.1	OK
S26.001	S3080-GR	20.3	OK
S26.002	S3081-GR	39.1	OK
S23.019	S3082	279.8	OK
S23.020	S3083	277.5	OK
S23.021	S3084	277.4	SURCHARGED*
S23.022	S3085	277.3	OK
S1.029	S3086-Basin C	48.5	SURCHARGED
S1.030	S3087-1	49.1	SURCHARGED
S1.031	S3087	48.8	SURCHARGED
S27.000	S3088	143.4	OK
S27.001	S3089	277.1	OK
S27.002	S3090	267.8	SURCHARGED
S27.003	S3091	267.3	SURCHARGED
S27.004	S3092	259.5	SURCHARGED
S28.000	S3093	26.9	SURCHARGED
S28.001	S3094	36.6	SURCHARGED
S28.002	S3095	42.8	SURCHARGED
S28.003	S3096	43.6	SURCHARGED
S28.004	S3097	53.5	SURCHARGED
S29.000	S3098	2.1	SURCHARGED
S27.005	S3099	319.4	SURCHARGED
S27.006	S3100	275.7	SURCHARGED
S27.007	S3101	261.7	SURCHARGED
S27.008	S3102	260.8	SURCHARGED
S30.000	S3103	15.5	OK
S30.001	S3104	20.6	SURCHARGED
S30.002	S3105	25.8	SURCHARGED
S30.003	S3106	28.0	SURCHARGED
S30.004	S3107	31.7	SURCHARGED
S27.009	S3108	275.7	SURCHARGED
S27.010	S3109	270.5	SURCHARGED
S1.032	S3110	104.8	SURCHARGED
S1.033	S3111-CON	57.9	SURCHARGED
S1.034	S3112	57.6	OK
S1.035	S3113	57.5	OK
S1.036	S3114	57.1	OK
S1.037	S3115	56.9	OK
S1.038	S3116	56.7	OK
S1.039	S3117	56.7	OK
S1.040	S3118-HW	56.7	OK

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+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Point
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 450306 114752		

Margin for Flood Risk Warning (mm)	299.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%)	0, +20, +40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S1.000	S4001	60 minute 100 year Summer Q+20%	27.478	26.175	-0.103	0.000	0.57	0.133	33.6
S1.001	S4002	60 minute 100 year Summer Q+20%	26.966	25.736	-0.030	0.000	0.83	0.527	54.7
S1.002	S4003	60 minute 100 year Summer Q+20%	26.704	25.631	0.021	0.000	0.88	2.660	92.2
S1.003	S4004	60 minute 100 year Summer Q+20%	28.014	25.484	0.064	0.000	1.07	6.486	93.8
S2.000	S4005	60 minute 100 year Summer Q+20%	33.607	32.391	-0.016	0.000	1.00	0.231	36.1
S2.001	S4006	60 minute 100 year Summer Q+20%	33.552	32.199	-0.093	0.000	0.64	0.356	57.6
S2.002	S4007	60 minute 100 year Summer Q+20%	32.390	31.095	-0.094	0.000	0.64	0.185	66.3
S2.003	S4008	60 minute 100 year Summer Q+20%	31.592	30.317	-0.075	0.000	0.77	0.200	80.2
S2.004	S4009	60 minute 100 year Summer Q+20%	30.545	29.598	0.221	0.000	1.01	0.759	92.4
S2.005	S4010	60 minute 100 year Summer Q+20%	29.217	28.321	0.190	0.000	1.20	0.797	97.6
S2.006	S4011	60 minute 100 year Summer Q+20%	28.782	27.590	-0.105	0.000	0.55	0.162	100.2
S1.004	S4012	60 minute 100 year Summer Q+20%	28.294	25.422	0.049	0.000	1.65	2.503	200.5
S1.005	S4013	60 minute 100 year Summer Q+20%	28.322	25.374	0.030	0.000	1.24	3.645	237.2
S1.006	S4014	60 minute 100 year Summer Q+20%	27.532	24.937	-0.313	0.000	0.34	2.750	241.3
S3.000	S4015	60 minute 100 year Summer Q+20%	26.680	25.426	-0.054	0.000	0.92	0.187	51.2
S3.001	S4016	60 minute 100 year Summer Q+20%	26.141	24.744	-0.077	0.000	0.59	0.558	76.8
S3.002	S4017	60 minute 100 year Summer Q+20%	26.114	24.678	0.068	0.000	1.00	4.513	87.0
S3.003	S4018	60 minute 100 year Summer Q+20%	26.410	24.630	0.067	0.000	1.06	2.108	106.2
S3.004	S4019	60 minute 100 year Summer Q+20%	27.500	24.508	0.059	0.000	1.24	4.358	107.1
S1.007	S4020	60 minute 100 year Summer Q+20%	27.348	24.432	0.025	0.000	0.96	3.063	387.8
S4.000	S4021	60 minute 100 year Summer Q+20%	26.080	24.966	0.148	0.000	1.09	0.416	38.8
S4.001	S4022	60 minute 100 year Summer Q+20%	25.790	24.852	0.135	0.000	1.06	1.112	70.5
S4.002	S4023	60 minute 100 year Summer Q+20%	25.325	24.637	0.119	0.000	1.38	3.650	76.1
S4.003	S4024	60 minute 100 year Summer Q+20%	25.456	24.543	0.065	0.000	0.98	1.224	96.0
S4.004	S4025	60 minute 100 year Summer Q+20%	25.586	24.447	0.065	0.000	1.12	3.848	112.5
S1.008	S4026	60 minute 100 year Summer Q+20%	26.600	24.295	0.031	0.000	1.87	25.345	504.9
S1.009	S4027	60 minute 100 year Summer Q+20%	26.345	24.238	0.000	0.000	1.99	6.409	508.5
S1.010	S4028	60 minute 100 year Summer Q+20%	26.150	23.795	-0.424	0.000	0.39	1.782	537.2

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+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S1.000	S4001	OK
S1.001	S4002	OK
S1.002	S4003	SURCHARGED
S1.003	S4004	SURCHARGED
S2.000	S4005	OK
S2.001	S4006	OK
S2.002	S4007	OK
S2.003	S4008	OK
S2.004	S4009	SURCHARGED
S2.005	S4010	SURCHARGED
S2.006	S4011	OK
S1.004	S4012	SURCHARGED
S1.005	S4013	SURCHARGED
S1.006	S4014	OK
S3.000	S4015	OK
S3.001	S4016	OK
S3.002	S4017	SURCHARGED
S3.003	S4018	SURCHARGED
S3.004	S4019	SURCHARGED
S1.007	S4020	SURCHARGED
S4.000	S4021	SURCHARGED
S4.001	S4022	SURCHARGED
S4.002	S4023	SURCHARGED
S4.003	S4024	SURCHARGED
S4.004	S4025	SURCHARGED
S1.008	S4026	SURCHARGED
S1.009	S4027	OK
S1.010	S4028	OK

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+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S1.011	S4029	60 minute 100 year Summer Q+20%	24.845	23.563	0.380	0.000	0.86	22.614
S5.000	S4030	60 minute 100 year Summer Q+20%	25.677	24.498	-0.007	0.000	1.00	0.157
S5.001	S4031	60 minute 100 year Summer Q+20%	25.276	24.010	-0.117	0.000	0.67	0.206
S1.012	S4032	60 minute 100 year Summer Q+20%	24.078	23.503	0.490	0.000	0.97	10.157
S1.013	S4033	60 minute 100 year Summer Q+20%	23.942	23.459	0.499	0.000	1.41	19.380
S1.014	S4034	60 minute 100 year Summer Q+20%	23.833	23.416	0.487	0.000	2.20	12.155
S6.000	S4035	60 minute 100 year Summer Q+20%	31.555	29.904	-0.121	0.000	0.44	0.112
S6.001	S4036	60 minute 100 year Summer Q+20%	29.895	28.268	-0.097	0.000	0.61	0.165
S6.002	S4037	60 minute 100 year Summer Q+20%	29.250	27.780	0.055	0.000	1.05	0.451
S7.000	S4038	60 minute 100 year Summer Q+20%	30.720	29.115	-0.095	0.000	0.63	0.142
S7.001	S4039	60 minute 100 year Summer Q+20%	29.740	28.157	-0.088	0.000	0.83	0.294
S7.002	S4040	60 minute 100 year Summer Q+20%	29.410	27.763	-0.157	0.000	0.64	0.496
S7.003	S4041	60 minute 100 year Summer Q+20%	29.250	27.631	-0.139	0.000	0.72	0.934
S7.004	S4042	60 minute 100 year Summer Q+20%	29.025	27.404	-0.136	0.000	0.72	1.056
S6.003	S4043	60 minute 100 year Summer Q+20%	28.650	27.051	-0.094	0.000	0.91	1.422
S6.004	S4044	60 minute 100 year Summer Q+20%	28.150	26.470	-0.185	0.000	0.51	0.482
S8.000	S4045	60 minute 100 year Summer Q+20%	26.200	24.169	0.041	0.000	0.98	0.211
S8.001	S4046	60 minute 100 year Summer Q+20%	26.500	23.951	0.098	0.000	1.14	0.645
S8.002	S4047	60 minute 100 year Summer Q+20%	26.440	23.839	0.163	0.000	0.85	1.490
S6.005	S4048	60 minute 100 year Summer Q+20%	26.160	23.723	0.140	0.000	1.26	3.268
S6.006	S4049	60 minute 100 year Summer Q+20%	24.555	23.676	0.157	0.000	0.41	9.913
S6.007	S4050	60 minute 100 year Summer Q+20%	24.220	23.446	0.460	0.000	1.93	3.685
S6.008	S4051	60 minute 100 year Summer Q+20%	23.845	23.412	0.450	0.000	0.62	6.021
S6.009	S4052	60 minute 100 year Summer Q+20%	23.675	23.394	0.492	0.000	0.70	7.128
S6.010	S4053	60 minute 100 year Summer Q+20%	23.600	23.384	0.489	0.000	0.84	6.942
S1.015	S4054	60 minute 100 year Summer Q+20%	23.565	23.371	0.486	0.000	2.57	17.962
S1.016	S4055	60 minute 100 year Summer Q+20%	23.660	23.302	0.429	0.000	2.94	9.549
S1.017	S4056	60 minute 100 year Summer Q+20%	23.840	23.229	0.371	0.000	2.68	10.988
S9.000	S4057	60 minute 100 year Summer Q+20%	26.352	25.039	-0.113	0.000	0.50	0.122
S9.001	S4058	60 minute 100 year Summer Q+20%	25.763	24.468	-0.094	0.000	0.79	0.310
S9.002	S4059	60 minute 100 year Summer Q+20%	25.576	24.330	0.017	0.000	1.03	2.026
S9.003	S4060	60 minute 100 year Summer Q+20%	25.493	24.237	-0.002	0.000	0.87	0.778
S10.000	S4061	60 minute 100 year Summer Q+20%	25.428	24.115	-0.113	0.000	0.50	0.122
S9.004	S4062	60 minute 100 year Summer Q+20%	25.210	24.058	0.048	0.000	1.12	1.991
S9.005	S4063	60 minute 100 year Summer Q+20%	24.964	23.766	0.003	0.000	1.00	1.299
S9.006	S4064	60 minute 100 year Summer Q+20%	24.852	23.669	0.017	0.000	0.48	1.453
S9.007	S4065	60 minute 100 year Summer Q+20%	24.696	23.520	0.100	0.000	0.47	2.465
S9.008	S4066	60 minute 100 year Summer Q+20%	24.374	23.346	0.248	0.000	0.61	4.653
S9.009	S4067	60 minute 100 year Summer Q+20%	24.123	23.196	0.302	0.000	1.16	3.963
S1.018	S4068	60 minute 100 year Summer Q+20%	23.970	23.161	0.316	0.000	1.96	11.430
S1.019	S4069	60 minute 100 year Winter Q+20%	23.988	23.090	0.259	0.000	2.88	5.300
S1.020	S4069-BASIN D	60 minute 100 year Winter Q+20%	23.500	23.077	0.742	0.000	0.86	1016.428
S1.021	S3001-CON	60 minute 100 year Winter Q+20%	23.971	23.013	0.809	0.000	1.12	5.807
S1.022	S3002	60 minute 100 year Winter Q+20%	24.693	22.209	0.103	0.000	1.11	8.903
S1.023	S3003	60 minute 100 year Winter Q+20%	25.302	22.046	0.089	0.000	1.05	14.870
S1.024	S3004	60 minute 100 year Winter Q+20%	25.496	21.871	0.077	0.000	1.04	16.000
S1.025	S3005	60 minute 100 year Winter Q+20%	25.233	21.696	0.065	0.000	1.17	15.734
S1.026	S3006	60 minute 100 year Winter Q+20%	24.970	21.615	0.043	0.000	1.15	6.163
S1.027	S3007	480 minute 100 year Winter Q+20%	24.235	21.571	0.063	0.000	0.88	6.805
S1.028	S3008	480 minute 100 year Winter Q+20%	24.282	21.560	0.103	0.000	1.17	5.698
S11.000	S3010	60 minute 100 year Summer Q+20%	27.983	26.305	-0.357	0.000	0.10	0.127
S11.001	S3011	60 minute 100 year Summer Q+20%	27.329	25.690	-0.350	0.000	0.11	0.201
S11.002	S3012	60 minute 100 year Summer Q+20%	26.707	24.921	-0.286	0.000	0.28	0.364
S11.003	S3013	60 minute 100 year Summer Q+20%	26.514	24.744	-0.270	0.000	0.30	0.462
S11.004	S3014	60 minute 100 year Summer Q+20%	26.322	24.728	-0.094	0.000	0.20	1.326
S12.000	S3015	60 minute 100 year Summer Q+20%	27.434	25.885	-0.049	0.000	0.79	0.108

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+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S1.011	S4029	552.8	SURCHARGED
S5.000	S4030	20.9	OK
S5.001	S4031	88.6	OK
S1.012	S4032	614.2	SURCHARGED
S1.013	S4033	608.3	SURCHARGED
S1.014	S4034	604.9	SURCHARGED
S6.000	S4035	48.0	OK
S6.001	S4036	57.9	OK
S6.002	S4037	70.6	SURCHARGED
S7.000	S4038	47.7	OK
S7.001	S4039	85.1	OK
S7.002	S4040	96.3	OK
S7.003	S4041	122.5	OK
S7.004	S4042	136.7	OK
S6.003	S4043	220.3	OK
S6.004	S4044	248.4	OK
S8.000	S4045	16.6	SURCHARGED
S8.001	S4046	45.0	SURCHARGED
S8.002	S4047	53.3	SURCHARGED
S6.005	S4048	318.4	SURCHARGED
S6.006	S4049	300.1	SURCHARGED
S6.007	S4050	299.6	SURCHARGED
S6.008	S4051	300.4	SURCHARGED
S6.009	S4052	313.0	FLOOD RISK
S6.010	S4053	310.3	FLOOD RISK
S1.015	S4054	858.0	FLOOD RISK
S1.016	S4055	861.0	SURCHARGED
S1.017	S4056	860.5	SURCHARGED
S9.000	S4057	29.7	OK
S9.001	S4058	65.2	OK
S9.002	S4059	69.9	SURCHARGED
S9.003	S4060	84.9	OK
S10.000	S4061	26.4	OK
S9.004	S4062	120.8	SURCHARGED
S9.005	S4063	130.4	SURCHARGED
S9.006	S4064	130.4	SURCHARGED
S9.007	S4065	143.9	SURCHARGED
S9.008	S4066	154.2	SURCHARGED
S9.009	S4067	163.3	SURCHARGED
S1.018	S4068	988.1	SURCHARGED
S1.019	S4069	955.1	SURCHARGED
S1.020	S4069-BASIN D	239.7	SURCHARGED
S1.021	S3001-CON	237.8	SURCHARGED
S1.022	S3002	232.0	SURCHARGED
S1.023	S3003	221.5	SURCHARGED
S1.024	S3004	218.5	SURCHARGED
S1.025	S3005	218.4	SURCHARGED
S1.026	S3006	218.4	SURCHARGED
S1.027	S3007	159.6	SURCHARGED
S1.028	S3008	159.6	SURCHARGED
S11.000	S3010	34.2	OK
S11.001	S3011	50.7	OK
S11.002	S3012	70.3	OK
S11.003	S3013	74.0	OK
S11.004	S3014	85.4	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.000	S3015	19.9	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S13.000	S3016	60 minute 100 year Summer Q+20%	27.405	25.856	-0.124	0.000	0.42	0.109	28.8
S12.001	S3017	60 minute 100 year Summer Q+20%	27.355	25.508	-0.232	0.000	0.31	0.199	53.7
S12.002	S3018	60 minute 100 year Summer Q+20%	26.944	25.295	-0.238	0.000	0.29	0.390	80.8
S12.003	S3019	60 minute 100 year Summer Q+20%	26.586	24.827	-0.184	0.000	0.51	0.412	96.2
S12.004	S3020	60 minute 100 year Summer Q+20%	26.355	24.770	-0.011	0.000	0.42	1.283	101.8
S11.005	S3021	60 minute 100 year Summer Q+20%	25.834	24.600	0.341	0.000	0.74	7.499	183.3
S11.006	S3022	60 minute 100 year Summer Q+20%	26.132	24.561	0.373	0.000	0.58	12.519	200.5
S14.000	S3023	60 minute 100 year Summer Q+20%	27.248	25.599	-0.149	0.000	0.51	0.165	51.9
S14.001	S3024	60 minute 100 year Summer Q+20%	26.960	25.312	-0.148	0.000	0.50	0.394	87.5
S14.002	S3025	60 minute 100 year Summer Q+20%	26.657	24.742	0.020	0.000	0.69	0.719	108.7
S11.007	S3026	60 minute 100 year Summer Q+20%	26.356	24.540	0.413	0.000	1.58	5.190	312.3
S11.008	S3027	60 minute 100 year Summer Q+20%	25.760	24.492	0.396	0.000	1.01	4.845	303.5
S11.009	S3028	60 minute 100 year Summer Q+20%	25.205	24.375	0.405	0.000	1.67	15.559	301.3
S15.000	S3029	60 minute 100 year Summer Q+20%	26.390	24.879	-0.086	0.000	0.39	0.067	17.4
S16.000	S3030	60 minute 100 year Summer Q+20%	26.231	24.729	-0.077	0.000	0.47	0.077	15.6
S15.001	S3031	60 minute 100 year Summer Q+20%	26.202	24.655	0.262	0.000	0.73	0.717	38.7
S15.002	S3032	60 minute 100 year Summer Q+20%	25.813	24.488	0.489	0.000	1.79	2.110	59.7
S11.010	S3033	60 minute 100 year Summer Q+20%	25.672	24.316	0.379	0.000	1.29	6.263	364.0
S11.011	S3034-GR	60 minute 100 year Summer Q+20%	25.057	24.181	0.324	0.000	1.08	10.235	374.9
S17.000	S3035	60 minute 100 year Summer Q+20%	25.408	24.254	0.199	0.000	0.95	0.473	36.3
S11.012	S3036-GR	60 minute 100 year Summer Q+20%	24.964	24.039	0.275	0.000	1.68	6.525	408.5
S11.013	S3037-GR	60 minute 100 year Summer Q+20%	24.890	23.824	0.134	0.000	2.99	13.055	424.8
S11.014	S3038	60 minute 100 year Summer Q+20%	24.022	23.234	-0.788	0.000	0.05	0.599	425.8
S18.000	S3039-GR	60 minute 100 year Summer Q+20%	24.640	23.312	-0.128	0.000	0.29	0.188	16.5
S19.000	S3040-GR	60 minute 100 year Summer Q+20%	24.628	23.310	-0.118	0.000	0.37	0.201	19.4
S18.001	S3041-GR	60 minute 100 year Summer Q+20%	24.597	23.300	-0.097	0.000	0.79	0.860	49.9
S18.002	S3042-GR	60 minute 100 year Summer Q+20%	24.494	23.232	-0.062	0.000	0.98	1.314	58.6
S11.015	S3043	60 minute 100 year Summer Q+20%	23.922	23.129	-0.793	0.000	0.06	3.653	473.9
S11.016	S3045	60 minute 100 year Summer Q+20%	23.652	22.889	-0.763	0.000	0.07	7.352	474.7
S20.000	S3045-1-GR	60 minute 100 year Summer Q+20%	24.136	22.804	-0.132	0.000	0.27	0.100	9.5
S20.001	S3045-2-GR	60 minute 100 year Summer Q+20%	24.043	22.791	-0.052	0.000	0.69	0.511	23.4
S11.017	S3046	60 minute 100 year Summer Q+20%	23.459	22.768	-0.691	0.000	0.08	5.225	488.2
S21.000	S3047-GR	60 minute 100 year Summer Q+20%	24.058	22.674	-0.184	0.000	0.27	0.125	16.8
S21.001	S3048-GR	60 minute 100 year Summer Q+20%	23.965	22.629	-0.136	0.000	0.50	0.716	31.8
S21.002	S3049-GR	60 minute 100 year Summer Q+20%	23.872	22.581	-0.091	0.000	0.82	1.025	46.9
S11.018	S3050	60 minute 100 year Summer Q+20%	23.365	22.536	-0.829	0.000	0.06	7.822	518.0
S11.019	S3051	60 minute 100 year Summer Q+20%	23.316	22.524	-0.792	0.000	0.06	0.905	519.2
S11.020	S3053	60 minute 100 year Winter Q+20%	22.996	22.333	-0.663	0.000	0.08	9.014	472.5
S22.000	S3053-1-GR	60 minute 100 year Winter Q+20%	23.484	22.351	0.067	0.000	0.39	0.325	14.8
S22.001	S3054-GR	60 minute 100 year Winter Q+20%	23.269	22.328	0.259	0.000	0.97	1.943	31.8
S11.021	S3055	60 minute 100 year Winter Q+20%	22.739	22.290	-0.449	0.000	0.08	31.877	458.0
S11.022	S3056	60 minute 100 year Winter Q+20%	22.621	22.263	0.272	0.000	1.76	63.575	437.3
S11.023	S3057	60 minute 100 year Winter Q+20%	22.633	21.761	-0.872	0.000	0.06	0.817	437.3
S23.000	S3058	60 minute 100 year Summer Q+20%	27.878	26.208	-0.254	0.000	0.06	0.047	5.7
S23.001	S3059	60 minute 100 year Summer Q+20%	27.725	26.065	-0.233	0.000	0.11	0.113	15.5
S23.002	S3060	60 minute 100 year Summer Q+20%	27.292	25.402	-0.236	0.000	0.29	0.222	39.3
S23.003	S3061	60 minute 100 year Summer Q+20%	27.136	25.297	-0.224	0.000	0.34	0.534	55.5
S23.004	S3062	60 minute 100 year Summer Q+20%	26.998	25.131	-0.213	0.000	0.39	0.482	71.1
S23.005	S3063	60 minute 100 year Summer Q+20%	26.633	25.055	0.077	0.000	0.98	3.174	98.0
S23.006	S3064	60 minute 100 year Summer Q+20%	26.623	24.974	0.104	0.000	0.71	4.444	120.4
S23.007	S3065	60 minute 100 year Summer Q+20%	26.942	24.875	0.087	0.000	1.20	3.170	126.1
S23.008	S3066	60 minute 100 year Summer Q+20%	27.141	24.835	0.082	0.000	1.36	2.815	133.5
S24.000	S3067	60 minute 100 year Summer Q+20%	27.294	25.717	-0.078	0.000	0.47	0.076	25.5
S23.009	S3068	60 minute 100 year Summer Q+20%	27.239	24.801	0.075	0.000	1.22	2.237	175.5
S23.010	S3069	60 minute 100 year Summer Q+20%	26.728	24.656	0.034	0.000	0.64	6.801	179.2
S25.000	S3070	60 minute 100 year Summer Q+20%	25.706	24.382	-0.061	0.000	0.09	0.264	16.6

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+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S13.000	S3016	OK
S12.001	S3017	OK
S12.002	S3018	OK
S12.003	S3019	OK
S12.004	S3020	OK
S11.005	S3021	SURCHARGED
S11.006	S3022	SURCHARGED
S14.000	S3023	OK
S14.001	S3024	OK
S14.002	S3025	SURCHARGED
S11.007	S3026	SURCHARGED
S11.008	S3027	SURCHARGED
S11.009	S3028	SURCHARGED
S15.000	S3029	OK
S16.000	S3030	OK
S15.001	S3031	SURCHARGED
S15.002	S3032	SURCHARGED
S11.010	S3033	SURCHARGED
S11.011	S3034-GR	SURCHARGED
S17.000	S3035	SURCHARGED
S11.012	S3036-GR	SURCHARGED
S11.013	S3037-GR	SURCHARGED
S11.014	S3038	OK
S18.000	S3039-GR	OK
S19.000	S3040-GR	OK
S18.001	S3041-GR	OK
S18.002	S3042-GR	OK
S11.015	S3043	OK
S11.016	S3045	OK
S20.000	S3045-1-GR	OK
S20.001	S3045-2-GR	OK
S11.017	S3046	OK
S21.000	S3047-GR	OK
S21.001	S3048-GR	OK
S21.002	S3049-GR	OK
S11.018	S3050	OK
S11.019	S3051	OK
S11.020	S3053	OK
S22.000	S3053-1-GR	SURCHARGED
S22.001	S3054-GR	SURCHARGED
S11.021	S3055	OK
S11.022	S3056	SURCHARGED*
S11.023	S3057	OK
S23.000	S3058	OK
S23.001	S3059	OK
S23.002	S3060	OK
S23.003	S3061	OK
S23.004	S3062	OK
S23.005	S3063	SURCHARGED
S23.006	S3064	SURCHARGED
S23.007	S3065	SURCHARGED
S23.008	S3066	SURCHARGED
S24.000	S3067	OK
S23.009	S3068	SURCHARGED
S23.010	S3069	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S25.000	S3070	OK

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+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S23.011	S3071	60 minute 100 year Summer Q+20%	25.786	24.372	0.441	0.000	1.34	14.053
S23.012	S3072	60 minute 100 year Summer Q+20%	25.341	24.238	0.381	0.000	1.45	9.266
S23.013	S3073-GR	60 minute 100 year Summer Q+20%	24.943	23.991	0.248	0.000	1.64	13.372
S23.014	S3074-GR	60 minute 100 year Summer Q+20%	24.865	23.778	0.113	0.000	2.46	9.153
S23.015	S3075	60 minute 100 year Summer Q+20%	24.643	23.235	-1.408	0.000	0.02	0.541
S23.016	S3076	60 minute 100 year Summer Q+20%	24.775	23.011	-1.764	0.000	0.01	1.767
S23.017	S3077	60 minute 100 year Summer Q+20%	24.194	22.754	-1.440	0.000	0.01	5.747
S23.018	S3078	60 minute 100 year Summer Q+20%	24.085	22.744	-1.341	0.000	0.01	3.176
S26.000	S3079-GR	60 minute 100 year Winter Q+20%	24.183	22.816	-0.167	0.000	0.04	0.145
S26.001	S3080-GR	60 minute 100 year Winter Q+20%	24.142	22.815	-0.127	0.000	0.28	0.441
S26.002	S3081-GR	60 minute 100 year Winter Q+20%	23.927	22.797	0.070	0.000	0.58	3.122
S23.019	S3082	60 minute 100 year Summer Q+20%	23.831	22.740	-1.091	0.000	0.02	5.884
S23.020	S3083	60 minute 100 year Summer Q+20%	23.455	22.735	-0.720	0.000	0.02	9.223
S23.021	S3084	60 minute 100 year Summer Q+20%	23.461	22.729	0.284	0.000	1.88	8.687
S23.022	S3085	60 minute 100 year Summer Q+20%	23.546	22.233	-1.313	0.000	0.02	0.581
S1.029	S3086-Basin C	480 minute 100 year Winter Q+20%	22.300	21.550	0.550	0.000	0.18	3260.124
S1.030	S3087-1	480 minute 100 year Winter Q+20%	22.439	21.537	0.800	0.000	0.13	2.684
S1.031	S3087	360 minute 100 year Winter Q+20%	22.646	21.476	1.242	0.000	0.34	4.511
S27.000	S3088	60 minute 100 year Summer Q+20%	24.098	22.430	-0.181	0.000	0.45	0.600
S27.001	S3089	60 minute 100 year Summer Q+20%	23.359	22.346	0.353	0.000	1.04	18.323
S27.002	S3090	60 minute 100 year Summer Q+20%	22.742	22.036	0.416	0.000	0.60	21.015
S27.003	S3091	60 minute 100 year Summer Q+20%	22.519	21.844	0.597	0.000	0.29	7.300
S27.004	S3092	60 minute 100 year Summer Q+20%	22.616	21.829	0.702	0.000	0.61	16.551
S28.000	S3093	60 minute 100 year Winter Q+20%	23.318	22.079	0.644	0.000	0.58	1.062
S28.001	S3094	60 minute 100 year Summer Q+20%	23.170	22.049	0.678	0.000	0.95	2.368
S28.002	S3095	60 minute 100 year Summer Q+20%	22.964	21.999	0.698	0.000	1.18	2.244
S28.003	S3096	60 minute 100 year Summer Q+20%	22.764	21.913	0.664	0.000	1.32	1.897
S28.004	S3097	60 minute 100 year Summer Q+20%	22.667	21.885	0.668	0.000	1.52	1.550
S29.000	S3098	60 minute 100 year Summer Q+20%	22.437	21.825	0.588	0.000	0.10	0.829
S27.005	S3099	60 minute 100 year Summer Q+20%	22.561	21.816	0.717	0.000	0.28	13.676
S27.006	S3100	60 minute 100 year Summer Q+20%	22.401	21.804	0.754	0.000	0.30	29.104
S27.007	S3101	60 minute 100 year Summer Q+20%	22.379	21.790	0.790	0.000	0.43	38.275
S27.008	S3102	60 minute 100 year Summer Q+20%	22.415	21.781	0.797	0.000	0.50	13.610
S30.000	S3103	60 minute 100 year Winter Q+20%	23.337	21.944	0.081	0.000	0.28	0.341
S30.001	S3104	60 minute 100 year Winter Q+20%	23.137	21.915	0.421	0.000	0.66	1.858
S30.002	S3105	60 minute 100 year Winter Q+20%	22.984	21.889	0.470	0.000	0.77	1.234
S30.003	S3106	60 minute 100 year Winter Q+20%	22.666	21.826	0.543	0.000	0.94	1.723
S30.004	S3107	60 minute 100 year Summer Q+20%	22.568	21.808	0.568	0.000	1.24	1.129
S27.009	S3108	60 minute 100 year Summer Q+20%	22.484	21.772	0.805	0.000	0.48	17.085
S27.010	S3109	60 minute 100 year Summer Q+20%	22.471	21.763	0.816	0.000	0.32	14.732
S1.032	S3110	60 minute 100 year Summer Q+20%	22.286	21.750	0.845	0.000	0.11	37.625
S1.033	S3111-CON	60 minute 100 year Summer Q+20%	22.317	21.748	1.634	0.000	0.39	38.935
S1.034	S3112	60 minute 100 year Summer Q+20%	22.361	19.766	-0.226	0.000	0.49	2.277
S1.035	S3113	60 minute 100 year Summer Q+20%	22.443	19.701	-0.243	0.000	0.43	1.216
S1.036	S3114	60 minute 100 year Summer Q+20%	21.748	19.603	-0.250	0.000	0.41	1.906
S1.037	S3115	60 minute 100 year Winter Q+20%	21.314	19.430	-0.248	0.000	0.40	2.494
S1.038	S3116	60 minute 100 year Winter Q+20%	20.779	19.327	-0.189	0.000	0.51	4.087
S1.039	S3117	60 minute 100 year Winter Q+20%	20.378	19.290	-0.183	0.000	0.66	1.582
S1.040	S3118-HW	60 minute 100 year Winter Q+20%	20.192	19.149	-1.043	0.000	0.01	0.339

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.011	S3071	249.3	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.012	S3072	282.9	SURCHARGED
S23.013	S3073-GR	307.8	SURCHARGED
S23.014	S3074-GR	316.0	SURCHARGED
S23.015	S3075	316.1	OK
S23.016	S3076	316.0	OK
S23.017	S3077	308.4	OK
S23.018	S3078	304.3	OK
S26.000	S3079-GR	2.0	OK
S26.001	S3080-GR	19.6	OK
S26.002	S3081-GR	35.7	SURCHARGED
S23.019	S3082	321.6	OK
S23.020	S3083	318.4	OK
S23.021	S3084	317.9	SURCHARGED*
S23.022	S3085	317.9	OK
S1.029	S3086-Basin C	51.1	SURCHARGED
S1.030	S3087-1	51.1	SURCHARGED
S1.031	S3087	51.0	SURCHARGED
S27.000	S3088	172.3	OK
S27.001	S3089	301.1	SURCHARGED
S27.002	S3090	279.2	SURCHARGED
S27.003	S3091	280.2	SURCHARGED
S27.004	S3092	278.1	SURCHARGED
S28.000	S3093	32.0	SURCHARGED
S28.001	S3094	57.6	SURCHARGED
S28.002	S3095	68.1	SURCHARGED
S28.003	S3096	69.5	SURCHARGED
S28.004	S3097	81.6	SURCHARGED
S29.000	S3098	1.7	SURCHARGED
S27.005	S3099	349.1	SURCHARGED
S27.006	S3100	342.9	SURCHARGED
S27.007	S3101	332.9	SURCHARGED
S27.008	S3102	326.2	SURCHARGED
S30.000	S3103	15.0	SURCHARGED
S30.001	S3104	22.8	SURCHARGED
S30.002	S3105	28.1	SURCHARGED
S30.003	S3106	28.2	SURCHARGED
S30.004	S3107	39.8	SURCHARGED
S27.009	S3108	345.0	SURCHARGED
S27.010	S3109	334.4	SURCHARGED
S1.032	S3110	110.8	SURCHARGED
S1.033	S3111-CON	61.6	SURCHARGED
S1.034	S3112	61.1	OK
S1.035	S3113	61.0	OK
S1.036	S3114	60.6	OK
S1.037	S3115	60.1	OK
S1.038	S3116	59.8	OK
S1.039	S3117	59.8	OK
S1.040	S3118-HW	59.8	OK

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+40%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Point
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 450306 114752		

Margin for Flood Risk Warning (mm)	299.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%)	0, +20, +40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S1.000	S4001	60 minute 100 year Summer Q+40%	27.478	26.188	-0.090	0.000	0.67	0.147	39.3
S1.001	S4002	60 minute 100 year Summer Q+40%	26.966	25.883	0.117	0.000	0.95	1.074	62.5
S1.002	S4003	60 minute 100 year Summer Q+40%	26.704	25.749	0.139	0.000	1.02	3.287	106.3
S1.003	S4004	60 minute 100 year Summer Q+40%	28.014	25.545	0.125	0.000	1.24	7.131	108.6
S2.000	S4005	60 minute 100 year Summer Q+40%	33.607	32.445	0.038	0.000	1.19	0.291	43.0
S2.001	S4006	60 minute 100 year Summer Q+40%	33.552	32.215	-0.077	0.000	0.76	0.430	67.9
S2.002	S4007	60 minute 100 year Summer Q+40%	32.390	31.110	-0.079	0.000	0.75	0.214	77.8
S2.003	S4008	60 minute 100 year Summer Q+40%	31.592	30.721	0.329	0.000	0.85	0.935	88.0
S2.004	S4009	60 minute 100 year Summer Q+40%	30.545	30.005	0.628	0.000	1.11	1.540	101.7
S2.005	S4010	60 minute 100 year Summer Q+40%	29.217	28.449	0.318	0.000	1.32	1.085	107.4
S2.006	S4011	60 minute 100 year Summer Q+40%	28.782	27.596	-0.099	0.000	0.60	0.175	110.2
S1.004	S4012	60 minute 100 year Summer Q+40%	28.294	25.473	0.101	0.000	1.86	2.658	225.7
S1.005	S4013	60 minute 100 year Summer Q+40%	28.322	25.413	0.070	0.000	1.39	3.819	267.5
S1.006	S4014	60 minute 100 year Summer Q+40%	27.532	24.952	-0.299	0.000	0.39	3.094	273.0
S3.000	S4015	60 minute 100 year Summer Q+40%	26.680	25.596	0.116	0.000	1.02	0.380	56.8
S3.001	S4016	60 minute 100 year Summer Q+40%	26.141	24.941	0.120	0.000	0.64	1.420	82.7
S3.002	S4017	60 minute 100 year Summer Q+40%	26.114	24.830	0.220	0.000	1.12	5.275	97.5
S3.003	S4018	60 minute 100 year Summer Q+40%	26.410	24.771	0.208	0.000	1.21	2.330	121.1
S3.004	S4019	60 minute 100 year Summer Q+40%	27.500	24.600	0.151	0.000	1.43	4.651	123.7
S1.007	S4020	60 minute 100 year Summer Q+40%	27.348	24.502	0.094	0.000	1.10	3.374	443.0
S4.000	S4021	60 minute 100 year Summer Q+40%	26.080	25.232	0.414	0.000	1.23	0.717	43.9
S4.001	S4022	60 minute 100 year Summer Q+40%	25.790	25.078	0.361	0.000	1.20	1.368	79.6
S4.002	S4023	60 minute 100 year Summer Q+40%	25.325	24.787	0.269	0.000	1.59	3.992	87.4
S4.003	S4024	60 minute 100 year Summer Q+40%	25.456	24.665	0.187	0.000	1.14	1.404	112.0
S4.004	S4025	60 minute 100 year Summer Q+40%	25.586	24.537	0.155	0.000	1.33	4.062	133.0
S1.008	S4026	60 minute 100 year Summer Q+40%	26.600	24.324	0.060	0.000	2.15	26.189	580.0
S1.009	S4027	60 minute 100 year Summer Q+40%	26.345	24.249	0.011	0.000	2.29	6.488	585.5
S1.010	S4028	60 minute 100 year Summer Q+40%	26.150	24.098	-0.121	0.000	0.44	4.203	606.4

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+40%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S1.000	S4001	OK
S1.001	S4002	SURCHARGED
S1.002	S4003	SURCHARGED
S1.003	S4004	SURCHARGED
S2.000	S4005	SURCHARGED
S2.001	S4006	OK
S2.002	S4007	OK
S2.003	S4008	SURCHARGED
S2.004	S4009	SURCHARGED
S2.005	S4010	SURCHARGED
S2.006	S4011	OK
S1.004	S4012	SURCHARGED
S1.005	S4013	SURCHARGED
S1.006	S4014	OK
S3.000	S4015	SURCHARGED
S3.001	S4016	SURCHARGED
S3.002	S4017	SURCHARGED
S3.003	S4018	SURCHARGED
S3.004	S4019	SURCHARGED
S1.007	S4020	SURCHARGED
S4.000	S4021	SURCHARGED
S4.001	S4022	SURCHARGED
S4.002	S4023	SURCHARGED
S4.003	S4024	SURCHARGED
S4.004	S4025	SURCHARGED
S1.008	S4026	SURCHARGED
S1.009	S4027	SURCHARGED
S1.010	S4028	OK

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+40%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S1.011	S4029	60 minute 100 year Summer Q+40%	24.845	23.900	0.717	0.000	0.96	29.577
S5.000	S4030	60 minute 100 year Summer Q+40%	25.677	24.626	0.121	0.000	1.15	0.301
S5.001	S4031	60 minute 100 year Summer Q+40%	25.276	24.072	-0.055	0.000	0.77	0.309
S1.012	S4032	60 minute 100 year Summer Q+40%	24.078	23.741	0.728	0.000	1.10	11.851
S1.013	S4033	60 minute 100 year Summer Q+40%	23.942	23.677	0.717	0.000	1.63	19.936
S1.014	S4034	60 minute 100 year Summer Q+40%	23.833	23.628	0.699	0.000	2.55	12.695
S6.000	S4035	60 minute 100 year Summer Q+40%	31.555	29.914	-0.111	0.000	0.51	0.123
S6.001	S4036	60 minute 100 year Summer Q+40%	29.895	28.316	-0.049	0.000	0.70	0.246
S6.002	S4037	60 minute 100 year Summer Q+40%	29.250	27.995	0.270	0.000	1.20	0.880
S7.000	S4038	60 minute 100 year Summer Q+40%	30.720	29.130	-0.080	0.000	0.74	0.158
S7.001	S4039	60 minute 100 year Summer Q+40%	29.740	28.182	-0.063	0.000	0.98	0.358
S7.002	S4040	60 minute 100 year Summer Q+40%	29.410	27.787	-0.133	0.000	0.74	0.629
S7.003	S4041	60 minute 100 year Summer Q+40%	29.250	27.659	-0.111	0.000	0.84	1.110
S7.004	S4042	60 minute 100 year Summer Q+40%	29.025	27.432	-0.108	0.000	0.84	1.292
S6.003	S4043	60 minute 100 year Summer Q+40%	28.650	27.166	0.021	0.000	1.03	2.768
S6.004	S4044	60 minute 100 year Summer Q+40%	28.150	26.485	-0.170	0.000	0.57	0.531
S8.000	S4045	60 minute 100 year Summer Q+40%	26.200	24.510	0.382	0.000	1.08	0.596
S8.001	S4046	60 minute 100 year Summer Q+40%	26.500	24.335	0.482	0.000	1.28	1.263
S8.002	S4047	60 minute 100 year Summer Q+40%	26.440	24.135	0.459	0.000	0.96	1.849
S6.005	S4048	60 minute 100 year Summer Q+40%	26.160	24.045	0.462	0.000	1.40	4.319
S6.006	S4049	60 minute 100 year Summer Q+40%	24.555	23.943	0.424	0.000	0.46	10.388
S6.007	S4050	60 minute 100 year Summer Q+40%	24.220	23.695	0.709	0.000	2.16	4.148
S6.008	S4051	60 minute 100 year Summer Q+40%	23.845	23.630	0.668	0.000	0.70	6.575
S6.009	S4052	60 minute 100 year Summer Q+40%	23.675	23.604	0.702	0.000	0.77	7.660
S6.010	S4053	60 minute 100 year Summer Q+40%	23.600	23.590	0.695	0.000	0.95	7.468
S1.015	S4054	60 minute 100 year Summer Q+40%	23.565	23.577	0.692	12.186	2.87	30.631
S1.016	S4055	60 minute 100 year Winter Q+40%	23.660	23.501	0.628	0.000	3.17	10.054
S1.017	S4056	60 minute 100 year Winter Q+40%	23.840	23.428	0.570	0.000	2.89	11.494
S9.000	S4057	60 minute 100 year Summer Q+40%	26.352	25.051	-0.101	0.000	0.58	0.134
S9.001	S4058	60 minute 100 year Summer Q+40%	25.763	24.663	0.101	0.000	0.86	1.001
S9.002	S4059	60 minute 100 year Summer Q+40%	25.576	24.486	0.173	0.000	1.14	3.076
S9.003	S4060	60 minute 100 year Summer Q+40%	25.493	24.399	0.160	0.000	0.97	1.015
S10.000	S4061	60 minute 100 year Summer Q+40%	25.428	24.263	0.035	0.000	0.55	0.288
S9.004	S4062	60 minute 100 year Summer Q+40%	25.210	24.219	0.209	0.000	1.23	2.769
S9.005	S4063	60 minute 100 year Winter Q+40%	24.964	23.981	0.218	0.000	1.00	2.128
S9.006	S4064	60 minute 100 year Winter Q+40%	24.852	23.873	0.221	0.000	0.47	1.838
S9.007	S4065	60 minute 100 year Winter Q+40%	24.696	23.714	0.294	0.000	0.45	2.881
S9.008	S4066	60 minute 100 year Winter Q+40%	24.374	23.536	0.438	0.000	0.60	4.979
S9.009	S4067	60 minute 100 year Winter Q+40%	24.123	23.389	0.495	0.000	1.16	4.240
S1.018	S4068	60 minute 100 year Winter Q+40%	23.970	23.358	0.513	0.000	2.11	11.931
S1.019	S4069	60 minute 100 year Winter Q+40%	23.988	23.212	0.381	0.000	3.20	5.614
S1.020	S4069-BASIN D	60 minute 100 year Winter Q+40%	23.500	23.198	0.863	0.000	0.90	1220.363
S1.021	S3001-CON	60 minute 100 year Winter Q+40%	23.971	23.125	0.921	0.000	1.16	6.006
S1.022	S3002	60 minute 100 year Winter Q+40%	24.693	22.313	0.207	0.000	1.16	9.102
S1.023	S3003	60 minute 100 year Winter Q+40%	25.302	22.129	0.172	0.000	1.12	15.216
S1.024	S3004	60 minute 100 year Winter Q+40%	25.496	21.930	0.136	0.000	1.10	16.374
S1.025	S3005	480 minute 100 year Winter Q+40%	25.233	21.733	0.102	0.000	0.98	16.188
S1.026	S3006	480 minute 100 year Winter Q+40%	24.970	21.722	0.150	0.000	0.97	6.546
S1.027	S3007	480 minute 100 year Winter Q+40%	24.235	21.710	0.202	0.000	1.01	7.157
S1.028	S3008	480 minute 100 year Winter Q+40%	24.282	21.699	0.242	0.000	1.35	5.954
S11.000	S3010	60 minute 100 year Summer Q+40%	27.983	26.312	-0.350	0.000	0.11	0.136
S11.001	S3011	60 minute 100 year Summer Q+40%	27.329	25.697	-0.343	0.000	0.13	0.224
S11.002	S3012	60 minute 100 year Summer Q+40%	26.707	25.369	0.162	0.000	0.33	3.037
S11.003	S3013	60 minute 100 year Summer Q+40%	26.514	25.222	0.208	0.000	0.34	2.355
S11.004	S3014	60 minute 100 year Summer Q+40%	26.322	25.067	0.246	0.000	0.23	2.412
S12.000	S3015	60 minute 100 year Summer Q+40%	27.434	25.897	-0.037	0.000	0.92	0.122

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S1.011	S4029	618.1	SURCHARGED
S5.000	S4030	24.1	SURCHARGED
S5.001	S4031	102.1	OK
S1.012	S4032	695.4	SURCHARGED
S1.013	S4033	702.2	FLOOD RISK
S1.014	S4034	700.7	FLOOD RISK
S6.000	S4035	56.1	OK
S6.001	S4036	66.6	OK
S6.002	S4037	81.3	SURCHARGED
S7.000	S4038	55.7	OK
S7.001	S4039	99.3	OK
S7.002	S4040	112.5	OK
S7.003	S4041	143.1	OK
S7.004	S4042	159.5	OK
S6.003	S4043	250.0	SURCHARGED
S6.004	S4044	279.0	OK
S8.000	S4045	18.3	SURCHARGED
S8.001	S4046	50.4	SURCHARGED
S8.002	S4047	60.3	SURCHARGED
S6.005	S4048	352.5	SURCHARGED
S6.006	S4049	336.0	SURCHARGED
S6.007	S4050	335.9	SURCHARGED
S6.008	S4051	337.6	FLOOD RISK
S6.009	S4052	348.8	FLOOD RISK
S6.010	S4053	349.9	FLOOD RISK
S1.015	S4054	956.5	FLOOD
S1.016	S4055	928.2	FLOOD RISK
S1.017	S4056	926.5	SURCHARGED
S9.000	S4057	34.7	OK
S9.001	S4058	70.3	SURCHARGED
S9.002	S4059	78.0	SURCHARGED
S9.003	S4060	94.2	SURCHARGED
S10.000	S4061	28.8	SURCHARGED
S9.004	S4062	133.2	SURCHARGED
S9.005	S4063	130.3	SURCHARGED
S9.006	S4064	127.8	SURCHARGED
S9.007	S4065	137.5	SURCHARGED
S9.008	S4066	151.6	SURCHARGED
S9.009	S4067	162.6	SURCHARGED
S1.018	S4068	1065.6	SURCHARGED
S1.019	S4069	1063.4	SURCHARGED
S1.020	S4069-BASIN D	248.5	SURCHARGED
S1.021	S3001-CON	247.3	SURCHARGED
S1.022	S3002	243.2	SURCHARGED
S1.023	S3003	235.3	SURCHARGED
S1.024	S3004	232.5	SURCHARGED
S1.025	S3005	183.4	SURCHARGED
S1.026	S3006	183.4	SURCHARGED
S1.027	S3007	183.3	SURCHARGED
S1.028	S3008	183.3	SURCHARGED
S11.000	S3010	39.9	OK
S11.001	S3011	59.3	OK
S11.002	S3012	81.7	SURCHARGED
S11.003	S3013	84.3	SURCHARGED
S11.004	S3014	94.0	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.000	S3015	23.3	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S13.000	S3016	60 minute 100 year Summer Q+40%	27.405	25.865	-0.114	0.000	0.49	0.120	33.6
S12.001	S3017	60 minute 100 year Summer Q+40%	27.355	25.521	-0.219	0.000	0.36	0.218	62.7
S12.002	S3018	60 minute 100 year Summer Q+40%	26.944	25.308	-0.225	0.000	0.33	0.455	94.4
S12.003	S3019	60 minute 100 year Summer Q+40%	26.586	25.198	0.187	0.000	0.59	2.085	110.1
S12.004	S3020	60 minute 100 year Summer Q+40%	26.355	25.041	0.261	0.000	0.45	2.057	107.3
S11.005	S3021	60 minute 100 year Summer Q+40%	25.834	24.837	0.578	0.000	0.77	8.452	190.5
S11.006	S3022	60 minute 100 year Summer Q+40%	26.132	24.794	0.606	0.000	0.61	12.930	210.4
S14.000	S3023	60 minute 100 year Summer Q+40%	27.248	25.614	-0.134	0.000	0.59	0.182	60.6
S14.001	S3024	60 minute 100 year Summer Q+40%	26.960	25.327	-0.133	0.000	0.59	0.460	102.2
S14.002	S3025	60 minute 100 year Summer Q+40%	26.657	25.070	0.348	0.000	0.75	1.807	118.7
S11.007	S3026	60 minute 100 year Summer Q+40%	26.356	24.746	0.619	0.000	1.70	5.699	336.5
S11.008	S3027	60 minute 100 year Summer Q+40%	25.760	24.687	0.591	0.000	1.10	5.189	329.7
S11.009	S3028	60 minute 100 year Summer Q+40%	25.205	24.545	0.575	0.000	1.82	15.859	327.0
S15.000	S3029	60 minute 100 year Summer Q+40%	26.390	25.013	0.048	0.000	0.45	0.218	20.1
S16.000	S3030	60 minute 100 year Summer Q+40%	26.231	25.020	0.214	0.000	0.51	0.406	16.9
S15.001	S3031	60 minute 100 year Summer Q+40%	26.202	24.932	0.539	0.000	0.79	1.097	41.6
S15.002	S3032	60 minute 100 year Summer Q+40%	25.813	24.705	0.706	0.000	2.01	2.356	67.2
S11.010	S3033	60 minute 100 year Summer Q+40%	25.672	24.475	0.538	0.000	1.43	6.545	402.5
S11.011	S3034-GR	60 minute 100 year Summer Q+40%	25.057	24.314	0.457	0.000	1.19	10.469	414.7
S17.000	S3035	60 minute 100 year Summer Q+40%	25.408	24.470	0.415	0.000	1.07	0.718	40.5
S11.012	S3036-GR	60 minute 100 year Summer Q+40%	24.964	24.142	0.378	0.000	1.88	6.735	459.1
S11.013	S3037-GR	60 minute 100 year Summer Q+40%	24.890	23.873	0.183	0.000	3.38	13.145	479.4
S11.014	S3038	60 minute 100 year Summer Q+40%	24.022	23.251	-0.771	0.000	0.06	0.680	478.9
S18.000	S3039-GR	60 minute 100 year Summer Q+40%	24.640	23.403	-0.037	0.000	0.33	0.292	18.4
S19.000	S3040-GR	60 minute 100 year Summer Q+40%	24.628	23.405	-0.023	0.000	0.41	0.308	21.5
S18.001	S3041-GR	60 minute 100 year Summer Q+40%	24.597	23.377	-0.020	0.000	0.87	1.253	54.8
S18.002	S3042-GR	60 minute 100 year Summer Q+40%	24.494	23.297	0.003	0.000	1.07	1.816	64.2
S11.015	S3043	60 minute 100 year Summer Q+40%	23.922	23.151	-0.771	0.000	0.07	4.216	538.2
S11.016	S3045	60 minute 100 year Summer Q+40%	23.652	22.908	-0.744	0.000	0.08	8.379	539.3
S20.000	S3045-1-GR	60 minute 100 year Summer Q+40%	24.136	22.838	-0.098	0.000	0.31	0.138	10.9
S20.001	S3045-2-GR	60 minute 100 year Summer Q+40%	24.043	22.823	-0.020	0.000	0.79	0.643	26.9
S11.017	S3046	60 minute 100 year Summer Q+40%	23.459	22.788	-0.671	0.000	0.09	5.898	557.0
S21.000	S3047-GR	60 minute 100 year Summer Q+40%	24.058	22.689	-0.169	0.000	0.31	0.143	19.6
S21.001	S3048-GR	60 minute 100 year Summer Q+40%	23.965	22.651	-0.114	0.000	0.59	0.866	37.1
S21.002	S3049-GR	60 minute 100 year Summer Q+40%	23.872	22.606	-0.066	0.000	0.96	1.194	54.7
S11.018	S3050	60 minute 100 year Summer Q+40%	23.365	22.559	-0.806	0.000	0.07	9.173	595.2
S11.019	S3051	60 minute 100 year Summer Q+40%	23.316	22.546	-0.770	0.000	0.07	1.018	594.7
S11.020	S3053	60 minute 100 year Winter Q+40%	22.996	22.404	-0.592	0.000	0.09	12.827	536.7
S22.000	S3053-1-GR	60 minute 100 year Winter Q+40%	23.484	22.452	0.168	0.000	0.45	0.439	16.9
S22.001	S3054-GR	60 minute 100 year Winter Q+40%	23.269	22.426	0.357	0.000	1.05	2.056	34.3
S11.021	S3055	60 minute 100 year Winter Q+40%	22.739	22.379	-0.360	0.000	0.09	42.094	517.2
S11.022	S3056	60 minute 100 year Winter Q+40%	22.621	22.346	0.355	0.000	1.97	77.192	490.2
S11.023	S3057	60 minute 100 year Winter Q+40%	22.633	21.782	-0.851	0.000	0.06	0.885	490.2
S23.000	S3058	60 minute 100 year Summer Q+40%	27.878	26.213	-0.249	0.000	0.07	0.052	6.7
S23.001	S3059	60 minute 100 year Summer Q+40%	27.725	26.071	-0.227	0.000	0.13	0.123	18.1
S23.002	S3060	60 minute 100 year Summer Q+40%	27.292	25.768	0.130	0.000	0.34	1.800	45.9
S23.003	S3061	60 minute 100 year Summer Q+40%	27.136	25.681	0.160	0.000	0.39	2.382	64.3
S23.004	S3062	60 minute 100 year Summer Q+40%	26.998	25.544	0.200	0.000	0.44	2.327	81.3
S23.005	S3063	60 minute 100 year Summer Q+40%	26.633	25.386	0.407	0.000	1.04	4.811	103.4
S23.006	S3064	60 minute 100 year Summer Q+40%	26.623	25.304	0.434	0.000	0.76	4.958	128.1
S23.007	S3065	60 minute 100 year Summer Q+40%	26.942	25.209	0.420	0.000	1.27	3.661	133.3
S23.008	S3066	60 minute 100 year Summer Q+40%	27.141	25.171	0.419	0.000	1.42	3.309	138.7
S24.000	S3067	60 minute 100 year Summer Q+40%	27.294	25.724	-0.070	0.000	0.55	0.084	29.8
S23.009	S3068	60 minute 100 year Summer Q+40%	27.239	25.140	0.414	0.000	1.30	2.775	186.1
S23.010	S3069	60 minute 100 year Summer Q+40%	26.728	24.979	0.357	0.000	0.70	7.569	197.0
S25.000	S3070	60 minute 100 year Summer Q+40%	25.706	24.674	0.231	0.000	0.10	0.595	17.6

