M5 Junction 10 Improvements Scheme

Environmental Statement

Appendix 2.1 Drainage strategy report

TR010063 - APP 6.15

Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

M5 Junction 10 Improvements Scheme

Development Consent Order 202[x]

Appendix 2.1 Drainage strategy report

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010063
Application Document Reference	TR010063/APP/6.15
Author:	M5 Junction 10 Improvements Scheme Project Team

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Rev 0	December 2023	DCO Application

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Abbreviations

GCC	Gloucestershire County Council
DMRB	Design Manual for Roads and Bridges
CIRIA	Construction Industry Research and Information Association
SuDS	Sustainable Drainage Systems
DCO	Development Consent Order
HEWRAT	Highways England Water Risk Assessment Tool
HADDMS	Highways Agency Drainage Data Management System
TIDP	Task Information Delivery Plan
FSR	Flood Studies Report
FEH	Flood Estimation Handbook
PCF	Product Control Framework
C_V	Volumetric Run off Coefficient
EA	Environment Agency
GI	Ground Investigation
CDKU	Combined Drainage and Kerb Units
BDK	Bridge Deck Drainage
LDC	Linear Drainage Channel
SWC	Surface Water Channel
GRP	Glass Reinforced Plastic
PNEC	Predicted No Effect Concentration

1 Introduction

1.1 Scheme Background

1.1.1 Atkins was appointed by Gloucestershire County Council (GCC) as the designer for the M5 Junction 10 Improvements Scheme. The purpose of the scheme is to improve the highway network around the existing M5 Junction 10 with an overarching aim to ease traffic congestion and to facilitate development in the area.

1.2 The Site

1.2.1 M5 Junction 10 is located 48 miles to the south of Birmingham, five miles to the south of Tewkesbury, four miles to the north-west of Cheltenham, and eight miles to the north-east of Gloucester. It is the northernmost of four junctions serving the Gloucester and Cheltenham urban areas.

1.2.2 This places the junction in a strategically important location for the region, particularly as northern and western Cheltenham are the sites of several large retail parks and employment areas. It is also the location of planned future housing and nationally significant business development.

1.2.3 The locations of the proposed infrastructure improvements that make up the M5 Junction 10 Improvements Scheme are illustrated in Figure 1-1 below:

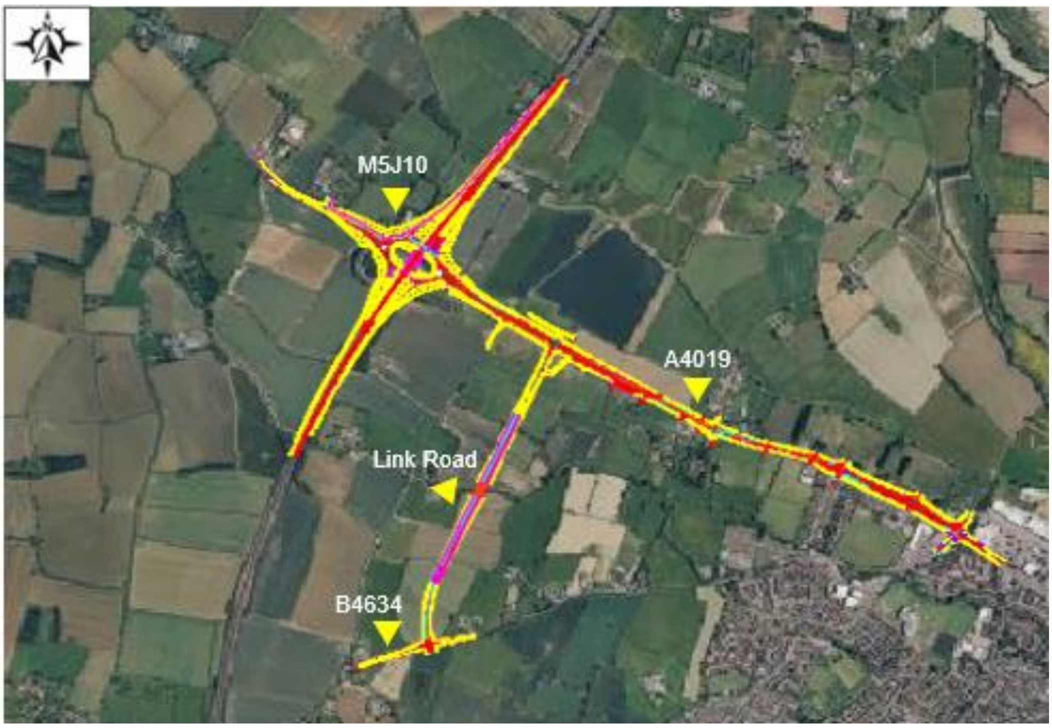


Figure 1-1 - Location of the Scheme

1.3 Scope of Report

1.3.1 This report is intended to provide a summary of the overall drainage design strategy for the M5 Junction 10 scheme, outlining a comprehensive and systematic approach for road drainage design aspects of the above scheme, to contribute to the requirements of the PCF Stage 3 Assessment. This report does not encompass land drainage aspects including watercourse alterations, geomorphology, floodplain storage matters, or associated flood risk relating to land drainage proposals. Notwithstanding, close collaboration has been undertaken with other teams to provide appropriate solutions, contribute to risk mitigation, and rigorously challenge constraints and opportunities of all elements of the design. Proposed road drainage designs will be carried out to current best practice guidance and based on the available information for the existing situation. The scheme includes the following improvements:

- An all-movements junction at M5 Junction 10 (Scheme Element 1)
- A new West Cheltenham Link Road east of Junction 10 from the A4019 to the B4634 (Scheme Element 2)
- Widening of the A4019 to the east of Junction 10, including a bus lane on the A4019 eastbound carriageway from the West Cheltenham Fire Station to the Gallagher Junction (Scheme Element 3)

2 Existing Highway Drainage

2.1 Summary

2.1.1 CCTV survey, Manhole survey drainage data, Topographical survey information, Ordinance survey mapping, HADDMS data and Google Street View has been reviewed as part of the preliminary design drainage information.

2.1.2 Whilst the CCTV survey has identified existing drainage assets at both locations, not all drainage systems could be surveyed due to the poor condition of the existing drainage systems. The existing catchments have been defined and are shown below in Figure 2-1.

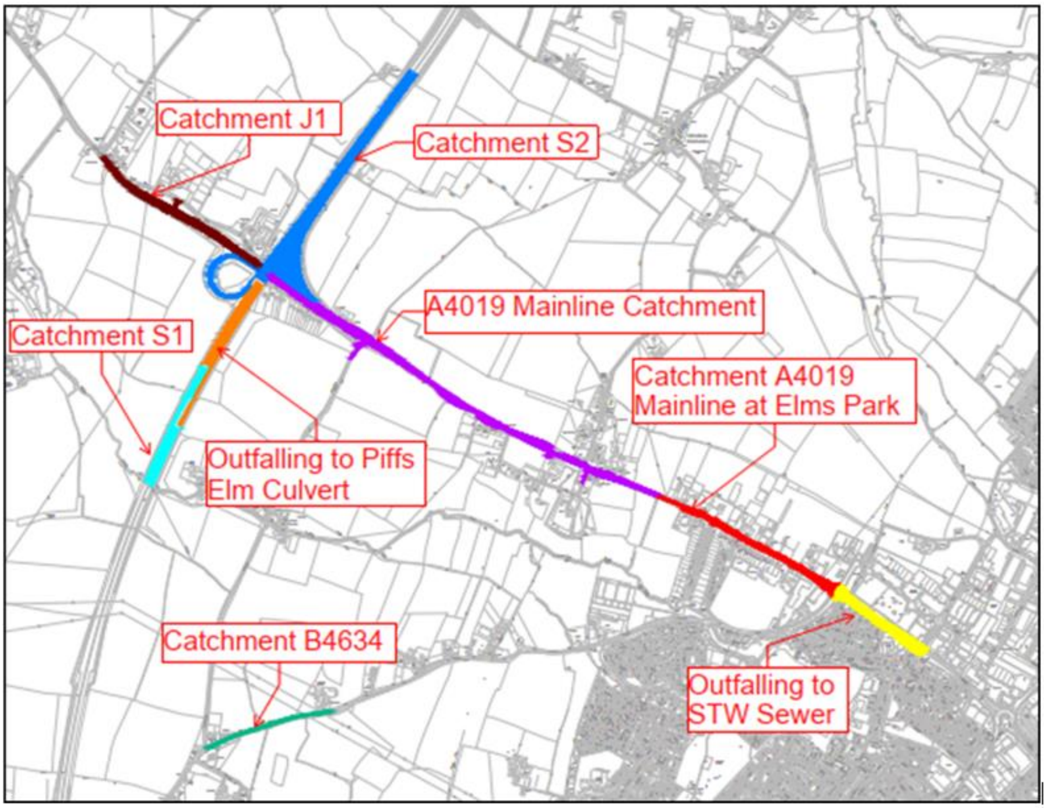


Figure 2-1 - Existing Catchment

2.1.3 **A4019 Mainline at Elms Park:** The existing drainage network for the catchment at A4019 Elms Park junction is comprised of a kerb and gully arrangement, with a piped system discharging into a ditch located to the west of the Cheltenham West Community Fire Station, on the south side of the highway. The ditch falls to the south and joins the River Chelt approximately 300m downstream. The head of the line starts at the Gallagher junction around 740m east of the outfall point.

2.1.4 **Outfall to Severn Trent Water sewer MH-6306:** The CCTV survey indicates that the highway drainage system to the east of the Gallagher junction discharges to the existing Severn Trent Water surface water sewer, at MH6306 which continues south. A continuation of the 375mm diameter highway system outgoing from MH6306 is at high level, acting as an overflow. The layout is shown in Figure 2-2.

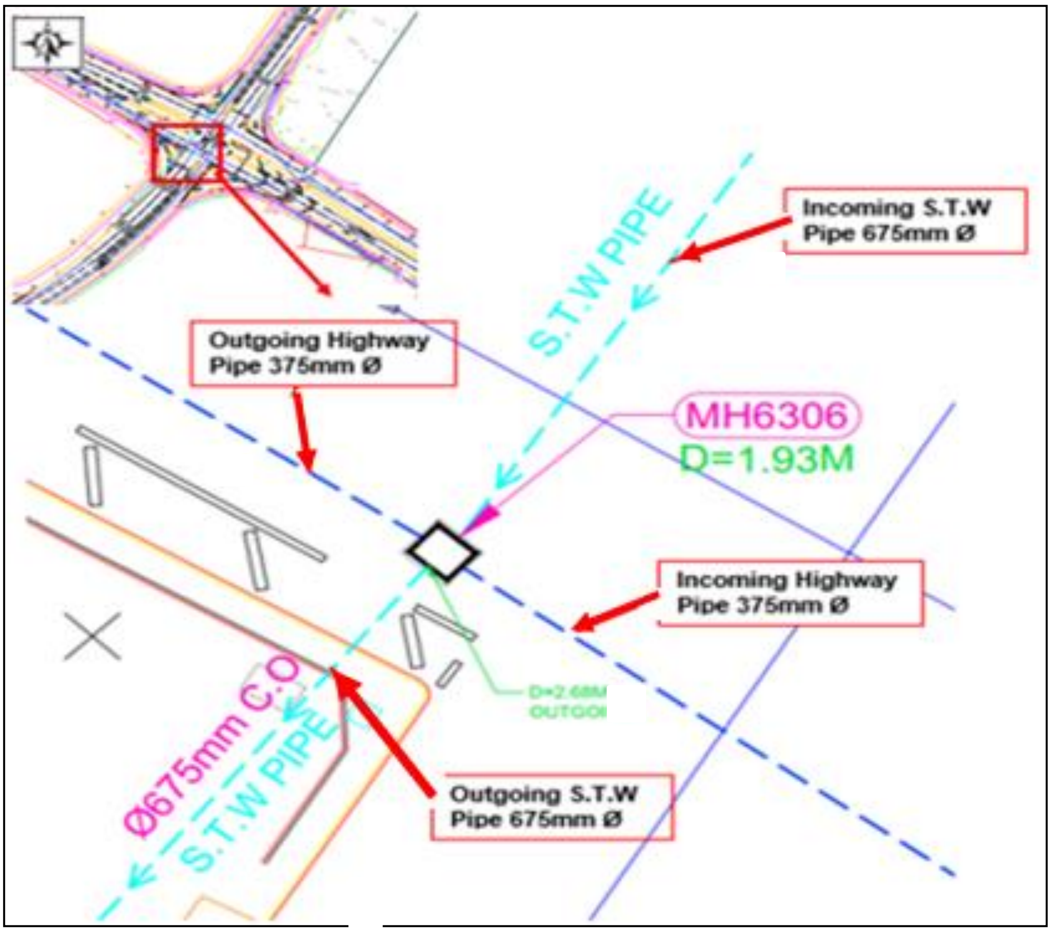


Figure 2-2 - Existing arrangement at A4019 main line at Elms Park

2.1.5 **A4019 Mainline catchment:** Within this catchment, surface water flows are collected via a kerb and gully arrangement and conveyed through pipes and a ditch system that runs parallel to the A4019. The system is culverted near junction 10 under the A4019 in dual 750mm diameter culverts which connect to the Leigh Brook to the north via ditches.

2.1.6 **Catchment J1:** Within catchment J1, surface water flows are collected by via a kerb and gully arrangement and discharged directly into the ditches at the toe of the highway embankment on both sides. These ditches connect to the Leigh Brook downstream.

2.1.7 **Catchment S2:** Catchment S2 is located to the north of the M5 junction. The existing runoff is collected by gullies and conveyed to the existing ditch by carrier drains. The ditches discharge flows to an existing ditch that is taken under the M5 via the “Barn Farm” culvert, which consists of dual 1025mm diameter pipes and connects to the Leigh Brook downstream.

2.1.8 **Catchment S1:** This catchment is located to the south of the M5 J10. The runoff from this existing catchment is collected by gullies with single connections to the existing ditches that run parallel to the M5 on both sides. The existing ditches discharge flows to the River Chelt.

2.1.9 **Outfall to Piffs Elm culvert:** The runoff from the south of M5 mainline junction for distance of about 385m is collected by existing gullies and is discharged into the existing ditch via 150mm diameter carrier drain which outfalls adjacent to the “Piffs-Elm” culvert.

2.1.10 **Catchment B4634:** The catchment associated with the B4634 Old Gloucester Road is served by gullies with single pipe outlets and grips which discharge flows to existing ditches. These ditches eventually connect to the River Chelt downstream.

2.2 Assumptions

2.2.1 The following assumptions have been made in the development of the PCF Stage 3 drainage design:

- If the systems within the site extent are in good condition according to the drainage surveys and sized and located appropriately, they will be retained. If they are in poor condition and/or not sized and located appropriately, they will be replaced
- Parts of the system falling beyond the proposed extents and in poor condition will not to be proposed for replacement
- Where drainage surveys were incomplete, connectivity has been assumed based on engineering judgement as appropriate
- The design criteria proposed assumes that the scheme will be required to go through the planning process
- This Drainage Strategy Report is a live document and may be updated as the design develops, and further information becomes available.

3 Proposed Drainage Strategy

3.1 Summary

3.1.1 The proposed junction upgrades represent an increase in the impermeable footprint of the existing highway, which will create greater amounts of surface water runoff compared to the current situation. The proposed surface water drainage strategy will seek to replicate the site's existing hydrology through SuDS principles. The drainage design for the upgraded and new carriageway sections will consist of gravity drainage networks, which will convey flows to suitable outfalls.

3.1.2 The proposed collection system for the M5 mainline is in the form of offset gullies which connect to carrier drains. For other sections along the A4019 Mainline, top entry gullies are provided. For the link road, swales and filter drains serve as the collection systems. For the B4634, a combination of both swales and top entry gullies are provided. Pre-earthworks ditches and filter drains have been provided to serve highway earthworks slopes. More detailed descriptions for each catchment are described below.

Infiltration Test Results

3.1.3 Infiltration tests were carried out in accordance with BRE Digest 365 (2016) by Geotechnical Engineering Ltd, and the locations of these exploratory holes are included in Appendix A. along with the results. These infiltration test results consistently indicate that there is negligeable infiltration occurring at the locations of the basins where the tests were undertaken and therefore infiltration has not been considered as a feasible design solution.

3.1.4 The proposed catchments have been defined and are given below in Figure 3-1.

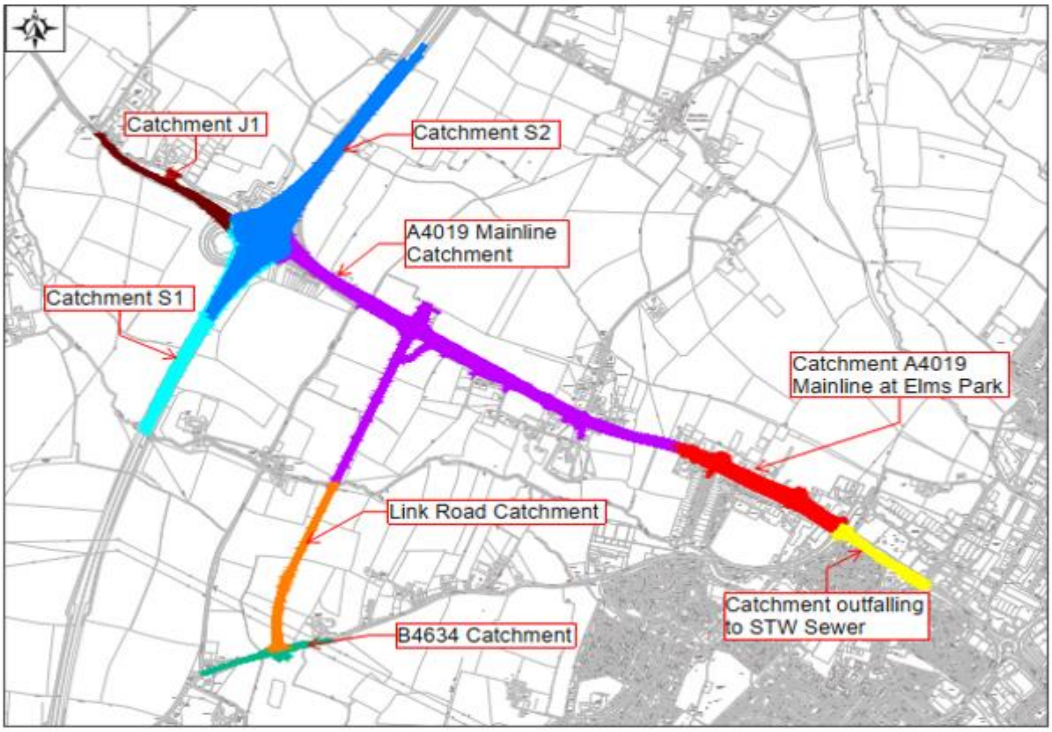


Figure 3-1 - Proposed Catchments

3.1.5 **A4019 main line at Elms Park:** Improvements on the A4019 main line include the widening of the existing carriageway and a new signalised junction. Due to the widening of the existing carriageway, there is an increase in the impermeable area. Collection systems along this length of highway are proposed to be a kerb and gully arrangement, with carrier drains discharging flows to proposed attenuation basin 6 (L1) in land adjacent to the Cheltenham West Community Fire Station, with an outfall into existing ditch (downstream of the existing outfall location), which connects to the River Chelt downstream.

3.1.6 **Out falling to STW sewer MH-6306**: There is a small increase in the impermeable area for the length of highway to the east of the Gallagher Junction. This increase in area is attenuated in proposed pipes with the slopes adjusted accordingly to meet the existing flow rates. The connections upstream and downstream of the Severn Trent Water manhole MH-6306 are retained as per the existing scenario, with the overflow arrangement described in the section 2.1.

3.1.7 **A4019 Mainline Catchment:** This comprises a catchment from the M5 J10 junction along the A4019 to the Cheltenham West Community Fire Station as well as the northern section of the link road from the River Chelt bridge to its junction with the A4019. The total runoff from this catchment is discharged to proposed attenuation basin 4 (J2), which has an outfall directly to the proposed wetland storage area. Highway runoff from the A4019 is collected via a kerb and gully arrangement and conveyed via carrier drains. The northern section of the link road is conveyed via 0.15 and 0.2m deep swales to the carrier drain network in the A4019 prior to the outfall.

3.1.8 **Catchment S1 and S2:** Catchment S1 and S2 constitute an increase in impermeable area as a result of the four new slip roads and roundabout. Runoff is stored in proposed attenuation basin 3 (S1) and proposed attenuation basin 2 (S2), located on the west sides of the road respectively. Offset gullies with conveyance network are proposed to capture the surface water on the slip roads, roundabout and associated widened M5 mainline. In addition to the offset gullies, combined filter drains are also proposed to intercept the runoff from cutting slopes. Beyond the extents of the widening, the existing drainage system is to be retained.

3.1.9 **Catchment B4634:** The proposed arrangement on the B4634 at its proposed junction with the link road constitutes an increase in impermeable area. Runoff is collected and attenuated within swales prior to discharge to ditches. On the northbound side of the carriageway and to the south of the junction runoff is collected by proposed gullies and a 225mm diameter carrier drain before discharging to the ditch. The proposed ditches are a replacement of the existing ditches offset to the new highway earthworks extents.

3.1.10 **Link Road:** This comprises of the southern section of the link road from the River Chelt bridge to the junction with the B4634 Old Gloucester Road. Highway runoff is conveyed via 0.15 and 0.2m deep swales to carrier drains which discharge into proposed attenuation basin 5 (L2) with a restricted outflow to the adjacent existing ditch system that joins the River Chelt. Separate filter drains have been provided to serve the shared use path and verge which discharge into the same system. Bridge deck drainage (BDKUs) is proposed on the River Chelt bridge.

3.1.11 **Catchment J1:** Catchment J1 constitute an increase in impermeable area which involves widening of the carriageway to accommodate the addition of cycleway and footway in the north bound of the stretch. New drainage conveyance network is proposed on the north-south bound of the stretch in the verge portion and standard gullies are provided to capture the runoff along the proposed kerb-line. As per the proposed design, three outfalls are considered to collect the run-off form the J1 stretch. One catchment of the stretch is out falling to the proposed attenuation basin 1 (J1) before out falling to the proposed ditch. Other two catchments are out falling to the existing drainage system. Beyond the extent of highway improvement works existing drainage system to be retained. Further CCTV survey have been requested to confirm the downstream connectivity of the existing drainage system at later stage of design.

3.1.12 **Pre-earthworks Drainage:** Unlined ditches are proposed at the toe of embankments to intercept embankment runoff and land drainage. The ditches have been sized conservatively at this stage with a base width of 1m, depth of 1m, with 1 in 3 side slopes and top width of 7m is considered for this stage of design. An earthwork offset of 2m and a maintenance strip of 4m is proposed (total width 13m). Where the embankment height is not significant, filter drain or ditch of reduced size having a base width of 0.5m, depth of 0.5m, with 1 in 3 side slopes and top width of 3m with an offset of 2m earthworks interface slope and a maintenance track of 4m is proposed resulting a total width of 9.5m for the reduced size ditch. Also, where there is no obstacle between the ditch and a formalised access track, we have assumed that ditch access will be gained from the access track and in those areas, we can remove 4m offset line, but we will retain the space as an allowance for potential changes at detailed design.

3.1.13 The basin designs will be revisited at detailed design stage with the production of detailed basin drawings and sections. These will include improved natural shapes and side slopes, forebay areas and internal permanent pools. It is envisaged that the basins will be approximately 300mm deep with minimum 1 in 5 side slope and will cover around 50% of the basin bases (minus forebay areas).

3.2 Design Criteria

3.2.1 Highway drainage is proposed to discharge to, or near to, the existing outfalls at a restricted rate, with the allowable discharge rates calculated using a combination of hydraulic models of the existing systems and QBAR calculated for new highway on greenfield sites, using Micro-Drainage hydraulic modelling software. The existing models have been built based on available information and where unavailable, appropriate assumptions have been made based on engineering judgement.

3.2.2 Peak outflows will be controlled to match existing highway peak runoff rates for 1 in 1, 1 in 5, 1 in 30 and 1 in 100-year return periods with an allowance of 40% for climate change added to additional impermeable areas. For the Link Road (100% greenfield area) peak outflows will be restricted to QBAR with an allowance of 40% for climate change included.

Hydraulic Design Parameters:

Design criteria applied to the models are as follows:

Table 3-1 - Summary of Design Parameters

Sl. No.	Particulars	Value
1.	Rainfall Method	FSR
2.	Return period	1 year
3.	M5-60	18.20 mm 18.20 mm
4.	Ratio R	0.37
5.	Global time of entry	5 mins
6.	Maximum rainfall	100 mm/hr
7.	Minimum Velocity	0.75 m/sec
8.	Maximum Velocity	4.00 m/sec
9.	Maximum Velocity at point of discharge	2.50 m/sec
10.	Maximum backdrop height	1.50 m
11.	Maximum Spacing of Chambers	90 m
12.	Minimum Pipe Diameter	225 mm
13.	Minimum Chamber Diameter	1050 mm
14.	Pipe Roughness Coefficients for carrier drains	0.60
15.	Pipe Roughness Coefficients for filter drains	1.50
16.	Pipe Roughness Coefficients for swales	0.05
17.	Time of Entry	Kerbs and Gullies - 5 mins
		Filter Drains - 6 mins
		Surface Water Channels / Slot Drains - 5 mins
		Land Drainage - 5 mins
18.	Cover	Min 1.20 m where feasible
19.	Velocity calculation formula for pipes	Colebrook-White – (k)
20.	Velocity calculation formula for ditches/swales	Manning – (n)
21.	Maximum Allowable Flow Width: Road with hard shoulder	1.50 m
22.	Maximum Allowable Flow Width: Road with hard strip	1.00m
Percentage Runoff		
1.	Carriageways, Footways	1.00 (100% of impermeable area)
2.	Verge	0.50 (50% of impermeable area)
3.	Cuttings	0.20 (20% of impermeable area)
Climate Change		
1.	Carriageways, Footways	0.40 (40% of impermeable area)
2.	Verge	0.20 (20% of impermeable area)

3.	Cuttings	0.08 (8% of impermeable area)
Bridge Deck Kerb Unit		
1.	Return Period	5 years (Value adopted from CG 501)
2.	Product	Marshalls Beany Block
3.	Outlet Unit	Gully with access unit (To ensure any silts or pollutants are trapped)
Pipes and Chambers		
1	Pipes and Chambers	For the purposes of assessment, outline conveyance pipework will generally be developed in accordance with CG 501 'Design of Highway Drainage Systems', section 3. Pipes shall be designed for the 1in 1-year return period without surcharge and 1in 5-year return period with no flooding. Review of design return periods may be carried out on critical sections of carriageway during design development. Retained existing systems in good condition will be allowed to surcharge in 1 year return period in agreement with the approving authority.
Surface Water Collection System		
		Surface water collection systems like top entry gullies, offset gullies, ditches and swales are proposed. These are sized in accordance with CD521 and CIRIA 756. Two sizes of Ditches are proposed as given below: • base width 1m, depth 1m, side slope 1 in 3 and top width 7m • base width 0.5m, depth 0.5m, side slope 1 in 3 and top width 3.5m Following swale sizes are proposed as given below: • Triangular swales with - depth 0.15m, side slope 1 in 5, top width 1.5m - depth 0.2m, side slope 1 in 5, top width 2.0m • Trapezoidal swales with - base width 0.4m, depth 0.2m, side slope1 in 5, top width 2.4m - base width 0.8m, depth 0.2m, side slope1 in 5, top width 2.8m

		- base width 0.2m, depth 0.2m, side slope1 in 5, top width 2.2m

3.3 Design Standards

3.3.1 The drainage design will be produced in accordance with the standards and best practice guidance as listed below:

- DMRB CD521 Hydraulic design of road edge surface water channels and outlets.
- DMRB CD522 Drainage of runoff from natural catchments.
- DMRB CD525 Design of combined surface and sub-surface drains and management of stone scatter
- DMRB CD523 Determination of pipe roughness and assessment of sediment deposition to aid pipeline design
- DMRB CD524 Edge of pavement details
- DMRB CD 526 Spacing of Road Gullies
- DMRB CD532 Vegetated drainage systems for highway runoff
- DMRB CD533 Determination of pipe and bedding combinations for drainage works
- DMRB CD534 Chamber tops and gully tops for road drainage and services
- DMRB CG501 Design of Highway Drainage Systems
- DMRB LA113 Road Drainage and the water environment
- CIRIA C753 The SuDS Manual
- Flood & Water Management Supplementary Planning Document, Tewkesbury Borough Council (March 2018)

3.4 Attenuation

3.4.1 Attenuation is to be provided for the proposed drainage before discharging to the nearest outfall/watercourses. Attenuation shall be in the form of a larger diameter pipe where feasible, or an attenuation basin, which discharges flow to outfalls at a rate restricted by a flow control device. Attenuation basins will be designed according to the SuDS Manual (CIRIA C753) and in coordination with the Environment Team.

3.4.2 In accordance with good practice and CDM designer duties, early consideration was given in consultation with highway designers to accessibility for inspection and maintenance. The summary of attenuation design is given in Table 3-2 below.

3.4.3 Attenuation basins will be designed based on the following:

- Attenuation basins to be sized to attenuate the 1 in 100-year return period flow including a 40% allowance for climate change
- The maximum total depth of the attenuation basins will be 1.2m. Due to restrictive downstream levels the depths of the proposed attenuation basins may be less than 1.2m in some cases. The basins will include a free board of 0.3m
- Attenuation basins will be designed with minimum side slopes of 1 in 4
- Maintenance access corridor of 8m is provided around the pond perimeter
- It is envisaged that the maintenance of the M5 Basins (Basin 2 (S2) and Basin 3 (S1)) will be the responsibility of National Highways and other basins (Basin 1 (J1), Basin 4 (J2), Basin 5 (L2) and Basin 6 (L1)) will be the responsibility of Gloucestershire County Council. For basin details refer to Table 3-3
- Flow controls are to be located downstream of attenuation basins and upstream of the receiving drainage system / watercourse

- Where space allows, a section of ditch will be proposed upstream of outfalls to watercourses, to allow minimal impact on watercourses. These ditches will be made sinuous if space allows, to allow further siltation and treatment to occur.

Table 3-2 - Attenuation Design Parameters

Attenuation Design	
Return Period	100 years; Climate Change (CC) allowance of 40%
Discharge Rates	For new highway catchments: Peak outflows will be limited to the greenfield runoff rate (QBAR) for events up to 100-year return period, with an allowance of 40% applied for climate change and a check for flooding at 70% as per section 5.7.7 of Flood & Water management. Supplementary Planning Document, Tewkesbury Borough Council (March 2018). For existing highway catchments: Peak outflows from increased catchments will be controlled to match existing highway peak runoff rates for 1 in 1, 1 in 5 and 1 in 100-year return periods.
Storage design	Where possible storage shall be provided in the form of basins. A freeboard of 300mm is to be provided. Where basins are not appropriate, ditch storage may be considered. Otherwise, on-line storage in pipes up to a maximum diameter of 900mm can be used.
Flow Control	Orifice plates shall be used in the first instance within the hydraulic model for flow control (with a minimum diameter of 75mm); if flows cannot be controlled, Hydro brakes or similar approved will be used.

Table 3-3 - Basin Details

Catchment	Basin Location	Basin volume excluding freeboard (m^3)	Basin Top Area excluding freeboard (m^2)	Basin Base Area (m^2)	Basin Depth including freeboard (m)	Freeboard minimum (m)
Proposed Attenuation Basin 1 (J1)	390247.090, 225860.147	234.6	477.9	310	0.9	0.3
Proposed Attenuation Basin 2 (S2)	390642.613, 225968.648	2375.4	2973.7	2318.5	1.2	0.3
Proposed Attenuation Basin 3 (S1)	390164.213, 225257.068	1125.9	1711.7	1300	1.05	0.3
Proposed Attenuation Basin 4 (J2)	390763.304, 225345.349	2931.5	3628	2900	1.2	0.3
Proposed Attenuation Basin 5 (L2)	390488.718, 223961.084	2130.2	3544.5	2500	0.95	0.3

Catchment	Basin Location	Basin volume excluding freeboard (m^3)	Basin Top Area excluding freeboard (m^2)	Basin Base Area (m^2)	Basin Depth including freeboard (m)	Freeboard minimum (m)
Proposed Attenuation Basin 6 (L1)	392011.007, 224715.207	915.9	1368.6	990	1.08	0.3

3.5 Constraints

3.5.1 Key constraints identified on this scheme include:

- Works within flood prone areas as indicated in the EA risk of surface water flooding map in Figure 3-2
- The width of the access tracks to basins is 3.5 to 5m. For proposed attenuation basin 3 (S1), access track width is 3.5m as it is used for accessing only the basin, for other proposed attenuation basins the access track width is 5m as they are not only proposed for use to access the basin but also to nearby properties / farms. For the basins S1 and S2, a low loader vehicle and for other basins, refuse vehicle is used as a design vehicle as they come under the responsibility of National Highways and GCC respectively
- Construction of structures (cross-pipes/culverts) are required under live carriageway
- Proposed verge width should be greater than the proposed width of the swales. Otherwise, a kerb and gully system shall be proposed for the drainage system
- Although pipe cover depths are a minimum of 1.2m where feasible, in some locations this is not practicable whilst maintaining downstream levels. Type Z (concrete) bedding and surround is to be proposed for these pipe sections to ensure appropriate protection.
- Other relevant constraints shall be identified and included on the drawings/report as they become known.

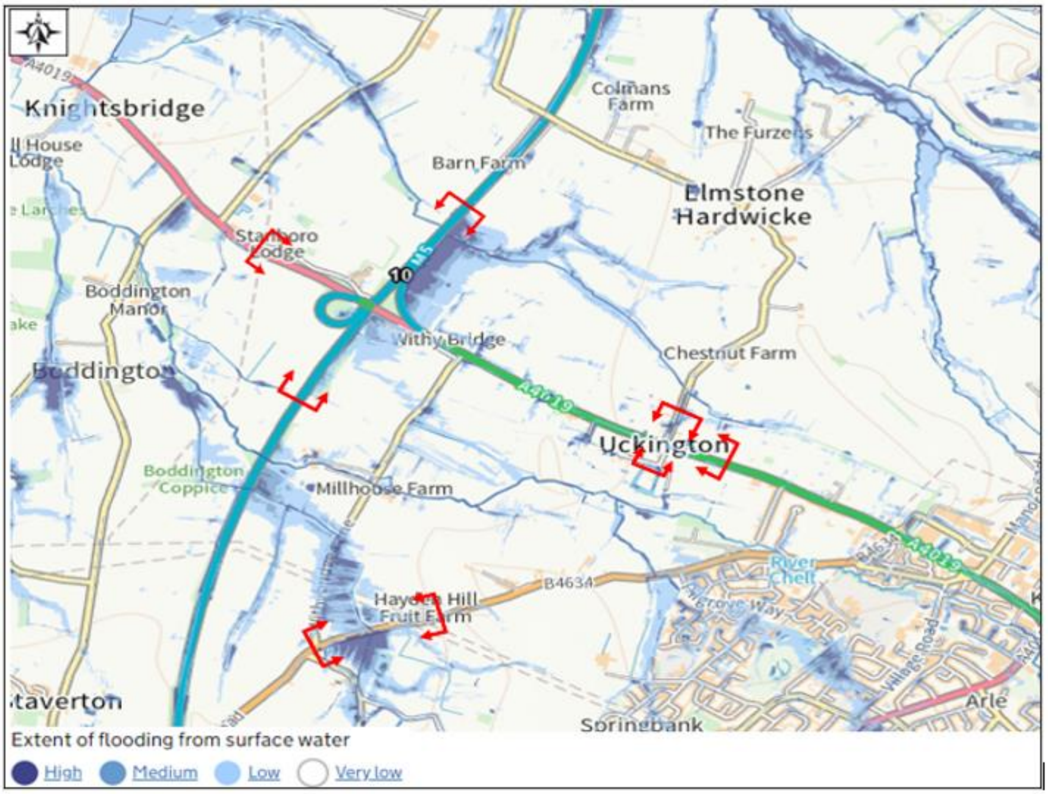


Figure 3-2 - EA Surface Water Flood Map

3.6 Flow Rate Calculations

3.6.1 The existing flowrates are generated from the hydraulic models of the existing drainage networks and QBAR calculations (refer Appendix E) which are given in Table 3-4 below.

3.6.2 Note that the existing model shows flooding to occur in several locations for the 1 in 100-year return period and floods for smaller events. These flood flows are not represented in the models (i.e., they are lost).

Table 3-4 - Existing Flow Rates

Catchment Reference	1 in 1 year (l/s)	1 in 5 years (l/s)	1 in 30 years (l/s)	1 in 100 years (l/s)	Network Reference
J1	52.5	68.1	82.0	98.8	Network 1 outfalls to southern ditch
	46.4	76.0	115.9	144.1	Network 2 outfalls to northern ditch
S1	54.8	91.6	141.1	204.4	Network 1 outfalls into existing ditch on east side of the stretch
	56.5	94.2	148	191.6	Network 2 outfalls to existing ditch near River Chelt culvert on the South Bound
	59.4	96.9	147.3	192.4	Network 3 outfalls to existing ditch near River Chelt culvert on the North Bound
S2	401.2	604.9	650.4	704.8	Network 1 outfalls to existing ditch.

A4019 Mainline	192.7	296.9	458.5	571.8	Network 1 outfalls to existing ditch. QBAR of 3.9 for the northern section of the link road
Link Road	6.5	6.5	6.5	6.5	Network 1 outfalls to existing ditch. QBAR of 6.5 for the southern section of the link road (refer to Appendix E)
B4634	11.5	18.9	26.5	33.2	Network 1 (Refer to Appendix E for calculations for each network)
	8.2	13.5	19.0	23.8	Network 3
	3.8	6.2	8.7	10.9	Network 4
	4.8	7.9	11	13.8	Network 5
	13.8	22.7	31.9	39.9	Network 6
	2.3	3.8	5.4	6.8	Network 7
	5.5	9.0	12.7	15.9	Network 8
	10.9	17.9	25.1	31.4	Network 9
A4019 Mainline at Elms Park	192.2	245.1	291.9	333.9	Network 1 outfalls to Severn Trent Surface Water system.
	122.4	165.3	194.7	226.5	Network 2 outfalls into existing ditch.

3.7 Proposed Flow Rates

3.7.1 The proposed discharge rates taken from the hydraulic models of the proposed systems are given in Table 3-5.

Table 3-5 - Proposed flow rates

Catchment Reference	1 in 1 year (l/s)	1 in 5 years (l/s)	1 in 30 years (l/s)	1 in 100 years (l/s)	Network Reference
J1	40.5	52.4	71.9	82.2	Peak discharge rates at Network 1 Outfall (OF-1) (l/s) outfalls into southern ditch
	45.9	63.5	79.2	82.4	Peak discharge rates at Network 2 outfalls to northern ditch outfall (OF-2 + OF 3) (l/s)
S1	50.2	63	76.4	88.4	Peak discharge rates at Network 1 outfalls to existing ditch via Attenuation basin
	38.1	62.4	88	108.5	Peak discharge rates at Network 2 outfalls to existing ditch near River Chelt culvert
	37.2	58.9	86.6	111.7	Peak discharge rates at Network 3 outfalls to existing ditch near River Chelt culvert
S2	181.8	302.1	371.3	464.0	Peak discharge rates at Network 1 outfalls to existing ditch via Attenuation basin
A4019 Mainline	190.1	272.6	368.5	441.2	Peak discharge rates at Network 1 outfalls to Wetland storage via Attenuation basin
Link Road	4.2	4.9	5.8	6.5	Peak discharge rates at Network 1 outfalls to existing ditch via Attenuation basin
B4634	4.2	4.9	5.6	6.1	Peak discharge rates at Network 1 (OF-1) outfalls to proposed ditch
	8.3	8.3	8.1	8.3	Peak discharge rates at Network 3 (OF-3) outfalls to proposed ditch
	3.5	4.2	4.8	5.3	Peak discharge rates at Network 4 (OF-4) outfalls to existing ditch
	3.8	3.8	4.2	4.4	Peak discharge rates at Network 5 (OF-5) outfalls to existing ditch
	10.9	15.4	16.1	16.3	Peak discharge rates at Network 6 (OF-6) outfalls to existing ditch

	2.2	2.2	2.9	2.9	Peak discharge rates at Network 7 (OF-7) outfalls to existing ditch
	5.0	6.3	8.0	11.1	Peak discharge rates at Network 8 (OF-8) outfalls to proposed ditch
	10.9	12.2	13.9	14.6	Peak discharge rates at Network 9 (OF-9) outfalls to existing ditch
A4019 Mainline at Elms Park	126.4	195.2	248.4	333.6	Peak discharge rates at Network 2 outfalls to STW manhole MH-6306
	64.8	128.0	172.5	203.9	Peak discharge rates at Network 1 outfalls to existing ditch via Attenuation basin

3.8 Surface Water Treatment

3.8.1 The Highways England Water Risk Assessment Tool (HEWRAT) (LA113 Road drainage and the Water Environment) has been used to assess the impacts of road drainage on receiving surface watercourses where it has potential to affect water quality. The HEWRAT assesses the acute impacts from soluble pollutants, the chronic impacts due to sediment related pollutants and the compliance with Environmental Quality Standards (EQS) annual average concentrations of soluble pollutants.

3.8.2 Due to failures in the HEWRAT assessment for annual average concentrations of soluble copper - a detailed assessment has been undertaken using the UKTAG Rivers and Lakes Metals Bioavailability Assessment Tool (M-BAT). The detailed assessment produced a Predicted No Effect Concentration (PNEC) value for copper for the watercourses which receive road runoff. The annual concentrations of copper predicted by the PNEC value can be used as a site-specific copper EQS value. The annual concentrations of copper predicted by the HEWRAT are below the PNEC values which means the road runoff does not present a risk to the receiving watercourses. Refer Appendix F for the routine runoff HEWRAT assessment results.

3.8.3 A spillage assessment has also been undertaken to determine the risk of a pollution incident occurring as a result of spillage. The spillage risk assessment showed that the annual probability of a serious pollution incident occurring in the Leigh Brook or River Chelt as a result of a spillage is less than 0.5% (with mitigation) which is deemed acceptable.

3.9 Maintenance

3.9.1 Regular inspection and maintenance are important for the effective operation of basins and swales

3.9.2 Any maintenance work for basins such as silt or vegetation removal is only required intermittently, but it should be planned to be sympathetic to the requirements of wildlife in a basin.

3.9.3 All outlets and overflows should be frequently inspected and cleaned to ensure their efficient operation.

3.9.4 Site vegetation should be trimmed as necessary to keep the basins free of leaves and to maintain the aesthetic appearance of the site.

3.9.5 Slope areas that have become bare should be re-vegetated and any eroded areas should be regraded before replanting.

3.9.6 Maintenance of swales is required to ensure their carrying capacity and ability to pass water from one place to another.

3.9.7 Swales should ideally retain grass lengths of 75-100mm across the main treatment surface. To assist in filtering pollutants and retaining sediments and to reduce the risk of flattening during runoff events.

3.9.8 Where quick establishment is required, turf laying may be used in the design to prevent the creation of rills in swales.

3.9.9 Geotextiles may be employed to prevent erosion of swales in early stages or as temporary measures in advance of seeding but are not relied on in the long term as they can degrade.

3.9.10 When designing ditches, the long-term drainage characteristics of environmentally sensitive soils, such as peat blogs, shall be preserved.

3.9.11 The CIRIA SuDS manual provides typical maintenance schedules for these assets and are provided in Appendix D. the appendix also includes a maintenance schedule for the attenuation basins which are to be adopted and maintained by GCC, which has been compiled in collaboration with relevant teams at GCC.

Appendices

Appendix A. Infiltration Test Results

Geotechnical Engineering Limited

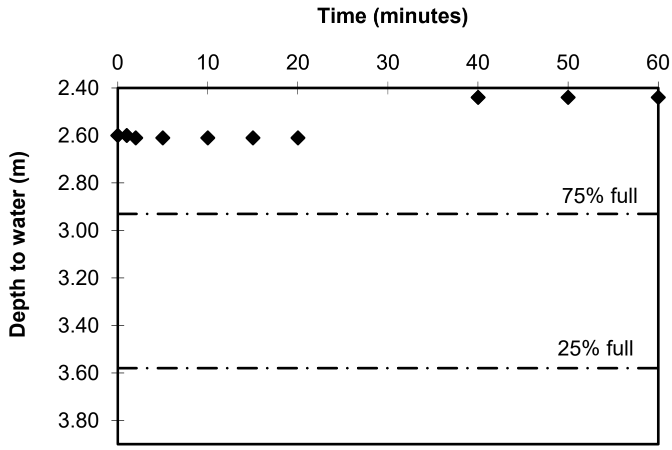
SOAKAWAY TEST

CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**LR_TP001**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	05/07/2021		

TEST 1

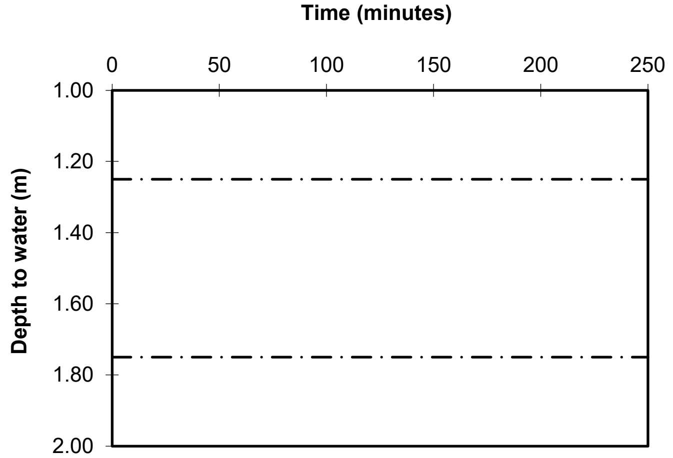
LENGTH	1.90	m
BREADTH	0.55	m
DEPTH	3.90	m
WATER LEVEL	Dry	
FILL LEVEL	2.60	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}

Rise in water level during test.



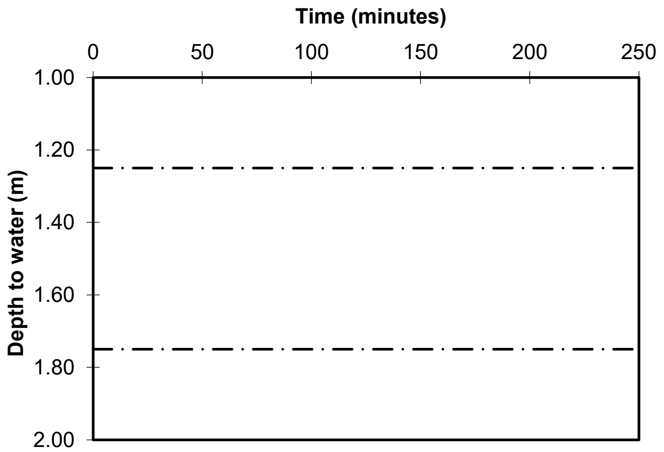
TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



Remarks Test carried out in accordance with BRE DG 365 (2016). Pit collapsed at 40 minutes, causing a rise in water level. Test terminated.	CONTRACT **36568**	CHECKED **CT**

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Geotechnical Engineering Limited

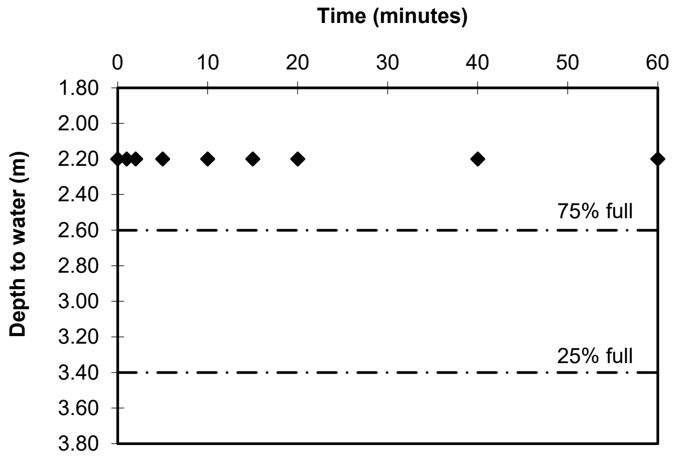
SOAKAWAY TEST

CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**LR_TP002**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	05/07/2021		

TEST 1

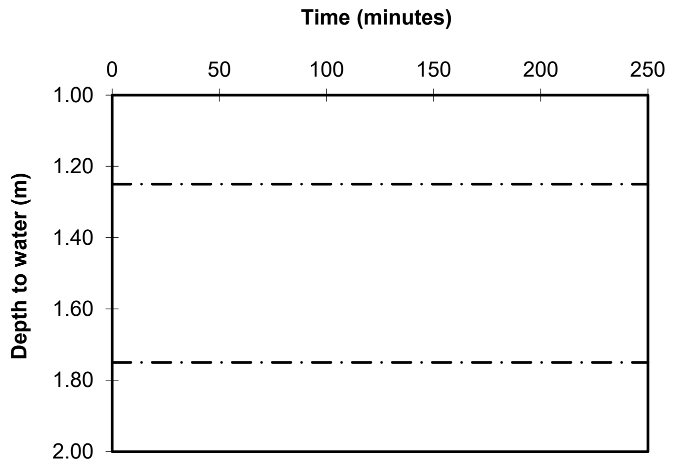
LENGTH	2.00	m
BREADTH	0.50	m
DEPTH	3.80	m
WATER LEVEL	Dry	
FILL LEVEL	2.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**

No change in water level during test.



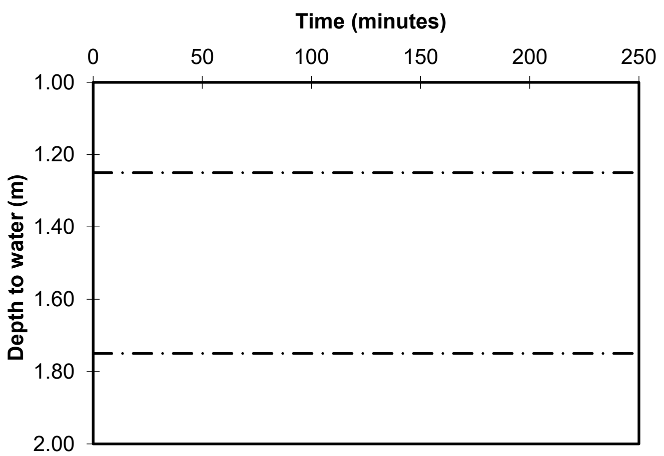
TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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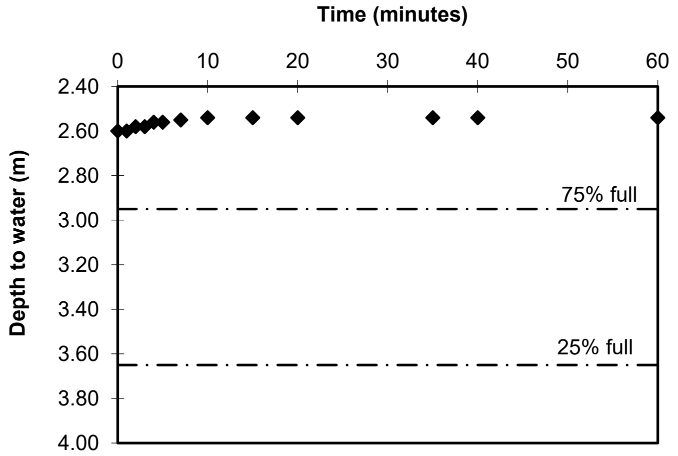
SOAKAWAY TEST

CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**LR_TP008**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	07/07/2021		

TEST 1

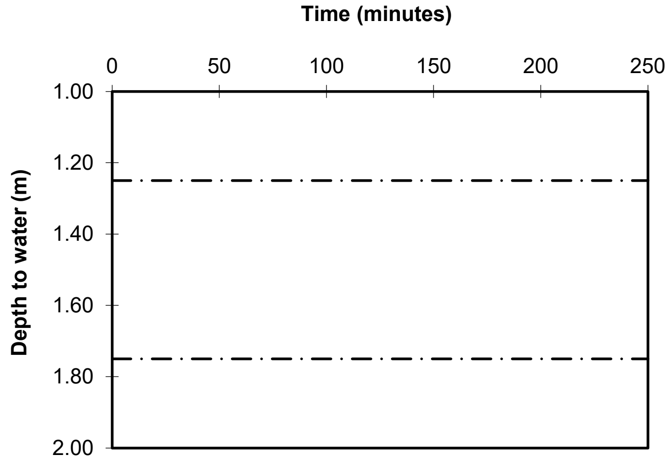
LENGTH	2.10	m
BREADTH	0.45	m
DEPTH	4.00	m
WATER LEVEL	Dry	
FILL LEVEL	2.60	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}

Rise in water level during test.



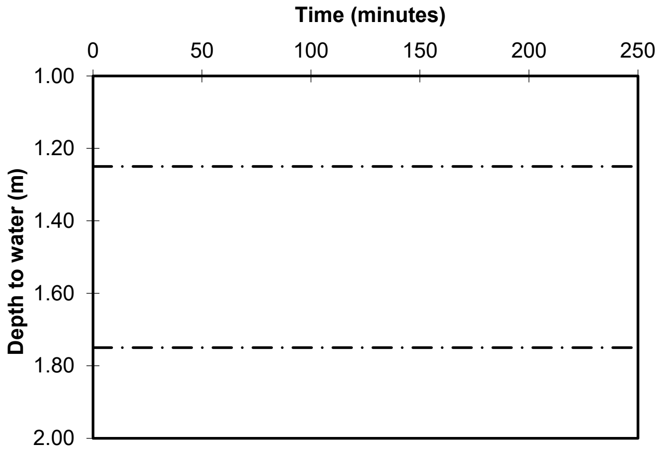
TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT	CHECKED
Rise in water level during test, settling at 2.54m.		**36568**	**CT**

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SOAKAWAY TEST

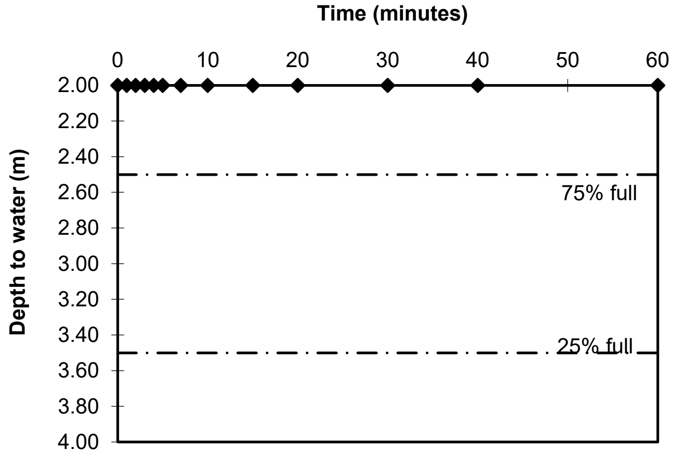
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**LR_TP009**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	08/07/2021		

TEST 1

LENGTH	2.10	m
BREADTH	0.45	m
DEPTH	4.00	m
WATER LEVEL	Dry	
FILL LEVEL	2.00	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

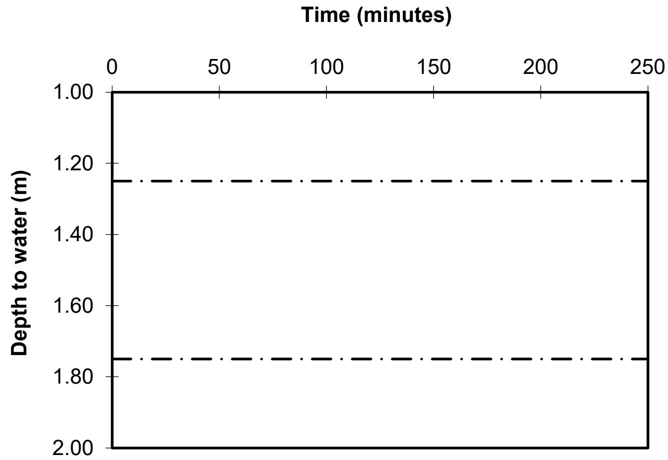
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

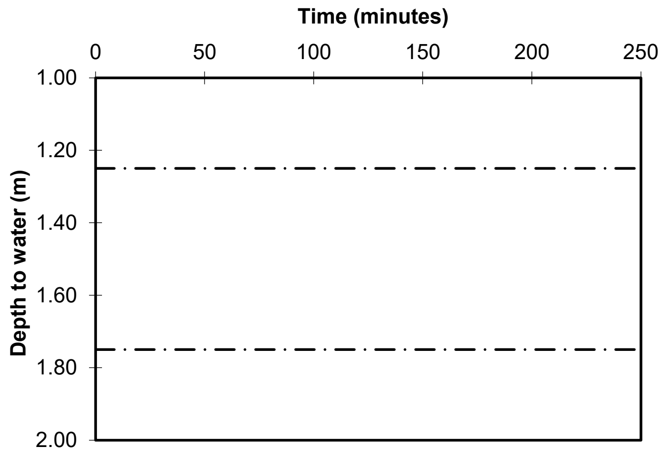
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED

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SOAKAWAY TEST

CLIENT GLOUCESTERSHIRE COUNTY COUNCIL TRIAL PIT **LR_TP010**

SITE M5 JUNCTION 10 IMPROVEMENTS SCHEME

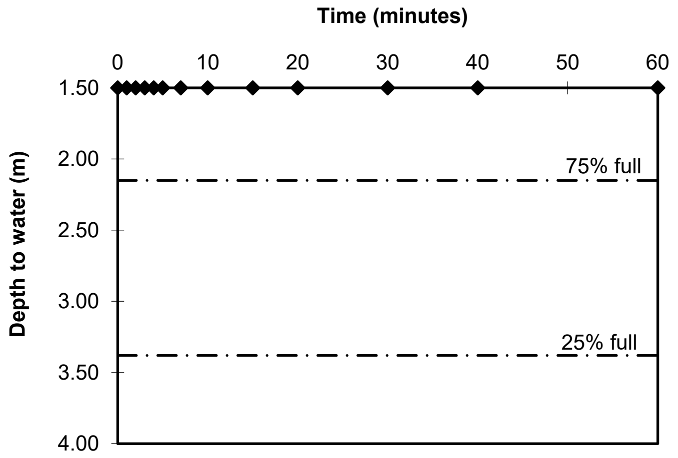
DATE 08/07/2021

TEST 1

LENGTH	2.10	m
BREADTH	0.50	m
DEPTH	4.00	m
WATER LEVEL	2.00	
FILL LEVEL	1.50	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

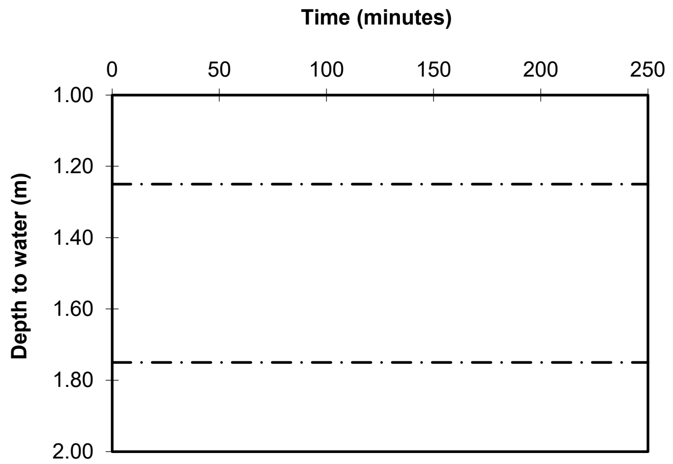
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

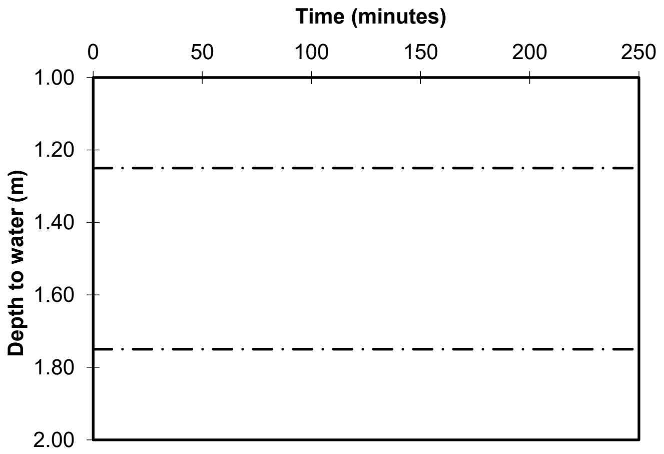
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT	CHECKED
		36568	**CT**

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SOAKAWAY TEST

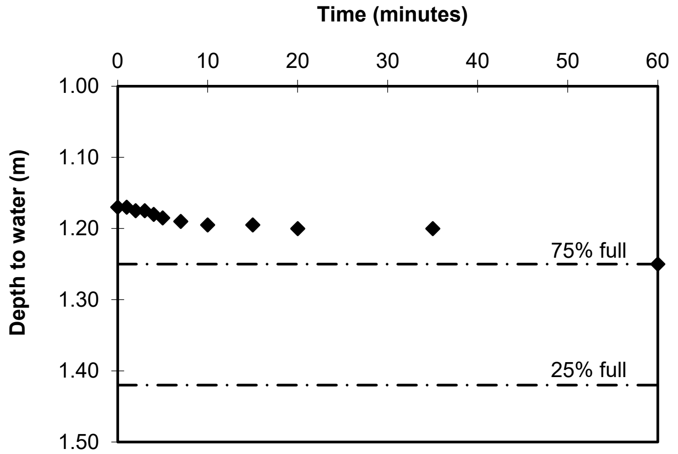
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP002**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	08/07/2021		

TEST 1

LENGTH	3.30	m
BREADTH	0.60	m
DEPTH	1.50	m
WATER LEVEL	Dry	
FILL LEVEL	1.17	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

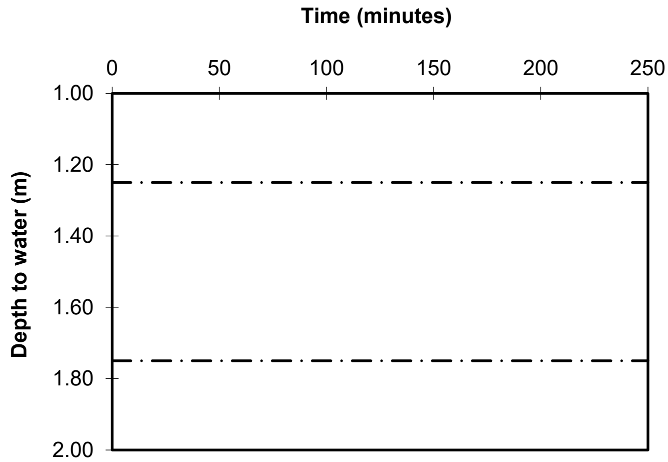
Too little water take to calculate infiltration rate.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

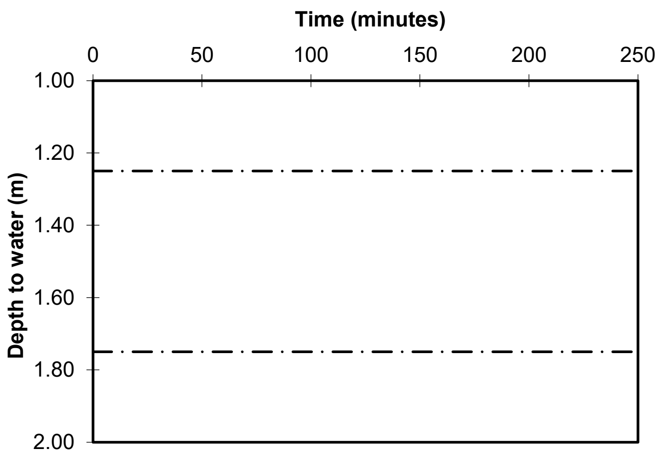
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks Test carried out in accordance with BRE DG 365 (2016). Too little water take to calculate infiltration rate.	CONTRACT **36568**	CHECKED **CT**

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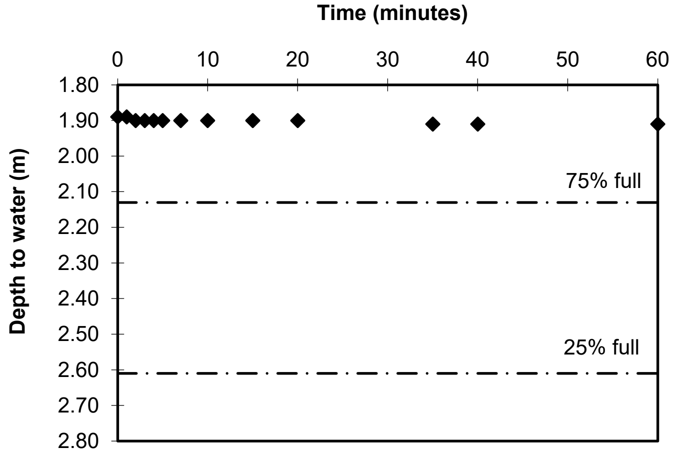
SOAKAWAY TEST

CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP003**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	11/08/2021		

TEST 1

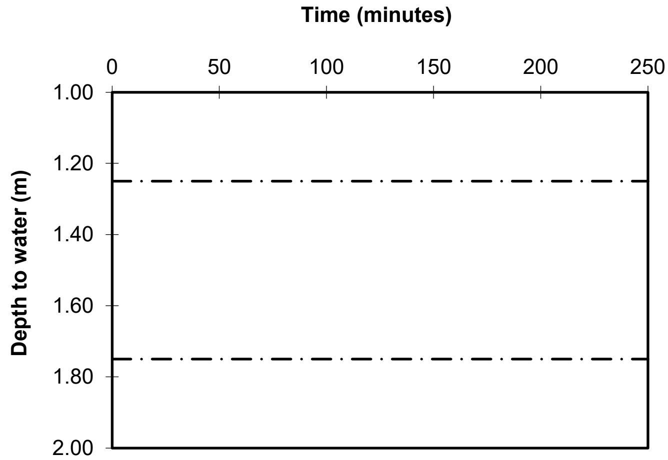
LENGTH	2.60	m
BREADTH	0.60	m
DEPTH	2.85	m
WATER LEVEL	2.60	m
FILL LEVEL	1.89	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**

Too little water take to calculate infiltration rate.



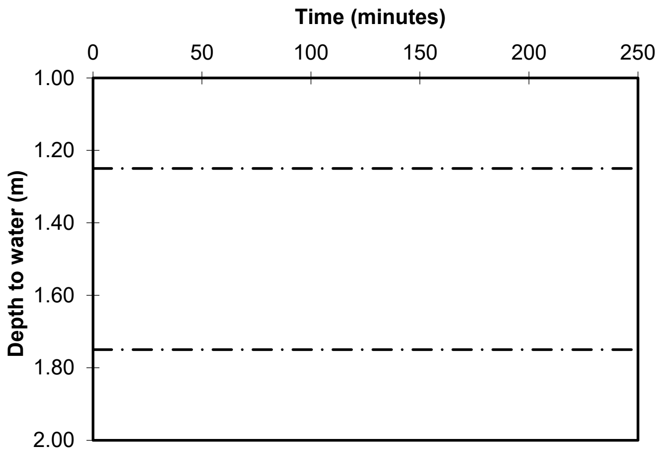
TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT	CHECKED
Too little water take to calculate infiltration rate.		**36568**	**CT**

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Geotechnical Engineering Limited

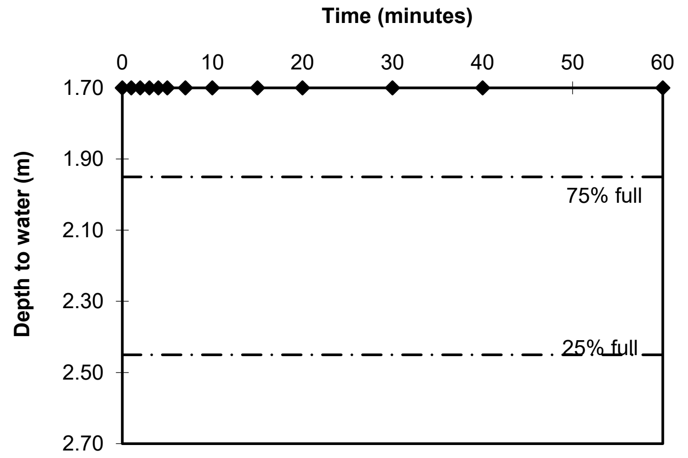
SOAKAWAY TEST

CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP006**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	12/08/2021		

TEST 1

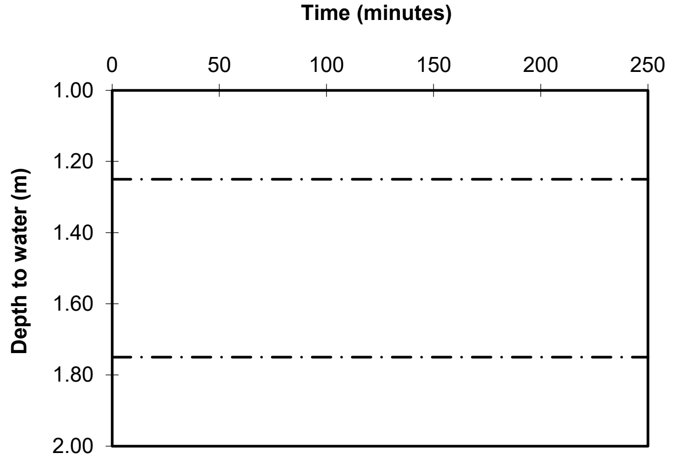
LENGTH	3.20	m
BREADTH	0.50	m
DEPTH	2.70	m
WATER LEVEL	Dry	
FILL LEVEL	1.70	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**

No change in water level during test.



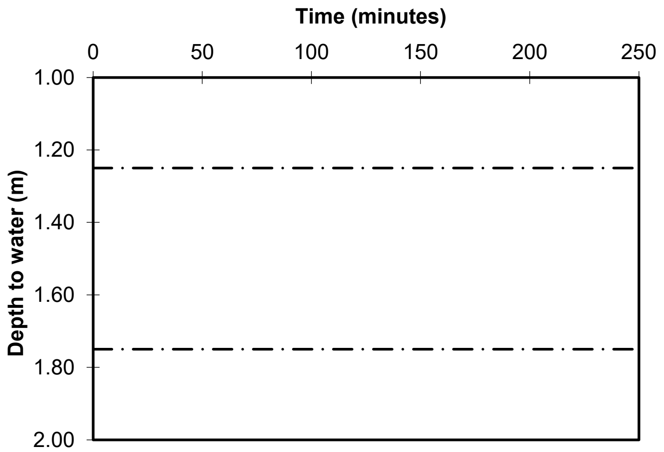
TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		**ms^{-1}**



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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Geotechnical Engineering Limited

SOAKAWAY TEST

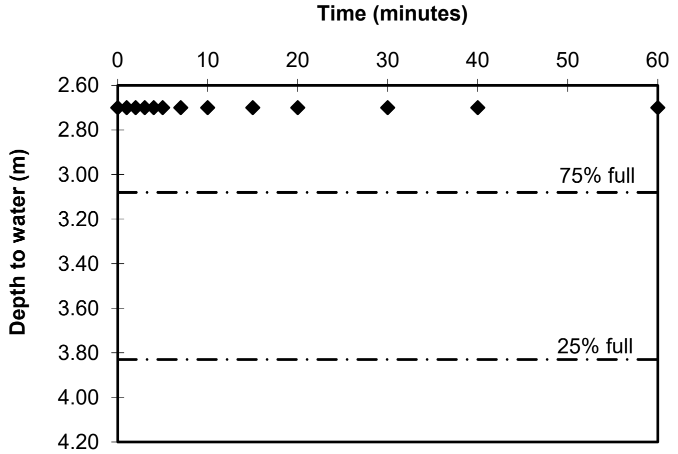
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP007**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	12/08/2021		

TEST 1

LENGTH	3.20	m
BREADTH	0.50	m
DEPTH	4.20	m
WATER LEVEL	Dry	
FILL LEVEL	2.70	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

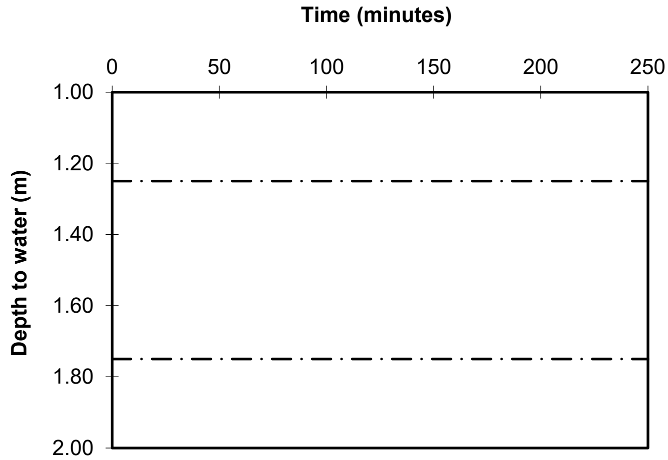
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

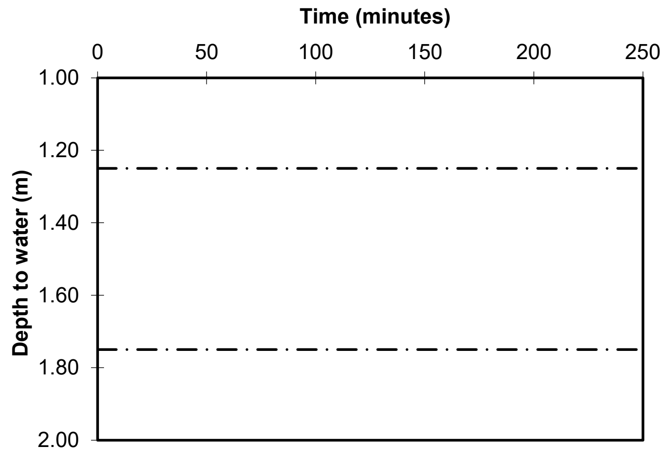
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

AF/CW

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Geotechnical Engineering Limited

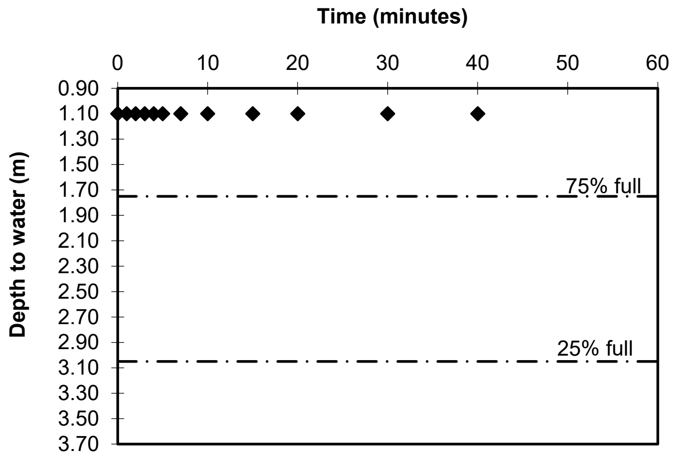
SOAKAWAY TEST

CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP009**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	16/07/2021		

TEST 1

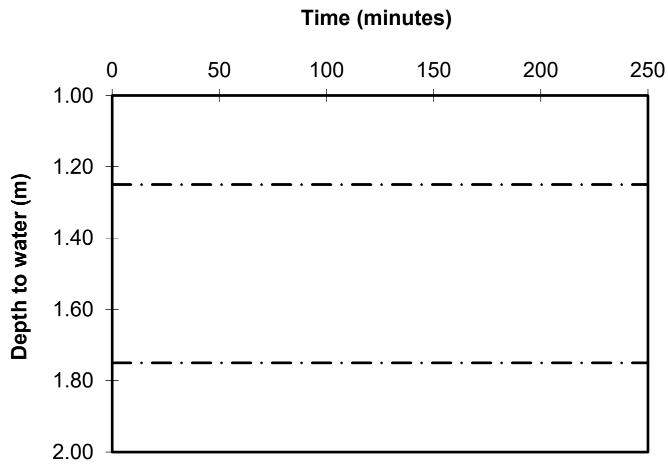
LENGTH	3.20	m
BREADTH	0.50	m
DEPTH	3.70	m
WATER LEVEL	Dry	
FILL LEVEL	1.10	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}

No change in water level duirng test.



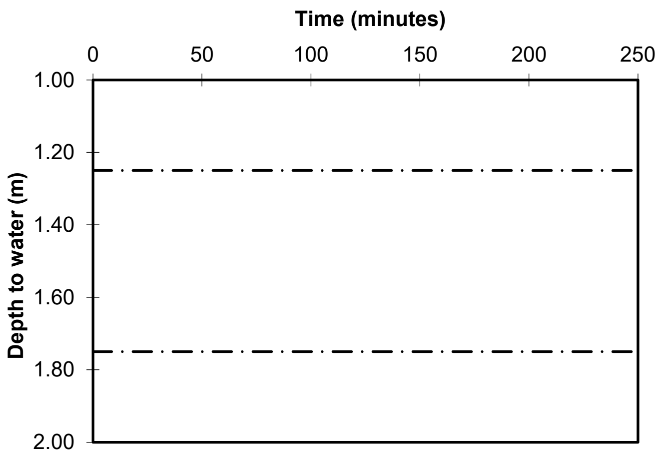
TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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Geotechnical Engineering Limited

SOAKAWAY TEST

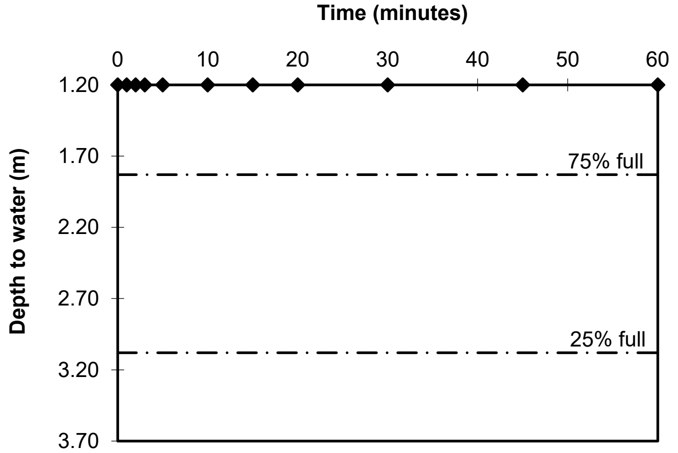
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP010**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	16/07/2021		

TEST 1

LENGTH	3.20	m
BREADTH	0.50	m
DEPTH	3.70	m
WATER LEVEL	Dry	
FILL LEVEL	1.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

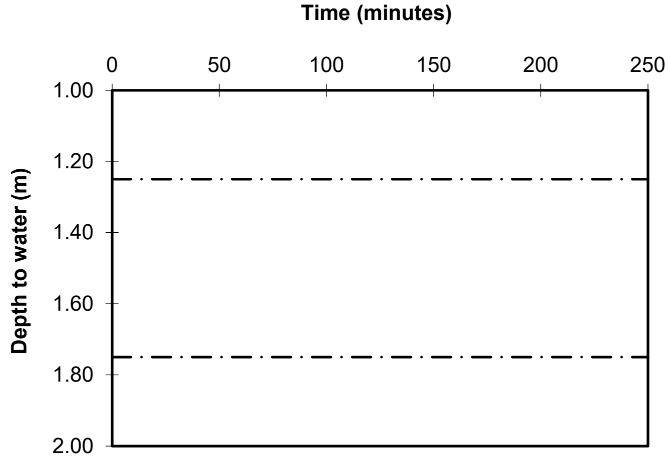
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

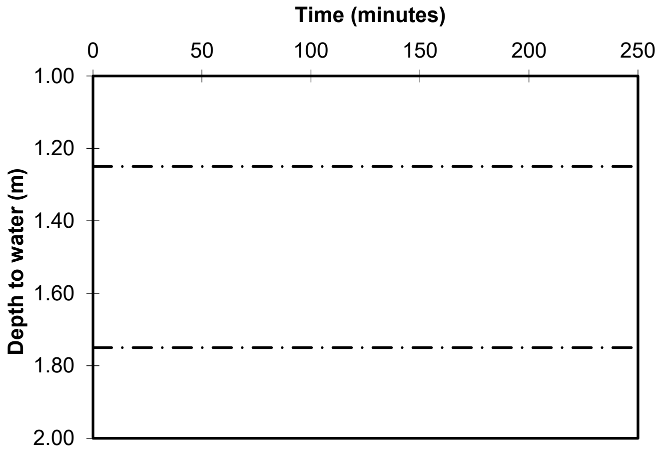
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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Geotechnical Engineering Limited

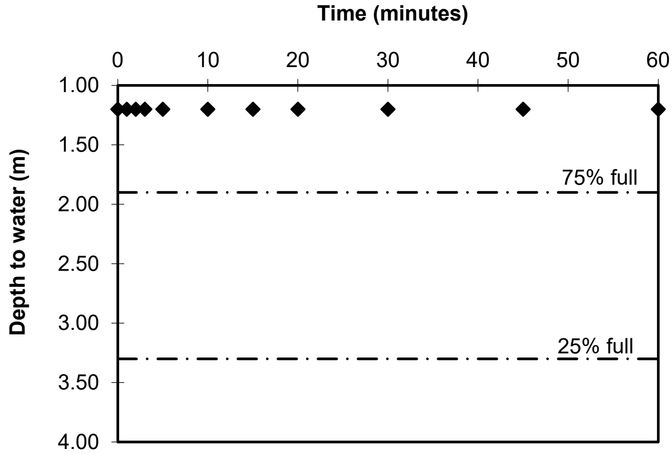
SOAKAWAY TEST

CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP011**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	16/07/2021		

TEST 1

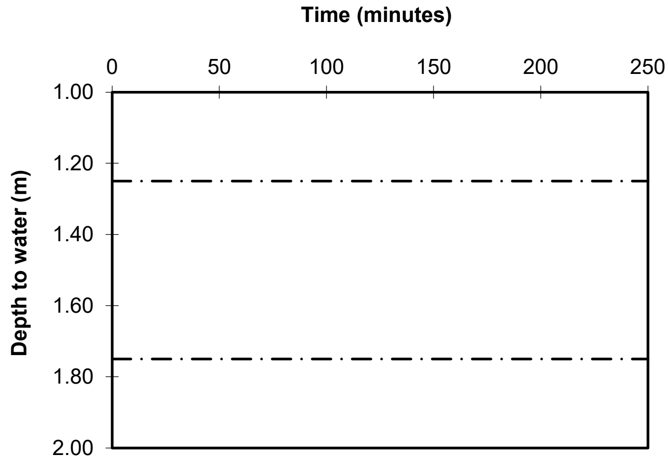
LENGTH	3.40	m
BREADTH	0.50	m
DEPTH	4.00	m
WATER LEVEL	Dry	
FILL LEVEL	1.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}

No change in water level during test.



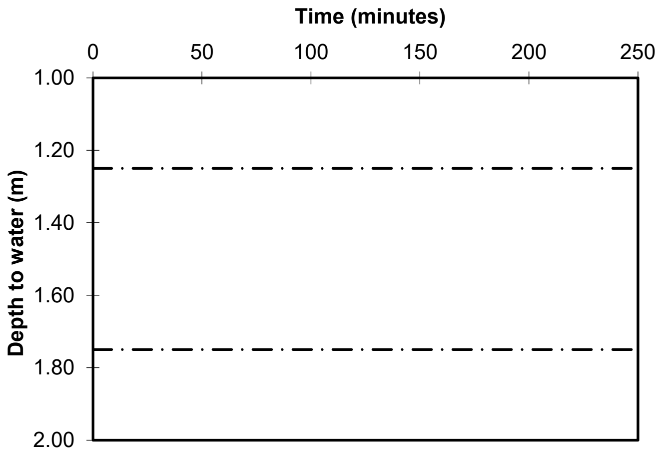
TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min
soil infiltration rate, *f*		ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT	CHECKED
Too little water take to calculate infiltration rate.		**36568**	

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Geotechnical Engineering Limited

SOAKAWAY TEST

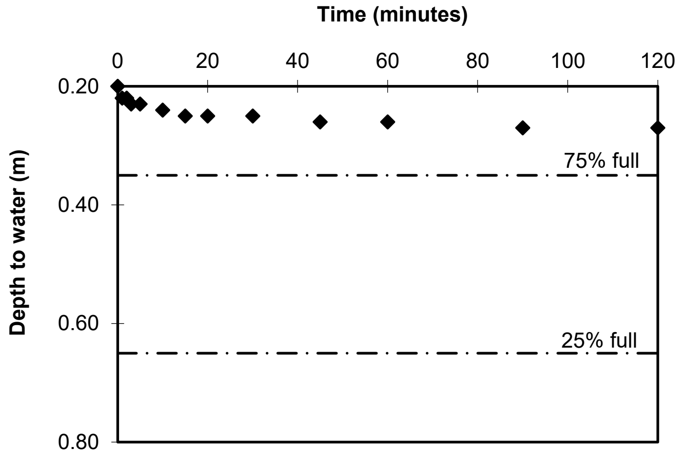
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP012**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	19/07/2021		

TEST 1

LENGTH	3.40	m
BREADTH	0.50	m
DEPTH	0.80	m
WATER LEVEL	Dry	
FILL LEVEL	0.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

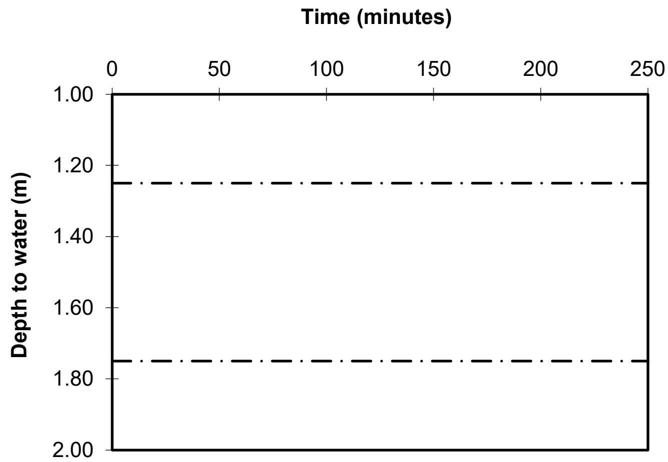
Too little water take to calculate infiltration rate.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

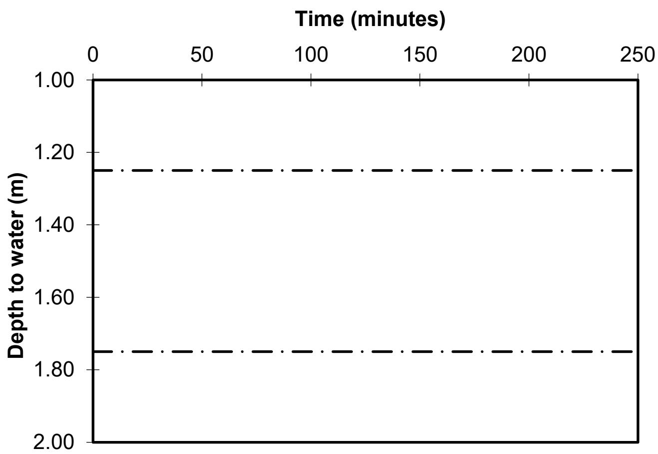
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT	CHECKED
Too little water take to calculate infiltration rate.		**36568**	**CT**

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Geotechnical Engineering Limited

SOAKAWAY TEST

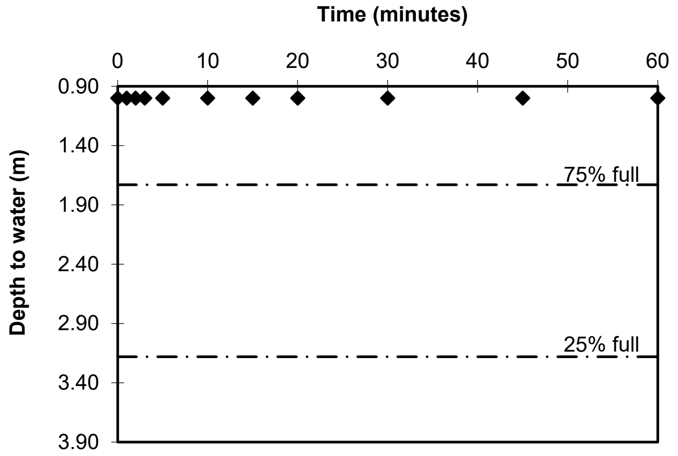
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP013**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	20/07/2021		

TEST 1

LENGTH	3.25	m
BREADTH	0.50	m
DEPTH	3.90	m
WATER LEVEL	Dry	
FILL LEVEL	1.00	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

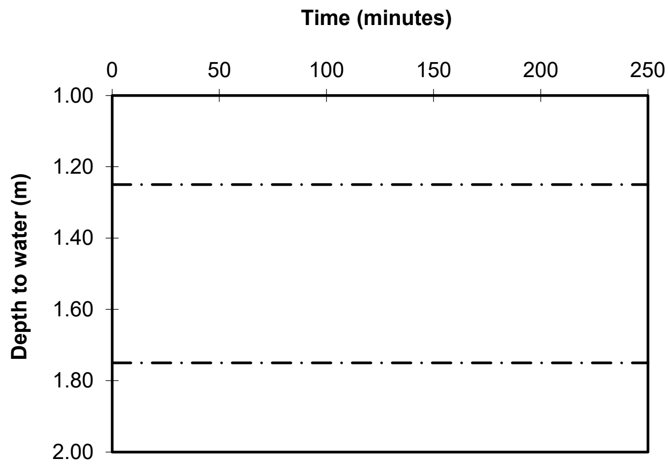
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

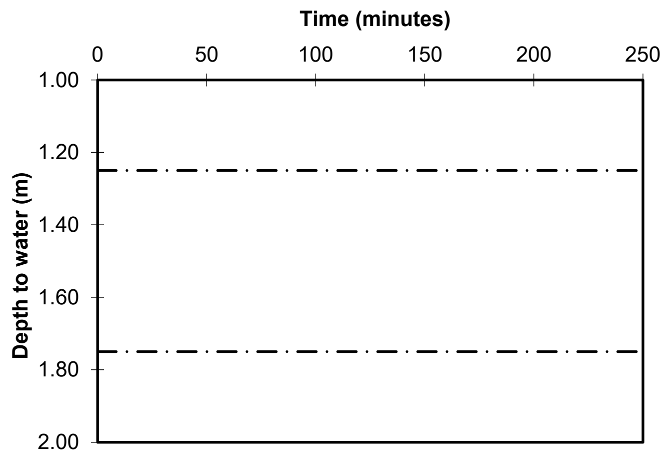
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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SOAKAWAY TEST

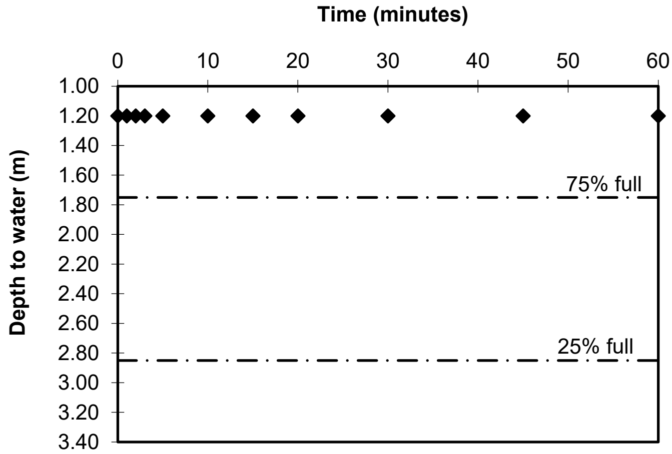
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP014A**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	20/07/2021		

TEST 1

LENGTH	3.40	m
BREADTH	0.50	m
DEPTH	3.40	m
WATER LEVEL	Dry	
FILL LEVEL	1.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

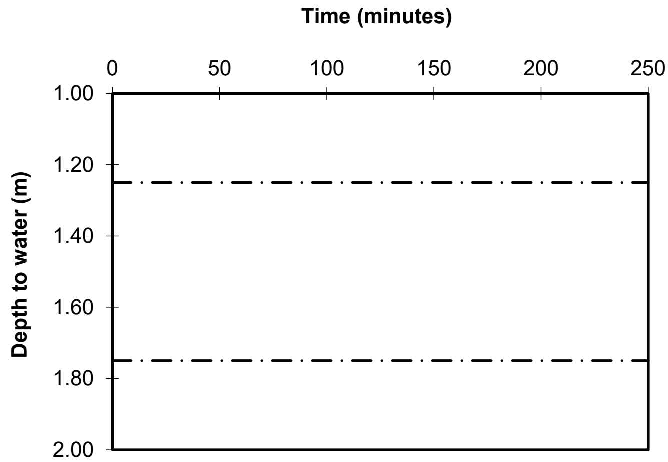
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

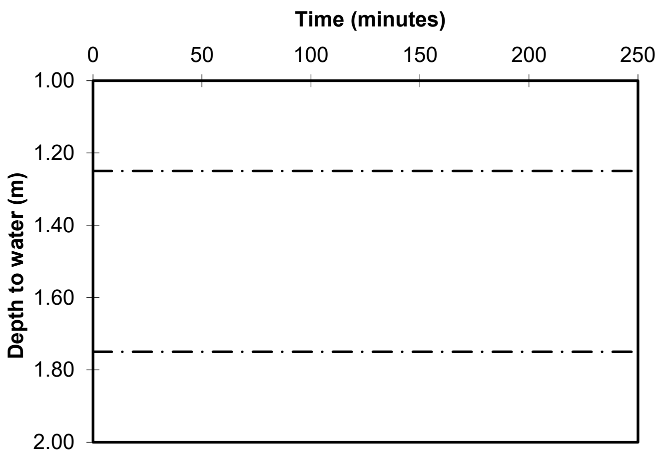
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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SOAKAWAY TEST

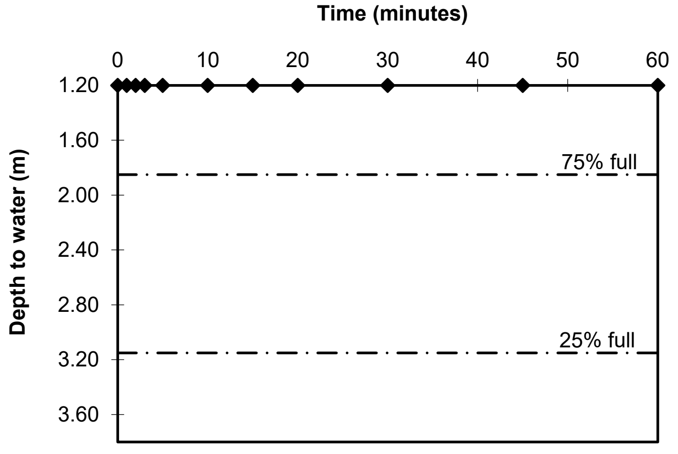
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP015**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	21/07/2021		

TEST 1

LENGTH	3.40	m
BREADTH	0.50	m
DEPTH	3.80	m
WATER LEVEL	Dry	
FILL LEVEL	1.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

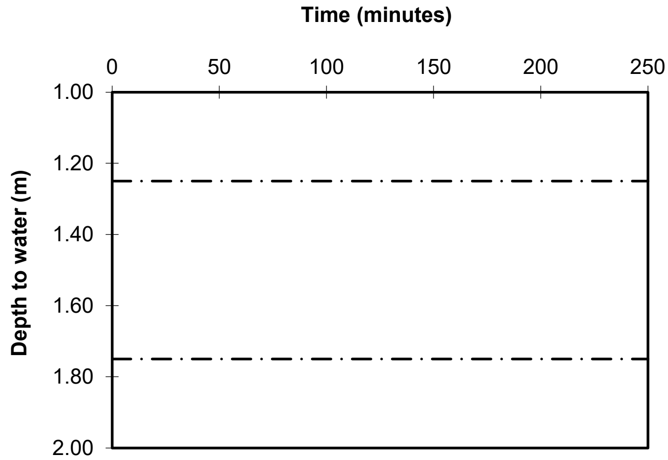
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

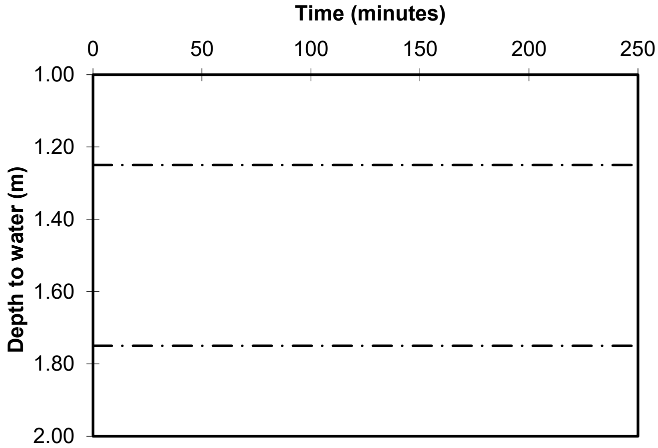
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT	CHECKED
		36568	**CT**

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SOAKAWAY TEST

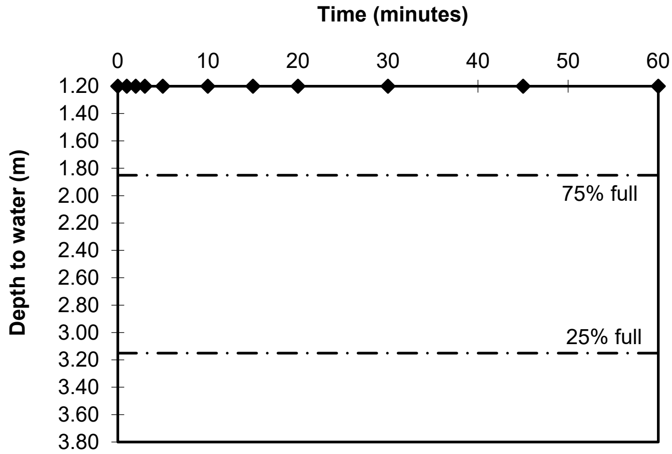
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP016**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	21/07/2021		

TEST 1

LENGTH	3.40	m
BREADTH	0.50	m
DEPTH	3.80	m
WATER LEVEL	Dry	
FILL LEVEL	1.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

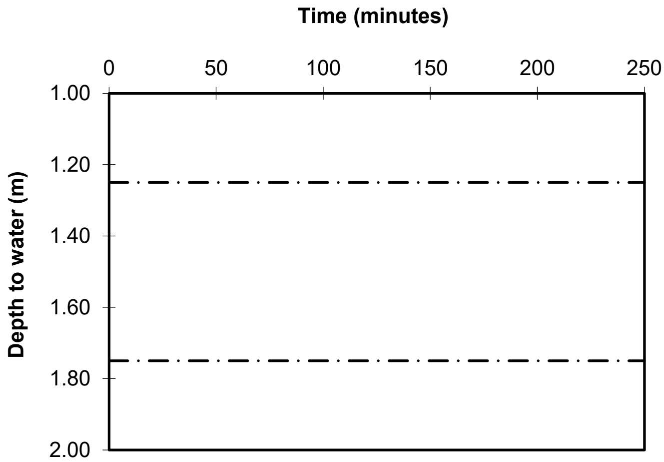
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

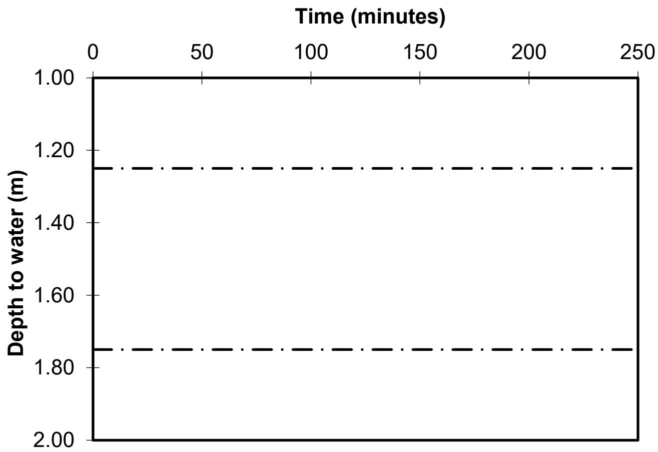
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT	CHECKED
		36568	**EC**

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SOAKAWAY TEST

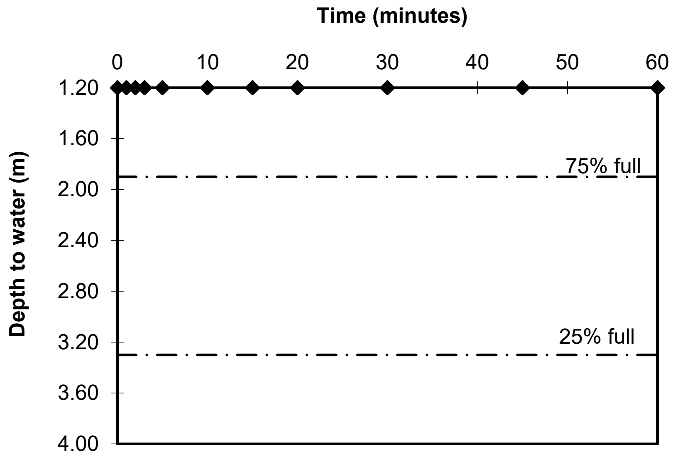
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP017**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	21/07/2021		

TEST 1

LENGTH	3.40	m
BREADTH	0.50	m
DEPTH	4.00	m
WATER LEVEL	Dry	
FILL LEVEL	1.20	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

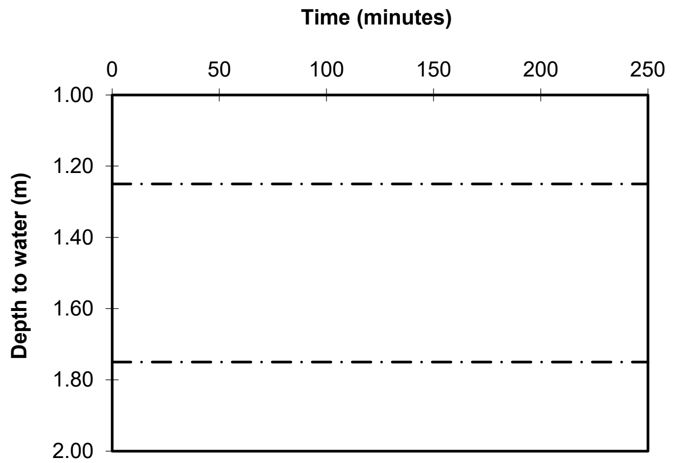
No change in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

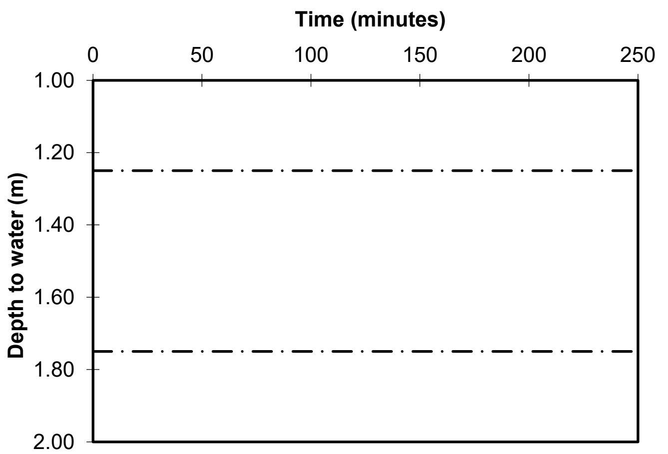
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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Geotechnical Engineering Limited

SOAKAWAY TEST

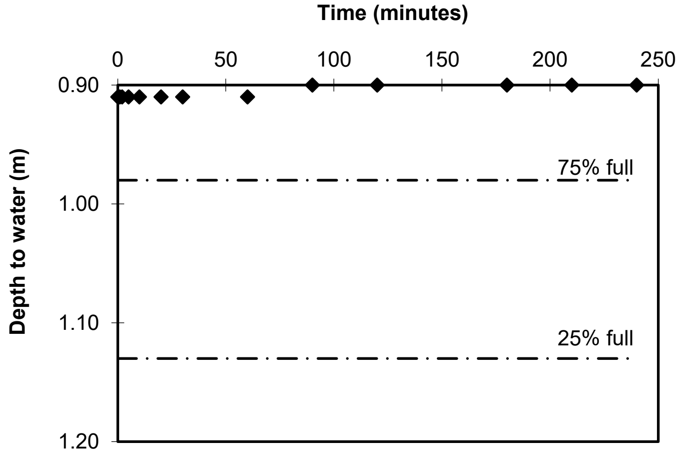
CLIENT	GLOUCESTERSHIRE COUNTY COUNCIL	TRIAL PIT	**M5_TP018**
SITE	M5 JUNCTION 10 IMPROVEMENTS SCHEME		
DATE	16/07/2021		

TEST 1

LENGTH	0.28	m
BREADTH	0.28	m
DEPTH	1.20	m
WATER LEVEL	Dry	
FILL LEVEL	0.91	m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}

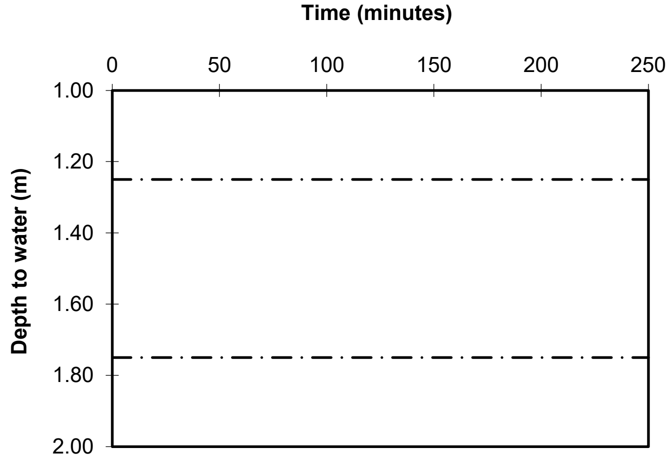
Rise in water level during test.



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

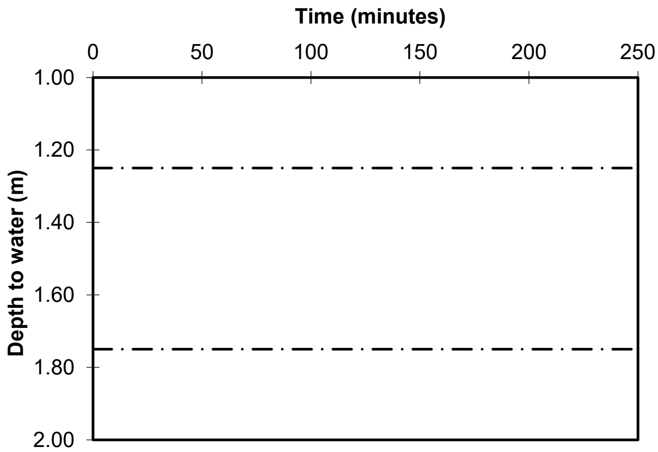
soil infiltration rate, *f* ms^{-1}



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* ms^{-1}



Remarks	Test carried out in accordance with BRE DG 365 (2016).	CONTRACT **36568**	CHECKED **CT**

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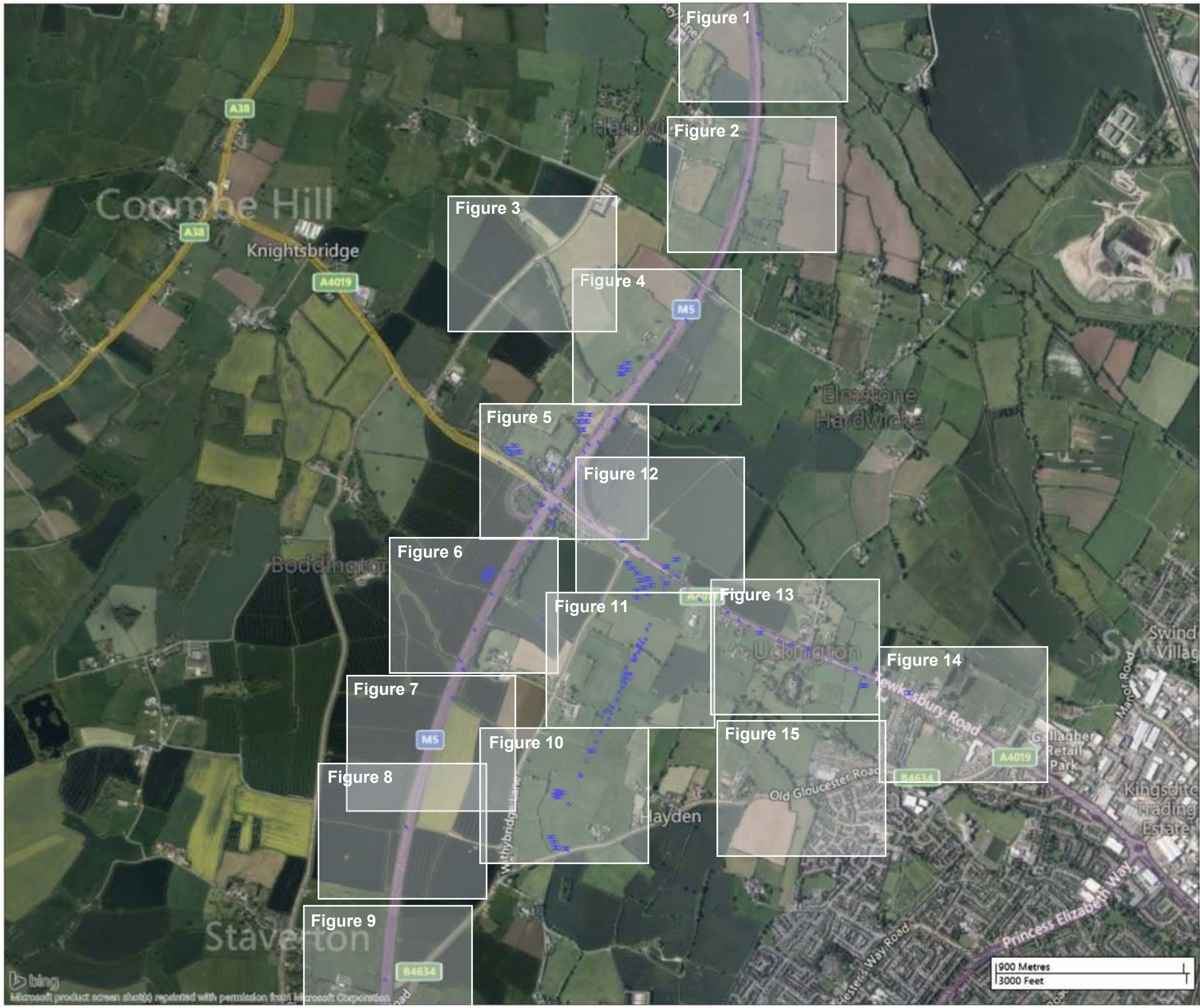

Key.

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

Notes:
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Telephone: (01452) 527743 Facsimile: (01452) 729314
E-mail: geotech@geoeng.co.uk
Web: www.geoeng.co.uk

Client: GLOUCESTERSHIRE COUNTY COUNCIL

Site: M5 J10 IMPROVEMENTS SCHEME

Title: EXPLORATORY HOLE LOCATION PLAN

Drawn By:	DJ	Checked By:	EC	Paper Size:	A3
Scale:	1:18500	Date:	October 2021		
Contract:	36568	Figure:	A1		

Key.

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

Notes:

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Gloucester GL2 4NF
Telephone: (01452) 527743 Facsimile: (01452) 729314
E-mail: geotech@geoeng.co.uk
Web: www.geoeng.co.uk

Client: GLOUCESTERSHIRE COUNTY COUNCIL

Site: M5 J10 IMPROVEMENTS SCHEME

Title: EXPLORATORY HOLE LOCATION PLAN

Drawn By:	DJ	Checked By:	EC	Paper Size:	A3
Scale:	1:2500	Date:	October 2021		
Contract:	36568	Figure:	1		

Key.

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

Notes:

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Gloucester GL2 4NF
Telephone: (01452) 527743 Facsimile: (01452) 729314
E-mail: geotech@geoeng.co.uk
Web: www.geoeng.co.uk

Client: GLOUCESTERSHIRE COUNTY COUNCIL

Site: M5 J10 IMPROVEMENTS SCHEME

Title: EXPLORATORY HOLE LOCATION PLAN

Drawn By:	DJ	Checked By:	EC	Paper Size:	A3
Scale:	1:2500	Date:	October 2021		
Contract:	36568	Figure:	2		

Key.

North

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Surface Water Sample
- Trial Pit
- Borehole (dynamic sample)

Notes:

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Client:
GLOUCESTERSHIRE COUNTY COUNCIL

Site:
M5 J10 IMPROVEMENTS SCHEME

Title:
EXPLORATORY HOLE LOCATION PLAN

Drawn By:	DJ	Checked By:	EC	Paper Size:	A3
Scale:	1:2500	Date:	November 2021		
Contract:	36568	Figure:	3		

Key.

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

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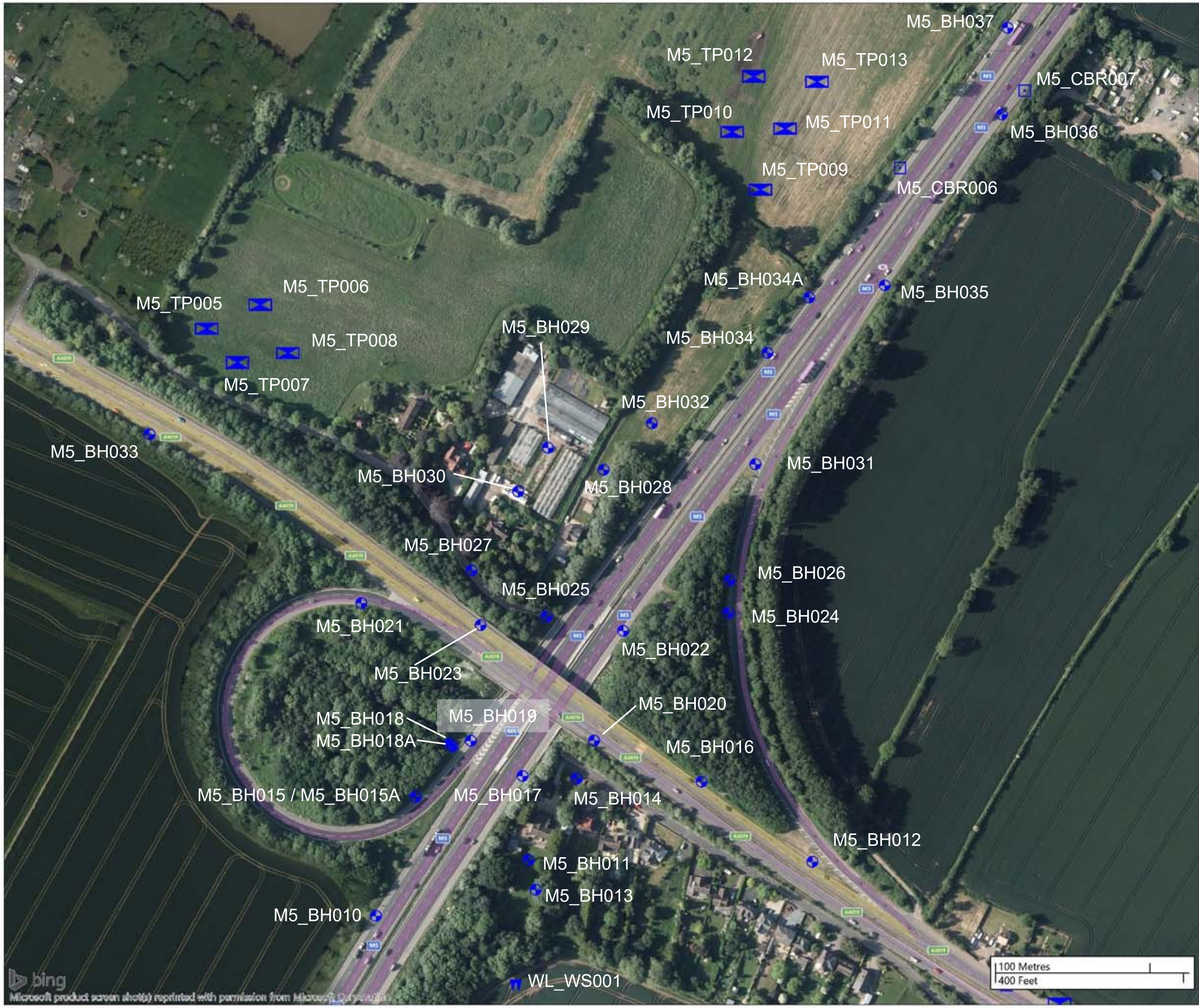
Title: EXPLORATORY HOLE LOCATION PLAN

Drawn By:	DJ	Checked By:	EC	Paper Size:	A3
Scale:	1:2500	Date:	October 2021		
Contract:	36568	Figure:	4		



Key.

North

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Surface Water Sample
- Trial Pit
- Borehole (dynamic sample)

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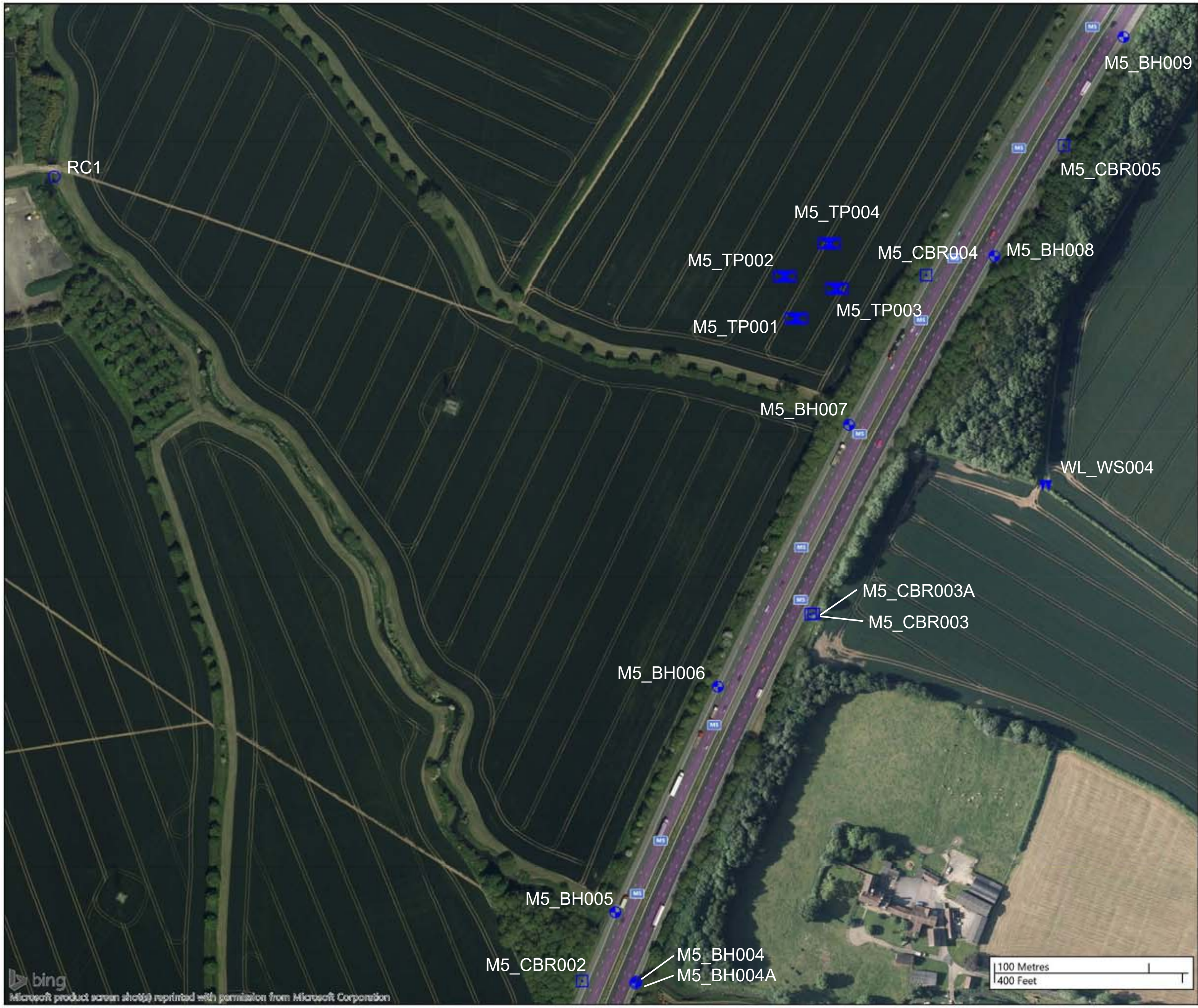
EXPLORATORY HOLE LOCATION PLAN

Drawn By: DJ	Checked By: EC	Paper Size: A3
Scale: 1:2500	Date: December 2021	
Contract: 36568	Figure: 5	



Key:

North

- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Surface Water Sample
- Trial Pit
- Borehole (dynamic sample)

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Title: EXPLORATORY HOLE LOCATION PLAN

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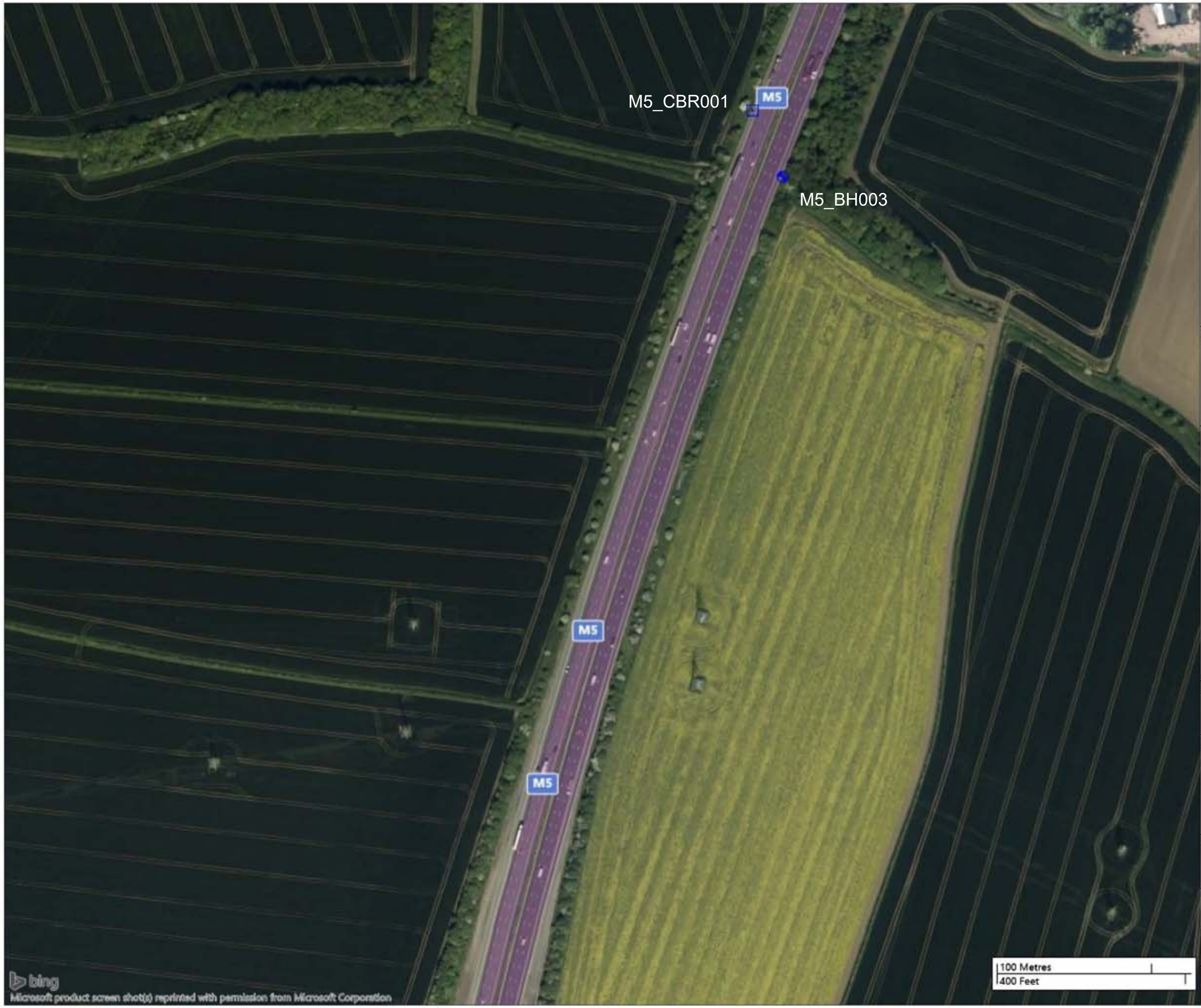
Scale: 1:2500	Date: November 2021	
Contract: 36568	Figure: 6	



Key.

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

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Title: EXPLORATORY HOLE LOCATION PLAN

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Scale:	1:2500	Date:	October 2021		
Contract:	36568	Figure:	7		

Key:

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

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Title:
EXPLORATORY HOLE LOCATION PLAN

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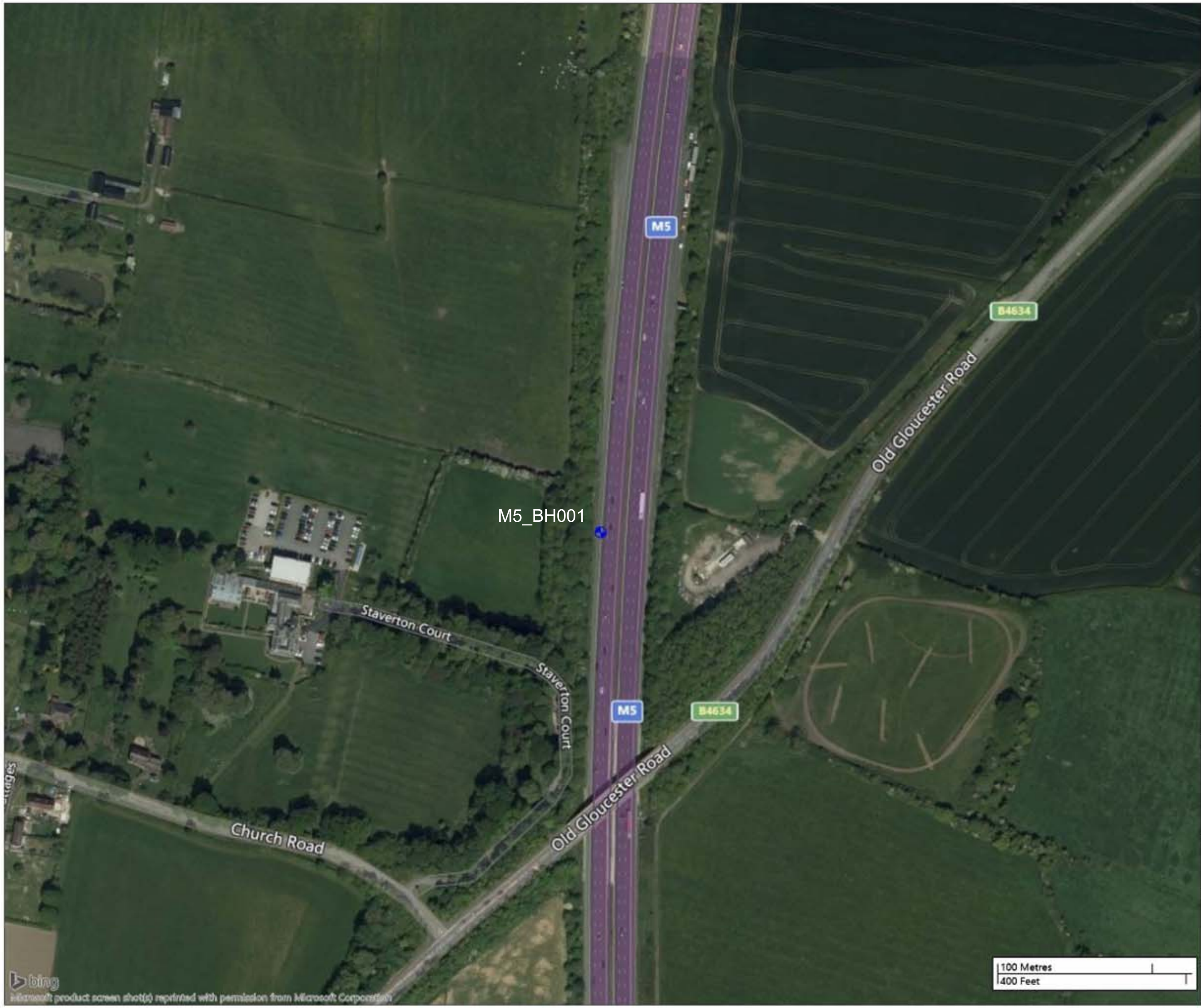
Scale: 1:2500	Date: October 2021	
Contract: 36568	Figure: 8	



Key.