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S13.000	S3016	OK
S12.001	S3017	OK
S12.002	S3018	OK
S12.003	S3019	SURCHARGED
S12.004	S3020	SURCHARGED
S11.005	S3021	SURCHARGED
S11.006	S3022	SURCHARGED
S14.000	S3023	OK
S14.001	S3024	OK
S14.002	S3025	SURCHARGED
S11.007	S3026	SURCHARGED
S11.008	S3027	SURCHARGED
S11.009	S3028	SURCHARGED
S15.000	S3029	SURCHARGED
S16.000	S3030	SURCHARGED
S15.001	S3031	SURCHARGED
S15.002	S3032	SURCHARGED
S11.010	S3033	SURCHARGED
S11.011	S3034-GR	SURCHARGED
S17.000	S3035	SURCHARGED
S11.012	S3036-GR	SURCHARGED
S11.013	S3037-GR	SURCHARGED
S11.014	S3038	OK
S18.000	S3039-GR	OK
S19.000	S3040-GR	OK
S18.001	S3041-GR	OK
S18.002	S3042-GR	SURCHARGED
S11.015	S3043	OK
S11.016	S3045	OK
S20.000	S3045-1-GR	OK
S20.001	S3045-2-GR	OK
S11.017	S3046	OK
S21.000	S3047-GR	OK
S21.001	S3048-GR	OK
S21.002	S3049-GR	OK
S11.018	S3050	OK
S11.019	S3051	OK
S11.020	S3053	OK
S22.000	S3053-1-GR	SURCHARGED
S22.001	S3054-GR	SURCHARGED
S11.021	S3055	OK
S11.022	S3056	FLOOD RISK*
S11.023	S3057	OK
S23.000	S3058	OK
S23.001	S3059	OK
S23.002	S3060	SURCHARGED
S23.003	S3061	SURCHARGED
S23.004	S3062	SURCHARGED
S23.005	S3063	SURCHARGED
S23.006	S3064	SURCHARGED
S23.007	S3065	SURCHARGED
S23.008	S3066	SURCHARGED
S24.000	S3067	OK
S23.009	S3068	SURCHARGED
S23.010	S3069	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S25.000	S3070	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S23.011	S3071	60 minute 100 year Summer Q+40%	25.786	24.660	0.729	0.000	1.55	15.821
S23.012	S3072	60 minute 100 year Summer Q+40%	25.341	24.478	0.621	0.000	1.70	9.690
S23.013	S3073-GR	60 minute 100 year Summer Q+40%	24.943	24.136	0.393	0.000	1.92	13.628
S23.014	S3074-GR	60 minute 100 year Summer Q+40%	24.865	23.842	0.177	0.000	2.88	9.280
S23.015	S3075	60 minute 100 year Summer Q+40%	24.643	23.256	-1.387	0.000	0.02	0.678
S23.016	S3076	60 minute 100 year Summer Q+40%	24.775	23.029	-1.746	0.000	0.01	2.078
S23.017	S3077	60 minute 100 year Summer Q+40%	24.194	22.829	-1.365	0.000	0.02	9.796
S23.018	S3078	60 minute 100 year Summer Q+40%	24.085	22.824	-1.261	0.000	0.01	4.791
S26.000	S3079-GR	60 minute 100 year Winter Q+40%	24.183	22.919	-0.064	0.000	0.04	0.262
S26.001	S3080-GR	60 minute 100 year Winter Q+40%	24.142	22.919	-0.023	0.000	0.32	0.769
S26.002	S3081-GR	60 minute 100 year Winter Q+40%	23.927	22.888	0.161	0.000	0.62	3.663
S23.019	S3082	60 minute 100 year Summer Q+40%	23.831	22.819	-1.012	0.000	0.02	7.733
S23.020	S3083	60 minute 100 year Summer Q+40%	23.455	22.814	-0.641	0.000	0.02	11.835
S23.021	S3084	60 minute 100 year Summer Q+40%	23.461	22.807	0.362	0.000	2.10	10.555
S23.022	S3085	60 minute 100 year Summer Q+40%	23.546	22.249	-1.297	0.000	0.02	0.632
S1.029	S3086-Basin C	480 minute 100 year Winter Q+40%	22.300	21.690	0.690	0.000	0.18	3936.348
S1.030	S3087-1	480 minute 100 year Winter Q+40%	22.439	21.678	0.941	0.000	0.13	2.887
S1.031	S3087	60 minute 100 year Summer Q+40%	22.646	21.655	1.421	0.000	0.46	4.767
S27.000	S3088	60 minute 100 year Summer Q+40%	24.098	22.829	0.218	0.000	0.53	1.304
S27.001	S3089	60 minute 100 year Summer Q+40%	23.359	22.659	0.666	0.000	1.17	20.708
S27.002	S3090	60 minute 100 year Summer Q+40%	22.742	22.332	0.712	0.000	0.70	21.538
S27.003	S3091	60 minute 100 year Summer Q+40%	22.519	22.134	0.887	0.000	0.34	8.037
S27.004	S3092	60 minute 100 year Summer Q+40%	22.616	22.115	0.988	0.000	0.69	17.280
S28.000	S3093	60 minute 100 year Summer Q+40%	23.318	22.432	0.997	0.000	0.79	1.461
S28.001	S3094	60 minute 100 year Summer Q+40%	23.170	22.410	1.039	0.000	1.02	2.777
S28.002	S3095	60 minute 100 year Summer Q+40%	22.964	22.329	1.028	0.000	1.27	2.617
S28.003	S3096	60 minute 100 year Summer Q+40%	22.764	22.251	1.002	0.000	1.45	2.280
S28.004	S3097	60 minute 100 year Summer Q+40%	22.667	22.178	0.961	0.000	1.70	1.880
S29.000	S3098	60 minute 100 year Summer Q+40%	22.437	22.106	0.869	0.000	0.11	1.147
S27.005	S3099	60 minute 100 year Summer Q+40%	22.561	22.100	1.001	0.000	0.34	14.661
S27.006	S3100	60 minute 100 year Summer Q+40%	22.401	22.087	1.037	0.000	0.33	30.087
S27.007	S3101	60 minute 100 year Summer Q+40%	22.379	22.073	1.073	0.000	0.48	39.256
S27.008	S3102	60 minute 100 year Summer Q+40%	22.415	22.064	1.080	0.000	0.59	14.590
S30.000	S3103	60 minute 100 year Summer Q+40%	23.337	22.276	0.413	0.000	0.39	0.716
S30.001	S3104	60 minute 100 year Summer Q+40%	23.137	22.252	0.758	0.000	0.91	2.239
S30.002	S3105	60 minute 100 year Summer Q+40%	22.984	22.228	0.809	0.000	1.03	1.617
S30.003	S3106	60 minute 100 year Summer Q+40%	22.666	22.176	0.893	0.000	1.38	2.119
S30.004	S3107	60 minute 100 year Summer Q+40%	22.568	22.123	0.883	0.000	1.43	1.486
S27.009	S3108	60 minute 100 year Summer Q+40%	22.484	22.054	1.087	0.000	0.56	18.062
S27.010	S3109	60 minute 100 year Summer Q+40%	22.471	22.043	1.096	0.000	0.38	15.703
S1.032	S3110	60 minute 100 year Summer Q+40%	22.286	22.028	1.123	0.000	0.11	39.593
S1.033	S3111-CON	60 minute 100 year Summer Q+40%	22.317	22.026	1.912	0.000	0.42	40.527
S1.034	S3112	60 minute 100 year Summer Q+40%	22.361	19.775	-0.217	0.000	0.53	2.443
S1.035	S3113	60 minute 100 year Summer Q+40%	22.443	19.709	-0.235	0.000	0.46	1.299
S1.036	S3114	60 minute 100 year Summer Q+40%	21.748	19.611	-0.242	0.000	0.44	2.029
S1.037	S3115	60 minute 100 year Winter Q+40%	21.314	19.439	-0.239	0.000	0.43	2.733
S1.038	S3116	60 minute 100 year Winter Q+40%	20.779	19.338	-0.178	0.000	0.54	4.407
S1.039	S3117	60 minute 100 year Winter Q+40%	20.378	19.301	-0.172	0.000	0.70	1.679
S1.040	S3118-HW	60 minute 100 year Winter Q+40%	20.192	19.153	-1.039	0.000	0.01	0.356

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.011	S3071	287.9	SURCHARGED

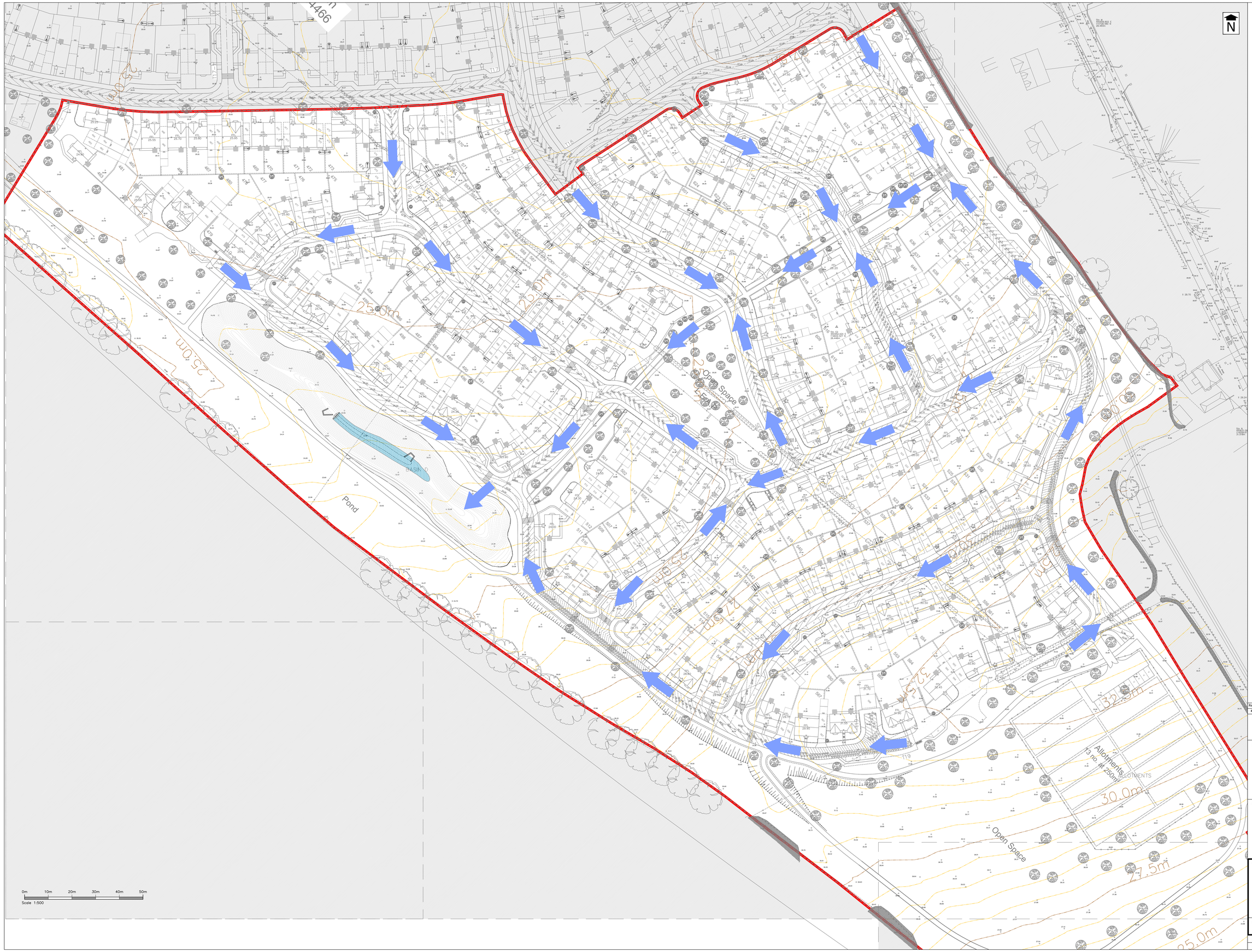
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+40%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.012	S3072	330.6	SURCHARGED
S23.013	S3073-GR	360.3	SURCHARGED
S23.014	S3074-GR	370.1	SURCHARGED
S23.015	S3075	370.0	OK
S23.016	S3076	369.4	OK
S23.017	S3077	352.3	OK
S23.018	S3078	344.9	OK
S26.000	S3079-GR	2.4	OK
S26.001	S3080-GR	22.6	OK
S26.002	S3081-GR	38.4	SURCHARGED
S23.019	S3082	362.1	OK
S23.020	S3083	355.8	OK
S23.021	S3084	354.7	SURCHARGED*
S23.022	S3085	354.8	OK
S1.029	S3086-Basin C	53.0	SURCHARGED
S1.030	S3087-1	53.0	SURCHARGED
S1.031	S3087	70.5	SURCHARGED
S27.000	S3088	200.9	SURCHARGED
S27.001	S3089	338.1	SURCHARGED
S27.002	S3090	327.7	SURCHARGED
S27.003	S3091	322.0	SURCHARGED
S27.004	S3092	316.9	SURCHARGED
S28.000	S3093	43.9	SURCHARGED
S28.001	S3094	61.7	SURCHARGED
S28.002	S3095	73.3	SURCHARGED
S28.003	S3096	76.4	SURCHARGED
S28.004	S3097	91.0	SURCHARGED
S29.000	S3098	1.8	SURCHARGED
S27.005	S3099	416.2	SURCHARGED
S27.006	S3100	388.0	SURCHARGED
S27.007	S3101	375.5	SURCHARGED
S27.008	S3102	381.2	SURCHARGED
S30.000	S3103	21.3	SURCHARGED
S30.001	S3104	31.5	SURCHARGED
S30.002	S3105	37.9	SURCHARGED
S30.003	S3106	41.2	SURCHARGED
S30.004	S3107	46.0	SURCHARGED
S27.009	S3108	403.0	SURCHARGED
S27.010	S3109	397.7	SURCHARGED
S1.032	S3110	104.0	FLOOD RISK
S1.033	S3111-CON	65.8	FLOOD RISK
S1.034	S3112	65.5	OK
S1.035	S3113	65.4	OK
S1.036	S3114	64.9	OK
S1.037	S3115	64.0	OK
S1.038	S3116	63.7	OK
S1.039	S3117	63.7	OK
S1.040	S3118-HW	63.6	OK

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Appendix 4



PFA consulting

Stratton Park House, Wanborough Road
Swindon, SN3 4HG

Telephone
01793 828000

Website
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For Planning
This drawing is produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

NOTES

1. Drawing based on Topographical Survey by Anthony Brookes Surveys Ltd, drawing number A258/7834/1 dated June 2014.
2. On-site road layout based on AAP Architecture's Drawing Numbers P1388.3000 Revision C dated 4 October 2019.
3. Subject to detailed design.

KEY

- Existing Major Contours
- Existing Minor Contours
- Proposed Major Contours
- Proposed Minor Contours
- Indicative Exceedance Flow Route
- Watercourse/Ditch
- Site Boundary (Indicative Only)

Rev	Date	Description	Drawn	Check
P	10/02/20	First Issue.	SC	BF

Status
FOR PLANNING

Client
miller homes
gleeson

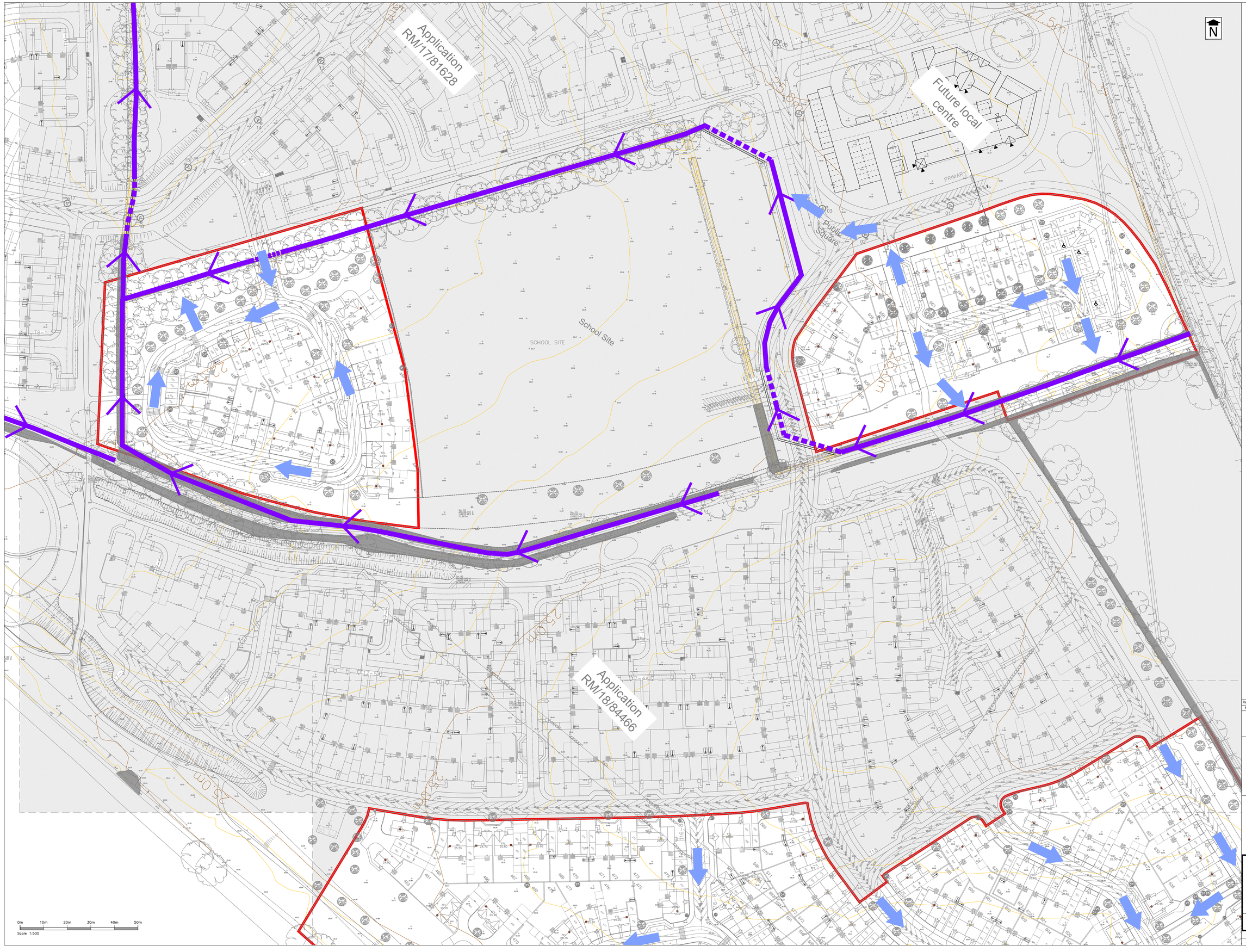
Project
Boorley Gardens
Winchester Road
Hedge End
Phase 3

Drawing Title
Phase 3
Exceedance Flow Routes
Sheet 1 of 2

Drawing No.
M380/128

Date: March 2020 | Scale: 1:500@A0

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- Existing Major Contours
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- Site Boundary (Indicative Only)

Rev	Date	Description	Drawn	Check
#	10/03/20	First Issue.	SC	BF

Status
FOR PLANNING

Client
miller homes
gleeson

Project
Boorley Gardens
Winchester Road
Hedge End
Phase 3

Drawing Title
Phase 3
Exceedance Flow Routes
Sheet 2 of 2

Drawing No.
M380/129

Date: March 2020 | Scale: 1:500@A0

E-Mail: bfox@pfaplc.com

Appendix G

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Catch C+D

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	5	Volumetric Runoff Coeff.	0.750
		PIMP (%)	100
FEH Rainfall Version	2013	Add Flow / Climate Change (%)	0
Site Location	GB 450306 114752	Minimum Backdrop Height (m)	20.000
Data Type	Point	Maximum Backdrop Height (m)	20.000
Maximum Rainfall (mm/hr)	550	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Catch C+D

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.000	4-8	0.198	8-12	1.798	12-16	3.421	16-20	2.957	20-24	0.218

Total Area Contributing (ha) = 8.592

Total Pipe Volume (m³) = 2524.283

Network Design Table for Catch C+D

- Indicates pipe length does not match coordinates
《 - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	35.949	0.512	70.2	0.096	5.00	0.0	0.600		o	225	Pipe/Conduit	
S1.001	37.616	0.156	241.1	0.066	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.002	60.836	0.190	320.2	0.126	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.003	15.123	0.048	315.1	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	
S2.000	19.287	0.115	167.7	0.105	5.00	0.0	0.600		o	225	Pipe/Conduit	
S2.001	33.215	1.103	30.1	0.060	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.002	15.620	0.797	19.6	0.024	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.003	21.369	1.015	21.1	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.004	36.334	1.246	29.2	0.043	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.005	13.620	0.436	31.2	0.018	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.006	14.675	2.323	6.3	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.004	14.479	0.029	499.3	0.022	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.005	45.757	0.093	492.0	0.138	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.006	10.237	0.843	12.1	0.017	0.00	0.0	0.600		o	525	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	80.71	5.38	26.053	0.096	0.0	0.0	0.0	1.56	62.1	20.9
S1.001	77.08	6.01	25.466	0.161	0.0	0.0	0.0	1.01	71.3	33.7
S1.002	71.96	7.01	25.235	0.287	0.0	0.0	0.0	1.01	111.2	56.0
S1.003	70.81	7.26	25.045	0.296	0.0	0.0	0.0	1.02	112.1	56.8
S2.000	81.11	5.32	32.182	0.105	0.0	0.0	0.0	1.01	40.0	23.1
S2.001	79.69	5.55	32.067	0.165	0.0	0.0	0.0	2.39	95.1	35.6
S2.002	79.17	5.64	30.964	0.189	0.0	0.0	0.0	2.97	118.1	40.5
S2.003	78.45	5.76	30.167	0.228	0.0	0.0	0.0	2.86	113.9	48.4
S2.004	77.05	6.01	29.152	0.271	0.0	0.0	0.0	2.43	96.7	56.5
S2.005	76.52	6.11	27.906	0.289	0.0	0.0	0.0	2.35	93.4	59.8
S2.006	76.27	6.15	27.470	0.298	0.0	0.0	0.0	5.24	208.4	61.5
S1.004	69.73	7.50	24.847	0.616	0.0	0.0	0.0	1.00	215.5	116.3
S1.005	66.58	8.26	24.818	0.754	0.0	0.0	0.0	1.00	217.1	136.0
S1.006	66.48	8.29	24.725	0.771	0.0	0.0	0.0	6.45	1396.8	138.8

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S3.000	53.557	0.659	81.3	0.147	5.00	0.0	0.600		o	225	Pipe/Conduit	
S3.001	41.576	0.211	197.0	0.082	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.002	14.948	0.047	318.0	0.047	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.003	36.706	0.114	322.0	0.070	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.004	12.697	0.041	309.7	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.007	59.337	0.144	412.1	0.163	0.00	0.0	0.600		o	675	Pipe/Conduit	
S4.000	48.639	0.300	162.1	0.168	5.00	0.0	0.600		o	225	Pipe/Conduit	
S4.001	9.863	0.040	246.6	0.072	0.00	0.0	0.600		o	300	Pipe/Conduit	
S4.002	31.323	0.096	326.3	0.072	0.00	0.0	0.600		o	375	Pipe/Conduit	
S4.003	38.232	0.118	324.0	0.065	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.008	12.810	0.026	492.7	0.016	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.009	9.391	0.019	494.3	0.018	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.010	64.152	1.036	61.9	0.130	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.011	10.287	0.170	60.5	0.074	0.00	0.0	0.600		o	750	Pipe/Conduit	
S5.000	24.808	0.378	65.6	0.061	5.00	0.0	0.600		o	150	Pipe/Conduit	
S5.001	73.068	1.114	65.6	0.189	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.012	26.687	0.053	503.5	0.040	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.013	15.378	0.031	496.1	0.030	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.014	16.427	0.014	1173.4	0.012	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.000	33.176	1.660	20.0	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	
S6.001	15.082	0.640	23.6	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S6.002	30.161	0.580	52.0	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S7.000	41.909	0.965	43.4	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	
S7.001	32.312	0.325	99.4	0.105	0.00	0.0	0.600		o	300	Pipe/Conduit	
S7.002	15.058	0.150	100.4	0.032	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.003	23.125	0.230	100.5	0.074	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.004	35.652	0.395	90.3	0.044	0.00	0.0	0.600		o	375	Pipe/Conduit	
S6.003	24.959	0.490	50.9	0.036	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S3.000	79.31	5.61	25.255	0.147	0.0	0.0	0.0	1.45	57.7	31.5
S3.001	76.28	6.15	24.446	0.229	0.0	0.0	0.0	1.29	142.2	47.3
S3.002	74.97	6.40	24.235	0.275	0.0	0.0	0.0	1.01	111.6	55.9
S3.003	71.97	7.01	24.188	0.345	0.0	0.0	0.0	1.00	110.9	67.3
S3.004	71.01	7.22	24.074	0.354	0.0	0.0	0.0	1.02	113.1	68.1
S1.007	63.62	9.06	23.733	1.288	0.0	0.0	0.0	1.28	459.8	222.0
S4.000	78.28	5.79	24.593	0.168	0.0	0.0	0.0	1.02	40.7	35.6
S4.001	77.35	5.96	24.218	0.240	0.0	0.0	0.0	1.00	70.5	50.3
S4.002	74.56	6.48	24.103	0.312	0.0	0.0	0.0	1.00	110.2	63.1
S4.003	71.47	7.12	24.007	0.377	0.0	0.0	0.0	1.00	110.6	73.1
S1.008	63.03	9.23	23.514	1.682	0.0	0.0	0.0	1.25	554.0	287.1
S1.009	62.60	9.35	23.488	1.700	0.0	0.0	0.0	1.25	553.1	288.3
S1.010	61.60	9.65	23.469	1.830	0.0	0.0	0.0	3.56	1572.8	305.4
S1.011	61.45	9.70	22.433	1.905	0.0	0.0	0.0	3.60	1591.1	317.0
S5.000	81.03	5.33	24.355	0.061	0.0	0.0	0.0	1.24	22.0	13.3
S5.001	77.34	5.96	23.827	0.250	0.0	0.0	0.0	1.94	137.4	52.4
S1.012	60.43	10.02	22.113	2.195	0.0	0.0	0.0	1.39	883.9	359.2
S1.013	59.86	10.21	22.060	2.224	0.0	0.0	0.0	1.40	890.6	360.6
S1.014	58.96	10.51	22.029	2.236	0.0	0.0	0.0	0.91	576.4	360.6
S6.000	81.95	5.19	29.800	0.136	0.0	0.0	0.0	2.94	116.9	30.3
S6.001	81.35	5.28	28.140	0.164	0.0	0.0	0.0	2.71	107.6	36.2
S6.002	79.65	5.56	27.500	0.203	0.0	0.0	0.0	1.82	72.3	43.7
S7.000	80.91	5.35	28.985	0.136	0.0	0.0	0.0	1.99	79.1	29.7
S7.001	78.86	5.69	27.945	0.241	0.0	0.0	0.0	1.58	111.5	51.4
S7.002	78.06	5.83	27.545	0.272	0.0	0.0	0.0	1.81	199.7	57.6
S7.003	76.87	6.04	27.395	0.347	0.0	0.0	0.0	1.81	199.6	72.2
S7.004	75.20	6.36	27.165	0.391	0.0	0.0	0.0	1.91	210.7	79.6
S6.003	74.36	6.52	26.770	0.629	0.0	0.0	0.0	2.54	281.0	126.8

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S6.004	43.011	3.072	14.0	0.085	0.00	0.0	0.600		o	375	Pipe/Conduit	
S8.000	27.733	0.275	100.8	0.048	5.00	0.0	0.600		o	150	Pipe/Conduit	
S8.001	26.245	0.177	148.3	0.082	0.00	0.0	0.600		o	225	Pipe/Conduit	
S8.002	22.377	0.093	240.6	0.028	0.00	0.0	0.600		o	300	Pipe/Conduit	
S6.005	31.872	0.064	498.0	0.054	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.006	8.022	0.533	15.1	0.009	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.007	12.185	0.024	507.7	0.012	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.008	9.943	0.046	216.2	0.012	0.00	0.0	0.600		o	750	Pipe/Conduit	
S6.009	7.177	0.007	1025.3	0.051	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.010	9.883	0.010	988.3	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.015	11.514	0.012	959.5	0.025	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.016	14.009	0.015	933.9	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.017	12.204	0.013	938.8	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S9.000	40.635	0.590	68.9	0.085	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.001	38.986	0.249	156.6	0.100	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.002	8.268	0.074	111.7	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.003	23.600	0.229	103.1	0.047	0.00	0.0	0.600		o	300	Pipe/Conduit	
S10.000	16.795	0.218	77.0	0.075	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.004	19.671	0.247	79.6	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.005	9.366	0.111	84.4	0.039	0.00	0.0	0.600		o	375	Pipe/Conduit	
S9.006	12.815	0.232	55.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.007	24.711	0.322	76.7	0.045	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.008	19.546	0.204	95.8	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.009	12.446	0.044	282.9	0.034	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.018	5.521	0.014	394.4	0.038	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.019	12.487#	0.021	594.6	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.020	17.627	0.131	134.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.021	37.615	0.098	383.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.022	66.231	0.149	444.5	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S6.004	73.62	6.67	26.280	0.715	0.0	0.0	0.0	4.86	537.2	142.5
S8.000	80.23	5.46	23.978	0.048	0.0	0.0	0.0	1.00	17.7	10.5
S8.001	77.84	5.87	23.628	0.131	0.0	0.0	0.0	1.07	42.6	27.6
S8.002	75.81	6.24	23.376	0.159	0.0	0.0	0.0	1.01	71.3	32.6
S6.005	71.28	7.16	22.983	0.927	0.0	0.0	0.0	1.08	306.6	179.0
S6.006	71.19	7.18	22.919	0.936	0.0	0.0	0.0	6.30	1780.7	180.4
S6.007	70.33	7.37	22.386	0.947	0.0	0.0	0.0	1.07	303.6	180.4
S6.008	69.94	7.45	22.212	0.960	0.0	0.0	0.0	1.90	839.2	181.8
S6.009	69.41	7.58	22.002	1.010	0.0	0.0	0.0	0.97	617.1	189.9
S6.010	68.69	7.74	21.995	1.010	0.0	0.0	0.0	0.99	628.7	189.9
S1.015	58.40	10.70	21.985	3.271	0.0	0.0	0.0	1.00	638.2	517.4
S1.016	57.75	10.93	21.973	3.271	0.0	0.0	0.0	1.02	647.0	517.4
S1.017	57.19	11.13	21.958	3.271	0.0	0.0	0.0	1.01	645.3	517.4
S9.000	80.43	5.43	24.927	0.085	0.0	0.0	0.0	1.58	62.7	18.4
S9.001	77.40	5.95	24.262	0.185	0.0	0.0	0.0	1.25	88.6	38.7
S9.002	76.89	6.04	24.013	0.212	0.0	0.0	0.0	1.49	105.1	44.2
S9.003	75.53	6.29	23.939	0.259	0.0	0.0	0.0	1.55	109.5	53.1
S10.000	81.95	5.19	24.003	0.075	0.0	0.0	0.0	1.49	59.3	16.6
S9.004	74.56	6.48	23.710	0.367	0.0	0.0	0.0	1.76	124.6	74.2
S9.005	74.16	6.56	23.388	0.406	0.0	0.0	0.0	1.97	218.0	81.6
S9.006	73.77	6.64	23.202	0.406	0.0	0.0	0.0	2.74	435.8	81.6
S9.007	72.90	6.81	22.970	0.451	0.0	0.0	0.0	2.32	369.4	89.1
S9.008	72.15	6.97	22.648	0.490	0.0	0.0	0.0	2.08	330.4	95.7
S9.009	71.34	7.14	22.444	0.524	0.0	0.0	0.0	1.20	191.5	101.2
S1.018	57.03	11.19	21.945	3.833	0.0	0.0	0.0	1.57	999.8	592.0
S1.019	56.60	11.35	21.931	3.833	0.0	0.0	0.0	1.28	812.8	592.0
S1.020	56.19	11.50	21.810	3.833	0.0	0.0	0.0	1.93	417.6K	592.0
S1.021	54.79	12.05	21.679	3.833	0.0	0.0	0.0	1.14	246.2K	592.0
S1.022	52.34	13.10	21.581	3.833	0.0	0.0	0.0	1.06	228.6K	592.0

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.023	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.024	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.025	26.289	0.059	445.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.026	28.667	0.064	447.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.027	22.780	0.051	446.7	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.028	14.238#	0.032	444.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.000	40.107	0.622	64.5	0.035	5.00	0.0	0.600		o	450	Pipe/Conduit	
S11.001	32.411	0.833	38.9	0.076	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.002	10.303	0.193	53.4	0.058	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.003	10.303	0.192	53.7	0.009	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.004	23.248	0.563	41.3	0.016	0.00	0.0	0.600		o	450	Pipe/Conduit	
S12.000	7.032	0.194	36.2	0.048	5.00	0.0	0.600		o	150	Pipe/Conduit	
S13.000	9.073	0.240	37.8	0.049	5.00	0.0	0.600		o	225	Pipe/Conduit	
S12.001	19.266	0.207	93.1	0.040	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.002	17.962	0.522	34.4	0.053	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.003	11.800	0.230	51.3	0.041	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.004	28.031	0.521	53.8	0.032	0.00	0.0	0.600		o	375	Pipe/Conduit	
S11.005	39.725	0.071	559.5	0.064	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.006	8.588	0.061	140.8	0.068	0.00	0.0	0.600		o	600	Pipe/Conduit	
S14.000	27.512	0.288	95.5	0.065	5.00	0.0	0.600		o	300	Pipe/Conduit	
S14.001	24.054	0.738	32.6	0.099	0.00	0.0	0.600		o	300	Pipe/Conduit	
S14.002	23.286	0.595	39.1	0.089	0.00	0.0	0.600		o	300	Pipe/Conduit	
S15.000	12.458	0.523	23.8	0.030	5.00	0.0	0.600		o	225	Pipe/Conduit	
S11.007	12.441	0.031	401.3	0.110	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.008	50.277	0.126	399.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.009	16.281	0.033	493.4	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S16.000	6.404	0.572	11.2	0.043	5.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.023	49.94	14.25	21.432	3.833	0.0	0.0	0.0	1.06	228.4≪	592.0
S1.024	47.79	15.39	21.269	3.833	0.0	0.0	0.0	1.06	228.4≪	592.0
S1.025	47.06	15.81	21.106	3.833	0.0	0.0	0.0	1.05	228.3≪	592.0
S1.026	46.29	16.26	21.047	3.833	0.0	0.0	0.0	1.05	227.7≪	592.0
S1.027	45.70	16.62	20.983	3.833	0.0	0.0	0.0	1.05	228.0≪	592.0
S1.028	45.35	16.85	20.932	3.833	0.0	0.0	0.0	1.06	228.5≪	592.0
S11.000	81.46	5.26	26.212	0.035	0.0	0.0	0.0	2.54	403.2	7.7
S11.001	80.43	5.43	25.590	0.111	0.0	0.0	0.0	3.27	519.6	24.2
S11.002	80.05	5.49	24.757	0.169	0.0	0.0	0.0	2.79	443.3	36.6
S11.003	79.68	5.55	24.564	0.178	0.0	0.0	0.0	2.78	442.2	38.4
S11.004	78.96	5.67	24.372	0.194	0.0	0.0	0.0	3.17	504.3	41.5
S12.000	82.73	5.07	25.784	0.048	0.0	0.0	0.0	1.68	29.6	10.8
S13.000	82.72	5.07	25.755	0.049	0.0	0.0	0.0	2.13	84.9	11.0
S12.001	81.60	5.24	25.365	0.137	0.0	0.0	0.0	1.88	207.5	30.3
S12.002	80.99	5.34	25.158	0.190	0.0	0.0	0.0	3.10	342.2	41.7
S12.003	80.51	5.42	24.636	0.231	0.0	0.0	0.0	2.53	280.0	50.4
S12.004	79.37	5.60	24.405	0.263	0.0	0.0	0.0	2.47	273.3	56.5
S11.005	75.38	6.32	23.659	0.521	0.0	0.0	0.0	1.02	289.1	106.4
S11.006	75.01	6.39	23.588	0.589	0.0	0.0	0.0	2.05	579.8	119.7
S14.000	81.33	5.28	25.448	0.065	0.0	0.0	0.0	1.61	113.7	14.3
S14.001	80.42	5.43	25.160	0.164	0.0	0.0	0.0	2.76	195.3	35.7
S14.002	79.49	5.58	24.422	0.253	0.0	0.0	0.0	2.52	178.2	54.5
S15.000	82.68	5.08	24.425	0.030	0.0	0.0	0.0	2.69	107.0	6.7
S11.007	74.14	6.56	23.527	0.982	0.0	0.0	0.0	1.21	341.9	197.2
S11.008	70.84	7.25	23.496	0.982	0.0	0.0	0.0	1.21	342.9	197.2
S11.009	69.73	7.50	23.370	0.982	0.0	0.0	0.0	1.09	308.1	197.2
S16.000	82.97	5.04	24.815	0.043	0.0	0.0	0.0	3.03	53.5	9.7

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S17.000	9.571	0.413	23.2	0.036	5.00	0.0	0.600		o	150	Pipe/Conduit	
S16.001	17.473	0.202	86.5	0.030	0.00	0.0	0.600		o	225	Pipe/Conduit	
S16.002	16.645	0.192	86.7	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S16.003	10.486	0.062	169.1	0.041	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.010	31.952	0.080	399.4	0.021	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.011	12.436	0.093	133.7	0.052	0.00	0.0	0.600		o	600	Pipe/Conduit	
S18.000	10.976	0.079	138.9	0.000	5.00	0.0	0.600		o	225	Pipe/Conduit	
S18.001	17.571	0.100	175.7	0.112	0.00	0.0	0.600		o	225	Pipe/Conduit	
S18.002	7.268	0.041	177.3	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.012	43.134	0.074	582.9	0.010	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.013	10.732	0.019	564.8	0.069	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.014	9.000	0.143	62.9	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S19.000	10.468	0.043	243.4	0.038	5.00	0.0	0.600		o	300	Pipe/Conduit	
S20.000	7.532	0.031	243.0	0.044	5.00	0.0	0.600		o	300	Pipe/Conduit	
S19.001	31.106	0.103	302.0	0.032	0.00	0.0	0.600		o	300	Pipe/Conduit	
S19.002	10.395	0.066	157.5	0.026	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.015	22.426	0.262	85.6	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.016	12.703	0.115	110.5	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S21.000	15.822	0.093	170.1	0.017	5.00	0.0	0.600		o	225	Pipe/Conduit	
S21.001	11.323	0.067	169.0	0.054	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.017	22.290	0.226	98.6	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S22.000	22.392	0.093	240.8	0.026	5.00	0.0	0.600		o	300	Pipe/Conduit	
S22.001	22.392	0.093	240.8	0.043	0.00	0.0	0.600		o	300	Pipe/Conduit	
S22.002	11.234	0.047	239.0	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S17.000	82.69	5.08	24.656	0.036	0.0	0.0	0.0	2.10	37.1	8.1
S16.001	81.34	5.28	24.168	0.109	0.0	0.0	0.0	1.41	55.9	24.0
S16.002	80.12	5.48	23.966	0.137	0.0	0.0	0.0	1.41	55.9	29.7
S16.003	79.08	5.65	23.774	0.178	0.0	0.0	0.0	1.00	39.9	38.1
S11.010	67.87	7.94	23.337	1.181	0.0	0.0	0.0	1.21	342.8	217.1
S11.011	67.47	8.04	23.257	1.233	0.0	0.0	0.0	2.10	595.0	225.3
S18.000	82.10	5.17	23.759	0.000	0.0	0.0	0.0	1.11	44.0	0.0
S18.001	80.22	5.46	23.680	0.112	0.0	0.0	0.0	0.98	39.1	24.4
S18.002	79.48	5.59	23.580	0.140	0.0	0.0	0.0	0.98	38.9	30.2
S11.012	64.70	8.76	23.164	1.383	0.0	0.0	0.0	1.00	283.1	242.4
S11.013	64.07	8.93	23.090	1.452	0.0	0.0	0.0	1.02	287.7	252.0
S11.014	63.25	9.17	22.971	1.452	0.0	0.0	0.0	0.65	141.2«	252.0
S19.000	82.04	5.17	23.140	0.038	0.0	0.0	0.0	1.00	70.9	8.4
S20.000	82.36	5.13	23.128	0.044	0.0	0.0	0.0	1.00	71.0	9.8
S19.001	78.52	5.75	23.097	0.114	0.0	0.0	0.0	0.90	63.6	24.2
S19.002	77.73	5.89	22.994	0.140	0.0	0.0	0.0	1.25	88.4	29.4
S11.015	61.01	9.84	22.828	1.592	0.0	0.0	0.0	0.56	121.1«	263.1
S11.016	59.67	10.27	22.566	1.592	0.0	0.0	0.0	0.49	106.6«	263.1
S21.000	81.46	5.26	22.711	0.017	0.0	0.0	0.0	1.00	39.7	3.8
S21.001	80.29	5.45	22.618	0.071	0.0	0.0	0.0	1.00	39.9	15.4
S11.017	57.59	10.99	22.451	1.663	0.0	0.0	0.0	0.52	112.8«	263.1
S22.000	80.79	5.37	22.558	0.026	0.0	0.0	0.0	1.01	71.3	5.7
S22.001	78.58	5.74	22.465	0.069	0.0	0.0	0.0	1.01	71.3	14.8
S22.002	77.53	5.92	22.372	0.096	0.0	0.0	0.0	1.01	71.6	20.2

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S11.018	1.710	0.021	81.4	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.019	20.296	0.226	89.8	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.020	28.551	0.288	99.1	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S23.000	36.485	0.215	169.7	0.019	5.00	0.0	0.600		o	225	Pipe/Conduit	
S23.001	9.144	0.054	169.3	0.090	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.021	30.393	0.224	135.7	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.022	4.573	0.027	169.4	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.023	5.237#	0.039	134.3	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.000	14.348	0.164	87.5	0.028	5.00	0.0	0.600		o	300	Pipe/Conduit	
S24.001	38.017	0.660	57.6	0.013	0.00	0.0	0.600		o	300	Pipe/Conduit	
S24.002	16.044	0.117	137.1	0.071	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.003	15.071	0.177	85.1	0.033	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.004	34.848	0.366	95.2	0.047	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.005	34.848	0.108	322.7	0.090	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.006	16.578	0.082	202.2	0.128	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.007	14.379	0.036	399.4	0.037	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.008	10.673	0.027	395.3	0.021	0.00	0.0	0.600		o	450	Pipe/Conduit	
S25.000	8.564	1.068	8.0	0.028	5.00	0.0	0.600		o	225	Pipe/Conduit	
S24.009	41.724	0.104	401.2	0.038	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.010	81.518	0.691	118.0	0.058	0.00	0.0	0.600		o	450	Pipe/Conduit	
S26.000	13.781	0.512	26.9	0.025	5.00	0.0	0.600		o	300	Pipe/Conduit	
S24.011	29.760	0.060	496.0	0.253	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.012	37.653	0.075	502.0	0.094	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.013	26.529	0.053	500.5	0.127	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.014	38.681	0.078	495.9	0.054	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.015	15.856	0.032	495.5	0.079	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.016	15.562	0.232	67.1	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.017	26.215	0.328	79.9	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S11.018	57.45	11.04	22.225	1.760	0.0	0.0	0.0	0.57	124.2K	273.8
S11.019	55.79	11.66	22.204	1.760	0.0	0.0	0.0	0.54	118.2K	273.8
S11.020	53.53	12.58	21.978	1.760	0.0	0.0	0.0	0.52	112.5K	273.8
S23.000	79.35	5.61	22.059	0.019	0.0	0.0	0.0	1.00	39.8	4.1
S23.001	78.47	5.76	21.844	0.109	0.0	0.0	0.0	1.00	39.8	23.2
S11.021	51.00	13.72	21.690	1.869	0.0	0.0	0.0	0.44	96.2K	273.8
S11.022	50.91	13.77	21.466	1.869	0.0	0.0	0.0	1.72	372.0	273.8
S11.023	50.51	13.96	21.439	1.869	0.0	0.0	0.0	0.44	96.7K	273.8
S24.000	82.25	5.14	26.162	0.028	0.0	0.0	0.0	1.68	118.9	6.2
S24.001	80.32	5.45	25.998	0.041	0.0	0.0	0.0	2.08	146.7	8.9
S24.002	79.28	5.62	25.263	0.112	0.0	0.0	0.0	1.55	170.7	24.0
S24.003	78.53	5.75	25.146	0.145	0.0	0.0	0.0	1.96	217.0	30.8
S24.004	76.78	6.06	24.969	0.192	0.0	0.0	0.0	1.86	205.1	39.9
S24.005	73.76	6.64	24.604	0.282	0.0	0.0	0.0	1.00	110.8	56.3
S24.006	72.81	6.83	24.420	0.410	0.0	0.0	0.0	1.43	226.8	80.8
S24.007	71.68	7.07	24.338	0.447	0.0	0.0	0.0	1.01	160.8	86.8
S24.008	70.88	7.25	24.303	0.468	0.0	0.0	0.0	1.02	161.7	89.8
S25.000	83.00	5.03	25.569	0.028	0.0	0.0	0.0	4.65	184.9	6.3
S24.009	67.90	7.94	24.276	0.534	0.0	0.0	0.0	1.01	160.4	98.2
S24.010	65.06	8.66	24.172	0.592	0.0	0.0	0.0	1.87	297.5	104.3
S26.000	82.69	5.08	24.143	0.025	0.0	0.0	0.0	3.04	215.1	5.6
S24.011	63.28	9.16	23.406	0.870	0.0	0.0	0.0	1.00	216.2	149.1
S24.012	61.17	9.79	23.346	0.964	0.0	0.0	0.0	0.99	214.9	159.7
S24.013	59.78	10.23	23.271	1.091	0.0	0.0	0.0	0.99	215.2	176.6
S24.014	57.89	10.88	23.218	1.145	0.0	0.0	0.0	1.00	216.3	179.5
S24.015	57.15	11.14	23.140	1.224	0.0	0.0	0.0	1.00	216.4	189.5
S24.016	56.05	11.56	23.008	1.224	0.0	0.0	0.0	0.63	136.8K	189.5
S24.017	54.15	12.31	22.776	1.224	0.0	0.0	0.0	0.58	125.3K	189.5

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S24.018	7.830	0.082	95.5	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.019	7.038	0.101	69.7	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S27.000	8.972	0.041	218.8	0.008	5.00	0.0	0.600		o	300	Pipe/Conduit	
S27.001	47.357	0.215	220.3	0.062	0.00	0.0	0.600		o	300	Pipe/Conduit	
S27.002	13.843	0.063	219.7	0.037	0.00	0.0	0.600		o	300	Pipe/Conduit	
S24.020	8.133	0.110	73.9	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.021	4.890	0.152	32.2	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.022	4.890	0.012	407.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.023	19.341#	0.193	100.2	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S1.029	7.696	0.263	29.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.030	14.529	0.503	28.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.031	24.965	0.079	316.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S28.000	87.610	0.618	141.8	0.498	5.00	0.0	0.600		o	525	Pipe/Conduit	
S28.001	90.939	0.373	243.8	0.523	0.00	0.0	0.600		o	525	Pipe/Conduit	
S28.002	17.829	0.373	47.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S28.003	21.428	0.120	178.6	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S28.004	11.970	0.028	427.5	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S29.000	19.137	0.064	299.0	0.117	5.00	0.0	0.600		o	300	Pipe/Conduit	
S29.001	17.051	0.070	243.6	0.050	0.00	0.0	0.600		o	300	Pipe/Conduit	
S29.002	12.702	0.052	244.3	0.034	0.00	0.0	0.600		o	300	Pipe/Conduit	
S29.003	7.714	0.032	241.1	0.009	0.00	0.0	0.600		o	300	Pipe/Conduit	
S29.004	8.191	0.118	69.4	0.046	0.00	0.0	0.600		o	300	Pipe/Conduit	
S30.000	13.965	0.138	101.2	0.000	5.00	0.0	0.600		o	150	Pipe/Conduit	
S28.005	21.863	0.050	437.3	0.060	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.006	29.864	0.050	597.3	0.043	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.007	8.032	0.016	502.0	0.007	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.008	10.831	0.017	637.1	0.034	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S31.000	29.691	0.369	80.5	0.053	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S24.018	53.56	12.56	22.448	1.224	0.0	0.0	0.0	0.53	114.7≪	189.5
S24.019	53.12	12.75	22.366	1.224	0.0	0.0	0.0	0.62	134.2≪	189.5
S27.000	82.25	5.14	22.683	0.008	0.0	0.0	0.0	1.06	74.8	1.8
S27.001	77.73	5.89	22.642	0.070	0.0	0.0	0.0	1.06	74.6	14.6
S27.002	76.52	6.11	22.427	0.107	0.0	0.0	0.0	1.06	74.7	22.1
S24.020	52.61	12.98	22.264	1.331	0.0	0.0	0.0	0.60	130.3≪	189.6
S24.021	52.41	13.07	22.147	1.331	0.0	0.0	0.0	0.91	197.5	189.6
S24.022	52.23	13.15	21.995	1.331	0.0	0.0	0.0	1.00	159.2≪	189.6
S24.023	50.89	13.78	21.983	1.331	0.0	0.0	0.0	0.51	111.9≪	189.6
S1.029	45.29	16.88	20.550	7.032	0.0	0.0	0.0	3.77	599.5≪	862.6
S1.030	45.19	16.94	20.287	7.032	0.0	0.0	0.0	3.79	603.4≪	862.6
S1.031	44.63	17.31	19.784	7.032	0.0	0.0	0.0	1.14	181.0≪	862.6
S28.000	78.37	5.78	22.086	0.498	0.0	0.0	0.0	1.88	406.8	105.8
S28.001	72.79	6.84	21.468	1.021	0.0	0.0	0.0	1.43	309.6	201.3
S28.002	72.35	6.93	21.095	1.021	0.0	0.0	0.0	3.25	702.6	201.3
S28.003	71.63	7.08	20.347	1.021	0.0	0.0	0.0	2.34	1489.8	201.3
S28.004	71.02	7.21	20.227	1.021	0.0	0.0	0.0	1.51	960.0	201.3
S29.000	80.90	5.35	21.135	0.117	0.0	0.0	0.0	0.90	63.9	25.6
S29.001	79.19	5.64	21.071	0.167	0.0	0.0	0.0	1.00	70.9	35.8
S29.002	77.96	5.85	21.001	0.201	0.0	0.0	0.0	1.00	70.8	42.4
S29.003	77.25	5.98	20.949	0.210	0.0	0.0	0.0	1.01	71.3	43.9
S29.004	76.85	6.05	20.917	0.256	0.0	0.0	0.0	1.89	133.6	53.3
S30.000	81.66	5.23	21.087	0.000	0.0	0.0	0.0	1.00	17.7	0.0
S28.005	70.11	7.42	19.899	1.337	0.0	0.0	0.0	1.78	2016.1	253.9
S28.006	68.69	7.74	19.850	1.380	0.0	0.0	0.0	1.52	1723.0	256.8
S28.007	68.36	7.82	19.800	1.387	0.0	0.0	0.0	1.66	1880.7	256.8
S28.008	67.85	7.95	19.784	1.421	0.0	0.0	0.0	1.47	1667.8	261.2
S31.000	80.99	5.34	21.638	0.053	0.0	0.0	0.0	1.46	58.0	11.6

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S31.001	12.611	0.075	168.1	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
S31.002	22.843	0.136	168.0	0.023	0.00	0.0	0.600		o	225	Pipe/Conduit	
S31.003	7.180	0.043	167.0	0.012	0.00	0.0	0.600		o	225	Pipe/Conduit	
S31.004	8.808	0.052	169.4	0.017	0.00	0.0	0.600		o	225	Pipe/Conduit	
S28.009	8.968	0.020	448.4	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.010	19.865	0.042	473.0	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.032	26.753	0.041	652.5	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.033	40.649	0.123	330.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.034	20.060	0.048	417.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.035	36.421	0.090	404.7	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.036	70.745	0.175	404.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.037	65.150	0.162	402.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.038	17.227	0.043	400.6	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.039	8.038	0.020	401.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.040	15.185	0.043	353.1	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S31.001	79.71	5.55	21.269	0.087	0.0	0.0	0.0	1.01	40.0	18.8
S31.002	77.52	5.93	21.194	0.110	0.0	0.0	0.0	1.01	40.0	23.1
S31.003	76.86	6.05	21.058	0.122	0.0	0.0	0.0	1.01	40.1	25.4
S31.004	76.07	6.19	21.015	0.139	0.0	0.0	0.0	1.00	39.8	28.6
S28.009	67.50	8.03	19.767	1.560	0.0	0.0	0.0	1.76	1990.7	285.3
S28.010	66.73	8.23	19.747	1.560	0.0	0.0	0.0	1.71	1938.0	285.3
S1.032	44.17	17.62	19.705	8.592	0.0	0.0	0.0	1.46	1647.8	1027.9
S1.033	43.29	18.22	19.664	8.592	0.0	0.0	0.0	1.11	177.0≪	1027.9
S1.034	42.82	18.56	19.542	8.592	0.0	0.0	0.0	0.99	157.2≪	1027.9
S1.035	42.01	19.17	19.494	8.592	0.0	0.0	0.0	1.00	159.7≪	1027.9
S1.036	40.53	20.34	19.403	8.592	0.0	0.0	0.0	1.00	159.8≪	1027.9
S1.037	39.28	21.42	19.228	8.592	0.0	0.0	0.0	1.01	160.2≪	1027.9
S1.038	38.97	21.70	19.066	8.592	0.0	0.0	0.0	1.01	160.6≪	1027.9
S1.039	38.82	21.84	19.023	8.592	0.0	0.0	0.0	1.01	160.3≪	1027.9
S1.040	37.84	22.76	19.003	8.592	0.0	0.0	0.0	0.27	59.6≪	1027.9

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

- Indicates pipe length does not match coordinates

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.000	o	225	S3000	27.478	26.053	1.200	Open Manhole		1200
S1.001	o	300	S3001	26.966	25.466	1.200	Open Manhole		1200
S1.002	o	375	S3002	26.704	25.235	1.094	Open Manhole		1350
S1.003	o	375	S3003	28.014	25.045	2.594	Open Manhole		1350
S2.000	o	225	S3050	33.607	32.182	1.200	Open Manhole		1200
S2.001	o	225	S3051	33.552	32.067	1.260	Open Manhole		1200
S2.002	o	225	S3052	32.390	30.964	1.201	Open Manhole		1200
S2.003	o	225	S3053	31.592	30.167	1.200	Open Manhole		1200
S2.004	o	225	S3054	30.545	29.152	1.168	Open Manhole		1200
S2.005	o	225	S3055	29.217	27.906	1.086	Open Manhole		1200
S2.006	o	225	S3056	28.782	27.470	1.087	Open Manhole		1200
S1.004	o	525	S3004	28.294	24.847	2.922	Open Manhole		1500
S1.005	o	525	S3005	28.322	24.818	2.979	Open Manhole		1500
S1.006	o	525	S3006	27.532	24.725	2.282	Open Manhole		1500
S3.000	o	225	S3060	26.680	25.255	1.200	Open Manhole		1200
S3.001	o	375	S3061	26.141	24.446	1.320	Open Manhole		1350
S3.002	o	375	S3062	26.114	24.235	1.504	Open Manhole		1350
S3.003	o	375	S3063	26.410	24.188	1.847	Open Manhole		1350
S3.004	o	375	S3064	27.500	24.074	3.051	Open Manhole		1350
S1.007	o	675	S3007	27.348	23.733	2.940	Open Manhole		1500
S4.000	o	225	S3070	25.790	24.593	0.972	Open Manhole		1200
S4.001	o	300	S3072	25.325	24.218	0.807	Open Manhole		1200
S4.002	o	375	S3073	25.456	24.103	0.978	Open Manhole		1350
S4.003	o	375	S3074	25.586	24.007	1.204	Open Manhole		1350
S1.008	o	750	S3008	26.600	23.514	2.336	Open Manhole		1800
S1.009	o	750	S3009	26.345	23.488	2.107	Open Manhole		1800
S1.010	o	750	S3010	26.150	23.469	1.931	Open Manhole		1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.000	35.949	70.2	S3001	26.966	25.541	1.200	Open Manhole		1200
S1.001	37.616	241.1	S3002	26.704	25.310	1.094	Open Manhole		1350
S1.002	60.836	320.2	S3003	28.014	25.045	2.594	Open Manhole		1350
S1.003	15.123	315.1	S3004	28.294	24.997	2.922	Open Manhole		1500
S2.000	19.287	167.7	S3051	33.552	32.067	1.260	Open Manhole		1200
S2.001	33.215	30.1	S3052	32.390	30.964	1.201	Open Manhole		1200
S2.002	15.620	19.6	S3053	31.592	30.167	1.200	Open Manhole		1200
S2.003	21.369	21.1	S3054	30.545	29.152	1.168	Open Manhole		1200
S2.004	36.334	29.2	S3055	29.217	27.906	1.086	Open Manhole		1200
S2.005	13.620	31.2	S3056	28.782	27.470	1.087	Open Manhole		1200
S2.006	14.675	6.3	S3004	28.294	25.147	2.922	Open Manhole		1500
S1.004	14.479	499.3	S3005	28.322	24.818	2.979	Open Manhole		1500
S1.005	45.757	492.0	S3006	27.532	24.725	2.282	Open Manhole		1500
S1.006	10.237	12.1	S3007	27.348	23.882	2.941	Open Manhole		1500
S3.000	53.557	81.3	S3061	26.141	24.596	1.320	Open Manhole		1350
S3.001	41.576	197.0	S3062	26.114	24.235	1.504	Open Manhole		1350
S3.002	14.948	318.0	S3063	26.410	24.188	1.847	Open Manhole		1350
S3.003	36.706	322.0	S3064	27.500	24.074	3.051	Open Manhole		1350
S3.004	12.697	309.7	S3007	27.348	24.033	2.940	Open Manhole		1500
S1.007	59.337	412.1	S3008	26.600	23.589	2.336	Open Manhole		1800
S4.000	48.639	162.1	S3072	25.325	24.293	0.807	Open Manhole		1200
S4.001	9.863	246.6	S3073	25.456	24.178	0.978	Open Manhole		1350
S4.002	31.323	326.3	S3074	25.586	24.007	1.204	Open Manhole		1350
S4.003	38.232	324.0	S3008	26.600	23.889	2.336	Open Manhole		1800
S1.008	12.810	492.7	S3009	26.345	23.488	2.107	Open Manhole		1800
S1.009	9.391	494.3	S3010	26.150	23.469	1.931	Open Manhole		1800
S1.010	64.152	61.9	S3011	24.845	22.433	1.662	Open Manhole		1800

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.011	o	750	S3011	24.845	22.433	1.662	Open Manhole		1800
S5.000	o	150	S3080	25.677	24.355	1.172	Open Manhole		1200
S5.001	o	300	S3081	25.276	23.827	1.149	Open Manhole		1200
S1.012	o	900	S3012	24.078	22.113	1.065	Open Manhole		1800
S1.013	o	900	S3013	23.942	22.060	0.982	Open Manhole		1800
S1.014	o	900	S3014	23.833	22.029	0.904	Open Manhole		1800
S6.000	o	225	S3090	31.555	29.800	1.530	Open Manhole		1200
S6.001	o	225	S3091	29.895	28.140	1.530	Open Manhole		1200
S6.002	o	225	S3092	29.250	27.500	1.525	Open Manhole		1200
S7.000	o	225	S3110	30.720	28.985	1.510	Open Manhole		1200
S7.001	o	300	S3111	29.740	27.945	1.495	Open Manhole		1200
S7.002	o	375	S3112	29.410	27.545	1.490	Open Manhole		1350
S7.003	o	375	S3113	29.250	27.395	1.480	Open Manhole		1350
S7.004	o	375	S3114	29.025	27.165	1.485	Open Manhole		1350
S6.003	o	375	S3093	28.650	26.770	1.505	Open Manhole		1350
S6.004	o	375	S3094	28.150	26.280	1.495	Open Manhole		1350
S8.000	o	150	S3120	26.200	23.978	2.072	Open Manhole		1200
S8.001	o	225	S3121	26.500	23.628	2.647	Open Manhole		1200
S8.002	o	300	S3122	26.440	23.376	2.764	Open Manhole		1200
S6.005	o	600	S3095	26.160	22.983	2.577	Open Manhole		1500
S6.006	o	600	S3096	24.555	22.919	1.036	Open Manhole		1500
S6.007	o	600	S3097	24.220	22.386	1.234	Open Manhole		1500
S6.008	o	750	S3098	23.845	22.212	0.883	Open Manhole		1800
S6.009	o	900	S3099	23.675	22.002	0.773	Open Manhole		1800
S6.010	o	900	S3100	23.600	21.995	0.705	Open Manhole		1800
S1.015	o	900	S3015	23.565	21.985	0.680	Open Manhole		1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.011	10.287	60.5	S3012	24.078	22.263	1.065	Open Manhole		1800
S5.000	24.808	65.6	S3081	25.276	23.977	1.149	Open Manhole		1200
S5.001	73.068	65.6	S3012	24.078	22.713	1.065	Open Manhole		1800
S1.012	26.687	503.5	S3013	23.942	22.060	0.982	Open Manhole		1800
S1.013	15.378	496.1	S3014	23.833	22.029	0.904	Open Manhole		1800
S1.014	16.427	1173.4	S3015	23.565	22.015	0.650	Open Manhole		1800
S6.000	33.176	20.0	S3091	29.895	28.140	1.530	Open Manhole		1200
S6.001	15.082	23.6	S3092	29.250	27.500	1.525	Open Manhole		1200
S6.002	30.161	52.0	S3093	28.650	26.920	1.505	Open Manhole		1350
S7.000	41.909	43.4	S3111	29.740	28.020	1.495	Open Manhole		1200
S7.001	32.312	99.4	S3112	29.410	27.620	1.490	Open Manhole		1350
S7.002	15.058	100.4	S3113	29.250	27.395	1.480	Open Manhole		1350
S7.003	23.125	100.5	S3114	29.025	27.165	1.485	Open Manhole		1350
S7.004	35.652	90.3	S3093	28.650	26.770	1.505	Open Manhole		1350
S6.003	24.959	50.9	S3094	28.150	26.280	1.495	Open Manhole		1350
S6.004	43.011	14.0	S3095	26.160	23.208	2.577	Open Manhole		1500
S8.000	27.733	100.8	S3121	26.500	23.703	2.647	Open Manhole		1200
S8.001	26.245	148.3	S3122	26.440	23.451	2.764	Open Manhole		1200
S8.002	22.377	240.6	S3095	26.160	23.283	2.577	Open Manhole		1500
S6.005	31.872	498.0	S3096	24.555	22.919	1.036	Open Manhole		1500
S6.006	8.022	15.1	S3097	24.220	22.386	1.234	Open Manhole		1500
S6.007	12.185	507.7	S3098	23.845	22.362	0.883	Open Manhole		1800
S6.008	9.943	216.2	S3099	23.675	22.166	0.759	Open Manhole		1800
S6.009	7.177	1025.3	S3100	23.600	21.995	0.705	Open Manhole		1800
S6.010	9.883	988.3	S3015	23.565	21.985	0.680	Open Manhole		1800
S1.015	11.514	959.5	S3016	23.660	21.973	0.787	Open Manhole		1800

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.016	o	900	S3016	23.660	21.973	0.787	Open Manhole	1800
S1.017	o	900	S3017	23.840	21.958	0.982	Open Manhole	1800
S9.000	o	225	S3130	26.352	24.927	1.200	Open Manhole	1200
S9.001	o	300	S3131	25.763	24.262	1.201	Open Manhole	1200
S9.002	o	300	S3132	25.576	24.013	1.263	Open Manhole	1200
S9.003	o	300	S3133	25.493	23.939	1.254	Open Manhole	1200
S10.000	o	225	S3140	25.428	24.003	1.200	Open Manhole	1200
S9.004	o	300	S3134	25.210	23.710	1.200	Open Manhole	1200
S9.005	o	375	S3135	24.964	23.388	1.201	Open Manhole	1350
S9.006	o	450	S3136	24.852	23.202	1.200	Open Manhole	1350
S9.007	o	450	S3137	24.696	22.970	1.276	Open Manhole	1350
S9.008	o	450	S3138	24.374	22.648	1.276	Open Manhole	1350
S9.009	o	450	S3139	24.123	22.444	1.229	Open Manhole	1350
S1.018	o	900	S3018	23.970	21.945	1.125	Open Manhole	1800
S1.019	o	900	S3019	23.988	21.931	1.157	Open Manhole	1800
S1.020	o	525	S3020-BASIN D	23.500	21.810	1.165	Open Manhole	1800
S1.021	o	525	S3021-CON	23.971	21.679	1.767	Open Manhole	1500
S1.022	o	525	S3022	24.693	21.581	2.587	Open Manhole	1500
S1.023	o	525	S3023	25.302	21.432	3.345	Open Manhole	1500
S1.024	o	525	S3024	25.496	21.269	3.702	Open Manhole	1500
S1.025	o	525	S3025	25.233	21.106	3.602	Open Manhole	1500
S1.026	o	525	S3026	24.970	21.047	3.398	Open Manhole	1500
S1.027	o	525	S3027	24.235	20.983	2.727	Open Manhole	1500
S1.028	o	525	S3028	24.282	20.932	2.825	Open Manhole	1500
S11.000	o	450	S3150	27.983	26.212	1.321	Open Manhole	1350
S11.001	o	450	S3151	27.335	25.590	1.295	Open Manhole	1350
S11.002	o	450	S3152	26.707	24.757	1.500	Open Manhole	1350
S11.003	o	450	S3153	26.514	24.564	1.500	Open Manhole	1350
S11.004	o	450	S3154	26.322	24.372	1.500	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.016	14.009	933.9	S3017	23.840	21.958	0.982	Open Manhole	1800
S1.017	12.204	938.8	S3018	23.970	21.945	1.125	Open Manhole	1800
S9.000	40.635	68.9	S3131	25.763	24.337	1.201	Open Manhole	1200
S9.001	38.986	156.6	S3132	25.576	24.013	1.263	Open Manhole	1200
S9.002	8.268	111.7	S3133	25.493	23.939	1.254	Open Manhole	1200
S9.003	23.600	103.1	S3134	25.210	23.710	1.200	Open Manhole	1200
S10.000	16.795	77.0	S3134	25.210	23.785	1.200	Open Manhole	1200
S9.004	19.671	79.6	S3135	24.964	23.463	1.201	Open Manhole	1350
S9.005	9.366	84.4	S3136	24.852	23.277	1.200	Open Manhole	1350
S9.006	12.815	55.2	S3137	24.696	22.970	1.276	Open Manhole	1350
S9.007	24.711	76.7	S3138	24.374	22.648	1.276	Open Manhole	1350
S9.008	19.546	95.8	S3139	24.123	22.444	1.229	Open Manhole	1350
S9.009	12.446	282.9	S3018	23.970	22.400	1.120	Open Manhole	1800
S1.018	5.521	394.4	S3019	23.988	21.931	1.157	Open Manhole	1800
S1.019	12.487#	594.6	S3020-BASIN D	23.500	21.910	0.690	Open Manhole	1800
S1.020	17.627	134.6	S3021-CON	23.971	21.679	1.767	Open Manhole	1500
S1.021	37.615	383.8	S3022	24.693	21.581	2.587	Open Manhole	1500
S1.022	66.231	444.5	S3023	25.302	21.432	3.345	Open Manhole	1500
S1.023	72.535	445.0	S3024	25.496	21.269	3.702	Open Manhole	1500
S1.024	72.535	445.0	S3025	25.233	21.106	3.602	Open Manhole	1500
S1.025	26.289	445.6	S3026	24.970	21.047	3.398	Open Manhole	1500
S1.026	28.667	447.9	S3027	24.235	20.983	2.727	Open Manhole	1500
S1.027	22.780	446.7	S3028	24.282	20.932	2.825	Open Manhole	1500
S1.028	14.238#	444.9	S3029-Basin C	22.300	20.900	0.875	Open Manhole	2700
S11.000	40.107	64.5	S3151	27.335	25.590	1.295	Open Manhole	1350
S11.001	32.411	38.9	S3152	26.707	24.757	1.500	Open Manhole	1350
S11.002	10.303	53.4	S3153	26.514	24.564	1.500	Open Manhole	1350
S11.003	10.303	53.7	S3154	26.322	24.372	1.500	Open Manhole	1350
S11.004	23.248	41.3	S3155	25.834	23.809	1.575	Open Manhole	1500

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S12.000	o	150	S3180	27.434	25.784	1.500	Open Manhole		1200
S13.000	o	225	S3190	27.405	25.755	1.425	Open Manhole		1200
S12.001	o	375	S3181	27.355	25.365	1.615	Open Manhole		1350
S12.002	o	375	S3182	26.944	25.158	1.411	Open Manhole		1350
S12.003	o	375	S3183	26.586	24.636	1.575	Open Manhole		1350
S12.004	o	375	S3184	26.355	24.405	1.575	Open Manhole		1350
S11.005	o	600	S3155	25.834	23.659	1.575	Open Manhole		1500
S11.006	o	600	S3156	26.132	23.588	1.944	Open Manhole		1500
S14.000	o	300	S3200	27.248	25.448	1.500	Open Manhole		1200
S14.001	o	300	S3201	26.960	25.160	1.500	Open Manhole		1200
S14.002	o	300	S3202	26.657	24.422	1.935	Open Manhole		1200
S15.000	o	225	SH316	26.150	24.425	1.500	Open Manhole		1200
S11.007	o	600	S3157	26.356	23.527	2.229	Open Manhole		1500
S11.008	o	600	S3158	25.760	23.496	1.664	Open Manhole		1500
S11.009	o	600	S3159	25.205	23.370	1.235	Open Manhole		1500
S16.000	o	150	S3210	26.390	24.815	1.425	Open Manhole		1200
S17.000	o	150	S3220	26.231	24.656	1.425	Open Manhole		1200
S16.001	o	225	S3211	26.202	24.168	1.809	Open Manhole		1200
S16.002	o	225	S3212	26.040	23.966	1.849	Open Manhole		1200
S16.003	o	225	S3213	25.813	23.774	1.814	Open Manhole		1200
S11.010	o	600	S3160	25.672	23.337	1.735	Open Manhole		1500
S11.011	o	600	S3161	25.057	23.257	1.200	Open Manhole		1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S12.000	7.032	36.2	S3181	27.355	25.590	1.615	Open Manhole		1350
S13.000	9.073	37.8	S3181	27.355	25.515	1.615	Open Manhole		1350
S12.001	19.266	93.1	S3182	26.944	25.158	1.411	Open Manhole		1350
S12.002	17.962	34.4	S3183	26.586	24.636	1.575	Open Manhole		1350
S12.003	11.800	51.3	S3184	26.355	24.406	1.574	Open Manhole		1350
S12.004	28.031	53.8	S3155	25.834	23.884	1.575	Open Manhole		1500
S11.005	39.725	559.5	S3156	26.132	23.588	1.944	Open Manhole		1500
S11.006	8.588	140.8	S3157	26.356	23.527	2.229	Open Manhole		1500
S14.000	27.512	95.5	S3201	26.960	25.160	1.500	Open Manhole		1200
S14.001	24.054	32.6	S3202	26.657	24.422	1.935	Open Manhole		1200
S14.002	23.286	39.1	S3157	26.356	23.827	2.229	Open Manhole		1500
S15.000	12.458	23.8	S3157	26.356	23.902	2.229	Open Manhole		1500
S11.007	12.441	401.3	S3158	25.760	23.496	1.664	Open Manhole		1500
S11.008	50.277	399.0	S3159	25.205	23.370	1.235	Open Manhole		1500
S11.009	16.281	493.4	S3160	25.672	23.337	1.735	Open Manhole		1500
S16.000	6.404	11.2	S3211	26.202	24.243	1.809	Open Manhole		1200
S17.000	9.571	23.2	S3211	26.202	24.243	1.809	Open Manhole		1200
S16.001	17.473	86.5	S3212	26.040	23.966	1.849	Open Manhole		1200
S16.002	16.645	86.7	S3213	25.813	23.774	1.814	Open Manhole		1200
S16.003	10.486	169.1	S3160	25.672	23.712	1.735	Open Manhole		1500
S11.010	31.952	399.4	S3161	25.057	23.257	1.200	Open Manhole		1500
S11.011	12.436	133.7	S3162	24.964	23.164	1.200	Open Manhole		1500

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S18.000	o	225	SH323	25.250	23.759	1.266	Open Manhole		1200
S18.001	o	225	S3230	25.150	23.680	1.245	Open Manhole		1200
S18.002	o	225	S3231	24.920	23.580	1.115	Open Manhole		1200
S11.012	o	600	S3162	24.964	23.164	1.200	Open Manhole		1500
S11.013	o	600	S3163	24.890	23.090	1.200	Open Manhole		1500
S11.014	3 ¥=/	1000	S3164	24.022	22.971	0.901	Junction		
S19.000	o	300	S3240	24.640	23.140	1.200	Open Manhole		1200
S20.000	o	300	S3250	24.628	23.128	1.200	Open Manhole		1200
S19.001	o	300	S3241	24.597	23.097	1.200	Open Manhole		1200
S19.002	o	300	S3242	24.000	22.994	0.706	Open Manhole		1200
S11.015	3 ¥=/	1000	S3165	23.922	22.828	0.944	Junction		
S11.016	3 ¥=/	1000	S3166	23.652	22.566	0.936	Junction		
S21.000	o	225	S3260	24.136	22.711	1.200	Open Manhole		1200
S21.001	o	225	S3261	24.043	22.618	1.200	Open Manhole		1200
S11.017	3 ¥=/	1000	S3167	23.459	22.451	0.858	Junction		
S22.000	o	300	S3270	24.058	22.558	1.200	Open Manhole		1200
S22.001	o	300	S3271	23.965	22.465	1.200	Open Manhole		1200
S22.002	o	300	S3272	23.872	22.372	1.200	Open Manhole		1200
S11.018	3 ¥=/	1000	S3168	23.365	22.225	0.990	Junction		
S11.019	3 ¥=/	1000	S3169	23.316	22.204	0.962	Junction		
S11.020	3 ¥=/	1000	S3170	22.996	21.978	0.868	Junction		
S23.000	o	225	S3280	23.484	22.059	1.200	Open Manhole		1200
S23.001	o	225	S3281	23.269	21.844	1.200	Open Manhole		1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S18.000	10.976	138.9	S3230	25.150	23.680	1.245	Open Manhole		1200
S18.001	17.571	175.7	S3231	24.920	23.580	1.115	Open Manhole		1200
S18.002	7.268	177.3	S3162	24.964	23.539	1.200	Open Manhole		1500
S11.012	43.134	582.9	S3163	24.890	23.090	1.200	Open Manhole		1500
S11.013	10.732	564.8	S3164	24.022	23.071	0.351	Junction		
S11.014	9.000	62.9	S3165	23.922	22.828	0.944	Junction		
S19.000	10.468	243.4	S3241	24.597	23.097	1.200	Open Manhole		1200
S20.000	7.532	243.0	S3241	24.597	23.097	1.200	Open Manhole		1200
S19.001	31.106	302.0	S3242	24.000	22.994	0.706	Open Manhole		1200
S19.002	10.395	157.5	S3165	23.922	22.928	0.694	Junction		
S11.015	22.426	85.6	S3166	23.652	22.566	0.936	Junction		
S11.016	12.703	110.5	S3167	23.459	22.451	0.858	Junction		
S21.000	15.822	170.1	S3261	24.043	22.618	1.200	Open Manhole		1200
S21.001	11.323	169.0	S3167	23.459	22.551	0.683	Junction		
S11.017	22.290	98.6	S3168	23.365	22.225	0.990	Junction		
S22.000	22.392	240.8	S3271	23.965	22.465	1.200	Open Manhole		1200
S22.001	22.392	240.8	S3272	23.872	22.372	1.200	Open Manhole		1200
S22.002	11.234	239.0	S3168	23.365	22.325	0.740	Junction		
S11.018	1.710	81.4	S3169	23.316	22.204	0.962	Junction		
S11.019	20.296	89.8	S3170	22.996	21.978	0.868	Junction		
S11.020	28.551	99.1	S3171	22.739	21.690	0.899	Junction		
S23.000	36.485	169.7	S3281	23.269	21.844	1.200	Open Manhole		1200
S23.001	9.144	169.3	S3171	22.739	21.790	0.724	Junction		

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S11.021	3 ¥=/	1000	S3171	22.739	21.690	0.899	Junction	
S11.022	o	525	S3172	22.621	21.466	0.630	Junction	
S11.023	3 ¥=/	1000	S3173	22.633	21.439	1.044	Junction	
S24.000	o	300	S3290	27.878	26.162	1.416	Open Manhole	1200
S24.001	o	300	S3291	27.725	25.998	1.427	Open Manhole	1200
S24.002	o	375	S3292	27.292	25.263	1.654	Open Manhole	1350
S24.003	o	375	S3293	27.136	25.146	1.615	Open Manhole	1350
S24.004	o	375	S3294	26.998	24.969	1.654	Open Manhole	1350
S24.005	o	375	S3295	26.633	24.604	1.654	Open Manhole	1350
S24.006	o	450	S3296	26.623	24.420	1.753	Open Manhole	1800
S24.007	o	450	S3297	26.942	24.338	2.154	Open Manhole	1350
S24.008	o	450	S3298	27.141	24.303	2.388	Open Manhole	1350
S25.000	o	225	S3320	27.291	25.569	1.497	Open Manhole	1200
S24.009	o	450	S3299	27.239	24.276	2.513	Open Manhole	1350
S24.010	o	450	S3300	26.728	24.172	2.106	Open Manhole	1350
S26.000	o	300	S3330	25.706	24.143	1.263	Open Manhole	1200
S24.011	o	525	S3301	25.786	23.406	1.855	Open Manhole	1500
S24.012	o	525	S3302	25.425	23.346	1.554	Open Manhole	1500
S24.013	o	525	S3303	24.980	23.271	1.184	Open Manhole	1500
S24.014	o	525	S3304	24.943	23.218	1.200	Open Manhole	1500
S24.015	o	525	S3305	24.865	23.140	1.200	Open Manhole	1500
S24.016	3 ¥=/	1000	S3306	24.643	23.008	1.485	Open Manhole	1200
S24.017	3 ¥=/	1000	S3307	24.775	22.776	1.849	Junction	
S24.018	3 ¥=/	1000	S3308	24.194	22.448	1.596	Junction	
S24.019	3 ¥=/	1000	S3309	24.085	22.366	1.569	Junction	
S27.000	o	300	S3340	24.183	22.683	1.200	Open Manhole	1200
S27.001	o	300	S3341	24.142	22.642	1.200	Open Manhole	1200
S27.002	o	300	S3342	23.927	22.427	1.200	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S11.021	30.393	135.7	S3172	22.621	21.466	1.005	Junction	
S11.022	4.573	169.4	S3173	22.633	21.439	0.669	Junction	
S11.023	5.237#	134.3	S3029-Basin C	22.300	21.400	0.750	Open Manhole	2700
S24.000	14.348	87.5	S3291	27.725	25.998	1.427	Open Manhole	1200
S24.001	38.017	57.6	S3292	27.292	25.338	1.654	Open Manhole	1350
S24.002	16.044	137.1	S3293	27.136	25.146	1.615	Open Manhole	1350
S24.003	15.071	85.1	S3294	26.998	24.969	1.654	Open Manhole	1350
S24.004	34.848	95.2	S3295	26.633	24.603	1.655	Open Manhole	1350
S24.005	34.848	322.7	S3296	26.623	24.496	1.752	Open Manhole	1800
S24.006	16.578	202.2	S3297	26.942	24.338	2.154	Open Manhole	1350
S24.007	14.379	399.4	S3298	27.141	24.302	2.389	Open Manhole	1350
S24.008	10.673	395.3	S3299	27.239	24.276	2.513	Open Manhole	1350
S25.000	8.564	8.0	S3299	27.239	24.501	2.513	Open Manhole	1350
S24.009	41.724	401.2	S3300	26.728	24.172	2.106	Open Manhole	1350
S24.010	81.518	118.0	S3301	25.786	23.481	1.855	Open Manhole	1500
S26.000	13.781	26.9	S3301	25.786	23.631	1.855	Open Manhole	1500
S24.011	29.760	496.0	S3302	25.425	23.346	1.554	Open Manhole	1500
S24.012	37.653	502.0	S3303	24.980	23.271	1.184	Open Manhole	1500
S24.013	26.529	500.5	S3304	24.943	23.218	1.200	Open Manhole	1500
S24.014	38.681	495.9	S3305	24.865	23.140	1.200	Open Manhole	1500
S24.015	15.856	495.5	S3306	24.643	23.108	1.010	Open Manhole	1200
S24.016	15.562	67.1	S3307	24.775	22.776	1.849	Junction	
S24.017	26.215	79.9	S3308	24.194	22.448	1.596	Junction	
S24.018	7.830	95.5	S3309	24.085	22.366	1.569	Junction	
S24.019	7.038	69.7	S3310	23.831	22.265	1.416	Junction	
S27.000	8.972	218.8	S3341	24.142	22.642	1.200	Open Manhole	1200
S27.001	47.357	220.3	S3342	23.927	22.427	1.200	Open Manhole	1200
S27.002	13.843	219.7	S3310	23.831	22.364	1.167	Junction	

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S24.020	3 ¥=/	1000	S3310	23.831	22.264	1.417	Junction	
S24.021	3 ¥=/	1000	S3311	23.455	22.147	1.158	Junction	
S24.022	o	450	S3312	23.461	21.995	1.016	Junction	
S24.023	3 ¥=/	1000	S3313	23.546	21.983	1.413	Junction	
S1.029	o	450	S3029-Basin C	22.300	20.550	1.300	Open Manhole	2700
S1.030	o	450	S3030	22.439	20.287	1.702	Open Manhole	1350
S1.031	o	450	S3031	22.646	19.784	2.412	Open Manhole	1350
S28.000	o	525	S3350	24.098	22.086	1.487	Open Manhole	1500
S28.001	o	525	S3351	23.359	21.468	1.366	Open Manhole	1500
S28.002	o	525	S3352	22.742	21.095	1.122	Open Manhole	1500
S28.003	o	900	S3353	22.519	20.347	1.272	Open Manhole	1800
S28.004	o	900	S3354	22.616	20.227	1.489	Open Manhole	1800
S29.000	o	300	S3370	23.318	21.135	1.883	Open Manhole	1200
S29.001	o	300	S3371	23.170	21.071	1.799	Open Manhole	1200
S29.002	o	300	S3372	22.964	21.001	1.663	Open Manhole	1200
S29.003	o	300	S3373	22.764	20.949	1.515	Open Manhole	1200
S29.004	o	300	S3374	22.667	20.917	1.450	Open Manhole	1200
S30.000	o	150	S3380	22.437	21.087	1.200	Open Manhole	1200
S28.005	o	1200	S3355	22.561	19.899	1.462	Open Manhole	2100
S28.006	o	1200	S3356	22.401	19.850	1.351	Open Manhole	2100
S28.007	o	1200	S3357	22.379	19.800	1.379	Open Manhole	2100
S28.008	o	1200	S3358	22.415	19.784	1.431	Open Manhole	2100
S31.000	o	225	S3390	23.337	21.638	1.474	Open Manhole	1200
S31.001	o	225	S3391	23.137	21.269	1.643	Open Manhole	1200
S31.002	o	225	S3392	22.984	21.194	1.565	Open Manhole	1200
S31.003	o	225	S3393	22.666	21.058	1.383	Open Manhole	1200
S31.004	o	225	S3394	22.568	21.015	1.328	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S24.020	8.133	73.9	S3311	23.455	22.154	1.151	Junction	
S24.021	4.890	32.2	S3312	23.461	21.995	1.316	Junction	
S24.022	4.890	407.5	S3313	23.546	21.983	1.113	Junction	
S24.023	19.341#	100.2	S3029-Basin C	22.300	21.790	0.360	Open Manhole	2700
S1.029	7.696	29.3	S3030	22.439	20.287	1.702	Open Manhole	1350
S1.030	14.529	28.9	S3031	22.646	19.784	2.412	Open Manhole	1350
S1.031	24.965	316.0	S3032	22.286	19.705	2.131	Open Manhole	3000
S28.000	87.610	141.8	S3351	23.359	21.468	1.366	Open Manhole	1500
S28.001	90.939	243.8	S3352	22.742	21.095	1.122	Open Manhole	1500
S28.002	17.829	47.8	S3353	22.519	20.722	1.272	Open Manhole	1800
S28.003	21.428	178.6	S3354	22.616	20.227	1.489	Open Manhole	1800
S28.004	11.970	427.5	S3355	22.561	20.199	1.462	Open Manhole	2100
S29.000	19.137	299.0	S3371	23.170	21.071	1.799	Open Manhole	1200
S29.001	17.051	243.6	S3372	22.964	21.001	1.663	Open Manhole	1200
S29.002	12.702	244.3	S3373	22.764	20.949	1.515	Open Manhole	1200
S29.003	7.714	241.1	S3374	22.667	20.917	1.450	Open Manhole	1200
S29.004	8.191	69.4	S3355	22.561	20.799	1.462	Open Manhole	2100
S30.000	13.965	101.2	S3355	22.561	20.949	1.462	Open Manhole	2100
S28.005	21.863	437.3	S3356	22.401	19.849	1.352	Open Manhole	2100
S28.006	29.864	597.3	S3357	22.379	19.800	1.379	Open Manhole	2100
S28.007	8.032	502.0	S3358	22.415	19.784	1.431	Open Manhole	2100
S28.008	10.831	637.1	S3359	22.484	19.767	1.517	Open Manhole	2100
S31.000	29.691	80.5	S3391	23.137	21.269	1.643	Open Manhole	1200
S31.001	12.611	168.1	S3392	22.984	21.194	1.565	Open Manhole	1200
S31.002	22.843	168.0	S3393	22.666	21.058	1.383	Open Manhole	1200
S31.003	7.180	167.0	S3394	22.568	21.015	1.328	Open Manhole	1200
S31.004	8.808	169.4	S3359	22.484	20.963	1.296	Open Manhole	2100

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S28.009	o	1200	S3359	22.484	19.767	1.517	Open Manhole	2100
S28.010	o	1200	S3360	22.471	19.747	1.524	Open Manhole	2100
S1.032	o	1200	S3032	22.286	19.705	1.381	Open Manhole	3000
S1.033	o	450	S3033-CON	22.317	19.664	2.203	Open Manhole	2700
S1.034	o	450	S3034	22.361	19.542	2.369	Open Manhole	1350
S1.035	o	450	S3035	22.443	19.494	2.499	Open Manhole	1350
S1.036	o	450	S3036	21.748	19.403	1.895	Open Manhole	1350
S1.037	o	450	S3037	21.314	19.228	1.636	Open Manhole	1350
S1.038	o	450	S3038	20.779	19.066	1.263	Open Manhole	1350
S1.039	o	450	S3039	20.378	19.023	0.905	Open Manhole	1350
S1.040	3 ¥=/	1000	S3040-HW	20.192	19.003	1.039	Junction	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S28.009	8.968	448.4	S3360	22.471	19.747	1.524	Open Manhole	2100
S28.010	19.865	473.0	S3032	22.286	19.705	1.381	Open Manhole	3000
S1.032	26.753	652.5	S3033-CON	22.317	19.664	1.453	Open Manhole	2700
S1.033	40.649	330.5	S3034	22.361	19.541	2.370	Open Manhole	1350
S1.034	20.060	417.9	S3035	22.443	19.494	2.499	Open Manhole	1350
S1.035	36.421	404.7	S3036	21.748	19.404	1.894	Open Manhole	1350
S1.036	70.745	404.3	S3037	21.314	19.228	1.636	Open Manhole	1350
S1.037	65.150	402.2	S3038	20.779	19.066	1.263	Open Manhole	1350
S1.038	17.227	400.6	S3039	20.378	19.023	0.905	Open Manhole	1350
S1.039	8.038	401.9	S3040-HW	20.192	19.003	0.739	Junction	
S1.040	15.185	353.1	SStream	19.460	18.960	0.350	Open Manhole	0

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.007	0.007	0.007
	User	-	100	0.084	0.084	0.091
	User	-	100	0.005	0.005	0.096
1.001	User	-	100	0.061	0.061	0.061
	User	-	100	0.005	0.005	0.066
1.002	User	-	100	0.118	0.118	0.118
	User	-	100	0.003	0.003	0.120
	User	-	100	0.001	0.001	0.122
	User	-	100	0.002	0.002	0.123
	User	-	100	0.001	0.001	0.125
	User	-	100	0.001	0.001	0.126
1.003	User	-	100	0.009	0.009	0.009
2.000	User	-	100	0.037	0.037	0.037
	User	-	100	0.040	0.040	0.078
	User	-	100	0.017	0.017	0.095
	User	-	100	0.004	0.004	0.099
	User	-	100	0.002	0.002	0.101
	User	-	100	0.002	0.002	0.103
	User	-	100	0.002	0.002	0.105
2.001	User	-	100	0.049	0.049	0.049
	User	-	100	0.006	0.006	0.055
	User	-	100	0.005	0.005	0.060
2.002	User	-	100	0.018	0.018	0.018
	User	-	100	0.006	0.006	0.024
2.003	User	-	100	0.023	0.023	0.023
	User	-	100	0.008	0.008	0.031
	User	-	100	0.008	0.008	0.039
2.004	User	-	100	0.043	0.043	0.043
2.005	User	-	100	0.018	0.018	0.018
2.006	User	-	100	0.009	0.009	0.009
1.004	User	-	100	0.022	0.022	0.022
1.005	User	-	100	0.138	0.138	0.138
1.006	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
3.000	User	-	100	0.132	0.132	0.132
	User	-	100	0.002	0.002	0.133
	User	-	100	0.003	0.003	0.136
	User	-	100	0.002	0.002	0.138
	User	-	100	0.002	0.002	0.141
	User	-	100	0.001	0.001	0.141
	User	-	100	0.001	0.001	0.142
	User	-	100	0.001	0.001	0.143
	User	-	100	0.000	0.000	0.144
	User	-	100	0.003	0.003	0.147
3.001	User	-	100	0.056	0.056	0.056
	User	-	100	0.006	0.006	0.062
	User	-	100	0.007	0.007	0.070
	User	-	100	0.007	0.007	0.077
	User	-	100	0.005	0.005	0.082
3.002	User	-	100	0.043	0.043	0.043
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.047
3.003	User	-	100	0.059	0.059	0.059
	User	-	100	0.006	0.006	0.065
	User	-	100	0.005	0.005	0.070
3.004	User	-	100	0.009	0.009	0.009
1.007	User	-	100	0.163	0.163	0.163
4.000	-	-	100	0.168	0.168	0.168
4.001	-	-	100	0.072	0.072	0.072
4.002	User	-	100	0.043	0.043	0.043
	User	-	100	0.029	0.029	0.072
4.003	User	-	100	0.052	0.052	0.052
	User	-	100	0.010	0.010	0.062
	User	-	100	0.003	0.003	0.065
1.008	User	-	100	0.016	0.016	0.016
1.009	User	-	100	0.009	0.009	0.009
	User	-	100	0.009	0.009	0.018
1.010	User	-	100	0.017	0.017	0.017
	User	-	100	0.113	0.113	0.130
1.011	User	-	100	0.074	0.074	0.074
5.000	User	-	100	0.059	0.059	0.059
	User	-	100	0.002	0.002	0.061
5.001	User	-	100	0.189	0.189	0.189
1.012	User	-	100	0.040	0.040	0.040
1.013	User	-	100	0.030	0.030	0.030
1.014	User	-	100	0.012	0.012	0.012
6.000	User	-	100	0.072	0.072	0.072

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.052	0.052	0.123
	User	-	100	0.003	0.003	0.127
	User	-	100	0.004	0.004	0.131
	User	-	100	0.006	0.006	0.136
6.001	User	-	100	0.022	0.022	0.022
	User	-	100	0.002	0.002	0.024
	User	-	100	0.003	0.003	0.028
6.002	User	-	100	0.033	0.033	0.033
	User	-	100	0.006	0.006	0.039
7.000	User	-	100	0.136	0.136	0.136
7.001	User	-	100	0.105	0.105	0.105
7.002	User	-	100	0.032	0.032	0.032
7.003	User	-	100	0.068	0.068	0.068
	User	-	100	0.006	0.006	0.074
7.004	User	-	100	0.044	0.044	0.044
6.003	User	-	100	0.029	0.029	0.029
	User	-	100	0.007	0.007	0.036
6.004	User	-	100	0.085	0.085	0.085
8.000	User	-	100	0.000	0.000	0.000
	User	-	100	0.035	0.035	0.035
	User	-	100	0.013	0.013	0.048
8.001	User	-	100	0.082	0.082	0.082
8.002	User	-	100	0.028	0.028	0.028
6.005	User	-	100	0.054	0.054	0.054
6.006	User	-	100	0.009	0.009	0.009
6.007	User	-	100	0.012	0.012	0.012
6.008	User	-	100	0.012	0.012	0.012
6.009	User	-	100	0.051	0.051	0.051
6.010	-	-	100	0.000	0.000	0.000
1.015	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
	User	-	100	0.008	0.008	0.025
1.016	-	-	100	0.000	0.000	0.000
1.017	-	-	100	0.000	0.000	0.000
9.000	User	-	100	0.080	0.080	0.080
	User	-	100	0.005	0.005	0.085
9.001	User	-	100	0.033	0.033	0.033
	User	-	100	0.003	0.003	0.036
	User	-	100	0.057	0.057	0.093
	User	-	100	0.007	0.007	0.100
9.002	User	-	100	0.021	0.021	0.021
	User	-	100	0.006	0.006	0.027
9.003	User	-	100	0.047	0.047	0.047
10.000	User	-	100	0.058	0.058	0.058
	User	-	100	0.017	0.017	0.075
9.004	User	-	100	0.033	0.033	0.033
9.005	User	-	100	0.039	0.039	0.039
9.006	-	-	100	0.000	0.000	0.000
9.007	User	-	100	0.045	0.045	0.045
9.008	User	-	100	0.039	0.039	0.039
9.009	User	-	100	0.034	0.034	0.034
1.018	User	-	100	0.038	0.038	0.038
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000
1.023	-	-	100	0.000	0.000	0.000
1.024	-	-	100	0.000	0.000	0.000
1.025	-	-	100	0.000	0.000	0.000
1.026	-	-	100	0.000	0.000	0.000
1.027	-	-	100	0.000	0.000	0.000
1.028	-	-	100	0.000	0.000	0.000
11.000	-	-	100	0.035	0.035	0.035
11.001	-	-	100	0.076	0.076	0.076
11.002	-	-	100	0.058	0.058	0.058
11.003	-	-	100	0.009	0.009	0.009
11.004	-	-	100	0.016	0.016	0.016
12.000	-	-	100	0.048	0.048	0.048
13.000	-	-	100	0.049	0.049	0.049
12.001	-	-	100	0.040	0.040	0.040
12.002	-	-	100	0.053	0.053	0.053
12.003	-	-	100	0.041	0.041	0.041
12.004	-	-	100	0.032	0.032	0.032
11.005	-	-	100	0.064	0.064	0.064
11.006	-	-	100	0.068	0.068	0.068
14.000	-	-	100	0.065	0.065	0.065
14.001	-	-	100	0.099	0.099	0.099
14.002	-	-	100	0.089	0.089	0.089

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
15.000	-	-	100	0.030	0.030	0.030
11.007	-	-	100	0.110	0.110	0.110
11.008	-	-	100	0.000	0.000	0.000
11.009	-	-	100	0.000	0.000	0.000
16.000	-	-	100	0.043	0.043	0.043
17.000	-	-	100	0.036	0.036	0.036
16.001	-	-	100	0.030	0.030	0.030
16.002	-	-	100	0.028	0.028	0.028
16.003	-	-	100	0.041	0.041	0.041
11.010	-	-	100	0.021	0.021	0.021
11.011	-	-	100	0.052	0.052	0.052
18.000	-	-	100	0.000	0.000	0.000
18.001	User	-	100	0.112	0.112	0.112
18.002	-	-	100	0.028	0.028	0.028
11.012	-	-	100	0.010	0.010	0.010
11.013	-	-	100	0.069	0.069	0.069
11.014	-	-	100	0.000	0.000	0.000
19.000	-	-	100	0.038	0.038	0.038
20.000	-	-	100	0.044	0.044	0.044
19.001	-	-	100	0.032	0.032	0.032
19.002	User	-	100	0.026	0.026	0.026
11.015	-	-	100	0.000	0.000	0.000
11.016	-	-	100	0.000	0.000	0.000
21.000	-	-	100	0.017	0.017	0.017
21.001	-	-	100	0.054	0.054	0.054
11.017	-	-	100	0.000	0.000	0.000
22.000	-	-	100	0.026	0.026	0.026
22.001	User	-	100	0.043	0.043	0.043
22.002	-	-	100	0.027	0.027	0.027
11.018	-	-	100	0.000	0.000	0.000
11.019	-	-	100	0.000	0.000	0.000
11.020	-	-	100	0.000	0.000	0.000
23.000	-	-	100	0.019	0.019	0.019
23.001	-	-	100	0.090	0.090	0.090
11.021	-	-	100	0.000	0.000	0.000
11.022	-	-	100	0.000	0.000	0.000
11.023	-	-	100	0.000	0.000	0.000
24.000	-	-	100	0.028	0.028	0.028
24.001	-	-	100	0.013	0.013	0.013
24.002	-	-	100	0.071	0.071	0.071
24.003	-	-	100	0.033	0.033	0.033
24.004	-	-	100	0.047	0.047	0.047
24.005	-	-	100	0.090	0.090	0.090
24.006	-	-	100	0.128	0.128	0.128
24.007	-	-	100	0.037	0.037	0.037
24.008	-	-	100	0.021	0.021	0.021
25.000	-	-	100	0.028	0.028	0.028
24.009	-	-	100	0.038	0.038	0.038
24.010	-	-	100	0.058	0.058	0.058
26.000	-	-	100	0.025	0.025	0.025
24.011	-	-	100	0.253	0.253	0.253
24.012	-	-	100	0.094	0.094	0.094
24.013	-	-	100	0.127	0.127	0.127
24.014	-	-	100	0.054	0.054	0.054
24.015	-	-	100	0.079	0.079	0.079
24.016	-	-	100	0.000	0.000	0.000
24.017	-	-	100	0.000	0.000	0.000
24.018	-	-	100	0.000	0.000	0.000
24.019	-	-	100	0.000	0.000	0.000
27.000	-	-	100	0.008	0.008	0.008
27.001	User	-	100	0.062	0.062	0.062
27.002	-	-	100	0.037	0.037	0.037
24.020	-	-	100	0.000	0.000	0.000
24.021	-	-	100	0.000	0.000	0.000
24.022	-	-	100	0.000	0.000	0.000
24.023	-	-	100	0.000	0.000	0.000
1.029	-	-	100	0.000	0.000	0.000
1.030	-	-	100	0.000	0.000	0.000
1.031	-	-	100	0.000	0.000	0.000
28.000	User	-	50	0.997	0.498	0.498
28.001	User	-	50	1.046	0.523	0.523
28.002	-	-	100	0.000	0.000	0.000
28.003	-	-	100	0.000	0.000	0.000
28.004	-	-	100	0.000	0.000	0.000
29.000	-	-	100	0.117	0.117	0.117
29.001	-	-	100	0.050	0.050	0.050
29.002	-	-	100	0.034	0.034	0.034
29.003	-	-	100	0.009	0.009	0.009

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
29.004	-	-	100	0.046	0.046	0.046
30.000	-	-	100	0.000	0.000	0.000
28.005	-	-	100	0.060	0.060	0.060
28.006	-	-	100	0.043	0.043	0.043
28.007	-	-	100	0.007	0.007	0.007
28.008	-	-	100	0.034	0.034	0.034
31.000	-	-	100	0.053	0.053	0.053
31.001	-	-	100	0.034	0.034	0.034
31.002	-	-	100	0.023	0.023	0.023
31.003	-	-	100	0.012	0.012	0.012
31.004	-	-	100	0.017	0.017	0.017
28.009	-	-	100	0.000	0.000	0.000
28.010	-	-	100	0.000	0.000	0.000
1.032	-	-	100	0.000	0.000	0.000
1.033	-	-	100	0.000	0.000	0.000
1.034	-	-	100	0.000	0.000	0.000
1.035	-	-	100	0.000	0.000	0.000
1.036	-	-	100	0.000	0.000	0.000
1.037	-	-	100	0.000	0.000	0.000
1.038	-	-	100	0.000	0.000	0.000
1.039	-	-	100	0.000	0.000	0.000
1.040	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				9.613	8.592	8.592

Simulation Criteria for Catch C+D

Volumetric Runoff Coeff	0.750	Manhole Headloss Coeff (Global)	0.500	Inlet Coeffiecient	0.800
Areal Reduction Factor	1.000	Foul Sewage per hectare (l/s)	0.000	Flow per Person per Day (l/per/day)	0.000
Hot Start (mins)	0	Additional Flow - % of Total Flow	0.000	Run Time (mins)	60
Hot Start Level (mm)	0	MADD Factor * 10m³/ha Storage	2.000	Output Interval (mins)	1

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

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	20.000	Cv (Summer)	0.750
Return Period (years)	5	Ratio R	0.350	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

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Online Controls for Catch C+D

Complex Manhole: S3021-CON, DS/PN: S1.021, Volume (m³): 7.5

Orifice

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 21.679

Weir

Discharge Coef 0.544 Width (m) 1.500 Invert Level (m) 22.300

Hydro-Brake® Optimum Manhole: S3033-CON, DS/PN: S1.033, Volume (m³): 42.2

Unit Reference	MD-SFF-0239-7040-2551-2790	Sump Available	Yes
Design Head (m)	2.551	Diameter (mm)	239
Design Flow (l/s)	70.4	Invert Level (m)	19.664
Flush-Flo™	User Defined	Minimum Outlet Pipe Diameter (mm)	300
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.551	70.4	Kick-Flo®	0.362	27.5
Flush-Flo™	0.300	27.9	Mean Flow over Head Range	-	47.3

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.9	0.800	40.2	2.000	62.5	4.000	87.6	7.000	115.2
0.200	24.1	1.000	44.7	2.200	65.5	4.500	92.8	7.500	119.2
0.300	27.9	1.200	48.8	2.400	68.3	5.000	97.7	8.000	123.0
0.400	28.8	1.400	52.6	2.600	71.0	5.500	102.4	8.500	126.7
0.500	32.0	1.600	56.1	3.000	76.2	6.000	106.8	9.000	130.3
0.600	35.0	1.800	59.4	3.500	82.1	6.500	111.1	9.500	133.8

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Storage Structures for Catch C+D

Tank or Pond Manhole: S3020-BASIN D, DS/PN: S1.020

Invert Level (m) 21.810

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	73.7	0.290	356.4	0.590	693.1	0.990	1249.9	1.290	1645.1	1.690	2292.5
0.090	160.7	0.390	472.8	0.690	841.9	1.090	1380.3	1.490	1920.5		
0.190	256.2	0.490	581.7	0.890	1116.3	1.190	1513.6	1.590	2101.9		

Tank or Pond Manhole: S3029-Basin C, DS/PN: S1.029

Invert Level (m) 20.600

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	173.9	0.300	3228.6	0.600	4148.5	0.900	4628.0	1.200	5149.0	1.500	5725.0
0.100	1267.8	0.400	3815.8	0.700	4307.7	1.000	4790.0	1.300	5341.0	1.600	5914.0
0.200	2672.8	0.500	3988.0	0.800	4467.3	1.100	4954.0	1.400	5537.0	1.700	6110.0

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Catch C+D

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	5	Volumetric Runoff Coeff.	0.750
		PIMP (%)	100
FEH Rainfall Version	2013	Add Flow / Climate Change (%)	0
Site Location	GB 450306 114752	Minimum Backdrop Height (m)	20.000
Data Type	Point	Maximum Backdrop Height (m)	20.000
Maximum Rainfall (mm/hr)	550	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Catch C+D

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.000	4-8	0.198	8-12	1.798	12-16	3.421	16-20	2.957	20-24	0.218