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

Notes:

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Title: EXPLORATORY HOLE LOCATION PLAN

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Scale:	1:2500	Date:	October 2021		
Contract:	36568	Figure:	9		

Key:

North

- Inspection Pit
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- Cone Penetration Test
- Surface Water Sample
- Trial Pit
- Borehole (dynamic sample)

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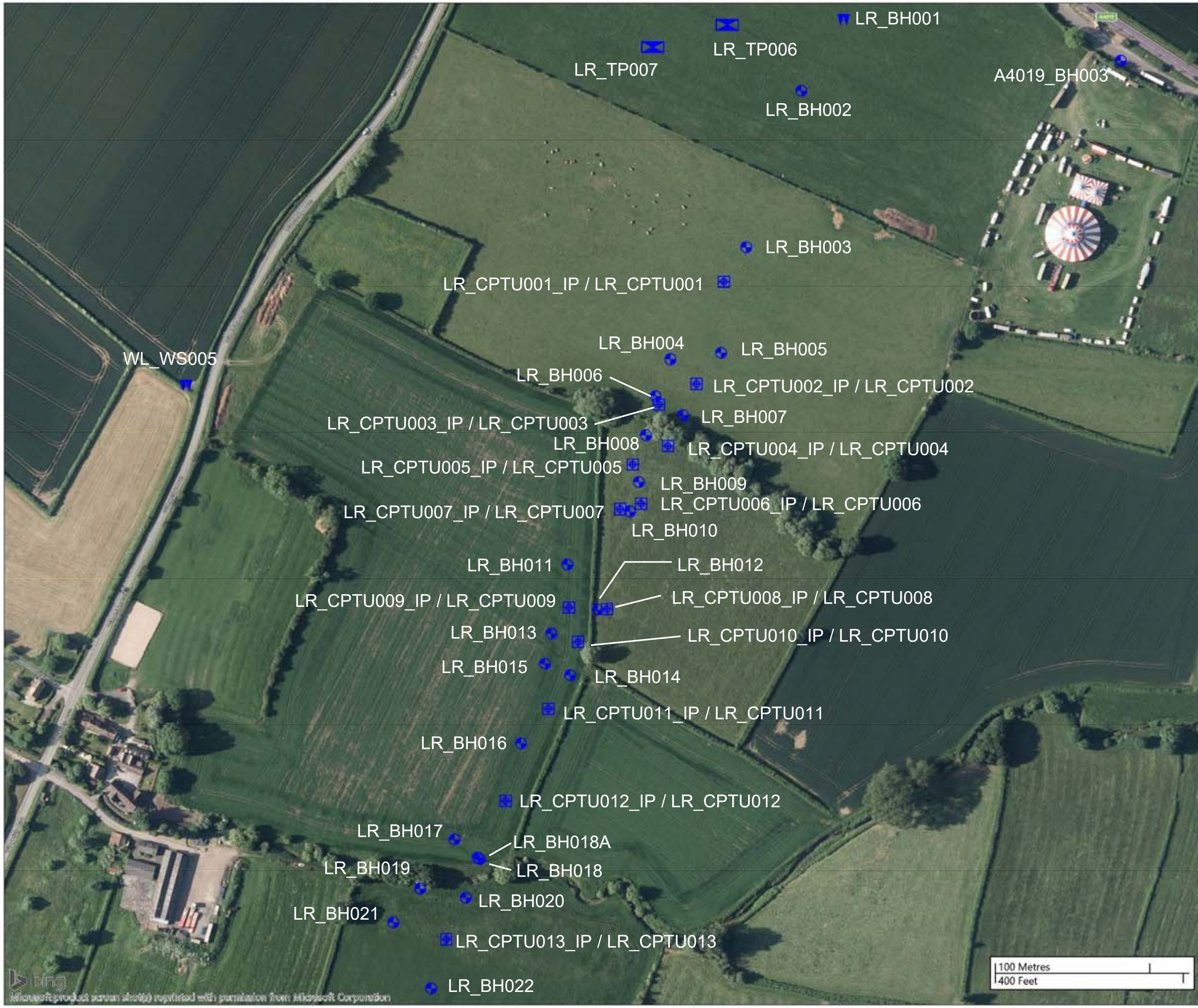
Scale:	1:2500	Date:	December 2021
Contract:	36568	Figure:	10



Key.

North

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- Cone Penetration Test
- Surface Water Sample
- Trial Pit
- Borehole (dynamic sample)

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EXPLORATORY HOLE LOCATION PLAN

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Scale:	1:2500	Date:	December 2021		
Contract:	36568	Figure:	11		

Key.

North

- Inspection Pit
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- Cone Penetration Test
- Surface Water Sample
- Trial Pit
- Borehole (dynamic sample)

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Title:
EXPLORATORY HOLE LOCATION PLAN

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Scale:	1:2500	Date:	December 2021		
Contract:	36568	Figure:	12		

Key.

North

- Inspection Pit
- Borehole (dynamic sample / rotary core)
- Cone Penetration Test
- Surface Water Sample
- Trial Pit
- Borehole (dynamic sample)

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Title:
EXPLORATORY HOLE LOCATION PLAN

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Scale:	1:2500	Date:	December 2021		
Contract:	36568	Figure:	13		

Key.

- Inspection Pit
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- Cone Penetration Test
- Trial Pit
- Borehole (dynamic sample)

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Title:	EXPLORATORY HOLE LOCATION PLAN				
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Scale:	1:2500	Date:	October 2021		
Contract:	36568	Figure:	14		

Key.

North

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- Surface Water Sample
- Trial Pit
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EXPLORATORY HOLE LOCATION PLAN

Drawn By:	DJ	Checked By:	EC	Paper Size:	A3
Scale:	1:2500	Date:	November 2021		
Contract:	36568	Figure:	15		

Appendix B. Existing Hydraulic Model

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes DMRB Manhole Sizes DMRB

FSR Rainfall Model - England and Wales

Return Period (years)	1	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	18.200	Volumetric Runoff Coeff.	1.000	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.370	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	100	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	500
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Designed with Level Soffits

Network Design Table for Storm

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	67.536	1.238	54.6	0.077	5.00	0.0	0.600		o	150	Pipe/Conduit	
1.001	36.640	8.050	4.6	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
1.002	6.590	0.013	500.0	0.000	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.003	5.577	0.052	107.3	0.000	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.004	12.883	0.076	169.5	0.024	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.005	13.309	0.076	175.1	0.010	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.006	30.398	0.161	188.8	0.011	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.007	31.447	0.129	243.8	0.023	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.008	26.118	0.101	258.6	0.023	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
2.000	73.179	0.551	132.8	0.028	5.00	0.0	0.600		o	150	Pipe/Conduit	
2.001	70.223	2.040	34.4	0.004	0.00	0.0	0.600		o	150	Pipe/Conduit	
2.002	74.327	2.525	29.4	0.086	0.00	0.0	0.600		o	225	Pipe/Conduit	
2.003	60.457	2.437	24.8	0.062	0.00	0.0	0.600		o	225	Pipe/Conduit	
2.004	22.394	2.796	8.0	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.009	32.520	0.154	211.2	0.021	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.010	23.940	0.091	263.1	0.024	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.011	21.068	0.044	478.8	0.018	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.012	27.354	0.057	479.9	0.019	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
3.000	89.898	2.298	39.1	0.007	5.00	0.0	0.600		o	150	Pipe/Conduit	
3.001	22.216	0.685	32.4	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
3.002	19.172	0.315	60.9	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.013	35.819	0.300	119.4	0.025	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.014	16.762	0.035	478.9	0.042	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.015	32.003	0.107	299.1	0.009	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.016	9.565	0.031	305.0	0.022	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.017	7.395	0.041	180.4	0.009	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.018	11.425	0.041	278.7	0.005	0.00	0.0		0.050	2 _/	300	1:2 Ditch	

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	44.87	5.82	31.211	0.077	0.0	0.0	0.0	1.36	24.1	12.5
1.001	44.43	5.95	29.973	0.077	0.0	0.0	0.0	4.76	84.1	12.5
1.002	43.09	6.36	21.773	0.077	0.0	0.0	0.0	0.27	72.5	12.5
1.003	42.59	6.52	21.760	0.077	0.0	0.0	0.0	0.58	156.5	12.5
1.004	41.20	6.99	21.708	0.101	0.0	0.0	0.0	0.46	124.5	15.1
1.005	39.86	7.48	21.632	0.111	0.0	0.0	0.0	0.45	122.5	16.0
1.006	37.05	8.64	21.556	0.122	0.0	0.0	0.0	0.44	118.0	16.3
1.007	34.27	10.00	21.395	0.145	0.0	0.0	0.0	0.38	103.8	18.0
1.008	32.25	11.17	21.266	0.168	0.0	0.0	0.0	0.37	100.8	19.6
2.000	42.96	6.40	31.901	0.028	0.0	0.0	0.0	0.87	15.4	4.3
2.001	40.94	7.08	31.350	0.032	0.0	0.0	0.0	1.72	30.4	4.7
2.002	39.56	7.59	29.235	0.118	0.0	0.0	0.0	2.42	96.2	16.9
2.003	38.59	7.98	26.710	0.180	0.0	0.0	0.0	2.64	104.9	25.1
2.004	38.40	8.06	24.273	0.180	0.0	0.0	0.0	4.65	185.0	25.1
1.009	30.34	12.48	21.165	0.369	0.0	0.0	0.0	0.41	111.5	40.4
1.010	28.99	13.56	21.011	0.392	0.0	0.0	0.0	0.37	99.9	41.1
1.011	27.55	14.84	20.920	0.411	0.0	0.0	0.0	0.27	74.1	41.1
1.012	25.92	16.50	20.876	0.429	0.0	0.0	0.0	0.27	74.0	41.1
3.000	44.51	5.93	24.273	0.007	0.0	0.0	0.0	1.61	28.5	1.1
3.001	43.97	6.09	21.900	0.007	0.0	0.0	0.0	2.31	91.7	1.1
3.002	43.35	6.28	21.215	0.007	0.0	0.0	0.0	1.68	66.8	1.1
1.013	25.48	17.00	20.819	0.461	0.0	0.0	0.0	1.20	47.5	42.4
1.014	24.62	18.02	20.444	0.503	0.0	0.0	0.0	0.27	74.1	44.7
1.015	23.45	19.55	20.409	0.512	0.0	0.0	0.0	0.35	93.7	44.7
1.016	23.33	19.73	20.377	0.535	0.0	0.0	0.0	0.89	63.3	45.0
1.017	23.13	20.01	20.346	0.544	0.0	0.0	0.0	0.45	120.7	45.4
1.018	22.77	20.54	20.305	0.549	0.0	0.0	0.0	0.36	97.1	45.4

Network Design Table for Storm

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
1.019	13.263	0.081	163.7	0.008	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
1.020	30.458	0.061	500.0	0.009	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
4.000	96.198	0.350	274.9	0.008	5.00	0.0	0.600		o	150	Pipe/Conduit	
4.001	49.820	0.184	270.8	0.002	0.00	0.0	0.600		o	225	Pipe/Conduit	
4.002	16.805	0.329	51.1	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.021	18.145	0.036	500.0	0.022	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.000	51.623	0.487	106.0	0.054	5.00	0.0	0.600		o	150	Pipe/Conduit	
5.001	31.166	0.429	72.6	0.028	0.00	0.0	0.600		o	150	Pipe/Conduit	
5.002	34.636	7.864	4.4	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
5.003	14.201	1.019	13.9	0.000	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.004	20.103	0.119	168.9	0.018	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.005	194.855	0.487	400.1	0.021	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.006	28.810	0.072	400.1	0.031	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.007	14.818	0.037	400.5	0.027	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.008	15.627	0.039	400.7	0.018	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.009	3.430	0.009	381.1	0.043	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.010	12.807	0.049	261.4	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
5.011	16.214	0.112	144.8	0.017	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.012	18.427	0.046	400.6	0.034	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.013	15.546	0.039	398.6	0.020	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.014	14.617	0.037	395.1	0.016	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.015	11.849	0.030	395.0	0.014	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.016	12.867	0.032	402.1	0.011	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.017	12.044	0.071	169.6	0.012	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.018	18.220	0.046	396.1	0.011	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.019	15.817	0.040	395.4	0.016	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.020	18.735	0.050	374.7	0.026	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.021	19.515	0.039	500.0	0.012	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.022	20.731	0.041	500.0	0.029	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.023	16.269	0.033	493.0	0.030	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.024	19.164	0.038	500.0	0.021	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.025	10.539	0.022	470.8	0.032	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
5.026	36.507	0.122	300.0	0.048	0.00	0.0	0.600		o	375	Pipe/Conduit	
5.027	48.092	0.096	500.0	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.019	22.46	21.01	20.264	0.557	0.0	0.0	0.0	0.47	126.7	45.4
1.020	21.31	22.90	20.183	0.566	0.0	0.0	0.0	0.27	72.5	45.4
4.000	39.37	7.67	21.215	0.008	0.0	0.0	0.0	0.60	10.6	1.2
4.001	36.87	8.72	20.790	0.011	0.0	0.0	0.0	0.79	31.4	1.4
4.002	36.53	8.87	20.606	0.011	0.0	0.0	0.0	1.83	72.9	1.4
1.021	20.69	24.02	20.122	0.598	0.0	0.0	0.0	0.27	72.5	45.4
5.000	44.67	5.88	31.690	0.054	0.0	0.0	0.0	0.98	17.2	8.7
5.001	43.21	6.32	31.203	0.082	0.0	0.0	0.0	1.18	20.9	12.8
5.002	42.84	6.44	30.774	0.082	0.0	0.0	0.0	4.84	85.5	12.8
5.003	42.38	6.59	22.760	0.082	0.0	0.0	0.0	1.61	434.2	12.8
5.004	40.30	7.31	21.741	0.100	0.0	0.0	0.0	0.46	124.7	14.5
5.005	24.53	18.13	21.622	0.121	0.0	0.0	0.0	0.30	81.0	14.5
5.006	23.32	19.73	21.135	0.152	0.0	0.0	0.0	0.30	81.0	14.5
5.007	22.76	20.56	21.063	0.179	0.0	0.0	0.0	0.30	81.0	14.7
5.008	22.19	21.43	21.026	0.196	0.0	0.0	0.0	0.30	81.0	15.7
5.009	22.08	21.61	20.987	0.240	0.0	0.0	0.0	0.31	83.0	19.1
5.010	21.94	21.83	20.978	0.240	0.0	0.0	0.0	0.97	68.4	19.1
5.011	21.61	22.37	20.929	0.256	0.0	0.0	0.0	0.50	134.7	20.0
5.012	21.03	23.40	20.817	0.290	0.0	0.0	0.0	0.30	81.0	22.0
5.013	20.56	24.26	20.771	0.310	0.0	0.0	0.0	0.30	81.2	23.0
5.014	20.15	25.07	20.732	0.325	0.0	0.0	0.0	0.30	81.6	23.7
5.015	19.83	25.72	20.695	0.339	0.0	0.0	0.0	0.30	81.6	24.3
5.016	19.49	26.44	20.665	0.350	0.0	0.0	0.0	0.30	80.8	24.7
5.017	19.29	26.87	20.633	0.362	0.0	0.0	0.0	0.46	124.5	25.2
5.018	18.85	27.88	20.562	0.373	0.0	0.0	0.0	0.30	81.4	25.4
5.019	18.49	28.75	20.516	0.389	0.0	0.0	0.0	0.30	81.5	26.0
5.020	18.09	29.76	20.476	0.415	0.0	0.0	0.0	0.31	83.7	27.1
5.021	17.99	30.00	20.426	0.427	0.0	0.0	0.0	0.27	72.5	27.8
5.022	17.99	30.00	20.387	0.456	0.0	0.0	0.0	0.27	72.5	29.6
5.023	17.99	30.00	20.346	0.486	0.0	0.0	0.0	0.27	73.0	31.5
5.024	17.99	30.00	20.313	0.506	0.0	0.0	0.0	0.27	72.5	32.9
5.025	17.99	30.00	20.274	0.538	0.0	0.0	0.0	0.28	74.7	35.0
5.026	17.99	30.00	20.252	0.585	0.0	0.0	0.0	1.04	115.0	38.0
5.027	17.99	30.00	20.055	0.625	0.0	0.0	0.0	0.90	143.5	40.6

Manhole Schedules for Storm

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)
MH-50	32.594	1.383	Open Manhole	1050	1.000	31.211	150				
MH-51	31.324	1.351	Open Manhole	1050	1.001	29.973	150	1.000	29.973	150	
Dummy-MH-3	22.073	0.300	Junction		1.002	21.773	300	1.001	21.923	150	
Dummy-MH-4	22.297	0.537	Junction		1.003	21.760	300	1.002	21.760	300	
Dummy-MH-5	22.245	0.537	Junction		1.004	21.708	300	1.003	21.708	300	
Dummy-MH-6	22.169	0.537	Junction		1.005	21.632	300	1.004	21.632	300	
Dummy-MH-7	22.093	0.537	Junction		1.006	21.556	300	1.005	21.556	300	
Dummy-MH-8	21.932	0.537	Junction		1.007	21.395	300	1.006	21.395	300	
Dummy-MH-9	21.803	0.537	Junction		1.008	21.266	300	1.007	21.266	300	
U/S MH	33.251	1.350	Open Manhole	1050	2.000	31.901	150				
MH-66	32.700	1.350	Open Manhole	1050	2.001	31.350	150	2.000	31.350	150	
MH-67	31.010	1.775	Open Manhole	1050	2.002	29.235	225	2.001	29.310	150	
MH-68	28.200	1.490	Open Manhole	1050	2.003	26.710	225	2.002	26.710	225	
MH-69	25.894	1.621	Open Manhole	1050	2.004	24.273	225	2.003	24.273	225	
Dummy-MH-15	21.702	0.537	Junction		1.009	21.165	300	1.008	21.165	300	
								2.004	21.477	225	237
Dummy-MH-16	21.548	0.537	Junction		1.010	21.011	300	1.009	21.011	300	
Dummy-MH-17	21.457	0.537	Junction		1.011	20.920	300	1.010	20.920	300	
Dummy-MH-18	21.709	0.833	Junction		1.012	20.876	300	1.011	20.876	300	
GMH-69	25.893	1.620	Junction		3.000	24.273	150				
MH-70	23.350	1.450	Open Manhole	1050	3.001	21.900	225	3.000	21.975	150	
MH-71	23.001	1.786	Open Manhole	1050	3.002	21.215	225	3.001	21.215	225	
MH-22	21.621	0.802	Junction		1.013	20.819	225	1.012	20.819	300	
								3.002	20.900	225	81
Dummy-MH-23	21.610	1.166	Junction		1.014	20.444	300	1.013	20.519	225	
Dummy-MH-24	21.564	1.155	Junction		1.015	20.409	300	1.014	20.409	300	
MH-25	21.456	1.154	Junction		1.016	20.377	300	1.015	20.302	300	
Dummy-MH-26	21.863	1.517	Junction		1.017	20.346	300	1.016	20.346	300	
Dummy-MH-27	22.415	2.110	Junction		1.018	20.305	300	1.017	20.305	300	
Dummy-MH-28	22.285	2.021	Junction		1.019	20.264	300	1.018	20.264	300	
Dummy-MH-29	22.171	1.988	Junction		1.020	20.183	300	1.019	20.183	300	
GMH-71	23.005	1.790	Junction		4.000	21.215	150				
MH-72	21.920	1.130	Open Manhole	1050	4.001	20.790	225	4.000	20.865	150	
MH-73	21.706	1.100	Open Manhole	1050	4.002	20.606	225	4.001	20.606	225	
Dummy-MH-33	22.412	2.290	Junction		1.021	20.122	300	1.020	20.122	300	
								4.002	20.277	225	80
OF-1	22.443	2.357	Open Manhole	0		OUTFALL		1.021	20.086	300	
MH-34	32.995	1.305	Open Manhole	1050	5.000	31.690	150				
MH-35	32.633	1.430	Open Manhole	1050	5.001	31.203	150	5.000	31.203	150	
MH-36	32.244	1.470	Open Manhole	1050	5.002	30.774	150	5.001	30.774	150	
Dummy-MH-37	23.060	0.300	Junction		5.003	22.760	300	5.002	22.910	150	
Dummy-MH-38	22.041	0.300	Junction		5.004	21.741	300	5.003	21.741	300	
Dummy-MH-39	22.833	1.211	Junction		5.005	21.622	300	5.004	21.622	300	
Dummy-MH-40	22.147	1.012	Junction		5.006	21.135	300	5.005	21.135	300	
Dummy-MH-41	23.213	2.150	Junction		5.007	21.063	300	5.006	21.063	300	
Dummy-MH-42	23.324	2.298	Junction		5.008	21.026	300	5.007	21.026	300	
Dummy-MH-43	23.005	2.018	Junction		5.009	20.987	300	5.008	20.987	300	
Dummy-MH-44	22.756	1.778	Junction		5.010	20.978	300	5.009	20.978	300	
Dummy-MH-45	22.830	1.901	Junction		5.011	20.929	300	5.010	20.929	300	
Dummy-MH-46	22.443	1.626	Junction		5.012	20.817	300	5.011	20.817	300	
Dummy-MH-47	22.179	1.408	Junction		5.013	20.771	300	5.012	20.771	300	
Dummy-MH-48	21.994	1.262	Junction		5.014	20.732	300	5.013	20.732	300	
Dummy-MH-49	22.008	1.313	Junction		5.015	20.695	300	5.014	20.695	300	
Dummy-MH-50	21.883	1.218	Junction		5.016	20.665	300	5.015	20.665	300	
Dummy-MH-51	21.809	1.176	Junction		5.017	20.633	300	5.016	20.633	300	
Dummy-MH-52	21.746	1.184	Junction		5.018	20.562	300	5.017	20.562	300	
Dummy-MH-53	21.625	1.109	Junction		5.019	20.516	300	5.018	20.516	300	
Dummy-MH-54	21.588	1.112	Junction		5.020	20.476	300	5.019	20.476	300	
Dummy-MH-55	21.470	1.044	Junction		5.021	20.426	300	5.020	20.426	300	
Dummy-MH-56	21.460	1.073	Junction		5.022	20.387	300	5.021	20.387	300	
Dummy-MH-57	21.400	1.054	Junction		5.023	20.346	300	5.022	20.346	300	
Dummy-MH-58	21.500	1.187	Junction		5.024	20.313	300	5.023	20.313	300	
Dummy-MH-59	21.330	1.056	Junction		5.025	20.274	300	5.024	20.274	300	
Dummy-MH-60	21.430	1.178	Junction		5.026	20.252	375	5.025	20.252	300	

Manhole Schedules for Storm

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)
MH-74	21.140	1.085	Open Manhole	1350	5.027	20.055	450	5.026	20.130	375	
OF-2	21.251	1.292	Open Manhole	0		OUTFALL		5.027	19.959	450	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
MH-50	390374.636	225668.635	390374.636	225668.635	Required	
MH-51	390320.536	225709.061	390320.536	225709.061	Required	
Dummy-MH-3	390284.520	225702.328			No Entry	
Dummy-MH-4	390283.977	225708.896			No Entry	
Dummy-MH-5	390279.872	225712.670			No Entry	
Dummy-MH-6	390269.754	225720.645			No Entry	
Dummy-MH-7	390259.421	225729.035			No Entry	
Dummy-MH-8	390234.717	225746.747			No Entry	
Dummy-MH-9	390208.732	225764.458			No Entry	
U/S MH	390428.277	225641.522	390428.277	225641.522	Required	
MH-66	390369.338	225684.897	390369.338	225684.897	Required	
MH-67	390312.812	225726.563	390312.812	225726.563	Required	
MH-68	390250.969	225767.793	390250.969	225767.793	Required	
MH-69	390198.585	225797.977	390198.585	225797.977	Required	
Dummy-MH-15	390186.937	225778.851			No Entry	
Dummy-MH-16	390159.453	225796.233			No Entry	
Dummy-MH-17	390139.140	225808.902			No Entry	
Dummy-MH-18	390121.050	225819.701			No Entry	
GMH-69	390198.597	225798.031			No Entry	
MH-70	390119.832	225841.363	390119.832	225841.363	Required	
MH-71	390099.674	225850.701	390099.674	225850.701	Required	
MH-22	390096.513	225831.791			No Entry	
Dummy-MH-23	390064.418	225847.694			No Entry	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy-MH-24	390049.741	225855.791			No Entry	
MH-25	390021.371	225870.600			No Entry	
Dummy-MH-26	390013.025	225875.273			No Entry	
Dummy-MH-27	390006.772	225879.222			No Entry	
Dummy-MH-28	389996.745	225884.697			No Entry	
Dummy-MH-29	389985.499	225891.730			No Entry	
GMH-71	390099.491	225850.618			No Entry	
MH-72	390014.611	225895.889	390014.611	225895.889	Required	
MH-73	389971.861	225921.473	389971.861	225921.473	Required	
Dummy-MH-33	389960.484	225909.105			No Entry	
OF-1	389946.102	225920.169			No Entry	
MH-34	390431.399	225652.740	390431.399	225652.740	Required	
MH-35	390389.787	225683.292	390389.787	225683.292	Required	
MH-36	390364.736	225701.832	390364.736	225701.832	Required	
Dummy-MH-37	390382.904	225731.320			No Entry	
Dummy-MH-38	390372.542	225741.030			No Entry	
Dummy-MH-39	390358.053	225754.966			No Entry	
Dummy-MH-40	390178.525	225830.717			No Entry	
Dummy-MH-41	390151.816	225841.515			No Entry	
Dummy-MH-42	390138.527	225848.070			No Entry	
Dummy-MH-43	390125.634	225856.901			No Entry	
Dummy-MH-44	390123.018	225859.120			No Entry	
Dummy-MH-45	390112.046	225865.725			No Entry	
Dummy-MH-46	390096.314	225869.650			No Entry	
Dummy-MH-47	390079.742	225877.706			No Entry	
Dummy-MH-48	390065.702	225884.381			No Entry	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy-MH-49	390052.582	225890.825			No Entry	
Dummy-MH-50	390042.224	225896.580			No Entry	
Dummy-MH-51	390030.716	225902.334			No Entry	
Dummy-MH-52	390019.898	225907.628			No Entry	
Dummy-MH-53	390003.671	225915.914			No Entry	
Dummy-MH-54	389989.861	225923.624			No Entry	
Dummy-MH-55	389974.398	225934.203			No Entry	
Dummy-MH-56	389958.266	225945.184			No Entry	
Dummy-MH-57	389942.019	225958.059			No Entry	
Dummy-MH-58	389929.475	225968.419			No Entry	
Dummy-MH-59	389915.034	225981.018			No Entry	
Dummy-MH-60	389906.990	225987.828			No Entry	
MH-74	389880.829	226013.290	389880.829	226013.290	Required	
OF-2	389851.537	226051.432			No Entry	

PIPELINE SCHEDULES for Storm

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)
1.000	o	150	MH-50	32.594	31.211	1.233	Open Manhole	1050
1.001	o	150	MH-51	31.324	29.973	1.201	Open Manhole	1050
1.002	2 _/	300	Dummy-MH-3	22.073	21.773	0.000	Junction	
1.003	2 _/	300	Dummy-MH-4	22.297	21.760	0.237	Junction	
1.004	2 _/	300	Dummy-MH-5	22.245	21.708	0.237	Junction	
1.005	2 _/	300	Dummy-MH-6	22.169	21.632	0.237	Junction	
1.006	2 _/	300	Dummy-MH-7	22.093	21.556	0.237	Junction	
1.007	2 _/	300	Dummy-MH-8	21.932	21.395	0.237	Junction	
1.008	2 _/	300	Dummy-MH-9	21.803	21.266	0.237	Junction	
2.000	o	150	U/S MH	33.251	31.901	1.200	Open Manhole	1050
2.001	o	150	MH-66	32.700	31.350	1.200	Open Manhole	1050
2.002	o	225	MH-67	31.010	29.235	1.550	Open Manhole	1050
2.003	o	225	MH-68	28.200	26.710	1.265	Open Manhole	1050
2.004	o	225	MH-69	25.894	24.273	1.396	Open Manhole	1050
1.009	2 _/	300	Dummy-MH-15	21.702	21.165	0.237	Junction	
1.010	2 _/	300	Dummy-MH-16	21.548	21.011	0.237	Junction	
1.011	2 _/	300	Dummy-MH-17	21.457	20.920	0.237	Junction	
1.012	2 _/	300	Dummy-MH-18	21.709	20.876	0.533	Junction	
3.000	o	150	GMH-69	25.893	24.273	1.470	Junction	
3.001	o	225	MH-70	23.350	21.900	1.225	Open Manhole	1050
3.002	o	225	MH-71	23.001	21.215	1.561	Open Manhole	1050
1.013	o	225	MH-22	21.621	20.819	0.577	Junction	
1.014	2 _/	300	Dummy-MH-23	21.610	20.444	0.866	Junction	
1.015	2 _/	300	Dummy-MH-24	21.564	20.409	0.855	Junction	
1.016	o	300	MH-25	21.456	20.377	0.779	Junction	
1.017	2 _/	300	Dummy-MH-26	21.863	20.346	1.217	Junction	
1.018	2 _/	300	Dummy-MH-27	22.415	20.305	1.810	Junction	
1.019	2 _/	300	Dummy-MH-28	22.285	20.264	1.721	Junction	
1.020	2 _/	300	Dummy-MH-29	22.171	20.183	1.688	Junction	
4.000	o	150	GMH-71	23.005	21.215	1.640	Junction	
4.001	o	225	MH-72	21.920	20.790	0.905	Open Manhole	1050
4.002	o	225	MH-73	21.706	20.606	0.875	Open Manhole	1050

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	67.536	54.6	MH-51	31.324	29.973	1.201	Open Manhole	1050
1.001	36.640	4.6	Dummy-MH-3	22.073	21.923	0.000	Junction	
1.002	6.590	500.0	Dummy-MH-4	22.297	21.760	0.237	Junction	
1.003	5.577	107.3	Dummy-MH-5	22.245	21.708	0.237	Junction	
1.004	12.883	169.5	Dummy-MH-6	22.169	21.632	0.237	Junction	
1.005	13.309	175.1	Dummy-MH-7	22.093	21.556	0.237	Junction	
1.006	30.398	188.8	Dummy-MH-8	21.932	21.395	0.237	Junction	
1.007	31.447	243.8	Dummy-MH-9	21.803	21.266	0.237	Junction	
1.008	26.118	258.6	Dummy-MH-15	21.702	21.165	0.237	Junction	
2.000	73.179	132.8	MH-66	32.700	31.350	1.200	Open Manhole	1050
2.001	70.223	34.4	MH-67	31.010	29.310	1.550	Open Manhole	1050
2.002	74.327	29.4	MH-68	28.200	26.710	1.265	Open Manhole	1050
2.003	60.457	24.8	MH-69	25.894	24.273	1.396	Open Manhole	1050
2.004	22.394	8.0	Dummy-MH-15	21.702	21.477	0.000	Junction	
1.009	32.520	211.2	Dummy-MH-16	21.548	21.011	0.237	Junction	
1.010	23.940	263.1	Dummy-MH-17	21.457	20.920	0.237	Junction	
1.011	21.068	478.8	Dummy-MH-18	21.709	20.876	0.533	Junction	
1.012	27.354	479.9	MH-22	21.621	20.819	0.502	Junction	
3.000	89.898	39.1	MH-70	23.350	21.975	1.225	Open Manhole	1050
3.001	22.216	32.4	MH-71	23.001	21.215	1.561	Open Manhole	1050
3.002	19.172	60.9	MH-22	21.621	20.900	0.496	Junction	
1.013	35.819	119.4	Dummy-MH-23	21.610	20.519	0.866	Junction	
1.014	16.762	478.9	Dummy-MH-24	21.564	20.409	0.855	Junction	
1.015	32.003	299.1	MH-25	21.456	20.302	0.854	Junction	
1.016	9.565	305.0	Dummy-MH-26	21.863	20.346	1.217	Junction	
1.017	7.395	180.4	Dummy-MH-27	22.415	20.305	1.810	Junction	
1.018	11.425	278.7	Dummy-MH-28	22.285	20.264	1.721	Junction	
1.019	13.263	163.7	Dummy-MH-29	22.171	20.183	1.688	Junction	
1.020	30.458	500.0	Dummy-MH-33	22.412	20.122	1.990	Junction	
4.000	96.198	274.9	MH-72	21.920	20.865	0.905	Open Manhole	1050
4.001	49.820	270.8	MH-73	21.706	20.606	0.875	Open Manhole	1050
4.002	16.805	51.1	Dummy-MH-33	22.412	20.277	1.910	Junction	

PIPELINE SCHEDULES for Storm

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)
1.021	2 _/	300	Dummy-MH-33	22.412	20.122	1.990	Junction	
5.000	o	150	MH-34	32.995	31.690	1.155	Open Manhole	1050
5.001	o	150	MH-35	32.633	31.203	1.280	Open Manhole	1050
5.002	o	150	MH-36	32.244	30.774	1.320	Open Manhole	1050
5.003	2 _/	300	Dummy-MH-37	23.060	22.760	0.000	Junction	
5.004	2 _/	300	Dummy-MH-38	22.041	21.741	0.000	Junction	
5.005	2 _/	300	Dummy-MH-39	22.833	21.622	0.911	Junction	
5.006	2 _/	300	Dummy-MH-40	22.147	21.135	0.712	Junction	
5.007	2 _/	300	Dummy-MH-41	23.213	21.063	1.850	Junction	
5.008	2 _/	300	Dummy-MH-42	23.324	21.026	1.998	Junction	
5.009	2 _/	300	Dummy-MH-43	23.005	20.987	1.718	Junction	
5.010	o	300	Dummy-MH-44	22.756	20.978	1.478	Junction	
5.011	2 _/	300	Dummy-MH-45	22.830	20.929	1.601	Junction	
5.012	2 _/	300	Dummy-MH-46	22.443	20.817	1.326	Junction	
5.013	2 _/	300	Dummy-MH-47	22.179	20.771	1.108	Junction	
5.014	2 _/	300	Dummy-MH-48	21.994	20.732	0.962	Junction	
5.015	2 _/	300	Dummy-MH-49	22.008	20.695	1.013	Junction	
5.016	2 _/	300	Dummy-MH-50	21.883	20.665	0.918	Junction	
5.017	2 _/	300	Dummy-MH-51	21.809	20.633	0.876	Junction	
5.018	2 _/	300	Dummy-MH-52	21.746	20.562	0.884	Junction	
5.019	2 _/	300	Dummy-MH-53	21.625	20.516	0.809	Junction	
5.020	2 _/	300	Dummy-MH-54	21.588	20.476	0.812	Junction	
5.021	2 _/	300	Dummy-MH-55	21.470	20.426	0.744	Junction	
5.022	2 _/	300	Dummy-MH-56	21.460	20.387	0.773	Junction	
5.023	2 _/	300	Dummy-MH-57	21.400	20.346	0.754	Junction	
5.024	2 _/	300	Dummy-MH-58	21.500	20.313	0.887	Junction	
5.025	2 _/	300	Dummy-MH-59	21.330	20.274	0.756	Junction	
5.026	o	375	Dummy-MH-60	21.430	20.252	0.803	Junction	
5.027	o	450	MH-74	21.140	20.055	0.635	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)
1.021	18.145	500.0	OF-1	22.443	20.086	2.057	Open Manhole	0
5.000	51.623	106.0	MH-35	32.633	31.203	1.280	Open Manhole	1050
5.001	31.166	72.6	MH-36	32.244	30.774	1.320	Open Manhole	1050
5.002	34.636	4.4	Dummy-MH-37	23.060	22.910	0.000	Junction	
5.003	14.201	13.9	Dummy-MH-38	22.041	21.741	0.000	Junction	
5.004	20.103	168.9	Dummy-MH-39	22.833	21.622	0.911	Junction	
5.005	194.855	400.1	Dummy-MH-40	22.147	21.135	0.712	Junction	
5.006	28.810	400.1	Dummy-MH-41	23.213	21.063	1.850	Junction	
5.007	14.818	400.5	Dummy-MH-42	23.324	21.026	1.998	Junction	
5.008	15.627	400.7	Dummy-MH-43	23.005	20.987	1.718	Junction	
5.009	3.430	381.1	Dummy-MH-44	22.756	20.978	1.478	Junction	
5.010	12.807	261.4	Dummy-MH-45	22.830	20.929	1.601	Junction	
5.011	16.214	144.8	Dummy-MH-46	22.443	20.817	1.326	Junction	
5.012	18.427	400.6	Dummy-MH-47	22.179	20.771	1.108	Junction	
5.013	15.546	398.6	Dummy-MH-48	21.994	20.732	0.962	Junction	
5.014	14.617	395.1	Dummy-MH-49	22.008	20.695	1.013	Junction	
5.015	11.849	395.0	Dummy-MH-50	21.883	20.665	0.918	Junction	
5.016	12.867	402.1	Dummy-MH-51	21.809	20.633	0.876	Junction	
5.017	12.044	169.6	Dummy-MH-52	21.746	20.562	0.884	Junction	
5.018	18.220	396.1	Dummy-MH-53	21.625	20.516	0.809	Junction	
5.019	15.817	395.4	Dummy-MH-54	21.588	20.476	0.812	Junction	
5.020	18.735	374.7	Dummy-MH-55	21.470	20.426	0.744	Junction	
5.021	19.515	500.0	Dummy-MH-56	21.460	20.387	0.773	Junction	
5.022	20.731	500.0	Dummy-MH-57	21.400	20.346	0.754	Junction	
5.023	16.269	493.0	Dummy-MH-58	21.500	20.313	0.887	Junction	
5.024	19.164	500.0	Dummy-MH-59	21.330	20.274	0.756	Junction	
5.025	10.539	470.8	Dummy-MH-60	21.430	20.252	0.878	Junction	
5.026	36.507	300.0	MH-74	21.140	20.130	0.635	Open Manhole	1350
5.027	48.092	500.0	OF-2	21.251	19.959	0.842	Open Manhole	0

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Carriage way & Footway	100	0.077	0.077	0.077
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.000	0.000	0.000
1.003	-	-	100	0.000	0.000	0.000
1.004	Classification	Carriage way & Footway	100	0.024	0.024	0.024
1.005	Classification	Carriage way & Footway	100	0.010	0.010	0.010
1.006	Classification	Carriage way & Footway	100	0.011	0.011	0.011
1.007	Classification	Carriage way & Footway	100	0.023	0.023	0.023
1.008	Classification	Carriage way & Footway	100	0.023	0.023	0.023
2.000	Classification	Central Reserve unpaved	20	0.022	0.004	0.004
	Classification	Carriage way & Footway	100	0.023	0.023	0.028
2.001	Classification	Central Reserve unpaved	20	0.021	0.004	0.004
2.002	Classification	Central Reserve unpaved	20	0.026	0.005	0.005
	Classification	Carriage way & Footway	100	0.012	0.012	0.017
	Classification	Carriage way & Footway	100	0.055	0.055	0.071
	Classification	Verge	50	0.011	0.006	0.077
	Classification	Carriage way & Footway	100	0.009	0.009	0.086
2.003	Classification	Central Reserve unpaved	20	0.026	0.005	0.005
	Classification	Carriage way & Footway	100	0.046	0.046	0.051
	Classification	Verge	50	0.008	0.004	0.056
	Classification	Carriage way & Footway	100	0.006	0.006	0.062
2.004	-	-	100	0.000	0.000	0.000
1.009	Classification	Carriage way & Footway	100	0.021	0.021	0.021
1.010	Classification	Carriage way & Footway	100	0.024	0.024	0.024
1.011	Classification	Carriage way & Footway	100	0.018	0.018	0.018
1.012	Classification	Carriage way & Footway	100	0.019	0.019	0.019
3.000	Classification	Central Reserve unpaved	20	0.033	0.007	0.007
3.001	-	-	100	0.000	0.000	0.000
3.002	-	-	100	0.000	0.000	0.000
1.013	Classification	Carriage way & Footway	100	0.025	0.025	0.025
1.014	Classification	Carriage way & Footway	100	0.042	0.042	0.042
1.015	Classification	Carriage way & Footway	100	0.009	0.009	0.009
1.016	Classification	Carriage way & Footway	100	0.022	0.022	0.022
1.017	Classification	Carriage way & Footway	100	0.009	0.009	0.009
1.018	Classification	Carriage way & Footway	100	0.005	0.005	0.005
1.019	Classification	Carriage way & Footway	100	0.008	0.008	0.008
1.020	Classification	Carriage way & Footway	100	0.009	0.009	0.009
4.000	Classification	Central Reserve unpaved	20	0.042	0.008	0.008
4.001	Classification	Central Reserve unpaved	20	0.011	0.002	0.002
4.002	-	-	100	0.000	0.000	0.000
1.021	Classification	Carriage way & Footway	100	0.022	0.022	0.022
5.000	Classification	Carriage way & Footway	100	0.043	0.043	0.043
	Classification	Verge	50	0.007	0.004	0.047
	Classification	Carriage way & Footway	100	0.007	0.007	0.054
5.001	Classification	Carriage way & Footway	100	0.022	0.022	0.022
	Classification	Verge	50	0.004	0.002	0.024
	Classification	Carriage way & Footway	100	0.004	0.004	0.028
5.002	-	-	100	0.000	0.000	0.000
5.003	-	-	100	0.000	0.000	0.000
5.004	Classification	Carriage way & Footway	100	0.014	0.014	0.014
	Classification	Verge	50	0.002	0.001	0.015
	Classification	Carriage way & Footway	100	0.002	0.002	0.018
5.005	Classification	Carriage way & Footway	100	0.017	0.017	0.017
	Classification	Verge	50	0.002	0.001	0.018
	Classification	Carriage way & Footway	100	0.003	0.003	0.021
5.006	Classification	Carriage way & Footway	100	0.026	0.026	0.026
	Classification	Verge	50	0.005	0.002	0.029
	Classification	Carriage way & Footway	100	0.003	0.003	0.031
5.007	Classification	Carriage way & Footway	100	0.024	0.024	0.024
	Classification	Carriage way & Footway	100	0.003	0.003	0.027
5.008	Classification	Carriage way & Footway	100	0.015	0.015	0.015
	Classification	Carriage way & Footway	100	0.002	0.002	0.018
5.009	Classification	Carriage way & Footway	100	0.026	0.026	0.026
	Classification	Carriage way & Footway	100	0.003	0.003	0.028
	Classification	Carriage way & Footway	100	0.012	0.012	0.040
	Classification	Carriage way & Footway	100	0.003	0.003	0.043
5.010	-	-	100	0.000	0.000	0.000
5.011	Classification	Carriage way & Footway	100	0.011	0.011	0.011
	Classification	Carriage way & Footway	100	0.006	0.006	0.017
5.012	Classification	Carriage way & Footway	100	0.030	0.030	0.030
	Classification	Verge	50	0.002	0.001	0.031
	Classification	Carriage way & Footway	100	0.003	0.003	0.034
5.013	Classification	Carriage way & Footway	100	0.017	0.017	0.017
	Classification	Carriage way & Footway	100	0.002	0.002	0.019
	Classification	Verge	50	0.002	0.001	0.020
5.014	Classification	Carriage way & Footway	100	0.013	0.013	0.013
	Classification	Verge	50	0.002	0.001	0.014
	Classification	Carriage way & Footway	100	0.002	0.002	0.016
5.015	Classification	Carriage way & Footway	100	0.011	0.011	0.011
	Classification	Verge	50	0.002	0.001	0.012
	Classification	Carriage way & Footway	100	0.001	0.001	0.014
5.016	Classification	Carriage way & Footway	100	0.009	0.009	0.009
	Classification	Verge	50	0.002	0.001	0.010
	Classification	Carriage way & Footway	100	0.001	0.001	0.011
5.017	Classification	Carriage way & Footway	100	0.009	0.009	0.009

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Verge	50	0.002	0.001	0.010
	Classification	Carriage way & Footway	100	0.001	0.001	0.012
5.018	Classification	Carriage way & Footway	100	0.009	0.009	0.009
	Classification	Carriage way & Footway	100	0.001	0.001	0.010
	Classification	Verge	50	0.002	0.001	0.011
5.019	Classification	Carriage way & Footway	100	0.014	0.014	0.014
	Classification	Carriage way & Footway	100	0.001	0.001	0.015
	Classification	Verge	50	0.002	0.001	0.016
5.020	Classification	Carriage way & Footway	100	0.021	0.021	0.021
	Classification	Verge	50	0.003	0.002	0.023
	Classification	Carriage way & Footway	100	0.003	0.003	0.026
5.021	Classification	Carriage way & Footway	100	0.011	0.011	0.011
	Classification	Carriage way & Footway	100	0.001	0.001	0.012
	Classification	Verge	50	0.001	0.000	0.012
5.022	Classification	Carriage way & Footway	100	0.026	0.026	0.026
	Classification	Carriage way & Footway	100	0.002	0.002	0.027
	Classification	Verge	50	0.002	0.001	0.029
5.023	Classification	Carriage way & Footway	100	0.026	0.026	0.026
	Classification	Carriage way & Footway	100	0.002	0.002	0.028
	Classification	Verge	50	0.003	0.001	0.030
5.024	Classification	Carriage way & Footway	100	0.018	0.018	0.018
	Classification	Carriage way & Footway	100	0.001	0.001	0.019
	Classification	Verge	50	0.002	0.001	0.021
5.025	Classification	Carriage way & Footway	100	0.026	0.026	0.026
	Classification	Carriage way & Footway	100	0.004	0.004	0.030
	Classification	Verge	50	0.003	0.002	0.032
5.026	Classification	Carriage way & Footway	100	0.033	0.033	0.033
	Classification	Verge	50	0.011	0.005	0.039
	Classification	Carriage way & Footway	100	0.003	0.003	0.041
	Classification	Carriage way & Footway	100	0.003	0.003	0.044
	Classification	Verge	50	0.002	0.001	0.045
	Classification	Carriage way & Footway	100	0.003	0.003	0.048
5.027	Classification	Carriage way & Footway	100	0.011	0.011	0.011
	Classification	Carriage way & Footway	100	0.016	0.016	0.027
	Classification	Verge	50	0.014	0.007	0.034
	Classification	Carriage way & Footway	100	0.005	0.005	0.039
				Total	Total	Total
				1.415	1.223	1.223

Network Classifications for Storm

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
1.000	MH-50	150	1.201	1.433	Unclassified	1050	0	1.233	Unclassified
1.001	MH-51	150	0.000	3.407	Unclassified	1050	0	1.201	Unclassified
1.002	Dummy-MH-3	300	0.000	0.237	Unclassified				Junction
1.003	Dummy-MH-4	300	0.236	0.237	Unclassified				Junction
1.004	Dummy-MH-5	300	0.237	0.238	Unclassified				Junction
1.005	Dummy-MH-6	300	0.235	0.237	Unclassified				Junction
1.006	Dummy-MH-7	300	0.234	0.237	Unclassified				Junction
1.007	Dummy-MH-8	300	0.237	0.237	Unclassified				Junction
1.008	Dummy-MH-9	300	0.236	0.237	Unclassified				Junction
2.000	U/S MH	150	1.200	1.328	Unclassified	1050	0	1.200	Unclassified
2.001	MH-66	150	1.200	1.559	Unclassified	1050	0	1.200	Unclassified
2.002	MH-67	225	1.265	1.550	Unclassified	1050	0	1.550	Unclassified
2.003	MH-68	225	1.242	1.396	Unclassified	1050	0	1.265	Unclassified
2.004	MH-69	225	1.396	1.985	Unclassified	1050	0	1.396	Unclassified
1.009	Dummy-MH-15	300	0.235	0.239	Unclassified				Junction
1.010	Dummy-MH-16	300	0.234	0.237	Unclassified				Junction
1.011	Dummy-MH-17	300	0.213	0.533	Unclassified				Junction
1.012	Dummy-MH-18	300	0.350	0.533	Unclassified				Junction
3.000	GMH-69	150	1.189	1.470	Unclassified				Junction
3.001	MH-70	225	1.187	1.561	Unclassified	1050	0	1.225	Unclassified
3.002	MH-71	225	0.496	1.561	Unclassified	1050	0	1.561	Unclassified
1.013	MH-22	225	0.577	0.866	Unclassified				Junction
1.014	Dummy-MH-23	300	0.855	0.866	Unclassified				Junction
1.015	Dummy-MH-24	300	0.854	2.057	Unclassified				Junction
1.016	MH-25	300	0.779	1.644	Unclassified				Junction
1.017	Dummy-MH-26	300	1.217	1.810	Unclassified				Junction
1.018	Dummy-MH-27	300	1.721	1.943	Unclassified				Junction
1.019	Dummy-MH-28	300	1.688	1.721	Unclassified				Junction
1.020	Dummy-MH-29	300	1.688	1.990	Unclassified				Junction
4.000	GMH-71	150	0.905	1.640	Unclassified				Junction
4.001	MH-72	225	0.875	0.918	Unclassified	1050	0	0.905	Unclassified
4.002	MH-73	225	0.875	1.910	Unclassified	1050	0	0.875	Unclassified
1.021	Dummy-MH-33	300	1.990	2.061	Unclassified				Junction
5.000	MH-34	150	1.155	1.327	Unclassified	1050	0	1.155	Unclassified
5.001	MH-35	150	1.280	1.347	Unclassified	1050	0	1.280	Unclassified
5.002	MH-36	150	1.320	1.320	Unclassified	1050	0	1.320	Unclassified
5.003	Dummy-MH-37	300	0.000	0.000	Unclassified				Junction
5.004	Dummy-MH-38	300	0.000	0.911	Unclassified				Junction
5.005	Dummy-MH-39	300	0.601	1.030	Unclassified				Junction
5.006	Dummy-MH-40	300	0.712	1.850	Unclassified				Junction
5.007	Dummy-MH-41	300	1.850	1.998	Unclassified				Junction
5.008	Dummy-MH-42	300	1.718	1.998	Unclassified				Junction
5.009	Dummy-MH-43	300	1.478	1.718	Unclassified				Junction
5.010	Dummy-MH-44	300	1.236	1.601	Unclassified				Junction
5.011	Dummy-MH-45	300	1.292	1.601	Unclassified				Junction
5.012	Dummy-MH-46	300	1.108	1.326	Unclassified				Junction
5.013	Dummy-MH-47	300	0.962	1.115	Unclassified				Junction
5.014	Dummy-MH-48	300	0.933	1.058	Unclassified				Junction
5.015	Dummy-MH-49	300	0.918	1.013	Unclassified				Junction
5.016	Dummy-MH-50	300	0.876	0.918	Unclassified				Junction
5.017	Dummy-MH-51	300	0.876	0.886	Unclassified				Junction
5.018	Dummy-MH-52	300	0.809	0.884	Unclassified				Junction
5.019	Dummy-MH-53	300	0.793	0.821	Unclassified				Junction
5.020	Dummy-MH-54	300	0.670	0.822	Unclassified				Junction
5.021	Dummy-MH-55	300	0.709	0.773	Unclassified				Junction
5.022	Dummy-MH-56	300	0.754	0.773	Unclassified				Junction
5.023	Dummy-MH-57	300	0.754	0.887	Unclassified				Junction
5.024	Dummy-MH-58	300	0.756	1.026	Unclassified				Junction
5.025	Dummy-MH-59	300	0.752	0.878	Unclassified				Junction
5.026	Dummy-MH-60	375	0.609	0.803	Unclassified				Junction
5.027	MH-74	450	0.635	0.842	Unclassified	1350	0	0.635	Unclassified

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.021	OF-1	22.443	20.086	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
5.027	OF-2	21.251	19.959	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	1.000	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	40.000	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	0	Number of Storage Structures	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	18.200	Cv (Summer)	1.000
Return Period (years)	1	Ratio R	0.370	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

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

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 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	MH-50	15 Summer	1	+0%	5/15 Summer	100/15 Summer			31.306	-0.055	0.000	0.70		16.5
1.001	MH-51	15 Summer	1	+0%					30.019	-0.104	0.000	0.20		16.4
1.002	Dummy-MH-3	15 Summer	1	+0%					21.923	-0.150	0.000	0.19		16.3
1.003	Dummy-MH-4	15 Summer	1	+0%					21.861	-0.436	0.000	0.03		16.3
1.004	Dummy-MH-5	15 Summer	1	+0%					21.834	-0.411	0.000	0.04		20.3
1.005	Dummy-MH-6	15 Summer	1	+0%					21.762	-0.407	0.000	0.05		21.4
1.006	Dummy-MH-7	15 Summer	1	+0%					21.692	-0.401	0.000	0.05		22.4
1.007	Dummy-MH-8	15 Summer	1	+0%					21.547	-0.385	0.000	0.06		24.3
1.008	Dummy-MH-9	15 Summer	1	+0%					21.437	-0.366	0.000	0.07		26.0
2.000	U/S MH	15 Summer	1	+0%	100/15 Summer				31.967	-0.084	0.000	0.36		5.5
2.001	MH-66	15 Summer	1	+0%					31.397	-0.103	0.000	0.21		6.3
2.002	MH-67	15 Summer	1	+0%					29.308	-0.152	0.000	0.22		21.0
2.003	MH-68	15 Summer	1	+0%	100/15 Summer				26.797	-0.138	0.000	0.31		31.8
2.004	MH-69	15 Summer	1	+0%					24.339	-0.159	0.000	0.19		31.7
1.009	Dummy-MH-15	30 Summer	1	+0%					21.374	-0.328	0.000	0.12		50.5
1.010	Dummy-MH-16	30 Summer	1	+0%					21.243	-0.305	0.000	0.13		50.6
1.011	Dummy-MH-17	30 Summer	1	+0%	100/30 Summer	100/30 Summer			21.184	-0.273	0.000	0.19		50.3
1.012	Dummy-MH-18	30 Summer	1	+0%					21.129	-0.580	0.000	0.06		50.8
3.000	GMH-69	15 Summer	1	+0%					24.295	-0.128	0.000	0.05		1.5
3.001	MH-70	15 Summer	1	+0%					21.919	-0.206	0.000	0.02		1.4
3.002	MH-71	15 Summer	1	+0%	100/30 Summer				21.239	-0.201	0.000	0.02		1.4
1.013	MH-22	30 Summer	1	+0%	5/15 Summer				21.041	-0.003	0.000	1.00		47.5
1.014	Dummy-MH-23	60 Summer	1	+0%					20.701	-0.909	0.000	0.03		49.7
1.015	Dummy-MH-24	60 Summer	1	+0%					20.654	-0.910	0.000	0.02		49.7
1.016	MH-25	60 Summer	1	+0%	30/15 Summer				20.585	-0.092	0.000	0.82		50.4
1.017	Dummy-MH-26	60 Summer	1	+0%					20.545	-1.318	0.000	0.01		50.6
1.018	Dummy-MH-27	60 Summer	1	+0%					20.524	-1.890	0.000	0.00		50.8
1.019	Dummy-MH-28	60 Summer	1	+0%					20.476	-1.809	0.000	0.00		51.1
1.020	Dummy-MH-29	60 Summer	1	+0%					20.446	-1.725	0.000	0.01		51.4
4.000	GMH-71	15 Summer	1	+0%					21.257	-0.108	0.000	0.17		1.8
4.001	MH-72	15 Summer	1	+0%					20.830	-0.185	0.000	0.07		2.1
4.002	MH-73	15 Summer	1	+0%					20.632	-0.199	0.000	0.03		2.1
1.021	Dummy-MH-33	60 Summer	1	+0%					20.374	-2.038	0.000	0.01		52.5
5.000	MH-34	15 Summer	1	+0%	5/15 Summer	100/15 Summer			31.783	-0.057	0.000	0.67		11.3
5.001	MH-35	15 Summer	1	+0%	5/15 Summer				31.306	-0.047	0.000	0.80		16.1
5.002	MH-36	15 Summer	1	+0%					30.819	-0.105	0.000	0.19		16.0
5.003	Dummy-MH-37	15 Summer	1	+0%					22.819	-0.241	0.000	0.04		16.1
5.004	Dummy-MH-38	15 Summer	1	+0%					21.864	-0.177	0.000	0.15		18.9
5.005	Dummy-MH-39	15 Summer	1	+0%					21.777	-1.056	0.000	0.01		18.9
5.006	Dummy-MH-40	30 Summer	1	+0%					21.294	-0.853	0.000	0.01		18.3
5.007	Dummy-MH-41	30 Summer	1	+0%					21.231	-1.982	0.000	0.00		20.0
5.008	Dummy-MH-42	30 Summer	1	+0%					21.196	-2.128	0.000	0.00		21.0
5.009	Dummy-MH-43	30 Summer	1	+0%					21.156	-1.849	0.000	0.00		24.2
5.010	Dummy-MH-44	30 Summer	1	+0%	100/15 Summer				21.109	-0.169	0.000	0.39		24.1
5.011	Dummy-MH-45	30 Summer	1	+0%					21.066	-1.764	0.000	0.00		25.7
5.012	Dummy-MH-46	30 Summer	1	+0%					21.013	-1.430	0.000	0.01		29.4
5.013	Dummy-MH-47	30 Summer	1	+0%					20.972	-1.207	0.000	0.01		31.8
5.014	Dummy-MH-48	30 Summer	1	+0%					20.936	-1.058	0.000	0.02		33.5
5.015	Dummy-MH-49	30 Summer	1	+0%					20.898	-1.110	0.000	0.01		35.1
5.016	Dummy-MH-50	30 Summer	1	+0%					20.865	-1.018	0.000	0.02		36.3
5.017	Dummy-MH-51	30 Summer	1	+0%					20.814	-0.995	0.000	0.01		37.1
5.018	Dummy-MH-52	30 Summer	1	+0%					20.788	-0.958	0.000	0.02		37.6
5.019	Dummy-MH-53	30 Summer	1	+0%					20.746	-0.879	0.000	0.02		38.2
5.020	Dummy-MH-54	30 Summer	1	+0%					20.711	-0.877	0.000	0.02		39.3
5.021	Dummy-MH-55	30 Summer	1	+0%					20.674	-0.796	0.000	0.03		39.2
5.022	Dummy-MH-56	60 Summer	1	+0%					20.636	-0.824	0.000	0.03		39.7
5.023	Dummy-MH-57	60 Summer	1	+0%					20.593	-0.807	0.000	0.03		40.8
5.024	Dummy-MH-58	60 Summer	1	+0%					20.556	-0.943	0.000	0.02		41.6
5.025	Dummy-MH-59	60 Summer	1	+0%					20.504	-0.826	0.000	0.04		43.0
5.026	Dummy-MH-60	60 Summer	1	+0%	100/30 Summer				20.415	-0.212	0.000	0.39		44.9

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

PN	US/MH Name	Status	Level Exceeded
1.000	MH-50	OK	3
1.001	MH-51	OK	
1.002	Dummy-MH-3	OK	
1.003	Dummy-MH-4	OK	
1.004	Dummy-MH-5	OK	
1.005	Dummy-MH-6	OK	
1.006	Dummy-MH-7	OK	
1.007	Dummy-MH-8	OK	
1.008	Dummy-MH-9	OK	
2.000	U/S MH	OK	
2.001	MH-66	OK	
2.002	MH-67	OK	
2.003	MH-68	OK	
2.004	MH-69	OK	
1.009	Dummy-MH-15	OK	
1.010	Dummy-MH-16	OK	
1.011	Dummy-MH-17	OK	5
1.012	Dummy-MH-18	OK	
3.000	GMH-69	OK*	
3.001	MH-70	OK	
3.002	MH-71	OK	
1.013	MH-22	OK*	
1.014	Dummy-MH-23	OK	
1.015	Dummy-MH-24	OK	
1.016	MH-25	OK*	
1.017	Dummy-MH-26	OK	
1.018	Dummy-MH-27	OK	
1.019	Dummy-MH-28	OK	
1.020	Dummy-MH-29	OK	
4.000	GMH-71	OK*	
4.001	MH-72	OK	
4.002	MH-73	OK	
1.021	Dummy-MH-33	OK	
5.000	MH-34	OK	3
5.001	MH-35	OK	
5.002	MH-36	OK	
5.003	Dummy-MH-37	OK	
5.004	Dummy-MH-38	OK	
5.005	Dummy-MH-39	OK	
5.006	Dummy-MH-40	OK	
5.007	Dummy-MH-41	OK	
5.008	Dummy-MH-42	OK	
5.009	Dummy-MH-43	OK	
5.010	Dummy-MH-44	OK*	
5.011	Dummy-MH-45	OK	
5.012	Dummy-MH-46	OK	
5.013	Dummy-MH-47	OK	
5.014	Dummy-MH-48	OK	
5.015	Dummy-MH-49	OK	
5.016	Dummy-MH-50	OK	
5.017	Dummy-MH-51	OK	
5.018	Dummy-MH-52	OK	
5.019	Dummy-MH-53	OK	
5.020	Dummy-MH-54	OK	
5.021	Dummy-MH-55	OK	
5.022	Dummy-MH-56	OK	
5.023	Dummy-MH-57	OK	
5.024	Dummy-MH-58	OK	
5.025	Dummy-MH-59	OK	
5.026	Dummy-MH-60	OK*	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
5.027	MH-74	60 Summer	1	+0%	100/60 Summer				20.241	-0.264	0.000	0.36		46.4	OK

PN	US/MH Name	Level Exceeded
5.027	MH-74	

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	MH-50	15 Summer	5	+0%	5/15 Summer	100/15 Summer			31.567	0.206	0.000	1.07		25.2
1.001	MH-51	15 Summer	5	+0%					30.030	-0.093	0.000	0.31		25.2
1.002	Dummy-MH-3	15 Summer	5	+0%					21.957	-0.116	0.000	0.29		25.1
1.003	Dummy-MH-4	15 Summer	5	+0%					21.885	-0.412	0.000	0.04		25.2
1.004	Dummy-MH-5	15 Summer	5	+0%					21.865	-0.380	0.000	0.06		30.9
1.005	Dummy-MH-6	15 Summer	5	+0%					21.796	-0.373	0.000	0.07		33.2
1.006	Dummy-MH-7	15 Summer	5	+0%					21.727	-0.366	0.000	0.08		35.3
1.007	Dummy-MH-8	15 Summer	5	+0%					21.587	-0.345	0.000	0.10		39.0
1.008	Dummy-MH-9	30 Summer	5	+0%					21.487	-0.316	0.000	0.11		42.3
2.000	U/S MH	15 Summer	5	+0%	100/15 Summer				31.991	-0.060	0.000	0.61		9.2
2.001	MH-66	15 Summer	5	+0%					31.412	-0.088	0.000	0.34		10.3
2.002	MH-67	15 Summer	5	+0%					29.332	-0.128	0.000	0.38		35.2
2.003	MH-68	15 Summer	5	+0%	100/15 Summer				26.827	-0.108	0.000	0.53		53.3
2.004	MH-69	15 Summer	5	+0%					24.359	-0.139	0.000	0.31		53.2
1.009	Dummy-MH-15	30 Summer	5	+0%					21.430	-0.272	0.000	0.20		84.3
1.010	Dummy-MH-16	30 Summer	5	+0%					21.313	-0.235	0.000	0.22		84.3
1.011	Dummy-MH-17	30 Summer	5	+0%	100/30 Summer	100/30 Summer			21.277	-0.180	0.000	0.30		79.6
1.012	Dummy-MH-18	30 Summer	5	+0%					21.257	-0.452	0.000	0.09		73.0
3.000	GMH-69	15 Summer	5	+0%					24.302	-0.121	0.000	0.09		2.4
3.001	MH-70	15 Summer	5	+0%					21.925	-0.200	0.000	0.03		2.4
3.002	MH-71	15 Summer	5	+0%	100/30 Summer				21.244	-0.196	0.000	0.04		2.4
1.013	MH-22	30 Summer	5	+0%	5/15 Summer				21.238	0.194	0.000	1.29		61.3
1.014	Dummy-MH-23	30 Summer	5	+0%					20.735	-0.875	0.000	0.04		63.2
1.015	Dummy-MH-24	60 Summer	5	+0%					20.695	-0.869	0.000	0.03		62.4
1.016	MH-25	60 Summer	5	+0%	30/15 Summer				20.645	-0.032	0.000	1.00		61.4
1.017	Dummy-MH-26	60 Summer	5	+0%					20.563	-1.300	0.000	0.01		62.3
1.018	Dummy-MH-27	60 Summer	5	+0%					20.542	-1.873	0.000	0.01		62.8
1.019	Dummy-MH-28	60 Summer	5	+0%					20.499	-1.785	0.000	0.00		63.5
1.020	Dummy-MH-29	60 Summer	5	+0%					20.473	-1.698	0.000	0.01		64.5
4.000	GMH-71	15 Summer	5	+0%					21.270	-0.095	0.000	0.29		3.0
4.001	MH-72	15 Summer	5	+0%					20.842	-0.173	0.000	0.11		3.4
4.002	MH-73	15 Summer	5	+0%					20.639	-0.192	0.000	0.05		3.4
1.021	Dummy-MH-33	60 Summer	5	+0%					20.399	-2.013	0.000	0.01		68.1
5.000	MH-34	15 Summer	5	+0%	5/15 Summer	100/15 Summer			32.006	0.166	0.000	1.01		17.1
5.001	MH-35	15 Summer	5	+0%	5/15 Summer				31.504	0.151	0.000	1.17		23.4
5.002	MH-36	15 Summer	5	+0%					30.828	-0.096	0.000	0.28		23.4
5.003	Dummy-MH-37	15 Summer	5	+0%					22.831	-0.229	0.000	0.05		23.3
5.004	Dummy-MH-38	15 Summer	5	+0%					21.889	-0.152	0.000	0.22		27.3
5.005	Dummy-MH-39	15 Summer	5	+0%					21.810	-1.023	0.000	0.01		26.8
5.006	Dummy-MH-40	30 Summer	5	+0%					21.340	-0.807	0.000	0.02		29.5
5.007	Dummy-MH-41	30 Summer	5	+0%					21.273	-1.940	0.000	0.00		32.2
5.008	Dummy-MH-42	30 Summer	5	+0%					21.236	-2.088	0.000	0.00		34.3
5.009	Dummy-MH-43	30 Summer	5	+0%					21.195	-1.810	0.000	0.00		40.6
5.010	Dummy-MH-44	30 Summer	5	+0%	100/15 Summer				21.158	-0.120	0.000	0.66		40.6
5.011	Dummy-MH-45	30 Summer	5	+0%					21.116	-1.714	0.000	0.00		43.6
5.012	Dummy-MH-46	30 Summer	5	+0%					21.073	-1.370	0.000	0.01		49.9
5.013	Dummy-MH-47	30 Summer	5	+0%					21.034	-1.145	0.000	0.02		53.4
5.014	Dummy-MH-48	30 Summer	5	+0%					20.997	-0.997	0.000	0.03		55.8
5.015	Dummy-MH-49	30 Summer	5	+0%					20.959	-1.049	0.000	0.02		58.1
5.016	Dummy-MH-50	30 Summer	5	+0%					20.924	-0.959	0.000	0.03		59.8
5.017	Dummy-MH-51	30 Summer	5	+0%					20.872	-0.937	0.000	0.02		60.9
5.018	Dummy-MH-52	30 Summer	5	+0%					20.846	-0.900	0.000	0.03		61.8
5.019	Dummy-MH-53	30 Summer	5	+0%					20.807	-0.818	0.000	0.04		62.6
5.020	Dummy-MH-54	30 Summer	5	+0%					20.775	-0.813	0.000	0.03		64.6
5.021	Dummy-MH-55	30 Summer	5	+0%					20.740	-0.730	0.000	0.05		64.6
5.022	Dummy-MH-56	30 Summer	5	+0%					20.699	-0.761	0.000	0.05		65.9
5.023	Dummy-MH-57	30 Summer	5	+0%					20.653	-0.746	0.000	0.06		67.2
5.024	Dummy-MH-58	30 Summer	5	+0%					20.613	-0.887	0.000	0.04		68.2
5.025	Dummy-MH-59	30 Summer	5	+0%					20.561	-0.769	0.000	0.06		69.8
5.026	Dummy-MH-60	60 Summer	5	+0%	100/30 Summer				20.470	-0.157	0.000	0.63		73.0

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
1.000	MH-50	SURCHARGED	3
1.001	MH-51	OK	
1.002	Dummy-MH-3	OK	
1.003	Dummy-MH-4	OK	
1.004	Dummy-MH-5	OK	
1.005	Dummy-MH-6	OK	
1.006	Dummy-MH-7	OK	
1.007	Dummy-MH-8	OK	
1.008	Dummy-MH-9	OK	
2.000	U/S MH	OK	
2.001	MH-66	OK	
2.002	MH-67	OK	
2.003	MH-68	OK	
2.004	MH-69	OK	
1.009	Dummy-MH-15	OK	
1.010	Dummy-MH-16	OK	
1.011	Dummy-MH-17	OK	5
1.012	Dummy-MH-18	OK	
3.000	GMH-69	OK*	
3.001	MH-70	OK	
3.002	MH-71	OK	
1.013	MH-22	SURCHARGED*	
1.014	Dummy-MH-23	OK	
1.015	Dummy-MH-24	OK	
1.016	MH-25	OK*	
1.017	Dummy-MH-26	OK	
1.018	Dummy-MH-27	OK	
1.019	Dummy-MH-28	OK	
1.020	Dummy-MH-29	OK	
4.000	GMH-71	OK*	
4.001	MH-72	OK	
4.002	MH-73	OK	
1.021	Dummy-MH-33	OK	
5.000	MH-34	SURCHARGED	3
5.001	MH-35	SURCHARGED	
5.002	MH-36	OK	
5.003	Dummy-MH-37	OK	
5.004	Dummy-MH-38	OK	
5.005	Dummy-MH-39	OK	
5.006	Dummy-MH-40	OK	
5.007	Dummy-MH-41	OK	
5.008	Dummy-MH-42	OK	
5.009	Dummy-MH-43	OK	
5.010	Dummy-MH-44	OK*	
5.011	Dummy-MH-45	OK	
5.012	Dummy-MH-46	OK	
5.013	Dummy-MH-47	OK	
5.014	Dummy-MH-48	OK	
5.015	Dummy-MH-49	OK	
5.016	Dummy-MH-50	OK	
5.017	Dummy-MH-51	OK	
5.018	Dummy-MH-52	OK	
5.019	Dummy-MH-53	OK	
5.020	Dummy-MH-54	OK	
5.021	Dummy-MH-55	OK	
5.022	Dummy-MH-56	OK	
5.023	Dummy-MH-57	OK	
5.024	Dummy-MH-58	OK	
5.025	Dummy-MH-59	OK	
5.026	Dummy-MH-60	OK*	

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
5.027	MH-74	60 Summer	5	+0%	100/60 Summer				20.303	-0.202	0.000	0.58		76.0	OK

PN	US/MH Name	Level Exceeded
5.027	MH-74	

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

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 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	MH-50	15 Summer	30	+0%	5/15 Summer	100/15 Summer			32.444	1.083	0.000	1.35		31.9
1.001	MH-51	15 Summer	30	+0%					30.038	-0.085	0.000	0.39		32.0
1.002	Dummy-MH-3	15 Summer	30	+0%					21.979	-0.094	0.000	0.38		32.0
1.003	Dummy-MH-4	15 Summer	30	+0%					21.901	-0.396	0.000	0.05		31.8
1.004	Dummy-MH-5	15 Summer	30	+0%					21.886	-0.359	0.000	0.08		39.9
1.005	Dummy-MH-6	15 Summer	30	+0%					21.819	-0.350	0.000	0.09		44.2
1.006	Dummy-MH-7	15 Summer	30	+0%					21.756	-0.337	0.000	0.11		47.9
1.007	Dummy-MH-8	15 Summer	30	+0%					21.624	-0.308	0.000	0.13		52.1
1.008	Dummy-MH-9	15 Summer	30	+0%					21.536	-0.267	0.000	0.15		59.3
2.000	U/S MH	15 Summer	30	+0%	100/15 Summer				32.020	-0.031	0.000	0.89		13.5
2.001	MH-66	15 Summer	30	+0%					31.427	-0.073	0.000	0.51		15.1
2.002	MH-67	15 Summer	30	+0%					29.375	-0.085	0.000	0.67		62.7
2.003	MH-68	15 Summer	30	+0%	100/15 Summer				26.890	-0.045	0.000	0.95		96.6
2.004	MH-69	15 Summer	30	+0%					24.398	-0.100	0.000	0.57		97.0
1.009	Dummy-MH-15	15 Summer	30	+0%					21.494	-0.208	0.000	0.31		132.8
1.010	Dummy-MH-16	30 Summer	30	+0%					21.420	-0.128	0.000	0.33		125.2
1.011	Dummy-MH-17	30 Summer	30	+0%	100/30 Summer	100/30 Summer			21.410	-0.047	0.000	0.42		111.7
1.012	Dummy-MH-18	30 Summer	30	+0%					21.399	-0.310	0.000	0.11		94.3
3.000	GMH-69	15 Summer	30	+0%					24.308	-0.115	0.000	0.13		3.6
3.001	MH-70	15 Summer	30	+0%					21.930	-0.195	0.000	0.04		3.6
3.002	MH-71	30 Summer	30	+0%	100/30 Summer				21.395	-0.045	0.000	0.05		3.2
1.013	MH-22	30 Summer	30	+0%	5/15 Summer				21.394	0.350	0.000	1.43		68.1
1.014	Dummy-MH-23	60 Summer	30	+0%					20.781	-0.829	0.000	0.04		71.0
1.015	Dummy-MH-24	60 Summer	30	+0%					20.751	-0.813	0.000	0.03		71.7
1.016	MH-25	60 Summer	30	+0%	30/15 Summer				20.717	0.040	0.000	1.20		73.6
1.017	Dummy-MH-26	60 Winter	30	+0%					20.581	-1.282	0.000	0.01		74.4
1.018	Dummy-MH-27	60 Winter	30	+0%					20.559	-1.856	0.000	0.01		75.0
1.019	Dummy-MH-28	60 Winter	30	+0%					20.520	-1.764	0.000	0.01		75.8
1.020	Dummy-MH-29	60 Winter	30	+0%					20.496	-1.675	0.000	0.01		76.8
4.000	GMH-71	15 Summer	30	+0%					21.283	-0.082	0.000	0.42		4.5
4.001	MH-72	15 Summer	30	+0%					20.854	-0.161	0.000	0.16		4.9
4.002	MH-73	15 Summer	30	+0%					20.647	-0.184	0.000	0.08		5.0
1.021	Dummy-MH-33	30 Summer	30	+0%					20.422	-1.990	0.000	0.01		82.0
5.000	MH-34	15 Summer	30	+0%	5/15 Summer	100/15 Summer			32.785	0.945	0.000	1.30		21.8
5.001	MH-35	15 Summer	30	+0%	5/15 Summer				31.971	0.618	0.000	1.54		30.8
5.002	MH-36	15 Summer	30	+0%					30.837	-0.087	0.000	0.37		30.7
5.003	Dummy-MH-37	15 Summer	30	+0%					22.842	-0.218	0.000	0.07		30.6
5.004	Dummy-MH-38	15 Summer	30	+0%					21.913	-0.128	0.000	0.29		36.3
5.005	Dummy-MH-39	15 Summer	30	+0%					21.850	-0.983	0.000	0.02		34.6
5.006	Dummy-MH-40	30 Summer	30	+0%					21.365	-0.782	0.000	0.03		39.8
5.007	Dummy-MH-41	30 Summer	30	+0%					21.302	-1.911	0.000	0.01		43.2
5.008	Dummy-MH-42	30 Summer	30	+0%					21.273	-2.051	0.000	0.00		47.1
5.009	Dummy-MH-43	30 Summer	30	+0%					21.237	-1.768	0.000	0.00		61.4
5.010	Dummy-MH-44	30 Summer	30	+0%	100/15 Summer				21.228	-0.050	0.000	1.00		61.4
5.011	Dummy-MH-45	30 Summer	30	+0%					21.167	-1.663	0.000	0.01		68.0
5.012	Dummy-MH-46	30 Summer	30	+0%					21.138	-1.305	0.000	0.02		80.4
5.013	Dummy-MH-47	30 Summer	30	+0%					21.093	-1.086	0.000	0.03		85.7
5.014	Dummy-MH-48	30 Summer	30	+0%					21.056	-0.938	0.000	0.04		89.8
5.015	Dummy-MH-49	30 Summer	30	+0%					21.018	-0.990	0.000	0.04		92.7
5.016	Dummy-MH-50	30 Summer	30	+0%					20.984	-0.899	0.000	0.05		95.7
5.017	Dummy-MH-51	30 Summer	30	+0%					20.934	-0.875	0.000	0.03		97.3
5.018	Dummy-MH-52	30 Summer	30	+0%					20.913	-0.833	0.000	0.05		97.8
5.019	Dummy-MH-53	30 Summer	30	+0%					20.871	-0.754	0.000	0.06		98.5
5.020	Dummy-MH-54	30 Summer	30	+0%					20.838	-0.750	0.000	0.05		100.7
5.021	Dummy-MH-55	30 Summer	30	+0%					20.803	-0.667	0.000	0.08		100.3
5.022	Dummy-MH-56	30 Summer	30	+0%					20.762	-0.698	0.000	0.07		101.6
5.023	Dummy-MH-57	60 Summer	30	+0%					20.716	-0.683	0.000	0.09		101.9
5.024	Dummy-MH-58	60 Summer	30	+0%					20.678	-0.822	0.000	0.06		103.5
5.025	Dummy-MH-59	60 Summer	30	+0%					20.624	-0.706	0.000	0.09		107.2
5.026	Dummy-MH-60	60 Summer	30	+0%	100/30 Summer				20.549	-0.078	0.000	0.98		112.3

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

PN	US/MH Name	Status	Level Exceeded
1.000	MH-50	SURCHARGED	3
1.001	MH-51	OK	
1.002	Dummy-MH-3	OK	
1.003	Dummy-MH-4	OK	
1.004	Dummy-MH-5	OK	
1.005	Dummy-MH-6	OK	
1.006	Dummy-MH-7	OK	
1.007	Dummy-MH-8	OK	
1.008	Dummy-MH-9	OK	
2.000	U/S MH	OK	
2.001	MH-66	OK	
2.002	MH-67	OK	
2.003	MH-68	OK	
2.004	MH-69	OK	
1.009	Dummy-MH-15	OK	
1.010	Dummy-MH-16	OK	
1.011	Dummy-MH-17	OK	5
1.012	Dummy-MH-18	OK	
3.000	GMH-69	OK*	
3.001	MH-70	OK	
3.002	MH-71	OK	
1.013	MH-22	SURCHARGED*	
1.014	Dummy-MH-23	OK	
1.015	Dummy-MH-24	OK	
1.016	MH-25	SURCHARGED*	
1.017	Dummy-MH-26	OK	
1.018	Dummy-MH-27	OK	
1.019	Dummy-MH-28	OK	
1.020	Dummy-MH-29	OK	
4.000	GMH-71	OK*	
4.001	MH-72	OK	
4.002	MH-73	OK	
1.021	Dummy-MH-33	OK	
5.000	MH-34	SURCHARGED	3
5.001	MH-35	SURCHARGED	
5.002	MH-36	OK	
5.003	Dummy-MH-37	OK	
5.004	Dummy-MH-38	OK	
5.005	Dummy-MH-39	OK	
5.006	Dummy-MH-40	OK	
5.007	Dummy-MH-41	OK	
5.008	Dummy-MH-42	OK	
5.009	Dummy-MH-43	OK	
5.010	Dummy-MH-44	OK*	
5.011	Dummy-MH-45	OK	
5.012	Dummy-MH-46	OK	
5.013	Dummy-MH-47	OK	
5.014	Dummy-MH-48	OK	
5.015	Dummy-MH-49	OK	
5.016	Dummy-MH-50	OK	
5.017	Dummy-MH-51	OK	
5.018	Dummy-MH-52	OK	
5.019	Dummy-MH-53	OK	
5.020	Dummy-MH-54	OK	
5.021	Dummy-MH-55	OK	
5.022	Dummy-MH-56	OK	
5.023	Dummy-MH-57	OK	
5.024	Dummy-MH-58	OK	
5.025	Dummy-MH-59	OK	
5.026	Dummy-MH-60	OK*	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
5.027	MH-74	60 Summer	30	+0%	100/60 Summer				20.387	-0.118	0.000	0.89		115.9	OK

PN	US/MH Name	Level Exceeded
5.027	MH-74	

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

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 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	MH-50	15 Summer	100	+0%	5/15 Summer	100/15 Summer			32.596	1.235	2.407	1.41		33.5
1.001	MH-51	15 Summer	100	+0%					30.040	-0.083	0.000	0.41		33.5
1.002	Dummy-MH-3	30 Summer	100	+0%					21.984	-0.089	0.000	0.39		33.5
1.003	Dummy-MH-4	15 Summer	100	+0%					21.913	-0.384	0.000	0.06		33.7
1.004	Dummy-MH-5	15 Summer	100	+0%					21.899	-0.346	0.000	0.10		47.0
1.005	Dummy-MH-6	15 Summer	100	+0%					21.836	-0.333	0.000	0.11		52.8
1.006	Dummy-MH-7	15 Summer	100	+0%					21.775	-0.318	0.000	0.13		57.8
1.007	Dummy-MH-8	30 Summer	100	+0%					21.651	-0.281	0.000	0.16		63.4
1.008	Dummy-MH-9	30 Summer	100	+0%					21.572	-0.231	0.000	0.18		70.7
2.000	U/S MH	15 Summer	100	+0%	100/15 Summer				32.266	0.215	0.000	1.11		16.8
2.001	MH-66	15 Summer	100	+0%					31.437	-0.063	0.000	0.62		18.4
2.002	MH-67	15 Summer	100	+0%					29.417	-0.043	0.000	0.86		80.3
2.003	MH-68	15 Summer	100	+0%	100/15 Summer				27.610	0.675	0.000	1.12		113.0
2.004	MH-69	15 Summer	100	+0%					24.409	-0.089	0.000	0.67		113.4
1.009	Dummy-MH-15	15 Summer	100	+0%					21.534	-0.168	0.000	0.41		173.7
1.010	Dummy-MH-16	60 Summer	100	+0%					21.485	-0.063	0.000	0.34		130.5
1.011	Dummy-MH-17	60 Summer	100	+0%	100/30 Summer	100/30 Summer			21.472	0.015	15.519	0.43		114.5
1.012	Dummy-MH-18	60 Summer	100	+0%					21.462	-0.247	0.000	0.12		96.9
3.000	GMH-69	15 Summer	100	+0%					24.313	-0.110	0.000	0.16		4.6
3.001	MH-70	15 Summer	100	+0%					21.934	-0.191	0.000	0.05		4.6
3.002	MH-71	60 Summer	100	+0%	100/30 Summer				21.459	0.019	0.000	0.05		2.8
1.013	MH-22	60 Summer	100	+0%	5/15 Summer				21.457	0.413	0.000	1.49		70.8
1.014	Dummy-MH-23	60 Summer	100	+0%					20.803	-0.807	0.000	0.05		78.1
1.015	Dummy-MH-24	60 Summer	100	+0%					20.775	-0.789	0.000	0.03		79.8
1.016	MH-25	60 Summer	100	+0%	30/15 Summer				20.744	0.067	0.000	1.37		84.0
1.017	Dummy-MH-26	60 Summer	100	+0%					20.602	-1.261	0.000	0.01		85.6
1.018	Dummy-MH-27	60 Summer	100	+0%					20.581	-1.834	0.000	0.01		86.7
1.019	Dummy-MH-28	60 Summer	100	+0%					20.546	-1.739	0.000	0.01		88.3
1.020	Dummy-MH-29	60 Summer	100	+0%					20.524	-1.647	0.000	0.01		90.4
4.000	GMH-71	15 Summer	100	+0%					21.294	-0.071	0.000	0.54		5.8
4.001	MH-72	15 Summer	100	+0%					20.863	-0.152	0.000	0.21		6.4
4.002	MH-73	15 Summer	100	+0%					20.653	-0.178	0.000	0.10		6.4
1.021	Dummy-MH-33	60 Summer	100	+0%					20.447	-1.965	0.000	0.01		98.8
5.000	MH-34	15 Summer	100	+0%	5/15 Summer	100/15 Summer			32.997	1.157	1.899	1.48		24.9
5.001	MH-35	15 Summer	100	+0%	5/15 Summer				32.382	1.029	0.000	1.81		36.2
5.002	MH-36	15 Summer	100	+0%					30.844	-0.080	0.000	0.44		36.3
5.003	Dummy-MH-37	15 Summer	100	+0%					22.850	-0.210	0.000	0.08		36.4
5.004	Dummy-MH-38	15 Summer	100	+0%					21.935	-0.106	0.000	0.36		44.6
5.005	Dummy-MH-39	15 Summer	100	+0%					21.876	-0.957	0.000	0.02		41.7
5.006	Dummy-MH-40	30 Summer	100	+0%					21.399	-0.748	0.000	0.03		49.7
5.007	Dummy-MH-41	30 Summer	100	+0%					21.344	-1.869	0.000	0.01		54.0
5.008	Dummy-MH-42	30 Summer	100	+0%					21.326	-1.998	0.000	0.01		57.6
5.009	Dummy-MH-43	30 Summer	100	+0%					21.308	-1.697	0.000	0.01		74.3
5.010	Dummy-MH-44	30 Summer	100	+0%	100/15 Summer				21.304	0.026	0.000	1.21		74.1
5.011	Dummy-MH-45	30 Summer	100	+0%					21.195	-1.635	0.000	0.01		81.6
5.012	Dummy-MH-46	30 Summer	100	+0%					21.168	-1.275	0.000	0.02		96.8
5.013	Dummy-MH-47	30 Summer	100	+0%					21.125	-1.054	0.000	0.04		104.6
5.014	Dummy-MH-48	30 Summer	100	+0%					21.090	-0.904	0.000	0.05		109.6
5.015	Dummy-MH-49	30 Summer	100	+0%					21.051	-0.957	0.000	0.05		113.6
5.016	Dummy-MH-50	30 Summer	100	+0%					21.018	-0.865	0.000	0.06		117.6
5.017	Dummy-MH-51	30 Summer	100	+0%					20.970	-0.839	0.000	0.04		119.5
5.018	Dummy-MH-52	30 Summer	100	+0%					20.950	-0.796	0.000	0.06		120.6
5.019	Dummy-MH-53	30 Summer	100	+0%					20.912	-0.713	0.000	0.07		122.4
5.020	Dummy-MH-54	30 Summer	100	+0%					20.881	-0.707	0.000	0.07		125.2
5.021	Dummy-MH-55	60 Summer	100	+0%					20.848	-0.622	0.000	0.10		118.4
5.022	Dummy-MH-56	60 Summer	100	+0%					20.813	-0.647	0.000	0.09		122.3
5.023	Dummy-MH-57	60 Summer	100	+0%					20.774	-0.625	0.000	0.11		126.4
5.024	Dummy-MH-58	60 Summer	100	+0%					20.743	-0.757	0.000	0.08		128.3
5.025	Dummy-MH-59	60 Summer	100	+0%					20.706	-0.624	0.000	0.11		132.8
5.026	Dummy-MH-60	60 Summer	100	+0%	100/30 Summer				20.685	0.058	0.000	1.21		139.2

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

PN	US/MH Name	Status	Level Exceeded
1.000	MH-50	FLOOD	3
1.001	MH-51	OK	
1.002	Dummy-MH-3	OK	
1.003	Dummy-MH-4	OK	
1.004	Dummy-MH-5	OK	
1.005	Dummy-MH-6	OK	
1.006	Dummy-MH-7	OK	
1.007	Dummy-MH-8	OK	
1.008	Dummy-MH-9	OK	
2.000	U/S MH	SURCHARGED	
2.001	MH-66	OK	
2.002	MH-67	OK	
2.003	MH-68	SURCHARGED	
2.004	MH-69	OK	
1.009	Dummy-MH-15	OK	
1.010	Dummy-MH-16	OK	
1.011	Dummy-MH-17	FLOOD	5
1.012	Dummy-MH-18	OK	
3.000	GMH-69	OK*	
3.001	MH-70	OK	
3.002	MH-71	SURCHARGED	
1.013	MH-22	SURCHARGED*	
1.014	Dummy-MH-23	OK	
1.015	Dummy-MH-24	OK	
1.016	MH-25	SURCHARGED*	
1.017	Dummy-MH-26	OK	
1.018	Dummy-MH-27	OK	
1.019	Dummy-MH-28	OK	
1.020	Dummy-MH-29	OK	
4.000	GMH-71	OK*	
4.001	MH-72	OK	
4.002	MH-73	OK	
1.021	Dummy-MH-33	OK	
5.000	MH-34	FLOOD	3
5.001	MH-35	SURCHARGED	
5.002	MH-36	OK	
5.003	Dummy-MH-37	OK	
5.004	Dummy-MH-38	OK	
5.005	Dummy-MH-39	OK	
5.006	Dummy-MH-40	OK	
5.007	Dummy-MH-41	OK	
5.008	Dummy-MH-42	OK	
5.009	Dummy-MH-43	OK	
5.010	Dummy-MH-44	SURCHARGED*	
5.011	Dummy-MH-45	OK	
5.012	Dummy-MH-46	OK	
5.013	Dummy-MH-47	OK	
5.014	Dummy-MH-48	OK	
5.015	Dummy-MH-49	OK	
5.016	Dummy-MH-50	OK	
5.017	Dummy-MH-51	OK	
5.018	Dummy-MH-52	OK	
5.019	Dummy-MH-53	OK	
5.020	Dummy-MH-54	OK	
5.021	Dummy-MH-55	OK	
5.022	Dummy-MH-56	OK	
5.023	Dummy-MH-57	OK	
5.024	Dummy-MH-58	OK	
5.025	Dummy-MH-59	OK	
5.026	Dummy-MH-60	SURCHARGED*	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
5.027	MH-74	60 Summer	100	+0%	100/60 Summer				20.506	0.001	0.000	1.11		144.1	SURCHARGED

PN	US/MH Name	Level Exceeded
5.027	MH-74	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes M5 J10 Manhole Sizes M5 J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	18.200	Volumetric Runoff Coeff.	1.000	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.370	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	100	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	500
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Designed with Level Inverts

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	48.361	0.276	175.2	0.115	5.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
1.001	69.263	0.367	188.7	0.145	0.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
2.000	34.263	0.606	56.5	0.080	5.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
2.001	68.073	0.410	166.0	0.170	0.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
1.002	11.669	0.023	500.0	0.000	0.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
3.000	89.149	0.643	138.6	0.196	5.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
3.001	89.550	0.179	500.0	0.194	0.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
3.002	85.820	1.382	62.1	0.190	0.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
4.000	88.747	0.664	133.7	0.201	5.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
4.001	89.353	0.946	94.5	0.184	0.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒
4.002	69.605	1.620	43.0	0.143	0.00	0.0	0.050	2 _/	1200	1:2 Ditch	🔒

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	42.66	6.50	23.818	0.115	0.0	0.0	0.0	0.54	290.5	17.6
1.001	36.85	8.73	23.542	0.260	0.0	0.0	0.0	0.52	279.9	34.6
2.000	45.66	5.60	24.191	0.080	0.0	0.0	0.0	0.95	511.4	13.2
2.001	39.39	7.66	23.585	0.250	0.0	0.0	0.0	0.55	298.4	35.6
1.002	35.56	9.34	23.175	0.510	0.0	0.0	0.0	0.32	172.0	65.5
3.000	39.91	7.46	24.216	0.196	0.0	0.0	0.0	0.60	326.6	28.3
3.001	30.79	12.14	23.573	0.390	0.0	0.0	0.0	0.32	172.0	43.4
3.002	28.79	13.73	23.394	0.580	0.0	0.0	0.0	0.90	488.0	60.2
4.000	40.06	7.40	25.333	0.201	0.0	0.0	0.0	0.62	332.6	29.1
4.001	35.36	9.43	24.669	0.385	0.0	0.0	0.0	0.73	395.7	49.2
4.002	33.36	10.50	23.723	0.528	0.0	0.0	0.0	1.09	586.7	63.6

Manhole Schedules for Storm

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)
S1-Dummy-MH1	24.118	0.300	Junction		1.000	23.818	1200				
S1-Dummy-MH2	23.842	0.300	Junction		1.001	23.542	1200	1.000	23.542	1200	
S1-Dummy-MH5	24.491	0.300	Junction		2.000	24.191	1200				
S1-Dummy-MH4	23.885	0.300	Junction		2.001	23.585	1200	2.000	23.585	1200	
S1-Dummy-MH3	23.475	0.300	Junction		1.002	23.175	1200	1.001	23.175	1200	
								2.001	23.175	1200	
OF-1	24.020	0.868	Open Manhole	0		OUTFALL		1.002	23.152	1200	
S1-Dummy-MH6	24.516	0.300	Junction		3.000	24.216	1200				
S1-Dummy-MH7	23.873	0.300	Junction		3.001	23.573	1200	3.000	23.573	1200	
S1-Dummy-MH8	24.050	0.656	Junction		3.002	23.394	1200	3.001	23.394	1200	
OF-3	22.312	0.300	Open Manhole	0		OUTFALL		3.002	22.012	1200	
S1-Dummy-MH9	25.633	0.300	Junction		4.000	25.333	1200				
S1-Dummy-MH10	24.969	0.300	Junction		4.001	24.669	1200	4.000	24.669	1200	
S1-Dummy-MH11	24.023	0.300	Junction		4.002	23.723	1200	4.001	23.723	1200	
OF-2	22.403	0.300	Open Manhole	0		OUTFALL		4.002	22.103	1200	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1-Dummy-MH1	390215.361	225263.687			No Entry	
S1-Dummy-MH2	390191.467	225221.640			No Entry	
S1-Dummy-MH5	390112.224	225069.443			No Entry	
S1-Dummy-MH4	390127.996	225099.860			No Entry	
S1-Dummy-MH3	390158.824	225160.552			No Entry	
OF-1	390147.874	225164.584			No Entry	
S1-Dummy-MH6	390111.756	225068.135			No Entry	
S1-Dummy-MH7	390071.918	224988.382			No Entry	
S1-Dummy-MH8	390033.640	224907.425			No Entry	
OF-3	389999.609	224828.641			No Entry	
S1-Dummy-MH9	390144.824	225021.273			No Entry	
S1-Dummy-MH10	390106.483	224941.236			No Entry	
S1-Dummy-MH11	390069.880	224859.724			No Entry	
OF-2	390042.619	224795.680			No Entry	

PIPELINE SCHEDULES for Storm

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)
1.000	2 _/	1200	S1-Dummy-MH1	24.118	23.818	0.000	Junction	
1.001	2 _/	1200	S1-Dummy-MH2	23.842	23.542	0.000	Junction	
2.000	2 _/	1200	S1-Dummy-MH5	24.491	24.191	0.000	Junction	
2.001	2 _/	1200	S1-Dummy-MH4	23.885	23.585	0.000	Junction	
1.002	2 _/	1200	S1-Dummy-MH3	23.475	23.175	0.000	Junction	
3.000	2 _/	1200	S1-Dummy-MH6	24.516	24.216	0.000	Junction	
3.001	2 _/	1200	S1-Dummy-MH7	23.873	23.573	0.000	Junction	
3.002	2 _/	1200	S1-Dummy-MH8	24.050	23.394	0.356	Junction	
4.000	2 _/	1200	S1-Dummy-MH9	25.633	25.333	0.000	Junction	
4.001	2 _/	1200	S1-Dummy-MH10	24.969	24.669	0.000	Junction	
4.002	2 _/	1200	S1-Dummy-MH11	24.023	23.723	0.000	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)
1.000	48.361	175.2	S1-Dummy-MH2	23.842	23.542	0.000	Junction	
1.001	69.263	188.7	S1-Dummy-MH3	23.475	23.175	0.000	Junction	
2.000	34.263	56.5	S1-Dummy-MH4	23.885	23.585	0.000	Junction	
2.001	68.073	166.0	S1-Dummy-MH3	23.475	23.175	0.000	Junction	
1.002	11.669	500.0	OF-1	24.020	23.152	0.568	Open Manhole	0
3.000	89.149	138.6	S1-Dummy-MH7	23.873	23.573	0.000	Junction	
3.001	89.550	500.0	S1-Dummy-MH8	24.050	23.394	0.356	Junction	
3.002	85.820	62.1	OF-3	22.312	22.012	0.000	Open Manhole	0
4.000	88.747	133.7	S1-Dummy-MH10	24.969	24.669	0.000	Junction	
4.001	89.353	94.5	S1-Dummy-MH11	24.023	23.723	0.000	Junction	
4.002	69.605	43.0	OF-2	22.403	22.103	0.000	Open Manhole	0

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Verge	50	0.065	0.032	0.032
	Classification	Carriage way & Footway	100	0.077	0.077	0.110
	Classification	Central Reserve unpaved	20	0.014	0.003	0.113
	Classification	Central Reserve unpaved	20	0.009	0.002	0.115
1.001	Classification	Verge	50	0.086	0.043	0.043
	Classification	Carriage way & Footway	100	0.097	0.097	0.140
	Classification	Central Reserve unpaved	20	0.015	0.003	0.143
	Classification	Central Reserve unpaved	20	0.002	0.000	0.143
	Classification	Central Reserve unpaved	20	0.012	0.002	0.145
2.000	Classification	Verge	50	0.041	0.021	0.021
	Classification	Carriage way & Footway	100	0.051	0.051	0.071
	Classification	Central reserve paved	100	0.004	0.004	0.076
	Classification	Central reserve paved	100	0.005	0.005	0.080
2.001	Classification	Verge	50	0.084	0.042	0.042
	Classification	Carriage way & Footway	100	0.101	0.101	0.143
	Classification	Central reserve paved	100	0.026	0.026	0.169
	Classification	Central Reserve unpaved	20	0.006	0.001	0.170
1.002	-	-	100	0.000	0.000	0.000
3.000	Classification	Verge	50	0.105	0.053	0.053
	Classification	Carriage way & Footway	100	0.130	0.130	0.183
	Classification	Central reserve paved	100	0.004	0.004	0.187
	Classification	Central reserve paved	100	0.010	0.010	0.196
3.001	Classification	Verge	50	0.118	0.059	0.059
	Classification	Carriage way & Footway	100	0.129	0.129	0.188
	Classification	Central reserve paved	100	0.004	0.004	0.192
	Classification	Central Reserve unpaved	20	0.010	0.002	0.194
3.002	Classification	Verge	50	0.114	0.057	0.057
	Classification	Carriage way & Footway	100	0.130	0.130	0.187
	Classification	Central Reserve unpaved	20	0.014	0.003	0.190
4.000	Classification	Verge	50	0.101	0.051	0.051
	Classification	Default	100	0.126	0.126	0.177
	Classification	Central reserve paved	100	0.024	0.024	0.201
	Classification	Central Reserve unpaved	20	0.001	0.000	0.201
4.001	Classification	Verge	50	0.105	0.052	0.052
	Classification	Carriage way & Footway	100	0.127	0.127	0.179
	Classification	Central Reserve unpaved	20	0.024	0.005	0.184
4.002	Classification	Verge	50	0.082	0.041	0.041
	Classification	Carriage way & Footway	100	0.098	0.098	0.139
	Classification	Central Reserve unpaved	20	0.018	0.004	0.143
				Total	Total	Total
				2.168	1.618	1.618

Network Classifications for Storm

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
1.000	S1-Dummy-MH1	1200	0.000	0.000	Unclassified				Junction
1.001	S1-Dummy-MH2	1200	0.000	0.265	Unclassified				Junction
2.000	S1-Dummy-MH5	1200	0.000	0.000	Unclassified				Junction
2.001	S1-Dummy-MH4	1200	0.000	0.000	Unclassified				Junction
1.002	S1-Dummy-MH3	1200	0.000	1.562	Unclassified				Junction
3.000	S1-Dummy-MH6	1200	0.000	0.000	Unclassified				Junction
3.001	S1-Dummy-MH7	1200	0.000	0.356	Unclassified				Junction
3.002	S1-Dummy-MH8	1200	0.000	1.455	Unclassified				Junction
4.000	S1-Dummy-MH9	1200	0.000	0.167	Unclassified				Junction
4.001	S1-Dummy-MH10	1200	0.000	0.000	Unclassified				Junction
4.002	S1-Dummy-MH11	1200	0.000	1.082	Unclassified				Junction

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.002	OF-1	24.020	23.152	23.340	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
3.002	OF-3	22.312	22.012	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
4.002	OF-2	22.403	22.103	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	1.000	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	0.000	Output Interval (mins)	1

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

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	18.200	Cv (Summer)	1.000
Return Period (years)	1	Ratio R	0.370	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

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

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.000	S1-Dummy-MH1	15 Summer	1	+0%					23.880	-0.238	0.000	0.06	
1.001	S1-Dummy-MH2	15 Summer	1	+0%					23.636	-0.206	0.000	0.11	
2.000	S1-Dummy-MH5	15 Summer	1	+0%					24.227	-0.264	0.000	0.02	
2.001	S1-Dummy-MH4	15 Summer	1	+0%					23.675	-0.210	0.000	0.11	
1.002	S1-Dummy-MH3	15 Summer	1	+0%	100/15 Summer	100/15 Summer			23.335	-0.140	0.000	0.41	
3.000	S1-Dummy-MH6	15 Summer	1	+0%					24.295	-0.221	0.000	0.08	
3.001	S1-Dummy-MH7	15 Summer	1	+0%					23.721	-0.152	0.000	0.25	
3.002	S1-Dummy-MH8	30 Summer	1	+0%					23.486	-0.564	0.000	0.03	
4.000	S1-Dummy-MH9	15 Summer	1	+0%					25.413	-0.220	0.000	0.08	
4.001	S1-Dummy-MH10	15 Summer	1	+0%					24.763	-0.206	0.000	0.11	
4.002	S1-Dummy-MH11	15 Summer	1	+0%					23.805	-0.218	0.000	0.10	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-Dummy-MH1	17.0	OK	
1.001	S1-Dummy-MH2	32.0	OK	
2.000	S1-Dummy-MH5	12.3	OK	
2.001	S1-Dummy-MH4	31.5	OK	
1.002	S1-Dummy-MH3	54.8	OK	3
3.000	S1-Dummy-MH6	26.5	OK	
3.001	S1-Dummy-MH7	43.2	OK	
3.002	S1-Dummy-MH8	59.4	OK	
4.000	S1-Dummy-MH9	27.3	OK	
4.001	S1-Dummy-MH10	44.0	OK	
4.002	S1-Dummy-MH11	56.5	OK	

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.000	S1-Dummy-MH1	15 Summer	5	+0%					23.902	-0.216	0.000	0.10	
1.001	S1-Dummy-MH2	15 Summer	5	+0%					23.667	-0.175	0.000	0.19	
2.000	S1-Dummy-MH5	15 Summer	5	+0%					24.240	-0.251	0.000	0.04	
2.001	S1-Dummy-MH4	15 Summer	5	+0%					23.706	-0.179	0.000	0.18	
1.002	S1-Dummy-MH3	15 Summer	5	+0%	100/15 Summer	100/15 Summer			23.389	-0.086	0.000	0.69	
3.000	S1-Dummy-MH6	15 Summer	5	+0%					24.323	-0.193	0.000	0.14	
3.001	S1-Dummy-MH7	15 Summer	5	+0%					23.773	-0.100	0.000	0.42	
3.002	S1-Dummy-MH8	15 Summer	5	+0%					23.516	-0.534	0.000	0.04	
4.000	S1-Dummy-MH9	15 Summer	5	+0%					25.440	-0.193	0.000	0.14	
4.001	S1-Dummy-MH10	15 Summer	5	+0%					24.795	-0.174	0.000	0.19	
4.002	S1-Dummy-MH11	15 Summer	5	+0%					23.833	-0.190	0.000	0.16	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-Dummy-MH1	28.5	OK	
1.001	S1-Dummy-MH2	53.2	OK	
2.000	S1-Dummy-MH5	20.6	OK	
2.001	S1-Dummy-MH4	52.8	OK	
1.002	S1-Dummy-MH3	91.6	OK	3
3.000	S1-Dummy-MH6	44.3	OK	
3.001	S1-Dummy-MH7	72.1	OK	
3.002	S1-Dummy-MH8	96.9	OK	
4.000	S1-Dummy-MH9	45.7	OK	
4.001	S1-Dummy-MH10	73.4	OK	
4.002	S1-Dummy-MH11	94.2	OK	

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

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coeefficient 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.000	S1-Dummy-MH1	15 Summer	30	+0%					23.922	-0.196	0.000	0.14	
1.001	S1-Dummy-MH2	15 Summer	30	+0%					23.711	-0.131	0.000	0.31	
2.000	S1-Dummy-MH5	15 Summer	30	+0%					24.252	-0.239	0.000	0.06	
2.001	S1-Dummy-MH4	15 Summer	30	+0%					23.752	-0.133	0.000	0.30	
1.002	S1-Dummy-MH3	15 Summer	30	+0%	100/15 Summer	100/15 Summer			23.446	-0.029	0.000	1.06	
3.000	S1-Dummy-MH6	15 Summer	30	+0%					24.349	-0.167	0.000	0.20	
3.001	S1-Dummy-MH7	15 Summer	30	+0%					23.831	-0.042	0.000	0.65	
3.002	S1-Dummy-MH8	15 Summer	30	+0%					23.552	-0.498	0.000	0.07	
4.000	S1-Dummy-MH9	15 Summer	30	+0%					25.467	-0.166	0.000	0.20	
4.001	S1-Dummy-MH10	15 Summer	30	+0%					24.837	-0.132	0.000	0.29	
4.002	S1-Dummy-MH11	15 Summer	30	+0%					23.870	-0.153	0.000	0.25	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-Dummy-MH1	41.7	OK	
1.001	S1-Dummy-MH2	86.5	OK	
2.000	S1-Dummy-MH5	30.2	OK	
2.001	S1-Dummy-MH4	89.5	OK	
1.002	S1-Dummy-MH3	141.1	OK	3
3.000	S1-Dummy-MH6	64.9	OK	
3.001	S1-Dummy-MH7	111.3	OK	
3.002	S1-Dummy-MH8	147.3	OK	
4.000	S1-Dummy-MH9	66.8	OK	
4.001	S1-Dummy-MH10	114.5	OK	
4.002	S1-Dummy-MH11	148.0	OK	

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

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.000	S1-Dummy-MH1	15 Summer	100	+0%					23.939	-0.179	0.000	0.19	
1.001	S1-Dummy-MH2	15 Summer	100	+0%					23.738	-0.104	0.000	0.40	
2.000	S1-Dummy-MH5	15 Summer	100	+0%					24.262	-0.229	0.000	0.08	
2.001	S1-Dummy-MH4	15 Summer	100	+0%					23.778	-0.107	0.000	0.39	
1.002	S1-Dummy-MH3	15 Summer	100	+0%	100/15 Summer	100/15 Summer			23.475	0.000	0.647	1.53	
3.000	S1-Dummy-MH6	15 Summer	100	+0%					24.370	-0.146	0.000	0.26	
3.001	S1-Dummy-MH7	15 Summer	100	+0%					23.870	-0.003	0.000	0.84	
3.002	S1-Dummy-MH8	15 Summer	100	+0%					23.578	-0.472	0.000	0.08	
4.000	S1-Dummy-MH9	15 Summer	100	+0%					25.488	-0.145	0.000	0.26	
4.001	S1-Dummy-MH10	15 Summer	100	+0%					24.863	-0.106	0.000	0.37	
4.002	S1-Dummy-MH11	15 Summer	100	+0%					23.893	-0.130	0.000	0.33	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-Dummy-MH1	53.9	OK	
1.001	S1-Dummy-MH2	112.0	OK	
2.000	S1-Dummy-MH5	39.0	OK	
2.001	S1-Dummy-MH4	115.8	OK	
1.002	S1-Dummy-MH3	204.4	FLOOD	3
3.000	S1-Dummy-MH6	83.8	OK	
3.001	S1-Dummy-MH7	143.7	OK	
3.002	S1-Dummy-MH8	191.0	OK	
4.000	S1-Dummy-MH9	86.3	OK	
4.001	S1-Dummy-MH10	148.1	OK	
4.002	S1-Dummy-MH11	191.6	OK	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Existing Model S2

Pipe Sizes M5 J10 Manhole Sizes M5 J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	18.200	Volumetric Runoff Coeff.	1.000	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.370	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	100	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	500
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Designed with Level Soffits

Network Design Table for Existing Model S2

« - 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	71.062	0.142	500.0	0.280	5.00	0.0		0.050	\/	-4	Pipe/Conduit	
1.001	68.940	0.308	223.8	0.341	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
1.002	66.838	0.200	334.2	0.200	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
1.003	63.713	0.300	212.4	0.123	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
1.004	66.092	0.132	500.0	0.162	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
1.005	107.336	0.215	500.0	0.254	0.00	0.0		0.050	\/	-5	Pipe/Conduit	
1.006	96.216	0.192	500.0	0.318	0.00	0.0		0.050	\/	-5	Pipe/Conduit	
2.000	86.532	0.672	128.8	0.182	5.00	0.0	0.600		o	225	Pipe/Conduit	
2.001	83.707	0.390	214.6	0.253	0.00	0.0	0.600		o	225	Pipe/Conduit	
2.002	80.774	0.162	499.8	0.187	0.00	0.0	0.600		o	225	Pipe/Conduit	
3.000	33.336	1.077	31.0	0.077	5.00	0.0	0.600		o	150	Pipe/Conduit	
2.003	44.230	0.088	500.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
4.000	57.251	1.055	54.3	0.788	5.00	0.0		0.050	\/	-3	Pipe/Conduit	
4.001	72.066	0.293	246.0	0.194	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
4.002	49.345	0.267	184.8	0.123	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
2.004	67.269	0.363	185.3	0.132	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
2.005	81.156	0.350	231.9	0.193	0.00	0.0		0.050	\/	-5	Pipe/Conduit	
2.006	88.056	0.200	440.3	0.206	0.00	0.0		0.050	\/	-6	Pipe/Conduit	
2.007	64.430	0.140	460.2	0.120	0.00	0.0		0.050	\/	-6	Pipe/Conduit	
5.000	50.345	0.529	95.2	0.128	5.00	0.0		0.050	\/	-3	Pipe/Conduit	
5.001	87.832	0.576	152.5	0.185	0.00	0.0		0.050	\/	-3	Pipe/Conduit	
5.002	89.058	0.765	116.4	0.183	0.00	0.0		0.050	\/	-3	Pipe/Conduit	
5.003	87.337	1.020	85.6	0.151	0.00	0.0		0.050	\/	-3	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	35.94	9.15	23.350	0.280	0.0	0.0	0.0	0.29	128.4	36.3
1.001	31.21	11.84	23.208	0.621	0.0	0.0	0.0	0.43	191.9	70.0
1.002	27.35	15.04	22.900	0.820	0.0	0.0	0.0	0.35	157.1	81.0
1.003	25.08	17.46	22.700	0.943	0.0	0.0	0.0	0.44	197.0	85.4
1.004	22.26	21.32	22.400	1.105	0.0	0.0	0.0	0.29	128.4	88.8
1.005	18.94	27.66	22.268	1.360	0.0	0.0	0.0	0.28	143.8	93.0
1.006	17.99	30.00	22.053	1.678	0.0	0.0	0.0	0.28	143.8	109.0
2.000	43.43	6.25	24.600	0.182	0.0	0.0	0.0	1.15	45.8	28.5
2.001	38.97	7.82	23.928	0.435	0.0	0.0	0.0	0.89	35.3«	61.2
2.002	33.99	10.15	23.538	0.622	0.0	0.0	0.0	0.58	23.0«	76.3
3.000	46.76	5.31	24.528	0.077	0.0	0.0	0.0	1.82	32.1	12.9
2.003	32.18	11.21	23.301	0.698	0.0	0.0	0.0	0.70	49.2«	81.1
4.000	42.94	6.41	24.928	0.788	0.0	0.0	0.0	0.68	149.0	122.2
4.001	35.51	9.36	23.773	0.982	0.0	0.0	0.0	0.41	183.1	125.9
4.002	32.33	11.11	23.480	1.105	0.0	0.0	0.0	0.47	211.2	129.0
2.004	28.93	13.60	23.213	1.935	0.0	0.0	0.0	0.47	210.9	202.2
2.005	25.59	16.87	22.850	2.128	0.0	0.0	0.0	0.41	211.2	202.2
2.006	22.44	21.03	22.500	2.334	0.0	0.0	0.0	0.35	318.4	202.2
2.007	20.62	24.15	22.300	2.454	0.0	0.0	0.0	0.34	311.5	202.2
5.000	42.23	6.64	26.409	0.128	0.0	0.0	0.0	0.51	112.5	19.5
5.001	33.79	10.26	25.880	0.312	0.0	0.0	0.0	0.40	88.9	38.1
5.002	29.09	13.47	25.304	0.495	0.0	0.0	0.0	0.46	101.8	52.0
5.003	26.23	16.17	24.539	0.647	0.0	0.0	0.0	0.54	118.7	61.2

Network Design Table for Existing Model S2

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
5.004	58.180	0.411	141.6	0.260	0.00	0.0		0.050	\/	-3	Pipe/Conduit	
5.005	58.180	0.848	68.6	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.000	56.134	0.207	271.2	0.123	5.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.001	84.840	0.232	365.7	0.159	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.002	87.982	1.358	64.8	0.189	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.003	89.073	1.184	75.2	0.173	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.004	50.776	0.451	112.6	0.150	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.005	57.804	0.925	62.5	0.053	0.00	0.0		0.050	\/	-2	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)
5.004	24.25	18.48	23.519	0.906	0.0	0.0	0.0	0.42	92.3	79.4
5.005	23.10	20.06	23.108	0.906	0.0	0.0	0.0	0.62	147.7	79.4
6.000	38.48	8.02	26.607	0.123	0.0	0.0	0.0	0.31	74.3	17.1
6.001	29.26	13.33	26.400	0.281	0.0	0.0	0.0	0.27	64.0	29.7
6.002	26.73	15.64	26.168	0.471	0.0	0.0	0.0	0.63	152.0	45.4
6.003	24.50	18.17	24.810	0.644	0.0	0.0	0.0	0.59	141.1	56.9
6.004	23.19	19.93	23.626	0.794	0.0	0.0	0.0	0.48	115.3	66.5
6.005	22.19	21.42	23.175	0.847	0.0	0.0	0.0	0.64	154.8	67.9

Conduit Sections for Existing Model S2

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m²)
-2	\/	1800	200	18.2		0.515	0.240
-3	\/	1700	200	18.2		0.499	0.220
-4	\/	2400	300	14.0		0.721	0.450
-5	\/	2800	300	14.0		0.708	0.510
-6	\/	2100	300	18.2		0.899	0.904

Manhole Schedules for Existing Model S2

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)
Dummy_01	23.650	0.300	Junction		1.000	23.350	-4				
Dummy_02	23.612	0.404	Junction		1.001	23.208	-4	1.000	23.208	-4	
Dummy_03	23.200	0.300	Junction		1.002	22.900	-4	1.001	22.900	-4	
Dummy_04	23.000	0.300	Junction		1.003	22.700	-4	1.002	22.700	-4	
Dummy_05	22.700	0.300	Junction		1.004	22.400	-4	1.003	22.400	-4	
Dummy_06	22.580	0.312	Junction		1.005	22.268	-5	1.004	22.268	-4	
Dummy_08	22.480	0.427	Junction		1.006	22.053	-5	1.005	22.053	-5	
Dummy_09	22.450	0.589	Open Manhole	0		OUTFALL		1.006	21.861	-5	
08A	26.010	1.410	Junction		2.000	24.600	225				
08	25.928	2.000	Open Manhole	1200	2.001	23.928	225	2.000	23.928	225	
07	25.938	2.400	Open Manhole	1200	2.002	23.538	225	2.001	23.538	225	
28	25.748	1.220	Junction		3.000	24.528	150				
06	25.721	2.420	Open Manhole	1200	2.003	23.301	300	2.002	23.376	225	
								3.000	23.451	150	
Dummy_21	25.128	0.200	Junction		4.000	24.928	-3				
Dummy_22	24.073	0.300	Junction		4.001	23.773	-4	4.000	23.873	-3	
Dummy_23	23.780	0.300	Junction		4.002	23.480	-4	4.001	23.480	-4	
Dummy_24	23.596	0.383	Junction		2.004	23.213	-4	2.003	23.213	300	
								4.002	23.213	-4	
Dummy_25	23.150	0.300	Junction		2.005	22.850	-5	2.004	22.850	-4	
Dummy_26	22.800	0.300	Junction		2.006	22.500	-6	2.005	22.500	-5	
Dummy_27	22.600	0.300	Junction		2.007	22.300	-6	2.006	22.300	-6	
Dummy_28	22.460	0.300	Open Manhole	0		OUTFALL		2.007	22.160	-6	
Dummy_15	26.609	0.200	Junction		5.000	26.409	-3				
Dummy_16	26.080	0.200	Junction		5.001	25.880	-3	5.000	25.880	-3	
Dummy_17	25.504	0.200	Junction		5.002	25.304	-3	5.001	25.304	-3	
Dummy_18	24.739	0.200	Junction		5.003	24.539	-3	5.002	24.539	-3	
Dummy_19	23.719	0.200	Junction		5.004	23.519	-3	5.003	23.519	-3	
Dummy_20	23.308	0.200	Junction		5.005	23.108	-2	5.004	23.108	-3	
Dummy_28	22.460	0.200	Open Manhole	0		OUTFALL		5.005	22.260	-2	
Dummy_10A	26.807	0.200	Junction		6.000	26.607	-2				
Dummy_10	26.600	0.200	Junction		6.001	26.400	-2	6.000	26.400	-2	
Dummy_11	26.368	0.200	Junction		6.002	26.168	-2	6.001	26.168	-2	
Dummy_12	25.010	0.200	Junction		6.003	24.810	-2	6.002	24.810	-2	
Dummy_13	23.826	0.200	Junction		6.004	23.626	-2	6.003	23.626	-2	
Dummy_14	23.375	0.200	Junction		6.005	23.175	-2	6.004	23.175	-2	
Dummy_09	22.450	0.200	Open Manhole	0		OUTFALL		6.005	22.250	-2	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy_01	390660.697	225517.428			No Entry	
Dummy_02	390622.643	225577.143			No Entry	
Dummy_03	390604.128	225643.421			No Entry	
Dummy_04	390606.210	225710.053			No Entry	
Dummy_05	390628.025	225769.915			No Entry	
Dummy_06	390663.149	225825.901			No Entry	
Dummy_08	390723.200	225914.866			No Entry	
Dummy_09	390778.176	225993.829			No Entry	
08A	390457.858	225569.098			No Entry	

Manhole Schedules for Existing Model S2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
08	390506.902	225640.388	390506.902	225640.388	Required	
07	390556.721	225707.655	390556.721	225707.655	Required	
28	390623.188	225800.400			No Entry	
06	390604.244	225772.969	390604.244	225772.969	Required	
Dummy_21	390455.726	225661.076			No Entry	
Dummy_22	390493.367	225704.214			No Entry	
Dummy_23	390538.119	225760.701			No Entry	
Dummy_24	390568.764	225799.377			No Entry	
Dummy_25	390609.359	225853.016			No Entry	
Dummy_26	390656.329	225919.198			No Entry	
Dummy_27	390706.925	225991.267			No Entry	
Dummy_28	390746.591	226042.040			No Entry	
Dummy_15	391002.656	226388.630			No Entry	
Dummy_16	390972.813	226348.083			No Entry	
Dummy_17	390921.109	226277.082			No Entry	
Dummy_18	390868.781	226205.019			No Entry	
Dummy_19	390816.180	226135.299			No Entry	
Dummy_20	390781.385	226088.669			No Entry	
Dummy_28	390746.591	226042.040			No Entry	
Dummy_10A	391032.624	226336.180			No Entry	
Dummy_10	390998.189	226291.849			No Entry	
Dummy_11	390947.174	226224.060			No Entry	
Dummy_12	390893.976	226153.983			No Entry	
Dummy_13	390840.827	226082.505			No Entry	
Dummy_14	390811.932	226040.752			No Entry	
Dummy_09	390778.176	225993.829			No Entry	

PIPELINE SCHEDULES for Existing Model S2

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)
1.000	\/	-4	Dummy_01	23.650	23.350	0.000	Junction	
1.001	\/	-4	Dummy_02	23.612	23.208	0.104	Junction	
1.002	\/	-4	Dummy_03	23.200	22.900	0.000	Junction	
1.003	\/	-4	Dummy_04	23.000	22.700	0.000	Junction	
1.004	\/	-4	Dummy_05	22.700	22.400	0.000	Junction	
1.005	\/	-5	Dummy_06	22.580	22.268	0.012	Junction	
1.006	\/	-5	Dummy_08	22.480	22.053	0.127	Junction	
2.000	o	225	08A	26.010	24.600	1.185	Junction	
2.001	o	225	08	25.928	23.928	1.775	Open Manhole	1200
2.002	o	225	07	25.938	23.538	2.175	Open Manhole	1200
3.000	o	150	28	25.748	24.528	1.070	Junction	
2.003	o	300	06	25.721	23.301	2.120	Open Manhole	1200
4.000	\/	-3	Dummy_21	25.128	24.928	0.000	Junction	
4.001	\/	-4	Dummy_22	24.073	23.773	0.000	Junction	
4.002	\/	-4	Dummy_23	23.780	23.480	0.000	Junction	
2.004	\/	-4	Dummy_24	23.596	23.213	0.083	Junction	
2.005	\/	-5	Dummy_25	23.150	22.850	0.000	Junction	
2.006	\/	-6	Dummy_26	22.800	22.500	0.000	Junction	
2.007	\/	-6	Dummy_27	22.600	22.300	0.000	Junction	
5.000	\/	-3	Dummy_15	26.609	26.409	0.000	Junction	
5.001	\/	-3	Dummy_16	26.080	25.880	0.000	Junction	
5.002	\/	-3	Dummy_17	25.504	25.304	0.000	Junction	
5.003	\/	-3	Dummy_18	24.739	24.539	0.000	Junction	
5.004	\/	-3	Dummy_19	23.719	23.519	0.000	Junction	
5.005	\/	-2	Dummy_20	23.308	23.108	0.000	Junction	
6.000	\/	-2	Dummy_10A	26.807	26.607	0.000	Junction	
6.001	\/	-2	Dummy_10	26.600	26.400	0.000	Junction	
6.002	\/	-2	Dummy_11	26.368	26.168	0.000	Junction	
6.003	\/	-2	Dummy_12	25.010	24.810	0.000	Junction	
6.004	\/	-2	Dummy_13	23.826	23.626	0.000	Junction	
6.005	\/	-2	Dummy_14	23.375	23.175	0.000	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)
1.000	71.062	500.0	Dummy_02	23.612	23.208	0.104	Junction	
1.001	68.940	223.8	Dummy_03	23.200	22.900	0.000	Junction	
1.002	66.838	334.2	Dummy_04	23.000	22.700	0.000	Junction	
1.003	63.713	212.4	Dummy_05	22.700	22.400	0.000	Junction	
1.004	66.092	500.0	Dummy_06	22.580	22.268	0.012	Junction	
1.005	107.336	500.0	Dummy_08	22.480	22.053	0.127	Junction	
1.006	96.216	500.0	Dummy_09	22.450	21.861	0.289	Open Manhole	0
2.000	86.532	128.8	08	25.928	23.928	1.775	Open Manhole	1200
2.001	83.707	214.6	07	25.938	23.538	2.175	Open Manhole	1200
2.002	80.774	499.8	06	25.721	23.376	2.120	Open Manhole	1200
3.000	33.336	31.0	06	25.721	23.451	2.120	Open Manhole	1200
2.003	44.230	500.0	Dummy_24	23.596	23.213	0.083	Junction	
4.000	57.251	54.3	Dummy_22	24.073	23.873	0.000	Junction	
4.001	72.066	246.0	Dummy_23	23.780	23.480	0.000	Junction	
4.002	49.345	184.8	Dummy_24	23.596	23.213	0.083	Junction	
2.004	67.269	185.3	Dummy_25	23.150	22.850	0.000	Junction	
2.005	81.156	231.9	Dummy_26	22.800	22.500	0.000	Junction	
2.006	88.056	440.3	Dummy_27	22.600	22.300	0.000	Junction	
2.007	64.430	460.2	Dummy_28	22.460	22.160	0.000	Open Manhole	0
5.000	50.345	95.2	Dummy_16	26.080	25.880	0.000	Junction	
5.001	87.832	152.5	Dummy_17	25.504	25.304	0.000	Junction	
5.002	89.058	116.4	Dummy_18	24.739	24.539	0.000	Junction	
5.003	87.337	85.6	Dummy_19	23.719	23.519	0.000	Junction	
5.004	58.180	141.6	Dummy_20	23.308	23.108	0.000	Junction	
5.005	58.180	68.6	Dummy_28	22.460	22.260	0.000	Open Manhole	0
6.000	56.134	271.2	Dummy_10	26.600	26.400	0.000	Junction	
6.001	84.840	365.7	Dummy_11	26.368	26.168	0.000	Junction	
6.002	87.982	64.8	Dummy_12	25.010	24.810	0.000	Junction	
6.003	89.073	75.2	Dummy_13	23.826	23.626	0.000	Junction	
6.004	50.776	112.6	Dummy_14	23.375	23.175	0.000	Junction	
6.005	57.804	62.5	Dummy_09	22.450	22.250	0.000	Open Manhole	0

Area Summary for Existing Model S2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Carriage way & Footway	100	0.046	0.046	0.046
	Classification	Verge	50	0.124	0.062	0.108
	Classification	Carriage way & Footway	100	0.032	0.032	0.140
	Classification	Verge	50	0.280	0.140	0.280
1.001	Classification	Verge	50	0.124	0.062	0.062
	Classification	Carriage way & Footway	100	0.074	0.074	0.136
	Classification	Verge	50	0.411	0.205	0.341
1.002	Classification	Verge	50	0.085	0.043	0.043
	Classification	Carriage way & Footway	100	0.081	0.081	0.123
	Classification	Verge	50	0.152	0.076	0.200
1.003	Classification	Verge	50	0.075	0.037	0.037
	Classification	Carriage way & Footway	100	0.072	0.072	0.109
	Classification	Verge	50	0.028	0.014	0.123
1.004	Classification	Verge	50	0.063	0.031	0.031
	Classification	Carriage way & Footway	100	0.034	0.034	0.065
	Classification	Carriage way & Footway	100	0.097	0.097	0.162
1.005	Classification	Carriage way & Footway	100	0.137	0.137	0.137
	Classification	Carriage way & Footway	100	0.017	0.017	0.153
	Classification	Carriage way & Footway	100	0.055	0.055	0.208
	Classification	Verge	50	0.092	0.046	0.254
1.006	Classification	Carriage way & Footway	100	0.010	0.010	0.010
	Classification	Carriage way & Footway	100	0.081	0.081	0.091
	Classification	Verge	50	0.058	0.029	0.120
	Classification	Carriage way & Footway	100	0.009	0.009	0.129
	Classification	Verge	50	0.067	0.034	0.163
	Classification	Carriage way & Footway	100	0.155	0.155	0.318
2.000	Classification	Carriage way & Footway	100	0.131	0.131	0.131
	Classification	Central reserve unpaved	20	0.013	0.003	0.134
	User	-	100	0.000	0.000	0.134
	Classification	Verge	50	0.096	0.048	0.182
2.001	Classification	Carriage way & Footway	100	0.138	0.138	0.138
	Classification	Central reserve unpaved	20	0.018	0.004	0.142
	Classification	Verge	50	0.221	0.111	0.253
2.002	Classification	Carriage way & Footway	100	0.139	0.139	0.139
	Classification	Central reserve paved	100	0.017	0.017	0.156
	Classification	Verge	50	0.016	0.008	0.164
	Classification	Verge	50	0.046	0.023	0.187
3.000	Classification	Carriage way & Footway	100	0.008	0.008	0.008
	User	-	100	0.005	0.005	0.012
	Classification	Carriage way & Footway	100	0.064	0.064	0.077
2.003	-	-	100	0.000	0.000	0.000
4.000	Classification	Verge	50	0.104	0.052	0.052
	Classification	Carriage way & Footway	100	0.160	0.160	0.212
	Classification	Central reserve unpaved	20	0.022	0.004	0.216
	Classification	Carriage way & Footway	100	0.119	0.119	0.335
	Classification	Carriage way & Footway	100	0.453	0.453	0.788
4.001	Classification	Central reserve unpaved	20	0.011	0.002	0.002
	Classification	Carriage way & Footway	100	0.143	0.143	0.146
	Classification	Verge	50	0.079	0.039	0.185
	Classification	Central reserve paved	100	0.009	0.009	0.194
4.002	Classification	Verge	50	0.060	0.030	0.030
	Classification	Carriage way & Footway	100	0.083	0.083	0.113
	Classification	Central reserve paved	100	0.010	0.010	0.123
2.004	Classification	Verge	50	0.070	0.035	0.035
	Classification	Carriage way & Footway	100	0.097	0.097	0.132
2.005	Classification	Verge	50	0.102	0.051	0.051
	Classification	Carriage way & Footway	100	0.142	0.142	0.193
2.006	Classification	Verge	50	0.108	0.054	0.054
	Classification	Carriage way & Footway	100	0.152	0.152	0.206
2.007	Classification	Verge	50	0.066	0.033	0.033
	Classification	Carriage way & Footway	100	0.087	0.087	0.120
5.000	Classification	Carriage way & Footway	100	0.097	0.097	0.097
	Classification	Central reserve unpaved	20	0.015	0.003	0.100
	Classification	Verge	50	0.056	0.028	0.128
5.001	Classification	Carriage way & Footway	100	0.132	0.132	0.132
	Classification	Central reserve unpaved	20	0.019	0.004	0.136
	Classification	Verge	50	0.097	0.049	0.185
5.002	Classification	Carriage way & Footway	100	0.131	0.131	0.131
	Classification	Central reserve unpaved	20	0.017	0.003	0.134
	Classification	Verge	50	0.097	0.049	0.183
5.003	Classification	Carriage way & Footway	100	0.102	0.102	0.102
	Classification	Central reserve unpaved	20	0.019	0.004	0.106
	Classification	Verge	50	0.091	0.045	0.151
5.004	Classification	Carriage way & Footway	100	0.185	0.185	0.185
	Classification	Central reserve unpaved	20	0.028	0.006	0.191
	Classification	Verge	50	0.137	0.069	0.260
5.005	-	-	100	0.000	0.000	0.000
6.000	Classification	Verge	50	0.082	0.041	0.041
	Classification	Default	100	0.079	0.079	0.120
	Classification	Central reserve unpaved	20	0.013	0.003	0.123
6.001	Classification	Carriage way & Footway	100	0.108	0.108	0.108
	Classification	Central reserve unpaved	20	0.017	0.003	0.112
	Classification	Verge	50	0.094	0.047	0.159
6.002	Classification	Carriage way & Footway	100	0.131	0.131	0.131
	Classification	Central reserve unpaved	20	0.020	0.004	0.135