Total Area Contributing (ha) = 8.592

Total Pipe Volume (m³) = 2524.283

Network Design Table for Catch C+D

- Indicates pipe length does not match coordinates
《 - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	35.949	0.512	70.2	0.096	5.00	0.0	0.600		o	225	Pipe/Conduit	
S1.001	37.616	0.156	241.1	0.066	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.002	60.836	0.190	320.2	0.126	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.003	15.123	0.048	315.1	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	
S2.000	19.287	0.115	167.7	0.105	5.00	0.0	0.600		o	225	Pipe/Conduit	
S2.001	33.215	1.103	30.1	0.060	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.002	15.620	0.797	19.6	0.024	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.003	21.369	1.015	21.1	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.004	36.334	1.246	29.2	0.043	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.005	13.620	0.436	31.2	0.018	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.006	14.675	2.323	6.3	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.004	14.479	0.029	499.3	0.022	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.005	45.757	0.093	492.0	0.138	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.006	10.237	0.843	12.1	0.017	0.00	0.0	0.600		o	525	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	80.71	5.38	26.053	0.096	0.0	0.0	0.0	1.56	62.1	20.9
S1.001	77.08	6.01	25.466	0.161	0.0	0.0	0.0	1.01	71.3	33.7
S1.002	71.96	7.01	25.235	0.287	0.0	0.0	0.0	1.01	111.2	56.0
S1.003	70.81	7.26	25.045	0.296	0.0	0.0	0.0	1.02	112.1	56.8
S2.000	81.11	5.32	32.182	0.105	0.0	0.0	0.0	1.01	40.0	23.1
S2.001	79.69	5.55	32.067	0.165	0.0	0.0	0.0	2.39	95.1	35.6
S2.002	79.17	5.64	30.964	0.189	0.0	0.0	0.0	2.97	118.1	40.5
S2.003	78.45	5.76	30.167	0.228	0.0	0.0	0.0	2.86	113.9	48.4
S2.004	77.05	6.01	29.152	0.271	0.0	0.0	0.0	2.43	96.7	56.5
S2.005	76.52	6.11	27.906	0.289	0.0	0.0	0.0	2.35	93.4	59.8
S2.006	76.27	6.15	27.470	0.298	0.0	0.0	0.0	5.24	208.4	61.5
S1.004	69.73	7.50	24.847	0.616	0.0	0.0	0.0	1.00	215.5	116.3
S1.005	66.58	8.26	24.818	0.754	0.0	0.0	0.0	1.00	217.1	136.0
S1.006	66.48	8.29	24.725	0.771	0.0	0.0	0.0	6.45	1396.8	138.8

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S3.000	53.557	0.659	81.3	0.147	5.00	0.0	0.600		o	225	Pipe/Conduit	
S3.001	41.576	0.211	197.0	0.082	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.002	14.948	0.047	318.0	0.047	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.003	36.706	0.114	322.0	0.070	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.004	12.697	0.041	309.7	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.007	59.337	0.144	412.1	0.163	0.00	0.0	0.600		o	675	Pipe/Conduit	
S4.000	48.639	0.300	162.1	0.168	5.00	0.0	0.600		o	225	Pipe/Conduit	
S4.001	9.863	0.040	246.6	0.072	0.00	0.0	0.600		o	300	Pipe/Conduit	
S4.002	31.323	0.096	326.3	0.072	0.00	0.0	0.600		o	375	Pipe/Conduit	
S4.003	38.232	0.118	324.0	0.065	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.008	12.810	0.026	492.7	0.016	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.009	9.391	0.019	494.3	0.018	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.010	64.152	1.036	61.9	0.130	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.011	10.287	0.170	60.5	0.074	0.00	0.0	0.600		o	750	Pipe/Conduit	
S5.000	24.808	0.378	65.6	0.061	5.00	0.0	0.600		o	150	Pipe/Conduit	
S5.001	73.068	1.114	65.6	0.189	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.012	26.687	0.053	503.5	0.040	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.013	15.378	0.031	496.1	0.030	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.014	16.427	0.014	1173.4	0.012	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.000	33.176	1.660	20.0	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	
S6.001	15.082	0.640	23.6	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S6.002	30.161	0.580	52.0	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S7.000	41.909	0.965	43.4	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	
S7.001	32.312	0.325	99.4	0.105	0.00	0.0	0.600		o	300	Pipe/Conduit	
S7.002	15.058	0.150	100.4	0.032	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.003	23.125	0.230	100.5	0.074	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.004	35.652	0.395	90.3	0.044	0.00	0.0	0.600		o	375	Pipe/Conduit	
S6.003	24.959	0.490	50.9	0.036	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S3.000	79.31	5.61	25.255	0.147	0.0	0.0	0.0	1.45	57.7	31.5
S3.001	76.28	6.15	24.446	0.229	0.0	0.0	0.0	1.29	142.2	47.3
S3.002	74.97	6.40	24.235	0.275	0.0	0.0	0.0	1.01	111.6	55.9
S3.003	71.97	7.01	24.188	0.345	0.0	0.0	0.0	1.00	110.9	67.3
S3.004	71.01	7.22	24.074	0.354	0.0	0.0	0.0	1.02	113.1	68.1
S1.007	63.62	9.06	23.733	1.288	0.0	0.0	0.0	1.28	459.8	222.0
S4.000	78.28	5.79	24.593	0.168	0.0	0.0	0.0	1.02	40.7	35.6
S4.001	77.35	5.96	24.218	0.240	0.0	0.0	0.0	1.00	70.5	50.3
S4.002	74.56	6.48	24.103	0.312	0.0	0.0	0.0	1.00	110.2	63.1
S4.003	71.47	7.12	24.007	0.377	0.0	0.0	0.0	1.00	110.6	73.1
S1.008	63.03	9.23	23.514	1.682	0.0	0.0	0.0	1.25	554.0	287.1
S1.009	62.60	9.35	23.488	1.700	0.0	0.0	0.0	1.25	553.1	288.3
S1.010	61.60	9.65	23.469	1.830	0.0	0.0	0.0	3.56	1572.8	305.4
S1.011	61.45	9.70	22.433	1.905	0.0	0.0	0.0	3.60	1591.1	317.0
S5.000	81.03	5.33	24.355	0.061	0.0	0.0	0.0	1.24	22.0	13.3
S5.001	77.34	5.96	23.827	0.250	0.0	0.0	0.0	1.94	137.4	52.4
S1.012	60.43	10.02	22.113	2.195	0.0	0.0	0.0	1.39	883.9	359.2
S1.013	59.86	10.21	22.060	2.224	0.0	0.0	0.0	1.40	890.6	360.6
S1.014	58.96	10.51	22.029	2.236	0.0	0.0	0.0	0.91	576.4	360.6
S6.000	81.95	5.19	29.800	0.136	0.0	0.0	0.0	2.94	116.9	30.3
S6.001	81.35	5.28	28.140	0.164	0.0	0.0	0.0	2.71	107.6	36.2
S6.002	79.65	5.56	27.500	0.203	0.0	0.0	0.0	1.82	72.3	43.7
S7.000	80.91	5.35	28.985	0.136	0.0	0.0	0.0	1.99	79.1	29.7
S7.001	78.86	5.69	27.945	0.241	0.0	0.0	0.0	1.58	111.5	51.4
S7.002	78.06	5.83	27.545	0.272	0.0	0.0	0.0	1.81	199.7	57.6
S7.003	76.87	6.04	27.395	0.347	0.0	0.0	0.0	1.81	199.6	72.2
S7.004	75.20	6.36	27.165	0.391	0.0	0.0	0.0	1.91	210.7	79.6
S6.003	74.36	6.52	26.770	0.629	0.0	0.0	0.0	2.54	281.0	126.8

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S6.004	43.011	3.072	14.0	0.085	0.00	0.0	0.600		o	375	Pipe/Conduit	
S8.000	27.733	0.275	100.8	0.048	5.00	0.0	0.600		o	150	Pipe/Conduit	
S8.001	26.245	0.177	148.3	0.082	0.00	0.0	0.600		o	225	Pipe/Conduit	
S8.002	22.377	0.093	240.6	0.028	0.00	0.0	0.600		o	300	Pipe/Conduit	
S6.005	31.872	0.064	498.0	0.054	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.006	8.022	0.533	15.1	0.009	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.007	12.185	0.024	507.7	0.012	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.008	9.943	0.046	216.2	0.012	0.00	0.0	0.600		o	750	Pipe/Conduit	
S6.009	7.177	0.007	1025.3	0.051	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.010	9.883	0.010	988.3	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.015	11.514	0.012	959.5	0.025	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.016	14.009	0.015	933.9	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.017	12.204	0.013	938.8	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S9.000	40.635	0.590	68.9	0.085	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.001	38.986	0.249	156.6	0.100	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.002	8.268	0.074	111.7	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.003	23.600	0.229	103.1	0.047	0.00	0.0	0.600		o	300	Pipe/Conduit	
S10.000	16.795	0.218	77.0	0.075	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.004	19.671	0.247	79.6	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.005	9.366	0.111	84.4	0.039	0.00	0.0	0.600		o	375	Pipe/Conduit	
S9.006	12.815	0.232	55.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.007	24.711	0.322	76.7	0.045	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.008	19.546	0.204	95.8	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.009	12.446	0.044	282.9	0.034	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.018	5.521	0.014	394.4	0.038	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.019	12.487#	0.021	594.6	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.020	17.627	0.131	134.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.021	37.615	0.098	383.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.022	66.231	0.149	444.5	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S6.004	73.62	6.67	26.280	0.715	0.0	0.0	0.0	4.86	537.2	142.5
S8.000	80.23	5.46	23.978	0.048	0.0	0.0	0.0	1.00	17.7	10.5
S8.001	77.84	5.87	23.628	0.131	0.0	0.0	0.0	1.07	42.6	27.6
S8.002	75.81	6.24	23.376	0.159	0.0	0.0	0.0	1.01	71.3	32.6
S6.005	71.28	7.16	22.983	0.927	0.0	0.0	0.0	1.08	306.6	179.0
S6.006	71.19	7.18	22.919	0.936	0.0	0.0	0.0	6.30	1780.7	180.4
S6.007	70.33	7.37	22.386	0.947	0.0	0.0	0.0	1.07	303.6	180.4
S6.008	69.94	7.45	22.212	0.960	0.0	0.0	0.0	1.90	839.2	181.8
S6.009	69.41	7.58	22.002	1.010	0.0	0.0	0.0	0.97	617.1	189.9
S6.010	68.69	7.74	21.995	1.010	0.0	0.0	0.0	0.99	628.7	189.9
S1.015	58.40	10.70	21.985	3.271	0.0	0.0	0.0	1.00	638.2	517.4
S1.016	57.75	10.93	21.973	3.271	0.0	0.0	0.0	1.02	647.0	517.4
S1.017	57.19	11.13	21.958	3.271	0.0	0.0	0.0	1.01	645.3	517.4
S9.000	80.43	5.43	24.927	0.085	0.0	0.0	0.0	1.58	62.7	18.4
S9.001	77.40	5.95	24.262	0.185	0.0	0.0	0.0	1.25	88.6	38.7
S9.002	76.89	6.04	24.013	0.212	0.0	0.0	0.0	1.49	105.1	44.2
S9.003	75.53	6.29	23.939	0.259	0.0	0.0	0.0	1.55	109.5	53.1
S10.000	81.95	5.19	24.003	0.075	0.0	0.0	0.0	1.49	59.3	16.6
S9.004	74.56	6.48	23.710	0.367	0.0	0.0	0.0	1.76	124.6	74.2
S9.005	74.16	6.56	23.388	0.406	0.0	0.0	0.0	1.97	218.0	81.6
S9.006	73.77	6.64	23.202	0.406	0.0	0.0	0.0	2.74	435.8	81.6
S9.007	72.90	6.81	22.970	0.451	0.0	0.0	0.0	2.32	369.4	89.1
S9.008	72.15	6.97	22.648	0.490	0.0	0.0	0.0	2.08	330.4	95.7
S9.009	71.34	7.14	22.444	0.524	0.0	0.0	0.0	1.20	191.5	101.2
S1.018	57.03	11.19	21.945	3.833	0.0	0.0	0.0	1.57	999.8	592.0
S1.019	56.60	11.35	21.931	3.833	0.0	0.0	0.0	1.28	812.8	592.0
S1.020	56.19	11.50	21.810	3.833	0.0	0.0	0.0	1.93	417.6K	592.0
S1.021	54.79	12.05	21.679	3.833	0.0	0.0	0.0	1.14	246.2K	592.0
S1.022	52.34	13.10	21.581	3.833	0.0	0.0	0.0	1.06	228.6K	592.0

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.023	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.024	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.025	26.289	0.059	445.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.026	28.667	0.064	447.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.027	22.780	0.051	446.7	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.028	14.238#	0.032	444.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.000	40.107	0.622	64.5	0.035	5.00	0.0	0.600		o	450	Pipe/Conduit	
S11.001	32.411	0.833	38.9	0.076	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.002	10.303	0.193	53.4	0.058	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.003	10.303	0.192	53.7	0.009	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.004	23.248	0.563	41.3	0.016	0.00	0.0	0.600		o	450	Pipe/Conduit	
S12.000	7.032	0.194	36.2	0.048	5.00	0.0	0.600		o	150	Pipe/Conduit	
S13.000	9.073	0.240	37.8	0.049	5.00	0.0	0.600		o	225	Pipe/Conduit	
S12.001	19.266	0.207	93.1	0.040	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.002	17.962	0.522	34.4	0.053	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.003	11.800	0.230	51.3	0.041	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.004	28.031	0.521	53.8	0.032	0.00	0.0	0.600		o	375	Pipe/Conduit	
S11.005	39.725	0.071	559.5	0.064	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.006	8.588	0.061	140.8	0.068	0.00	0.0	0.600		o	600	Pipe/Conduit	
S14.000	27.512	0.288	95.5	0.065	5.00	0.0	0.600		o	300	Pipe/Conduit	
S14.001	24.054	0.738	32.6	0.099	0.00	0.0	0.600		o	300	Pipe/Conduit	
S14.002	23.286	0.595	39.1	0.089	0.00	0.0	0.600		o	300	Pipe/Conduit	
S15.000	12.458	0.523	23.8	0.030	5.00	0.0	0.600		o	225	Pipe/Conduit	
S11.007	12.441	0.031	401.3	0.110	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.008	50.277	0.126	399.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.009	16.281	0.033	493.4	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S16.000	6.404	0.572	11.2	0.043	5.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.023	49.94	14.25	21.432	3.833	0.0	0.0	0.0	1.06	228.4≪	592.0
S1.024	47.79	15.39	21.269	3.833	0.0	0.0	0.0	1.06	228.4≪	592.0
S1.025	47.06	15.81	21.106	3.833	0.0	0.0	0.0	1.05	228.3≪	592.0
S1.026	46.29	16.26	21.047	3.833	0.0	0.0	0.0	1.05	227.7≪	592.0
S1.027	45.70	16.62	20.983	3.833	0.0	0.0	0.0	1.05	228.0≪	592.0
S1.028	45.35	16.85	20.932	3.833	0.0	0.0	0.0	1.06	228.5≪	592.0
S11.000	81.46	5.26	26.212	0.035	0.0	0.0	0.0	2.54	403.2	7.7
S11.001	80.43	5.43	25.590	0.111	0.0	0.0	0.0	3.27	519.6	24.2
S11.002	80.05	5.49	24.757	0.169	0.0	0.0	0.0	2.79	443.3	36.6
S11.003	79.68	5.55	24.564	0.178	0.0	0.0	0.0	2.78	442.2	38.4
S11.004	78.96	5.67	24.372	0.194	0.0	0.0	0.0	3.17	504.3	41.5
S12.000	82.73	5.07	25.784	0.048	0.0	0.0	0.0	1.68	29.6	10.8
S13.000	82.72	5.07	25.755	0.049	0.0	0.0	0.0	2.13	84.9	11.0
S12.001	81.60	5.24	25.365	0.137	0.0	0.0	0.0	1.88	207.5	30.3
S12.002	80.99	5.34	25.158	0.190	0.0	0.0	0.0	3.10	342.2	41.7
S12.003	80.51	5.42	24.636	0.231	0.0	0.0	0.0	2.53	280.0	50.4
S12.004	79.37	5.60	24.405	0.263	0.0	0.0	0.0	2.47	273.3	56.5
S11.005	75.38	6.32	23.659	0.521	0.0	0.0	0.0	1.02	289.1	106.4
S11.006	75.01	6.39	23.588	0.589	0.0	0.0	0.0	2.05	579.8	119.7
S14.000	81.33	5.28	25.448	0.065	0.0	0.0	0.0	1.61	113.7	14.3
S14.001	80.42	5.43	25.160	0.164	0.0	0.0	0.0	2.76	195.3	35.7
S14.002	79.49	5.58	24.422	0.253	0.0	0.0	0.0	2.52	178.2	54.5
S15.000	82.68	5.08	24.425	0.030	0.0	0.0	0.0	2.69	107.0	6.7
S11.007	74.14	6.56	23.527	0.982	0.0	0.0	0.0	1.21	341.9	197.2
S11.008	70.84	7.25	23.496	0.982	0.0	0.0	0.0	1.21	342.9	197.2
S11.009	69.73	7.50	23.370	0.982	0.0	0.0	0.0	1.09	308.1	197.2
S16.000	82.97	5.04	24.815	0.043	0.0	0.0	0.0	3.03	53.5	9.7

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S17.000	9.571	0.413	23.2	0.036	5.00	0.0	0.600		o	150	Pipe/Conduit	
S16.001	17.473	0.202	86.5	0.030	0.00	0.0	0.600		o	225	Pipe/Conduit	
S16.002	16.645	0.192	86.7	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S16.003	10.486	0.062	169.1	0.041	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.010	31.952	0.080	399.4	0.021	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.011	12.436	0.093	133.7	0.052	0.00	0.0	0.600		o	600	Pipe/Conduit	
S18.000	10.976	0.079	138.9	0.000	5.00	0.0	0.600		o	225	Pipe/Conduit	
S18.001	17.571	0.100	175.7	0.112	0.00	0.0	0.600		o	225	Pipe/Conduit	
S18.002	7.268	0.041	177.3	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.012	43.134	0.074	582.9	0.010	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.013	10.732	0.019	564.8	0.069	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.014	9.000	0.143	62.9	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S19.000	10.468	0.043	243.4	0.038	5.00	0.0	0.600		o	300	Pipe/Conduit	
S20.000	7.532	0.031	243.0	0.044	5.00	0.0	0.600		o	300	Pipe/Conduit	
S19.001	31.106	0.103	302.0	0.032	0.00	0.0	0.600		o	300	Pipe/Conduit	
S19.002	10.395	0.066	157.5	0.026	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.015	22.426	0.262	85.6	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.016	12.703	0.115	110.5	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S21.000	15.822	0.093	170.1	0.017	5.00	0.0	0.600		o	225	Pipe/Conduit	
S21.001	11.323	0.067	169.0	0.054	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.017	22.290	0.226	98.6	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S22.000	22.392	0.093	240.8	0.026	5.00	0.0	0.600		o	300	Pipe/Conduit	
S22.001	22.392	0.093	240.8	0.043	0.00	0.0	0.600		o	300	Pipe/Conduit	
S22.002	11.234	0.047	239.0	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S17.000	82.69	5.08	24.656	0.036	0.0	0.0	0.0	2.10	37.1	8.1
S16.001	81.34	5.28	24.168	0.109	0.0	0.0	0.0	1.41	55.9	24.0
S16.002	80.12	5.48	23.966	0.137	0.0	0.0	0.0	1.41	55.9	29.7
S16.003	79.08	5.65	23.774	0.178	0.0	0.0	0.0	1.00	39.9	38.1
S11.010	67.87	7.94	23.337	1.181	0.0	0.0	0.0	1.21	342.8	217.1
S11.011	67.47	8.04	23.257	1.233	0.0	0.0	0.0	2.10	595.0	225.3
S18.000	82.10	5.17	23.759	0.000	0.0	0.0	0.0	1.11	44.0	0.0
S18.001	80.22	5.46	23.680	0.112	0.0	0.0	0.0	0.98	39.1	24.4
S18.002	79.48	5.59	23.580	0.140	0.0	0.0	0.0	0.98	38.9	30.2
S11.012	64.70	8.76	23.164	1.383	0.0	0.0	0.0	1.00	283.1	242.4
S11.013	64.07	8.93	23.090	1.452	0.0	0.0	0.0	1.02	287.7	252.0
S11.014	63.25	9.17	22.971	1.452	0.0	0.0	0.0	0.65	141.2«	252.0
S19.000	82.04	5.17	23.140	0.038	0.0	0.0	0.0	1.00	70.9	8.4
S20.000	82.36	5.13	23.128	0.044	0.0	0.0	0.0	1.00	71.0	9.8
S19.001	78.52	5.75	23.097	0.114	0.0	0.0	0.0	0.90	63.6	24.2
S19.002	77.73	5.89	22.994	0.140	0.0	0.0	0.0	1.25	88.4	29.4
S11.015	61.01	9.84	22.828	1.592	0.0	0.0	0.0	0.56	121.1«	263.1
S11.016	59.67	10.27	22.566	1.592	0.0	0.0	0.0	0.49	106.6«	263.1
S21.000	81.46	5.26	22.711	0.017	0.0	0.0	0.0	1.00	39.7	3.8
S21.001	80.29	5.45	22.618	0.071	0.0	0.0	0.0	1.00	39.9	15.4
S11.017	57.59	10.99	22.451	1.663	0.0	0.0	0.0	0.52	112.8«	263.1
S22.000	80.79	5.37	22.558	0.026	0.0	0.0	0.0	1.01	71.3	5.7
S22.001	78.58	5.74	22.465	0.069	0.0	0.0	0.0	1.01	71.3	14.8
S22.002	77.53	5.92	22.372	0.096	0.0	0.0	0.0	1.01	71.6	20.2

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S11.018	1.710	0.021	81.4	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.019	20.296	0.226	89.8	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.020	28.551	0.288	99.1	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S23.000	36.485	0.215	169.7	0.019	5.00	0.0	0.600		o	225	Pipe/Conduit	
S23.001	9.144	0.054	169.3	0.090	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.021	30.393	0.224	135.7	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S11.022	4.573	0.027	169.4	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.023	5.237#	0.039	134.3	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.000	14.348	0.164	87.5	0.028	5.00	0.0	0.600		o	300	Pipe/Conduit	
S24.001	38.017	0.660	57.6	0.013	0.00	0.0	0.600		o	300	Pipe/Conduit	
S24.002	16.044	0.117	137.1	0.071	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.003	15.071	0.177	85.1	0.033	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.004	34.848	0.366	95.2	0.047	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.005	34.848	0.108	322.7	0.090	0.00	0.0	0.600		o	375	Pipe/Conduit	
S24.006	16.578	0.082	202.2	0.128	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.007	14.379	0.036	399.4	0.037	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.008	10.673	0.027	395.3	0.021	0.00	0.0	0.600		o	450	Pipe/Conduit	
S25.000	8.564	1.068	8.0	0.028	5.00	0.0	0.600		o	225	Pipe/Conduit	
S24.009	41.724	0.104	401.2	0.038	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.010	81.518	0.691	118.0	0.058	0.00	0.0	0.600		o	450	Pipe/Conduit	
S26.000	13.781	0.512	26.9	0.025	5.00	0.0	0.600		o	300	Pipe/Conduit	
S24.011	29.760	0.060	496.0	0.253	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.012	37.653	0.075	502.0	0.094	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.013	26.529	0.053	500.5	0.127	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.014	38.681	0.078	495.9	0.054	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.015	15.856	0.032	495.5	0.079	0.00	0.0	0.600		o	525	Pipe/Conduit	
S24.016	15.562	0.232	67.1	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.017	26.215	0.328	79.9	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S11.018	57.45	11.04	22.225	1.760	0.0	0.0	0.0	0.57	124.2K	273.8
S11.019	55.79	11.66	22.204	1.760	0.0	0.0	0.0	0.54	118.2K	273.8
S11.020	53.53	12.58	21.978	1.760	0.0	0.0	0.0	0.52	112.5K	273.8
S23.000	79.35	5.61	22.059	0.019	0.0	0.0	0.0	1.00	39.8	4.1
S23.001	78.47	5.76	21.844	0.109	0.0	0.0	0.0	1.00	39.8	23.2
S11.021	51.00	13.72	21.690	1.869	0.0	0.0	0.0	0.44	96.2K	273.8
S11.022	50.91	13.77	21.466	1.869	0.0	0.0	0.0	1.72	372.0	273.8
S11.023	50.51	13.96	21.439	1.869	0.0	0.0	0.0	0.44	96.7K	273.8
S24.000	82.25	5.14	26.162	0.028	0.0	0.0	0.0	1.68	118.9	6.2
S24.001	80.32	5.45	25.998	0.041	0.0	0.0	0.0	2.08	146.7	8.9
S24.002	79.28	5.62	25.263	0.112	0.0	0.0	0.0	1.55	170.7	24.0
S24.003	78.53	5.75	25.146	0.145	0.0	0.0	0.0	1.96	217.0	30.8
S24.004	76.78	6.06	24.969	0.192	0.0	0.0	0.0	1.86	205.1	39.9
S24.005	73.76	6.64	24.604	0.282	0.0	0.0	0.0	1.00	110.8	56.3
S24.006	72.81	6.83	24.420	0.410	0.0	0.0	0.0	1.43	226.8	80.8
S24.007	71.68	7.07	24.338	0.447	0.0	0.0	0.0	1.01	160.8	86.8
S24.008	70.88	7.25	24.303	0.468	0.0	0.0	0.0	1.02	161.7	89.8
S25.000	83.00	5.03	25.569	0.028	0.0	0.0	0.0	4.65	184.9	6.3
S24.009	67.90	7.94	24.276	0.534	0.0	0.0	0.0	1.01	160.4	98.2
S24.010	65.06	8.66	24.172	0.592	0.0	0.0	0.0	1.87	297.5	104.3
S26.000	82.69	5.08	24.143	0.025	0.0	0.0	0.0	3.04	215.1	5.6
S24.011	63.28	9.16	23.406	0.870	0.0	0.0	0.0	1.00	216.2	149.1
S24.012	61.17	9.79	23.346	0.964	0.0	0.0	0.0	0.99	214.9	159.7
S24.013	59.78	10.23	23.271	1.091	0.0	0.0	0.0	0.99	215.2	176.6
S24.014	57.89	10.88	23.218	1.145	0.0	0.0	0.0	1.00	216.3	179.5
S24.015	57.15	11.14	23.140	1.224	0.0	0.0	0.0	1.00	216.4	189.5
S24.016	56.05	11.56	23.008	1.224	0.0	0.0	0.0	0.63	136.8K	189.5
S24.017	54.15	12.31	22.776	1.224	0.0	0.0	0.0	0.58	125.3K	189.5

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S24.018	7.830	0.082	95.5	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.019	7.038	0.101	69.7	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S27.000	8.972	0.041	218.8	0.008	5.00	0.0	0.600		o	300	Pipe/Conduit	
S27.001	47.357	0.215	220.3	0.062	0.00	0.0	0.600		o	300	Pipe/Conduit	
S27.002	13.843	0.063	219.7	0.037	0.00	0.0	0.600		o	300	Pipe/Conduit	
S24.020	8.133	0.110	73.9	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.021	4.890	0.152	32.2	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S24.022	4.890	0.012	407.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.023	19.341#	0.193	100.2	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	
S1.029	7.696	0.263	29.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.030	14.529	0.503	28.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.031	24.965	0.079	316.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S28.000	87.610	0.618	141.8	0.498	5.00	0.0	0.600		o	525	Pipe/Conduit	
S28.001	90.939	0.373	243.8	0.523	0.00	0.0	0.600		o	525	Pipe/Conduit	
S28.002	17.829	0.373	47.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S28.003	21.428	0.120	178.6	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S28.004	11.970	0.028	427.5	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S29.000	19.137	0.064	299.0	0.117	5.00	0.0	0.600		o	300	Pipe/Conduit	
S29.001	17.051	0.070	243.6	0.050	0.00	0.0	0.600		o	300	Pipe/Conduit	
S29.002	12.702	0.052	244.3	0.034	0.00	0.0	0.600		o	300	Pipe/Conduit	
S29.003	7.714	0.032	241.1	0.009	0.00	0.0	0.600		o	300	Pipe/Conduit	
S29.004	8.191	0.118	69.4	0.046	0.00	0.0	0.600		o	300	Pipe/Conduit	
S30.000	13.965	0.138	101.2	0.000	5.00	0.0	0.600		o	150	Pipe/Conduit	
S28.005	21.863	0.050	437.3	0.060	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.006	29.864	0.050	597.3	0.043	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.007	8.032	0.016	502.0	0.007	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.008	10.831	0.017	637.1	0.034	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S31.000	29.691	0.369	80.5	0.053	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S24.018	53.56	12.56	22.448	1.224	0.0	0.0	0.0	0.53	114.7≪	189.5
S24.019	53.12	12.75	22.366	1.224	0.0	0.0	0.0	0.62	134.2≪	189.5
S27.000	82.25	5.14	22.683	0.008	0.0	0.0	0.0	1.06	74.8	1.8
S27.001	77.73	5.89	22.642	0.070	0.0	0.0	0.0	1.06	74.6	14.6
S27.002	76.52	6.11	22.427	0.107	0.0	0.0	0.0	1.06	74.7	22.1
S24.020	52.61	12.98	22.264	1.331	0.0	0.0	0.0	0.60	130.3≪	189.6
S24.021	52.41	13.07	22.147	1.331	0.0	0.0	0.0	0.91	197.5	189.6
S24.022	52.23	13.15	21.995	1.331	0.0	0.0	0.0	1.00	159.2≪	189.6
S24.023	50.89	13.78	21.983	1.331	0.0	0.0	0.0	0.51	111.9≪	189.6
S1.029	45.29	16.88	20.550	7.032	0.0	0.0	0.0	3.77	599.5≪	862.6
S1.030	45.19	16.94	20.287	7.032	0.0	0.0	0.0	3.79	603.4≪	862.6
S1.031	44.63	17.31	19.784	7.032	0.0	0.0	0.0	1.14	181.0≪	862.6
S28.000	78.37	5.78	22.086	0.498	0.0	0.0	0.0	1.88	406.8	105.8
S28.001	72.79	6.84	21.468	1.021	0.0	0.0	0.0	1.43	309.6	201.3
S28.002	72.35	6.93	21.095	1.021	0.0	0.0	0.0	3.25	702.6	201.3
S28.003	71.63	7.08	20.347	1.021	0.0	0.0	0.0	2.34	1489.8	201.3
S28.004	71.02	7.21	20.227	1.021	0.0	0.0	0.0	1.51	960.0	201.3
S29.000	80.90	5.35	21.135	0.117	0.0	0.0	0.0	0.90	63.9	25.6
S29.001	79.19	5.64	21.071	0.167	0.0	0.0	0.0	1.00	70.9	35.8
S29.002	77.96	5.85	21.001	0.201	0.0	0.0	0.0	1.00	70.8	42.4
S29.003	77.25	5.98	20.949	0.210	0.0	0.0	0.0	1.01	71.3	43.9
S29.004	76.85	6.05	20.917	0.256	0.0	0.0	0.0	1.89	133.6	53.3
S30.000	81.66	5.23	21.087	0.000	0.0	0.0	0.0	1.00	17.7	0.0
S28.005	70.11	7.42	19.899	1.337	0.0	0.0	0.0	1.78	2016.1	253.9
S28.006	68.69	7.74	19.850	1.380	0.0	0.0	0.0	1.52	1723.0	256.8
S28.007	68.36	7.82	19.800	1.387	0.0	0.0	0.0	1.66	1880.7	256.8
S28.008	67.85	7.95	19.784	1.421	0.0	0.0	0.0	1.47	1667.8	261.2
S31.000	80.99	5.34	21.638	0.053	0.0	0.0	0.0	1.46	58.0	11.6

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Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S31.001	12.611	0.075	168.1	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
S31.002	22.843	0.136	168.0	0.023	0.00	0.0	0.600		o	225	Pipe/Conduit	
S31.003	7.180	0.043	167.0	0.012	0.00	0.0	0.600		o	225	Pipe/Conduit	
S31.004	8.808	0.052	169.4	0.017	0.00	0.0	0.600		o	225	Pipe/Conduit	
S28.009	8.968	0.020	448.4	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S28.010	19.865	0.042	473.0	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.032	26.753	0.041	652.5	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.033	40.649	0.123	330.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.034	20.060	0.048	417.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.035	36.421	0.090	404.7	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.036	70.745	0.175	404.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.037	65.150	0.162	402.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.038	17.227	0.043	400.6	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.039	8.038	0.020	401.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.040	15.185	0.043	353.1	0.000	0.00	0.0		0.045	3 ¥=/	1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S31.001	79.71	5.55	21.269	0.087	0.0	0.0	0.0	1.01	40.0	18.8
S31.002	77.52	5.93	21.194	0.110	0.0	0.0	0.0	1.01	40.0	23.1
S31.003	76.86	6.05	21.058	0.122	0.0	0.0	0.0	1.01	40.1	25.4
S31.004	76.07	6.19	21.015	0.139	0.0	0.0	0.0	1.00	39.8	28.6
S28.009	67.50	8.03	19.767	1.560	0.0	0.0	0.0	1.76	1990.7	285.3
S28.010	66.73	8.23	19.747	1.560	0.0	0.0	0.0	1.71	1938.0	285.3
S1.032	44.17	17.62	19.705	8.592	0.0	0.0	0.0	1.46	1647.8	1027.9
S1.033	43.29	18.22	19.664	8.592	0.0	0.0	0.0	1.11	177.0≪	1027.9
S1.034	42.82	18.56	19.542	8.592	0.0	0.0	0.0	0.99	157.2≪	1027.9
S1.035	42.01	19.17	19.494	8.592	0.0	0.0	0.0	1.00	159.7≪	1027.9
S1.036	40.53	20.34	19.403	8.592	0.0	0.0	0.0	1.00	159.8≪	1027.9
S1.037	39.28	21.42	19.228	8.592	0.0	0.0	0.0	1.01	160.2≪	1027.9
S1.038	38.97	21.70	19.066	8.592	0.0	0.0	0.0	1.01	160.6≪	1027.9
S1.039	38.82	21.84	19.023	8.592	0.0	0.0	0.0	1.01	160.3≪	1027.9
S1.040	37.84	22.76	19.003	8.592	0.0	0.0	0.0	0.27	59.6≪	1027.9

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

- Indicates pipe length does not match coordinates

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.000	o	225	S3000	27.478	26.053	1.200	Open Manhole		1200
S1.001	o	300	S3001	26.966	25.466	1.200	Open Manhole		1200
S1.002	o	375	S3002	26.704	25.235	1.094	Open Manhole		1350
S1.003	o	375	S3003	28.014	25.045	2.594	Open Manhole		1350
S2.000	o	225	S3050	33.607	32.182	1.200	Open Manhole		1200
S2.001	o	225	S3051	33.552	32.067	1.260	Open Manhole		1200
S2.002	o	225	S3052	32.390	30.964	1.201	Open Manhole		1200
S2.003	o	225	S3053	31.592	30.167	1.200	Open Manhole		1200
S2.004	o	225	S3054	30.545	29.152	1.168	Open Manhole		1200
S2.005	o	225	S3055	29.217	27.906	1.086	Open Manhole		1200
S2.006	o	225	S3056	28.782	27.470	1.087	Open Manhole		1200
S1.004	o	525	S3004	28.294	24.847	2.922	Open Manhole		1500
S1.005	o	525	S3005	28.322	24.818	2.979	Open Manhole		1500
S1.006	o	525	S3006	27.532	24.725	2.282	Open Manhole		1500
S3.000	o	225	S3060	26.680	25.255	1.200	Open Manhole		1200
S3.001	o	375	S3061	26.141	24.446	1.320	Open Manhole		1350
S3.002	o	375	S3062	26.114	24.235	1.504	Open Manhole		1350
S3.003	o	375	S3063	26.410	24.188	1.847	Open Manhole		1350
S3.004	o	375	S3064	27.500	24.074	3.051	Open Manhole		1350
S1.007	o	675	S3007	27.348	23.733	2.940	Open Manhole		1500
S4.000	o	225	S3070	25.790	24.593	0.972	Open Manhole		1200
S4.001	o	300	S3072	25.325	24.218	0.807	Open Manhole		1200
S4.002	o	375	S3073	25.456	24.103	0.978	Open Manhole		1350
S4.003	o	375	S3074	25.586	24.007	1.204	Open Manhole		1350
S1.008	o	750	S3008	26.600	23.514	2.336	Open Manhole		1800
S1.009	o	750	S3009	26.345	23.488	2.107	Open Manhole		1800
S1.010	o	750	S3010	26.150	23.469	1.931	Open Manhole		1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.000	35.949	70.2	S3001	26.966	25.541	1.200	Open Manhole		1200
S1.001	37.616	241.1	S3002	26.704	25.310	1.094	Open Manhole		1350
S1.002	60.836	320.2	S3003	28.014	25.045	2.594	Open Manhole		1350
S1.003	15.123	315.1	S3004	28.294	24.997	2.922	Open Manhole		1500
S2.000	19.287	167.7	S3051	33.552	32.067	1.260	Open Manhole		1200
S2.001	33.215	30.1	S3052	32.390	30.964	1.201	Open Manhole		1200
S2.002	15.620	19.6	S3053	31.592	30.167	1.200	Open Manhole		1200
S2.003	21.369	21.1	S3054	30.545	29.152	1.168	Open Manhole		1200
S2.004	36.334	29.2	S3055	29.217	27.906	1.086	Open Manhole		1200
S2.005	13.620	31.2	S3056	28.782	27.470	1.087	Open Manhole		1200
S2.006	14.675	6.3	S3004	28.294	25.147	2.922	Open Manhole		1500
S1.004	14.479	499.3	S3005	28.322	24.818	2.979	Open Manhole		1500
S1.005	45.757	492.0	S3006	27.532	24.725	2.282	Open Manhole		1500
S1.006	10.237	12.1	S3007	27.348	23.882	2.941	Open Manhole		1500
S3.000	53.557	81.3	S3061	26.141	24.596	1.320	Open Manhole		1350
S3.001	41.576	197.0	S3062	26.114	24.235	1.504	Open Manhole		1350
S3.002	14.948	318.0	S3063	26.410	24.188	1.847	Open Manhole		1350
S3.003	36.706	322.0	S3064	27.500	24.074	3.051	Open Manhole		1350
S3.004	12.697	309.7	S3007	27.348	24.033	2.940	Open Manhole		1500
S1.007	59.337	412.1	S3008	26.600	23.589	2.336	Open Manhole		1800
S4.000	48.639	162.1	S3072	25.325	24.293	0.807	Open Manhole		1200
S4.001	9.863	246.6	S3073	25.456	24.178	0.978	Open Manhole		1350
S4.002	31.323	326.3	S3074	25.586	24.007	1.204	Open Manhole		1350
S4.003	38.232	324.0	S3008	26.600	23.889	2.336	Open Manhole		1800
S1.008	12.810	492.7	S3009	26.345	23.488	2.107	Open Manhole		1800
S1.009	9.391	494.3	S3010	26.150	23.469	1.931	Open Manhole		1800
S1.010	64.152	61.9	S3011	24.845	22.433	1.662	Open Manhole		1800

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.011	o	750	S3011	24.845	22.433	1.662	Open Manhole		1800
S5.000	o	150	S3080	25.677	24.355	1.172	Open Manhole		1200
S5.001	o	300	S3081	25.276	23.827	1.149	Open Manhole		1200
S1.012	o	900	S3012	24.078	22.113	1.065	Open Manhole		1800
S1.013	o	900	S3013	23.942	22.060	0.982	Open Manhole		1800
S1.014	o	900	S3014	23.833	22.029	0.904	Open Manhole		1800
S6.000	o	225	S3090	31.555	29.800	1.530	Open Manhole		1200
S6.001	o	225	S3091	29.895	28.140	1.530	Open Manhole		1200
S6.002	o	225	S3092	29.250	27.500	1.525	Open Manhole		1200
S7.000	o	225	S3110	30.720	28.985	1.510	Open Manhole		1200
S7.001	o	300	S3111	29.740	27.945	1.495	Open Manhole		1200
S7.002	o	375	S3112	29.410	27.545	1.490	Open Manhole		1350
S7.003	o	375	S3113	29.250	27.395	1.480	Open Manhole		1350
S7.004	o	375	S3114	29.025	27.165	1.485	Open Manhole		1350
S6.003	o	375	S3093	28.650	26.770	1.505	Open Manhole		1350
S6.004	o	375	S3094	28.150	26.280	1.495	Open Manhole		1350
S8.000	o	150	S3120	26.200	23.978	2.072	Open Manhole		1200
S8.001	o	225	S3121	26.500	23.628	2.647	Open Manhole		1200
S8.002	o	300	S3122	26.440	23.376	2.764	Open Manhole		1200
S6.005	o	600	S3095	26.160	22.983	2.577	Open Manhole		1500
S6.006	o	600	S3096	24.555	22.919	1.036	Open Manhole		1500
S6.007	o	600	S3097	24.220	22.386	1.234	Open Manhole		1500
S6.008	o	750	S3098	23.845	22.212	0.883	Open Manhole		1800
S6.009	o	900	S3099	23.675	22.002	0.773	Open Manhole		1800
S6.010	o	900	S3100	23.600	21.995	0.705	Open Manhole		1800
S1.015	o	900	S3015	23.565	21.985	0.680	Open Manhole		1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.011	10.287	60.5	S3012	24.078	22.263	1.065	Open Manhole		1800
S5.000	24.808	65.6	S3081	25.276	23.977	1.149	Open Manhole		1200
S5.001	73.068	65.6	S3012	24.078	22.713	1.065	Open Manhole		1800
S1.012	26.687	503.5	S3013	23.942	22.060	0.982	Open Manhole		1800
S1.013	15.378	496.1	S3014	23.833	22.029	0.904	Open Manhole		1800
S1.014	16.427	1173.4	S3015	23.565	22.015	0.650	Open Manhole		1800
S6.000	33.176	20.0	S3091	29.895	28.140	1.530	Open Manhole		1200
S6.001	15.082	23.6	S3092	29.250	27.500	1.525	Open Manhole		1200
S6.002	30.161	52.0	S3093	28.650	26.920	1.505	Open Manhole		1350
S7.000	41.909	43.4	S3111	29.740	28.020	1.495	Open Manhole		1200
S7.001	32.312	99.4	S3112	29.410	27.620	1.490	Open Manhole		1350
S7.002	15.058	100.4	S3113	29.250	27.395	1.480	Open Manhole		1350
S7.003	23.125	100.5	S3114	29.025	27.165	1.485	Open Manhole		1350
S7.004	35.652	90.3	S3093	28.650	26.770	1.505	Open Manhole		1350
S6.003	24.959	50.9	S3094	28.150	26.280	1.495	Open Manhole		1350
S6.004	43.011	14.0	S3095	26.160	23.208	2.577	Open Manhole		1500
S8.000	27.733	100.8	S3121	26.500	23.703	2.647	Open Manhole		1200
S8.001	26.245	148.3	S3122	26.440	23.451	2.764	Open Manhole		1200
S8.002	22.377	240.6	S3095	26.160	23.283	2.577	Open Manhole		1500
S6.005	31.872	498.0	S3096	24.555	22.919	1.036	Open Manhole		1500
S6.006	8.022	15.1	S3097	24.220	22.386	1.234	Open Manhole		1500
S6.007	12.185	507.7	S3098	23.845	22.362	0.883	Open Manhole		1800
S6.008	9.943	216.2	S3099	23.675	22.166	0.759	Open Manhole		1800
S6.009	7.177	1025.3	S3100	23.600	21.995	0.705	Open Manhole		1800
S6.010	9.883	988.3	S3015	23.565	21.985	0.680	Open Manhole		1800
S1.015	11.514	959.5	S3016	23.660	21.973	0.787	Open Manhole		1800

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.016	o	900	S3016	23.660	21.973	0.787	Open Manhole	1800
S1.017	o	900	S3017	23.840	21.958	0.982	Open Manhole	1800
S9.000	o	225	S3130	26.352	24.927	1.200	Open Manhole	1200
S9.001	o	300	S3131	25.763	24.262	1.201	Open Manhole	1200
S9.002	o	300	S3132	25.576	24.013	1.263	Open Manhole	1200
S9.003	o	300	S3133	25.493	23.939	1.254	Open Manhole	1200
S10.000	o	225	S3140	25.428	24.003	1.200	Open Manhole	1200
S9.004	o	300	S3134	25.210	23.710	1.200	Open Manhole	1200
S9.005	o	375	S3135	24.964	23.388	1.201	Open Manhole	1350
S9.006	o	450	S3136	24.852	23.202	1.200	Open Manhole	1350
S9.007	o	450	S3137	24.696	22.970	1.276	Open Manhole	1350
S9.008	o	450	S3138	24.374	22.648	1.276	Open Manhole	1350
S9.009	o	450	S3139	24.123	22.444	1.229	Open Manhole	1350
S1.018	o	900	S3018	23.970	21.945	1.125	Open Manhole	1800
S1.019	o	900	S3019	23.988	21.931	1.157	Open Manhole	1800
S1.020	o	525	S3020-BASIN D	23.500	21.810	1.165	Open Manhole	1800
S1.021	o	525	S3021-CON	23.971	21.679	1.767	Open Manhole	1500
S1.022	o	525	S3022	24.693	21.581	2.587	Open Manhole	1500
S1.023	o	525	S3023	25.302	21.432	3.345	Open Manhole	1500
S1.024	o	525	S3024	25.496	21.269	3.702	Open Manhole	1500
S1.025	o	525	S3025	25.233	21.106	3.602	Open Manhole	1500
S1.026	o	525	S3026	24.970	21.047	3.398	Open Manhole	1500
S1.027	o	525	S3027	24.235	20.983	2.727	Open Manhole	1500
S1.028	o	525	S3028	24.282	20.932	2.825	Open Manhole	1500
S11.000	o	450	S3150	27.983	26.212	1.321	Open Manhole	1350
S11.001	o	450	S3151	27.335	25.590	1.295	Open Manhole	1350
S11.002	o	450	S3152	26.707	24.757	1.500	Open Manhole	1350
S11.003	o	450	S3153	26.514	24.564	1.500	Open Manhole	1350
S11.004	o	450	S3154	26.322	24.372	1.500	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.016	14.009	933.9	S3017	23.840	21.958	0.982	Open Manhole	1800
S1.017	12.204	938.8	S3018	23.970	21.945	1.125	Open Manhole	1800
S9.000	40.635	68.9	S3131	25.763	24.337	1.201	Open Manhole	1200
S9.001	38.986	156.6	S3132	25.576	24.013	1.263	Open Manhole	1200
S9.002	8.268	111.7	S3133	25.493	23.939	1.254	Open Manhole	1200
S9.003	23.600	103.1	S3134	25.210	23.710	1.200	Open Manhole	1200
S10.000	16.795	77.0	S3134	25.210	23.785	1.200	Open Manhole	1200
S9.004	19.671	79.6	S3135	24.964	23.463	1.201	Open Manhole	1350
S9.005	9.366	84.4	S3136	24.852	23.277	1.200	Open Manhole	1350
S9.006	12.815	55.2	S3137	24.696	22.970	1.276	Open Manhole	1350
S9.007	24.711	76.7	S3138	24.374	22.648	1.276	Open Manhole	1350
S9.008	19.546	95.8	S3139	24.123	22.444	1.229	Open Manhole	1350
S9.009	12.446	282.9	S3018	23.970	22.400	1.120	Open Manhole	1800
S1.018	5.521	394.4	S3019	23.988	21.931	1.157	Open Manhole	1800
S1.019	12.487#	594.6	S3020-BASIN D	23.500	21.910	0.690	Open Manhole	1800
S1.020	17.627	134.6	S3021-CON	23.971	21.679	1.767	Open Manhole	1500
S1.021	37.615	383.8	S3022	24.693	21.581	2.587	Open Manhole	1500
S1.022	66.231	444.5	S3023	25.302	21.432	3.345	Open Manhole	1500
S1.023	72.535	445.0	S3024	25.496	21.269	3.702	Open Manhole	1500
S1.024	72.535	445.0	S3025	25.233	21.106	3.602	Open Manhole	1500
S1.025	26.289	445.6	S3026	24.970	21.047	3.398	Open Manhole	1500
S1.026	28.667	447.9	S3027	24.235	20.983	2.727	Open Manhole	1500
S1.027	22.780	446.7	S3028	24.282	20.932	2.825	Open Manhole	1500
S1.028	14.238#	444.9	S3029-Basin C	22.300	20.900	0.875	Open Manhole	2700
S11.000	40.107	64.5	S3151	27.335	25.590	1.295	Open Manhole	1350
S11.001	32.411	38.9	S3152	26.707	24.757	1.500	Open Manhole	1350
S11.002	10.303	53.4	S3153	26.514	24.564	1.500	Open Manhole	1350
S11.003	10.303	53.7	S3154	26.322	24.372	1.500	Open Manhole	1350
S11.004	23.248	41.3	S3155	25.834	23.809	1.575	Open Manhole	1500

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S12.000	o	150	S3180	27.434	25.784	1.500	Open Manhole		1200
S13.000	o	225	S3190	27.405	25.755	1.425	Open Manhole		1200
S12.001	o	375	S3181	27.355	25.365	1.615	Open Manhole		1350
S12.002	o	375	S3182	26.944	25.158	1.411	Open Manhole		1350
S12.003	o	375	S3183	26.586	24.636	1.575	Open Manhole		1350
S12.004	o	375	S3184	26.355	24.405	1.575	Open Manhole		1350
S11.005	o	600	S3155	25.834	23.659	1.575	Open Manhole		1500
S11.006	o	600	S3156	26.132	23.588	1.944	Open Manhole		1500
S14.000	o	300	S3200	27.248	25.448	1.500	Open Manhole		1200
S14.001	o	300	S3201	26.960	25.160	1.500	Open Manhole		1200
S14.002	o	300	S3202	26.657	24.422	1.935	Open Manhole		1200
S15.000	o	225	SH316	26.150	24.425	1.500	Open Manhole		1200
S11.007	o	600	S3157	26.356	23.527	2.229	Open Manhole		1500
S11.008	o	600	S3158	25.760	23.496	1.664	Open Manhole		1500
S11.009	o	600	S3159	25.205	23.370	1.235	Open Manhole		1500
S16.000	o	150	S3210	26.390	24.815	1.425	Open Manhole		1200
S17.000	o	150	S3220	26.231	24.656	1.425	Open Manhole		1200
S16.001	o	225	S3211	26.202	24.168	1.809	Open Manhole		1200
S16.002	o	225	S3212	26.040	23.966	1.849	Open Manhole		1200
S16.003	o	225	S3213	25.813	23.774	1.814	Open Manhole		1200
S11.010	o	600	S3160	25.672	23.337	1.735	Open Manhole		1500
S11.011	o	600	S3161	25.057	23.257	1.200	Open Manhole		1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S12.000	7.032	36.2	S3181	27.355	25.590	1.615	Open Manhole		1350
S13.000	9.073	37.8	S3181	27.355	25.515	1.615	Open Manhole		1350
S12.001	19.266	93.1	S3182	26.944	25.158	1.411	Open Manhole		1350
S12.002	17.962	34.4	S3183	26.586	24.636	1.575	Open Manhole		1350
S12.003	11.800	51.3	S3184	26.355	24.406	1.574	Open Manhole		1350
S12.004	28.031	53.8	S3155	25.834	23.884	1.575	Open Manhole		1500
S11.005	39.725	559.5	S3156	26.132	23.588	1.944	Open Manhole		1500
S11.006	8.588	140.8	S3157	26.356	23.527	2.229	Open Manhole		1500
S14.000	27.512	95.5	S3201	26.960	25.160	1.500	Open Manhole		1200
S14.001	24.054	32.6	S3202	26.657	24.422	1.935	Open Manhole		1200
S14.002	23.286	39.1	S3157	26.356	23.827	2.229	Open Manhole		1500
S15.000	12.458	23.8	S3157	26.356	23.902	2.229	Open Manhole		1500
S11.007	12.441	401.3	S3158	25.760	23.496	1.664	Open Manhole		1500
S11.008	50.277	399.0	S3159	25.205	23.370	1.235	Open Manhole		1500
S11.009	16.281	493.4	S3160	25.672	23.337	1.735	Open Manhole		1500
S16.000	6.404	11.2	S3211	26.202	24.243	1.809	Open Manhole		1200
S17.000	9.571	23.2	S3211	26.202	24.243	1.809	Open Manhole		1200
S16.001	17.473	86.5	S3212	26.040	23.966	1.849	Open Manhole		1200
S16.002	16.645	86.7	S3213	25.813	23.774	1.814	Open Manhole		1200
S16.003	10.486	169.1	S3160	25.672	23.712	1.735	Open Manhole		1500
S11.010	31.952	399.4	S3161	25.057	23.257	1.200	Open Manhole		1500
S11.011	12.436	133.7	S3162	24.964	23.164	1.200	Open Manhole		1500

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S18.000	o	225	SH323	25.250	23.759	1.266	Open Manhole		1200
S18.001	o	225	S3230	25.150	23.680	1.245	Open Manhole		1200
S18.002	o	225	S3231	24.920	23.580	1.115	Open Manhole		1200
S11.012	o	600	S3162	24.964	23.164	1.200	Open Manhole		1500
S11.013	o	600	S3163	24.890	23.090	1.200	Open Manhole		1500
S11.014	3 ¥=/	1000	S3164	24.022	22.971	0.901	Junction		
S19.000	o	300	S3240	24.640	23.140	1.200	Open Manhole		1200
S20.000	o	300	S3250	24.628	23.128	1.200	Open Manhole		1200
S19.001	o	300	S3241	24.597	23.097	1.200	Open Manhole		1200
S19.002	o	300	S3242	24.000	22.994	0.706	Open Manhole		1200
S11.015	3 ¥=/	1000	S3165	23.922	22.828	0.944	Junction		
S11.016	3 ¥=/	1000	S3166	23.652	22.566	0.936	Junction		
S21.000	o	225	S3260	24.136	22.711	1.200	Open Manhole		1200
S21.001	o	225	S3261	24.043	22.618	1.200	Open Manhole		1200
S11.017	3 ¥=/	1000	S3167	23.459	22.451	0.858	Junction		
S22.000	o	300	S3270	24.058	22.558	1.200	Open Manhole		1200
S22.001	o	300	S3271	23.965	22.465	1.200	Open Manhole		1200
S22.002	o	300	S3272	23.872	22.372	1.200	Open Manhole		1200
S11.018	3 ¥=/	1000	S3168	23.365	22.225	0.990	Junction		
S11.019	3 ¥=/	1000	S3169	23.316	22.204	0.962	Junction		
S11.020	3 ¥=/	1000	S3170	22.996	21.978	0.868	Junction		
S23.000	o	225	S3280	23.484	22.059	1.200	Open Manhole		1200
S23.001	o	225	S3281	23.269	21.844	1.200	Open Manhole		1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S18.000	10.976	138.9	S3230	25.150	23.680	1.245	Open Manhole		1200
S18.001	17.571	175.7	S3231	24.920	23.580	1.115	Open Manhole		1200
S18.002	7.268	177.3	S3162	24.964	23.539	1.200	Open Manhole		1500
S11.012	43.134	582.9	S3163	24.890	23.090	1.200	Open Manhole		1500
S11.013	10.732	564.8	S3164	24.022	23.071	0.351	Junction		
S11.014	9.000	62.9	S3165	23.922	22.828	0.944	Junction		
S19.000	10.468	243.4	S3241	24.597	23.097	1.200	Open Manhole		1200
S20.000	7.532	243.0	S3241	24.597	23.097	1.200	Open Manhole		1200
S19.001	31.106	302.0	S3242	24.000	22.994	0.706	Open Manhole		1200
S19.002	10.395	157.5	S3165	23.922	22.928	0.694	Junction		
S11.015	22.426	85.6	S3166	23.652	22.566	0.936	Junction		
S11.016	12.703	110.5	S3167	23.459	22.451	0.858	Junction		
S21.000	15.822	170.1	S3261	24.043	22.618	1.200	Open Manhole		1200
S21.001	11.323	169.0	S3167	23.459	22.551	0.683	Junction		
S11.017	22.290	98.6	S3168	23.365	22.225	0.990	Junction		
S22.000	22.392	240.8	S3271	23.965	22.465	1.200	Open Manhole		1200
S22.001	22.392	240.8	S3272	23.872	22.372	1.200	Open Manhole		1200
S22.002	11.234	239.0	S3168	23.365	22.325	0.740	Junction		
S11.018	1.710	81.4	S3169	23.316	22.204	0.962	Junction		
S11.019	20.296	89.8	S3170	22.996	21.978	0.868	Junction		
S11.020	28.551	99.1	S3171	22.739	21.690	0.899	Junction		
S23.000	36.485	169.7	S3281	23.269	21.844	1.200	Open Manhole		1200
S23.001	9.144	169.3	S3171	22.739	21.790	0.724	Junction		

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S11.021	3 ¥=/	1000	S3171	22.739	21.690	0.899	Junction	
S11.022	o	525	S3172	22.621	21.466	0.630	Junction	
S11.023	3 ¥=/	1000	S3173	22.633	21.439	1.044	Junction	
S24.000	o	300	S3290	27.878	26.162	1.416	Open Manhole	1200
S24.001	o	300	S3291	27.725	25.998	1.427	Open Manhole	1200
S24.002	o	375	S3292	27.292	25.263	1.654	Open Manhole	1350
S24.003	o	375	S3293	27.136	25.146	1.615	Open Manhole	1350
S24.004	o	375	S3294	26.998	24.969	1.654	Open Manhole	1350
S24.005	o	375	S3295	26.633	24.604	1.654	Open Manhole	1350
S24.006	o	450	S3296	26.623	24.420	1.753	Open Manhole	1800
S24.007	o	450	S3297	26.942	24.338	2.154	Open Manhole	1350
S24.008	o	450	S3298	27.141	24.303	2.388	Open Manhole	1350
S25.000	o	225	S3320	27.291	25.569	1.497	Open Manhole	1200
S24.009	o	450	S3299	27.239	24.276	2.513	Open Manhole	1350
S24.010	o	450	S3300	26.728	24.172	2.106	Open Manhole	1350
S26.000	o	300	S3330	25.706	24.143	1.263	Open Manhole	1200
S24.011	o	525	S3301	25.786	23.406	1.855	Open Manhole	1500
S24.012	o	525	S3302	25.425	23.346	1.554	Open Manhole	1500
S24.013	o	525	S3303	24.980	23.271	1.184	Open Manhole	1500
S24.014	o	525	S3304	24.943	23.218	1.200	Open Manhole	1500
S24.015	o	525	S3305	24.865	23.140	1.200	Open Manhole	1500
S24.016	3 ¥=/	1000	S3306	24.643	23.008	1.485	Open Manhole	1200
S24.017	3 ¥=/	1000	S3307	24.775	22.776	1.849	Junction	
S24.018	3 ¥=/	1000	S3308	24.194	22.448	1.596	Junction	
S24.019	3 ¥=/	1000	S3309	24.085	22.366	1.569	Junction	
S27.000	o	300	S3340	24.183	22.683	1.200	Open Manhole	1200
S27.001	o	300	S3341	24.142	22.642	1.200	Open Manhole	1200
S27.002	o	300	S3342	23.927	22.427	1.200	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S11.021	30.393	135.7	S3172	22.621	21.466	1.005	Junction	
S11.022	4.573	169.4	S3173	22.633	21.439	0.669	Junction	
S11.023	5.237#	134.3	S3029-Basin C	22.300	21.400	0.750	Open Manhole	2700
S24.000	14.348	87.5	S3291	27.725	25.998	1.427	Open Manhole	1200
S24.001	38.017	57.6	S3292	27.292	25.338	1.654	Open Manhole	1350
S24.002	16.044	137.1	S3293	27.136	25.146	1.615	Open Manhole	1350
S24.003	15.071	85.1	S3294	26.998	24.969	1.654	Open Manhole	1350
S24.004	34.848	95.2	S3295	26.633	24.603	1.655	Open Manhole	1350
S24.005	34.848	322.7	S3296	26.623	24.496	1.752	Open Manhole	1800
S24.006	16.578	202.2	S3297	26.942	24.338	2.154	Open Manhole	1350
S24.007	14.379	399.4	S3298	27.141	24.302	2.389	Open Manhole	1350
S24.008	10.673	395.3	S3299	27.239	24.276	2.513	Open Manhole	1350
S25.000	8.564	8.0	S3299	27.239	24.501	2.513	Open Manhole	1350
S24.009	41.724	401.2	S3300	26.728	24.172	2.106	Open Manhole	1350
S24.010	81.518	118.0	S3301	25.786	23.481	1.855	Open Manhole	1500
S26.000	13.781	26.9	S3301	25.786	23.631	1.855	Open Manhole	1500
S24.011	29.760	496.0	S3302	25.425	23.346	1.554	Open Manhole	1500
S24.012	37.653	502.0	S3303	24.980	23.271	1.184	Open Manhole	1500
S24.013	26.529	500.5	S3304	24.943	23.218	1.200	Open Manhole	1500
S24.014	38.681	495.9	S3305	24.865	23.140	1.200	Open Manhole	1500
S24.015	15.856	495.5	S3306	24.643	23.108	1.010	Open Manhole	1200
S24.016	15.562	67.1	S3307	24.775	22.776	1.849	Junction	
S24.017	26.215	79.9	S3308	24.194	22.448	1.596	Junction	
S24.018	7.830	95.5	S3309	24.085	22.366	1.569	Junction	
S24.019	7.038	69.7	S3310	23.831	22.265	1.416	Junction	
S27.000	8.972	218.8	S3341	24.142	22.642	1.200	Open Manhole	1200
S27.001	47.357	220.3	S3342	23.927	22.427	1.200	Open Manhole	1200
S27.002	13.843	219.7	S3310	23.831	22.364	1.167	Junction	

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S24.020	3 ¥=/	1000	S3310	23.831	22.264	1.417	Junction	
S24.021	3 ¥=/	1000	S3311	23.455	22.147	1.158	Junction	
S24.022	o	450	S3312	23.461	21.995	1.016	Junction	
S24.023	3 ¥=/	1000	S3313	23.546	21.983	1.413	Junction	
S1.029	o	450	S3029-Basin C	22.300	20.550	1.300	Open Manhole	2700
S1.030	o	450	S3030	22.439	20.287	1.702	Open Manhole	1350
S1.031	o	450	S3031	22.646	19.784	2.412	Open Manhole	1350
S28.000	o	525	S3350	24.098	22.086	1.487	Open Manhole	1500
S28.001	o	525	S3351	23.359	21.468	1.366	Open Manhole	1500
S28.002	o	525	S3352	22.742	21.095	1.122	Open Manhole	1500
S28.003	o	900	S3353	22.519	20.347	1.272	Open Manhole	1800
S28.004	o	900	S3354	22.616	20.227	1.489	Open Manhole	1800
S29.000	o	300	S3370	23.318	21.135	1.883	Open Manhole	1200
S29.001	o	300	S3371	23.170	21.071	1.799	Open Manhole	1200
S29.002	o	300	S3372	22.964	21.001	1.663	Open Manhole	1200
S29.003	o	300	S3373	22.764	20.949	1.515	Open Manhole	1200
S29.004	o	300	S3374	22.667	20.917	1.450	Open Manhole	1200
S30.000	o	150	S3380	22.437	21.087	1.200	Open Manhole	1200
S28.005	o	1200	S3355	22.561	19.899	1.462	Open Manhole	2100
S28.006	o	1200	S3356	22.401	19.850	1.351	Open Manhole	2100
S28.007	o	1200	S3357	22.379	19.800	1.379	Open Manhole	2100
S28.008	o	1200	S3358	22.415	19.784	1.431	Open Manhole	2100
S31.000	o	225	S3390	23.337	21.638	1.474	Open Manhole	1200
S31.001	o	225	S3391	23.137	21.269	1.643	Open Manhole	1200
S31.002	o	225	S3392	22.984	21.194	1.565	Open Manhole	1200
S31.003	o	225	S3393	22.666	21.058	1.383	Open Manhole	1200
S31.004	o	225	S3394	22.568	21.015	1.328	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S24.020	8.133	73.9	S3311	23.455	22.154	1.151	Junction	
S24.021	4.890	32.2	S3312	23.461	21.995	1.316	Junction	
S24.022	4.890	407.5	S3313	23.546	21.983	1.113	Junction	
S24.023	19.341#	100.2	S3029-Basin C	22.300	21.790	0.360	Open Manhole	2700
S1.029	7.696	29.3	S3030	22.439	20.287	1.702	Open Manhole	1350
S1.030	14.529	28.9	S3031	22.646	19.784	2.412	Open Manhole	1350
S1.031	24.965	316.0	S3032	22.286	19.705	2.131	Open Manhole	3000
S28.000	87.610	141.8	S3351	23.359	21.468	1.366	Open Manhole	1500
S28.001	90.939	243.8	S3352	22.742	21.095	1.122	Open Manhole	1500
S28.002	17.829	47.8	S3353	22.519	20.722	1.272	Open Manhole	1800
S28.003	21.428	178.6	S3354	22.616	20.227	1.489	Open Manhole	1800
S28.004	11.970	427.5	S3355	22.561	20.199	1.462	Open Manhole	2100
S29.000	19.137	299.0	S3371	23.170	21.071	1.799	Open Manhole	1200
S29.001	17.051	243.6	S3372	22.964	21.001	1.663	Open Manhole	1200
S29.002	12.702	244.3	S3373	22.764	20.949	1.515	Open Manhole	1200
S29.003	7.714	241.1	S3374	22.667	20.917	1.450	Open Manhole	1200
S29.004	8.191	69.4	S3355	22.561	20.799	1.462	Open Manhole	2100
S30.000	13.965	101.2	S3355	22.561	20.949	1.462	Open Manhole	2100
S28.005	21.863	437.3	S3356	22.401	19.849	1.352	Open Manhole	2100
S28.006	29.864	597.3	S3357	22.379	19.800	1.379	Open Manhole	2100
S28.007	8.032	502.0	S3358	22.415	19.784	1.431	Open Manhole	2100
S28.008	10.831	637.1	S3359	22.484	19.767	1.517	Open Manhole	2100
S31.000	29.691	80.5	S3391	23.137	21.269	1.643	Open Manhole	1200
S31.001	12.611	168.1	S3392	22.984	21.194	1.565	Open Manhole	1200
S31.002	22.843	168.0	S3393	22.666	21.058	1.383	Open Manhole	1200
S31.003	7.180	167.0	S3394	22.568	21.015	1.328	Open Manhole	1200
S31.004	8.808	169.4	S3359	22.484	20.963	1.296	Open Manhole	2100

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PIPELINE SCHEDULES for Catch C+D

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S28.009	o	1200	S3359	22.484	19.767	1.517	Open Manhole	2100
S28.010	o	1200	S3360	22.471	19.747	1.524	Open Manhole	2100
S1.032	o	1200	S3032	22.286	19.705	1.381	Open Manhole	3000
S1.033	o	450	S3033-CON	22.317	19.664	2.203	Open Manhole	2700
S1.034	o	450	S3034	22.361	19.542	2.369	Open Manhole	1350
S1.035	o	450	S3035	22.443	19.494	2.499	Open Manhole	1350
S1.036	o	450	S3036	21.748	19.403	1.895	Open Manhole	1350
S1.037	o	450	S3037	21.314	19.228	1.636	Open Manhole	1350
S1.038	o	450	S3038	20.779	19.066	1.263	Open Manhole	1350
S1.039	o	450	S3039	20.378	19.023	0.905	Open Manhole	1350
S1.040	3 ¥=/	1000	S3040-HW	20.192	19.003	1.039	Junction	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S28.009	8.968	448.4	S3360	22.471	19.747	1.524	Open Manhole	2100
S28.010	19.865	473.0	S3032	22.286	19.705	1.381	Open Manhole	3000
S1.032	26.753	652.5	S3033-CON	22.317	19.664	1.453	Open Manhole	2700
S1.033	40.649	330.5	S3034	22.361	19.541	2.370	Open Manhole	1350
S1.034	20.060	417.9	S3035	22.443	19.494	2.499	Open Manhole	1350
S1.035	36.421	404.7	S3036	21.748	19.404	1.894	Open Manhole	1350
S1.036	70.745	404.3	S3037	21.314	19.228	1.636	Open Manhole	1350
S1.037	65.150	402.2	S3038	20.779	19.066	1.263	Open Manhole	1350
S1.038	17.227	400.6	S3039	20.378	19.023	0.905	Open Manhole	1350
S1.039	8.038	401.9	S3040-HW	20.192	19.003	0.739	Junction	
S1.040	15.185	353.1	SStream	19.460	18.960	0.350	Open Manhole	0

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.007	0.007	0.007
	User	-	100	0.084	0.084	0.091
	User	-	100	0.005	0.005	0.096
1.001	User	-	100	0.061	0.061	0.061
	User	-	100	0.005	0.005	0.066
1.002	User	-	100	0.118	0.118	0.118
	User	-	100	0.003	0.003	0.120
	User	-	100	0.001	0.001	0.122
	User	-	100	0.002	0.002	0.123
	User	-	100	0.001	0.001	0.125
	User	-	100	0.001	0.001	0.126
1.003	User	-	100	0.009	0.009	0.009
2.000	User	-	100	0.037	0.037	0.037
	User	-	100	0.040	0.040	0.078
	User	-	100	0.017	0.017	0.095
	User	-	100	0.004	0.004	0.099
	User	-	100	0.002	0.002	0.101
	User	-	100	0.002	0.002	0.103
	User	-	100	0.002	0.002	0.105
2.001	User	-	100	0.049	0.049	0.049
	User	-	100	0.006	0.006	0.055
	User	-	100	0.005	0.005	0.060
2.002	User	-	100	0.018	0.018	0.018
	User	-	100	0.006	0.006	0.024
2.003	User	-	100	0.023	0.023	0.023
	User	-	100	0.008	0.008	0.031
	User	-	100	0.008	0.008	0.039
2.004	User	-	100	0.043	0.043	0.043
2.005	User	-	100	0.018	0.018	0.018
2.006	User	-	100	0.009	0.009	0.009
1.004	User	-	100	0.022	0.022	0.022
1.005	User	-	100	0.138	0.138	0.138
1.006	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
3.000	User	-	100	0.132	0.132	0.132
	User	-	100	0.002	0.002	0.133
	User	-	100	0.003	0.003	0.136
	User	-	100	0.002	0.002	0.138
	User	-	100	0.002	0.002	0.141
	User	-	100	0.001	0.001	0.141
	User	-	100	0.001	0.001	0.142
	User	-	100	0.001	0.001	0.143
	User	-	100	0.000	0.000	0.144
	User	-	100	0.003	0.003	0.147
3.001	User	-	100	0.056	0.056	0.056
	User	-	100	0.006	0.006	0.062
	User	-	100	0.007	0.007	0.070
	User	-	100	0.007	0.007	0.077
	User	-	100	0.005	0.005	0.082
3.002	User	-	100	0.043	0.043	0.043
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.047
3.003	User	-	100	0.059	0.059	0.059
	User	-	100	0.006	0.006	0.065
	User	-	100	0.005	0.005	0.070
3.004	User	-	100	0.009	0.009	0.009
1.007	User	-	100	0.163	0.163	0.163
4.000	-	-	100	0.168	0.168	0.168
4.001	-	-	100	0.072	0.072	0.072
4.002	User	-	100	0.043	0.043	0.043
	User	-	100	0.029	0.029	0.072
4.003	User	-	100	0.052	0.052	0.052
	User	-	100	0.010	0.010	0.062
	User	-	100	0.003	0.003	0.065
1.008	User	-	100	0.016	0.016	0.016
1.009	User	-	100	0.009	0.009	0.009
	User	-	100	0.009	0.009	0.018
1.010	User	-	100	0.017	0.017	0.017
	User	-	100	0.113	0.113	0.130
1.011	User	-	100	0.074	0.074	0.074
5.000	User	-	100	0.059	0.059	0.059
	User	-	100	0.002	0.002	0.061
5.001	User	-	100	0.189	0.189	0.189
1.012	User	-	100	0.040	0.040	0.040
1.013	User	-	100	0.030	0.030	0.030
1.014	User	-	100	0.012	0.012	0.012
6.000	User	-	100	0.072	0.072	0.072

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.052	0.052	0.123
	User	-	100	0.003	0.003	0.127
	User	-	100	0.004	0.004	0.131
	User	-	100	0.006	0.006	0.136
6.001	User	-	100	0.022	0.022	0.022
	User	-	100	0.002	0.002	0.024
	User	-	100	0.003	0.003	0.028
6.002	User	-	100	0.033	0.033	0.033
	User	-	100	0.006	0.006	0.039
7.000	User	-	100	0.136	0.136	0.136
7.001	User	-	100	0.105	0.105	0.105
7.002	User	-	100	0.032	0.032	0.032
7.003	User	-	100	0.068	0.068	0.068
	User	-	100	0.006	0.006	0.074
7.004	User	-	100	0.044	0.044	0.044
6.003	User	-	100	0.029	0.029	0.029
	User	-	100	0.007	0.007	0.036
6.004	User	-	100	0.085	0.085	0.085
8.000	User	-	100	0.000	0.000	0.000
	User	-	100	0.035	0.035	0.035
	User	-	100	0.013	0.013	0.048
8.001	User	-	100	0.082	0.082	0.082
8.002	User	-	100	0.028	0.028	0.028
6.005	User	-	100	0.054	0.054	0.054
6.006	User	-	100	0.009	0.009	0.009
6.007	User	-	100	0.012	0.012	0.012
6.008	User	-	100	0.012	0.012	0.012
6.009	User	-	100	0.051	0.051	0.051
6.010	-	-	100	0.000	0.000	0.000
1.015	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
	User	-	100	0.008	0.008	0.025
1.016	-	-	100	0.000	0.000	0.000
1.017	-	-	100	0.000	0.000	0.000
9.000	User	-	100	0.080	0.080	0.080
	User	-	100	0.005	0.005	0.085
9.001	User	-	100	0.033	0.033	0.033
	User	-	100	0.003	0.003	0.036
	User	-	100	0.057	0.057	0.093
	User	-	100	0.007	0.007	0.100
9.002	User	-	100	0.021	0.021	0.021
	User	-	100	0.006	0.006	0.027
9.003	User	-	100	0.047	0.047	0.047
10.000	User	-	100	0.058	0.058	0.058
	User	-	100	0.017	0.017	0.075
9.004	User	-	100	0.033	0.033	0.033
9.005	User	-	100	0.039	0.039	0.039
9.006	-	-	100	0.000	0.000	0.000
9.007	User	-	100	0.045	0.045	0.045
9.008	User	-	100	0.039	0.039	0.039
9.009	User	-	100	0.034	0.034	0.034
1.018	User	-	100	0.038	0.038	0.038
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000
1.023	-	-	100	0.000	0.000	0.000
1.024	-	-	100	0.000	0.000	0.000
1.025	-	-	100	0.000	0.000	0.000
1.026	-	-	100	0.000	0.000	0.000
1.027	-	-	100	0.000	0.000	0.000
1.028	-	-	100	0.000	0.000	0.000
11.000	-	-	100	0.035	0.035	0.035
11.001	-	-	100	0.076	0.076	0.076
11.002	-	-	100	0.058	0.058	0.058
11.003	-	-	100	0.009	0.009	0.009
11.004	-	-	100	0.016	0.016	0.016
12.000	-	-	100	0.048	0.048	0.048
13.000	-	-	100	0.049	0.049	0.049
12.001	-	-	100	0.040	0.040	0.040
12.002	-	-	100	0.053	0.053	0.053
12.003	-	-	100	0.041	0.041	0.041
12.004	-	-	100	0.032	0.032	0.032
11.005	-	-	100	0.064	0.064	0.064
11.006	-	-	100	0.068	0.068	0.068
14.000	-	-	100	0.065	0.065	0.065
14.001	-	-	100	0.099	0.099	0.099
14.002	-	-	100	0.089	0.089	0.089

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
15.000	-	-	100	0.030	0.030	0.030
11.007	-	-	100	0.110	0.110	0.110
11.008	-	-	100	0.000	0.000	0.000
11.009	-	-	100	0.000	0.000	0.000
16.000	-	-	100	0.043	0.043	0.043
17.000	-	-	100	0.036	0.036	0.036
16.001	-	-	100	0.030	0.030	0.030
16.002	-	-	100	0.028	0.028	0.028
16.003	-	-	100	0.041	0.041	0.041
11.010	-	-	100	0.021	0.021	0.021
11.011	-	-	100	0.052	0.052	0.052
18.000	-	-	100	0.000	0.000	0.000
18.001	User	-	100	0.112	0.112	0.112
18.002	-	-	100	0.028	0.028	0.028
11.012	-	-	100	0.010	0.010	0.010
11.013	-	-	100	0.069	0.069	0.069
11.014	-	-	100	0.000	0.000	0.000
19.000	-	-	100	0.038	0.038	0.038
20.000	-	-	100	0.044	0.044	0.044
19.001	-	-	100	0.032	0.032	0.032
19.002	User	-	100	0.026	0.026	0.026
11.015	-	-	100	0.000	0.000	0.000
11.016	-	-	100	0.000	0.000	0.000
21.000	-	-	100	0.017	0.017	0.017
21.001	-	-	100	0.054	0.054	0.054
11.017	-	-	100	0.000	0.000	0.000
22.000	-	-	100	0.026	0.026	0.026
22.001	User	-	100	0.043	0.043	0.043
22.002	-	-	100	0.027	0.027	0.027
11.018	-	-	100	0.000	0.000	0.000
11.019	-	-	100	0.000	0.000	0.000
11.020	-	-	100	0.000	0.000	0.000
23.000	-	-	100	0.019	0.019	0.019
23.001	-	-	100	0.090	0.090	0.090
11.021	-	-	100	0.000	0.000	0.000
11.022	-	-	100	0.000	0.000	0.000
11.023	-	-	100	0.000	0.000	0.000
24.000	-	-	100	0.028	0.028	0.028
24.001	-	-	100	0.013	0.013	0.013
24.002	-	-	100	0.071	0.071	0.071
24.003	-	-	100	0.033	0.033	0.033
24.004	-	-	100	0.047	0.047	0.047
24.005	-	-	100	0.090	0.090	0.090
24.006	-	-	100	0.128	0.128	0.128
24.007	-	-	100	0.037	0.037	0.037
24.008	-	-	100	0.021	0.021	0.021
25.000	-	-	100	0.028	0.028	0.028
24.009	-	-	100	0.038	0.038	0.038
24.010	-	-	100	0.058	0.058	0.058
26.000	-	-	100	0.025	0.025	0.025
24.011	-	-	100	0.253	0.253	0.253
24.012	-	-	100	0.094	0.094	0.094
24.013	-	-	100	0.127	0.127	0.127
24.014	-	-	100	0.054	0.054	0.054
24.015	-	-	100	0.079	0.079	0.079
24.016	-	-	100	0.000	0.000	0.000
24.017	-	-	100	0.000	0.000	0.000
24.018	-	-	100	0.000	0.000	0.000
24.019	-	-	100	0.000	0.000	0.000
27.000	-	-	100	0.008	0.008	0.008
27.001	User	-	100	0.062	0.062	0.062
27.002	-	-	100	0.037	0.037	0.037
24.020	-	-	100	0.000	0.000	0.000
24.021	-	-	100	0.000	0.000	0.000
24.022	-	-	100	0.000	0.000	0.000
24.023	-	-	100	0.000	0.000	0.000
1.029	-	-	100	0.000	0.000	0.000
1.030	-	-	100	0.000	0.000	0.000
1.031	-	-	100	0.000	0.000	0.000
28.000	User	-	50	0.997	0.498	0.498
28.001	User	-	50	1.046	0.523	0.523
28.002	-	-	100	0.000	0.000	0.000
28.003	-	-	100	0.000	0.000	0.000
28.004	-	-	100	0.000	0.000	0.000
29.000	-	-	100	0.117	0.117	0.117
29.001	-	-	100	0.050	0.050	0.050
29.002	-	-	100	0.034	0.034	0.034
29.003	-	-	100	0.009	0.009	0.009

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
29.004	-	-	100	0.046	0.046	0.046
30.000	-	-	100	0.000	0.000	0.000
28.005	-	-	100	0.060	0.060	0.060
28.006	-	-	100	0.043	0.043	0.043
28.007	-	-	100	0.007	0.007	0.007
28.008	-	-	100	0.034	0.034	0.034
31.000	-	-	100	0.053	0.053	0.053
31.001	-	-	100	0.034	0.034	0.034
31.002	-	-	100	0.023	0.023	0.023
31.003	-	-	100	0.012	0.012	0.012
31.004	-	-	100	0.017	0.017	0.017
28.009	-	-	100	0.000	0.000	0.000
28.010	-	-	100	0.000	0.000	0.000
1.032	-	-	100	0.000	0.000	0.000
1.033	-	-	100	0.000	0.000	0.000
1.034	-	-	100	0.000	0.000	0.000
1.035	-	-	100	0.000	0.000	0.000
1.036	-	-	100	0.000	0.000	0.000
1.037	-	-	100	0.000	0.000	0.000
1.038	-	-	100	0.000	0.000	0.000
1.039	-	-	100	0.000	0.000	0.000
1.040	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				9.613	8.592	8.592

Simulation Criteria for Catch C+D

Volumetric Runoff Coeff	0.750	Manhole Headloss Coeff (Global)	0.500	Inlet Coeffiecient	0.800
Areal Reduction Factor	1.000	Foul Sewage per hectare (l/s)	0.000	Flow per Person per Day (l/per/day)	0.000
Hot Start (mins)	0	Additional Flow - % of Total Flow	0.000	Run Time (mins)	60
Hot Start Level (mm)	0	MADD Factor * 10m³/ha Storage	2.000	Output Interval (mins)	1

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

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	20.000	Cv (Summer)	0.750
Return Period (years)	5	Ratio R	0.350	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

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Online Controls for Catch C+D

Complex Manhole: S3021-CON, DS/PN: S1.021, Volume (m³): 7.5

Orifice

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 21.679

Weir

Discharge Coef 0.544 Width (m) 1.500 Invert Level (m) 22.300

Hydro-Brake® Optimum Manhole: S3033-CON, DS/PN: S1.033, Volume (m³): 42.2

Unit Reference	MD-SFF-0239-7040-2551-2790	Sump Available	Yes
Design Head (m)	2.551	Diameter (mm)	239
Design Flow (l/s)	70.4	Invert Level (m)	19.664
Flush-Flo™	User Defined	Minimum Outlet Pipe Diameter (mm)	300
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.551	70.4	Kick-Flo®	0.362	27.5
Flush-Flo™	0.300	27.9	Mean Flow over Head Range	-	47.3

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.9	0.800	40.2	2.000	62.5	4.000	87.6	7.000	115.2
0.200	24.1	1.000	44.7	2.200	65.5	4.500	92.8	7.500	119.2
0.300	27.9	1.200	48.8	2.400	68.3	5.000	97.7	8.000	123.0
0.400	28.8	1.400	52.6	2.600	71.0	5.500	102.4	8.500	126.7
0.500	32.0	1.600	56.1	3.000	76.2	6.000	106.8	9.000	130.3
0.600	35.0	1.800	59.4	3.500	82.1	6.500	111.1	9.500	133.8

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Storage Structures for Catch C+D

Tank or Pond Manhole: S3020-BASIN D, DS/PN: S1.020

Invert Level (m) 21.810

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	73.7	0.290	356.4	0.590	693.1	0.990	1249.9	1.290	1645.1	1.690	2292.5
0.090	160.7	0.390	472.8	0.690	841.9	1.090	1380.3	1.490	1920.5		
0.190	256.2	0.490	581.7	0.890	1116.3	1.190	1513.6	1.590	2101.9		

Tank or Pond Manhole: S3029-Basin C, DS/PN: S1.029

Invert Level (m) 20.600

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	173.9	0.300	3228.6	0.600	4148.5	0.900	4628.0	1.200	5149.0	1.500	5725.0
0.100	1267.8	0.400	3815.8	0.700	4307.7	1.000	4790.0	1.300	5341.0	1.600	5914.0
0.200	2672.8	0.500	3988.0	0.800	4467.3	1.100	4954.0	1.400	5537.0	1.700	6110.0

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.000	S3000	60 minute 2 year Summer I+0%	60	1	27.478	26.116	-0.162	0.000	0.17	0.066	10.3	OK
S1.001	S3001	60 minute 2 year Summer I+0%	60	1	26.966	25.568	-0.198	0.000	0.25	0.112	16.6	OK
S1.002	S3002	60 minute 2 year Summer I+0%	60	1	26.704	25.369	-0.241	0.000	0.27	0.289	28.4	OK
S1.003	S3003	60 minute 2 year Summer I+0%	60	1	28.014	25.193	-0.227	0.000	0.33	1.062	28.9	OK
S2.000	S3050	60 minute 2 year Summer I+0%	60	1	33.607	32.268	-0.139	0.000	0.31	0.091	11.2	OK
S2.001	S3051	60 minute 2 year Summer I+0%	60	1	33.552	32.134	-0.158	0.000	0.19	0.139	17.2	OK
S2.002	S3052	60 minute 2 year Summer I+0%	60	1	32.390	31.030	-0.159	0.000	0.19	0.081	19.5	OK
S2.003	S3053	60 minute 2 year Summer I+0%	60	1	31.592	30.239	-0.153	0.000	0.22	0.085	23.3	OK
S2.004	S3054	60 minute 2 year Summer I+0%	60	1	30.545	29.237	-0.140	0.000	0.30	0.102	27.6	OK
S2.005	S3055	60 minute 2 year Summer I+0%	60	1	29.217	28.000	-0.131	0.000	0.36	0.118	29.4	OK
S2.006	S3056	60 minute 2 year Summer I+0%	60	1	28.782	27.531	-0.164	0.000	0.17	0.075	30.3	OK
S1.004	S3004	60 minute 2 year Summer I+0%	60	1	28.294	25.108	-0.264	0.000	0.49	0.681	60.1	OK
S1.005	S3005	60 minute 2 year Summer I+0%	60	1	28.322	25.042	-0.301	0.000	0.37	1.161	72.0	OK
S1.006	S3006	60 minute 2 year Summer I+0%	60	1	27.532	24.838	-0.412	0.000	0.10	0.816	73.3	OK
S3.000	S3060	60 minute 2 year Summer I+0%	60	1	26.680	25.336	-0.144	0.000	0.28	0.086	15.7	OK
S3.001	S3061	60 minute 2 year Summer I+0%	60	1	26.141	24.554	-0.267	0.000	0.18	0.148	23.7	OK
S3.002	S3062	60 minute 2 year Summer I+0%	60	1	26.114	24.385	-0.225	0.000	0.32	0.753	27.9	OK
S3.003	S3063	60 minute 2 year Summer I+0%	60	1	26.410	24.340	-0.223	0.000	0.34	0.595	34.3	OK
S3.004	S3064	60 minute 2 year Summer I+0%	60	1	27.500	24.240	-0.209	0.000	0.40	1.183	35.0	OK
S1.007	S3007	60 minute 2 year Summer I+0%	60	1	27.348	24.027	-0.381	0.000	0.30	0.540	120.5	OK
S4.000	S3070	60 minute 2 year Summer I+0%	60	1	25.790	24.700	-0.118	0.000	0.45	0.116	17.7	OK
S4.001	S3072	60 minute 2 year Summer I+0%	60	1	25.325	24.360	-0.158	0.000	0.45	0.227	24.8	OK
S4.002	S3073	60 minute 2 year Summer I+0%	60	1	25.456	24.250	-0.228	0.000	0.32	0.276	31.6	OK

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S4.003	S3074	60 minute 2 year Summer I+0%	60	1	25.586	24.166	-0.216	0.000	0.38	1.046	37.7	OK
S1.008	S3008	60 minute 2 year Summer I+0%	60	1	26.600	23.942	-0.322	0.000	0.57	9.192	154.2	OK
S1.009	S3009	60 minute 2 year Summer I+0%	60	1	26.345	23.906	-0.332	0.000	0.61	3.179	155.9	OK
S1.010	S3010	60 minute 2 year Summer I+0%	60	1	26.150	23.641	-0.578	0.000	0.12	0.705	164.6	OK
S1.011	S3011	60 minute 2 year Summer I+0%	60	1	24.845	22.704	-0.479	0.000	0.26	1.654	168.1	OK
S5.000	S3080	60 minute 2 year Summer I+0%	60	1	25.677	24.412	-0.093	0.000	0.31	0.059	6.5	OK
S5.001	S3081	60 minute 2 year Summer I+0%	60	1	25.276	23.916	-0.211	0.000	0.19	0.095	25.3	OK
S1.012	S3012	60 minute 2 year Summer I+0%	60	1	24.078	22.676	-0.337	0.000	0.30	2.970	187.4	OK
S1.013	S3013	60 minute 2 year Summer I+0%	60	1	23.942	22.661	-0.299	0.000	0.43	10.677	186.5	OK
S1.014	S3014	60 minute 2 year Summer I+0%	60	1	23.833	22.645	-0.284	0.000	0.68	6.735	186.9	OK
S6.000	S3090	60 minute 2 year Summer I+0%	60	1	31.555	29.854	-0.171	0.000	0.13	0.056	14.6	OK
S6.001	S3091	60 minute 2 year Summer I+0%	60	1	29.895	28.205	-0.160	0.000	0.18	0.076	17.4	OK
S6.002	S3092	60 minute 2 year Summer I+0%	60	1	29.250	27.586	-0.139	0.000	0.31	0.105	21.2	OK
S7.000	S3110	60 minute 2 year Summer I+0%	60	1	30.720	29.052	-0.158	0.000	0.19	0.070	14.5	OK
S7.001	S3111	60 minute 2 year Summer I+0%	60	1	29.740	28.045	-0.200	0.000	0.24	0.109	24.8	OK
S7.002	S3112	60 minute 2 year Summer I+0%	60	1	29.410	27.654	-0.266	0.000	0.18	0.156	27.9	OK
S7.003	S3113	60 minute 2 year Summer I+0%	60	1	29.250	27.510	-0.260	0.000	0.21	0.285	35.3	OK
S7.004	S3114	60 minute 2 year Summer I+0%	60	1	29.025	27.281	-0.259	0.000	0.21	0.294	39.6	OK
S6.003	S3093	60 minute 2 year Summer I+0%	60	1	28.650	26.901	-0.244	0.000	0.26	0.358	64.2	OK
S6.004	S3094	60 minute 2 year Summer I+0%	60	1	28.150	26.375	-0.280	0.000	0.15	0.172	72.5	OK
S8.000	S3120	60 minute 2 year Summer I+0%	60	1	26.200	24.035	-0.093	0.000	0.31	0.058	5.2	OK
S8.001	S3121	60 minute 2 year Summer I+0%	60	1	26.500	23.718	-0.135	0.000	0.34	0.098	13.3	OK
S8.002	S3122	60 minute 2 year Summer I+0%	60	1	26.440	23.479	-0.197	0.000	0.26	0.114	16.1	OK
S6.005	S3095	60 minute 2 year Summer I+0%	60	1	26.160	23.235	-0.348	0.000	0.37	0.440	93.0	OK
S6.006	S3096	60 minute 2 year Summer I+0%	60	1	24.555	23.061	-0.458	0.000	0.13	1.019	94.0	OK
S6.007	S3097	60 minute 2 year Summer I+0%	60	1	24.220	22.725	-0.261	0.000	0.61	0.880	95.0	OK
S6.008	S3098	60 minute 2 year Summer I+0%	60	1	23.845	22.633	-0.329	0.000	0.19	1.970	92.2	OK
S6.009	S3099	60 minute 2 year Summer I+0%	60	1	23.675	22.627	-0.275	0.000	0.21	3.415	93.0	OK
S6.010	S3100	60 minute 2 year Summer I+0%	60	1	23.600	22.624	-0.271	0.000	0.24	3.698	90.0	OK
S1.015	S3015	60 minute 2 year Summer I+0%	60	1	23.565	22.620	-0.265	0.000	0.79	10.248	264.2	OK
S1.016	S3016	60 minute 2 year Summer I+0%	60	1	23.660	22.599	-0.274	0.000	0.90	5.365	263.3	OK
S1.017	S3017	60 minute 2 year Summer I+0%	60	1	23.840	22.563	-0.295	0.000	0.82	6.068	263.9	OK
S9.000	S3130	60 minute 2 year Summer I+0%	60	1	26.352	24.985	-0.167	0.000	0.15	0.060	9.1	OK
S9.001	S3131	60 minute 2 year Summer I+0%	60	1	25.763	24.359	-0.203	0.000	0.23	0.106	18.9	OK
S9.002	S3132	60 minute 2 year Summer I+0%	60	1	25.576	24.129	-0.184	0.000	0.32	0.312	21.6	OK
S9.003	S3133	60 minute 2 year Summer I+0%	60	1	25.493	24.045	-0.194	0.000	0.27	0.193	26.2	OK
S10.000	S3140	60 minute 2 year Summer I+0%	60	1	25.428	24.061	-0.167	0.000	0.15	0.060	8.0	OK
S9.004	S3134	60 minute 2 year Summer I+0%	60	1	25.210	23.831	-0.179	0.000	0.34	0.286	37.2	OK
S9.005	S3135	60 minute 2 year Summer I+0%	60	1	24.964	23.531	-0.232	0.000	0.31	0.241	40.9	OK
S9.006	S3136	60 minute 2 year Summer I+0%	60	1	24.852	23.318	-0.334	0.000	0.15	0.174	40.8	OK
S9.007	S3137	60 minute 2 year Summer I+0%	60	1	24.696	23.084	-0.336	0.000	0.15	0.231	45.1	OK
S9.008	S3138	60 minute 2 year Summer I+0%	60	1	24.374	22.781	-0.317	0.000	0.19	0.358	48.8	OK
S9.009	S3139	60 minute 2 year Summer I+0%	60	1	24.123	22.633	-0.261	0.000	0.37	0.710	52.1	OK
S1.018	S3018	120 minute 2 year Winter I+0%	120	1	23.970	22.546	-0.299	0.000	0.40	5.621	199.8	OK
S1.019	S3019	120 minute 2 year Winter I+0%	120	1	23.988	22.542	-0.289	0.000	0.60	2.947	199.0	OK
S1.020	S3020-BASIN D	120 minute 2 year Winter I+0%	120	1	23.500	22.537	0.202	0.000	0.30	333.925	82.1	SURCHARGED

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.021	S3021-CON	120 minute 2 year Winter I+0%	120	1	23.971	22.516	0.312	0.000	0.39	4.929	82.1	SURCHARGED
S1.022	S3022	120 minute 2 year Winter I+0%	120	1	24.693	21.809	-0.297	0.000	0.39	2.620	82.0	OK
S1.023	S3023	120 minute 2 year Winter I+0%	120	1	25.302	21.659	-0.298	0.000	0.39	3.714	81.9	OK
S1.024	S3024	120 minute 2 year Winter I+0%	120	1	25.496	21.501	-0.293	0.000	0.39	4.019	81.6	OK
S1.025	S3025	120 minute 2 year Winter I+0%	120	1	25.233	21.382	-0.249	0.000	0.43	5.586	81.3	OK
S1.026	S3026	120 minute 2 year Winter I+0%	120	1	24.970	21.326	-0.246	0.000	0.43	2.656	81.2	OK
S1.027	S3027	120 minute 2 year Winter I+0%	120	1	24.235	21.269	-0.239	0.000	0.44	2.971	81.2	OK
S1.028	S3028	120 minute 2 year Winter I+0%	120	1	24.282	21.224	-0.233	0.000	0.60	2.509	81.1	OK
S11.000	S3150	60 minute 2 year Summer I+0%	60	1	27.983	26.234	-0.428	0.000	0.01	0.025	3.7	OK
S11.001	S3151	60 minute 2 year Summer I+0%	60	1	27.335	25.638	-0.402	0.000	0.03	0.090	11.3	OK
S11.002	S3152	60 minute 2 year Summer I+0%	60	1	26.707	24.834	-0.373	0.000	0.07	0.132	17.0	OK
S11.003	S3153	60 minute 2 year Summer I+0%	60	1	26.514	24.644	-0.370	0.000	0.07	0.144	17.9	OK
S11.004	S3154	60 minute 2 year Summer I+0%	60	1	26.322	24.434	-0.388	0.000	0.05	0.111	19.5	OK
S12.000	S3180	60 minute 2 year Summer I+0%	60	1	27.434	25.830	-0.104	0.000	0.20	0.046	5.1	OK
S13.000	S3190	60 minute 2 year Summer I+0%	60	1	27.405	25.796	-0.184	0.000	0.08	0.041	5.3	OK
S12.001	S3181	60 minute 2 year Summer I+0%	60	1	27.355	25.437	-0.303	0.000	0.08	0.096	14.4	OK
S12.002	S3182	60 minute 2 year Summer I+0%	60	1	26.944	25.223	-0.310	0.000	0.07	0.135	19.6	OK
S12.003	S3183	60 minute 2 year Summer I+0%	60	1	26.586	24.724	-0.287	0.000	0.13	0.145	23.6	OK
S12.004	S3184	60 minute 2 year Summer I+0%	60	1	26.355	24.488	-0.292	0.000	0.11	0.146	26.8	OK
S11.005	S3155	60 minute 2 year Summer I+0%	60	1	25.834	23.887	-0.372	0.000	0.21	0.432	51.8	OK
S11.006	S3156	60 minute 2 year Summer I+0%	60	1	26.132	23.828	-0.360	0.000	0.17	3.094	58.4	OK
S14.000	S3200	60 minute 2 year Summer I+0%	60	1	27.248	25.499	-0.249	0.000	0.07	0.052	7.0	OK
S14.001	S3201	60 minute 2 year Summer I+0%	60	1	26.960	25.222	-0.238	0.000	0.10	0.110	16.8	OK
S14.002	S3202	60 minute 2 year Summer I+0%	60	1	26.657	24.503	-0.219	0.000	0.16	0.106	25.6	OK
S15.000	SH316	60 minute 2 year Summer I+0%	60	1	26.150	24.452	-0.198	0.000	0.03	0.025	3.2	OK
S11.007	S3157	60 minute 2 year Summer I+0%	60	1	26.356	23.821	-0.306	0.000	0.48	1.218	95.6	OK
S11.008	S3158	60 minute 2 year Summer I+0%	60	1	25.760	23.757	-0.339	0.000	0.31	1.345	94.0	OK
S11.009	S3159	60 minute 2 year Summer I+0%	60	1	25.205	23.680	-0.290	0.000	0.50	5.769	90.7	OK
S16.000	S3210	60 minute 2 year Summer I+0%	60	1	26.390	24.847	-0.118	0.000	0.10	0.030	4.6	OK
S17.000	S3220	60 minute 2 year Summer I+0%	60	1	26.231	24.690	-0.116	0.000	0.12	0.033	3.9	OK
S16.001	S3211	60 minute 2 year Summer I+0%	60	1	26.202	24.241	-0.152	0.000	0.23	0.077	11.5	OK
S16.002	S3212	60 minute 2 year Summer I+0%	60	1	26.040	24.048	-0.143	0.000	0.29	0.131	14.2	OK
S16.003	S3213	60 minute 2 year Summer I+0%	60	1	25.813	23.893	-0.106	0.000	0.55	0.218	18.2	OK
S11.010	S3160	60 minute 2 year Summer I+0%	60	1	25.672	23.632	-0.305	0.000	0.37	1.999	105.6	OK
S11.011	S3161	60 minute 2 year Summer I+0%	60	1	25.057	23.574	-0.283	0.000	0.31	3.995	106.5	OK
S18.000	SH323	60 minute 2 year Summer I+0%	60	1	25.250	23.762	-0.222	0.000	0.00	0.000	0.0	OK
S18.001	S3230	60 minute 2 year Summer I+0%	60	1	25.150	23.767	-0.138	0.000	0.32	0.165	11.1	OK
S18.002	S3231	60 minute 2 year Summer I+0%	60	1	24.920	23.688	-0.117	0.000	0.46	0.244	13.9	OK
S11.012	S3162	60 minute 2 year Summer I+0%	60	1	24.964	23.558	-0.206	0.000	0.48	2.422	116.2	OK
S11.013	S3163	60 minute 2 year Summer I+0%	60	1	24.890	23.508	-0.182	0.000	0.84	7.899	119.6	OK
S11.014	S3164	60 minute 2 year Summer I+0%	60	1	24.022	23.104	-0.918	0.000	0.01	0.158	119.6	OK
S19.000	S3240	60 minute 2 year Summer I+0%	60	1	24.640	23.205	-0.235	0.000	0.07	0.068	4.1	OK
S20.000	S3250	60 minute 2 year Summer I+0%	60	1	24.628	23.200	-0.228	0.000	0.09	0.076	4.7	OK
S19.001	S3241	60 minute 2 year Summer I+0%	60	1	24.597	23.189	-0.208	0.000	0.20	0.271	11.8	OK
S19.002	S3242	60 minute 2 year Summer I+0%	60	1	24.000	23.090	-0.204	0.000	0.22	0.328	14.4	OK
S11.015	S3165	60 minute 2 year Summer I+0%	60	1	23.922	22.978	-0.944	0.000	0.02	0.727	128.4	OK

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S11.016	S3166	60 minute 2 year Summer I+0%	60	1	23.652	22.727	-0.925	0.000	0.02	1.718	128.5	OK
S21.000	S3260	60 minute 2 year Summer I+0%	60	1	24.136	22.744	-0.192	0.000	0.05	0.031	1.8	OK
S21.001	S3261	60 minute 2 year Summer I+0%	60	1	24.043	22.688	-0.155	0.000	0.21	0.147	7.2	OK
S11.017	S3167	60 minute 2 year Summer I+0%	60	1	23.459	22.610	-0.849	0.000	0.02	1.340	132.4	OK
S22.000	S3270	60 minute 2 year Summer I+0%	60	1	24.058	22.598	-0.260	0.000	0.04	0.040	2.8	OK
S22.001	S3271	60 minute 2 year Summer I+0%	60	1	23.965	22.532	-0.233	0.000	0.11	0.190	7.0	OK
S22.002	S3272	60 minute 2 year Summer I+0%	60	1	23.872	22.455	-0.217	0.000	0.17	0.239	9.7	OK
S11.018	S3168	60 minute 2 year Summer I+0%	60	1	23.365	22.378	-0.987	0.000	0.02	1.844	138.1	OK
S11.019	S3169	60 minute 2 year Summer I+0%	60	1	23.316	22.362	-0.954	0.000	0.02	0.191	138.1	OK
S11.020	S3170	60 minute 2 year Summer I+0%	60	1	22.996	22.141	-0.855	0.000	0.02	1.842	137.8	OK
S23.000	S3280	60 minute 2 year Summer I+0%	60	1	23.484	22.093	-0.191	0.000	0.05	0.032	2.0	OK
S23.001	S3281	60 minute 2 year Summer I+0%	60	1	23.269	21.934	-0.135	0.000	0.33	0.196	10.9	OK
S11.021	S3171	60 minute 2 year Summer I+0%	60	1	22.739	21.872	-0.867	0.000	0.03	2.517	142.9	OK
S11.022	S3172	60 minute 2 year Summer I+0%	60	1	22.621	21.750	-0.241	0.000	0.57	8.240	141.4	OK*
S11.023	S3173	60 minute 2 year Summer I+0%	60	1	22.633	21.617	-1.016	0.000	0.02	0.354	141.2	OK
S24.000	S3290	60 minute 2 year Summer I+0%	60	1	27.878	26.196	-0.266	0.000	0.03	0.033	3.0	OK
S24.001	S3291	60 minute 2 year Summer I+0%	60	1	27.725	26.033	-0.265	0.000	0.03	0.054	4.3	OK
S24.002	S3292	60 minute 2 year Summer I+0%	60	1	27.292	25.336	-0.302	0.000	0.08	0.099	11.3	OK
S24.003	S3293	60 minute 2 year Summer I+0%	60	1	27.136	25.221	-0.300	0.000	0.09	0.186	14.6	OK
S24.004	S3294	60 minute 2 year Summer I+0%	60	1	26.998	25.050	-0.294	0.000	0.10	0.166	19.2	OK
S24.005	S3295	60 minute 2 year Summer I+0%	60	1	26.633	24.739	-0.240	0.000	0.28	0.395	27.7	OK
S24.006	S3296	60 minute 2 year Summer I+0%	60	1	26.623	24.586	-0.284	0.000	0.23	0.720	39.6	OK
S24.007	S3297	60 minute 2 year Summer I+0%	60	1	26.942	24.552	-0.236	0.000	0.41	1.086	42.9	OK
S24.008	S3298	60 minute 2 year Summer I+0%	60	1	27.141	24.514	-0.239	0.000	0.45	0.973	44.7	OK
S25.000	S3320	60 minute 2 year Summer I+0%	60	1	27.291	25.591	-0.203	0.000	0.02	0.019	3.0	OK
S24.009	S3299	60 minute 2 year Summer I+0%	60	1	27.239	24.461	-0.265	0.000	0.35	0.641	50.2	OK
S24.010	S3300	60 minute 2 year Summer I+0%	60	1	26.728	24.307	-0.315	0.000	0.20	1.035	54.6	OK
S26.000	S3330	60 minute 2 year Summer I+0%	60	1	25.706	24.164	-0.279	0.000	0.02	0.019	2.7	OK
S24.011	S3301	60 minute 2 year Summer I+0%	60	1	25.786	23.692	-0.239	0.000	0.42	1.262	76.0	OK
S24.012	S3302	60 minute 2 year Summer I+0%	60	1	25.425	23.641	-0.230	0.000	0.44	3.205	81.5	OK
S24.013	S3303	60 minute 2 year Summer I+0%	60	1	24.980	23.584	-0.212	0.000	0.50	4.323	88.9	OK
S24.014	S3304	60 minute 2 year Summer I+0%	60	1	24.943	23.534	-0.209	0.000	0.49	3.210	91.0	OK
S24.015	S3305	60 minute 2 year Summer I+0%	60	1	24.865	23.477	-0.188	0.000	0.74	4.926	94.9	OK
S24.016	S3306	60 minute 2 year Summer I+0%	60	1	24.643	23.132	-1.511	0.000	0.01	0.165	94.8	OK
S24.017	S3307	60 minute 2 year Summer I+0%	60	1	24.775	22.904	-1.871	0.000	0.00	0.381	94.7	OK
S24.018	S3308	60 minute 2 year Summer I+0%	60	1	24.194	22.583	-1.611	0.000	0.00	1.079	94.8	OK
S24.019	S3309	60 minute 2 year Summer I+0%	60	1	24.085	22.490	-1.595	0.000	0.00	0.260	94.9	OK
S27.000	S3340	60 minute 2 year Summer I+0%	60	1	24.183	22.715	-0.268	0.000	0.01	0.031	0.9	OK
S27.001	S3341	60 minute 2 year Summer I+0%	60	1	24.142	22.705	-0.237	0.000	0.10	0.123	6.9	OK
S27.002	S3342	60 minute 2 year Summer I+0%	60	1	23.927	22.510	-0.217	0.000	0.17	0.230	10.5	OK
S24.020	S3310	60 minute 2 year Summer I+0%	60	1	23.831	22.394	-1.437	0.000	0.00	0.337	100.4	OK
S24.021	S3311	60 minute 2 year Summer I+0%	60	1	23.455	22.257	-1.198	0.000	0.01	0.172	100.3	OK
S24.022	S3312	60 minute 2 year Summer I+0%	60	1	23.461	22.245	-0.200	0.000	0.59	1.039	100.1	OK*
S24.023	S3313	60 minute 2 year Summer I+0%	60	1	23.546	22.124	-1.422	0.000	0.01	0.259	100.2	OK
S1.029	S3029-Basin C	360 minute 2 year Winter I+0%	360	1	22.300	20.956	-0.044	0.000	0.21	743.476	60.3	OK
S1.030	S3030	360 minute 2 year Winter I+0%	360	1	22.439	20.947	0.210	0.000	0.15	1.826	59.1	SURCHARGED