Area Summary for Existing Model S2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Verge	50	0.108	0.054	0.189
6.003	Classification	Carriage way & Footway	100	0.121	0.121	0.121
	Classification	Central reserve unpaved	20	0.022	0.004	0.126
	Classification	Verge	50	0.095	0.047	0.173
6.004	Classification	Carriage way & Footway	100	0.139	0.139	0.139
	Classification	Central reserve unpaved	20	0.019	0.004	0.142
	Classification	Verge	50	0.016	0.008	0.150
6.005	Classification	Verge	50	0.107	0.053	0.053
				Total	Total	Total
				7.841	5.886	5.886

Network Classifications for Existing Model S2

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
1.000	Dummy_01	-4	0.000	0.147	Unclassified				Junction
1.001	Dummy_02	-4	0.000	0.247	Unclassified				Junction
1.002	Dummy_03	-4	0.000	0.317	Unclassified				Junction
1.003	Dummy_04	-4	0.000	0.350	Unclassified				Junction
1.004	Dummy_05	-4	0.000	0.344	Unclassified				Junction
1.005	Dummy_06	-5	0.012	0.454	Unclassified				Junction
1.006	Dummy_08	-5	0.127	0.511	Unclassified				Junction
2.000	08A	225	1.185	1.775	Carrier				Junction
2.001	08	225	1.775	2.175	Carrier	1200	0	1.775	Type 7
2.002	07	225	2.120	2.196	Carrier	1200	0	2.175	Type 7
3.000	28	150	1.070	2.120	Carrier				Junction
2.003	06	300	0.083	2.120	Carrier	1200	0	2.120	Type 7
4.000	Dummy_21	-3	0.000	0.324	Unclassified				Junction
4.001	Dummy_22	-4	0.000	0.325	Unclassified				Junction
4.002	Dummy_23	-4	0.000	0.398	Unclassified				Junction
2.004	Dummy_24	-4	0.083	0.489	Unclassified				Junction
2.005	Dummy_25	-5	0.000	0.433	Unclassified				Junction
2.006	Dummy_26	-6	0.000	0.467	Unclassified				Junction
2.007	Dummy_27	-6	0.000	0.447	Unclassified				Junction
5.000	Dummy_15	-3	0.000	0.194	Unclassified				Junction
5.001	Dummy_16	-3	0.000	0.262	Unclassified				Junction
5.002	Dummy_17	-3	0.000	0.351	Unclassified				Junction
5.003	Dummy_18	-3	0.000	0.441	Unclassified				Junction
5.004	Dummy_19	-3	0.000	0.355	Unclassified				Junction
5.005	Dummy_20	-2	0.000	0.607	Unclassified				Junction
6.000	Dummy_10A	-2	0.000	0.211	Unclassified				Junction
6.001	Dummy_10	-2	0.000	0.255	Unclassified				Junction
6.002	Dummy_11	-2	0.000	0.385	Unclassified				Junction
6.003	Dummy_12	-2	0.000	0.479	Unclassified				Junction
6.004	Dummy_13	-2	0.000	0.365	Unclassified				Junction
6.005	Dummy_14	-2	0.000	0.542	Unclassified				Junction

Free Flowing Outfall Details for Existing Model S2

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.006	Dummy_09	22.450	21.861	0.000	0	0

Free Flowing Outfall Details for Existing Model S2

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
2.007	Dummy_28	22.460	22.160	0.000	0	0

Free Flowing Outfall Details for Existing Model S2

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
5.005	Dummy_28	22.460	22.260	0.000	0	0

Free Flowing Outfall Details for Existing Model S2

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
6.005	Dummy_09	22.450	22.250	0.000	0	0

Simulation Criteria for Existing Model S2

Volumetric Runoff Coeff	1.000	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	0.000	Output Interval (mins)	1

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

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	18.200	Cv (Summer)	1.000
Return Period (years)	1	Ratio R	0.370	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	Dummy_01	15 Summer	1	+0%	100/15 Summer	100/15 Summer			23.528	-0.122	0.000	0.31		39.2
1.001	Dummy_02	15 Summer	1	+0%	30/15 Summer				23.394	-0.114	0.000	0.35		66.8
1.002	Dummy_03	30 Summer	1	+0%	30/15 Summer	30/15 Summer			23.119	-0.081	0.000	0.50		78.2
1.003	Dummy_04	30 Summer	1	+0%	100/30 Summer	100/30 Summer			22.899	-0.101	0.000	0.42		81.9
1.004	Dummy_05	30 Summer	1	+0%	5/15 Summer	5/15 Summer			22.647	-0.053	0.000	0.66		84.3
1.005	Dummy_06	30 Summer	1	+0%	30/15 Summer	30/15 Summer			22.506	-0.062	0.000	0.60		86.3
1.006	Dummy_08	60 Summer	1	+0%	5/30 Winter				22.295	-0.058	0.000	0.63		90.0
2.000	08A	15 Winter	1	+0%					24.825	0.000	0.000	0.53		24.2
2.001	08	30 Summer	1	+0%	1/15 Summer	5/15 Summer			25.117	0.964	0.000	1.13		38.8
2.002	07	30 Summer	1	+0%	1/15 Summer	30/15 Summer			24.585	0.822	0.000	2.34		52.4
3.000	28	15 Summer	1	+0%					24.592	-0.086	0.000	0.37		11.9
2.003	06	30 Summer	1	+0%	1/15 Summer				23.630	0.029	0.000	1.18		54.5
4.000	Dummy_21	15 Summer	1	+0%	5/15 Summer	5/15 Summer			25.111	-0.017	0.000	0.76		113.2
4.001	Dummy_22	15 Summer	1	+0%	30/15 Summer	30/15 Summer			24.036	-0.037	0.000	0.68		125.3
4.002	Dummy_23	15 Summer	1	+0%	5/15 Summer	5/15 Summer			23.718	-0.062	0.000	0.60		126.4
2.004	Dummy_24	30 Summer	1	+0%	5/15 Summer	5/15 Summer			23.492	-0.021	0.000	0.83		174.6
2.005	Dummy_25	30 Summer	1	+0%	5/15 Summer	5/15 Summer			23.130	-0.020	0.000	0.82		174.2
2.006	Dummy_26	30 Summer	1	+0%					22.718	-0.082	0.000	0.54		172.5
2.007	Dummy_27	30 Summer	1	+0%					22.513	-0.087	0.000	0.53		165.0
5.000	Dummy_15	15 Summer	1	+0%					26.492	-0.117	0.000	0.17		18.8
5.001	Dummy_16	15 Summer	1	+0%	30/15 Summer	30/15 Summer			26.018	-0.062	0.000	0.41		36.8
5.002	Dummy_17	15 Summer	1	+0%	30/15 Summer	30/15 Summer			25.452	-0.052	0.000	0.50		50.6
5.003	Dummy_18	30 Summer	1	+0%	30/15 Summer	30/15 Summer			24.687	-0.052	0.000	0.51		60.6
5.004	Dummy_19	30 Summer	1	+0%	5/15 Summer	5/15 Summer			23.706	-0.013	0.000	0.85		78.6
5.005	Dummy_20	30 Summer	1	+0%					23.253	-0.055	0.000	0.52		76.8
6.000	Dummy_10A	15 Summer	1	+0%					26.708	-0.099	0.000	0.24		17.8
6.001	Dummy_10	15 Summer	1	+0%	30/15 Summer	30/15 Summer			26.545	-0.055	0.000	0.48		30.7
6.002	Dummy_11	30 Summer	1	+0%	100/15 Summer	100/15 Summer			26.279	-0.089	0.000	0.30		45.4
6.003	Dummy_12	30 Summer	1	+0%	30/15 Summer	30/15 Summer			24.940	-0.070	0.000	0.41		57.2
6.004	Dummy_13	30 Summer	1	+0%	30/15 Summer	30/15 Summer			23.780	-0.046	0.000	0.58		67.3
6.005	Dummy_14	30 Summer	1	+0%					23.310	-0.065	0.000	0.45		69.4

PN	US/MH Name	Status	Level Exceeded
1.000	Dummy_01	OK	3
1.001	Dummy_02	OK	
1.002	Dummy_03	OK	12
1.003	Dummy_04	OK	3
1.004	Dummy_05	OK	24
1.005	Dummy_06	OK	20
1.006	Dummy_08	OK	
2.000	08A	SURCHARGED*	
2.001	08	SURCHARGED	25
2.002	07	SURCHARGED	8
3.000	28	OK*	
2.003	06	SURCHARGED	
4.000	Dummy_21	OK	17
4.001	Dummy_22	OK	13
4.002	Dummy_23	OK	17
2.004	Dummy_24	OK	22
2.005	Dummy_25	OK	26
2.006	Dummy_26	OK	
2.007	Dummy_27	OK	
5.000	Dummy_15	OK	
5.001	Dummy_16	OK	8
5.002	Dummy_17	OK	12
5.003	Dummy_18	OK	12

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

PN	US/MH Name	Status	Level Exceeded
5.004	Dummy_19	OK	28
5.005	Dummy_20	OK	
6.000	Dummy_10A	OK	
6.001	Dummy_10	OK	11
6.002	Dummy_11	OK	1
6.003	Dummy_12	OK	10
6.004	Dummy_13	OK	16
6.005	Dummy_14	OK	

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	Dummy_01	15 Summer	5	+0%	100/15 Summer	100/15 Summer			23.580	-0.070	0.000	0.51		65.4
1.001	Dummy_02	15 Summer	5	+0%	30/15 Summer				23.447	-0.061	0.000	0.58		112.2
1.002	Dummy_03	15 Summer	5	+0%	30/15 Summer	30/15 Summer			23.180	-0.020	0.000	0.82		129.5
1.003	Dummy_04	30 Summer	5	+0%	100/30 Summer	100/30 Summer			22.953	-0.047	0.000	0.68		134.5
1.004	Dummy_05	30 Summer	5	+0%	5/15 Summer	5/15 Summer			22.703	0.003	3.077	1.02		130.5
1.005	Dummy_06	60 Summer	5	+0%	30/15 Summer	30/15 Summer			22.566	-0.002	0.000	0.96		138.7
1.006	Dummy_08	60 Summer	5	+0%	5/30 Winter				22.355	0.002	0.000	1.04		148.9
2.000	08A	15 Winter	5	+0%					24.825	0.000	0.000	0.75		34.4
2.001	08	30 Summer	5	+0%	1/15 Summer	5/15 Summer			25.939	1.786	10.585	1.56		53.8
2.002	07	30 Summer	5	+0%	1/15 Summer	30/15 Summer			25.552	1.789	0.000	3.09		69.3
3.000	28	15 Summer	5	+0%					24.615	-0.063	0.000	0.62		19.9
2.003	06	30 Summer	5	+0%	1/15 Summer				23.847	0.246	0.000	1.69		77.9
4.000	Dummy_21	15 Summer	5	+0%	5/15 Summer	5/15 Summer			25.139	0.011	10.710	1.00		149.3
4.001	Dummy_22	30 Summer	5	+0%	30/15 Summer	30/15 Summer			24.073	0.000	0.000	0.97		178.2
4.002	Dummy_23	30 Summer	5	+0%	5/15 Summer	5/15 Summer			23.781	0.001	1.454	0.85		178.6
2.004	Dummy_24	30 Summer	5	+0%	5/15 Summer	5/15 Summer			23.603	0.090	7.190	1.10		232.9
2.005	Dummy_25	30 Summer	5	+0%	5/15 Summer	5/15 Summer			23.164	0.014	14.374	1.04		219.5
2.006	Dummy_26	60 Summer	5	+0%					22.751	-0.049	0.000	0.72		227.7
2.007	Dummy_27	60 Winter	5	+0%					22.554	-0.046	0.000	0.74		228.9
5.000	Dummy_15	15 Summer	5	+0%					26.518	-0.091	0.000	0.28		31.5
5.001	Dummy_16	15 Summer	5	+0%	30/15 Summer	30/15 Summer			26.059	-0.021	0.000	0.69		61.5
5.002	Dummy_17	15 Summer	5	+0%	30/15 Summer	30/15 Summer			25.496	-0.008	0.000	0.84		85.1
5.003	Dummy_18	30 Summer	5	+0%	30/15 Summer	30/15 Summer			24.730	-0.009	0.000	0.85		101.0
5.004	Dummy_19	30 Summer	5	+0%	5/15 Summer	5/15 Summer			23.735	0.016	15.803	1.03		95.1
5.005	Dummy_20	30 Summer	5	+0%					23.268	-0.040	0.000	0.64		95.0
6.000	Dummy_10A	15 Summer	5	+0%					26.738	-0.069	0.000	0.40		29.9
6.001	Dummy_10	15 Summer	5	+0%	30/15 Summer	30/15 Summer			26.590	-0.010	0.000	0.81		51.9
6.002	Dummy_11	15 Summer	5	+0%	100/15 Summer	100/15 Summer			26.313	-0.055	0.000	0.49		74.4
6.003	Dummy_12	30 Summer	5	+0%	30/15 Summer	30/15 Summer			24.977	-0.033	0.000	0.66		93.1
6.004	Dummy_13	30 Summer	5	+0%	30/15 Summer	30/15 Summer			23.823	-0.003	0.000	0.95		109.4
6.005	Dummy_14	30 Summer	5	+0%					23.348	-0.027	0.000	0.73		113.3

PN	US/MH Name	Status	Level Exceeded
1.000	Dummy_01	OK	3
1.001	Dummy_02	OK	
1.002	Dummy_03	OK	12
1.003	Dummy_04	OK	3
1.004	Dummy_05	FLOOD	24
1.005	Dummy_06	OK	20
1.006	Dummy_08	SURCHARGED*	
2.000	08A	SURCHARGED*	
2.001	08	FLOOD	25
2.002	07	SURCHARGED	8
3.000	28	OK*	
2.003	06	SURCHARGED	
4.000	Dummy_21	FLOOD	17
4.001	Dummy_22	OK	13
4.002	Dummy_23	FLOOD	17
2.004	Dummy_24	FLOOD	22
2.005	Dummy_25	FLOOD	26
2.006	Dummy_26	OK	
2.007	Dummy_27	OK	
5.000	Dummy_15	OK	
5.001	Dummy_16	OK	8
5.002	Dummy_17	OK	12
5.003	Dummy_18	OK	12

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

PN	US/MH Name	Status	Level Exceeded
5.004	Dummy_19	FLOOD	28
5.005	Dummy_20	OK	
6.000	Dummy_10A	OK	
6.001	Dummy_10	OK	11
6.002	Dummy_11	OK	1
6.003	Dummy_12	OK	10
6.004	Dummy_13	OK	16
6.005	Dummy_14	OK	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	Dummy_01	15 Summer	30	+0%	100/15 Summer	100/15 Summer			23.627	-0.023	0.000	0.75		95.7
1.001	Dummy_02	15 Summer	30	+0%	30/15 Summer				23.518	0.010	0.000	0.93		177.5
1.002	Dummy_03	30 Summer	30	+0%	30/15 Summer	30/15 Summer			23.213	0.013	12.905	1.05		164.5
1.003	Dummy_04	30 Winter	30	+0%	100/30 Summer	100/30 Summer			22.987	-0.013	0.000	0.89		175.9
1.004	Dummy_05	30 Summer	30	+0%	5/15 Summer	5/15 Summer			22.742	0.042	42.113	1.06		136.6
1.005	Dummy_06	60 Summer	30	+0%	30/15 Summer	30/15 Summer			22.597	0.029	17.153	1.01		145.5
1.006	Dummy_08	60 Summer	30	+0%	5/30 Winter				22.413	0.060	0.000	1.16		167.3
2.000	08A	180 Winter	30	+0%					24.825	0.000	0.000	0.34		15.6
2.001	08	30 Summer	30	+0%	1/15 Summer	5/15 Summer			25.969	1.816	40.685	1.68		58.0
2.002	07	15 Summer	30	+0%	1/15 Summer	30/15 Summer			25.940	2.177	1.793	3.34		74.9
3.000	28	30 Summer	30	+0%					24.678	0.000	0.000	0.81		25.9
2.003	06	30 Summer	30	+0%	1/15 Summer				24.026	0.425	0.000	2.14		98.7
4.000	Dummy_21	15 Summer	30	+0%	5/15 Summer	5/15 Summer			25.165	0.037	36.779	1.01		150.9
4.001	Dummy_22	30 Summer	30	+0%	30/15 Summer	30/15 Summer			24.080	0.007	6.793	1.00		182.6
4.002	Dummy_23	30 Winter	30	+0%	5/15 Summer	5/15 Summer			23.796	0.016	16.381	0.84		176.4
2.004	Dummy_24	60 Summer	30	+0%	5/15 Summer	5/15 Summer			23.624	0.111	27.851	1.11		233.7
2.005	Dummy_25	60 Summer	30	+0%	5/15 Summer	5/15 Summer			23.186	0.036	36.420	1.07		226.0
2.006	Dummy_26	60 Summer	30	+0%					22.767	-0.033	0.000	0.78		248.0
2.007	Dummy_27	60 Winter	30	+0%					22.571	-0.029	0.000	0.82		256.3
5.000	Dummy_15	15 Summer	30	+0%					26.542	-0.067	0.000	0.41		46.2
5.001	Dummy_16	15 Summer	30	+0%	30/15 Summer	30/15 Summer			26.085	0.005	4.955	0.97		86.4
5.002	Dummy_17	30 Summer	30	+0%	30/15 Summer	30/15 Summer			25.514	0.010	10.017	1.00		101.7
5.003	Dummy_18	30 Summer	30	+0%	30/15 Summer	30/15 Summer			24.745	0.006	5.582	0.98		116.5
5.004	Dummy_19	30 Summer	30	+0%	5/15 Summer	5/15 Summer			23.770	0.051	50.962	1.07		98.8
5.005	Dummy_20	30 Summer	30	+0%					23.271	-0.037	0.000	0.67		98.7
6.000	Dummy_10A	15 Summer	30	+0%					26.766	-0.041	0.000	0.59		43.8
6.001	Dummy_10	15 Summer	30	+0%	30/15 Summer	30/15 Summer			26.607	0.007	6.773	1.02		65.3
6.002	Dummy_11	15 Summer	30	+0%	100/15 Summer	100/15 Summer			26.349	-0.019	0.000	0.69		105.1
6.003	Dummy_12	30 Summer	30	+0%	30/15 Summer	30/15 Summer			25.012	0.002	1.522	0.97		137.0
6.004	Dummy_13	30 Summer	30	+0%	30/15 Summer	30/15 Summer			23.845	0.019	19.404	1.03		119.0
6.005	Dummy_14	30 Summer	30	+0%					23.361	-0.014	0.000	0.83		128.1

PN	US/MH Name	Status	Level Exceeded
1.000	Dummy_01	OK	3
1.001	Dummy_02	SURCHARGED*	
1.002	Dummy_03	FLOOD	12
1.003	Dummy_04	OK	3
1.004	Dummy_05	FLOOD	24
1.005	Dummy_06	FLOOD	20
1.006	Dummy_08	SURCHARGED*	
2.000	08A	SURCHARGED*	
2.001	08	FLOOD	25
2.002	07	FLOOD	8
3.000	28	SURCHARGED*	
2.003	06	SURCHARGED	
4.000	Dummy_21	FLOOD	17
4.001	Dummy_22	FLOOD	13
4.002	Dummy_23	FLOOD	17
2.004	Dummy_24	FLOOD	22
2.005	Dummy_25	FLOOD	26
2.006	Dummy_26	OK	
2.007	Dummy_27	OK	
5.000	Dummy_15	OK	
5.001	Dummy_16	FLOOD	8
5.002	Dummy_17	FLOOD	12
5.003	Dummy_18	FLOOD	12

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

PN	US/MH Name	Status	Level Exceeded
5.004	Dummy_19	FLOOD	28
5.005	Dummy_20	OK	
6.000	Dummy_10A	OK	
6.001	Dummy_10	FLOOD	11
6.002	Dummy_11	OK	1
6.003	Dummy_12	FLOOD	10
6.004	Dummy_13	FLOOD	16
6.005	Dummy_14	OK	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.000	Dummy_01	15 Summer	100	+0%	100/15 Summer	100/15 Summer			23.656	0.006	6.028	0.81		104.5
1.001	Dummy_02	15 Summer	100	+0%	30/15 Summer				23.599	0.091	0.000	1.05		201.4
1.002	Dummy_03	30 Summer	100	+0%	30/15 Summer	30/15 Summer			23.237	0.037	36.814	1.09		170.7
1.003	Dummy_04	60 Summer	100	+0%	100/30 Summer	100/30 Summer			23.001	0.001	0.744	0.94		185.2
1.004	Dummy_05	60 Summer	100	+0%	5/15 Summer	5/15 Summer			22.784	0.084	83.988	1.10		141.0
1.005	Dummy_06	60 Summer	100	+0%	30/15 Summer	30/15 Summer			22.625	0.057	44.684	1.05		151.5
1.006	Dummy_08	60 Summer	100	+0%	5/30 Winter				22.472	0.119	0.000	1.27		182.2
2.000	08A	240 Winter	100	+0%					24.825	0.000	0.000	0.37		16.8
2.001	08	30 Summer	100	+0%	1/15 Summer	5/15 Summer			25.999	1.846	70.740	1.71		58.8
2.002	07	15 Summer	100	+0%	1/15 Summer	30/15 Summer			25.944	2.181	6.279	3.38		75.8
3.000	28	30 Winter	100	+0%					24.678	0.000	0.000	0.85		27.2
2.003	06	30 Summer	100	+0%	1/15 Summer				24.096	0.495	0.000	2.31		106.5
4.000	Dummy_21	15 Summer	100	+0%	5/15 Summer	5/15 Summer			25.193	0.065	64.907	1.02		152.3
4.001	Dummy_22	30 Summer	100	+0%	30/15 Summer	30/15 Summer			24.088	0.015	15.216	1.00		183.3
4.002	Dummy_23	60 Summer	100	+0%	5/15 Summer	5/15 Summer			23.813	0.033	33.424	0.83		174.5
2.004	Dummy_24	60 Winter	100	+0%	5/15 Summer	5/15 Summer			23.645	0.132	49.175	1.11		233.9
2.005	Dummy_25	60 Winter	100	+0%	5/15 Summer	5/15 Summer			23.206	0.056	55.640	1.10		231.4
2.006	Dummy_26	30 Summer	100	+0%					22.786	-0.014	0.000	0.84		268.9
2.007	Dummy_27	60 Summer	100	+0%					22.587	-0.013	0.000	0.91		284.8
5.000	Dummy_15	15 Summer	100	+0%					26.560	-0.049	0.000	0.53		59.8
5.001	Dummy_16	15 Summer	100	+0%	30/15 Summer	30/15 Summer			26.094	0.014	13.601	0.99		87.9
5.002	Dummy_17	30 Summer	100	+0%	30/15 Summer	30/15 Summer			25.524	0.020	19.963	1.00		102.1
5.003	Dummy_18	30 Summer	100	+0%	30/15 Summer	30/15 Summer			24.752	0.013	13.376	0.98		116.2
5.004	Dummy_19	60 Summer	100	+0%	5/15 Summer	5/15 Summer			23.801	0.082	82.045	1.11		102.0
5.005	Dummy_20	60 Summer	100	+0%					23.274	-0.034	0.000	0.69		101.9
6.000	Dummy_10A	15 Summer	100	+0%					26.789	-0.018	0.000	0.76		56.6
6.001	Dummy_10	15 Summer	100	+0%	30/15 Summer	30/15 Summer			26.615	0.015	15.417	1.04		66.7
6.002	Dummy_11	15 Summer	100	+0%	100/15 Summer	100/15 Summer			26.368	0.000	0.087	0.84		127.8
6.003	Dummy_12	30 Summer	100	+0%	30/15 Summer	30/15 Summer			25.023	0.013	13.339	0.99		139.7
6.004	Dummy_13	60 Summer	100	+0%	30/15 Summer	30/15 Summer			23.866	0.040	40.624	1.05		121.5
6.005	Dummy_14	15 Summer	100	+0%					23.366	-0.009	0.000	0.85		131.7

PN	US/MH Name	Status	Level Exceeded
1.000	Dummy_01	FLOOD	3
1.001	Dummy_02	SURCHARGED*	
1.002	Dummy_03	FLOOD	12
1.003	Dummy_04	FLOOD	3
1.004	Dummy_05	FLOOD	24
1.005	Dummy_06	FLOOD	20
1.006	Dummy_08	SURCHARGED*	
2.000	08A	SURCHARGED*	
2.001	08	FLOOD	25
2.002	07	FLOOD	8
3.000	28	SURCHARGED*	
2.003	06	SURCHARGED	
4.000	Dummy_21	FLOOD	17
4.001	Dummy_22	FLOOD	13
4.002	Dummy_23	FLOOD	17
2.004	Dummy_24	FLOOD	22
2.005	Dummy_25	FLOOD	26
2.006	Dummy_26	OK	
2.007	Dummy_27	OK	
5.000	Dummy_15	OK	
5.001	Dummy_16	FLOOD	8
5.002	Dummy_17	FLOOD	12
5.003	Dummy_18	FLOOD	12

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Model S2

PN	US/MH Name	Status	Level Exceeded
5.004	Dummy_19	FLOOD	28
5.005	Dummy_20	OK	
6.000	Dummy_10A	OK	
6.001	Dummy_10	FLOOD	11
6.002	Dummy_11	FLOOD	1
6.003	Dummy_12	FLOOD	10
6.004	Dummy_13	FLOOD	16
6.005	Dummy_14	OK	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes DMRB Manhole Sizes DMRB

FSR Rainfall Model - England and Wales

Return Period (years)	1	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	18.200	Volumetric Runoff Coeff.	1.000	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.370	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	100	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	500
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Designed with Level Soffits

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	75.109	1.327	56.6	0.119	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.001	67.246	0.396	169.8	0.049	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.002	19.799	0.559	35.4	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit	
S2.000	58.409	0.666	87.7	0.113	5.00	0.0	0.600	o	375	Pipe/Conduit	
S2.001	113.538	0.534	212.6	0.129	0.00	0.0	0.600	o	375	Pipe/Conduit	
S2.002	18.567	0.110	169.0	0.048	0.00	0.0	0.600	o	375	Pipe/Conduit	
S1.003	30.916	0.052	596.3	0.011	0.00	0.0	0.600	o	375	Pipe/Conduit	
S3.000	13.820	0.075	184.3	0.031	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.004	29.681	0.066	449.7	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
S4.000	14.087	0.075	187.8	0.020	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.005	23.897	0.066	362.1	0.011	0.00	0.0	0.600	o	375	Pipe/Conduit	
S5.000	12.884	0.075	171.8	0.017	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.006	23.423	0.151	155.1	0.009	0.00	0.0	0.600	o	375	Pipe/Conduit	
S6.000	12.695	0.075	169.3	0.028	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.007	87.926	0.259	339.5	0.112	0.00	0.0	0.600	o	375	Pipe/Conduit	
S7.000	15.283	0.075	203.8	0.058	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.008	18.638	0.320	58.2	0.000	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	45.24	5.72	38.207	0.119	0.0	0.0	0.0	1.74	69.3	19.4
S1.001	41.64	6.84	36.880	0.168	0.0	0.0	0.0	1.00	39.8	25.2
S1.002	41.20	6.99	36.484	0.182	0.0	0.0	0.0	2.21	87.7	27.1
S2.000	46.02	5.50	37.085	0.113	0.0	0.0	0.0	1.94	213.8	18.8
S2.001	41.08	7.03	36.419	0.242	0.0	0.0	0.0	1.24	136.8	35.9
S2.002	40.46	7.25	35.885	0.290	0.0	0.0	0.0	1.39	153.6	42.4
S1.003	38.64	7.95	35.775	0.483	0.0	0.0	0.0	0.73	81.2	67.4
S3.000	46.74	5.31	36.023	0.031	0.0	0.0	0.0	0.74	13.0	5.3
S1.004	37.27	8.54	35.723	0.515	0.0	0.0	0.0	0.85	93.6	69.2
S4.000	46.70	5.32	35.975	0.020	0.0	0.0	0.0	0.73	12.9	3.5
S1.005	36.34	8.96	35.675	0.546	0.0	0.0	0.0	0.95	104.5	71.6
S5.000	46.86	5.28	35.909	0.017	0.0	0.0	0.0	0.76	13.5	2.9
S1.006	35.78	9.23	35.609	0.571	0.0	0.0	0.0	1.45	160.4	73.8
S6.000	47.13	5.21	35.758	0.028	0.0	0.0	0.0	1.00	39.8	4.7
S1.007	32.98	10.73	35.458	0.711	0.0	0.0	0.0	0.98	108.0	84.6
S7.000	46.87	5.28	35.499	0.058	0.0	0.0	0.0	0.91	36.3	9.9
S1.008	32.76	10.86	35.199	0.769	0.0	0.0	0.0	2.38	262.7	91.0

Network Design Table for Storm

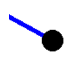
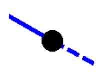
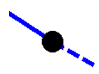
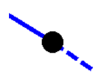
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.009	93.042	0.753	123.6	0.077	0.00	0.0	0.600	o	375	Pipe/Conduit	
S1.010	111.308	0.300	371.0	0.052	0.00	0.0	0.600	o	375	Pipe/Conduit	
S1.011	19.623	0.327	60.0	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
S8.000	83.240	0.853	97.6	0.071	5.00	0.0	0.600	o	150	Pipe/Conduit	
S8.001	58.177	0.552	105.4	0.108	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.012	78.063	0.156	499.3	0.104	0.00	0.0	0.600	o	450	Pipe/Conduit	
S9.000	10.102	0.132	76.5	0.015	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.013	39.340	0.079	500.0	0.063	0.00	0.0	0.600	o	450	Pipe/Conduit	
S10.000	11.139	0.111	100.4	0.019	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.014	42.891	0.095	450.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.015	33.672	0.067	500.0	0.010	0.00	0.0	0.600	o	450	Pipe/Conduit	
S11.000	75.269	1.369	55.0	0.454	7.00	0.0	0.600	o	225	Pipe/Conduit	
S12.000	72.875	0.729	100.0	0.508	7.00	0.0	0.600	o	300	Pipe/Conduit	
S12.001	25.691	0.321	80.0	0.013	0.00	0.0	0.600	o	300	Pipe/Conduit	
S11.001	36.493	0.434	84.1	0.210	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)
S1.009	31.26	11.81	34.879	0.846	0.0	0.0	0.0	1.63	179.9	95.5
S1.010	28.71	13.79	34.126	0.898	0.0	0.0	0.0	0.93	103.2	95.5
S1.011	28.55	13.93	33.826	0.898	0.0	0.0	0.0	2.34	258.7	95.5
S8.000	43.08	6.36	35.129	0.071	0.0	0.0	0.0	1.02	18.0	11.1
S8.001	40.19	7.35	34.276	0.179	0.0	0.0	0.0	0.98	17.3«	26.0
S1.012	27.00	15.37	33.424	1.181	0.0	0.0	0.0	0.90	143.6	115.2
S9.000	47.38	5.15	33.700	0.015	0.0	0.0	0.0	1.15	20.3	2.6
S1.013	26.29	16.10	33.268	1.259	0.0	0.0	0.0	0.90	143.5	119.5
S10.000	47.23	5.19	33.600	0.019	0.0	0.0	0.0	1.00	17.7	3.3
S1.014	25.61	16.85	33.189	1.278	0.0	0.0	0.0	0.95	151.4	119.5
S1.015	25.07	17.47	33.094	1.288	0.0	0.0	0.0	0.90	143.5	119.5
S11.000	39.26	7.71	38.603	0.454	0.0	0.0	0.0	1.77	70.3	64.3
S12.000	39.10	7.77	38.209	0.508	0.0	0.0	0.0	1.57	111.1	71.7
S12.001	38.49	8.02	37.480	0.521	0.0	0.0	0.0	1.76	124.4	72.4
S11.001	37.76	8.32	37.084	1.185	0.0	0.0	0.0	1.98	218.4	161.6

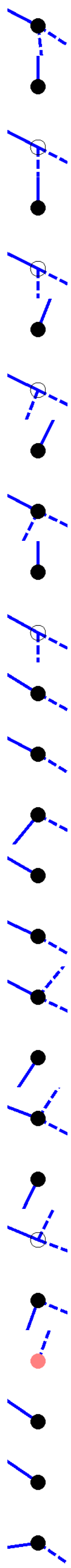
Manhole Schedules for Storm

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)
SMH-39	39.227	1.020	Open Manhole	1050	S1.000	38.207	225				
SMH-38	38.400	1.520	Open Manhole	1200	S1.001	36.880	225	S1.000	36.880	225	
SMH-37	38.004	1.520	Open Manhole	1200	S1.002	36.484	225	S1.001	36.484	225	
SMH-6306	38.580	1.495	Open Manhole	1050	S2.000	37.085	375				
SMH-43	38.339	1.920	Open Manhole	1200	S2.001	36.419	375	S2.000	36.419	375	
SMH-44	37.955	2.070	Open Manhole	1200	S2.002	35.885	375	S2.001	35.885	375	
SMH-27	37.870	2.095	Open Manhole	1200	S1.003	35.775	375	S1.002	35.925	225	
								S2.002	35.775	375	
SG71	37.424	1.401	Open Manhole	1200	S3.000	36.023	150				
SDummy-MH-6	37.688	1.965	Junction		S1.004	35.723	375	S1.003	35.723	375	
								S3.000	35.948	150	
SG70	37.220	1.245	Open Manhole	1200	S4.000	35.975	150				
SDummy-MH-8	37.443	1.786	Junction		S1.005	35.675	375	S1.004	35.657	375	
								S4.000	35.900	150	
SG69	37.038	1.129	Open Manhole	1200	S5.000	35.909	150				
SDummy-MH-10	37.156	1.547	Junction		S1.006	35.609	375	S1.005	35.609	375	
								S5.000	35.834	150	
SG59	36.882	1.124	Open Manhole	1200	S6.000	35.758	225				
SMH-26	36.908	1.450	Open Manhole	1500	S1.007	35.458	375	S1.006	35.458	375	
								S6.000	35.683	225	75
SG58	36.349	0.850	Open Manhole	1200	S7.000	35.499	225				
SDummy-MH-14	36.243	1.044	Junction		S1.008	35.199	375	S1.007	35.199	375	
								S7.000	35.424	225	75
SMH-25	36.069	1.190	Open Manhole	1500	S1.009	34.879	375	S1.008	34.879	375	
SMH-24	35.586	1.460	Open Manhole	1500	S1.010	34.126	375	S1.009	34.126	375	
SMH-23	35.176	1.350	Open Manhole	1500	S1.011	33.826	375	S1.010	33.826	375	
SMH-22	35.829	0.700	Open Manhole	1200	S8.000	35.129	150				
SMH-21	35.126	0.850	Open Manhole	1200	S8.001	34.276	150	S8.000	34.276	150	
SMH-20	35.444	2.020	Open Manhole	1500	S1.012	33.424	450	S1.011	33.499	375	
								S8.001	33.724	150	
SG47	34.560	0.860	Open Manhole	1200	S9.000	33.700	150				
SMH-19	34.502	1.234	Open Manhole	1500	S1.013	33.268	450	S1.012	33.268	450	
								S9.000	33.568	150	
SG45	34.230	0.630	Open Manhole	1200	S10.000	33.600	150				
S24	34.260	1.071	Junction		S1.014	33.189	450	S1.013	33.189	450	
								S10.000	33.489	150	
SMH-18	34.004	0.910	Open Manhole	1500	S1.015	33.094	450	S1.014	33.094	450	
SOutfall L1	33.500	0.473	Open Manhole	0		OUTFALL		S1.015	33.027	450	
SRE-1	39.484	0.881	Open Manhole	1050	S11.000	38.603	225				
SMH-41	39.419	1.210	Open Manhole	1200	S12.000	38.209	300				
SMH-40	39.140	1.660	Open Manhole	1200	S12.001	37.480	300	S12.000	37.480	300	
SMH-42	38.724	1.640	Open Manhole	1350	S11.001	37.084	375	S11.000	37.234	225	
								S12.001	37.159	300	
SOutfall-STW	38.580	1.930	Open Manhole	0		OUTFALL		S11.001	36.650	375	

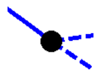
MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SMH-39	392619.407	224427.604	392619.407	224427.604	Required	
SMH-38	392553.525	224463.673	392553.525	224463.673	Required	
SMH-37	392495.083	224496.938	392495.083	224496.938	Required	
SMH-6306	392625.365	224396.581	392625.365	224396.581	Required	
SMH-43	392577.410	224429.926	392577.410	224429.926	Required	
SMH-44	392480.629	224489.292	392480.629	224489.292	Required	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SMH-27	392478.487	224507.735	392478.487	224507.735	Required	
SG71	392450.961	224508.163	392450.961	224508.163	Required	
SDummy-MH-6	392451.050	224521.982			No Entry	
SG70	392424.605	224521.489	392424.605	224521.489	Required	
SDummy-MH-8	392424.665	224535.576			No Entry	
SG69	392398.484	224534.209	392398.484	224534.209	Required	
SDummy-MH-10	392403.249	224546.179			No Entry	
SG59	392376.500	224545.081	392376.500	224545.081	Required	
SMH-26	392382.188	224556.430	392382.188	224556.430	Required	
SG58	392304.239	224581.859	392304.239	224581.859	Required	
SDummy-MH-14	392304.256	224597.142			No Entry	
SMH-25	392287.928	224606.129	392287.928	224606.129	Required	
SMH-24	392208.689	224654.893	392208.689	224654.893	Required	
SMH-23	392110.186	224706.727	392110.186	224706.727	Required	
SMH-22	392222.585	224625.526	392222.585	224625.526	Required	
SMH-21	392150.435	224667.038	392150.435	224667.038	Required	
SMH-20	392097.695	224691.593	392097.695	224691.593	Required	
SG47	392034.120	224736.178	392034.120	224736.178	Required	
SMH-19	392028.524	224727.768	392028.524	224727.768	Required	
SG45	391996.632	224751.564	391996.632	224751.564	Required	
S24	391991.689	224741.581			No Entry	
SMH-18	391952.124	224758.142	391952.124	224758.142	Required	
SOutfall L1	391940.629	224726.493			No Entry	
SRE-1	392716.827	224332.393	392716.827	224332.393	Required	
SMH-41	392740.134	224337.165	392740.134	224337.165	Required	
SMH-40	392680.028	224378.372	392680.028	224378.372	Required	



Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SMH-42	392654.596	224374.734	392654.596	224374.734	Required	
SOutfall-STW	392625.365	224396.581			No Entry	

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	225	SMH-39	39.227	38.207	0.795	Open Manhole	1050
S1.001	o	225	SMH-38	38.400	36.880	1.295	Open Manhole	1200
S1.002	o	225	SMH-37	38.004	36.484	1.295	Open Manhole	1200
S2.000	o	375	SMH-6306	38.580	37.085	1.120	Open Manhole	1050
S2.001	o	375	SMH-43	38.339	36.419	1.545	Open Manhole	1200
S2.002	o	375	SMH-44	37.955	35.885	1.695	Open Manhole	1200
S1.003	o	375	SMH-27	37.870	35.775	1.720	Open Manhole	1200
S3.000	o	150	SG71	37.424	36.023	1.251	Open Manhole	1200
S1.004	o	375	SDummy-MH-6	37.688	35.723	1.590	Junction	
S4.000	o	150	SG70	37.220	35.975	1.095	Open Manhole	1200
S1.005	o	375	SDummy-MH-8	37.443	35.675	1.393	Junction	
S5.000	o	150	SG69	37.038	35.909	0.979	Open Manhole	1200
S1.006	o	375	SDummy-MH-10	37.156	35.609	1.172	Junction	
S6.000	o	225	SG59	36.882	35.758	0.899	Open Manhole	1200
S1.007	o	375	SMH-26	36.908	35.458	1.075	Open Manhole	1500
S7.000	o	225	SG58	36.349	35.499	0.625	Open Manhole	1200
S1.008	o	375	SDummy-MH-14	36.243	35.199	0.669	Junction	
S1.009	o	375	SMH-25	36.069	34.879	0.815	Open Manhole	1500
S1.010	o	375	SMH-24	35.586	34.126	1.085	Open Manhole	1500
S1.011	o	375	SMH-23	35.176	33.826	0.975	Open Manhole	1500
S8.000	o	150	SMH-22	35.829	35.129	0.550	Open Manhole	1200
S8.001	o	150	SMH-21	35.126	34.276	0.700	Open Manhole	1200
S1.012	o	450	SMH-20	35.444	33.424	1.570	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., L*W (mm)
S1.000	75.109	56.6	SMH-38	38.400	36.880	1.295	Open Manhole	1200
S1.001	67.246	169.8	SMH-37	38.004	36.484	1.295	Open Manhole	1200
S1.002	19.799	35.4	SMH-27	37.870	35.925	1.720	Open Manhole	1200
S2.000	58.409	87.7	SMH-43	38.339	36.419	1.545	Open Manhole	1200
S2.001	113.538	212.6	SMH-44	37.955	35.885	1.695	Open Manhole	1200
S2.002	18.567	169.0	SMH-27	37.870	35.775	1.719	Open Manhole	1200
S1.003	30.916	596.3	SDummy-MH-6	37.688	35.723	1.590	Junction	
S3.000	13.820	184.3	SDummy-MH-6	37.688	35.948	1.590	Junction	
S1.004	29.681	449.7	SDummy-MH-8	37.443	35.657	1.411	Junction	
S4.000	14.087	187.8	SDummy-MH-8	37.443	35.900	1.393	Junction	
S1.005	23.897	362.1	SDummy-MH-10	37.156	35.609	1.172	Junction	
S5.000	12.884	171.8	SDummy-MH-10	37.156	35.834	1.172	Junction	
S1.006	23.423	155.1	SMH-26	36.908	35.458	1.075	Open Manhole	1500
S6.000	12.695	169.3	SMH-26	36.908	35.683	1.000	Open Manhole	1500
S1.007	87.926	339.5	SDummy-MH-14	36.243	35.199	0.669	Junction	
S7.000	15.283	203.8	SDummy-MH-14	36.243	35.424	0.594	Junction	
S1.008	18.638	58.2	SMH-25	36.069	34.879	0.815	Open Manhole	1500
S1.009	93.042	123.6	SMH-24	35.586	34.126	1.085	Open Manhole	1500
S1.010	111.308	371.0	SMH-23	35.176	33.826	0.975	Open Manhole	1500
S1.011	19.623	60.0	SMH-20	35.444	33.499	1.570	Open Manhole	1500
S8.000	83.240	97.6	SMH-21	35.126	34.276	0.700	Open Manhole	1200
S8.001	58.177	105.4	SMH-20	35.444	33.724	1.570	Open Manhole	1500
S1.012	78.063	499.3	SMH-19	34.502	33.268	0.784	Open Manhole	1500

PIPELINE SCHEDULES for Storm

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)
S9.000	o	150	SG47	34.560	33.700	0.710	Open Manhole	1200
S1.013	o	450	SMH-19	34.502	33.268	0.784	Open Manhole	1500
S10.000	o	150	SG45	34.230	33.600	0.480	Open Manhole	1200
S1.014	o	450	S24	34.260	33.189	0.621	Junction	
S1.015	o	450	SMH-18	34.004	33.094	0.460	Open Manhole	1500
S11.000	o	225	SRE-1	39.484	38.603	0.656	Open Manhole	1050
S12.000	o	300	SMH-41	39.419	38.209	0.910	Open Manhole	1200
S12.001	o	300	SMH-40	39.140	37.480	1.360	Open Manhole	1200
S11.001	o	375	SMH-42	38.724	37.084	1.265	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)
S9.000	10.102	76.5	SMH-19	34.502	33.568	0.784	Open Manhole	1500
S1.013	39.340	500.0	S24	34.260	33.189	0.621	Junction	
S10.000	11.139	100.4	S24	34.260	33.489	0.621	Junction	
S1.014	42.891	450.0	SMH-18	34.004	33.094	0.460	Open Manhole	1500
S1.015	33.672	500.0	SOutfall L1	33.500	33.027	0.023	Open Manhole	0
S11.000	75.269	55.0	SMH-42	38.724	37.234	1.265	Open Manhole	1350
S12.000	72.875	100.0	SMH-40	39.140	37.480	1.360	Open Manhole	1200
S12.001	25.691	80.0	SMH-42	38.724	37.159	1.265	Open Manhole	1350
S11.001	36.493	84.1	SOutfall-STW	38.580	36.650	1.555	Open Manhole	0

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Carriage way & Footway	100	0.083	0.083	0.083
	Classification	Verge	50	0.003	0.001	0.084
	Classification	Carriage way & Footway	100	0.016	0.016	0.100
	Classification	Verge	50	0.010	0.005	0.105
	Classification	Carriage way & Footway	100	0.014	0.014	0.119
1.001	Classification	Carriage way & Footway	100	0.036	0.036	0.036
	Classification	Verge	50	0.011	0.005	0.041
	Classification	Carriage way & Footway	100	0.008	0.008	0.049
1.002	Classification	Verge	50	0.018	0.009	0.009
	Classification	Carriage way & Footway	100	0.005	0.005	0.014
2.000	Classification	Carriage way & Footway	100	0.090	0.090	0.090
	Classification	Carriage way & Footway	100	0.010	0.010	0.101
	Classification	Verge	50	0.009	0.004	0.105
	Classification	Verge	50	0.016	0.008	0.113
2.001	Classification	Carriage way & Footway	100	0.091	0.091	0.091
	Classification	Verge	50	0.017	0.009	0.099
	Classification	Carriage way & Footway	100	0.018	0.018	0.117
	Classification	Verge	50	0.024	0.012	0.129
2.002	Classification	Carriage way & Footway	100	0.044	0.044	0.044
	Classification	Verge	50	0.002	0.001	0.045
	Classification	Carriage way & Footway	100	0.003	0.003	0.047
	Classification	Verge	50	0.002	0.001	0.048
1.003	Classification	Carriage way & Footway	100	0.011	0.011	0.011
3.000	Classification	Carriage way & Footway	100	0.031	0.031	0.031
1.004	-	-	100	0.000	0.000	0.000
4.000	Classification	Carriage way & Footway	100	0.020	0.020	0.020
1.005	Classification	Carriage way & Footway	100	0.011	0.011	0.011
5.000	Classification	Carriage way & Footway	100	0.017	0.017	0.017
1.006	Classification	Carriage way & Footway	100	0.009	0.009	0.009
6.000	Classification	Carriage way & Footway	100	0.028	0.028	0.028
1.007	Classification	Carriage way & Footway	100	0.085	0.085	0.085
	Classification	Verge	50	0.011	0.006	0.091
	Classification	Verge	50	0.005	0.003	0.094
	Classification	Verge	50	0.008	0.004	0.098
	Classification	Carriage way & Footway	100	0.014	0.014	0.112
7.000	Classification	Carriage way & Footway	100	0.050	0.050	0.050
	Classification	Carriage way & Footway	100	0.009	0.009	0.058
1.008	-	-	100	0.000	0.000	0.000
1.009	Classification	Carriage way & Footway	100	0.056	0.056	0.056
	Classification	Verge	50	0.009	0.005	0.061
	Classification	Carriage way & Footway	100	0.016	0.016	0.077
1.010	Classification	Carriage way & Footway	100	0.025	0.025	0.025
	Classification	Carriage way & Footway	100	0.020	0.020	0.045
	Classification	Verge	50	0.003	0.001	0.046
	Classification	Verge	50	0.011	0.006	0.052
1.011	-	-	100	0.000	0.000	0.000
8.000	Classification	Carriage way & Footway	100	0.054	0.054	0.054
	Classification	Verge	50	0.024	0.012	0.066
	Classification	Carriage way & Footway	100	0.006	0.006	0.071
8.001	Classification	Carriage way & Footway	100	0.084	0.084	0.084
	Classification	Verge	50	0.029	0.015	0.098
	Classification	Carriage way & Footway	100	0.003	0.003	0.101
	Classification	Verge	50	0.008	0.004	0.105
	Classification	Carriage way & Footway	100	0.003	0.003	0.108
1.012	Classification	Carriage way & Footway	100	0.086	0.086	0.086
	Classification	Verge	50	0.002	0.001	0.088
	Classification	Verge	50	0.016	0.008	0.096
	Classification	Carriage way & Footway	100	0.002	0.002	0.098
	Classification	Carriage way & Footway	100	0.004	0.004	0.102
	Classification	Verge	50	0.003	0.002	0.104
9.000	Classification	Carriage way & Footway	100	0.015	0.015	0.015
1.013	Classification	Carriage way & Footway	100	0.036	0.036	0.036
	Classification	Verge	50	0.054	0.027	0.063
10.000	Classification	Carriage way & Footway	100	0.019	0.019	0.019
1.014	-	-	100	0.000	0.000	0.000
1.015	Classification	Overland	20	0.048	0.010	0.010
11.000	Classification	Carriage way & Footway	100	0.298	0.298	0.298
	Classification	Carriage way & Footway	100	0.081	0.081	0.379
	Classification	Verge	50	0.013	0.006	0.385
	Classification	Carriage way & Footway	100	0.027	0.027	0.413
	Classification	Verge	50	0.022	0.011	0.424
	Classification	Carriage way & Footway	100	0.015	0.015	0.438
	Classification	Verge	50	0.031	0.015	0.454
12.000	Classification	Carriage way & Footway	100	0.364	0.364	0.364
	Classification	Carriage way & Footway	100	0.054	0.054	0.417
	Classification	Central Reserve unpaved	20	0.092	0.018	0.435
	Classification	Carriage way & Footway	100	0.054	0.054	0.490
	Classification	Verge	50	0.013	0.007	0.496
	Classification	Verge	50	0.016	0.008	0.504
	Classification	Verge	50	0.007	0.004	0.508
12.001	Classification	Central Reserve unpaved	20	0.010	0.002	0.002
	Classification	Carriage way & Footway	100	0.008	0.008	0.010
	Classification	Verge	50	0.007	0.003	0.013
11.001	Classification	Carriage way & Footway	100	0.013	0.013	0.013
	Classification	Central Reserve unpaved	20	0.003	0.001	0.013

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Carriage way & Footway	100	0.190	0.190	0.204
	Classification	Carriage way & Footway	100	0.002	0.002	0.206
	Classification	Verge	50	0.002	0.001	0.207
	Classification	Carriage way & Footway	100	0.001	0.001	0.208
	Classification	Carriage way & Footway	100	0.002	0.002	0.210
	Classification	Verge	50	0.002	0.001	0.210
				Total	Total	Total
				2.799	2.473	2.473

Network Classifications for Storm

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
S1.000	SMH-39	225	0.795	1.295	Unclassified	1050	0	0.795	Unclassified
S1.001	SMH-38	225	1.208	1.295	Unclassified	1200	0	1.295	Unclassified
S1.002	SMH-37	225	1.295	1.720	Unclassified	1200	0	1.295	Unclassified
S2.000	SMH-6306	375	1.120	1.545	Unclassified	1050	0	1.120	Unclassified
S2.001	SMH-43	375	1.545	1.770	Unclassified	1200	0	1.545	Unclassified
S2.002	SMH-44	375	1.582	1.719	Unclassified	1200	0	1.695	Unclassified
S1.003	SMH-27	375	1.590	1.720	Unclassified	1200	0	1.720	Unclassified
S3.000	SG71	150	1.251	1.590	Unclassified	1200	0	1.251	Unclassified
S1.004	SDummy-MH-6	375	1.411	1.590	Unclassified				Junction
S4.000	SG70	150	1.095	1.393	Unclassified	1200	0	1.095	Unclassified
S1.005	SDummy-MH-8	375	1.172	1.393	Unclassified				Junction
S5.000	SG69	150	0.979	1.172	Unclassified	1200	0	0.979	Unclassified
S1.006	SDummy-MH-10	375	1.075	1.172	Unclassified				Junction
S6.000	SG59	225	0.899	1.000	Unclassified	1200	0	0.899	Unclassified
S1.007	SMH-26	375	0.669	1.075	Unclassified	1500	0	1.075	Unclassified
S7.000	SG58	225	0.588	0.684	Unclassified	1200	0	0.625	Unclassified
S1.008	SDummy-MH-14	375	0.669	0.815	Unclassified				Junction
S1.009	SMH-25	375	0.815	1.085	Unclassified	1500	0	0.815	Unclassified
S1.010	SMH-24	375	0.975	1.085	Unclassified	1500	0	1.085	Unclassified
S1.011	SMH-23	375	0.878	1.570	Unclassified	1500	0	0.975	Unclassified
S8.000	SMH-22	150	0.550	0.700	Unclassified	1200	0	0.550	Unclassified
S8.001	SMH-21	150	0.700	1.570	Unclassified	1200	0	0.700	Unclassified
S1.012	SMH-20	450	0.784	1.570	Unclassified	1500	0	1.570	Unclassified
S9.000	SG47	150	0.705	0.784	Unclassified	1200	0	0.710	Unclassified
S1.013	SMH-19	450	0.621	0.804	Unclassified	1500	0	0.784	Unclassified
S10.000	SG45	150	0.480	0.636	Unclassified	1200	0	0.480	Unclassified
S1.014	S24	450	0.460	0.683	Unclassified				Junction
S1.015	SMH-18	450	0.023	0.460	Unclassified	1500	0	0.460	Unclassified
S11.000	SRE-1	225	0.656	1.265	Unclassified	1050	0	0.656	Unclassified
S12.000	SMH-41	300	0.910	1.360	Unclassified	1200	0	0.910	Unclassified
S12.001	SMH-40	300	1.265	1.360	Unclassified	1200	0	1.360	Unclassified
S11.001	SMH-42	375	1.265	1.555	Unclassified	1350	0	1.265	Unclassified

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.015	SOutfall L1	33.500	33.027	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S11.001	SOutfall-STW	38.580	36.650	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	1.000	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	40.000	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	0	Number of Storage Structures	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	18.200	Cv (Summer)	1.000
Return Period (years)	1	Ratio R	0.370	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

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

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 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	SMH-39	15 Summer	1	+0%	30/15 Summer	100/15 Summer			38.304	-0.128	0.000	0.38	
S1.001	SMH-38	15 Summer	1	+0%	5/15 Summer	100/15 Summer			37.045	-0.060	0.000	0.84	
S1.002	SMH-37	15 Summer	1	+0%	30/15 Summer				36.588	-0.121	0.000	0.44	
S2.000	SMH-6306	15 Summer	1	+0%	100/15 Summer				37.173	-0.287	0.000	0.12	
S2.001	SMH-43	15 Summer	1	+0%	30/15 Summer				36.576	-0.218	0.000	0.33	
S2.002	SMH-44	15 Summer	1	+0%	5/15 Summer				36.177	-0.083	0.000	0.36	
S1.003	SMH-27	15 Summer	1	+0%	5/15 Summer				36.150	0.000	0.000	1.03	
S3.000	SG71	15 Summer	1	+0%	5/15 Summer	100/15 Summer			36.105	-0.068	0.000	0.56	
S1.004	SDummy-MH-6	15 Summer	1	+0%					35.991	-0.107	0.000	0.81	
S4.000	SG70	15 Summer	1	+0%	5/15 Summer	100/15 Summer			36.039	-0.086	0.000	0.37	
S1.005	SDummy-MH-8	15 Summer	1	+0%					35.919	-0.131	0.000	0.75	
S5.000	SG69	15 Summer	1	+0%	5/15 Summer	100/15 Summer			35.965	-0.094	0.000	0.30	
S1.006	SDummy-MH-10	30 Summer	1	+0%					35.811	-0.173	0.000	0.53	
S6.000	SG59	15 Summer	1	+0%	5/15 Summer	100/15 Summer			35.822	-0.161	0.000	0.18	
S1.007	SMH-26	30 Summer	1	+0%	5/15 Summer	100/15 Summer			35.743	-0.090	0.000	0.89	
S7.000	SG58	15 Summer	1	+0%	30/15 Summer				35.598	-0.126	0.000	0.39	
S1.008	SDummy-MH-14	30 Summer	1	+0%	30/15 Summer				35.371	-0.203	0.000	0.43	
S1.009	SMH-25	30 Summer	1	+0%	5/30 Summer	100/15 Summer			35.088	-0.166	0.000	0.59	
S1.010	SMH-24	30 Summer	1	+0%	5/15 Summer				34.501	0.000	0.000	0.99	
S1.011	SMH-23	30 Summer	1	+0%	30/15 Summer				34.004	-0.197	0.000	0.46	
S8.000	SMH-22	15 Summer	1	+0%	5/15 Summer	30/15 Summer			35.268	-0.011	0.000	0.76	
S8.001	SMH-21	15 Summer	1	+0%	1/15 Summer	5/15 Summer			34.907	0.481	0.000	1.37	
S1.012	SMH-20	30 Summer	1	+0%	5/15 Summer				33.761	-0.113	0.000	0.90	
S9.000	SG47	15 Summer	1	+0%	30/15 Summer				33.743	-0.107	0.000	0.18	
S1.013	SMH-19	60 Summer	1	+0%	5/15 Summer				33.621	-0.097	0.000	0.96	
S10.000	SG45	15 Summer	1	+0%	30/30 Summer				33.652	-0.098	0.000	0.26	
S1.014	S24	60 Summer	1	+0%					33.526	-0.113	0.000	0.81	
S1.015	SMH-18	60 Summer	1	+0%	5/15 Summer				33.449	-0.095	0.000	0.98	
S11.000	SRE-1	15 Summer	1	+0%	1/15 Summer	5/15 Summer			38.952	0.124	0.000	1.04	
S12.000	SMH-41	15 Summer	1	+0%	5/15 Summer	30/15 Summer			38.422	-0.087	0.000	0.84	
S12.001	SMH-40	15 Summer	1	+0%	5/15 Summer				37.688	-0.092	0.000	0.82	
S11.001	SMH-42	15 Summer	1	+0%	5/15 Summer				37.381	-0.078	0.000	0.98	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SMH-39	25.4	OK	3
S1.001	SMH-38	32.4	OK	5
S1.002	SMH-37	34.6	OK	
S2.000	SMH-6306	24.3	OK	
S2.001	SMH-43	43.5	OK	
S2.002	SMH-44	45.7	OK	
S1.003	SMH-27	74.2	OK	
S3.000	SG71	6.7	OK	5
S1.004	SDummy-MH-6	75.9	OK*	
S4.000	SG70	4.4	OK	5
S1.005	SDummy-MH-8	78.6	OK*	
S5.000	SG69	3.7	OK	5
S1.006	SDummy-MH-10	80.8	OK*	
S6.000	SG59	6.1	OK	6
S1.007	SMH-26	92.2	OK	5
S7.000	SG58	12.6	OK	
S1.008	SDummy-MH-14	96.0	OK*	
S1.009	SMH-25	101.8	OK	7
S1.010	SMH-24	99.1	OK	
S1.011	SMH-23	99.1	OK	
S8.000	SMH-22	13.5	OK	12
S8.001	SMH-21	23.2	SURCHARGED	25

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

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.012	SMH-20	121.5	OK	
S9.000	SG47	3.3	OK	
S1.013	SMH-19	122.9	OK	
S10.000	SG45	4.2	OK	
S1.014	S24	122.3	OK*	
S1.015	SMH-18	122.4	OK	
S11.000	SRE-1	71.2	SURCHARGED	20
S12.000	SMH-41	89.3	OK	12
S12.001	SMH-40	90.8	OK	
S11.001	SMH-42	192.2	OK	

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	SMH-39	15 Summer	5	+0%	30/15 Summer	100/15 Summer			38.340	-0.092	0.000	0.63	
S1.001	SMH-38	15 Summer	5	+0%	5/15 Summer	100/15 Summer			37.429	0.324	0.000	1.32	
S1.002	SMH-37	15 Summer	5	+0%	30/15 Summer				36.620	-0.089	0.000	0.68	
S2.000	SMH-6306	15 Summer	5	+0%	100/15 Summer				37.201	-0.259	0.000	0.20	
S2.001	SMH-43	15 Summer	5	+0%	30/15 Summer				36.632	-0.162	0.000	0.55	
S2.002	SMH-44	30 Summer	5	+0%	5/15 Summer				36.411	0.151	0.000	0.51	
S1.003	SMH-27	30 Summer	5	+0%	5/15 Summer				36.378	0.228	0.000	1.55	
S3.000	SG71	30 Summer	5	+0%	5/15 Summer	100/15 Summer			36.284	0.111	0.000	0.86	
S1.004	SDummy-MH-6	15 Winter	5	+0%					36.098	0.000	0.000	1.21	
S4.000	SG70	30 Summer	5	+0%	5/15 Summer	100/15 Summer			36.193	0.068	0.000	0.57	
S1.005	SDummy-MH-8	15 Winter	5	+0%					36.050	0.000	0.000	1.09	
S5.000	SG69	30 Summer	5	+0%	5/15 Summer	100/15 Summer			36.111	0.052	0.000	0.45	
S1.006	SDummy-MH-10	15 Winter	5	+0%					35.984	0.000	0.000	0.76	
S6.000	SG59	30 Summer	5	+0%	5/15 Summer	100/15 Summer			36.023	0.040	0.000	0.26	
S1.007	SMH-26	30 Summer	5	+0%	5/15 Summer	100/15 Summer			36.017	0.184	0.000	1.28	
S7.000	SG58	15 Summer	5	+0%	30/15 Summer				35.635	-0.089	0.000	0.66	
S1.008	SDummy-MH-14	30 Summer	5	+0%	30/15 Summer				35.424	-0.150	0.000	0.61	
S1.009	SMH-25	30 Summer	5	+0%	5/30 Summer	100/15 Summer			35.307	0.053	0.000	0.82	
S1.010	SMH-24	30 Summer	5	+0%	5/15 Summer				34.808	0.307	0.000	1.43	
S1.011	SMH-23	30 Summer	5	+0%	30/15 Summer				34.178	-0.023	0.000	0.64	
S8.000	SMH-22	15 Summer	5	+0%	5/15 Summer	30/15 Summer			35.825	0.546	0.000	0.89	
S8.001	SMH-21	30 Summer	5	+0%	1/15 Summer	5/15 Summer			35.130	0.704	4.441	1.50	
S1.012	SMH-20	30 Summer	5	+0%	5/15 Summer				34.046	0.172	0.000	1.21	
S9.000	SG47	60 Summer	5	+0%	30/15 Summer				33.818	-0.032	0.000	0.20	
S1.013	SMH-19	30 Summer	5	+0%	5/15 Summer				33.815	0.097	0.000	1.29	
S10.000	SG45	60 Summer	5	+0%	30/30 Summer				33.688	-0.062	0.000	0.28	
S1.014	S24	15 Winter	5	+0%					33.639	0.000	0.000	1.01	
S1.015	SMH-18	60 Summer	5	+0%	5/15 Summer				33.572	0.028	0.000	1.32	
S11.000	SRE-1	15 Summer	5	+0%	1/15 Summer	5/15 Summer			39.494	0.666	9.616	1.19	
S12.000	SMH-41	15 Summer	5	+0%	5/15 Summer	30/15 Summer			39.132	0.623	0.000	1.19	
S12.001	SMH-40	15 Summer	5	+0%	5/15 Summer				38.101	0.321	0.000	1.15	
S11.001	SMH-42	15 Summer	5	+0%	5/15 Summer				37.683	0.224	0.000	1.25	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SMH-39	42.5	OK	3
S1.001	SMH-38	50.7	SURCHARGED	5
S1.002	SMH-37	53.9	OK	
S2.000	SMH-6306	40.7	OK	
S2.001	SMH-43	72.8	OK	
S2.002	SMH-44	64.9	SURCHARGED	
S1.003	SMH-27	111.4	SURCHARGED	
S3.000	SG71	10.3	SURCHARGED	5
S1.004	SDummy-MH-6	113.5	SURCHARGED*	
S4.000	SG70	6.8	SURCHARGED	5
S1.005	SDummy-MH-8	114.3	SURCHARGED*	
S5.000	SG69	5.6	SURCHARGED	5
S1.006	SDummy-MH-10	115.1	SURCHARGED*	
S6.000	SG59	8.9	SURCHARGED	6
S1.007	SMH-26	132.3	SURCHARGED	5
S7.000	SG58	21.1	OK	
S1.008	SDummy-MH-14	134.9	OK*	
S1.009	SMH-25	140.7	SURCHARGED	7
S1.010	SMH-24	142.4	SURCHARGED	
S1.011	SMH-23	137.7	OK	
S8.000	SMH-22	15.7	SURCHARGED	12
S8.001	SMH-21	25.4	FLOOD	25

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.012	SMH-20	163.3	SURCHARGED	
S9.000	SG47	3.6	OK	
S1.013	SMH-19	164.8	SURCHARGED	
S10.000	SG45	4.5	OK	
S1.014	S24	152.4	SURCHARGED*	
S1.015	SMH-18	165.3	SURCHARGED	
S11.000	SRE-1	81.3	FLOOD	20
S12.000	SMH-41	126.4	SURCHARGED	12
S12.001	SMH-40	127.7	SURCHARGED	
S11.001	SMH-42	245.1	SURCHARGED	

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

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 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	SMH-39	15 Summer	30	+0%	30/15 Summer	100/15 Summer			38.822	0.390	0.000	0.77	
S1.001	SMH-38	15 Summer	30	+0%	5/15 Summer	100/15 Summer			38.111	1.006	0.000	1.66	
S1.002	SMH-37	30 Summer	30	+0%	30/15 Summer				37.383	0.674	0.000	0.74	
S2.000	SMH-6306	30 Summer	30	+0%	100/15 Summer				37.229	-0.231	0.000	0.28	
S2.001	SMH-43	30 Summer	30	+0%	30/15 Summer				37.209	0.415	0.000	0.72	
S2.002	SMH-44	30 Summer	30	+0%	5/15 Summer				37.154	0.894	0.000	0.71	
S1.003	SMH-27	30 Summer	30	+0%	5/15 Summer				37.118	0.968	0.000	1.95	
S3.000	SG71	30 Summer	30	+0%	5/15 Summer	100/15 Summer			36.994	0.821	0.000	1.00	
S1.004	SDummy-MH-6	15 Winter	30	+0%					36.098	0.000	0.000	1.53	
S4.000	SG70	30 Summer	30	+0%	5/15 Summer	100/15 Summer			36.860	0.735	0.000	0.70	
S1.005	SDummy-MH-8	15 Winter	30	+0%					36.050	0.000	0.000	1.40	
S5.000	SG69	30 Summer	30	+0%	5/15 Summer	100/15 Summer			36.743	0.684	0.000	0.56	
S1.006	SDummy-MH-10	15 Winter	30	+0%					35.984	0.000	0.000	0.98	
S6.000	SG59	30 Summer	30	+0%	5/15 Summer	100/15 Summer			36.617	0.634	0.000	0.31	
S1.007	SMH-26	30 Summer	30	+0%	5/15 Summer	100/15 Summer			36.611	0.778	0.000	1.57	
S7.000	SG58	30 Summer	30	+0%	30/15 Summer				36.071	0.347	0.000	0.89	
S1.008	SDummy-MH-14	15 Winter	30	+0%	30/15 Summer				35.649	0.075	0.000	0.72	
S1.009	SMH-25	30 Summer	30	+0%	5/30 Summer	100/15 Summer			35.900	0.646	0.000	0.99	
S1.010	SMH-24	30 Summer	30	+0%	5/15 Summer				35.226	0.725	0.000	1.67	
S1.011	SMH-23	60 Summer	30	+0%	30/15 Summer				34.441	0.240	0.000	0.74	
S8.000	SMH-22	15 Summer	30	+0%	5/15 Summer	30/15 Summer			35.832	0.553	3.956	0.90	
S8.001	SMH-21	30 Summer	30	+0%	1/15 Summer	5/15 Summer			35.140	0.714	14.435	1.47	
S1.012	SMH-20	60 Summer	30	+0%	5/15 Summer				34.263	0.389	0.000	1.40	
S9.000	SG47	60 Summer	30	+0%	30/15 Summer				33.960	0.110	0.000	0.28	
S1.013	SMH-19	60 Summer	30	+0%	5/15 Summer				33.956	0.238	0.000	1.52	
S10.000	SG45	60 Summer	30	+0%	30/30 Summer				33.779	0.029	0.000	0.43	
S1.014	S24	180 Winter	30	+0%					33.639	0.000	0.000	0.99	
S1.015	SMH-18	60 Summer	30	+0%	5/15 Summer				33.618	0.074	0.000	1.55	
S11.000	SRE-1	30 Summer	30	+0%	1/15 Summer	5/15 Summer			39.522	0.694	38.272	1.22	
S12.000	SMH-41	15 Summer	30	+0%	5/15 Summer	30/15 Summer			39.438	0.929	19.380	1.32	
S12.001	SMH-40	15 Summer	30	+0%	5/15 Summer				38.447	0.667	0.000	1.29	
S11.001	SMH-42	15 Summer	30	+0%	5/15 Summer				38.003	0.544	0.000	1.48	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SMH-39	51.6	SURCHARGED	3
S1.001	SMH-38	64.1	SURCHARGED	5
S1.002	SMH-37	58.7	SURCHARGED	
S2.000	SMH-6306	55.0	OK	
S2.001	SMH-43	95.3	SURCHARGED	
S2.002	SMH-44	90.0	SURCHARGED	
S1.003	SMH-27	140.3	SURCHARGED	
S3.000	SG71	11.9	SURCHARGED	5
S1.004	SDummy-MH-6	143.6	SURCHARGED*	
S4.000	SG70	8.2	SURCHARGED	5
S1.005	SDummy-MH-8	145.8	SURCHARGED*	
S5.000	SG69	6.9	SURCHARGED	5
S1.006	SDummy-MH-10	148.8	SURCHARGED*	
S6.000	SG59	10.8	SURCHARGED	6
S1.007	SMH-26	162.2	SURCHARGED	5
S7.000	SG58	28.6	SURCHARGED	
S1.008	SDummy-MH-14	159.6	SURCHARGED*	
S1.009	SMH-25	170.2	SURCHARGED	7
S1.010	SMH-24	166.6	SURCHARGED	
S1.011	SMH-23	160.9	SURCHARGED	
S8.000	SMH-22	16.0	FLOOD	12
S8.001	SMH-21	24.9	FLOOD	25

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

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.012	SMH-20	188.2	SURCHARGED	
S9.000	SG47	5.1	SURCHARGED	
S1.013	SMH-19	193.4	SURCHARGED	
S10.000	SG45	6.8	SURCHARGED	
S1.014	S24	149.9	SURCHARGED*	
S1.015	SMH-18	194.7	SURCHARGED	
S11.000	SRE-1	83.5	FLOOD	20
S12.000	SMH-41	140.7	FLOOD	12
S12.001	SMH-40	143.6	SURCHARGED	
S11.001	SMH-42	291.9	SURCHARGED	

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

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 Coefficient 0.800
Hot Start Level (mm) 0 Additional Flow - % of Total Flow 40.000 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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	SMH-39	15 Summer	100	+0%	30/15 Summer	100/15 Summer			39.229	0.797	2.409	0.82	
S1.001	SMH-38	30 Summer	100	+0%	5/15 Summer	100/15 Summer			38.408	1.303	7.555	1.63	
S1.002	SMH-37	30 Summer	100	+0%	30/15 Summer				37.979	1.270	0.000	0.73	
S2.000	SMH-6306	30 Summer	100	+0%	100/15 Summer				38.192	0.732	0.000	0.34	
S2.001	SMH-43	30 Summer	100	+0%	30/15 Summer				38.145	1.351	0.000	0.75	
S2.002	SMH-44	30 Summer	100	+0%	5/15 Summer				37.847	1.587	0.000	0.90	
S1.003	SMH-27	30 Summer	100	+0%	5/15 Summer				37.755	1.605	0.000	2.34	
S3.000	SG71	30 Summer	100	+0%	5/15 Summer	100/15 Summer			37.427	1.254	2.715	1.36	
S1.004	SDummy-MH-6	60 Winter	100	+0%					36.098	0.000	0.000	1.34	
S4.000	SG70	30 Summer	100	+0%	5/15 Summer	100/15 Summer			37.222	1.097	2.351	1.08	
S1.005	SDummy-MH-8	60 Winter	100	+0%					36.050	0.000	0.000	1.26	
S5.000	SG69	30 Summer	100	+0%	5/15 Summer	100/15 Summer			37.041	0.982	3.275	1.42	
S1.006	SDummy-MH-10	60 Winter	100	+0%					35.984	0.000	0.000	0.90	
S6.000	SG59	30 Summer	100	+0%	5/15 Summer	100/15 Summer			36.890	0.907	8.161	1.18	
S1.007	SMH-26	30 Summer	100	+0%	5/15 Summer	100/15 Summer			36.913	1.080	4.971	1.62	
S7.000	SG58	30 Summer	100	+0%	30/15 Summer				36.346	0.622	0.000	1.08	
S1.008	SDummy-MH-14	120 Winter	100	+0%	30/15 Summer				35.649	0.075	0.000	0.61	
S1.009	SMH-25	60 Summer	100	+0%	5/30 Summer	100/15 Summer			36.090	0.836	20.631	0.96	
S1.010	SMH-24	60 Summer	100	+0%	5/15 Summer				35.518	1.017	0.000	1.70	
S1.011	SMH-23	60 Summer	100	+0%	30/15 Summer				34.683	0.482	0.000	0.78	
S8.000	SMH-22	30 Summer	100	+0%	5/15 Summer	30/15 Summer			35.837	0.558	8.228	0.90	
S8.001	SMH-21	60 Summer	100	+0%	1/15 Summer	5/15 Summer			35.154	0.728	27.652	1.51	
S1.012	SMH-20	60 Summer	100	+0%	5/15 Summer				34.493	0.619	0.000	1.52	
S9.000	SG47	60 Winter	100	+0%	30/15 Summer				34.140	0.290	0.000	0.25	
S1.013	SMH-19	60 Winter	100	+0%	5/15 Summer				34.128	0.410	0.000	1.73	
S10.000	SG45	60 Winter	100	+0%	30/30 Summer				33.904	0.154	0.000	0.37	
S1.014	S24	180 Winter	100	+0%					33.639	0.000	0.000	1.20	
S1.015	SMH-18	60 Winter	100	+0%	5/15 Summer				33.676	0.132	0.000	1.81	
S11.000	SRE-1	30 Summer	100	+0%	1/15 Summer	5/15 Summer			39.554	0.726	70.060	1.23	
S12.000	SMH-41	30 Summer	100	+0%	5/15 Summer	30/15 Summer			39.468	0.959	49.217	1.32	
S12.001	SMH-40	15 Summer	100	+0%	5/15 Summer				38.699	0.919	0.000	1.30	
S11.001	SMH-42	15 Summer	100	+0%	5/15 Summer				38.291	0.832	0.000	1.70	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SMH-39	55.3	FLOOD	3
S1.001	SMH-38	62.8	FLOOD	5
S1.002	SMH-37	57.9	SURCHARGED	
S2.000	SMH-6306	68.0	SURCHARGED	
S2.001	SMH-43	98.5	SURCHARGED	
S2.002	SMH-44	114.9	SURCHARGED	
S1.003	SMH-27	168.3	SURCHARGED	
S3.000	SG71	16.3	FLOOD	5
S1.004	SDummy-MH-6	125.4	SURCHARGED*	
S4.000	SG70	12.8	FLOOD	5
S1.005	SDummy-MH-8	131.8	SURCHARGED*	
S5.000	SG69	17.5	FLOOD	5
S1.006	SDummy-MH-10	137.3	SURCHARGED*	
S6.000	SG59	40.4	FLOOD	6
S1.007	SMH-26	167.4	FLOOD	5
S7.000	SG58	34.5	SURCHARGED	
S1.008	SDummy-MH-14	135.5	SURCHARGED*	
S1.009	SMH-25	165.7	FLOOD	7
S1.010	SMH-24	168.8	SURCHARGED	
S1.011	SMH-23	168.9	SURCHARGED	
S8.000	SMH-22	15.9	FLOOD	12
S8.001	SMH-21	25.6	FLOOD	25

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

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.012	SMH-20	204.9	SURCHARGED	
S9.000	SG47	4.5	SURCHARGED	
S1.013	SMH-19	221.0	SURCHARGED	
S10.000	SG45	6.0	SURCHARGED	
S1.014	S24	181.8	SURCHARGED*	
S1.015	SMH-18	226.5	SURCHARGED	
S11.000	SRE-1	83.8	FLOOD	20
S12.000	SMH-41	141.0	FLOOD	12
S12.001	SMH-40	144.9	SURCHARGED	
S11.001	SMH-42	333.9	SURCHARGED	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Existing Network A40 Main-Line

Pipe Sizes M5 J10 Manhole Sizes M5 J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	18.200	Volumetric Runoff Coeff.	1.000	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.370	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	100	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	500
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Designed with Level Soffits

Network Design Table for Existing Network A40 Main-Line

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
Pipe1.000	13.205	0.024	539.7	0.066	5.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.001	2.987	0.006	539.7	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe1.002	67.387	0.950	70.9	0.084	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe1.003	27.725	0.391	70.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe1.004	63.131	0.994	63.5	0.125	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe1.005	39.158	0.194	202.2	0.114	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.006	13.751	0.067	203.9	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe2.000	4.733	0.028	171.6	0.076	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe2.001	19.113	0.371	51.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe3.000	5.115	0.105	48.7	0.006	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe3.001	2.048	0.038	53.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe1.007	15.328	0.087	175.6	0.036	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.008	41.500	0.235	176.6	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.009	84.225	0.477	176.6	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.010	94.063	0.430	218.8	0.022	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe4.000	35.939	0.125	287.5	0.066	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe5.000	31.115	0.104	299.2	0.110	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe5.001	68.583	0.370	185.4	0.106	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe5.002	42.084	0.080	526.1	0.101	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe5.003	50.595	0.510	99.2	0.119	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe4.001	11.898	0.100	119.0	0.001	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.011	96.831	1.009	96.0	0.079	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)
Pipe1.000	46.42	5.40	32.930	0.066	0.0	0.0	0.0	0.56	22.1	11.1
Pipe1.001	45.99	5.51	32.906	0.066	0.0	0.0	0.0	0.43	7.5«	11.1
Pipe1.002	42.80	6.45	32.900	0.150	0.0	0.0	0.0	1.20	21.1«	23.2
Pipe1.003	41.64	6.84	31.950	0.150	0.0	0.0	0.0	1.20	21.1«	23.2
Pipe1.004	39.36	7.67	31.559	0.275	0.0	0.0	0.0	1.26	22.3«	39.1
Pipe1.005	37.62	8.38	30.490	0.389	0.0	0.0	0.0	0.92	36.4«	52.9
Pipe1.006	37.05	8.63	30.296	0.389	0.0	0.0	0.0	0.91	36.3«	52.9
Pipe2.000	47.56	5.10	30.628	0.076	0.0	0.0	0.0	0.76	13.5	13.1
Pipe2.001	46.67	5.33	30.600	0.076	0.0	0.0	0.0	1.40	24.8	13.1
Pipe3.000	47.73	5.06	30.372	0.006	0.0	0.0	0.0	1.45	25.5	1.0
Pipe3.001	47.63	5.08	30.267	0.006	0.0	0.0	0.0	1.37	24.3	1.0
Pipe1.007	36.48	8.89	30.229	0.507	0.0	0.0	0.0	0.98	39.1«	66.8
Pipe1.008	35.03	9.60	30.142	0.507	0.0	0.0	0.0	0.98	39.0«	66.8
Pipe1.009	32.47	11.03	29.907	0.507	0.0	0.0	0.0	0.98	39.0«	66.8
Pipe1.010	29.91	12.81	29.430	0.529	0.0	0.0	0.0	0.88	35.0«	66.8
Pipe4.000	44.21	6.02	29.300	0.066	0.0	0.0	0.0	0.59	10.4«	10.6
Pipe5.000	44.61	5.90	30.400	0.110	0.0	0.0	0.0	0.58	10.2«	17.7
Pipe5.001	40.90	7.09	30.060	0.216	0.0	0.0	0.0	0.96	38.1	31.9
Pipe5.002	37.72	8.34	29.690	0.317	0.0	0.0	0.0	0.56	22.4«	43.1
Pipe5.003	36.29	8.98	29.610	0.435	0.0	0.0	0.0	1.31	52.2«	57.0
Pipe4.001	35.94	9.15	29.100	0.502	0.0	0.0	0.0	1.20	47.6«	65.2
Pipe1.011	28.68	13.82	29.000	1.110	0.0	0.0	0.0	1.61	113.5«	115.0

Network Design Table for Existing Network A40 Main-Line

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
Pipe1.012	14.718	0.029	500.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
Pipe1.013	1.847	0.004	500.0	0.000	0.00	0.0	0.600	o	500	Pipe/Conduit	
Pipe1.014	12.808	0.026	500.0	0.000	0.00	0.0	0.600	o	500	Pipe/Conduit	
Pipe1.015	28.839	0.058	500.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.016	16.328	0.033	500.0	0.026	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.017	31.363	0.063	500.0	0.023	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.018	5.198	0.010	500.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.019	3.249	0.006	500.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.020	19.539	0.039	500.0	0.027	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.021	4.930	0.010	500.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.022	45.543	0.701	65.0	0.025	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.023	23.903	0.060	400.0	0.024	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.024	24.373	0.049	500.0	0.025	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.025	60.060	0.150	400.0	0.060	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe6.000	24.630	0.063	391.0	0.047	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe6.001	69.722	0.530	131.6	0.081	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe6.002	71.513	0.340	210.3	0.061	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe6.003	68.661	0.405	169.5	0.056	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe6.004	12.913	0.020	645.6	0.003	0.00	0.0	0.600	o	300	Pipe/Conduit	
Pipe7.000	33.268	0.330	100.8	0.023	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe6.005	34.529	0.208	166.4	0.031	0.00	0.0	0.600	o	300	Pipe/Conduit	
Pipe6.006	9.635	0.160	60.2	0.231	0.00	0.0	0.600	o	300	Pipe/Conduit	
Pipe6.007	6.629	0.350	18.9	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
Pipe1.026	49.369	0.247	200.0	0.048	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.027	50.811	0.389	130.6	0.026	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.028	90.637	0.605	149.9	0.077	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.029	89.724	0.690	130.0	0.065	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.030	85.563	0.171	500.0	0.075	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe8.000	68.906	0.138	500.0	0.044	5.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.031	6.663	0.017	400.1	0.000	0.00	0.0	0.600	oo	750	Double Pipe	
Pipe1.032	20.393	1.020	20.0	0.045	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe9.000	27.856	0.093	300.0	0.006	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)
Pipe1.012	28.37	14.09	27.841	1.110	0.0	0.0	0.0	0.90	143.5	115.0
Pipe1.013	28.33	14.12	27.762	1.110	0.0	0.0	0.0	0.96	189.4	115.0
Pipe1.014	28.09	14.34	27.608	1.110	0.0	0.0	0.0	0.96	189.4	115.0
Pipe1.015	27.61	14.79	27.482	1.110	0.0	0.0	0.0	1.08	306.0	115.0
Pipe1.016	27.34	15.04	27.425	1.136	0.0	0.0	0.0	1.08	306.0	115.0
Pipe1.017	26.85	15.52	27.392	1.159	0.0	0.0	0.0	1.08	306.0	115.0
Pipe1.018	26.77	15.60	27.329	1.159	0.0	0.0	0.0	1.08	306.0	115.0
Pipe1.019	26.72	15.65	27.319	1.159	0.0	0.0	0.0	1.08	306.0	115.0
Pipe1.020	26.43	15.95	27.312	1.187	0.0	0.0	0.0	1.08	306.0	115.0
Pipe1.021	26.36	16.03	27.273	1.187	0.0	0.0	0.0	1.08	306.0	115.0
Pipe1.022	26.13	16.28	27.263	1.211	0.0	0.0	0.0	3.02	855.0	115.0
Pipe1.023	25.82	16.61	26.562	1.235	0.0	0.0	0.0	1.21	342.5	115.2
Pipe1.024	25.49	16.98	26.502	1.260	0.0	0.0	0.0	1.08	306.0	115.9
Pipe1.025	24.79	17.81	26.453	1.320	0.0	0.0	0.0	1.21	342.5	118.1
Pipe6.000	44.90	5.82	28.800	0.047	0.0	0.0	0.0	0.50	8.9	7.6
Pipe6.001	40.76	7.15	28.690	0.128	0.0	0.0	0.0	0.87	15.5«	18.9
Pipe6.002	37.41	8.47	28.160	0.189	0.0	0.0	0.0	0.90	35.7	25.5
Pipe6.003	35.00	9.62	27.820	0.245	0.0	0.0	0.0	1.00	39.8	30.9
Pipe6.004	34.33	9.97	27.340	0.247	0.0	0.0	0.0	0.61	43.2	30.9
Pipe7.000	45.84	5.55	27.800	0.023	0.0	0.0	0.0	1.00	17.7	3.7
Pipe6.005	33.47	10.44	27.320	0.301	0.0	0.0	0.0	1.22	86.0	36.4
Pipe6.006	33.33	10.52	27.112	0.532	0.0	0.0	0.0	2.03	143.5	64.1
Pipe6.007	33.28	10.55	26.952	0.532	0.0	0.0	0.0	3.63	256.6	64.1
Pipe1.026	24.40	18.29	26.303	1.900	0.0	0.0	0.0	1.72	485.8	167.5
Pipe1.027	24.10	18.69	26.056	1.926	0.0	0.0	0.0	2.13	602.1	167.6
Pipe1.028	23.53	19.45	25.667	2.003	0.0	0.0	0.0	1.99	561.8	170.2
Pipe1.029	23.03	20.15	25.062	2.069	0.0	0.0	0.0	2.13	603.5	172.1
Pipe1.030	22.17	21.47	24.372	2.143	0.0	0.0	0.0	1.08	306.0	172.1
Pipe8.000	41.21	6.99	24.450	0.044	0.0	0.0	0.0	0.58	23.0	6.6
Pipe1.031	22.12	21.54	24.201	2.188	0.0	0.0	0.0	1.39	1230.6	174.7
Pipe1.032	22.08	21.61	24.184	2.233	0.0	0.0	0.0	5.46	1544.3	178.0
Pipe9.000	45.60	5.62	24.929	0.006	0.0	0.0	0.0	0.75	29.8	1.0

Network Design Table for Existing Network A40 Main-Line

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
Pipe9.001	17.343	0.108	160.6	0.022	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe9.002	12.688	0.120	105.7	0.002	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe9.003	10.406	0.040	260.2	0.000	0.00	0.0	0.600	o	575	Pipe/Conduit	
Pipe9.004	12.093	0.737	16.4	0.000	0.00	0.0	0.600	o	575	Pipe/Conduit	
Pipe1.033	56.456	0.113	500.0	0.067	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe10.000	57.753	0.240	240.6	0.217	5.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe10.001	48.325	0.450	107.4	0.011	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe10.002	36.062	0.280	128.8	0.090	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe10.003	54.517	0.600	90.9	0.106	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe10.004	30.419	0.427	71.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.034	21.969	0.209	105.0	0.086	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe1.035	40.194	0.080	500.0	0.011	0.00	0.0	0.600	o	600	Pipe/Conduit	
Pipe11.000	84.406	2.110	40.0	0.092	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe11.001	92.392	3.107	29.7	0.076	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe11.002	91.445	1.720	53.2	0.078	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe11.003	2.887	0.150	19.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe11.004	3.110	0.268	11.6	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe12.000	86.456	2.540	34.0	0.016	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe12.001	95.280	3.560	26.8	0.012	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe12.002	90.528	1.640	55.2	0.010	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe12.003	12.285	0.123	99.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe1.036	58.765	0.118	500.0	0.000	0.00	0.0	0.600	oo	750	Double Pipe	
Pipe13.000	34.150	0.203	168.0	0.178	5.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe13.001	83.152	0.554	150.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.037	48.835	0.244	200.0	0.000	0.00	0.0	0.600	oo	750	Double Pipe	
Pipe14.000	84.135	2.321	36.2	0.081	5.00	0.0	0.600	o	150	Pipe/Conduit	
Pipe14.001	94.618	3.710	25.5	0.071	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe14.002	26.427	1.762	15.0	0.057	0.00	0.0	0.600	o	225	Pipe/Conduit	
Pipe1.038	13.524	0.027	500.0	0.000	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)
Pipe9.001	44.61	5.90	24.836	0.028	0.0	0.0	0.0	1.03	40.9	4.5
Pipe9.002	44.05	6.07	24.728	0.029	0.0	0.0	0.0	1.27	50.5	4.7
Pipe9.003	43.66	6.18	24.258	0.029	0.0	0.0	0.0	1.47	380.5	4.7
Pipe9.004	43.54	6.22	24.218	0.029	0.0	0.0	0.0	5.87	1525.2	4.7
Pipe1.033	21.55	22.48	23.164	2.329	0.0	0.0	0.0	1.08	306.0	181.3
Pipe10.000	43.78	6.15	25.710	0.217	0.0	0.0	0.0	0.84	33.3«	34.3
Pipe10.001	41.79	6.79	25.470	0.228	0.0	0.0	0.0	1.26	50.1	34.4
Pipe10.002	40.31	7.31	25.020	0.317	0.0	0.0	0.0	1.15	45.7«	46.2
Pipe10.003	38.60	7.97	24.740	0.423	0.0	0.0	0.0	1.37	54.6«	59.0
Pipe10.004	37.82	8.30	24.140	0.423	0.0	0.0	0.0	1.55	61.7	59.0
Pipe1.034	21.46	22.63	23.051	2.838	0.0	0.0	0.0	2.38	671.9	220.0
Pipe1.035	21.11	23.25	22.842	2.850	0.0	0.0	0.0	1.08	306.0	220.0
Pipe11.000	44.67	5.88	31.027	0.092	0.0	0.0	0.0	1.60	28.2	14.9
Pipe11.001	42.01	6.71	28.917	0.169	0.0	0.0	0.0	1.85	32.7	25.6
Pipe11.002	39.64	7.56	25.810	0.247	0.0	0.0	0.0	1.80	71.5	35.3
Pipe11.003	39.60	7.58	24.090	0.247	0.0	0.0	0.0	3.00	119.1	35.3
Pipe11.004	39.57	7.59	23.940	0.247	0.0	0.0	0.0	3.86	153.6	35.3
Pipe12.000	44.84	5.83	31.400	0.016	0.0	0.0	0.0	1.73	30.6	2.5
Pipe12.001	42.21	6.64	28.860	0.028	0.0	0.0	0.0	1.95	34.5	4.2
Pipe12.002	39.14	7.76	25.300	0.037	0.0	0.0	0.0	1.36	24.0	5.3
Pipe12.003	38.63	7.96	23.660	0.037	0.0	0.0	0.0	1.01	17.8	5.3
Pipe1.036	20.68	24.04	22.762	3.133	0.0	0.0	0.0	1.24	1099.7	234.0
Pipe13.000	45.79	5.57	23.617	0.178	0.0	0.0	0.0	1.01	40.0	29.5
Pipe13.001	41.55	6.87	23.414	0.178	0.0	0.0	0.0	1.07	42.4	29.5
Pipe1.037	20.46	24.45	22.644	3.312	0.0	0.0	0.0	1.98	1745.3	244.7
Pipe14.000	44.83	5.84	30.881	0.081	0.0	0.0	0.0	1.68	29.6	13.2
Pipe14.001	42.83	6.44	28.560	0.152	0.0	0.0	0.0	2.60	103.4	23.5
Pipe14.002	42.43	6.57	24.850	0.209	0.0	0.0	0.0	3.40	135.0	32.1
Pipe1.038	20.37	24.63	22.400	3.521	0.0	0.0	0.0	1.24	549.9	259.0

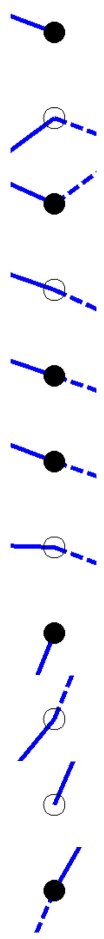
Manhole Schedules for Existing Network A40 Main-Line

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)
17	33.740	0.810	Open Manhole	1200	Pipe1.000	32.930	225				
Dummy_14	33.670	0.764	Junction		Pipe1.001	32.906	150	Pipe1.000	32.906	225	
17A	33.760	0.860	Open Manhole	1200	Pipe1.002	32.900	150	Pipe1.001	32.900	150	
Dummy_18	32.950	1.000	Junction		Pipe1.003	31.950	150	Pipe1.002	31.950	150	
19	32.470	0.911	Open Manhole	1200	Pipe1.004	31.559	150	Pipe1.003	31.559	150	
16	31.340	0.850	Open Manhole	1200	Pipe1.005	30.490	225	Pipe1.004	30.565	150	
Dummy_18	31.270	0.974	Junction		Pipe1.006	30.296	225	Pipe1.005	30.296	225	
13	31.388	0.760	Open Manhole	1200	Pipe2.000	30.628	150				
Dummy_17	31.192	0.592	Junction		Pipe2.001	30.600	150	Pipe2.000	30.600	150	
Dummy_10	31.272	0.900	Junction		Pipe3.000	30.372	150				
15A	31.167	0.900	Open Manhole	1200	Pipe3.001	30.267	150	Pipe3.000	30.267	150	
15	31.169	0.940	Open Manhole	1200	Pipe1.007	30.229	225	Pipe1.006	30.229	225	
								Pipe2.001	30.229	150	
								Pipe3.001	30.229	150	
Dummy_20	31.474	1.332	Junction		Pipe1.008	30.142	225	Pipe1.007	30.142	225	
Dummy_21	31.258	1.351	Junction		Pipe1.009	29.907	225	Pipe1.008	29.907	225	
10	30.610	1.180	Open Manhole	1200	Pipe1.010	29.430	225	Pipe1.009	29.430	225	
Dummy_18	30.050	0.750	Junction		Pipe4.000	29.300	150				
Dummy_16	30.820	0.420	Junction		Pipe5.000	30.400	150				
9	30.760	0.700	Open Manhole	1200	Pipe5.001	30.060	225	Pipe5.000	30.296	150	161
8	30.430	0.740	Open Manhole	1200	Pipe5.002	29.690	225	Pipe5.001	29.690	225	
7	30.200	0.590	Open Manhole	1200	Pipe5.003	29.610	225	Pipe5.002	29.610	225	
6	29.990	0.890	Open Manhole	1200	Pipe4.001	29.100	225	Pipe4.000	29.175	150	
								Pipe5.003	29.100	225	
29	30.200	1.200	Open Manhole	1200	Pipe1.011	29.000	300	Pipe1.010	29.000	225	
								Pipe4.001	29.000	225	
28	29.571	1.730	Open Manhole	1200	Pipe1.012	27.841	450	Pipe1.011	27.991	300	
30	29.355	1.593	Open Manhole	1200	Pipe1.013	27.762	500	Pipe1.012	27.812	450	
OUTLET-10	29.468	1.860	Junction		Pipe1.014	27.608	500	Pipe1.013	27.758	500	150
INLET-11	29.263	1.781	Junction		Pipe1.015	27.482	600	Pipe1.014	27.582	500	
OUTLET-12	28.987	1.562	Junction		Pipe1.016	27.425	600	Pipe1.015	27.425	600	
INLET-13	28.984	1.592	Junction		Pipe1.017	27.392	600	Pipe1.016	27.392	600	
28	28.932	1.603	Junction		Pipe1.018	27.329	600	Pipe1.017	27.329	600	
OUTLET-14	28.859	1.540	Junction		Pipe1.019	27.319	600	Pipe1.018	27.319	600	
INLET-15	28.694	1.382	Junction		Pipe1.020	27.312	600	Pipe1.019	27.312	600	
INACCESSIBLE MANHOLE	28.763	1.490	Open Manhole	1500	Pipe1.021	27.273	600	Pipe1.020	27.273	600	
Outlet-16	28.784	1.521	Junction		Pipe1.022	27.263	600	Pipe1.021	27.263	600	
Dummy_35	27.796	1.234	Junction		Pipe1.023	26.562	600	Pipe1.022	26.562	600	
Dummy_37	27.750	1.248	Junction		Pipe1.024	26.502	600	Pipe1.023	26.502	600	
Dummy_40	27.735	1.282	Junction		Pipe1.025	26.453	600	Pipe1.024	26.453	600	
Dummy_21	29.430	0.630	Junction		Pipe6.000	28.800	150				
5	29.400	0.710	Open Manhole	1200	Pipe6.001	28.690	150	Pipe6.000	28.737	150	47
4	29.060	0.900	Open Manhole	1200	Pipe6.002	28.160	225	Pipe6.001	28.160	150	
3	28.700	0.880	Open Manhole	1200	Pipe6.003	27.820	225	Pipe6.002	27.820	225	
2	28.470	1.130	Open Manhole	1200	Pipe6.004	27.340	300	Pipe6.003	27.415	225	
31	28.560	0.760	Open Manhole	1200	Pipe7.000	27.800	150				
1	28.370	1.050	Open Manhole	1200	Pipe6.005	27.320	300	Pipe6.004	27.320	300	
								Pipe7.000	27.470	150	
32	28.220	1.108	Open Manhole	1200	Pipe6.006	27.112	300	Pipe6.005	27.112	300	
33	28.010	1.058	Open Manhole	1200	Pipe6.007	26.952	300	Pipe6.006	26.952	300	
Dummy_42	27.604	1.301	Junction		Pipe1.026	26.303	600	Pipe1.025	26.303	600	
								Pipe6.007	26.602	300	
Dummy_45	27.388	1.332	Junction		Pipe1.027	26.056	600	Pipe1.026	26.056	600	
Dummy_48	26.897	1.230	Junction		Pipe1.028	25.667	600	Pipe1.027	25.667	600	
Dummy_50	26.323	1.261	Junction		Pipe1.029	25.062	600	Pipe1.028	25.062	600	
Dummy_51	25.657	1.285	Junction		Pipe1.030	24.372	600	Pipe1.029	24.372	600	
49	25.560	1.110	Open Manhole	1200	Pipe8.000	24.450	225				
Dummy_52	25.751	1.550	Junction		Pipe1.031	24.201	750	Pipe1.030	24.201	600	
								Pipe8.000	24.312	225	
Dummy_53	25.757	1.573	Junction		Pipe1.032	24.184	600	Pipe1.031	24.184	750	
64	25.754	0.825	Open Manhole	1200	Pipe9.000	24.929	225				
Dummy_65	25.915	1.079	Junction		Pipe9.001	24.836	225	Pipe9.000	24.836	225	
Dummy_68	25.553	0.825	Junction		Pipe9.002	24.728	225	Pipe9.001	24.728	225	
Dummy_72	25.433	1.175	Junction		Pipe9.003	24.258	575	Pipe9.002	24.608	225	

Manhole Schedules for Existing Network A40 Main-Line

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)
Dummy_73	25.658	1.440	Junction		Pipe9.004	24.218	575	Pipe9.003	24.218	575	
Dummy_55	24.669	1.505	Junction		Pipe1.033	23.164	600	Pipe1.032	23.164	600	
								Pipe9.004	23.481	575	292
34	27.300	1.590	Open Manhole	1200	Pipe10.000	25.710	225				
35	26.890	1.420	Open Manhole	1050	Pipe10.001	25.470	225	Pipe10.000	25.470	225	
36	26.510	1.490	Open Manhole	1200	Pipe10.002	25.020	225	Pipe10.001	25.020	225	
36-A	25.860	1.120	Open Manhole	1200	Pipe10.003	24.740	225	Pipe10.002	24.740	225	
36-B	25.230	1.090	Open Manhole	1200	Pipe10.004	24.140	225	Pipe10.003	24.140	225	
Dummy_56	25.041	1.990	Junction		Pipe1.034	23.051	600	Pipe1.033	23.051	600	
								Pipe10.004	23.713	225	287
Dummy_58	24.335	1.493	Junction		Pipe1.035	22.842	600	Pipe1.034	22.842	600	
Dummy_49A	32.300	1.273	Junction		Pipe11.000	31.027	150				
49	30.010	1.093	Open Manhole	1200	Pipe11.001	28.917	150	Pipe11.000	28.917	150	
47	26.840	1.030	Open Manhole	1200	Pipe11.002	25.810	225	Pipe11.001	25.810	150	
46	25.010	0.920	Open Manhole	1200	Pipe11.003	24.090	225	Pipe11.002	24.090	225	
48	25.220	1.280	Open Manhole	1200	Pipe11.004	23.940	225	Pipe11.003	23.940	225	
Dummy_65A	32.490	1.090	Junction		Pipe12.000	31.400	150				
65	30.210	1.350	Open Manhole	1200	Pipe12.001	28.860	150	Pipe12.000	28.860	150	
64	26.660	1.360	Open Manhole	1200	Pipe12.002	25.300	150	Pipe12.001	25.300	150	
63	25.050	1.390	Open Manhole	1050	Pipe12.003	23.660	150	Pipe12.002	23.660	150	
Dummy_67A	25.060	2.298	Junction		Pipe1.036	22.762	750	Pipe1.035	22.762	600	
								Pipe11.004	23.672	225	385
								Pipe12.003	23.537	150	175
73	24.817	1.200	Open Manhole	1200	Pipe13.000	23.617	225				
Dummy_74	24.604	1.190	Junction		Pipe13.001	23.414	225	Pipe13.000	23.414	225	
Dummy_73A	25.175	2.531	Junction		Pipe1.037	22.644	750	Pipe1.036	22.644	750	
								Pipe13.001	22.859	225	
Dummy_54A	32.340	1.459	Junction		Pipe14.000	30.881	150				
54	29.980	1.420	Open Manhole	1200	Pipe14.001	28.560	225	Pipe14.000	28.560	150	
55	26.420	1.570	Open Manhole	1200	Pipe14.002	24.850	225	Pipe14.001	24.850	225	
83	24.456	2.056	Open Manhole	1800	Pipe1.038	22.400	750	Pipe1.037	22.400	750	
								Pipe14.002	23.088	225	163
Outfall to Ditch	24.410	2.037	Open Manhole	0		OUTFALL		Pipe1.038	22.373	750	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
17	391898.375	224781.377	391898.375	224781.377	Required	
Dummy_14	391886.020	224786.035			No Entry	
17A	391883.614	224784.264	391883.614	224784.264	Required	
Dummy_18	391822.336	224812.131			No Entry	
19	391796.156	224821.256	391796.156	224821.256	Required	
16	391736.507	224841.934	391736.507	224841.934	Required	
Dummy_18	391699.912	224855.868			No Entry	
13	391700.035	224875.494	391700.035	224875.494	Required	
Dummy_17	391698.281	224871.097			No Entry	
Dummy_10	391683.156	224849.825			No Entry	
15A	391685.156	224854.533	391685.156	224854.533	Required	



Manhole Schedules for Existing Network A40 Main-Line

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
15	391686.168	224856.314	391686.168	224856.314	Required	
Dummy_20	391675.123	224866.942			No Entry	
Dummy_21	391637.996	224885.485			No Entry	
10	391560.747	224919.047	391560.747	224919.047	Required	
Dummy_18	391448.909	224984.443			No Entry	
Dummy_16	391658.484	224894.034			No Entry	
9	391629.816	224906.129	391629.816	224906.129	Required	
8	391566.222	224931.809	391566.222	224931.809	Required	
7	391527.600	224948.526	391527.600	224948.526	Required	
6	391481.872	224970.179	391481.872	224970.179	Required	
29	391475.988	224959.838	391475.988	224959.838	Required	
28	391390.022	225004.403	391390.022	225004.403	Required	
30	391376.100	225009.175	391376.100	225009.175	Required	
OUTLET-10	391374.349	225009.763			No Entry	
INLET-11	391362.018	225013.226			No Entry	
OUTLET-12	391334.494	225021.777			No Entry	
INLET-13	391319.357	225027.886			No Entry	
28	391290.466	225040.080			No Entry	
OUTLET-14	391286.062	225042.841			No Entry	
INLET-15	391283.502	225044.842			No Entry	
INACCESSIBLE MANHOLE	391270.303	225059.249	391270.303	225059.249	Required	
Outlet-16	391266.620	225062.527			No Entry	
Dummy_35	391229.250	225088.560			No Entry	
Dummy_37	391206.404	225095.401			No Entry	
Dummy_40	391184.130	225105.297			No Entry	
Dummy_21	391384.625	225018.145			No Entry	

Manhole Schedules for Existing Network A40 Main-Line

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
5	391363.856	225031.334	391363.856	225031.334	Required	
4	391303.094	225065.525	391303.094	225065.525	Required	
3	391242.012	225102.715	391242.012	225102.715	Required	
2	391184.192	225139.745	391184.192	225139.745	Required	
31	391201.866	225115.445	391201.866	225115.445	Required	
1	391173.397	225132.659	391173.397	225132.659	Required	
32	391145.135	225152.495	391145.135	225152.495	Required	
33	391139.254	225144.863	391139.254	225144.863	Required	
Dummy_42	391134.974	225139.801			No Entry	
Dummy_45	391098.854	225173.455			No Entry	
Dummy_48	391055.393	225199.495			No Entry	
Dummy_50	390979.526	225249.073			No Entry	
Dummy_51	390903.765	225297.142			No Entry	
49	390789.420	225283.837	390789.420	225283.837	Required	
Dummy_52	390829.603	225339.814			No Entry	
Dummy_53	390824.278	225343.819			No Entry	
64	390781.023	225286.721	390781.023	225286.721	Required	
Dummy_65	390795.223	225310.685			No Entry	
Dummy_68	390803.421	225325.542			No Entry	
Dummy_72	390805.672	225337.895			No Entry	
Dummy_73	390812.330	225345.892			No Entry	
Dummy_55	390809.229	225357.581			No Entry	
34	390955.661	225288.851	390955.661	225288.851	Required	
35	390908.125	225321.649	390908.125	225321.649	Required	
36	390867.971	225348.536	390867.971	225348.536	Required	
36-A	390836.399	225365.961	390836.399	225365.961	Required	

Manhole Schedules for Existing Network A40 Main-Line

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
36-B	390791.032	225396.193	390791.032	225396.193	Required	
Dummy_56	390761.717	225388.075			No Entry	
Dummy_58	390746.869	225403.996			No Entry	
Dummy_49A	390488.459	225582.376			No Entry	
49	390557.273	225533.498	390557.273	225533.498	Required	
47	390632.885	225480.402	390632.885	225480.402	Required	
46	390709.102	225429.874	390709.102	225429.874	Required	
48	390710.393	225427.291	390710.393	225427.291	Required	
Dummy_65A	390495.569	225591.924			No Entry	
65	390565.136	225540.590	390565.136	225540.590	Required	
64	390642.837	225485.446	390642.837	225485.446	Required	
63	390719.087	225436.649	390719.087	225436.649	Required	
Dummy_67A	390713.167	225425.884			No Entry	
73	390782.080	225412.599	390782.080	225412.599	Required	
Dummy_74	390752.491	225429.649			No Entry	
Dummy_73A	390684.112	225476.964			No Entry	
Dummy_54A	390501.795	225599.789			No Entry	
54	390569.298	225549.570	390569.298	225549.570	Required	
55	390647.083	225495.698	390647.083	225495.698	Required	
83	390659.395	225519.081	390659.395	225519.081	Required	
Outfall to Ditch	390652.923	225530.956			No Entry	

PIPELINE SCHEDULES for Existing Network A40 Main-Line

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)
Pipe1.000	o	225	17	33.740	32.930	0.660	Open Manhole	1200
Pipe1.001	o	150	Dummy_14	33.670	32.906	0.614	Junction	
Pipe1.002	o	150	17A	33.760	32.900	0.710	Open Manhole	1200
Pipe1.003	o	150	Dummy_18	32.950	31.950	0.850	Junction	
Pipe1.004	o	150	19	32.470	31.559	0.761	Open Manhole	1200
Pipe1.005	o	225	16	31.340	30.490	0.625	Open Manhole	1200
Pipe1.006	o	225	Dummy_18	31.270	30.296	0.749	Junction	
Pipe2.000	o	150	13	31.388	30.628	0.610	Open Manhole	1200
Pipe2.001	o	150	Dummy_17	31.192	30.600	0.442	Junction	
Pipe3.000	o	150	Dummy_10	31.272	30.372	0.750	Junction	
Pipe3.001	o	150	15A	31.167	30.267	0.750	Open Manhole	1200
Pipe1.007	o	225	15	31.169	30.229	0.715	Open Manhole	1200
Pipe1.008	o	225	Dummy_20	31.474	30.142	1.107	Junction	
Pipe1.009	o	225	Dummy_21	31.258	29.907	1.126	Junction	
Pipe1.010	o	225	10	30.610	29.430	0.955	Open Manhole	1200
Pipe4.000	o	150	Dummy_18	30.050	29.300	0.600	Junction	
Pipe5.000	o	150	Dummy_16	30.820	30.400	0.270	Junction	
Pipe5.001	o	225	9	30.760	30.060	0.475	Open Manhole	1200
Pipe5.002	o	225	8	30.430	29.690	0.515	Open Manhole	1200
Pipe5.003	o	225	7	30.200	29.610	0.365	Open Manhole	1200
Pipe4.001	o	225	6	29.990	29.100	0.665	Open Manhole	1200
Pipe1.011	o	300	29	30.200	29.000	0.900	Open Manhole	1200
Pipe1.012	o	450	28	29.571	27.841	1.280	Open Manhole	1200
Pipe1.013	o	500	30	29.355	27.762	1.093	Open Manhole	1200
Pipe1.014	o	500	OUTLET-10	29.468	27.608	1.360	Junction	
Pipe1.015	o	600	INLET-11	29.263	27.482	1.181	Junction	
Pipe1.016	o	600	OUTLET-12	28.987	27.425	0.962	Junction	
Pipe1.017	o	600	INLET-13	28.984	27.392	0.992	Junction	
Pipe1.018	o	600	28	28.932	27.329	1.003	Junction	
Pipe1.019	o	600	OUTLET-14	28.859	27.319	0.940	Junction	
Pipe1.020	o	600	INLET-15	28.694	27.312	0.782	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)
Pipe1.000	13.205	539.7	Dummy_14	33.670	32.906	0.614	Junction	
Pipe1.001	2.987	539.7	17A	33.760	32.900	0.710	Open Manhole	1200
Pipe1.002	67.387	70.9	Dummy_18	32.950	31.950	0.850	Junction	
Pipe1.003	27.725	70.9	19	32.470	31.559	0.761	Open Manhole	1200
Pipe1.004	63.131	63.5	16	31.340	30.565	0.625	Open Manhole	1200
Pipe1.005	39.158	202.2	Dummy_18	31.270	30.296	0.749	Junction	
Pipe1.006	13.751	203.9	15	31.169	30.229	0.715	Open Manhole	1200
Pipe2.000	4.733	171.6	Dummy_17	31.192	30.600	0.442	Junction	
Pipe2.001	19.113	51.5	15	31.169	30.229	0.790	Open Manhole	1200
Pipe3.000	5.115	48.7	15A	31.167	30.267	0.750	Open Manhole	1200
Pipe3.001	2.048	53.9	15	31.169	30.229	0.790	Open Manhole	1200
Pipe1.007	15.328	175.6	Dummy_20	31.474	30.142	1.107	Junction	
Pipe1.008	41.500	176.6	Dummy_21	31.258	29.907	1.126	Junction	
Pipe1.009	84.225	176.6	10	30.610	29.430	0.955	Open Manhole	1200
Pipe1.010	94.063	218.8	29	30.200	29.000	0.975	Open Manhole	1200
Pipe4.000	35.939	287.5	6	29.990	29.175	0.665	Open Manhole	1200
Pipe5.000	31.115	299.2	9	30.760	30.296	0.314	Open Manhole	1200
Pipe5.001	68.583	185.4	8	30.430	29.690	0.515	Open Manhole	1200
Pipe5.002	42.084	526.1	7	30.200	29.610	0.365	Open Manhole	1200
Pipe5.003	50.595	99.2	6	29.990	29.100	0.665	Open Manhole	1200
Pipe4.001	11.898	119.0	29	30.200	29.000	0.975	Open Manhole	1200
Pipe1.011	96.831	96.0	28	29.571	27.991	1.280	Open Manhole	1200
Pipe1.012	14.718	500.0	30	29.355	27.812	1.093	Open Manhole	1200
Pipe1.013	1.847	500.0	OUTLET-10	29.468	27.758	1.210	Junction	
Pipe1.014	12.808	500.0	INLET-11	29.263	27.582	1.181	Junction	
Pipe1.015	28.839	500.0	OUTLET-12	28.987	27.425	0.962	Junction	
Pipe1.016	16.328	500.0	INLET-13	28.984	27.392	0.992	Junction	
Pipe1.017	31.363	500.0	28	28.932	27.329	1.003	Junction	
Pipe1.018	5.198	500.0	OUTLET-14	28.859	27.319	0.940	Junction	
Pipe1.019	3.249	500.0	INLET-15	28.694	27.312	0.782	Junction	
Pipe1.020	19.539	500.0	INACCESSIBLE MANHOLE	28.763	27.273	0.890	Open Manhole	1500

PIPELINE SCHEDULES for Existing Network A40 Main-Line

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)
Pipe1.021	o	600	INACCESSIBLE MANHOLE	28.763	27.273	0.890	Open Manhole	1500
Pipe1.022	o	600	Outlet-16	28.784	27.263	0.921	Junction	
Pipe1.023	o	600	Dummy_35	27.796	26.562	0.634	Junction	
Pipe1.024	o	600	Dummy_37	27.750	26.502	0.648	Junction	
Pipe1.025	o	600	Dummy_40	27.735	26.453	0.682	Junction	
Pipe6.000	o	150	Dummy_21	29.430	28.800	0.480	Junction	
Pipe6.001	o	150	5	29.400	28.690	0.560	Open Manhole	1200
Pipe6.002	o	225	4	29.060	28.160	0.675	Open Manhole	1200
Pipe6.003	o	225	3	28.700	27.820	0.655	Open Manhole	1200
Pipe6.004	o	300	2	28.470	27.340	0.830	Open Manhole	1200
Pipe7.000	o	150	31	28.560	27.800	0.610	Open Manhole	1200
Pipe6.005	o	300	1	28.370	27.320	0.750	Open Manhole	1200
Pipe6.006	o	300	32	28.220	27.112	0.808	Open Manhole	1200
Pipe6.007	o	300	33	28.010	26.952	0.758	Open Manhole	1200
Pipe1.026	o	600	Dummy_42	27.604	26.303	0.701	Junction	
Pipe1.027	o	600	Dummy_45	27.388	26.056	0.732	Junction	
Pipe1.028	o	600	Dummy_48	26.897	25.667	0.630	Junction	
Pipe1.029	o	600	Dummy_50	26.323	25.062	0.661	Junction	
Pipe1.030	o	600	Dummy_51	25.657	24.372	0.685	Junction	
Pipe8.000	o	225	49	25.560	24.450	0.885	Open Manhole	1200
Pipe1.031	oo	750	Dummy_52	25.751	24.201	0.800	Junction	
Pipe1.032	o	600	Dummy_53	25.757	24.184	0.973	Junction	
Pipe9.000	o	225	64	25.754	24.929	0.600	Open Manhole	1200
Pipe9.001	o	225	Dummy_65	25.915	24.836	0.854	Junction	
Pipe9.002	o	225	Dummy_68	25.553	24.728	0.600	Junction	
Pipe9.003	o	575	Dummy_72	25.433	24.258	0.600	Junction	
Pipe9.004	o	575	Dummy_73	25.658	24.218	0.865	Junction	
Pipe1.033	o	600	Dummy_55	24.669	23.164	0.905	Junction	
Pipe10.000	o	225	34	27.300	25.710	1.365	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)
Pipe1.021	4.930	500.0	Outlet-16	28.784	27.263	0.921	Junction	
Pipe1.022	45.543	65.0	Dummy_35	27.796	26.562	0.634	Junction	
Pipe1.023	23.903	400.0	Dummy_37	27.750	26.502	0.648	Junction	
Pipe1.024	24.373	500.0	Dummy_40	27.735	26.453	0.682	Junction	
Pipe1.025	60.060	400.0	Dummy_42	27.604	26.303	0.701	Junction	
Pipe6.000	24.630	391.0	5	29.400	28.737	0.513	Open Manhole	1200
Pipe6.001	69.722	131.6	4	29.060	28.160	0.750	Open Manhole	1200
Pipe6.002	71.513	210.3	3	28.700	27.820	0.655	Open Manhole	1200
Pipe6.003	68.661	169.5	2	28.470	27.415	0.830	Open Manhole	1200
Pipe6.004	12.913	645.6	1	28.370	27.320	0.750	Open Manhole	1200
Pipe7.000	33.268	100.8	1	28.370	27.470	0.750	Open Manhole	1200
Pipe6.005	34.529	166.4	32	28.220	27.112	0.808	Open Manhole	1200
Pipe6.006	9.635	60.2	33	28.010	26.952	0.758	Open Manhole	1200
Pipe6.007	6.629	18.9	Dummy_42	27.604	26.602	0.702	Junction	
Pipe1.026	49.369	200.0	Dummy_45	27.388	26.056	0.732	Junction	
Pipe1.027	50.811	130.6	Dummy_48	26.897	25.667	0.630	Junction	
Pipe1.028	90.637	149.9	Dummy_50	26.323	25.062	0.661	Junction	
Pipe1.029	89.724	130.0	Dummy_51	25.657	24.372	0.685	Junction	
Pipe1.030	85.563	500.0	Dummy_52	25.751	24.201	0.950	Junction	
Pipe8.000	68.906	500.0	Dummy_52	25.751	24.312	1.214	Junction	
Pipe1.031	6.663	400.1	Dummy_53	25.757	24.184	0.823	Junction	
Pipe1.032	20.393	20.0	Dummy_55	24.669	23.164	0.905	Junction	
Pipe9.000	27.856	300.0	Dummy_65	25.915	24.836	0.854	Junction	
Pipe9.001	17.343	160.6	Dummy_68	25.553	24.728	0.600	Junction	
Pipe9.002	12.688	105.7	Dummy_72	25.433	24.608	0.600	Junction	
Pipe9.003	10.406	260.2	Dummy_73	25.658	24.218	0.865	Junction	
Pipe9.004	12.093	16.4	Dummy_55	24.669	23.481	0.613	Junction	
Pipe1.033	56.456	500.0	Dummy_56	25.041	23.051	1.390	Junction	
Pipe10.000	57.753	240.6	35	26.890	25.470	1.195	Open Manhole	1050

PIPELINE SCHEDULES for Existing Network A40 Main-Line

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)
Pipe10.001	o	225	35	26.890	25.470	1.195	Open Manhole	1050
Pipe10.002	o	225	36	26.510	25.020	1.265	Open Manhole	1200
Pipe10.003	o	225	36-A	25.860	24.740	0.895	Open Manhole	1200
Pipe10.004	o	225	36-B	25.230	24.140	0.865	Open Manhole	1200
Pipe1.034	o	600	Dummy_56	25.041	23.051	1.390	Junction	
Pipe1.035	o	600	Dummy_58	24.335	22.842	0.893	Junction	
Pipe11.000	o	150	Dummy_49A	32.300	31.027	1.123	Junction	
Pipe11.001	o	150	49	30.010	28.917	0.943	Open Manhole	1200
Pipe11.002	o	225	47	26.840	25.810	0.805	Open Manhole	1200
Pipe11.003	o	225	46	25.010	24.090	0.695	Open Manhole	1200
Pipe11.004	o	225	48	25.220	23.940	1.055	Open Manhole	1200
Pipe12.000	o	150	Dummy_65A	32.490	31.400	0.940	Junction	
Pipe12.001	o	150	65	30.210	28.860	1.200	Open Manhole	1200
Pipe12.002	o	150	64	26.660	25.300	1.210	Open Manhole	1200
Pipe12.003	o	150	63	25.050	23.660	1.240	Open Manhole	1050
Pipe1.036	oo	750	Dummy_67A	25.060	22.762	1.548	Junction	
Pipe13.000	o	225	73	24.817	23.617	0.975	Open Manhole	1200
Pipe13.001	o	225	Dummy_74	24.604	23.414	0.965	Junction	
Pipe1.037	oo	750	Dummy_73A	25.175	22.644	1.781	Junction	
Pipe14.000	o	150	Dummy_54A	32.340	30.881	1.309	Junction	
Pipe14.001	o	225	54	29.980	28.560	1.195	Open Manhole	1200
Pipe14.002	o	225	55	26.420	24.850	1.345	Open Manhole	1200
Pipe1.038	o	750	83	24.456	22.400	1.306	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)
Pipe10.001	48.325	107.4	36	26.510	25.020	1.265	Open Manhole	1200
Pipe10.002	36.062	128.8	36-A	25.860	24.740	0.895	Open Manhole	1200
Pipe10.003	54.517	90.9	36-B	25.230	24.140	0.865	Open Manhole	1200
Pipe10.004	30.419	71.2	Dummy_56	25.041	23.713	1.103	Junction	
Pipe1.034	21.969	105.0	Dummy_58	24.335	22.842	0.893	Junction	
Pipe1.035	40.194	500.0	Dummy_67A	25.060	22.762	1.698	Junction	
Pipe11.000	84.406	40.0	49	30.010	28.917	0.943	Open Manhole	1200
Pipe11.001	92.392	29.7	47	26.840	25.810	0.880	Open Manhole	1200
Pipe11.002	91.445	53.2	46	25.010	24.090	0.695	Open Manhole	1200
Pipe11.003	2.887	19.2	48	25.220	23.940	1.055	Open Manhole	1200
Pipe11.004	3.110	11.6	Dummy_67A	25.060	23.672	1.163	Junction	
Pipe12.000	86.456	34.0	65	30.210	28.860	1.200	Open Manhole	1200
Pipe12.001	95.280	26.8	64	26.660	25.300	1.210	Open Manhole	1200
Pipe12.002	90.528	55.2	63	25.050	23.660	1.240	Open Manhole	1050
Pipe12.003	12.285	99.9	Dummy_67A	25.060	23.537	1.373	Junction	
Pipe1.036	58.765	500.0	Dummy_73A	25.175	22.644	1.781	Junction	
Pipe13.000	34.150	168.0	Dummy_74	24.604	23.414	0.965	Junction	
Pipe13.001	83.152	150.0	Dummy_73A	25.175	22.859	2.091	Junction	
Pipe1.037	48.835	200.0	83	24.456	22.400	1.306	Open Manhole	1800
Pipe14.000	84.135	36.2	54	29.980	28.560	1.270	Open Manhole	1200
Pipe14.001	94.618	25.5	55	26.420	24.850	1.345	Open Manhole	1200
Pipe14.002	26.427	15.0	83	24.456	23.088	1.143	Open Manhole	1800
Pipe1.038	13.524	500.0	Outfall to Ditch	24.410	22.373	1.287	Open Manhole	0

Area Summary for Existing Network A40 Main-Line

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.042	0.042	0.042
	User	-	50	0.019	0.010	0.052
	Classification	Verge	50	0.024	0.012	0.063
	User	-	100	0.003	0.003	0.066
1.001	-	-	100	0.000	0.000	0.000
1.002	User	-	100	0.054	0.054	0.054
	User	-	50	0.011	0.005	0.060
	Classification	Verge	50	0.033	0.016	0.076
	User	-	100	0.008	0.008	0.084
1.003	-	-	100	0.000	0.000	0.000
1.004	User	-	100	0.055	0.055	0.055
	User	-	100	0.039	0.039	0.094
	User	-	100	0.006	0.006	0.100
	Classification	Verge	50	0.013	0.006	0.107
	User	-	100	0.013	0.013	0.120
	Classification	Verge	50	0.007	0.003	0.123
	User	-	100	0.002	0.002	0.125
1.005	User	-	100	0.043	0.043	0.043
	User	-	100	0.042	0.042	0.085
	User	-	100	0.014	0.014	0.099
	User	-	100	0.011	0.011	0.110
	Classification	Verge	50	0.001	0.001	0.111
	Classification	Verge	50	0.008	0.004	0.114
1.006	-	-	100	0.000	0.000	0.000
2.000	User	-	100	0.061	0.061	0.061
	User	-	100	0.011	0.011	0.071
	User	-	100	0.005	0.005	0.076
2.001	-	-	100	0.000	0.000	0.000
3.000	Classification	Verge	50	0.012	0.006	0.006
3.001	-	-	100	0.000	0.000	0.000
1.007	Classification	Verge	50	0.003	0.002	0.002
	User	-	100	0.026	0.026	0.028
	Classification	Verge	50	0.001	0.000	0.029
	Classification	Verge	50	0.009	0.004	0.033
	Classification	Verge	50	0.006	0.003	0.036
1.008	-	-	100	0.000	0.000	0.000
1.009	-	-	100	0.000	0.000	0.000
1.010	Classification	Verge	50	0.044	0.022	0.022
4.000	User	-	100	0.026	0.026	0.026
	Classification	Verge	50	0.031	0.015	0.041
	User	-	100	0.025	0.025	0.066
5.000	User	-	100	0.086	0.086	0.086
	Classification	Verge	50	0.002	0.001	0.087
	User	-	100	0.006	0.006	0.093
	Classification	Verge	50	0.001	0.001	0.093
	Classification	Verge	50	0.002	0.001	0.094
	Classification	Verge	50	0.002	0.001	0.095
	User	-	100	0.012	0.012	0.107
	User	-	100	0.002	0.002	0.110
5.001	User	-	100	0.074	0.074	0.074
	Classification	Verge	50	0.001	0.001	0.075
	User	-	100	0.008	0.008	0.083
	Classification	Verge	50	0.003	0.002	0.085
	Classification	Verge	50	0.043	0.021	0.106
5.002	User	-	100	0.041	0.041	0.041
	Classification	Verge	50	0.054	0.027	0.068
	Classification	Default	100	0.014	0.014	0.082
	Classification	Verge	50	0.004	0.002	0.084
	User	-	100	0.017	0.017	0.101
5.003	Classification	Verge	50	0.069	0.035	0.035
	User	-	100	0.038	0.038	0.073
	User	-	100	0.032	0.032	0.105
	Classification	Verge	50	0.001	0.000	0.105
	Classification	Verge	50	0.027	0.013	0.119
4.001	Classification	Verge	50	0.001	0.001	0.001
1.011	User	-	100	0.018	0.018	0.018
	Classification	Verge	50	0.030	0.015	0.033
	User	-	100	0.020	0.020	0.052
	Classification	Verge	50	0.053	0.027	0.079
1.012	-	-	100	0.000	0.000	0.000
1.013	-	-	100	0.000	0.000	0.000
1.014	-	-	100	0.000	0.000	0.000
1.015	-	-	100	0.000	0.000	0.000
1.016	Classification	Verge	50	0.017	0.009	0.009
	User	-	100	0.017	0.017	0.026
1.017	User	-	100	0.023	0.023	0.023
1.018	-	-	100	0.000	0.000	0.000
1.019	-	-	100	0.000	0.000	0.000
1.020	Classification	Verge	50	0.010	0.005	0.005
	User	-	100	0.022	0.022	0.027
1.021	-	-	100	0.000	0.000	0.000
1.022	Classification	Verge	50	0.049	0.025	0.025
1.023	User	-	100	0.018	0.018	0.018
	Classification	Verge	50	0.012	0.006	0.024
1.024	User	-	100	0.017	0.017	0.017

Area Summary for Existing Network A40 Main-Line

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Verge	50	0.015	0.008	0.025
1.025	User	-	100	0.046	0.046	0.046
	Classification	Verge	50	0.029	0.015	0.060
6.000	User	-	100	0.036	0.036	0.036
	Classification	Verge	50	0.006	0.003	0.039
	User	-	100	0.008	0.008	0.047
6.001	User	-	100	0.019	0.019	0.019
	User	-	100	0.052	0.052	0.070
	Classification	Verge	50	0.009	0.004	0.075
	Classification	Default	100	0.006	0.006	0.081
6.002	User	-	100	0.053	0.053	0.053
	Classification	Verge	50	0.007	0.004	0.057
	User	-	100	0.004	0.004	0.061
6.003	User	-	100	0.052	0.052	0.052
	Classification	Verge	50	0.007	0.004	0.056
6.004	User	-	100	0.003	0.003	0.003
7.000	Classification	Verge	50	0.011	0.005	0.005
	Classification	Verge	50	0.034	0.017	0.023
6.005	User	-	100	0.025	0.025	0.025
	Classification	Verge	50	0.012	0.006	0.031
6.006	User	-	100	0.227	0.227	0.227
	Classification	Verge	50	0.008	0.004	0.231
6.007	-	-	100	0.000	0.000	0.000
1.026	User	-	100	0.026	0.026	0.026
	Classification	Verge	50	0.043	0.022	0.048
1.027	Classification	Verge	50	0.052	0.026	0.026
1.028	Classification	Verge	50	0.111	0.056	0.056
	User	-	100	0.018	0.018	0.073
	Classification	Verge	50	0.008	0.004	0.077
1.029	Classification	Verge	50	0.113	0.056	0.056
	Classification	Verge	50	0.004	0.002	0.059
	User	-	100	0.007	0.007	0.065
1.030	Classification	Verge	50	0.118	0.059	0.059
	User	-	100	0.016	0.016	0.075
8.000	User	-	100	0.010	0.010	0.010
	User	-	100	0.017	0.017	0.027
	Classification	Verge	50	0.035	0.018	0.044
1.031	-	-	100	0.000	0.000	0.000
1.032	User	-	100	0.020	0.020	0.020
	Classification	Verge	50	0.022	0.011	0.031
	User	-	100	0.008	0.008	0.039
	User	-	100	0.006	0.006	0.045
9.000	User	-	100	0.003	0.003	0.003
	Classification	Verge	50	0.006	0.003	0.006
9.001	User	-	100	0.014	0.014	0.014
	Classification	Verge	50	0.016	0.008	0.022
9.002	Classification	Paved	100	0.002	0.002	0.002
9.003	-	-	100	0.000	0.000	0.000
9.004	-	-	100	0.000	0.000	0.000
1.033	User	-	100	0.045	0.045	0.045
	Classification	Verge	50	0.044	0.022	0.067
10.000	User	-	100	0.053	0.053	0.053
	User	-	100	0.081	0.081	0.134
	User	-	100	0.071	0.071	0.205
	Classification	Verge	50	0.006	0.003	0.208
	User	-	100	0.009	0.009	0.217
10.001	Classification	Verge	50	0.005	0.002	0.002
	Classification	Paved	100	0.008	0.008	0.011
10.002	User	-	100	0.033	0.033	0.033
	User	-	100	0.004	0.004	0.037
	User	-	100	0.034	0.034	0.071
	User	-	100	0.018	0.018	0.090
10.003	User	-	100	0.059	0.059	0.059
	User	-	100	0.009	0.009	0.068
	User	-	100	0.038	0.038	0.106
10.004	-	-	100	0.000	0.000	0.000
1.034	User	-	100	0.069	0.069	0.069
	Classification	Verge	50	0.019	0.010	0.079
	Classification	Verge	50	0.014	0.007	0.086
1.035	Classification	Verge	50	0.016	0.008	0.008
	Classification	Verge	50	0.007	0.003	0.011
11.000	User	-	100	0.024	0.024	0.024
	User	-	100	0.064	0.064	0.088
	Classification	Verge	50	0.009	0.005	0.092
11.001	User	-	100	0.072	0.072	0.072
	Classification	Verge	50	0.009	0.005	0.076
11.002	User	-	100	0.072	0.072	0.072
	Classification	Verge	50	0.011	0.006	0.078
11.003	-	-	100	0.000	0.000	0.000
11.004	-	-	100	0.000	0.000	0.000
12.000	Classification	Verge	50	0.031	0.016	0.016
12.001	Classification	Verge	50	0.024	0.012	0.012
12.002	Classification	Verge	50	0.019	0.010	0.010
12.003	-	-	100	0.000	0.000	0.000
1.036	-	-	100	0.000	0.000	0.000

Area Summary for Existing Network A40 Main-Line

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
13.000	User	-	100	0.109	0.109	0.109
	User	-	100	0.069	0.069	0.178
13.001	-	-	100	0.000	0.000	0.000
1.037	-	-	100	0.000	0.000	0.000
14.000	User	-	100	0.081	0.081	0.081
14.001	User	-	100	0.071	0.071	0.071
14.002	User	-	100	0.057	0.057	0.057
1.038	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				4.264	3.521	3.521

Network Classifications for Existing Network A40 Main-Line

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
Pipe1.000	17	225	0.614	0.660	Unclassified	1200	0	0.660	Unclassified
Pipe1.001	Dummy_14	150	0.614	0.710	Unclassified				Junction
Pipe1.002	17A	150	0.710	0.850	Unclassified	1200	0	0.710	Unclassified
Pipe1.003	Dummy_18	150	0.761	0.850	Unclassified				Junction
Pipe1.004	19	150	0.625	0.761	Unclassified	1200	0	0.761	Unclassified
Pipe1.005	16	225	0.625	0.749	Unclassified	1200	0	0.625	Unclassified
Pipe1.006	Dummy_18	225	0.715	0.749	Unclassified				Junction
Pipe2.000	13	150	0.442	0.610	Unclassified	1200	0	0.610	Unclassified
Pipe2.001	Dummy_17	150	0.442	0.790	Unclassified				Junction
Pipe3.000	Dummy_10	150	0.750	0.750	Unclassified				Junction
Pipe3.001	15A	150	0.750	0.790	Unclassified	1200	0	0.750	Unclassified
Pipe1.007	15	225	0.715	1.107	Unclassified	1200	0	0.715	Unclassified
Pipe1.008	Dummy_20	225	1.107	1.126	Unclassified				Junction
Pipe1.009	Dummy_21	225	0.955	1.126	Unclassified				Junction
Pipe1.010	10	225	0.955	0.975	Unclassified	1200	0	0.955	Unclassified
Pipe4.000	Dummy_18	150	0.600	0.665	Unclassified				Junction
Pipe5.000	Dummy_16	150	0.270	0.314	Unclassified				Junction
Pipe5.001	9	225	0.475	0.515	Unclassified	1200	0	0.475	Unclassified
Pipe5.002	8	225	0.365	0.515	Unclassified	1200	0	0.515	Unclassified
Pipe5.003	7	225	0.365	0.665	Unclassified	1200	0	0.365	Unclassified
Pipe4.001	6	225	0.665	0.975	Unclassified	1200	0	0.665	Unclassified
Pipe1.011	29	300	0.900	1.280	Unclassified	1200	0	0.900	Unclassified
Pipe1.012	28	450	1.093	1.280	Unclassified	1200	0	1.280	Unclassified
Pipe1.013	30	500	1.093	1.210	Unclassified	1200	0	1.093	Unclassified
Pipe1.014	OUTLET-10	500	1.181	1.360	Unclassified				Junction
Pipe1.015	INLET-11	600	0.962	1.181	Unclassified				Junction
Pipe1.016	OUTLET-12	600	0.962	0.992	Unclassified				Junction
Pipe1.017	INLET-13	600	0.992	1.003	Unclassified				Junction
Pipe1.018	28	600	0.940	1.003	Unclassified				Junction
Pipe1.019	OUTLET-14	600	0.782	0.940	Unclassified				Junction
Pipe1.020	INLET-15	600	0.782	0.890	Unclassified				Junction
Pipe1.021	INACCESSIBLE MANHOLE	600	0.890	0.921	Unclassified	1500	0	0.890	Unclassified
Pipe1.022	Outlet-16	600	0.634	0.921	Unclassified				Junction
Pipe1.023	Dummy_35	600	0.634	0.648	Unclassified				Junction
Pipe1.024	Dummy_37	600	0.648	0.682	Unclassified				Junction
Pipe1.025	Dummy_40	600	0.682	0.701	Unclassified				Junction
Pipe6.000	Dummy_21	150	0.480	0.513	Unclassified				Junction
Pipe6.001	5	150	0.560	0.750	Unclassified	1200	0	0.560	Unclassified
Pipe6.002	4	225	0.655	0.675	Unclassified	1200	0	0.675	Unclassified
Pipe6.003	3	225	0.655	0.830	Unclassified	1200	0	0.655	Unclassified
Pipe6.004	2	300	0.750	0.830	Unclassified	1200	0	0.830	Unclassified
Pipe7.000	31	150	0.610	0.750	Unclassified	1200	0	0.610	Unclassified
Pipe6.005	1	300	0.750	0.808	Unclassified	1200	0	0.750	Unclassified
Pipe6.006	32	300	0.758	0.808	Unclassified	1200	0	0.808	Unclassified
Pipe6.007	33	300	0.702	0.758	Unclassified	1200	0	0.758	Unclassified
Pipe1.026	Dummy_42	600	0.701	0.732	Unclassified				Junction
Pipe1.027	Dummy_45	600	0.630	0.732	Unclassified				Junction
Pipe1.028	Dummy_48	600	0.630	0.661	Unclassified				Junction
Pipe1.029	Dummy_50	600	0.661	0.685	Unclassified				Junction
Pipe1.030	Dummy_51	600	0.685	0.950	Unclassified				Junction
Pipe8.000	49	225	0.885	1.214	Unclassified	1200	0	0.885	Unclassified
Pipe1.031	Dummy_52	750	0.800	0.823	Unclassified				Junction
Pipe1.032	Dummy_53	600	0.905	0.973	Unclassified				Junction
Pipe9.000	64	225	0.600	0.854	Unclassified	1200	0	0.600	Unclassified
Pipe9.001	Dummy_65	225	0.600	0.854	Unclassified				Junction
Pipe9.002	Dummy_68	225	0.600	0.600	Unclassified				Junction
Pipe9.003	Dummy_72	575	0.600	0.865	Unclassified				Junction
Pipe9.004	Dummy_73	575	0.613	0.865	Unclassified				Junction
Pipe1.033	Dummy_55	600	0.905	1.390	Unclassified				Junction
Pipe10.000	34	225	1.195	1.365	Unclassified	1200	0	1.365	Unclassified
Pipe10.001	35	225	1.195	1.265	Unclassified	1050	0	1.195	Unclassified
Pipe10.002	36	225	0.895	1.265	Unclassified	1200	0	1.265	Unclassified
Pipe10.003	36-A	225	0.865	0.895	Unclassified	1200	0	0.895	Unclassified
Pipe10.004	36-B	225	0.865	1.103	Unclassified	1200	0	0.865	Unclassified
Pipe1.034	Dummy_56	600	0.893	1.390	Unclassified				Junction
Pipe1.035	Dummy_58	600	0.893	1.698	Unclassified				Junction
Pipe11.000	Dummy_49A	150	0.943	1.123	Unclassified				Junction
Pipe11.001	49	150	0.880	0.943	Unclassified	1200	0	0.943	Unclassified
Pipe11.002	47	225	0.695	0.805	Unclassified	1200	0	0.805	Unclassified
Pipe11.003	46	225	0.695	1.055	Unclassified	1200	0	0.695	Unclassified
Pipe11.004	48	225	1.055	1.163	Unclassified	1200	0	1.055	Unclassified
Pipe12.000	Dummy_65A	150	0.940	1.200	Unclassified				Junction
Pipe12.001	65	150	1.200	1.210	Unclassified	1200	0	1.200	Unclassified
Pipe12.002	64	150	1.210	1.240	Unclassified	1200	0	1.210	Unclassified
Pipe12.003	63	150	1.240	1.373	Unclassified	1050	0	1.240	Unclassified
Pipe1.036	Dummy_67A	750	1.548	1.781	Unclassified				Junction
Pipe13.000	73	225	0.965	0.975	Unclassified	1200	0	0.975	Unclassified
Pipe13.001	Dummy_74	225	0.965	2.091	Unclassified				Junction
Pipe1.037	Dummy_73A	750	1.306	1.781	Unclassified				Junction
Pipe14.000	Dummy_54A	150	1.270	1.309	Unclassified				Junction
Pipe14.001	54	225	1.195	1.345	Unclassified	1200	0	1.195	Unclassified
Pipe14.002	55	225	1.143	1.345	Unclassified	1200	0	1.345	Unclassified
Pipe1.038	83	750	1.287	1.306	Unclassified	1800	0	1.306	Unclassified

Free Flowing Outfall Details for Existing Network A40 Main-Line

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
Pipe1.038	Outfall to Ditch	24.410	22.373	0.000	0	0

Simulation Criteria for Existing Network A40 Main-Line

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	0	Number of Storage Structures	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	18.000	Cv (Summer)	0.750
Return Period (years)	1	Ratio R	0.350	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

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 0   Number of Storage Structures 0   Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR   M5-60 (mm) 18.200   Cv (Summer) 1.000
Region England and Wales   Ratio R 0.370   Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0   DTS Status ON   Inertia Status OFF
Analysis Timestep Fine   DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
Pipe1.000	17	15 Summer	1	+0%	5/15 Summer	30/15 Summer			33.073	-0.082	0.000	0.71
Pipe1.001	Dummy_14	15 Summer	1	+0%	5/15 Summer				33.031	-0.025	0.000	0.92
Pipe1.002	17A	15 Summer	1	+0%	5/15 Summer	30/15 Summer			33.021	-0.029	0.000	0.95
Pipe1.003	Dummy_18	15 Winter	1	+0%					32.100	0.000	0.000	0.78
Pipe1.004	19	15 Summer	1	+0%	1/15 Summer	5/15 Summer			32.042	0.333	0.000	1.13
Pipe1.005	16	30 Summer	1	+0%	1/15 Summer	30/15 Summer			30.777	0.062	0.000	0.97
Pipe1.006	Dummy_18	30 Winter	1	+0%					30.521	0.000	0.000	0.90
Pipe2.000	13	15 Summer	1	+0%	5/15 Summer	30/15 Summer			30.778	0.000	0.000	1.03
Pipe2.001	Dummy_17	15 Summer	1	+0%					30.672	-0.078	0.000	0.45
Pipe3.000	Dummy_10	15 Winter	1	+0%					30.522	0.000	0.000	0.04
Pipe3.001	15A	30 Summer	1	+0%	1/15 Summer	30/15 Summer			30.538	0.121	0.000	0.19
Pipe1.007	15	30 Summer	1	+0%	1/15 Summer	30/15 Summer			30.538	0.084	0.000	1.24
Pipe1.008	Dummy_20	30 Winter	1	+0%					30.367	0.000	0.000	1.05
Pipe1.009	Dummy_21	30 Winter	1	+0%					30.132	0.000	0.000	0.97
Pipe1.010	10	30 Summer	1	+0%	1/15 Summer				29.750	0.095	0.000	1.11
Pipe4.000	Dummy_18	15 Summer	1	+0%					29.420	-0.030	0.000	0.96
Pipe5.000	Dummy_16	30 Winter	1	+0%					30.550	0.000	0.000	1.11
Pipe5.001	9	15 Summer	1	+0%	5/15 Summer	30/15 Summer			30.201	-0.084	0.000	0.67
Pipe5.002	8	30 Summer	1	+0%	1/15 Summer	30/15 Summer			30.016	0.101	0.000	1.52
Pipe5.003	7	30 Summer	1	+0%	5/15 Summer	30/15 Summer			29.770	-0.065	0.000	0.84
Pipe4.001	6	30 Summer	1	+0%	1/15 Summer				29.354	0.029	0.000	1.18
Pipe1.011	29	30 Summer	1	+0%	30/15 Summer				29.202	-0.098	0.000	0.78
Pipe1.012	28	30 Summer	1	+0%					28.210	-0.081	0.000	1.00
Pipe1.013	30	30 Summer	1	+0%					28.020	-0.242	0.000	0.53
Pipe1.014	OUTLET-10	30 Summer	1	+0%					27.881	-0.227	0.000	0.58
Pipe1.015	INLET-11	30 Summer	1	+0%					27.736	-0.346	0.000	0.28
Pipe1.016	OUTLET-12	30 Summer	1	+0%					27.685	-0.340	0.000	0.34
Pipe1.017	INLET-13	30 Summer	1	+0%					27.644	-0.348	0.000	0.28
Pipe1.018	28	30 Summer	1	+0%					27.586	-0.344	0.000	0.24
Pipe1.019	OUTLET-14	30 Summer	1	+0%					27.579	-0.340	0.000	0.24
Pipe1.020	INLET-15	30 Summer	1	+0%					27.575	-0.338	0.000	0.31
Pipe1.021	INACCESSIBLE MANHOLE	30 Summer	1	+0%					27.534	-0.339	0.000	0.39
Pipe1.022	Outlet-16	30 Summer	1	+0%					27.390	-0.473	0.000	0.10
Pipe1.023	Dummy_35	30 Summer	1	+0%					26.784	-0.378	0.000	0.25
Pipe1.024	Dummy_37	30 Summer	1	+0%					26.728	-0.374	0.000	0.28
Pipe1.025	Dummy_40	30 Summer	1	+0%					26.657	-0.396	0.000	0.25
Pipe6.000	Dummy_21	15 Summer	1	+0%					28.905	-0.045	0.000	0.81
Pipe6.001	5	15 Summer	1	+0%	1/15 Summer	30/15 Summer			28.850	0.010	0.000	1.00
Pipe6.002	4	15 Summer	1	+0%	30/15 Summer				28.289	-0.096	0.000	0.59
Pipe6.003	3	30 Summer	1	+0%	30/15 Summer				27.957	-0.088	0.000	0.66
Pipe6.004	2	30 Summer	1	+0%	30/15 Summer				27.614	-0.026	0.000	1.00
Pipe7.000	31	15 Summer	1	+0%					27.846	-0.104	0.000	0.21
Pipe6.005	1	30 Summer	1	+0%	30/15 Summer				27.445	-0.175	0.000	0.36
Pipe6.006	32	30 Summer	1	+0%	30/15 Summer				27.267	-0.145	0.000	0.52
Pipe6.007	33	30 Summer	1	+0%	100/15 Summer				27.075	-0.177	0.000	0.35
Pipe1.026	Dummy_42	60 Summer	1	+0%					26.499	-0.404	0.000	0.23
Pipe1.027	Dummy_45	60 Summer	1	+0%					26.233	-0.423	0.000	0.19
Pipe1.028	Dummy_48	60 Summer	1	+0%					25.853	-0.414	0.000	0.21
Pipe1.029	Dummy_50	60 Summer	1	+0%					25.244	-0.418	0.000	0.20
Pipe1.030	Dummy_51	60 Summer	1	+0%					24.636	-0.336	0.000	0.40
Pipe8.000	49	15 Summer	1	+0%					24.536	-0.139	0.000	0.31
Pipe1.031	Dummy_52	60 Summer	1	+0%					24.359	-0.592	0.000	0.10
Pipe1.032	Dummy_53	60 Summer	1	+0%					24.324	-0.460	0.000	0.12
Pipe9.000	64	15 Summer	1	+0%					24.956	-0.198	0.000	0.03
Pipe9.001	Dummy_65	15 Summer	1	+0%					24.882	-0.179	0.000	0.09
Pipe9.002	Dummy_68	15 Summer	1	+0%					24.770	-0.183	0.000	0.08
Pipe9.003	Dummy_72	15 Summer	1	+0%					24.292	-0.541	0.000	0.01
Pipe9.004	Dummy_73	15 Summer	1	+0%					24.232	-0.561	0.000	0.00
Pipe1.033	Dummy_55	60 Summer	1	+0%	100/30 Summer				23.435	-0.329	0.000	0.42
Pipe10.000	34	15 Summer	1	+0%	5/15 Summer	30/15 Summer			25.929	-0.006	0.000	0.97
Pipe10.001	35	15 Summer	1	+0%	5/15 Summer	30/15 Summer			25.606	-0.089	0.000	0.66

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
Pipe1.000	17		10.1	OK	12
Pipe1.001	Dummy_14		10.0	OK*	
Pipe1.002	17A		19.7	OK	9
Pipe1.003	Dummy_18		16.4	SURCHARGED*	
Pipe1.004	19		24.7	SURCHARGED	25
Pipe1.005	16		33.6	SURCHARGED	18
Pipe1.006	Dummy_18		32.5	SURCHARGED*	
Pipe2.000	13		11.2	OK	10
Pipe2.001	Dummy_17		11.2	OK*	
Pipe3.000	Dummy_10		0.8	SURCHARGED*	
Pipe3.001	15A		2.4	SURCHARGED	15
Pipe1.007	15		42.7	SURCHARGED	15
Pipe1.008	Dummy_20		40.9	SURCHARGED*	
Pipe1.009	Dummy_21		37.8	SURCHARGED*	
Pipe1.010	10		38.0	SURCHARGED	
Pipe4.000	Dummy_18		10.0	OK*	
Pipe5.000	Dummy_16		11.3	SURCHARGED*	
Pipe5.001	9		24.9	OK	12
Pipe5.002	8		32.5	SURCHARGED	16
Pipe5.003	7		42.3	OK	15
Pipe4.001	6		48.1	SURCHARGED	
Pipe1.011	29		85.5	OK	
Pipe1.012	28		84.8	OK	
Pipe1.013	30		84.8	OK	
Pipe1.014	OUTLET-10		84.8	OK*	
Pipe1.015	INLET-11		84.6	OK*	
Pipe1.016	OUTLET-12		84.7	OK*	
Pipe1.017	INLET-13		85.0	OK*	
Pipe1.018	28		84.4	OK*	
Pipe1.019	OUTLET-14		84.3	OK*	
Pipe1.020	INLET-15		84.7	OK*	
Pipe1.021	INACCESSIBLE MANHOLE		84.8	OK	
Pipe1.022	Outlet-16		85.3	OK*	
Pipe1.023	Dummy_35		85.6	OK*	
Pipe1.024	Dummy_37		85.9	OK*	
Pipe1.025	Dummy_40		86.7	OK*	
Pipe6.000	Dummy_21		7.2	OK*	
Pipe6.001	5		15.1	SURCHARGED	12
Pipe6.002	4		20.6	OK	
Pipe6.003	3		25.6	OK	
Pipe6.004	2		24.1	OK	
Pipe7.000	31		3.5	OK	
Pipe6.005	1		28.7	OK	
Pipe6.006	32		51.9	OK	
Pipe6.007	33		51.9	OK	
Pipe1.026	Dummy_42		113.8	OK*	
Pipe1.027	Dummy_45		114.9	OK*	
Pipe1.028	Dummy_48		118.0	OK*	
Pipe1.029	Dummy_50		120.4	OK*	
Pipe1.030	Dummy_51		122.3	OK*	
Pipe8.000	49		6.9	OK	
Pipe1.031	Dummy_52		124.0	OK*	
Pipe1.032	Dummy_53		125.3	OK*	
Pipe9.000	64		0.9	OK	
Pipe9.001	Dummy_65		3.7	OK*	
Pipe9.002	Dummy_68		3.9	OK*	
Pipe9.003	Dummy_72		3.9	OK*	
Pipe9.004	Dummy_73		3.9	OK*	
Pipe1.033	Dummy_55		128.5	OK*	
Pipe10.000	34		31.3	OK	8
Pipe10.001	35		31.7	OK	7

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
Pipe10.002	36	15 Summer	1	+0%	5/15 Summer	100/15 Summer			25.194	-0.051	0.000	0.94	
Pipe10.003	36-A	15 Summer	1	+0%	5/15 Summer	30/15 Summer			24.918	-0.047	0.000	0.97	
Pipe10.004	36-B	15 Summer	1	+0%	5/15 Summer				24.304	-0.061	0.000	0.88	
Pipe1.034	Dummy_56	60 Summer	1	+0%	100/30 Summer				23.295	-0.356	0.000	0.35	
Pipe1.035	Dummy_58	60 Summer	1	+0%					23.149	-0.293	0.000	0.52	
Pipe11.000	Dummy_49A	15 Summer	1	+0%					31.104	-0.073	0.000	0.50	
Pipe11.001	49	15 Summer	1	+0%	5/15 Summer	30/15 Summer			29.014	-0.053	0.000	0.71	
Pipe11.002	47	15 Summer	1	+0%	100/15 Summer				25.918	-0.117	0.000	0.45	
Pipe11.003	46	15 Summer	1	+0%	30/15 Summer				24.212	-0.103	0.000	0.57	
Pipe11.004	48	15 Summer	1	+0%					24.043	-0.122	0.000	0.43	
Pipe12.000	Dummy_65A	15 Summer	1	+0%					31.428	-0.122	0.000	0.08	
Pipe12.001	65	15 Summer	1	+0%					28.894	-0.116	0.000	0.11	
Pipe12.002	64	15 Summer	1	+0%					25.347	-0.103	0.000	0.20	
Pipe12.003	63	15 Summer	1	+0%					23.715	-0.095	0.000	0.29	
Pipe1.036	Dummy_67A	60 Summer	1	+0%					22.992	-0.520	0.000	0.16	
Pipe13.000	73	15 Summer	1	+0%	5/15 Summer	100/15 Summer			23.763	-0.079	0.000	0.73	
Pipe13.001	Dummy_74	15 Summer	1	+0%					23.545	-0.093	0.000	0.64	
Pipe1.037	Dummy_73A	60 Summer	1	+0%					22.894	-0.500	0.000	0.12	
Pipe14.000	Dummy_54A	15 Summer	1	+0%					30.950	-0.081	0.000	0.42	
Pipe14.001	54	15 Summer	1	+0%					28.630	-0.155	0.000	0.21	
Pipe14.002	55	15 Summer	1	+0%					24.922	-0.153	0.000	0.23	
Pipe1.038	83	60 Summer	1	+0%	100/30 Summer				22.864	-0.285	0.000	0.70	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
Pipe10.002	36	40.7	OK	5
Pipe10.003	36-A	50.7	OK	9
Pipe10.004	36-B	50.7	OK	
Pipe1.034	Dummy_56	159.3	OK*	
Pipe1.035	Dummy_58	159.2	OK*	
Pipe11.000	Dummy_49A	14.0	OK*	
Pipe11.001	49	22.8	OK	8
Pipe11.002	47	31.4	OK	
Pipe11.003	46	31.3	OK	
Pipe11.004	48	31.1	OK	
Pipe12.000	Dummy_65A	2.4	OK*	
Pipe12.001	65	3.8	OK	
Pipe12.002	64	4.7	OK	
Pipe12.003	63	4.7	OK	
Pipe1.036	Dummy_67A	177.4	OK*	
Pipe13.000	73	27.5	OK	3
Pipe13.001	Dummy_74	27.1	OK*	
Pipe1.037	Dummy_73A	182.7	OK*	
Pipe14.000	Dummy_54A	12.4	OK*	
Pipe14.001	54	21.0	OK	
Pipe14.002	55	28.2	OK	
Pipe1.038	83	188.8	OK	

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
Pipe1.000	17	15 Summer	5	+0%	5/15 Summer	30/15 Summer			33.490	0.335	0.000	0.92
Pipe1.001	Dummy_14	30 Winter	5	+0%	5/15 Summer				33.131	0.075	0.000	0.83
Pipe1.002	17A	15 Summer	5	+0%	5/15 Summer	30/15 Summer			33.471	0.421	0.000	0.97
Pipe1.003	Dummy_18	60 Winter	5	+0%					32.100	0.000	0.000	0.72
Pipe1.004	19	30 Summer	5	+0%	1/15 Summer	5/15 Summer			32.472	0.763	2.480	1.21
Pipe1.005	16	30 Summer	5	+0%	1/15 Summer	30/15 Summer			31.231	0.516	0.000	1.11
Pipe1.006	Dummy_18	60 Winter	5	+0%					30.521	0.000	0.000	0.95
Pipe2.000	13	30 Summer	5	+0%	5/15 Summer	30/15 Summer			30.974	0.196	0.000	1.55
Pipe2.001	Dummy_17	60 Winter	5	+0%					30.750	0.000	0.000	0.38
Pipe3.000	Dummy_10	60 Winter	5	+0%					30.522	0.000	0.000	0.06
Pipe3.001	15A	30 Summer	5	+0%	1/15 Summer	30/15 Summer			30.947	0.530	0.000	0.26
Pipe1.007	15	30 Summer	5	+0%	1/15 Summer	30/15 Summer			30.947	0.493	0.000	1.47
Pipe1.008	Dummy_20	120 Winter	5	+0%					30.367	0.000	0.000	0.98
Pipe1.009	Dummy_21	120 Winter	5	+0%					30.132	0.000	0.000	0.94
Pipe1.010	10	30 Summer	5	+0%	1/15 Summer				29.940	0.285	0.000	1.28
Pipe4.000	Dummy_18	60 Winter	5	+0%					29.450	0.000	0.000	0.74
Pipe5.000	Dummy_16	60 Winter	5	+0%					30.550	0.000	0.000	1.28
Pipe5.001	9	30 Summer	5	+0%	5/15 Summer	30/15 Summer			30.603	0.318	0.000	0.81
Pipe5.002	8	30 Summer	5	+0%	1/15 Summer	30/15 Summer			30.384	0.469	0.000	1.90
Pipe5.003	7	30 Summer	5	+0%	5/15 Summer	30/15 Summer			30.090	0.255	0.000	1.08
Pipe4.001	6	30 Summer	5	+0%	1/15 Summer				29.490	0.165	0.000	1.54
Pipe1.011	29	30 Summer	5	+0%	30/15 Summer				29.259	-0.041	0.000	0.98
Pipe1.012	28	30 Winter	5	+0%					28.291	0.000	0.000	1.26
Pipe1.013	30	30 Summer	5	+0%					28.061	-0.200	0.000	0.67
Pipe1.014	OUTLET-10	30 Summer	5	+0%					27.927	-0.181	0.000	0.73
Pipe1.015	INLET-11	30 Summer	5	+0%					27.776	-0.306	0.000	0.35
Pipe1.016	OUTLET-12	30 Summer	5	+0%					27.726	-0.299	0.000	0.44
Pipe1.017	INLET-13	30 Summer	5	+0%					27.685	-0.307	0.000	0.36
Pipe1.018	28	30 Summer	5	+0%					27.628	-0.301	0.000	0.31
Pipe1.019	OUTLET-14	30 Summer	5	+0%					27.621	-0.298	0.000	0.31
Pipe1.020	INLET-15	30 Summer	5	+0%					27.617	-0.295	0.000	0.41
Pipe1.021	INACCESSIBLE MANHOLE	30 Summer	5	+0%					27.577	-0.297	0.000	0.51
Pipe1.022	Outlet-16	30 Winter	5	+0%					27.407	-0.456	0.000	0.13
Pipe1.023	Dummy_35	60 Summer	5	+0%					26.820	-0.342	0.000	0.32
Pipe1.024	Dummy_37	60 Summer	5	+0%					26.764	-0.338	0.000	0.37
Pipe1.025	Dummy_40	60 Summer	5	+0%					26.692	-0.361	0.000	0.34
Pipe6.000	Dummy_21	30 Winter	5	+0%					28.950	0.000	0.000	0.85
Pipe6.001	5	15 Summer	5	+0%	1/15 Summer	30/15 Summer			29.200	0.360	0.000	1.27
Pipe6.002	4	15 Summer	5	+0%	30/15 Summer				28.320	-0.065	0.000	0.81
Pipe6.003	3	30 Summer	5	+0%	30/15 Summer				28.010	-0.035	0.000	0.95
Pipe6.004	2	30 Winter	5	+0%	30/15 Summer				27.640	0.000	0.000	1.45
Pipe7.000	31	15 Summer	5	+0%					27.861	-0.089	0.000	0.34
Pipe6.005	1	30 Summer	5	+0%	30/15 Summer				27.483	-0.137	0.000	0.57
Pipe6.006	32	30 Summer	5	+0%	30/15 Summer				27.323	-0.089	0.000	0.83
Pipe6.007	33	30 Summer	5	+0%	100/15 Summer				27.114	-0.138	0.000	0.56
Pipe1.026	Dummy_42	60 Summer	5	+0%					26.548	-0.355	0.000	0.35
Pipe1.027	Dummy_45	60 Summer	5	+0%					26.274	-0.382	0.000	0.29
Pipe1.028	Dummy_48	60 Summer	5	+0%					25.900	-0.367	0.000	0.32
Pipe1.029	Dummy_50	60 Summer	5	+0%					25.289	-0.373	0.000	0.31
Pipe1.030	Dummy_51	60 Summer	5	+0%					24.715	-0.257	0.000	0.62
Pipe8.000	49	15 Summer	5	+0%					24.566	-0.109	0.000	0.51
Pipe1.031	Dummy_52	60 Summer	5	+0%					24.398	-0.553	0.000	0.16
Pipe1.032	Dummy_53	60 Summer	5	+0%					24.361	-0.423	0.000	0.19
Pipe9.000	64	15 Summer	5	+0%					24.964	-0.190	0.000	0.06
Pipe9.001	Dummy_65	15 Summer	5	+0%					24.895	-0.166	0.000	0.15
Pipe9.002	Dummy_68	15 Summer	5	+0%					24.783	-0.170	0.000	0.14
Pipe9.003	Dummy_72	15 Summer	5	+0%					24.315	-0.518	0.000	0.02
Pipe9.004	Dummy_73	15 Summer	5	+0%					24.241	-0.552	0.000	0.01
Pipe1.033	Dummy_55	60 Summer	5	+0%	100/30 Summer				23.520	-0.244	0.000	0.66
Pipe10.000	34	15 Summer	5	+0%	5/15 Summer	30/15 Summer			26.330	0.395	0.000	1.52
Pipe10.001	35	15 Summer	5	+0%	5/15 Summer	30/15 Summer			25.878	0.183	0.000	0.84

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
Pipe1.000	17		13.2	SURCHARGED	12
Pipe1.001	Dummy_14		9.0	SURCHARGED*	
Pipe1.002	17A		20.2	SURCHARGED	9
Pipe1.003	Dummy_18		15.2	SURCHARGED*	
Pipe1.004	19		26.4	FLOOD	25
Pipe1.005	16		38.4	SURCHARGED	18
Pipe1.006	Dummy_18		34.3	SURCHARGED*	
Pipe2.000	13		16.8	SURCHARGED	10
Pipe2.001	Dummy_17		9.5	SURCHARGED*	
Pipe3.000	Dummy_10		1.1	SURCHARGED*	
Pipe3.001	15A		3.2	SURCHARGED	15
Pipe1.007	15		50.8	SURCHARGED	15
Pipe1.008	Dummy_20		38.1	SURCHARGED*	
Pipe1.009	Dummy_21		36.8	SURCHARGED*	
Pipe1.010	10		43.7	SURCHARGED	
Pipe4.000	Dummy_18		7.7	SURCHARGED*	
Pipe5.000	Dummy_16		13.0	SURCHARGED*	
Pipe5.001	9		29.9	SURCHARGED	12
Pipe5.002	8		40.6	SURCHARGED	16
Pipe5.003	7		54.0	SURCHARGED	15
Pipe4.001	6		62.5	SURCHARGED	
Pipe1.011	29		107.4	OK	
Pipe1.012	28		106.6	OK	
Pipe1.013	30		107.4	OK	
Pipe1.014	OUTLET-10		107.3	OK*	
Pipe1.015	INLET-11		107.2	OK*	
Pipe1.016	OUTLET-12		108.1	OK*	
Pipe1.017	INLET-13		109.0	OK*	
Pipe1.018	28		108.8	OK*	
Pipe1.019	OUTLET-14		108.8	OK*	
Pipe1.020	INLET-15		109.7	OK*	
Pipe1.021	INACCESSIBLE MANHOLE		109.7	OK	
Pipe1.022	Outlet-16		110.7	OK*	
Pipe1.023	Dummy_35		111.2	OK*	
Pipe1.024	Dummy_37		112.4	OK*	
Pipe1.025	Dummy_40		114.9	OK*	
Pipe6.000	Dummy_21		7.5	SURCHARGED*	
Pipe6.001	5		19.2	SURCHARGED	12
Pipe6.002	4		28.2	OK	
Pipe6.003	3		36.5	OK	
Pipe6.004	2		35.1	OK	
Pipe7.000	31		5.9	OK	
Pipe6.005	1		44.8	OK	
Pipe6.006	32		83.1	OK	
Pipe6.007	33		83.1	OK	
Pipe1.026	Dummy_42		170.2	OK*	
Pipe1.027	Dummy_45		172.7	OK*	
Pipe1.028	Dummy_48		179.3	OK*	
Pipe1.029	Dummy_50		184.2	OK*	
Pipe1.030	Dummy_51		188.6	OK*	
Pipe8.000	49		11.3	OK	
Pipe1.031	Dummy_52		191.7	OK*	
Pipe1.032	Dummy_53		194.4	OK*	
Pipe9.000	64		1.6	OK	
Pipe9.001	Dummy_65		6.3	OK*	
Pipe9.002	Dummy_68		6.6	OK*	
Pipe9.003	Dummy_72		6.6	OK*	
Pipe9.004	Dummy_73		6.6	OK*	
Pipe1.033	Dummy_55		200.5	OK*	
Pipe10.000	34		48.8	SURCHARGED	8
Pipe10.001	35		40.2	SURCHARGED	7

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
Pipe10.002	36	15 Summer	5	+0%	5/15 Summer	100/15 Summer			25.597	0.352	0.000	1.15	
Pipe10.003	36-A	15 Summer	5	+0%	5/15 Summer	30/15 Summer			25.229	0.264	0.000	1.17	
Pipe10.004	36-B	15 Summer	5	+0%	5/15 Summer				24.406	0.041	0.000	1.06	
Pipe1.034	Dummy_56	60 Summer	5	+0%	100/30 Summer				23.377	-0.274	0.000	0.57	
Pipe1.035	Dummy_58	60 Summer	5	+0%					23.270	-0.172	0.000	0.86	
Pipe11.000	Dummy_49A	15 Summer	5	+0%					31.135	-0.042	0.000	0.83	
Pipe11.001	49	15 Summer	5	+0%	5/15 Summer	30/15 Summer			29.330	0.263	0.000	1.04	
Pipe11.002	47	15 Summer	5	+0%	100/15 Summer				25.949	-0.086	0.000	0.68	
Pipe11.003	46	15 Summer	5	+0%	30/15 Summer				24.253	-0.062	0.000	0.87	
Pipe11.004	48	15 Summer	5	+0%					24.072	-0.093	0.000	0.65	
Pipe12.000	Dummy_65A	15 Summer	5	+0%					31.436	-0.114	0.000	0.13	
Pipe12.001	65	15 Summer	5	+0%					28.905	-0.105	0.000	0.19	
Pipe12.002	64	15 Summer	5	+0%					25.362	-0.088	0.000	0.33	
Pipe12.003	63	15 Summer	5	+0%					23.734	-0.076	0.000	0.49	
Pipe1.036	Dummy_67A	60 Summer	5	+0%					23.109	-0.403	0.000	0.26	
Pipe13.000	73	15 Summer	5	+0%	5/15 Summer	100/15 Summer			23.917	0.075	0.000	1.17	
Pipe13.001	Dummy_74	15 Summer	5	+0%					23.624	-0.015	0.000	1.00	
Pipe1.037	Dummy_73A	60 Summer	5	+0%					23.056	-0.338	0.000	0.18	
Pipe14.000	Dummy_54A	15 Summer	5	+0%					30.976	-0.055	0.000	0.70	
Pipe14.001	54	15 Summer	5	+0%					28.653	-0.132	0.000	0.35	
Pipe14.002	55	15 Summer	5	+0%					24.946	-0.129	0.000	0.38	
Pipe1.038	83	60 Summer	5	+0%	100/30 Summer				23.039	-0.111	0.000	1.08	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
Pipe10.002	36	49.5	SURCHARGED	5
Pipe10.003	36-A	61.6	SURCHARGED	9
Pipe10.004	36-B	61.1	SURCHARGED	
Pipe1.034	Dummy_56	261.3	OK*	
Pipe1.035	Dummy_58	262.1	OK*	
Pipe11.000	Dummy_49A	23.4	OK*	
Pipe11.001	49	33.5	SURCHARGED	8
Pipe11.002	47	47.6	OK	
Pipe11.003	46	47.6	OK	
Pipe11.004	48	47.4	OK	
Pipe12.000	Dummy_65A	4.0	OK*	
Pipe12.001	65	6.3	OK	
Pipe12.002	64	7.9	OK	
Pipe12.003	63	7.8	OK	
Pipe1.036	Dummy_67A	284.6	OK*	
Pipe13.000	73	44.0	SURCHARGED	3
Pipe13.001	Dummy_74	42.3	OK*	
Pipe1.037	Dummy_73A	285.7	OK*	
Pipe14.000	Dummy_54A	20.7	OK*	
Pipe14.001	54	35.2	OK	
Pipe14.002	55	47.2	OK	
Pipe1.038	83	293.0	OK	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

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 Coefficient 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 0   Number of Storage Structures 0   Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR   M5-60 (mm) 18.200   Cv (Summer) 1.000
Region England and Wales   Ratio R 0.370   Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0   DTS Status ON   Inertia Status OFF
Analysis Timestep Fine   DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
Pipe1.000	17	30 Summer	30	+0%	5/15 Summer	30/15 Summer			33.745	0.590	4.657	1.08
Pipe1.001	Dummy_14	60 Winter	30	+0%	5/15 Summer				33.131	0.075	0.000	0.85
Pipe1.002	17A	15 Summer	30	+0%	5/15 Summer	30/15 Summer			33.761	0.711	0.790	1.01
Pipe1.003	Dummy_18	60 Winter	30	+0%					32.100	0.000	0.000	0.93
Pipe1.004	19	30 Winter	30	+0%	1/15 Summer	5/15 Summer			32.482	0.773	12.233	1.24
Pipe1.005	16	30 Summer	30	+0%	1/15 Summer	30/15 Summer			31.347	0.632	7.124	1.29
Pipe1.006	Dummy_18	120 Winter	30	+0%					30.521	0.000	0.000	0.96
Pipe2.000	13	30 Summer	30	+0%	5/15 Summer	30/15 Summer			31.388	0.610	0.426	1.59
Pipe2.001	Dummy_17	60 Winter	30	+0%					30.750	0.000	0.000	0.45
Pipe3.000	Dummy_10	180 Winter	30	+0%					30.522	0.000	0.000	0.04
Pipe3.001	15A	30 Winter	30	+0%	1/15 Summer	30/15 Summer			31.168	0.751	0.760	0.61
Pipe1.007	15	30 Summer	30	+0%	1/15 Summer	30/15 Summer			31.171	0.717	1.850	1.62
Pipe1.008	Dummy_20	120 Winter	30	+0%					30.367	0.000	0.000	1.12
Pipe1.009	Dummy_21	120 Winter	30	+0%					30.132	0.000	0.000	1.12
Pipe1.010	10	30 Winter	30	+0%	1/15 Summer				30.248	0.593	0.000	1.33
Pipe4.000	Dummy_18	120 Winter	30	+0%					29.450	0.000	0.000	0.72
Pipe5.000	Dummy_16	60 Winter	30	+0%					30.550	0.000	0.000	1.60
Pipe5.001	9	30 Summer	30	+0%	5/15 Summer	30/15 Summer			30.764	0.479	3.732	0.94
Pipe5.002	8	30 Summer	30	+0%	1/15 Summer	30/15 Summer			30.439	0.524	9.339	2.37
Pipe5.003	7	30 Summer	30	+0%	5/15 Summer	30/15 Summer			30.205	0.370	4.552	1.12
Pipe4.001	6	30 Summer	30	+0%	1/15 Summer				29.710	0.385	0.000	1.64
Pipe1.011	29	30 Winter	30	+0%	30/15 Summer				29.442	0.142	0.000	1.07
Pipe1.012	28	30 Winter	30	+0%					28.291	0.000	0.000	1.38
Pipe1.013	30	30 Winter	30	+0%					28.080	-0.182	0.000	0.73
Pipe1.014	OUTLET-10	30 Winter	30	+0%					27.947	-0.161	0.000	0.80
Pipe1.015	INLET-11	60 Summer	30	+0%					27.795	-0.287	0.000	0.38
Pipe1.016	OUTLET-12	60 Summer	30	+0%					27.747	-0.278	0.000	0.48
Pipe1.017	INLET-13	60 Summer	30	+0%					27.707	-0.286	0.000	0.40
Pipe1.018	28	60 Summer	30	+0%					27.650	-0.279	0.000	0.35
Pipe1.019	OUTLET-14	60 Summer	30	+0%					27.644	-0.275	0.000	0.35
Pipe1.020	INLET-15	60 Summer	30	+0%					27.640	-0.273	0.000	0.46
Pipe1.021	INACCESSIBLE MANHOLE	60 Summer	30	+0%					27.599	-0.274	0.000	0.57
Pipe1.022	Outlet-16	60 Summer	30	+0%					27.417	-0.446	0.000	0.15
Pipe1.023	Dummy_35	60 Summer	30	+0%					26.846	-0.316	0.000	0.37
Pipe1.024	Dummy_37	60 Summer	30	+0%					26.792	-0.310	0.000	0.43
Pipe1.025	Dummy_40	60 Summer	30	+0%					26.725	-0.328	0.000	0.40
Pipe6.000	Dummy_21	60 Winter	30	+0%					28.950	0.000	0.000	0.85
Pipe6.001	5	15 Summer	30	+0%	1/15 Summer	30/15 Summer			29.404	0.564	3.774	1.42
Pipe6.002	4	15 Summer	30	+0%	30/15 Summer				28.585	0.200	0.000	1.01
Pipe6.003	3	15 Summer	30	+0%	30/15 Summer				28.229	0.184	0.000	1.17
Pipe6.004	2	15 Summer	30	+0%	30/15 Summer				27.676	0.036	0.000	1.90
Pipe7.000	31	15 Summer	30	+0%					27.876	-0.074	0.000	0.50
Pipe6.005	1	15 Summer	30	+0%	30/15 Summer				27.643	0.023	0.000	0.82
Pipe6.006	32	15 Summer	30	+0%	30/15 Summer				27.545	0.133	0.000	1.36
Pipe6.007	33	15 Summer	30	+0%	100/15 Summer				27.177	-0.075	0.000	0.92
Pipe1.026	Dummy_42	30 Summer	30	+0%					26.610	-0.293	0.000	0.51
Pipe1.027	Dummy_45	30 Summer	30	+0%					26.329	-0.327	0.000	0.42
Pipe1.028	Dummy_48	30 Summer	30	+0%					25.960	-0.307	0.000	0.47
Pipe1.029	Dummy_50	30 Summer	30	+0%					25.346	-0.316	0.000	0.45
Pipe1.030	Dummy_51	30 Summer	30	+0%					24.821	-0.151	0.000	0.89
Pipe8.000	49	15 Summer	30	+0%					24.599	-0.076	0.000	0.72
Pipe1.031	Dummy_52	30 Summer	30	+0%					24.442	-0.509	0.000	0.23
Pipe1.032	Dummy_53	60 Summer	30	+0%					24.399	-0.385	0.000	0.28
Pipe9.000	64	15 Summer	30	+0%					24.973	-0.181	0.000	0.08
Pipe9.001	Dummy_65	15 Summer	30	+0%					24.918	-0.143	0.000	0.28
Pipe9.002	Dummy_68	15 Summer	30	+0%					24.804	-0.149	0.000	0.24
Pipe9.003	Dummy_72	15 Summer	30	+0%					24.331	-0.502	0.000	0.04
Pipe9.004	Dummy_73	15 Summer	30	+0%					24.260	-0.533	0.000	0.02
Pipe1.033	Dummy_55	60 Summer	30	+0%	100/30 Summer				23.720	-0.044	0.000	0.94
Pipe10.000	34	15 Summer	30	+0%	5/15 Summer	30/15 Summer			27.302	1.367	1.855	1.61
Pipe10.001	35	15 Summer	30	+0%	5/15 Summer	30/15 Summer			26.890	1.195	0.056	0.99

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
Pipe1.000	17		15.5	FLOOD	12
Pipe1.001	Dummy_14		9.2	SURCHARGED*	
Pipe1.002	17A		21.0	FLOOD	9
Pipe1.003	Dummy_18		19.6	SURCHARGED*	
Pipe1.004	19		27.2	FLOOD	25
Pipe1.005	16		44.4	FLOOD	18
Pipe1.006	Dummy_18		34.7	SURCHARGED*	
Pipe2.000	13		17.2	FLOOD	10
Pipe2.001	Dummy_17		11.1	SURCHARGED*	
Pipe3.000	Dummy_10		0.8	SURCHARGED*	
Pipe3.001	15A		7.4	FLOOD	15
Pipe1.007	15		55.9	FLOOD	15
Pipe1.008	Dummy_20		43.7	SURCHARGED*	
Pipe1.009	Dummy_21		43.6	SURCHARGED*	
Pipe1.010	10		45.6	SURCHARGED	
Pipe4.000	Dummy_18		7.5	SURCHARGED*	
Pipe5.000	Dummy_16		16.3	SURCHARGED*	
Pipe5.001	9		34.6	FLOOD	12
Pipe5.002	8		50.5	FLOOD	16
Pipe5.003	7		56.0	FLOOD	15
Pipe4.001	6		66.8	SURCHARGED	
Pipe1.011	29		117.2	SURCHARGED	
Pipe1.012	28		117.1	OK	
Pipe1.013	30		117.1	OK	
Pipe1.014	OUTLET-10		117.1	OK*	
Pipe1.015	INLET-11		116.9	OK*	
Pipe1.016	OUTLET-12		119.1	OK*	
Pipe1.017	INLET-13		121.2	OK*	
Pipe1.018	28		121.0	OK*	
Pipe1.019	OUTLET-14		121.1	OK*	
Pipe1.020	INLET-15		123.3	OK*	
Pipe1.021	INACCESSIBLE MANHOLE		123.2	OK	
Pipe1.022	Outlet-16		125.4	OK*	
Pipe1.023	Dummy_35		127.8	OK*	
Pipe1.024	Dummy_37		130.7	OK*	
Pipe1.025	Dummy_40		137.6	OK*	
Pipe6.000	Dummy_21		7.6	SURCHARGED*	
Pipe6.001	5		21.6	FLOOD	12
Pipe6.002	4		34.9	SURCHARGED	
Pipe6.003	3		45.0	SURCHARGED	
Pipe6.004	2		46.0	SURCHARGED	
Pipe7.000	31		8.5	OK	
Pipe6.005	1		64.7	SURCHARGED	
Pipe6.006	32		136.1	SURCHARGED	
Pipe6.007	33		135.8	OK	
Pipe1.026	Dummy_42		250.2	OK*	
Pipe1.027	Dummy_45		254.6	OK*	
Pipe1.028	Dummy_48		264.0	OK*	
Pipe1.029	Dummy_50		271.8	OK*	
Pipe1.030	Dummy_51		272.8	OK*	
Pipe8.000	49		16.1	OK	
Pipe1.031	Dummy_52		279.4	OK*	
Pipe1.032	Dummy_53		282.7	OK*	
Pipe9.000	64		2.3	OK	
Pipe9.001	Dummy_65		11.4	OK*	
Pipe9.002	Dummy_68		11.9	OK*	
Pipe9.003	Dummy_72		12.0	OK*	
Pipe9.004	Dummy_73		12.1	OK*	
Pipe1.033	Dummy_55		288.5	OK*	
Pipe10.000	34		51.6	FLOOD	8
Pipe10.001	35		47.3	FLOOD	7

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
Pipe10.002	36	30 Summer	30	+0%	5/15 Summer	100/15 Summer			26.476	1.231	0.000	1.46	
Pipe10.003	36-A	30 Summer	30	+0%	5/15 Summer	30/15 Summer			25.861	0.896	0.787	1.45	
Pipe10.004	36-B	30 Summer	30	+0%	5/15 Summer				24.645	0.280	0.000	1.30	
Pipe1.034	Dummy_56	60 Summer	30	+0%	100/30 Summer				23.598	-0.053	0.000	0.79	
Pipe1.035	Dummy_58	60 Summer	30	+0%					23.442	0.000	0.000	1.19	
Pipe11.000	Dummy_49A	15 Winter	30	+0%					31.177	0.000	0.000	0.88	
Pipe11.001	49	15 Summer	30	+0%	5/15 Summer	30/15 Summer			30.011	0.944	1.179	1.14	
Pipe11.002	47	15 Summer	30	+0%	100/15 Summer				25.988	-0.047	0.000	0.93	
Pipe11.003	46	15 Summer	30	+0%	30/15 Summer				24.364	0.049	0.000	1.18	
Pipe11.004	48	15 Summer	30	+0%					24.105	-0.060	0.000	0.88	
Pipe12.000	Dummy_65A	15 Summer	30	+0%					31.445	-0.105	0.000	0.19	
Pipe12.001	65	15 Summer	30	+0%					28.918	-0.092	0.000	0.30	
Pipe12.002	64	15 Summer	30	+0%					25.384	-0.066	0.000	0.54	
Pipe12.003	63	15 Summer	30	+0%					23.763	-0.047	0.000	0.80	
Pipe1.036	Dummy_67A	60 Summer	30	+0%					23.224	-0.288	0.000	0.37	
Pipe13.000	73	15 Summer	30	+0%	5/15 Summer	100/15 Summer			24.379	0.537	0.000	1.50	
Pipe13.001	Dummy_74	30 Winter	30	+0%					23.639	0.000	0.000	1.05	
Pipe1.037	Dummy_73A	60 Summer	30	+0%					23.177	-0.217	0.000	0.28	
Pipe14.000	Dummy_54A	15 Summer	30	+0%					31.031	0.000	0.000	0.99	
Pipe14.001	54	15 Summer	30	+0%					28.684	-0.101	0.000	0.56	
Pipe14.002	55	15 Summer	30	+0%					24.983	-0.092	0.000	0.63	
Pipe1.038	83	15 Summer	30	+0%	100/30 Summer				23.150	0.000	0.000	1.36	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
Pipe10.002	36	62.9	SURCHARGED	5
Pipe10.003	36-A	76.2	FLOOD	9
Pipe10.004	36-B	74.8	SURCHARGED	
Pipe1.034	Dummy_56	363.3	OK*	
Pipe1.035	Dummy_58	364.3	SURCHARGED*	
Pipe11.000	Dummy_49A	24.9	SURCHARGED*	
Pipe11.001	49	36.9	FLOOD	8
Pipe11.002	47	64.9	OK	
Pipe11.003	46	64.5	SURCHARGED	
Pipe11.004	48	64.1	OK	
Pipe12.000	Dummy_65A	5.8	OK*	
Pipe12.001	65	10.3	OK	
Pipe12.002	64	12.8	OK	
Pipe12.003	63	13.0	OK	
Pipe1.036	Dummy_67A	404.8	OK*	
Pipe13.000	73	56.5	SURCHARGED	3
Pipe13.001	Dummy_74	44.3	SURCHARGED*	
Pipe1.037	Dummy_73A	429.5	OK*	
Pipe14.000	Dummy_54A	29.3	SURCHARGED*	
Pipe14.001	54	56.2	OK	
Pipe14.002	55	78.6	OK	
Pipe1.038	83	368.5	OK	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

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 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.200 Cv (Summer) 1.000
Region England and Wales Ratio R 0.370 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.
Pipe1.000	17	30 Summer	100	+0%	5/15 Summer	30/15 Summer			33.751	0.596	10.937	1.33
Pipe1.001	Dummy_14	180 Winter	100	+0%	5/15 Summer				33.131	0.075	0.000	0.67
Pipe1.002	17A	15 Summer	100	+0%	5/15 Summer	30/15 Summer			33.763	0.713	2.881	1.02
Pipe1.003	Dummy_18	120 Winter	100	+0%					32.100	0.000	0.000	0.90
Pipe1.004	19	60 Winter	100	+0%	1/15 Summer	5/15 Summer			32.492	0.783	22.142	1.22
Pipe1.005	16	60 Summer	100	+0%	1/15 Summer	30/15 Summer			31.355	0.640	14.931	1.24
Pipe1.006	Dummy_18	180 Winter	100	+0%					30.521	0.000	0.000	0.96
Pipe2.000	13	30 Summer	100	+0%	5/15 Summer	30/15 Summer			31.391	0.613	3.171	1.65
Pipe2.001	Dummy_17	120 Winter	100	+0%					30.750	0.000	0.000	0.44
Pipe3.000	Dummy_10	180 Winter	100	+0%					30.522	0.000	0.000	0.05
Pipe3.001	15A	60 Summer	100	+0%	1/15 Summer	30/15 Summer			31.170	0.753	2.505	0.82
Pipe1.007	15	60 Summer	100	+0%	1/15 Summer	30/15 Summer			31.175	0.721	6.472	1.48
Pipe1.008	Dummy_20	180 Winter	100	+0%					30.367	0.000	0.000	1.14
Pipe1.009	Dummy_21	180 Winter	100	+0%					30.132	0.000	0.000	1.14
Pipe1.010	10	30 Summer	100	+0%	1/15 Summer				30.448	0.793	0.000	1.34
Pipe4.000	Dummy_18	180 Winter	100	+0%					29.450	0.000	0.000	0.72
Pipe5.000	Dummy_16	120 Winter	100	+0%					30.550	0.000	0.000	1.47
Pipe5.001	9	30 Summer	100	+0%	5/15 Summer	30/15 Summer			30.771	0.486	11.081	0.94
Pipe5.002	8	60 Summer	100	+0%	1/15 Summer	30/15 Summer			30.447	0.532	17.171	2.30
Pipe5.003	7	30 Summer	100	+0%	5/15 Summer	30/15 Summer			30.213	0.378	12.855	1.19
Pipe4.001	6	30 Summer	100	+0%	1/15 Summer				29.879	0.554	0.000	1.59
Pipe1.011	29	30 Summer	100	+0%	30/15 Summer				29.646	0.346	0.000	1.14
Pipe1.012	28	60 Winter	100	+0%					28.291	0.000	0.000	1.44
Pipe1.013	30	30 Summer	100	+0%					28.096	-0.166	0.000	0.78
Pipe1.014	OUTLET-10	30 Summer	100	+0%					27.965	-0.143	0.000	0.86
Pipe1.015	INLET-11	60 Summer	100	+0%					27.811	-0.271	0.000	0.41
Pipe1.016	OUTLET-12	60 Summer	100	+0%					27.765	-0.260	0.000	0.52
Pipe1.017	INLET-13	60 Summer	100	+0%					27.725	-0.267	0.000	0.43
Pipe1.018	28	60 Summer	100	+0%					27.670	-0.259	0.000	0.38
Pipe1.019	OUTLET-14	60 Summer	100	+0%					27.664	-0.255	0.000	0.38
Pipe1.020	INLET-15	60 Summer	100	+0%					27.660	-0.253	0.000	0.50
Pipe1.021	INACCESSIBLE MANHOLE	60 Summer	100	+0%					27.619	-0.255	0.000	0.63
Pipe1.022	Outlet-16	60 Summer	100	+0%					27.426	-0.437	0.000	0.17
Pipe1.023	Dummy_35	60 Summer	100	+0%					26.872	-0.290	0.000	0.42
Pipe1.024	Dummy_37	60 Summer	100	+0%					26.821	-0.281	0.000	0.49
Pipe1.025	Dummy_40	60 Summer	100	+0%					26.759	-0.294	0.000	0.47
Pipe6.000	Dummy_21	60 Winter	100	+0%					28.950	0.000	0.000	1.25
Pipe6.001	5	30 Summer	100	+0%	1/15 Summer	30/15 Summer			29.410	0.570	10.462	1.44
Pipe6.002	4	15 Summer	100	+0%	30/15 Summer				28.970	0.585	0.000	1.02
Pipe6.003	3	15 Summer	100	+0%	30/15 Summer				28.636	0.591	0.000	1.31
Pipe6.004	2	15 Summer	100	+0%	30/15 Summer				27.874	0.234	0.000	2.53
Pipe7.000	31	15 Summer	100	+0%					27.943	-0.007	0.000	0.62
Pipe6.005	1	15 Summer	100	+0%	30/15 Summer				27.839	0.219	0.000	0.99
Pipe6.006	32	15 Summer	100	+0%	30/15 Summer				27.733	0.321	0.000	1.60
Pipe6.007	33	15 Summer	100	+0%	100/15 Summer				27.302	0.050	0.000	1.09
Pipe1.026	Dummy_42	30 Summer	100	+0%					26.654	-0.249	0.000	0.64
Pipe1.027	Dummy_45	30 Summer	100	+0%					26.366	-0.290	0.000	0.53
Pipe1.028	Dummy_48	30 Summer	100	+0%					26.001	-0.266	0.000	0.59
Pipe1.029	Dummy_50	30 Summer	100	+0%					25.387	-0.275	0.000	0.56
Pipe1.030	Dummy_51	30 Winter	100	+0%					24.972	0.000	0.000	1.05
Pipe8.000	49	15 Summer	100	+0%					24.630	-0.045	0.000	0.91
Pipe1.031	Dummy_52	60 Summer	100	+0%					24.471	-0.480	0.000	0.29
Pipe1.032	Dummy_53	60 Summer	100	+0%					24.428	-0.356	0.000	0.35
Pipe9.000	64	15 Summer	100	+0%					24.978	-0.176	0.000	0.11
Pipe9.001	Dummy_65	15 Summer	100	+0%					24.930	-0.131	0.000	0.36
Pipe9.002	Dummy_68	15 Summer	100	+0%					24.816	-0.137	0.000	0.32
Pipe9.003	Dummy_72	15 Summer	100	+0%					24.341	-0.492	0.000	0.05
Pipe9.004	Dummy_73	15 Summer	100	+0%					24.272	-0.521	0.000	0.02
Pipe1.033	Dummy_55	60 Summer	100	+0%	100/30 Summer				23.891	0.127	0.000	1.18
Pipe10.000	34	30 Summer	100	+0%	5/15 Summer	30/15 Summer			27.310	1.375	9.884	1.56
Pipe10.001	35	15 Summer	100	+0%	5/15 Summer	30/15 Summer			26.891	1.196	0.959	1.08

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
Pipe1.000	17		19.0	FLOOD	12
Pipe1.001	Dummy_14		7.2	SURCHARGED*	
Pipe1.002	17A		21.2	FLOOD	9
Pipe1.003	Dummy_18		19.0	SURCHARGED*	
Pipe1.004	19		26.7	FLOOD	25
Pipe1.005	16		42.9	FLOOD	18
Pipe1.006	Dummy_18		34.9	SURCHARGED*	
Pipe2.000	13		17.9	FLOOD	10
Pipe2.001	Dummy_17		11.0	SURCHARGED*	
Pipe3.000	Dummy_10		1.1	SURCHARGED*	
Pipe3.001	15A		10.0	FLOOD	15
Pipe1.007	15		51.0	FLOOD	15
Pipe1.008	Dummy_20		44.6	SURCHARGED*	
Pipe1.009	Dummy_21		44.4	SURCHARGED*	
Pipe1.010	10		46.0	SURCHARGED	
Pipe4.000	Dummy_18		7.5	SURCHARGED*	
Pipe5.000	Dummy_16		15.0	SURCHARGED*	
Pipe5.001	9		34.7	FLOOD	12
Pipe5.002	8		49.0	FLOOD	16
Pipe5.003	7		59.4	FLOOD	15
Pipe4.001	6		64.6	SURCHARGED	
Pipe1.011	29		125.5	SURCHARGED	
Pipe1.012	28		122.0	OK	
Pipe1.013	30		125.4	OK	
Pipe1.014	OUTLET-10		125.5	OK*	
Pipe1.015	INLET-11		124.2	OK*	
Pipe1.016	OUTLET-12		128.2	OK*	
Pipe1.017	INLET-13		131.7	OK*	
Pipe1.018	28		131.5	OK*	
Pipe1.019	OUTLET-14		131.7	OK*	
Pipe1.020	INLET-15		135.2	OK*	
Pipe1.021	INACCESSIBLE MANHOLE		135.4	OK	
Pipe1.022	Outlet-16		138.6	OK*	
Pipe1.023	Dummy_35		142.9	OK*	
Pipe1.024	Dummy_37		147.9	OK*	
Pipe1.025	Dummy_40		159.9	OK*	
Pipe6.000	Dummy_21		11.1	SURCHARGED*	
Pipe6.001	5		21.9	FLOOD	12
Pipe6.002	4		35.5	SURCHARGED	
Pipe6.003	3		50.7	SURCHARGED	
Pipe6.004	2		61.1	SURCHARGED	
Pipe7.000	31		10.6	OK	
Pipe6.005	1		77.9	SURCHARGED	
Pipe6.006	32		160.5	SURCHARGED	
Pipe6.007	33		160.8	SURCHARGED	
Pipe1.026	Dummy_42		310.5	OK*	
Pipe1.027	Dummy_45		316.9	OK*	
Pipe1.028	Dummy_48		330.0	OK*	
Pipe1.029	Dummy_50		340.6	OK*	
Pipe1.030	Dummy_51		322.6	SURCHARGED*	
Pipe8.000	49		20.3	OK	
Pipe1.031	Dummy_52		347.0	OK*	
Pipe1.032	Dummy_53		352.5	OK*	
Pipe9.000	64		2.9	OK	
Pipe9.001	Dummy_65		14.8	OK*	
Pipe9.002	Dummy_68		15.5	OK*	
Pipe9.003	Dummy_72		15.5	OK*	
Pipe9.004	Dummy_73		15.7	OK*	
Pipe1.033	Dummy_55		360.5	SURCHARGED*	
Pipe10.000	34		50.0	FLOOD	8
Pipe10.001	35		51.6	FLOOD	7

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Existing Network A40 Main-Line

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
Pipe10.002	36	30 Summer	100	+0%	5/15 Summer	100/15 Summer			26.512	1.267	2.049	1.52	
Pipe10.003	36-A	30 Summer	100	+0%	5/15 Summer	30/15 Summer			25.867	0.902	6.914	1.47	
Pipe10.004	36-B	30 Summer	100	+0%	5/15 Summer				24.647	0.282	0.000	1.30	
Pipe1.034	Dummy_56	60 Summer	100	+0%	100/30 Summer				23.732	0.081	0.000	0.97	
Pipe1.035	Dummy_58	120 Winter	100	+0%					23.442	0.000	0.000	1.14	
Pipe11.000	Dummy_49A	30 Winter	100	+0%					31.177	0.000	0.000	0.95	
Pipe11.001	49	30 Summer	100	+0%	5/15 Summer	30/15 Summer			30.015	0.948	5.251	1.14	
Pipe11.002	47	15 Summer	100	+0%	100/15 Summer				26.224	0.189	0.000	1.01	
Pipe11.003	46	15 Summer	100	+0%	30/15 Summer				24.407	0.092	0.000	1.30	
Pipe11.004	48	15 Summer	100	+0%					24.116	-0.049	0.000	0.97	
Pipe12.000	Dummy_65A	15 Summer	100	+0%					31.451	-0.099	0.000	0.25	
Pipe12.001	65	15 Summer	100	+0%					28.927	-0.083	0.000	0.39	
Pipe12.002	64	15 Summer	100	+0%					25.400	-0.050	0.000	0.70	
Pipe12.003	63	15 Summer	100	+0%					23.809	-0.001	0.000	1.00	
Pipe1.036	Dummy_67A	60 Summer	100	+0%					23.252	-0.260	0.000	0.45	
Pipe13.000	73	15 Summer	100	+0%	5/15 Summer	100/15 Summer			24.818	0.976	1.156	1.68	
Pipe13.001	Dummy_74	60 Winter	100	+0%					23.639	0.000	0.000	0.96	
Pipe1.037	Dummy_73A	60 Summer	100	+0%					23.191	-0.203	0.000	0.35	
Pipe14.000	Dummy_54A	15 Winter	100	+0%					31.031	0.000	0.000	1.07	
Pipe14.001	54	15 Summer	100	+0%					28.698	-0.087	0.000	0.66	
Pipe14.002	55	15 Summer	100	+0%					25.003	-0.072	0.000	0.78	
Pipe1.038	83	60 Summer	100	+0%	100/30 Summer				23.157	0.007	0.000	2.10	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
Pipe10.002	36	65.6	FLOOD	5
Pipe10.003	36-A	77.1	FLOOD	9
Pipe10.004	36-B	74.9	SURCHARGED	
Pipe1.034	Dummy_56	443.2	SURCHARGED*	
Pipe1.035	Dummy_58	348.3	SURCHARGED*	
Pipe11.000	Dummy_49A	26.7	SURCHARGED*	
Pipe11.001	49	36.9	FLOOD	8
Pipe11.002	47	70.8	SURCHARGED	
Pipe11.003	46	70.9	SURCHARGED	
Pipe11.004	48	70.8	OK	
Pipe12.000	Dummy_65A	7.5	OK*	
Pipe12.001	65	13.3	OK	
Pipe12.002	64	16.5	OK	
Pipe12.003	63	16.1	OK	
Pipe1.036	Dummy_67A	498.0	OK*	
Pipe13.000	73	63.2	FLOOD	3
Pipe13.001	Dummy_74	40.5	SURCHARGED*	
Pipe1.037	Dummy_73A	539.4	OK*	
Pipe14.000	Dummy_54A	31.7	SURCHARGED*	
Pipe14.001	54	66.7	OK	
Pipe14.002	55	97.4	OK	
Pipe1.038	83	567.9	SURCHARGED	

Appendix C. Proposed Hydraulic Model

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Proposed Model J1

Pipe Sizes STANDARD Manhole Sizes M5J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.200	Add Flow / Climate Change (%)	0
Ratio R	0.370	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Inverts

Network Design Table for Proposed Model J1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	56.899	1.626	35.0	0.172	5.00	0.0	0.600	o	225	Pipe/Conduit	
1.001	86.879	3.407	25.5	0.131	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	75.221	3.796	19.8	0.150	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.003	42.247	2.498	16.9	0.010	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.004	37.130	0.199	186.6	0.055	0.00	0.0	0.600	oo	300	Double Pipe	
1.005	16.937	0.034	500.0	0.000	0.00	0.0	0.600	oo	375	Double Pipe	
1.006	28.703	0.057	500.0	0.000	0.00	0.0	0.600	oo	375	Double Pipe	
1.007	39.874	0.080	500.0	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.008	34.832	0.070	500.0	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.009	23.538	0.047	500.0	0.000	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)
1.000	46.30	5.43	33.014	0.172	0.0	0.0	0.0	2.22	88.2	28.7
1.001	44.32	5.98	31.388	0.303	0.0	0.0	0.0	2.60	103.4	48.4
1.002	42.94	6.41	27.981	0.453	0.0	0.0	0.0	2.95	117.4	70.2
1.003	42.26	6.63	24.185	0.463	0.0	0.0	0.0	3.20	127.1	70.7
1.004	40.70	7.17	21.687	0.518	0.0	0.0	0.0	1.15	162.3	76.1
1.005	39.75	7.52	21.488	0.518	0.0	0.0	0.0	0.80	177.5	76.1
1.006	38.25	8.11	21.454	0.518	0.0	0.0	0.0	0.80	177.5	76.1
1.007	36.38	8.94	21.397	0.518	0.0	0.0	0.0	0.80	88.7	76.1
1.008	34.91	9.66	21.317	0.518	0.0	0.0	0.0	0.80	88.7	76.1
1.009	33.99	10.15	21.247	0.518	0.0	0.0	0.0	0.80	88.7	76.1

Network Design Table for Proposed Model J1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.010	26.043	0.055	471.7	0.165	0.00	0.0	0.600	o	575	Pipe/Conduit	
1.011	10.090	0.020	500.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.012	5.113	0.023	220.8	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
2.000	86.843	3.474	25.0	0.190	5.00	0.0	0.600	o	300	Pipe/Conduit	
2.001	65.691	2.530	26.0	0.078	0.00	0.0	0.600	o	300	Pipe/Conduit	
2.002	83.372	3.207	26.0	0.046	0.00	0.0	0.600	o	300	Pipe/Conduit	
2.003	65.161	1.515	43.0	0.048	0.00	0.0	0.600	o	450	Pipe/Conduit	
2.004	89.011	0.989	90.0	0.038	0.00	0.0	0.600	o	525	Pipe/Conduit	
2.005	58.511	0.118	495.9	0.000	0.00	0.0	0.600	o	525	Pipe/Conduit	
2.006	21.145	0.042	500.0	0.000	0.00	0.0	0.600	o	525	Pipe/Conduit	
3.000	65.612	0.662	99.1	0.079	5.00	0.0	0.600	o	225	Pipe/Conduit	
3.001	44.778	0.292	153.3	0.042	0.00	0.0	0.600	o	225	Pipe/Conduit	
3.002	40.785	0.250	163.1	0.040	0.00	0.0	0.600	o	225	Pipe/Conduit	
3.003	40.427	0.175	231.0	0.060	0.00	0.0	0.600	o	225	Pipe/Conduit	
3.004	36.264	0.145	250.1	0.022	0.00	0.0	0.600	o	225	Pipe/Conduit	
3.005	38.531	0.110	350.3	0.046	0.00	0.0	0.600	o	375	Pipe/Conduit	
3.006	48.092	0.096	500.0	0.041	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

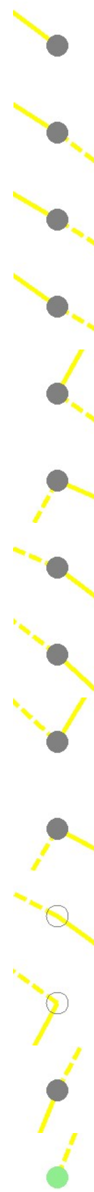
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.010	33.28	10.55	21.200	0.683	0.0	0.0	0.0	1.09	281.8	82.0
1.011	32.95	10.74	21.145	0.683	0.0	0.0	0.0	0.90	143.5	82.0
1.012	32.85	10.80	21.126	0.683	0.0	0.0	0.0	1.36	217.0	82.0
2.000	46.19	5.46	32.546	0.190	0.0	0.0	0.0	3.16	223.2	31.6
2.001	44.92	5.81	29.072	0.268	0.0	0.0	0.0	3.10	219.0	43.4
2.002	43.41	6.26	26.542	0.314	0.0	0.0	0.0	3.10	218.8	49.2
2.003	42.32	6.61	23.185	0.362	0.0	0.0	0.0	3.11	494.2	55.3
2.004	40.50	7.24	21.595	0.400	0.0	0.0	0.0	2.36	511.3	58.5
2.005	38.02	8.21	20.606	0.400	0.0	0.0	0.0	1.00	216.3	58.5
2.006	37.20	8.57	20.488	0.400	0.0	0.0	0.0	0.99	215.4	58.5
3.000	44.84	5.83	21.909	0.079	0.0	0.0	0.0	1.31	52.2	12.8
3.001	42.53	6.54	21.247	0.121	0.0	0.0	0.0	1.05	41.9	18.6
3.002	40.59	7.21	20.955	0.161	0.0	0.0	0.0	1.02	40.6	23.6
3.003	38.55	7.99	20.705	0.221	0.0	0.0	0.0	0.86	34.0	30.8
3.004	36.84	8.73	20.530	0.243	0.0	0.0	0.0	0.82	32.7	32.4
3.005	35.44	9.40	20.235	0.289	0.0	0.0	0.0	0.96	106.3	37.0
3.006	33.75	10.28	20.050	0.330	0.0	0.0	0.0	0.90	143.5	40.2

Manhole Schedules for Proposed Model J1

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)	Backd (mm
J1-PRMH1-01	34.439	1.425	Open Manhole	1050	1.000	33.014	225				
J1-PRMH1-02	32.888	1.500	Open Manhole	1050	1.001	31.388	225	1.000	31.388	225	
J1-PRMH1-03	29.369	1.388	Open Manhole	1050	1.002	27.981	225	1.001	27.981	225	
J1-PRMH1-04	25.270	1.085	Open Manhole	1050	1.003	24.185	225	1.002	24.185	225	
J1-PRMH1-05	23.337	1.650	Open Manhole	1350	1.004	21.687	300	1.003	21.687	225	
J1-PRMH1-06	22.080	0.592	Open Manhole	1500	1.005	21.488	375	1.004	21.488	300	
J1-PRMH1-07	21.971	0.517	Open Manhole	1500	1.006	21.454	375	1.005	21.454	375	
J1-PRMH1-08	22.063	0.666	Open Manhole	1500	1.007	21.397	375	1.006	21.397	375	
J1-PRMH1-09	22.194	0.877	Open Manhole	1500	1.008	21.317	375	1.007	21.317	375	
J1-PRMH1-10	22.290	1.043	Open Manhole	1500	1.009	21.247	375	1.008	21.247	375	
J1-POND INLET	22.100	0.900	Junction		1.010	21.200	575	1.009	21.200	375	
J1-POND OUTLET	22.100	0.955	Junction		1.011	21.145	450	1.010	21.145	575	
J1-PRMH1-11	22.210	1.085	Open Manhole	1800	1.012	21.126	450	1.011	21.125	450	
OF-3	22.370	1.267	Open Manhole	0		OUTFALL		1.012	21.103	450	
J1-PRMH1-12	34.994	2.448	Open Manhole	1200	2.000	32.546	300				
J1-PRMH1-13	32.710	3.638	Open Manhole	1200	2.001	29.072	300	2.000	29.072	300	
J1-PRMH1-14	30.007	3.465	Open Manhole	1200	2.002	26.542	300	2.001	26.542	300	
J1-PRMH1-15	25.732	2.547	Open Manhole	1350	2.003	23.185	450	2.002	23.335	300	
J1-PRMH1-16	23.020	1.425	Open Manhole	1500	2.004	21.595	525	2.003	21.670	450	
J1-PRMH1-17	22.013	1.407	Open Manhole	1500	2.005	20.606	525	2.004	20.606	525	
J1-PRMH1-18	21.884	1.396	Open Manhole	1500	2.006	20.488	525	2.005	20.488	525	
OF-1	22.440	1.994	Open Manhole	0		OUTFALL		2.006	20.446	525	
J1-PRMH1-19	22.734	0.825	Open Manhole	1050	3.000	21.909	225				
J1-PRMH1-20	22.073	0.826	Open Manhole	1050	3.001	21.247	225	3.000	21.247	225	
J1-PRMH1-21	21.778	0.823	Open Manhole	1050	3.002	20.955	225	3.001	20.955	225	
J1-PRMH1-22	21.533	0.828	Open Manhole	1050	3.003	20.705	225	3.002	20.705	225	
J1-PRMH1-23	21.355	0.825	Open Manhole	1050	3.004	20.530	225	3.003	20.530	225	
J1-PRMH1-24	21.218	0.983	Open Manhole	1350	3.005	20.235	375	3.004	20.385	225	
J1-PRMH1-25	21.255	1.205	Open Manhole	1350	3.006	20.050	450	3.005	20.125	375	
OF-2	21.300	1.346	Open Manhole	0		OUTFALL		3.006	19.954	450	

Manhole Schedules for Proposed Model J1

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J1-PRMH1-01	390336.221	225710.443	390336.221	225710.443	Required	
J1-PRMH1-02	390290.869	225744.803	390290.869	225744.803	Required	
J1-PRMH1-03	390217.593	225791.479	390217.593	225791.479	Required	
J1-PRMH1-04	390152.757	225829.616	390152.757	225829.616	Required	
J1-PRMH1-05	390118.256	225853.999	390118.256	225853.999	Required	
J1-PRMH1-06	390136.262	225886.471	390136.262	225886.471	Required	
J1-PRMH1-07	390151.797	225879.723	390151.797	225879.723	Required	
J1-PRMH1-08	390174.629	225862.329	390174.629	225862.329	Required	
J1-PRMH1-09	390204.002	225835.363	390204.002	225835.363	Required	
J1-PRMH1-10	390222.054	225865.152	390222.054	225865.152	Required	
J1-POND INLET	390242.905	225854.230			No Entry	
J1-POND OUTLET	390263.945	225838.883			No Entry	
J1-PRMH1-11	390259.197	225829.980	390259.197	225829.980	Required	
OF-3	390257.267	225825.245			No Entry	



Manhole Schedules for Proposed Model J1

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J1-PRMH1-12	390325.955	225655.611	390325.955	225655.611	Required	
J1-PRMH1-13	390269.530	225721.626	390269.530	225721.626	Required	
J1-PRMH1-14	390219.358	225764.029	390219.358	225764.029	Required	
J1-PRMH1-15	390151.573	225812.570	390151.573	225812.570	Required	
J1-PRMH1-16	390094.902	225844.730	390094.902	225844.730	Required	
J1-PRMH1-17	390017.668	225888.979	390017.668	225888.979	Required	
J1-PRMH1-18	389967.186	225918.562	389967.186	225918.562	Required	
OF-1	389946.102	225920.169			No Entry	
J1-PRMH1-19	390095.582	225860.869	390095.582	225860.869	Required	
J1-PRMH1-20	390037.133	225890.680	390037.133	225890.680	Required	
J1-PRMH1-21	389997.263	225911.064	389997.263	225911.064	Required	
J1-PRMH1-22	389962.882	225933.002	389962.882	225933.002	Required	
J1-PRMH1-23	389931.229	225958.150	389931.229	225958.150	Required	
J1-PRMH1-24	389905.431	225983.635	389905.431	225983.635	Required	

Manhole Schedules for Proposed Model J1

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J1-PRMH1-25	389880.829	226013.290	389880.829	226013.290	Required	
OF-2	389851.537	226051.432			No Entry	

PIPELINE SCHEDULES for Proposed Model J1

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)
1.000	o	225	J1-PRMH1-01	34.439	33.014	1.200	Open Manhole	1050
1.001	o	225	J1-PRMH1-02	32.888	31.388	1.275	Open Manhole	1050
1.002	o	225	J1-PRMH1-03	29.369	27.981	1.163	Open Manhole	1050
1.003	o	225	J1-PRMH1-04	25.270	24.185	0.860	Open Manhole	1050
1.004	oo	300	J1-PRMH1-05	23.337	21.687	1.350	Open Manhole	1350
1.005	oo	375	J1-PRMH1-06	22.080	21.488	0.217	Open Manhole	1500
1.006	oo	375	J1-PRMH1-07	21.971	21.454	0.142	Open Manhole	1500
1.007	o	375	J1-PRMH1-08	22.063	21.397	0.291	Open Manhole	1500
1.008	o	375	J1-PRMH1-09	22.194	21.317	0.502	Open Manhole	1500
1.009	o	375	J1-PRMH1-10	22.290	21.247	0.668	Open Manhole	1500
1.010	o	575	J1-POND INLET	22.100	21.200	0.325	Junction	
1.011	o	450	J1-POND OUTLET	22.100	21.145	0.505	Junction	
1.012	o	450	J1-PRMH1-11	22.210	21.126	0.634	Open Manhole	1800
2.000	o	300	J1-PRMH1-12	34.994	32.546	2.148	Open Manhole	1200
2.001	o	300	J1-PRMH1-13	32.710	29.072	3.338	Open Manhole	1200
2.002	o	300	J1-PRMH1-14	30.007	26.542	3.165	Open Manhole	1200
2.003	o	450	J1-PRMH1-15	25.732	23.185	2.097	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)
1.000	56.899	35.0	J1-PRMH1-02	32.888	31.388	1.275	Open Manhole	1050
1.001	86.879	25.5	J1-PRMH1-03	29.369	27.981	1.163	Open Manhole	1050
1.002	75.221	19.8	J1-PRMH1-04	25.270	24.185	0.860	Open Manhole	1050
1.003	42.247	16.9	J1-PRMH1-05	23.337	21.687	1.425	Open Manhole	1350
1.004	37.130	186.6	J1-PRMH1-06	22.080	21.488	0.292	Open Manhole	1500
1.005	16.937	500.0	J1-PRMH1-07	21.971	21.454	0.142	Open Manhole	1500
1.006	28.703	500.0	J1-PRMH1-08	22.063	21.397	0.291	Open Manhole	1500
1.007	39.874	500.0	J1-PRMH1-09	22.194	21.317	0.502	Open Manhole	1500
1.008	34.832	500.0	J1-PRMH1-10	22.290	21.247	0.668	Open Manhole	1500
1.009	23.538	500.0	J1-POND INLET	22.100	21.200	0.525	Junction	
1.010	26.043	471.7	J1-POND OUTLET	22.100	21.145	0.380	Junction	
1.011	10.090	500.0	J1-PRMH1-11	22.210	21.125	0.635	Open Manhole	1800
1.012	5.113	220.8	OF-3	22.370	21.103	0.817	Open Manhole	0
2.000	86.843	25.0	J1-PRMH1-13	32.710	29.072	3.338	Open Manhole	1200
2.001	65.691	26.0	J1-PRMH1-14	30.007	26.542	3.165	Open Manhole	1200
2.002	83.372	26.0	J1-PRMH1-15	25.732	23.335	2.096	Open Manhole	1350
2.003	65.161	43.0	J1-PRMH1-16	23.020	21.670	0.901	Open Manhole	1500

PIPELINE SCHEDULES for Proposed Model J1

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)
2.004	o	525	J1-PRMH1-16	23.020	21.595	0.900	Open Manhole	1500
2.005	o	525	J1-PRMH1-17	22.013	20.606	0.882	Open Manhole	1500
2.006	o	525	J1-PRMH1-18	21.884	20.488	0.871	Open Manhole	1500
3.000	o	225	J1-PRMH1-19	22.734	21.909	0.600	Open Manhole	1050
3.001	o	225	J1-PRMH1-20	22.073	21.247	0.601	Open Manhole	1050
3.002	o	225	J1-PRMH1-21	21.778	20.955	0.598	Open Manhole	1050
3.003	o	225	J1-PRMH1-22	21.533	20.705	0.603	Open Manhole	1050
3.004	o	225	J1-PRMH1-23	21.355	20.530	0.600	Open Manhole	1050
3.005	o	375	J1-PRMH1-24	21.218	20.235	0.608	Open Manhole	1350
3.006	o	450	J1-PRMH1-25	21.255	20.050	0.755	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)
2.004	89.011	90.0	J1-PRMH1-17	22.013	20.606	0.882	Open Manhole	1500
2.005	58.511	495.9	J1-PRMH1-18	21.884	20.488	0.871	Open Manhole	1500
2.006	21.145	500.0	OF-1	22.440	20.446	1.469	Open Manhole	0
3.000	65.612	99.1	J1-PRMH1-20	22.073	21.247	0.601	Open Manhole	1050
3.001	44.778	153.3	J1-PRMH1-21	21.778	20.955	0.598	Open Manhole	1050
3.002	40.785	163.1	J1-PRMH1-22	21.533	20.705	0.603	Open Manhole	1050
3.003	40.427	231.0	J1-PRMH1-23	21.355	20.530	0.600	Open Manhole	1050
3.004	36.264	250.1	J1-PRMH1-24	21.218	20.385	0.608	Open Manhole	1350
3.005	38.531	350.3	J1-PRMH1-25	21.255	20.125	0.755	Open Manhole	1350
3.006	48.092	500.0	OF-2	21.300	19.954	0.896	Open Manhole	0

Area Summary for Proposed Model J1

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Verge	50	0.006	0.003	0.003
	Classification	Carriage Way & Footway	100	0.048	0.048	0.051
	Classification	Verge	50	0.008	0.004	0.055
	Classification	Carriage Way & Footway	100	0.061	0.061	0.116
	Classification	Climate change	40	0.007	0.003	0.119
	Classification	Climate change	40	0.003	0.001	0.120
	Classification	Carriage Way & Footway	100	0.015	0.015	0.135
	Classification	Carriage Way & Footway	100	0.019	0.019	0.154
	Classification	Verge	50	0.004	0.002	0.156
	Classification	Carriage Way & Footway	100	0.016	0.016	0.172
1.001	Classification	Verge	50	0.011	0.005	0.005
	Classification	Carriage Way & Footway	100	0.058	0.058	0.064
	Classification	Verge	50	0.002	0.001	0.065
	Classification	Carriage Way & Footway	100	0.035	0.035	0.100
	Classification	Verge	50	0.004	0.002	0.102
	Classification	Carriage Way & Footway	100	0.017	0.017	0.119
	Classification	Carriage Way & Footway	100	0.012	0.012	0.131
1.002	Classification	Verge	50	0.003	0.001	0.001
	Classification	Carriage Way & Footway	100	0.005	0.005	0.007
	Classification	Carriage Way & Footway	100	0.091	0.091	0.098
	Classification	Central reserve	20	0.002	0.000	0.098
	Classification	Carriage Way & Footway	100	0.022	0.022	0.120
	Classification	Carriage Way & Footway	100	0.013	0.013	0.133
	Classification	Verge	50	0.002	0.001	0.134
	Classification	Carriage Way & Footway	100	0.009	0.009	0.144
	Classification	Verge	50	0.005	0.002	0.146
	Classification	Verge	50	0.009	0.004	0.150
1.003	Classification	Carriage Way & Footway	100	0.008	0.008	0.008
	Classification	Verge	50	0.005	0.003	0.010
1.004	Classification	Carriage Way & Footway	100	0.033	0.033	0.033
	Classification	Verge	50	0.003	0.001	0.034
	Classification	Carriage Way & Footway	100	0.006	0.006	0.040
	Classification	Climate change	40	0.004	0.002	0.041
	Classification	Additional verge	20	0.001	0.000	0.041
	Classification	Climate change	40	0.000	0.000	0.042
	Classification	Carriage Way & Footway	100	0.011	0.011	0.053
	Classification	Verge	50	0.000	0.000	0.053
	Classification	Carriage Way & Footway	100	0.001	0.001	0.054
	Classification	Climate change	40	0.000	0.000	0.055
1.005	-	-	100	0.000	0.000	0.000
1.006	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.000	0.000	0.000
1.008	-	-	100	0.000	0.000	0.000
1.009	-	-	100	0.000	0.000	0.000
1.010	Classification	Default	100	0.031	0.031	0.031

Area Summary for Proposed Model J1

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Default	100	0.032	0.032	0.063
	Classification	Default	100	0.102	0.102	0.165
1.011	-	-	100	0.000	0.000	0.000
1.012	-	-	100	0.000	0.000	0.000
2.000	Classification	Carriage Way & Footway	100	0.055	0.055	0.055
	Classification	Carriage Way & Footway	100	0.044	0.044	0.099
	Classification	Central reserve	20	0.034	0.007	0.106
	Classification	Central reserve	20	0.030	0.006	0.112
	Classification	Central reserve	20	0.067	0.013	0.125
	Classification	Central reserve	20	0.051	0.010	0.136
	Classification	Climate change	40	0.099	0.040	0.175
	Classification	Additional central median	8	0.181	0.015	0.190
2.001	Classification	Carriage Way & Footway	100	0.048	0.048	0.048
	Classification	Central reserve	20	0.041	0.008	0.056
	Classification	Climate change	40	0.049	0.020	0.076
	Classification	Additional central median	8	0.028	0.002	0.078
2.002	Classification	Carriage Way & Footway	100	0.036	0.036	0.036
	Classification	Carriage Way & Footway	100	0.003	0.003	0.039
	Classification	Central reserve	20	0.008	0.002	0.041
	Classification	Climate change	40	0.015	0.006	0.046
2.003	Classification	Carriage Way & Footway	100	0.048	0.048	0.048
2.004	Classification	Carriage Way & Footway	100	0.022	0.022	0.022
	Classification	Carriage Way & Footway	100	0.016	0.016	0.038
2.005	-	-	100	0.000	0.000	0.000
2.006	-	-	100	0.000	0.000	0.000
3.000	Classification	Carriage Way & Footway	100	0.059	0.059	0.059
	Classification	Carriage Way & Footway	100	0.013	0.013	0.072
	Classification	Verge	50	0.008	0.004	0.077
	Classification	Verge	50	0.002	0.001	0.077
	Classification	Carriage Way & Footway	100	0.001	0.001	0.078
	Classification	Verge	50	0.001	0.000	0.079
3.001	Classification	Carriage Way & Footway	100	0.019	0.019	0.019
	Classification	Carriage Way & Footway	100	0.009	0.009	0.028
	Classification	Verge	50	0.007	0.003	0.032
	Classification	Carriage Way & Footway	100	0.011	0.011	0.042
3.002	Classification	Carriage Way & Footway	100	0.008	0.008	0.008
	Classification	Verge	50	0.006	0.003	0.011
	Classification	Carriage Way & Footway	100	0.014	0.014	0.025
	Classification	Carriage Way & Footway	100	0.015	0.015	0.040
3.003	Classification	Carriage Way & Footway	100	0.010	0.010	0.010
	Classification	Carriage Way & Footway	100	0.008	0.008	0.018
	Classification	Carriage Way & Footway	100	0.009	0.009	0.027
	Classification	Climate change	40	0.000	0.000	0.027
	Classification	Carriage Way & Footway	100	0.030	0.030	0.058
	Classification	Verge	50	0.006	0.003	0.060

Area Summary for Proposed Model J1

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
3.004	Classification	Verge	50	0.002	0.001	0.001
	Classification	Carriage Way & Footway	100	0.005	0.005	0.006
	Classification	Carriage Way & Footway	100	0.003	0.003	0.010
	Classification	Carriage Way & Footway	100	0.005	0.005	0.015
	Classification	Climate change	40	0.001	0.000	0.015
	Classification	Verge	50	0.004	0.002	0.017
	Classification	Carriage Way & Footway	100	0.005	0.005	0.022
3.005	Classification	Carriage Way & Footway	100	0.033	0.033	0.033
	Classification	Verge	50	0.010	0.005	0.038
	Classification	Carriage Way & Footway	100	0.006	0.006	0.044
	Classification	Carriage Way & Footway	100	0.001	0.001	0.046
3.006	Classification	Carriage Way & Footway	100	0.011	0.011	0.011
	Classification	Carriage Way & Footway	100	0.016	0.016	0.027
	Classification	Verge	50	0.009	0.005	0.032
	Classification	Carriage Way & Footway	100	0.009	0.009	0.041
				Total	Total	Total
				1.957	1.412	1.412

Free Flowing Outfall Details for Proposed Model J1

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.012	OF-3	22.370	21.103	0.000	0	0

Free Flowing Outfall Details for Proposed Model J1

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
2.006	OF-1	22.440	20.446	0.000	0	0

Free Flowing Outfall Details for Proposed Model J1

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
3.006	OF-2	21.300	19.954	0.000	0	0

Simulation Criteria for Proposed Model J1

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

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	3	Number of Storage Structures	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.200	Storm Duration (mins)	30
Ratio R	0.370		

Online Controls for Proposed Model J1

Orifice Manhole: J1-PRMH1-11, DS/PN: 1.012, Volume (m^3): 4.2

Diameter (m) 0.147 Discharge Coefficient 0.600 Invert Level (m) 21.126

Orifice Manhole: J1-PRMH1-18, DS/PN: 2.006, Volume (m^3): 14.8

Diameter (m) 0.200 Discharge Coefficient 0.600 Invert Level (m) 20.488

Orifice Manhole: J1-PRMH1-25, DS/PN: 3.006, Volume (m^3): 5.8

Diameter (m) 0.160 Discharge Coefficient 0.600 Invert Level (m) 20.106

Storage Structures for Proposed Model J1

Tank or Pond Manhole: J1-POND INLET, DS/PN: 1.010

Invert Level (m) 21.200

Depth (m)	Area (m^2)	Depth (m)	Area (m^2)	Depth (m)	Area (m^2)
0.000	310.0	0.600	477.9	0.900	575.4

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
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 3 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	J1-PRMH1-01	15 Summer	1	+0%	30/15 Summer		
1.001	J1-PRMH1-02	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
1.002	J1-PRMH1-03	15 Summer	1	+0%	30/15 Summer	30/15 Summer	
1.003	J1-PRMH1-04	15 Summer	1	+0%	30/15 Summer		
1.004	J1-PRMH1-05	15 Summer	1	+0%	30/15 Summer		
1.005	J1-PRMH1-06	15 Summer	1	+0%	30/15 Summer		
1.006	J1-PRMH1-07	15 Summer	1	+0%	30/15 Summer	30/15 Summer	
1.007	J1-PRMH1-08	15 Summer	1	+0%	5/15 Summer		
1.008	J1-PRMH1-09	15 Summer	1	+0%	30/15 Summer		
1.009	J1-PRMH1-10	15 Summer	1	+0%	30/15 Summer		
1.010	J1-POND INLET	240 Winter	1	+0%	100/480 Summer		
1.011	J1-POND OUTLET	240 Winter	1	+0%	30/120 Summer		
1.012	J1-PRMH1-11	180 Summer	1	+0%	30/120 Summer	100/120 Summer	
2.000	J1-PRMH1-12	15 Summer	1	+0%			

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	J1-PRMH1-01		33.101	-0.138	0.000	0.31		26.4	OK
1.001	J1-PRMH1-02		31.492	-0.121	0.000	0.43		43.3	OK
1.002	J1-PRMH1-03		28.101	-0.105	0.000	0.54		62.2	OK
1.003	J1-PRMH1-04		24.301	-0.109	0.000	0.52		63.3	OK
1.004	J1-PRMH1-05		21.840	-0.147	0.000	0.50		68.8	OK
1.005	J1-PRMH1-06		21.705	-0.158	0.000	0.60		64.1	OK
1.006	J1-PRMH1-07		21.676	-0.153	0.000	0.42		60.0	OK
1.007	J1-PRMH1-08		21.645	-0.127	0.000	0.75		56.9	OK
1.008	J1-PRMH1-09		21.554	-0.138	0.000	0.68		54.3	OK
1.009	J1-PRMH1-10		21.485	-0.137	0.000	0.72		53.2	OK
1.010	J1-POND INLET		21.374	-0.401	0.000	0.05		13.9	OK*
1.011	J1-POND OUTLET		21.372	-0.223	0.000	0.11		12.3	OK*
1.012	J1-PRMH1-11		21.377	-0.199	0.000	0.12		11.9	OK
2.000	J1-PRMH1-12		32.620	-0.226	0.000	0.14		29.2	OK

PN	US/MH Name	Level Exceeded
1.000	J1-PRMH1-01	
1.001	J1-PRMH1-02	3
1.002	J1-PRMH1-03	8
1.003	J1-PRMH1-04	
1.004	J1-PRMH1-05	
1.005	J1-PRMH1-06	
1.006	J1-PRMH1-07	10
1.007	J1-PRMH1-08	
1.008	J1-PRMH1-09	
1.009	J1-PRMH1-10	
1.010	J1-POND INLET	
1.011	J1-POND OUTLET	
1.012	J1-PRMH1-11	8
2.000	J1-PRMH1-12	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model_J1

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
2.001	J1-PRMH1-13	15 Summer	1	+0%				
2.002	J1-PRMH1-14	15 Summer	1	+0%				
2.003	J1-PRMH1-15	15 Summer	1	+0%				
2.004	J1-PRMH1-16	15 Summer	1	+0%				
2.005	J1-PRMH1-17	15 Summer	1	+0%	5/15 Summer			
2.006	J1-PRMH1-18	30 Summer	1	+0%	5/15 Summer	100/15 Summer		
3.000	J1-PRMH1-19	15 Summer	1	+0%	30/15 Summer			
3.001	J1-PRMH1-20	15 Summer	1	+0%	30/15 Summer			
3.002	J1-PRMH1-21	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
3.003	J1-PRMH1-22	15 Summer	1	+0%	5/15 Summer	30/15 Summer		
3.004	J1-PRMH1-23	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
3.005	J1-PRMH1-24	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
3.006	J1-PRMH1-25	30 Summer	1	+0%	5/15 Summer	100/15 Summer		

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
2.001	J1-PRMH1-13	29.161	-0.211	0.000	0.19		39.3	OK	
2.002	J1-PRMH1-14	26.636	-0.206	0.000	0.22		45.5	OK	
2.003	J1-PRMH1-15	23.285	-0.350	0.000	0.11		51.1	OK	
2.004	J1-PRMH1-16	21.714	-0.406	0.000	0.12		55.0	OK	
2.005	J1-PRMH1-17	20.862	-0.269	0.000	0.25		49.1	OK	
2.006	J1-PRMH1-18	20.844	-0.169	0.000	0.26		40.5	OK	5
3.000	J1-PRMH1-19	21.984	-0.150	0.000	0.24		12.0	OK	
3.001	J1-PRMH1-20	21.351	-0.121	0.000	0.42		16.8	OK	
3.002	J1-PRMH1-21	21.077	-0.103	0.000	0.55		21.3	OK	4
3.003	J1-PRMH1-22	20.867	-0.063	0.000	0.84		27.2	OK	12
3.004	J1-PRMH1-23	20.703	-0.052	0.000	0.93		28.8	OK	5
3.005	J1-PRMH1-24	20.501	-0.109	0.000	0.32		30.4	OK	3
3.006	J1-PRMH1-25	20.487	-0.013	0.000	0.22		29.1	OK	3

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
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	3	Number of Storage Structures	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	J1-PRMH1-01	15 Summer	5	+0%	30/15 Summer		
1.001	J1-PRMH1-02	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
1.002	J1-PRMH1-03	15 Summer	5	+0%	30/15 Summer	30/15 Summer	
1.003	J1-PRMH1-04	15 Summer	5	+0%	30/15 Summer		
1.004	J1-PRMH1-05	15 Summer	5	+0%	30/15 Summer		
1.005	J1-PRMH1-06	15 Summer	5	+0%	30/15 Summer		
1.006	J1-PRMH1-07	15 Summer	5	+0%	30/15 Summer	30/15 Summer	
1.007	J1-PRMH1-08	15 Summer	5	+0%	5/15 Summer		
1.008	J1-PRMH1-09	15 Summer	5	+0%	30/15 Summer		
1.009	J1-PRMH1-10	30 Summer	5	+0%	30/15 Summer		
1.010	J1-POND INLET	120 Summer	5	+0%	100/480 Summer		
1.011	J1-POND OUTLET	120 Summer	5	+0%	30/120 Summer		
1.012	J1-PRMH1-11	180 Summer	5	+0%	30/120 Summer	100/120 Summer	
2.000	J1-PRMH1-12	15 Summer	5	+0%			

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	J1-PRMH1-01		33.131	-0.108	0.000	0.52		44.1	OK
1.001	J1-PRMH1-02		31.532	-0.081	0.000	0.72		72.4	OK
1.002	J1-PRMH1-03		28.151	-0.055	0.000	0.91		103.9	OK
1.003	J1-PRMH1-04		24.348	-0.062	0.000	0.87		105.8	OK
1.004	J1-PRMH1-05		21.930	-0.057	0.000	0.84		114.5	OK
1.005	J1-PRMH1-06		21.847	-0.016	0.000	0.98		103.6	OK
1.006	J1-PRMH1-07		21.820	-0.009	0.000	0.65		92.7	OK
1.007	J1-PRMH1-08		21.786	0.014	0.000	1.15		87.2	SURCHARGED
1.008	J1-PRMH1-09		21.685	-0.007	0.000	0.99		79.3	OK
1.009	J1-PRMH1-10		21.608	-0.014	0.000	1.00		74.0	OK
1.010	J1-POND INLET		21.461	-0.314	0.000	0.08		22.7	OK*
1.011	J1-POND OUTLET		21.471	-0.124	0.000	0.18		20.5	OK*
1.012	J1-PRMH1-11		21.450	-0.126	0.000	0.21		20.5	OK
2.000	J1-PRMH1-12		32.644	-0.202	0.000	0.23		48.8	OK

PN	US/MH Name	Level Exceeded
1.000	J1-PRMH1-01	
1.001	J1-PRMH1-02	3
1.002	J1-PRMH1-03	8
1.003	J1-PRMH1-04	
1.004	J1-PRMH1-05	
1.005	J1-PRMH1-06	
1.006	J1-PRMH1-07	10
1.007	J1-PRMH1-08	
1.008	J1-PRMH1-09	
1.009	J1-PRMH1-10	
1.010	J1-POND INLET	
1.011	J1-POND OUTLET	
1.012	J1-PRMH1-11	8
2.000	J1-PRMH1-12	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
2.001	J1-PRMH1-13	15 Summer	5	+0%				
2.002	J1-PRMH1-14	15 Summer	5	+0%				
2.003	J1-PRMH1-15	15 Summer	5	+0%				
2.004	J1-PRMH1-16	15 Summer	5	+0%				
2.005	J1-PRMH1-17	15 Summer	5	+0%	5/15 Summer			
2.006	J1-PRMH1-18	30 Winter	5	+0%	5/15 Summer	100/15 Summer		
3.000	J1-PRMH1-19	15 Summer	5	+0%	30/15 Summer			
3.001	J1-PRMH1-20	15 Summer	5	+0%	30/15 Summer			
3.002	J1-PRMH1-21	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
3.003	J1-PRMH1-22	15 Summer	5	+0%	5/15 Summer	30/15 Summer		
3.004	J1-PRMH1-23	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
3.005	J1-PRMH1-24	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
3.006	J1-PRMH1-25	30 Summer	5	+0%	5/15 Summer	100/15 Summer		

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
2.001	J1-PRMH1-13	29.188	-0.184	0.000	0.31		65.8	OK	
2.002	J1-PRMH1-14	26.667	-0.175	0.000	0.36		76.0	OK	
2.003	J1-PRMH1-15	23.316	-0.319	0.000	0.19		84.8	OK	
2.004	J1-PRMH1-16	21.752	-0.368	0.000	0.19		91.4	OK	
2.005	J1-PRMH1-17	21.165	0.034	0.000	0.40		77.4	SURCHARGED	
2.006	J1-PRMH1-18	20.992	-0.021	0.000	0.34		52.4	OK	5
3.000	J1-PRMH1-19	22.009	-0.125	0.000	0.40		20.0	OK	
3.001	J1-PRMH1-20	21.390	-0.082	0.000	0.70		28.1	OK	
3.002	J1-PRMH1-21	21.235	0.055	0.000	0.80		30.8	SURCHARGED	4
3.003	J1-PRMH1-22	21.157	0.227	0.000	1.17		37.8	SURCHARGED	12
3.004	J1-PRMH1-23	21.013	0.258	0.000	1.19		36.9	SURCHARGED	5
3.005	J1-PRMH1-24	20.836	0.226	0.000	0.40		38.7	SURCHARGED	3
3.006	J1-PRMH1-25	20.827	0.327	0.000	0.32		41.9	SURCHARGED	3

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
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	3	Number of Storage Structures	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	0, 0, 0, 0

PN	**US/MH Name**	**Storm**	**Return Period**	**Climate Change**	**First (X) Surcharge**	**First (Y) Flood**	**First (Z) Overflow**
1.000	J1-PRMH1-01	15 Summer	30	+0%	30/15 Summer		
1.001	J1-PRMH1-02	15 Summer	30	+0%	30/15 Summer	100/15 Summer	
1.002	J1-PRMH1-03	15 Winter	30	+0%	30/15 Summer	30/15 Summer	
1.003	J1-PRMH1-04	15 Summer	30	+0%	30/15 Summer		
1.004	J1-PRMH1-05	15 Summer	30	+0%	30/15 Summer		
1.005	J1-PRMH1-06	30 Summer	30	+0%	30/15 Summer		
1.006	J1-PRMH1-07	15 Summer	30	+0%	30/15 Summer	30/15 Summer	
1.007	J1-PRMH1-08	15 Summer	30	+0%	5/15 Summer		
1.008	J1-PRMH1-09	15 Winter	30	+0%	30/15 Summer		
1.009	J1-PRMH1-10	30 Summer	30	+0%	30/15 Summer		
1.010	J1-POND INLET	180 Winter	30	+0%	100/480 Summer		
1.011	J1-POND OUTLET	120 Summer	30	+0%	30/120 Summer		
1.012	J1-PRMH1-11	60 Summer	30	+0%	30/120 Summer	100/120 Summer	
2.000	J1-PRMH1-12	15 Summer	30	+0%			

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	J1-PRMH1-01		33.525	0.286	0.000	0.74		63.0	SURCHARGED
1.001	J1-PRMH1-02		32.727	1.114	0.000	0.98		98.8	SURCHARGED
1.002	J1-PRMH1-03		29.371	1.165	1.766	1.11		126.2	FLOOD
1.003	J1-PRMH1-04		24.876	0.466	0.000	1.05		126.5	SURCHARGED
1.004	J1-PRMH1-05		22.196	0.209	0.000	1.05		142.9	SURCHARGED
1.005	J1-PRMH1-06		22.018	0.155	0.000	1.28		135.7	SURCHARGED
1.006	J1-PRMH1-07		21.976	0.147	5.203	0.86		123.3	FLOOD
1.007	J1-PRMH1-08		21.936	0.164	0.000	1.51		114.2	SURCHARGED
1.008	J1-PRMH1-09		21.779	0.087	0.000	1.36		108.2	SURCHARGED
1.009	J1-PRMH1-10		21.651	0.029	0.000	1.45		107.4	SURCHARGED
1.010	J1-POND INLET		21.567	-0.208	0.000	0.12		34.8	OK*
1.011	J1-POND OUTLET		21.648	0.053	0.000	0.26		29.4	SURCHARGED*
1.012	J1-PRMH1-11		21.566	-0.010	0.000	0.26		25.9	OK
2.000	J1-PRMH1-12		32.666	-0.180	0.000	0.33		71.4	OK

PN	US/MH Name	Level Exceeded
1.000	J1-PRMH1-01	
1.001	J1-PRMH1-02	3
1.002	J1-PRMH1-03	8
1.003	J1-PRMH1-04	
1.004	J1-PRMH1-05	
1.005	J1-PRMH1-06	
1.006	J1-PRMH1-07	10
1.007	J1-PRMH1-08	
1.008	J1-PRMH1-09	
1.009	J1-PRMH1-10	
1.010	J1-POND INLET	
1.011	J1-POND OUTLET	
1.012	J1-PRMH1-11	8
2.000	J1-PRMH1-12	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
2.001	J1-PRMH1-13	15 Summer	30	+0%				
2.002	J1-PRMH1-14	15 Summer	30	+0%				
2.003	J1-PRMH1-15	15 Summer	30	+0%				
2.004	J1-PRMH1-16	15 Summer	30	+0%				
2.005	J1-PRMH1-17	15 Summer	30	+0%	5/15 Summer			
2.006	J1-PRMH1-18	30 Summer	30	+0%	5/15 Summer	100/15 Summer		
3.000	J1-PRMH1-19	15 Summer	30	+0%	30/15 Summer			
3.001	J1-PRMH1-20	15 Summer	30	+0%	30/15 Summer			
3.002	J1-PRMH1-21	15 Summer	30	+0%	5/15 Summer	100/15 Summer		
3.003	J1-PRMH1-22	15 Summer	30	+0%	5/15 Summer	30/15 Summer		
3.004	J1-PRMH1-23	30 Summer	30	+0%	5/15 Summer	100/15 Summer		
3.005	J1-PRMH1-24	30 Summer	30	+0%	5/15 Summer	100/15 Summer		
3.006	J1-PRMH1-25	30 Summer	30	+0%	5/15 Summer	100/15 Summer		

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
2.001	J1-PRMH1-13	29.224	-0.148	0.000	0.49		102.4	OK	
2.002	J1-PRMH1-14	26.708	-0.134	0.000	0.58		121.9	OK	
2.003	J1-PRMH1-15	23.357	-0.278	0.000	0.31		139.9	OK	
2.004	J1-PRMH1-16	21.800	-0.320	0.000	0.31		147.8	OK	
2.005	J1-PRMH1-17	21.651	0.520	0.000	0.55		107.0	SURCHARGED	
2.006	J1-PRMH1-18	21.673	0.660	0.000	0.46		71.9	SURCHARGED	5
3.000	J1-PRMH1-19	22.160	0.026	0.000	0.56		28.3	SURCHARGED	
3.001	J1-PRMH1-20	21.996	0.524	0.000	0.83		33.2	SURCHARGED	
3.002	J1-PRMH1-21	21.775	0.595	0.000	0.98		37.7	SURCHARGED	4
3.003	J1-PRMH1-22	21.537	0.607	4.017	1.33		43.0	FLOOD	12
3.004	J1-PRMH1-23	21.353	0.598	0.000	1.42		43.8	SURCHARGED	5
3.005	J1-PRMH1-24	21.215	0.605	0.000	0.48		46.2	SURCHARGED	3
3.006	J1-PRMH1-25	21.206	0.706	0.000	0.40		52.5	SURCHARGED	3

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
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	3	Number of Storage Structures	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	J1-PRMH1-01	15 Summer	100	+0%	30/15 Summer		
1.001	J1-PRMH1-02	15 Summer	100	+0%	30/15 Summer	100/15 Summer	
1.002	J1-PRMH1-03	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
1.003	J1-PRMH1-04	15 Summer	100	+0%	30/15 Summer		
1.004	J1-PRMH1-05	15 Summer	100	+0%	30/15 Summer		
1.005	J1-PRMH1-06	30 Summer	100	+0%	30/15 Summer		
1.006	J1-PRMH1-07	15 Summer	100	+0%	30/15 Summer	30/15 Summer	
1.007	J1-PRMH1-08	15 Summer	100	+0%	5/15 Summer		
1.008	J1-PRMH1-09	15 Winter	100	+0%	30/15 Summer		
1.009	J1-PRMH1-10	30 Winter	100	+0%	30/15 Summer		
1.010	J1-POND INLET	180 Summer	100	+0%	100/480 Summer		
1.011	J1-POND OUTLET	180 Winter	100	+0%	30/120 Summer		
1.012	J1-PRMH1-11	30 Summer	100	+0%	30/120 Summer	100/120 Summer	
2.000	J1-PRMH1-12	15 Summer	100	+0%			

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	J1-PRMH1-01		34.373	1.134	0.000	0.92		78.2	SURCHARGED
1.001	J1-PRMH1-02		32.893	1.280	5.252	1.02		102.5	FLOOD
1.002	J1-PRMH1-03		29.379	1.173	10.120	1.11		126.3	FLOOD
1.003	J1-PRMH1-04		24.957	0.547	0.000	1.05		127.4	SURCHARGED
1.004	J1-PRMH1-05		22.226	0.239	0.000	1.11		151.0	SURCHARGED
1.005	J1-PRMH1-06		22.026	0.163	0.000	1.37		145.5	SURCHARGED
1.006	J1-PRMH1-07		21.982	0.153	11.355	0.89		128.3	FLOOD
1.007	J1-PRMH1-08		21.942	0.170	0.000	1.54		116.1	SURCHARGED
1.008	J1-PRMH1-09		21.781	0.089	0.000	1.36		108.7	SURCHARGED
1.009	J1-PRMH1-10		21.652	0.030	0.000	1.47		108.5	SURCHARGED
1.010	J1-POND INLET		21.759	-0.016	0.000	0.25		70.6	OK*
1.011	J1-POND OUTLET		21.720	0.125	0.000	0.38		42.3	SURCHARGED*
1.012	J1-PRMH1-11		21.594	0.018	0.000	0.27		26.9	SURCHARGED
2.000	J1-PRMH1-12		32.685	-0.161	0.000	0.43		92.3	OK

PN	US/MH Name	Level Exceeded
1.000	J1-PRMH1-01	
1.001	J1-PRMH1-02	3
1.002	J1-PRMH1-03	8
1.003	J1-PRMH1-04	
1.004	J1-PRMH1-05	
1.005	J1-PRMH1-06	
1.006	J1-PRMH1-07	10
1.007	J1-PRMH1-08	
1.008	J1-PRMH1-09	
1.009	J1-PRMH1-10	
1.010	J1-POND INLET	
1.011	J1-POND OUTLET	
1.012	J1-PRMH1-11	8
2.000	J1-PRMH1-12	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model J1

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
2.001	J1-PRMH1-13	15 Summer	100	+0%				
2.002	J1-PRMH1-14	15 Summer	100	+0%				
2.003	J1-PRMH1-15	15 Summer	100	+0%				
2.004	J1-PRMH1-16	15 Summer	100	+0%				
2.005	J1-PRMH1-17	30 Summer	100	+0%	5/15 Summer			
2.006	J1-PRMH1-18	30 Summer	100	+0%	5/15 Summer	100/15 Summer		
3.000	J1-PRMH1-19	15 Summer	100	+0%	30/15 Summer			
3.001	J1-PRMH1-20	15 Summer	100	+0%	30/15 Summer			
3.002	J1-PRMH1-21	15 Summer	100	+0%	5/15 Summer	100/15 Summer		
3.003	J1-PRMH1-22	15 Summer	100	+0%	5/15 Summer	30/15 Summer		
3.004	J1-PRMH1-23	15 Winter	100	+0%	5/15 Summer	100/15 Summer		
3.005	J1-PRMH1-24	60 Summer	100	+0%	5/15 Summer	100/15 Summer		
3.006	J1-PRMH1-25	30 Winter	100	+0%	5/15 Summer	100/15 Summer		

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
2.001	J1-PRMH1-13	29.250	-0.122	0.000	0.63		132.3	OK	
2.002	J1-PRMH1-14	26.740	-0.102	0.000	0.74		155.9	OK	
2.003	J1-PRMH1-15	23.383	-0.252	0.000	0.39		179.4	OK	
2.004	J1-PRMH1-16	22.012	-0.108	0.000	0.40		190.5	OK	
2.005	J1-PRMH1-17	21.948	0.817	0.000	0.65		127.4	SURCHARGED	
2.006	J1-PRMH1-18	21.892	0.879	7.810	0.53		82.2	FLOOD	5
3.000	J1-PRMH1-19	22.434	0.300	0.000	0.70		35.3	SURCHARGED	
3.001	J1-PRMH1-20	22.071	0.599	0.000	1.00		39.9	SURCHARGED	
3.002	J1-PRMH1-21	21.780	0.600	2.219	0.98		37.8	FLOOD	4
3.003	J1-PRMH1-22	21.542	0.612	8.995	1.37		44.4	FLOOD	12
3.004	J1-PRMH1-23	21.356	0.601	1.594	1.57		48.4	FLOOD	5
3.005	J1-PRMH1-24	21.217	0.607	0.570	0.50		48.5	FLOOD	3
3.006	J1-PRMH1-25	21.235	0.735	0.000	0.41		53.1	SURCHARGED	3

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes M5 J10 Manhole Sizes M5 J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	40
Ratio R	0.350	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	0.75
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

« - 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
S8.000	33.471	0.112	300.0	0.055	5.00	0.0	0.600		o	375	Pipe/Conduit	
S8.001	1.307	0.004	300.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
S9.000	49.172	0.167	294.9	0.051	5.00	0.0	0.600		o	375	Pipe/Conduit	
S9.001	3.382	0.024	140.1	0.001	0.00	0.0	0.600		o	375	Pipe/Conduit	
S10.000	18.364	0.037	500.0	0.030	5.00	0.0	0.600		o	375	Pipe/Conduit	
S10.001	4.771	0.011	450.0	0.000	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)
S8.000	44.19	5.54	25.882	0.055	0.0	0.0	3.5	1.04	115.0	12.2
S8.001	44.12	5.56	25.770	0.055	0.0	0.0	3.5	1.04	115.0	12.2
S9.000	43.36	5.78	25.245	0.051	0.0	0.0	3.2	1.05	116.0	11.3
S9.001	43.24	5.82	25.078	0.052	0.0	0.0	3.3	1.53	168.9	11.4
S10.000	44.74	5.38	25.328	0.030	0.0	0.0	2.0	0.80	88.7	6.9
S10.001	44.40	5.47	25.291	0.030	0.0	0.0	2.0	0.85	93.6	6.9

Network Design Table for Storm

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
S11.000	14.476	0.171	84.7	0.164	5.00	0.0		0.050	\/	-2	Pipe/Conduit	
S11.001	14.476	0.056	258.5	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S11.002	14.476	0.056	258.5	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S11.003	14.548	0.057	255.2	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S11.004	30.041	0.240	125.2	0.075	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S11.005	12.900	0.089	144.9	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.006	22.467	0.090	250.0	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S11.007	21.803	0.073	300.0	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S11.008	2.831	0.028	100.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.000	14.601	0.090	162.2	0.036	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
S12.001	14.601	0.100	146.0	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S12.002	21.483	0.112	191.8	0.107	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S12.003	26.028	0.052	500.0	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S12.004	13.460	0.035	384.6	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S12.005	24.969	0.050	500.0	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S12.006	2.615	0.012	225.0	0.000	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)
S11.000	44.24	5.52	26.570	0.164	0.0	0.0	10.5	0.46	92.4	36.7
S11.001	41.32	6.43	26.399	0.164	0.0	0.0	10.5	0.26	52.9	36.7
S11.002	38.81	7.35	26.343	0.164	0.0	0.0	10.5	0.26	52.9	36.7
S11.003	36.64	8.26	26.287	0.164	0.0	0.0	10.5	0.27	53.2	36.7
S11.004	33.95	9.57	26.230	0.239	0.0	0.0	11.7	0.38	76.0	41.0
S11.005	33.59	9.77	25.965	0.239	0.0	0.0	11.7	1.08	43.1	41.0
S11.006	31.26	11.17	25.876	0.239	0.0	0.0	11.7	0.27	53.8	41.0
S11.007	29.18	12.65	25.786	0.239	0.0	0.0	11.7	0.25	49.1	41.0
S11.008	29.15	12.67	25.219	0.239	0.0	0.0	11.7	1.81	200.1	41.0
S12.000	43.03	5.88	26.340	0.036	0.0	0.0	2.2	0.28	31.0	7.8
S12.001	40.49	6.72	26.250	0.036	0.0	0.0	2.2	0.29	32.7	7.8
S12.002	37.49	7.89	26.150	0.143	0.0	0.0	7.8	0.31	61.4	27.2
S12.003	32.89	10.17	26.038	0.143	0.0	0.0	7.8	0.19	38.0	27.2
S12.004	32.31	10.51	25.978	0.143	0.0	0.0	7.8	0.66	26.3«	27.2
S12.005	29.12	12.70	25.943	0.143	0.0	0.0	7.8	0.19	38.0	27.2
S12.006	29.06	12.75	25.289	0.143	0.0	0.0	7.8	0.87	34.5	27.2

Network Design Table for Storm

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
S13.000	13.411	0.079	169.8	0.094	5.00	0.0		0.050	\/	-2	Pipe/Conduit	
S13.001	13.411	0.081	165.6	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S13.002	6.569	0.200	32.8	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S13.003	6.321	0.032	197.5	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S13.004	6.321	0.028	225.8	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S13.005	7.999	0.016	500.0	0.000	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
S13.006	5.725	0.093	61.6	0.015	0.00	0.0		0.050	o	450	Pipe/Conduit	
S14.000	21.359	0.298	71.7	0.074	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
S14.001	21.359	0.392	54.5	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S14.002	21.359	0.154	138.7	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S14.003	21.359	0.116	184.1	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S14.004	3.387	0.380	8.9	0.001	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S15.000	11.914	0.193	61.7	0.038	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
S15.001	11.914	0.064	186.2	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S15.002	11.914	0.066	180.5	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S15.003	11.914	0.272	43.8	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S15.004	2.516	0.075	33.5	0.000	0.00	0.0		0.050	\/	-1	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)
S13.000	43.68	5.68	27.060	0.094	0.0	0.0	5.9	0.33	65.3	20.8
S13.001	41.54	6.36	26.981	0.094	0.0	0.0	5.9	0.33	66.1	20.8
S13.002	41.10	6.51	26.900	0.094	0.0	0.0	5.9	0.74	148.4	20.8
S13.003	40.11	6.86	26.700	0.094	0.0	0.0	5.9	0.30	60.5	20.8
S13.004	39.11	7.23	26.668	0.094	0.0	0.0	5.9	0.28	56.6	20.8
S13.005	37.39	7.93	26.640	0.094	0.0	0.0	5.9	0.19	38.0	20.8
S13.006	37.02	8.09	26.124	0.109	0.0	0.0	5.9	0.59	94.4	20.8
S14.000	43.11	5.86	28.140	0.074	0.0	0.0	4.6	0.41	46.6	16.1
S14.001	40.81	6.61	27.842	0.074	0.0	0.0	4.6	0.48	53.5	16.1
S14.002	37.69	7.80	27.450	0.074	0.0	0.0	4.6	0.30	33.5	16.1
S14.003	34.71	9.18	27.296	0.074	0.0	0.0	4.6	0.26	29.1	16.1
S14.004	34.62	9.23	27.180	0.074	0.0	0.0	4.6	1.18	132.3	16.1
S15.000	44.51	5.44	27.577	0.038	0.0	0.0	2.5	0.45	50.3	8.7
S15.001	41.97	6.22	27.384	0.038	0.0	0.0	2.5	0.26	28.9	8.7
S15.002	39.79	6.98	27.320	0.038	0.0	0.0	2.5	0.26	29.4	8.7
S15.003	38.80	7.35	27.254	0.038	0.0	0.0	2.5	0.53	59.7	8.7
S15.004	38.63	7.42	26.982	0.038	0.0	0.0	2.5	0.61	68.2	8.7

Network Design Table for Storm

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
S16.000	12.243	0.058	211.1	0.056	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
S16.001	12.243	0.065	188.4	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S16.002	12.243	0.068	180.0	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S16.003	12.243	0.069	177.4	0.000	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
S16.004	2.988	0.450	6.6	0.000	0.00	0.0		0.050	\/	-1	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)
S16.000	43.15	5.84	27.110	0.056	0.0	0.0	3.5	0.24	27.2	12.2
S16.001	40.71	6.64	27.052	0.056	0.0	0.0	3.5	0.26	28.8	12.2
S16.002	38.62	7.42	26.987	0.056	0.0	0.0	3.5	0.26	29.4	12.2
S16.003	36.78	8.20	26.919	0.056	0.0	0.0	3.5	0.26	29.6	12.2
S16.004	36.69	8.23	26.850	0.056	0.0	0.0	3.5	1.36	153.2	12.2

Conduit Sections for Storm

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-1	\/	1500	150	11.3		0.294	0.113
-2	\/	2000	200	11.3		0.392	0.200

Manhole Schedules for Storm

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)	Diamet (mm)
SJ3-PRMH-6	26.857	0.975	Open Manhole	1350	S8.000	25.882	375			
SJ3-PRMH-7	27.750	1.980	Open Manhole	1500	S8.001	25.770	375	S8.000	25.770	3
SOF7	26.740	0.974	Open Manhole	0		OUTFALL		S8.001	25.766	3
SJ3-PRMH-3	26.520	1.275	Open Manhole	1350	S9.000	25.245	375			
SJ3-PRMH-4	26.521	1.443	Open Manhole	1350	S9.001	25.078	375	S9.000	25.078	3
SOF8	25.820	0.766	Open Manhole	0		OUTFALL		S9.001	25.054	3
SJ3-PRMH-5	26.578	1.250	Open Manhole	1350	S10.000	25.328	375			
SJ3-PRMH-6	26.684	1.393	Open Manhole	1350	S10.001	25.291	375	S10.000	25.291	3
SOF10	26.280	1.000	Open Manhole	0		OUTFALL		S10.001	25.280	3
SJ3-PRMH_Dummy-1	26.770	0.200	Junction		S11.000	26.570	-2			
SJ3-PRMH_Dummy-2	26.599	0.200	Junction		S11.001	26.399	-2	S11.000	26.399	
SJ3-PRMH_Dummy-3	26.543	0.200	Junction		S11.002	26.343	-2	S11.001	26.343	
SJ3-PRMH_Dummy-4	26.487	0.200	Junction		S11.003	26.287	-2	S11.002	26.287	
SJ3-PRMH_Dummy-5	26.450	0.220	Junction		S11.004	26.230	-2	S11.003	26.230	
SJ3-PRMH_Dummy-6	26.190	0.225	Junction		S11.005	25.965	225	S11.004	25.990	
SJ3-PRMH_Dummy-7	26.180	0.304	Junction		S11.006	25.876	-2	S11.005	25.876	2
SJ3-PRMH_Dummy-8	26.191	0.405	Junction		S11.007	25.786	-2	S11.006	25.786	
SJ3-PRMH-2	26.180	0.961	Open Manhole	1500	S11.008	25.219	375	S11.007	25.713	
SOF6	26.170	0.979	Open Manhole	0		OUTFALL		S11.008	25.191	3
SJ3-PRMH_Dummy-9	26.490	0.150	Junction		S12.000	26.340	-1			
SJ3-PRMH_Dummy-10	26.400	0.150	Junction		S12.001	26.250	-1	S12.000	26.250	
SJ3-PRMH_Dummy-11	26.350	0.200	Junction		S12.002	26.150	-2	S12.001	26.150	
SJ3-PRMH_Dummy-12	26.238	0.200	Junction		S12.003	26.038	-2	S12.002	26.038	
SJ3-PRMH_Dummy-13	26.203	0.225	Junction		S12.004	25.978	225	S12.003	25.986	
SJ3-PRMH_Dummy-13A	26.178	0.235	Junction		S12.005	25.943	-2	S12.004	25.943	2
SJ3-PRMH-8	26.173	0.884	Open Manhole	1500	S12.006	25.289	225	S12.005	25.893	
SOF9	26.170	0.893	Open Manhole	0		OUTFALL		S12.006	25.277	2
SJ3-PRMH_Dummy-19	27.260	0.200	Junction		S13.000	27.060	-2			
SJ3-PRMH_Dummy-20	27.181	0.200	Junction		S13.001	26.981	-2	S13.000	26.981	
SJ3-PRMH_Dummy-21	27.100	0.200	Junction		S13.002	26.900	-2	S13.001	26.900	
SJ3-PRMH_Dummy-22	26.900	0.200	Junction		S13.003	26.700	-2	S13.002	26.700	
SJ3-PRMH_Dummy-23	26.868	0.200	Junction		S13.004	26.668	-2	S13.003	26.668	
SJ3-PRMH_Dummy-24	26.837	0.197	Junction		S13.005	26.640	-2	S13.004	26.640	

Manhole Schedules for Storm

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)	Diamete (mm)
SJ3-PRMH-9	26.947	0.823	Open Manhole	2100	S13.006	26.124	450	S13.005	26.624	-
SOF3	26.481	0.450	Open Manhole	0		OUTFALL		S13.006	26.031	45
SJ3-PRMH_Dummy-14	28.290	0.150	Junction		S14.000	28.140	-1			
SJ3-PRMH_Dummy-15	27.992	0.150	Junction		S14.001	27.842	-1	S14.000	27.842	-
SJ3-PRMH_Dummy-16	27.600	0.150	Junction		S14.002	27.450	-1	S14.001	27.450	-
SJ3-PRMH_Dummy-17	27.446	0.150	Junction		S14.003	27.296	-1	S14.002	27.296	-
SJ3-PRMH_Dummy-18	27.330	0.150	Junction		S14.004	27.180	-1	S14.003	27.180	-
SOF1	26.950	0.150	Open Manhole	0		OUTFALL		S14.004	26.800	-
SJ3-PRMH_Dummy-25	27.727	0.150	Junction		S15.000	27.577	-1			
SJ3-PRMH_Dummy-26	27.534	0.150	Junction		S15.001	27.384	-1	S15.000	27.384	-
SJ3-PRMH_Dummy-27	27.470	0.150	Junction		S15.002	27.320	-1	S15.001	27.320	-
SJ3-PRMH_Dummy-28	27.404	0.150	Junction		S15.003	27.254	-1	S15.002	27.254	-
SJ3-PRMH_Dummy-29	27.132	0.150	Junction		S15.004	26.982	-1	S15.003	26.982	-
SOF4	27.057	0.150	Open Manhole	0		OUTFALL		S15.004	26.907	-
SJ3-PRMH_Dummy-30	27.260	0.150	Junction		S16.000	27.110	-1			
SJ3-PRMH_Dummy-31	27.202	0.150	Junction		S16.001	27.052	-1	S16.000	27.052	-
SJ3-PRMH_Dummy-32	27.137	0.150	Junction		S16.002	26.987	-1	S16.001	26.987	-
SJ3-PRMH_Dummy-33	27.069	0.150	Junction		S16.003	26.919	-1	S16.002	26.919	-
SJ3-PRMH_Dummy-34	27.000	0.150	Junction		S16.004	26.850	-1	S16.003	26.850	-
SOF5	26.550	0.150	Open Manhole	0		OUTFALL		S16.004	26.400	-

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SJ3-PRMH-6	390494.317	223913.403	390494.317	223913.403	Required	
SJ3-PRMH-7	390464.349	223898.495	390464.349	223898.495	Required	
SOF7	390463.201	223897.870			No Entry	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SJ3-PRMH-3	390380.891	223864.658	390380.891	223864.658	Required	
SJ3-PRMH-4	390427.299	223880.913	390427.299	223880.913	Required	
SOF8	390426.203	223884.112			No Entry	
SJ3-PRMH-5	390440.508	223885.491	390440.508	223885.491	Required	
SJ3-PRMH-6	390457.116	223893.327	390457.116	223893.327	Required	
SOF10	390455.142	223897.670			No Entry	
SJ3-PRMH_Dummy-1	390508.526	223888.320			No Entry	
SJ3-PRMH_Dummy-2	390494.546	223884.566			No Entry	
SJ3-PRMH_Dummy-3	390480.566	223880.811			No Entry	
SJ3-PRMH_Dummy-4	390466.585	223877.057			No Entry	
SJ3-PRMH_Dummy-5	390452.443	223873.644			No Entry	
SJ3-PRMH_Dummy-6	390423.608	223865.218			No Entry	
SJ3-PRMH_Dummy-7	390411.203	223861.678			No Entry	
SJ3-PRMH_Dummy-8	390389.616	223855.453			No Entry	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SJ3-PRMH-2	390368.673	223849.390	390368.673	223849.390	Required	
SOF6	390366.017	223848.410			No Entry	
SJ3-PRMH_Dummy-9	390253.632	223806.132			No Entry	
SJ3-PRMH_Dummy-10	390266.816	223812.407			No Entry	
SJ3-PRMH_Dummy-11	390280.001	223818.681			No Entry	
SJ3-PRMH_Dummy-12	390300.288	223825.748			No Entry	
SJ3-PRMH_Dummy-13	390324.693	223834.795			No Entry	
SJ3-PRMH_Dummy-13A	390337.461	223839.054			No Entry	
SJ3-PRMH-8	390361.148	223846.951	390361.148	223846.951	Required	
SOF9	390363.685	223847.585			No Entry	
SJ3-PRMH_Dummy-19	390615.343	223918.850			No Entry	
SJ3-PRMH_Dummy-20	390602.357	223915.501			No Entry	
SJ3-PRMH_Dummy-21	390589.371	223912.151			No Entry	
SJ3-PRMH_Dummy-22	390584.917	223907.323			No Entry	