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.031	S3031	360 minute 2 year Winter I+0%	360	1	22.646	20.933	0.699	0.000	0.38	3.734	58.2	SURCHARGED
S28.000	S3350	60 minute 2 year Summer I+0%	60	1	24.098	22.216	-0.395	0.000	0.14	0.221	52.4	OK
S28.001	S3351	60 minute 2 year Summer I+0%	60	1	23.359	21.684	-0.309	0.000	0.35	1.401	100.9	OK
S28.002	S3352	60 minute 2 year Summer I+0%	60	1	22.742	21.259	-0.361	0.000	0.21	1.296	100.5	OK
S28.003	S3353	360 minute 2 year Winter I+0%	360	1	22.519	20.917	-0.330	0.000	0.03	1.706	27.0	OK
S28.004	S3354	360 minute 2 year Winter I+0%	360	1	22.616	20.917	-0.210	0.000	0.06	10.482	26.0	OK
S29.000	S3370	60 minute 2 year Summer I+0%	60	1	23.318	21.235	-0.200	0.000	0.23	0.107	12.5	OK
S29.001	S3371	60 minute 2 year Summer I+0%	60	1	23.170	21.181	-0.190	0.000	0.29	0.363	17.3	OK
S29.002	S3372	60 minute 2 year Summer I+0%	60	1	22.964	21.125	-0.176	0.000	0.36	0.401	20.7	OK
S29.003	S3373	60 minute 2 year Summer I+0%	60	1	22.764	21.082	-0.167	0.000	0.41	0.383	21.4	OK
S29.004	S3374	60 minute 2 year Summer I+0%	60	1	22.667	21.029	-0.188	0.000	0.30	0.218	25.8	OK
S30.000	S3380	60 minute 2 year Summer I+0%	60	1	22.437	21.087	-0.150	0.000	0.00	0.000	0.0	OK
S28.005	S3355	360 minute 2 year Winter I+0%	360	1	22.561	20.917	-0.182	0.000	0.03	8.266	33.7	OK
S28.006	S3356	360 minute 2 year Winter I+0%	360	1	22.401	20.917	-0.133	0.000	0.03	22.309	33.5	OK
S28.007	S3357	360 minute 2 year Winter I+0%	360	1	22.379	20.917	-0.083	0.000	0.04	31.231	32.1	OK
S28.008	S3358	360 minute 2 year Winter I+0%	360	1	22.415	20.917	-0.067	0.000	0.05	9.840	32.5	OK
S31.000	S3390	60 minute 2 year Summer I+0%	60	1	23.337	21.686	-0.177	0.000	0.10	0.049	5.7	OK
S31.001	S3391	60 minute 2 year Summer I+0%	60	1	23.137	21.347	-0.147	0.000	0.26	0.123	9.0	OK
S31.002	S3392	60 minute 2 year Summer I+0%	60	1	22.984	21.280	-0.139	0.000	0.31	0.176	11.3	OK
S31.003	S3393	60 minute 2 year Summer I+0%	60	1	22.666	21.159	-0.124	0.000	0.42	0.218	12.5	OK
S31.004	S3394	60 minute 2 year Summer I+0%	60	1	22.568	21.119	-0.121	0.000	0.44	0.185	14.1	OK
S28.009	S3359	360 minute 2 year Winter I+0%	360	1	22.484	20.916	-0.051	0.000	0.05	12.832	35.5	OK
S28.010	S3360	360 minute 2 year Winter I+0%	360	1	22.471	20.916	-0.031	0.000	0.03	11.131	35.0	OK
S1.032	S3032	360 minute 2 year Winter I+0%	360	1	22.286	20.916	0.011	0.000	0.06	30.626	56.6	SURCHARGED
S1.033	S3033-CON	360 minute 2 year Winter I+0%	360	1	22.317	20.914	0.800	0.000	0.31	32.938	48.2	SURCHARGED
S1.034	S3034	360 minute 2 year Winter I+0%	360	1	22.361	19.739	-0.253	0.000	0.39	1.806	48.2	OK
S1.035	S3035	360 minute 2 year Winter I+0%	360	1	22.443	19.675	-0.269	0.000	0.34	1.001	48.2	OK
S1.036	S3036	360 minute 2 year Winter I+0%	360	1	21.748	19.578	-0.275	0.000	0.32	1.556	48.2	OK
S1.037	S3037	360 minute 2 year Winter I+0%	360	1	21.314	19.404	-0.274	0.000	0.32	1.975	48.2	OK
S1.038	S3038	360 minute 2 year Winter I+0%	360	1	20.779	19.293	-0.223	0.000	0.41	3.143	48.2	OK
S1.039	S3039	360 minute 2 year Winter I+0%	360	1	20.378	19.256	-0.217	0.000	0.53	1.296	48.2	OK
S1.040	S3040-HW	360 minute 2 year Winter I+0%	360	1	20.192	19.134	-1.058	0.000	0.01	0.285	48.2	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.000	S3000	60 minute 30 year Summer I+0%	60	1	27.478	26.148	-0.130	0.000	0.38	0.102	22.0	OK
S1.001	S3001	60 minute 30 year Summer I+0%	60	1	26.966	25.628	-0.138	0.000	0.56	0.226	36.8	OK
S1.002	S3002	60 minute 30 year Summer I+0%	60	1	26.704	25.452	-0.158	0.000	0.61	0.752	64.1	OK
S1.003	S3003	60 minute 30 year Summer I+0%	60	1	28.014	25.384	-0.036	0.000	0.77	4.787	67.8	OK
S2.000	S3050	60 minute 30 year Summer I+0%	60	1	33.607	32.317	-0.090	0.000	0.67	0.147	24.1	OK
S2.001	S3051	60 minute 30 year Summer I+0%	60	1	33.552	32.170	-0.122	0.000	0.43	0.221	38.1	OK
S2.002	S3052	60 minute 30 year Summer I+0%	60	1	32.390	31.066	-0.123	0.000	0.42	0.130	43.7	OK
S2.003	S3053	60 minute 30 year Summer I+0%	60	1	31.592	30.281	-0.111	0.000	0.51	0.141	52.8	OK
S2.004	S3054	60 minute 30 year Summer I+0%	60	1	30.545	29.290	-0.087	0.000	0.69	0.183	62.9	OK
S2.005	S3055	60 minute 30 year Summer I+0%	60	1	29.217	28.062	-0.069	0.000	0.83	0.232	67.0	OK
S2.006	S3056	60 minute 30 year Summer I+0%	60	1	28.782	27.566	-0.129	0.000	0.38	0.121	68.9	OK
S1.004	S3004	60 minute 30 year Summer I+0%	60	1	28.294	25.352	-0.020	0.000	1.00	2.244	121.6	OK
S1.005	S3005	60 minute 30 year Summer I+0%	60	1	28.322	25.174	-0.169	0.000	0.78	2.265	149.3	OK
S1.006	S3006	60 minute 30 year Summer I+0%	60	1	27.532	24.890	-0.360	0.000	0.22	1.822	152.9	OK
S3.000	S3060	60 minute 30 year Summer I+0%	60	1	26.680	25.382	-0.098	0.000	0.61	0.138	33.8	OK
S3.001	S3061	60 minute 30 year Summer I+0%	60	1	26.141	24.613	-0.208	0.000	0.40	0.238	52.1	OK
S3.002	S3062	60 minute 30 year Summer I+0%	60	1	26.114	24.480	-0.130	0.000	0.71	1.856	61.9	OK
S3.003	S3063	60 minute 30 year Summer I+0%	60	1	26.410	24.436	-0.127	0.000	0.76	1.183	75.6	OK
S3.004	S3064	60 minute 30 year Summer I+0%	60	1	27.500	24.349	-0.100	0.000	0.89	2.665	76.8	OK
S1.007	S3007	60 minute 30 year Summer I+0%	60	1	27.348	24.281	-0.127	0.000	0.63	1.978	252.6	OK
S4.000	S3070	60 minute 30 year Summer I+0%	60	1	25.790	24.772	-0.046	0.000	0.97	0.197	37.9	OK
S4.001	S3072	60 minute 30 year Summer I+0%	60	1	25.325	24.457	-0.061	0.000	0.98	0.632	53.9	OK
S4.002	S3073	60 minute 30 year Summer I+0%	60	1	25.456	24.345	-0.133	0.000	0.71	0.596	69.6	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S4.003	S3074	60 minute 30 year Summer I+0%	60	1	25.586	24.277	-0.105	0.000	0.82	2.355	81.9	OK
S1.008	S3008	60 minute 30 year Summer I+0%	60	1	26.600	24.227	-0.037	0.000	1.17	23.107	315.5	OK
S1.009	S3009	60 minute 30 year Summer I+0%	60	1	26.345	24.105	-0.133	0.000	1.24	5.271	317.5	OK
S1.010	S3010	60 minute 30 year Summer I+0%	60	1	26.150	23.719	-0.500	0.000	0.24	1.214	332.7	OK
S1.011	S3011	60 minute 30 year Summer I+0%	60	1	24.845	23.095	-0.088	0.000	0.53	9.267	344.0	OK
S5.000	S3080	60 minute 30 year Summer I+0%	60	1	25.677	24.445	-0.060	0.000	0.67	0.096	14.0	OK
S5.001	S3081	60 minute 30 year Summer I+0%	60	1	25.276	23.968	-0.159	0.000	0.44	0.156	58.3	OK
S1.012	S3012	60 minute 30 year Summer I+0%	60	1	24.078	23.066	0.053	0.000	0.61	6.913	384.9	SURCHARGED
S1.013	S3013	60 minute 30 year Summer I+0%	60	1	23.942	23.035	0.075	0.000	0.90	17.936	389.1	SURCHARGED
S1.014	S3014	60 minute 30 year Summer I+0%	60	1	23.833	23.007	0.078	0.000	1.42	10.929	390.7	SURCHARGED
S6.000	S3090	60 minute 30 year Summer I+0%	60	1	31.555	29.882	-0.143	0.000	0.29	0.087	31.4	OK
S6.001	S3091	60 minute 30 year Summer I+0%	60	1	29.895	28.239	-0.126	0.000	0.40	0.119	37.8	OK
S6.002	S3092	60 minute 30 year Summer I+0%	60	1	29.250	27.639	-0.086	0.000	0.69	0.188	46.9	OK
S7.000	S3110	60 minute 30 year Summer I+0%	60	1	30.720	29.086	-0.124	0.000	0.41	0.108	31.2	OK
S7.001	S3111	60 minute 30 year Summer I+0%	60	1	29.740	28.104	-0.141	0.000	0.55	0.202	55.6	OK
S7.002	S3112	60 minute 30 year Summer I+0%	60	1	29.410	27.713	-0.207	0.000	0.42	0.324	63.0	OK
S7.003	S3113	60 minute 30 year Summer I+0%	60	1	29.250	27.576	-0.194	0.000	0.47	0.615	80.2	OK
S7.004	S3114	60 minute 30 year Summer I+0%	60	1	29.025	27.347	-0.193	0.000	0.47	0.649	89.8	OK
S6.003	S3093	60 minute 30 year Summer I+0%	60	1	28.650	26.979	-0.166	0.000	0.59	0.777	144.4	OK
S6.004	S3094	60 minute 30 year Summer I+0%	60	1	28.150	26.430	-0.225	0.000	0.33	0.343	163.4	OK
S8.000	S3120	60 minute 30 year Summer I+0%	60	1	26.200	24.067	-0.061	0.000	0.65	0.095	11.1	OK
S8.001	S3121	60 minute 30 year Summer I+0%	60	1	26.500	23.778	-0.075	0.000	0.77	0.204	30.3	OK
S8.002	S3122	60 minute 30 year Summer I+0%	60	1	26.440	23.541	-0.135	0.000	0.58	0.285	36.6	OK
S6.005	S3095	60 minute 30 year Summer I+0%	60	1	26.160	23.408	-0.175	0.000	0.84	1.116	211.2	OK
S6.006	S3096	60 minute 30 year Summer I+0%	60	1	24.555	23.139	-0.380	0.000	0.29	2.177	212.3	OK
S6.007	S3097	60 minute 30 year Summer I+0%	60	1	24.220	23.043	0.057	0.000	1.37	2.341	212.6	SURCHARGED
S6.008	S3098	60 minute 30 year Summer I+0%	60	1	23.845	23.015	0.053	0.000	0.43	4.954	209.7	SURCHARGED
S6.009	S3099	60 minute 30 year Summer I+0%	60	1	23.675	22.999	0.097	0.000	0.48	6.078	215.2	SURCHARGED
S6.010	S3100	60 minute 30 year Summer I+0%	60	1	23.600	22.990	0.095	0.000	0.58	5.896	213.1	SURCHARGED
S1.015	S3015	60 minute 30 year Summer I+0%	60	1	23.565	22.979	0.094	0.000	1.76	16.666	586.8	SURCHARGED
S1.016	S3016	60 minute 30 year Summer I+0%	60	1	23.660	22.944	0.071	0.000	2.00	8.482	584.9	SURCHARGED
S1.017	S3017	60 minute 30 year Summer I+0%	60	1	23.840	22.904	0.046	0.000	1.82	9.868	583.3	SURCHARGED
S9.000	S3130	60 minute 30 year Summer I+0%	60	1	26.352	25.015	-0.137	0.000	0.33	0.094	19.4	OK
S9.001	S3131	60 minute 30 year Summer I+0%	60	1	25.763	24.417	-0.145	0.000	0.52	0.210	42.6	OK
S9.002	S3132	60 minute 30 year Summer I+0%	60	1	25.576	24.202	-0.111	0.000	0.71	0.788	48.7	OK
S9.003	S3133	60 minute 30 year Summer I+0%	60	1	25.493	24.110	-0.129	0.000	0.61	0.397	59.4	OK
S10.000	S3140	60 minute 30 year Summer I+0%	60	1	25.428	24.091	-0.137	0.000	0.33	0.094	17.2	OK
S9.004	S3134	60 minute 30 year Summer I+0%	60	1	25.210	23.911	-0.099	0.000	0.77	0.718	83.7	OK
S9.005	S3135	60 minute 30 year Summer I+0%	60	1	24.964	23.624	-0.139	0.000	0.71	0.536	92.5	OK
S9.006	S3136	60 minute 30 year Summer I+0%	60	1	24.852	23.384	-0.268	0.000	0.34	0.345	92.8	OK
S9.007	S3137	60 minute 30 year Summer I+0%	60	1	24.696	23.149	-0.271	0.000	0.33	0.473	102.5	OK
S9.008	S3138	60 minute 30 year Summer I+0%	60	1	24.374	22.935	-0.163	0.000	0.43	1.358	108.5	OK
S9.009	S3139	60 minute 30 year Summer I+0%	60	1	24.123	22.897	0.003	0.000	0.79	2.946	110.5	SURCHARGED
S1.018	S3018	60 minute 30 year Summer I+0%	60	1	23.970	22.867	0.022	0.000	1.35	10.261	681.6	SURCHARGED
S1.019	S3019	60 minute 30 year Winter I+0%	60	1	23.988	22.831	0.000	0.000	1.93	4.496	641.4	OK
S1.020	S3020-BASIN D	60 minute 30 year Winter I+0%	60	1	23.500	22.810	0.475	0.000	0.69	630.871	191.5	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.021	S3021-CON	60 minute 30 year Winter I+0%	60	1	23.971	22.763	0.559	0.000	0.90	5.366	191.4	SURCHARGED
S1.022	S3022	60 minute 30 year Winter I+0%	60	1	24.693	21.985	-0.121	0.000	0.91	6.167	190.9	OK
S1.023	S3023	60 minute 30 year Winter I+0%	60	1	25.302	21.874	-0.083	0.000	0.88	10.977	186.2	OK
S1.024	S3024	60 minute 30 year Winter I+0%	60	1	25.496	21.753	-0.041	0.000	0.86	13.166	181.2	OK
S1.025	S3025	180 minute 30 year Winter I+0%	180	1	25.233	21.631	0.000	0.000	0.87	14.338	162.3	OK
S1.026	S3026	120 minute 30 year Winter I+0%	120	1	24.970	21.572	0.000	0.000	0.92	5.869	173.9	OK
S1.027	S3027	120 minute 30 year Summer I+0%	120	1	24.235	21.508	0.000	0.000	0.88	6.344	160.0	OK
S1.028	S3028	60 minute 30 year Winter I+0%	60	1	24.282	21.457	0.000	0.000	1.33	5.169	181.0	OK
S11.000	S3150	60 minute 30 year Summer I+0%	60	1	27.983	26.258	-0.404	0.000	0.02	0.059	8.0	OK
S11.001	S3151	60 minute 30 year Summer I+0%	60	1	27.335	25.660	-0.380	0.000	0.06	0.136	25.9	OK
S11.002	S3152	60 minute 30 year Summer I+0%	60	1	26.707	24.878	-0.329	0.000	0.16	0.233	39.5	OK
S11.003	S3153	60 minute 30 year Summer I+0%	60	1	26.514	24.688	-0.326	0.000	0.17	0.263	41.8	OK
S11.004	S3154	60 minute 30 year Summer I+0%	60	1	26.322	24.471	-0.351	0.000	0.11	0.182	45.7	OK
S12.000	S3180	60 minute 30 year Summer I+0%	60	1	27.434	25.853	-0.081	0.000	0.44	0.073	11.0	OK
S13.000	S3190	60 minute 30 year Summer I+0%	60	1	27.405	25.816	-0.164	0.000	0.16	0.063	11.3	OK
S12.001	S3181	60 minute 30 year Summer I+0%	60	1	27.355	25.473	-0.267	0.000	0.18	0.148	31.7	OK
S12.002	S3182	60 minute 30 year Summer I+0%	60	1	26.944	25.257	-0.276	0.000	0.16	0.214	44.1	OK
S12.003	S3183	60 minute 30 year Summer I+0%	60	1	26.586	24.773	-0.238	0.000	0.29	0.263	53.8	OK
S12.004	S3184	60 minute 30 year Summer I+0%	60	1	26.355	24.534	-0.246	0.000	0.26	0.264	61.4	OK
S11.005	S3155	60 minute 30 year Summer I+0%	60	1	25.834	24.135	-0.124	0.000	0.47	1.959	114.4	OK
S11.006	S3156	60 minute 30 year Summer I+0%	60	1	26.132	24.109	-0.079	0.000	0.36	9.651	126.2	OK
S14.000	S3200	60 minute 30 year Summer I+0%	60	1	27.248	25.524	-0.224	0.000	0.15	0.080	14.9	OK
S14.001	S3201	60 minute 30 year Summer I+0%	60	1	26.960	25.255	-0.205	0.000	0.22	0.173	38.1	OK
S14.002	S3202	60 minute 30 year Summer I+0%	60	1	26.657	24.550	-0.172	0.000	0.37	0.190	59.0	OK
S15.000	SH316	60 minute 30 year Summer I+0%	60	1	26.150	24.466	-0.184	0.000	0.08	0.040	6.9	OK
S11.007	S3157	60 minute 30 year Summer I+0%	60	1	26.356	24.094	-0.033	0.000	1.00	3.137	198.3	OK
S11.008	S3158	60 minute 30 year Summer I+0%	60	1	25.760	24.024	-0.072	0.000	0.65	3.464	194.7	OK
S11.009	S3159	60 minute 30 year Summer I+0%	60	1	25.205	23.970	0.000	0.000	1.07	13.872	192.6	OK
S16.000	S3210	60 minute 30 year Summer I+0%	60	1	26.390	24.862	-0.103	0.000	0.22	0.048	9.9	OK
S17.000	S3220	60 minute 30 year Summer I+0%	60	1	26.231	24.707	-0.099	0.000	0.25	0.052	8.3	OK
S16.001	S3211	60 minute 30 year Summer I+0%	60	1	26.202	24.282	-0.111	0.000	0.50	0.126	25.2	OK
S16.002	S3212	60 minute 30 year Summer I+0%	60	1	26.040	24.099	-0.092	0.000	0.64	0.266	31.8	OK
S16.003	S3213	60 minute 30 year Summer I+0%	60	1	25.813	24.020	0.021	0.000	1.23	0.658	41.3	SURCHARGED
S11.010	S3160	60 minute 30 year Summer I+0%	60	1	25.672	23.875	-0.062	0.000	0.80	4.642	225.6	OK
S11.011	S3161	60 minute 30 year Summer I+0%	60	1	25.057	23.806	-0.051	0.000	0.67	8.313	231.4	OK
S18.000	SH323	60 minute 30 year Summer I+0%	60	1	25.250	23.857	-0.127	0.000	0.01	0.106	0.3	OK
S18.001	S3230	60 minute 30 year Summer I+0%	60	1	25.150	23.858	-0.047	0.000	0.72	0.435	25.0	OK
S18.002	S3231	60 minute 30 year Summer I+0%	60	1	24.920	23.809	0.004	0.000	1.01	0.755	30.1	SURCHARGED
S11.012	S3162	60 minute 30 year Summer I+0%	60	1	24.964	23.770	0.006	0.000	1.03	4.200	251.6	SURCHARGED
S11.013	S3163	60 minute 30 year Summer I+0%	60	1	24.890	23.690	0.000	0.000	1.83	12.045	260.2	OK
S11.014	S3164	60 minute 30 year Summer I+0%	60	1	24.022	23.178	-0.844	0.000	0.03	0.316	260.3	OK
S19.000	S3240	60 minute 30 year Summer I+0%	60	1	24.640	23.249	-0.191	0.000	0.16	0.117	8.7	OK
S20.000	S3250	60 minute 30 year Summer I+0%	60	1	24.628	23.247	-0.181	0.000	0.19	0.129	10.1	OK
S19.001	S3241	60 minute 30 year Summer I+0%	60	1	24.597	23.238	-0.159	0.000	0.45	0.515	25.9	OK
S19.002	S3242	60 minute 30 year Summer I+0%	60	1	24.000	23.143	-0.151	0.000	0.49	0.763	31.7	OK
S11.015	S3165	60 minute 30 year Summer I+0%	60	1	23.922	23.061	-0.861	0.000	0.04	2.047	285.3	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S11.016	S3166	60 minute 30 year Summer I+0%	60	1	23.652	22.813	-0.839	0.000	0.04	4.202	285.0	OK
S21.000	S3260	60 minute 30 year Summer I+0%	60	1	24.136	22.764	-0.172	0.000	0.11	0.055	3.9	OK
S21.001	S3261	60 minute 30 year Summer I+0%	60	1	24.043	22.730	-0.113	0.000	0.49	0.256	16.6	OK
S11.017	S3167	60 minute 30 year Summer I+0%	60	1	23.459	22.695	-0.764	0.000	0.05	3.151	294.1	OK
S22.000	S3270	60 minute 30 year Summer I+0%	60	1	24.058	22.622	-0.236	0.000	0.09	0.067	6.0	OK
S22.001	S3271	60 minute 30 year Summer I+0%	60	1	23.965	22.568	-0.197	0.000	0.26	0.302	16.1	OK
S22.002	S3272	60 minute 30 year Summer I+0%	60	1	23.872	22.502	-0.170	0.000	0.39	0.478	22.3	OK
S11.018	S3168	60 minute 30 year Summer I+0%	60	1	23.365	22.465	-0.900	0.000	0.03	4.633	308.9	OK
S11.019	S3169	60 minute 30 year Summer I+0%	60	1	23.316	22.449	-0.867	0.000	0.04	0.483	309.2	OK
S11.020	S3170	60 minute 30 year Summer I+0%	60	1	22.996	22.228	-0.768	0.000	0.05	4.424	307.5	OK
S23.000	S3280	60 minute 30 year Summer I+0%	60	1	23.484	22.110	-0.174	0.000	0.12	0.052	4.3	OK
S23.001	S3281	60 minute 30 year Winter I+0%	60	1	23.269	22.059	-0.010	0.000	0.62	0.869	20.3	OK
S11.021	S3171	60 minute 30 year Summer I+0%	60	1	22.739	22.051	-0.688	0.000	0.05	11.384	301.1	OK
S11.022	S3172	60 minute 30 year Summer I+0%	60	1	22.621	22.030	0.039	0.000	1.00	32.645	248.6	SURCHARGED*
S11.023	S3173	60 minute 30 year Summer I+0%	60	1	22.633	21.684	-0.949	0.000	0.03	0.561	248.6	OK
S24.000	S3290	60 minute 30 year Summer I+0%	60	1	27.878	26.212	-0.250	0.000	0.07	0.050	6.4	OK
S24.001	S3291	60 minute 30 year Summer I+0%	60	1	27.725	26.050	-0.248	0.000	0.07	0.085	9.5	OK
S24.002	S3292	60 minute 30 year Summer I+0%	60	1	27.292	25.376	-0.262	0.000	0.19	0.162	26.1	OK
S24.003	S3293	60 minute 30 year Summer I+0%	60	1	27.136	25.262	-0.259	0.000	0.21	0.327	34.0	OK
S24.004	S3294	60 minute 30 year Summer I+0%	60	1	26.998	25.095	-0.249	0.000	0.24	0.314	45.0	OK
S24.005	S3295	60 minute 30 year Summer I+0%	60	1	26.633	24.827	-0.152	0.000	0.65	0.918	64.8	OK
S24.006	S3296	60 minute 30 year Summer I+0%	60	1	26.623	24.743	-0.127	0.000	0.53	2.650	89.7	OK
S24.007	S3297	60 minute 30 year Summer I+0%	60	1	26.942	24.711	-0.077	0.000	0.91	2.342	96.3	OK
S24.008	S3298	60 minute 30 year Summer I+0%	60	1	27.141	24.672	-0.081	0.000	1.00	2.080	99.7	OK
S25.000	S3320	60 minute 30 year Summer I+0%	60	1	27.291	25.599	-0.195	0.000	0.04	0.029	6.4	OK
S24.009	S3299	60 minute 30 year Summer I+0%	60	1	27.239	24.580	-0.146	0.000	0.78	1.291	112.3	OK
S24.010	S3300	60 minute 30 year Summer I+0%	60	1	26.728	24.380	-0.242	0.000	0.43	2.195	121.6	OK
S26.000	S3330	60 minute 30 year Summer I+0%	60	1	25.706	24.178	-0.265	0.000	0.03	0.034	5.7	OK
S24.011	S3301	60 minute 30 year Summer I+0%	60	1	25.786	23.949	0.018	0.000	0.92	5.610	166.4	SURCHARGED
S24.012	S3302	60 minute 30 year Summer I+0%	60	1	25.425	23.898	0.027	0.000	0.97	6.764	179.9	SURCHARGED
S24.013	S3303	60 minute 30 year Summer I+0%	60	1	24.980	23.828	0.032	0.000	1.12	8.426	198.1	SURCHARGED
S24.014	S3304	60 minute 30 year Summer I+0%	60	1	24.943	23.760	0.017	0.000	1.09	6.035	204.8	SURCHARGED
S24.015	S3305	60 minute 30 year Winter I+0%	60	1	24.865	23.665	0.000	0.000	1.59	8.344	204.4	OK
S24.016	S3306	60 minute 30 year Summer I+0%	60	1	24.643	23.196	-1.447	0.000	0.01	0.341	214.5	OK
S24.017	S3307	60 minute 30 year Summer I+0%	60	1	24.775	22.976	-1.799	0.000	0.01	1.189	214.6	OK
S24.018	S3308	60 minute 30 year Summer I+0%	60	1	24.194	22.651	-1.543	0.000	0.01	2.259	215.0	OK
S24.019	S3309	60 minute 30 year Summer I+0%	60	1	24.085	22.578	-1.507	0.000	0.01	0.919	213.0	OK
S27.000	S3340	60 minute 30 year Summer I+0%	60	1	24.183	22.744	-0.239	0.000	0.03	0.063	1.9	OK
S27.001	S3341	60 minute 30 year Summer I+0%	60	1	24.142	22.740	-0.202	0.000	0.23	0.198	16.2	OK
S27.002	S3342	60 minute 30 year Summer I+0%	60	1	23.927	22.574	-0.153	0.000	0.40	0.665	24.6	OK
S24.020	S3310	60 minute 30 year Summer I+0%	60	1	23.831	22.565	-1.266	0.000	0.01	2.392	220.5	OK
S24.021	S3311	60 minute 30 year Summer I+0%	60	1	23.455	22.560	-0.895	0.000	0.01	4.565	217.8	OK
S24.022	S3312	60 minute 30 year Summer I+0%	60	1	23.461	22.560	0.115	0.000	1.29	5.225	217.9	SURCHARGED*
S24.023	S3313	60 minute 30 year Summer I+0%	60	1	23.546	22.188	-1.358	0.000	0.01	0.438	217.6	OK
S1.029	S3029-Basin C	360 minute 30 year Winter I+0%	360	1	22.300	21.260	0.260	0.000	0.44	1958.385	125.9	SURCHARGED
S1.030	S3030	360 minute 30 year Winter I+0%	360	1	22.439	21.304	0.567	0.000	0.30	2.350	119.4	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.031	S3031	360 minute 30 year Winter I+0%	360	1	22.646	21.350	1.116	0.000	0.61	4.330	92.6	SURCHARGED
S28.000	S3350	60 minute 30 year Summer I+0%	60	1	24.098	22.283	-0.328	0.000	0.30	0.339	112.6	OK
S28.001	S3351	60 minute 30 year Summer I+0%	60	1	23.359	21.815	-0.178	0.000	0.75	3.805	217.9	OK
S28.002	S3352	60 minute 30 year Winter I+0%	60	1	22.742	21.427	-0.193	0.000	0.39	5.534	184.8	OK
S28.003	S3353	60 minute 30 year Winter I+0%	60	1	22.519	21.386	0.139	0.000	0.18	5.656	174.3	SURCHARGED
S28.004	S3354	60 minute 30 year Winter I+0%	60	1	22.616	21.375	0.248	0.000	0.38	15.367	174.1	SURCHARGED
S29.000	S3370	60 minute 30 year Winter I+0%	60	1	23.318	21.445	0.010	0.000	0.39	0.345	21.7	SURCHARGED
S29.001	S3371	60 minute 30 year Winter I+0%	60	1	23.170	21.431	0.060	0.000	0.51	1.632	30.9	SURCHARGED
S29.002	S3372	60 minute 30 year Winter I+0%	60	1	22.964	21.412	0.111	0.000	0.64	1.580	37.1	SURCHARGED
S29.003	S3373	60 minute 30 year Winter I+0%	60	1	22.764	21.395	0.146	0.000	0.73	1.311	38.8	SURCHARGED
S29.004	S3374	60 minute 30 year Winter I+0%	60	1	22.667	21.382	0.165	0.000	0.55	0.981	47.1	SURCHARGED
S30.000	S3380	60 minute 30 year Winter I+0%	60	1	22.437	21.373	0.136	0.000	0.16	0.318	2.7	SURCHARGED
S28.005	S3355	60 minute 30 year Winter I+0%	60	1	22.561	21.366	0.267	0.000	0.17	12.119	213.5	SURCHARGED
S28.006	S3356	60 minute 30 year Winter I+0%	60	1	22.401	21.360	0.310	0.000	0.18	27.561	211.3	SURCHARGED
S28.007	S3357	360 minute 30 year Winter I+0%	360	1	22.379	21.364	0.364	0.000	0.09	36.797	69.5	SURCHARGED
S28.008	S3358	360 minute 30 year Winter I+0%	360	1	22.415	21.368	0.384	0.000	0.11	12.179	70.1	SURCHARGED
S31.000	S3390	60 minute 30 year Summer I+0%	60	1	23.337	21.710	-0.153	0.000	0.22	0.076	12.2	OK
S31.001	S3391	60 minute 30 year Winter I+0%	60	1	23.137	21.413	-0.081	0.000	0.47	0.297	16.2	OK
S31.002	S3392	60 minute 30 year Winter I+0%	60	1	22.984	21.397	-0.022	0.000	0.56	0.566	20.5	OK
S31.003	S3393	60 minute 30 year Winter I+0%	60	1	22.666	21.372	0.089	0.000	0.76	1.178	22.7	SURCHARGED
S31.004	S3394	60 minute 30 year Winter I+0%	60	1	22.568	21.361	0.121	0.000	0.80	0.623	25.8	SURCHARGED
S28.009	S3359	360 minute 30 year Winter I+0%	360	1	22.484	21.371	0.404	0.000	0.10	15.698	74.7	SURCHARGED
S28.010	S3360	360 minute 30 year Winter I+0%	360	1	22.471	21.374	0.427	0.000	0.07	13.386	71.3	SURCHARGED
S1.032	S3032	360 minute 30 year Winter I+0%	360	1	22.286	21.379	0.474	0.000	0.09	35.003	83.6	SURCHARGED
S1.033	S3033-CON	360 minute 30 year Winter I+0%	360	1	22.317	21.379	1.265	0.000	0.35	36.825	54.5	SURCHARGED
S1.034	S3034	60 minute 30 year Winter I+0%	60	1	22.361	19.753	-0.239	0.000	0.44	2.039	55.0	OK
S1.035	S3035	60 minute 30 year Winter I+0%	60	1	22.443	19.689	-0.255	0.000	0.39	1.113	54.9	OK
S1.036	S3036	60 minute 30 year Winter I+0%	60	1	21.748	19.591	-0.262	0.000	0.37	1.742	54.7	OK
S1.037	S3037	60 minute 30 year Winter I+0%	60	1	21.314	19.417	-0.261	0.000	0.37	2.243	54.4	OK
S1.038	S3038	60 minute 30 year Winter I+0%	60	1	20.779	19.311	-0.205	0.000	0.46	3.630	54.2	OK
S1.039	S3039	60 minute 30 year Winter I+0%	60	1	20.378	19.273	-0.200	0.000	0.60	1.444	54.2	OK
S1.040	S3040-HW	60 minute 30 year Winter I+0%	60	1	20.192	19.142	-1.050	0.000	0.01	0.313	54.2	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.000	S3000	60 minute 100 year Summer I+40%	60	1	27.478	26.188	-0.090	0.000	0.67	0.147	39.2	OK
S1.001	S3001	60 minute 100 year Summer I+40%	60	1	26.966	25.873	0.107	0.000	0.94	1.035	62.1	SURCHARGED
S1.002	S3002	60 minute 100 year Summer I+40%	60	1	26.704	25.740	0.130	0.000	1.01	3.271	105.6	SURCHARGED
S1.003	S3003	60 minute 100 year Summer I+40%	60	1	28.014	25.541	0.121	0.000	1.23	7.088	108.2	SURCHARGED
S2.000	S3050	60 minute 100 year Summer I+40%	60	1	33.607	32.444	0.037	0.000	1.18	0.290	42.8	SURCHARGED
S2.001	S3051	60 minute 100 year Summer I+40%	60	1	33.552	32.215	-0.077	0.000	0.76	0.428	67.6	OK
S2.002	S3052	60 minute 100 year Summer I+40%	60	1	32.390	31.110	-0.079	0.000	0.74	0.213	77.5	OK
S2.003	S3053	60 minute 100 year Summer I+40%	60	1	31.592	30.702	0.310	0.000	0.85	0.900	87.7	SURCHARGED
S2.004	S3054	60 minute 100 year Summer I+40%	60	1	30.545	29.988	0.611	0.000	1.11	1.507	101.4	SURCHARGED
S2.005	S3055	60 minute 100 year Summer I+40%	60	1	29.217	28.444	0.313	0.000	1.32	1.075	107.1	SURCHARGED
S2.006	S3056	60 minute 100 year Summer I+40%	60	1	28.782	27.596	-0.099	0.000	0.60	0.174	110.0	OK
S1.004	S3004	60 minute 100 year Summer I+40%	60	1	28.294	25.470	0.098	0.000	1.85	2.652	224.6	SURCHARGED
S1.005	S3005	60 minute 100 year Summer I+40%	60	1	28.322	25.411	0.068	0.000	1.39	3.810	266.4	SURCHARGED
S1.006	S3006	60 minute 100 year Summer I+40%	60	1	27.532	24.951	-0.299	0.000	0.39	3.080	271.7	OK
S3.000	S3060	60 minute 100 year Summer I+40%	60	1	26.680	25.575	0.095	0.000	1.03	0.356	56.9	SURCHARGED
S3.001	S3061	60 minute 100 year Summer I+40%	60	1	26.141	24.908	0.087	0.000	0.64	1.268	83.3	SURCHARGED
S3.002	S3062	60 minute 100 year Summer I+40%	60	1	26.114	24.821	0.211	0.000	1.14	5.250	98.6	SURCHARGED
S3.003	S3063	60 minute 100 year Summer I+40%	60	1	26.410	24.763	0.200	0.000	1.22	2.318	121.6	SURCHARGED
S3.004	S3064	60 minute 100 year Summer I+40%	60	1	27.500	24.598	0.149	0.000	1.44	4.648	123.9	SURCHARGED
S1.007	S3007	60 minute 100 year Summer I+40%	60	1	27.348	24.498	0.090	0.000	1.09	3.359	441.8	SURCHARGED
S4.000	S3070	60 minute 100 year Summer I+40%	60	1	25.790	25.519	0.701	0.000	1.57	1.042	61.1	FLOOD RISK
S4.001	S3072	60 minute 100 year Summer I+40%	60	1	25.325	24.764	0.246	0.000	1.55	2.431	85.3	SURCHARGED
S4.002	S3073	60 minute 100 year Summer I+40%	60	1	25.456	24.647	0.169	0.000	1.12	1.378	109.9	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S4.003	S3074	60 minute 100 year Summer I+40%	60	1	25.586	24.523	0.141	0.000	1.31	4.042	131.3	SURCHARGED
S1.008	S3008	60 minute 100 year Summer I+40%	60	1	26.600	24.321	0.057	0.000	2.14	26.162	576.1	SURCHARGED
S1.009	S3009	60 minute 100 year Summer I+40%	60	1	26.345	24.248	0.010	0.000	2.27	6.479	581.3	SURCHARGED
S1.010	S3010	60 minute 100 year Summer I+40%	60	1	26.150	24.076	-0.143	0.000	0.44	4.041	601.4	OK
S1.011	S3011	60 minute 100 year Summer I+40%	60	1	24.845	23.881	0.698	0.000	0.94	29.357	607.1	SURCHARGED
S5.000	S3080	60 minute 100 year Summer I+40%	60	1	25.677	24.623	0.118	0.000	1.15	0.297	24.0	SURCHARGED
S5.001	S3081	60 minute 100 year Summer I+40%	60	1	25.276	24.066	-0.061	0.000	0.77	0.298	101.9	OK
S1.012	S3012	60 minute 100 year Summer I+40%	60	1	24.078	23.734	0.721	0.000	1.08	11.801	683.6	SURCHARGED
S1.013	S3013	60 minute 100 year Summer I+40%	60	1	23.942	23.674	0.714	0.000	1.60	19.927	689.4	FLOOD RISK
S1.014	S3014	60 minute 100 year Summer I+40%	60	1	23.833	23.626	0.697	0.000	2.52	12.689	691.2	FLOOD RISK
S6.000	S3090	60 minute 100 year Summer I+40%	60	1	31.555	29.914	-0.111	0.000	0.51	0.123	55.9	OK
S6.001	S3091	60 minute 100 year Summer I+40%	60	1	29.895	28.309	-0.056	0.000	0.70	0.234	66.5	OK
S6.002	S3092	60 minute 100 year Summer I+40%	60	1	29.250	27.991	0.266	0.000	1.20	0.872	81.1	SURCHARGED
S7.000	S3110	60 minute 100 year Summer I+40%	60	1	30.720	29.129	-0.081	0.000	0.74	0.158	55.6	OK
S7.001	S3111	60 minute 100 year Summer I+40%	60	1	29.740	28.182	-0.063	0.000	0.97	0.357	99.1	OK
S7.002	S3112	60 minute 100 year Summer I+40%	60	1	29.410	27.786	-0.134	0.000	0.74	0.626	112.2	OK
S7.003	S3113	60 minute 100 year Summer I+40%	60	1	29.250	27.658	-0.112	0.000	0.84	1.106	142.6	OK
S7.004	S3114	60 minute 100 year Summer I+40%	60	1	29.025	27.431	-0.109	0.000	0.84	1.287	159.0	OK
S6.003	S3093	60 minute 100 year Summer I+40%	60	1	28.650	27.161	0.016	0.000	1.02	2.707	248.7	SURCHARGED
S6.004	S3094	60 minute 100 year Summer I+40%	60	1	28.150	26.484	-0.171	0.000	0.57	0.530	278.6	OK
S8.000	S3120	60 minute 100 year Summer I+40%	60	1	26.200	24.347	0.219	0.000	1.11	0.412	18.7	SURCHARGED
S8.001	S3121	60 minute 100 year Summer I+40%	60	1	26.500	24.074	0.221	0.000	1.28	0.936	50.6	SURCHARGED
S8.002	S3122	60 minute 100 year Summer I+40%	60	1	26.440	23.904	0.228	0.000	0.95	1.587	59.9	SURCHARGED
S6.005	S3095	60 minute 100 year Summer I+40%	60	1	26.160	23.852	0.269	0.000	1.41	3.687	355.7	SURCHARGED
S6.006	S3096	60 minute 100 year Summer I+40%	60	1	24.555	23.749	0.230	0.000	0.47	10.045	341.2	SURCHARGED
S6.007	S3097	60 minute 100 year Summer I+40%	60	1	24.220	23.695	0.709	0.000	2.18	4.149	338.9	SURCHARGED
S6.008	S3098	60 minute 100 year Summer I+40%	60	1	23.845	23.629	0.667	0.000	0.70	6.573	338.6	FLOOD RISK
S6.009	S3099	60 minute 100 year Summer I+40%	60	1	23.675	23.604	0.702	0.000	0.78	7.661	349.0	FLOOD RISK
S6.010	S3100	60 minute 100 year Summer I+40%	60	1	23.600	23.590	0.695	0.000	0.95	7.467	349.9	FLOOD RISK
S1.015	S3015	60 minute 100 year Summer I+40%	60	1	23.565	23.577	0.692	11.909	2.87	30.181	956.5	FLOOD
S1.016	S3016	60 minute 100 year Winter I+40%	60	1	23.660	23.504	0.631	0.000	3.14	10.062	919.2	FLOOD RISK
S1.017	S3017	60 minute 100 year Winter I+40%	60	1	23.840	23.432	0.574	0.000	2.86	11.505	919.4	SURCHARGED
S9.000	S3130	60 minute 100 year Summer I+40%	60	1	26.352	25.050	-0.102	0.000	0.58	0.134	34.6	OK
S9.001	S3131	60 minute 100 year Summer I+40%	60	1	25.763	24.651	0.089	0.000	0.86	0.959	70.5	SURCHARGED
S9.002	S3132	60 minute 100 year Summer I+40%	60	1	25.576	24.477	0.164	0.000	1.16	3.039	78.7	SURCHARGED
S9.003	S3133	60 minute 100 year Summer I+40%	60	1	25.493	24.380	0.141	0.000	0.97	0.993	94.7	SURCHARGED
S10.000	S3140	60 minute 100 year Summer I+40%	60	1	25.428	24.224	-0.004	0.000	0.55	0.245	28.9	OK
S9.004	S3134	60 minute 100 year Summer I+40%	60	1	25.210	24.161	0.151	0.000	1.24	2.580	134.1	SURCHARGED
S9.005	S3135	60 minute 100 year Summer I+40%	60	1	24.964	23.777	0.014	0.000	1.13	1.366	147.5	SURCHARGED
S9.006	S3136	60 minute 100 year Summer I+40%	60	1	24.852	23.531	-0.121	0.000	0.54	0.923	146.3	OK
S9.007	S3137	60 minute 100 year Winter I+40%	60	1	24.696	23.493	0.073	0.000	0.45	2.374	140.5	SURCHARGED
S9.008	S3138	60 minute 100 year Winter I+40%	60	1	24.374	23.442	0.344	0.000	0.57	4.841	145.5	SURCHARGED
S9.009	S3139	60 minute 100 year Winter I+40%	60	1	24.123	23.395	0.501	0.000	1.10	4.248	155.2	SURCHARGED
S1.018	S3018	60 minute 100 year Winter I+40%	60	1	23.970	23.362	0.517	0.000	2.12	11.942	1073.5	SURCHARGED
S1.019	S3019	60 minute 100 year Winter I+40%	60	1	23.988	23.211	0.380	0.000	3.23	5.611	1071.9	SURCHARGED
S1.020	S3020-BASIN D	60 minute 100 year Winter I+40%	60	1	23.500	23.196	0.861	0.000	0.90	1216.703	248.6	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.021	S3021-CON	60 minute 100 year Winter I+40%	60	1	23.971	23.125	0.921	0.000	1.16	6.006	247.6	SURCHARGED
S1.022	S3022	60 minute 100 year Winter I+40%	60	1	24.693	22.313	0.207	0.000	1.17	9.103	243.8	SURCHARGED
S1.023	S3023	60 minute 100 year Winter I+40%	60	1	25.302	22.129	0.172	0.000	1.12	15.217	236.1	SURCHARGED
S1.024	S3024	60 minute 100 year Winter I+40%	60	1	25.496	21.931	0.137	0.000	1.10	16.377	232.5	SURCHARGED
S1.025	S3025	240 minute 100 year Winter I+40%	240	1	25.233	21.785	0.154	0.000	1.14	16.474	212.6	SURCHARGED
S1.026	S3026	360 minute 100 year Winter I+40%	360	1	24.970	21.759	0.187	0.000	1.05	6.616	197.8	SURCHARGED
S1.027	S3027	480 minute 100 year Winter I+40%	480	1	24.235	21.739	0.231	0.000	1.01	7.208	184.8	SURCHARGED
S1.028	S3028	480 minute 100 year Winter I+40%	480	1	24.282	21.726	0.269	0.000	1.36	6.001	184.8	SURCHARGED
S11.000	S3150	60 minute 100 year Summer I+40%	60	1	27.983	26.270	-0.392	0.000	0.04	0.075	14.3	OK
S11.001	S3151	60 minute 100 year Summer I+40%	60	1	27.335	25.686	-0.354	0.000	0.10	0.192	46.1	OK
S11.002	S3152	60 minute 100 year Summer I+40%	60	1	26.707	24.921	-0.286	0.000	0.28	0.371	70.3	OK
S11.003	S3153	60 minute 100 year Summer I+40%	60	1	26.514	24.820	-0.194	0.000	0.30	0.809	74.3	OK
S11.004	S3154	60 minute 100 year Summer I+40%	60	1	26.322	24.805	-0.017	0.000	0.19	1.707	78.8	OK
S12.000	S3180	60 minute 100 year Summer I+40%	60	1	27.434	25.884	-0.050	0.000	0.78	0.107	19.7	OK
S13.000	S3190	60 minute 100 year Summer I+40%	60	1	27.405	25.837	-0.143	0.000	0.29	0.088	20.1	OK
S12.001	S3181	60 minute 100 year Summer I+40%	60	1	27.355	25.512	-0.228	0.000	0.33	0.206	56.4	OK
S12.002	S3182	60 minute 100 year Summer I+40%	60	1	26.944	25.293	-0.240	0.000	0.28	0.379	78.6	OK
S12.003	S3183	60 minute 100 year Summer I+40%	60	1	26.586	24.883	-0.128	0.000	0.51	0.614	95.9	OK
S12.004	S3184	60 minute 100 year Summer I+40%	60	1	26.355	24.849	0.069	0.000	0.45	1.612	106.7	SURCHARGED
S11.005	S3155	60 minute 100 year Summer I+40%	60	1	25.834	24.780	0.521	0.000	0.72	8.291	176.6	SURCHARGED
S11.006	S3156	60 minute 100 year Summer I+40%	60	1	26.132	24.739	0.551	0.000	0.57	12.832	198.0	SURCHARGED
S14.000	S3200	60 minute 100 year Summer I+40%	60	1	27.248	25.551	-0.197	0.000	0.26	0.111	26.6	OK
S14.001	S3201	60 minute 100 year Summer I+40%	60	1	26.960	25.291	-0.169	0.000	0.39	0.304	67.8	OK
S14.002	S3202	60 minute 100 year Summer I+40%	60	1	26.657	24.891	0.169	0.000	0.65	1.214	103.0	SURCHARGED
S15.000	SH316	60 minute 100 year Summer I+40%	60	1	26.150	24.731	0.081	0.000	0.13	0.341	12.2	SURCHARGED
S11.007	S3157	60 minute 100 year Summer I+40%	60	1	26.356	24.715	0.588	0.000	1.68	6.072	332.3	SURCHARGED
S11.008	S3158	60 minute 100 year Summer I+40%	60	1	25.760	24.653	0.557	0.000	1.10	5.129	329.6	SURCHARGED
S11.009	S3159	60 minute 100 year Summer I+40%	60	1	25.205	24.504	0.534	0.000	1.82	15.786	327.8	SURCHARGED
S16.000	S3210	60 minute 100 year Summer I+40%	60	1	26.390	24.935	-0.030	0.000	0.39	0.130	17.6	OK
S17.000	S3220	60 minute 100 year Summer I+40%	60	1	26.231	24.931	0.125	0.000	0.44	0.306	14.6	SURCHARGED
S16.001	S3211	60 minute 100 year Summer I+40%	60	1	26.202	24.875	0.482	0.000	0.79	1.029	39.3	SURCHARGED
S16.002	S3212	60 minute 100 year Summer I+40%	60	1	26.040	24.770	0.579	0.000	0.94	1.551	46.8	SURCHARGED
S16.003	S3213	60 minute 100 year Summer I+40%	60	1	25.813	24.614	0.615	0.000	1.78	1.559	59.5	SURCHARGED
S11.010	S3160	60 minute 100 year Summer I+40%	60	1	25.672	24.431	0.494	0.000	1.38	6.467	390.5	SURCHARGED
S11.011	S3161	60 minute 100 year Summer I+40%	60	1	25.057	24.277	0.420	0.000	1.17	10.403	404.9	SURCHARGED
S18.000	SH323	60 minute 100 year Summer I+40%	60	1	25.250	24.337	0.353	0.000	0.04	0.648	1.3	SURCHARGED
S18.001	S3230	60 minute 100 year Summer I+40%	60	1	25.150	24.339	0.434	0.000	1.17	1.128	40.9	SURCHARGED
S18.002	S3231	60 minute 100 year Summer I+40%	60	1	24.920	24.215	0.410	0.000	1.67	1.363	49.9	SURCHARGED
S11.012	S3162	60 minute 100 year Summer I+40%	60	1	24.964	24.113	0.349	0.000	1.84	4.995	447.4	SURCHARGED
S11.013	S3163	60 minute 100 year Summer I+40%	60	1	24.890	23.859	0.169	0.000	3.28	13.119	465.6	SURCHARGED
S11.014	S3164	60 minute 100 year Summer I+40%	60	1	24.022	23.247	-0.775	0.000	0.06	0.661	465.6	OK
S19.000	S3240	60 minute 100 year Summer I+40%	60	1	24.640	23.313	-0.127	0.000	0.28	0.190	15.5	OK
S20.000	S3250	60 minute 100 year Summer I+40%	60	1	24.628	23.312	-0.116	0.000	0.34	0.202	18.0	OK
S19.001	S3241	60 minute 100 year Summer I+40%	60	1	24.597	23.302	-0.095	0.000	0.79	0.871	46.1	OK
S19.002	S3242	60 minute 100 year Summer I+40%	60	1	24.000	23.213	-0.081	0.000	0.88	1.396	56.4	OK
S11.015	S3165	60 minute 100 year Summer I+40%	60	1	23.922	23.142	-0.780	0.000	0.06	3.737	514.0	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S11.016	S3166	60 minute 100 year Summer I+40%	60	1	23.652	22.901	-0.751	0.000	0.07	8.004	514.2	OK
S21.000	S3260	60 minute 100 year Summer I+40%	60	1	24.136	22.824	-0.112	0.000	0.19	0.122	6.8	OK
S21.001	S3261	60 minute 100 year Summer I+40%	60	1	24.043	22.813	-0.030	0.000	0.86	0.604	29.2	OK
S11.017	S3167	60 minute 100 year Summer I+40%	60	1	23.459	22.782	-0.677	0.000	0.09	5.675	533.4	OK
S22.000	S3270	60 minute 100 year Summer I+40%	60	1	24.058	22.651	-0.207	0.000	0.17	0.100	10.6	OK
S22.001	S3271	60 minute 100 year Summer I+40%	60	1	23.965	22.611	-0.154	0.000	0.45	0.593	28.4	OK
S22.002	S3272	60 minute 100 year Summer I+40%	60	1	23.872	22.569	-0.103	0.000	0.69	0.942	39.3	OK
S11.018	S3168	60 minute 100 year Summer I+40%	60	1	23.365	22.549	-0.816	0.000	0.06	8.559	560.9	OK
S11.019	S3169	60 minute 100 year Summer I+40%	60	1	23.316	22.537	-0.779	0.000	0.07	0.974	560.7	OK
S11.020	S3170	60 minute 100 year Summer I+40%	60	1	22.996	22.363	-0.633	0.000	0.09	10.489	554.2	OK
S23.000	S3280	60 minute 100 year Winter I+40%	60	1	23.484	22.353	0.069	0.000	0.16	0.327	6.0	SURCHARGED
S23.001	S3281	60 minute 100 year Winter I+40%	60	1	23.269	22.345	0.276	0.000	0.99	1.963	32.5	SURCHARGED
S11.021	S3171	60 minute 100 year Summer I+40%	60	1	22.739	22.325	-0.414	0.000	0.09	35.839	512.2	OK
S11.022	S3172	60 minute 100 year Summer I+40%	60	1	22.621	22.316	0.325	0.000	1.90	72.223	471.5	SURCHARGED*
S11.023	S3173	60 minute 100 year Summer I+40%	60	1	22.633	21.775	-0.858	0.000	0.06	0.862	471.7	OK
S24.000	S3290	60 minute 100 year Summer I+40%	60	1	27.878	26.230	-0.232	0.000	0.12	0.071	11.5	OK
S24.001	S3291	60 minute 100 year Summer I+40%	60	1	27.725	26.068	-0.230	0.000	0.12	0.118	16.9	OK
S24.002	S3292	60 minute 100 year Summer I+40%	60	1	27.292	25.417	-0.221	0.000	0.35	0.253	46.5	OK
S24.003	S3293	60 minute 100 year Summer I+40%	60	1	27.136	25.343	-0.178	0.000	0.37	0.805	60.5	OK
S24.004	S3294	60 minute 100 year Summer I+40%	60	1	26.998	25.318	-0.026	0.000	0.42	1.562	78.1	OK
S24.005	S3295	60 minute 100 year Summer I+40%	60	1	26.633	25.274	0.295	0.000	1.04	4.580	103.0	SURCHARGED
S24.006	S3296	60 minute 100 year Summer I+40%	60	1	26.623	25.188	0.318	0.000	0.88	5.617	149.2	SURCHARGED
S24.007	S3297	60 minute 100 year Summer I+40%	60	1	26.942	25.141	0.353	0.000	1.52	3.529	160.8	SURCHARGED
S24.008	S3298	60 minute 100 year Summer I+40%	60	1	27.141	25.094	0.341	0.000	1.67	3.198	166.1	SURCHARGED
S25.000	S3320	60 minute 100 year Summer I+40%	60	1	27.291	25.611	-0.183	0.000	0.08	0.042	11.5	OK
S24.009	S3299	60 minute 100 year Summer I+40%	60	1	27.239	25.049	0.323	0.000	1.26	2.700	180.9	SURCHARGED
S24.010	S3300	60 minute 100 year Summer I+40%	60	1	26.728	24.906	0.284	0.000	0.68	7.464	191.3	SURCHARGED
S26.000	S3330	60 minute 100 year Summer I+40%	60	1	25.706	24.593	0.150	0.000	0.05	0.503	9.5	SURCHARGED
S24.011	S3301	60 minute 100 year Summer I+40%	60	1	25.786	24.586	0.655	0.000	1.49	15.592	270.1	SURCHARGED
S24.012	S3302	60 minute 100 year Summer I+40%	60	1	25.425	24.455	0.584	0.000	1.58	8.069	294.0	SURCHARGED
S24.013	S3303	60 minute 100 year Summer I+40%	60	1	24.980	24.268	0.472	0.000	1.84	9.580	325.7	SURCHARGED
S24.014	S3304	60 minute 100 year Summer I+40%	60	1	24.943	24.085	0.342	0.000	1.81	6.941	338.6	SURCHARGED
S24.015	S3305	60 minute 100 year Summer I+40%	60	1	24.865	23.825	0.160	0.000	2.77	9.247	357.0	SURCHARGED
S24.016	S3306	60 minute 100 year Summer I+40%	60	1	24.643	23.251	-1.392	0.000	0.02	0.645	356.7	OK
S24.017	S3307	60 minute 100 year Summer I+40%	60	1	24.775	23.024	-1.751	0.000	0.01	2.006	356.0	OK
S24.018	S3308	60 minute 100 year Summer I+40%	60	1	24.194	22.798	-1.396	0.000	0.01	8.113	342.8	OK
S24.019	S3309	60 minute 100 year Summer I+40%	60	1	24.085	22.790	-1.295	0.000	0.01	4.055	337.7	OK
S27.000	S3340	60 minute 100 year Winter I+40%	60	1	24.183	22.819	-0.164	0.000	0.05	0.149	2.7	OK
S27.001	S3341	60 minute 100 year Winter I+40%	60	1	24.142	22.818	-0.124	0.000	0.33	0.451	23.1	OK
S27.002	S3342	60 minute 100 year Summer I+40%	60	1	23.927	22.801	0.074	0.000	0.68	3.160	41.9	SURCHARGED
S24.020	S3310	60 minute 100 year Summer I+40%	60	1	23.831	22.788	-1.043	0.000	0.02	6.958	351.3	OK
S24.021	S3311	60 minute 100 year Summer I+40%	60	1	23.455	22.787	-0.668	0.000	0.02	10.914	345.9	OK
S24.022	S3312	60 minute 100 year Summer I+40%	60	1	23.461	22.786	0.341	0.000	2.04	10.028	345.0	SURCHARGED*
S24.023	S3313	60 minute 100 year Summer I+40%	60	1	23.546	22.245	-1.301	0.000	0.02	0.618	345.1	OK
S1.029	S3029-Basin C	480 minute 100 year Winter I+40%	480	1	22.300	21.715	0.715	0.000	0.59	4061.335	169.8	SURCHARGED
S1.030	S3030	480 minute 100 year Winter I+40%	480	1	22.439	21.776	1.039	0.000	0.42	3.026	166.3	SURCHARGED