Manhole Schedules for Storm

MH Name	**Manhole Easting (m)**	**Manhole Northing (m)**	**Intersection Easting (m)**	**Intersection Northing (m)**	**Manhole Access**	**Layout (North)**
SJ3-PRMH_Dummy-23	390578.826	223905.632			No Entry	
SJ3-PRMH_Dummy-24	390572.735	223903.942			No Entry	
SJ3-PRMH-9	390564.776	223904.736	390564.776	223904.736	Required	
SOF3	390562.599	223899.441			No Entry	
SJ3-PRMH_Dummy-14	390710.142	223940.932			No Entry	
SJ3-PRMH_Dummy-15	390689.341	223936.083			No Entry	
SJ3-PRMH_Dummy-16	390668.539	223931.234			No Entry	
SJ3-PRMH_Dummy-17	390647.738	223926.385			No Entry	
SJ3-PRMH_Dummy-18	390626.937	223921.536			No Entry	
SOF1	390627.473	223918.191			No Entry	
SJ3-PRMH_Dummy-25	390671.260	223943.635			No Entry	
SJ3-PRMH_Dummy-26	390659.518	223941.620			No Entry	
SJ3-PRMH_Dummy-27	390647.775	223939.605			No Entry	
SJ3-PRMH_Dummy-28	390636.032	223937.590			No Entry	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SJ3-PRMH_Dummy-29	390624.290	223935.575			No Entry	
SOF4	390623.468	223937.952			No Entry	
SJ3-PRMH_Dummy-30	390613.176	223933.736			No Entry	
SJ3-PRMH_Dummy-31	390601.162	223931.382			No Entry	
SJ3-PRMH_Dummy-32	390589.147	223929.028			No Entry	
SJ3-PRMH_Dummy-33	390577.132	223926.674			No Entry	
SJ3-PRMH_Dummy-34	390565.117	223924.320			No Entry	
SOF5	390564.357	223927.210			No Entry	

PIPELINE SCHEDULES for Storm

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)
S8.000	o	375	SJ3-PRMH-6	26.857	25.882	0.600	Open Manhole	1350
S8.001	o	375	SJ3-PRMH-7	27.750	25.770	1.605	Open Manhole	1500
S9.000	o	375	SJ3-PRMH-3	26.520	25.245	0.900	Open Manhole	1350
S9.001	o	375	SJ3-PRMH-4	26.521	25.078	1.068	Open Manhole	1350
S10.000	o	375	SJ3-PRMH-5	26.578	25.328	0.875	Open Manhole	1350
S10.001	o	375	SJ3-PRMH-6	26.684	25.291	1.018	Open Manhole	1350
S11.000	\/	-2	SJ3-PRMH_Dummy-1	26.770	26.570	0.000	Junction	
S11.001	\/	-2	SJ3-PRMH_Dummy-2	26.599	26.399	0.000	Junction	
S11.002	\/	-2	SJ3-PRMH_Dummy-3	26.543	26.343	0.000	Junction	
S11.003	\/	-2	SJ3-PRMH_Dummy-4	26.487	26.287	0.000	Junction	
S11.004	\/	-2	SJ3-PRMH_Dummy-5	26.450	26.230	0.020	Junction	
S11.005	o	225	SJ3-PRMH_Dummy-6	26.190	25.965	0.000	Junction	
S11.006	\/	-2	SJ3-PRMH_Dummy-7	26.180	25.876	0.104	Junction	
S11.007	\/	-2	SJ3-PRMH_Dummy-8	26.191	25.786	0.205	Junction	
S11.008	o	375	SJ3-PRMH-2	26.180	25.219	0.586	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., L*W (mm)
S8.000	33.471	300.0	SJ3-PRMH-7	27.750	25.770	1.605	Open Manhole	1500
S8.001	1.307	300.0	SOF7	26.740	25.766	0.599	Open Manhole	0
S9.000	49.172	294.9	SJ3-PRMH-4	26.521	25.078	1.068	Open Manhole	1350
S9.001	3.382	140.1	SOF8	25.820	25.054	0.391	Open Manhole	0
S10.000	18.364	500.0	SJ3-PRMH-6	26.684	25.291	1.018	Open Manhole	1350
S10.001	4.771	450.0	SOF10	26.280	25.280	0.625	Open Manhole	0
S11.000	14.476	84.7	SJ3-PRMH_Dummy-2	26.599	26.399	0.000	Junction	
S11.001	14.476	258.5	SJ3-PRMH_Dummy-3	26.543	26.343	0.000	Junction	
S11.002	14.476	258.5	SJ3-PRMH_Dummy-4	26.487	26.287	0.000	Junction	
S11.003	14.548	255.2	SJ3-PRMH_Dummy-5	26.450	26.230	0.020	Junction	
S11.004	30.041	125.2	SJ3-PRMH_Dummy-6	26.190	25.990	0.000	Junction	
S11.005	12.900	144.9	SJ3-PRMH_Dummy-7	26.180	25.876	0.079	Junction	
S11.006	22.467	250.0	SJ3-PRMH_Dummy-8	26.191	25.786	0.205	Junction	
S11.007	21.803	300.0	SJ3-PRMH-2	26.180	25.713	0.267	Open Manhole	1500
S11.008	2.831	100.0	SOF6	26.170	25.191	0.604	Open Manhole	0

PIPELINE SCHEDULES for Storm

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)
S12.000	\/	-1	SJ3-PRMH_Dummy-9	26.490	26.340	0.000	Junction	
S12.001	\/	-1	SJ3-PRMH_Dummy-10	26.400	26.250	0.000	Junction	
S12.002	\/	-2	SJ3-PRMH_Dummy-11	26.350	26.150	0.000	Junction	
S12.003	\/	-2	SJ3-PRMH_Dummy-12	26.238	26.038	0.000	Junction	
S12.004	o	225	SJ3-PRMH_Dummy-13	26.203	25.978	0.000	Junction	
S12.005	\/	-2	SJ3-PRMH_Dummy-13A	26.178	25.943	0.035	Junction	
S12.006	o	225	SJ3-PRMH-8	26.173	25.289	0.659	Open Manhole	1500
S13.000	\/	-2	SJ3-PRMH_Dummy-19	27.260	27.060	0.000	Junction	
S13.001	\/	-2	SJ3-PRMH_Dummy-20	27.181	26.981	0.000	Junction	
S13.002	\/	-2	SJ3-PRMH_Dummy-21	27.100	26.900	0.000	Junction	
S13.003	\/	-2	SJ3-PRMH_Dummy-22	26.900	26.700	0.000	Junction	
S13.004	\/	-2	SJ3-PRMH_Dummy-23	26.868	26.668	0.000	Junction	
S13.005	\/	-2	SJ3-PRMH_Dummy-24	26.837	26.640	-0.003	Junction	
S13.006	o	450	SJ3-PRMH-9	26.947	26.124	0.373	Open Manhole	2100
S14.000	\/	-1	SJ3-PRMH_Dummy-14	28.290	28.140	0.000	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)
S12.000	14.601	162.2	SJ3-PRMH_Dummy-10	26.400	26.250	0.000	Junction	
S12.001	14.601	146.0	SJ3-PRMH_Dummy-11	26.350	26.150	0.050	Junction	
S12.002	21.483	191.8	SJ3-PRMH_Dummy-12	26.238	26.038	0.000	Junction	
S12.003	26.028	500.0	SJ3-PRMH_Dummy-13	26.203	25.986	0.017	Junction	
S12.004	13.460	384.6	SJ3-PRMH_Dummy-13A	26.178	25.943	0.010	Junction	
S12.005	24.969	500.0	SJ3-PRMH-8	26.173	25.893	0.080	Open Manhole	1500
S12.006	2.615	225.0	SOF9	26.170	25.277	0.668	Open Manhole	0
S13.000	13.411	169.8	SJ3-PRMH_Dummy-20	27.181	26.981	0.000	Junction	
S13.001	13.411	165.6	SJ3-PRMH_Dummy-21	27.100	26.900	0.000	Junction	
S13.002	6.569	32.8	SJ3-PRMH_Dummy-22	26.900	26.700	0.000	Junction	
S13.003	6.321	197.5	SJ3-PRMH_Dummy-23	26.868	26.668	0.000	Junction	
S13.004	6.321	225.8	SJ3-PRMH_Dummy-24	26.837	26.640	-0.003	Junction	
S13.005	7.999	500.0	SJ3-PRMH-9	26.947	26.624	0.123	Open Manhole	2100
S13.006	5.725	61.6	SOF3	26.481	26.031	0.000	Open Manhole	0
S14.000	21.359	71.7	SJ3-PRMH_Dummy-15	27.992	27.842	0.000	Junction	

PIPELINE SCHEDULES for Storm

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)
S14.001	\/	-1	SJ3-PRMH_Dummy-15	27.992	27.842	0.000	Junction	
S14.002	\/	-1	SJ3-PRMH_Dummy-16	27.600	27.450	0.000	Junction	
S14.003	\/	-1	SJ3-PRMH_Dummy-17	27.446	27.296	0.000	Junction	
S14.004	\/	-1	SJ3-PRMH_Dummy-18	27.330	27.180	0.000	Junction	
S15.000	\/	-1	SJ3-PRMH_Dummy-25	27.727	27.577	0.000	Junction	
S15.001	\/	-1	SJ3-PRMH_Dummy-26	27.534	27.384	0.000	Junction	
S15.002	\/	-1	SJ3-PRMH_Dummy-27	27.470	27.320	0.000	Junction	
S15.003	\/	-1	SJ3-PRMH_Dummy-28	27.404	27.254	0.000	Junction	
S15.004	\/	-1	SJ3-PRMH_Dummy-29	27.132	26.982	0.000	Junction	
S16.000	\/	-1	SJ3-PRMH_Dummy-30	27.260	27.110	0.000	Junction	
S16.001	\/	-1	SJ3-PRMH_Dummy-31	27.202	27.052	0.000	Junction	
S16.002	\/	-1	SJ3-PRMH_Dummy-32	27.137	26.987	0.000	Junction	
S16.003	\/	-1	SJ3-PRMH_Dummy-33	27.069	26.919	0.000	Junction	
S16.004	\/	-1	SJ3-PRMH_Dummy-34	27.000	26.850	0.000	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)
S14.001	21.359	54.5	SJ3-PRMH_Dummy-16	27.600	27.450	0.000	Junction	
S14.002	21.359	138.7	SJ3-PRMH_Dummy-17	27.446	27.296	0.000	Junction	
S14.003	21.359	184.1	SJ3-PRMH_Dummy-18	27.330	27.180	0.000	Junction	
S14.004	3.387	8.9	SOF1	26.950	26.800	0.000	Open Manhole	0
S15.000	11.914	61.7	SJ3-PRMH_Dummy-26	27.534	27.384	0.000	Junction	
S15.001	11.914	186.2	SJ3-PRMH_Dummy-27	27.470	27.320	0.000	Junction	
S15.002	11.914	180.5	SJ3-PRMH_Dummy-28	27.404	27.254	0.000	Junction	
S15.003	11.914	43.8	SJ3-PRMH_Dummy-29	27.132	26.982	0.000	Junction	
S15.004	2.516	33.5	SOF4	27.057	26.907	0.000	Open Manhole	0
S16.000	12.243	211.1	SJ3-PRMH_Dummy-31	27.202	27.052	0.000	Junction	
S16.001	12.243	188.4	SJ3-PRMH_Dummy-32	27.137	26.987	0.000	Junction	
S16.002	12.243	180.0	SJ3-PRMH_Dummy-33	27.069	26.919	0.000	Junction	
S16.003	12.243	177.4	SJ3-PRMH_Dummy-34	27.000	26.850	0.000	Junction	
S16.004	2.988	6.6	SOF5	26.550	26.400	0.000	Open Manhole	0

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
8.000	Classification	Carriage way & Footway	100	0.028	0.028	0.028
	Classification	Carriage way & Footway	100	0.021	0.021	0.049
	Classification	Verge	50	0.005	0.002	0.051
	Classification	Verge	50	0.008	0.004	0.055
8.001	-	-	100	0.000	0.000	0.000
9.000	Classification	Carriage way & Footway	100	0.040	0.040	0.040
	Classification	Carriage way & Footway	100	0.012	0.012	0.051
9.001	Classification	Verge	50	0.002	0.001	0.001
10.000	Classification	Carriage way & Footway	100	0.020	0.020	0.020
	Classification	Verge	50	0.002	0.001	0.021
	Classification	Carriage way & Footway	100	0.010	0.010	0.030
10.001	-	-	100	0.000	0.000	0.000
11.000	Classification	Verge +CC	70	0.014	0.010	0.010
	Classification	Verge +CC	70	0.015	0.010	0.020
	Classification	Carriage way & Footway	100	0.006	0.006	0.026
	Classification	Climate Change	40	0.006	0.002	0.029
	Classification	Default	100	0.054	0.054	0.082
	Classification	Climate Change	40	0.054	0.022	0.104
	Classification	Verge +CC	70	0.003	0.002	0.106
	Classification	Carriage way & Footway	100	0.041	0.041	0.146
	Classification	Climate Change	40	0.041	0.016	0.163
	Classification	Verge +CC	70	0.003	0.002	0.164
11.001	-	-	100	0.000	0.000	0.000
11.002	-	-	100	0.000	0.000	0.000
11.003	-	-	100	0.000	0.000	0.000
11.004	Classification	Verge +CC	70	0.023	0.016	0.016
	Classification	Carriage way & Footway	100	0.042	0.042	0.058
	Classification	Climate Change	40	0.042	0.017	0.075
11.005	-	-	100	0.000	0.000	0.000
11.006	-	-	100	0.000	0.000	0.000
11.007	-	-	100	0.000	0.000	0.000
11.008	Classification	Verge	50	0.000	0.000	0.000
12.000	Classification	Verge +CC	70	0.009	0.006	0.006
	Classification	Carriage way & Footway	100	0.021	0.021	0.027
	Classification	Embankments & Cuttings	20	0.002	0.000	0.027
	Classification	Carriage way & Footway	100	0.008	0.008	0.035
	Classification	Verge	50	0.002	0.001	0.036
12.001	-	-	100	0.000	0.000	0.000
12.002	Classification	Verge +CC	70	0.022	0.016	0.016
	Classification	Carriage way & Footway	100	0.062	0.062	0.078
	Classification	Climate Change	40	0.025	0.010	0.088
	Classification	Carriage way & Footway	100	0.007	0.007	0.095
	Classification	Carriage way & Footway	100	0.011	0.011	0.106
	Classification	Verge	50	0.001	0.001	0.107
	Classification	Verge	50	0.002	0.001	0.107

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
12.003	-	-	100	0.000	0.000	0.000
12.004	-	-	100	0.000	0.000	0.000
12.005	-	-	100	0.000	0.000	0.000
12.006	-	-	100	0.000	0.000	0.000
13.000	-	-	100	0.094	0.094	0.094
13.001	-	-	100	0.000	0.000	0.000
13.002	-	-	100	0.000	0.000	0.000
13.003	-	-	100	0.000	0.000	0.000
13.004	-	-	100	0.000	0.000	0.000
13.005	-	-	100	0.000	0.000	0.000
13.006	Classification	Verge +CC	70	0.019	0.013	0.013
	Classification	Verge +CC	70	0.003	0.002	0.015
14.000	Classification	Verge +CC	70	0.023	0.016	0.016
	Classification	Carriage way & Footway	100	0.045	0.045	0.062
	Classification	Climate Change	40	0.028	0.011	0.073
	Classification	Embankments & Cuttings	20	0.004	0.001	0.074
14.001	-	-	100	0.000	0.000	0.000
14.002	-	-	100	0.000	0.000	0.000
14.003	-	-	100	0.000	0.000	0.000
14.004	Classification	Verge +CC	70	0.001	0.001	0.001
15.000	Classification	Carriage way & Footway	100	0.032	0.032	0.032
	Classification	Verge	50	0.012	0.006	0.038
15.001	-	-	100	0.000	0.000	0.000
15.002	-	-	100	0.000	0.000	0.000
15.003	-	-	100	0.000	0.000	0.000
15.004	-	-	100	0.000	0.000	0.000
16.000	Classification	Carriage way & Footway	100	0.003	0.003	0.003
	Classification	Verge	50	0.016	0.008	0.011
	Classification	Carriage way & Footway	100	0.045	0.045	0.056
16.001	-	-	100	0.000	0.000	0.000
16.002	-	-	100	0.000	0.000	0.000
16.003	-	-	100	0.000	0.000	0.000
16.004	-	-	100	0.000	0.000	0.000
				Total 0.985	Total 0.798	Total 0.798

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S8.001	SOF7	26.740	25.766	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S9.001	SOF8	25.820	25.054	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S10.001	SOF10	26.280	25.280	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S11.008	SOF6	26.170	25.191	25.270	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S12.006	SOF9	26.170	25.277	25.270	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S13.006	SOF3	26.481	26.031	26.013	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S14.004	SOF1	26.950	26.800	26.533	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S15.004	SOF4	27.057	26.907	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S16.004	SOF5	26.550	26.400	0.000	0	0

Simulation Criteria for Storm

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

Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	23	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.200	Storm Duration (mins)	30
Ratio R	0.370		

Online Controls for Storm

Hydro-Brake® Optimum Manhole: SJ3-PRMH-7, DS/PN: S8.001, Volume (m^3): 7.0

Unit Reference	MD-SHE-0071-2900-1800-2900
Design Head (m)	1.800
Design Flow (l/s)	2.9
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	71
Invert Level (m)	25.770
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.800	2.9	Kick-Flo®	0.633	1.8
Flush-Flo™	0.309	2.2	Mean Flow over Head Range	-	2.2

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.8	1.200	2.4	3.000	3.7	7.000	5.5
0.200	2.2	1.400	2.6	3.500	3.9	7.500	5.6
0.300	2.2	1.600	2.7	4.000	4.2	8.000	5.8
0.400	2.2	1.800	2.9	4.500	4.4	8.500	6.0
0.500	2.1	2.000	3.0	5.000	4.7	9.000	6.1
0.600	1.9	2.200	3.2	5.500	4.9	9.500	6.3
0.800	2.0	2.400	3.3	6.000	5.1		
1.000	2.2	2.600	3.4	6.500	5.3		

Hydro-Brake® Optimum Manhole: SJ3-PRMH-4, DS/PN: S9.001, Volume (m^3): 7.3

Unit Reference	MD-SHE-0099-4000-0750-4000
Design Head (m)	0.750
Design Flow (l/s)	4.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	99

Hydro-Brake® Optimum Manhole: SJ3-PRMH-4, DS/PN: S9.001, Volume (m^3): 7.3

Invert Level (m)	25.078
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.750	4.0	Kick-Flo®	0.497	3.3
Flush-Flo™	0.222	4.0	Mean Flow over Head Range	-	3.4

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)
0.100	3.2	1.200	5.0	3.000	7.6	7.000	11.4
0.200	4.0	1.400	5.3	3.500	8.2	7.500	11.8
0.300	3.9	1.600	5.7	4.000	8.7	8.000	12.1
0.400	3.8	1.800	6.0	4.500	9.3	8.500	12.5
0.500	3.3	2.000	6.3	5.000	9.7	9.000	12.9
0.600	3.6	2.200	6.6	5.500	10.2	9.500	13.2
0.800	4.1	2.400	6.9	6.000	10.6		
1.000	4.6	2.600	7.1	6.500	11.0		

Hydro-Brake® Optimum Manhole: SJ3-PRMH-6, DS/PN: S10.001, Volume (m^3): 3.9

Unit Reference	MD-SHE-0058-2000-1800-2000
Design Head (m)	1.800
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	58
Invert Level (m)	25.291
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.800	2.0	Kick-Flo®	0.521	1.1
Flush-Flo™	0.257	1.4	Mean Flow over Head Range	-	1.5

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

Hydro-Brake® Optimum Manhole: SJ3-PRMH-6, DS/PN: S10.001, Volume (m³): 3.9

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.2	1.200	1.7	3.000	2.5	7.000	3.7
0.200	1.4	1.400	1.8	3.500	2.7	7.500	3.9
0.300	1.4	1.600	1.9	4.000	2.9	8.000	4.0
0.400	1.3	1.800	2.0	4.500	3.1	8.500	4.1
0.500	1.2	2.000	2.1	5.000	3.2	9.000	4.2
0.600	1.2	2.200	2.2	5.500	3.3	9.500	4.3
0.800	1.4	2.400	2.3	6.000	3.5		
1.000	1.5	2.600	2.4	6.500	3.6		

Orifice Manhole: SJ3-PRMH-2, DS/PN: S11.008, Volume (m³): 5.9

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 25.219

Hydro-Brake® Optimum Manhole: SJ3-PRMH-9, DS/PN: S13.006, Volume (m³): 4.2

Unit Reference	MD-SHE-0119-7900-1800-7900
Design Head (m)	1.800
Design Flow (l/s)	7.9
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	119
Invert Level (m)	26.124
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.800	7.9	Kick-Flo®	1.060	6.2
Flush-Flo™	0.521	7.7	Mean Flow over Head Range	-	6.8

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.2	0.600	7.7	1.600	7.5	2.600	9.4
0.200	6.7	0.800	7.4	1.800	7.9	3.000	10.0
0.300	7.4	1.000	6.6	2.000	8.3	3.500	10.8
0.400	7.7	1.200	6.5	2.200	8.7	4.000	11.5
0.500	7.7	1.400	7.0	2.400	9.0	4.500	12.2

Hydro-Brake® Optimum Manhole: SJ3-PRMH-9, DS/PN: S13.006, Volume (m^3): 4.2

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
5.000	12.8	6.500	14.5	8.000	16.0	9.500	17.4
5.500	13.4	7.000	15.0	8.500	16.5		
6.000	14.0	7.500	15.5	9.000	16.9		

Offline Controls for Storm

Weir Manhole: SJ3-PRMH_Dummy-2, DS/PN: S11.001, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.499

Weir Manhole: SJ3-PRMH_Dummy-3, DS/PN: S11.002, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.443

Weir Manhole: SJ3-PRMH_Dummy-4, DS/PN: S11.003, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.387

Weir Manhole: SJ3-PRMH_Dummy-5, DS/PN: S11.004, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.230

Weir Manhole: SJ3-PRMH_Dummy-7, DS/PN: S11.006, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.155

Weir Manhole: SJ3-PRMH_Dummy-8, DS/PN: S11.007, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.091

Weir Manhole: SJ3-PRMH_Dummy-10, DS/PN: S12.001, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.300

Weir Manhole: SJ3-PRMH_Dummy-11, DS/PN: S12.002, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.250

Weir Manhole: SJ3-PRMH_Dummy-12, DS/PN: S12.003, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.138

Weir Manhole: SJ3-PRMH_Dummy-13, DS/PN: S12.004, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.086

Weir Manhole: SJ3-PRMH Dummy-20, DS/PN: S13.001, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.081

Weir Manhole: SJ3-PRMH Dummy-22, DS/PN: S13.003, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.800

Weir Manhole: SJ3-PRMH_Dummy-23, DS/PN: S13.004, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.768

Weir Manhole: SJ3-PRMH Dummy-24, DS/PN: S13.005, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.740

Weir Manhole: SJ3-PRMH Dummy-15, DS/PN: S14.001, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.892

Weir Manhole: SJ3-PRMH Dummy-16, DS/PN: S14.002, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.500

Weir Manhole: SJ3-PRMH Dummy-17, DS/PN: S14.003, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.346

Weir Manhole: SJ3-PRMH_Dummy-26, DS/PN: S15.001, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.434

Weir Manhole: SJ3-PRMH Dummy-27, DS/PN: S15.002, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.370

Weir Manhole: SJ3-PRMH Dummy-28, DS/PN: S15.003, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.304

Weir Manhole: SJ3-PRMH Dummy-31, DS/PN: S16.001, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.102

Weir Manhole: SJ3-PRMH Dummy-32, DS/PN: S16.002, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 27.037

Weir Manhole: SJ3-PRMH Dummy-33, DS/PN: S16.003, Loop to PN: None

Discharge Coef 0.544 Width (m) 1.400 Invert Level (m) 26.969

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	23	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S8.000	SJ3-PRMH-6	15 Summer	1	+0%	5/30 Summer	30/30 Summer	
S8.001	SJ3-PRMH-7	30 Summer	1	+0%	5/15 Summer	30/120 Winter	
S9.000	SJ3-PRMH-3	15 Summer	1	+0%	100/15 Summer		
S9.001	SJ3-PRMH-4	30 Summer	1	+0%	30/15 Summer		
S10.000	SJ3-PRMH-5	15 Summer	1	+0%	30/15 Summer	100/30 Summer	
S10.001	SJ3-PRMH-6	30 Summer	1	+0%	5/30 Summer	100/30 Summer	
S11.000	SJ3-PRMH_Dummy-1	15 Summer	1	+0%			
S11.001	SJ3-PRMH_Dummy-2	15 Summer	1	+0%			1/15 Summer
S11.002	SJ3-PRMH_Dummy-3	15 Summer	1	+0%			1/15 Summer
S11.003	SJ3-PRMH_Dummy-4	15 Summer	1	+0%			1/15 Summer
S11.004	SJ3-PRMH_Dummy-5	30 Summer	1	+0%			1/15 Summer
S11.005	SJ3-PRMH_Dummy-6	30 Summer	1	+0%			
S11.006	SJ3-PRMH_Dummy-7	30 Summer	1	+0%			

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S8.000	SJ3-PRMH-6		26.028	-0.229	0.000	0.08		8.0	OK
S8.001	SJ3-PRMH-7		26.044	-0.102	0.000	0.02		2.2	OK
S9.000	SJ3-PRMH-3		25.314	-0.306	0.000	0.07		7.8	OK
S9.001	SJ3-PRMH-4		25.272	-0.181	0.000	0.04		3.7	OK
S10.000	SJ3-PRMH-5		25.508	-0.195	0.000	0.07		4.2	OK
S10.001	SJ3-PRMH-6		25.522	-0.144	0.000	0.02		1.4	OK
S11.000	SJ3-PRMH_Dummy-1		26.692	-0.078	0.000	0.27		25.3	OK
S11.001	SJ3-PRMH_Dummy-2	54	26.536	-0.063	0.000	0.37	6.1	19.4	OK
S11.002	SJ3-PRMH_Dummy-3	54	26.470	-0.073	0.000	0.31	2.8	16.3	OK
S11.003	SJ3-PRMH_Dummy-4	54	26.408	-0.079	0.000	0.27	1.5	14.5	OK
S11.004	SJ3-PRMH_Dummy-5	152	26.288	-0.142	0.000	0.04	19.4	2.9	OK
S11.005	SJ3-PRMH_Dummy-6		26.004	-0.186	0.000	0.07		2.9	OK*
S11.006	SJ3-PRMH_Dummy-7	0	25.941	-0.135	0.000	0.05	0.0	2.9	OK

PN	US/MH Name	Level Exceeded
S8.000	SJ3-PRMH-6	19
S8.001	SJ3-PRMH-7	9
S9.000	SJ3-PRMH-3	
S9.001	SJ3-PRMH-4	
S10.000	SJ3-PRMH-5	9
S10.001	SJ3-PRMH-6	8
S11.000	SJ3-PRMH_Dummy-1	
S11.001	SJ3-PRMH_Dummy-2	
S11.002	SJ3-PRMH_Dummy-3	
S11.003	SJ3-PRMH_Dummy-4	
S11.004	SJ3-PRMH_Dummy-5	
S11.005	SJ3-PRMH_Dummy-6	
S11.006	SJ3-PRMH_Dummy-7	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S11.007	SJ3-PRMH_Dummy-8	30 Summer	1	+0%			
S11.008	SJ3-PRMH-2	30 Summer	1	+0%			
S12.000	SJ3-PRMH_Dummy-9	15 Summer	1	+0%			
S12.001	SJ3-PRMH_Dummy-10	15 Summer	1	+0%			1/15 Summer
S12.002	SJ3-PRMH_Dummy-11	15 Summer	1	+0%			1/15 Summer
S12.003	SJ3-PRMH_Dummy-12	15 Summer	1	+0%			1/15 Summer
S12.004	SJ3-PRMH_Dummy-13	30 Summer	1	+0%			1/15 Summer
S12.005	SJ3-PRMH_Dummy-13A	30 Summer	1	+0%			
S12.006	SJ3-PRMH-8	30 Summer	1	+0%			
S13.000	SJ3-PRMH_Dummy-19	15 Summer	1	+0%			
S13.001	SJ3-PRMH_Dummy-20	15 Summer	1	+0%			1/15 Summer
S13.002	SJ3-PRMH_Dummy-21	15 Summer	1	+0%			
S13.003	SJ3-PRMH_Dummy-22	15 Summer	1	+0%			1/15 Summer
S13.004	SJ3-PRMH_Dummy-23	15 Summer	1	+0%			1/15 Summer
S13.005	SJ3-PRMH_Dummy-24	15 Summer	1	+0%			1/15 Summer
S13.006	SJ3-PRMH-9	60 Summer	1	+0%	1/15 Summer		
S14.000	SJ3-PRMH_Dummy-14	15 Summer	1	+0%			
S14.001	SJ3-PRMH_Dummy-15	15 Summer	1	+0%			1/15 Summer
S14.002	SJ3-PRMH_Dummy-16	15 Summer	1	+0%			1/15 Summer
S14.003	SJ3-PRMH_Dummy-17	15 Summer	1	+0%			1/15 Summer
S14.004	SJ3-PRMH_Dummy-18	15 Summer	1	+0%			
S15.000	SJ3-PRMH_Dummy-25	15 Summer	1	+0%			
S15.001	SJ3-PRMH_Dummy-26	15 Summer	1	+0%			1/15 Summer
S15.002	SJ3-PRMH_Dummy-27	15 Summer	1	+0%			1/15 Summer
S15.003	SJ3-PRMH_Dummy-28	15 Summer	1	+0%			1/15 Summer
S15.004	SJ3-PRMH_Dummy-29	15 Summer	1	+0%			
S16.000	SJ3-PRMH_Dummy-30	15 Summer	1	+0%			
S16.001	SJ3-PRMH_Dummy-31	15 Summer	1	+0%			1/15 Summer
S16.002	SJ3-PRMH_Dummy-32	15 Summer	1	+0%			1/15 Summer
S16.003	SJ3-PRMH_Dummy-33	15 Summer	1	+0%			1/15 Summer
S16.004	SJ3-PRMH_Dummy-34	15 Summer	1	+0%			

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S11.007	SJ3-PRMH_Dummy-8	0	25.853	-0.133	0.000	0.06	0.0	2.9
S11.008	SJ3-PRMH-2		25.340	-0.254	0.000	0.03		2.9
S12.000	SJ3-PRMH_Dummy-9		26.419	-0.071	0.000	0.18		5.5
S12.001	SJ3-PRMH_Dummy-10	54	26.319	-0.081	0.000	0.13	1.2	4.3
S12.002	SJ3-PRMH_Dummy-11	46	26.271	-0.079	0.000	0.27	1.4	16.6

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S12.003	SJ3-PRMH_Dummy-12	62	26.168	-0.070	0.000	0.32	3.7	12.3
S12.004	SJ3-PRMH_Dummy-13	46	26.098	-0.105	0.000	0.47	0.4	11.0
S12.005	SJ3-PRMH_Dummy-13A		26.066	-0.077	0.000	0.29		10.9
S12.006	SJ3-PRMH-8		25.387	-0.127	0.000	0.40		10.9
S13.000	SJ3-PRMH_Dummy-19		27.173	-0.087	0.000	0.22		14.5
S13.001	SJ3-PRMH_Dummy-20	31	27.091	-0.090	0.000	0.21	0.3	14.1
S13.002	SJ3-PRMH_Dummy-21		26.980	-0.120	0.000	0.09		14.1
S13.003	SJ3-PRMH_Dummy-22	34	26.813	-0.087	0.000	0.23	0.4	13.7
S13.004	SJ3-PRMH_Dummy-23	37	26.783	-0.085	0.000	0.23	0.6	12.9
S13.005	SJ3-PRMH_Dummy-24	47	26.764	-0.076	0.000	0.30	2.0	11.0
S13.006	SJ3-PRMH-9		26.599	0.025	0.000	0.09		7.7
S14.000	SJ3-PRMH_Dummy-14		28.228	-0.062	0.000	0.24		11.4
S14.001	SJ3-PRMH_Dummy-15	62	27.918	-0.074	0.000	0.16	2.6	8.8
S14.002	SJ3-PRMH_Dummy-16	78	27.527	-0.073	0.000	0.17	2.9	5.8
S14.003	SJ3-PRMH_Dummy-17	84	27.368	-0.078	0.000	0.14	1.6	4.1
S14.004	SJ3-PRMH_Dummy-18		27.219	-0.111	0.000	0.03		4.2
S15.000	SJ3-PRMH_Dummy-25		27.643	-0.084	0.000	0.12		6.0
S15.001	SJ3-PRMH_Dummy-26	61	27.457	-0.077	0.000	0.15	1.7	4.2
S15.002	SJ3-PRMH_Dummy-27	60	27.386	-0.084	0.000	0.12	0.7	3.5
S15.003	SJ3-PRMH_Dummy-28	22	27.304	-0.100	0.000	0.06	0.0	3.5
S15.004	SJ3-PRMH_Dummy-29		27.030	-0.102	0.000	0.05		3.5
S16.000	SJ3-PRMH_Dummy-30		27.207	-0.053	0.000	0.32		8.6
S16.001	SJ3-PRMH_Dummy-31	74	27.131	-0.071	0.000	0.19	3.4	5.3
S16.002	SJ3-PRMH_Dummy-32	74	27.057	-0.080	0.000	0.14	1.3	4.0
S16.003	SJ3-PRMH_Dummy-33	74	26.984	-0.085	0.000	0.11	0.6	3.4
S16.004	SJ3-PRMH_Dummy-34		26.882	-0.118	0.000	0.02		3.4

PN	US/MH Name	Status	Level Exceeded
S11.007	SJ3-PRMH_Dummy-8	OK	
S11.008	SJ3-PRMH-2	OK	
S12.000	SJ3-PRMH_Dummy-9	OK	
S12.001	SJ3-PRMH_Dummy-10	OK	
S12.002	SJ3-PRMH_Dummy-11	OK	
S12.003	SJ3-PRMH_Dummy-12	OK	
S12.004	SJ3-PRMH_Dummy-13	OK*	
S12.005	SJ3-PRMH_Dummy-13A	OK	
S12.006	SJ3-PRMH-8	OK	
S13.000	SJ3-PRMH_Dummy-19	OK	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
S13.001	SJ3-PRMH_Dummy-20	OK	
S13.002	SJ3-PRMH_Dummy-21	OK	
S13.003	SJ3-PRMH_Dummy-22	OK	
S13.004	SJ3-PRMH_Dummy-23	OK	
S13.005	SJ3-PRMH_Dummy-24	OK	
S13.006	SJ3-PRMH-9	SURCHARGED	
S14.000	SJ3-PRMH_Dummy-14	OK	
S14.001	SJ3-PRMH_Dummy-15	OK	
S14.002	SJ3-PRMH_Dummy-16	OK	
S14.003	SJ3-PRMH_Dummy-17	OK	
S14.004	SJ3-PRMH_Dummy-18	OK	
S15.000	SJ3-PRMH_Dummy-25	OK	
S15.001	SJ3-PRMH_Dummy-26	OK	
S15.002	SJ3-PRMH_Dummy-27	OK	
S15.003	SJ3-PRMH_Dummy-28	OK	
S15.004	SJ3-PRMH_Dummy-29	OK	
S16.000	SJ3-PRMH_Dummy-30	OK	
S16.001	SJ3-PRMH_Dummy-31	OK	
S16.002	SJ3-PRMH_Dummy-32	OK	
S16.003	SJ3-PRMH_Dummy-33	OK	
S16.004	SJ3-PRMH_Dummy-34	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

Number of Input Hydrographs 0 Number of Storage Structures 0
Number of Online Controls 5 Number of Time/Area Diagrams 0
Number of Offline Controls 23 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S8.000	SJ3-PRMH-6	15 Summer	5	+0%	5/30 Summer	30/30 Summer	
S8.001	SJ3-PRMH-7	15 Summer	5	+0%	5/15 Summer	30/120 Winter	
S9.000	SJ3-PRMH-3	15 Summer	5	+0%	100/15 Summer		
S9.001	SJ3-PRMH-4	30 Summer	5	+0%	30/15 Summer		
S10.000	SJ3-PRMH-5	15 Summer	5	+0%	30/15 Summer	100/30 Summer	
S10.001	SJ3-PRMH-6	30 Summer	5	+0%	5/30 Summer	100/30 Summer	
S11.000	SJ3-PRMH_Dummy-1	15 Summer	5	+0%			
S11.001	SJ3-PRMH_Dummy-2	15 Summer	5	+0%			1/15 Summer
S11.002	SJ3-PRMH_Dummy-3	15 Summer	5	+0%			1/15 Summer
S11.003	SJ3-PRMH_Dummy-4	15 Summer	5	+0%			1/15 Summer
S11.004	SJ3-PRMH_Dummy-5	15 Summer	5	+0%			1/15 Summer
S11.005	SJ3-PRMH_Dummy-6	15 Summer	5	+0%			
S11.006	SJ3-PRMH_Dummy-7	15 Summer	5	+0%			

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S8.000	SJ3-PRMH-6		26.214	-0.043	0.000	0.13		13.1
S8.001	SJ3-PRMH-7		26.212	0.067	0.000	0.02		2.2
S9.000	SJ3-PRMH-3		25.368	-0.252	0.000	0.12		12.8
S9.001	SJ3-PRMH-4		25.373	-0.081	0.000	0.04		4.0
S10.000	SJ3-PRMH-5		25.646	-0.057	0.000	0.11		6.8
S10.001	SJ3-PRMH-6		25.689	0.023	0.000	0.02		1.4
S11.000	SJ3-PRMH_Dummy-1		26.719	-0.051	0.000	0.46		42.5
S11.001	SJ3-PRMH_Dummy-2	54	26.553	-0.046	0.000	0.51	15.7	26.8
S11.002	SJ3-PRMH_Dummy-3	54	26.481	-0.062	0.000	0.37	6.8	19.8
S11.003	SJ3-PRMH_Dummy-4	54	26.415	-0.072	0.000	0.31	3.0	16.6
S11.004	SJ3-PRMH_Dummy-5	152	26.297	-0.133	0.000	0.06	27.1	4.2
S11.005	SJ3-PRMH_Dummy-6		26.013	-0.177	0.000	0.10		4.3
S11.006	SJ3-PRMH_Dummy-7	0	25.950	-0.126	0.000	0.08	0.0	4.2

PN	US/MH Name	Status	Level Exceeded
S8.000	SJ3-PRMH-6	OK	19
S8.001	SJ3-PRMH-7	SURCHARGED	9
S9.000	SJ3-PRMH-3	OK	
S9.001	SJ3-PRMH-4	OK	
S10.000	SJ3-PRMH-5	OK	9
S10.001	SJ3-PRMH-6	SURCHARGED	8
S11.000	SJ3-PRMH_Dummy-1	OK	
S11.001	SJ3-PRMH_Dummy-2	OK	
S11.002	SJ3-PRMH_Dummy-3	OK	
S11.003	SJ3-PRMH_Dummy-4	OK	
S11.004	SJ3-PRMH_Dummy-5	OK	
S11.005	SJ3-PRMH_Dummy-6	OK*	
S11.006	SJ3-PRMH_Dummy-7	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S11.007	SJ3-PRMH_Dummy-8	15 Summer	5	+0%			
S11.008	SJ3-PRMH-2	30 Summer	5	+0%			
S12.000	SJ3-PRMH_Dummy-9	15 Summer	5	+0%			
S12.001	SJ3-PRMH_Dummy-10	15 Summer	5	+0%			1/15 Summer
S12.002	SJ3-PRMH_Dummy-11	15 Summer	5	+0%			1/15 Summer
S12.003	SJ3-PRMH_Dummy-12	15 Summer	5	+0%			1/15 Summer
S12.004	SJ3-PRMH_Dummy-13	30 Summer	5	+0%			1/15 Summer
S12.005	SJ3-PRMH_Dummy-13A	30 Summer	5	+0%			
S12.006	SJ3-PRMH-8	30 Summer	5	+0%			
S13.000	SJ3-PRMH_Dummy-19	15 Summer	5	+0%			
S13.001	SJ3-PRMH_Dummy-20	15 Summer	5	+0%			1/15 Summer
S13.002	SJ3-PRMH_Dummy-21	15 Summer	5	+0%			
S13.003	SJ3-PRMH_Dummy-22	15 Summer	5	+0%			1/15 Summer
S13.004	SJ3-PRMH_Dummy-23	15 Summer	5	+0%			1/15 Summer
S13.005	SJ3-PRMH_Dummy-24	15 Summer	5	+0%			1/15 Summer
S13.006	SJ3-PRMH-9	180 Summer	5	+0%	1/15 Summer		
S14.000	SJ3-PRMH_Dummy-14	15 Summer	5	+0%			
S14.001	SJ3-PRMH_Dummy-15	15 Summer	5	+0%			1/15 Summer
S14.002	SJ3-PRMH_Dummy-16	15 Summer	5	+0%			1/15 Summer
S14.003	SJ3-PRMH_Dummy-17	15 Summer	5	+0%			1/15 Summer
S14.004	SJ3-PRMH_Dummy-18	15 Summer	5	+0%			
S15.000	SJ3-PRMH_Dummy-25	15 Summer	5	+0%			
S15.001	SJ3-PRMH_Dummy-26	15 Summer	5	+0%			1/15 Summer
S15.002	SJ3-PRMH_Dummy-27	15 Summer	5	+0%			1/15 Summer
S15.003	SJ3-PRMH_Dummy-28	15 Summer	5	+0%			1/15 Summer
S15.004	SJ3-PRMH_Dummy-29	15 Summer	5	+0%			
S16.000	SJ3-PRMH_Dummy-30	15 Summer	5	+0%			
S16.001	SJ3-PRMH_Dummy-31	15 Summer	5	+0%			1/15 Summer
S16.002	SJ3-PRMH_Dummy-32	15 Summer	5	+0%			1/15 Summer
S16.003	SJ3-PRMH_Dummy-33	15 Summer	5	+0%			1/15 Summer
S16.004	SJ3-PRMH_Dummy-34	15 Summer	5	+0%			

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S11.007	SJ3-PRMH_Dummy-8	0	25.862	-0.124	0.000	0.08	0.0	4.1
S11.008	SJ3-PRMH-2		25.358	-0.236	0.000	0.04		4.1
S12.000	SJ3-PRMH_Dummy-9		26.435	-0.055	0.000	0.30		9.2
S12.001	SJ3-PRMH_Dummy-10	54	26.329	-0.071	0.000	0.18	3.3	6.0
S12.002	SJ3-PRMH_Dummy-11	46	26.288	-0.062	0.000	0.37	6.5	22.7

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S12.003	SJ3-PRMH_Dummy-12	62	26.178	-0.060	0.000	0.39	7.6	14.7
S12.004	SJ3-PRMH_Dummy-13	46	26.106	-0.097	0.000	0.54	1.4	12.4
S12.005	SJ3-PRMH_Dummy-13A		26.073	-0.070	0.000	0.33		12.4
S12.006	SJ3-PRMH-8		25.394	-0.120	0.000	0.45		12.4
S13.000	SJ3-PRMH_Dummy-19		27.199	-0.061	0.000	0.37		24.3
S13.001	SJ3-PRMH_Dummy-20	31	27.110	-0.071	0.000	0.32	3.3	21.0
S13.002	SJ3-PRMH_Dummy-21		26.995	-0.105	0.000	0.14		20.9
S13.003	SJ3-PRMH_Dummy-22	34	26.826	-0.074	0.000	0.30	2.6	18.3
S13.004	SJ3-PRMH_Dummy-23	37	26.792	-0.076	0.000	0.29	2.0	16.3
S13.005	SJ3-PRMH_Dummy-24	47	26.773	-0.067	0.000	0.34	4.6	12.5
S13.006	SJ3-PRMH-9		26.598	0.024	0.000	0.09		7.7
S14.000	SJ3-PRMH_Dummy-14		28.248	-0.042	0.000	0.41		19.0
S14.001	SJ3-PRMH_Dummy-15	62	27.929	-0.063	0.000	0.24	6.1	12.9
S14.002	SJ3-PRMH_Dummy-16	78	27.535	-0.065	0.000	0.23	5.3	7.6
S14.003	SJ3-PRMH_Dummy-17	84	27.372	-0.074	0.000	0.17	2.7	4.8
S14.004	SJ3-PRMH_Dummy-18		27.223	-0.107	0.000	0.04		4.9
S15.000	SJ3-PRMH_Dummy-25		27.658	-0.069	0.000	0.20		10.0
S15.001	SJ3-PRMH_Dummy-26	61	27.466	-0.068	0.000	0.20	4.1	5.9
S15.002	SJ3-PRMH_Dummy-27	60	27.392	-0.078	0.000	0.14	1.7	4.2
S15.003	SJ3-PRMH_Dummy-28	22	27.307	-0.097	0.000	0.07	0.0	4.2
S15.004	SJ3-PRMH_Dummy-29		27.033	-0.099	0.000	0.06		4.2
S16.000	SJ3-PRMH_Dummy-30		27.228	-0.032	0.000	0.53		14.5
S16.001	SJ3-PRMH_Dummy-31	74	27.141	-0.061	0.000	0.26	7.1	7.5
S16.002	SJ3-PRMH_Dummy-32	74	27.063	-0.074	0.000	0.17	2.6	4.9
S16.003	SJ3-PRMH_Dummy-33	74	26.987	-0.082	0.000	0.13	1.0	3.8
S16.004	SJ3-PRMH_Dummy-34		26.884	-0.116	0.000	0.02		3.8

PN	US/MH Name	Status	Level Exceeded
S11.007	SJ3-PRMH_Dummy-8	OK	
S11.008	SJ3-PRMH-2	OK	
S12.000	SJ3-PRMH_Dummy-9	OK	
S12.001	SJ3-PRMH_Dummy-10	OK	
S12.002	SJ3-PRMH_Dummy-11	OK	
S12.003	SJ3-PRMH_Dummy-12	OK	
S12.004	SJ3-PRMH_Dummy-13	OK*	
S12.005	SJ3-PRMH_Dummy-13A	OK	
S12.006	SJ3-PRMH-8	OK	
S13.000	SJ3-PRMH_Dummy-19	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
S13.001	SJ3-PRMH_Dummy-20	OK	
S13.002	SJ3-PRMH_Dummy-21	OK	
S13.003	SJ3-PRMH_Dummy-22	OK	
S13.004	SJ3-PRMH_Dummy-23	OK	
S13.005	SJ3-PRMH_Dummy-24	OK	
S13.006	SJ3-PRMH-9	SURCHARGED	
S14.000	SJ3-PRMH_Dummy-14	OK	
S14.001	SJ3-PRMH_Dummy-15	OK	
S14.002	SJ3-PRMH_Dummy-16	OK	
S14.003	SJ3-PRMH_Dummy-17	OK	
S14.004	SJ3-PRMH_Dummy-18	OK	
S15.000	SJ3-PRMH_Dummy-25	OK	
S15.001	SJ3-PRMH_Dummy-26	OK	
S15.002	SJ3-PRMH_Dummy-27	OK	
S15.003	SJ3-PRMH_Dummy-28	OK	
S15.004	SJ3-PRMH_Dummy-29	OK	
S16.000	SJ3-PRMH_Dummy-30	OK	
S16.001	SJ3-PRMH_Dummy-31	OK	
S16.002	SJ3-PRMH_Dummy-32	OK	
S16.003	SJ3-PRMH_Dummy-33	OK	
S16.004	SJ3-PRMH_Dummy-34	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

Number of Input Hydrographs 0 Number of Storage Structures 0
Number of Online Controls 5 Number of Time/Area Diagrams 0
Number of Offline Controls 23 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S8.000	SJ3-PRMH-6	60 Winter	30	+0%	5/30 Summer	30/30 Summer	
S8.001	SJ3-PRMH-7	120 Winter	30	+0%	5/15 Summer	30/120 Winter	
S9.000	SJ3-PRMH-3	15 Summer	30	+0%	100/15 Summer		
S9.001	SJ3-PRMH-4	180 Winter	30	+0%	30/15 Summer		
S10.000	SJ3-PRMH-5	15 Summer	30	+0%	30/15 Summer	100/30 Summer	
S10.001	SJ3-PRMH-6	60 Summer	30	+0%	5/30 Summer	100/30 Summer	
S11.000	SJ3-PRMH_Dummy-1	15 Summer	30	+0%			
S11.001	SJ3-PRMH_Dummy-2	15 Summer	30	+0%			1/15 Summer
S11.002	SJ3-PRMH_Dummy-3	15 Summer	30	+0%			1/15 Summer
S11.003	SJ3-PRMH_Dummy-4	15 Summer	30	+0%			1/15 Summer
S11.004	SJ3-PRMH_Dummy-5	15 Summer	30	+0%			1/15 Summer
S11.005	SJ3-PRMH_Dummy-6	15 Summer	30	+0%			
S11.006	SJ3-PRMH_Dummy-7	15 Summer	30	+0%			

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S8.000	SJ3-PRMH-6		26.862	0.605	5.600	0.20		20.8
S8.001	SJ3-PRMH-7		27.750	1.605	0.504	0.03		2.5
S9.000	SJ3-PRMH-3		25.512	-0.108	0.000	0.17		18.5
S9.001	SJ3-PRMH-4		25.293	-0.160	0.000	0.04		4.0
S10.000	SJ3-PRMH-5		26.060	0.357	0.000	0.16		9.8
S10.001	SJ3-PRMH-6		26.366	0.700	0.000	0.02		1.6
S11.000	SJ3-PRMH_Dummy-1		26.743	-0.027	0.000	0.67		62.2
S11.001	SJ3-PRMH_Dummy-2	54	26.567	-0.032	0.000	0.64	28.4	33.8
S11.002	SJ3-PRMH_Dummy-3	54	26.489	-0.054	0.000	0.43	10.7	23.0
S11.003	SJ3-PRMH_Dummy-4	54	26.420	-0.067	0.000	0.34	4.7	18.2
S11.004	SJ3-PRMH_Dummy-5	152	26.309	-0.121	0.000	0.09	41.2	6.7
S11.005	SJ3-PRMH_Dummy-6		26.025	-0.165	0.000	0.16		6.8
S11.006	SJ3-PRMH_Dummy-7	0	25.965	-0.111	0.000	0.12	0.0	6.6

PN	US/MH Name	Status	Level Exceeded
S8.000	SJ3-PRMH-6	FLOOD	19
S8.001	SJ3-PRMH-7	FLOOD	9
S9.000	SJ3-PRMH-3	OK	
S9.001	SJ3-PRMH-4	OK	
S10.000	SJ3-PRMH-5	SURCHARGED	9
S10.001	SJ3-PRMH-6	SURCHARGED	8
S11.000	SJ3-PRMH_Dummy-1	OK	
S11.001	SJ3-PRMH_Dummy-2	OK	
S11.002	SJ3-PRMH_Dummy-3	OK	
S11.003	SJ3-PRMH_Dummy-4	OK	
S11.004	SJ3-PRMH_Dummy-5	OK	
S11.005	SJ3-PRMH_Dummy-6	OK*	
S11.006	SJ3-PRMH_Dummy-7	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S11.007	SJ3-PRMH_Dummy-8	15 Summer	30	+0%			
S11.008	SJ3-PRMH-2	15 Summer	30	+0%			
S12.000	SJ3-PRMH_Dummy-9	15 Summer	30	+0%			
S12.001	SJ3-PRMH_Dummy-10	15 Summer	30	+0%			1/15 Summer
S12.002	SJ3-PRMH_Dummy-11	15 Summer	30	+0%			1/15 Summer
S12.003	SJ3-PRMH_Dummy-12	15 Summer	30	+0%			1/15 Summer
S12.004	SJ3-PRMH_Dummy-13	15 Summer	30	+0%			1/15 Summer
S12.005	SJ3-PRMH_Dummy-13A	30 Summer	30	+0%			
S12.006	SJ3-PRMH-8	15 Summer	30	+0%			
S13.000	SJ3-PRMH_Dummy-19	15 Summer	30	+0%			
S13.001	SJ3-PRMH_Dummy-20	15 Summer	30	+0%			1/15 Summer
S13.002	SJ3-PRMH_Dummy-21	15 Summer	30	+0%			
S13.003	SJ3-PRMH_Dummy-22	15 Summer	30	+0%			1/15 Summer
S13.004	SJ3-PRMH_Dummy-23	15 Summer	30	+0%			1/15 Summer
S13.005	SJ3-PRMH_Dummy-24	15 Summer	30	+0%			1/15 Summer
S13.006	SJ3-PRMH-9	30 Winter	30	+0%	1/15 Summer		
S14.000	SJ3-PRMH_Dummy-14	15 Summer	30	+0%			
S14.001	SJ3-PRMH_Dummy-15	15 Summer	30	+0%			1/15 Summer
S14.002	SJ3-PRMH_Dummy-16	15 Summer	30	+0%			1/15 Summer
S14.003	SJ3-PRMH_Dummy-17	15 Summer	30	+0%			1/15 Summer
S14.004	SJ3-PRMH_Dummy-18	15 Summer	30	+0%			
S15.000	SJ3-PRMH_Dummy-25	15 Summer	30	+0%			
S15.001	SJ3-PRMH_Dummy-26	15 Summer	30	+0%			1/15 Summer
S15.002	SJ3-PRMH_Dummy-27	15 Summer	30	+0%			1/15 Summer
S15.003	SJ3-PRMH_Dummy-28	15 Summer	30	+0%			1/15 Summer
S15.004	SJ3-PRMH_Dummy-29	15 Summer	30	+0%			
S16.000	SJ3-PRMH_Dummy-30	15 Summer	30	+0%			
S16.001	SJ3-PRMH_Dummy-31	15 Summer	30	+0%			1/15 Summer
S16.002	SJ3-PRMH_Dummy-32	15 Summer	30	+0%			1/15 Summer
S16.003	SJ3-PRMH_Dummy-33	15 Summer	30	+0%			1/15 Summer
S16.004	SJ3-PRMH_Dummy-34	15 Summer	30	+0%			

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S11.007	SJ3-PRMH_Dummy-8	0	25.878	-0.108	0.000	0.13	0.0	6.5
S11.008	SJ3-PRMH-2		25.393	-0.201	0.000	0.07		6.5
S12.000	SJ3-PRMH_Dummy-9		26.450	-0.040	0.000	0.44		13.6
S12.001	SJ3-PRMH_Dummy-10	54	26.337	-0.063	0.000	0.24	6.0	7.7
S12.002	SJ3-PRMH_Dummy-11	46	26.309	-0.041	0.000	0.54	19.6	33.4

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S12.003	SJ3-PRMH_Dummy-12	62	26.190	-0.048	0.000	0.49	14.4	18.5
S12.004	SJ3-PRMH_Dummy-13	46	26.114	-0.089	0.000	0.60	3.2	13.9
S12.005	SJ3-PRMH_Dummy-13A		26.079	-0.064	0.000	0.36		13.8
S12.006	SJ3-PRMH-8		25.402	-0.112	0.000	0.50		13.9
S13.000	SJ3-PRMH_Dummy-19		27.219	-0.041	0.000	0.55		35.7
S13.001	SJ3-PRMH_Dummy-20	31	27.124	-0.057	0.000	0.41	8.8	26.9
S13.002	SJ3-PRMH_Dummy-21		27.004	-0.096	0.000	0.18		26.9
S13.003	SJ3-PRMH_Dummy-22	34	26.835	-0.065	0.000	0.35	5.3	21.4
S13.004	SJ3-PRMH_Dummy-23	37	26.800	-0.068	0.000	0.32	4.3	17.9
S13.005	SJ3-PRMH_Dummy-24	47	26.785	-0.055	0.000	0.35	10.1	13.0
S13.006	SJ3-PRMH-9		26.784	0.210	0.000	0.09		7.7
S14.000	SJ3-PRMH_Dummy-14		28.264	-0.026	0.000	0.60		27.8
S14.001	SJ3-PRMH_Dummy-15	62	27.939	-0.053	0.000	0.32	10.9	16.9
S14.002	SJ3-PRMH_Dummy-16	78	27.540	-0.060	0.000	0.27	7.8	9.0
S14.003	SJ3-PRMH_Dummy-17	84	27.375	-0.071	0.000	0.19	3.5	5.5
S14.004	SJ3-PRMH_Dummy-18		27.226	-0.104	0.000	0.04		5.6
S15.000	SJ3-PRMH_Dummy-25		27.671	-0.056	0.000	0.29		14.7
S15.001	SJ3-PRMH_Dummy-26	61	27.473	-0.061	0.000	0.26	7.2	7.5
S15.002	SJ3-PRMH_Dummy-27	60	27.396	-0.074	0.000	0.17	2.7	4.9
S15.003	SJ3-PRMH_Dummy-28	22	27.310	-0.094	0.000	0.08	0.1	4.8
S15.004	SJ3-PRMH_Dummy-29		27.035	-0.097	0.000	0.07		4.8
S16.000	SJ3-PRMH_Dummy-30		27.248	-0.012	0.000	0.78		21.3
S16.001	SJ3-PRMH_Dummy-31	74	27.150	-0.052	0.000	0.33	11.8	9.4
S16.002	SJ3-PRMH_Dummy-32	74	27.067	-0.070	0.000	0.19	3.7	5.7
S16.003	SJ3-PRMH_Dummy-33	74	26.990	-0.079	0.000	0.14	1.5	4.2
S16.004	SJ3-PRMH_Dummy-34		26.886	-0.114	0.000	0.03		4.2

PN	US/MH Name	Status	Level Exceeded
S11.007	SJ3-PRMH_Dummy-8	OK	
S11.008	SJ3-PRMH-2	OK	
S12.000	SJ3-PRMH_Dummy-9	OK	
S12.001	SJ3-PRMH_Dummy-10	OK	
S12.002	SJ3-PRMH_Dummy-11	OK	
S12.003	SJ3-PRMH_Dummy-12	OK	
S12.004	SJ3-PRMH_Dummy-13	OK*	
S12.005	SJ3-PRMH_Dummy-13A	OK	
S12.006	SJ3-PRMH-8	OK	
S13.000	SJ3-PRMH_Dummy-19	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
S13.001	SJ3-PRMH_Dummy-20	OK	
S13.002	SJ3-PRMH_Dummy-21	OK	
S13.003	SJ3-PRMH_Dummy-22	OK	
S13.004	SJ3-PRMH_Dummy-23	OK	
S13.005	SJ3-PRMH_Dummy-24	OK	
S13.006	SJ3-PRMH-9	SURCHARGED	
S14.000	SJ3-PRMH_Dummy-14	OK	
S14.001	SJ3-PRMH_Dummy-15	OK	
S14.002	SJ3-PRMH_Dummy-16	OK	
S14.003	SJ3-PRMH_Dummy-17	OK	
S14.004	SJ3-PRMH_Dummy-18	OK	
S15.000	SJ3-PRMH_Dummy-25	OK	
S15.001	SJ3-PRMH_Dummy-26	OK	
S15.002	SJ3-PRMH_Dummy-27	OK	
S15.003	SJ3-PRMH_Dummy-28	OK	
S15.004	SJ3-PRMH_Dummy-29	OK	
S16.000	SJ3-PRMH_Dummy-30	OK	
S16.001	SJ3-PRMH_Dummy-31	OK	
S16.002	SJ3-PRMH_Dummy-32	OK	
S16.003	SJ3-PRMH_Dummy-33	OK	
S16.004	SJ3-PRMH_Dummy-34	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	23	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S8.000	SJ3-PRMH-6	180 Winter	100	+0%	5/30 Summer	30/30 Summer	
S8.001	SJ3-PRMH-7	60 Summer	100	+0%	5/15 Summer	30/120 Winter	
S9.000	SJ3-PRMH-3	15 Summer	100	+0%	100/15 Summer		
S9.001	SJ3-PRMH-4	30 Summer	100	+0%	30/15 Summer		
S10.000	SJ3-PRMH-5	180 Summer	100	+0%	30/15 Summer	100/30 Summer	
S10.001	SJ3-PRMH-6	30 Winter	100	+0%	5/30 Summer	100/30 Summer	
S11.000	SJ3-PRMH_Dummy-1	15 Summer	100	+0%			
S11.001	SJ3-PRMH_Dummy-2	15 Summer	100	+0%			1/15 Summer
S11.002	SJ3-PRMH_Dummy-3	15 Summer	100	+0%			1/15 Summer
S11.003	SJ3-PRMH_Dummy-4	15 Summer	100	+0%			1/15 Summer
S11.004	SJ3-PRMH_Dummy-5	15 Summer	100	+0%			1/15 Summer
S11.005	SJ3-PRMH_Dummy-6	15 Summer	100	+0%			
S11.006	SJ3-PRMH_Dummy-7	15 Summer	100	+0%			

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S8.000	SJ3-PRMH-6		26.868	0.611	11.450	0.33		34.4
S8.001	SJ3-PRMH-7		27.750	1.605	0.521	0.03		2.5
S9.000	SJ3-PRMH-3		26.089	0.469	0.000	0.22		23.4
S9.001	SJ3-PRMH-4		26.386	0.933	0.000	0.06		5.1
S10.000	SJ3-PRMH-5		26.582	0.879	4.020	0.22		13.6
S10.001	SJ3-PRMH-6		26.684	1.018	0.197	0.02		1.7
S11.000	SJ3-PRMH_Dummy-1		26.761	-0.009	0.000	0.87		80.5
S11.001	SJ3-PRMH_Dummy-2	54	26.578	-0.021	0.000	0.74	41.0	39.3
S11.002	SJ3-PRMH_Dummy-3	54	26.494	-0.049	0.000	0.48	13.8	25.3
S11.003	SJ3-PRMH_Dummy-4	54	26.423	-0.064	0.000	0.36	5.9	19.3
S11.004	SJ3-PRMH_Dummy-5	152	26.316	-0.114	0.000	0.11	50.5	8.1
S11.005	SJ3-PRMH_Dummy-6		26.033	-0.157	0.000	0.20		8.2
S11.006	SJ3-PRMH_Dummy-7	0	25.974	-0.102	0.000	0.15	0.0	8.0

PN	US/MH Name	Status	Level Exceeded
S8.000	SJ3-PRMH-6	FLOOD	19
S8.001	SJ3-PRMH-7	FLOOD	9
S9.000	SJ3-PRMH-3	SURCHARGED	
S9.001	SJ3-PRMH-4	SURCHARGED	
S10.000	SJ3-PRMH-5	FLOOD	9
S10.001	SJ3-PRMH-6	FLOOD	8
S11.000	SJ3-PRMH_Dummy-1	OK	
S11.001	SJ3-PRMH_Dummy-2	OK	
S11.002	SJ3-PRMH_Dummy-3	OK	
S11.003	SJ3-PRMH_Dummy-4	OK	
S11.004	SJ3-PRMH_Dummy-5	OK	
S11.005	SJ3-PRMH_Dummy-6	OK*	
S11.006	SJ3-PRMH_Dummy-7	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S11.007	SJ3-PRMH_Dummy-8	15 Summer	100	+0%			
S11.008	SJ3-PRMH-2	15 Summer	100	+0%			
S12.000	SJ3-PRMH_Dummy-9	15 Summer	100	+0%			
S12.001	SJ3-PRMH_Dummy-10	15 Summer	100	+0%			1/15 Summer
S12.002	SJ3-PRMH_Dummy-11	15 Summer	100	+0%			1/15 Summer
S12.003	SJ3-PRMH_Dummy-12	15 Summer	100	+0%			1/15 Summer
S12.004	SJ3-PRMH_Dummy-13	30 Summer	100	+0%			1/15 Summer
S12.005	SJ3-PRMH_Dummy-13A	15 Summer	100	+0%			
S12.006	SJ3-PRMH-8	15 Summer	100	+0%			
S13.000	SJ3-PRMH_Dummy-19	15 Summer	100	+0%			
S13.001	SJ3-PRMH_Dummy-20	15 Summer	100	+0%			1/15 Summer
S13.002	SJ3-PRMH_Dummy-21	15 Summer	100	+0%			
S13.003	SJ3-PRMH_Dummy-22	15 Summer	100	+0%			1/15 Summer
S13.004	SJ3-PRMH_Dummy-23	15 Summer	100	+0%			1/15 Summer
S13.005	SJ3-PRMH_Dummy-24	15 Winter	100	+0%			1/15 Summer
S13.006	SJ3-PRMH-9	30 Summer	100	+0%	1/15 Summer		
S14.000	SJ3-PRMH_Dummy-14	15 Summer	100	+0%			
S14.001	SJ3-PRMH_Dummy-15	15 Summer	100	+0%			1/15 Summer
S14.002	SJ3-PRMH_Dummy-16	15 Summer	100	+0%			1/15 Summer
S14.003	SJ3-PRMH_Dummy-17	15 Summer	100	+0%			1/15 Summer
S14.004	SJ3-PRMH_Dummy-18	15 Summer	100	+0%			
S15.000	SJ3-PRMH_Dummy-25	15 Summer	100	+0%			
S15.001	SJ3-PRMH_Dummy-26	15 Summer	100	+0%			1/15 Summer
S15.002	SJ3-PRMH_Dummy-27	15 Summer	100	+0%			1/15 Summer
S15.003	SJ3-PRMH_Dummy-28	15 Summer	100	+0%			1/15 Summer
S15.004	SJ3-PRMH_Dummy-29	15 Summer	100	+0%			
S16.000	SJ3-PRMH_Dummy-30	15 Summer	100	+0%			
S16.001	SJ3-PRMH_Dummy-31	15 Summer	100	+0%			1/15 Summer
S16.002	SJ3-PRMH_Dummy-32	15 Summer	100	+0%			1/15 Summer
S16.003	SJ3-PRMH_Dummy-33	15 Summer	100	+0%			1/15 Summer
S16.004	SJ3-PRMH_Dummy-34	15 Summer	100	+0%			

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S11.007	SJ3-PRMH_Dummy-8	0	25.887	-0.099	0.000	0.16	0.0	7.9
S11.008	SJ3-PRMH-2		25.418	-0.176	0.000	0.08		7.9
S12.000	SJ3-PRMH_Dummy-9		26.461	-0.029	0.000	0.57		17.5
S12.001	SJ3-PRMH_Dummy-10	54	26.343	-0.057	0.000	0.27	9.0	8.8
S12.002	SJ3-PRMH_Dummy-11	46	26.318	-0.032	0.000	0.63	28.6	38.8

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S12.003	SJ3-PRMH_Dummy-12	62	26.195	-0.043	0.000	0.53	18.0	20.2
S12.004	SJ3-PRMH_Dummy-13	46	26.118	-0.085	0.000	0.63	4.3	14.6
S12.005	SJ3-PRMH_Dummy-13A		26.083	-0.060	0.000	0.38		14.6
S12.006	SJ3-PRMH-8		25.405	-0.109	0.000	0.53		14.6
S13.000	SJ3-PRMH_Dummy-19		27.236	-0.024	0.000	0.71		46.2
S13.001	SJ3-PRMH_Dummy-20	31	27.133	-0.048	0.000	0.49	14.0	32.1
S13.002	SJ3-PRMH_Dummy-21		27.011	-0.089	0.000	0.22		32.0
S13.003	SJ3-PRMH_Dummy-22	34	26.841	-0.059	0.000	0.39	8.0	23.8
S13.004	SJ3-PRMH_Dummy-23	37	26.806	-0.062	0.000	0.32	6.5	18.4
S13.005	SJ3-PRMH_Dummy-24	47	26.791	-0.049	0.000	0.35	13.4	12.9
S13.006	SJ3-PRMH-9		26.793	0.219	0.000	0.09		7.7
S14.000	SJ3-PRMH_Dummy-14		28.277	-0.013	0.000	0.77		35.9
S14.001	SJ3-PRMH_Dummy-15	62	27.946	-0.046	0.000	0.37	15.9	20.1
S14.002	SJ3-PRMH_Dummy-16	78	27.544	-0.056	0.000	0.30	9.9	10.1
S14.003	SJ3-PRMH_Dummy-17	84	27.377	-0.069	0.000	0.20	4.2	5.9
S14.004	SJ3-PRMH_Dummy-18		27.227	-0.103	0.000	0.05		6.1
S15.000	SJ3-PRMH_Dummy-25		27.681	-0.046	0.000	0.38		19.0
S15.001	SJ3-PRMH_Dummy-26	61	27.479	-0.055	0.000	0.30	10.1	8.8
S15.002	SJ3-PRMH_Dummy-27	60	27.399	-0.071	0.000	0.19	3.4	5.5
S15.003	SJ3-PRMH_Dummy-28	22	27.312	-0.092	0.000	0.09	0.1	5.3
S15.004	SJ3-PRMH_Dummy-29		27.037	-0.095	0.000	0.08		5.3
S16.000	SJ3-PRMH_Dummy-30		27.260	0.000	0.000	1.01		27.6
S16.001	SJ3-PRMH_Dummy-31	74	27.157	-0.045	0.000	0.38	16.4	11.0
S16.002	SJ3-PRMH_Dummy-32	74	27.070	-0.067	0.000	0.21	4.7	6.3
S16.003	SJ3-PRMH_Dummy-33	74	26.992	-0.077	0.000	0.15	1.9	4.4
S16.004	SJ3-PRMH_Dummy-34		26.887	-0.113	0.000	0.03		4.4

PN	US/MH Name	Status	Level Exceeded
S11.007	SJ3-PRMH_Dummy-8	OK	
S11.008	SJ3-PRMH-2	OK	
S12.000	SJ3-PRMH_Dummy-9	OK	
S12.001	SJ3-PRMH_Dummy-10	OK	
S12.002	SJ3-PRMH_Dummy-11	OK	
S12.003	SJ3-PRMH_Dummy-12	OK	
S12.004	SJ3-PRMH_Dummy-13	OK*	
S12.005	SJ3-PRMH_Dummy-13A	OK	
S12.006	SJ3-PRMH-8	OK	
S13.000	SJ3-PRMH_Dummy-19	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
S13.001	SJ3-PRMH_Dummy-20	OK	
S13.002	SJ3-PRMH_Dummy-21	OK	
S13.003	SJ3-PRMH_Dummy-22	OK	
S13.004	SJ3-PRMH_Dummy-23	OK	
S13.005	SJ3-PRMH_Dummy-24	OK	
S13.006	SJ3-PRMH-9	SURCHARGED	
S14.000	SJ3-PRMH_Dummy-14	OK	
S14.001	SJ3-PRMH_Dummy-15	OK	
S14.002	SJ3-PRMH_Dummy-16	OK	
S14.003	SJ3-PRMH_Dummy-17	OK	
S14.004	SJ3-PRMH_Dummy-18	OK	
S15.000	SJ3-PRMH_Dummy-25	OK	
S15.001	SJ3-PRMH_Dummy-26	OK	
S15.002	SJ3-PRMH_Dummy-27	OK	
S15.003	SJ3-PRMH_Dummy-28	OK	
S15.004	SJ3-PRMH_Dummy-29	OK	
S16.000	SJ3-PRMH_Dummy-30	OK	
S16.001	SJ3-PRMH_Dummy-31	OK	
S16.002	SJ3-PRMH_Dummy-32	OK	
S16.003	SJ3-PRMH_Dummy-33	OK	
S16.004	SJ3-PRMH_Dummy-34	OK	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes DMRB Manhole Sizes DMRB

FSR Rainfall Model - England and Wales

Return Period (years)	5	PIMP (%)	100
M5-60 (mm)	18.200	Add Flow / Climate Change (%)	0
Ratio R	0.370	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	0.600
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	0.75
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

« - 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	39.737	0.136	292.2	0.362	5.00	0.0	0.600		o	375	Pipe/Conduit	
S1.001	36.468	0.090	405.2	0.048	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.002	33.249	0.066	500.0	0.217	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.003	48.693	0.106	461.5	0.120	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.004	39.859	0.291	137.0	0.226	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.005	20.325	0.421	48.3	0.015	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.006	50.556	0.727	69.5	0.248	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.007	78.693	0.500	157.4	0.233	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.008	60.518	0.248	244.0	0.187	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.009	76.535	0.538	142.3	0.180	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.010	58.528	0.429	136.4	0.170	0.00	0.0	3.000		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)
S1.000	75.55	5.63	37.777	0.362	0.0	0.0	0.0	1.05	116.5	98.8
S1.001	72.23	6.23	37.566	0.410	0.0	0.0	0.0	1.00	159.6	106.9
S1.002	69.46	6.79	37.401	0.627	0.0	0.0	0.0	0.99	215.4	157.2
S1.003	65.97	7.57	37.335	0.746	0.0	0.0	0.0	1.04	224.3	177.7
S1.004	64.55	7.92	37.229	0.972	0.0	0.0	0.0	1.91	413.9	226.6
S1.005	64.13	8.03	36.938	0.987	0.0	0.0	0.0	3.23	699.1	228.6
S1.006	62.93	8.34	36.517	1.235	0.0	0.0	0.0	2.69	582.0	280.5
S1.007	60.50	9.02	35.715	1.468	0.0	0.0	0.0	1.94	548.1	320.7
S1.008	58.37	9.66	35.215	1.655	0.0	0.0	0.0	1.55	439.5	348.9
S1.009	56.48	10.29	34.967	1.835	0.0	0.0	0.0	2.04	576.7	374.2
S1.010	55.06	10.79	34.279	2.005	0.0	0.0	0.0	1.95	859.5	398.6

Network Design Table for Storm

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
S1.011	33.808	0.146	231.6	0.224	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.012	44.381	0.175	253.6	0.070	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.013	28.172	0.056	500.0	0.187	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.014	22.590	0.045	500.0	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
S2.000	64.613	0.480	134.6	0.008	5.00	0.0	1.500		o	225	Pipe/Conduit	
S2.001	82.042	0.390	210.4	0.012	0.00	0.0	1.500		o	225	Pipe/Conduit	
S2.002	72.559	0.580	125.1	0.001	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.003	74.945	0.360	208.2	0.020	0.00	0.0	1.500		o	225	Pipe/Conduit	
S2.004	57.404	0.400	143.5	0.006	0.00	0.0	1.500		o	225	Pipe/Conduit	
S2.005	64.766	0.288	225.0	0.007	0.00	0.0	1.500		o	225	Pipe/Conduit	
S2.006	66.797	0.420	159.0	0.007	0.00	0.0	1.500		o	225	Pipe/Conduit	
S2.007	55.331	0.184	300.0	0.002	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.008	65.895	0.280	235.0	0.014	0.00	0.0	1.500		o	225	Pipe/Conduit	
S2.009	21.300	0.071	300.0	0.006	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.010	50.593	0.215	235.0	0.007	0.00	0.0	1.500		o	225	Pipe/Conduit	
S2.011	13.200	0.189	70.0	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.015	25.886	0.058	450.0	0.000	0.00	0.0	0.600		oo	600	Double Pipe	
S3.000	54.017	0.276	195.7	0.240	5.00	0.0	0.600		o	300	Pipe/Conduit	
S3.001	33.343	0.276	120.8	0.058	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.011	54.23	11.10	33.850	2.228	0.0	0.0	0.0	1.83	810.6	436.4
S1.012	53.14	11.52	33.704	2.299	0.0	0.0	0.0	1.75	774.3	441.1
S1.013	52.21	11.90	33.529	2.486	0.0	0.0	0.0	1.24	549.9	468.6
S1.014	51.49	12.20	33.473	2.486	0.0	0.0	0.0	1.24	549.9	468.6
S2.000	72.99	6.09	37.285	0.008	0.0	0.0	0.0	0.99	39.3	2.1
S2.001	64.95	7.82	36.805	0.020	0.0	0.0	0.0	0.79	31.4	4.7
S2.002	61.05	8.86	36.415	0.021	0.0	0.0	0.0	1.17	46.4	4.7
S2.003	56.07	10.43	35.835	0.041	0.0	0.0	0.0	0.79	31.6	8.3
S2.004	53.37	11.43	35.475	0.047	0.0	0.0	0.0	0.96	38.1	9.0
S2.005	50.03	12.84	35.075	0.054	0.0	0.0	0.0	0.76	30.4	9.8
S2.006	47.50	14.07	34.787	0.061	0.0	0.0	0.0	0.91	36.1	10.5
S2.007	45.25	15.30	34.367	0.063	0.0	0.0	0.0	0.75	29.8	10.5
S2.008	42.86	16.77	34.183	0.077	0.0	0.0	0.0	0.75	29.7	11.9
S2.009	42.15	17.24	33.903	0.083	0.0	0.0	0.0	0.75	29.8	12.6
S2.010	40.57	18.37	33.832	0.089	0.0	0.0	0.0	0.75	29.7	13.1
S2.011	40.38	18.51	33.617	0.089	0.0	0.0	0.0	1.57	62.2	13.1
S1.015	39.89	18.89	33.428	2.575	0.0	0.0	0.0	1.14	645.4	468.6
S3.000	74.55	5.80	38.230	0.240	0.0	0.0	0.0	1.12	79.2	64.7
S3.001	72.91	6.10	37.804	0.299	0.0	0.0	0.0	1.85	294.0	78.7

Network Design Table for Storm

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
S3.002	85.793	0.757	113.3	0.105	0.00	0.0	0.600		o	450	Pipe/Conduit	
S3.003	98.049	0.823	119.1	0.308	0.00	0.0	0.600		o	450	Pipe/Conduit	
S3.004	80.779	0.531	152.1	0.186	0.00	0.0	0.600		o	525	Pipe/Conduit	
S3.005	68.174	0.383	178.0	0.186	0.00	0.0	0.600		o	525	Pipe/Conduit	
S3.006	76.728	0.466	164.7	0.183	0.00	0.0	0.600		o	525	Pipe/Conduit	
S3.007	24.387	0.131	186.2	0.109	0.00	0.0	0.600		o	525	Pipe/Conduit	
S3.008	89.394	0.626	142.8	0.180	0.00	0.0	0.600		o	525	Pipe/Conduit	
S3.009	59.943	0.366	163.8	0.076	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.016	19.726	0.095	207.6	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.017	49.096	0.100	491.0	0.215	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.018	6.987	0.014	500.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.019	9.388	0.035	268.2	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.020	17.226	0.046	374.5	0.000	0.00	0.0		0.050	2 _/	300	1:2 Ditch	
S4.000	87.305	0.350	249.6	0.312	5.00	0.0	0.600		o	375	Pipe/Conduit	
S4.001	74.657	0.503	148.5	0.146	0.00	0.0	0.600		o	375	Pipe/Conduit	
S5.000	85.936	0.253	339.7	0.336	5.00	0.0	0.600		o	375	Pipe/Conduit	
S5.001	78.809	0.342	230.4	0.153	0.00	0.0	0.600		o	375	Pipe/Conduit	
S5.002	29.575	0.115	258.0	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)
S3.002	69.17	6.85	37.528	0.404	0.0	0.0	0.0	1.91	303.6	100.9
S3.003	65.32	7.73	36.771	0.712	0.0	0.0	0.0	1.86	296.1	167.8
S3.004	62.43	8.47	35.873	0.897	0.0	0.0	0.0	1.81	392.6	202.3
S3.005	60.04	9.15	35.342	1.083	0.0	0.0	0.0	1.68	362.8	234.9
S3.006	57.69	9.89	34.959	1.266	0.0	0.0	0.0	1.74	377.3	263.7
S3.007	56.94	10.13	34.493	1.375	0.0	0.0	0.0	1.64	354.7	282.6
S3.008	54.69	10.93	34.362	1.554	0.0	0.0	0.0	1.87	405.3	306.9
S3.009	53.19	11.50	33.736	1.630	0.0	0.0	0.0	1.75	378.3	313.2
S1.016	39.67	19.06	33.370	4.206	0.0	0.0	0.0	1.94	856.3	602.5
S1.017	38.57	19.96	33.275	4.421	0.0	0.0	0.0	0.91	144.9«	615.7
S1.018	38.43	20.07	33.175	4.421	0.0	0.0	0.0	0.99	215.4«	615.7
S1.019	38.30	20.19	33.161	4.421	0.0	0.0	0.0	1.36	295.0«	615.7
S1.020	37.25	21.11	33.126	4.421	0.0	0.0	0.0	0.31	83.8«	615.7
S4.000	72.02	6.27	38.012	0.312	0.0	0.0	0.0	1.14	126.2	81.1
S4.001	67.98	7.11	37.662	0.458	0.0	0.0	0.0	1.48	164.0	112.5
S5.000	71.05	6.47	37.869	0.336	0.0	0.0	0.0	0.98	108.0	86.2
S5.001	65.99	7.57	37.616	0.489	0.0	0.0	0.0	1.19	131.4	116.6
S5.002	64.20	8.01	37.274	0.505	0.0	0.0	0.0	1.12	124.1	117.0

Network Design Table for Storm

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
S4.002	37.233	0.434	85.8	0.077	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)
S4.002	62.98	8.33	37.084	1.040	0.0	0.0	0.0	1.96	216.2«	236.4

Manhole Schedules for Storm

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)	Bac
SL1-PRMH-1	38.752	0.975	Open Manhole	1500	S1.000	37.777	375				
SL1-PRMH-2	38.616	1.050	Open Manhole	1500	S1.001	37.566	450	S1.000	37.641	375	
SL1-PRMH-3	38.526	1.125	Open Manhole	1500	S1.002	37.401	525	S1.001	37.476	450	
SL1-PRMH-4	38.645	1.310	Open Manhole	1500	S1.003	37.335	525	S1.002	37.335	525	
SL1-PRMH-6	38.354	1.125	Open Manhole	1500	S1.004	37.229	525	S1.003	37.229	525	
SL1-PRMH-7	38.063	1.125	Open Manhole	1500	S1.005	36.938	525	S1.004	36.938	525	
SL1-PRMH-8	37.642	1.125	Open Manhole	1500	S1.006	36.517	525	S1.005	36.517	525	
SL1-PRMH-9	36.915	1.200	Open Manhole	1500	S1.007	35.715	600	S1.006	35.790	525	
SL1-PRMH-10	36.415	1.200	Open Manhole	1500	S1.008	35.215	600	S1.007	35.215	600	
SL1-PRMH-11	36.167	1.200	Open Manhole	1500	S1.009	34.967	600	S1.008	34.967	600	
SL1-PRMH-12	35.629	1.350	Open Manhole	1500	S1.010	34.279	750	S1.009	34.429	600	
SL1-PRMH-13	35.200	1.350	Open Manhole	2100	S1.011	33.850	750	S1.010	33.850	750	
SL1-PRMH-14	35.054	1.350	Open Manhole	2100	S1.012	33.704	750	S1.011	33.704	750	
SL1-PRMH-15	34.723	1.194	Open Manhole	2100	S1.013	33.529	750	S1.012	33.529	750	
SL1-PRMH-15A	34.633	1.160	Open Manhole	2100	S1.014	33.473	750	S1.013	33.473	750	
SL1-PRMH-39	38.110	0.825	Open Manhole	1350	S2.000	37.285	225				
SL1-PRMH-40	37.630	0.825	Open Manhole	1350	S2.001	36.805	225	S2.000	36.805	225	
SL1-PRMH-41	37.240	0.825	Open Manhole	1350	S2.002	36.415	225	S2.001	36.415	225	
SL1-PRMH-42	36.660	0.825	Open Manhole	1350	S2.003	35.835	225	S2.002	35.835	225	
SL1-PRMH-43	36.300	0.825	Open Manhole	1350	S2.004	35.475	225	S2.003	35.475	225	
SL1-PRMH-44	35.911	0.836	Open Manhole	1350	S2.005	35.075	225	S2.004	35.075	225	
SL1-PRMH-45	35.890	1.103	Open Manhole	1350	S2.006	34.787	225	S2.005	34.787	225	
SL1-PRMH-46	35.160	0.793	Open Manhole	1350	S2.007	34.367	225	S2.006	34.367	225	
SL1-PRMH-47	35.310	1.127	Open Manhole	2100	S2.008	34.183	225	S2.007	34.183	225	
SL1-PRMH-48	34.522	0.619	Open Manhole	2100	S2.009	33.903	225	S2.008	33.903	225	
SL1-PRMH-49	34.400	0.568	Open Manhole	2100	S2.010	33.832	225	S2.009	33.832	225	
SL1-PRMH-50	34.500	0.883	Open Manhole	2100	S2.011	33.617	225	S2.010	33.617	225	
SL1-PRMH-16	34.560	1.132	Open Manhole	2100	S1.015	33.428	600	S1.014	33.428	750	
								S2.011	33.428	225	
SL1-PRMH-17	39.130	0.900	Open Manhole	1050	S3.000	38.230	300				
SL1-PRMH-18	38.854	1.050	Open Manhole	1050	S3.001	37.804	450	S3.000	37.954	300	
SL1-PRMH-19	38.578	1.050	Open Manhole	1200	S3.002	37.528	450	S3.001	37.528	450	
SL1-PRMH-20	37.821	1.050	Open Manhole	1350	S3.003	36.771	450	S3.002	36.771	450	
SL1-PRMH-21	36.998	1.125	Open Manhole	1350	S3.004	35.873	525	S3.003	35.948	450	
SL1-PRMH-22	36.467	1.125	Open Manhole	1350	S3.005	35.342	525	S3.004	35.342	525	
SL1-PRMH-23	36.084	1.125	Open Manhole	1350	S3.006	34.959	525	S3.005	34.959	525	
SL1-PRMH-24	35.618	1.125	Open Manhole	1350	S3.007	34.493	525	S3.006	34.493	525	
SL1-PRMH-25	35.487	1.125	Open Manhole	1500	S3.008	34.362	525	S3.007	34.362	525	

Manhole Schedules for Storm

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)
SL1-PRMH-26	34.900	1.164	Open Manhole	1500	S3.009	33.736	525	S3.008	33.736	525
SL1-PRMH-28	34.534	1.164	Open Manhole	2100	S1.016	33.370	750	S1.015	33.370	600
								S3.009	33.370	525
SL1-POND_INLET	34.355	1.080	Junction		S1.017	33.275	450	S1.016	33.275	750
SL1_Pond_OUT	34.380	1.205	Junction		S1.018	33.175	525	S1.017	33.175	450
SL1-PRMH-31	34.380	1.219	Open Manhole	2100	S1.019	33.161	525	S1.018	33.161	525
SL1-PRMH-32	34.000	0.874	Junction		S1.020	33.126	300	S1.019	33.126	525
SOutfall-L1	34.200	1.120	Open Manhole	0		OUTFALL		S1.020	33.080	300
SL1-PRMH-33	40.142	2.130	Open Manhole	1350	S4.000	38.012	375			
SL1-PRMH-34	39.675	2.013	Open Manhole	1350	S4.001	37.662	375	S4.000	37.662	375
SL1-PRMH-35	40.053	2.184	Open Manhole	1350	S5.000	37.869	375			
SL1-PRMH-36	39.800	2.184	Open Manhole	1350	S5.001	37.616	375	S5.000	37.616	375
SL1-PRMH-37	39.519	2.245	Open Manhole	1350	S5.002	37.274	375	S5.001	37.274	375
SL1-PRMH-38	39.331	2.247	Open Manhole	1350	S4.002	37.084	375	S4.001	37.159	375
								S5.002	37.159	375
SOutfall STW	38.856	2.206	Open Manhole	0		OUTFALL		S4.002	36.650	375

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SL1-PRMH-1	392621.077	224447.119	392621.077	224447.119	Required	
SL1-PRMH-2	392588.000	224469.142	392588.000	224469.142	Required	
SL1-PRMH-3	392558.757	224490.932	392558.757	224490.932	Required	
SL1-PRMH-4	392532.165	224510.890	392532.165	224510.890	Required	
SL1-PRMH-6	392492.422	224539.024	392492.422	224539.024	Required	
SL1-PRMH-7	392459.143	224560.961	392459.143	224560.961	Required	
SL1-PRMH-8	392440.878	224569.877	392440.878	224569.877	Required	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SL1-PRMH-9	392394.999	224591.113	392394.999	224591.113	Required	
SL1-PRMH-10	392323.794	224624.617	392323.794	224624.617	Required	
SL1-PRMH-11	392269.482	224651.312	392269.482	224651.312	Required	
SL1-PRMH-12	392201.261	224686.005	392201.261	224686.005	Required	
SL1-PRMH-13	392148.752	224711.857	392148.752	224711.857	Required	
SL1-PRMH-14	392117.419	224724.557	392117.419	224724.557	Required	
SL1-PRMH-15	392076.793	224742.424	392076.793	224742.424	Required	
SL1-PRMH-15A	392050.631	224752.872	392050.631	224752.872	Required	
SL1-PRMH-39	392629.814	224457.300	392629.814	224457.300	Required	
SL1-PRMH-40	392577.057	224494.603	392577.057	224494.603	Required	
SL1-PRMH-41	392510.962	224543.207	392510.962	224543.207	Required	
SL1-PRMH-42	392448.534	224580.188	392448.534	224580.188	Required	
SL1-PRMH-43	392380.473	224611.564	392380.473	224611.564	Required	
SL1-PRMH-44	392328.486	224635.907	392328.486	224635.907	Required	
SL1-PRMH-45	392269.912	224663.542	392269.912	224663.542	Required	

Atkins (Epsom)		Page 8
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Innovyze	Network 2019.1	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SL1-PRMH-46	392210.442	224693.959	392210.442	224693.959	Required	
SL1-PRMH-47	392160.905	224718.608	392160.905	224718.608	Required	
SL1-PRMH-48	392100.998	224746.055	392100.998	224746.055	Required	
SL1-PRMH-49	392081.332	224754.237	392081.332	224754.237	Required	
SL1-PRMH-50	392033.401	224770.433	392033.401	224770.433	Required	
SL1-PRMH-16	392028.657	224758.114	392028.657	224758.114	Required	
SL1-PRMH-17	392604.406	224410.286	392604.406	224410.286	Required	
SL1-PRMH-18	392559.978	224441.010	392559.978	224441.010	Required	
SL1-PRMH-19	392533.435	224461.190	392533.435	224461.190	Required	
SL1-PRMH-20	392464.028	224511.619	392464.028	224511.619	Required	
SL1-PRMH-21	392376.729	224556.256	392376.729	224556.256	Required	
SL1-PRMH-22	392304.251	224591.926	392304.251	224591.926	Required	
SL1-PRMH-23	392244.830	224625.345	392244.830	224625.345	Required	
SL1-PRMH-24	392177.589	224662.301	392177.589	224662.301	Required	
SL1-PRMH-25	392155.824	224673.303	392155.824	224673.303	Required	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SL1-PRMH-26	392075.340	224712.206	392075.340	224712.206	Required	
SL1-PRMH-28	392019.467	224733.915	392019.467	224733.915	Required	
SL1-POND_INLET	392009.336	224716.989			No Entry	
SL1_Pond_OUT	391964.516	224696.950			No Entry	
SL1-PRMH-31	391957.880	224694.764	391957.880	224694.764	Required	
SL1-PRMH-32	391948.674	224692.923			No Entry	
SOutfall-L1	391931.558	224690.976			No Entry	
SL1-PRMH-33	392787.934	224281.494	392787.934	224281.494	Required	
SL1-PRMH-34	392717.301	224332.808	392717.301	224332.808	Required	
SL1-PRMH-35	392799.902	224297.121	392799.902	224297.121	Required	
SL1-PRMH-36	392734.009	224352.286	392734.009	224352.286	Required	
SL1-PRMH-37	392671.698	224400.537	392671.698	224400.537	Required	
SL1-PRMH-38	392656.025	224375.456	392656.025	224375.456	Required	
SOutfall STW	392625.365	224396.581			No Entry	

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	375	SL1-PRMH-1	38.752	37.777	0.600	Open Manhole	1500
S1.001	o	450	SL1-PRMH-2	38.616	37.566	0.600	Open Manhole	1500
S1.002	o	525	SL1-PRMH-3	38.526	37.401	0.600	Open Manhole	1500
S1.003	o	525	SL1-PRMH-4	38.645	37.335	0.785	Open Manhole	1500
S1.004	o	525	SL1-PRMH-6	38.354	37.229	0.600	Open Manhole	1500
S1.005	o	525	SL1-PRMH-7	38.063	36.938	0.600	Open Manhole	1500
S1.006	o	525	SL1-PRMH-8	37.642	36.517	0.600	Open Manhole	1500
S1.007	o	600	SL1-PRMH-9	36.915	35.715	0.600	Open Manhole	1500
S1.008	o	600	SL1-PRMH-10	36.415	35.215	0.600	Open Manhole	1500
S1.009	o	600	SL1-PRMH-11	36.167	34.967	0.600	Open Manhole	1500
S1.010	o	750	SL1-PRMH-12	35.629	34.279	0.600	Open Manhole	1500
S1.011	o	750	SL1-PRMH-13	35.200	33.850	0.600	Open Manhole	2100
S1.012	o	750	SL1-PRMH-14	35.054	33.704	0.600	Open Manhole	2100
S1.013	o	750	SL1-PRMH-15	34.723	33.529	0.444	Open Manhole	2100
S1.014	o	750	SL1-PRMH-15A	34.633	33.473	0.410	Open Manhole	2100
S2.000	o	225	SL1-PRMH-39	38.110	37.285	0.600	Open Manhole	1350
S2.001	o	225	SL1-PRMH-40	37.630	36.805	0.600	Open Manhole	1350
S2.002	o	225	SL1-PRMH-41	37.240	36.415	0.600	Open Manhole	1350
S2.003	o	225	SL1-PRMH-42	36.660	35.835	0.600	Open Manhole	1350
S2.004	o	225	SL1-PRMH-43	36.300	35.475	0.600	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)
S1.000	39.737	292.2	SL1-PRMH-2	38.616	37.641	0.600	Open Manhole	1500
S1.001	36.468	405.2	SL1-PRMH-3	38.526	37.476	0.600	Open Manhole	1500
S1.002	33.249	500.0	SL1-PRMH-4	38.645	37.335	0.785	Open Manhole	1500
S1.003	48.693	461.5	SL1-PRMH-6	38.354	37.229	0.600	Open Manhole	1500
S1.004	39.859	137.0	SL1-PRMH-7	38.063	36.938	0.600	Open Manhole	1500
S1.005	20.325	48.3	SL1-PRMH-8	37.642	36.517	0.600	Open Manhole	1500
S1.006	50.556	69.5	SL1-PRMH-9	36.915	35.790	0.600	Open Manhole	1500
S1.007	78.693	157.4	SL1-PRMH-10	36.415	35.215	0.600	Open Manhole	1500
S1.008	60.518	244.0	SL1-PRMH-11	36.167	34.967	0.600	Open Manhole	1500
S1.009	76.535	142.3	SL1-PRMH-12	35.629	34.429	0.600	Open Manhole	1500
S1.010	58.528	136.4	SL1-PRMH-13	35.200	33.850	0.600	Open Manhole	2100
S1.011	33.808	231.6	SL1-PRMH-14	35.054	33.704	0.600	Open Manhole	2100
S1.012	44.381	253.6	SL1-PRMH-15	34.723	33.529	0.444	Open Manhole	2100
S1.013	28.172	500.0	SL1-PRMH-15A	34.633	33.473	0.410	Open Manhole	2100
S1.014	22.590	500.0	SL1-PRMH-16	34.560	33.428	0.382	Open Manhole	2100
S2.000	64.613	134.6	SL1-PRMH-40	37.630	36.805	0.600	Open Manhole	1350
S2.001	82.042	210.4	SL1-PRMH-41	37.240	36.415	0.600	Open Manhole	1350
S2.002	72.559	125.1	SL1-PRMH-42	36.660	35.835	0.600	Open Manhole	1350
S2.003	74.945	208.2	SL1-PRMH-43	36.300	35.475	0.600	Open Manhole	1350
S2.004	57.404	143.5	SL1-PRMH-44	35.911	35.075	0.611	Open Manhole	1350

PIPELINE SCHEDULES for Storm

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)
S2.005	o	225	SL1-PRMH-44	35.911	35.075	0.611	Open Manhole	1350
S2.006	o	225	SL1-PRMH-45	35.890	34.787	0.878	Open Manhole	1350
S2.007	o	225	SL1-PRMH-46	35.160	34.367	0.568	Open Manhole	1350
S2.008	o	225	SL1-PRMH-47	35.310	34.183	0.902	Open Manhole	2100
S2.009	o	225	SL1-PRMH-48	34.522	33.903	0.394	Open Manhole	2100
S2.010	o	225	SL1-PRMH-49	34.400	33.832	0.343	Open Manhole	2100
S2.011	o	225	SL1-PRMH-50	34.500	33.617	0.658	Open Manhole	2100
S1.015	oo	600	SL1-PRMH-16	34.560	33.428	0.532	Open Manhole	2100
S3.000	o	300	SL1-PRMH-17	39.130	38.230	0.600	Open Manhole	1050
S3.001	o	450	SL1-PRMH-18	38.854	37.804	0.600	Open Manhole	1050
S3.002	o	450	SL1-PRMH-19	38.578	37.528	0.600	Open Manhole	1200
S3.003	o	450	SL1-PRMH-20	37.821	36.771	0.600	Open Manhole	1350
S3.004	o	525	SL1-PRMH-21	36.998	35.873	0.600	Open Manhole	1350
S3.005	o	525	SL1-PRMH-22	36.467	35.342	0.600	Open Manhole	1350
S3.006	o	525	SL1-PRMH-23	36.084	34.959	0.600	Open Manhole	1350
S3.007	o	525	SL1-PRMH-24	35.618	34.493	0.600	Open Manhole	1350
S3.008	o	525	SL1-PRMH-25	35.487	34.362	0.600	Open Manhole	1500
S3.009	o	525	SL1-PRMH-26	34.900	33.736	0.639	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., L*W (mm)
S2.005	64.766	225.0	SL1-PRMH-45	35.890	34.787	0.878	Open Manhole	1350
S2.006	66.797	159.0	SL1-PRMH-46	35.160	34.367	0.568	Open Manhole	1350
S2.007	55.331	300.0	SL1-PRMH-47	35.310	34.183	0.902	Open Manhole	2100
S2.008	65.895	235.0	SL1-PRMH-48	34.522	33.903	0.394	Open Manhole	2100
S2.009	21.300	300.0	SL1-PRMH-49	34.400	33.832	0.343	Open Manhole	2100
S2.010	50.593	235.0	SL1-PRMH-50	34.500	33.617	0.658	Open Manhole	2100
S2.011	13.200	70.0	SL1-PRMH-16	34.560	33.428	0.907	Open Manhole	2100
S1.015	25.886	450.0	SL1-PRMH-28	34.534	33.370	0.564	Open Manhole	2100
S3.000	54.017	195.7	SL1-PRMH-18	38.854	37.954	0.600	Open Manhole	1050
S3.001	33.343	120.8	SL1-PRMH-19	38.578	37.528	0.600	Open Manhole	1200
S3.002	85.793	113.3	SL1-PRMH-20	37.821	36.771	0.600	Open Manhole	1350
S3.003	98.049	119.1	SL1-PRMH-21	36.998	35.948	0.600	Open Manhole	1350
S3.004	80.779	152.1	SL1-PRMH-22	36.467	35.342	0.600	Open Manhole	1350
S3.005	68.174	178.0	SL1-PRMH-23	36.084	34.959	0.600	Open Manhole	1350
S3.006	76.728	164.7	SL1-PRMH-24	35.618	34.493	0.600	Open Manhole	1350
S3.007	24.387	186.2	SL1-PRMH-25	35.487	34.362	0.600	Open Manhole	1500
S3.008	89.394	142.8	SL1-PRMH-26	34.900	33.736	0.639	Open Manhole	1500
S3.009	59.943	163.8	SL1-PRMH-28	34.534	33.370	0.639	Open Manhole	2100

PIPELINE SCHEDULES for Storm

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	750	SL1-PRMH-28	34.534	33.370	0.414	Open Manhole	2100
S1.017	o	450	SL1-POND_INLET	34.355	33.275	0.630	Junction	
S1.018	o	525	SL1_Pond_OUT	34.380	33.175	0.680	Junction	
S1.019	o	525	SL1-PRMH-31	34.380	33.161	0.694	Open Manhole	2100
S1.020	2 _/	300	SL1-PRMH-32	34.000	33.126	0.574	Junction	
S4.000	o	375	SL1-PRMH-33	40.142	38.012	1.755	Open Manhole	1350
S4.001	o	375	SL1-PRMH-34	39.675	37.662	1.638	Open Manhole	1350
S5.000	o	375	SL1-PRMH-35	40.053	37.869	1.809	Open Manhole	1350
S5.001	o	375	SL1-PRMH-36	39.800	37.616	1.809	Open Manhole	1350
S5.002	o	375	SL1-PRMH-37	39.519	37.274	1.870	Open Manhole	1350
S4.002	o	375	SL1-PRMH-38	39.331	37.084	1.872	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	19.726	207.6	SL1-POND_INLET	34.355	33.275	0.330	Junction	
S1.017	49.096	491.0	SL1_Pond_OUT	34.380	33.175	0.755	Junction	
S1.018	6.987	500.0	SL1-PRMH-31	34.380	33.161	0.694	Open Manhole	2100
S1.019	9.388	268.2	SL1-PRMH-32	34.000	33.126	0.349	Junction	
S1.020	17.226	374.5	SOutfall-L1	34.200	33.080	0.820	Open Manhole	0
S4.000	87.305	249.6	SL1-PRMH-34	39.675	37.662	1.638	Open Manhole	1350
S4.001	74.657	148.5	SL1-PRMH-38	39.331	37.159	1.797	Open Manhole	1350
S5.000	85.936	339.7	SL1-PRMH-36	39.800	37.616	1.809	Open Manhole	1350
S5.001	78.809	230.4	SL1-PRMH-37	39.519	37.274	1.870	Open Manhole	1350
S5.002	29.575	258.0	SL1-PRMH-38	39.331	37.159	1.797	Open Manhole	1350
S4.002	37.233	85.8	SOutfall STW	38.856	36.650	1.831	Open Manhole	0

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Additional verge area	70	0.002	0.001	0.001
	Classification	Carriage way & Footway	100	0.056	0.056	0.057
	User	-	100	0.001	0.001	0.058
	Classification	Carriage way & Footway	100	0.001	0.001	0.059
	Classification	Climate change	40	0.001	0.000	0.059
	Classification	Verge	50	0.001	0.000	0.060
	Classification	Carriage way & Footway	100	0.003	0.003	0.063
	Classification	Carriage way & Footway	100	0.077	0.077	0.140
	Classification	Carriage way & Footway	100	0.027	0.027	0.167
	Classification	Verge	50	0.014	0.007	0.174
	Classification	Climate change	40	0.027	0.011	0.185
	Classification	Climate change	40	0.077	0.031	0.216
	Classification	Carriage way & Footway	100	0.031	0.031	0.247
	Classification	Climate change	40	0.031	0.013	0.260
	Classification	Verge	50	0.004	0.002	0.262
	Classification	Carriage way & Footway	100	0.016	0.016	0.278
	Classification	Climate change	40	0.016	0.006	0.285
	Classification	Carriage way & Footway	100	0.004	0.004	0.289
	Classification	Climate change	40	0.004	0.002	0.290
	Classification	Verge	50	0.003	0.002	0.292
	Classification	Verge	50	0.006	0.003	0.295
	Classification	Carriage way & Footway	100	0.011	0.011	0.306
	Classification	Carriage way & Footway	100	0.024	0.024	0.330
	Classification	Carriage way & Footway	100	0.032	0.032	0.362
1.001	Classification	Carriage way & Footway	100	0.015	0.015	0.015
	Classification	Carriage way & Footway	100	0.008	0.008	0.023
	Classification	Verge	50	0.003	0.001	0.024
	Classification	Climate change	40	0.008	0.003	0.028
	Classification	Carriage way & Footway	100	0.007	0.007	0.034
	Classification	Climate change	40	0.015	0.006	0.040
	Classification	Climate change	40	0.007	0.003	0.043
	Classification	Carriage way & Footway	100	0.003	0.003	0.046
	Classification	Climate change	40	0.003	0.001	0.047
	Classification	Verge	50	0.001	0.000	0.048
1.002	Classification	Additional verge area	70	0.006	0.004	0.004
	Classification	Carriage way & Footway	100	0.013	0.013	0.017
	Classification	Climate change	40	0.013	0.005	0.022
	Classification	Verge	50	0.005	0.002	0.025
	Classification	Carriage way & Footway	100	0.006	0.006	0.031
	Classification	Climate change	40	0.006	0.003	0.034
	Classification	Carriage way & Footway	100	0.026	0.026	0.060
	Classification	Climate change	40	0.026	0.010	0.070
	Classification	Carriage way & Footway	100	0.134	0.134	0.204
	Classification	Verge	50	0.001	0.001	0.205
	Classification	Carriage way & Footway	100	0.009	0.009	0.213
	Classification	Climate change	40	0.009	0.003	0.217
1.003	Classification	Additional verge area	70	0.009	0.006	0.006
	Classification	Carriage way & Footway	100	0.013	0.013	0.019
	Classification	Climate change	40	0.013	0.005	0.025
	Classification	Carriage way & Footway	100	0.008	0.008	0.033
	Classification	Climate change	40	0.008	0.003	0.036

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Carriage way & Footway	100	0.036	0.036	0.072
	Classification	Climate change	40	0.036	0.014	0.087
	Classification	Verge	50	0.004	0.002	0.088
	Classification	Carriage way & Footway	100	0.019	0.019	0.107
	Classification	Climate change	40	0.019	0.007	0.115
	Classification	Additional verge area	70	0.007	0.005	0.120
1.004	Classification	Carriage way & Footway	100	0.003	0.003	0.003
	Classification	Additional verge area	70	0.002	0.001	0.004
	Classification	Carriage way & Footway	100	0.021	0.021	0.025
	Classification	Climate change	40	0.021	0.008	0.034
	Classification	Carriage way & Footway	100	0.006	0.006	0.040
	Classification	Climate change	40	0.006	0.002	0.042
	Classification	Additional verge area	70	0.002	0.001	0.044
	Classification	Climate change	40	0.003	0.001	0.045
	Classification	Additional verge area	70	0.001	0.000	0.045
	Classification	Carriage way & Footway	100	0.001	0.001	0.046
	Classification	Climate change	40	0.001	0.000	0.047
	Classification	Additional verge area	70	0.001	0.000	0.047
	Classification	Carriage way & Footway	100	0.002	0.002	0.049
	Classification	Climate change	40	0.002	0.001	0.050
	Classification	Additional verge area	70	0.000	0.000	0.050
	Classification	Additional verge area	70	0.001	0.001	0.051
	Classification	Carriage way & Footway	100	0.057	0.057	0.108
	Classification	Climate change	40	0.057	0.023	0.131
	Classification	Carriage way & Footway	100	0.049	0.049	0.179
	Classification	Climate change	40	0.049	0.019	0.199
	Classification	Carriage way & Footway	100	0.010	0.010	0.209
	Classification	Climate change	40	0.010	0.004	0.213
	Classification	Additional verge area	70	0.002	0.002	0.215
	Classification	Additional verge area	70	0.004	0.003	0.218
	Classification	Additional verge area	70	0.000	0.000	0.218
	Classification	Additional verge area	70	0.003	0.002	0.220
	Classification	Carriage way & Footway	100	0.003	0.003	0.223
	Classification	Climate change	40	0.003	0.001	0.225
	Classification	Additional verge area	70	0.002	0.001	0.226
	Classification	Carriage way & Footway	100	0.000	0.000	0.226
	Classification	Climate change	40	0.000	0.000	0.226
1.005	Classification	Carriage way & Footway	100	0.011	0.011	0.011
	Classification	Climate change	40	0.010	0.004	0.015
1.006	Classification	Additional verge area	70	0.029	0.021	0.021
	Classification	Additional verge area	70	0.002	0.002	0.022
	Classification	Carriage way & Footway	100	0.095	0.095	0.117
	Classification	Climate change	40	0.095	0.038	0.155
	Classification	Additional verge area	70	0.011	0.008	0.163
	Classification	Carriage way & Footway	100	0.029	0.029	0.192
	Classification	Climate change	40	0.029	0.012	0.204
	Classification	Additional verge area	70	0.004	0.002	0.206
	Classification	Carriage way & Footway	100	0.021	0.021	0.227
	Classification	Climate change	40	0.021	0.008	0.235
	Classification	Carriage way & Footway	100	0.009	0.009	0.244
	Classification	Climate change	40	0.009	0.004	0.248

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.007	Classification	Additional verge area	70	0.073	0.051	0.051
	Classification	Carriage way & Footway	100	0.076	0.076	0.127
	Classification	Climate change	40	0.076	0.030	0.157
	Classification	Additional verge area	70	0.009	0.006	0.163
	Classification	Carriage way & Footway	100	0.023	0.023	0.186
	Classification	Climate change	40	0.023	0.009	0.195
	Classification	Additional verge area	70	0.003	0.002	0.197
	Classification	Carriage way & Footway	100	0.011	0.011	0.208
	Classification	Climate change	40	0.011	0.004	0.212
	Classification	Carriage way & Footway	100	0.015	0.015	0.227
	Classification	Climate change	40	0.015	0.006	0.233
1.008	Classification	Verge	50	0.035	0.017	0.017
	Classification	Carriage way & Footway	100	0.056	0.056	0.073
	Classification	Climate change	40	0.056	0.023	0.096
	Classification	Additional verge area	70	0.011	0.008	0.104
	Classification	Carriage way & Footway	100	0.026	0.026	0.129
	Classification	Climate change	40	0.026	0.010	0.140
	Classification	Additional verge area	70	0.003	0.002	0.142
	Classification	Carriage way & Footway	100	0.013	0.013	0.155
	Classification	Climate change	40	0.013	0.005	0.160
	Classification	Carriage way & Footway	100	0.020	0.020	0.180
	Classification	Climate change	40	0.020	0.008	0.187
1.009	Classification	Additional verge area	70	0.018	0.013	0.013
	Classification	Carriage way & Footway	100	0.061	0.061	0.073
	Classification	Carriage way & Footway	100	0.008	0.008	0.082
	Classification	Climate change	40	0.060	0.024	0.106
	Classification	Carriage way & Footway	100	0.004	0.004	0.110
	Classification	Climate change	40	0.004	0.002	0.112
	Classification	Carriage way & Footway	100	0.025	0.025	0.137
	Classification	Climate change	40	0.025	0.010	0.147
	Classification	Additional verge area	70	0.003	0.002	0.149
	Classification	Carriage way & Footway	100	0.012	0.012	0.161
	Classification	Climate change	40	0.012	0.005	0.166
	Classification	Climate change	40	0.008	0.003	0.169
	Classification	Additional verge area	70	0.012	0.008	0.178
	Classification	Carriage way & Footway	100	0.000	0.000	0.178
	Classification	Climate change	40	0.000	0.000	0.178
	Classification	Additional verge area	70	0.001	0.001	0.179
	Classification	Carriage way & Footway	100	0.000	0.000	0.179
	Classification	Climate change	40	0.000	0.000	0.179
	Classification	Additional verge area	70	0.001	0.001	0.180
1.010	Classification	Carriage way & Footway	100	0.004	0.004	0.004
	Classification	Climate change	40	0.004	0.001	0.005
	Classification	Additional verge area	70	0.002	0.001	0.006
	Classification	Verge	50	0.001	0.001	0.007
	Classification	Carriage way & Footway	100	0.019	0.019	0.026
	Classification	Climate change	40	0.019	0.008	0.034
	Classification	Carriage way & Footway	100	0.009	0.009	0.042
	Classification	Verge	50	0.001	0.001	0.043
	Classification	Carriage way & Footway	100	0.034	0.034	0.077
	Classification	Carriage way & Footway	100	0.002	0.002	0.080

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Additional verge area	70	0.004	0.003	0.082
	Classification	Climate change	40	0.009	0.003	0.086
	Classification	Climate change	40	0.034	0.014	0.099
	Classification	Climate change	40	0.002	0.001	0.100
	Classification	Carriage way & Footway	100	0.007	0.007	0.107
	Classification	Climate change	40	0.007	0.003	0.110
	Classification	Carriage way & Footway	100	0.038	0.038	0.149
	Classification	Climate change	40	0.038	0.015	0.164
	Classification	Carriage way & Footway	100	0.003	0.003	0.167
	Classification	Climate change	40	0.003	0.001	0.168
	Classification	Additional verge area	70	0.001	0.001	0.169
	Classification	Carriage way & Footway	100	0.000	0.000	0.170
	Classification	Climate change	40	0.000	0.000	0.170
	Classification	Additional verge area	70	0.000	0.000	0.170
1.011	Classification	Additional median area	28	0.000	0.000	0.000
	Classification	Carriage way & Footway	100	0.008	0.008	0.009
	Classification	Additional verge area	70	0.001	0.000	0.009
	Classification	Additional verge area	70	0.001	0.001	0.009
	Classification	Carriage way & Footway	100	0.003	0.003	0.012
	Classification	Climate change	40	0.003	0.001	0.014
	Classification	Carriage way & Footway	100	0.001	0.001	0.015
	Classification	Climate change	40	0.001	0.000	0.015
	Classification	Carriage way & Footway	100	0.007	0.007	0.022
	Classification	Climate change	40	0.007	0.003	0.025
	Classification	Additional verge area	70	0.002	0.001	0.027
	Classification	Carriage way & Footway	100	0.007	0.007	0.034
	Classification	Additional verge area	70	0.002	0.002	0.035
	Classification	Additional verge area	70	0.006	0.004	0.039
	Classification	Carriage way & Footway	100	0.015	0.015	0.054
	Classification	Carriage way & Footway	100	0.050	0.050	0.104
	Classification	Climate change	40	0.015	0.006	0.110
	Classification	Climate change	40	0.007	0.003	0.113
	Classification	Climate change	40	0.052	0.021	0.134
	Classification	Climate change	40	0.050	0.020	0.154
	Classification	Carriage way & Footway	100	0.005	0.005	0.159
	Classification	Climate change	40	0.005	0.002	0.161
	Classification	Additional verge area	70	0.001	0.001	0.162
	Classification	Climate change	40	0.008	0.003	0.166
	Classification	Carriage way & Footway	100	0.000	0.000	0.166
	Classification	Climate change	40	0.000	0.000	0.166
	Classification	Carriage way & Footway	100	0.000	0.000	0.166
	Classification	Climate change	40	0.000	0.000	0.166
	Classification	Additional verge area	70	0.005	0.003	0.169
	Classification	Additional verge area	70	0.003	0.002	0.171
	Classification	Carriage way & Footway	100	0.052	0.052	0.224
1.012	Classification	Carriage way & Footway	100	0.008	0.008	0.008
	Classification	Climate change	40	0.008	0.003	0.011
	Classification	Additional verge area	70	0.002	0.001	0.013
	Classification	Additional verge area	70	0.003	0.002	0.015
	Classification	Carriage way & Footway	100	0.018	0.018	0.033
	Classification	Carriage way & Footway	100	0.022	0.022	0.054

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Climate change	40	0.018	0.007	0.061
	Classification	Climate change	40	0.022	0.009	0.070
1.013	Classification	Additional median area	28	0.013	0.004	0.004
	Classification	Additional median area	28	0.014	0.004	0.007
	Classification	Carriage way & Footway	100	0.075	0.075	0.083
	Classification	Carriage way & Footway	100	0.013	0.013	0.096
	Classification	Climate change	40	0.075	0.030	0.126
	Classification	Carriage way & Footway	100	0.016	0.016	0.142
	Classification	Climate change	40	0.016	0.007	0.149
	Classification	Additional verge area	70	0.002	0.002	0.150
	Classification	Carriage way & Footway	100	0.009	0.009	0.159
	Classification	Climate change	40	0.009	0.004	0.163
	Classification	Climate change	40	0.013	0.005	0.168
	Classification	Additional verge area	70	0.004	0.003	0.171
	Classification	Additional verge area	70	0.005	0.003	0.174
	Classification	Carriage way & Footway	100	0.009	0.009	0.184
	Classification	Climate change	40	0.009	0.004	0.187
1.014	-	-	100	0.000	0.000	0.000
2.000	Classification	Verge	50	0.008	0.004	0.004
	Classification	Embankment&Cutting	20	0.021	0.004	0.008
2.001	Classification	Verge	50	0.003	0.002	0.002
	Classification	Verge	50	0.002	0.001	0.002
	Classification	Verge	50	0.004	0.002	0.005
	Classification	Embankment&Cutting	20	0.030	0.006	0.011
	Classification	Embankment&Cutting	20	0.007	0.001	0.012
2.002	Classification	Verge	50	0.003	0.001	0.001
2.003	Classification	Additional verge area	70	0.011	0.007	0.007
	Classification	Additional verge area	70	0.007	0.005	0.012
	Classification	Additional verge area	70	0.002	0.001	0.013
	Classification	Additional verge area	70	0.003	0.002	0.016
	Classification	Embankment&Cutting	20	0.020	0.004	0.020
2.004	Classification	Additional verge area	70	0.006	0.004	0.004
	Classification	Embankment&Cutting	20	0.011	0.002	0.006
2.005	Classification	Additional verge area	70	0.007	0.005	0.005
	Classification	Embankment&Cutting	20	0.012	0.002	0.007
2.006	Classification	Additional verge area	70	0.006	0.004	0.004
	Classification	Embankment&Cutting	20	0.014	0.003	0.007
2.007	Classification	Verge	50	0.003	0.002	0.002
2.008	Classification	Additional verge area	70	0.013	0.009	0.009
	Classification	Additional verge area	70	0.006	0.004	0.013
	Classification	Embankment&Cutting	20	0.005	0.001	0.014
2.009	Classification	Additional verge area	70	0.006	0.004	0.004
	Classification	Embankment&Cutting	20	0.007	0.001	0.006
2.010	Classification	Additional verge area	70	0.008	0.005	0.005
	Classification	Embankment&Cutting	20	0.006	0.001	0.007
2.011	-	-	100	0.000	0.000	0.000
1.015	-	-	100	0.000	0.000	0.000
3.000	Classification	Verge	50	0.021	0.010	0.010
	Classification	Verge	50	0.065	0.033	0.043
	Classification	Carriage way & Footway	100	0.020	0.020	0.063
	Classification	Verge	50	0.008	0.004	0.067

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Carriage way & Footway	100	0.013	0.013	0.079
	Classification	Carriage way & Footway	100	0.090	0.090	0.169
	Classification	Carriage way & Footway	100	0.047	0.047	0.216
	Classification	Carriage way & Footway	100	0.022	0.022	0.238
	Classification	Central Reserve unpaved	20	0.002	0.000	0.239
	Classification	Central Reserve unpaved	20	0.001	0.000	0.239
	Classification	Verge	50	0.003	0.001	0.240
3.001	Classification	Verge	50	0.012	0.006	0.006
	Classification	Carriage way & Footway	100	0.043	0.043	0.049
	Classification	Carriage way & Footway	100	0.010	0.010	0.058
3.002	Classification	Verge	50	0.040	0.020	0.020
	Classification	Verge	50	0.114	0.057	0.077
	Classification	Carriage way & Footway	100	0.028	0.028	0.105
3.003	Classification	Carriage way & Footway	100	0.015	0.015	0.015
	Classification	Additional verge area	70	0.004	0.002	0.017
	Classification	Verge	50	0.077	0.039	0.056
	Classification	Additional verge area	70	0.001	0.000	0.056
	Classification	Carriage way & Footway	100	0.126	0.126	0.182
	Classification	Carriage way & Footway	100	0.054	0.054	0.236
	Classification	Carriage way & Footway	100	0.071	0.071	0.307
	Classification	Verge	50	0.001	0.000	0.308
3.004	Classification	Carriage way & Footway	100	0.016	0.016	0.016
	Classification	Additional verge area	70	0.004	0.003	0.019
	Classification	Verge	50	0.088	0.044	0.063
	Classification	Carriage way & Footway	100	0.059	0.059	0.122
	Classification	Carriage way & Footway	100	0.063	0.063	0.186
3.005	Classification	Carriage way & Footway	100	0.014	0.014	0.014
	Classification	Additional verge area	70	0.003	0.002	0.016
	Classification	Verge	50	0.019	0.010	0.026
	Classification	Carriage way & Footway	100	0.049	0.049	0.075
	Classification	Carriage way & Footway	100	0.092	0.092	0.167
	Classification	Carriage way & Footway	100	0.009	0.009	0.176
	Classification	Verge	50	0.005	0.003	0.179
	Classification	Verge	50	0.008	0.004	0.183
	Classification	Carriage way & Footway	100	0.003	0.003	0.186
3.006	Classification	Central Reserve unpaved	20	0.002	0.000	0.000
	Classification	Carriage way & Footway	100	0.013	0.013	0.014
	Classification	Additional verge area	70	0.004	0.003	0.017
	Classification	Carriage way & Footway	100	0.055	0.055	0.072
	Classification	Carriage way & Footway	100	0.087	0.087	0.158
	Classification	Carriage way & Footway	100	0.013	0.013	0.172
	Classification	Verge	50	0.008	0.004	0.176
	Classification	Verge	50	0.013	0.007	0.183
3.007	Classification	Central Reserve unpaved	20	0.002	0.000	0.000
	Classification	Carriage way & Footway	100	0.053	0.053	0.054
	Classification	Carriage way & Footway	100	0.036	0.036	0.090
	Classification	Verge	50	0.010	0.005	0.095
	Classification	Carriage way & Footway	100	0.001	0.001	0.096
	Classification	Carriage way & Footway	100	0.007	0.007	0.103
	Classification	Additional verge area	70	0.008	0.006	0.109
3.008	Classification	Additional median area	28	0.064	0.018	0.018

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Carriage way & Footway	100	0.061	0.061	0.079
	Classification	Carriage way & Footway	100	0.065	0.065	0.144
	Classification	Verge	50	0.034	0.017	0.161
	Classification	Carriage way & Footway	100	0.015	0.015	0.176
	Classification	Verge	50	0.007	0.003	0.179
	Classification	Carriage way & Footway	100	0.000	0.000	0.179
	Classification	Carriage way & Footway	100	0.000	0.000	0.180
3.009	Classification	Additional median area	28	0.011	0.003	0.003
	Classification	Carriage way & Footway	100	0.063	0.063	0.066
	Classification	Additional median area	28	0.015	0.004	0.070
	Classification	Verge	50	0.005	0.003	0.073
	Classification	Verge	50	0.007	0.003	0.076
1.016	-	-	100	0.000	0.000	0.000
1.017	User	-	100	0.099	0.099	0.099
	User	-	100	0.063	0.063	0.162
	User	-	100	0.054	0.054	0.215
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
4.000	-	-	100	0.312	0.312	0.312
4.001	Classification	Verge	50	0.004	0.002	0.002
	Classification	Carriage way & Footway	100	0.125	0.125	0.127
	Classification	Carriage way & Footway	100	0.019	0.019	0.146
5.000	-	-	100	0.336	0.336	0.336
5.001	Classification	Central Reserve unpaved	20	0.025	0.005	0.005
	Classification	Carriage way & Footway	100	0.064	0.064	0.069
	Classification	Carriage way & Footway	100	0.029	0.029	0.099
	Classification	Carriage way & Footway	100	0.030	0.030	0.129
	Classification	Climate change	40	0.030	0.012	0.141
	Classification	Verge	50	0.004	0.002	0.143
	User	-	100	0.003	0.003	0.145
	Classification	Climate change	40	0.006	0.002	0.148
	Classification	Climate change	40	0.014	0.006	0.153
5.002	Classification	Verge	50	0.005	0.002	0.002
	Classification	Verge	50	0.001	0.000	0.003
	Classification	Verge	50	0.002	0.001	0.004
	Classification	Verge	50	0.002	0.001	0.005
	Classification	Carriage way & Footway	100	0.008	0.008	0.012
	Classification	Verge	50	0.000	0.000	0.012
	Classification	Climate change	40	0.008	0.003	0.015
4.002	Classification	Verge	50	0.001	0.001	0.001
	Classification	Carriage way & Footway	100	0.022	0.022	0.022
	Classification	Verge	50	0.001	0.001	0.023
	Classification	Verge	50	0.002	0.001	0.024
	Classification	Verge	50	0.003	0.002	0.025
	Classification	Carriage way & Footway	100	0.018	0.018	0.044
	Classification	Verge	50	0.000	0.000	0.044
	Classification	Default	100	0.001	0.001	0.045
	Classification	Carriage way & Footway	100	0.030	0.030	0.075
	Classification	Verge	50	0.002	0.001	0.076
	Classification	Climate change	40	0.002	0.001	0.077

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
				Total	Total	Total
				7.012	5.461	5.461

Network Classifications for Storm

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
S1.000	SL1-PRMH-1	375	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.001	SL1-PRMH-2	450	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.002	SL1-PRMH-3	525	0.600	0.785	Filter	1500	0	0.600	Type 7
S1.003	SL1-PRMH-4	525	0.600	0.785	Filter	1500	0	0.785	Type 7
S1.004	SL1-PRMH-6	525	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.005	SL1-PRMH-7	525	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.006	SL1-PRMH-8	525	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.007	SL1-PRMH-9	600	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.008	SL1-PRMH-10	600	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.009	SL1-PRMH-11	600	0.600	0.600	Filter	1500	0	0.600	Type 7
S1.010	SL1-PRMH-12	750	0.600	0.600	Shallow Carrier	1500	0	0.600	Type 7
S1.011	SL1-PRMH-13	750	0.600	0.600	Shallow Carrier	2100	0	0.600	Type 7
S1.012	SL1-PRMH-14	750	0.444	0.600	Shallow Carrier	2100	0	0.600	Type 7
S1.013	SL1-PRMH-15	750	0.410	0.444	Carrier	2100	0	0.444	Type 7
S1.014	SL1-PRMH-15A	750	0.382	0.410	Shallow Carrier	2100	0	0.410	Type 7
S2.000	SL1-PRMH-39	225	0.600	0.600	Filter	1350	0	0.600	Type 7
S2.001	SL1-PRMH-40	225	0.600	0.600	Filter	1350	0	0.600	Type 7
S2.002	SL1-PRMH-41	225	0.600	0.600	Filter	1350	0	0.600	Type 7
S2.003	SL1-PRMH-42	225	0.600	0.600	Filter	1350	0	0.600	Type 7
S2.004	SL1-PRMH-43	225	0.600	0.611	Filter	1350	0	0.600	Type 7
S2.005	SL1-PRMH-44	225	0.611	0.878	Filter	1350	0	0.611	Type 7
S2.006	SL1-PRMH-45	225	0.568	0.878	Filter	1350	0	0.878	Type 7
S2.007	SL1-PRMH-46	225	0.568	0.902	Carrier	1350	0	0.568	Type 7
S2.008	SL1-PRMH-47	225	0.394	0.902	Carrier	2100	0	0.902	Type 7
S2.009	SL1-PRMH-48	225	0.343	0.394	Filter	2100	0	0.394	Type 7
S2.010	SL1-PRMH-49	225	0.343	0.658	Filter	2100	0	0.343	Type 7
S2.011	SL1-PRMH-50	225	0.658	0.907	Carrier	2100	0	0.658	Type 7
S1.015	SL1-PRMH-16	600	0.532	0.564	Carrier	2100	0	0.532	Type 7
S3.000	SL1-PRMH-17	300	0.600	0.600	Filter	1050	0	0.600	Type 7
S3.001	SL1-PRMH-18	450	0.600	0.600	Filter	1050	0	0.600	Type 7
S3.002	SL1-PRMH-19	450	0.600	0.600	Filter	1200	0	0.600	Type 7
S3.003	SL1-PRMH-20	450	0.600	0.600	Filter	1350	0	0.600	Type 7
S3.004	SL1-PRMH-21	525	0.600	0.600	Filter	1350	0	0.600	Type 7
S3.005	SL1-PRMH-22	525	0.600	0.600	Filter	1350	0	0.600	Type 7
S3.006	SL1-PRMH-23	525	0.600	0.600	Filter	1350	0	0.600	Type 7
S3.007	SL1-PRMH-24	525	0.600	0.600	Filter	1350	0	0.600	Type 7
S3.008	SL1-PRMH-25	525	0.600	0.639	Filter	1500	0	0.600	Type 7
S3.009	SL1-PRMH-26	525	0.639	0.639	Filter	1500	0	0.639	Type 7
S1.016	SL1-PRMH-28	750	0.330	0.414	Carrier	2100	0	0.414	Type 7
S1.017	SL1-POND_INLET	450	0.630	0.755	Carrier				Junction
S1.018	SL1_Pond_OUT	525	0.680	0.694	Carrier				Junction
S1.019	SL1-PRMH-31	525	0.349	0.694	Carrier	2100	0	0.694	Type 7
S1.020	SL1-PRMH-32	300	0.109	0.820	Ditch				Junction
S4.000	SL1-PRMH-33	375	1.638	1.755	Carrier	1350	0	1.755	Type 7
S4.001	SL1-PRMH-34	375	1.638	1.797	Carrier	1350	0	1.638	Type 7
S5.000	SL1-PRMH-35	375	1.809	1.809	Carrier	1350	0	1.809	Type 7
S5.001	SL1-PRMH-36	375	1.809	1.870	Carrier	1350	0	1.809	Type 7
S5.002	SL1-PRMH-37	375	1.797	1.870	Carrier	1350	0	1.870	Type 7
S4.002	SL1-PRMH-38	375	1.831	1.872	Carrier	1350	0	1.872	Type 7

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.020	SOutfall-L1	34.200	33.080	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S4.002	SOutfall STW	38.856	36.650	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	5	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.200	Storm Duration (mins)	30
Ratio R	0.370		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SL1-PRMH-1	15 Summer	1	+0%	30/15 Summer			
S1.001	SL1-PRMH-2	15 Summer	1	+0%	30/15 Summer			
S1.002	SL1-PRMH-3	15 Summer	1	+0%	30/15 Summer			
S1.003	SL1-PRMH-4	15 Summer	1	+0%	30/15 Summer			
S1.004	SL1-PRMH-6	15 Summer	1	+0%				
S1.005	SL1-PRMH-7	15 Summer	1	+0%				
S1.006	SL1-PRMH-8	15 Summer	1	+0%				
S1.007	SL1-PRMH-9	30 Summer	1	+0%	100/15 Summer			
S1.008	SL1-PRMH-10	30 Summer	1	+0%	30/15 Summer			
S1.009	SL1-PRMH-11	30 Summer	1	+0%	100/15 Summer			
S1.010	SL1-PRMH-12	30 Summer	1	+0%	100/30 Summer			
S1.011	SL1-PRMH-13	30 Summer	1	+0%	30/30 Summer			
S1.012	SL1-PRMH-14	30 Summer	1	+0%	30/15 Summer			
S1.013	SL1-PRMH-15	30 Summer	1	+0%	30/15 Summer			
S1.014	SL1-PRMH-15A	30 Summer	1	+0%	30/15 Summer			
S2.000	SL1-PRMH-39	15 Summer	1	+0%				
S2.001	SL1-PRMH-40	15 Summer	1	+0%				
S2.002	SL1-PRMH-41	15 Summer	1	+0%				
S2.003	SL1-PRMH-42	30 Summer	1	+0%				

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SL1-PRMH-1	37.973	-0.179	0.000	0.52		55.5	OK	
S1.001	SL1-PRMH-2	37.773	-0.243	0.000	0.43		59.9	OK	
S1.002	SL1-PRMH-3	37.670	-0.256	0.000	0.45		82.2	OK	
S1.003	SL1-PRMH-4	37.589	-0.271	0.000	0.46		91.7	OK	
S1.004	SL1-PRMH-6	37.430	-0.324	0.000	0.31		112.2	OK	
S1.005	SL1-PRMH-7	37.107	-0.356	0.000	0.23		113.6	OK	
S1.006	SL1-PRMH-8	36.699	-0.343	0.000	0.26		134.8	OK	
S1.007	SL1-PRMH-9	35.945	-0.370	0.000	0.31		154.5	OK	
S1.008	SL1-PRMH-10	35.492	-0.323	0.000	0.43		170.5	OK	
S1.009	SL1-PRMH-11	35.212	-0.355	0.000	0.35		183.2	OK	
S1.010	SL1-PRMH-12	34.534	-0.495	0.000	0.25		195.3	OK	
S1.011	SL1-PRMH-13	34.156	-0.444	0.000	0.35		210.5	OK	
S1.012	SL1-PRMH-14	34.045	-0.409	0.000	0.33		211.0	OK	
S1.013	SL1-PRMH-15	33.961	-0.318	0.000	0.52		217.0	OK	
S1.014	SL1-PRMH-15A	33.899	-0.324	0.000	0.56		214.8	OK	
S2.000	SL1-PRMH-39	37.311	-0.199	0.000	0.03		1.2	OK	
S2.001	SL1-PRMH-40	36.849	-0.181	0.000	0.08		2.4	OK	
S2.002	SL1-PRMH-41	36.450	-0.190	0.000	0.05		2.5	OK	
S2.003	SL1-PRMH-42	35.891	-0.169	0.000	0.13		4.1	OK	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S2.004	SL1-PRMH-43	30 Summer	1	+0%			
S2.005	SL1-PRMH-44	30 Summer	1	+0%			
S2.006	SL1-PRMH-45	30 Summer	1	+0%			
S2.007	SL1-PRMH-46	30 Summer	1	+0%			
S2.008	SL1-PRMH-47	30 Summer	1	+0%	30/30 Summer		
S2.009	SL1-PRMH-48	30 Summer	1	+0%	30/15 Summer		
S2.010	SL1-PRMH-49	30 Summer	1	+0%	5/30 Summer	100/15 Summer	
S2.011	SL1-PRMH-50	15 Summer	1	+0%	1/30 Summer		
S1.015	SL1-PRMH-16	30 Summer	1	+0%	30/15 Summer		
S3.000	SL1-PRMH-17	15 Summer	1	+0%	30/15 Summer		
S3.001	SL1-PRMH-18	15 Summer	1	+0%			
S3.002	SL1-PRMH-19	15 Summer	1	+0%			
S3.003	SL1-PRMH-20	15 Summer	1	+0%	100/15 Summer		
S3.004	SL1-PRMH-21	15 Summer	1	+0%	100/15 Summer		
S3.005	SL1-PRMH-22	15 Summer	1	+0%	100/15 Summer		
S3.006	SL1-PRMH-23	15 Summer	1	+0%	30/15 Summer	100/30 Summer	
S3.007	SL1-PRMH-24	30 Summer	1	+0%	30/15 Summer	100/30 Summer	
S3.008	SL1-PRMH-25	15 Summer	1	+0%	30/15 Summer		
S3.009	SL1-PRMH-26	30 Summer	1	+0%	30/15 Summer		
S1.016	SL1-PRMH-28	30 Summer	1	+0%	30/15 Summer		
S1.017	SL1-POND_INLET	360 Summer	1	+0%	5/30 Summer		
S1.018	SL1_Pond_OUT	360 Summer	1	+0%			
S1.019	SL1-PRMH-31	240 Summer	1	+0%	5/30 Summer	100/2160 Winter	
S1.020	SL1-PRMH-32	240 Summer	1	+0%			
S4.000	SL1-PRMH-33	15 Summer	1	+0%	100/15 Summer		
S4.001	SL1-PRMH-34	15 Summer	1	+0%	100/15 Summer		
S5.000	SL1-PRMH-35	15 Summer	1	+0%	30/15 Summer		
S5.001	SL1-PRMH-36	15 Summer	1	+0%	30/15 Summer		
S5.002	SL1-PRMH-37	15 Summer	1	+0%	30/15 Summer		
S4.002	SL1-PRMH-38	15 Summer	1	+0%	30/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S2.004	SL1-PRMH-43		35.528	-0.172	0.000	0.12		4.6	OK
S2.005	SL1-PRMH-44		35.138	-0.162	0.000	0.17		5.0	OK
S2.006	SL1-PRMH-45		34.846	-0.166	0.000	0.15		5.3	OK
S2.007	SL1-PRMH-46		34.433	-0.159	0.000	0.18		5.3	OK
S2.008	SL1-PRMH-47		34.251	-0.157	0.000	0.20		5.7	OK
S2.009	SL1-PRMH-48		33.973	-0.155	0.000	0.22		5.8	OK
S2.010	SL1-PRMH-49		33.902	-0.155	0.000	0.21		6.0	OK
S2.011	SL1-PRMH-50		33.834	-0.008	0.000	0.20		9.6	OK
S1.015	SL1-PRMH-16		33.837	-0.191	0.000	0.53		219.2	OK
S3.000	SL1-PRMH-17		38.381	-0.149	0.000	0.50		37.8	OK
S3.001	SL1-PRMH-18		37.931	-0.323	0.000	0.18		44.9	OK
S3.002	SL1-PRMH-19		37.665	-0.313	0.000	0.20		56.3	OK

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
S3.003	SL1-PRMH-20		36.950	-0.271	0.000	0.32		89.7	OK
S3.004	SL1-PRMH-21		36.071	-0.327	0.000	0.29		107.5	OK
S3.005	SL1-PRMH-22		35.566	-0.301	0.000	0.37		124.5	OK
S3.006	SL1-PRMH-23		35.191	-0.293	0.000	0.40		139.8	OK
S3.007	SL1-PRMH-24		34.766	-0.252	0.000	0.53		147.9	OK
S3.008	SL1-PRMH-25		34.602	-0.285	0.000	0.42		160.2	OK
S3.009	SL1-PRMH-26		33.994	-0.267	0.000	0.48		164.8	OK
S1.016	SL1-PRMH-28		33.795	-0.325	0.000	0.61		368.0	OK
S1.017	SL1-POND_INLET		33.718	-0.007	0.000	0.36		52.5	OK*
S1.018	SL1_Pond_OUT		33.697	-0.003	0.000	0.21		50.3	OK*
S1.019	SL1-PRMH-31		33.686	0.000	0.000	0.31		58.9	OK
S1.020	SL1-PRMH-32		33.376	-0.624	0.000	0.06		64.8	OK
S4.000	SL1-PRMH-33		38.178	-0.209	0.000	0.37		45.2	OK
S4.001	SL1-PRMH-34		37.829	-0.208	0.000	0.39		61.3	OK
S5.000	SL1-PRMH-35		38.060	-0.184	0.000	0.46		47.3	OK
S5.001	SL1-PRMH-36		37.811	-0.180	0.000	0.50		62.1	OK
S5.002	SL1-PRMH-37		37.497	-0.152	0.000	0.65		62.3	OK
S4.002	SL1-PRMH-38		37.305	-0.154	0.000	0.65		126.4	OK

PN	US/MH Name	Level Exceeded
S2.004	SL1-PRMH-43	
S2.005	SL1-PRMH-44	
S2.006	SL1-PRMH-45	
S2.007	SL1-PRMH-46	
S2.008	SL1-PRMH-47	
S2.009	SL1-PRMH-48	
S2.010	SL1-PRMH-49	6
S2.011	SL1-PRMH-50	
S1.015	SL1-PRMH-16	
S3.000	SL1-PRMH-17	
S3.001	SL1-PRMH-18	
S3.002	SL1-PRMH-19	
S3.003	SL1-PRMH-20	
S3.004	SL1-PRMH-21	
S3.005	SL1-PRMH-22	
S3.006	SL1-PRMH-23	1
S3.007	SL1-PRMH-24	1
S3.008	SL1-PRMH-25	
S3.009	SL1-PRMH-26	
S1.016	SL1-PRMH-28	
S1.017	SL1-POND_INLET	
S1.018	SL1_Pond_OUT	
S1.019	SL1-PRMH-31	
S1.020	SL1-PRMH-32	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Level Exceeded
S4.000	SL1-PRMH-33	
S4.001	SL1-PRMH-34	
S5.000	SL1-PRMH-35	
S5.001	SL1-PRMH-36	
S5.002	SL1-PRMH-37	
S4.002	SL1-PRMH-38	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SL1-PRMH-1	15 Summer	5	+0%	30/15 Summer			
S1.001	SL1-PRMH-2	15 Summer	5	+0%	30/15 Summer			
S1.002	SL1-PRMH-3	15 Summer	5	+0%	30/15 Summer			
S1.003	SL1-PRMH-4	15 Summer	5	+0%	30/15 Summer			
S1.004	SL1-PRMH-6	15 Summer	5	+0%				
S1.005	SL1-PRMH-7	15 Summer	5	+0%				
S1.006	SL1-PRMH-8	15 Summer	5	+0%				
S1.007	SL1-PRMH-9	15 Summer	5	+0%	100/15 Summer			
S1.008	SL1-PRMH-10	30 Summer	5	+0%	30/15 Summer			
S1.009	SL1-PRMH-11	30 Summer	5	+0%	100/15 Summer			
S1.010	SL1-PRMH-12	30 Summer	5	+0%	100/30 Summer			
S1.011	SL1-PRMH-13	30 Summer	5	+0%	30/30 Summer			
S1.012	SL1-PRMH-14	30 Summer	5	+0%	30/15 Summer			
S1.013	SL1-PRMH-15	30 Summer	5	+0%	30/15 Summer			
S1.014	SL1-PRMH-15A	30 Summer	5	+0%	30/15 Summer			
S2.000	SL1-PRMH-39	15 Summer	5	+0%				
S2.001	SL1-PRMH-40	15 Summer	5	+0%				
S2.002	SL1-PRMH-41	15 Summer	5	+0%				
S2.003	SL1-PRMH-42	15 Summer	5	+0%				

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SL1-PRMH-1	38.055	-0.097	0.000	0.88		92.7	OK	
S1.001	SL1-PRMH-2	37.856	-0.160	0.000	0.70		98.4	OK	
S1.002	SL1-PRMH-3	37.770	-0.156	0.000	0.73		134.5	OK	
S1.003	SL1-PRMH-4	37.684	-0.175	0.000	0.75		150.4	OK	
S1.004	SL1-PRMH-6	37.497	-0.257	0.000	0.51		184.8	OK	
S1.005	SL1-PRMH-7	37.160	-0.303	0.000	0.38		187.0	OK	
S1.006	SL1-PRMH-8	36.757	-0.285	0.000	0.43		222.2	OK	
S1.007	SL1-PRMH-9	36.020	-0.295	0.000	0.51		253.9	OK	
S1.008	SL1-PRMH-10	35.592	-0.223	0.000	0.71		279.4	OK	
S1.009	SL1-PRMH-11	35.293	-0.274	0.000	0.57		300.6	OK	
S1.010	SL1-PRMH-12	34.615	-0.414	0.000	0.41		320.3	OK	
S1.011	SL1-PRMH-13	34.284	-0.316	0.000	0.56		338.4	OK	
S1.012	SL1-PRMH-14	34.203	-0.251	0.000	0.53		338.4	OK	
S1.013	SL1-PRMH-15	34.142	-0.137	0.000	0.82		345.7	OK	
S1.014	SL1-PRMH-15A	34.081	-0.142	0.000	0.90		340.9	OK	
S2.000	SL1-PRMH-39	37.319	-0.191	0.000	0.05		2.0	OK	
S2.001	SL1-PRMH-40	36.862	-0.168	0.000	0.13		4.0	OK	
S2.002	SL1-PRMH-41	36.461	-0.179	0.000	0.09		4.1	OK	
S2.003	SL1-PRMH-42	35.909	-0.151	0.000	0.22		6.9	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S2.004	SL1-PRMH-43	30 Summer	5	+0%			
S2.005	SL1-PRMH-44	30 Summer	5	+0%			
S2.006	SL1-PRMH-45	30 Summer	5	+0%			
S2.007	SL1-PRMH-46	30 Summer	5	+0%			
S2.008	SL1-PRMH-47	30 Summer	5	+0%	30/30 Summer		
S2.009	SL1-PRMH-48	30 Summer	5	+0%	30/15 Summer		
S2.010	SL1-PRMH-49	30 Summer	5	+0%	5/30 Summer	100/15 Summer	
S2.011	SL1-PRMH-50	15 Summer	5	+0%	1/30 Summer		
S1.015	SL1-PRMH-16	30 Summer	5	+0%	30/15 Summer		
S3.000	SL1-PRMH-17	15 Summer	5	+0%	30/15 Summer		
S3.001	SL1-PRMH-18	15 Summer	5	+0%			
S3.002	SL1-PRMH-19	15 Summer	5	+0%			
S3.003	SL1-PRMH-20	15 Summer	5	+0%	100/15 Summer		
S3.004	SL1-PRMH-21	15 Summer	5	+0%	100/15 Summer		
S3.005	SL1-PRMH-22	15 Summer	5	+0%	100/15 Summer		
S3.006	SL1-PRMH-23	15 Summer	5	+0%	30/15 Summer	100/30 Summer	
S3.007	SL1-PRMH-24	15 Summer	5	+0%	30/15 Summer	100/30 Summer	
S3.008	SL1-PRMH-25	15 Summer	5	+0%	30/15 Summer		
S3.009	SL1-PRMH-26	15 Summer	5	+0%	30/15 Summer		
S1.016	SL1-PRMH-28	30 Summer	5	+0%	30/15 Summer		
S1.017	SL1-POND_INLET	180 Summer	5	+0%	5/30 Summer		
S1.018	SL1_Pond_OUT	180 Summer	5	+0%			
S1.019	SL1-PRMH-31	180 Summer	5	+0%	5/30 Summer	100/2160 Winter	
S1.020	SL1-PRMH-32	180 Summer	5	+0%			
S4.000	SL1-PRMH-33	15 Summer	5	+0%	100/15 Summer		
S4.001	SL1-PRMH-34	15 Summer	5	+0%	100/15 Summer		
S5.000	SL1-PRMH-35	15 Summer	5	+0%	30/15 Summer		
S5.001	SL1-PRMH-36	15 Summer	5	+0%	30/15 Summer		
S5.002	SL1-PRMH-37	15 Summer	5	+0%	30/15 Summer		
S4.002	SL1-PRMH-38	15 Summer	5	+0%	30/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S2.004	SL1-PRMH-43		35.545	-0.155	0.000	0.21		7.7
S2.005	SL1-PRMH-44		35.158	-0.142	0.000	0.28		8.4
S2.006	SL1-PRMH-45		34.865	-0.147	0.000	0.25		9.0
S2.007	SL1-PRMH-46		34.454	-0.138	0.000	0.31		8.9
S2.008	SL1-PRMH-47		34.274	-0.134	0.000	0.33		9.7
S2.009	SL1-PRMH-48		34.081	-0.047	0.000	0.45		12.1
S2.010	SL1-PRMH-49		34.059	0.002	0.000	0.53		15.3
S2.011	SL1-PRMH-50		34.012	0.170	0.000	0.45		22.0
S1.015	SL1-PRMH-16		34.020	-0.008	0.000	0.83		346.2
S3.000	SL1-PRMH-17		38.442	-0.088	0.000	0.84		63.2
S3.001	SL1-PRMH-18		37.971	-0.283	0.000	0.29		75.1
S3.002	SL1-PRMH-19		37.709	-0.269	0.000	0.33		94.1

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S3.003	SL1-PRMH-20		37.012	-0.209	0.000	0.53		150.0
S3.004	SL1-PRMH-21		36.138	-0.260	0.000	0.49		179.9
S3.005	SL1-PRMH-22		35.647	-0.220	0.000	0.62		207.3
S3.006	SL1-PRMH-23		35.276	-0.208	0.000	0.67		232.3
S3.007	SL1-PRMH-24		34.878	-0.140	0.000	0.89		245.9
S3.008	SL1-PRMH-25		34.691	-0.196	0.000	0.70		263.8
S3.009	SL1-PRMH-26		34.143	-0.118	0.000	0.75		259.0
S1.016	SL1-PRMH-28		33.962	-0.158	0.000	0.98		590.7
S1.017	SL1-POND_INLET		33.841	0.116	0.000	0.88		128.1
S1.018	SL1_Pond_OUT		33.700	0.000	0.000	0.54		128.1
S1.019	SL1-PRMH-31		33.752	0.066	0.000	0.67		128.1
S1.020	SL1-PRMH-32		33.487	-0.513	0.000	0.13		128.0
S4.000	SL1-PRMH-33		38.240	-0.147	0.000	0.63		75.5
S4.001	SL1-PRMH-34		37.890	-0.147	0.000	0.66		102.0
S5.000	SL1-PRMH-35		38.138	-0.106	0.000	0.77		79.2
S5.001	SL1-PRMH-36		37.886	-0.105	0.000	0.83		103.2
S5.002	SL1-PRMH-37		37.621	-0.028	0.000	1.00		95.6
S4.002	SL1-PRMH-38		37.428	-0.031	0.000	1.00		195.2

PN	US/MH Name	Status	Level Exceeded
S2.004	SL1-PRMH-43	OK	
S2.005	SL1-PRMH-44	OK	
S2.006	SL1-PRMH-45	OK	
S2.007	SL1-PRMH-46	OK	
S2.008	SL1-PRMH-47	OK	
S2.009	SL1-PRMH-48	OK	
S2.010	SL1-PRMH-49	SURCHARGED	6
S2.011	SL1-PRMH-50	SURCHARGED	
S1.015	SL1-PRMH-16	OK	
S3.000	SL1-PRMH-17	OK	
S3.001	SL1-PRMH-18	OK	
S3.002	SL1-PRMH-19	OK	
S3.003	SL1-PRMH-20	OK	
S3.004	SL1-PRMH-21	OK	
S3.005	SL1-PRMH-22	OK	
S3.006	SL1-PRMH-23	OK	1
S3.007	SL1-PRMH-24	OK	1
S3.008	SL1-PRMH-25	OK	
S3.009	SL1-PRMH-26	OK	
S1.016	SL1-PRMH-28	OK	
S1.017	SL1-POND_INLET	SURCHARGED*	
S1.018	SL1_Pond_OUT	SURCHARGED*	
S1.019	SL1-PRMH-31	SURCHARGED	
S1.020	SL1-PRMH-32	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
S4.000	SL1-PRMH-33	OK	
S4.001	SL1-PRMH-34	OK	
S5.000	SL1-PRMH-35	OK	
S5.001	SL1-PRMH-36	OK	
S5.002	SL1-PRMH-37	OK	
S4.002	SL1-PRMH-38	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SL1-PRMH-1	15 Summer	30	+0%	30/15 Summer			
S1.001	SL1-PRMH-2	15 Summer	30	+0%	30/15 Summer			
S1.002	SL1-PRMH-3	15 Summer	30	+0%	30/15 Summer			
S1.003	SL1-PRMH-4	15 Summer	30	+0%	30/15 Summer			
S1.004	SL1-PRMH-6	15 Summer	30	+0%				
S1.005	SL1-PRMH-7	15 Summer	30	+0%				
S1.006	SL1-PRMH-8	15 Summer	30	+0%				
S1.007	SL1-PRMH-9	15 Summer	30	+0%	100/15 Summer			
S1.008	SL1-PRMH-10	15 Summer	30	+0%	30/15 Summer			
S1.009	SL1-PRMH-11	30 Summer	30	+0%	100/15 Summer			
S1.010	SL1-PRMH-12	30 Summer	30	+0%	100/30 Summer			
S1.011	SL1-PRMH-13	30 Summer	30	+0%	30/30 Summer			
S1.012	SL1-PRMH-14	30 Summer	30	+0%	30/15 Summer			
S1.013	SL1-PRMH-15	30 Summer	30	+0%	30/15 Summer			
S1.014	SL1-PRMH-15A	30 Summer	30	+0%	30/15 Summer			
S2.000	SL1-PRMH-39	15 Summer	30	+0%				
S2.001	SL1-PRMH-40	15 Summer	30	+0%				
S2.002	SL1-PRMH-41	15 Summer	30	+0%				
S2.003	SL1-PRMH-42	15 Summer	30	+0%				

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SL1-PRMH-1	38.271	0.119	0.000	1.27		133.9	SURCHARGED	
S1.001	SL1-PRMH-2	38.063	0.047	0.000	1.02		143.1	SURCHARGED	
S1.002	SL1-PRMH-3	37.969	0.043	0.000	1.09		199.3	SURCHARGED	
S1.003	SL1-PRMH-4	37.881	0.021	0.000	1.11		220.7	SURCHARGED	
S1.004	SL1-PRMH-6	37.579	-0.175	0.000	0.76		273.0	OK	
S1.005	SL1-PRMH-7	37.217	-0.246	0.000	0.55		275.4	OK	
S1.006	SL1-PRMH-8	36.837	-0.205	0.000	0.65		339.5	OK	
S1.007	SL1-PRMH-9	36.158	-0.157	0.000	0.80		403.6	OK	
S1.008	SL1-PRMH-10	35.843	0.028	0.000	1.08		426.3	SURCHARGED	
S1.009	SL1-PRMH-11	35.395	-0.172	0.000	0.84		444.9	OK	
S1.010	SL1-PRMH-12	34.746	-0.283	0.000	0.60		469.0	OK	
S1.011	SL1-PRMH-13	34.614	0.014	0.000	0.76		461.7	SURCHARGED	
S1.012	SL1-PRMH-14	34.544	0.090	0.000	0.72		461.0	SURCHARGED	
S1.013	SL1-PRMH-15	34.457	0.178	0.000	1.13		474.1	SURCHARGED	
S1.014	SL1-PRMH-15A	34.387	0.164	0.000	1.24		473.6	SURCHARGED	
S2.000	SL1-PRMH-39	37.327	-0.183	0.000	0.07		2.9	OK	
S2.001	SL1-PRMH-40	36.882	-0.148	0.000	0.21		6.5	OK	
S2.002	SL1-PRMH-41	36.474	-0.166	0.000	0.15		6.6	OK	
S2.003	SL1-PRMH-42	35.937	-0.123	0.000	0.37		11.4	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S2.004	SL1-PRMH-43	15 Summer	30	+0%			
S2.005	SL1-PRMH-44	30 Summer	30	+0%			
S2.006	SL1-PRMH-45	30 Summer	30	+0%			
S2.007	SL1-PRMH-46	30 Summer	30	+0%			
S2.008	SL1-PRMH-47	30 Summer	30	+0%	30/30 Summer		
S2.009	SL1-PRMH-48	15 Summer	30	+0%	30/15 Summer		
S2.010	SL1-PRMH-49	15 Summer	30	+0%	5/30 Summer	100/15 Summer	
S2.011	SL1-PRMH-50	15 Summer	30	+0%	1/30 Summer		
S1.015	SL1-PRMH-16	30 Summer	30	+0%	30/15 Summer		
S3.000	SL1-PRMH-17	15 Summer	30	+0%	30/15 Summer		
S3.001	SL1-PRMH-18	15 Summer	30	+0%			
S3.002	SL1-PRMH-19	15 Summer	30	+0%			
S3.003	SL1-PRMH-20	15 Summer	30	+0%	100/15 Summer		
S3.004	SL1-PRMH-21	15 Summer	30	+0%	100/15 Summer		
S3.005	SL1-PRMH-22	15 Summer	30	+0%	100/15 Summer		
S3.006	SL1-PRMH-23	15 Summer	30	+0%	30/15 Summer	100/30 Summer	
S3.007	SL1-PRMH-24	15 Summer	30	+0%	30/15 Summer	100/30 Summer	
S3.008	SL1-PRMH-25	15 Summer	30	+0%	30/15 Summer		
S3.009	SL1-PRMH-26	30 Summer	30	+0%	30/15 Summer		
S1.016	SL1-PRMH-28	30 Summer	30	+0%	30/15 Summer		
S1.017	SL1-POND_INLET	180 Summer	30	+0%	5/30 Summer		
S1.018	SL1_Pond_OUT	180 Summer	30	+0%			
S1.019	SL1-PRMH-31	180 Summer	30	+0%	5/30 Summer	100/2160 Winter	
S1.020	SL1-PRMH-32	180 Summer	30	+0%			
S4.000	SL1-PRMH-33	15 Summer	30	+0%	100/15 Summer		
S4.001	SL1-PRMH-34	15 Summer	30	+0%	100/15 Summer		
S5.000	SL1-PRMH-35	15 Summer	30	+0%	30/15 Summer		
S5.001	SL1-PRMH-36	15 Summer	30	+0%	30/15 Summer		
S5.002	SL1-PRMH-37	15 Summer	30	+0%	30/15 Summer		
S4.002	SL1-PRMH-38	15 Summer	30	+0%	30/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S2.004	SL1-PRMH-43		35.568	-0.132	0.000	0.33		12.4
S2.005	SL1-PRMH-44		35.184	-0.116	0.000	0.45		13.2
S2.006	SL1-PRMH-45		34.887	-0.125	0.000	0.40		14.0
S2.007	SL1-PRMH-46		34.479	-0.113	0.000	0.48		13.9
S2.008	SL1-PRMH-47		34.435	0.027	0.000	0.49		14.3
S2.009	SL1-PRMH-48		34.339	0.211	0.000	0.78		21.1
S2.010	SL1-PRMH-49		34.322	0.265	0.000	0.82		23.7
S2.011	SL1-PRMH-50		34.296	0.454	0.000	0.58		28.4
S1.015	SL1-PRMH-16		34.324	0.296	0.000	1.14		472.7
S3.000	SL1-PRMH-17		38.662	0.132	0.000	1.20		89.6
S3.001	SL1-PRMH-18		38.013	-0.241	0.000	0.43		110.8
S3.002	SL1-PRMH-19		37.763	-0.215	0.000	0.51		145.9

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S3.003	SL1-PRMH-20		37.119	-0.102	0.000	0.88		247.7
S3.004	SL1-PRMH-21		36.252	-0.146	0.000	0.83		301.2
S3.005	SL1-PRMH-22		35.854	-0.013	0.000	0.96		319.7
S3.006	SL1-PRMH-23		35.509	0.025	0.000	0.96		334.6
S3.007	SL1-PRMH-24		35.157	0.139	0.000	1.23		340.8
S3.008	SL1-PRMH-25		34.994	0.107	0.000	0.92		349.0
S3.009	SL1-PRMH-26		34.583	0.322	0.000	0.96		329.5
S1.016	SL1-PRMH-28		34.249	0.129	0.000	1.33		800.5
S1.017	SL1-POND_INLET		34.058	0.333	0.000	1.19		172.5
S1.018	SL1_Pond_OUT		33.700	0.000	0.000	0.72		172.5
S1.019	SL1-PRMH-31		33.902	0.216	0.000	0.90		172.5
S1.020	SL1-PRMH-32		33.536	-0.464	0.000	0.17		172.5
S4.000	SL1-PRMH-33		38.329	-0.058	0.000	0.92		110.4
S4.001	SL1-PRMH-34		38.028	-0.009	0.000	0.92		143.1
S5.000	SL1-PRMH-35		38.471	0.227	0.000	1.10		113.8
S5.001	SL1-PRMH-36		38.222	0.231	0.000	1.05		131.3
S5.002	SL1-PRMH-37		37.908	0.259	0.000	1.28		122.6
S4.002	SL1-PRMH-38		37.716	0.257	0.000	1.27		248.4

PN	US/MH Name	Status	Level Exceeded
S2.004	SL1-PRMH-43	OK	
S2.005	SL1-PRMH-44	OK	
S2.006	SL1-PRMH-45	OK	
S2.007	SL1-PRMH-46	OK	
S2.008	SL1-PRMH-47	SURCHARGED	
S2.009	SL1-PRMH-48	SURCHARGED	
S2.010	SL1-PRMH-49	SURCHARGED	6
S2.011	SL1-PRMH-50	SURCHARGED	
S1.015	SL1-PRMH-16	SURCHARGED	
S3.000	SL1-PRMH-17	SURCHARGED	
S3.001	SL1-PRMH-18	OK	
S3.002	SL1-PRMH-19	OK	
S3.003	SL1-PRMH-20	OK	
S3.004	SL1-PRMH-21	OK	
S3.005	SL1-PRMH-22	OK	
S3.006	SL1-PRMH-23	SURCHARGED	1
S3.007	SL1-PRMH-24	SURCHARGED	1
S3.008	SL1-PRMH-25	SURCHARGED	
S3.009	SL1-PRMH-26	SURCHARGED	
S1.016	SL1-PRMH-28	SURCHARGED	
S1.017	SL1-POND_INLET	SURCHARGED*	
S1.018	SL1_Pond_OUT	SURCHARGED*	
S1.019	SL1-PRMH-31	SURCHARGED	
S1.020	SL1-PRMH-32	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
S4.000	SL1-PRMH-33	OK	
S4.001	SL1-PRMH-34	OK	
S5.000	SL1-PRMH-35	SURCHARGED	
S5.001	SL1-PRMH-36	SURCHARGED	
S5.002	SL1-PRMH-37	SURCHARGED	
S4.002	SL1-PRMH-38	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

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

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SL1-PRMH-1	15 Summer	100	+0%	30/15 Summer			
S1.001	SL1-PRMH-2	15 Summer	100	+0%	30/15 Summer			
S1.002	SL1-PRMH-3	15 Summer	100	+0%	30/15 Summer			
S1.003	SL1-PRMH-4	15 Summer	100	+0%	30/15 Summer			
S1.004	SL1-PRMH-6	30 Summer	100	+0%				
S1.005	SL1-PRMH-7	15 Summer	100	+0%				
S1.006	SL1-PRMH-8	15 Summer	100	+0%				
S1.007	SL1-PRMH-9	15 Summer	100	+0%	100/15 Summer			
S1.008	SL1-PRMH-10	15 Summer	100	+0%	30/15 Summer			
S1.009	SL1-PRMH-11	15 Summer	100	+0%	100/15 Summer			
S1.010	SL1-PRMH-12	30 Summer	100	+0%	100/30 Summer			
S1.011	SL1-PRMH-13	30 Summer	100	+0%	30/30 Summer			
S1.012	SL1-PRMH-14	30 Summer	100	+0%	30/15 Summer			
S1.013	SL1-PRMH-15	30 Summer	100	+0%	30/15 Summer			
S1.014	SL1-PRMH-15A	30 Summer	100	+0%	30/15 Summer			
S2.000	SL1-PRMH-39	15 Summer	100	+0%				
S2.001	SL1-PRMH-40	15 Summer	100	+0%				
S2.002	SL1-PRMH-41	15 Summer	100	+0%				
S2.003	SL1-PRMH-42	15 Summer	100	+0%				

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SL1-PRMH-1	38.679	0.527	0.000	1.58		167.4	SURCHARGED	
S1.001	SL1-PRMH-2	38.330	0.314	0.000	1.32		185.0	SURCHARGED	
S1.002	SL1-PRMH-3	38.166	0.240	0.000	1.44		263.0	SURCHARGED	
S1.003	SL1-PRMH-4	38.008	0.149	0.000	1.50		299.8	SURCHARGED	
S1.004	SL1-PRMH-6	37.661	-0.093	0.000	1.00		358.6	OK	
S1.005	SL1-PRMH-7	37.272	-0.191	0.000	0.73		362.7	OK	
S1.006	SL1-PRMH-8	36.994	-0.048	0.000	0.83		429.9	OK	
S1.007	SL1-PRMH-9	36.491	0.176	0.000	0.98		489.7	SURCHARGED	
S1.008	SL1-PRMH-10	36.006	0.191	0.000	1.34		526.9	SURCHARGED	
S1.009	SL1-PRMH-11	35.575	0.008	0.000	1.02		537.3	SURCHARGED	
S1.010	SL1-PRMH-12	35.118	0.089	0.000	0.69		535.8	SURCHARGED	
S1.011	SL1-PRMH-13	34.914	0.314	0.000	0.92		557.8	SURCHARGED	
S1.012	SL1-PRMH-14	34.805	0.351	0.000	0.88		564.6	SURCHARGED	
S1.013	SL1-PRMH-15	34.671	0.392	0.000	1.38		581.7	SURCHARGED	
S1.014	SL1-PRMH-15A	34.564	0.341	0.000	1.53		580.7	SURCHARGED	
S2.000	SL1-PRMH-39	37.333	-0.177	0.000	0.10		3.7	OK	
S2.001	SL1-PRMH-40	36.894	-0.136	0.000	0.27		8.4	OK	
S2.002	SL1-PRMH-41	36.484	-0.156	0.000	0.19		8.5	OK	
S2.003	SL1-PRMH-42	35.954	-0.106	0.000	0.48		14.9	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
S2.004	SL1-PRMH-43	15 Summer	100	+0%			
S2.005	SL1-PRMH-44	30 Summer	100	+0%			
S2.006	SL1-PRMH-45	30 Summer	100	+0%			
S2.007	SL1-PRMH-46	30 Summer	100	+0%			
S2.008	SL1-PRMH-47	30 Summer	100	+0%	30/30 Summer		
S2.009	SL1-PRMH-48	15 Summer	100	+0%	30/15 Summer		
S2.010	SL1-PRMH-49	15 Summer	100	+0%	5/30 Summer	100/15 Summer	
S2.011	SL1-PRMH-50	15 Summer	100	+0%	1/30 Summer		
S1.015	SL1-PRMH-16	30 Summer	100	+0%	30/15 Summer		
S3.000	SL1-PRMH-17	15 Summer	100	+0%	30/15 Summer		
S3.001	SL1-PRMH-18	15 Summer	100	+0%			
S3.002	SL1-PRMH-19	15 Summer	100	+0%			
S3.003	SL1-PRMH-20	15 Summer	100	+0%	100/15 Summer		
S3.004	SL1-PRMH-21	15 Summer	100	+0%	100/15 Summer		
S3.005	SL1-PRMH-22	15 Summer	100	+0%	100/15 Summer		
S3.006	SL1-PRMH-23	15 Summer	100	+0%	30/15 Summer	100/30 Summer	
S3.007	SL1-PRMH-24	15 Summer	100	+0%	30/15 Summer	100/30 Summer	
S3.008	SL1-PRMH-25	30 Summer	100	+0%	30/15 Summer		
S3.009	SL1-PRMH-26	30 Summer	100	+0%	30/15 Summer		
S1.016	SL1-PRMH-28	30 Summer	100	+0%	30/15 Summer		
S1.017	SL1-POND_INLET	180 Summer	100	+0%	5/30 Summer		
S1.018	SL1_Pond_OUT	180 Summer	100	+0%			
S1.019	SL1-PRMH-31	180 Summer	100	+0%	5/30 Summer	100/2160 Winter	
S1.020	SL1-PRMH-32	180 Summer	100	+0%			
S4.000	SL1-PRMH-33	15 Summer	100	+0%	100/15 Summer		
S4.001	SL1-PRMH-34	15 Summer	100	+0%	100/15 Summer		
S5.000	SL1-PRMH-35	15 Summer	100	+0%	30/15 Summer		
S5.001	SL1-PRMH-36	15 Summer	100	+0%	30/15 Summer		
S5.002	SL1-PRMH-37	15 Summer	100	+0%	30/15 Summer		
S4.002	SL1-PRMH-38	30 Summer	100	+0%	30/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S2.004	SL1-PRMH-43		35.583	-0.117	0.000	0.44		16.2
S2.005	SL1-PRMH-44		35.202	-0.098	0.000	0.58		17.2
S2.006	SL1-PRMH-45		34.904	-0.109	0.000	0.52		18.2
S2.007	SL1-PRMH-46		34.578	-0.014	0.000	0.58		16.6
S2.008	SL1-PRMH-47		34.527	0.119	0.000	0.55		15.8
S2.009	SL1-PRMH-48		34.431	0.303	0.000	0.83		22.4
S2.010	SL1-PRMH-49		34.403	0.346	3.153	1.01		29.0
S2.011	SL1-PRMH-50		34.413	0.571	0.000	0.63		30.8
S1.015	SL1-PRMH-16		34.468	0.440	0.000	1.38		574.0
S3.000	SL1-PRMH-17		38.941	0.411	0.000	1.54		115.2
S3.001	SL1-PRMH-18		38.047	-0.207	0.000	0.56		142.2
S3.002	SL1-PRMH-19		37.803	-0.175	0.000	0.65		186.0

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S3.003	SL1-PRMH-20		37.397	0.176	0.000	1.04		291.7
S3.004	SL1-PRMH-21		36.604	0.206	0.000	0.89		325.6
S3.005	SL1-PRMH-22		36.314	0.447	0.000	1.00		334.0
S3.006	SL1-PRMH-23		35.995	0.511	0.000	1.02		357.1
S3.007	SL1-PRMH-24		35.573	0.555	0.000	1.29		359.2
S3.008	SL1-PRMH-25		35.434	0.547	0.000	1.02		385.2
S3.009	SL1-PRMH-26		34.825	0.564	0.000	1.13		388.8
S1.016	SL1-PRMH-28		34.358	0.238	0.000	1.58		953.1
S1.017	SL1-POND_INLET		34.265	0.540	0.000	1.41		203.9
S1.018	SL1_Pond_OUT		33.700	0.000	0.000	0.85		203.9
S1.019	SL1-PRMH-31		34.049	0.363	0.000	1.07		203.9
S1.020	SL1-PRMH-32		33.568	-0.432	0.000	0.20		203.9
S4.000	SL1-PRMH-33		39.116	0.729	0.000	1.15		139.0
S4.001	SL1-PRMH-34		38.849	0.812	0.000	1.05		162.6
S5.000	SL1-PRMH-35		39.597	1.353	0.000	1.35		138.7
S5.001	SL1-PRMH-36		39.302	1.311	0.000	1.43		178.1
S5.002	SL1-PRMH-37		38.709	1.060	0.000	1.77		169.4
S4.002	SL1-PRMH-38		38.309	0.850	0.000	1.71		333.6

PN	US/MH Name	Status	Level Exceeded
S2.004	SL1-PRMH-43	OK	
S2.005	SL1-PRMH-44	OK	
S2.006	SL1-PRMH-45	OK	
S2.007	SL1-PRMH-46	OK	
S2.008	SL1-PRMH-47	SURCHARGED	
S2.009	SL1-PRMH-48	SURCHARGED	
S2.010	SL1-PRMH-49	FLOOD	6
S2.011	SL1-PRMH-50	SURCHARGED	
S1.015	SL1-PRMH-16	SURCHARGED	
S3.000	SL1-PRMH-17	SURCHARGED	
S3.001	SL1-PRMH-18	OK	
S3.002	SL1-PRMH-19	OK	
S3.003	SL1-PRMH-20	SURCHARGED	
S3.004	SL1-PRMH-21	SURCHARGED	
S3.005	SL1-PRMH-22	SURCHARGED	
S3.006	SL1-PRMH-23	SURCHARGED	1
S3.007	SL1-PRMH-24	SURCHARGED	1
S3.008	SL1-PRMH-25	SURCHARGED	
S3.009	SL1-PRMH-26	SURCHARGED	
S1.016	SL1-PRMH-28	SURCHARGED	
S1.017	SL1-POND_INLET	SURCHARGED*	
S1.018	SL1_Pond_OUT	SURCHARGED*	
S1.019	SL1-PRMH-31	SURCHARGED	
S1.020	SL1-PRMH-32	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Status	Level Exceeded
S4.000	SL1-PRMH-33	SURCHARGED	
S4.001	SL1-PRMH-34	SURCHARGED	
S5.000	SL1-PRMH-35	SURCHARGED	
S5.001	SL1-PRMH-36	SURCHARGED	
S5.002	SL1-PRMH-37	SURCHARGED	
S4.002	SL1-PRMH-38	SURCHARGED	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Outfall-2

Pipe Sizes STANDARD Manhole Sizes M5J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.200	Add Flow / Climate Change (%)	40
Ratio R	0.370	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	50	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Outfall-2

« - 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	40.134	0.250	160.5	0.083	5.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.000	96.136	1.250	76.9	0.068	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
2.001	89.958	0.980	91.8	0.052	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
2.002	90.126	1.000	90.1	0.053	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.003	89.844	0.970	92.6	0.053	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.004	89.190	0.850	104.9	0.087	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.005	89.306	0.710	125.8	0.115	0.00	0.0		0.050	\/	-3	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	41.19	6.99	26.310	0.083	0.0	0.0	4.9	0.34	67.1	17.2
2.000	36.25	9.00	32.480	0.068	0.0	0.0	3.5	0.40	45.0	12.4
2.001	29.55	13.10	31.230	0.119	0.0	0.0	5.1	0.37	41.2	17.8
2.002	25.97	16.45	30.200	0.173	0.0	0.0	6.5	0.45	89.6	22.7
2.003	23.25	19.84	29.200	0.226	0.0	0.0	7.6	0.44	88.4	26.5
2.004	21.02	23.42	28.230	0.313	0.0	0.0	9.5	0.42	83.0	33.2
2.005	19.18	27.12	27.380	0.428	0.0	0.0	11.8	0.40	96.5	41.5

Network Design Table for Outfall-2

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
2.006	57.451	0.370	155.3	0.093	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
2.007	49.378	0.240	205.7	0.088	0.00	0.0		0.050	\/	-6	Pipe/Conduit	
1.001	20.166	0.129	156.3	0.000	0.00	0.0	0.600		oo	225	Double Pipe	
3.000	95.917	1.160	82.7	0.077	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
3.001	89.935	0.980	91.8	0.041	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
3.002	90.031	0.980	91.9	0.042	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
3.003	89.836	0.920	97.6	0.042	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
3.004	89.722	0.530	169.3	0.022	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
3.005	93.445	0.490	190.7	0.004	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
3.006	59.168	0.520	113.8	0.003	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
3.007	50.599	0.660	76.7	0.003	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.000	43.428	0.160	271.4	0.074	5.00	0.0		0.050	\/	-2	Pipe/Conduit	
1.002	8.973	0.036	250.0	0.000	0.00	0.0	0.600		oo	300	Double Pipe	
5.000	95.123	1.200	79.3	0.072	6.00	0.0	1.500		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)
2.006	18.13	29.64	26.670	0.520	0.0	0.0	13.6	0.38	106.1	47.7
2.007	17.27	31.98	26.300	0.608	0.0	0.0	15.2	0.35	126.7	53.1
1.001	17.16	32.31	25.435	0.691	0.0	0.0	17.1	1.04	83.0	59.9
3.000	35.96	9.14	32.460	0.077	0.0	0.0	4.0	0.39	43.4	13.9
3.001	29.38	13.23	31.300	0.118	0.0	0.0	5.0	0.37	41.2	17.5
3.002	25.19	17.33	30.320	0.159	0.0	0.0	5.8	0.37	41.2	20.3
3.003	22.59	20.81	29.290	0.201	0.0	0.0	6.6	0.43	86.1	23.0
3.004	19.99	25.38	28.370	0.223	0.0	0.0	6.6	0.33	65.4	23.0
3.005	17.83	30.44	27.840	0.227	0.0	0.0	6.6	0.31	61.6	23.0
3.006	16.96	32.92	27.350	0.230	0.0	0.0	6.6	0.40	79.7	23.0
3.007	16.42	34.65	26.830	0.233	0.0	0.0	6.6	0.49	97.1	23.0
4.000	39.02	7.80	26.330	0.074	0.0	0.0	4.2	0.26	51.6	14.7
1.002	16.37	34.80	25.231	0.998	0.0	0.0	23.6	0.99	139.9	82.6
5.000	39.51	7.61	30.953	0.072	0.0	0.0	4.1	0.98	17.4	14.5

Network Design Table for Outfall-2

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
5.001	90.142	0.825	109.3	0.068	0.00	0.0	1.500		o	225	Pipe/Conduit	
5.002	90.280	1.100	82.1	0.067	0.00	0.0	1.500		o	225	Pipe/Conduit	
5.003	90.114	0.600	150.2	0.067	0.00	0.0	1.500		o	300	Pipe/Conduit	
5.004	89.577	0.416	215.3	0.067	0.00	0.0	1.500		o	300	Pipe/Conduit	
5.005	89.780	0.502	178.8	0.066	0.00	0.0	1.500		o	300	Pipe/Conduit	
5.006	65.577	0.400	163.9	0.049	0.00	0.0	1.500		o	300	Pipe/Conduit	
5.007	51.722	0.510	101.4	0.039	0.00	0.0	1.500		o	300	Pipe/Conduit	
6.000	42.486	0.345	123.1	0.047	6.00	0.0	1.500		o	150	Pipe/Conduit	
1.003	15.895	0.045	350.0	0.000	0.00	0.0	0.600		oo	375	Double Pipe	
1.004	61.904	0.124	500.0	0.624	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.005	7.785	0.016	500.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.006	8.265	0.017	500.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.007	9.367	0.019	500.0	0.000	0.00	0.0		0.050	2 _/	300	1:2 Ditch	

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)
5.001	36.30	8.98	29.678	0.140	0.0	0.0	7.3	1.10	43.7	25.7
5.002	33.96	10.17	28.853	0.207	0.0	0.0	10.2	1.27	50.4	35.6
5.003	31.73	11.49	27.678	0.275	0.0	0.0	12.6	1.13	79.9	44.1
5.004	29.57	13.08	27.078	0.342	0.0	0.0	14.6	0.94	66.7	51.1
5.005	27.89	14.52	26.662	0.408	0.0	0.0	16.4	1.04	73.2	57.5
5.006	26.84	15.53	26.160	0.457	0.0	0.0	17.7	1.08	76.5	62.0
5.007	26.24	16.16	25.760	0.496	0.0	0.0	18.8	1.38	97.3	65.8
6.000	41.46	6.90	25.615	0.047	0.0	0.0	2.8	0.79	13.9	9.9
1.003	16.29	35.08	25.195	1.541	0.0	0.0	36.3	0.96	212.7	126.9
1.004	15.96	36.22	25.150	2.164	0.0	0.0	49.9	0.90	143.5«	174.7
1.005	15.91	36.41	25.028	2.164	0.0	0.0	49.9	0.70	49.2«	174.7
1.006	15.86	36.61	25.012	2.164	0.0	0.0	49.9	0.70	49.2«	174.7
1.007	15.70	37.19	24.995	2.164	0.0	0.0	49.9	0.27	72.5«	174.7

Conduit Sections for Outfall-2

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-1	\/	1500	150	11.3		0.294	0.113
-2	\/	2000	200	11.3		0.392	0.200
-3	\/	2200	200	11.3		0.429	0.240
-4	\/	2400	200	11.3		0.459	0.280
-6	\/	2800	200	11.3		0.507	0.360

Manhole Schedules for Outfall-2

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)	Ba
Dummy-L2-PRMH2-10	26.510	0.200	Junction		1.000	26.310	-2				
Dummy-L2-PRMH2-11	32.630	0.150	Junction		2.000	32.480	-1				
Dummy-L2-PRMH2-12	31.380	0.150	Junction		2.001	31.230	-1	2.000	31.230	-1	
Dummy-L2-PRMH2-13	30.400	0.200	Junction		2.002	30.200	-2	2.001	30.250	-1	
Dummy-L2-PRMH2-14	29.400	0.200	Junction		2.003	29.200	-2	2.002	29.200	-2	
Dummy-L2-PRMH2-15	28.430	0.200	Junction		2.004	28.230	-2	2.003	28.230	-2	
Dummy-L2-PRMH2-16	27.580	0.200	Junction		2.005	27.380	-3	2.004	27.380	-2	
Dummy-L2-PRMH2-17	26.870	0.200	Junction		2.006	26.670	-4	2.005	26.670	-3	
Dummy-L2-PRMH2-18	26.500	0.200	Junction		2.007	26.300	-6	2.006	26.300	-4	
L2-PRMH2-19	26.260	0.825	Open Manhole	1500	1.001	25.435	225	1.000	26.060	-2	
								2.007	26.060	-6	
Dummy-L2-PRMH2-20	32.610	0.150	Junction		3.000	32.460	-1				
Dummy-L2-PRMH2-21	31.450	0.150	Junction		3.001	31.300	-1	3.000	31.300	-1	
Dummy-L2-PRMH2-22	30.470	0.150	Junction		3.002	30.320	-1	3.001	30.320	-1	
Dummy-L2-PRMH2-23	29.490	0.200	Junction		3.003	29.290	-2	3.002	29.340	-1	
Dummy-L2-PRMH2-24	28.570	0.200	Junction		3.004	28.370	-2	3.003	28.370	-2	
Dummy-L2-PRMH2-26	28.040	0.200	Junction		3.005	27.840	-2	3.004	27.840	-2	
Dummy-L2-PRMH2-28	27.550	0.200	Junction		3.006	27.350	-2	3.005	27.350	-2	
Dummy-L2-PRMH2-29	27.030	0.200	Junction		3.007	26.830	-2	3.006	26.830	-2	
Dummy-L2-PRMH2-30	26.530	0.200	Junction		4.000	26.330	-2				
L2-PRMH2-31	26.370	1.139	Open Manhole	1500	1.002	25.231	300	1.001	25.306	225	
								3.007	26.170	-2	
								4.000	26.170	-2	
L2-PRMH2-32	32.610	1.657	Open Manhole	1050	5.000	30.953	150				
L2-PRMH2-33	31.230	1.552	Open Manhole	1050	5.001	29.678	225	5.000	29.753	150	
L2-PRMH2-34	30.240	1.387	Open Manhole	1050	5.002	28.853	225	5.001	28.853	225	
L2-PRMH2-35	29.270	1.592	Open Manhole	1200	5.003	27.678	300	5.002	27.753	225	
L2-PRMH2-36	28.310	1.232	Open Manhole	1200	5.004	27.078	300	5.003	27.078	300	
L2-PRMH2-37	27.780	1.118	Open Manhole	1200	5.005	26.662	300	5.004	26.662	300	
L2-PRMH2-38	27.320	1.160	Open Manhole	1200	5.006	26.160	300	5.005	26.160	300	
L2-PRMH2-39	26.810	1.050	Open Manhole	1200	5.007	25.760	300	5.006	25.760	300	
L2-PRMH2-40	26.440	0.825	Open Manhole	1050	6.000	25.615	150				
L2-PRMH2-41	26.150	0.955	Open Manhole	1800	1.003	25.195	375	1.002	25.195	300	

Manhole Schedules for Outfall-2

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)	Diame (mm
								5.007	25.250	
								6.000	25.270	
L2-PR-Pond_Inlet	26.100	0.950	Open Manhole	1500	1.004	25.150	450	1.003	25.150	
Dummy-L2-PR_Pond_Outlet	26.100	1.074	Junction		1.005	25.028	300	1.004	25.026	
L2-PRMH2-44	26.100	1.088	Open Manhole	1200	1.006	25.012	300	1.005	25.012	
L2-PRMH2-45	26.084	1.089	Junction		1.007	24.995	300	1.006	24.995	
J5_PR_Outfall_L2	26.000	1.024	Open Manhole	0		OUTFALL		1.007	24.976	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy-L2-PRMH2-10	390541.897	223924.241			No Entry	
Dummy-L2-PRMH2-11	390735.396	224573.877			No Entry	
Dummy-L2-PRMH2-12	390695.502	224486.410			No Entry	
Dummy-L2-PRMH2-13	390658.390	224404.464			No Entry	
Dummy-L2-PRMH2-14	390621.480	224322.243			No Entry	
Dummy-L2-PRMH2-15	390583.998	224240.590			No Entry	
Dummy-L2-PRMH2-16	390550.592	224157.892			No Entry	
Dummy-L2-PRMH2-17	390533.698	224070.198			No Entry	

Manhole Schedules for Outfall-2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy-L2-PRMH2-18	390530.831	224012.819			No Entry	
L2-PRMH2-19	390533.671	223963.523	390533.671	223963.523	Required	
Dummy-L2-PRMH2-20	390725.022	224578.386			No Entry	
Dummy-L2-PRMH2-21	390685.394	224491.039			No Entry	
Dummy-L2-PRMH2-22	390648.055	224409.221			No Entry	
Dummy-L2-PRMH2-23	390610.756	224327.279			No Entry	
Dummy-L2-PRMH2-24	390573.937	224245.334			No Entry	
Dummy-L2-PRMH2-26	390540.320	224162.215			No Entry	
Dummy-L2-PRMH2-28	390518.531	224071.430			No Entry	
Dummy-L2-PRMH2-29	390513.187	224012.504			No Entry	
Dummy-L2-PRMH2-30	390517.868	223918.691			No Entry	
L2-PRMH2-31	390513.570	223961.906	390513.570	223961.906	Required	
L2-PRMH2-32	390716.328	224581.506	390716.328	224581.506	Required	
L2-PRMH2-33	390677.339	224494.741	390677.339	224494.741	Required	

Manhole Schedules for Outfall-2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
L2-PRMH2-34	390639.729	224412.820	390639.729	224412.820	Required	
L2-PRMH2-35	390602.449	224330.596	390602.449	224330.596	Required	
L2-PRMH2-36	390564.623	224248.805	390564.623	224248.805	Required	
L2-PRMH2-37	390531.305	224165.655	390531.305	224165.655	Required	
L2-PRMH2-38	390509.708	224078.511	390509.708	224078.511	Required	
L2-PRMH2-39	390503.931	224013.189	390503.931	224013.189	Required	
L2-PRMH2-40	390508.330	223919.149	390508.330	223919.149	Required	
L2-PRMH2-41	390504.608	223961.472	390504.608	223961.472	Required	
L2-PR-Pond_Inlet	390488.718	223961.084	390488.718	223961.084	Required	
Dummy-L2-PR_Pond_Outlet	390431.114	223983.752	390431.114	223983.752	Required	
L2-PRMH2-44	390423.688	223986.091	390423.688	223986.091	Required	
L2-PRMH2-45	390415.801	223988.561			No Entry	
J5_PR_Outfall_L2	390406.883	223991.427			No Entry	

PIPELINE SCHEDULES for Outfall-2

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)
1.000	\/	-2	Dummy-L2-PRMH2-10	26.510	26.310	0.000	Junction	
2.000	\/	-1	Dummy-L2-PRMH2-11	32.630	32.480	0.000	Junction	
2.001	\/	-1	Dummy-L2-PRMH2-12	31.380	31.230	0.000	Junction	
2.002	\/	-2	Dummy-L2-PRMH2-13	30.400	30.200	0.000	Junction	
2.003	\/	-2	Dummy-L2-PRMH2-14	29.400	29.200	0.000	Junction	
2.004	\/	-2	Dummy-L2-PRMH2-15	28.430	28.230	0.000	Junction	
2.005	\/	-3	Dummy-L2-PRMH2-16	27.580	27.380	0.000	Junction	
2.006	\/	-4	Dummy-L2-PRMH2-17	26.870	26.670	0.000	Junction	
2.007	\/	-6	Dummy-L2-PRMH2-18	26.500	26.300	0.000	Junction	
1.001	oo	225	L2-PRMH2-19	26.260	25.435	0.600	Open Manhole	1500
3.000	\/	-1	Dummy-L2-PRMH2-20	32.610	32.460	0.000	Junction	
3.001	\/	-1	Dummy-L2-PRMH2-21	31.450	31.300	0.000	Junction	
3.002	\/	-1	Dummy-L2-PRMH2-22	30.470	30.320	0.000	Junction	
3.003	\/	-2	Dummy-L2-PRMH2-23	29.490	29.290	0.000	Junction	
3.004	\/	-2	Dummy-L2-PRMH2-24	28.570	28.370	0.000	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)
1.000	40.134	160.5	L2-PRMH2-19	26.260	26.060	0.000	Open Manhole	1500
2.000	96.136	76.9	Dummy-L2-PRMH2-12	31.380	31.230	0.000	Junction	
2.001	89.958	91.8	Dummy-L2-PRMH2-13	30.400	30.250	0.000	Junction	
2.002	90.126	90.1	Dummy-L2-PRMH2-14	29.400	29.200	0.000	Junction	
2.003	89.844	92.6	Dummy-L2-PRMH2-15	28.430	28.230	0.000	Junction	
2.004	89.190	104.9	Dummy-L2-PRMH2-16	27.580	27.380	0.000	Junction	
2.005	89.306	125.8	Dummy-L2-PRMH2-17	26.870	26.670	0.000	Junction	
2.006	57.451	155.3	Dummy-L2-PRMH2-18	26.500	26.300	0.000	Junction	
2.007	49.378	205.7	L2-PRMH2-19	26.260	26.060	0.000	Open Manhole	1500
1.001	20.166	156.3	L2-PRMH2-31	26.370	25.306	0.839	Open Manhole	1500
3.000	95.917	82.7	Dummy-L2-PRMH2-21	31.450	31.300	0.000	Junction	
3.001	89.935	91.8	Dummy-L2-PRMH2-22	30.470	30.320	0.000	Junction	
3.002	90.031	91.9	Dummy-L2-PRMH2-23	29.490	29.340	0.000	Junction	
3.003	89.836	97.6	Dummy-L2-PRMH2-24	28.570	28.370	0.000	Junction	
3.004	89.722	169.3	Dummy-L2-PRMH2-26	28.040	27.840	0.000	Junction	

PIPELINE SCHEDULES for Outfall-2

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)
3.005	\/	-2	Dummy-L2-PRMH2-26	28.040	27.840	0.000	Junction	
3.006	\/	-2	Dummy-L2-PRMH2-28	27.550	27.350	0.000	Junction	
3.007	\/	-2	Dummy-L2-PRMH2-29	27.030	26.830	0.000	Junction	
4.000	\/	-2	Dummy-L2-PRMH2-30	26.530	26.330	0.000	Junction	
1.002	oo	300	L2-PRMH2-31	26.370	25.231	0.839	Open Manhole	1500
5.000	o	150	L2-PRMH2-32	32.610	30.953	1.507	Open Manhole	1050
5.001	o	225	L2-PRMH2-33	31.230	29.678	1.327	Open Manhole	1050
5.002	o	225	L2-PRMH2-34	30.240	28.853	1.162	Open Manhole	1050
5.003	o	300	L2-PRMH2-35	29.270	27.678	1.292	Open Manhole	1200
5.004	o	300	L2-PRMH2-36	28.310	27.078	0.932	Open Manhole	1200
5.005	o	300	L2-PRMH2-37	27.780	26.662	0.818	Open Manhole	1200
5.006	o	300	L2-PRMH2-38	27.320	26.160	0.860	Open Manhole	1200
5.007	o	300	L2-PRMH2-39	26.810	25.760	0.750	Open Manhole	1200
6.000	o	150	L2-PRMH2-40	26.440	25.615	0.675	Open Manhole	1050

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)
3.005	93.445	190.7	Dummy-L2-PRMH2-28	27.550	27.350	0.000	Junction	
3.006	59.168	113.8	Dummy-L2-PRMH2-29	27.030	26.830	0.000	Junction	
3.007	50.599	76.7	L2-PRMH2-31	26.370	26.170	0.000	Open Manhole	1500
4.000	43.428	271.4	L2-PRMH2-31	26.370	26.170	0.000	Open Manhole	1500
1.002	8.973	250.0	L2-PRMH2-41	26.150	25.195	0.655	Open Manhole	1800
5.000	95.123	79.3	L2-PRMH2-33	31.230	29.753	1.327	Open Manhole	1050
5.001	90.142	109.3	L2-PRMH2-34	30.240	28.853	1.162	Open Manhole	1050
5.002	90.280	82.1	L2-PRMH2-35	29.270	27.753	1.292	Open Manhole	1200
5.003	90.114	150.2	L2-PRMH2-36	28.310	27.078	0.932	Open Manhole	1200
5.004	89.577	215.3	L2-PRMH2-37	27.780	26.662	0.818	Open Manhole	1200
5.005	89.780	178.8	L2-PRMH2-38	27.320	26.160	0.860	Open Manhole	1200
5.006	65.577	163.9	L2-PRMH2-39	26.810	25.760	0.750	Open Manhole	1200
5.007	51.722	101.4	L2-PRMH2-41	26.150	25.250	0.600	Open Manhole	1800
6.000	42.486	123.1	L2-PRMH2-41	26.150	25.270	0.730	Open Manhole	1800

PIPELINE SCHEDULES for Outfall-2

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)
1.003	oo	375	L2-PRMH2-41	26.150	25.195	0.580	Open Manhole	1800
1.004	o	450	L2-PR-Pond_Inlet	26.100	25.150	0.500	Open Manhole	1500
1.005	o	300	Dummy-L2-PR_Pond_Outlet	26.100	25.028	0.772	Junction	
1.006	o	300	L2-PRMH2-44	26.100	25.012	0.788	Open Manhole	1200
1.007	2 _/	300	L2-PRMH2-45	26.084	24.995	0.789	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)
1.003	15.895	350.0	L2-PR-Pond_Inlet	26.100	25.150	0.575	Open Manhole	1500
1.004	61.904	500.0	Dummy-L2-PR_Pond_Outlet	26.100	25.026	0.624	Junction	
1.005	7.785	500.0	L2-PRMH2-44	26.100	25.012	0.788	Open Manhole	1200
1.006	8.265	500.0	L2-PRMH2-45	26.084	24.995	0.788	Junction	
1.007	9.367	500.0	J5_PR_Outfall_L2	26.000	24.976	0.724	Open Manhole	0

Area Summary for Outfall-2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Central Reserve unpaved	20	0.002	0.000	0.000
	Classification	Carriage way & Footway	100	0.042	0.042	0.042
	Classification	Verge	50	0.006	0.003	0.045
	Classification	Carriage way & Footway	100	0.030	0.030	0.075
	Classification	Verge	50	0.015	0.007	0.083
2.000	Classification	Carriage way & Footway	100	0.040	0.040	0.040
	Classification	Verge	50	0.028	0.014	0.054
	Classification	Carriage way & Footway	100	0.010	0.010	0.064
	Classification	Verge	50	0.006	0.003	0.068
2.001	Classification	Verge	50	0.029	0.015	0.015
	Classification	Carriage way & Footway	100	0.037	0.037	0.052
2.002	Classification	Carriage way & Footway	100	0.037	0.037	0.037
	Classification	Verge	50	0.032	0.016	0.053
2.003	Classification	Carriage way & Footway	100	0.037	0.037	0.037
	Classification	Verge	50	0.032	0.016	0.053
2.004	Classification	Carriage way & Footway	100	0.069	0.069	0.069
	Classification	Verge	50	0.035	0.018	0.087
2.005	Classification	Carriage way & Footway	100	0.092	0.092	0.092
	Classification	Verge	50	0.046	0.023	0.115
2.006	Classification	Verge	50	0.028	0.014	0.014
	Classification	Carriage way & Footway	100	0.079	0.079	0.093
2.007	Classification	Carriage way & Footway	100	0.077	0.077	0.077
	Classification	Verge	50	0.020	0.010	0.088
1.001	-	-	100	0.000	0.000	0.000
3.000	Classification	Central Reserve unpaved	20	0.019	0.004	0.004
	Classification	Carriage way & Footway	100	0.041	0.041	0.045
	Classification	Carriage way & Footway	100	0.032	0.032	0.077
3.001	Classification	Carriage way & Footway	100	0.037	0.037	0.037
	Classification	Central Reserve unpaved	20	0.018	0.004	0.041
3.002	Classification	Carriage way & Footway	100	0.037	0.037	0.037
	Classification	Central Reserve unpaved	20	0.022	0.004	0.042
3.003	Classification	Carriage way & Footway	100	0.037	0.037	0.037
	Classification	Central Reserve unpaved	20	0.022	0.004	0.042
3.004	Classification	Carriage way & Footway	100	0.005	0.005	0.005
	User	-	100	0.011	0.011	0.016
	Classification	Verge	50	0.011	0.006	0.022
3.005	Classification	Central Reserve unpaved	20	0.021	0.004	0.004
3.006	Classification	Central Reserve unpaved	20	0.016	0.003	0.003
3.007	Classification	Central Reserve unpaved	20	0.013	0.003	0.003
4.000	Classification	Central Reserve unpaved	20	0.002	0.000	0.000
	Classification	Carriage way & Footway	100	0.040	0.040	0.040
	Classification	Central Reserve unpaved	20	0.007	0.001	0.042
	Classification	Carriage way & Footway	100	0.031	0.031	0.073
	Classification	Central Reserve unpaved	20	0.009	0.002	0.074
1.002	-	-	100	0.000	0.000	0.000

Area Summary for Outfall-2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
5.000	Classification	Carriage way & Footway	100	0.039	0.039	0.039
	Classification	Verge	50	0.005	0.002	0.041
	Classification	Carriage way & Footway	100	0.019	0.019	0.060
	Classification	Verge	50	0.024	0.012	0.072
5.001	Classification	Carriage way & Footway	100	0.036	0.036	0.036
	Classification	Verge	50	0.023	0.011	0.047
	Classification	Verge	50	0.005	0.002	0.050
	Classification	Carriage way & Footway	100	0.018	0.018	0.068
5.002	Classification	Carriage way & Footway	100	0.036	0.036	0.036
	Classification	Verge	50	0.023	0.011	0.047
	Classification	Verge	50	0.004	0.002	0.049
	Classification	Default	100	0.018	0.018	0.067
5.003	Classification	Verge	50	0.023	0.011	0.011
	Classification	Carriage way & Footway	100	0.036	0.036	0.047
	Classification	Verge	50	0.004	0.002	0.049
	Classification	Carriage way & Footway	100	0.018	0.018	0.067
5.004	Classification	Carriage way & Footway	100	0.018	0.018	0.018
	Classification	Verge	50	0.011	0.005	0.023
	Classification	Carriage way & Footway	100	0.018	0.018	0.041
	Classification	Verge	50	0.011	0.006	0.047
	Classification	Verge	50	0.002	0.001	0.048
	Classification	Carriage way & Footway	100	0.009	0.009	0.057
	Classification	Carriage way & Footway	100	0.009	0.009	0.066
	Classification	Verge	50	0.002	0.001	0.067
5.005	Classification	Carriage way & Footway	100	0.035	0.035	0.035
	Classification	Verge	50	0.022	0.011	0.046
	Classification	Verge	50	0.005	0.002	0.048
	Classification	Carriage way & Footway	100	0.017	0.017	0.066
5.006	Classification	Verge	50	0.016	0.008	0.008
	Classification	Carriage way & Footway	100	0.026	0.026	0.034
	Classification	Verge	50	0.003	0.002	0.036
	Classification	Carriage way & Footway	100	0.013	0.013	0.049
5.007	Classification	Carriage way & Footway	100	0.020	0.020	0.020
	Classification	Verge	50	0.013	0.006	0.027
	Classification	Verge	50	0.003	0.001	0.028
	Classification	Carriage way & Footway	100	0.010	0.010	0.039
6.000	Classification	Verge	50	0.006	0.003	0.003
	Classification	Carriage way & Footway	100	0.018	0.018	0.021
	Classification	Carriage way & Footway	100	0.014	0.014	0.035
	Classification	Verge	50	0.009	0.004	0.039
	Classification	Verge	50	0.002	0.001	0.040
	Classification	Carriage way & Footway	100	0.007	0.007	0.047
1.003	-	-	100	0.000	0.000	0.000
1.004	User	-	100	0.624	0.624	0.624
1.005	-	-	100	0.000	0.000	0.000

Area Summary for Outfall-2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.006	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				2.536	2.164	2.164

Free Flowing Outfall Details for Outfall-2

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007	J5_PR_Outfall_L2	26.000	24.976	0.000	0	0

Simulation Criteria for Outfall-2

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

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

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.200	Storm Duration (mins)	30
Ratio R	0.370		

Online Controls for Outfall-2

Hydro-Brake® Optimum Manhole: L2-PR-Pond_Inlet, DS/PN: 1.004, Volume (m^3): 4.8

Unit Reference	MD-SCU-0088-6500-0650-6500
Design Head (m)	0.650
Design Flow (l/s)	6.5
Flush-Flo™	Calculated
Objective	Linear discharge profile
Application	Surface
Sump Available	Yes
Diameter (mm)	88
Invert Level (m)	25.150
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.650	6.5	Kick-Flo®	0.132	3.1
Flush-Flo™	0.115	3.1	Mean Flow over Head Range	-	4.4

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)
0.100	3.0	1.200	8.7	3.000	13.4	7.000	20.1
0.200	3.8	1.400	9.3	3.500	14.4	7.500	20.8
0.300	4.5	1.600	9.9	4.000	15.4	8.000	21.5
0.400	5.2	1.800	10.5	4.500	16.3	8.500	22.2
0.500	5.8	2.000	11.0	5.000	17.1	9.000	22.8
0.600	6.3	2.200	11.6	5.500	17.9	9.500	23.4
0.800	7.2	2.400	12.0	6.000	18.7		
1.000	8.0	2.600	12.5	6.500	19.4		

Storage Structures for Outfall-2

Tank or Pond Manhole: L2-PR-Pond_Inlet, DS/PN: 1.004

Invert Level (m) 25.150

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	3017.0	0.650	3544.5	0.950	3802.3

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 40, 40, 40, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	Dummy-L2-PRMH2-10	15 Summer	1	+40%			
2.000	Dummy-L2-PRMH2-11	15 Summer	1	+40%	100/15 Summer	100/15 Summer	
2.001	Dummy-L2-PRMH2-12	15 Summer	1	+40%	30/15 Summer	30/15 Summer	
2.002	Dummy-L2-PRMH2-13	30 Summer	1	+40%			
2.003	Dummy-L2-PRMH2-14	30 Summer	1	+40%	100/15 Summer	100/15 Summer	
2.004	Dummy-L2-PRMH2-15	30 Summer	1	+40%	30/15 Summer	30/15 Summer	
2.005	Dummy-L2-PRMH2-16	30 Summer	1	+40%	30/15 Summer	30/15 Summer	
2.006	Dummy-L2-PRMH2-17	30 Summer	1	+40%	30/15 Summer	30/15 Summer	
2.007	Dummy-L2-PRMH2-18	30 Summer	1	+40%	30/15 Summer	30/15 Summer	
1.001	L2-PRMH2-19	30 Summer	1	+40%	5/15 Summer	30/30 Summer	
3.000	Dummy-L2-PRMH2-20	15 Summer	1	+40%	100/15 Summer	100/15 Summer	
3.001	Dummy-L2-PRMH2-21	15 Summer	1	+40%	30/15 Summer	30/15 Summer	
3.002	Dummy-L2-PRMH2-22	30 Summer	1	+40%	30/15 Summer	30/15 Summer	
3.003	Dummy-L2-PRMH2-23	30 Summer	1	+40%			

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	Dummy-L2-PRMH2-10		26.431	-0.079	0.000	0.27		18.2	OK
2.000	Dummy-L2-PRMH2-11		32.578	-0.052	0.000	0.28		12.6	OK
2.001	Dummy-L2-PRMH2-12		31.346	-0.034	0.000	0.46		18.8	OK
2.002	Dummy-L2-PRMH2-13		30.324	-0.076	0.000	0.27		24.4	OK
2.003	Dummy-L2-PRMH2-14		29.334	-0.066	0.000	0.33		29.3	OK
2.004	Dummy-L2-PRMH2-15		28.379	-0.051	0.000	0.44		36.8	OK
2.005	Dummy-L2-PRMH2-16		27.531	-0.049	0.000	0.49		47.2	OK
2.006	Dummy-L2-PRMH2-17		26.821	-0.049	0.000	0.52		55.6	OK
2.007	Dummy-L2-PRMH2-18		26.444	-0.056	0.000	0.50		63.8	OK
1.001	L2-PRMH2-19		25.639	-0.021	0.000	1.01		70.7	OK
3.000	Dummy-L2-PRMH2-20		32.565	-0.045	0.000	0.33		14.3	OK
3.001	Dummy-L2-PRMH2-21		31.416	-0.034	0.000	0.45		18.5	OK
3.002	Dummy-L2-PRMH2-22		30.442	-0.028	0.000	0.54		22.4	OK
3.003	Dummy-L2-PRMH2-23		29.419	-0.071	0.000	0.30		25.7	OK

PN	US/MH Name	Level Exceeded
1.000	Dummy-L2-PRMH2-10	
2.000	Dummy-L2-PRMH2-11	1
2.001	Dummy-L2-PRMH2-12	10
2.002	Dummy-L2-PRMH2-13	
2.003	Dummy-L2-PRMH2-14	3
2.004	Dummy-L2-PRMH2-15	12
2.005	Dummy-L2-PRMH2-16	13
2.006	Dummy-L2-PRMH2-17	16
2.007	Dummy-L2-PRMH2-18	12
1.001	L2-PRMH2-19	10
3.000	Dummy-L2-PRMH2-20	3
3.001	Dummy-L2-PRMH2-21	9
3.002	Dummy-L2-PRMH2-22	12
3.003	Dummy-L2-PRMH2-23	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood
3.004	Dummy-L2-PRMH2-24	30 Summer	1	+40%	100/15 Summer	100/15 Summer
3.005	Dummy-L2-PRMH2-26	30 Summer	1	+40%	100/30 Summer	100/30 Summer
3.006	Dummy-L2-PRMH2-28	30 Summer	1	+40%		
3.007	Dummy-L2-PRMH2-29	30 Summer	1	+40%		
4.000	Dummy-L2-PRMH2-30	15 Summer	1	+40%		
1.002	L2-PRMH2-31	60 Summer	1	+40%	5/15 Summer	
5.000	L2-PRMH2-32	15 Summer	1	+40%	5/15 Summer	30/15 Summer
5.001	L2-PRMH2-33	15 Summer	1	+40%	30/15 Summer	100/15 Summer
5.002	L2-PRMH2-34	15 Summer	1	+40%	5/15 Summer	100/15 Summer
5.003	L2-PRMH2-35	30 Summer	1	+40%	30/15 Summer	
5.004	L2-PRMH2-36	30 Summer	1	+40%	5/15 Summer	100/15 Summer
5.005	L2-PRMH2-37	30 Summer	1	+40%	5/15 Summer	100/15 Summer
5.006	L2-PRMH2-38	30 Summer	1	+40%	5/15 Summer	
5.007	L2-PRMH2-39	30 Summer	1	+40%	30/15 Summer	
6.000	L2-PRMH2-40	15 Summer	1	+40%	5/15 Summer	
1.003	L2-PRMH2-41	30 Summer	1	+40%	5/15 Summer	
1.004	L2-PR-Pond_Inlet	4320 Summer	1	+40%	30/720 Summer	
1.005	Dummy-L2-PR_Pond_Outlet	4320 Summer	1	+40%		
1.006	L2-PRMH2-44	4320 Summer	1	+40%		
1.007	L2-PRMH2-45	4320 Summer	1	+40%		

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
3.004	Dummy-L2-PRMH2-24			28.514	-0.056	0.000	0.40	
3.005	Dummy-L2-PRMH2-26			27.985	-0.055	0.000	0.41	
3.006	Dummy-L2-PRMH2-28			27.478	-0.072	0.000	0.31	
3.007	Dummy-L2-PRMH2-29			26.948	-0.082	0.000	0.26	
4.000	Dummy-L2-PRMH2-30			26.459	-0.071	0.000	0.32	
1.002	L2-PRMH2-31			25.504	-0.027	0.000	0.84	
5.000	L2-PRMH2-32			31.057	-0.046	0.000	0.77	
5.001	L2-PRMH2-33			29.801	-0.102	0.000	0.54	
5.002	L2-PRMH2-34			28.991	-0.087	0.000	0.65	
5.003	L2-PRMH2-35			27.835	-0.143	0.000	0.52	
5.004	L2-PRMH2-36			27.275	-0.103	0.000	0.73	
5.005	L2-PRMH2-37			26.860	-0.102	0.000	0.74	
5.006	L2-PRMH2-38			26.359	-0.101	0.000	0.76	
5.007	L2-PRMH2-39			25.934	-0.126	0.000	0.63	
6.000	L2-PRMH2-40			25.706	-0.059	0.000	0.66	
1.003	L2-PRMH2-41			25.482	-0.088	0.000	0.93	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.004	L2-PR-Pond_Inlet			25.397	-0.203	0.000	0.03	
1.005	Dummy-L2-PR_Pond_Outlet			25.111	-0.217	0.000	0.08	
1.006	L2-PRMH2-44			25.104	-0.208	0.000	0.12	
1.007	L2-PRMH2-45			25.095	-0.988	0.000	0.00	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
3.004	Dummy-L2-PRMH2-24	26.4	OK	5
3.005	Dummy-L2-PRMH2-26	25.3	OK	3
3.006	Dummy-L2-PRMH2-28	24.9	OK	
3.007	Dummy-L2-PRMH2-29	24.9	OK	
4.000	Dummy-L2-PRMH2-30	16.4	OK	
1.002	L2-PRMH2-31	90.2	OK	
5.000	L2-PRMH2-32	13.3	OK	10
5.001	L2-PRMH2-33	23.1	OK	5
5.002	L2-PRMH2-34	32.2	OK	5
5.003	L2-PRMH2-35	40.4	OK	
5.004	L2-PRMH2-36	47.2	OK	7
5.005	L2-PRMH2-37	52.7	OK	7
5.006	L2-PRMH2-38	56.4	OK	
5.007	L2-PRMH2-39	58.7	OK	
6.000	L2-PRMH2-40	9.0	OK	
1.003	L2-PRMH2-41	152.2	OK	
1.004	L2-PR-Pond_Inlet	4.2	OK	
1.005	Dummy-L2-PR_Pond_Outlet	4.2	OK*	
1.006	L2-PRMH2-44	4.2	OK	
1.007	L2-PRMH2-45	4.2	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	40, 40, 40, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	Dummy-L2-PRMH2-10	15 Summer	5	+40%			
2.000	Dummy-L2-PRMH2-11	15 Summer	5	+40%	100/15 Summer	100/15 Summer	
2.001	Dummy-L2-PRMH2-12	15 Summer	5	+40%	30/15 Summer	30/15 Summer	
2.002	Dummy-L2-PRMH2-13	30 Summer	5	+40%			
2.003	Dummy-L2-PRMH2-14	30 Summer	5	+40%	100/15 Summer	100/15 Summer	
2.004	Dummy-L2-PRMH2-15	30 Summer	5	+40%	30/15 Summer	30/15 Summer	
2.005	Dummy-L2-PRMH2-16	30 Summer	5	+40%	30/15 Summer	30/15 Summer	
2.006	Dummy-L2-PRMH2-17	30 Summer	5	+40%	30/15 Summer	30/15 Summer	
2.007	Dummy-L2-PRMH2-18	30 Summer	5	+40%	30/15 Summer	30/15 Summer	
1.001	L2-PRMH2-19	30 Summer	5	+40%	5/15 Summer	30/30 Summer	
3.000	Dummy-L2-PRMH2-20	15 Summer	5	+40%	100/15 Summer	100/15 Summer	
3.001	Dummy-L2-PRMH2-21	15 Summer	5	+40%	30/15 Summer	30/15 Summer	
3.002	Dummy-L2-PRMH2-22	15 Summer	5	+40%	30/15 Summer	30/15 Summer	
3.003	Dummy-L2-PRMH2-23	30 Summer	5	+40%			

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	Dummy-L2-PRMH2-10		26.458	-0.052	0.000	0.45		30.5	OK
2.000	Dummy-L2-PRMH2-11		32.599	-0.031	0.000	0.47		21.1	OK
2.001	Dummy-L2-PRMH2-12		31.372	-0.008	0.000	0.76		31.5	OK
2.002	Dummy-L2-PRMH2-13		30.351	-0.049	0.000	0.45		40.4	OK
2.003	Dummy-L2-PRMH2-14		29.362	-0.038	0.000	0.55		48.4	OK
2.004	Dummy-L2-PRMH2-15		28.412	-0.018	0.000	0.74		61.3	OK
2.005	Dummy-L2-PRMH2-16		27.568	-0.012	0.000	0.82		78.8	OK
2.006	Dummy-L2-PRMH2-17		26.861	-0.009	0.000	0.88		93.0	OK
2.007	Dummy-L2-PRMH2-18		26.485	-0.015	0.000	0.85		107.4	OK
1.001	L2-PRMH2-19		26.064	0.404	0.000	1.70		119.2	SURCHARGED
3.000	Dummy-L2-PRMH2-20		32.587	-0.023	0.000	0.55		23.9	OK
3.001	Dummy-L2-PRMH2-21		31.442	-0.008	0.000	0.75		31.0	OK
3.002	Dummy-L2-PRMH2-22		30.469	-0.001	0.000	0.90		37.2	OK
3.003	Dummy-L2-PRMH2-23		29.446	-0.044	0.000	0.50		42.6	OK

PN	US/MH Name	Level Exceeded
1.000	Dummy-L2-PRMH2-10	
2.000	Dummy-L2-PRMH2-11	1
2.001	Dummy-L2-PRMH2-12	10
2.002	Dummy-L2-PRMH2-13	
2.003	Dummy-L2-PRMH2-14	3
2.004	Dummy-L2-PRMH2-15	12
2.005	Dummy-L2-PRMH2-16	13
2.006	Dummy-L2-PRMH2-17	16
2.007	Dummy-L2-PRMH2-18	12
1.001	L2-PRMH2-19	10
3.000	Dummy-L2-PRMH2-20	3
3.001	Dummy-L2-PRMH2-21	9
3.002	Dummy-L2-PRMH2-22	12
3.003	Dummy-L2-PRMH2-23	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood
3.004	Dummy-L2-PRMH2-24	30 Summer	5	+40%	100/15 Summer	100/15 Summer
3.005	Dummy-L2-PRMH2-26	30 Summer	5	+40%	100/30 Summer	100/30 Summer
3.006	Dummy-L2-PRMH2-28	30 Summer	5	+40%		
3.007	Dummy-L2-PRMH2-29	30 Summer	5	+40%		
4.000	Dummy-L2-PRMH2-30	15 Summer	5	+40%		
1.002	L2-PRMH2-31	30 Summer	5	+40%	5/15 Summer	
5.000	L2-PRMH2-32	15 Summer	5	+40%	5/15 Summer	30/15 Summer
5.001	L2-PRMH2-33	15 Summer	5	+40%	30/15 Summer	100/15 Summer
5.002	L2-PRMH2-34	15 Summer	5	+40%	5/15 Summer	100/15 Summer
5.003	L2-PRMH2-35	30 Summer	5	+40%	30/15 Summer	
5.004	L2-PRMH2-36	15 Summer	5	+40%	5/15 Summer	100/15 Summer
5.005	L2-PRMH2-37	30 Summer	5	+40%	5/15 Summer	100/15 Summer
5.006	L2-PRMH2-38	30 Summer	5	+40%	5/15 Summer	
5.007	L2-PRMH2-39	30 Summer	5	+40%	30/15 Summer	
6.000	L2-PRMH2-40	15 Summer	5	+40%	5/15 Summer	
1.003	L2-PRMH2-41	30 Summer	5	+40%	5/15 Summer	
1.004	L2-PR-Pond_Inlet	4320 Summer	5	+40%	30/720 Summer	
1.005	Dummy-L2-PR_Pond_Outlet	4320 Summer	5	+40%		
1.006	L2-PRMH2-44	4320 Summer	5	+40%		
1.007	L2-PRMH2-45	4320 Summer	5	+40%		

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
3.004	Dummy-L2-PRMH2-24			28.544	-0.026	0.000	0.67	
3.005	Dummy-L2-PRMH2-26			28.016	-0.024	0.000	0.68	
3.006	Dummy-L2-PRMH2-28			27.506	-0.044	0.000	0.52	
3.007	Dummy-L2-PRMH2-29			26.975	-0.055	0.000	0.43	
4.000	Dummy-L2-PRMH2-30			26.486	-0.044	0.000	0.53	
1.002	L2-PRMH2-31			25.693	0.162	0.000	1.40	
5.000	L2-PRMH2-32			31.790	0.687	0.000	1.19	
5.001	L2-PRMH2-33			29.845	-0.058	0.000	0.84	
5.002	L2-PRMH2-34			29.130	0.052	0.000	1.02	
5.003	L2-PRMH2-35			27.891	-0.087	0.000	0.82	
5.004	L2-PRMH2-36			27.497	0.119	0.000	1.08	
5.005	L2-PRMH2-37			27.045	0.083	0.000	1.04	
5.006	L2-PRMH2-38			26.494	0.034	0.000	1.06	
5.007	L2-PRMH2-39			25.985	-0.075	0.000	0.87	
6.000	L2-PRMH2-40			25.933	0.168	0.000	1.03	
1.003	L2-PRMH2-41			25.601	0.031	0.000	1.47	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.004	L2-PR-Pond_Inlet			25.504	-0.096	0.000	0.04	
1.005	Dummy-L2-PR_Pond_Outlet			25.115	-0.213	0.000	0.10	
1.006	L2-PRMH2-44			25.108	-0.204	0.000	0.14	
1.007	L2-PRMH2-45			25.097	-0.986	0.000	0.00	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
3.004	Dummy-L2-PRMH2-24	43.7	OK	5
3.005	Dummy-L2-PRMH2-26	41.9	OK	3
3.006	Dummy-L2-PRMH2-28	41.4	OK	
3.007	Dummy-L2-PRMH2-29	41.4	OK	
4.000	Dummy-L2-PRMH2-30	27.4	OK	
1.002	L2-PRMH2-31	150.3	SURCHARGED	
5.000	L2-PRMH2-32	20.5	SURCHARGED	10
5.001	L2-PRMH2-33	36.1	OK	5
5.002	L2-PRMH2-34	50.3	SURCHARGED	5
5.003	L2-PRMH2-35	63.7	OK	
5.004	L2-PRMH2-36	70.1	SURCHARGED	7
5.005	L2-PRMH2-37	74.4	SURCHARGED	7
5.006	L2-PRMH2-38	78.0	SURCHARGED	
5.007	L2-PRMH2-39	81.2	OK	
6.000	L2-PRMH2-40	14.1	SURCHARGED	
1.003	L2-PRMH2-41	241.2	SURCHARGED	
1.004	L2-PR-Pond_Inlet	4.9	OK	
1.005	Dummy-L2-PR_Pond_Outlet	4.9	OK*	
1.006	L2-PRMH2-44	4.9	OK	
1.007	L2-PRMH2-45	4.9	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 40, 40, 40, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	Dummy-L2-PRMH2-10	15 Summer	30	+40%			
2.000	Dummy-L2-PRMH2-11	15 Summer	30	+40%	100/15 Summer	100/15 Summer	
2.001	Dummy-L2-PRMH2-12	30 Summer	30	+40%	30/15 Summer	30/15 Summer	
2.002	Dummy-L2-PRMH2-13	30 Summer	30	+40%			
2.003	Dummy-L2-PRMH2-14	30 Summer	30	+40%	100/15 Summer	100/15 Summer	
2.004	Dummy-L2-PRMH2-15	30 Summer	30	+40%	30/15 Summer	30/15 Summer	
2.005	Dummy-L2-PRMH2-16	30 Summer	30	+40%	30/15 Summer	30/15 Summer	
2.006	Dummy-L2-PRMH2-17	30 Summer	30	+40%	30/15 Summer	30/15 Summer	
2.007	Dummy-L2-PRMH2-18	30 Summer	30	+40%	30/15 Summer	30/15 Summer	
1.001	L2-PRMH2-19	15 Summer	30	+40%	5/15 Summer	30/30 Summer	
3.000	Dummy-L2-PRMH2-20	15 Summer	30	+40%	100/15 Summer	100/15 Summer	
3.001	Dummy-L2-PRMH2-21	30 Summer	30	+40%	30/15 Summer	30/15 Summer	
3.002	Dummy-L2-PRMH2-22	30 Summer	30	+40%	30/15 Summer	30/15 Summer	
3.003	Dummy-L2-PRMH2-23	30 Summer	30	+40%			

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	Dummy-L2-PRMH2-10		26.481	-0.029	0.000	0.65		43.8	OK
2.000	Dummy-L2-PRMH2-11		32.619	-0.011	0.000	0.69		30.9	OK
2.001	Dummy-L2-PRMH2-12		31.382	0.002	2.160	1.00		41.0	FLOOD
2.002	Dummy-L2-PRMH2-13		30.376	-0.024	0.000	0.63		56.5	OK
2.003	Dummy-L2-PRMH2-14		29.392	-0.008	0.000	0.79		70.1	OK
2.004	Dummy-L2-PRMH2-15		28.434	0.004	3.983	1.00		82.6	FLOOD
2.005	Dummy-L2-PRMH2-16		27.587	0.007	7.337	1.00		96.6	FLOOD
2.006	Dummy-L2-PRMH2-17		26.876	0.006	5.985	1.01		107.6	FLOOD
2.007	Dummy-L2-PRMH2-18		26.502	0.002	2.177	1.02		128.9	FLOOD
1.001	L2-PRMH2-19		26.257	0.597	0.000	1.97		138.2	SURCHARGED
3.000	Dummy-L2-PRMH2-20		32.607	-0.003	0.000	0.81		35.0	OK
3.001	Dummy-L2-PRMH2-21		31.452	0.002	1.807	0.99		40.7	FLOOD
3.002	Dummy-L2-PRMH2-22		30.475	0.005	4.507	1.00		41.4	FLOOD
3.003	Dummy-L2-PRMH2-23		29.462	-0.028	0.000	0.61		52.1	OK

PN	US/MH Name	Level Exceeded
1.000	Dummy-L2-PRMH2-10	
2.000	Dummy-L2-PRMH2-11	1
2.001	Dummy-L2-PRMH2-12	10
2.002	Dummy-L2-PRMH2-13	
2.003	Dummy-L2-PRMH2-14	3
2.004	Dummy-L2-PRMH2-15	12
2.005	Dummy-L2-PRMH2-16	13
2.006	Dummy-L2-PRMH2-17	16
2.007	Dummy-L2-PRMH2-18	12
1.001	L2-PRMH2-19	10
3.000	Dummy-L2-PRMH2-20	3
3.001	Dummy-L2-PRMH2-21	9
3.002	Dummy-L2-PRMH2-22	12
3.003	Dummy-L2-PRMH2-23	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood
3.004	Dummy-L2-PRMH2-24	30 Summer	30	+40%	100/15 Summer	100/15 Summer
3.005	Dummy-L2-PRMH2-26	60 Summer	30	+40%	100/30 Summer	100/30 Summer
3.006	Dummy-L2-PRMH2-28	60 Summer	30	+40%		
3.007	Dummy-L2-PRMH2-29	60 Summer	30	+40%		
4.000	Dummy-L2-PRMH2-30	15 Summer	30	+40%		
1.002	L2-PRMH2-31	60 Summer	30	+40%	5/15 Summer	
5.000	L2-PRMH2-32	15 Summer	30	+40%	5/15 Summer	30/15 Summer
5.001	L2-PRMH2-33	15 Summer	30	+40%	30/15 Summer	100/15 Summer
5.002	L2-PRMH2-34	15 Summer	30	+40%	5/15 Summer	100/15 Summer
5.003	L2-PRMH2-35	15 Summer	30	+40%	30/15 Summer	
5.004	L2-PRMH2-36	30 Summer	30	+40%	5/15 Summer	100/15 Summer
5.005	L2-PRMH2-37	30 Summer	30	+40%	5/15 Summer	100/15 Summer
5.006	L2-PRMH2-38	30 Summer	30	+40%	5/15 Summer	
5.007	L2-PRMH2-39	30 Summer	30	+40%	30/15 Summer	
6.000	L2-PRMH2-40	15 Summer	30	+40%	5/15 Summer	
1.003	L2-PRMH2-41	30 Summer	30	+40%	5/15 Summer	
1.004	L2-PR-Pond_Inlet	2160 Winter	30	+40%	30/720 Summer	
1.005	Dummy-L2-PR_Pond_Outlet	2160 Winter	30	+40%		
1.006	L2-PRMH2-44	2160 Winter	30	+40%		
1.007	L2-PRMH2-45	2160 Winter	30	+40%		

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
3.004	Dummy-L2-PRMH2-24			28.563	-0.007	0.000	0.84	
3.005	Dummy-L2-PRMH2-26			28.032	-0.008	0.000	0.87	
3.006	Dummy-L2-PRMH2-28			27.522	-0.028	0.000	0.67	
3.007	Dummy-L2-PRMH2-29			26.989	-0.041	0.000	0.56	
4.000	Dummy-L2-PRMH2-30			26.512	-0.018	0.000	0.78	
1.002	L2-PRMH2-31			25.799	0.268	0.000	1.82	
5.000	L2-PRMH2-32			32.612	1.509	2.203	1.37	
5.001	L2-PRMH2-33			30.933	1.030	0.000	1.00	
5.002	L2-PRMH2-34			30.226	1.148	0.000	1.21	
5.003	L2-PRMH2-35			28.503	0.525	0.000	0.95	
5.004	L2-PRMH2-36			28.265	0.887	0.000	1.25	
5.005	L2-PRMH2-37			27.594	0.632	0.000	1.26	
5.006	L2-PRMH2-38			26.798	0.338	0.000	1.25	
5.007	L2-PRMH2-39			26.174	0.114	0.000	1.02	
6.000	L2-PRMH2-40			26.435	0.670	0.000	1.49	
1.003	L2-PRMH2-41			25.650	0.080	0.000	1.81	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.004	L2-PR-Pond_Inlet			25.657	0.057	0.000	0.04	
1.005	Dummy-L2-PR_Pond_Outlet			25.121	-0.207	0.000	0.12	
1.006	L2-PRMH2-44			25.113	-0.199	0.000	0.17	
1.007	L2-PRMH2-45			25.101	-0.982	0.000	0.00	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
3.004	Dummy-L2-PRMH2-24	55.1	OK	5
3.005	Dummy-L2-PRMH2-26	53.7	OK	3
3.006	Dummy-L2-PRMH2-28	53.6	OK	
3.007	Dummy-L2-PRMH2-29	53.9	OK	
4.000	Dummy-L2-PRMH2-30	40.1	OK	
1.002	L2-PRMH2-31	194.9	SURCHARGED	
5.000	L2-PRMH2-32	23.6	FLOOD	10
5.001	L2-PRMH2-33	43.0	SURCHARGED	5
5.002	L2-PRMH2-34	59.9	SURCHARGED	5
5.003	L2-PRMH2-35	73.8	SURCHARGED	
5.004	L2-PRMH2-36	80.9	SURCHARGED	7
5.005	L2-PRMH2-37	90.2	SURCHARGED	7
5.006	L2-PRMH2-38	92.2	SURCHARGED	
5.007	L2-PRMH2-39	94.7	SURCHARGED	
6.000	L2-PRMH2-40	20.4	SURCHARGED	
1.003	L2-PRMH2-41	296.1	SURCHARGED	
1.004	L2-PR-Pond_Inlet	5.8	SURCHARGED	
1.005	Dummy-L2-PR_Pond_Outlet	5.8	OK*	
1.006	L2-PRMH2-44	5.8	OK	
1.007	L2-PRMH2-45	5.8	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

Simulation Criteria

Areal Reduction Factor 1.000   Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0   MADD Factor * 10m³/ha Storage 0.000
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 1   Number of Storage Structures 1   Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR   Ratio R 0.370
Region England and Wales   Cv (Summer) 1.000
M5-60 (mm) 18.200   Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0   DVD Status OFF
Analysis Timestep Fine   Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 40, 40, 40, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	Dummy-L2-PRMH2-10	15 Summer	100	+40%			
2.000	Dummy-L2-PRMH2-11	15 Summer	100	+40%	100/15 Summer	100/15 Summer	
2.001	Dummy-L2-PRMH2-12	30 Summer	100	+40%	30/15 Summer	30/15 Summer	
2.002	Dummy-L2-PRMH2-13	30 Summer	100	+40%			
2.003	Dummy-L2-PRMH2-14	30 Summer	100	+40%	100/15 Summer	100/15 Summer	
2.004	Dummy-L2-PRMH2-15	30 Summer	100	+40%	30/15 Summer	30/15 Summer	
2.005	Dummy-L2-PRMH2-16	30 Summer	100	+40%	30/15 Summer	30/15 Summer	
2.006	Dummy-L2-PRMH2-17	30 Winter	100	+40%	30/15 Summer	30/15 Summer	
2.007	Dummy-L2-PRMH2-18	15 Summer	100	+40%	30/15 Summer	30/15 Summer	
1.001	L2-PRMH2-19	60 Winter	100	+40%	5/15 Summer	30/30 Summer	
3.000	Dummy-L2-PRMH2-20	15 Summer	100	+40%	100/15 Summer	100/15 Summer	
3.001	Dummy-L2-PRMH2-21	30 Summer	100	+40%	30/15 Summer	30/15 Summer	
3.002	Dummy-L2-PRMH2-22	30 Summer	100	+40%	30/15 Summer	30/15 Summer	
3.003	Dummy-L2-PRMH2-23	30 Summer	100	+40%			

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	Dummy-L2-PRMH2-10		26.499	-0.011	0.000	0.84		56.3	OK
2.000	Dummy-L2-PRMH2-11		32.630	0.000	0.168	0.89		40.2	FLOOD
2.001	Dummy-L2-PRMH2-12		31.387	0.007	7.292	1.01		41.4	FLOOD
2.002	Dummy-L2-PRMH2-13		30.386	-0.014	0.000	0.73		65.6	OK
2.003	Dummy-L2-PRMH2-14		29.401	0.001	1.039	0.96		85.1	FLOOD
2.004	Dummy-L2-PRMH2-15		28.445	0.015	14.709	1.00		82.9	FLOOD
2.005	Dummy-L2-PRMH2-16		27.596	0.016	15.943	1.00		96.7	FLOOD
2.006	Dummy-L2-PRMH2-17		26.883	0.013	12.817	1.02		108.3	FLOOD
2.007	Dummy-L2-PRMH2-18		26.505	0.005	5.448	1.02		128.9	FLOOD
1.001	L2-PRMH2-19		26.272	0.612	12.356	1.98		139.5	FLOOD
3.000	Dummy-L2-PRMH2-20		32.612	0.002	1.524	0.95		41.3	FLOOD
3.001	Dummy-L2-PRMH2-21		31.456	0.006	6.506	1.00		41.1	FLOOD
3.002	Dummy-L2-PRMH2-22		30.479	0.009	8.971	1.01		41.5	FLOOD
3.003	Dummy-L2-PRMH2-23		29.471	-0.019	0.000	0.69		59.7	OK

PN	US/MH Name	Level Exceeded
1.000	Dummy-L2-PRMH2-10	
2.000	Dummy-L2-PRMH2-11	1
2.001	Dummy-L2-PRMH2-12	10
2.002	Dummy-L2-PRMH2-13	
2.003	Dummy-L2-PRMH2-14	3
2.004	Dummy-L2-PRMH2-15	12
2.005	Dummy-L2-PRMH2-16	13
2.006	Dummy-L2-PRMH2-17	16
2.007	Dummy-L2-PRMH2-18	12
1.001	L2-PRMH2-19	10
3.000	Dummy-L2-PRMH2-20	3
3.001	Dummy-L2-PRMH2-21	9
3.002	Dummy-L2-PRMH2-22	12
3.003	Dummy-L2-PRMH2-23	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood
3.004	Dummy-L2-PRMH2-24	30 Summer	100	+40%	100/15 Summer	100/15 Summer
3.005	Dummy-L2-PRMH2-26	30 Winter	100	+40%	100/30 Summer	100/30 Summer
3.006	Dummy-L2-PRMH2-28	60 Summer	100	+40%		
3.007	Dummy-L2-PRMH2-29	60 Summer	100	+40%		
4.000	Dummy-L2-PRMH2-30	15 Summer	100	+40%		
1.002	L2-PRMH2-31	60 Winter	100	+40%	5/15 Summer	
5.000	L2-PRMH2-32	15 Winter	100	+40%	5/15 Summer	30/15 Summer
5.001	L2-PRMH2-33	30 Summer	100	+40%	30/15 Summer	100/15 Summer
5.002	L2-PRMH2-34	15 Summer	100	+40%	5/15 Summer	100/15 Summer
5.003	L2-PRMH2-35	30 Summer	100	+40%	30/15 Summer	
5.004	L2-PRMH2-36	30 Summer	100	+40%	5/15 Summer	100/15 Summer
5.005	L2-PRMH2-37	15 Winter	100	+40%	5/15 Summer	100/15 Summer
5.006	L2-PRMH2-38	30 Winter	100	+40%	5/15 Summer	
5.007	L2-PRMH2-39	30 Winter	100	+40%	30/15 Summer	
6.000	L2-PRMH2-40	15 Summer	100	+40%	5/15 Summer	
1.003	L2-PRMH2-41	60 Summer	100	+40%	5/15 Summer	
1.004	L2-PR-Pond_Inlet	2160 Winter	100	+40%	30/720 Summer	
1.005	Dummy-L2-PR_Pond_Outlet	2160 Winter	100	+40%		
1.006	L2-PRMH2-44	2160 Winter	100	+40%		
1.007	L2-PRMH2-45	2160 Winter	100	+40%		

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
3.004	Dummy-L2-PRMH2-24			28.571	0.001	0.784	0.98	
3.005	Dummy-L2-PRMH2-26			28.040	0.000	0.453	1.00	
3.006	Dummy-L2-PRMH2-28			27.532	-0.018	0.000	0.78	
3.007	Dummy-L2-PRMH2-29			26.998	-0.032	0.000	0.64	
4.000	Dummy-L2-PRMH2-30			26.530	0.000	0.000	1.01	
1.002	L2-PRMH2-31			25.842	0.311	0.000	1.91	
5.000	L2-PRMH2-32			32.616	1.513	5.857	1.37	
5.001	L2-PRMH2-33			31.231	1.328	1.480	1.09	
5.002	L2-PRMH2-34			30.245	1.167	5.053	1.18	
5.003	L2-PRMH2-35			29.092	1.114	0.000	1.06	
5.004	L2-PRMH2-36			28.320	0.942	10.205	1.35	
5.005	L2-PRMH2-37			27.780	0.818	0.402	1.32	
5.006	L2-PRMH2-38			27.137	0.677	0.000	1.38	
5.007	L2-PRMH2-39			26.401	0.341	0.000	1.17	
6.000	L2-PRMH2-40			26.438	0.673	0.000	1.50	
1.003	L2-PRMH2-41			25.680	0.110	0.000	2.01	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Outfall-2

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
1.004	L2-PR-Pond_Inlet			25.797	0.197	0.000	0.05	
1.005	Dummy-L2-PR_Pond_Outlet			25.125	-0.203	0.000	0.13	
1.006	L2-PRMH2-44			25.117	-0.195	0.000	0.19	
1.007	L2-PRMH2-45			25.103	-0.980	0.000	0.01	

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
3.004	Dummy-L2-PRMH2-24	64.4	FLOOD	5
3.005	Dummy-L2-PRMH2-26	61.6	FLOOD	3
3.006	Dummy-L2-PRMH2-28	61.8	OK	
3.007	Dummy-L2-PRMH2-29	62.1	OK	
4.000	Dummy-L2-PRMH2-30	51.9	OK	
1.002	L2-PRMH2-31	204.1	SURCHARGED	
5.000	L2-PRMH2-32	23.6	FLOOD	10
5.001	L2-PRMH2-33	46.7	FLOOD	5
5.002	L2-PRMH2-34	58.6	FLOOD	5
5.003	L2-PRMH2-35	82.2	SURCHARGED	
5.004	L2-PRMH2-36	87.4	FLOOD	7
5.005	L2-PRMH2-37	93.8	FLOOD	7
5.006	L2-PRMH2-38	101.6	SURCHARGED	
5.007	L2-PRMH2-39	109.0	SURCHARGED	
6.000	L2-PRMH2-40	20.5	SURCHARGED	
1.003	L2-PRMH2-41	329.9	SURCHARGED	
1.004	L2-PR-Pond_Inlet	6.5	SURCHARGED	
1.005	Dummy-L2-PR_Pond_Outlet	6.5	OK*	
1.006	L2-PRMH2-44	6.5	OK	
1.007	L2-PRMH2-45	6.5	OK	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Proposed Network A40 Main-Line and Link Road

Pipe Sizes M5 J10 Manhole Sizes M5 J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.200	Add Flow / Climate Change (%)	0
Ratio R	0.370	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Proposed Network A40 Main-Line and Link Road

« - 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	51.181	0.200	255.9	0.073	5.00	0.0	0.600		o	225	Pipe/Conduit	
1.001	87.619	0.625	140.2	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.002	88.683	1.195	74.2	0.139	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.003	78.645	1.000	78.6	0.142	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.004	89.041	0.260	342.5	0.312	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.005	64.562	0.480	134.5	0.133	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.006	85.359	0.330	258.7	0.146	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.007	57.970	0.350	165.6	0.099	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)
1.000	44.10	6.05	33.100	0.073	0.0	0.0	0.0	0.81	32.3	11.6
1.001	40.13	7.37	32.900	0.073	0.0	0.0	0.0	1.10	43.8	11.6
1.002	37.71	8.35	32.275	0.212	0.0	0.0	0.0	1.52	60.4	28.9
1.003	36.08	9.09	31.005	0.354	0.0	0.0	0.0	1.77	125.4	46.2
1.004	33.18	10.61	29.930	0.667	0.0	0.0	0.0	0.97	107.5	79.9
1.005	32.03	11.30	29.670	0.799	0.0	0.0	0.0	1.56	172.4	92.5
1.006	30.22	12.57	29.190	0.946	0.0	0.0	0.0	1.12	123.9	103.2
1.007	29.35	13.26	28.860	1.044	0.0	0.0	0.0	1.41	155.2	110.7

Network Design Table for Proposed Network A40 Main-Line and Link Road

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
1.008	81.632	0.185	441.3	0.165	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.009	89.329	0.460	194.2	0.284	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.010	83.138	0.450	184.8	0.215	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.011	78.927	0.490	161.1	0.216	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.012	59.303	0.450	131.8	0.208	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.013	72.555	0.544	133.4	0.179	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.014	44.479	0.448	99.3	0.194	0.00	0.0	0.600		o	450	Pipe/Conduit	
2.000	69.392	0.980	70.8	0.047	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
2.001	36.836	0.270	136.4	0.019	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
2.002	88.690	0.680	130.4	0.040	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.003	89.619	0.690	129.9	0.050	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.004	89.491	0.713	125.5	0.047	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.005	86.889	0.687	126.5	0.094	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.006	89.504	1.143	78.3	0.098	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
2.007	69.261	0.727	95.3	0.035	0.00	0.0	0.600		\/	-2	Pipe/Conduit	
3.000	41.954	0.120	349.6	0.050	5.00	0.0		0.050	\/	-2	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)
1.008	27.73	14.67	28.435	1.209	0.0	0.0	0.0	0.96	152.9	121.0
1.009	26.68	15.69	28.250	1.493	0.0	0.0	0.0	1.46	231.5	143.9
1.010	25.81	16.62	27.790	1.708	0.0	0.0	0.0	1.49	237.4	159.2
1.011	25.09	17.44	27.340	1.925	0.0	0.0	0.0	1.60	254.4	174.4
1.012	24.63	18.00	26.850	2.133	0.0	0.0	0.0	1.77	281.4	189.7
1.013	24.09	18.69	26.400	2.312	0.0	0.0	0.0	1.76	279.7	201.1
1.014	23.82	19.05	25.856	2.505	0.0	0.0	0.0	2.04	324.5	215.5
2.000	39.10	7.77	32.610	0.047	0.0	0.0	0.0	0.42	46.9	6.6
2.001	34.62	9.82	31.630	0.066	0.0	0.0	0.0	0.30	33.8	8.3
2.002	28.72	13.79	31.310	0.106	0.0	0.0	0.0	0.37	74.5	11.0
2.003	24.81	17.79	30.630	0.156	0.0	0.0	0.0	0.37	74.6	13.9
2.004	22.01	21.72	29.940	0.203	0.0	0.0	0.0	0.38	75.9	16.1
2.005	19.91	25.55	29.227	0.297	0.0	0.0	0.0	0.38	75.6	21.3
2.006	18.53	28.65	28.540	0.394	0.0	0.0	0.0	0.48	96.1	26.4
2.007	18.28	29.26	27.397	0.429	0.0	0.0	0.0	1.91	382.0	28.3
3.000	38.35	8.07	26.790	0.050	0.0	0.0	0.0	0.23	45.5	6.9

Network Design Table for Proposed Network A40 Main-Line and Link Road

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
4.000	63.999	0.530	120.8	0.120	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
4.001	37.686	0.290	130.0	0.053	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.002	85.762	0.669	128.2	0.106	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.003	88.827	0.692	128.4	0.101	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.004	89.049	0.693	128.5	0.113	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.005	89.969	0.743	121.1	0.060	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.006	90.039	1.109	81.2	0.076	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.007	68.515	0.744	92.1	0.033	0.00	0.0	0.600		\/	-2	Pipe/Conduit	
5.000	31.489	0.070	449.8	0.038	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
5.001	31.183	0.050	623.7	0.037	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
5.002	25.865	0.082	315.4	0.033	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
5.003	17.801	0.052	342.3	0.041	0.00	0.0	0.600		\/	-1	Pipe/Conduit	
5.004	12.213	0.066	185.0	0.020	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
5.005	9.761	0.100	97.6	0.008	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
5.006	39.408	0.090	437.9	0.040	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.000	60.383	0.560	107.8	0.073	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
6.001	34.379	0.250	137.5	0.030	0.00	0.0		0.050	\/	-1	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)
4.000	37.72	8.34	32.410	0.120	0.0	0.0	0.0	0.32	35.9	16.3
4.001	34.23	10.02	31.830	0.173	0.0	0.0	0.0	0.37	74.6	21.4
4.002	28.67	13.83	31.540	0.279	0.0	0.0	0.0	0.38	75.1	28.9
4.003	24.82	17.77	30.871	0.380	0.0	0.0	0.0	0.38	75.1	34.1
4.004	22.00	21.73	30.179	0.494	0.0	0.0	0.0	0.38	75.0	39.2
4.005	19.88	25.61	29.486	0.553	0.0	0.0	0.0	0.39	77.3	39.7
4.006	18.47	28.79	28.743	0.629	0.0	0.0	0.0	0.47	94.4	42.0
4.007	18.24	29.38	27.634	0.662	0.0	0.0	0.0	1.94	388.6	43.6
5.000	38.12	8.17	27.370	0.038	0.0	0.0	0.0	0.17	18.6	5.3
5.001	31.18	11.87	27.300	0.076	0.0	0.0	0.0	0.14	15.8	8.5
5.002	28.41	14.05	27.250	0.109	0.0	0.0	0.0	0.20	22.2	11.1
5.003	28.02	14.41	27.168	0.150	0.0	0.0	0.0	0.83	93.8	15.1
5.004	27.32	15.06	27.066	0.169	0.0	0.0	0.0	0.31	62.5	16.7
5.005	26.94	15.43	27.000	0.178	0.0	0.0	0.0	0.43	86.1	17.3
5.006	24.11	18.67	26.900	0.218	0.0	0.0	0.0	0.20	40.6	18.9
6.000	38.59	7.98	32.380	0.073	0.0	0.0	0.0	0.34	38.0	10.2
6.001	34.47	9.89	31.820	0.103	0.0	0.0	0.0	0.30	33.7	12.8

Network Design Table for Proposed Network A40 Main-Line and Link Road

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
6.002	89.296	0.701	127.4	0.076	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
6.003	88.966	0.689	129.1	0.080	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.004	89.745	0.719	124.8	0.081	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.005	89.027	0.715	124.5	0.080	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.006	91.332	1.116	81.8	0.078	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
6.007	28.015	0.350	80.0	0.046	0.00	0.0	0.600		o	300	Pipe/Conduit	
6.008	38.920	0.527	73.9	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
7.000	16.264	0.290	56.1	0.006	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
7.001	43.365	0.180	240.9	0.162	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
5.007	17.519	0.050	348.7	0.010	0.00	0.0	0.600		oo	450	Double Pipe	
8.000	18.704	0.170	110.0	0.027	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
8.001	42.483	0.100	424.8	0.007	0.00	0.0		0.050	\/	-2	Pipe/Conduit	
4.008	9.194	0.150	61.3	0.042	0.00	0.0	0.600		oo	450	Double Pipe	
2.008	42.718	0.158	270.4	0.039	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)
6.002	27.72	14.68	31.570	0.180	0.0	0.0	0.0	0.31	35.0	18.0
6.003	24.13	18.64	30.819	0.259	0.0	0.0	0.0	0.37	74.8	22.6
6.004	21.50	22.57	30.130	0.341	0.0	0.0	0.0	0.38	76.1	26.4
6.005	19.48	26.46	29.411	0.420	0.0	0.0	0.0	0.38	76.2	29.6
6.006	18.11	29.70	28.696	0.498	0.0	0.0	0.0	0.47	94.0	32.6
6.007	18.01	29.97	26.837	0.544	0.0	0.0	0.0	1.76	124.3	35.4
6.008	17.99	30.00	26.487	0.544	0.0	0.0	0.0	1.83	129.5	35.4
7.000	45.75	5.58	27.330	0.006	0.0	0.0	0.0	0.47	52.7	1.0
7.001	38.01	8.22	26.990	0.168	0.0	0.0	0.0	0.27	54.8	23.1
5.007	17.99	30.00	25.810	0.940	0.0	0.0	0.0	1.08	344.5	61.1
8.000	44.50	5.93	27.160	0.027	0.0	0.0	0.0	0.33	37.6	4.4
8.001	35.50	9.36	26.940	0.034	0.0	0.0	0.0	0.21	41.3	4.4
4.008	17.99	30.00	25.760	1.679	0.0	0.0	0.0	2.60	827.2	109.1
2.008	17.99	30.00	25.460	2.197	0.0	0.0	0.0	1.48	417.4	142.8

Network Design Table for Proposed Network A40 Main-Line and Link Road

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
9.000	19.776	0.260	76.1	0.006	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
2.009	17.599	0.044	399.5	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.015	56.715	0.142	400.0	0.094	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.016	63.887	0.160	400.0	0.227	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.017	58.059	0.171	340.0	0.208	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.018	85.165	0.241	353.3	0.061	0.00	0.0	0.600		o	600	Pipe/Conduit	
10.000	38.452	0.200	192.3	0.129	5.00	0.0	0.600		o	225	Pipe/Conduit	
10.001	40.991	0.267	153.3	0.087	0.00	0.0	0.600		o	300	Pipe/Conduit	
10.002	23.199	0.167	138.9	0.065	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.000	38.441	0.172	223.5	0.128	5.00	0.0	0.600		o	225	Pipe/Conduit	
11.001	42.233	0.147	287.3	0.150	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.002	42.276	0.315	134.1	0.057	0.00	0.0	0.600		o	300	Pipe/Conduit	
10.003	21.814	0.129	169.7	0.000	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)
9.000	44.89	5.82	27.000	0.006	0.0	0.0	0.0	0.40	45.3	1.0
2.009	17.99	30.00	25.302	2.203	0.0	0.0	0.0	1.21	342.7	143.1
1.015	17.99	30.00	25.258	4.802	0.0	0.0	0.0	1.21	342.5	312.0
1.016	17.99	30.00	25.116	5.029	0.0	0.0	0.0	1.21	342.5	326.8
1.017	17.99	30.00	24.956	5.237	0.0	0.0	0.0	1.31	371.8	340.3
1.018	17.99	30.00	24.785	5.298	0.0	0.0	0.0	1.29	364.7	344.3
10.000	45.37	5.68	32.797	0.129	0.0	0.0	0.0	0.94	37.4	21.2
10.001	43.54	6.22	32.522	0.216	0.0	0.0	0.0	1.27	89.6	34.0
10.002	42.62	6.51	32.255	0.281	0.0	0.0	0.0	1.33	94.2	43.3
11.000	45.18	5.74	32.797	0.128	0.0	0.0	0.0	0.87	34.6	20.8
11.001	42.66	6.50	32.550	0.277	0.0	0.0	0.0	0.92	65.2	42.7
11.002	41.12	7.02	32.403	0.335	0.0	0.0	0.0	1.36	95.9	49.7
10.003	40.39	7.28	32.013	0.616	0.0	0.0	0.0	1.39	153.3	89.8

Network Design Table for Proposed Network A40 Main-Line and Link Road

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
10.004	23.126	0.385	60.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
10.005	75.638	1.801	42.0	0.163	0.00	0.0	0.600		o	375	Pipe/Conduit	
10.006	60.130	1.943	30.9	0.080	0.00	0.0	0.600		o	375	Pipe/Conduit	
10.007	41.957	1.360	30.9	0.057	0.00	0.0	0.600		o	375	Pipe/Conduit	
10.008	72.749	1.476	49.3	0.133	0.00	0.0	0.600		o	375	Pipe/Conduit	
12.000	48.835	0.287	170.2	0.099	5.00	0.0	0.600		o	225	Pipe/Conduit	
12.001	66.094	0.296	223.3	0.095	0.00	0.0	0.600		o	225	Pipe/Conduit	
13.000	50.311	0.366	137.5	0.010	6.00	0.0	1.500		o	225	Pipe/Conduit	
13.001	8.515	0.222	38.4	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
13.002	81.230	0.242	335.7	0.010	0.00	0.0	1.500		o	225	Pipe/Conduit	
13.003	14.192	0.067	211.8	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
12.002	41.726	0.470	88.8	0.119	0.00	0.0	0.600		o	300	Pipe/Conduit	
12.003	43.432	0.605	71.8	0.180	0.00	0.0	0.600		o	300	Pipe/Conduit	
12.004	43.647	0.605	72.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
12.005	87.959	0.790	111.3	0.183	0.00	0.0	0.600		o	300	Pipe/Conduit	
12.006	63.935	0.343	186.4	0.184	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)
10.004	39.95	7.45	31.884	0.616	0.0	0.0	0.0	2.34	258.8	89.8
10.005	38.79	7.89	31.499	0.779	0.0	0.0	0.0	2.80	309.6	109.1
10.006	38.05	8.20	29.698	0.858	0.0	0.0	0.0	3.27	360.9	117.9
10.007	37.55	8.42	27.755	0.916	0.0	0.0	0.0	3.27	361.4	124.1
10.008	36.50	8.88	26.395	1.048	0.0	0.0	0.0	2.59	285.7	138.2
12.000	44.91	5.81	33.312	0.099	0.0	0.0	0.0	1.00	39.7	16.1
12.001	40.95	7.08	33.025	0.194	0.0	0.0	0.0	0.87	34.6	28.8
13.000	41.58	6.86	33.575	0.010	0.0	0.0	0.0	0.98	38.9	1.5
13.001	41.39	6.92	33.209	0.010	0.0	0.0	0.0	2.12	84.2	1.5
13.002	36.06	9.09	32.987	0.020	0.0	0.0	0.0	0.62	24.8	2.6
13.003	35.52	9.36	32.745	0.020	0.0	0.0	0.0	0.89	35.6	2.6
12.002	34.70	9.77	32.603	0.334	0.0	0.0	0.0	1.67	118.0	41.8
12.003	33.97	10.16	32.133	0.514	0.0	0.0	0.0	1.86	131.3	63.0
12.004	33.27	10.56	31.528	0.514	0.0	0.0	0.0	1.85	131.0	63.0
12.005	31.65	11.54	30.923	0.697	0.0	0.0	0.0	1.49	105.3	79.7
12.006	30.52	12.35	30.058	0.882	0.0	0.0	0.0	1.32	146.2	97.2

Network Design Table for Proposed Network A40 Main-Line and Link Road

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
12.007	29.473	0.170	173.4	0.136	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.008	28.956	0.120	241.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.009	67.647	0.350	193.3	0.140	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.010	73.037	0.363	201.2	0.150	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.011	83.713	0.426	196.5	0.174	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.012	80.087	0.473	169.3	0.187	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.013	83.442	0.432	193.2	0.201	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.014	80.687	0.180	448.3	0.209	0.00	0.0	0.600		o	525	Pipe/Conduit	
12.015	58.131	0.290	200.5	0.159	0.00	0.0	0.600		o	525	Pipe/Conduit	
12.016	69.320	0.270	256.7	0.211	0.00	0.0	0.600		o	525	Pipe/Conduit	
12.017	86.364	0.746	115.8	0.465	0.00	0.0	0.600		o	525	Pipe/Conduit	
12.018	86.998	0.396	219.8	0.294	0.00	0.0	0.600		o	600	Pipe/Conduit	
12.019	75.235	0.250	300.9	0.239	0.00	0.0	0.600		o	600	Pipe/Conduit	
12.020	68.585	0.196	350.4	0.119	0.00	0.0	0.600		o	600	Pipe/Conduit	
14.000	52.756	0.524	100.7	0.070	5.00	0.0	0.600		o	225	Pipe/Conduit	
14.001	32.247	0.634	50.9	0.091	0.00	0.0	0.600		o	225	Pipe/Conduit	
14.002	56.768	1.620	35.0	0.129	0.00	0.0	0.600		o	225	Pipe/Conduit	
14.003	53.645	2.373	22.6	0.167	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)
12.007	30.10	12.66	29.640	1.017	0.0	0.0	0.0	1.54	245.1	110.6
12.008	29.63	13.03	29.470	1.017	0.0	0.0	0.0	1.30	207.4	110.6
12.009	28.69	13.81	29.350	1.158	0.0	0.0	0.0	1.46	232.0	119.9
12.010	27.74	14.66	29.000	1.307	0.0	0.0	0.0	1.43	227.4	131.0
12.011	26.75	15.62	28.637	1.482	0.0	0.0	0.0	1.45	230.1	143.1
12.012	25.94	16.48	28.211	1.668	0.0	0.0	0.0	1.56	248.0	156.3
12.013	25.10	17.43	27.738	1.869	0.0	0.0	0.0	1.46	232.1	169.5
12.014	24.08	18.71	27.231	2.079	0.0	0.0	0.0	1.05	227.6	180.7
12.015	23.62	19.32	27.051	2.238	0.0	0.0	0.0	1.58	341.7	190.8
12.016	23.03	20.15	26.761	2.448	0.0	0.0	0.0	1.39	301.6	203.6
12.017	22.57	20.85	26.491	2.913	0.0	0.0	0.0	2.08	450.5	237.4
12.018	22.00	21.73	25.670	3.207	0.0	0.0	0.0	1.64	463.3	254.8
12.019	21.47	22.63	25.274	3.446	0.0	0.0	0.0	1.40	395.4	267.1
12.020	20.97	23.51	25.024	3.564	0.0	0.0	0.0	1.30	366.2	269.9
14.000	45.40	5.67	32.460	0.070	0.0	0.0	0.0	1.30	51.8	11.5
14.001	44.38	5.97	31.936	0.161	0.0	0.0	0.0	1.84	73.1	25.8
14.002	42.99	6.39	31.302	0.290	0.0	0.0	0.0	2.22	88.2	45.0
14.003	41.99	6.72	29.682	0.457	0.0	0.0	0.0	2.76	109.9	69.3

Network Design Table for Proposed Network A40 Main-Line and Link Road

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
14.004	54.155	1.221	44.4	0.079	0.00	0.0	0.600		o	300	Pipe/Conduit	
14.005	77.075	0.884	87.2	0.229	0.00	0.0	0.600		o	375	Pipe/Conduit	
12.021	36.965	0.284	130.2	0.020	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.019	36.613	0.268	136.6	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.020	78.169	0.156	500.0	0.618	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.021	23.412	0.047	500.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.022	22.071	0.044	500.0	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)
14.004	40.89	7.10	27.233	0.536	0.0	0.0	0.0	2.37	167.3	79.1
14.005	39.13	7.76	25.937	0.764	0.0	0.0	0.0	1.94	214.4	108.0
12.021	20.81	23.80	24.828	4.349	0.0	0.0	0.0	2.13	603.1	326.8
1.019	17.99	30.00	24.544	10.696	0.0	0.0	0.0	2.39	1057.0	695.0
1.020	17.99	30.00	24.276	11.314	0.0	0.0	0.0	1.08	306.0«	735.2
1.021	17.99	30.00	24.120	11.314	0.0	0.0	0.0	1.08	306.0«	735.2
1.022	17.99	30.00	24.073	11.314	0.0	0.0	0.0	1.08	306.0«	735.2

Conduit Sections for Proposed Network A40 Main-Line and Link Road

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m²)
-1	\/	1500	150	11.3		0.294	0.113
-2	\/	2000	200	11.3		0.392	0.200

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Ba
J2-PRMH1-01	34.290	1.190	Open Manhole	1050	1.000	33.100	225				
J2-PRMH1-02	34.070	1.170	Open Manhole	1050	1.001	32.900	225	1.000	32.900	225	
J2-PRMH1-03	33.480	1.205	Open Manhole	1050	1.002	32.275	225	1.001	32.275	225	
J2-PRMH1-04	32.280	1.275	Open Manhole	1200	1.003	31.005	300	1.002	31.080	225	
J2-PRMH1-05	31.390	1.460	Open Manhole	1350	1.004	29.930	375	1.003	30.005	300	
J2-PRMH1-06	31.180	1.510	Open Manhole	1350	1.005	29.670	375	1.004	29.670	375	
J2-PRMH1-07	30.710	1.520	Open Manhole	1350	1.006	29.190	375	1.005	29.190	375	
J2-PRMH1-08	30.280	1.420	Open Manhole	1350	1.007	28.860	375	1.006	28.860	375	
J2-PRMH1-09	29.990	1.555	Open Manhole	1350	1.008	28.435	450	1.007	28.510	375	
J2-PRMH1-10	29.600	1.350	Open Manhole	1350	1.009	28.250	450	1.008	28.250	450	
J2-PRMH1-11	29.140	1.350	Open Manhole	1350	1.010	27.790	450	1.009	27.790	450	
J2-PRMH1-12	28.710	1.370	Open Manhole	1350	1.011	27.340	450	1.010	27.340	450	
J2-PRMH1-13	28.240	1.390	Open Manhole	1350	1.012	26.850	450	1.011	26.850	450	
J2-PRMH1-14	27.770	1.370	Open Manhole	1350	1.013	26.400	450	1.012	26.400	450	
J2-PRMH1-15	27.530	1.674	Open Manhole	1500	1.014	25.856	450	1.013	25.856	450	
Dummy_J2-PRMH1-90	32.760	0.150	Junction		2.000	32.610	-1				
Dummy_J2-PRMH1-91	31.780	0.150	Junction		2.001	31.630	-1	2.000	31.630	-1	
Dummy_J2-PRMH1-92	31.510	0.200	Junction		2.002	31.310	-2	2.001	31.360	-1	
Dummy_J2-PRMH1-93	30.830	0.200	Junction		2.003	30.630	-2	2.002	30.630	-2	
Dummy_J2-PRMH1-94	30.140	0.200	Junction		2.004	29.940	-2	2.003	29.940	-2	
Dummy_J2-PRMH1-95	29.427	0.200	Junction		2.005	29.227	-2	2.004	29.227	-2	
Dummy_J2-PRMH1-96	28.740	0.200	Junction		2.006	28.540	-2	2.005	28.540	-2	
Dummy_J2-PRMH1-97	27.597	0.200	Junction		2.007	27.397	-2	2.006	27.397	-2	
24	26.990	0.200	Junction		3.000	26.790	-2				
Dummy_J2-PRMH1-79	32.560	0.150	Junction		4.000	32.410	-1				
Dummy_J2-PRMH1-80	32.030	0.200	Junction		4.001	31.830	-2	4.000	31.880	-1	
Dummy_J2-PRMH1-81	31.740	0.200	Junction		4.002	31.540	-2	4.001	31.540	-2	
Dummy_J2-PRMH1-82	31.071	0.200	Junction		4.003	30.871	-2	4.002	30.871	-2	
Dummy_J2-PRMH1-83	30.379	0.200	Junction		4.004	30.179	-2	4.003	30.179	-2	
Dummy_J2-PRMH1-84	29.686	0.200	Junction		4.005	29.486	-2	4.004	29.486	-2	
Dummy_J2-PRMH1-85	28.943	0.200	Junction		4.006	28.743	-2	4.005	28.743	-2	
Dummy_J2-PRMH1-86	27.834	0.200	Junction		4.007	27.634	-2	4.006	27.634	-2	
Dummy_J2-PRMH1-61	27.520	0.150	Junction		5.000	27.370	-1				