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S1.031	S3031	480 minute 100 year Winter I+40%	480	1	22.646	21.855	1.621	0.000	0.97	5.053	147.3	SURCHARGED
S28.000	S3350	60 minute 100 year Summer I+40%	60	1	24.098	22.637	0.026	0.000	0.53	0.965	200.7	SURCHARGED
S28.001	S3351	60 minute 100 year Summer I+40%	60	1	23.359	22.572	0.579	0.000	1.15	20.382	332.2	SURCHARGED
S28.002	S3352	60 minute 100 year Summer I+40%	60	1	22.742	22.241	0.621	0.000	0.67	21.378	314.0	SURCHARGED
S28.003	S3353	60 minute 100 year Summer I+40%	60	1	22.519	22.114	0.867	0.000	0.32	7.987	307.2	SURCHARGED
S28.004	S3354	60 minute 100 year Summer I+40%	60	1	22.616	22.095	0.968	0.000	0.66	17.227	300.2	SURCHARGED
S29.000	S3370	60 minute 100 year Summer I+40%	60	1	23.318	22.220	0.785	0.000	0.74	1.221	40.8	SURCHARGED
S29.001	S3371	60 minute 100 year Summer I+40%	60	1	23.170	22.195	0.824	0.000	0.93	2.533	56.0	SURCHARGED
S29.002	S3372	60 minute 100 year Summer I+40%	60	1	22.964	22.162	0.861	0.000	1.14	2.427	66.0	SURCHARGED
S29.003	S3373	60 minute 100 year Summer I+40%	60	1	22.764	22.129	0.880	0.000	1.29	2.142	67.9	SURCHARGED
S29.004	S3374	60 minute 100 year Summer I+40%	60	1	22.667	22.106	0.889	0.000	0.94	1.799	81.0	SURCHARGED
S30.000	S3380	60 minute 100 year Summer I+40%	60	1	22.437	22.080	0.843	0.000	0.30	1.117	4.8	SURCHARGED
S28.005	S3355	60 minute 100 year Summer I+40%	60	1	22.561	22.079	0.980	0.000	0.30	14.587	376.7	SURCHARGED
S28.006	S3356	60 minute 100 year Summer I+40%	60	1	22.401	22.066	1.016	0.000	0.33	30.012	378.9	SURCHARGED
S28.007	S3357	60 minute 100 year Summer I+40%	60	1	22.379	22.051	1.051	0.000	0.48	39.180	370.1	SURCHARGED
S28.008	S3358	60 minute 100 year Summer I+40%	60	1	22.415	22.042	1.058	0.000	0.57	14.513	369.7	SURCHARGED
S31.000	S3390	60 minute 100 year Summer I+40%	60	1	23.337	22.178	0.315	0.000	0.39	0.606	21.2	SURCHARGED
S31.001	S3391	60 minute 100 year Summer I+40%	60	1	23.137	22.152	0.658	0.000	0.81	2.126	28.0	SURCHARGED
S31.002	S3392	60 minute 100 year Summer I+40%	60	1	22.984	22.126	0.707	0.000	0.96	1.503	35.3	SURCHARGED
S31.003	S3393	60 minute 100 year Summer I+40%	60	1	22.666	22.084	0.801	0.000	1.20	2.015	35.8	SURCHARGED
S31.004	S3394	60 minute 100 year Summer I+40%	60	1	22.568	22.062	0.822	0.000	1.29	1.416	41.4	SURCHARGED
S28.009	S3359	60 minute 100 year Summer I+40%	60	1	22.484	22.031	1.064	0.000	0.54	17.985	393.4	SURCHARGED
S28.010	S3360	60 minute 100 year Summer I+40%	60	1	22.471	22.021	1.074	0.000	0.37	15.626	389.8	SURCHARGED
S1.032	S3032	60 minute 100 year Summer I+40%	60	1	22.286	22.006	1.101	0.000	0.09	39.434	85.9	FLOOD RISK
S1.033	S3033-CON	60 minute 100 year Summer I+40%	60	1	22.317	22.003	1.889	0.000	0.42	40.397	65.5	SURCHARGED
S1.034	S3034	60 minute 100 year Summer I+40%	60	1	22.361	19.775	-0.217	0.000	0.52	2.433	65.3	OK
S1.035	S3035	60 minute 100 year Summer I+40%	60	1	22.443	19.709	-0.235	0.000	0.46	1.295	65.2	OK
S1.036	S3036	60 minute 100 year Summer I+40%	60	1	21.748	19.610	-0.243	0.000	0.43	2.023	64.7	OK
S1.037	S3037	60 minute 100 year Winter I+40%	60	1	21.314	19.439	-0.239	0.000	0.43	2.732	63.9	OK
S1.038	S3038	60 minute 100 year Winter I+40%	60	1	20.779	19.338	-0.178	0.000	0.54	4.403	63.6	OK
S1.039	S3039	60 minute 100 year Winter I+40%	60	1	20.378	19.301	-0.172	0.000	0.70	1.678	63.6	OK
S1.040	S3040-HW	60 minute 100 year Winter I+40%	60	1	20.192	19.153	-1.039	0.000	0.01	0.356	63.6	OK

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.000	S3000	60 minute 2 year Summer I+0%	60	1	27.478	26.116	-0.162	0.000	0.17	0.066	10.3	OK
S1.001	S3001	60 minute 2 year Summer I+0%	60	1	26.966	25.568	-0.198	0.000	0.25	0.112	16.6	OK
S1.002	S3002	60 minute 2 year Summer I+0%	60	1	26.704	25.369	-0.241	0.000	0.27	0.289	28.4	OK
S1.003	S3003	60 minute 2 year Summer I+0%	60	1	28.014	25.193	-0.227	0.000	0.33	1.062	28.9	OK
S2.000	S3050	60 minute 2 year Summer I+0%	60	1	33.607	32.268	-0.139	0.000	0.31	0.091	11.2	OK
S2.001	S3051	60 minute 2 year Summer I+0%	60	1	33.552	32.134	-0.158	0.000	0.19	0.139	17.2	OK
S2.002	S3052	60 minute 2 year Summer I+0%	60	1	32.390	31.030	-0.159	0.000	0.19	0.081	19.5	OK
S2.003	S3053	60 minute 2 year Summer I+0%	60	1	31.592	30.239	-0.153	0.000	0.22	0.085	23.3	OK
S2.004	S3054	60 minute 2 year Summer I+0%	60	1	30.545	29.237	-0.140	0.000	0.30	0.102	27.6	OK
S2.005	S3055	60 minute 2 year Summer I+0%	60	1	29.217	28.000	-0.131	0.000	0.36	0.118	29.4	OK
S2.006	S3056	60 minute 2 year Summer I+0%	60	1	28.782	27.531	-0.164	0.000	0.17	0.075	30.3	OK
S1.004	S3004	60 minute 2 year Summer I+0%	60	1	28.294	25.108	-0.264	0.000	0.49	0.681	60.1	OK
S1.005	S3005	60 minute 2 year Summer I+0%	60	1	28.322	25.042	-0.301	0.000	0.37	1.161	72.0	OK
S1.006	S3006	60 minute 2 year Summer I+0%	60	1	27.532	24.838	-0.412	0.000	0.10	0.816	73.3	OK
S3.000	S3060	60 minute 2 year Summer I+0%	60	1	26.680	25.336	-0.144	0.000	0.28	0.086	15.7	OK
S3.001	S3061	60 minute 2 year Summer I+0%	60	1	26.141	24.554	-0.267	0.000	0.18	0.148	23.7	OK
S3.002	S3062	60 minute 2 year Summer I+0%	60	1	26.114	24.385	-0.225	0.000	0.32	0.753	27.9	OK
S3.003	S3063	60 minute 2 year Summer I+0%	60	1	26.410	24.340	-0.223	0.000	0.34	0.595	34.3	OK
S3.004	S3064	60 minute 2 year Summer I+0%	60	1	27.500	24.240	-0.209	0.000	0.40	1.183	35.0	OK
S1.007	S3007	60 minute 2 year Summer I+0%	60	1	27.348	24.027	-0.381	0.000	0.30	0.540	120.5	OK
S4.000	S3070	60 minute 2 year Summer I+0%	60	1	25.790	24.700	-0.118	0.000	0.45	0.116	17.7	OK
S4.001	S3072	60 minute 2 year Summer I+0%	60	1	25.325	24.360	-0.158	0.000	0.45	0.227	24.8	OK
S4.002	S3073	60 minute 2 year Summer I+0%	60	1	25.456	24.250	-0.228	0.000	0.32	0.276	31.6	OK

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S4.003	S3074	60 minute 2 year Summer I+0%	60	1	25.586	24.166	-0.216	0.000	0.38	1.046	37.7	OK
S1.008	S3008	60 minute 2 year Summer I+0%	60	1	26.600	23.942	-0.322	0.000	0.57	9.192	154.2	OK
S1.009	S3009	60 minute 2 year Summer I+0%	60	1	26.345	23.906	-0.332	0.000	0.61	3.179	155.9	OK
S1.010	S3010	60 minute 2 year Summer I+0%	60	1	26.150	23.641	-0.578	0.000	0.12	0.705	164.6	OK
S1.011	S3011	60 minute 2 year Summer I+0%	60	1	24.845	22.704	-0.479	0.000	0.26	1.654	168.1	OK
S5.000	S3080	60 minute 2 year Summer I+0%	60	1	25.677	24.412	-0.093	0.000	0.31	0.059	6.5	OK
S5.001	S3081	60 minute 2 year Summer I+0%	60	1	25.276	23.916	-0.211	0.000	0.19	0.095	25.3	OK
S1.012	S3012	60 minute 2 year Summer I+0%	60	1	24.078	22.676	-0.337	0.000	0.30	2.970	187.4	OK
S1.013	S3013	60 minute 2 year Summer I+0%	60	1	23.942	22.661	-0.299	0.000	0.43	10.677	186.5	OK
S1.014	S3014	60 minute 2 year Summer I+0%	60	1	23.833	22.645	-0.284	0.000	0.68	6.735	186.9	OK
S6.000	S3090	60 minute 2 year Summer I+0%	60	1	31.555	29.854	-0.171	0.000	0.13	0.056	14.6	OK
S6.001	S3091	60 minute 2 year Summer I+0%	60	1	29.895	28.205	-0.160	0.000	0.18	0.076	17.4	OK
S6.002	S3092	60 minute 2 year Summer I+0%	60	1	29.250	27.586	-0.139	0.000	0.31	0.105	21.2	OK
S7.000	S3110	60 minute 2 year Summer I+0%	60	1	30.720	29.052	-0.158	0.000	0.19	0.070	14.5	OK
S7.001	S3111	60 minute 2 year Summer I+0%	60	1	29.740	28.045	-0.200	0.000	0.24	0.109	24.8	OK
S7.002	S3112	60 minute 2 year Summer I+0%	60	1	29.410	27.654	-0.266	0.000	0.18	0.156	27.9	OK
S7.003	S3113	60 minute 2 year Summer I+0%	60	1	29.250	27.510	-0.260	0.000	0.21	0.285	35.3	OK
S7.004	S3114	60 minute 2 year Summer I+0%	60	1	29.025	27.281	-0.259	0.000	0.21	0.294	39.6	OK
S6.003	S3093	60 minute 2 year Summer I+0%	60	1	28.650	26.901	-0.244	0.000	0.26	0.358	64.2	OK
S6.004	S3094	60 minute 2 year Summer I+0%	60	1	28.150	26.375	-0.280	0.000	0.15	0.172	72.5	OK
S8.000	S3120	60 minute 2 year Summer I+0%	60	1	26.200	24.035	-0.093	0.000	0.31	0.058	5.2	OK
S8.001	S3121	60 minute 2 year Summer I+0%	60	1	26.500	23.718	-0.135	0.000	0.34	0.098	13.3	OK
S8.002	S3122	60 minute 2 year Summer I+0%	60	1	26.440	23.479	-0.197	0.000	0.26	0.114	16.1	OK
S6.005	S3095	60 minute 2 year Summer I+0%	60	1	26.160	23.235	-0.348	0.000	0.37	0.440	93.0	OK
S6.006	S3096	60 minute 2 year Summer I+0%	60	1	24.555	23.061	-0.458	0.000	0.13	1.019	94.0	OK
S6.007	S3097	60 minute 2 year Summer I+0%	60	1	24.220	22.725	-0.261	0.000	0.61	0.880	95.0	OK
S6.008	S3098	60 minute 2 year Summer I+0%	60	1	23.845	22.633	-0.329	0.000	0.19	1.970	92.2	OK
S6.009	S3099	60 minute 2 year Summer I+0%	60	1	23.675	22.627	-0.275	0.000	0.21	3.415	93.0	OK
S6.010	S3100	60 minute 2 year Summer I+0%	60	1	23.600	22.624	-0.271	0.000	0.24	3.698	90.0	OK
S1.015	S3015	60 minute 2 year Summer I+0%	60	1	23.565	22.620	-0.265	0.000	0.79	10.248	264.2	OK
S1.016	S3016	60 minute 2 year Summer I+0%	60	1	23.660	22.599	-0.274	0.000	0.90	5.365	263.3	OK
S1.017	S3017	60 minute 2 year Summer I+0%	60	1	23.840	22.563	-0.295	0.000	0.82	6.068	263.9	OK
S9.000	S3130	60 minute 2 year Summer I+0%	60	1	26.352	24.985	-0.167	0.000	0.15	0.060	9.1	OK
S9.001	S3131	60 minute 2 year Summer I+0%	60	1	25.763	24.359	-0.203	0.000	0.23	0.106	18.9	OK
S9.002	S3132	60 minute 2 year Summer I+0%	60	1	25.576	24.129	-0.184	0.000	0.32	0.312	21.6	OK
S9.003	S3133	60 minute 2 year Summer I+0%	60	1	25.493	24.045	-0.194	0.000	0.27	0.193	26.2	OK
S10.000	S3140	60 minute 2 year Summer I+0%	60	1	25.428	24.061	-0.167	0.000	0.15	0.060	8.0	OK
S9.004	S3134	60 minute 2 year Summer I+0%	60	1	25.210	23.831	-0.179	0.000	0.34	0.286	37.2	OK
S9.005	S3135	60 minute 2 year Summer I+0%	60	1	24.964	23.531	-0.232	0.000	0.31	0.241	40.9	OK
S9.006	S3136	60 minute 2 year Summer I+0%	60	1	24.852	23.318	-0.334	0.000	0.15	0.174	40.8	OK
S9.007	S3137	60 minute 2 year Summer I+0%	60	1	24.696	23.084	-0.336	0.000	0.15	0.231	45.1	OK
S9.008	S3138	60 minute 2 year Summer I+0%	60	1	24.374	22.781	-0.317	0.000	0.19	0.358	48.8	OK
S9.009	S3139	60 minute 2 year Summer I+0%	60	1	24.123	22.633	-0.261	0.000	0.37	0.710	52.1	OK
S1.018	S3018	120 minute 2 year Winter I+0%	120	1	23.970	22.546	-0.299	0.000	0.40	5.621	199.8	OK
S1.019	S3019	120 minute 2 year Winter I+0%	120	1	23.988	22.542	-0.289	0.000	0.60	2.947	199.0	OK
S1.020	S3020-BASIN D	120 minute 2 year Winter I+0%	120	1	23.500	22.537	0.202	0.000	0.30	333.925	82.1	SURCHARGED

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.021	S3021-CON	120 minute 2 year Winter I+0%	120	1	23.971	22.516	0.312	0.000	0.39	4.929	82.1	SURCHARGED
S1.022	S3022	120 minute 2 year Winter I+0%	120	1	24.693	21.809	-0.297	0.000	0.39	2.620	82.0	OK
S1.023	S3023	120 minute 2 year Winter I+0%	120	1	25.302	21.659	-0.298	0.000	0.39	3.714	81.9	OK
S1.024	S3024	120 minute 2 year Winter I+0%	120	1	25.496	21.501	-0.293	0.000	0.39	4.019	81.6	OK
S1.025	S3025	120 minute 2 year Winter I+0%	120	1	25.233	21.382	-0.249	0.000	0.43	5.586	81.3	OK
S1.026	S3026	120 minute 2 year Winter I+0%	120	1	24.970	21.326	-0.246	0.000	0.43	2.656	81.2	OK
S1.027	S3027	120 minute 2 year Winter I+0%	120	1	24.235	21.269	-0.239	0.000	0.44	2.971	81.2	OK
S1.028	S3028	120 minute 2 year Winter I+0%	120	1	24.282	21.224	-0.233	0.000	0.60	2.509	81.1	OK
S11.000	S3150	60 minute 2 year Summer I+0%	60	1	27.983	26.234	-0.428	0.000	0.01	0.025	3.7	OK
S11.001	S3151	60 minute 2 year Summer I+0%	60	1	27.335	25.638	-0.402	0.000	0.03	0.090	11.3	OK
S11.002	S3152	60 minute 2 year Summer I+0%	60	1	26.707	24.834	-0.373	0.000	0.07	0.132	17.0	OK
S11.003	S3153	60 minute 2 year Summer I+0%	60	1	26.514	24.644	-0.370	0.000	0.07	0.144	17.9	OK
S11.004	S3154	60 minute 2 year Summer I+0%	60	1	26.322	24.434	-0.388	0.000	0.05	0.111	19.5	OK
S12.000	S3180	60 minute 2 year Summer I+0%	60	1	27.434	25.830	-0.104	0.000	0.20	0.046	5.1	OK
S13.000	S3190	60 minute 2 year Summer I+0%	60	1	27.405	25.796	-0.184	0.000	0.08	0.041	5.3	OK
S12.001	S3181	60 minute 2 year Summer I+0%	60	1	27.355	25.437	-0.303	0.000	0.08	0.096	14.4	OK
S12.002	S3182	60 minute 2 year Summer I+0%	60	1	26.944	25.223	-0.310	0.000	0.07	0.135	19.6	OK
S12.003	S3183	60 minute 2 year Summer I+0%	60	1	26.586	24.724	-0.287	0.000	0.13	0.145	23.6	OK
S12.004	S3184	60 minute 2 year Summer I+0%	60	1	26.355	24.488	-0.292	0.000	0.11	0.146	26.8	OK
S11.005	S3155	60 minute 2 year Summer I+0%	60	1	25.834	23.887	-0.372	0.000	0.21	0.432	51.8	OK
S11.006	S3156	60 minute 2 year Summer I+0%	60	1	26.132	23.828	-0.360	0.000	0.17	3.094	58.4	OK
S14.000	S3200	60 minute 2 year Summer I+0%	60	1	27.248	25.499	-0.249	0.000	0.07	0.052	7.0	OK
S14.001	S3201	60 minute 2 year Summer I+0%	60	1	26.960	25.222	-0.238	0.000	0.10	0.110	16.8	OK
S14.002	S3202	60 minute 2 year Summer I+0%	60	1	26.657	24.503	-0.219	0.000	0.16	0.106	25.6	OK
S15.000	SH316	60 minute 2 year Summer I+0%	60	1	26.150	24.452	-0.198	0.000	0.03	0.025	3.2	OK
S11.007	S3157	60 minute 2 year Summer I+0%	60	1	26.356	23.821	-0.306	0.000	0.48	1.218	95.6	OK
S11.008	S3158	60 minute 2 year Summer I+0%	60	1	25.760	23.757	-0.339	0.000	0.31	1.345	94.0	OK
S11.009	S3159	60 minute 2 year Summer I+0%	60	1	25.205	23.680	-0.290	0.000	0.50	5.769	90.7	OK
S16.000	S3210	60 minute 2 year Summer I+0%	60	1	26.390	24.847	-0.118	0.000	0.10	0.030	4.6	OK
S17.000	S3220	60 minute 2 year Summer I+0%	60	1	26.231	24.690	-0.116	0.000	0.12	0.033	3.9	OK
S16.001	S3211	60 minute 2 year Summer I+0%	60	1	26.202	24.241	-0.152	0.000	0.23	0.077	11.5	OK
S16.002	S3212	60 minute 2 year Summer I+0%	60	1	26.040	24.048	-0.143	0.000	0.29	0.131	14.2	OK
S16.003	S3213	60 minute 2 year Summer I+0%	60	1	25.813	23.893	-0.106	0.000	0.55	0.218	18.2	OK
S11.010	S3160	60 minute 2 year Summer I+0%	60	1	25.672	23.632	-0.305	0.000	0.37	1.999	105.6	OK
S11.011	S3161	60 minute 2 year Summer I+0%	60	1	25.057	23.574	-0.283	0.000	0.31	3.995	106.5	OK
S18.000	SH323	60 minute 2 year Summer I+0%	60	1	25.250	23.762	-0.222	0.000	0.00	0.000	0.0	OK
S18.001	S3230	60 minute 2 year Summer I+0%	60	1	25.150	23.767	-0.138	0.000	0.32	0.165	11.1	OK
S18.002	S3231	60 minute 2 year Summer I+0%	60	1	24.920	23.688	-0.117	0.000	0.46	0.244	13.9	OK
S11.012	S3162	60 minute 2 year Summer I+0%	60	1	24.964	23.558	-0.206	0.000	0.48	2.422	116.2	OK
S11.013	S3163	60 minute 2 year Summer I+0%	60	1	24.890	23.508	-0.182	0.000	0.84	7.899	119.6	OK
S11.014	S3164	60 minute 2 year Summer I+0%	60	1	24.022	23.104	-0.918	0.000	0.01	0.158	119.6	OK
S19.000	S3240	60 minute 2 year Summer I+0%	60	1	24.640	23.205	-0.235	0.000	0.07	0.068	4.1	OK
S20.000	S3250	60 minute 2 year Summer I+0%	60	1	24.628	23.200	-0.228	0.000	0.09	0.076	4.7	OK
S19.001	S3241	60 minute 2 year Summer I+0%	60	1	24.597	23.189	-0.208	0.000	0.20	0.271	11.8	OK
S19.002	S3242	60 minute 2 year Summer I+0%	60	1	24.000	23.090	-0.204	0.000	0.22	0.328	14.4	OK
S11.015	S3165	60 minute 2 year Summer I+0%	60	1	23.922	22.978	-0.944	0.000	0.02	0.727	128.4	OK

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S11.016	S3166	60 minute 2 year Summer I+0%	60	1	23.652	22.727	-0.925	0.000	0.02	1.718	128.5	OK
S21.000	S3260	60 minute 2 year Summer I+0%	60	1	24.136	22.744	-0.192	0.000	0.05	0.031	1.8	OK
S21.001	S3261	60 minute 2 year Summer I+0%	60	1	24.043	22.688	-0.155	0.000	0.21	0.147	7.2	OK
S11.017	S3167	60 minute 2 year Summer I+0%	60	1	23.459	22.610	-0.849	0.000	0.02	1.340	132.4	OK
S22.000	S3270	60 minute 2 year Summer I+0%	60	1	24.058	22.598	-0.260	0.000	0.04	0.040	2.8	OK
S22.001	S3271	60 minute 2 year Summer I+0%	60	1	23.965	22.532	-0.233	0.000	0.11	0.190	7.0	OK
S22.002	S3272	60 minute 2 year Summer I+0%	60	1	23.872	22.455	-0.217	0.000	0.17	0.239	9.7	OK
S11.018	S3168	60 minute 2 year Summer I+0%	60	1	23.365	22.378	-0.987	0.000	0.02	1.844	138.1	OK
S11.019	S3169	60 minute 2 year Summer I+0%	60	1	23.316	22.362	-0.954	0.000	0.02	0.191	138.1	OK
S11.020	S3170	60 minute 2 year Summer I+0%	60	1	22.996	22.141	-0.855	0.000	0.02	1.842	137.8	OK
S23.000	S3280	60 minute 2 year Summer I+0%	60	1	23.484	22.093	-0.191	0.000	0.05	0.032	2.0	OK
S23.001	S3281	60 minute 2 year Summer I+0%	60	1	23.269	21.934	-0.135	0.000	0.33	0.196	10.9	OK
S11.021	S3171	60 minute 2 year Summer I+0%	60	1	22.739	21.872	-0.867	0.000	0.03	2.517	142.9	OK
S11.022	S3172	60 minute 2 year Summer I+0%	60	1	22.621	21.750	-0.241	0.000	0.57	8.240	141.4	OK*
S11.023	S3173	60 minute 2 year Summer I+0%	60	1	22.633	21.617	-1.016	0.000	0.02	0.354	141.2	OK
S24.000	S3290	60 minute 2 year Summer I+0%	60	1	27.878	26.196	-0.266	0.000	0.03	0.033	3.0	OK
S24.001	S3291	60 minute 2 year Summer I+0%	60	1	27.725	26.033	-0.265	0.000	0.03	0.054	4.3	OK
S24.002	S3292	60 minute 2 year Summer I+0%	60	1	27.292	25.336	-0.302	0.000	0.08	0.099	11.3	OK
S24.003	S3293	60 minute 2 year Summer I+0%	60	1	27.136	25.221	-0.300	0.000	0.09	0.186	14.6	OK
S24.004	S3294	60 minute 2 year Summer I+0%	60	1	26.998	25.050	-0.294	0.000	0.10	0.166	19.2	OK
S24.005	S3295	60 minute 2 year Summer I+0%	60	1	26.633	24.739	-0.240	0.000	0.28	0.395	27.7	OK
S24.006	S3296	60 minute 2 year Summer I+0%	60	1	26.623	24.586	-0.284	0.000	0.23	0.720	39.6	OK
S24.007	S3297	60 minute 2 year Summer I+0%	60	1	26.942	24.552	-0.236	0.000	0.41	1.086	42.9	OK
S24.008	S3298	60 minute 2 year Summer I+0%	60	1	27.141	24.514	-0.239	0.000	0.45	0.973	44.7	OK
S25.000	S3320	60 minute 2 year Summer I+0%	60	1	27.291	25.591	-0.203	0.000	0.02	0.019	3.0	OK
S24.009	S3299	60 minute 2 year Summer I+0%	60	1	27.239	24.461	-0.265	0.000	0.35	0.641	50.2	OK
S24.010	S3300	60 minute 2 year Summer I+0%	60	1	26.728	24.307	-0.315	0.000	0.20	1.035	54.6	OK
S26.000	S3330	60 minute 2 year Summer I+0%	60	1	25.706	24.164	-0.279	0.000	0.02	0.019	2.7	OK
S24.011	S3301	60 minute 2 year Summer I+0%	60	1	25.786	23.692	-0.239	0.000	0.42	1.262	76.0	OK
S24.012	S3302	60 minute 2 year Summer I+0%	60	1	25.425	23.641	-0.230	0.000	0.44	3.205	81.5	OK
S24.013	S3303	60 minute 2 year Summer I+0%	60	1	24.980	23.584	-0.212	0.000	0.50	4.323	88.9	OK
S24.014	S3304	60 minute 2 year Summer I+0%	60	1	24.943	23.534	-0.209	0.000	0.49	3.210	91.0	OK
S24.015	S3305	60 minute 2 year Summer I+0%	60	1	24.865	23.477	-0.188	0.000	0.74	4.926	94.9	OK
S24.016	S3306	60 minute 2 year Summer I+0%	60	1	24.643	23.132	-1.511	0.000	0.01	0.165	94.8	OK
S24.017	S3307	60 minute 2 year Summer I+0%	60	1	24.775	22.904	-1.871	0.000	0.00	0.381	94.7	OK
S24.018	S3308	60 minute 2 year Summer I+0%	60	1	24.194	22.583	-1.611	0.000	0.00	1.079	94.8	OK
S24.019	S3309	60 minute 2 year Summer I+0%	60	1	24.085	22.490	-1.595	0.000	0.00	0.260	94.9	OK
S27.000	S3340	60 minute 2 year Summer I+0%	60	1	24.183	22.715	-0.268	0.000	0.01	0.031	0.9	OK
S27.001	S3341	60 minute 2 year Summer I+0%	60	1	24.142	22.705	-0.237	0.000	0.10	0.123	6.9	OK
S27.002	S3342	60 minute 2 year Summer I+0%	60	1	23.927	22.510	-0.217	0.000	0.17	0.230	10.5	OK
S24.020	S3310	60 minute 2 year Summer I+0%	60	1	23.831	22.394	-1.437	0.000	0.00	0.337	100.4	OK
S24.021	S3311	60 minute 2 year Summer I+0%	60	1	23.455	22.257	-1.198	0.000	0.01	0.172	100.3	OK
S24.022	S3312	60 minute 2 year Summer I+0%	60	1	23.461	22.245	-0.200	0.000	0.59	1.039	100.1	OK*
S24.023	S3313	60 minute 2 year Summer I+0%	60	1	23.546	22.124	-1.422	0.000	0.01	0.259	100.2	OK
S1.029	S3029-Basin C	360 minute 2 year Winter I+0%	360	1	22.300	20.956	-0.044	0.000	0.21	743.476	60.3	OK
S1.030	S3030	360 minute 2 year Winter I+0%	360	1	22.439	20.947	0.210	0.000	0.15	1.826	59.1	SURCHARGED