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Ba
Dummy_J2-PRMH1-62	27.450	0.150	Junction		5.001	27.300	-1	5.000	27.300	-1	
Dummy_J2-PRMH1-63	27.400	0.150	Junction		5.002	27.250	-1	5.001	27.250	-1	
Dummy_J2-PRMH1-64	27.318	0.150	Junction		5.003	27.168	-1	5.002	27.168	-1	
Dummy_J2-PRMH1-65	27.266	0.200	Junction		5.004	27.066	-2	5.003	27.116	-1	
Dummy_J2-PRMH1-66	27.200	0.200	Junction		5.005	27.000	-2	5.004	27.000	-2	
Dummy_J2-PRMH1-57	27.100	0.200	Junction		5.006	26.900	-2	5.005	26.900	-2	
Dummy_J2-PRMH1-69	32.530	0.150	Junction		6.000	32.380	-1				
Dummy_J2-PRMH1-70	31.970	0.150	Junction		6.001	31.820	-1	6.000	31.820	-1	
Dummy_J2-PRMH1-71	31.720	0.150	Junction		6.002	31.570	-1	6.001	31.570	-1	
Dummy_J2-PRMH1-72	31.019	0.200	Junction		6.003	30.819	-2	6.002	30.869	-1	
Dummy_J2-PRMH1-73	30.330	0.200	Junction		6.004	30.130	-2	6.003	30.130	-2	
Dummy_J2-PRMH1-74	29.611	0.200	Junction		6.005	29.411	-2	6.004	29.411	-2	
Dummy_J2-PRMH1-75	28.896	0.200	Junction		6.006	28.696	-2	6.005	28.696	-2	
J2-PRMH1-61	27.792	0.955	Open Manhole	1200	6.007	26.837	300	6.006	27.580	-2	
J2-PRMH1-62	27.490	1.003	Open Manhole	1200	6.008	26.487	300	6.007	26.487	300	
49	27.480	0.150	Junction		7.000	27.330	-1				
50	27.190	0.200	Junction		7.001	26.990	-2	7.000	27.040	-1	
J2-PRMH1-63	26.959	1.149	Open Manhole	1800	5.007	25.810	450	5.006	26.810	-2	
								6.008	25.960	300	
								7.001	26.810	-2	
52	27.310	0.150	Junction		8.000	27.160	-1				
53	27.140	0.200	Junction		8.001	26.940	-2	8.000	26.990	-1	
J2-PRMH1-64	27.000	1.240	Open Manhole	1800	4.008	25.760	450	4.007	26.890	-2	
								5.007	25.760	450	
								8.001	26.840	-2	
J2-PRMH1-65	26.767	1.307	Open Manhole	2100	2.008	25.460	600	2.007	26.670	-2	
								3.000	26.670	-2	
								4.008	25.610	450	
58	27.150	0.150	Junction		9.000	27.000	-1				
J2-PRMH1-66	26.890	1.588	Open Manhole	1800	2.009	25.302	600	2.008	25.302	600	
								9.000	26.740	-1	
J2-PRMH1-16	27.320	2.062	Open Manhole	1800	1.015	25.258	600	1.014	25.408	450	
								2.009	25.258	600	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

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)	Backd (mm
J2-PRMH1-17	27.050	1.934	Open Manhole	1500	1.016	25.116	600	1.015	25.116	600	
J2-PRMH1-18	26.730	1.774	Open Manhole	1500	1.017	24.956	600	1.016	24.956	600	
J2-PRMH1-19	26.440	1.655	Open Manhole	1800	1.018	24.785	600	1.017	24.785	600	
J2-PRMH1-21	34.380	1.583	Open Manhole	600	10.000	32.797	225				
J2-PRMH1-22	34.034	1.512	Open Manhole	1050	10.001	32.522	300	10.000	32.597	225	
J2-PRMH1-23	33.722	1.467	Open Manhole	1200	10.002	32.255	300	10.001	32.255	300	
J2-PRMH1-56	34.370	1.573	Open Manhole	600	11.000	32.797	225				
J2-PRMH1-57	34.050	1.500	Open Manhole	1200	11.001	32.550	300	11.000	32.625	225	
J2-PRMH1-58	33.703	1.300	Open Manhole	1200	11.002	32.403	300	11.001	32.403	300	
J2-PRMH1-24	33.660	1.647	Open Manhole	1200	10.003	32.013	375	10.002	32.088	300	
								11.002	32.088	300	
J2-PRMH1-25	33.560	1.676	Open Manhole	1200	10.004	31.884	375	10.003	31.884	375	
J2-PRMH1-26	32.980	1.481	Open Manhole	1200	10.005	31.499	375	10.004	31.499	375	
J2-PRMH1-27	31.080	1.382	Open Manhole	1200	10.006	29.698	375	10.005	29.698	375	
J2-PRMH1-28	28.814	1.059	Open Manhole	1200	10.007	27.755	375	10.006	27.755	375	
J2-PRMH1-29	27.412	1.017	Open Manhole	1200	10.008	26.395	375	10.007	26.395	375	
J2-PRMH1-30	34.440	1.128	Open Manhole	1050	12.000	33.312	225				
J2-PRMH1-31	34.150	1.125	Open Manhole	1050	12.001	33.025	225	12.000	33.025	225	
J2-PRMH1-59	34.078	0.503	Open Manhole	1050	13.000	33.575	225				
J2-PRMH59A	33.703	0.494	Open Manhole	1050	13.001	33.209	225	13.000	33.209	225	
J1-PRMH1-60	33.621	0.634	Open Manhole	1050	13.002	32.987	225	13.001	32.987	225	
J1-PRMH1-58	33.483	0.738	Open Manhole	1050	13.003	32.745	225	13.002	32.745	225	
J2-PRMH1-32	33.800	1.197	Open Manhole	1200	12.002	32.603	300	12.001	32.729	225	
								13.003	32.678	225	
J2-PRMH1-33	33.334	1.201	Open Manhole	1200	12.003	32.133	300	12.002	32.133	300	
J2-PRMH1-33A	32.730	1.202	Open Manhole	1200	12.004	31.528	300	12.003	31.528	300	
J2-PRMH1-34	32.124	1.201	Open Manhole	1200	12.005	30.923	300	12.004	30.923	300	
J2-PRMH1-35	31.340	1.282	Open Manhole	1350	12.006	30.058	375	12.005	30.133	300	
J2-PRMH1-36	30.990	1.350	Open Manhole	1350	12.007	29.640	450	12.006	29.715	375	
J2-PRMH1-36A	30.820	1.350	Open Manhole	1200	12.008	29.470	450	12.007	29.470	450	
J2-PRMH1-37	30.710	1.360	Open Manhole	1350	12.009	29.350	450	12.008	29.350	450	
J2-PRMH1-38	30.360	1.360	Open Manhole	1350	12.010	29.000	450	12.009	29.000	450	
J2-PRMH1-39	29.990	1.353	Open Manhole	1350	12.011	28.637	450	12.010	28.637	450	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

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)	Backdr (mm)
J2-PRMH1-40	29.530	1.319	Open Manhole	1350	12.012	28.211	450	12.011	28.211	450	
J2-PRMH1-41	29.088	1.350	Open Manhole	1500	12.013	27.738	450	12.012	27.738	450	
J2-PRMH1-42	28.680	1.449	Open Manhole	1800	12.014	27.231	525	12.013	27.306	450	
J2-PRMH1-43	28.254	1.203	Open Manhole	1800	12.015	27.051	525	12.014	27.051	525	
J2-PRMH1-44	28.090	1.329	Open Manhole	1800	12.016	26.761	525	12.015	26.761	525	
J2-PRMH1-45	27.701	1.210	Open Manhole	1800	12.017	26.491	525	12.016	26.491	525	
J2-PRMH1-46	27.074	1.404	Open Manhole	1800	12.018	25.670	600	12.017	25.745	525	
J2-PRMH1-47	26.633	1.359	Open Manhole	1800	12.019	25.274	600	12.018	25.274	600	
J2-PRMH1-48	26.383	1.359	Open Manhole	1800	12.020	25.024	600	12.019	25.024	600	
J2-PRMH1-50	34.340	1.880	Open Manhole	1050	14.000	32.460	225				
J2-PRMH1-51	33.760	1.824	Open Manhole	1050	14.001	31.936	225	14.000	31.936	225	
J2-PRMH1-52	33.190	1.888	Open Manhole	1050	14.002	31.302	225	14.001	31.302	225	
J2-PRMH1-53	31.700	2.018	Open Manhole	1050	14.003	29.682	225	14.002	29.682	225	
J2-PRMH1-54	29.720	2.487	Open Manhole	1200	14.004	27.233	300	14.003	27.309	225	
J2-PRMH1-55	27.730	1.793	Open Manhole	1200	14.005	25.937	375	14.004	26.012	300	
J2-PRMH1-49	26.325	1.497	Open Manhole	1800	12.021	24.828	600	12.020	24.828	600	
								14.005	25.053	375	
J2-PRMH1-20	26.075	1.531	Open Manhole	2100	1.019	24.544	750	1.018	24.544	600	
								10.008	24.919	375	
								12.021	24.544	600	
J2-PRHW-01	25.476	1.200	Junction		1.020	24.276	600	1.019	24.276	750	
J2-PRHW-02	25.476	1.356	Junction		1.021	24.120	600	1.020	24.120	600	
J2-PRMH1-68	25.476	1.403	Open Manhole	1500	1.022	24.073	600	1.021	24.073	600	
J2-PRHW-04	25.000	0.971	Open Manhole	0		OUTFALL		1.022	24.029	600	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J2-PRMH1-01	391996.081	224740.992	391996.081	224740.992	Required	
J2-PRMH1-02	391946.897	224755.151	391946.897	224755.151	Required	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J2-PRMH1-03	391861.852	224776.234	391861.852	224776.234	Required	
J2-PRMH1-04	391777.045	224802.163	391777.045	224802.163	Required	
J2-PRMH1-05	391704.368	224832.214	391704.368	224832.214	Required	
J2-PRMH1-06	391625.117	224872.803	391625.117	224872.803	Required	
J2-PRMH1-07	391568.830	224904.426	391568.830	224904.426	Required	
J2-PRMH1-08	391496.085	224949.084	391496.085	224949.084	Required	
J2-PRMH1-09	391446.690	224979.425	391446.690	224979.425	Required	
J2-PRMH1-10	391376.560	225021.205	391376.560	225021.205	Required	
J2-PRMH1-11	391299.723	225066.766	391299.723	225066.766	Required	
J2-PRMH1-12	391225.999	225105.193	391225.999	225105.193	Required	
J2-PRMH1-13	391156.507	225142.615	391156.507	225142.615	Required	
J2-PRMH1-14	391105.720	225173.234	391105.720	225173.234	Required	
J2-PRMH1-15	391044.299	225211.856	391044.299	225211.856	Required	
Dummy_J2-PRMH1-90	390730.444	224612.798			No Entry	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy_J2-PRMH1-91	390758.846	224676.111			No Entry	
Dummy_J2-PRMH1-92	390774.226	224709.583			No Entry	
Dummy_J2-PRMH1-93	390810.957	224790.310			No Entry	
Dummy_J2-PRMH1-94	390847.858	224871.979			No Entry	
Dummy_J2-PRMH1-95	390884.540	224953.607			No Entry	
Dummy_J2-PRMH1-96	390920.893	225032.526			No Entry	
Dummy_J2-PRMH1-97	390955.522	225115.059			No Entry	
24	390998.356	225217.685			No Entry	
Dummy_J2-PRMH1-79	390741.270	224614.136			No Entry	
Dummy_J2-PRMH1-80	390767.642	224672.450			No Entry	
Dummy_J2-PRMH1-81	390782.821	224706.943			No Entry	
Dummy_J2-PRMH1-82	390818.393	224784.980			No Entry	
Dummy_J2-PRMH1-83	390855.010	224865.909			No Entry	
Dummy_J2-PRMH1-84	390891.644	224947.073			No Entry	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy_J2-PRMH1-85	390928.730	225029.044			No Entry	
Dummy_J2-PRMH1-86	390964.785	225111.549			No Entry	
Dummy_J2-PRMH1-61	391091.883	225176.397			No Entry	
Dummy_J2-PRMH1-62	391064.252	225163.298			No Entry	
Dummy_J2-PRMH1-63	391041.756	225141.705			No Entry	
Dummy_J2-PRMH1-64	391022.899	225124.001			No Entry	
Dummy_J2-PRMH1-65	391005.913	225119.642			No Entry	
Dummy_J2-PRMH1-66	390994.561	225123.098			No Entry	
Dummy_J2-PRMH1-57	390990.657	225131.511			No Entry	
Dummy_J2-PRMH1-69	390752.268	224613.065			No Entry	
Dummy_J2-PRMH1-70	390777.730	224667.817			No Entry	
Dummy_J2-PRMH1-71	390791.545	224699.298			No Entry	
Dummy_J2-PRMH1-72	390828.769	224780.465			No Entry	
Dummy_J2-PRMH1-73	390865.355	224861.561			No Entry	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy_J2-PRMH1-74	390902.841	224943.101			No Entry	
Dummy_J2-PRMH1-75	390939.277	225024.330			No Entry	
J2-PRMH1-61	390977.829	225107.127	390977.829	225107.127	Required	
J2-PRMH1-62	390990.127	225132.298	390990.127	225132.298	Required	
49	391041.070	225212.007			No Entry	
50	391026.082	225206.312			No Entry	
J2-PRMH1-63	391007.004	225167.369	391007.004	225167.369	Required	
52	391006.946	225232.390			No Entry	
53	391007.106	225214.161			No Entry	
J2-PRMH1-64	390991.136	225174.794	390991.136	225174.794	Required	
J2-PRMH1-65	390982.819	225178.714	390982.819	225178.714	Required	
58	390992.253	225236.154			No Entry	
J2-PRMH1-66	390998.784	225218.336	390998.784	225218.336	Required	
J2-PRMH1-16	391005.960	225234.406	391005.960	225234.406	Required	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J2-PRMH1-17	390959.758	225267.298	390959.758	225267.298	Required	
J2-PRMH1-18	390905.951	225301.742	390905.951	225301.742	Required	
J2-PRMH1-19	390856.971	225332.916	390856.971	225332.916	Required	
J2-PRMH1-21	390450.992	225553.954	390450.992	225553.954	Required	
J2-PRMH1-22	390483.370	225533.213	390483.370	225533.213	Required	
J2-PRMH1-23	390524.359	225532.785	390524.359	225532.785	Required	
J2-PRMH1-56	390515.294	225647.338	390515.294	225647.338	Required	
J2-PRMH1-57	390545.376	225623.406	390545.376	225623.406	Required	
J2-PRMH1-58	390560.076	225583.815	390560.076	225583.815	Required	
J2-PRMH1-24	390544.337	225544.577	390544.337	225544.577	Required	
J2-PRMH1-25	390560.457	225529.881	390560.457	225529.881	Required	
J2-PRMH1-26	390583.334	225526.493	390583.334	225526.493	Required	
J2-PRMH1-27	390643.450	225480.589	390643.450	225480.589	Required	
J2-PRMH1-28	390690.849	225443.590	390690.849	225443.590	Required	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J2-PRMH1-29	390724.407	225418.405	390724.407	225418.405	Required	
J2-PRMH1-30	392001.373	224764.797	392001.373	224764.797	Required	
J2-PRMH1-31	391954.248	224777.607	391954.248	224777.607	Required	
J2-PRMH1-59	392028.822	224770.870	392028.822	224770.870	Required	
J2-PRMH59A	391980.426	224784.616	391980.426	224784.616	Required	
J1-PRMH1-60	391972.322	224787.230	391972.322	224787.230	Required	
J1-PRMH1-58	391893.147	224805.388	391893.147	224805.388	Required	
J2-PRMH1-32	391889.660	224791.631	391889.660	224791.631	Required	
J2-PRMH1-33	391849.312	224802.268	391849.312	224802.268	Required	
J2-PRMH1-33A	391807.930	224815.453	391807.930	224815.453	Required	
J2-PRMH1-34	391767.098	224830.874	391767.098	224830.874	Required	
J2-PRMH1-35	391686.786	224866.745	391686.786	224866.745	Required	
J2-PRMH1-36	391629.793	224895.719	391629.793	224895.719	Required	
J2-PRMH1-36A	391604.220	224910.371	391604.220	224910.371	Required	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J2-PRMH1-37	391579.621	224925.647	391579.621	224925.647	Required	
J2-PRMH1-38	391522.413	224961.749	391522.413	224961.749	Required	
J2-PRMH1-39	391460.829	225001.016	391460.829	225001.016	Required	
J2-PRMH1-40	391390.617	225046.603	391390.617	225046.603	Required	
J2-PRMH1-41	391322.259	225088.329	391322.259	225088.329	Required	
J2-PRMH1-42	391250.314	225130.597	391250.314	225130.597	Required	
J2-PRMH1-43	391181.173	225172.188	391181.173	225172.188	Required	
J2-PRMH1-44	391131.594	225202.537	391131.594	225202.537	Required	
J2-PRMH1-45	391072.939	225239.480	391072.939	225239.480	Required	
J2-PRMH1-46	391000.266	225286.144	391000.266	225286.144	Required	
J2-PRMH1-47	390926.671	225332.538	390926.671	225332.538	Required	
J2-PRMH1-48	390863.271	225373.045	390863.271	225373.045	Required	
J2-PRMH1-50	390564.092	225623.882	390564.092	225623.882	Required	
J2-PRMH1-51	390594.029	225580.443	390594.029	225580.443	Required	

Manhole Schedules for Proposed Network A40 Main-Line and Link Road

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
J2-PRMH1-52	390614.589	225555.600	390614.589	225555.600	Required	
J2-PRMH1-53	390653.864	225514.612	390653.864	225514.612	Required	
J2-PRMH1-54	390694.445	225479.526	390694.445	225479.526	Required	
J2-PRMH1-55	390738.077	225447.448	390738.077	225447.448	Required	
J2-PRMH1-49	390803.622	225406.896	390803.622	225406.896	Required	
J2-PRMH1-20	390783.458	225375.915	390783.458	225375.915	Required	
J2-PRHW-01	390763.304	225345.349			No Entry	
J2-PRHW-02	390722.586	225278.622			No Entry	
J2-PRMH1-68	390700.657	225286.822	390700.657	225286.822	Required	
J2-PRHW-04	390679.987	225294.560			No Entry	

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
1.000	o	225	J2-PRMH1-01	34.290	33.100	0.965	Open Manhole	1050
1.001	o	225	J2-PRMH1-02	34.070	32.900	0.945	Open Manhole	1050
1.002	o	225	J2-PRMH1-03	33.480	32.275	0.980	Open Manhole	1050
1.003	o	300	J2-PRMH1-04	32.280	31.005	0.975	Open Manhole	1200
1.004	o	375	J2-PRMH1-05	31.390	29.930	1.085	Open Manhole	1350
1.005	o	375	J2-PRMH1-06	31.180	29.670	1.135	Open Manhole	1350
1.006	o	375	J2-PRMH1-07	30.710	29.190	1.145	Open Manhole	1350
1.007	o	375	J2-PRMH1-08	30.280	28.860	1.045	Open Manhole	1350
1.008	o	450	J2-PRMH1-09	29.990	28.435	1.105	Open Manhole	1350
1.009	o	450	J2-PRMH1-10	29.600	28.250	0.900	Open Manhole	1350
1.010	o	450	J2-PRMH1-11	29.140	27.790	0.900	Open Manhole	1350
1.011	o	450	J2-PRMH1-12	28.710	27.340	0.920	Open Manhole	1350
1.012	o	450	J2-PRMH1-13	28.240	26.850	0.940	Open Manhole	1350
1.013	o	450	J2-PRMH1-14	27.770	26.400	0.920	Open Manhole	1350
1.014	o	450	J2-PRMH1-15	27.530	25.856	1.224	Open Manhole	1500
2.000	\/	-1	Dummy_J2-PRMH1-90	32.760	32.610	0.000	Junction	
2.001	\/	-1	Dummy_J2-PRMH1-91	31.780	31.630	0.000	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)
1.000	51.181	255.9	J2-PRMH1-02	34.070	32.900	0.945	Open Manhole	1050
1.001	87.619	140.2	J2-PRMH1-03	33.480	32.275	0.980	Open Manhole	1050
1.002	88.683	74.2	J2-PRMH1-04	32.280	31.080	0.975	Open Manhole	1200
1.003	78.645	78.6	J2-PRMH1-05	31.390	30.005	1.085	Open Manhole	1350
1.004	89.041	342.5	J2-PRMH1-06	31.180	29.670	1.135	Open Manhole	1350
1.005	64.562	134.5	J2-PRMH1-07	30.710	29.190	1.145	Open Manhole	1350
1.006	85.359	258.7	J2-PRMH1-08	30.280	28.860	1.045	Open Manhole	1350
1.007	57.970	165.6	J2-PRMH1-09	29.990	28.510	1.105	Open Manhole	1350
1.008	81.632	441.3	J2-PRMH1-10	29.600	28.250	0.900	Open Manhole	1350
1.009	89.329	194.2	J2-PRMH1-11	29.140	27.790	0.900	Open Manhole	1350
1.010	83.138	184.8	J2-PRMH1-12	28.710	27.340	0.920	Open Manhole	1350
1.011	78.927	161.1	J2-PRMH1-13	28.240	26.850	0.940	Open Manhole	1350
1.012	59.303	131.8	J2-PRMH1-14	27.770	26.400	0.920	Open Manhole	1350
1.013	72.555	133.4	J2-PRMH1-15	27.530	25.856	1.224	Open Manhole	1500
1.014	44.479	99.3	J2-PRMH1-16	27.320	25.408	1.462	Open Manhole	1800
2.000	69.392	70.8	Dummy_J2-PRMH1-91	31.780	31.630	0.000	Junction	
2.001	36.836	136.4	Dummy_J2-PRMH1-92	31.510	31.360	0.000	Junction	

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
2.002	\/	-2	Dummy_J2-PRMH1-92	31.510	31.310	0.000	Junction	
2.003	\/	-2	Dummy_J2-PRMH1-93	30.830	30.630	0.000	Junction	
2.004	\/	-2	Dummy_J2-PRMH1-94	30.140	29.940	0.000	Junction	
2.005	\/	-2	Dummy_J2-PRMH1-95	29.427	29.227	0.000	Junction	
2.006	\/	-2	Dummy_J2-PRMH1-96	28.740	28.540	0.000	Junction	
2.007	\/	-2	Dummy_J2-PRMH1-97	27.597	27.397	0.000	Junction	
3.000	\/	-2	24	26.990	26.790	0.000	Junction	
4.000	\/	-1	Dummy_J2-PRMH1-79	32.560	32.410	0.000	Junction	
4.001	\/	-2	Dummy_J2-PRMH1-80	32.030	31.830	0.000	Junction	
4.002	\/	-2	Dummy_J2-PRMH1-81	31.740	31.540	0.000	Junction	
4.003	\/	-2	Dummy_J2-PRMH1-82	31.071	30.871	0.000	Junction	
4.004	\/	-2	Dummy_J2-PRMH1-83	30.379	30.179	0.000	Junction	
4.005	\/	-2	Dummy_J2-PRMH1-84	29.686	29.486	0.000	Junction	
4.006	\/	-2	Dummy_J2-PRMH1-85	28.943	28.743	0.000	Junction	
4.007	\/	-2	Dummy_J2-PRMH1-86	27.834	27.634	0.000	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)
2.002	88.690	130.4	Dummy_J2-PRMH1-93	30.830	30.630	0.000	Junction	
2.003	89.619	129.9	Dummy_J2-PRMH1-94	30.140	29.940	0.000	Junction	
2.004	89.491	125.5	Dummy_J2-PRMH1-95	29.427	29.227	0.000	Junction	
2.005	86.889	126.5	Dummy_J2-PRMH1-96	28.740	28.540	0.000	Junction	
2.006	89.504	78.3	Dummy_J2-PRMH1-97	27.597	27.397	0.000	Junction	
2.007	69.261	95.3	J2-PRMH1-65	26.767	26.670	-0.103	Open Manhole	2100
3.000	41.954	349.6	J2-PRMH1-65	26.767	26.670	-0.103	Open Manhole	2100
4.000	63.999	120.8	Dummy_J2-PRMH1-80	32.030	31.880	0.000	Junction	
4.001	37.686	130.0	Dummy_J2-PRMH1-81	31.740	31.540	0.000	Junction	
4.002	85.762	128.2	Dummy_J2-PRMH1-82	31.071	30.871	0.000	Junction	
4.003	88.827	128.4	Dummy_J2-PRMH1-83	30.379	30.179	0.000	Junction	
4.004	89.049	128.5	Dummy_J2-PRMH1-84	29.686	29.486	0.000	Junction	
4.005	89.969	121.1	Dummy_J2-PRMH1-85	28.943	28.743	0.000	Junction	
4.006	90.039	81.2	Dummy_J2-PRMH1-86	27.834	27.634	0.000	Junction	
4.007	68.515	92.1	J2-PRMH1-64	27.000	26.890	-0.090	Open Manhole	1800

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
5.000	\/	-1	Dummy_J2-PRMH1-61	27.520	27.370	0.000	Junction	
5.001	\/	-1	Dummy_J2-PRMH1-62	27.450	27.300	0.000	Junction	
5.002	\/	-1	Dummy_J2-PRMH1-63	27.400	27.250	0.000	Junction	
5.003	\/	-1	Dummy_J2-PRMH1-64	27.318	27.168	0.000	Junction	
5.004	\/	-2	Dummy_J2-PRMH1-65	27.266	27.066	0.000	Junction	
5.005	\/	-2	Dummy_J2-PRMH1-66	27.200	27.000	0.000	Junction	
5.006	\/	-2	Dummy_J2-PRMH1-57	27.100	26.900	0.000	Junction	
6.000	\/	-1	Dummy_J2-PRMH1-69	32.530	32.380	0.000	Junction	
6.001	\/	-1	Dummy_J2-PRMH1-70	31.970	31.820	0.000	Junction	
6.002	\/	-1	Dummy_J2-PRMH1-71	31.720	31.570	0.000	Junction	
6.003	\/	-2	Dummy_J2-PRMH1-72	31.019	30.819	0.000	Junction	
6.004	\/	-2	Dummy_J2-PRMH1-73	30.330	30.130	0.000	Junction	
6.005	\/	-2	Dummy_J2-PRMH1-74	29.611	29.411	0.000	Junction	
6.006	\/	-2	Dummy_J2-PRMH1-75	28.896	28.696	0.000	Junction	
6.007	o	300	J2-PRMH1-61	27.792	26.837	0.655	Open Manhole	1200
6.008	o	300	J2-PRMH1-62	27.490	26.487	0.703	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)
5.000	31.489	449.8	Dummy_J2-PRMH1-62	27.450	27.300	0.000	Junction	
5.001	31.183	623.7	Dummy_J2-PRMH1-63	27.400	27.250	0.000	Junction	
5.002	25.865	315.4	Dummy_J2-PRMH1-64	27.318	27.168	0.000	Junction	
5.003	17.801	342.3	Dummy_J2-PRMH1-65	27.266	27.116	0.000	Junction	
5.004	12.213	185.0	Dummy_J2-PRMH1-66	27.200	27.000	0.000	Junction	
5.005	9.761	97.6	Dummy_J2-PRMH1-57	27.100	26.900	0.000	Junction	
5.006	39.408	437.9	J2-PRMH1-63	26.959	26.810	-0.051	Open Manhole	1800
6.000	60.383	107.8	Dummy_J2-PRMH1-70	31.970	31.820	0.000	Junction	
6.001	34.379	137.5	Dummy_J2-PRMH1-71	31.720	31.570	0.000	Junction	
6.002	89.296	127.4	Dummy_J2-PRMH1-72	31.019	30.869	0.000	Junction	
6.003	88.966	129.1	Dummy_J2-PRMH1-73	30.330	30.130	0.000	Junction	
6.004	89.745	124.8	Dummy_J2-PRMH1-74	29.611	29.411	0.000	Junction	
6.005	89.027	124.5	Dummy_J2-PRMH1-75	28.896	28.696	0.000	Junction	
6.006	91.332	81.8	J2-PRMH1-61	27.792	27.580	0.012	Open Manhole	1200
6.007	28.015	80.0	J2-PRMH1-62	27.490	26.487	0.703	Open Manhole	1200
6.008	38.920	73.9	J2-PRMH1-63	26.959	25.960	0.699	Open Manhole	1800

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
7.000	\/	-1	49	27.480	27.330	0.000	Junction	
7.001	\/	-2	50	27.190	26.990	0.000	Junction	
5.007	oo	450	J2-PRMH1-63	26.959	25.810	0.699	Open Manhole	1800
8.000	\/	-1	52	27.310	27.160	0.000	Junction	
8.001	\/	-2	53	27.140	26.940	0.000	Junction	
4.008	oo	450	J2-PRMH1-64	27.000	25.760	0.790	Open Manhole	1800
2.008	o	600	J2-PRMH1-65	26.767	25.460	0.707	Open Manhole	2100
9.000	\/	-1	58	27.150	27.000	0.000	Junction	
2.009	o	600	J2-PRMH1-66	26.890	25.302	0.988	Open Manhole	1800
1.015	o	600	J2-PRMH1-16	27.320	25.258	1.462	Open Manhole	1800
1.016	o	600	J2-PRMH1-17	27.050	25.116	1.334	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., L*W (mm)
7.000	16.264	56.1	50	27.190	27.040	0.000	Junction	
7.001	43.365	240.9	J2-PRMH1-63	26.959	26.810	-0.051	Open Manhole	1800
5.007	17.519	348.7	J2-PRMH1-64	27.000	25.760	0.790	Open Manhole	1800
8.000	18.704	110.0	53	27.140	26.990	0.000	Junction	
8.001	42.483	424.8	J2-PRMH1-64	27.000	26.840	-0.040	Open Manhole	1800
4.008	9.194	61.3	J2-PRMH1-65	26.767	25.610	0.707	Open Manhole	2100
2.008	42.718	270.4	J2-PRMH1-66	26.890	25.302	0.988	Open Manhole	1800
9.000	19.776	76.1	J2-PRMH1-66	26.890	26.740	0.000	Open Manhole	1800
2.009	17.599	399.5	J2-PRMH1-16	27.320	25.258	1.462	Open Manhole	1800
1.015	56.715	400.0	J2-PRMH1-17	27.050	25.116	1.334	Open Manhole	1500
1.016	63.887	400.0	J2-PRMH1-18	26.730	24.956	1.174	Open Manhole	1500

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
1.017	o	600	J2-PRMH1-18	26.730	24.956	1.174	Open Manhole	1500
1.018	o	600	J2-PRMH1-19	26.440	24.785	1.055	Open Manhole	1800
10.000	o	225	J2-PRMH1-21	34.380	32.797	1.358	Open Manhole	600
10.001	o	300	J2-PRMH1-22	34.034	32.522	1.212	Open Manhole	1050
10.002	o	300	J2-PRMH1-23	33.722	32.255	1.167	Open Manhole	1200
11.000	o	225	J2-PRMH1-56	34.370	32.797	1.348	Open Manhole	600
11.001	o	300	J2-PRMH1-57	34.050	32.550	1.200	Open Manhole	1200
11.002	o	300	J2-PRMH1-58	33.703	32.403	1.000	Open Manhole	1200
10.003	o	375	J2-PRMH1-24	33.660	32.013	1.272	Open Manhole	1200
10.004	o	375	J2-PRMH1-25	33.560	31.884	1.301	Open Manhole	1200
10.005	o	375	J2-PRMH1-26	32.980	31.499	1.106	Open Manhole	1200
10.006	o	375	J2-PRMH1-27	31.080	29.698	1.007	Open Manhole	1200
10.007	o	375	J2-PRMH1-28	28.814	27.755	0.684	Open Manhole	1200
10.008	o	375	J2-PRMH1-29	27.412	26.395	0.642	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)
1.017	58.059	340.0	J2-PRMH1-19	26.440	24.785	1.055	Open Manhole	1800
1.018	85.165	353.3	J2-PRMH1-20	26.075	24.544	0.931	Open Manhole	2100
10.000	38.452	192.3	J2-PRMH1-22	34.034	32.597	1.212	Open Manhole	1050
10.001	40.991	153.3	J2-PRMH1-23	33.722	32.255	1.167	Open Manhole	1200
10.002	23.199	138.9	J2-PRMH1-24	33.660	32.088	1.272	Open Manhole	1200
11.000	38.441	223.5	J2-PRMH1-57	34.050	32.625	1.200	Open Manhole	1200
11.001	42.233	287.3	J2-PRMH1-58	33.703	32.403	1.000	Open Manhole	1200
11.002	42.276	134.1	J2-PRMH1-24	33.660	32.088	1.272	Open Manhole	1200
10.003	21.814	169.7	J2-PRMH1-25	33.560	31.884	1.301	Open Manhole	1200
10.004	23.126	60.0	J2-PRMH1-26	32.980	31.499	1.106	Open Manhole	1200
10.005	75.638	42.0	J2-PRMH1-27	31.080	29.698	1.007	Open Manhole	1200
10.006	60.130	30.9	J2-PRMH1-28	28.814	27.755	0.684	Open Manhole	1200
10.007	41.957	30.9	J2-PRMH1-29	27.412	26.395	0.642	Open Manhole	1200
10.008	72.749	49.3	J2-PRMH1-20	26.075	24.919	0.781	Open Manhole	2100

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
12.000	o	225	J2-PRMH1-30	34.440	33.312	0.903	Open Manhole	1050
12.001	o	225	J2-PRMH1-31	34.150	33.025	0.900	Open Manhole	1050
13.000	o	225	J2-PRMH1-59	34.078	33.575	0.278	Open Manhole	1050
13.001	o	225	J2-PRMH59A	33.703	33.209	0.269	Open Manhole	1050
13.002	o	225	J1-PRMH1-60	33.621	32.987	0.409	Open Manhole	1050
13.003	o	225	J1-PRMH1-58	33.483	32.745	0.513	Open Manhole	1050
12.002	o	300	J2-PRMH1-32	33.800	32.603	0.897	Open Manhole	1200
12.003	o	300	J2-PRMH1-33	33.334	32.133	0.901	Open Manhole	1200
12.004	o	300	J2-PRMH1-33A	32.730	31.528	0.902	Open Manhole	1200
12.005	o	300	J2-PRMH1-34	32.124	30.923	0.901	Open Manhole	1200
12.006	o	375	J2-PRMH1-35	31.340	30.058	0.907	Open Manhole	1350
12.007	o	450	J2-PRMH1-36	30.990	29.640	0.900	Open Manhole	1350
12.008	o	450	J2-PRMH1-36A	30.820	29.470	0.900	Open Manhole	1200
12.009	o	450	J2-PRMH1-37	30.710	29.350	0.910	Open Manhole	1350
12.010	o	450	J2-PRMH1-38	30.360	29.000	0.910	Open Manhole	1350
12.011	o	450	J2-PRMH1-39	29.990	28.637	0.903	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)
12.000	48.835	170.2	J2-PRMH1-31	34.150	33.025	0.900	Open Manhole	1050
12.001	66.094	223.3	J2-PRMH1-32	33.800	32.729	0.846	Open Manhole	1200
13.000	50.311	137.5	J2-PRMH59A	33.703	33.209	0.269	Open Manhole	1050
13.001	8.515	38.4	J1-PRMH1-60	33.621	32.987	0.409	Open Manhole	1050
13.002	81.230	335.7	J1-PRMH1-58	33.483	32.745	0.513	Open Manhole	1050
13.003	14.192	211.8	J2-PRMH1-32	33.800	32.678	0.897	Open Manhole	1200
12.002	41.726	88.8	J2-PRMH1-33	33.334	32.133	0.901	Open Manhole	1200
12.003	43.432	71.8	J2-PRMH1-33A	32.730	31.528	0.902	Open Manhole	1200
12.004	43.647	72.1	J2-PRMH1-34	32.124	30.923	0.901	Open Manhole	1200
12.005	87.959	111.3	J2-PRMH1-35	31.340	30.133	0.907	Open Manhole	1350
12.006	63.935	186.4	J2-PRMH1-36	30.990	29.715	0.900	Open Manhole	1350
12.007	29.473	173.4	J2-PRMH1-36A	30.820	29.470	0.900	Open Manhole	1200
12.008	28.956	241.3	J2-PRMH1-37	30.710	29.350	0.910	Open Manhole	1350
12.009	67.647	193.3	J2-PRMH1-38	30.360	29.000	0.910	Open Manhole	1350
12.010	73.037	201.2	J2-PRMH1-39	29.990	28.637	0.903	Open Manhole	1350
12.011	83.713	196.5	J2-PRMH1-40	29.530	28.211	0.869	Open Manhole	1350

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
12.012	o	450	J2-PRMH1-40	29.530	28.211	0.869	Open Manhole	1350
12.013	o	450	J2-PRMH1-41	29.088	27.738	0.900	Open Manhole	1500
12.014	o	525	J2-PRMH1-42	28.680	27.231	0.924	Open Manhole	1800
12.015	o	525	J2-PRMH1-43	28.254	27.051	0.678	Open Manhole	1800
12.016	o	525	J2-PRMH1-44	28.090	26.761	0.804	Open Manhole	1800
12.017	o	525	J2-PRMH1-45	27.701	26.491	0.685	Open Manhole	1800
12.018	o	600	J2-PRMH1-46	27.074	25.670	0.804	Open Manhole	1800
12.019	o	600	J2-PRMH1-47	26.633	25.274	0.759	Open Manhole	1800
12.020	o	600	J2-PRMH1-48	26.383	25.024	0.759	Open Manhole	1800
14.000	o	225	J2-PRMH1-50	34.340	32.460	1.655	Open Manhole	1050
14.001	o	225	J2-PRMH1-51	33.760	31.936	1.599	Open Manhole	1050
14.002	o	225	J2-PRMH1-52	33.190	31.302	1.663	Open Manhole	1050
14.003	o	225	J2-PRMH1-53	31.700	29.682	1.793	Open Manhole	1050
14.004	o	300	J2-PRMH1-54	29.720	27.233	2.187	Open Manhole	1200
14.005	o	375	J2-PRMH1-55	27.730	25.937	1.418	Open Manhole	1200
12.021	o	600	J2-PRMH1-49	26.325	24.828	0.897	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)
12.012	80.087	169.3	J2-PRMH1-41	29.088	27.738	0.900	Open Manhole	1500
12.013	83.442	193.2	J2-PRMH1-42	28.680	27.306	0.924	Open Manhole	1800
12.014	80.687	448.3	J2-PRMH1-43	28.254	27.051	0.678	Open Manhole	1800
12.015	58.131	200.5	J2-PRMH1-44	28.090	26.761	0.804	Open Manhole	1800
12.016	69.320	256.7	J2-PRMH1-45	27.701	26.491	0.685	Open Manhole	1800
12.017	86.364	115.8	J2-PRMH1-46	27.074	25.745	0.804	Open Manhole	1800
12.018	86.998	219.8	J2-PRMH1-47	26.633	25.274	0.759	Open Manhole	1800
12.019	75.235	300.9	J2-PRMH1-48	26.383	25.024	0.759	Open Manhole	1800
12.020	68.585	350.4	J2-PRMH1-49	26.325	24.828	0.897	Open Manhole	1800
14.000	52.756	100.7	J2-PRMH1-51	33.760	31.936	1.599	Open Manhole	1050
14.001	32.247	50.9	J2-PRMH1-52	33.190	31.302	1.663	Open Manhole	1050
14.002	56.768	35.0	J2-PRMH1-53	31.700	29.682	1.793	Open Manhole	1050
14.003	53.645	22.6	J2-PRMH1-54	29.720	27.309	2.186	Open Manhole	1200
14.004	54.155	44.4	J2-PRMH1-55	27.730	26.012	1.418	Open Manhole	1200
14.005	77.075	87.2	J2-PRMH1-49	26.325	25.053	0.897	Open Manhole	1800
12.021	36.965	130.2	J2-PRMH1-20	26.075	24.544	0.931	Open Manhole	2100

PIPELINE SCHEDULES for Proposed Network A40 Main-Line and Link Road

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)
1.019	o	750	J2-PRMH1-20	26.075	24.544	0.781	Open Manhole	2100
1.020	o	600	J2-PRHW-01	25.476	24.276	0.600	Junction	
1.021	o	600	J2-PRHW-02	25.476	24.120	0.756	Junction	
1.022	o	600	J2-PRMH1-68	25.476	24.073	0.803	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., L*W (mm)
1.019	36.613	136.6	J2-PRHW-01	25.476	24.276	0.450	Junction	
1.020	78.169	500.0	J2-PRHW-02	25.476	24.120	0.756	Junction	
1.021	23.412	500.0	J2-PRMH1-68	25.476	24.073	0.803	Open Manhole	1500
1.022	22.071	500.0	J2-PRHW-04	25.000	24.029	0.371	Open Manhole	0

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	70	0.013	0.009	0.009
	User	-	100	0.018	0.018	0.027
	User	-	100	0.016	0.016	0.044
	User	-	40	0.016	0.006	0.050
	User	-	70	0.020	0.014	0.064
	Classification	Verge	50	0.007	0.004	0.068
	Classification	Verge	50	0.009	0.004	0.072
	User	-	100	0.001	0.001	0.073
	User	-	40	0.000	0.000	0.073
1.001	-	-	100	0.000	0.000	0.000
1.002	User	-	70	0.022	0.015	0.015
	Classification	Paved Area	100	0.057	0.057	0.072
	User	-	40	0.057	0.023	0.095
	User	-	70	0.063	0.044	0.139
1.003	User	-	70	0.020	0.014	0.014
	Classification	Paved Area	100	0.072	0.072	0.085
	User	-	40	0.072	0.029	0.114
	User	-	70	0.040	0.028	0.142
1.004	User	-	100	0.004	0.004	0.004
	Classification	Verge	50	0.002	0.001	0.005
	Classification	Verge	50	0.001	0.001	0.006
	User	-	70	0.005	0.003	0.009
	User	-	70	0.001	0.001	0.010
	User	-	70	0.001	0.001	0.011
	User	-	100	0.076	0.076	0.087
	User	-	70	0.005	0.003	0.090
	User	-	40	0.026	0.010	0.101
	User	-	70	0.009	0.006	0.107
	User	-	100	0.012	0.012	0.119
	User	-	40	0.012	0.005	0.124
	User	-	70	0.002	0.002	0.126
	User	-	100	0.014	0.014	0.139
	User	-	40	0.014	0.006	0.145
	User	-	70	0.003	0.002	0.147
	User	-	100	0.115	0.115	0.262
	User	-	40	0.115	0.046	0.308
	User	-	70	0.006	0.004	0.312
1.005	User	-	70	0.019	0.013	0.013
	User	-	70	0.012	0.008	0.022
	Classification	Verge	50	0.013	0.007	0.028
	User	-	100	0.015	0.015	0.043
	User	-	40	0.015	0.006	0.049
	User	-	70	0.007	0.005	0.054
	User	-	70	0.011	0.008	0.062
	User	-	100	0.050	0.050	0.112

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	40	0.050	0.020	0.133
1.006	User	-	100	0.056	0.056	0.056
	User	-	70	0.003	0.002	0.058
	User	-	70	0.004	0.003	0.060
	User	-	40	0.056	0.022	0.082
	User	-	40	0.002	0.001	0.083
	User	-	50	0.005	0.002	0.086
	User	-	100	0.003	0.003	0.088
	User	-	40	0.003	0.001	0.089
	User	-	100	0.010	0.010	0.099
	User	-	40	0.010	0.004	0.103
	User	-	70	0.002	0.001	0.105
	User	-	100	0.013	0.013	0.117
	Classification	Verge	50	0.058	0.029	0.146
1.007	Classification	Verge	50	0.055	0.028	0.028
	User	-	100	0.042	0.042	0.070
	User	-	70	0.006	0.004	0.074
	User	-	100	0.011	0.011	0.085
	User	-	40	0.012	0.005	0.090
	User	-	100	0.009	0.009	0.099
1.008	Classification	Verge	50	0.082	0.041	0.041
	User	-	100	0.055	0.055	0.095
	User	-	100	0.011	0.011	0.107
	User	-	70	0.006	0.004	0.111
	User	-	40	0.011	0.005	0.115
	User	-	70	0.025	0.018	0.133
	User	-	100	0.032	0.032	0.165
1.009	Classification	Verge	50	0.101	0.050	0.050
	User	-	100	0.068	0.068	0.119
	Classification	Verge	50	0.028	0.014	0.132
	User	-	100	0.098	0.098	0.230
	Classification	Verge	50	0.002	0.001	0.231
	User	-	100	0.010	0.010	0.241
	Classification	Verge	50	0.031	0.016	0.256
	User	-	40	0.070	0.028	0.284
1.010	Classification	Verge	50	0.023	0.011	0.011
	Classification	Verge	50	0.113	0.057	0.068
	User	-	100	0.062	0.062	0.130
	User	-	70	0.008	0.005	0.135
	User	-	100	0.080	0.080	0.215
1.011	Classification	Verge	50	0.020	0.010	0.010
	User	-	100	0.102	0.102	0.112
	User	-	70	0.060	0.042	0.154
	User	-	70	0.008	0.006	0.160
	User	-	100	0.056	0.056	0.216

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.012	User	-	70	0.031	0.022	0.022
	User	-	100	0.105	0.105	0.127
	User	-	100	0.036	0.036	0.162
	User	-	70	0.015	0.010	0.173
	User	-	100	0.031	0.031	0.204
	User	-	70	0.006	0.004	0.208
1.013	User	-	70	0.017	0.012	0.012
	Classification	user2	100	0.122	0.122	0.134
	Classification	User1	40	0.038	0.015	0.149
	User	-	70	0.020	0.014	0.163
	User	-	100	0.009	0.009	0.173
	User	-	40	0.009	0.004	0.176
	User	-	70	0.001	0.001	0.177
	User	-	70	0.003	0.002	0.179
1.014	User	-	100	0.071	0.071	0.071
	User	-	100	0.013	0.013	0.084
	User	-	40	0.027	0.011	0.095
	User	-	70	0.006	0.004	0.099
	User	-	100	0.059	0.059	0.159
	User	-	40	0.009	0.004	0.162
	User	-	40	0.030	0.012	0.174
	User	-	70	0.002	0.002	0.176
	User	-	40	0.044	0.018	0.194
2.000	User	-	70	0.005	0.003	0.003
	User	-	70	0.021	0.015	0.018
	User	-	100	0.021	0.021	0.038
	User	-	40	0.020	0.008	0.047
2.001	User	-	70	0.002	0.001	0.001
	User	-	70	0.011	0.008	0.009
	User	-	100	0.007	0.007	0.017
	User	-	40	0.007	0.003	0.019
2.002	User	-	70	0.004	0.003	0.003
	User	-	100	0.018	0.018	0.021
	User	-	40	0.018	0.007	0.028
	User	-	40	0.031	0.012	0.040
2.003	User	-	70	0.004	0.003	0.003
	User	-	70	0.030	0.021	0.024
	User	-	100	0.018	0.018	0.042
	User	-	40	0.018	0.007	0.050
2.004	User	-	70	0.005	0.003	0.003
	User	-	70	0.028	0.019	0.023
	User	-	100	0.018	0.018	0.040
	User	-	40	0.018	0.007	0.047
2.005	User	-	100	0.035	0.035	0.035
	User	-	70	0.004	0.003	0.038

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	70	0.026	0.018	0.056
	User	-	40	0.035	0.014	0.070
	User	-	100	0.017	0.017	0.087
	User	-	40	0.017	0.007	0.094
2.006	User	-	100	0.036	0.036	0.036
	User	-	70	0.004	0.003	0.039
	User	-	100	0.018	0.018	0.057
	User	-	70	0.027	0.019	0.076
	User	-	40	0.036	0.014	0.090
	User	-	40	0.018	0.007	0.098
2.007	User	-	70	0.021	0.014	0.014
	User	-	40	0.003	0.001	0.016
	User	-	100	0.014	0.014	0.029
	User	-	40	0.014	0.005	0.035
3.000	User	-	70	0.012	0.008	0.008
	User	-	100	0.009	0.009	0.017
	User	-	100	0.009	0.009	0.026
	User	-	100	0.017	0.017	0.043
	User	-	40	0.017	0.007	0.050
4.000	User	-	70	0.019	0.013	0.013
	User	-	100	0.038	0.038	0.052
	User	-	40	0.038	0.015	0.067
	User	-	100	0.038	0.038	0.105
	User	-	40	0.038	0.015	0.120
4.001	Classification	Default	100	0.013	0.013	0.013
	User	-	70	0.008	0.005	0.019
	User	-	100	0.014	0.014	0.032
	User	-	100	0.015	0.015	0.047
	User	-	40	0.015	0.006	0.053
4.002	User	-	70	0.017	0.012	0.012
	User	-	100	0.031	0.031	0.043
	User	-	40	0.032	0.013	0.056
	User	-	100	0.036	0.036	0.092
	User	-	40	0.035	0.014	0.106
4.003	User	-	40	0.022	0.009	0.009
	User	-	100	0.032	0.032	0.040
	User	-	40	0.032	0.013	0.053
	User	-	100	0.034	0.034	0.087
	User	-	40	0.034	0.014	0.101
4.004	User	-	70	0.022	0.016	0.016
	User	-	100	0.033	0.033	0.048
	User	-	40	0.034	0.013	0.062
	User	-	100	0.037	0.037	0.099
	User	-	40	0.037	0.015	0.113
4.005	User	-	70	0.022	0.015	0.015

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.031	0.031	0.047
	User	-	40	0.032	0.013	0.060
4.006	User	-	70	0.022	0.016	0.016
	User	-	100	0.043	0.043	0.059
	User	-	40	0.043	0.017	0.076
4.007	User	-	70	0.016	0.012	0.012
	User	-	100	0.015	0.015	0.027
	User	-	40	0.015	0.006	0.033
5.000	User	-	100	0.022	0.022	0.022
	User	-	40	0.022	0.009	0.030
	User	-	70	0.002	0.002	0.032
	User	-	70	0.009	0.006	0.038
5.001	User	-	100	0.021	0.021	0.021
	User	-	70	0.003	0.002	0.023
	User	-	40	0.021	0.008	0.031
	User	-	70	0.009	0.006	0.037
5.002	User	-	40	0.018	0.007	0.007
	User	-	100	0.018	0.018	0.026
	User	-	70	0.003	0.002	0.027
	User	-	70	0.008	0.005	0.033
5.003	User	-	100	0.020	0.020	0.020
	User	-	40	0.020	0.008	0.028
	User	-	40	0.020	0.008	0.035
	User	-	70	0.002	0.002	0.037
	User	-	70	0.006	0.004	0.041
5.004	User	-	100	0.013	0.013	0.013
	User	-	40	0.012	0.005	0.017
	User	-	70	0.003	0.002	0.020
5.005	User	-	100	0.005	0.005	0.005
	User	-	40	0.005	0.002	0.006
	User	-	70	0.003	0.002	0.008
5.006	User	-	100	0.029	0.029	0.029
	User	-	40	0.029	0.012	0.040
6.000	User	-	70	0.026	0.018	0.018
	User	-	100	0.039	0.039	0.057
	User	-	40	0.040	0.016	0.073
6.001	Classification	Default	100	0.016	0.016	0.016
	User	-	40	0.016	0.006	0.023
	User	-	70	0.011	0.007	0.030
6.002	User	-	70	0.027	0.019	0.019
	User	-	100	0.041	0.041	0.060
	User	-	40	0.041	0.016	0.076
6.003	User	-	70	0.031	0.021	0.021
	User	-	100	0.042	0.042	0.063
	User	-	40	0.042	0.017	0.080

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
6.004	User	-	70	0.032	0.022	0.022
	User	-	100	0.042	0.042	0.064
	User	-	40	0.042	0.017	0.081
6.005	User	-	70	0.031	0.022	0.022
	User	-	100	0.041	0.041	0.063
	User	-	40	0.042	0.017	0.080
6.006	User	-	70	0.030	0.021	0.021
	Classification	Paved Area	100	0.040	0.040	0.062
	User	-	40	0.041	0.016	0.078
6.007	User	-	100	0.030	0.030	0.030
	User	-	40	0.030	0.012	0.042
	User	-	70	0.006	0.004	0.046
6.008	User	-	40	0.000	0.000	0.000
7.000	User	-	70	0.009	0.006	0.006
7.001	User	-	70	0.006	0.004	0.004
	User	-	100	0.061	0.061	0.065
	User	-	40	0.061	0.025	0.090
	User	-	70	0.015	0.010	0.100
	User	-	100	0.062	0.062	0.162
5.007	User	-	70	0.014	0.010	0.010
8.000	User	-	70	0.007	0.005	0.005
	User	-	100	0.007	0.007	0.012
	User	-	40	0.007	0.003	0.015
	User	-	70	0.000	0.000	0.015
	User	-	100	0.008	0.008	0.023
	User	-	40	0.008	0.003	0.026
	User	-	70	0.002	0.002	0.027
8.001	User	-	70	0.010	0.007	0.007
4.008	User	-	100	0.030	0.030	0.030
	User	-	40	0.030	0.012	0.042
2.008	User	-	100	0.027	0.027	0.027
	User	-	40	0.027	0.011	0.038
	User	-	70	0.002	0.002	0.039
9.000	User	-	70	0.001	0.000	0.000
	User	-	100	0.002	0.002	0.003
	User	-	40	0.002	0.001	0.004
	User	-	70	0.003	0.002	0.006
2.009	-	-	100	0.000	0.000	0.000
1.015	User	-	100	0.038	0.038	0.038
	User	-	100	0.018	0.018	0.057
	User	-	70	0.000	0.000	0.057
	User	-	70	0.003	0.002	0.059
	User	-	70	0.001	0.001	0.060
	User	-	100	0.006	0.006	0.066
	User	-	40	0.006	0.002	0.069

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Verge	50	0.008	0.004	0.073
	User	-	100	0.015	0.015	0.088
	User	-	40	0.015	0.006	0.094
1.016	Classification	Verge	50	0.019	0.009	0.009
	Classification	Verge	50	0.027	0.013	0.023
	Classification	user2	100	0.041	0.041	0.063
	Classification	user2	100	0.057	0.057	0.121
	Classification	User1	40	0.065	0.026	0.147
	Classification	Verge	50	0.008	0.004	0.151
	Classification	Paved Area	100	0.003	0.003	0.153
	User	-	100	0.035	0.035	0.188
	User	-	40	0.034	0.014	0.202
	User	-	100	0.018	0.018	0.220
	User	-	40	0.018	0.007	0.227
1.017	Classification	Paved Area	100	0.001	0.001	0.001
	Classification	Verge	50	0.012	0.006	0.007
	Classification	user2	100	0.081	0.081	0.088
	Classification	User1	40	0.055	0.022	0.110
	Classification	Verge	50	0.038	0.019	0.129
	User	-	100	0.035	0.035	0.164
	User	-	40	0.035	0.014	0.178
	User	-	100	0.022	0.022	0.199
	User	-	40	0.022	0.009	0.208
1.018	Classification	user2	100	0.031	0.031	0.031
	Classification	Verge	50	0.018	0.009	0.040
	Classification	Verge	50	0.008	0.004	0.044
	Classification	user2	100	0.017	0.017	0.061
10.000	User	-	100	0.045	0.045	0.045
	User	-	40	0.045	0.018	0.063
	User	-	100	0.048	0.048	0.110
	User	-	40	0.047	0.019	0.129
10.001	User	-	100	0.062	0.062	0.062
	User	-	40	0.062	0.025	0.087
10.002	User	-	100	0.046	0.046	0.046
	User	-	40	0.047	0.019	0.065
11.000	User	-	100	0.042	0.042	0.042
	User	-	40	0.042	0.017	0.059
	User	-	100	0.049	0.049	0.108
	User	-	40	0.049	0.020	0.128
11.001	User	-	100	0.062	0.062	0.062
	User	-	100	0.062	0.062	0.125
	User	-	40	0.063	0.025	0.150
11.002	User	-	100	0.041	0.041	0.041
	User	-	40	0.041	0.016	0.057
10.003	-	-	100	0.000	0.000	0.000

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
10.004	-	-	100	0.000	0.000	0.000
10.005	Classification	Verge	50	0.057	0.029	0.029
	Classification	Paved Area	100	0.063	0.063	0.092
	User	-	100	0.057	0.057	0.149
	Classification	Verge	50	0.028	0.014	0.163
10.006	Classification	Verge	50	0.030	0.015	0.015
	Classification	user2	100	0.065	0.065	0.080
10.007	Classification	Verge	50	0.021	0.010	0.010
	Classification	user2	100	0.047	0.047	0.057
10.008	Classification	Verge	50	0.036	0.018	0.018
	Classification	user2	100	0.078	0.078	0.096
	User	-	50	0.014	0.007	0.103
	User	-	100	0.030	0.030	0.133
12.000	User	-	100	0.002	0.002	0.002
	User	-	100	0.035	0.035	0.036
	User	-	40	0.035	0.014	0.050
	User	-	70	0.007	0.005	0.056
	Classification	Paved Area	100	0.020	0.020	0.076
	User	-	40	0.020	0.008	0.084
	User	-	70	0.002	0.002	0.085
	User	-	100	0.010	0.010	0.095
	User	-	40	0.010	0.004	0.099
12.001	Classification	Paved Area	100	0.022	0.022	0.022
	Classification	Paved Area	100	0.016	0.016	0.039
	User	-	40	0.016	0.007	0.045
	User	-	70	0.006	0.004	0.049
	Classification	Paved Area	100	0.018	0.018	0.067
	User	-	40	0.018	0.007	0.075
	User	-	70	0.009	0.007	0.081
	User	-	100	0.010	0.010	0.091
	User	-	40	0.010	0.004	0.095
13.000	User	-	70	0.008	0.005	0.005
	User	-	20	0.024	0.005	0.010
13.001	-	-	100	0.000	0.000	0.000
13.002	User	-	70	0.006	0.004	0.004
	User	-	20	0.029	0.006	0.010
13.003	-	-	100	0.000	0.000	0.000
12.002	User	-	100	0.000	0.000	0.000
	User	-	100	0.014	0.014	0.014
	User	-	100	0.021	0.021	0.035
	User	-	40	0.021	0.008	0.044
	User	-	70	0.005	0.004	0.047
	Classification	Paved Area	100	0.014	0.014	0.061
	User	-	70	0.008	0.005	0.066
	User	-	100	0.011	0.011	0.077

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.012	0.012	0.089
	User	-	40	0.013	0.005	0.094
	User	-	100	0.012	0.012	0.107
	User	-	100	0.004	0.004	0.110
	User	-	40	0.004	0.001	0.112
	User	-	100	0.007	0.007	0.119
12.003	User	-	100	0.040	0.040	0.040
	User	-	40	0.040	0.016	0.056
	User	-	70	0.011	0.008	0.064
	User	-	100	0.017	0.017	0.081
	User	-	70	0.014	0.009	0.090
	User	-	100	0.062	0.062	0.153
	User	-	100	0.012	0.012	0.164
	User	-	40	0.012	0.005	0.169
	Classification	Verge	50	0.005	0.003	0.171
	User	-	100	0.005	0.005	0.176
	User	-	100	0.004	0.004	0.180
12.004	-	-	100	0.000	0.000	0.000
12.005	User	-	100	0.037	0.037	0.037
	User	-	40	0.037	0.015	0.051
	User	-	70	0.017	0.012	0.063
	User	-	100	0.014	0.014	0.077
	User	-	70	0.013	0.009	0.086
	User	-	100	0.043	0.043	0.129
	User	-	100	0.004	0.004	0.132
	User	-	70	0.004	0.003	0.135
	User	-	100	0.001	0.001	0.136
	User	-	100	0.006	0.006	0.141
	User	-	70	0.005	0.004	0.145
	User	-	100	0.014	0.014	0.159
	User	-	70	0.001	0.000	0.159
	User	-	70	0.001	0.000	0.159
	User	-	100	0.021	0.021	0.180
	User	-	40	0.008	0.003	0.183
12.006	User	-	70	0.004	0.003	0.003
	User	-	70	0.004	0.003	0.006
	User	-	100	0.005	0.005	0.011
	User	-	70	0.005	0.003	0.014
	User	-	100	0.030	0.030	0.044
	User	-	100	0.008	0.008	0.053
	User	-	100	0.009	0.009	0.062
	User	-	50	0.002	0.001	0.063
	User	-	100	0.013	0.013	0.076
	User	-	100	0.014	0.014	0.091
	User	-	50	0.005	0.002	0.093

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.065	0.065	0.158
	User	-	40	0.065	0.026	0.184
12.007	User	-	70	0.007	0.005	0.005
	User	-	100	0.016	0.016	0.020
	User	-	40	0.007	0.003	0.023
	User	-	70	0.039	0.028	0.051
	User	-	100	0.008	0.008	0.058
	User	-	40	0.008	0.003	0.062
	User	-	100	0.017	0.017	0.079
	User	-	40	0.017	0.007	0.086
	User	-	50	0.000	0.000	0.086
	User	-	50	0.003	0.002	0.088
	User	-	70	0.015	0.010	0.098
	User	-	100	0.038	0.038	0.136
12.008	-	-	100	0.000	0.000	0.000
12.009	User	-	70	0.010	0.007	0.007
	User	-	100	0.014	0.014	0.021
	User	-	40	0.014	0.006	0.026
	User	-	100	0.027	0.027	0.053
	User	-	40	0.027	0.011	0.064
	User	-	70	0.014	0.010	0.074
	User	-	100	0.048	0.048	0.121
	User	-	40	0.048	0.019	0.140
12.010	User	-	70	0.012	0.008	0.008
	User	-	70	0.010	0.007	0.016
	User	-	100	0.015	0.015	0.030
	User	-	40	0.015	0.006	0.036
	User	-	100	0.033	0.033	0.069
	User	-	40	0.033	0.013	0.082
	User	-	100	0.022	0.022	0.105
	User	-	100	0.021	0.021	0.126
	User	-	100	0.008	0.008	0.134
	User	-	40	0.008	0.003	0.137
	User	-	40	0.023	0.009	0.147
	User	-	70	0.004	0.003	0.150
12.011	User	-	100	0.013	0.013	0.013
	User	-	40	0.014	0.005	0.018
	User	-	70	0.001	0.001	0.019
	User	-	100	0.002	0.002	0.021
	User	-	40	0.002	0.001	0.022
	User	-	70	0.007	0.005	0.027
	User	-	70	0.003	0.002	0.029
	User	-	70	0.009	0.006	0.035
	User	-	100	0.025	0.025	0.061
	User	-	40	0.025	0.010	0.071

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.074	0.074	0.144
	User	-	40	0.074	0.030	0.174
	User	-	70	0.000	0.000	0.174
12.012	User	-	100	0.017	0.017	0.017
	User	-	40	0.016	0.006	0.023
	User	-	70	0.008	0.006	0.029
	User	-	70	0.004	0.003	0.031
	User	-	100	0.032	0.032	0.063
	User	-	40	0.032	0.013	0.076
	User	-	70	0.012	0.009	0.085
	User	-	100	0.073	0.073	0.158
	User	-	40	0.073	0.029	0.187
12.013	User	-	40	0.016	0.007	0.007
	User	-	70	0.012	0.009	0.015
	User	-	70	0.017	0.012	0.027
	User	-	40	0.016	0.006	0.033
	User	-	70	0.004	0.003	0.036
	User	-	100	0.032	0.032	0.068
	User	-	40	0.032	0.013	0.081
	User	-	100	0.086	0.086	0.167
	User	-	40	0.085	0.034	0.201
12.014	User	-	100	0.033	0.033	0.033
	User	-	40	0.032	0.013	0.046
	User	-	70	0.012	0.009	0.055
	User	-	100	0.016	0.016	0.071
	User	-	40	0.016	0.006	0.077
	User	-	70	0.004	0.003	0.080
	User	-	100	0.092	0.092	0.172
	User	-	40	0.092	0.037	0.209
12.015	User	-	100	0.070	0.070	0.070
	User	-	70	0.009	0.006	0.076
	User	-	70	0.006	0.004	0.080
	User	-	100	0.012	0.012	0.092
	User	-	40	0.012	0.005	0.096
	User	-	70	0.003	0.002	0.098
	User	-	100	0.023	0.023	0.122
	User	-	40	0.024	0.009	0.131
	User	-	40	0.070	0.028	0.159
12.016	User	-	70	0.022	0.016	0.016
	User	-	100	0.077	0.077	0.093
	User	-	70	0.010	0.007	0.100
	User	-	40	0.038	0.015	0.115
	User	-	70	0.007	0.005	0.120
	User	-	100	0.014	0.014	0.134
	User	-	40	0.013	0.005	0.139

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	70	0.003	0.002	0.141
	User	-	100	0.027	0.027	0.169
	User	-	40	0.027	0.011	0.179
	User	-	40	0.078	0.031	0.211
12.017	Classification	user2	100	0.020	0.020	0.020
	Classification	user2	100	0.073	0.073	0.094
	Classification	User1	40	0.020	0.008	0.102
	Classification	User1	40	0.073	0.029	0.131
	User	-	70	0.014	0.010	0.141
	User	-	100	0.017	0.017	0.159
	User	-	40	0.017	0.007	0.165
	User	-	70	0.004	0.003	0.168
	User	-	70	0.013	0.009	0.178
	User	-	100	0.001	0.001	0.179
	User	-	40	0.001	0.001	0.180
	User	-	100	0.036	0.036	0.216
	User	-	40	0.036	0.015	0.231
	User	-	70	0.052	0.036	0.267
	User	-	70	0.001	0.001	0.268
	User	-	70	0.001	0.001	0.269
	User	-	100	0.077	0.077	0.346
	User	-	40	0.077	0.031	0.377
	User	-	100	0.008	0.008	0.384
	User	-	40	0.008	0.003	0.387
	User	-	70	0.001	0.001	0.388
	User	-	70	0.004	0.003	0.391
	User	-	100	0.015	0.015	0.405
	User	-	40	0.015	0.006	0.411
	User	-	70	0.002	0.002	0.413
	User	-	100	0.002	0.002	0.414
	User	-	40	0.002	0.001	0.415
	User	-	70	0.005	0.003	0.418
	User	-	100	0.006	0.006	0.424
	User	-	40	0.006	0.002	0.427
	User	-	100	0.027	0.027	0.454
	User	-	40	0.027	0.011	0.465
12.018	Classification	Verge	50	0.015	0.007	0.007
	Classification	user2	100	0.059	0.059	0.066
	Classification	User1	40	0.108	0.043	0.109
	Classification	Verge	50	0.020	0.010	0.119
	Classification	user2	100	0.079	0.079	0.199
	Classification	user3	70	0.008	0.005	0.204
	Classification	user2	100	0.020	0.020	0.224
	Classification	user3	70	0.002	0.002	0.226
	Classification	User1	40	0.020	0.008	0.234

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	70	0.002	0.001	0.235
	User	-	100	0.017	0.017	0.252
	User	-	40	0.017	0.007	0.259
	User	-	100	0.015	0.015	0.274
	User	-	40	0.015	0.006	0.280
	User	-	70	0.006	0.004	0.284
	User	-	70	0.014	0.010	0.294
12.019	Classification	Verge	50	0.031	0.015	0.015
	Classification	user2	100	0.116	0.116	0.131
	Classification	User1	40	0.062	0.025	0.156
	Classification	user3	70	0.012	0.008	0.164
	Classification	user2	100	0.030	0.030	0.194
	Classification	User1	40	0.030	0.012	0.206
	Classification	user3	70	0.004	0.003	0.209
	User	-	100	0.015	0.015	0.224
	User	-	40	0.015	0.006	0.230
	User	-	70	0.012	0.009	0.239
12.020	Classification	Verge	50	0.034	0.017	0.017
	Classification	user2	100	0.046	0.046	0.063
	Classification	User1	40	0.009	0.004	0.067
	Classification	user3	70	0.006	0.005	0.072
	Classification	user2	100	0.018	0.018	0.090
	Classification	user3	70	0.002	0.002	0.091
	Classification	user2	100	0.009	0.009	0.100
	Classification	User1	40	0.009	0.004	0.103
	Classification	User1	40	0.018	0.007	0.111
	User	-	70	0.012	0.008	0.119
14.000	Classification	Verge	50	0.012	0.006	0.006
	Classification	Verge	50	0.003	0.001	0.007
	Classification	user2	100	0.021	0.021	0.028
	Classification	user2	100	0.021	0.021	0.049
	Classification	user2	100	0.011	0.011	0.060
	Classification	user3	70	0.008	0.006	0.066
	User	-	100	0.004	0.004	0.070
14.001	Classification	Verge	50	0.005	0.002	0.002
	Classification	Verge	50	0.044	0.022	0.024
	User	-	100	0.001	0.001	0.025
	User	-	40	0.003	0.001	0.026
	Classification	user2	100	0.030	0.030	0.056
	Classification	user2	100	0.013	0.013	0.069
	Classification	Verge	50	0.001	0.001	0.070
	Classification	user3	70	0.000	0.000	0.070
	Classification	user2	100	0.006	0.006	0.077
	User	-	70	0.021	0.014	0.091
14.002	Classification	Verge	50	0.050	0.025	0.025

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	user2	100	0.043	0.043	0.068
	Classification	User1	40	0.010	0.004	0.072
	Classification	Verge	50	0.008	0.004	0.076
	Classification	user4	20	0.006	0.001	0.078
	Classification	user2	100	0.023	0.023	0.100
	Classification	User1	40	0.022	0.009	0.109
	Classification	user3	70	0.003	0.002	0.111
	Classification	user2	100	0.011	0.011	0.122
	Classification	User1	40	0.011	0.004	0.126
	User	-	70	0.005	0.003	0.129
14.003	Classification	Verge	50	0.044	0.022	0.022
	Classification	user2	100	0.052	0.052	0.074
	Classification	User1	40	0.038	0.015	0.089
	Classification	user3	70	0.011	0.008	0.097
	Classification	user2	100	0.028	0.028	0.125
	Classification	user3	70	0.003	0.002	0.128
	Classification	user2	100	0.014	0.014	0.142
	Classification	User1	40	0.028	0.011	0.153
	Classification	User1	40	0.014	0.006	0.159
	User	-	70	0.011	0.008	0.167
14.004	Classification	Verge	50	0.021	0.011	0.011
	Classification	user2	100	0.027	0.027	0.038
	Classification	User1	40	0.014	0.006	0.043
	Classification	user3	70	0.006	0.004	0.047
	Classification	user2	100	0.015	0.015	0.062
	Classification	user3	70	0.002	0.001	0.063
	Classification	user2	100	0.007	0.007	0.070
	Classification	User1	40	0.015	0.006	0.076
	Classification	User1	40	0.007	0.003	0.079
14.005	User	-	100	0.062	0.062	0.062
	Classification	Verge	50	0.049	0.025	0.087
	User	-	70	0.011	0.008	0.094
	User	-	100	0.029	0.029	0.124
	User	-	70	0.004	0.003	0.127
	User	-	100	0.015	0.015	0.142
	User	-	40	0.025	0.010	0.152
	User	-	40	0.029	0.011	0.163
	User	-	40	0.015	0.006	0.169
	Classification	Verge	50	0.018	0.009	0.178
	Classification	user2	100	0.024	0.024	0.202
	Classification	User1	40	0.004	0.002	0.204
	Classification	user3	70	0.004	0.003	0.206
	Classification	user2	100	0.010	0.010	0.217
	Classification	user2	100	0.005	0.005	0.222
	Classification	User1	40	0.005	0.002	0.224

Area Summary for Proposed Network A40 Main-Line and Link Road

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	User1	40	0.010	0.004	0.228
	User	-	70	0.001	0.001	0.229
12.021	User	-	70	0.029	0.020	0.020
1.019	-	-	100	0.000	0.000	0.000
1.020	User	-	100	0.618	0.618	0.618
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				15.354	11.314	11.314

Free Flowing Outfall Details for Proposed Network A40 Main-Line and Link Road

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.022	J2-PRHW-04	25.000	24.029	0.000	0	0

Simulation Criteria for Proposed Network A40 Main-Line and Link Road

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

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

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.350		

Storage Structures for Proposed Network A40 Main-Line and Link Road

Tank or Pond Manhole: J2-PRHW-01, DS/PN: 1.020

Invert Level (m) 24.276

Depth (m)	**Area (m²)**	**Depth (m)**	**Area (m²)**	**Depth (m)**	**Area (m²)**	**Depth (m)**	**Area (m²)**
0.000	2900.0	0.600	3376.3	0.900	3628.0	1.200	3888.7

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

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 0 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	J2-PRMH1-01	15 Summer	1	+0%	100/15 Summer			
1.001	J2-PRMH1-02	15 Summer	1	+0%	100/15 Summer			
1.002	J2-PRMH1-03	15 Summer	1	+0%	30/15 Summer			
1.003	J2-PRMH1-04	15 Summer	1	+0%	30/15 Summer			
1.004	J2-PRMH1-05	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
1.005	J2-PRMH1-06	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
1.006	J2-PRMH1-07	30 Summer	1	+0%	5/15 Summer	30/30 Summer		
1.007	J2-PRMH1-08	30 Summer	1	+0%	5/30 Summer	100/15 Summer		
1.008	J2-PRMH1-09	30 Summer	1	+0%	5/30 Summer			
1.009	J2-PRMH1-10	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
1.010	J2-PRMH1-11	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
1.011	J2-PRMH1-12	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
1.012	J2-PRMH1-13	30 Summer	1	+0%	5/30 Summer	100/15 Summer		
1.013	J2-PRMH1-14	30 Summer	1	+0%	5/30 Summer	30/60 Summer		
1.014	J2-PRMH1-15	30 Summer	1	+0%	5/15 Summer			

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	J2-PRMH1-01	33.195	-0.130	0.000	0.35		10.8	OK	
1.001	J2-PRMH1-02	32.977	-0.148	0.000	0.23		9.9	OK	
1.002	J2-PRMH1-03	32.381	-0.119	0.000	0.43		25.3	OK	
1.003	J2-PRMH1-04	31.128	-0.177	0.000	0.34		41.2	OK	
1.004	J2-PRMH1-05	30.179	-0.126	0.000	0.71		72.5	OK	6
1.005	J2-PRMH1-06	29.864	-0.181	0.000	0.52		84.5	OK	5
1.006	J2-PRMH1-07	29.452	-0.113	0.000	0.80		94.6	OK	8
1.007	J2-PRMH1-08	29.092	-0.143	0.000	0.69		100.6	OK	7
1.008	J2-PRMH1-09	28.733	-0.152	0.000	0.75		107.9	OK	
1.009	J2-PRMH1-10	28.491	-0.209	0.000	0.55		121.4	OK	7
1.010	J2-PRMH1-11	28.039	-0.201	0.000	0.59		130.9	OK	7
1.011	J2-PRMH1-12	27.590	-0.200	0.000	0.59		141.0	OK	7
1.012	J2-PRMH1-13	27.099	-0.201	0.000	0.59		152.1	OK	7
1.013	J2-PRMH1-14	26.658	-0.192	0.000	0.62		162.2	OK	10
1.014	J2-PRMH1-15	26.107	-0.199	0.000	0.60		173.7	OK	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
2.000	Dummy_J2-PRMH1-90	15 Summer	1	+0%			
2.001	Dummy_J2-PRMH1-91	15 Summer	1	+0%			
2.002	Dummy_J2-PRMH1-92	30 Summer	1	+0%			
2.003	Dummy_J2-PRMH1-93	30 Summer	1	+0%			
2.004	Dummy_J2-PRMH1-94	30 Summer	1	+0%			
2.005	Dummy_J2-PRMH1-95	30 Summer	1	+0%	100/15 Summer	100/15 Summer	
2.006	Dummy_J2-PRMH1-96	30 Summer	1	+0%	100/15 Summer	100/15 Summer	
2.007	Dummy_J2-PRMH1-97	30 Summer	1	+0%			
3.000	24	15 Summer	1	+0%		100/120 Summer	
4.000	Dummy_J2-PRMH1-79	15 Summer	1	+0%	30/15 Summer	30/15 Summer	
4.001	Dummy_J2-PRMH1-80	15 Summer	1	+0%			
4.002	Dummy_J2-PRMH1-81	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
4.003	Dummy_J2-PRMH1-82	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
4.004	Dummy_J2-PRMH1-83	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
4.005	Dummy_J2-PRMH1-84	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
4.006	Dummy_J2-PRMH1-85	60 Summer	1	+0%	100/15 Summer	100/15 Summer	
4.007	Dummy_J2-PRMH1-86	60 Summer	1	+0%			
5.000	Dummy_J2-PRMH1-61	15 Summer	1	+0%	100/15 Summer	100/15 Summer	
5.001	Dummy_J2-PRMH1-62	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
5.002	Dummy_J2-PRMH1-63	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
5.003	Dummy_J2-PRMH1-64	30 Summer	1	+0%			
5.004	Dummy_J2-PRMH1-65	30 Summer	1	+0%			
5.005	Dummy_J2-PRMH1-66	30 Summer	1	+0%			
5.006	Dummy_J2-PRMH1-57	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
6.000	Dummy_J2-PRMH1-69	15 Summer	1	+0%			
6.001	Dummy_J2-PRMH1-70	15 Summer	1	+0%	30/15 Summer	30/15 Summer	
6.002	Dummy_J2-PRMH1-71	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
6.003	Dummy_J2-PRMH1-72	30 Summer	1	+0%			
6.004	Dummy_J2-PRMH1-73	30 Summer	1	+0%	100/15 Summer	100/15 Summer	
6.005	Dummy_J2-PRMH1-74	30 Summer	1	+0%	30/15 Summer	30/15 Summer	
6.006	Dummy_J2-PRMH1-75	60 Summer	1	+0%	100/15 Summer	100/15 Summer	
6.007	J2-PRMH1-61	60 Summer	1	+0%	30/15 Summer		
6.008	J2-PRMH1-62	60 Summer	1	+0%	5/30 Summer		
7.000	49	15 Summer	1	+0%			
7.001	50	15 Summer	1	+0%	30/15 Summer	30/15 Summer	
5.007	J2-PRMH1-63	30 Summer	1	+0%	5/15 Summer	30/60 Summer	
8.000	52	15 Summer	1	+0%			
8.001	53	15 Summer	1	+0%			
4.008	J2-PRMH1-64	60 Summer	1	+0%	5/15 Summer	100/60 Summer	
2.008	J2-PRMH1-65	60 Summer	1	+0%	5/15 Summer	30/15 Summer	
9.000	58	15 Summer	1	+0%			
2.009	J2-PRMH1-66	60 Summer	1	+0%	5/15 Summer	100/15 Summer	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.000	Dummy_J2-PRMH1-90		32.684	-0.076	0.000	0.14		6.4	OK
2.001	Dummy_J2-PRMH1-91		31.718	-0.062	0.000	0.24		8.2	OK
2.002	Dummy_J2-PRMH1-92		31.411	-0.099	0.000	0.15		11.2	OK
2.003	Dummy_J2-PRMH1-93		30.740	-0.090	0.000	0.20		14.6	OK
2.004	Dummy_J2-PRMH1-94		30.055	-0.085	0.000	0.22		17.1	OK
2.005	Dummy_J2-PRMH1-95		29.354	-0.073	0.000	0.29		22.2	OK
2.006	Dummy_J2-PRMH1-96		28.665	-0.075	0.000	0.29		27.4	OK
2.007	Dummy_J2-PRMH1-97		27.470	-0.127	0.000	0.08		29.2	OK
3.000	24		26.892	-0.098	0.000	0.17		7.6	OK
4.000	Dummy_J2-PRMH1-79		32.524	-0.036	0.000	0.44		15.7	OK
4.001	Dummy_J2-PRMH1-80		31.953	-0.077	0.000	0.28		20.5	OK
4.002	Dummy_J2-PRMH1-81		31.683	-0.057	0.000	0.38		28.3	OK
4.003	Dummy_J2-PRMH1-82		31.022	-0.049	0.000	0.45		34.0	OK
4.004	Dummy_J2-PRMH1-83		30.337	-0.042	0.000	0.52		38.7	OK
4.005	Dummy_J2-PRMH1-84		29.642	-0.044	0.000	0.51		39.5	OK
4.006	Dummy_J2-PRMH1-85		28.890	-0.053	0.000	0.44		41.1	OK
4.007	Dummy_J2-PRMH1-86		27.718	-0.116	0.000	0.11		42.1	OK
5.000	Dummy_J2-PRMH1-61		27.465	-0.055	0.000	0.30		5.5	OK
5.001	Dummy_J2-PRMH1-62		27.416	-0.034	0.000	0.51		8.0	OK
5.002	Dummy_J2-PRMH1-63		27.362	-0.038	0.000	0.47		10.4	OK
5.003	Dummy_J2-PRMH1-64		27.239	-0.079	0.000	0.14		13.4	OK
5.004	Dummy_J2-PRMH1-65		27.181	-0.085	0.000	0.24		14.8	OK
5.005	Dummy_J2-PRMH1-66		27.104	-0.096	0.000	0.18		15.4	OK
5.006	Dummy_J2-PRMH1-57		27.047	-0.053	0.000	0.45		18.1	OK
6.000	Dummy_J2-PRMH1-69		32.473	-0.057	0.000	0.26		10.1	OK
6.001	Dummy_J2-PRMH1-70		31.925	-0.045	0.000	0.38		12.8	OK
6.002	Dummy_J2-PRMH1-71		31.691	-0.029	0.000	0.53		18.5	OK
6.003	Dummy_J2-PRMH1-72		30.951	-0.068	0.000	0.31		23.5	OK
6.004	Dummy_J2-PRMH1-73		30.268	-0.062	0.000	0.36		27.4	OK
6.005	Dummy_J2-PRMH1-74		29.554	-0.057	0.000	0.39		30.1	OK
6.006	Dummy_J2-PRMH1-75		28.831	-0.065	0.000	0.36		33.4	OK
6.007	J2-PRMH1-61		26.953	-0.184	0.000	0.31		35.1	OK
6.008	J2-PRMH1-62		26.598	-0.189	0.000	0.29		35.1	OK
7.000	49		27.358	-0.122	0.000	0.02		0.9	OK
7.001	50		27.128	-0.062	0.000	0.37		20.2	OK
5.007	J2-PRMH1-63		25.969	-0.291	0.000	0.30		65.2	OK
8.000	52		27.224	-0.086	0.000	0.11		4.1	OK
8.001	53		27.029	-0.111	0.000	0.12		5.0	OK
4.008	J2-PRMH1-64		25.894	-0.316	0.000	0.25		107.2	OK
2.008	J2-PRMH1-65		25.831	-0.229	0.000	0.39		139.7	OK
9.000	58		27.030	-0.120	0.000	0.02		0.9	OK

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.009	J2-PRMH1-66		25.794	-0.108	0.000	0.58		137.4	OK

PN	US/MH Name	Level Exceeded
2.000	Dummy_J2-PRMH1-90	
2.001	Dummy_J2-PRMH1-91	
2.002	Dummy_J2-PRMH1-92	
2.003	Dummy_J2-PRMH1-93	
2.004	Dummy_J2-PRMH1-94	
2.005	Dummy_J2-PRMH1-95	5
2.006	Dummy_J2-PRMH1-96	5
2.007	Dummy_J2-PRMH1-97	
3.000	24	
4.000	Dummy_J2-PRMH1-79	8
4.001	Dummy_J2-PRMH1-80	
4.002	Dummy_J2-PRMH1-81	8
4.003	Dummy_J2-PRMH1-82	12
4.004	Dummy_J2-PRMH1-83	15
4.005	Dummy_J2-PRMH1-84	16
4.006	Dummy_J2-PRMH1-85	5
4.007	Dummy_J2-PRMH1-86	
5.000	Dummy_J2-PRMH1-61	1
5.001	Dummy_J2-PRMH1-62	12
5.002	Dummy_J2-PRMH1-63	11
5.003	Dummy_J2-PRMH1-64	
5.004	Dummy_J2-PRMH1-65	
5.005	Dummy_J2-PRMH1-66	
5.006	Dummy_J2-PRMH1-57	12
6.000	Dummy_J2-PRMH1-69	
6.001	Dummy_J2-PRMH1-70	5
6.002	Dummy_J2-PRMH1-71	12
6.003	Dummy_J2-PRMH1-72	
6.004	Dummy_J2-PRMH1-73	5
6.005	Dummy_J2-PRMH1-74	11
6.006	Dummy_J2-PRMH1-75	5
6.007	J2-PRMH1-61	
6.008	J2-PRMH1-62	
7.000	49	
7.001	50	8

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Level Exceeded
5.007	J2-PRMH1-63	10
8.000	52	
8.001	53	
4.008	J2-PRMH1-64	3
2.008	J2-PRMH1-65	23
9.000	58	
2.009	J2-PRMH1-66	8

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.015	J2-PRMH1-16	60 Summer	1	+0%	5/15 Summer			
1.016	J2-PRMH1-17	60 Summer	1	+0%	5/15 Summer			
1.017	J2-PRMH1-18	60 Summer	1	+0%	5/15 Summer			
1.018	J2-PRMH1-19	60 Summer	1	+0%	5/15 Summer			
10.000	J2-PRMH1-21	15 Summer	1	+0%	30/15 Summer			
10.001	J2-PRMH1-22	15 Summer	1	+0%	30/15 Summer			
10.002	J2-PRMH1-23	15 Summer	1	+0%	30/15 Summer			
11.000	J2-PRMH1-56	15 Summer	1	+0%	30/15 Summer			
11.001	J2-PRMH1-57	15 Summer	1	+0%	30/15 Summer			
11.002	J2-PRMH1-58	15 Summer	1	+0%	30/15 Summer			
10.003	J2-PRMH1-24	15 Summer	1	+0%	5/15 Summer			
10.004	J2-PRMH1-25	15 Summer	1	+0%	100/15 Summer			
10.005	J2-PRMH1-26	15 Summer	1	+0%				
10.006	J2-PRMH1-27	15 Summer	1	+0%				
10.007	J2-PRMH1-28	15 Summer	1	+0%	100/15 Summer			
10.008	J2-PRMH1-29	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.000	J2-PRMH1-30	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.001	J2-PRMH1-31	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
13.000	J2-PRMH1-59	15 Summer	1	+0%				
13.001	J2-PRMH59A	15 Summer	1	+0%	100/15 Summer			
13.002	J1-PRMH1-60	15 Summer	1	+0%	100/15 Summer			
13.003	J1-PRMH1-58	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.002	J2-PRMH1-32	15 Summer	1	+0%	30/15 Summer			
12.003	J2-PRMH1-33	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.004	J2-PRMH1-33A	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.005	J2-PRMH1-34	15 Summer	1	+0%	5/15 Summer	30/15 Summer		
12.006	J2-PRMH1-35	30 Summer	1	+0%	5/30 Summer	100/30 Summer		
12.007	J2-PRMH1-36	30 Summer	1	+0%	30/15 Summer			
12.008	J2-PRMH1-36A	30 Summer	1	+0%	30/15 Summer	100/30 Summer		
12.009	J2-PRMH1-37	30 Summer	1	+0%	30/15 Summer	100/30 Summer		
12.010	J2-PRMH1-38	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.011	J2-PRMH1-39	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.012	J2-PRMH1-40	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
12.013	J2-PRMH1-41	30 Summer	1	+0%	5/30 Summer	100/30 Summer		
12.014	J2-PRMH1-42	30 Summer	1	+0%	5/30 Summer			
12.015	J2-PRMH1-43	30 Summer	1	+0%	30/30 Summer	100/30 Summer		
12.016	J2-PRMH1-44	30 Summer	1	+0%	30/30 Summer			
12.017	J2-PRMH1-45	60 Summer	1	+0%	30/30 Summer	100/30 Summer		
12.018	J2-PRMH1-46	60 Summer	1	+0%	30/15 Summer	100/30 Summer		
12.019	J2-PRMH1-47	60 Summer	1	+0%	5/30 Summer	100/15 Summer		
12.020	J2-PRMH1-48	60 Summer	1	+0%	5/30 Summer	100/15 Summer		
14.000	J2-PRMH1-50	15 Summer	1	+0%	30/15 Summer			

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.015	J2-PRMH1-16	25.768	-0.090	0.000	1.00		304.1	OK	
1.016	J2-PRMH1-17	25.630	-0.086	0.000	1.00		308.0	OK	
1.017	J2-PRMH1-18	25.422	-0.134	0.000	0.95		314.3	OK	
1.018	J2-PRMH1-19	25.270	-0.115	0.000	0.95		317.9	OK	
10.000	J2-PRMH1-21	32.920	-0.102	0.000	0.56		19.8	OK	
10.001	J2-PRMH1-22	32.649	-0.173	0.000	0.37		30.6	OK	
10.002	J2-PRMH1-23	32.398	-0.156	0.000	0.46		38.0	OK	
11.000	J2-PRMH1-56	32.925	-0.097	0.000	0.59		19.5	OK	
11.001	J2-PRMH1-57	32.725	-0.125	0.000	0.61		37.1	OK	
11.002	J2-PRMH1-58	32.552	-0.151	0.000	0.49		43.4	OK	
10.003	J2-PRMH1-24	32.242	-0.146	0.000	0.68		80.2	OK	
10.004	J2-PRMH1-25	32.041	-0.218	0.000	0.36		80.7	OK	
10.005	J2-PRMH1-26	31.647	-0.226	0.000	0.33		96.1	OK	
10.006	J2-PRMH1-27	29.839	-0.233	0.000	0.31		103.1	OK	
10.007	J2-PRMH1-28	27.903	-0.227	0.000	0.33		108.1	OK	
10.008	J2-PRMH1-29	26.570	-0.199	0.000	0.44		120.3	OK	4
12.000	J2-PRMH1-30	33.412	-0.125	0.000	0.40		15.1	OK	3
12.001	J2-PRMH1-31	33.179	-0.071	0.000	0.80		26.7	OK	4
13.000	J2-PRMH1-59	33.603	-0.197	0.000	0.04		1.4	OK	
13.001	J2-PRMH59A	33.232	-0.202	0.000	0.02		1.4	OK	
13.002	J1-PRMH1-60	33.036	-0.176	0.000	0.10		2.4	OK	
13.003	J1-PRMH1-58	32.788	-0.182	0.000	0.08		2.4	OK	2
12.002	J2-PRMH1-32	32.732	-0.171	0.000	0.38		41.4	OK	
12.003	J2-PRMH1-33	32.285	-0.148	0.000	0.50		61.0	OK	3
12.004	J2-PRMH1-33A	31.677	-0.151	0.000	0.49		60.4	OK	3
12.005	J2-PRMH1-34	31.125	-0.098	0.000	0.76		77.5	OK	9
12.006	J2-PRMH1-35	30.290	-0.143	0.000	0.68		93.9	OK	3
12.007	J2-PRMH1-36	29.867	-0.223	0.000	0.50		105.8	OK	
12.008	J2-PRMH1-36A	29.720	-0.200	0.000	0.60		105.6	OK	3
12.009	J2-PRMH1-37	29.586	-0.214	0.000	0.54		115.5	OK	1
12.010	J2-PRMH1-38	29.250	-0.200	0.000	0.58		124.1	OK	5
12.011	J2-PRMH1-39	28.895	-0.192	0.000	0.61		133.1	OK	6
12.012	J2-PRMH1-40	28.466	-0.195	0.000	0.61		141.3	OK	7
12.013	J2-PRMH1-41	28.013	-0.175	0.000	0.68		149.1	OK	5
12.014	J2-PRMH1-42	27.570	-0.186	0.000	0.74		155.7	OK	
12.015	J2-PRMH1-43	27.319	-0.257	0.000	0.52		160.1	OK	5
12.016	J2-PRMH1-44	27.054	-0.232	0.000	0.60		165.3	OK	
12.017	J2-PRMH1-45	26.735	-0.281	0.000	0.44		183.5	OK	4
12.018	J2-PRMH1-46	25.959	-0.311	0.000	0.46		198.4	OK	4
12.019	J2-PRMH1-47	25.605	-0.269	0.000	0.58		210.3	OK	7
12.020	J2-PRMH1-48	25.377	-0.247	0.000	0.65		214.9	OK	7

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.000	J2-PRMH1-50	32.532	-0.153	0.000	0.22		10.7	OK	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
14.001	J2-PRMH1-51	15 Summer	1	+0%	30/15 Summer			
14.002	J2-PRMH1-52	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
14.003	J2-PRMH1-53	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
14.004	J2-PRMH1-54	15 Summer	1	+0%	30/15 Summer			
14.005	J2-PRMH1-55	15 Summer	1	+0%	30/15 Summer			
12.021	J2-PRMH1-49	30 Summer	1	+0%	5/15 Summer			
1.019	J2-PRMH1-20	60 Summer	1	+0%	5/30 Summer			
1.020	J2-PRHW-01	240 Summer	1	+0%	30/30 Summer			
1.021	J2-PRHW-02	240 Summer	1	+0%				
1.022	J2-PRMH1-68	240 Summer	1	+0%	30/60 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.001	J2-PRMH1-51	32.025	-0.136	0.000	0.33		22.4	OK	
14.002	J2-PRMH1-52	31.410	-0.117	0.000	0.46		38.9	OK	3
14.003	J2-PRMH1-53	29.805	-0.102	0.000	0.57		60.0	OK	3
14.004	J2-PRMH1-54	27.373	-0.160	0.000	0.44		69.3	OK	
14.005	J2-PRMH1-55	26.121	-0.191	0.000	0.47		96.2	OK	
12.021	J2-PRMH1-49	25.161	-0.267	0.000	0.59		267.5	OK	
1.019	J2-PRMH1-20	25.059	-0.235	0.000	0.81		611.2	OK	
1.020	J2-PRHW-01	24.648	-0.228	0.000	0.60		184.5	OK*	
1.021	J2-PRHW-02	24.537	-0.183	0.000	0.62		184.3	OK*	
1.022	J2-PRMH1-68	24.493	-0.180	0.000	0.83		184.4	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

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 0 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	J2-PRMH1-01	15 Summer	5	+0%	100/15 Summer			
1.001	J2-PRMH1-02	15 Summer	5	+0%	100/15 Summer			
1.002	J2-PRMH1-03	15 Summer	5	+0%	30/15 Summer			
1.003	J2-PRMH1-04	15 Summer	5	+0%	30/15 Summer			
1.004	J2-PRMH1-05	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
1.005	J2-PRMH1-06	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
1.006	J2-PRMH1-07	30 Summer	5	+0%	5/15 Summer	30/30 Summer		
1.007	J2-PRMH1-08	30 Summer	5	+0%	5/30 Summer	100/15 Summer		
1.008	J2-PRMH1-09	30 Summer	5	+0%	5/30 Summer			
1.009	J2-PRMH1-10	30 Summer	5	+0%	30/15 Summer	100/15 Summer		
1.010	J2-PRMH1-11	30 Summer	5	+0%	30/15 Summer	100/15 Summer		
1.011	J2-PRMH1-12	30 Summer	5	+0%	30/15 Summer	100/15 Summer		
1.012	J2-PRMH1-13	30 Summer	5	+0%	5/30 Summer	100/15 Summer		
1.013	J2-PRMH1-14	30 Summer	5	+0%	5/30 Summer	30/60 Summer		
1.014	J2-PRMH1-15	30 Summer	5	+0%	5/15 Summer			

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	J2-PRMH1-01	33.229	-0.096	0.000	0.58		18.1	OK	
1.001	J2-PRMH1-02	33.002	-0.123	0.000	0.39		16.6	OK	
1.002	J2-PRMH1-03	32.422	-0.078	0.000	0.72		42.3	OK	
1.003	J2-PRMH1-04	31.171	-0.134	0.000	0.57		68.6	OK	
1.004	J2-PRMH1-05	30.416	0.111	0.000	1.15		118.5	SURCHARGED	6
1.005	J2-PRMH1-06	29.987	-0.058	0.000	0.78		126.6	OK	5
1.006	J2-PRMH1-07	29.695	0.130	0.000	1.18		139.8	SURCHARGED	8
1.007	J2-PRMH1-08	29.235	0.000	0.000	0.99		144.0	SURCHARGED	7
1.008	J2-PRMH1-09	28.890	0.005	0.000	1.06		152.8	SURCHARGED	
1.009	J2-PRMH1-10	28.561	-0.139	0.000	0.81		177.5	OK	7
1.010	J2-PRMH1-11	28.125	-0.115	0.000	0.90		200.4	OK	7
1.011	J2-PRMH1-12	27.712	-0.078	0.000	0.93		221.8	OK	7
1.012	J2-PRMH1-13	27.410	0.110	0.000	0.91		236.4	SURCHARGED	7
1.013	J2-PRMH1-14	27.154	0.304	0.000	0.92		240.0	SURCHARGED	10
1.014	J2-PRMH1-15	26.830	0.524	0.000	0.81		237.3	SURCHARGED	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
2.000	Dummy_J2-PRMH1-90	15 Summer	5	+0%			
2.001	Dummy_J2-PRMH1-91	15 Summer	5	+0%			
2.002	Dummy_J2-PRMH1-92	15 Summer	5	+0%			
2.003	Dummy_J2-PRMH1-93	30 Summer	5	+0%			
2.004	Dummy_J2-PRMH1-94	30 Summer	5	+0%			
2.005	Dummy_J2-PRMH1-95	30 Summer	5	+0%	100/15 Summer	100/15 Summer	
2.006	Dummy_J2-PRMH1-96	30 Summer	5	+0%	100/15 Summer	100/15 Summer	
2.007	Dummy_J2-PRMH1-97	30 Summer	5	+0%			
3.000	24	15 Summer	5	+0%		100/120 Summer	
4.000	Dummy_J2-PRMH1-79	15 Summer	5	+0%	30/15 Summer	30/15 Summer	
4.001	Dummy_J2-PRMH1-80	15 Summer	5	+0%			
4.002	Dummy_J2-PRMH1-81	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
4.003	Dummy_J2-PRMH1-82	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
4.004	Dummy_J2-PRMH1-83	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
4.005	Dummy_J2-PRMH1-84	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
4.006	Dummy_J2-PRMH1-85	30 Summer	5	+0%	100/15 Summer	100/15 Summer	
4.007	Dummy_J2-PRMH1-86	30 Summer	5	+0%			
5.000	Dummy_J2-PRMH1-61	15 Summer	5	+0%	100/15 Summer	100/15 Summer	
5.001	Dummy_J2-PRMH1-62	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
5.002	Dummy_J2-PRMH1-63	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
5.003	Dummy_J2-PRMH1-64	30 Summer	5	+0%			
5.004	Dummy_J2-PRMH1-65	30 Summer	5	+0%			
5.005	Dummy_J2-PRMH1-66	30 Summer	5	+0%			
5.006	Dummy_J2-PRMH1-57	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
6.000	Dummy_J2-PRMH1-69	15 Summer	5	+0%			
6.001	Dummy_J2-PRMH1-70	15 Summer	5	+0%	30/15 Summer	30/15 Summer	
6.002	Dummy_J2-PRMH1-71	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
6.003	Dummy_J2-PRMH1-72	30 Summer	5	+0%			
6.004	Dummy_J2-PRMH1-73	30 Summer	5	+0%	100/15 Summer	100/15 Summer	
6.005	Dummy_J2-PRMH1-74	30 Summer	5	+0%	30/15 Summer	30/15 Summer	
6.006	Dummy_J2-PRMH1-75	30 Summer	5	+0%	100/15 Summer	100/15 Summer	
6.007	J2-PRMH1-61	30 Summer	5	+0%	30/15 Summer		
6.008	J2-PRMH1-62	30 Summer	5	+0%	5/30 Summer		
7.000	49	15 Summer	5	+0%			
7.001	50	15 Summer	5	+0%	30/15 Summer	30/15 Summer	
5.007	J2-PRMH1-63	30 Summer	5	+0%	5/15 Summer	30/60 Summer	
8.000	52	15 Summer	5	+0%			
8.001	53	15 Summer	5	+0%			
4.008	J2-PRMH1-64	30 Summer	5	+0%	5/15 Summer	100/60 Summer	
2.008	J2-PRMH1-65	30 Summer	5	+0%	5/15 Summer	30/15 Summer	
9.000	58	15 Summer	5	+0%			
2.009	J2-PRMH1-66	30 Summer	5	+0%	5/15 Summer	100/15 Summer	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.000	Dummy_J2-PRMH1-90		32.699	-0.061	0.000	0.23		10.9	OK
2.001	Dummy_J2-PRMH1-91		31.739	-0.041	0.000	0.41		14.0	OK
2.002	Dummy_J2-PRMH1-92		31.433	-0.077	0.000	0.25		19.0	OK
2.003	Dummy_J2-PRMH1-93		30.764	-0.066	0.000	0.33		24.6	OK
2.004	Dummy_J2-PRMH1-94		30.082	-0.058	0.000	0.38		28.7	OK
2.005	Dummy_J2-PRMH1-95		29.382	-0.045	0.000	0.50		37.6	OK
2.006	Dummy_J2-PRMH1-96		28.694	-0.046	0.000	0.49		46.9	OK
2.007	Dummy_J2-PRMH1-97		27.488	-0.109	0.000	0.13		50.1	OK
3.000	24		26.913	-0.077	0.000	0.28		12.8	OK
4.000	Dummy_J2-PRMH1-79		32.551	-0.009	0.000	0.77		27.6	OK
4.001	Dummy_J2-PRMH1-80		31.983	-0.047	0.000	0.49		36.2	OK
4.002	Dummy_J2-PRMH1-81		31.715	-0.025	0.000	0.65		48.9	OK
4.003	Dummy_J2-PRMH1-82		31.058	-0.013	0.000	0.78		58.8	OK
4.004	Dummy_J2-PRMH1-83		30.376	-0.003	0.000	0.90		67.6	OK
4.005	Dummy_J2-PRMH1-84		29.681	-0.005	0.000	0.90		69.3	OK
4.006	Dummy_J2-PRMH1-85		28.925	-0.018	0.000	0.75		71.2	OK
4.007	Dummy_J2-PRMH1-86		27.739	-0.095	0.000	0.19		72.4	OK
5.000	Dummy_J2-PRMH1-61		27.488	-0.032	0.000	0.51		9.5	OK
5.001	Dummy_J2-PRMH1-62		27.443	-0.007	0.000	0.86		13.6	OK
5.002	Dummy_J2-PRMH1-63		27.388	-0.012	0.000	0.79		17.5	OK
5.003	Dummy_J2-PRMH1-64		27.255	-0.063	0.000	0.24		22.9	OK
5.004	Dummy_J2-PRMH1-65		27.209	-0.057	0.000	0.41		25.5	OK
5.005	Dummy_J2-PRMH1-66		27.127	-0.073	0.000	0.31		26.5	OK
5.006	Dummy_J2-PRMH1-57		27.082	-0.018	0.000	0.78		31.7	OK
6.000	Dummy_J2-PRMH1-69		32.495	-0.035	0.000	0.45		17.3	OK
6.001	Dummy_J2-PRMH1-70		31.948	-0.022	0.000	0.65		22.0	OK
6.002	Dummy_J2-PRMH1-71		31.719	-0.001	0.000	0.90		31.4	OK
6.003	Dummy_J2-PRMH1-72		30.980	-0.039	0.000	0.54		40.2	OK
6.004	Dummy_J2-PRMH1-73		30.300	-0.030	0.000	0.62		47.4	OK
6.005	Dummy_J2-PRMH1-74		29.588	-0.023	0.000	0.69		52.6	OK
6.006	Dummy_J2-PRMH1-75		28.862	-0.034	0.000	0.62		58.0	OK
6.007	J2-PRMH1-61		26.995	-0.142	0.000	0.54		60.4	OK
6.008	J2-PRMH1-62		26.861	0.074	0.000	0.48		58.1	SURCHARGED
7.000	49		27.367	-0.113	0.000	0.03		1.5	OK
7.001	50		27.160	-0.030	0.000	0.65		35.8	OK
5.007	J2-PRMH1-63		26.738	0.478	0.000	0.46		100.5	SURCHARGED
8.000	52		27.240	-0.070	0.000	0.19		7.0	OK
8.001	53		27.049	-0.091	0.000	0.21		8.5	OK
4.008	J2-PRMH1-64		26.718	0.508	0.000	0.38		167.5	SURCHARGED
2.008	J2-PRMH1-65		26.695	0.635	0.000	0.59		213.3	SURCHARGED
9.000	58		27.041	-0.109	0.000	0.03		1.5	OK

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.009	J2-PRMH1-66		26.641	0.739	0.000	0.90		211.6	SURCHARGED

PN	US/MH Name	Level Exceeded
2.000	Dummy_J2-PRMH1-90	
2.001	Dummy_J2-PRMH1-91	
2.002	Dummy_J2-PRMH1-92	
2.003	Dummy_J2-PRMH1-93	
2.004	Dummy_J2-PRMH1-94	
2.005	Dummy_J2-PRMH1-95	5
2.006	Dummy_J2-PRMH1-96	5
2.007	Dummy_J2-PRMH1-97	
3.000	24	
4.000	Dummy_J2-PRMH1-79	8
4.001	Dummy_J2-PRMH1-80	
4.002	Dummy_J2-PRMH1-81	8
4.003	Dummy_J2-PRMH1-82	12
4.004	Dummy_J2-PRMH1-83	15
4.005	Dummy_J2-PRMH1-84	16
4.006	Dummy_J2-PRMH1-85	5
4.007	Dummy_J2-PRMH1-86	
5.000	Dummy_J2-PRMH1-61	1
5.001	Dummy_J2-PRMH1-62	12
5.002	Dummy_J2-PRMH1-63	11
5.003	Dummy_J2-PRMH1-64	
5.004	Dummy_J2-PRMH1-65	
5.005	Dummy_J2-PRMH1-66	
5.006	Dummy_J2-PRMH1-57	12
6.000	Dummy_J2-PRMH1-69	
6.001	Dummy_J2-PRMH1-70	5
6.002	Dummy_J2-PRMH1-71	12
6.003	Dummy_J2-PRMH1-72	
6.004	Dummy_J2-PRMH1-73	5
6.005	Dummy_J2-PRMH1-74	11
6.006	Dummy_J2-PRMH1-75	5
6.007	J2-PRMH1-61	
6.008	J2-PRMH1-62	
7.000	49	
7.001	50	8

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Level Exceeded
5.007	J2-PRMH1-63	10
8.000	52	
8.001	53	
4.008	J2-PRMH1-64	3
2.008	J2-PRMH1-65	23
9.000	58	
2.009	J2-PRMH1-66	8

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.015	J2-PRMH1-16	30 Summer	5	+0%	5/15 Summer			
1.016	J2-PRMH1-17	60 Summer	5	+0%	5/15 Summer			
1.017	J2-PRMH1-18	60 Summer	5	+0%	5/15 Summer			
1.018	J2-PRMH1-19	60 Summer	5	+0%	5/15 Summer			
10.000	J2-PRMH1-21	15 Summer	5	+0%	30/15 Summer			
10.001	J2-PRMH1-22	15 Summer	5	+0%	30/15 Summer			
10.002	J2-PRMH1-23	15 Summer	5	+0%	30/15 Summer			
11.000	J2-PRMH1-56	15 Summer	5	+0%	30/15 Summer			
11.001	J2-PRMH1-57	15 Summer	5	+0%	30/15 Summer			
11.002	J2-PRMH1-58	15 Summer	5	+0%	30/15 Summer			
10.003	J2-PRMH1-24	15 Summer	5	+0%	5/15 Summer			
10.004	J2-PRMH1-25	15 Summer	5	+0%	100/15 Summer			
10.005	J2-PRMH1-26	15 Summer	5	+0%				
10.006	J2-PRMH1-27	15 Summer	5	+0%				
10.007	J2-PRMH1-28	15 Summer	5	+0%	100/15 Summer			
10.008	J2-PRMH1-29	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.000	J2-PRMH1-30	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.001	J2-PRMH1-31	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
13.000	J2-PRMH1-59	15 Summer	5	+0%				
13.001	J2-PRMH59A	15 Summer	5	+0%	100/15 Summer			
13.002	J1-PRMH1-60	15 Summer	5	+0%	100/15 Summer			
13.003	J1-PRMH1-58	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.002	J2-PRMH1-32	15 Summer	5	+0%	30/15 Summer			
12.003	J2-PRMH1-33	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.004	J2-PRMH1-33A	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.005	J2-PRMH1-34	15 Summer	5	+0%	5/15 Summer	30/15 Summer		
12.006	J2-PRMH1-35	30 Summer	5	+0%	5/30 Summer	100/30 Summer		
12.007	J2-PRMH1-36	30 Summer	5	+0%	30/15 Summer			
12.008	J2-PRMH1-36A	30 Summer	5	+0%	30/15 Summer	100/30 Summer		
12.009	J2-PRMH1-37	30 Summer	5	+0%	30/15 Summer	100/30 Summer		
12.010	J2-PRMH1-38	30 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.011	J2-PRMH1-39	30 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.012	J2-PRMH1-40	30 Summer	5	+0%	30/15 Summer	100/15 Summer		
12.013	J2-PRMH1-41	30 Summer	5	+0%	5/30 Summer	100/30 Summer		
12.014	J2-PRMH1-42	30 Summer	5	+0%	5/30 Summer			
12.015	J2-PRMH1-43	30 Winter	5	+0%	30/30 Summer	100/30 Summer		
12.016	J2-PRMH1-44	30 Winter	5	+0%	30/30 Summer			
12.017	J2-PRMH1-45	30 Summer	5	+0%	30/30 Summer	100/30 Summer		
12.018	J2-PRMH1-46	30 Summer	5	+0%	30/15 Summer	100/30 Summer		
12.019	J2-PRMH1-47	30 Summer	5	+0%	5/30 Summer	100/15 Summer		
12.020	J2-PRMH1-48	60 Summer	5	+0%	5/30 Summer	100/15 Summer		
14.000	J2-PRMH1-50	15 Summer	5	+0%	30/15 Summer			

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.015	J2-PRMH1-16	26.602	0.744	0.000	1.38		421.2	SURCHARGED	
1.016	J2-PRMH1-17	26.362	0.646	0.000	1.39		429.3	SURCHARGED	
1.017	J2-PRMH1-18	26.050	0.494	0.000	1.32		436.8	SURCHARGED	
1.018	J2-PRMH1-19	25.753	0.368	0.000	1.31		438.7	SURCHARGED	
10.000	J2-PRMH1-21	32.972	-0.050	0.000	0.93		33.1	OK	
10.001	J2-PRMH1-22	32.694	-0.128	0.000	0.61		50.9	OK	
10.002	J2-PRMH1-23	32.469	-0.085	0.000	0.75		63.0	OK	
11.000	J2-PRMH1-56	32.998	-0.024	0.000	0.98		32.3	OK	
11.001	J2-PRMH1-57	32.821	-0.029	0.000	0.99		60.4	OK	
11.002	J2-PRMH1-58	32.606	-0.097	0.000	0.79		70.3	OK	
10.003	J2-PRMH1-24	32.391	0.003	0.000	1.07		126.5	SURCHARGED	
10.004	J2-PRMH1-25	32.088	-0.171	0.000	0.57		125.4	OK	
10.005	J2-PRMH1-26	31.691	-0.183	0.000	0.51		150.4	OK	
10.006	J2-PRMH1-27	29.881	-0.191	0.000	0.48		162.0	OK	
10.007	J2-PRMH1-28	27.946	-0.184	0.000	0.52		170.1	OK	
10.008	J2-PRMH1-29	26.630	-0.139	0.000	0.71		190.8	OK	4
12.000	J2-PRMH1-30	33.459	-0.078	0.000	0.66		25.1	OK	3
12.001	J2-PRMH1-31	33.358	0.108	0.000	1.15		38.5	SURCHARGED	4
13.000	J2-PRMH1-59	33.612	-0.188	0.000	0.06		2.3	OK	
13.001	J2-PRMH59A	33.236	-0.198	0.000	0.04		2.4	OK	
13.002	J1-PRMH1-60	33.051	-0.161	0.000	0.16		4.0	OK	
13.003	J1-PRMH1-58	32.803	-0.167	0.000	0.14		4.0	OK	2
12.002	J2-PRMH1-32	32.768	-0.135	0.000	0.57		62.8	OK	
12.003	J2-PRMH1-33	32.340	-0.093	0.000	0.80		97.8	OK	3
12.004	J2-PRMH1-33A	31.816	-0.012	0.000	0.77		93.7	OK	3
12.005	J2-PRMH1-34	31.481	0.258	0.000	1.15		116.6	SURCHARGED	9
12.006	J2-PRMH1-35	30.433	0.000	0.000	1.00		137.7	SURCHARGED	3
12.007	J2-PRMH1-36	29.935	-0.155	0.000	0.75		158.6	OK	
12.008	J2-PRMH1-36A	29.801	-0.119	0.000	0.89		158.0	OK	3
12.009	J2-PRMH1-37	29.665	-0.135	0.000	0.82		177.1	OK	1
12.010	J2-PRMH1-38	29.340	-0.110	0.000	0.91		193.8	OK	5
12.011	J2-PRMH1-39	28.991	-0.096	0.000	0.96		208.7	OK	6
12.012	J2-PRMH1-40	28.617	-0.044	0.000	0.92		213.6	OK	7
12.013	J2-PRMH1-41	28.220	0.032	0.000	1.02		223.0	SURCHARGED	5
12.014	J2-PRMH1-42	27.768	0.012	0.000	1.10		232.0	SURCHARGED	
12.015	J2-PRMH1-43	27.399	-0.177	0.000	0.77		238.3	OK	5
12.016	J2-PRMH1-44	27.148	-0.138	0.000	0.89		247.7	OK	
12.017	J2-PRMH1-45	26.813	-0.203	0.000	0.68		286.8	OK	4
12.018	J2-PRMH1-46	26.065	-0.205	0.000	0.74		317.2	OK	4
12.019	J2-PRMH1-47	25.883	0.009	0.000	0.88		319.1	SURCHARGED	7
12.020	J2-PRMH1-48	25.710	0.086	0.000	0.96		317.1	SURCHARGED	7

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.000	J2-PRMH1-50	32.555	-0.130	0.000	0.36		17.9	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
14.001	J2-PRMH1-51	15 Summer	5	+0%	30/15 Summer			
14.002	J2-PRMH1-52	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
14.003	J2-PRMH1-53	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
14.004	J2-PRMH1-54	15 Summer	5	+0%	30/15 Summer			
14.005	J2-PRMH1-55	15 Summer	5	+0%	30/15 Summer			
12.021	J2-PRMH1-49	30 Summer	5	+0%	5/15 Summer			
1.019	J2-PRMH1-20	60 Summer	5	+0%	5/30 Summer			
1.020	J2-PRHW-01	180 Summer	5	+0%	30/30 Summer			
1.021	J2-PRHW-02	180 Summer	5	+0%				
1.022	J2-PRMH1-68	180 Summer	5	+0%	30/60 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.001	J2-PRMH1-51	32.056	-0.105	0.000	0.55		37.5	OK	
14.002	J2-PRMH1-52	31.452	-0.075	0.000	0.77		65.0	OK	3
14.003	J2-PRMH1-53	29.857	-0.050	0.000	0.95		100.3	OK	3
14.004	J2-PRMH1-54	27.426	-0.107	0.000	0.73		115.7	OK	
14.005	J2-PRMH1-55	26.194	-0.118	0.000	0.78		159.8	OK	
12.021	J2-PRMH1-49	25.535	0.107	0.000	0.80		366.3	SURCHARGED	
1.019	J2-PRMH1-20	25.357	0.063	0.000	1.17		878.4	SURCHARGED	
1.020	J2-PRHW-01	24.831	-0.045	0.000	0.84		258.0	OK*	
1.021	J2-PRHW-02	24.720	0.000	0.000	0.87		257.9	OK*	
1.022	J2-PRMH1-68	24.673	0.000	0.000	1.17		258.0	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

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 0 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	J2-PRMH1-01	15 Summer	30	+0%	100/15 Summer			
1.001	J2-PRMH1-02	15 Summer	30	+0%	100/15 Summer			
1.002	J2-PRMH1-03	30 Summer	30	+0%	30/15 Summer			
1.003	J2-PRMH1-04	15 Summer	30	+0%	30/15 Summer			
1.004	J2-PRMH1-05	15 Summer	30	+0%	5/15 Summer	100/15 Summer		
1.005	J2-PRMH1-06	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
1.006	J2-PRMH1-07	15 Summer	30	+0%	5/15 Summer	30/30 Summer		
1.007	J2-PRMH1-08	15 Summer	30	+0%	5/30 Summer	100/15 Summer		
1.008	J2-PRMH1-09	30 Summer	30	+0%	5/30 Summer			
1.009	J2-PRMH1-10	30 Summer	30	+0%	30/15 Summer	100/15 Summer		
1.010	J2-PRMH1-11	30 Winter	30	+0%	30/15 Summer	100/15 Summer		
1.011	J2-PRMH1-12	30 Winter	30	+0%	30/15 Summer	100/15 Summer		
1.012	J2-PRMH1-13	60 Summer	30	+0%	5/30 Summer	100/15 Summer		
1.013	J2-PRMH1-14	60 Summer	30	+0%	5/30 Summer	30/60 Summer		
1.014	J2-PRMH1-15	60 Summer	30	+0%	5/15 Summer			

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	J2-PRMH1-01	33.268	-0.057	0.000	0.86		26.5	OK	
1.001	J2-PRMH1-02	33.028	-0.097	0.000	0.57		24.5	OK	
1.002	J2-PRMH1-03	32.660	0.160	0.000	0.96		56.5	SURCHARGED	
1.003	J2-PRMH1-04	31.705	0.400	0.000	0.76		91.7	SURCHARGED	
1.004	J2-PRMH1-05	31.239	0.934	0.000	1.56		160.1	SURCHARGED	6
1.005	J2-PRMH1-06	30.767	0.722	0.000	1.04		168.8	SURCHARGED	5
1.006	J2-PRMH1-07	30.294	0.729	0.000	1.49		175.8	SURCHARGED	8
1.007	J2-PRMH1-08	29.636	0.401	0.000	1.22		177.2	SURCHARGED	7
1.008	J2-PRMH1-09	29.679	0.794	0.000	1.25		179.5	SURCHARGED	
1.009	J2-PRMH1-10	29.382	0.682	0.000	0.92		202.1	SURCHARGED	7
1.010	J2-PRMH1-11	28.982	0.742	0.000	0.97		216.2	SURCHARGED	7
1.011	J2-PRMH1-12	28.570	0.780	0.000	0.97		230.6	SURCHARGED	7
1.012	J2-PRMH1-13	28.182	0.882	0.000	0.95		245.2	SURCHARGED	7
1.013	J2-PRMH1-14	27.770	0.920	0.081	1.00		261.2	FLOOD	10
1.014	J2-PRMH1-15	27.230	0.924	0.000	0.96		280.1	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
2.000	Dummy_J2-PRMH1-90	15 Summer	30	+0%			
2.001	Dummy_J2-PRMH1-91	15 Summer	30	+0%			
2.002	Dummy_J2-PRMH1-92	15 Summer	30	+0%			
2.003	Dummy_J2-PRMH1-93	30 Summer	30	+0%			
2.004	Dummy_J2-PRMH1-94	30 Summer	30	+0%			
2.005	Dummy_J2-PRMH1-95	30 Summer	30	+0%	100/15 Summer	100/15 Summer	
2.006	Dummy_J2-PRMH1-96	30 Summer	30	+0%	100/15 Summer	100/15 Summer	
2.007	Dummy_J2-PRMH1-97	30 Summer	30	+0%			
3.000	24	15 Summer	30	+0%		100/120 Summer	
4.000	Dummy_J2-PRMH1-79	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
4.001	Dummy_J2-PRMH1-80	30 Summer	30	+0%			
4.002	Dummy_J2-PRMH1-81	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
4.003	Dummy_J2-PRMH1-82	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
4.004	Dummy_J2-PRMH1-83	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
4.005	Dummy_J2-PRMH1-84	30 Winter	30	+0%	30/15 Summer	30/15 Summer	
4.006	Dummy_J2-PRMH1-85	60 Summer	30	+0%	100/15 Summer	100/15 Summer	
4.007	Dummy_J2-PRMH1-86	60 Summer	30	+0%			
5.000	Dummy_J2-PRMH1-61	15 Summer	30	+0%	100/15 Summer	100/15 Summer	
5.001	Dummy_J2-PRMH1-62	15 Summer	30	+0%	30/15 Summer	30/15 Summer	
5.002	Dummy_J2-PRMH1-63	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
5.003	Dummy_J2-PRMH1-64	30 Summer	30	+0%			
5.004	Dummy_J2-PRMH1-65	30 Summer	30	+0%			
5.005	Dummy_J2-PRMH1-66	30 Summer	30	+0%			
5.006	Dummy_J2-PRMH1-57	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
6.000	Dummy_J2-PRMH1-69	15 Summer	30	+0%			
6.001	Dummy_J2-PRMH1-70	15 Summer	30	+0%	30/15 Summer	30/15 Summer	
6.002	Dummy_J2-PRMH1-71	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
6.003	Dummy_J2-PRMH1-72	30 Summer	30	+0%			
6.004	Dummy_J2-PRMH1-73	30 Summer	30	+0%	100/15 Summer	100/15 Summer	
6.005	Dummy_J2-PRMH1-74	30 Summer	30	+0%	30/15 Summer	30/15 Summer	
6.006	Dummy_J2-PRMH1-75	60 Summer	30	+0%	100/15 Summer	100/15 Summer	
6.007	J2-PRMH1-61	60 Summer	30	+0%	30/15 Summer		
6.008	J2-PRMH1-62	60 Summer	30	+0%	5/30 Summer		
7.000	49	15 Summer	30	+0%			
7.001	50	15 Summer	30	+0%	30/15 Summer	30/15 Summer	
5.007	J2-PRMH1-63	30 Summer	30	+0%	5/15 Summer	30/60 Summer	
8.000	52	15 Summer	30	+0%			
8.001	53	15 Summer	30	+0%			
4.008	J2-PRMH1-64	60 Summer	30	+0%	5/15 Summer	100/60 Summer	
2.008	J2-PRMH1-65	60 Summer	30	+0%	5/15 Summer	30/15 Summer	
9.000	58	15 Summer	30	+0%			
2.009	J2-PRMH1-66	60 Summer	30	+0%	5/15 Summer	100/15 Summer	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.000	Dummy_J2-PRMH1-90		32.714	-0.046	0.000	0.34		16.0	OK
2.001	Dummy_J2-PRMH1-91		31.758	-0.022	0.000	0.63		21.4	OK
2.002	Dummy_J2-PRMH1-92		31.459	-0.051	0.000	0.39		29.0	OK
2.003	Dummy_J2-PRMH1-93		30.790	-0.040	0.000	0.51		37.8	OK
2.004	Dummy_J2-PRMH1-94		30.107	-0.033	0.000	0.58		44.0	OK
2.005	Dummy_J2-PRMH1-95		29.415	-0.012	0.000	0.78		58.8	OK
2.006	Dummy_J2-PRMH1-96		28.729	-0.011	0.000	0.77		74.3	OK
2.007	Dummy_J2-PRMH1-97		27.506	-0.091	0.000	0.21		79.5	OK
3.000	24		26.934	-0.056	0.000	0.42		19.0	OK
4.000	Dummy_J2-PRMH1-79		32.561	0.001	0.820	0.99		35.7	FLOOD
4.001	Dummy_J2-PRMH1-80		32.005	-0.025	0.000	0.67		50.2	OK
4.002	Dummy_J2-PRMH1-81		31.741	0.001	1.115	0.96		72.4	FLOOD
4.003	Dummy_J2-PRMH1-82		31.076	0.005	5.348	1.00		74.7	FLOOD
4.004	Dummy_J2-PRMH1-83		30.388	0.009	9.123	1.00		75.4	FLOOD
4.005	Dummy_J2-PRMH1-84		29.688	0.002	2.434	1.01		77.7	FLOOD
4.006	Dummy_J2-PRMH1-85		28.940	-0.003	0.000	0.92		86.6	OK
4.007	Dummy_J2-PRMH1-86		27.748	-0.086	0.000	0.23		91.0	OK
5.000	Dummy_J2-PRMH1-61		27.507	-0.013	0.000	0.76		14.2	OK
5.001	Dummy_J2-PRMH1-62		27.452	0.002	1.726	1.04		16.5	FLOOD
5.002	Dummy_J2-PRMH1-63		27.400	0.000	0.351	1.05		23.3	FLOOD
5.003	Dummy_J2-PRMH1-64		27.272	-0.046	0.000	0.38		35.3	OK
5.004	Dummy_J2-PRMH1-65		27.236	-0.030	0.000	0.65		40.7	OK
5.005	Dummy_J2-PRMH1-66		27.153	-0.047	0.000	0.50		42.7	OK
5.006	Dummy_J2-PRMH1-57		27.102	0.002	1.994	1.06		43.2	FLOOD
6.000	Dummy_J2-PRMH1-69		32.514	-0.016	0.000	0.67		25.5	OK
6.001	Dummy_J2-PRMH1-70		31.970	0.000	0.138	0.97		32.8	FLOOD
6.002	Dummy_J2-PRMH1-71		31.725	0.005	4.962	1.01		35.2	FLOOD
6.003	Dummy_J2-PRMH1-72		31.003	-0.016	0.000	0.70		52.7	OK
6.004	Dummy_J2-PRMH1-73		30.329	-0.001	0.000	0.89		67.8	OK
6.005	Dummy_J2-PRMH1-74		29.612	0.001	1.325	0.99		75.5	FLOOD
6.006	Dummy_J2-PRMH1-75		28.890	-0.006	0.000	0.91		85.3	OK
6.007	J2-PRMH1-61		27.467	0.330	0.000	0.80		90.1	SURCHARGED
6.008	J2-PRMH1-62		27.237	0.450	0.000	0.75		89.9	SURCHARGED
7.000	49		27.376	-0.104	0.000	0.04		2.3	OK
7.001	50		27.192	0.002	1.944	1.03		56.6	FLOOD
5.007	J2-PRMH1-63		26.945	0.685	0.000	0.71		157.1	SURCHARGED
8.000	52		27.251	-0.059	0.000	0.27		10.3	OK
8.001	53		27.068	-0.072	0.000	0.31		12.9	OK
4.008	J2-PRMH1-64		26.944	0.734	0.000	0.58		253.5	SURCHARGED
2.008	J2-PRMH1-65		26.920	0.860	153.515	0.79		283.1	FLOOD
9.000	58		27.048	-0.102	0.000	0.05		2.3	OK

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.009	J2-PRMH1-66		26.871	0.969	0.000	1.22		288.6	SURCHARGED

PN	US/MH Name	Level Exceeded
2.000	Dummy_J2-PRMH1-90	
2.001	Dummy_J2-PRMH1-91	
2.002	Dummy_J2-PRMH1-92	
2.003	Dummy_J2-PRMH1-93	
2.004	Dummy_J2-PRMH1-94	
2.005	Dummy_J2-PRMH1-95	5
2.006	Dummy_J2-PRMH1-96	5
2.007	Dummy_J2-PRMH1-97	
3.000	24	
4.000	Dummy_J2-PRMH1-79	8
4.001	Dummy_J2-PRMH1-80	
4.002	Dummy_J2-PRMH1-81	8
4.003	Dummy_J2-PRMH1-82	12
4.004	Dummy_J2-PRMH1-83	15
4.005	Dummy_J2-PRMH1-84	16
4.006	Dummy_J2-PRMH1-85	5
4.007	Dummy_J2-PRMH1-86	
5.000	Dummy_J2-PRMH1-61	1
5.001	Dummy_J2-PRMH1-62	12
5.002	Dummy_J2-PRMH1-63	11
5.003	Dummy_J2-PRMH1-64	
5.004	Dummy_J2-PRMH1-65	
5.005	Dummy_J2-PRMH1-66	
5.006	Dummy_J2-PRMH1-57	12
6.000	Dummy_J2-PRMH1-69	
6.001	Dummy_J2-PRMH1-70	5
6.002	Dummy_J2-PRMH1-71	12
6.003	Dummy_J2-PRMH1-72	
6.004	Dummy_J2-PRMH1-73	5
6.005	Dummy_J2-PRMH1-74	11
6.006	Dummy_J2-PRMH1-75	5
6.007	J2-PRMH1-61	
6.008	J2-PRMH1-62	
7.000	49	
7.001	50	8

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Level Exceeded
5.007	J2-PRMH1-63	10
8.000	52	
8.001	53	
4.008	J2-PRMH1-64	3
2.008	J2-PRMH1-65	23
9.000	58	
2.009	J2-PRMH1-66	8

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.015	J2-PRMH1-16	30 Summer	30	+0%	5/15 Summer			
1.016	J2-PRMH1-17	30 Summer	30	+0%	5/15 Summer			
1.017	J2-PRMH1-18	60 Summer	30	+0%	5/15 Summer			
1.018	J2-PRMH1-19	60 Summer	30	+0%	5/15 Summer			
10.000	J2-PRMH1-21	15 Summer	30	+0%	30/15 Summer			
10.001	J2-PRMH1-22	15 Summer	30	+0%	30/15 Summer			
10.002	J2-PRMH1-23	15 Summer	30	+0%	30/15 Summer			
11.000	J2-PRMH1-56	15 Summer	30	+0%	30/15 Summer			
11.001	J2-PRMH1-57	15 Summer	30	+0%	30/15 Summer			
11.002	J2-PRMH1-58	15 Summer	30	+0%	30/15 Summer			
10.003	J2-PRMH1-24	15 Summer	30	+0%	5/15 Summer			
10.004	J2-PRMH1-25	15 Summer	30	+0%	100/15 Summer			
10.005	J2-PRMH1-26	15 Summer	30	+0%				
10.006	J2-PRMH1-27	15 Summer	30	+0%				
10.007	J2-PRMH1-28	15 Summer	30	+0%	100/15 Summer			
10.008	J2-PRMH1-29	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.000	J2-PRMH1-30	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.001	J2-PRMH1-31	15 Summer	30	+0%	5/15 Summer	100/15 Summer		
13.000	J2-PRMH1-59	15 Summer	30	+0%				
13.001	J2-PRMH59A	15 Summer	30	+0%	100/15 Summer			
13.002	J1-PRMH1-60	15 Summer	30	+0%	100/15 Summer			
13.003	J1-PRMH1-58	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.002	J2-PRMH1-32	15 Summer	30	+0%	30/15 Summer			
12.003	J2-PRMH1-33	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.004	J2-PRMH1-33A	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.005	J2-PRMH1-34	15 Summer	30	+0%	5/15 Summer	30/15 Summer		
12.006	J2-PRMH1-35	15 Summer	30	+0%	5/30 Summer	100/30 Summer		
12.007	J2-PRMH1-36	15 Summer	30	+0%	30/15 Summer			
12.008	J2-PRMH1-36A	15 Summer	30	+0%	30/15 Summer	100/30 Summer		
12.009	J2-PRMH1-37	15 Summer	30	+0%	30/15 Summer	100/30 Summer		
12.010	J2-PRMH1-38	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.011	J2-PRMH1-39	30 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.012	J2-PRMH1-40	30 Summer	30	+0%	30/15 Summer	100/15 Summer		
12.013	J2-PRMH1-41	30 Winter	30	+0%	5/30 Summer	100/30 Summer		
12.014	J2-PRMH1-42	30 Summer	30	+0%	5/30 Summer			
12.015	J2-PRMH1-43	30 Summer	30	+0%	30/30 Summer	100/30 Summer		
12.016	J2-PRMH1-44	30 Summer	30	+0%	30/30 Summer			
12.017	J2-PRMH1-45	30 Summer	30	+0%	30/30 Summer	100/30 Summer		
12.018	J2-PRMH1-46	15 Summer	30	+0%	30/15 Summer	100/30 Summer		
12.019	J2-PRMH1-47	60 Summer	30	+0%	5/30 Summer	100/15 Summer		
12.020	J2-PRMH1-48	60 Summer	30	+0%	5/30 Summer	100/15 Summer		
14.000	J2-PRMH1-50	15 Summer	30	+0%	30/15 Summer			