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.031	S3031	360 minute 2 year Winter I+0%	360	1	22.646	20.933	0.699	0.000	0.38	3.734	58.2	SURCHARGED
S28.000	S3350	60 minute 2 year Summer I+0%	60	1	24.098	22.216	-0.395	0.000	0.14	0.221	52.4	OK
S28.001	S3351	60 minute 2 year Summer I+0%	60	1	23.359	21.684	-0.309	0.000	0.35	1.401	100.9	OK
S28.002	S3352	60 minute 2 year Summer I+0%	60	1	22.742	21.259	-0.361	0.000	0.21	1.296	100.5	OK
S28.003	S3353	360 minute 2 year Winter I+0%	360	1	22.519	20.917	-0.330	0.000	0.03	1.706	27.0	OK
S28.004	S3354	360 minute 2 year Winter I+0%	360	1	22.616	20.917	-0.210	0.000	0.06	10.482	26.0	OK
S29.000	S3370	60 minute 2 year Summer I+0%	60	1	23.318	21.235	-0.200	0.000	0.23	0.107	12.5	OK
S29.001	S3371	60 minute 2 year Summer I+0%	60	1	23.170	21.181	-0.190	0.000	0.29	0.363	17.3	OK
S29.002	S3372	60 minute 2 year Summer I+0%	60	1	22.964	21.125	-0.176	0.000	0.36	0.401	20.7	OK
S29.003	S3373	60 minute 2 year Summer I+0%	60	1	22.764	21.082	-0.167	0.000	0.41	0.383	21.4	OK
S29.004	S3374	60 minute 2 year Summer I+0%	60	1	22.667	21.029	-0.188	0.000	0.30	0.218	25.8	OK
S30.000	S3380	60 minute 2 year Summer I+0%	60	1	22.437	21.087	-0.150	0.000	0.00	0.000	0.0	OK
S28.005	S3355	360 minute 2 year Winter I+0%	360	1	22.561	20.917	-0.182	0.000	0.03	8.266	33.7	OK
S28.006	S3356	360 minute 2 year Winter I+0%	360	1	22.401	20.917	-0.133	0.000	0.03	22.309	33.5	OK
S28.007	S3357	360 minute 2 year Winter I+0%	360	1	22.379	20.917	-0.083	0.000	0.04	31.231	32.1	OK
S28.008	S3358	360 minute 2 year Winter I+0%	360	1	22.415	20.917	-0.067	0.000	0.05	9.840	32.5	OK
S31.000	S3390	60 minute 2 year Summer I+0%	60	1	23.337	21.686	-0.177	0.000	0.10	0.049	5.7	OK
S31.001	S3391	60 minute 2 year Summer I+0%	60	1	23.137	21.347	-0.147	0.000	0.26	0.123	9.0	OK
S31.002	S3392	60 minute 2 year Summer I+0%	60	1	22.984	21.280	-0.139	0.000	0.31	0.176	11.3	OK
S31.003	S3393	60 minute 2 year Summer I+0%	60	1	22.666	21.159	-0.124	0.000	0.42	0.218	12.5	OK
S31.004	S3394	60 minute 2 year Summer I+0%	60	1	22.568	21.119	-0.121	0.000	0.44	0.185	14.1	OK
S28.009	S3359	360 minute 2 year Winter I+0%	360	1	22.484	20.916	-0.051	0.000	0.05	12.832	35.5	OK
S28.010	S3360	360 minute 2 year Winter I+0%	360	1	22.471	20.916	-0.031	0.000	0.03	11.131	35.0	OK
S1.032	S3032	360 minute 2 year Winter I+0%	360	1	22.286	20.916	0.011	0.000	0.06	30.626	56.6	SURCHARGED
S1.033	S3033-CON	360 minute 2 year Winter I+0%	360	1	22.317	20.914	0.800	0.000	0.31	32.938	48.2	SURCHARGED
S1.034	S3034	360 minute 2 year Winter I+0%	360	1	22.361	19.739	-0.253	0.000	0.39	1.806	48.2	OK
S1.035	S3035	360 minute 2 year Winter I+0%	360	1	22.443	19.675	-0.269	0.000	0.34	1.001	48.2	OK
S1.036	S3036	360 minute 2 year Winter I+0%	360	1	21.748	19.578	-0.275	0.000	0.32	1.556	48.2	OK
S1.037	S3037	360 minute 2 year Winter I+0%	360	1	21.314	19.404	-0.274	0.000	0.32	1.975	48.2	OK
S1.038	S3038	360 minute 2 year Winter I+0%	360	1	20.779	19.293	-0.223	0.000	0.41	3.143	48.2	OK
S1.039	S3039	360 minute 2 year Winter I+0%	360	1	20.378	19.256	-0.217	0.000	0.53	1.296	48.2	OK
S1.040	S3040-HW	360 minute 2 year Winter I+0%	360	1	20.192	19.134	-1.058	0.000	0.01	0.285	48.2	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.000	S3000	60 minute 30 year Summer I+0%	60	1	27.478	26.148	-0.130	0.000	0.38	0.102	22.0	OK
S1.001	S3001	60 minute 30 year Summer I+0%	60	1	26.966	25.628	-0.138	0.000	0.56	0.226	36.8	OK
S1.002	S3002	60 minute 30 year Summer I+0%	60	1	26.704	25.452	-0.158	0.000	0.61	0.752	64.1	OK
S1.003	S3003	60 minute 30 year Summer I+0%	60	1	28.014	25.384	-0.036	0.000	0.77	4.787	67.8	OK
S2.000	S3050	60 minute 30 year Summer I+0%	60	1	33.607	32.317	-0.090	0.000	0.67	0.147	24.1	OK
S2.001	S3051	60 minute 30 year Summer I+0%	60	1	33.552	32.170	-0.122	0.000	0.43	0.221	38.1	OK
S2.002	S3052	60 minute 30 year Summer I+0%	60	1	32.390	31.066	-0.123	0.000	0.42	0.130	43.7	OK
S2.003	S3053	60 minute 30 year Summer I+0%	60	1	31.592	30.281	-0.111	0.000	0.51	0.141	52.8	OK
S2.004	S3054	60 minute 30 year Summer I+0%	60	1	30.545	29.290	-0.087	0.000	0.69	0.183	62.9	OK
S2.005	S3055	60 minute 30 year Summer I+0%	60	1	29.217	28.062	-0.069	0.000	0.83	0.232	67.0	OK
S2.006	S3056	60 minute 30 year Summer I+0%	60	1	28.782	27.566	-0.129	0.000	0.38	0.121	68.9	OK
S1.004	S3004	60 minute 30 year Summer I+0%	60	1	28.294	25.352	-0.020	0.000	1.00	2.244	121.6	OK
S1.005	S3005	60 minute 30 year Summer I+0%	60	1	28.322	25.174	-0.169	0.000	0.78	2.265	149.3	OK
S1.006	S3006	60 minute 30 year Summer I+0%	60	1	27.532	24.890	-0.360	0.000	0.22	1.822	152.9	OK
S3.000	S3060	60 minute 30 year Summer I+0%	60	1	26.680	25.382	-0.098	0.000	0.61	0.138	33.8	OK
S3.001	S3061	60 minute 30 year Summer I+0%	60	1	26.141	24.613	-0.208	0.000	0.40	0.238	52.1	OK
S3.002	S3062	60 minute 30 year Summer I+0%	60	1	26.114	24.480	-0.130	0.000	0.71	1.856	61.9	OK
S3.003	S3063	60 minute 30 year Summer I+0%	60	1	26.410	24.436	-0.127	0.000	0.76	1.183	75.6	OK
S3.004	S3064	60 minute 30 year Summer I+0%	60	1	27.500	24.349	-0.100	0.000	0.89	2.665	76.8	OK
S1.007	S3007	60 minute 30 year Summer I+0%	60	1	27.348	24.281	-0.127	0.000	0.63	1.978	252.6	OK
S4.000	S3070	60 minute 30 year Summer I+0%	60	1	25.790	24.772	-0.046	0.000	0.97	0.197	37.9	OK
S4.001	S3072	60 minute 30 year Summer I+0%	60	1	25.325	24.457	-0.061	0.000	0.98	0.632	53.9	OK
S4.002	S3073	60 minute 30 year Summer I+0%	60	1	25.456	24.345	-0.133	0.000	0.71	0.596	69.6	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S4.003	S3074	60 minute 30 year Summer I+0%	60	1	25.586	24.277	-0.105	0.000	0.82	2.355	81.9	OK
S1.008	S3008	60 minute 30 year Summer I+0%	60	1	26.600	24.227	-0.037	0.000	1.17	23.107	315.5	OK
S1.009	S3009	60 minute 30 year Summer I+0%	60	1	26.345	24.105	-0.133	0.000	1.24	5.271	317.5	OK
S1.010	S3010	60 minute 30 year Summer I+0%	60	1	26.150	23.719	-0.500	0.000	0.24	1.214	332.7	OK
S1.011	S3011	60 minute 30 year Summer I+0%	60	1	24.845	23.095	-0.088	0.000	0.53	9.267	344.0	OK
S5.000	S3080	60 minute 30 year Summer I+0%	60	1	25.677	24.445	-0.060	0.000	0.67	0.096	14.0	OK
S5.001	S3081	60 minute 30 year Summer I+0%	60	1	25.276	23.968	-0.159	0.000	0.44	0.156	58.3	OK
S1.012	S3012	60 minute 30 year Summer I+0%	60	1	24.078	23.066	0.053	0.000	0.61	6.913	384.9	SURCHARGED
S1.013	S3013	60 minute 30 year Summer I+0%	60	1	23.942	23.035	0.075	0.000	0.90	17.936	389.1	SURCHARGED
S1.014	S3014	60 minute 30 year Summer I+0%	60	1	23.833	23.007	0.078	0.000	1.42	10.929	390.7	SURCHARGED
S6.000	S3090	60 minute 30 year Summer I+0%	60	1	31.555	29.882	-0.143	0.000	0.29	0.087	31.4	OK
S6.001	S3091	60 minute 30 year Summer I+0%	60	1	29.895	28.239	-0.126	0.000	0.40	0.119	37.8	OK
S6.002	S3092	60 minute 30 year Summer I+0%	60	1	29.250	27.639	-0.086	0.000	0.69	0.188	46.9	OK
S7.000	S3110	60 minute 30 year Summer I+0%	60	1	30.720	29.086	-0.124	0.000	0.41	0.108	31.2	OK
S7.001	S3111	60 minute 30 year Summer I+0%	60	1	29.740	28.104	-0.141	0.000	0.55	0.202	55.6	OK
S7.002	S3112	60 minute 30 year Summer I+0%	60	1	29.410	27.713	-0.207	0.000	0.42	0.324	63.0	OK
S7.003	S3113	60 minute 30 year Summer I+0%	60	1	29.250	27.576	-0.194	0.000	0.47	0.615	80.2	OK
S7.004	S3114	60 minute 30 year Summer I+0%	60	1	29.025	27.347	-0.193	0.000	0.47	0.649	89.8	OK
S6.003	S3093	60 minute 30 year Summer I+0%	60	1	28.650	26.979	-0.166	0.000	0.59	0.777	144.4	OK
S6.004	S3094	60 minute 30 year Summer I+0%	60	1	28.150	26.430	-0.225	0.000	0.33	0.343	163.4	OK
S8.000	S3120	60 minute 30 year Summer I+0%	60	1	26.200	24.067	-0.061	0.000	0.65	0.095	11.1	OK
S8.001	S3121	60 minute 30 year Summer I+0%	60	1	26.500	23.778	-0.075	0.000	0.77	0.204	30.3	OK
S8.002	S3122	60 minute 30 year Summer I+0%	60	1	26.440	23.541	-0.135	0.000	0.58	0.285	36.6	OK
S6.005	S3095	60 minute 30 year Summer I+0%	60	1	26.160	23.408	-0.175	0.000	0.84	1.116	211.2	OK
S6.006	S3096	60 minute 30 year Summer I+0%	60	1	24.555	23.139	-0.380	0.000	0.29	2.177	212.3	OK
S6.007	S3097	60 minute 30 year Summer I+0%	60	1	24.220	23.043	0.057	0.000	1.37	2.341	212.6	SURCHARGED
S6.008	S3098	60 minute 30 year Summer I+0%	60	1	23.845	23.015	0.053	0.000	0.43	4.954	209.7	SURCHARGED
S6.009	S3099	60 minute 30 year Summer I+0%	60	1	23.675	22.999	0.097	0.000	0.48	6.078	215.2	SURCHARGED
S6.010	S3100	60 minute 30 year Summer I+0%	60	1	23.600	22.990	0.095	0.000	0.58	5.896	213.1	SURCHARGED
S1.015	S3015	60 minute 30 year Summer I+0%	60	1	23.565	22.979	0.094	0.000	1.76	16.666	586.8	SURCHARGED
S1.016	S3016	60 minute 30 year Summer I+0%	60	1	23.660	22.944	0.071	0.000	2.00	8.482	584.9	SURCHARGED
S1.017	S3017	60 minute 30 year Summer I+0%	60	1	23.840	22.904	0.046	0.000	1.82	9.868	583.3	SURCHARGED
S9.000	S3130	60 minute 30 year Summer I+0%	60	1	26.352	25.015	-0.137	0.000	0.33	0.094	19.4	OK
S9.001	S3131	60 minute 30 year Summer I+0%	60	1	25.763	24.417	-0.145	0.000	0.52	0.210	42.6	OK
S9.002	S3132	60 minute 30 year Summer I+0%	60	1	25.576	24.202	-0.111	0.000	0.71	0.788	48.7	OK
S9.003	S3133	60 minute 30 year Summer I+0%	60	1	25.493	24.110	-0.129	0.000	0.61	0.397	59.4	OK
S10.000	S3140	60 minute 30 year Summer I+0%	60	1	25.428	24.091	-0.137	0.000	0.33	0.094	17.2	OK
S9.004	S3134	60 minute 30 year Summer I+0%	60	1	25.210	23.911	-0.099	0.000	0.77	0.718	83.7	OK
S9.005	S3135	60 minute 30 year Summer I+0%	60	1	24.964	23.624	-0.139	0.000	0.71	0.536	92.5	OK
S9.006	S3136	60 minute 30 year Summer I+0%	60	1	24.852	23.384	-0.268	0.000	0.34	0.345	92.8	OK
S9.007	S3137	60 minute 30 year Summer I+0%	60	1	24.696	23.149	-0.271	0.000	0.33	0.473	102.5	OK
S9.008	S3138	60 minute 30 year Summer I+0%	60	1	24.374	22.935	-0.163	0.000	0.43	1.358	108.5	OK
S9.009	S3139	60 minute 30 year Summer I+0%	60	1	24.123	22.897	0.003	0.000	0.79	2.946	110.5	SURCHARGED
S1.018	S3018	60 minute 30 year Summer I+0%	60	1	23.970	22.867	0.022	0.000	1.35	10.261	681.6	SURCHARGED
S1.019	S3019	60 minute 30 year Winter I+0%	60	1	23.988	22.831	0.000	0.000	1.93	4.496	641.4	OK
S1.020	S3020-BASIN D	60 minute 30 year Winter I+0%	60	1	23.500	22.810	0.475	0.000	0.69	630.871	191.5	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.021	S3021-CON	60 minute 30 year Winter I+0%	60	1	23.971	22.763	0.559	0.000	0.90	5.366	191.4	SURCHARGED
S1.022	S3022	60 minute 30 year Winter I+0%	60	1	24.693	21.985	-0.121	0.000	0.91	6.167	190.9	OK
S1.023	S3023	60 minute 30 year Winter I+0%	60	1	25.302	21.874	-0.083	0.000	0.88	10.977	186.2	OK
S1.024	S3024	60 minute 30 year Winter I+0%	60	1	25.496	21.753	-0.041	0.000	0.86	13.166	181.2	OK
S1.025	S3025	180 minute 30 year Winter I+0%	180	1	25.233	21.631	0.000	0.000	0.87	14.338	162.3	OK
S1.026	S3026	120 minute 30 year Winter I+0%	120	1	24.970	21.572	0.000	0.000	0.92	5.869	173.9	OK
S1.027	S3027	120 minute 30 year Summer I+0%	120	1	24.235	21.508	0.000	0.000	0.88	6.344	160.0	OK
S1.028	S3028	60 minute 30 year Winter I+0%	60	1	24.282	21.457	0.000	0.000	1.33	5.169	181.0	OK
S11.000	S3150	60 minute 30 year Summer I+0%	60	1	27.983	26.258	-0.404	0.000	0.02	0.059	8.0	OK
S11.001	S3151	60 minute 30 year Summer I+0%	60	1	27.335	25.660	-0.380	0.000	0.06	0.136	25.9	OK
S11.002	S3152	60 minute 30 year Summer I+0%	60	1	26.707	24.878	-0.329	0.000	0.16	0.233	39.5	OK
S11.003	S3153	60 minute 30 year Summer I+0%	60	1	26.514	24.688	-0.326	0.000	0.17	0.263	41.8	OK
S11.004	S3154	60 minute 30 year Summer I+0%	60	1	26.322	24.471	-0.351	0.000	0.11	0.182	45.7	OK
S12.000	S3180	60 minute 30 year Summer I+0%	60	1	27.434	25.853	-0.081	0.000	0.44	0.073	11.0	OK
S13.000	S3190	60 minute 30 year Summer I+0%	60	1	27.405	25.816	-0.164	0.000	0.16	0.063	11.3	OK
S12.001	S3181	60 minute 30 year Summer I+0%	60	1	27.355	25.473	-0.267	0.000	0.18	0.148	31.7	OK
S12.002	S3182	60 minute 30 year Summer I+0%	60	1	26.944	25.257	-0.276	0.000	0.16	0.214	44.1	OK
S12.003	S3183	60 minute 30 year Summer I+0%	60	1	26.586	24.773	-0.238	0.000	0.29	0.263	53.8	OK
S12.004	S3184	60 minute 30 year Summer I+0%	60	1	26.355	24.534	-0.246	0.000	0.26	0.264	61.4	OK
S11.005	S3155	60 minute 30 year Summer I+0%	60	1	25.834	24.135	-0.124	0.000	0.47	1.959	114.4	OK
S11.006	S3156	60 minute 30 year Summer I+0%	60	1	26.132	24.109	-0.079	0.000	0.36	9.651	126.2	OK
S14.000	S3200	60 minute 30 year Summer I+0%	60	1	27.248	25.524	-0.224	0.000	0.15	0.080	14.9	OK
S14.001	S3201	60 minute 30 year Summer I+0%	60	1	26.960	25.255	-0.205	0.000	0.22	0.173	38.1	OK
S14.002	S3202	60 minute 30 year Summer I+0%	60	1	26.657	24.550	-0.172	0.000	0.37	0.190	59.0	OK
S15.000	SH316	60 minute 30 year Summer I+0%	60	1	26.150	24.466	-0.184	0.000	0.08	0.040	6.9	OK
S11.007	S3157	60 minute 30 year Summer I+0%	60	1	26.356	24.094	-0.033	0.000	1.00	3.137	198.3	OK
S11.008	S3158	60 minute 30 year Summer I+0%	60	1	25.760	24.024	-0.072	0.000	0.65	3.464	194.7	OK
S11.009	S3159	60 minute 30 year Summer I+0%	60	1	25.205	23.970	0.000	0.000	1.07	13.872	192.6	OK
S16.000	S3210	60 minute 30 year Summer I+0%	60	1	26.390	24.862	-0.103	0.000	0.22	0.048	9.9	OK
S17.000	S3220	60 minute 30 year Summer I+0%	60	1	26.231	24.707	-0.099	0.000	0.25	0.052	8.3	OK
S16.001	S3211	60 minute 30 year Summer I+0%	60	1	26.202	24.282	-0.111	0.000	0.50	0.126	25.2	OK
S16.002	S3212	60 minute 30 year Summer I+0%	60	1	26.040	24.099	-0.092	0.000	0.64	0.266	31.8	OK
S16.003	S3213	60 minute 30 year Summer I+0%	60	1	25.813	24.020	0.021	0.000	1.23	0.658	41.3	SURCHARGED
S11.010	S3160	60 minute 30 year Summer I+0%	60	1	25.672	23.875	-0.062	0.000	0.80	4.642	225.6	OK
S11.011	S3161	60 minute 30 year Summer I+0%	60	1	25.057	23.806	-0.051	0.000	0.67	8.313	231.4	OK
S18.000	SH323	60 minute 30 year Summer I+0%	60	1	25.250	23.857	-0.127	0.000	0.01	0.106	0.3	OK
S18.001	S3230	60 minute 30 year Summer I+0%	60	1	25.150	23.858	-0.047	0.000	0.72	0.435	25.0	OK
S18.002	S3231	60 minute 30 year Summer I+0%	60	1	24.920	23.809	0.004	0.000	1.01	0.755	30.1	SURCHARGED
S11.012	S3162	60 minute 30 year Summer I+0%	60	1	24.964	23.770	0.006	0.000	1.03	4.200	251.6	SURCHARGED
S11.013	S3163	60 minute 30 year Summer I+0%	60	1	24.890	23.690	0.000	0.000	1.83	12.045	260.2	OK
S11.014	S3164	60 minute 30 year Summer I+0%	60	1	24.022	23.178	-0.844	0.000	0.03	0.316	260.3	OK
S19.000	S3240	60 minute 30 year Summer I+0%	60	1	24.640	23.249	-0.191	0.000	0.16	0.117	8.7	OK
S20.000	S3250	60 minute 30 year Summer I+0%	60	1	24.628	23.247	-0.181	0.000	0.19	0.129	10.1	OK
S19.001	S3241	60 minute 30 year Summer I+0%	60	1	24.597	23.238	-0.159	0.000	0.45	0.515	25.9	OK
S19.002	S3242	60 minute 30 year Summer I+0%	60	1	24.000	23.143	-0.151	0.000	0.49	0.763	31.7	OK
S11.015	S3165	60 minute 30 year Summer I+0%	60	1	23.922	23.061	-0.861	0.000	0.04	2.047	285.3	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S11.016	S3166	60 minute 30 year Summer I+0%	60	1	23.652	22.813	-0.839	0.000	0.04	4.202	285.0	OK
S21.000	S3260	60 minute 30 year Summer I+0%	60	1	24.136	22.764	-0.172	0.000	0.11	0.055	3.9	OK
S21.001	S3261	60 minute 30 year Summer I+0%	60	1	24.043	22.730	-0.113	0.000	0.49	0.256	16.6	OK
S11.017	S3167	60 minute 30 year Summer I+0%	60	1	23.459	22.695	-0.764	0.000	0.05	3.151	294.1	OK
S22.000	S3270	60 minute 30 year Summer I+0%	60	1	24.058	22.622	-0.236	0.000	0.09	0.067	6.0	OK
S22.001	S3271	60 minute 30 year Summer I+0%	60	1	23.965	22.568	-0.197	0.000	0.26	0.302	16.1	OK
S22.002	S3272	60 minute 30 year Summer I+0%	60	1	23.872	22.502	-0.170	0.000	0.39	0.478	22.3	OK
S11.018	S3168	60 minute 30 year Summer I+0%	60	1	23.365	22.465	-0.900	0.000	0.03	4.633	308.9	OK
S11.019	S3169	60 minute 30 year Summer I+0%	60	1	23.316	22.449	-0.867	0.000	0.04	0.483	309.2	OK
S11.020	S3170	60 minute 30 year Summer I+0%	60	1	22.996	22.228	-0.768	0.000	0.05	4.424	307.5	OK
S23.000	S3280	60 minute 30 year Summer I+0%	60	1	23.484	22.110	-0.174	0.000	0.12	0.052	4.3	OK
S23.001	S3281	60 minute 30 year Winter I+0%	60	1	23.269	22.059	-0.010	0.000	0.62	0.869	20.3	OK
S11.021	S3171	60 minute 30 year Summer I+0%	60	1	22.739	22.051	-0.688	0.000	0.05	11.384	301.1	OK
S11.022	S3172	60 minute 30 year Summer I+0%	60	1	22.621	22.030	0.039	0.000	1.00	32.645	248.6	SURCHARGED*
S11.023	S3173	60 minute 30 year Summer I+0%	60	1	22.633	21.684	-0.949	0.000	0.03	0.561	248.6	OK
S24.000	S3290	60 minute 30 year Summer I+0%	60	1	27.878	26.212	-0.250	0.000	0.07	0.050	6.4	OK
S24.001	S3291	60 minute 30 year Summer I+0%	60	1	27.725	26.050	-0.248	0.000	0.07	0.085	9.5	OK
S24.002	S3292	60 minute 30 year Summer I+0%	60	1	27.292	25.376	-0.262	0.000	0.19	0.162	26.1	OK
S24.003	S3293	60 minute 30 year Summer I+0%	60	1	27.136	25.262	-0.259	0.000	0.21	0.327	34.0	OK
S24.004	S3294	60 minute 30 year Summer I+0%	60	1	26.998	25.095	-0.249	0.000	0.24	0.314	45.0	OK
S24.005	S3295	60 minute 30 year Summer I+0%	60	1	26.633	24.827	-0.152	0.000	0.65	0.918	64.8	OK
S24.006	S3296	60 minute 30 year Summer I+0%	60	1	26.623	24.743	-0.127	0.000	0.53	2.650	89.7	OK
S24.007	S3297	60 minute 30 year Summer I+0%	60	1	26.942	24.711	-0.077	0.000	0.91	2.342	96.3	OK
S24.008	S3298	60 minute 30 year Summer I+0%	60	1	27.141	24.672	-0.081	0.000	1.00	2.080	99.7	OK
S25.000	S3320	60 minute 30 year Summer I+0%	60	1	27.291	25.599	-0.195	0.000	0.04	0.029	6.4	OK
S24.009	S3299	60 minute 30 year Summer I+0%	60	1	27.239	24.580	-0.146	0.000	0.78	1.291	112.3	OK
S24.010	S3300	60 minute 30 year Summer I+0%	60	1	26.728	24.380	-0.242	0.000	0.43	2.195	121.6	OK
S26.000	S3330	60 minute 30 year Summer I+0%	60	1	25.706	24.178	-0.265	0.000	0.03	0.034	5.7	OK
S24.011	S3301	60 minute 30 year Summer I+0%	60	1	25.786	23.949	0.018	0.000	0.92	5.610	166.4	SURCHARGED
S24.012	S3302	60 minute 30 year Summer I+0%	60	1	25.425	23.898	0.027	0.000	0.97	6.764	179.9	SURCHARGED
S24.013	S3303	60 minute 30 year Summer I+0%	60	1	24.980	23.828	0.032	0.000	1.12	8.426	198.1	SURCHARGED
S24.014	S3304	60 minute 30 year Summer I+0%	60	1	24.943	23.760	0.017	0.000	1.09	6.035	204.8	SURCHARGED
S24.015	S3305	60 minute 30 year Winter I+0%	60	1	24.865	23.665	0.000	0.000	1.59	8.344	204.4	OK
S24.016	S3306	60 minute 30 year Summer I+0%	60	1	24.643	23.196	-1.447	0.000	0.01	0.341	214.5	OK
S24.017	S3307	60 minute 30 year Summer I+0%	60	1	24.775	22.976	-1.799	0.000	0.01	1.189	214.6	OK
S24.018	S3308	60 minute 30 year Summer I+0%	60	1	24.194	22.651	-1.543	0.000	0.01	2.259	215.0	OK
S24.019	S3309	60 minute 30 year Summer I+0%	60	1	24.085	22.578	-1.507	0.000	0.01	0.919	213.0	OK
S27.000	S3340	60 minute 30 year Summer I+0%	60	1	24.183	22.744	-0.239	0.000	0.03	0.063	1.9	OK
S27.001	S3341	60 minute 30 year Summer I+0%	60	1	24.142	22.740	-0.202	0.000	0.23	0.198	16.2	OK
S27.002	S3342	60 minute 30 year Summer I+0%	60	1	23.927	22.574	-0.153	0.000	0.40	0.665	24.6	OK
S24.020	S3310	60 minute 30 year Summer I+0%	60	1	23.831	22.565	-1.266	0.000	0.01	2.392	220.5	OK
S24.021	S3311	60 minute 30 year Summer I+0%	60	1	23.455	22.560	-0.895	0.000	0.01	4.565	217.8	OK
S24.022	S3312	60 minute 30 year Summer I+0%	60	1	23.461	22.560	0.115	0.000	1.29	5.225	217.9	SURCHARGED*
S24.023	S3313	60 minute 30 year Summer I+0%	60	1	23.546	22.188	-1.358	0.000	0.01	0.438	217.6	OK
S1.029	S3029-Basin C	360 minute 30 year Winter I+0%	360	1	22.300	21.260	0.260	0.000	0.44	1958.385	125.9	SURCHARGED
S1.030	S3030	360 minute 30 year Winter I+0%	360	1	22.439	21.304	0.567	0.000	0.30	2.350	119.4	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.031	S3031	360 minute 30 year Winter I+0%	360	1	22.646	21.350	1.116	0.000	0.61	4.330	92.6	SURCHARGED
S28.000	S3350	60 minute 30 year Summer I+0%	60	1	24.098	22.283	-0.328	0.000	0.30	0.339	112.6	OK
S28.001	S3351	60 minute 30 year Summer I+0%	60	1	23.359	21.815	-0.178	0.000	0.75	3.805	217.9	OK
S28.002	S3352	60 minute 30 year Winter I+0%	60	1	22.742	21.427	-0.193	0.000	0.39	5.534	184.8	OK
S28.003	S3353	60 minute 30 year Winter I+0%	60	1	22.519	21.386	0.139	0.000	0.18	5.656	174.3	SURCHARGED
S28.004	S3354	60 minute 30 year Winter I+0%	60	1	22.616	21.375	0.248	0.000	0.38	15.367	174.1	SURCHARGED
S29.000	S3370	60 minute 30 year Winter I+0%	60	1	23.318	21.445	0.010	0.000	0.39	0.345	21.7	SURCHARGED
S29.001	S3371	60 minute 30 year Winter I+0%	60	1	23.170	21.431	0.060	0.000	0.51	1.632	30.9	SURCHARGED
S29.002	S3372	60 minute 30 year Winter I+0%	60	1	22.964	21.412	0.111	0.000	0.64	1.580	37.1	SURCHARGED
S29.003	S3373	60 minute 30 year Winter I+0%	60	1	22.764	21.395	0.146	0.000	0.73	1.311	38.8	SURCHARGED
S29.004	S3374	60 minute 30 year Winter I+0%	60	1	22.667	21.382	0.165	0.000	0.55	0.981	47.1	SURCHARGED
S30.000	S3380	60 minute 30 year Winter I+0%	60	1	22.437	21.373	0.136	0.000	0.16	0.318	2.7	SURCHARGED
S28.005	S3355	60 minute 30 year Winter I+0%	60	1	22.561	21.366	0.267	0.000	0.17	12.119	213.5	SURCHARGED
S28.006	S3356	60 minute 30 year Winter I+0%	60	1	22.401	21.360	0.310	0.000	0.18	27.561	211.3	SURCHARGED
S28.007	S3357	360 minute 30 year Winter I+0%	360	1	22.379	21.364	0.364	0.000	0.09	36.797	69.5	SURCHARGED
S28.008	S3358	360 minute 30 year Winter I+0%	360	1	22.415	21.368	0.384	0.000	0.11	12.179	70.1	SURCHARGED
S31.000	S3390	60 minute 30 year Summer I+0%	60	1	23.337	21.710	-0.153	0.000	0.22	0.076	12.2	OK
S31.001	S3391	60 minute 30 year Winter I+0%	60	1	23.137	21.413	-0.081	0.000	0.47	0.297	16.2	OK
S31.002	S3392	60 minute 30 year Winter I+0%	60	1	22.984	21.397	-0.022	0.000	0.56	0.566	20.5	OK
S31.003	S3393	60 minute 30 year Winter I+0%	60	1	22.666	21.372	0.089	0.000	0.76	1.178	22.7	SURCHARGED
S31.004	S3394	60 minute 30 year Winter I+0%	60	1	22.568	21.361	0.121	0.000	0.80	0.623	25.8	SURCHARGED
S28.009	S3359	360 minute 30 year Winter I+0%	360	1	22.484	21.371	0.404	0.000	0.10	15.698	74.7	SURCHARGED
S28.010	S3360	360 minute 30 year Winter I+0%	360	1	22.471	21.374	0.427	0.000	0.07	13.386	71.3	SURCHARGED
S1.032	S3032	360 minute 30 year Winter I+0%	360	1	22.286	21.379	0.474	0.000	0.09	35.003	83.6	SURCHARGED
S1.033	S3033-CON	360 minute 30 year Winter I+0%	360	1	22.317	21.379	1.265	0.000	0.35	36.825	54.5	SURCHARGED
S1.034	S3034	60 minute 30 year Winter I+0%	60	1	22.361	19.753	-0.239	0.000	0.44	2.039	55.0	OK
S1.035	S3035	60 minute 30 year Winter I+0%	60	1	22.443	19.689	-0.255	0.000	0.39	1.113	54.9	OK
S1.036	S3036	60 minute 30 year Winter I+0%	60	1	21.748	19.591	-0.262	0.000	0.37	1.742	54.7	OK
S1.037	S3037	60 minute 30 year Winter I+0%	60	1	21.314	19.417	-0.261	0.000	0.37	2.243	54.4	OK
S1.038	S3038	60 minute 30 year Winter I+0%	60	1	20.779	19.311	-0.205	0.000	0.46	3.630	54.2	OK
S1.039	S3039	60 minute 30 year Winter I+0%	60	1	20.378	19.273	-0.200	0.000	0.60	1.444	54.2	OK
S1.040	S3040-HW	60 minute 30 year Winter I+0%	60	1	20.192	19.142	-1.050	0.000	0.01	0.313	54.2	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.000	S3000	60 minute 100 year Summer I+40%	60	1	27.478	26.188	-0.090	0.000	0.67	0.147	39.2	OK
S1.001	S3001	60 minute 100 year Summer I+40%	60	1	26.966	25.873	0.107	0.000	0.94	1.035	62.1	SURCHARGED
S1.002	S3002	60 minute 100 year Summer I+40%	60	1	26.704	25.740	0.130	0.000	1.01	3.271	105.6	SURCHARGED
S1.003	S3003	60 minute 100 year Summer I+40%	60	1	28.014	25.541	0.121	0.000	1.23	7.088	108.2	SURCHARGED
S2.000	S3050	60 minute 100 year Summer I+40%	60	1	33.607	32.444	0.037	0.000	1.18	0.290	42.8	SURCHARGED
S2.001	S3051	60 minute 100 year Summer I+40%	60	1	33.552	32.215	-0.077	0.000	0.76	0.428	67.6	OK
S2.002	S3052	60 minute 100 year Summer I+40%	60	1	32.390	31.110	-0.079	0.000	0.74	0.213	77.5	OK
S2.003	S3053	60 minute 100 year Summer I+40%	60	1	31.592	30.702	0.310	0.000	0.85	0.900	87.7	SURCHARGED
S2.004	S3054	60 minute 100 year Summer I+40%	60	1	30.545	29.988	0.611	0.000	1.11	1.507	101.4	SURCHARGED
S2.005	S3055	60 minute 100 year Summer I+40%	60	1	29.217	28.444	0.313	0.000	1.32	1.075	107.1	SURCHARGED
S2.006	S3056	60 minute 100 year Summer I+40%	60	1	28.782	27.596	-0.099	0.000	0.60	0.174	110.0	OK
S1.004	S3004	60 minute 100 year Summer I+40%	60	1	28.294	25.470	0.098	0.000	1.85	2.652	224.6	SURCHARGED
S1.005	S3005	60 minute 100 year Summer I+40%	60	1	28.322	25.411	0.068	0.000	1.39	3.810	266.4	SURCHARGED
S1.006	S3006	60 minute 100 year Summer I+40%	60	1	27.532	24.951	-0.299	0.000	0.39	3.080	271.7	OK
S3.000	S3060	60 minute 100 year Summer I+40%	60	1	26.680	25.575	0.095	0.000	1.03	0.356	56.9	SURCHARGED
S3.001	S3061	60 minute 100 year Summer I+40%	60	1	26.141	24.908	0.087	0.000	0.64	1.268	83.3	SURCHARGED
S3.002	S3062	60 minute 100 year Summer I+40%	60	1	26.114	24.821	0.211	0.000	1.14	5.250	98.6	SURCHARGED
S3.003	S3063	60 minute 100 year Summer I+40%	60	1	26.410	24.763	0.200	0.000	1.22	2.318	121.6	SURCHARGED
S3.004	S3064	60 minute 100 year Summer I+40%	60	1	27.500	24.598	0.149	0.000	1.44	4.648	123.9	SURCHARGED
S1.007	S3007	60 minute 100 year Summer I+40%	60	1	27.348	24.498	0.090	0.000	1.09	3.359	441.8	SURCHARGED
S4.000	S3070	60 minute 100 year Summer I+40%	60	1	25.790	25.519	0.701	0.000	1.57	1.042	61.1	FLOOD RISK
S4.001	S3072	60 minute 100 year Summer I+40%	60	1	25.325	24.764	0.246	0.000	1.55	2.431	85.3	SURCHARGED
S4.002	S3073	60 minute 100 year Summer I+40%	60	1	25.456	24.647	0.169	0.000	1.12	1.378	109.9	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S4.003	S3074	60 minute 100 year Summer I+40%	60	1	25.586	24.523	0.141	0.000	1.31	4.042	131.3	SURCHARGED
S1.008	S3008	60 minute 100 year Summer I+40%	60	1	26.600	24.321	0.057	0.000	2.14	26.162	576.1	SURCHARGED
S1.009	S3009	60 minute 100 year Summer I+40%	60	1	26.345	24.248	0.010	0.000	2.27	6.479	581.3	SURCHARGED
S1.010	S3010	60 minute 100 year Summer I+40%	60	1	26.150	24.076	-0.143	0.000	0.44	4.041	601.4	OK
S1.011	S3011	60 minute 100 year Summer I+40%	60	1	24.845	23.881	0.698	0.000	0.94	29.357	607.1	SURCHARGED
S5.000	S3080	60 minute 100 year Summer I+40%	60	1	25.677	24.623	0.118	0.000	1.15	0.297	24.0	SURCHARGED
S5.001	S3081	60 minute 100 year Summer I+40%	60	1	25.276	24.066	-0.061	0.000	0.77	0.298	101.9	OK
S1.012	S3012	60 minute 100 year Summer I+40%	60	1	24.078	23.734	0.721	0.000	1.08	11.801	683.6	SURCHARGED
S1.013	S3013	60 minute 100 year Summer I+40%	60	1	23.942	23.674	0.714	0.000	1.60	19.927	689.4	FLOOD RISK
S1.014	S3014	60 minute 100 year Summer I+40%	60	1	23.833	23.626	0.697	0.000	2.52	12.689	691.2	FLOOD RISK
S6.000	S3090	60 minute 100 year Summer I+40%	60	1	31.555	29.914	-0.111	0.000	0.51	0.123	55.9	OK
S6.001	S3091	60 minute 100 year Summer I+40%	60	1	29.895	28.309	-0.056	0.000	0.70	0.234	66.5	OK
S6.002	S3092	60 minute 100 year Summer I+40%	60	1	29.250	27.991	0.266	0.000	1.20	0.872	81.1	SURCHARGED
S7.000	S3110	60 minute 100 year Summer I+40%	60	1	30.720	29.129	-0.081	0.000	0.74	0.158	55.6	OK
S7.001	S3111	60 minute 100 year Summer I+40%	60	1	29.740	28.182	-0.063	0.000	0.97	0.357	99.1	OK
S7.002	S3112	60 minute 100 year Summer I+40%	60	1	29.410	27.786	-0.134	0.000	0.74	0.626	112.2	OK
S7.003	S3113	60 minute 100 year Summer I+40%	60	1	29.250	27.658	-0.112	0.000	0.84	1.106	142.6	OK
S7.004	S3114	60 minute 100 year Summer I+40%	60	1	29.025	27.431	-0.109	0.000	0.84	1.287	159.0	OK
S6.003	S3093	60 minute 100 year Summer I+40%	60	1	28.650	27.161	0.016	0.000	1.02	2.707	248.7	SURCHARGED
S6.004	S3094	60 minute 100 year Summer I+40%	60	1	28.150	26.484	-0.171	0.000	0.57	0.530	278.6	OK
S8.000	S3120	60 minute 100 year Summer I+40%	60	1	26.200	24.347	0.219	0.000	1.11	0.412	18.7	SURCHARGED
S8.001	S3121	60 minute 100 year Summer I+40%	60	1	26.500	24.074	0.221	0.000	1.28	0.936	50.6	SURCHARGED
S8.002	S3122	60 minute 100 year Summer I+40%	60	1	26.440	23.904	0.228	0.000	0.95	1.587	59.9	SURCHARGED
S6.005	S3095	60 minute 100 year Summer I+40%	60	1	26.160	23.852	0.269	0.000	1.41	3.687	355.7	SURCHARGED
S6.006	S3096	60 minute 100 year Summer I+40%	60	1	24.555	23.749	0.230	0.000	0.47	10.045	341.2	SURCHARGED
S6.007	S3097	60 minute 100 year Summer I+40%	60	1	24.220	23.695	0.709	0.000	2.18	4.149	338.9	SURCHARGED
S6.008	S3098	60 minute 100 year Summer I+40%	60	1	23.845	23.629	0.667	0.000	0.70	6.573	338.6	FLOOD RISK
S6.009	S3099	60 minute 100 year Summer I+40%	60	1	23.675	23.604	0.702	0.000	0.78	7.661	349.0	FLOOD RISK
S6.010	S3100	60 minute 100 year Summer I+40%	60	1	23.600	23.590	0.695	0.000	0.95	7.467	349.9	FLOOD RISK
S1.015	S3015	60 minute 100 year Summer I+40%	60	1	23.565	23.577	0.692	11.909	2.87	30.181	956.5	FLOOD
S1.016	S3016	60 minute 100 year Winter I+40%	60	1	23.660	23.504	0.631	0.000	3.14	10.062	919.2	FLOOD RISK
S1.017	S3017	60 minute 100 year Winter I+40%	60	1	23.840	23.432	0.574	0.000	2.86	11.505	919.4	SURCHARGED
S9.000	S3130	60 minute 100 year Summer I+40%	60	1	26.352	25.050	-0.102	0.000	0.58	0.134	34.6	OK
S9.001	S3131	60 minute 100 year Summer I+40%	60	1	25.763	24.651	0.089	0.000	0.86	0.959	70.5	SURCHARGED
S9.002	S3132	60 minute 100 year Summer I+40%	60	1	25.576	24.477	0.164	0.000	1.16	3.039	78.7	SURCHARGED
S9.003	S3133	60 minute 100 year Summer I+40%	60	1	25.493	24.380	0.141	0.000	0.97	0.993	94.7	SURCHARGED
S10.000	S3140	60 minute 100 year Summer I+40%	60	1	25.428	24.224	-0.004	0.000	0.55	0.245	28.9	OK
S9.004	S3134	60 minute 100 year Summer I+40%	60	1	25.210	24.161	0.151	0.000	1.24	2.580	134.1	SURCHARGED
S9.005	S3135	60 minute 100 year Summer I+40%	60	1	24.964	23.777	0.014	0.000	1.13	1.366	147.5	SURCHARGED
S9.006	S3136	60 minute 100 year Summer I+40%	60	1	24.852	23.531	-0.121	0.000	0.54	0.923	146.3	OK
S9.007	S3137	60 minute 100 year Winter I+40%	60	1	24.696	23.493	0.073	0.000	0.45	2.374	140.5	SURCHARGED
S9.008	S3138	60 minute 100 year Winter I+40%	60	1	24.374	23.442	0.344	0.000	0.57	4.841	145.5	SURCHARGED
S9.009	S3139	60 minute 100 year Winter I+40%	60	1	24.123	23.395	0.501	0.000	1.10	4.248	155.2	SURCHARGED
S1.018	S3018	60 minute 100 year Winter I+40%	60	1	23.970	23.362	0.517	0.000	2.12	11.942	1073.5	SURCHARGED
S1.019	S3019	60 minute 100 year Winter I+40%	60	1	23.988	23.211	0.380	0.000	3.23	5.611	1071.9	SURCHARGED
S1.020	S3020-BASIN D	60 minute 100 year Winter I+40%	60	1	23.500	23.196	0.861	0.000	0.90	1216.703	248.6	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.021	S3021-CON	60 minute 100 year Winter I+40%	60	1	23.971	23.125	0.921	0.000	1.16	6.006	247.6	SURCHARGED
S1.022	S3022	60 minute 100 year Winter I+40%	60	1	24.693	22.313	0.207	0.000	1.17	9.103	243.8	SURCHARGED
S1.023	S3023	60 minute 100 year Winter I+40%	60	1	25.302	22.129	0.172	0.000	1.12	15.217	236.1	SURCHARGED
S1.024	S3024	60 minute 100 year Winter I+40%	60	1	25.496	21.931	0.137	0.000	1.10	16.377	232.5	SURCHARGED
S1.025	S3025	240 minute 100 year Winter I+40%	240	1	25.233	21.785	0.154	0.000	1.14	16.474	212.6	SURCHARGED
S1.026	S3026	360 minute 100 year Winter I+40%	360	1	24.970	21.759	0.187	0.000	1.05	6.616	197.8	SURCHARGED
S1.027	S3027	480 minute 100 year Winter I+40%	480	1	24.235	21.739	0.231	0.000	1.01	7.208	184.8	SURCHARGED
S1.028	S3028	480 minute 100 year Winter I+40%	480	1	24.282	21.726	0.269	0.000	1.36	6.001	184.8	SURCHARGED
S11.000	S3150	60 minute 100 year Summer I+40%	60	1	27.983	26.270	-0.392	0.000	0.04	0.075	14.3	OK
S11.001	S3151	60 minute 100 year Summer I+40%	60	1	27.335	25.686	-0.354	0.000	0.10	0.192	46.1	OK
S11.002	S3152	60 minute 100 year Summer I+40%	60	1	26.707	24.921	-0.286	0.000	0.28	0.371	70.3	OK
S11.003	S3153	60 minute 100 year Summer I+40%	60	1	26.514	24.820	-0.194	0.000	0.30	0.809	74.3	OK
S11.004	S3154	60 minute 100 year Summer I+40%	60	1	26.322	24.805	-0.017	0.000	0.19	1.707	78.8	OK
S12.000	S3180	60 minute 100 year Summer I+40%	60	1	27.434	25.884	-0.050	0.000	0.78	0.107	19.7	OK
S13.000	S3190	60 minute 100 year Summer I+40%	60	1	27.405	25.837	-0.143	0.000	0.29	0.088	20.1	OK
S12.001	S3181	60 minute 100 year Summer I+40%	60	1	27.355	25.512	-0.228	0.000	0.33	0.206	56.4	OK
S12.002	S3182	60 minute 100 year Summer I+40%	60	1	26.944	25.293	-0.240	0.000	0.28	0.379	78.6	OK
S12.003	S3183	60 minute 100 year Summer I+40%	60	1	26.586	24.883	-0.128	0.000	0.51	0.614	95.9	OK
S12.004	S3184	60 minute 100 year Summer I+40%	60	1	26.355	24.849	0.069	0.000	0.45	1.612	106.7	SURCHARGED
S11.005	S3155	60 minute 100 year Summer I+40%	60	1	25.834	24.780	0.521	0.000	0.72	8.291	176.6	SURCHARGED
S11.006	S3156	60 minute 100 year Summer I+40%	60	1	26.132	24.739	0.551	0.000	0.57	12.832	198.0	SURCHARGED
S14.000	S3200	60 minute 100 year Summer I+40%	60	1	27.248	25.551	-0.197	0.000	0.26	0.111	26.6	OK
S14.001	S3201	60 minute 100 year Summer I+40%	60	1	26.960	25.291	-0.169	0.000	0.39	0.304	67.8	OK
S14.002	S3202	60 minute 100 year Summer I+40%	60	1	26.657	24.891	0.169	0.000	0.65	1.214	103.0	SURCHARGED
S15.000	SH316	60 minute 100 year Summer I+40%	60	1	26.150	24.731	0.081	0.000	0.13	0.341	12.2	SURCHARGED
S11.007	S3157	60 minute 100 year Summer I+40%	60	1	26.356	24.715	0.588	0.000	1.68	6.072	332.3	SURCHARGED
S11.008	S3158	60 minute 100 year Summer I+40%	60	1	25.760	24.653	0.557	0.000	1.10	5.129	329.6	SURCHARGED
S11.009	S3159	60 minute 100 year Summer I+40%	60	1	25.205	24.504	0.534	0.000	1.82	15.786	327.8	SURCHARGED
S16.000	S3210	60 minute 100 year Summer I+40%	60	1	26.390	24.935	-0.030	0.000	0.39	0.130	17.6	OK
S17.000	S3220	60 minute 100 year Summer I+40%	60	1	26.231	24.931	0.125	0.000	0.44	0.306	14.6	SURCHARGED
S16.001	S3211	60 minute 100 year Summer I+40%	60	1	26.202	24.875	0.482	0.000	0.79	1.029	39.3	SURCHARGED
S16.002	S3212	60 minute 100 year Summer I+40%	60	1	26.040	24.770	0.579	0.000	0.94	1.551	46.8	SURCHARGED
S16.003	S3213	60 minute 100 year Summer I+40%	60	1	25.813	24.614	0.615	0.000	1.78	1.559	59.5	SURCHARGED
S11.010	S3160	60 minute 100 year Summer I+40%	60	1	25.672	24.431	0.494	0.000	1.38	6.467	390.5	SURCHARGED
S11.011	S3161	60 minute 100 year Summer I+40%	60	1	25.057	24.277	0.420	0.000	1.17	10.403	404.9	SURCHARGED
S18.000	SH323	60 minute 100 year Summer I+40%	60	1	25.250	24.337	0.353	0.000	0.04	0.648	1.3	SURCHARGED
S18.001	S3230	60 minute 100 year Summer I+40%	60	1	25.150	24.339	0.434	0.000	1.17	1.128	40.9	SURCHARGED
S18.002	S3231	60 minute 100 year Summer I+40%	60	1	24.920	24.215	0.410	0.000	1.67	1.363	49.9	SURCHARGED
S11.012	S3162	60 minute 100 year Summer I+40%	60	1	24.964	24.113	0.349	0.000	1.84	4.995	447.4	SURCHARGED
S11.013	S3163	60 minute 100 year Summer I+40%	60	1	24.890	23.859	0.169	0.000	3.28	13.119	465.6	SURCHARGED
S11.014	S3164	60 minute 100 year Summer I+40%	60	1	24.022	23.247	-0.775	0.000	0.06	0.661	465.6	OK
S19.000	S3240	60 minute 100 year Summer I+40%	60	1	24.640	23.313	-0.127	0.000	0.28	0.190	15.5	OK
S20.000	S3250	60 minute 100 year Summer I+40%	60	1	24.628	23.312	-0.116	0.000	0.34	0.202	18.0	OK
S19.001	S3241	60 minute 100 year Summer I+40%	60	1	24.597	23.302	-0.095	0.000	0.79	0.871	46.1	OK
S19.002	S3242	60 minute 100 year Summer I+40%	60	1	24.000	23.213	-0.081	0.000	0.88	1.396	56.4	OK
S11.015	S3165	60 minute 100 year Summer I+40%	60	1	23.922	23.142	-0.780	0.000	0.06	3.737	514.0	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S11.016	S3166	60 minute 100 year Summer I+40%	60	1	23.652	22.901	-0.751	0.000	0.07	8.004	514.2	OK
S21.000	S3260	60 minute 100 year Summer I+40%	60	1	24.136	22.824	-0.112	0.000	0.19	0.122	6.8	OK
S21.001	S3261	60 minute 100 year Summer I+40%	60	1	24.043	22.813	-0.030	0.000	0.86	0.604	29.2	OK
S11.017	S3167	60 minute 100 year Summer I+40%	60	1	23.459	22.782	-0.677	0.000	0.09	5.675	533.4	OK
S22.000	S3270	60 minute 100 year Summer I+40%	60	1	24.058	22.651	-0.207	0.000	0.17	0.100	10.6	OK
S22.001	S3271	60 minute 100 year Summer I+40%	60	1	23.965	22.611	-0.154	0.000	0.45	0.593	28.4	OK
S22.002	S3272	60 minute 100 year Summer I+40%	60	1	23.872	22.569	-0.103	0.000	0.69	0.942	39.3	OK
S11.018	S3168	60 minute 100 year Summer I+40%	60	1	23.365	22.549	-0.816	0.000	0.06	8.559	560.9	OK
S11.019	S3169	60 minute 100 year Summer I+40%	60	1	23.316	22.537	-0.779	0.000	0.07	0.974	560.7	OK
S11.020	S3170	60 minute 100 year Summer I+40%	60	1	22.996	22.363	-0.633	0.000	0.09	10.489	554.2	OK
S23.000	S3280	60 minute 100 year Winter I+40%	60	1	23.484	22.353	0.069	0.000	0.16	0.327	6.0	SURCHARGED
S23.001	S3281	60 minute 100 year Winter I+40%	60	1	23.269	22.345	0.276	0.000	0.99	1.963	32.5	SURCHARGED
S11.021	S3171	60 minute 100 year Summer I+40%	60	1	22.739	22.325	-0.414	0.000	0.09	35.839	512.2	OK
S11.022	S3172	60 minute 100 year Summer I+40%	60	1	22.621	22.316	0.325	0.000	1.90	72.223	471.5	SURCHARGED*
S11.023	S3173	60 minute 100 year Summer I+40%	60	1	22.633	21.775	-0.858	0.000	0.06	0.862	471.7	OK
S24.000	S3290	60 minute 100 year Summer I+40%	60	1	27.878	26.230	-0.232	0.000	0.12	0.071	11.5	OK
S24.001	S3291	60 minute 100 year Summer I+40%	60	1	27.725	26.068	-0.230	0.000	0.12	0.118	16.9	OK
S24.002	S3292	60 minute 100 year Summer I+40%	60	1	27.292	25.417	-0.221	0.000	0.35	0.253	46.5	OK
S24.003	S3293	60 minute 100 year Summer I+40%	60	1	27.136	25.343	-0.178	0.000	0.37	0.805	60.5	OK
S24.004	S3294	60 minute 100 year Summer I+40%	60	1	26.998	25.318	-0.026	0.000	0.42	1.562	78.1	OK
S24.005	S3295	60 minute 100 year Summer I+40%	60	1	26.633	25.274	0.295	0.000	1.04	4.580	103.0	SURCHARGED
S24.006	S3296	60 minute 100 year Summer I+40%	60	1	26.623	25.188	0.318	0.000	0.88	5.617	149.2	SURCHARGED
S24.007	S3297	60 minute 100 year Summer I+40%	60	1	26.942	25.141	0.353	0.000	1.52	3.529	160.8	SURCHARGED
S24.008	S3298	60 minute 100 year Summer I+40%	60	1	27.141	25.094	0.341	0.000	1.67	3.198	166.1	SURCHARGED
S25.000	S3320	60 minute 100 year Summer I+40%	60	1	27.291	25.611	-0.183	0.000	0.08	0.042	11.5	OK
S24.009	S3299	60 minute 100 year Summer I+40%	60	1	27.239	25.049	0.323	0.000	1.26	2.700	180.9	SURCHARGED
S24.010	S3300	60 minute 100 year Summer I+40%	60	1	26.728	24.906	0.284	0.000	0.68	7.464	191.3	SURCHARGED
S26.000	S3330	60 minute 100 year Summer I+40%	60	1	25.706	24.593	0.150	0.000	0.05	0.503	9.5	SURCHARGED
S24.011	S3301	60 minute 100 year Summer I+40%	60	1	25.786	24.586	0.655	0.000	1.49	15.592	270.1	SURCHARGED
S24.012	S3302	60 minute 100 year Summer I+40%	60	1	25.425	24.455	0.584	0.000	1.58	8.069	294.0	SURCHARGED
S24.013	S3303	60 minute 100 year Summer I+40%	60	1	24.980	24.268	0.472	0.000	1.84	9.580	325.7	SURCHARGED
S24.014	S3304	60 minute 100 year Summer I+40%	60	1	24.943	24.085	0.342	0.000	1.81	6.941	338.6	SURCHARGED
S24.015	S3305	60 minute 100 year Summer I+40%	60	1	24.865	23.825	0.160	0.000	2.77	9.247	357.0	SURCHARGED
S24.016	S3306	60 minute 100 year Summer I+40%	60	1	24.643	23.251	-1.392	0.000	0.02	0.645	356.7	OK
S24.017	S3307	60 minute 100 year Summer I+40%	60	1	24.775	23.024	-1.751	0.000	0.01	2.006	356.0	OK
S24.018	S3308	60 minute 100 year Summer I+40%	60	1	24.194	22.798	-1.396	0.000	0.01	8.113	342.8	OK
S24.019	S3309	60 minute 100 year Summer I+40%	60	1	24.085	22.790	-1.295	0.000	0.01	4.055	337.7	OK
S27.000	S3340	60 minute 100 year Winter I+40%	60	1	24.183	22.819	-0.164	0.000	0.05	0.149	2.7	OK
S27.001	S3341	60 minute 100 year Winter I+40%	60	1	24.142	22.818	-0.124	0.000	0.33	0.451	23.1	OK
S27.002	S3342	60 minute 100 year Summer I+40%	60	1	23.927	22.801	0.074	0.000	0.68	3.160	41.9	SURCHARGED
S24.020	S3310	60 minute 100 year Summer I+40%	60	1	23.831	22.788	-1.043	0.000	0.02	6.958	351.3	OK
S24.021	S3311	60 minute 100 year Summer I+40%	60	1	23.455	22.787	-0.668	0.000	0.02	10.914	345.9	OK
S24.022	S3312	60 minute 100 year Summer I+40%	60	1	23.461	22.786	0.341	0.000	2.04	10.028	345.0	SURCHARGED*
S24.023	S3313	60 minute 100 year Summer I+40%	60	1	23.546	22.245	-1.301	0.000	0.02	0.618	345.1	OK
S1.029	S3029-Basin C	480 minute 100 year Winter I+40%	480	1	22.300	21.715	0.715	0.000	0.59	4061.335	169.8	SURCHARGED
S1.030	S3030	480 minute 100 year Winter I+40%	480	1	22.439	21.776	1.039	0.000	0.42	3.026	166.3	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Duration (mins)	Storm Rank	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S1.031	S3031	480 minute 100 year Winter I+40%	480	1	22.646	21.855	1.621	0.000	0.97	5.053	147.3	SURCHARGED
S28.000	S3350	60 minute 100 year Summer I+40%	60	1	24.098	22.637	0.026	0.000	0.53	0.965	200.7	SURCHARGED
S28.001	S3351	60 minute 100 year Summer I+40%	60	1	23.359	22.572	0.579	0.000	1.15	20.382	332.2	SURCHARGED
S28.002	S3352	60 minute 100 year Summer I+40%	60	1	22.742	22.241	0.621	0.000	0.67	21.378	314.0	SURCHARGED
S28.003	S3353	60 minute 100 year Summer I+40%	60	1	22.519	22.114	0.867	0.000	0.32	7.987	307.2	SURCHARGED
S28.004	S3354	60 minute 100 year Summer I+40%	60	1	22.616	22.095	0.968	0.000	0.66	17.227	300.2	SURCHARGED
S29.000	S3370	60 minute 100 year Summer I+40%	60	1	23.318	22.220	0.785	0.000	0.74	1.221	40.8	SURCHARGED
S29.001	S3371	60 minute 100 year Summer I+40%	60	1	23.170	22.195	0.824	0.000	0.93	2.533	56.0	SURCHARGED
S29.002	S3372	60 minute 100 year Summer I+40%	60	1	22.964	22.162	0.861	0.000	1.14	2.427	66.0	SURCHARGED
S29.003	S3373	60 minute 100 year Summer I+40%	60	1	22.764	22.129	0.880	0.000	1.29	2.142	67.9	SURCHARGED
S29.004	S3374	60 minute 100 year Summer I+40%	60	1	22.667	22.106	0.889	0.000	0.94	1.799	81.0	SURCHARGED
S30.000	S3380	60 minute 100 year Summer I+40%	60	1	22.437	22.080	0.843	0.000	0.30	1.117	4.8	SURCHARGED
S28.005	S3355	60 minute 100 year Summer I+40%	60	1	22.561	22.079	0.980	0.000	0.30	14.587	376.7	SURCHARGED
S28.006	S3356	60 minute 100 year Summer I+40%	60	1	22.401	22.066	1.016	0.000	0.33	30.012	378.9	SURCHARGED
S28.007	S3357	60 minute 100 year Summer I+40%	60	1	22.379	22.051	1.051	0.000	0.48	39.180	370.1	SURCHARGED
S28.008	S3358	60 minute 100 year Summer I+40%	60	1	22.415	22.042	1.058	0.000	0.57	14.513	369.7	SURCHARGED
S31.000	S3390	60 minute 100 year Summer I+40%	60	1	23.337	22.178	0.315	0.000	0.39	0.606	21.2	SURCHARGED
S31.001	S3391	60 minute 100 year Summer I+40%	60	1	23.137	22.152	0.658	0.000	0.81	2.126	28.0	SURCHARGED
S31.002	S3392	60 minute 100 year Summer I+40%	60	1	22.984	22.126	0.707	0.000	0.96	1.503	35.3	SURCHARGED
S31.003	S3393	60 minute 100 year Summer I+40%	60	1	22.666	22.084	0.801	0.000	1.20	2.015	35.8	SURCHARGED
S31.004	S3394	60 minute 100 year Summer I+40%	60	1	22.568	22.062	0.822	0.000	1.29	1.416	41.4	SURCHARGED
S28.009	S3359	60 minute 100 year Summer I+40%	60	1	22.484	22.031	1.064	0.000	0.54	17.985	393.4	SURCHARGED
S28.010	S3360	60 minute 100 year Summer I+40%	60	1	22.471	22.021	1.074	0.000	0.37	15.626	389.8	SURCHARGED
S1.032	S3032	60 minute 100 year Summer I+40%	60	1	22.286	22.006	1.101	0.000	0.09	39.434	85.9	FLOOD RISK
S1.033	S3033-CON	60 minute 100 year Summer I+40%	60	1	22.317	22.003	1.889	0.000	0.42	40.397	65.5	SURCHARGED
S1.034	S3034	60 minute 100 year Summer I+40%	60	1	22.361	19.775	-0.217	0.000	0.52	2.433	65.3	OK
S1.035	S3035	60 minute 100 year Summer I+40%	60	1	22.443	19.709	-0.235	0.000	0.46	1.295	65.2	OK
S1.036	S3036	60 minute 100 year Summer I+40%	60	1	21.748	19.610	-0.243	0.000	0.43	2.023	64.7	OK
S1.037	S3037	60 minute 100 year Winter I+40%	60	1	21.314	19.439	-0.239	0.000	0.43	2.732	63.9	OK
S1.038	S3038	60 minute 100 year Winter I+40%	60	1	20.779	19.338	-0.178	0.000	0.54	4.403	63.6	OK
S1.039	S3039	60 minute 100 year Winter I+40%	60	1	20.378	19.301	-0.172	0.000	0.70	1.678	63.6	OK
S1.040	S3040-HW	60 minute 100 year Winter I+40%	60	1	20.192	19.153	-1.039	0.000	0.01	0.356	63.6	OK

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Appendix H

M380-FN25 REV B – BOORLEY GARDENS

SUDS OPERATION AND MAINTENANCE REQUIREMENTS

1. Introduction

1.1. This file note considers the text required within the Soft Landscape Management and Maintenance Plan. It is based on the text ACD Environmental Ltd have already prepared, with additional sections added to add detail as required by Eastleigh Borough Council.

2. SuDS Features (Swales and Basins)

2.1. The swales and SuDS basins and their associated aquatic vegetation will be monitored and managed on a non-interventionist basis annually for four years post development, although plant growth and water levels will be monitored and emergency treatment carried out if necessary. Monitoring visits and management will take place outside the breeding season. Each monitoring visit will consist of an assessment of the water level; an assessment of the health of aquatic vegetation and the need for any further aquatic planting; and an assessment of the colonisation of the swales by aquatic invertebrates.

2.2. Removal of vegetation from the swales and their margins should be carried out between mid-November and mid-February. Removal of vegetation should be carried out as sensitively as possible, with all operations carried out by hand or with the use of hand tools. Due care and attention should be given to avoid removing more than 50% of vegetation present in the basin in any given management year, and to avoiding carrying out vegetation removal in such a way that it might damage the basin. The removed vegetation should be kept on site for 24 hours to enable any aquatic species to move back to the water. The vegetation should then be removed from the site.

2.3. It is recognised that swales are dynamic functioning ecosystems, and that not all species planted are likely to perform equally well. As such it is to be expected that some species will die out between management intervals. This should not be seen as a cause for concern, provided that an overall diversity of plant species is maintained, providing suitable habitats for the associated fauna.

2.4. Over time it is likely that some silt and leaf-fall will accumulate in the swales. De-silting and leaf removal operations will be required on a regular basis, but that these should be carried out infrequently, as required. It is likely that this would need to take place on an approximately ten year cycle.

2.5. It is recommended that an annual inspection of the swales and existing ditches be carried out and reported, to the satisfaction of the Local Authority's Ecology Team, in June of each year, to identify any ecological (and other) problems. This would include a check for the presence of, an assessment of the vegetation in each basin, an assessment of the water level, an assessment of the requirement for management operations, an inspection of the hibernacula associated with each basin and a general assessment of the ecological value of the swales and wider site.

2.6. A SuDS Maintenance Inspection Checklist is contained in **Appendix A**, which should be completed and included in the Ecologist's Report. This Checklist will also enable maintenance inspections to be recorded for review and remediation by the Sewerage Undertaker, and the records saved for future reference.

2.7. Under the Design and Construction Guidance, issued by Water UK in October 2019, which is to be read in in conjunction with the Sewerage Sector Guidance published by the sewerage undertakers pursuant to the 'Code for adoption agreements for water and sewerage companies operating wholly or mainly in England' (the Code), SuDS components may be adoptable by the sewerage company. Icosa agrees with the interpretation that SuDS can be considered sewers, and are therefore adopting SuDS components (as of April 2020).

2.8. The SuDS components, comprising detention basins and swales, would therefore be maintained by a Sewerage Company. A 12 month functioning period would apply where the developer would be responsible for the maintenance of the SuDS components before handover to the Sewerage Company.

3. Operation and Maintenance Requirements

3.1. Guidance on the operation and maintenance of Sustainable Drainage Systems (SuDS) is provided in The SuDS Manual 2015 (Ciria C753). It is intended that the detention basins and swale are maintained generally in accordance with this guidance.

3.2. There are three categories of maintenance: regular, occasional, and remedial. In addition, remedial inspections should be undertaken as soon as possible as a result of notification of a defect by a third party, e.g. police or public. The purpose of remedial inspections is to identify obvious deficiencies which represent, or might lead to, a danger to the public and, therefore, require immediate or urgent attention.

3.3. Maintenance inspections must be undertaken by personnel with the minimum health, experience and, where appropriate, qualification requirements for the particular inspection type. The results of the inspections shall be recorded on Maintenance Inspection Checklists and the records saved for future reference.

3.4. Regular maintenance consists of basic tasks including litter and debris removal, and includes inspections and monitoring to identify potential system failures such as blockages, silt and sediment build-up, eroded or damaged areas, and condition of inlets and outlets.

3.5. Occasional maintenance comprises tasks that are likely to be required periodically and includes sediment removal and reseeding areas of poor vegetation growth.

3.6. Remedial Maintenance comprises intermittent tasks to rectify faults and includes inlet/outlet repairs, erosion repairs, and removal of oils/petrol.

3.7. The required actions in the event of a blockage are part of regular maintenance. For the detention basins and swales, the required action is to inspect all inlets, outlets, control chambers, and outfall headwalls, for blockages and clear if required, which is to be done on a monthly basis.

3.8. Guidance on the type of operation and maintenance requirements that may be appropriate for the detention basins, including required actions and typical frequency, are shown in **Table A** below, and the corresponding guidance for the swales is shown in **Table B** below. The list of activities, which is based on The SuDS Manual 2015 (CIRIA C753), is not exhaustive and some actions may not be required.

3.9. The Sewerage Company would be responsible for implementing the Maintenance Management Plan for the detention basins and swales, including carrying out remedial inspections and remediation, recording any actions for future reference.

3.10. The Management Company would be responsible for implementing the Maintenance Management Plan for the existing ditches, including carrying out remedial inspections.

Table A: Operation and maintenance requirements for detention basins

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect any lifebuoys, banks, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year), then annually or as required
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlet and forebay	Annually (or as required)
	Manage wetland plants in outlet pool – where provided	Annually (as set out in Chapter 23)
Occasional Maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required
Remedial Actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required

Source: The SuDS Manual 2015 (CIRIA C753)

Table B: Operation and maintenance requirements for swales

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly, or as required
	Cut grass – to retain grass height within specified design range	Monthly (during growing season), or as required
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspection infiltration surfaces for ponding, compaction, silt accumulation, record areas where water is ponding for > 48 hours	Monthly, or when required
	Inspect vegetation coverage	Monthly for 6 months, quarterly for 2 years, then half yearly
	Inspection inlets and facility surface for silt accumulation, established appropriate silt removal frequencies	Half yearly
Occasional Maintenance	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required	As required or if bare soil is exposed over 10% or more of the swale treatment area
Remedial Actions	Repair erosion or other damage by re-turfing or reseeding	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt depositions and prevent compaction of the soil surface	As required
	Remove build-up of sediment or upstream gravel trench, flow spreader or at top of filter strip	As required
	Remove and dispose of oils or petrol residues using safe standard practices	As required

Source: The SuDS Manual 2015 (CIRIA C753)

4. Summary

4.1. This drainage section of the Management Plan describes the proposed surface water drainage scheme, and sets out details of how the scheme shall be maintained and managed after completion, including confirmation of adoption and maintenance of all drainage proposals, and the maintenance strategy, frequency of inspections and required actions in the event of a blockage.

4.2. The SuDS components, comprising detention basins and swales, would be maintained by a Sewerage Company.

4.3. The Management Company would be responsible for implementing the Maintenance Management Plan for the existing ditches, including carrying out remedial inspections.

4.4. The application of the maintenance schedules set out in Table A and Table B, and use of the SuDS Inspection Maintenance Checklist at Appendix A, would ensure there are clear arrangements in place for ongoing maintenance of the SuDS components including recording the results of inspections for future reference.

APPENDICES

Appendix A SuDS Maintenance Inspection Checklist

Appendices

Appendix A

SuDS MAINTENANCE INSPECTION CHECKLIST

General Information	
Site ID	
Site Location and co-ordinates (GIS if appropriate)	
Elements forming the SuDS scheme	
Inspection Frequency	
Type of development	

Inspection Date				
	Details	**Y/N**	**Action required**	**Date Completed**
General Inspection Items				
Is there any evidence of erosion, channelling, ponding (where not desirable) or other poor hydraulic performance?				
Is there any evidence of accidental spillages, oils, poor water quality, odours or nuisance insects?				
Have any health and safety risks been identified to either the public or maintenance operatives?				
Is there any deterioration in the surface of permeable or porous surfaces (e.g. rutting, spreading of blocks or signs of ponding water)?				
Silt/Sediment Accumulation				
Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of filter drains or infiltration basins and with proprietary devices)? If yes, state depth (mm) and extent. Is removal required? If yes, state waste disposal requirements and confirm that all waste management requirements have been compiled with (consult environmental regulator).				
Is surface clogging visible (potentially problematic where water has to soak into the underlying construction or ground (e.g. under drained swale or infiltration basin)?				
Does permeable or porous surfacing require sweeping to remove silt?				
System Blockages and Litter Build-Up				
Is there evidence of litter accumulation in the system? If yes, is this a blockage risk?				

SuDS MAINTENANCE INSPECTION CHECKLIST

Inspection Date				
	Details	**Y/N**	**Action required**	**Date Completed**
Is there any evidence of any other clogging or blockage of outlets or drainage paths?				
Vegetation				
Is the vegetation condition satisfactory (density, weed growth, coverage etc)? (Check against approved planting regime).				
Does any part of the system require weeding, pruning or mowing? (Check against maintenance frequency stated in approved design)				
Is there any evidence of invasive species becoming established? If yes, state action required.				
Infrastructure				
Are any check dams or weirs in good condition?				
Is there evidence of any accidental damage to the system (e.g. wheel ruts?)				
Is there any evidence of cross connections or other unauthorised inflows?				
Is there any evidence of tampering with the flow controls?				
Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity and visual aspects? (Specify).				
Other Observations				
Information appended (e.g. photos)				
Suitability of Current Maintenance Regime				
Continue as current Increase maintenance Decrease maintenance				
Next Inspection				
Proposed date for next inspection				

Source: The SuDS Manual 2015 (CIRIA C753)