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.015	J2-PRMH1-16	26.820	0.962	0.000	1.50		456.2	SURCHARGED	
1.016	J2-PRMH1-17	26.665	0.949	0.000	1.48		456.3	SURCHARGED	
1.017	J2-PRMH1-18	26.388	0.832	0.000	1.39		460.6	SURCHARGED	
1.018	J2-PRMH1-19	26.073	0.688	0.000	1.38		462.6	SURCHARGED	
10.000	J2-PRMH1-21	33.222	0.200	0.000	1.33		47.1	SURCHARGED	
10.001	J2-PRMH1-22	32.888	0.066	0.000	0.85		70.7	SURCHARGED	
10.002	J2-PRMH1-23	32.711	0.156	0.000	1.00		83.8	SURCHARGED	
11.000	J2-PRMH1-56	33.569	0.547	0.000	1.30		42.7	SURCHARGED	
11.001	J2-PRMH1-57	33.286	0.436	0.000	1.47		89.6	SURCHARGED	
11.002	J2-PRMH1-58	32.972	0.269	0.000	1.13		101.3	SURCHARGED	
10.003	J2-PRMH1-24	32.550	0.163	0.000	1.54		180.8	SURCHARGED	
10.004	J2-PRMH1-25	32.146	-0.114	0.000	0.82		182.2	OK	
10.005	J2-PRMH1-26	31.741	-0.133	0.000	0.71		208.9	OK	
10.006	J2-PRMH1-27	29.930	-0.143	0.000	0.68		229.0	OK	
10.007	J2-PRMH1-28	28.002	-0.128	0.000	0.74		244.0	OK	
10.008	J2-PRMH1-29	26.883	0.113	0.000	1.03		278.1	SURCHARGED	4
12.000	J2-PRMH1-30	34.088	0.551	0.000	0.81		30.9	SURCHARGED	3
12.001	J2-PRMH1-31	33.909	0.659	0.000	1.56		52.2	SURCHARGED	4
13.000	J2-PRMH1-59	33.621	-0.179	0.000	0.09		3.4	OK	
13.001	J2-PRMH59A	33.242	-0.192	0.000	0.05		3.4	OK	
13.002	J1-PRMH1-60	33.132	-0.080	0.000	0.25		6.1	OK	
13.003	J1-PRMH1-58	33.110	0.140	0.000	0.70		20.0	SURCHARGED	2
12.002	J2-PRMH1-32	33.115	0.212	0.000	0.75		82.2	SURCHARGED	
12.003	J2-PRMH1-33	33.013	0.580	0.000	0.97		118.5	SURCHARGED	3
12.004	J2-PRMH1-33A	32.560	0.732	0.000	0.90		110.4	SURCHARGED	3
12.005	J2-PRMH1-34	32.126	0.903	1.565	1.36		137.8	FLOOD	9
12.006	J2-PRMH1-35	30.712	0.279	0.000	1.30		178.6	SURCHARGED	3
12.007	J2-PRMH1-36	30.163	0.073	0.000	0.91		191.7	SURCHARGED	
12.008	J2-PRMH1-36A	30.033	0.113	0.000	1.04		185.1	SURCHARGED	3
12.009	J2-PRMH1-37	29.909	0.109	0.000	0.96		206.6	SURCHARGED	1
12.010	J2-PRMH1-38	29.623	0.173	0.000	0.99		211.1	SURCHARGED	5
12.011	J2-PRMH1-39	29.473	0.386	0.000	1.04		224.8	SURCHARGED	6
12.012	J2-PRMH1-40	29.041	0.380	0.000	1.02		238.5	SURCHARGED	7
12.013	J2-PRMH1-41	28.545	0.357	0.000	1.15		252.1	SURCHARGED	5
12.014	J2-PRMH1-42	28.005	0.249	0.000	1.29		272.7	SURCHARGED	
12.015	J2-PRMH1-43	27.729	0.153	0.000	0.93		286.5	SURCHARGED	5
12.016	J2-PRMH1-44	27.511	0.225	0.000	1.10		304.6	SURCHARGED	
12.017	J2-PRMH1-45	27.231	0.215	0.000	0.90		377.3	SURCHARGED	4
12.018	J2-PRMH1-46	26.597	0.327	0.000	0.94		402.2	SURCHARGED	4
12.019	J2-PRMH1-47	26.568	0.694	0.000	1.08		389.4	SURCHARGED	7
12.020	J2-PRMH1-48	26.310	0.686	0.000	1.20		399.2	SURCHARGED	7

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.000	J2-PRMH1-50	32.763	0.078	0.000	0.51		25.4	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
14.001	J2-PRMH1-51	15 Summer	30	+0%	30/15 Summer			
14.002	J2-PRMH1-52	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
14.003	J2-PRMH1-53	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
14.004	J2-PRMH1-54	15 Summer	30	+0%	30/15 Summer			
14.005	J2-PRMH1-55	15 Summer	30	+0%	30/15 Summer			
12.021	J2-PRMH1-49	30 Summer	30	+0%	5/15 Summer			
1.019	J2-PRMH1-20	30 Summer	30	+0%	5/30 Summer			
1.020	J2-PRHW-01	180 Summer	30	+0%	30/30 Summer			
1.021	J2-PRHW-02	180 Summer	30	+0%				
1.022	J2-PRMH1-68	180 Summer	30	+0%	30/60 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.001	J2-PRMH1-51	32.698	0.537	0.000	0.75		51.7	SURCHARGED	
14.002	J2-PRMH1-52	32.448	0.921	0.000	0.94		80.2	SURCHARGED	3
14.003	J2-PRMH1-53	31.105	1.198	0.000	1.20		126.4	SURCHARGED	3
14.004	J2-PRMH1-54	27.697	0.164	0.000	0.96		151.4	SURCHARGED	
14.005	J2-PRMH1-55	26.578	0.266	0.000	1.12		229.0	SURCHARGED	
12.021	J2-PRMH1-49	26.085	0.657	0.000	1.17		536.5	SURCHARGED	
1.019	J2-PRMH1-20	25.693	0.399	0.000	1.61		1211.6	SURCHARGED	
1.020	J2-PRHW-01	25.075	0.199	0.000	1.18		360.7	SURCHARGED*	
1.021	J2-PRHW-02	24.720	0.000	0.000	1.22		360.7	SURCHARGED*	
1.022	J2-PRMH1-68	24.728	0.055	0.000	1.63		360.6	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

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 0   Number of Storage Structures 1   Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR   Ratio R 0.370
Region England and Wales   Cv (Summer) 1.000
M5-60 (mm) 18.200   Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0   DVD Status OFF
Analysis Timestep Fine   Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	J2-PRMH1-01	15 Summer	100	+0%	100/15 Summer			
1.001	J2-PRMH1-02	15 Summer	100	+0%	100/15 Summer			
1.002	J2-PRMH1-03	15 Summer	100	+0%	30/15 Summer			
1.003	J2-PRMH1-04	15 Summer	100	+0%	30/15 Summer			
1.004	J2-PRMH1-05	15 Summer	100	+0%	5/15 Summer	100/15 Summer		
1.005	J2-PRMH1-06	15 Winter	100	+0%	30/15 Summer	100/15 Summer		
1.006	J2-PRMH1-07	15 Summer	100	+0%	5/15 Summer	30/30 Summer		
1.007	J2-PRMH1-08	15 Summer	100	+0%	5/30 Summer	100/15 Summer		
1.008	J2-PRMH1-09	30 Winter	100	+0%	5/30 Summer			
1.009	J2-PRMH1-10	30 Summer	100	+0%	30/15 Summer	100/15 Summer		
1.010	J2-PRMH1-11	15 Winter	100	+0%	30/15 Summer	100/15 Summer		
1.011	J2-PRMH1-12	15 Winter	100	+0%	30/15 Summer	100/15 Summer		
1.012	J2-PRMH1-13	15 Summer	100	+0%	5/30 Summer	100/15 Summer		
1.013	J2-PRMH1-14	15 Summer	100	+0%	5/30 Summer	30/60 Summer		
1.014	J2-PRMH1-15	30 Summer	100	+0%	5/15 Summer			

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	J2-PRMH1-01	33.731	0.406	0.000	1.02		31.7	SURCHARGED	
1.001	J2-PRMH1-02	33.582	0.457	0.000	0.66		28.3	SURCHARGED	
1.002	J2-PRMH1-03	33.395	0.895	0.000	0.99		58.3	SURCHARGED	
1.003	J2-PRMH1-04	32.200	0.895	0.000	0.86		103.3	SURCHARGED	
1.004	J2-PRMH1-05	31.410	1.105	19.985	1.56		160.7	FLOOD	6
1.005	J2-PRMH1-06	31.181	1.136	1.112	1.04		168.7	FLOOD	5
1.006	J2-PRMH1-07	30.721	1.156	11.291	1.42		168.4	FLOOD	8
1.007	J2-PRMH1-08	30.282	1.047	2.094	1.18		171.2	FLOOD	7
1.008	J2-PRMH1-09	29.973	1.088	0.000	1.29		185.2	SURCHARGED	
1.009	J2-PRMH1-10	29.609	0.909	8.624	1.00		217.8	FLOOD	7
1.010	J2-PRMH1-11	29.148	0.908	7.745	1.01		226.8	FLOOD	7
1.011	J2-PRMH1-12	28.714	0.924	3.958	1.03		246.1	FLOOD	7
1.012	J2-PRMH1-13	28.241	0.941	1.101	1.01		263.0	FLOOD	7
1.013	J2-PRMH1-14	27.779	0.929	9.096	1.03		268.7	FLOOD	10
1.014	J2-PRMH1-15	27.461	1.155	0.000	1.03		299.1	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
2.000	Dummy_J2-PRMH1-90	15 Summer	100	+0%			
2.001	Dummy_J2-PRMH1-91	15 Summer	100	+0%			
2.002	Dummy_J2-PRMH1-92	30 Summer	100	+0%			
2.003	Dummy_J2-PRMH1-93	30 Summer	100	+0%			
2.004	Dummy_J2-PRMH1-94	30 Summer	100	+0%			
2.005	Dummy_J2-PRMH1-95	30 Summer	100	+0%	100/15 Summer	100/15 Summer	
2.006	Dummy_J2-PRMH1-96	30 Summer	100	+0%	100/15 Summer	100/15 Summer	
2.007	Dummy_J2-PRMH1-97	30 Winter	100	+0%			
3.000	24	15 Summer	100	+0%		100/120 Summer	
4.000	Dummy_J2-PRMH1-79	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
4.001	Dummy_J2-PRMH1-80	15 Summer	100	+0%			
4.002	Dummy_J2-PRMH1-81	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
4.003	Dummy_J2-PRMH1-82	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
4.004	Dummy_J2-PRMH1-83	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
4.005	Dummy_J2-PRMH1-84	60 Summer	100	+0%	30/15 Summer	30/15 Summer	
4.006	Dummy_J2-PRMH1-85	60 Summer	100	+0%	100/15 Summer	100/15 Summer	
4.007	Dummy_J2-PRMH1-86	60 Summer	100	+0%			
5.000	Dummy_J2-PRMH1-61	15 Summer	100	+0%	100/15 Summer	100/15 Summer	
5.001	Dummy_J2-PRMH1-62	15 Summer	100	+0%	30/15 Summer	30/15 Summer	
5.002	Dummy_J2-PRMH1-63	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
5.003	Dummy_J2-PRMH1-64	15 Summer	100	+0%			
5.004	Dummy_J2-PRMH1-65	15 Summer	100	+0%			
5.005	Dummy_J2-PRMH1-66	30 Summer	100	+0%			
5.006	Dummy_J2-PRMH1-57	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
6.000	Dummy_J2-PRMH1-69	15 Summer	100	+0%			
6.001	Dummy_J2-PRMH1-70	15 Summer	100	+0%	30/15 Summer	30/15 Summer	
6.002	Dummy_J2-PRMH1-71	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
6.003	Dummy_J2-PRMH1-72	30 Summer	100	+0%			
6.004	Dummy_J2-PRMH1-73	30 Summer	100	+0%	100/15 Summer	100/15 Summer	
6.005	Dummy_J2-PRMH1-74	30 Summer	100	+0%	30/15 Summer	30/15 Summer	
6.006	Dummy_J2-PRMH1-75	30 Summer	100	+0%	100/15 Summer	100/15 Summer	
6.007	J2-PRMH1-61	60 Summer	100	+0%	30/15 Summer		
6.008	J2-PRMH1-62	60 Summer	100	+0%	5/30 Summer		
7.000	49	15 Summer	100	+0%			
7.001	50	15 Summer	100	+0%	30/15 Summer	30/15 Summer	
5.007	J2-PRMH1-63	15 Summer	100	+0%	5/15 Summer	30/60 Summer	
8.000	52	15 Summer	100	+0%			
8.001	53	15 Summer	100	+0%			
4.008	J2-PRMH1-64	30 Summer	100	+0%	5/15 Summer	100/60 Summer	
2.008	J2-PRMH1-65	60 Summer	100	+0%	5/15 Summer	30/15 Summer	
9.000	58	15 Summer	100	+0%			
2.009	J2-PRMH1-66	60 Summer	100	+0%	5/15 Summer	100/15 Summer	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.000	Dummy_J2-PRMH1-90		32.724	-0.036	0.000	0.44		20.6	OK
2.001	Dummy_J2-PRMH1-91		31.772	-0.008	0.000	0.83		27.9	OK
2.002	Dummy_J2-PRMH1-92		31.472	-0.038	0.000	0.51		38.1	OK
2.003	Dummy_J2-PRMH1-93		30.809	-0.021	0.000	0.67		49.8	OK
2.004	Dummy_J2-PRMH1-94		30.127	-0.013	0.000	0.76		58.1	OK
2.005	Dummy_J2-PRMH1-95		29.429	0.002	1.632	0.99		75.1	FLOOD
2.006	Dummy_J2-PRMH1-96		28.741	0.001	1.163	0.99		94.9	FLOOD
2.007	Dummy_J2-PRMH1-97		27.515	-0.082	0.000	0.26		99.5	OK
3.000	24		26.948	-0.042	0.000	0.54		24.5	OK
4.000	Dummy_J2-PRMH1-79		32.564	0.004	4.118	1.01		36.3	FLOOD
4.001	Dummy_J2-PRMH1-80		32.017	-0.013	0.000	0.78		58.5	OK
4.002	Dummy_J2-PRMH1-81		31.746	0.006	6.265	0.99		74.5	FLOOD
4.003	Dummy_J2-PRMH1-82		31.084	0.013	13.309	1.00		74.9	FLOOD
4.004	Dummy_J2-PRMH1-83		30.396	0.017	17.487	1.01		75.7	FLOOD
4.005	Dummy_J2-PRMH1-84		29.694	0.008	7.601	1.01		78.0	FLOOD
4.006	Dummy_J2-PRMH1-85		28.944	0.001	0.881	1.00		94.2	FLOOD
4.007	Dummy_J2-PRMH1-86		27.752	-0.082	0.000	0.26		100.6	OK
5.000	Dummy_J2-PRMH1-61		27.520	0.000	0.035	0.97		18.0	FLOOD
5.001	Dummy_J2-PRMH1-62		27.454	0.004	4.209	1.06		16.7	FLOOD
5.002	Dummy_J2-PRMH1-63		27.401	0.001	1.497	1.05		23.4	FLOOD
5.003	Dummy_J2-PRMH1-64		27.280	-0.038	0.000	0.44		41.6	OK
5.004	Dummy_J2-PRMH1-65		27.251	-0.015	0.000	0.80		50.1	OK
5.005	Dummy_J2-PRMH1-66		27.167	-0.033	0.000	0.62		53.5	OK
5.006	Dummy_J2-PRMH1-57		27.106	0.006	6.330	1.09		44.1	FLOOD
6.000	Dummy_J2-PRMH1-69		32.528	-0.002	0.000	0.87		33.0	OK
6.001	Dummy_J2-PRMH1-70		31.972	0.002	2.201	0.99		33.3	FLOOD
6.002	Dummy_J2-PRMH1-71		31.731	0.011	10.672	1.01		35.4	FLOOD
6.003	Dummy_J2-PRMH1-72		31.015	-0.004	0.000	0.83		62.3	OK
6.004	Dummy_J2-PRMH1-73		30.334	0.004	3.624	0.99		75.6	FLOOD
6.005	Dummy_J2-PRMH1-74		29.619	0.008	7.791	1.01		76.8	FLOOD
6.006	Dummy_J2-PRMH1-75		28.897	0.001	0.707	1.00		94.5	FLOOD
6.007	J2-PRMH1-61		27.667	0.530	0.000	0.93		104.1	SURCHARGED
6.008	J2-PRMH1-62		27.364	0.577	0.000	0.86		103.6	SURCHARGED
7.000	49		27.380	-0.100	0.000	0.06		2.9	OK
7.001	50		27.196	0.006	6.291	1.04		57.2	FLOOD
5.007	J2-PRMH1-63		26.961	0.701	2.256	0.84		185.1	FLOOD
8.000	52		27.262	-0.048	0.000	0.35		13.3	OK
8.001	53		27.083	-0.057	0.000	0.40		16.7	OK
4.008	J2-PRMH1-64		26.986	0.776	0.000	0.67		294.1	SURCHARGED
2.008	J2-PRMH1-65		26.983	0.923	215.918	1.00		356.8	FLOOD
9.000	58		27.052	-0.098	0.000	0.06		2.9	OK

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
2.009	J2-PRMH1-66		26.938	1.036	48.226	1.52		358.4	FLOOD

PN	US/MH Name	Level Exceeded
2.000	Dummy_J2-PRMH1-90	
2.001	Dummy_J2-PRMH1-91	
2.002	Dummy_J2-PRMH1-92	
2.003	Dummy_J2-PRMH1-93	
2.004	Dummy_J2-PRMH1-94	
2.005	Dummy_J2-PRMH1-95	5
2.006	Dummy_J2-PRMH1-96	5
2.007	Dummy_J2-PRMH1-97	
3.000	24	
4.000	Dummy_J2-PRMH1-79	8
4.001	Dummy_J2-PRMH1-80	
4.002	Dummy_J2-PRMH1-81	8
4.003	Dummy_J2-PRMH1-82	12
4.004	Dummy_J2-PRMH1-83	15
4.005	Dummy_J2-PRMH1-84	16
4.006	Dummy_J2-PRMH1-85	5
4.007	Dummy_J2-PRMH1-86	
5.000	Dummy_J2-PRMH1-61	1
5.001	Dummy_J2-PRMH1-62	12
5.002	Dummy_J2-PRMH1-63	11
5.003	Dummy_J2-PRMH1-64	
5.004	Dummy_J2-PRMH1-65	
5.005	Dummy_J2-PRMH1-66	
5.006	Dummy_J2-PRMH1-57	12
6.000	Dummy_J2-PRMH1-69	
6.001	Dummy_J2-PRMH1-70	5
6.002	Dummy_J2-PRMH1-71	12
6.003	Dummy_J2-PRMH1-72	
6.004	Dummy_J2-PRMH1-73	5
6.005	Dummy_J2-PRMH1-74	11
6.006	Dummy_J2-PRMH1-75	5
6.007	J2-PRMH1-61	
6.008	J2-PRMH1-62	
7.000	49	
7.001	50	8

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Level Exceeded
5.007	J2-PRMH1-63	10
8.000	52	
8.001	53	
4.008	J2-PRMH1-64	3
2.008	J2-PRMH1-65	23
9.000	58	
2.009	J2-PRMH1-66	8

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.015	J2-PRMH1-16	30 Winter	100	+0%	5/15 Summer			
1.016	J2-PRMH1-17	30 Summer	100	+0%	5/15 Summer			
1.017	J2-PRMH1-18	30 Summer	100	+0%	5/15 Summer			
1.018	J2-PRMH1-19	30 Summer	100	+0%	5/15 Summer			
10.000	J2-PRMH1-21	15 Summer	100	+0%	30/15 Summer			
10.001	J2-PRMH1-22	15 Summer	100	+0%	30/15 Summer			
10.002	J2-PRMH1-23	15 Summer	100	+0%	30/15 Summer			
11.000	J2-PRMH1-56	15 Summer	100	+0%	30/15 Summer			
11.001	J2-PRMH1-57	15 Summer	100	+0%	30/15 Summer			
11.002	J2-PRMH1-58	15 Summer	100	+0%	30/15 Summer			
10.003	J2-PRMH1-24	15 Summer	100	+0%	5/15 Summer			
10.004	J2-PRMH1-25	15 Summer	100	+0%	100/15 Summer			
10.005	J2-PRMH1-26	15 Summer	100	+0%				
10.006	J2-PRMH1-27	15 Summer	100	+0%				
10.007	J2-PRMH1-28	30 Summer	100	+0%	100/15 Summer			
10.008	J2-PRMH1-29	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
12.000	J2-PRMH1-30	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
12.001	J2-PRMH1-31	15 Summer	100	+0%	5/15 Summer	100/15 Summer		
13.000	J2-PRMH1-59	15 Summer	100	+0%				
13.001	J2-PRMH59A	15 Winter	100	+0%	100/15 Summer			
13.002	J1-PRMH1-60	15 Summer	100	+0%	100/15 Summer			
13.003	J1-PRMH1-58	15 Winter	100	+0%	30/15 Summer	100/15 Summer		
12.002	J2-PRMH1-32	30 Summer	100	+0%	30/15 Summer			
12.003	J2-PRMH1-33	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
12.004	J2-PRMH1-33A	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
12.005	J2-PRMH1-34	15 Summer	100	+0%	5/15 Summer	30/15 Summer		
12.006	J2-PRMH1-35	15 Winter	100	+0%	5/30 Summer	100/30 Summer		
12.007	J2-PRMH1-36	15 Summer	100	+0%	30/15 Summer			
12.008	J2-PRMH1-36A	30 Summer	100	+0%	30/15 Summer	100/30 Summer		
12.009	J2-PRMH1-37	15 Summer	100	+0%	30/15 Summer	100/30 Summer		
12.010	J2-PRMH1-38	15 Winter	100	+0%	30/15 Summer	100/15 Summer		
12.011	J2-PRMH1-39	15 Winter	100	+0%	30/15 Summer	100/15 Summer		
12.012	J2-PRMH1-40	30 Winter	100	+0%	30/15 Summer	100/15 Summer		
12.013	J2-PRMH1-41	30 Winter	100	+0%	5/30 Summer	100/30 Summer		
12.014	J2-PRMH1-42	30 Summer	100	+0%	5/30 Summer			
12.015	J2-PRMH1-43	30 Summer	100	+0%	30/30 Summer	100/30 Summer		
12.016	J2-PRMH1-44	30 Summer	100	+0%	30/30 Summer			
12.017	J2-PRMH1-45	15 Summer	100	+0%	30/30 Summer	100/30 Summer		
12.018	J2-PRMH1-46	30 Summer	100	+0%	30/15 Summer	100/30 Summer		
12.019	J2-PRMH1-47	30 Summer	100	+0%	5/30 Summer	100/15 Summer		
12.020	J2-PRMH1-48	30 Winter	100	+0%	5/30 Summer	100/15 Summer		
14.000	J2-PRMH1-50	15 Summer	100	+0%	30/15 Summer			

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.015	J2-PRMH1-16	26.906	1.048	0.000	1.55		471.5	SURCHARGED	
1.016	J2-PRMH1-17	26.885	1.169	0.000	1.53		471.3	SURCHARGED	
1.017	J2-PRMH1-18	26.689	1.133	0.000	1.47		487.5	SURCHARGED	
1.018	J2-PRMH1-19	26.333	0.948	0.000	1.40		471.6	SURCHARGED	
10.000	J2-PRMH1-21	33.825	0.803	0.000	1.54		54.6	SURCHARGED	
10.001	J2-PRMH1-22	33.350	0.528	0.000	1.02		85.4	SURCHARGED	
10.002	J2-PRMH1-23	33.048	0.493	0.000	1.29		107.7	SURCHARGED	
11.000	J2-PRMH1-56	34.300	1.278	0.000	1.60		52.3	SURCHARGED	
11.001	J2-PRMH1-57	33.854	1.004	0.000	1.73		105.2	SURCHARGED	
11.002	J2-PRMH1-58	33.388	0.685	0.000	1.39		124.3	SURCHARGED	
10.003	J2-PRMH1-24	32.745	0.358	0.000	1.96		230.9	SURCHARGED	
10.004	J2-PRMH1-25	32.266	0.007	0.000	1.02		226.7	SURCHARGED	
10.005	J2-PRMH1-26	31.793	-0.080	0.000	0.91		268.3	OK	
10.006	J2-PRMH1-27	29.973	-0.100	0.000	0.86		291.4	OK	
10.007	J2-PRMH1-28	28.567	0.437	0.000	0.91		300.9	SURCHARGED	
10.008	J2-PRMH1-29	27.416	0.647	4.440	1.14		308.4	FLOOD	4
12.000	J2-PRMH1-30	34.441	0.904	0.625	0.99		37.7	FLOOD	3
12.001	J2-PRMH1-31	34.153	0.903	3.427	1.60		53.8	FLOOD	4
13.000	J2-PRMH1-59	33.627	-0.173	0.000	0.12		4.4	OK	
13.001	J2-PRMH59A	33.503	0.069	0.000	0.18		11.8	SURCHARGED	
13.002	J1-PRMH1-60	33.504	0.292	0.000	0.44		10.7	SURCHARGED	
13.003	J1-PRMH1-58	33.483	0.513	0.000	0.79		22.5	SURCHARGED	2
12.002	J2-PRMH1-32	33.551	0.648	0.000	0.80		88.4	SURCHARGED	
12.003	J2-PRMH1-33	33.335	0.902	1.021	1.00		122.6	FLOOD	3
12.004	J2-PRMH1-33A	32.730	0.902	0.165	0.99		121.2	FLOOD	3
12.005	J2-PRMH1-34	32.142	0.919	18.105	1.42		144.5	FLOOD	9
12.006	J2-PRMH1-35	31.304	0.871	0.000	1.33		182.6	SURCHARGED	3
12.007	J2-PRMH1-36	30.931	0.841	0.000	0.92		193.9	SURCHARGED	
12.008	J2-PRMH1-36A	30.822	0.902	1.559	1.05		185.6	FLOOD	3
12.009	J2-PRMH1-37	30.689	0.889	0.000	1.00		216.1	SURCHARGED	1
12.010	J2-PRMH1-38	30.361	0.911	0.930	1.06		224.2	FLOOD	5
12.011	J2-PRMH1-39	29.992	0.905	2.133	1.11		241.2	FLOOD	6
12.012	J2-PRMH1-40	29.545	0.884	15.105	1.19		276.9	FLOOD	7
12.013	J2-PRMH1-41	29.096	0.908	8.421	1.28		278.9	FLOOD	5
12.014	J2-PRMH1-42	28.663	0.907	0.000	1.35		286.3	SURCHARGED	
12.015	J2-PRMH1-43	28.265	0.689	10.654	1.04		321.1	FLOOD	5
12.016	J2-PRMH1-44	28.079	0.793	0.000	1.20		333.7	SURCHARGED	
12.017	J2-PRMH1-45	27.478	0.462	0.000	0.93		388.9	SURCHARGED	4
12.018	J2-PRMH1-46	27.076	0.806	1.887	1.03		440.4	FLOOD	4
12.019	J2-PRMH1-47	26.681	0.807	47.850	1.35		485.3	FLOOD	7
12.020	J2-PRMH1-48	26.397	0.773	14.355	1.46		485.2	FLOOD	7

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.000	J2-PRMH1-50	33.815	1.130	0.000	0.56		27.8	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Network A40 Main-Line and Link Road

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
14.001	J2-PRMH1-51	15 Summer	100	+0%	30/15 Summer			
14.002	J2-PRMH1-52	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
14.003	J2-PRMH1-53	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
14.004	J2-PRMH1-54	15 Summer	100	+0%	30/15 Summer			
14.005	J2-PRMH1-55	15 Summer	100	+0%	30/15 Summer			
12.021	J2-PRMH1-49	15 Summer	100	+0%	5/15 Summer			
1.019	J2-PRMH1-20	30 Summer	100	+0%	5/30 Summer			
1.020	J2-PRHW-01	240 Summer	100	+0%	30/30 Summer			
1.021	J2-PRHW-02	240 Summer	100	+0%				
1.022	J2-PRMH1-68	240 Summer	100	+0%	30/60 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
14.001	J2-PRMH1-51	33.655	1.494	0.000	0.80		55.0	SURCHARGED	
14.002	J2-PRMH1-52	33.192	1.665	2.193	0.99		84.0	FLOOD	3
14.003	J2-PRMH1-53	31.702	1.795	2.217	1.25		131.6	FLOOD	3
14.004	J2-PRMH1-54	28.236	0.703	0.000	1.00		159.0	SURCHARGED	
14.005	J2-PRMH1-55	27.008	0.696	0.000	1.25		254.1	SURCHARGED	
12.021	J2-PRMH1-49	26.191	0.763	0.000	1.24		566.7	SURCHARGED	
1.019	J2-PRMH1-20	25.808	0.514	0.000	1.74		1306.9	SURCHARGED	
1.020	J2-PRHW-01	25.284	0.408	0.000	1.41		432.5	SURCHARGED*	
1.021	J2-PRHW-02	24.720	0.000	0.000	1.46		432.5	SURCHARGED*	
1.022	J2-PRMH1-68	24.785	0.112	0.000	1.95		432.4	SURCHARGED	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes M5 J10 Manhole Sizes M5 J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.200	Add Flow / Climate Change (%)	0
Ratio R	0.370	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	0.75
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

« - 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	34.964	0.908	38.5	0.051	5.00	0.0	0.600		o	225	Pipe/Conduit	
1.001	87.827	3.301	26.6	0.127	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.002	61.055	2.243	27.2	0.066	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.003	65.061	1.243	52.3	0.070	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.004	78.893	0.500	157.8	0.117	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.005	44.247	0.126	351.2	0.099	0.00	0.0	0.600		o	375	Pipe/Conduit	
2.000	88.885	0.203	437.0	0.179	5.00	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)
1.000	46.88	5.28	32.601	0.051	0.0	0.0	0.0	2.11	84.1	8.7
1.001	44.78	5.85	31.693	0.178	0.0	0.0	0.0	2.55	101.3	28.8
1.002	43.43	6.25	28.392	0.244	0.0	0.0	0.0	2.52	100.1	38.3
1.003	41.89	6.75	26.074	0.314	0.0	0.0	0.0	2.18	154.0	47.5
1.004	39.02	7.81	24.831	0.431	0.0	0.0	0.0	1.25	88.3	60.8
1.005	37.19	8.57	24.256	0.530	0.0	0.0	0.0	0.96	106.2	71.2
2.000	41.21	6.99	25.399	0.179	0.0	0.0	0.0	0.75	52.7	26.7

Network Design Table for Storm

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
2.001	86.565	0.198	437.0	0.174	0.00	0.0	0.600		o	300	Pipe/Conduit	
2.002	58.538	0.463	126.4	0.110	0.00	0.0	0.600		o	300	Pipe/Conduit	
2.003	55.192	0.330	167.2	0.114	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.006	48.890	0.568	86.1	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
3.000	88.595	0.532	166.5	0.197	5.00	0.0	0.600		o	225	Pipe/Conduit	
3.001	85.342	0.255	334.2	0.196	0.00	0.0	0.600		o	300	Pipe/Conduit	
3.002	57.464	0.304	189.3	0.137	0.00	0.0	0.600		o	300	Pipe/Conduit	
3.003	57.464	0.573	100.3	0.136	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.007	65.576	0.151	435.5	0.187	0.00	0.0	0.600		o	600	Pipe/Conduit	
4.000	39.665	0.264	150.0	0.131	5.00	0.0	0.600		o	225	Pipe/Conduit	
4.001	35.214	0.704	50.0	0.103	0.00	0.0	0.600		o	225	Pipe/Conduit	
5.000	40.647	0.286	141.9	0.059	5.00	0.0	0.600		o	225	Pipe/Conduit	
4.002	23.944	0.532	45.0	0.000	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)
2.001	36.42	8.92	25.196	0.353	0.0	0.0	0.0	0.75	52.7	46.5
2.002	34.99	9.62	24.998	0.463	0.0	0.0	0.0	1.40	98.7	58.5
2.003	33.58	10.38	24.535	0.577	0.0	0.0	0.0	1.21	85.7	70.0
1.006	32.86	10.80	24.130	1.108	0.0	0.0	0.0	1.95	215.8	131.4
3.000	42.77	6.46	25.376	0.197	0.0	0.0	0.0	1.01	40.2	30.4
3.001	38.23	8.13	24.769	0.393	0.0	0.0	0.0	0.85	60.4	54.2
3.002	36.33	8.97	24.514	0.529	0.0	0.0	0.0	1.14	80.5	69.4
3.003	35.08	9.58	24.210	0.666	0.0	0.0	0.0	1.57	111.0	84.3
1.007	31.37	11.74	23.337	1.961	0.0	0.0	0.0	1.16	328.1	222.1
4.000	45.59	5.62	33.106	0.131	0.0	0.0	0.0	1.07	42.4	21.5
4.001	44.48	5.94	32.842	0.233	0.0	0.0	0.0	1.85	73.7	37.4
5.000	45.60	5.62	32.424	0.059	0.0	0.0	0.0	1.10	43.6	9.7
4.002	43.80	6.14	32.138	0.292	0.0	0.0	0.0	1.96	77.7	46.2

Network Design Table for Storm

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
4.003	38.902	0.973	40.0	0.078	0.00	0.0	0.600		o	225	Pipe/Conduit	
4.004	56.851	1.263	45.0	0.091	0.00	0.0	0.600		o	225	Pipe/Conduit	
4.005	88.784	3.611	24.6	0.117	0.00	0.0	0.600		o	225	Pipe/Conduit	
4.006	72.856	1.457	50.0	0.095	0.00	0.0	0.600		o	300	Pipe/Conduit	
4.007	57.912	0.741	78.1	0.111	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.008	9.955	0.020	500.0	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.009	74.957	0.150	500.0	0.000	0.00	0.0		0.050	\/	-4	Pipe/Conduit	
1.010	13.208	0.066	200.1	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.011	55.013	0.129	426.5	0.331	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.012	10.400	0.022	472.7	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.013	11.698	0.100	117.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.014	50.984	0.149	342.2	0.000	0.00	0.0		0.050	\/	-6	Pipe/Conduit	
6.000	55.772	0.186	300.0	0.115	5.00	0.0	0.600		o	225	Pipe/Conduit	
6.001	84.708	0.194	437.0	0.151	0.00	0.0	0.600		o	300	Pipe/Conduit	
6.002	8.819	0.081	109.5	0.061	0.00	0.0	0.600		o	300	Pipe/Conduit	
7.000	67.994	0.224	303.5	0.139	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)
4.003	42.80	6.45	31.606	0.369	0.0	0.0	0.0	2.07	82.5	57.1
4.004	41.35	6.94	30.633	0.461	0.0	0.0	0.0	1.96	77.7	68.8
4.005	39.81	7.50	29.370	0.578	0.0	0.0	0.0	2.65	105.4	83.1
4.006	38.43	8.04	25.684	0.673	0.0	0.0	0.0	2.23	157.5	93.5
4.007	37.16	8.58	24.227	0.785	0.0	0.0	0.0	1.78	125.9	105.3
1.008	31.18	11.87	23.036	2.745	0.0	0.0	0.0	1.24	549.9	309.1
1.009	28.52	13.96	23.016	2.745	0.0	0.0	0.0	0.60	2390.2	309.1
1.010	28.37	14.09	22.866	2.745	0.0	0.0	0.0	1.72	485.7	309.1
1.011	27.63	14.77	22.800	3.076	0.0	0.0	0.0	1.35	595.8	309.1
1.012	27.40	14.98	22.671	3.076	0.0	0.0	0.0	0.83	91.3«	309.1
1.013	27.30	15.08	22.649	3.076	0.0	0.0	0.0	1.88	298.8«	309.1
1.014	25.87	16.56	22.499	3.076	0.0	0.0	0.0	0.58	1008.1	309.1
6.000	43.48	6.24	24.950	0.115	0.0	0.0	0.0	0.75	29.8	18.0
6.001	38.21	8.13	24.689	0.265	0.0	0.0	0.0	0.75	52.7	36.6
6.002	37.98	8.23	24.495	0.326	0.0	0.0	0.0	1.50	106.2	44.7
7.000	42.59	6.52	25.009	0.139	0.0	0.0	0.0	0.75	29.6	21.4

Network Design Table for Storm

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
7.001	67.247	0.248	271.6	0.119	0.00	0.0	0.600		o	300	Pipe/Conduit	
7.002	5.761	0.137	42.2	0.056	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)
7.001	39.28	7.70	24.710	0.258	0.0	0.0	0.0	0.95	67.1	36.6
7.002	39.18	7.74	24.462	0.315	0.0	0.0	0.0	2.43	171.6	44.5

Conduit Sections for Storm

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-4	\/	7000	1000	18.4		2.184	4.000
-6	\/	3500	500	90.0		1.556	1.750

Manhole Schedules for Storm

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)	Backd (mm
S1-PRMH1-1	33.973	1.372	Open Manhole	1050	1.000	32.601	225				
S1-PRMH1-2	33.064	1.371	Open Manhole	1050	1.001	31.693	225	1.000	31.693	225	
S1-PRMH1-3	29.763	1.371	Open Manhole	1050	1.002	28.392	225	1.001	28.392	225	
S1-PRMH1-4	27.520	1.446	Open Manhole	1200	1.003	26.074	300	1.002	26.149	225	
S1-PRMH1-5	26.277	1.446	Open Manhole	1200	1.004	24.831	300	1.003	24.831	300	
S1-PRMH1-6	26.242	1.986	Open Manhole	1350	1.005	24.256	375	1.004	24.331	300	
S1-PRMH1-15	26.524	1.125	Open Manhole	1200	2.000	25.399	300				
S1-PRMH1-16	26.434	1.238	Open Manhole	1200	2.001	25.196	300	2.000	25.196	300	
S1-PRMH1-17	26.399	1.401	Open Manhole	1200	2.002	24.998	300	2.001	24.998	300	
S1-PRMH1-18	26.327	1.792	Open Manhole	1200	2.003	24.535	300	2.002	24.535	300	
S1-PRMH1-7	26.274	2.144	Open Manhole	1350	1.006	24.130	375	1.005	24.130	375	
								2.003	24.205	300	
S1-PRMH1-19	26.501	1.125	Open Manhole	1050	3.000	25.376	225				
S1-PRMH1-20	26.378	1.609	Open Manhole	1200	3.001	24.769	300	3.000	24.844	225	
S1-PRMH1-21	26.294	1.781	Open Manhole	1200	3.002	24.514	300	3.001	24.514	300	
S1-PRMH1-22	26.192	1.981	Open Manhole	1200	3.003	24.210	300	3.002	24.210	300	
S1-PRMH1-23	26.122	2.785	Open Manhole	1500	1.007	23.337	600	1.006	23.562	375	
								3.003	23.637	300	
S1-PRMH1-36	34.920	1.814	Open Manhole	1050	4.000	33.106	225				
S1-PRMH1-37	34.782	1.941	Open Manhole	1050	4.001	32.842	225	4.000	32.842	225	
S1-PRMH1-35	34.610	2.186	Open Manhole	1050	5.000	32.424	225				
S1-PRMH1-38	34.683	2.546	Open Manhole	1050	4.002	32.138	225	4.001	32.138	225	
								5.000	32.138	225	
S1-PRMH1-8	34.499	2.893	Open Manhole	1050	4.003	31.606	225	4.002	31.606	225	
S1-PRMH1-9	33.621	2.988	Open Manhole	1050	4.004	30.633	225	4.003	30.633	225	
S1-PRMH1-10	31.429	2.059	Open Manhole	1050	4.005	29.370	225	4.004	29.370	225	
S1-PRMH1-11	27.818	2.134	Open Manhole	1200	4.006	25.684	300	4.005	25.759	225	
S1-PRMH1-12	26.266	2.039	Open Manhole	1200	4.007	24.227	300	4.006	24.227	300	
S1-PRMH1-13	26.000	2.964	Open Manhole	1500	1.008	23.036	750	1.007	23.186	600	
								4.007	23.486	300	
S1-PRHW1-14	24.180	1.164	Junction		1.009	23.016	-4	1.008	23.016	750	
S1-PRHW1-15	23.940	1.074	Junction		1.010	22.866	600	1.009	22.866	-4	
S1-POND INLET	23.850	1.050	Junction		1.011	22.800	750	1.010	22.800	600	
S1-POND OUTLET	23.850	1.179	Junction		1.012	22.671	375	1.011	22.671	750	

Manhole Schedules for Storm

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)	Backd (mm
S1-PRMH1-27	23.560	0.911	Open Manhole	2100	1.013	22.649	450	1.012	22.649	375	

Manhole Schedules for Storm

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)
S1-PRHW1-28	23.530	1.031	Junction		1.014	22.499	-6	1.013	22.549	450	
OF1	22.900	0.550	Open Manhole	0		OUTFALL		1.014	22.350	-6	
S1-PRMH1-32	26.519	1.569	Open Manhole	1050	6.000	24.950	225				
S1-PRMH1-33	26.577	1.888	Open Manhole	1200	6.001	24.689	300	6.000	24.764	225	
S1-PRMH1-34	26.670	2.175	Open Manhole	1350	6.002	24.495	300	6.001	24.495	300	
OF-3	25.120	0.706	Open Manhole	0		OUTFALL		6.002	24.414	300	
S1-PRMH1-29	26.521	1.512	Open Manhole	1050	7.000	25.009	225				
S1-PRMH1-30	26.576	1.866	Open Manhole	1200	7.001	24.710	300	7.000	24.785	225	
S1-PRMH1-31	26.633	2.171	Open Manhole	1200	7.002	24.462	300	7.001	24.462	300	
OF-2	25.710	1.384	Open Manhole	0		OUTFALL		7.002	24.326	300	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1-PRMH1-1	390486.043	225506.978	390486.043	225506.978	Required	
S1-PRMH1-2	390459.023	225484.788	390459.023	225484.788	Required	
S1-PRMH1-3	390395.150	225424.505	390395.150	225424.505	Required	
S1-PRMH1-4	390355.287	225378.261	390355.287	225378.261	Required	
S1-PRMH1-5	390315.613	225326.696	390315.613	225326.696	Required	
S1-PRMH1-6	390272.173	225260.840	390272.173	225260.840	Required	
S1-PRMH1-15	390114.466	224967.265	390114.466	224967.265	Required	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1-PRMH1-16	390153.378	225047.180	390153.378	225047.180	Required	
S1-PRMH1-17	390193.076	225124.105	390193.076	225124.105	Required	
S1-PRMH1-18	390221.605	225175.221	390221.605	225175.221	Required	
S1-PRMH1-7	390249.381	225222.915	390249.381	225222.915	Required	
S1-PRMH1-19	390075.488	224987.184	390075.488	224987.184	Required	
S1-PRMH1-20	390113.367	225067.273	390113.367	225067.273	Required	
S1-PRMH1-21	390152.411	225143.160	390152.411	225143.160	Required	
S1-PRMH1-22	390179.078	225194.061	390179.078	225194.061	Required	
S1-PRMH1-23	390205.745	225244.963	390205.745	225244.963	Required	
S1-PRMH1-36	390374.283	225675.429	390374.283	225675.429	Required	
S1-PRMH1-37	390367.653	225636.322	390367.653	225636.322	Required	
S1-PRMH1-35	390415.416	225579.733	390415.416	225579.733	Required	
S1-PRMH1-38	390383.464	225604.857	390383.464	225604.857	Required	
S1-PRMH1-8	390364.042	225590.853	390364.042	225590.853	Required	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1-PRMH1-9	390352.352	225553.748	390352.352	225553.748	Required	
S1-PRMH1-10	390330.840	225501.124	390330.840	225501.124	Required	
S1-PRMH1-11	390294.024	225420.333	390294.024	225420.333	Required	
S1-PRMH1-12	390261.988	225354.899	390261.988	225354.899	Required	
S1-PRMH1-13	390235.341	225303.481	390235.341	225303.481	Required	
S1-PRHW1-14	390226.165	225307.342			No Entry	
S1-PRHW1-15	390177.178	225254.545			No Entry	
S1-POND INLET	390164.213	225257.068			No Entry	
S1-POND OUTLET	390113.616	225235.472			No Entry	
S1-PRMH1-27	390103.958	225231.613	390103.958	225231.613	Required	
S1-PRHW1-28	390094.039	225225.413			No Entry	
OF1	390055.681	225191.827			No Entry	
S1-PRMH1-32	390074.539	224984.441	390074.539	224984.441	Required	
S1-PRMH1-33	390051.340	224933.723	390051.340	224933.723	Required	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1-PRMH1-34	390018.014	224855.846	390018.014	224855.846	Required	
OF-3	390009.293	224857.156			No Entry	
S1-PRMH1-29	390113.178	224965.048	390113.178	224965.048	Required	
S1-PRMH1-30	390082.528	224904.354	390082.528	224904.354	Required	
S1-PRMH1-31	390053.583	224843.655	390053.583	224843.655	Required	
OF-2	390054.930	224838.054			No Entry	

PIPELINE SCHEDULES for Storm

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)
1.000	o	225	S1-PRMH1-1	33.973	32.601	1.147	Open Manhole	1050
1.001	o	225	S1-PRMH1-2	33.064	31.693	1.146	Open Manhole	1050
1.002	o	225	S1-PRMH1-3	29.763	28.392	1.146	Open Manhole	1050
1.003	o	300	S1-PRMH1-4	27.520	26.074	1.146	Open Manhole	1200
1.004	o	300	S1-PRMH1-5	26.277	24.831	1.146	Open Manhole	1200
1.005	o	375	S1-PRMH1-6	26.242	24.256	1.611	Open Manhole	1350
2.000	o	300	S1-PRMH1-15	26.524	25.399	0.825	Open Manhole	1200
2.001	o	300	S1-PRMH1-16	26.434	25.196	0.938	Open Manhole	1200
2.002	o	300	S1-PRMH1-17	26.399	24.998	1.101	Open Manhole	1200
2.003	o	300	S1-PRMH1-18	26.327	24.535	1.492	Open Manhole	1200
1.006	o	375	S1-PRMH1-7	26.274	24.130	1.769	Open Manhole	1350
3.000	o	225	S1-PRMH1-19	26.501	25.376	0.900	Open Manhole	1050
3.001	o	300	S1-PRMH1-20	26.378	24.769	1.309	Open Manhole	1200
3.002	o	300	S1-PRMH1-21	26.294	24.514	1.480	Open Manhole	1200
3.003	o	300	S1-PRMH1-22	26.192	24.210	1.681	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	34.964	38.5	S1-PRMH1-2	33.064	31.693	1.146	Open Manhole	1050
1.001	87.827	26.6	S1-PRMH1-3	29.763	28.392	1.146	Open Manhole	1050
1.002	61.055	27.2	S1-PRMH1-4	27.520	26.149	1.146	Open Manhole	1200
1.003	65.061	52.3	S1-PRMH1-5	26.277	24.831	1.146	Open Manhole	1200
1.004	78.893	157.8	S1-PRMH1-6	26.242	24.331	1.611	Open Manhole	1350
1.005	44.247	351.2	S1-PRMH1-7	26.274	24.130	1.769	Open Manhole	1350
2.000	88.885	437.0	S1-PRMH1-16	26.434	25.196	0.938	Open Manhole	1200
2.001	86.565	437.0	S1-PRMH1-17	26.399	24.998	1.101	Open Manhole	1200
2.002	58.538	126.4	S1-PRMH1-18	26.327	24.535	1.492	Open Manhole	1200
2.003	55.192	167.2	S1-PRMH1-7	26.274	24.205	1.769	Open Manhole	1350
1.006	48.890	86.1	S1-PRMH1-23	26.122	23.562	2.185	Open Manhole	1500
3.000	88.595	166.5	S1-PRMH1-20	26.378	24.844	1.309	Open Manhole	1200
3.001	85.342	334.2	S1-PRMH1-21	26.294	24.514	1.481	Open Manhole	1200
3.002	57.464	189.3	S1-PRMH1-22	26.192	24.210	1.681	Open Manhole	1200
3.003	57.464	100.3	S1-PRMH1-23	26.122	23.637	2.184	Open Manhole	1500

PIPELINE SCHEDULES for Storm

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)
1.007	o	600	S1-PRMH1-23	26.122	23.337	2.185	Open Manhole	1500
4.000	o	225	S1-PRMH1-36	34.920	33.106	1.589	Open Manhole	1050
4.001	o	225	S1-PRMH1-37	34.782	32.842	1.715	Open Manhole	1050
5.000	o	225	S1-PRMH1-35	34.610	32.424	1.961	Open Manhole	1050
4.002	o	225	S1-PRMH1-38	34.683	32.138	2.320	Open Manhole	1050
4.003	o	225	S1-PRMH1-8	34.499	31.606	2.668	Open Manhole	1050
4.004	o	225	S1-PRMH1-9	33.621	30.633	2.763	Open Manhole	1050
4.005	o	225	S1-PRMH1-10	31.429	29.370	1.834	Open Manhole	1050
4.006	o	300	S1-PRMH1-11	27.818	25.684	1.834	Open Manhole	1200
4.007	o	300	S1-PRMH1-12	26.266	24.227	1.739	Open Manhole	1200
1.008	o	750	S1-PRMH1-13	26.000	23.036	2.214	Open Manhole	1500
1.009	\/	-4	S1-PRHW1-14	24.180	23.016	0.164	Junction	
1.010	o	600	S1-PRHW1-15	23.940	22.866	0.474	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)
1.007	65.576	435.5	S1-PRMH1-13	26.000	23.186	2.214	Open Manhole	1500
4.000	39.665	150.0	S1-PRMH1-37	34.782	32.842	1.716	Open Manhole	1050
4.001	35.214	50.0	S1-PRMH1-38	34.683	32.138	2.321	Open Manhole	1050
5.000	40.647	141.9	S1-PRMH1-38	34.683	32.138	2.321	Open Manhole	1050
4.002	23.944	45.0	S1-PRMH1-8	34.499	31.606	2.668	Open Manhole	1050
4.003	38.902	40.0	S1-PRMH1-9	33.621	30.633	2.763	Open Manhole	1050
4.004	56.851	45.0	S1-PRMH1-10	31.429	29.370	1.834	Open Manhole	1050
4.005	88.784	24.6	S1-PRMH1-11	27.818	25.759	1.834	Open Manhole	1200
4.006	72.856	50.0	S1-PRMH1-12	26.266	24.227	1.739	Open Manhole	1200
4.007	57.912	78.1	S1-PRMH1-13	26.000	23.486	2.214	Open Manhole	1500
1.008	9.955	500.0	S1-PRHW1-14	24.180	23.016	0.414	Junction	
1.009	74.957	500.0	S1-PRHW1-15	23.940	22.866	0.074	Junction	
1.010	13.208	200.1	S1-POND INLET	23.850	22.800	0.450	Junction	

PIPELINE SCHEDULES for Storm

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)
1.011	o	750	S1-POND INLET	23.850	22.800	0.300	Junction	
1.012	o	375	S1-POND OUTLET	23.850	22.671	0.804	Junction	
1.013	o	450	S1-PRMH1-27	23.560	22.649	0.461	Open Manhole	2100
1.014	\/	-6	S1-PRHW1-28	23.530	22.499	0.531	Junction	
6.000	o	225	S1-PRMH1-32	26.519	24.950	1.344	Open Manhole	1050
6.001	o	300	S1-PRMH1-33	26.577	24.689	1.588	Open Manhole	1200
6.002	o	300	S1-PRMH1-34	26.670	24.495	1.875	Open Manhole	1350
7.000	o	225	S1-PRMH1-29	26.521	25.009	1.287	Open Manhole	1050
7.001	o	300	S1-PRMH1-30	26.576	24.710	1.566	Open Manhole	1200
7.002	o	300	S1-PRMH1-31	26.633	24.462	1.871	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)
1.011	55.013	426.5	S1-POND OUTLET	23.850	22.671	0.429	Junction	
1.012	10.400	472.7	S1-PRMH1-27	23.560	22.649	0.536	Open Manhole	2100
1.013	11.698	117.0	S1-PRHW1-28	23.530	22.549	0.531	Junction	
1.014	50.984	342.2	OF1	22.900	22.350	0.050	Open Manhole	0
6.000	55.772	300.0	S1-PRMH1-33	26.577	24.764	1.588	Open Manhole	1200
6.001	84.708	437.0	S1-PRMH1-34	26.670	24.495	1.875	Open Manhole	1350
6.002	8.819	109.5	OF-3	25.120	24.414	0.406	Open Manhole	0
7.000	67.994	303.5	S1-PRMH1-30	26.576	24.785	1.566	Open Manhole	1200
7.001	67.247	271.6	S1-PRMH1-31	26.633	24.462	1.871	Open Manhole	1200
7.002	5.761	42.2	OF-2	25.710	24.326	1.084	Open Manhole	0

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Carriage way & Footway	100	0.036	0.036	0.036
	Classification	40%CC Carriageway	40	0.037	0.015	0.051
1.001	Classification	Carriage way & Footway	100	0.090	0.090	0.090
	Classification	40%CC Carriageway	40	0.091	0.036	0.127
1.002	Classification	Carriage way & Footway	100	0.047	0.047	0.047
	Classification	40%CC Carriageway	40	0.048	0.019	0.066
1.003	Classification	Carriage way & Footway	100	0.050	0.050	0.050
	Classification	40%CC Carriageway	40	0.050	0.020	0.070
1.004	Classification	Carriage way & Footway	100	0.062	0.062	0.062
	Classification	40%CC Carriageway	40	0.061	0.024	0.086
	Classification	Carriage way & Footway	100	0.031	0.031	0.117
1.005	Classification	Carriage way & Footway	100	0.027	0.027	0.027
	Classification	40%CC Carriageway	40	0.020	0.008	0.035
	Classification	Carriage way & Footway	100	0.040	0.040	0.075
	Classification	Carriage way & Footway	100	0.021	0.021	0.096
	Classification	40%CC Carriageway	40	0.007	0.003	0.099
2.000	Classification	Central Reserve	20	0.029	0.006	0.006
	Classification	Carriage way & Footway	100	0.160	0.160	0.165
	Classification	40%CC Carriageway	40	0.034	0.014	0.179
2.001	Classification	Carriage way & Footway	100	0.118	0.118	0.118
	Classification	40%CC Carriageway	40	0.024	0.010	0.128
	Classification	Carriage way & Footway	100	0.040	0.040	0.168
	Classification	Central Reserve	20	0.012	0.002	0.171
	Classification	40%CC Carriageway	40	0.008	0.003	0.174
2.002	Classification	Carriage way & Footway	100	0.101	0.101	0.101
	Classification	40%CC Carriageway	40	0.021	0.008	0.110
2.003	Classification	Carriage way & Footway	100	0.103	0.103	0.103
	Classification	40%CC Carriageway	40	0.027	0.011	0.114
1.006	-	-	100	0.000	0.000	0.000
3.000	Classification	Central Reserve	20	0.015	0.003	0.003
	Classification	Carriage way & Footway	100	0.176	0.176	0.179
	Classification	40%CC Carriageway	40	0.045	0.018	0.197
3.001	Classification	Central Reserve	20	0.031	0.006	0.006
	Classification	Carriage way & Footway	100	0.044	0.044	0.050
	Classification	Carriage way & Footway	100	0.127	0.127	0.177
	Classification	40%CC Carriageway	40	0.048	0.019	0.196
3.002	Classification	Carriage way & Footway	100	0.118	0.118	0.118
	Classification	Central Reserve	20	0.027	0.005	0.123
	Classification	40%CC Carriageway	40	0.034	0.014	0.137
3.003	Classification	Carriage way & Footway	100	0.116	0.116	0.116
	Classification	Central Reserve	20	0.028	0.006	0.121
	Classification	40%CC Carriageway	40	0.037	0.015	0.136
1.007	Classification	Central Reserve	20	0.034	0.007	0.007
	Classification	Carriage way & Footway	100	0.156	0.156	0.163
	Classification	40%CC Carriageway	40	0.061	0.024	0.187

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
4.000	Classification	Carriage way & Footway	100	0.093	0.093	0.093
	Classification	40%CC Carriageway	40	0.094	0.037	0.131
4.001	Classification	Carriage way & Footway	100	0.074	0.074	0.074
	Classification	40%CC Carriageway	40	0.072	0.029	0.103
5.000	Classification	Carriage way & Footway	100	0.042	0.042	0.042
	Classification	40%CC Carriageway	40	0.042	0.017	0.059
4.002	-	-	100	0.000	0.000	0.000
4.003	Classification	Carriage way & Footway	100	0.055	0.055	0.055
	Classification	40%CC Carriageway	40	0.056	0.022	0.078
4.004	Classification	Carriage way & Footway	100	0.065	0.065	0.065
	Classification	40%CC Carriageway	40	0.065	0.026	0.091
4.005	Classification	Carriage way & Footway	100	0.084	0.084	0.084
	Classification	40%CC Carriageway	40	0.084	0.034	0.117
4.006	Classification	Carriage way & Footway	100	0.068	0.068	0.068
	Classification	40%CC Carriageway	40	0.068	0.027	0.095
4.007	Classification	Carriage way & Footway	100	0.050	0.050	0.050
	Classification	40%CC Carriageway	40	0.050	0.020	0.070
	Classification	Carriage way & Footway	100	0.015	0.015	0.085
	Classification	Central Reserve	20	0.005	0.001	0.086
	Classification	Central Reserve	20	0.005	0.001	0.086
	Classification	Carriage way & Footway	100	0.021	0.021	0.108
	Classification	40%CC Carriageway	40	0.009	0.004	0.111
1.008	-	-	100	0.000	0.000	0.000
1.009	-	-	100	0.000	0.000	0.000
1.010	-	-	100	0.000	0.000	0.000
1.011	Classification	Default	100	0.110	0.110	0.110
	Classification	Default	100	0.065	0.065	0.175
	Classification	Default	100	0.156	0.156	0.331
1.012	-	-	100	0.000	0.000	0.000
1.013	-	-	100	0.000	0.000	0.000
1.014	-	-	100	0.000	0.000	0.000
6.000	Classification	Carriage way & Footway	100	0.105	0.105	0.105
	Classification	40%CC Carriageway	40	0.023	0.009	0.115
6.001	Classification	Carriage way & Footway	100	0.128	0.128	0.128
	Classification	40%CC Carriageway	40	0.018	0.007	0.135
	Classification	Carriage way & Footway	100	0.015	0.015	0.150
	Classification	40%CC Carriageway	40	0.003	0.001	0.151
6.002	Classification	40%CC Carriageway	40	0.005	0.002	0.002
	Classification	Carriage way & Footway	100	0.059	0.059	0.061
7.000	Classification	Carriage way & Footway	100	0.113	0.113	0.113
	Classification	Central Reserve	20	0.033	0.007	0.120
	Classification	Carriage way & Footway	100	0.019	0.019	0.139
7.001	Classification	Carriage way & Footway	100	0.110	0.110	0.110
	Classification	Central Reserve	20	0.040	0.008	0.118
	Classification	40%CC Carriageway	40	0.002	0.001	0.119

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
7.002	Classification	Carriage way & Footway	100	0.053	0.053	0.053
	Classification	Central Reserve	20	0.018	0.004	0.056
				Total	Total	Total
				4.685	3.717	3.717

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.014	OF1	22.900	22.350	0.000	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
6.002	OF-3	25.120	24.414	22.360	0	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
7.002	OF-2	25.710	24.326	22.400	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.367		

Online Controls for Storm

Orifice Manhole: S1-PRMH1-27, DS/PN: 1.013, Volume (m^3): 4.2

Diameter (m) 0.234 Discharge Coefficient 0.600 Invert Level (m) 22.649

Storage Structures for Storm

Tank or Pond Manhole: S1-POND INLET, DS/PN: 1.011

Invert Level (m) 22.800

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1300.0	0.750	1711.7	1.050	1892.2

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	**US/MH Name**	**Storm**	**Return Period**	**Climate Change**	**First (X) Surcharge**	**First (Y) Flood**	**First (Z) Overflow**	**Overflow Act.**
1.000	S1-PRMH1-1	15 Summer	1	+0%				
1.001	S1-PRMH1-2	15 Summer	1	+0%	100/15 Summer			
1.002	S1-PRMH1-3	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
1.003	S1-PRMH1-4	15 Summer	1	+0%	30/15 Summer			
1.004	S1-PRMH1-5	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
1.005	S1-PRMH1-6	15 Summer	1	+0%	30/15 Summer			
2.000	S1-PRMH1-15	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
2.001	S1-PRMH1-16	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
2.002	S1-PRMH1-17	30 Summer	1	+0%	30/15 Summer	100/15 Summer		
2.003	S1-PRMH1-18	30 Summer	1	+0%	5/15 Summer			
1.006	S1-PRMH1-7	30 Summer	1	+0%	30/15 Summer			
3.000	S1-PRMH1-19	15 Summer	1	+0%	5/15 Summer	30/15 Summer		
3.001	S1-PRMH1-20	15 Summer	1	+0%	5/15 Summer	100/15 Summer		
3.002	S1-PRMH1-21	15 Summer	1	+0%	5/15 Summer	100/15 Summer		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-PRMH1-1	32.649	-0.177	0.000	0.10		7.9	OK	
1.001	S1-PRMH1-2	31.769	-0.149	0.000	0.25		24.3	OK	
1.002	S1-PRMH1-3	28.483	-0.134	0.000	0.34		32.7	OK	
1.003	S1-PRMH1-4	26.183	-0.191	0.000	0.28		40.9	OK	
1.004	S1-PRMH1-5	25.009	-0.122	0.000	0.62		52.7	OK	5
1.005	S1-PRMH1-6	24.477	-0.154	0.000	0.64		61.8	OK	
2.000	S1-PRMH1-15	25.559	-0.140	0.000	0.48		24.2	OK	5
2.001	S1-PRMH1-16	25.406	-0.090	0.000	0.76		38.6	OK	5
2.002	S1-PRMH1-17	25.150	-0.148	0.000	0.51		47.5	OK	4
2.003	S1-PRMH1-18	24.722	-0.113	0.000	0.70		56.5	OK	
1.006	S1-PRMH1-7	24.347	-0.158	0.000	0.63		114.9	OK	
3.000	S1-PRMH1-19	25.528	-0.073	0.000	0.71		27.8	OK	9
3.001	S1-PRMH1-20	24.990	-0.079	0.000	0.81		47.0	OK	5
3.002	S1-PRMH1-21	24.716	-0.098	0.000	0.77		59.1	OK	2

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
3.003	S1-PRMH1-22	15 Summer	1	+0%	30/15 Summer		
1.007	S1-PRMH1-23	30 Summer	1	+0%	5/15 Summer		
4.000	S1-PRMH1-36	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
4.001	S1-PRMH1-37	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
5.000	S1-PRMH1-35	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
4.002	S1-PRMH1-38	15 Summer	1	+0%	5/15 Summer		
4.003	S1-PRMH1-8	15 Summer	1	+0%	5/15 Summer	100/15 Summer	
4.004	S1-PRMH1-9	15 Summer	1	+0%	5/15 Summer	100/15 Summer	
4.005	S1-PRMH1-10	15 Summer	1	+0%	5/15 Summer	100/15 Summer	
4.006	S1-PRMH1-11	15 Summer	1	+0%	30/15 Summer		
4.007	S1-PRMH1-12	15 Summer	1	+0%	5/15 Summer		
1.008	S1-PRMH1-13	30 Summer	1	+0%	5/15 Summer		
1.009	S1-PRHW1-14	30 Summer	1	+0%			
1.010	S1-PRHW1-15	30 Summer	1	+0%	30/15 Summer		
1.011	S1-POND INLET	180 Summer	1	+0%			
1.012	S1-POND OUTLET	240 Summer	1	+0%	5/30 Summer		
1.013	S1-PRMH1-27	240 Summer	1	+0%	5/120 Summer	100/120 Summer	
1.014	S1-PRHW1-28	240 Summer	1	+0%			
6.000	S1-PRMH1-32	15 Summer	1	+0%	5/15 Summer		
6.001	S1-PRMH1-33	15 Summer	1	+0%	5/15 Summer		
6.002	S1-PRMH1-34	15 Summer	1	+0%	30/15 Summer		
7.000	S1-PRMH1-29	15 Summer	1	+0%	5/15 Summer		
7.001	S1-PRMH1-30	15 Summer	1	+0%	30/15 Summer		
7.002	S1-PRMH1-31	15 Summer	1	+0%	100/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
3.003	S1-PRMH1-22		24.392	-0.118	0.000	0.67		70.7	OK
1.007	S1-PRMH1-23		23.873	-0.064	0.000	0.73		191.2	OK
4.000	S1-PRMH1-36		33.220	-0.111	0.000	0.50		20.0	OK
4.001	S1-PRMH1-37		32.952	-0.115	0.000	0.48		33.1	OK
5.000	S1-PRMH1-35		32.496	-0.153	0.000	0.22		9.0	OK
4.002	S1-PRMH1-38		32.267	-0.096	0.000	0.62		42.0	OK
4.003	S1-PRMH1-8		31.746	-0.085	0.000	0.70		51.1	OK
4.004	S1-PRMH1-9		30.792	-0.066	0.000	0.82		61.7	OK
4.005	S1-PRMH1-10		29.515	-0.080	0.000	0.73		74.6	OK
4.006	S1-PRMH1-11		25.846	-0.138	0.000	0.55		83.7	OK
4.007	S1-PRMH1-12		24.432	-0.095	0.000	0.79		94.8	OK
1.008	S1-PRMH1-13		23.786	0.000	0.000	1.54		270.5	OK

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.009	S1-PRHW1-14		23.380	-0.636	0.000	0.11		252.1	OK
1.010	S1-PRHW1-15		23.222	-0.244	0.000	0.66		228.3	OK*
1.011	S1-POND INLET		23.019	-0.531	0.000	0.08		50.6	OK*
1.012	S1-POND OUTLET		22.986	-0.060	0.000	0.69		50.2	OK*
1.013	S1-PRMH1-27		22.969	-0.130	0.000	0.28		50.2	OK
1.014	S1-PRHW1-28		22.575	-0.424	0.000	0.05		50.2	OK
6.000	S1-PRMH1-32		25.080	-0.095	0.000	0.58		16.7	OK
6.001	S1-PRMH1-33		24.875	-0.114	0.000	0.62		31.5	OK
6.002	S1-PRMH1-34		24.651	-0.144	0.000	0.53		37.2	OK
7.000	S1-PRMH1-29		25.157	-0.077	0.000	0.69		19.7	OK
7.001	S1-PRMH1-30		24.868	-0.142	0.000	0.50		32.4	OK
7.002	S1-PRMH1-31		24.597	-0.165	0.000	0.41		38.1	OK

PN	US/MH Name	Level Exceeded
3.003	S1-PRMH1-22	
1.007	S1-PRMH1-23	
4.000	S1-PRMH1-36	5
4.001	S1-PRMH1-37	5
5.000	S1-PRMH1-35	4
4.002	S1-PRMH1-38	
4.003	S1-PRMH1-8	1
4.004	S1-PRMH1-9	2
4.005	S1-PRMH1-10	4
4.006	S1-PRMH1-11	
4.007	S1-PRMH1-12	
1.008	S1-PRMH1-13	
1.009	S1-PRHW1-14	
1.010	S1-PRHW1-15	
1.011	S1-POND INLET	
1.012	S1-POND OUTLET	
1.013	S1-PRMH1-27	7
1.014	S1-PRHW1-28	
6.000	S1-PRMH1-32	
6.001	S1-PRMH1-33	
6.002	S1-PRMH1-34	
7.000	S1-PRMH1-29	
7.001	S1-PRMH1-30	
7.002	S1-PRMH1-31	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	S1-PRMH1-1	15 Summer	5	+0%				
1.001	S1-PRMH1-2	15 Summer	5	+0%	100/15 Summer			
1.002	S1-PRMH1-3	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
1.003	S1-PRMH1-4	15 Summer	5	+0%	30/15 Summer			
1.004	S1-PRMH1-5	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
1.005	S1-PRMH1-6	15 Summer	5	+0%	30/15 Summer			
2.000	S1-PRMH1-15	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
2.001	S1-PRMH1-16	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
2.002	S1-PRMH1-17	15 Summer	5	+0%	30/15 Summer	100/15 Summer		
2.003	S1-PRMH1-18	30 Summer	5	+0%	5/15 Summer			
1.006	S1-PRMH1-7	15 Summer	5	+0%	30/15 Summer			
3.000	S1-PRMH1-19	15 Summer	5	+0%	5/15 Summer	30/15 Summer		
3.001	S1-PRMH1-20	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
3.002	S1-PRMH1-21	15 Summer	5	+0%	5/15 Summer	100/15 Summer		

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-PRMH1-1	32.663	-0.163	0.000	0.17		13.3	OK	
1.001	S1-PRMH1-2	31.795	-0.123	0.000	0.41		40.6	OK	
1.002	S1-PRMH1-3	28.515	-0.102	0.000	0.57		54.7	OK	
1.003	S1-PRMH1-4	26.220	-0.154	0.000	0.46		68.3	OK	
1.004	S1-PRMH1-5	25.160	0.029	0.000	1.02		86.5	SURCHARGED	5
1.005	S1-PRMH1-6	24.612	-0.019	0.000	1.00		97.1	OK	
2.000	S1-PRMH1-15	25.665	-0.034	0.000	0.76		38.8	OK	5
2.001	S1-PRMH1-16	25.573	0.077	0.000	1.13		57.7	SURCHARGED	5
2.002	S1-PRMH1-17	25.196	-0.102	0.000	0.76		70.9	OK	4
2.003	S1-PRMH1-18	24.852	0.017	0.000	1.03		83.9	SURCHARGED	
1.006	S1-PRMH1-7	24.488	-0.017	0.000	0.95		171.9	OK	
3.000	S1-PRMH1-19	25.860	0.259	0.000	1.05		41.2	SURCHARGED	9
3.001	S1-PRMH1-20	25.222	0.153	0.000	1.20		69.7	SURCHARGED	5
3.002	S1-PRMH1-21	24.864	0.050	0.000	1.09		83.5	SURCHARGED	2

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
3.003	S1-PRMH1-22	30 Summer	5	+0%	30/15 Summer		
1.007	S1-PRMH1-23	30 Summer	5	+0%	5/15 Summer		
4.000	S1-PRMH1-36	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
4.001	S1-PRMH1-37	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
5.000	S1-PRMH1-35	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
4.002	S1-PRMH1-38	15 Summer	5	+0%	5/15 Summer		
4.003	S1-PRMH1-8	15 Summer	5	+0%	5/15 Summer	100/15 Summer	
4.004	S1-PRMH1-9	15 Summer	5	+0%	5/15 Summer	100/15 Summer	
4.005	S1-PRMH1-10	15 Summer	5	+0%	5/15 Summer	100/15 Summer	
4.006	S1-PRMH1-11	15 Summer	5	+0%	30/15 Summer		
4.007	S1-PRMH1-12	15 Summer	5	+0%	5/15 Summer		
1.008	S1-PRMH1-13	30 Summer	5	+0%	5/15 Summer		
1.009	S1-PRHW1-14	30 Summer	5	+0%			
1.010	S1-PRHW1-15	30 Summer	5	+0%	30/15 Summer		
1.011	S1-POND INLET	120 Summer	5	+0%			
1.012	S1-POND OUTLET	120 Winter	5	+0%	5/30 Summer		
1.013	S1-PRMH1-27	240 Summer	5	+0%	5/120 Summer	100/120 Summer	
1.014	S1-PRHW1-28	60 Winter	5	+0%			
6.000	S1-PRMH1-32	15 Summer	5	+0%	5/15 Summer		
6.001	S1-PRMH1-33	15 Summer	5	+0%	5/15 Summer		
6.002	S1-PRMH1-34	15 Summer	5	+0%	30/15 Summer		
7.000	S1-PRMH1-29	15 Summer	5	+0%	5/15 Summer		
7.001	S1-PRMH1-30	15 Summer	5	+0%	30/15 Summer		
7.002	S1-PRMH1-31	15 Summer	5	+0%	100/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
3.003	S1-PRMH1-22		24.479	-0.031	0.000	0.93		98.0	OK
1.007	S1-PRMH1-23		23.982	0.045	0.000	1.09		287.9	SURCHARGED
4.000	S1-PRMH1-36		33.267	-0.064	0.000	0.83		33.5	OK
4.001	S1-PRMH1-37		32.996	-0.071	0.000	0.80		55.4	OK
5.000	S1-PRMH1-35		32.552	-0.097	0.000	0.36		15.1	OK
4.002	S1-PRMH1-38		32.519	0.156	0.000	0.91		61.1	SURCHARGED
4.003	S1-PRMH1-8		32.124	0.293	0.000	0.96		70.0	SURCHARGED
4.004	S1-PRMH1-9		31.229	0.371	0.000	1.13		84.5	SURCHARGED
4.005	S1-PRMH1-10		29.631	0.036	0.000	1.01		103.3	SURCHARGED
4.006	S1-PRMH1-11		25.890	-0.094	0.000	0.80		120.4	OK
4.007	S1-PRMH1-12		24.756	0.229	0.000	1.14		135.9	SURCHARGED
1.008	S1-PRMH1-13		23.797	0.011	0.000	2.39		420.5	SURCHARGED

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.009	S1-PRHW1-14		23.494	-0.522	0.000	0.17		409.4	OK
1.010	S1-PRHW1-15		23.368	-0.098	0.000	1.00		347.1	OK*
1.011	S1-POND INLET		23.128	-0.422	0.000	0.11		66.6	OK*
1.012	S1-POND OUTLET		23.111	0.065	0.000	0.91		66.2	SURCHARGED*
1.013	S1-PRMH1-27		23.131	0.032	0.000	0.35		63.0	SURCHARGED
1.014	S1-PRHW1-28		22.587	-0.412	0.000	0.06		63.0	OK
6.000	S1-PRMH1-32		25.175	0.000	0.000	0.95		27.1	SURCHARGED
6.001	S1-PRMH1-33		25.000	0.011	0.000	0.99		50.5	SURCHARGED
6.002	S1-PRMH1-34		24.707	-0.088	0.000	0.84		58.9	OK
7.000	S1-PRMH1-29		25.335	0.101	0.000	1.14		32.7	SURCHARGED
7.001	S1-PRMH1-30		24.927	-0.083	0.000	0.83		53.1	OK
7.002	S1-PRMH1-31		24.644	-0.118	0.000	0.67		62.4	OK

PN	US/MH Name	Level Exceeded
3.003	S1-PRMH1-22	
1.007	S1-PRMH1-23	
4.000	S1-PRMH1-36	5
4.001	S1-PRMH1-37	5
5.000	S1-PRMH1-35	4
4.002	S1-PRMH1-38	
4.003	S1-PRMH1-8	1
4.004	S1-PRMH1-9	2
4.005	S1-PRMH1-10	4
4.006	S1-PRMH1-11	
4.007	S1-PRMH1-12	
1.008	S1-PRMH1-13	
1.009	S1-PRHW1-14	
1.010	S1-PRHW1-15	
1.011	S1-POND INLET	
1.012	S1-POND OUTLET	
1.013	S1-PRMH1-27	7
1.014	S1-PRHW1-28	
6.000	S1-PRMH1-32	
6.001	S1-PRMH1-33	
6.002	S1-PRMH1-34	
7.000	S1-PRMH1-29	
7.001	S1-PRMH1-30	
7.002	S1-PRMH1-31	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	S1-PRMH1-1	15 Summer	30	+0%				
1.001	S1-PRMH1-2	15 Summer	30	+0%	100/15 Summer			
1.002	S1-PRMH1-3	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
1.003	S1-PRMH1-4	15 Summer	30	+0%	30/15 Summer			
1.004	S1-PRMH1-5	15 Summer	30	+0%	5/15 Summer	100/15 Summer		
1.005	S1-PRMH1-6	15 Summer	30	+0%	30/15 Summer			
2.000	S1-PRMH1-15	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
2.001	S1-PRMH1-16	15 Summer	30	+0%	5/15 Summer	100/15 Summer		
2.002	S1-PRMH1-17	30 Summer	30	+0%	30/15 Summer	100/15 Summer		
2.003	S1-PRMH1-18	30 Summer	30	+0%	5/15 Summer			
1.006	S1-PRMH1-7	30 Summer	30	+0%	30/15 Summer			
3.000	S1-PRMH1-19	15 Summer	30	+0%	5/15 Summer	30/15 Summer		
3.001	S1-PRMH1-20	15 Summer	30	+0%	5/15 Summer	100/15 Summer		
3.002	S1-PRMH1-21	15 Summer	30	+0%	5/15 Summer	100/15 Summer		

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-PRMH1-1	32.677	-0.149	0.000	0.25		19.5	OK	
1.001	S1-PRMH1-2	31.839	-0.079	0.000	0.73		71.7	OK	
1.002	S1-PRMH1-3	28.689	0.072	0.000	0.98		94.3	SURCHARGED	
1.003	S1-PRMH1-4	26.735	0.361	0.000	0.74		108.6	SURCHARGED	
1.004	S1-PRMH1-5	26.111	0.980	0.000	1.48		125.7	SURCHARGED	5
1.005	S1-PRMH1-6	25.152	0.521	0.000	1.31		127.7	SURCHARGED	
2.000	S1-PRMH1-15	26.337	0.638	0.000	0.96		49.0	SURCHARGED	5
2.001	S1-PRMH1-16	26.105	0.609	0.000	1.55		79.1	SURCHARGED	5
2.002	S1-PRMH1-17	25.899	0.601	0.000	0.92		86.7	SURCHARGED	4
2.003	S1-PRMH1-18	25.509	0.674	0.000	1.22		99.2	SURCHARGED	
1.006	S1-PRMH1-7	24.999	0.494	0.000	1.23		222.3	SURCHARGED	
3.000	S1-PRMH1-19	26.504	0.903	3.513	1.21		47.4	FLOOD	9
3.001	S1-PRMH1-20	26.148	1.079	0.000	1.40		81.7	SURCHARGED	5
3.002	S1-PRMH1-21	25.626	0.812	0.000	1.40		107.1	SURCHARGED	2

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
3.003	S1-PRMH1-22	30 Summer	30	+0%	30/15 Summer		
1.007	S1-PRMH1-23	30 Summer	30	+0%	5/15 Summer		
4.000	S1-PRMH1-36	30 Summer	30	+0%	30/15 Summer	100/15 Summer	
4.001	S1-PRMH1-37	15 Summer	30	+0%	30/15 Summer	100/15 Summer	
5.000	S1-PRMH1-35	15 Summer	30	+0%	30/15 Summer	100/15 Summer	
4.002	S1-PRMH1-38	15 Summer	30	+0%	5/15 Summer		
4.003	S1-PRMH1-8	15 Summer	30	+0%	5/15 Summer	100/15 Summer	
4.004	S1-PRMH1-9	15 Summer	30	+0%	5/15 Summer	100/15 Summer	
4.005	S1-PRMH1-10	15 Summer	30	+0%	5/15 Summer	100/15 Summer	
4.006	S1-PRMH1-11	15 Summer	30	+0%	30/15 Summer		
4.007	S1-PRMH1-12	15 Summer	30	+0%	5/15 Summer		
1.008	S1-PRMH1-13	30 Summer	30	+0%	5/15 Summer		
1.009	S1-PRHW1-14	30 Summer	30	+0%			
1.010	S1-PRHW1-15	30 Summer	30	+0%	30/15 Summer		
1.011	S1-POND INLET	240 Summer	30	+0%			
1.012	S1-POND OUTLET	180 Summer	30	+0%	5/30 Summer		
1.013	S1-PRMH1-27	240 Summer	30	+0%	5/120 Summer	100/120 Summer	
1.014	S1-PRHW1-28	60 Summer	30	+0%			
6.000	S1-PRMH1-32	15 Summer	30	+0%	5/15 Summer		
6.001	S1-PRMH1-33	15 Summer	30	+0%	5/15 Summer		
6.002	S1-PRMH1-34	15 Summer	30	+0%	30/15 Summer		
7.000	S1-PRMH1-29	15 Summer	30	+0%	5/15 Summer		
7.001	S1-PRMH1-30	15 Summer	30	+0%	30/15 Summer		
7.002	S1-PRMH1-31	15 Summer	30	+0%	100/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
3.003	S1-PRMH1-22		25.044	0.534	0.000	1.25		131.7	SURCHARGED
1.007	S1-PRMH1-23		24.138	0.201	0.000	1.40		367.8	SURCHARGED
4.000	S1-PRMH1-36		34.288	0.957	0.000	0.95		38.4	SURCHARGED
4.001	S1-PRMH1-37		34.312	1.245	0.000	0.93		64.7	SURCHARGED
5.000	S1-PRMH1-35		34.018	1.369	0.000	0.42		17.5	SURCHARGED
4.002	S1-PRMH1-38		33.976	1.613	0.000	0.93		62.8	SURCHARGED
4.003	S1-PRMH1-8		33.565	1.734	0.000	1.02		74.9	SURCHARGED
4.004	S1-PRMH1-9		32.610	1.752	0.000	1.20		90.1	SURCHARGED
4.005	S1-PRMH1-10		30.797	1.202	0.000	1.10		113.5	SURCHARGED
4.006	S1-PRMH1-11		26.485	0.501	0.000	0.90		136.5	SURCHARGED
4.007	S1-PRMH1-12		25.279	0.752	0.000	1.39		165.8	SURCHARGED
1.008	S1-PRMH1-13		23.835	0.049	0.000	2.96		521.0	SURCHARGED

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.009	S1-PRHW1-14		23.607	-0.409	0.000	0.21		509.8	OK
1.010	S1-PRHW1-15		23.548	0.082	0.000	1.22		422.2	SURCHARGED*
1.011	S1-POND INLET		23.290	-0.260	0.000	0.15		87.7	OK*
1.012	S1-POND OUTLET		23.314	0.268	0.000	1.09		79.1	SURCHARGED*
1.013	S1-PRMH1-27		23.363	0.264	0.000	0.43		76.5	SURCHARGED
1.014	S1-PRHW1-28		22.597	-0.402	0.000	0.08		76.4	OK
6.000	S1-PRMH1-32		25.758	0.583	0.000	1.35		38.7	SURCHARGED
6.001	S1-PRMH1-33		25.403	0.414	0.000	1.50		76.4	SURCHARGED
6.002	S1-PRMH1-34		24.827	0.032	0.000	1.24		86.6	SURCHARGED
7.000	S1-PRMH1-29		25.769	0.535	0.000	1.56		44.9	SURCHARGED
7.001	S1-PRMH1-30		25.139	0.129	0.000	1.17		74.8	SURCHARGED
7.002	S1-PRMH1-31		24.696	-0.066	0.000	0.95		88.0	OK

PN	US/MH Name	Level Exceeded
3.003	S1-PRMH1-22	
1.007	S1-PRMH1-23	
4.000	S1-PRMH1-36	5
4.001	S1-PRMH1-37	5
5.000	S1-PRMH1-35	4
4.002	S1-PRMH1-38	
4.003	S1-PRMH1-8	1
4.004	S1-PRMH1-9	2
4.005	S1-PRMH1-10	4
4.006	S1-PRMH1-11	
4.007	S1-PRMH1-12	
1.008	S1-PRMH1-13	
1.009	S1-PRHW1-14	
1.010	S1-PRHW1-15	
1.011	S1-POND INLET	
1.012	S1-POND OUTLET	
1.013	S1-PRMH1-27	7
1.014	S1-PRHW1-28	
6.000	S1-PRMH1-32	
6.001	S1-PRMH1-33	
6.002	S1-PRMH1-34	
7.000	S1-PRMH1-29	
7.001	S1-PRMH1-30	
7.002	S1-PRMH1-31	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	S1-PRMH1-1	15 Summer	100	+0%				
1.001	S1-PRMH1-2	15 Summer	100	+0%	100/15 Summer			
1.002	S1-PRMH1-3	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
1.003	S1-PRMH1-4	15 Summer	100	+0%	30/15 Summer			
1.004	S1-PRMH1-5	15 Summer	100	+0%	5/15 Summer	100/15 Summer		
1.005	S1-PRMH1-6	15 Summer	100	+0%	30/15 Summer			
2.000	S1-PRMH1-15	15 Summer	100	+0%	30/15 Summer	100/15 Summer		
2.001	S1-PRMH1-16	15 Winter	100	+0%	5/15 Summer	100/15 Summer		
2.002	S1-PRMH1-17	30 Summer	100	+0%	30/15 Summer	100/15 Summer		
2.003	S1-PRMH1-18	30 Summer	100	+0%	5/15 Summer			
1.006	S1-PRMH1-7	30 Summer	100	+0%	30/15 Summer			
3.000	S1-PRMH1-19	15 Summer	100	+0%	5/15 Summer	30/15 Summer		
3.001	S1-PRMH1-20	30 Summer	100	+0%	5/15 Summer	100/15 Summer		
3.002	S1-PRMH1-21	15 Winter	100	+0%	5/15 Summer	100/15 Summer		

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1-PRMH1-1	32.689	-0.137	0.000	0.32		25.1	OK	
1.001	S1-PRMH1-2	31.956	0.038	0.000	0.91		89.8	SURCHARGED	
1.002	S1-PRMH1-3	29.760	1.143	0.003	1.06		102.6	FLOOD	
1.003	S1-PRMH1-4	27.226	0.852	0.000	0.85		125.0	SURCHARGED	
1.004	S1-PRMH1-5	26.286	1.155	9.797	1.50		127.4	FLOOD	5
1.005	S1-PRMH1-6	25.608	0.977	0.000	1.41		137.6	SURCHARGED	
2.000	S1-PRMH1-15	26.531	0.832	7.274	0.96		49.1	FLOOD	5
2.001	S1-PRMH1-16	26.442	0.946	8.625	1.66		84.3	FLOOD	5
2.002	S1-PRMH1-17	26.400	1.102	1.058	0.99		92.8	FLOOD	4
2.003	S1-PRMH1-18	26.126	1.291	0.000	1.44		116.8	SURCHARGED	
1.006	S1-PRMH1-7	25.414	0.909	0.000	1.38		249.6	SURCHARGED	
3.000	S1-PRMH1-19	26.516	0.915	15.261	1.48		57.9	FLOOD	9
3.001	S1-PRMH1-20	26.388	1.319	9.127	1.60		93.3	FLOOD	5
3.002	S1-PRMH1-21	26.253	1.439	0.000	1.50		115.0	SURCHARGED	2

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
3.003	S1-PRMH1-22	15 Summer	100	+0%	30/15 Summer		
1.007	S1-PRMH1-23	30 Summer	100	+0%	5/15 Summer		
4.000	S1-PRMH1-36	15 Summer	100	+0%	30/15 Summer	100/15 Summer	
4.001	S1-PRMH1-37	15 Winter	100	+0%	30/15 Summer	100/15 Summer	
5.000	S1-PRMH1-35	15 Summer	100	+0%	30/15 Summer	100/15 Summer	
4.002	S1-PRMH1-38	15 Summer	100	+0%	5/15 Summer		
4.003	S1-PRMH1-8	15 Summer	100	+0%	5/15 Summer	100/15 Summer	
4.004	S1-PRMH1-9	15 Summer	100	+0%	5/15 Summer	100/15 Summer	
4.005	S1-PRMH1-10	15 Summer	100	+0%	5/15 Summer	100/15 Summer	
4.006	S1-PRMH1-11	15 Summer	100	+0%	30/15 Summer		
4.007	S1-PRMH1-12	15 Summer	100	+0%	5/15 Summer		
1.008	S1-PRMH1-13	30 Summer	100	+0%	5/15 Summer		
1.009	S1-PRHW1-14	30 Summer	100	+0%			
1.010	S1-PRHW1-15	60 Summer	100	+0%	30/15 Summer		
1.011	S1-POND INLET	180 Winter	100	+0%			
1.012	S1-POND OUTLET	240 Summer	100	+0%	5/30 Summer		
1.013	S1-PRMH1-27	180 Summer	100	+0%	5/120 Summer	100/120 Summer	
1.014	S1-PRHW1-28	180 Summer	100	+0%			
6.000	S1-PRMH1-32	15 Summer	100	+0%	5/15 Summer		
6.001	S1-PRMH1-33	15 Summer	100	+0%	5/15 Summer		
6.002	S1-PRMH1-34	15 Summer	100	+0%	30/15 Summer		
7.000	S1-PRMH1-29	15 Summer	100	+0%	5/15 Summer		
7.001	S1-PRMH1-30	15 Summer	100	+0%	30/15 Summer		
7.002	S1-PRMH1-31	15 Summer	100	+0%	100/15 Summer		

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
3.003	S1-PRMH1-22		25.636	1.126	0.000	1.51		158.8	SURCHARGED
1.007	S1-PRMH1-23		24.328	0.391	0.000	1.66		437.8	SURCHARGED
4.000	S1-PRMH1-36		34.923	1.592	3.425	1.03		41.5	FLOOD
4.001	S1-PRMH1-37		34.786	1.719	3.553	0.91		63.5	FLOOD
5.000	S1-PRMH1-35		34.612	1.963	2.263	0.55		22.6	FLOOD
4.002	S1-PRMH1-38		34.612	2.249	0.000	1.09		73.6	SURCHARGED
4.003	S1-PRMH1-8		34.499	2.668	0.127	1.12		81.6	FLOOD
4.004	S1-PRMH1-9		33.621	2.763	0.269	1.31		97.9	FLOOD
4.005	S1-PRMH1-10		31.432	1.837	3.105	1.18		121.2	FLOOD
4.006	S1-PRMH1-11		27.049	1.065	0.000	0.97		147.2	SURCHARGED
4.007	S1-PRMH1-12		25.636	1.109	0.000	1.53		183.4	SURCHARGED
1.008	S1-PRMH1-13		23.884	0.098	0.000	3.49		614.4	SURCHARGED

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.009	S1-PRHW1-14		23.665	-0.351	0.000	0.25		592.0	OK
1.010	S1-PRHW1-15		23.617	0.151	0.000	1.43		497.5	SURCHARGED*
1.011	S1-POND INLET		23.427	-0.123	0.000	0.21		124.7	OK*
1.012	S1-POND OUTLET		23.421	0.375	0.000	1.30		94.8	SURCHARGED*
1.013	S1-PRMH1-27		23.444	0.345	0.000	0.50		88.9	SURCHARGED
1.014	S1-PRHW1-28		22.613	-0.386	0.000	0.09		88.4	OK
6.000	S1-PRMH1-32		26.361	1.186	0.000	1.71		49.1	SURCHARGED
6.001	S1-PRMH1-33		25.789	0.800	0.000	1.88		95.7	SURCHARGED
6.002	S1-PRMH1-34		24.910	0.115	0.000	1.60		111.7	SURCHARGED
7.000	S1-PRMH1-29		26.376	1.142	0.000	1.97		56.5	SURCHARGED
7.001	S1-PRMH1-30		25.430	0.420	0.000	1.48		94.6	SURCHARGED
7.002	S1-PRMH1-31		24.804	0.041	0.000	1.17		108.5	SURCHARGED

PN	US/MH Name	Level Exceeded
3.003	S1-PRMH1-22	
1.007	S1-PRMH1-23	
4.000	S1-PRMH1-36	5
4.001	S1-PRMH1-37	5
5.000	S1-PRMH1-35	4
4.002	S1-PRMH1-38	
4.003	S1-PRMH1-8	1
4.004	S1-PRMH1-9	2
4.005	S1-PRMH1-10	4
4.006	S1-PRMH1-11	
4.007	S1-PRMH1-12	
1.008	S1-PRMH1-13	
1.009	S1-PRHW1-14	
1.010	S1-PRHW1-15	
1.011	S1-POND INLET	
1.012	S1-POND OUTLET	
1.013	S1-PRMH1-27	7
1.014	S1-PRHW1-28	
6.000	S1-PRMH1-32	
6.001	S1-PRMH1-33	
6.002	S1-PRMH1-34	
7.000	S1-PRMH1-29	
7.001	S1-PRMH1-30	
7.002	S1-PRMH1-31	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Proposed Model S2

Pipe Sizes M5 J10 Manhole Sizes M5 J10

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.200	Add Flow / Climate Change (%)	0
Ratio R	0.370	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Proposed Model S2

« - 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	51.854	0.166	312.4	0.111	5.00	0.0	1.500		o	375	Pipe/Conduit	
1.001	89.012	0.262	339.7	0.171	0.00	0.0	1.500		o	375	Pipe/Conduit	
1.002	78.813	0.278	283.5	0.175	0.00	0.0	1.500		o	375	Pipe/Conduit	
1.003	80.597	0.175	460.0	0.222	0.00	0.0	1.500		o	375	Pipe/Conduit	
1.004	46.231	0.104	444.5	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
2.000	49.634	0.146	340.0	0.281	6.00	0.0	1.500		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)
1.000	44.42	5.95	25.112	0.111	0.0	0.0	0.0	0.91	100.0	17.8
1.001	39.37	7.66	24.946	0.282	0.0	0.0	0.0	0.87	95.8	40.0
1.002	36.16	9.05	24.684	0.457	0.0	0.0	0.0	0.95	105.0	59.6
1.003	32.77	10.85	24.406	0.679	0.0	0.0	0.0	0.75	82.3	80.3
1.004	31.34	11.75	24.231	0.679	0.0	0.0	0.0	0.85	94.2	80.3
2.000	40.88	7.10	24.890	0.281	0.0	0.0	0.0	0.75	53.0	41.5

Network Design Table for Proposed Model S2

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
1.005	57.625	0.116	496.8	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
3.000	55.480	0.169	328.3	0.285	6.00	0.0	1.500		o	300	Pipe/Conduit	
1.006	77.466	0.155	500.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
4.000	73.367	0.215	341.2	0.255	6.00	0.0	1.500		o	300	Pipe/Conduit	
1.007	88.317	0.177	499.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
5.000	87.269	0.255	342.2	0.268	6.00	0.0	1.500		o	300	Pipe/Conduit	
1.008	89.048	0.178	500.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
6.000	87.735	0.351	250.0	0.214	6.00	0.0	1.500		o	300	Pipe/Conduit	
1.009	63.243	0.126	500.0	0.032	0.00	0.0	0.600		o	525	Pipe/Conduit	
7.000	73.677	0.210	350.8	0.156	6.00	0.0	1.500		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)
1.005	29.90	12.81	24.052	0.960	0.0	0.0	0.0	0.91	144.0	103.7
3.000	40.58	7.21	24.810	0.285	0.0	0.0	0.0	0.76	53.9	41.7
1.006	28.20	14.24	23.936	1.245	0.0	0.0	0.0	0.90	143.5	126.7
4.000	39.45	7.63	24.580	0.255	0.0	0.0	0.0	0.75	52.9	36.4
1.007	26.51	15.87	23.781	1.500	0.0	0.0	0.0	0.90	143.7	143.6
5.000	38.66	7.95	24.522	0.268	0.0	0.0	0.0	0.75	52.8	37.4
1.008	25.16	17.37	23.529	1.768	0.0	0.0	0.0	0.99	215.4	160.6
6.000	39.36	7.67	24.497	0.214	0.0	0.0	0.0	0.88	61.9	30.4
1.009	24.30	18.43	23.351	2.014	0.0	0.0	0.0	0.99	215.4	176.7
7.000	39.96	7.44	25.062	0.156	0.0	0.0	0.0	0.85	94.3	22.5

Network Design Table for Proposed Model S2

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
7.001	67.454	0.218	309.4	0.139	0.00	0.0	1.500		o	375	Pipe/Conduit	
7.002	88.840	0.197	451.0	0.206	0.00	0.0	1.500		o	375	Pipe/Conduit	
7.003	65.387	0.147	444.8	0.163	0.00	0.0	1.500		o	375	Pipe/Conduit	
7.004	49.605	0.099	500.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
8.000	48.725	0.143	340.7	0.239	6.00	0.0	1.500		o	300	Pipe/Conduit	
7.005	54.034	0.109	495.7	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
9.000	52.954	0.172	307.9	0.235	6.00	0.0	1.500		o	300	Pipe/Conduit	
7.006	76.726	0.153	500.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
10.000	69.597	0.296	235.1	0.186	6.00	0.0	1.500		o	225	Pipe/Conduit	
7.007	89.777	0.180	498.8	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
11.000	88.460	0.260	340.2	0.190	6.00	0.0	1.500		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)
7.001	36.96	8.67	24.852	0.295	0.0	0.0	0.0	0.91	100.5	39.3
7.002	33.12	10.64	24.634	0.500	0.0	0.0	0.0	0.75	83.1	59.8
7.003	30.88	12.08	24.437	0.664	0.0	0.0	0.0	0.76	83.7	74.0
7.004	29.53	13.11	24.290	0.664	0.0	0.0	0.0	0.80	88.7	74.0
8.000	40.93	7.08	24.850	0.239	0.0	0.0	0.0	0.75	52.9	35.3
7.005	28.35	14.10	24.116	0.903	0.0	0.0	0.0	0.91	144.1	92.4
9.000	40.83	7.12	24.870	0.235	0.0	0.0	0.0	0.79	55.7	34.7
7.006	26.85	15.52	24.007	1.138	0.0	0.0	0.0	0.90	143.5	110.3
10.000	39.66	7.55	24.695	0.186	0.0	0.0	0.0	0.75	29.7	26.6
7.007	25.32	17.18	23.854	1.323	0.0	0.0	0.0	0.90	143.7	121.0
11.000	38.61	7.97	24.670	0.190	0.0	0.0	0.0	0.75	53.0	26.5

Network Design Table for Proposed Model S2

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
7.008	87.941	0.176	499.7	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
12.000	86.563	0.368	235.2	0.159	6.00	0.0	1.500		o	225	Pipe/Conduit	
7.009	64.231	0.128	500.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
13.000	48.172	0.247	195.0	0.086	5.00	0.0	0.600		o	300	Pipe/Conduit	
13.001	59.822	0.198	302.1	0.114	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.002	89.217	0.178	500.0	0.190	0.00	0.0	0.600		o	450	Pipe/Conduit	
13.003	88.294	0.177	498.8	0.207	0.00	0.0	0.600		o	450	Pipe/Conduit	
13.004	61.521	0.123	500.0	0.132	0.00	0.0	0.600		o	450	Pipe/Conduit	
13.005	89.651	0.179	500.0	0.204	0.00	0.0	0.600		o	450	Pipe/Conduit	
13.006	89.632	0.179	500.0	0.214	0.00	0.0	0.600		o	450	Pipe/Conduit	
13.007	45.056	0.090	500.0	0.115	0.00	0.0	0.600		o	600	Pipe/Conduit	
13.008	64.535	0.129	500.0	0.184	0.00	0.0	0.600		o	600	Pipe/Conduit	
14.000	73.096	2.392	30.6	0.107	5.00	0.0	0.600		o	225	Pipe/Conduit	
14.001	88.440	2.948	30.0	0.113	0.00	0.0	0.600		o	225	Pipe/Conduit	
14.002	65.170	1.629	40.0	0.083	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)
7.008	24.01	18.80	23.674	1.513	0.0	0.0	0.0	0.90	143.6	131.2
12.000	38.70	7.93	24.544	0.159	0.0	0.0	0.0	0.75	29.7	22.3
7.009	23.15	19.99	23.498	1.673	0.0	0.0	0.0	0.90	143.5	139.8
13.000	45.25	5.72	24.619	0.086	0.0	0.0	0.0	1.12	79.3	14.0
13.001	41.68	6.82	24.372	0.199	0.0	0.0	0.0	0.90	63.6	30.0
13.002	37.42	8.47	24.174	0.389	0.0	0.0	0.0	0.90	143.5	52.6
13.003	34.08	10.10	23.996	0.596	0.0	0.0	0.0	0.90	143.7	73.4
13.004	32.13	11.24	23.819	0.728	0.0	0.0	0.0	0.90	143.5	84.4
13.005	29.80	12.89	23.696	0.932	0.0	0.0	0.0	0.90	143.5	100.3
13.006	27.86	14.55	23.517	1.146	0.0	0.0	0.0	0.90	143.5	115.3
13.007	27.13	15.24	23.338	1.262	0.0	0.0	0.0	1.08	306.0	123.6
13.008	26.17	16.24	23.248	1.446	0.0	0.0	0.0	1.08	306.0	136.6
14.000	45.99	5.51	31.241	0.107	0.0	0.0	0.0	2.38	94.4	17.7
14.001	43.84	6.13	28.849	0.219	0.0	0.0	0.0	2.40	95.3	34.7
14.002	42.19	6.65	25.901	0.303	0.0	0.0	0.0	2.07	82.5	46.1

Network Design Table for Proposed Model S2

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
14.003	62.824	0.628	100.0	0.083	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.009	12.850	0.049	262.2	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
15.000	62.832	0.267	235.3	0.109	6.00	0.0	1.500		o	225	Pipe/Conduit	
7.010	35.192	0.070	500.0	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
16.000	62.337	0.312	199.8	0.106	6.00	0.0	1.500		o	225	Pipe/Conduit	
1.010	9.967	0.020	498.4	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
17.000	29.011	0.433	67.0	0.328	5.00	0.0	0.600		o	300	Pipe/Conduit	
18.000	34.093	0.114	300.0	0.076	5.00	0.0	0.600		o	225	Pipe/Conduit	
18.001	32.667	0.109	300.0	0.102	0.00	0.0	0.600		o	225	Pipe/Conduit	
17.001	22.142	0.443	50.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
17.002	43.452	0.793	54.8	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
14.003	40.29	7.32	24.197	0.386	0.0	0.0	0.0	1.57	111.1	56.1
13.009	26.05	16.36	23.119	1.832	0.0	0.0	0.0	1.72	761.3	172.3
15.000	40.06	7.40	24.465	0.109	0.0	0.0	0.0	0.75	29.7	15.7
7.010	22.82	20.46	23.070	3.613	0.0	0.0	0.0	1.24	549.9	297.8
16.000	40.39	7.28	24.428	0.106	0.0	0.0	0.0	0.81	32.2	15.5
1.010	22.73	20.59	23.000	5.733	0.0	0.0	0.0	1.25	550.8	470.7
17.000	46.97	5.25	33.496	0.328	0.0	0.0	0.0	1.92	136.0	55.6
18.000	45.10	5.76	33.361	0.076	0.0	0.0	0.0	0.75	29.8	12.3
18.001	42.70	6.48	33.247	0.178	0.0	0.0	0.0	0.75	29.8	27.4
17.001	42.20	6.65	33.063	0.505	0.0	0.0	0.0	2.23	157.5	77.0
17.002	41.20	6.99	32.620	0.505	0.0	0.0	0.0	2.13	150.5	77.0

Network Design Table for Proposed Model S2

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
17.003	68.365	2.675	25.6	0.122	0.00	0.0	0.600		o	300	Pipe/Conduit	
17.004	70.882	2.568	27.6	0.090	0.00	0.0	0.600		o	300	Pipe/Conduit	
17.005	79.095	2.246	35.2	0.086	0.00	0.0	0.600		o	300	Pipe/Conduit	
17.006	59.586	0.908	65.6	0.061	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.011	73.090	0.146	500.0	0.210	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.012	36.976	0.074	500.0	0.113	0.00	0.0	0.600		o	750	Pipe/Conduit	
19.000	83.428	0.200	417.1	0.163	5.00	0.0	0.600		o	300	Pipe/Conduit	
19.001	86.761	0.202	429.5	0.193	0.00	0.0	0.600		o	300	Pipe/Conduit	
19.002	79.076	0.160	494.2	0.169	0.00	0.0	0.600		o	375	Pipe/Conduit	
19.003	89.572	0.181	494.9	0.190	0.00	0.0	0.600		o	375	Pipe/Conduit	
19.004	91.177	0.182	500.0	0.229	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.013	12.084	0.190	63.6	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.014	100.284	0.354	283.5	0.000	0.00	0.0		0.050	\/	-5	Pipe/Conduit	
1.015	13.437	0.246	54.6	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.016	68.883	0.138	500.0	0.649	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.017	10.906	0.055	200.0	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)
17.003	40.19	7.35	31.827	0.628	0.0	0.0	0.0	3.12	220.7	91.1
17.004	39.16	7.75	29.152	0.717	0.0	0.0	0.0	3.00	212.4	101.4
17.005	37.95	8.24	26.584	0.803	0.0	0.0	0.0	2.66	187.9	110.0
17.006	37.04	8.64	24.188	0.864	0.0	0.0	0.0	2.51	399.6	115.6
1.011	22.10	21.57	22.980	6.808	0.0	0.0	0.0	1.24	549.9	543.3
1.012	21.80	22.06	22.834	6.921	0.0	0.0	0.0	1.24	549.9	544.8
19.000	41.69	6.82	24.135	0.163	0.0	0.0	0.0	0.76	54.0	24.5
19.001	36.81	8.74	23.935	0.355	0.0	0.0	0.0	0.75	53.2	47.2
19.002	33.59	10.37	23.658	0.524	0.0	0.0	0.0	0.81	89.3	63.6
19.003	30.69	12.22	23.498	0.714	0.0	0.0	0.0	0.81	89.2	79.1
19.004	28.34	14.11	23.317	0.943	0.0	0.0	0.0	0.80	88.7«	96.5
1.013	21.76	22.12	22.760	7.864	0.0	0.0	0.0	3.51	1551.8	618.0
1.014	20.53	24.33	22.570	7.864	0.0	0.0	0.0	0.76	2993.3	618.0
1.015	20.49	24.39	22.216	7.864	0.0	0.0	0.0	3.79	1676.0	618.0
1.016	19.96	25.45	21.970	8.513	0.0	0.0	0.0	1.08	306.0«	618.0
1.017	19.91	25.56	21.832	8.513	0.0	0.0	0.0	1.72	485.8«	618.0

Network Design Table for Proposed Model S2

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
1.018	10.564	0.021	500.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.019	25.532	0.456	56.0	0.000	0.00	0.0		0.050	\/	-7	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)
1.018	19.83	25.72	21.777	8.513	0.0	0.0	0.0	1.08	306.0«	618.0
1.019	19.69	26.02	21.756	8.513	0.0	0.0	0.0	1.42	2491.9	618.0

Conduit Sections for Proposed Model S2

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-5	\/	6600	600	11.3		2.031	3.960
-7	\/	3500	500	18.4		1.556	1.750

Manhole Schedules for Proposed Model S2

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Ba
S2-PRMH1-1	26.238	1.126	Open Manhole	1350	1.000	25.112	375				
S2-PRMH1-2	26.329	1.383	Open Manhole	1350	1.001	24.946	375	1.000	24.946	375	
S2-PRMH1-3	26.234	1.550	Open Manhole	1350	1.002	24.684	375	1.001	24.684	375	
S2-PRMH1-4	26.125	1.719	Open Manhole	1350	1.003	24.406	375	1.002	24.406	375	
S2-PRMH1-5	26.160	1.929	Open Manhole	1350	1.004	24.231	375	1.003	24.231	375	
Dummy_S2-PRMH1-1	26.190	1.300	Junction		2.000	24.890	300				
S2-PRMH1-6	26.080	2.028	Open Manhole	1350	1.005	24.052	450	1.004	24.127	375	
								2.000	24.744	300	
Dummy_S2-PRMH1-2	26.110	1.300	Junction		3.000	24.810	300				
S2-PRMH1-7	26.050	2.114	Open Manhole	1350	1.006	23.936	450	1.005	23.936	450	
								3.000	24.641	300	
Dummy_S2-PRMH1-3	26.080	1.500	Junction		4.000	24.580	300				
S2-PRMH1-8	25.970	2.189	Open Manhole	1500	1.007	23.781	450	1.006	23.781	450	
								4.000	24.365	300	
Dummy_S2-PRMH1-4	26.022	1.500	Junction		5.000	24.522	300				
S2-PRMH1-9	25.897	2.368	Open Manhole	1500	1.008	23.529	525	1.007	23.604	450	
								5.000	24.267	300	
Dummy_S2-PRMH1-5	25.922	1.425	Junction		6.000	24.497	300				
S2-PRMH1-10	25.829	2.478	Open Manhole	1500	1.009	23.351	525	1.008	23.351	525	
								6.000	24.146	300	
S2-PRMH1-11	26.240	1.178	Open Manhole	1350	7.000	25.062	375				
S2-PRMH1-12	26.325	1.473	Open Manhole	1350	7.001	24.852	375	7.000	24.852	375	
S2-PRMH1-13	26.245	1.611	Open Manhole	1350	7.002	24.634	375	7.001	24.634	375	
S2-PRMH1-14	26.220	1.783	Open Manhole	1350	7.003	24.437	375	7.002	24.437	375	
S2-PRMH1-15	26.130	1.840	Open Manhole	1350	7.004	24.290	375	7.003	24.290	375	
Dummy_S2-PRMH1-7	26.150	1.300	Junction		8.000	24.850	300				
S2-PRMH1-16	26.150	2.034	Open Manhole	1350	7.005	24.116	450	7.004	24.191	375	
								8.000	24.707	300	
Dummy_S2-PRMH1-8	26.170	1.300	Junction		9.000	24.870	300				
S2-PRMH1-17	26.080	2.073	Open Manhole	1350	7.006	24.007	450	7.005	24.007	450	
								9.000	24.698	300	
Dummy_S2-PRMH1-9	26.120	1.425	Junction		10.000	24.695	225				
S2-PRMH1-18	26.069	2.215	Open Manhole	1350	7.007	23.854	450	7.006	23.854	450	

Manhole Schedules for Proposed Model S2

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)
								10.000	24.399	225
Dummy_S2-PRMH1-10	26.095	1.425	Junction		11.000	24.670	300			
S2-PRMH1-19	25.933	2.259	Open Manhole	1350	7.008	23.674	450	7.007	23.674	450
								11.000	24.410	300
Dummy_S2-PRMH1-11	25.969	1.425	Junction		12.000	24.544	225			
S2-PRMH1-20	25.874	2.376	Open Manhole	1350	7.009	23.498	450	7.008	23.498	450
								12.000	24.176	225
S2-PRMH1-46	25.577	0.958	Open Manhole	1200	13.000	24.619	300			
S2-PRMH1-47	25.337	0.965	Open Manhole	1200	13.001	24.372	300	13.000	24.372	300
S2-PRMH1-48	25.320	1.146	Open Manhole	1800	13.002	24.174	450	13.001	24.174	300
S2-PRMH1-49	25.290	1.294	Open Manhole	1800	13.003	23.996	450	13.002	23.996	450
S2-PRMH1-50	25.360	1.541	Open Manhole	1350	13.004	23.819	450	13.003	23.819	450
S2-PRMH1-51	25.261	1.565	Open Manhole	1350	13.005	23.696	450	13.004	23.696	450
S2-PRMH1-52	25.401	1.885	Open Manhole	1350	13.006	23.517	450	13.005	23.517	450
S2-PRMH1-53	25.454	2.116	Open Manhole	1500	13.007	23.338	600	13.006	23.338	450
S2-PRMH1-54	25.409	2.161	Open Manhole	1500	13.008	23.248	600	13.007	23.248	600
S2-PRMH1-34	33.936	2.695	Open Manhole	1050	14.000	31.241	225			
S2-PRMH1-35	31.596	2.747	Open Manhole	1050	14.001	28.849	225	14.000	28.849	225
S2-PRMH1-36	27.696	1.795	Open Manhole	1050	14.002	25.901	225	14.001	25.901	225
S2-PRMH1-37	25.996	1.799	Open Manhole	1200	14.003	24.197	300	14.002	24.272	225
S2-PRMH1-38	25.326	2.207	Open Manhole	1500	13.009	23.119	750	13.008	23.119	600
								14.003	23.569	300
Dummy_S2-PRMH1-12	25.897	1.432	Junction		15.000	24.465	225			
S2-PRMH1-39	25.576	2.506	Open Manhole	1500	7.010	23.070	750	7.009	23.370	450
								13.009	23.070	750
								15.000	24.198	225
Dummy_S2-PRMH1-6	25.853	1.425	Junction		16.000	24.428	225			
S2-PRMH1-40	25.644	2.644	Open Manhole	1500	1.010	23.000	750	1.009	23.225	525
								7.010	23.000	750
								16.000	24.116	225
S2-PRMH1-21	34.939	1.443	Open Manhole	1200	17.000	33.496	300			
S2-PRMH1-22	34.582	1.221	Open Manhole	1050	18.000	33.361	225			
S2-PRMH1-23	34.643	1.396	Open Manhole	1050	18.001	33.247	225	18.000	33.247	225

Manhole Schedules for Proposed Model S2

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)	Backdr (mm)
S2-PRMH1-24	34.666	1.603	Open Manhole	1200	17.001	33.063	300	17.000	33.063	300	
								18.001	33.138	225	
S2-PRMH1-25	35.130	2.510	Open Manhole	1200	17.002	32.620	300	17.001	32.620	300	
S2-PRMH1-27	33.849	2.023	Open Manhole	1200	17.003	31.827	300	17.002	31.827	300	
S2-PRMH1-28	31.653	2.501	Open Manhole	1200	17.004	29.152	300	17.003	29.152	300	
S2-PRMH1-29	28.874	2.290	Open Manhole	1200	17.005	26.584	300	17.004	26.584	300	
S2-PRMH1-30	26.331	2.143	Open Manhole	1200	17.006	24.188	450	17.005	24.338	300	
S2-PRMH1-31	25.489	2.509	Open Manhole	1500	1.011	22.980	750	1.010	22.980	750	
								17.006	23.280	450	
S2-PRMH1-32	25.393	2.559	Open Manhole	1500	1.012	22.834	750	1.011	22.834	750	
S2-PRMH1-41	25.223	1.088	Open Manhole	1200	19.000	24.135	300				
S2-PRMH1-42	25.212	1.277	Open Manhole	1200	19.001	23.935	300	19.000	23.935	300	
S2-PRMH1-43	25.284	1.626	Open Manhole	1350	19.002	23.658	375	19.001	23.733	300	
S2-PRMH1-44	25.340	1.842	Open Manhole	1350	19.003	23.498	375	19.002	23.498	375	
S2-PRMH1-45	25.271	1.954	Open Manhole	1350	19.004	23.317	375	19.003	23.317	375	
S2-PRMH1-33	25.318	2.558	Open Manhole	1500	1.013	22.760	750	1.012	22.760	750	
								19.004	23.135	375	
S2-PRHW1-55	23.320	0.750	Junction		1.014	22.570	-5	1.013	22.570	750	
S2-PRHW1-56	23.300	1.084	Junction		1.015	22.216	750	1.014	22.216	-5	
S2-PRHW1-57	23.170	1.200	Junction		1.016	21.970	600	1.015	21.970	750	
S2-PRHW1-58	23.170	1.338	Junction		1.017	21.832	600	1.016	21.832	600	
S2-PRMH1-59	22.760	0.983	Open Manhole	1500	1.018	21.777	600	1.017	21.777	600	
S2-PRHW1-60	22.710	0.954	Junction		1.019	21.756	-7	1.018	21.756	600	
OF-1	21.800	0.500	Open Manhole	0		OUTFALL		1.019	21.300	-7	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S2-PRMH1-1	390262.009	225327.500	390262.009	225327.500	Required	
S2-PRMH1-2	390288.458	225372.102	390288.458	225372.102	Required	

Manhole Schedules for Proposed Model S2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S2-PRMH1-3	390335.373	225447.746	390335.373	225447.746	Required	
S2-PRMH1-4	390378.178	225513.922	390378.178	225513.922	Required	
S2-PRMH1-5	390422.847	225581.008	390422.847	225581.008	Required	
Dummy_S2-PRMH1-1	390420.227	225578.681			No Entry	
S2-PRMH1-6	390448.787	225619.275	390448.787	225619.275	Required	
Dummy_S2-PRMH1-2	390449.424	225621.453			No Entry	
S2-PRMH1-7	390481.848	225666.472	390481.848	225666.472	Required	
Dummy_S2-PRMH1-3	390483.599	225670.282			No Entry	
S2-PRMH1-8	390527.900	225728.764	390527.900	225728.764	Required	
Dummy_S2-PRMH1-4	390527.679	225730.233			No Entry	
S2-PRMH1-9	390580.169	225799.952	390580.169	225799.952	Required	
Dummy_S2-PRMH1-5	390580.453	225801.374			No Entry	
S2-PRMH1-10	390632.659	225871.885	390632.659	225871.885	Required	
S2-PRMH1-11	390292.928	225311.045	390292.928	225311.045	Required	

Manhole Schedules for Proposed Model S2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S2-PRMH1-12	390330.891	225374.189	390330.891	225374.189	Required	
S2-PRMH1-13	390366.464	225431.500	390366.464	225431.500	Required	
S2-PRMH1-14	390414.908	225505.969	390414.908	225505.969	Required	
S2-PRMH1-15	390451.420	225560.213	390451.420	225560.213	Required	
Dummy_S2-PRMH1-7	390452.296	225560.681			No Entry	
S2-PRMH1-16	390479.523	225601.090	390479.523	225601.090	Required	
Dummy_S2-PRMH1-8	390480.455	225601.756			No Entry	
S2-PRMH1-17	390510.641	225645.264	390510.641	225645.264	Required	
Dummy_S2-PRMH1-9	390515.385	225650.633			No Entry	
S2-PRMH1-18	390555.769	225707.316	390555.769	225707.316	Required	
Dummy_S2-PRMH1-10	390556.966	225708.072			No Entry	
S2-PRMH1-19	390608.949	225779.647	390608.949	225779.647	Required	
Dummy_S2-PRMH1-11	390610.330	225780.344			No Entry	
S2-PRMH1-20	390661.142	225850.424	390661.142	225850.424	Required	

Manhole Schedules for Proposed Model S2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S2-PRMH1-46	391076.497	226415.118	391076.497	226415.118	Required	
S2-PRMH1-47	391049.093	226375.500	391049.093	226375.500	Required	
S2-PRMH1-48	391014.644	226326.592	391014.644	226326.592	Required	
S2-PRMH1-49	390963.068	226253.793	390963.068	226253.793	Required	
S2-PRMH1-50	390911.728	226181.959	390911.728	226181.959	Required	
S2-PRMH1-51	390875.911	226131.939	390875.911	226131.939	Required	
S2-PRMH1-52	390823.153	226059.456	390823.153	226059.456	Required	
S2-PRMH1-53	390770.734	225986.750	390770.734	225986.750	Required	
S2-PRMH1-54	390745.720	225949.276	390745.720	225949.276	Required	
S2-PRMH1-34	390566.548	225644.417	390566.548	225644.417	Required	
S2-PRMH1-35	390598.769	225710.028	390598.769	225710.028	Required	
S2-PRMH1-36	390642.448	225786.929	390642.448	225786.929	Required	
S2-PRMH1-37	390674.698	225843.560	390674.698	225843.560	Required	
S2-PRMH1-38	390709.952	225895.560	390709.952	225895.560	Required	

Manhole Schedules for Proposed Model S2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
Dummy_S2-PRMH1-12	390662.387	225851.250			No Entry	
S2-PRMH1-39	390699.013	225902.303	390699.013	225902.303	Required	
Dummy_S2-PRMH1-6	390632.824	225872.894			No Entry	
S2-PRMH1-40	390670.326	225922.688	390670.326	225922.688	Required	
S2-PRMH1-21	390391.885	225694.119	390391.885	225694.119	Required	
S2-PRMH1-22	390480.736	225672.820	390480.736	225672.820	Required	
S2-PRMH1-23	390452.466	225691.876	390452.466	225691.876	Required	
S2-PRMH1-24	390420.526	225698.732	390420.526	225698.732	Required	
S2-PRMH1-25	390420.365	225720.874	390420.365	225720.874	Required	
S2-PRMH1-27	390455.320	225746.685	390455.320	225746.685	Required	
S2-PRMH1-28	390512.488	225784.177	390512.488	225784.177	Required	
S2-PRMH1-29	390568.056	225828.182	390568.056	225828.182	Required	
S2-PRMH1-30	390623.905	225884.190	390623.905	225884.190	Required	
S2-PRMH1-31	390662.854	225929.284	390662.854	225929.284	Required	

Manhole Schedules for Proposed Model S2

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S2-PRMH1-32	390708.118	225986.671	390708.118	225986.671	Required	
S2-PRMH1-41	390991.071	226358.110	390991.071	226358.110	Required	
S2-PRMH1-42	390938.908	226293.000	390938.908	226293.000	Required	
S2-PRMH1-43	390887.155	226223.365	390887.155	226223.365	Required	
S2-PRMH1-44	390839.965	226159.912	390839.965	226159.912	Required	
S2-PRMH1-45	390786.830	226087.803	390786.830	226087.803	Required	
S2-PRMH1-33	390730.789	226015.882	390730.789	226015.882	Required	
S2-PRHW1-55	390721.175	226023.203			No Entry	
S2-PRHW1-56	390647.956	225956.319			No Entry	
S2-PRHW1-57	390642.613	225968.648			No Entry	
S2-PRHW1-58	390664.768	226033.871			No Entry	
S2-PRMH1-59	390669.334	226043.775	390669.334	226043.775	Required	
S2-PRHW1-60	390673.658	226053.413			No Entry	
OF-1	390684.289	226076.627			No Entry	

PIPELINE SCHEDULES for Proposed Model S2

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)
1.000	o	375	S2-PRMH1-1	26.238	25.112	0.751	Open Manhole	1350
1.001	o	375	S2-PRMH1-2	26.329	24.946	1.008	Open Manhole	1350
1.002	o	375	S2-PRMH1-3	26.234	24.684	1.175	Open Manhole	1350
1.003	o	375	S2-PRMH1-4	26.125	24.406	1.344	Open Manhole	1350
1.004	o	375	S2-PRMH1-5	26.160	24.231	1.554	Open Manhole	1350
2.000	o	300	Dummy_S2-PRMH1-1	26.190	24.890	1.000	Junction	
1.005	o	450	S2-PRMH1-6	26.080	24.052	1.578	Open Manhole	1350
3.000	o	300	Dummy_S2-PRMH1-2	26.110	24.810	1.000	Junction	
1.006	o	450	S2-PRMH1-7	26.050	23.936	1.664	Open Manhole	1350
4.000	o	300	Dummy_S2-PRMH1-3	26.080	24.580	1.200	Junction	
1.007	o	450	S2-PRMH1-8	25.970	23.781	1.739	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., L*W (mm)
1.000	51.854	312.4	S2-PRMH1-2	26.329	24.946	1.008	Open Manhole	1350
1.001	89.012	339.7	S2-PRMH1-3	26.234	24.684	1.175	Open Manhole	1350
1.002	78.813	283.5	S2-PRMH1-4	26.125	24.406	1.344	Open Manhole	1350
1.003	80.597	460.0	S2-PRMH1-5	26.160	24.231	1.554	Open Manhole	1350
1.004	46.231	444.5	S2-PRMH1-6	26.080	24.127	1.578	Open Manhole	1350
2.000	49.634	340.0	S2-PRMH1-6	26.080	24.744	1.036	Open Manhole	1350
1.005	57.625	496.8	S2-PRMH1-7	26.050	23.936	1.664	Open Manhole	1350
3.000	55.480	328.3	S2-PRMH1-7	26.050	24.641	1.109	Open Manhole	1350
1.006	77.466	500.0	S2-PRMH1-8	25.970	23.781	1.739	Open Manhole	1500
4.000	73.367	341.2	S2-PRMH1-8	25.970	24.365	1.305	Open Manhole	1500
1.007	88.317	499.0	S2-PRMH1-9	25.897	23.604	1.843	Open Manhole	1500

PIPELINE SCHEDULES for Proposed Model S2

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)
5.000	o	300	Dummy_S2-PRMH1-4	26.022	24.522	1.200	Junction	
1.008	o	525	S2-PRMH1-9	25.897	23.529	1.843	Open Manhole	1500
6.000	o	300	Dummy_S2-PRMH1-5	25.922	24.497	1.125	Junction	
1.009	o	525	S2-PRMH1-10	25.829	23.351	1.953	Open Manhole	1500
7.000	o	375	S2-PRMH1-11	26.240	25.062	0.803	Open Manhole	1350
7.001	o	375	S2-PRMH1-12	26.325	24.852	1.098	Open Manhole	1350
7.002	o	375	S2-PRMH1-13	26.245	24.634	1.236	Open Manhole	1350
7.003	o	375	S2-PRMH1-14	26.220	24.437	1.408	Open Manhole	1350
7.004	o	375	S2-PRMH1-15	26.130	24.290	1.465	Open Manhole	1350
8.000	o	300	Dummy_S2-PRMH1-7	26.150	24.850	1.000	Junction	
7.005	o	450	S2-PRMH1-16	26.150	24.116	1.584	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)
5.000	87.269	342.2	S2-PRMH1-9	25.897	24.267	1.330	Open Manhole	1500
1.008	89.048	500.0	S2-PRMH1-10	25.829	23.351	1.953	Open Manhole	1500
6.000	87.735	250.0	S2-PRMH1-10	25.829	24.146	1.383	Open Manhole	1500
1.009	63.243	500.0	S2-PRMH1-40	25.644	23.225	1.894	Open Manhole	1500
7.000	73.677	350.8	S2-PRMH1-12	26.325	24.852	1.098	Open Manhole	1350
7.001	67.454	309.4	S2-PRMH1-13	26.245	24.634	1.236	Open Manhole	1350
7.002	88.840	451.0	S2-PRMH1-14	26.220	24.437	1.408	Open Manhole	1350
7.003	65.387	444.8	S2-PRMH1-15	26.130	24.290	1.465	Open Manhole	1350
7.004	49.605	500.0	S2-PRMH1-16	26.150	24.191	1.584	Open Manhole	1350
8.000	48.725	340.7	S2-PRMH1-16	26.150	24.707	1.143	Open Manhole	1350
7.005	54.034	495.7	S2-PRMH1-17	26.080	24.007	1.623	Open Manhole	1350

PIPELINE SCHEDULES for Proposed Model S2

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	300	Dummy_S2-PRMH1-8	26.170	24.870	1.000	Junction	
7.006	o	450	S2-PRMH1-17	26.080	24.007	1.623	Open Manhole	1350
10.000	o	225	Dummy_S2-PRMH1-9	26.120	24.695	1.200	Junction	
7.007	o	450	S2-PRMH1-18	26.069	23.854	1.765	Open Manhole	1350
11.000	o	300	Dummy_S2-PRMH1-10	26.095	24.670	1.125	Junction	
7.008	o	450	S2-PRMH1-19	25.933	23.674	1.809	Open Manhole	1350
12.000	o	225	Dummy_S2-PRMH1-11	25.969	24.544	1.200	Junction	
7.009	o	450	S2-PRMH1-20	25.874	23.498	1.926	Open Manhole	1350
13.000	o	300	S2-PRMH1-46	25.577	24.619	0.658	Open Manhole	1200
13.001	o	300	S2-PRMH1-47	25.337	24.372	0.665	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	52.954	307.9	S2-PRMH1-17	26.080	24.698	1.082	Open Manhole	1350
7.006	76.726	500.0	S2-PRMH1-18	26.069	23.854	1.765	Open Manhole	1350
10.000	69.597	235.1	S2-PRMH1-18	26.069	24.399	1.445	Open Manhole	1350
7.007	89.777	498.8	S2-PRMH1-19	25.933	23.674	1.809	Open Manhole	1350
11.000	88.460	340.2	S2-PRMH1-19	25.933	24.410	1.223	Open Manhole	1350
7.008	87.941	499.7	S2-PRMH1-20	25.874	23.498	1.926	Open Manhole	1350
12.000	86.563	235.2	S2-PRMH1-20	25.874	24.176	1.473	Open Manhole	1350
7.009	64.231	500.0	S2-PRMH1-39	25.576	23.370	1.757	Open Manhole	1500
13.000	48.172	195.0	S2-PRMH1-47	25.337	24.372	0.665	Open Manhole	1200
13.001	59.822	302.1	S2-PRMH1-48	25.320	24.174	0.846	Open Manhole	1800

PIPELINE SCHEDULES for Proposed Model S2

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)
13.002	o	450	S2-PRMH1-48	25.320	24.174	0.696	Open Manhole	1800
13.003	o	450	S2-PRMH1-49	25.290	23.996	0.844	Open Manhole	1800
13.004	o	450	S2-PRMH1-50	25.360	23.819	1.091	Open Manhole	1350
13.005	o	450	S2-PRMH1-51	25.261	23.696	1.115	Open Manhole	1350
13.006	o	450	S2-PRMH1-52	25.401	23.517	1.434	Open Manhole	1350
13.007	o	600	S2-PRMH1-53	25.454	23.338	1.516	Open Manhole	1500
13.008	o	600	S2-PRMH1-54	25.409	23.248	1.561	Open Manhole	1500
14.000	o	225	S2-PRMH1-34	33.936	31.241	2.470	Open Manhole	1050
14.001	o	225	S2-PRMH1-35	31.596	28.849	2.522	Open Manhole	1050
14.002	o	225	S2-PRMH1-36	27.696	25.901	1.570	Open Manhole	1050
14.003	o	300	S2-PRMH1-37	25.996	24.197	1.499	Open Manhole	1200
13.009	o	750	S2-PRMH1-38	25.326	23.119	1.457	Open Manhole	1500
15.000	o	225	Dummy_S2-PRMH1-12	25.897	24.465	1.207	Junction	
7.010	o	750	S2-PRMH1-39	25.576	23.070	1.756	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., L*W (mm)
13.002	89.217	500.0	S2-PRMH1-49	25.290	23.996	0.844	Open Manhole	1800
13.003	88.294	498.8	S2-PRMH1-50	25.360	23.819	1.091	Open Manhole	1350
13.004	61.521	500.0	S2-PRMH1-51	25.261	23.696	1.115	Open Manhole	1350
13.005	89.651	500.0	S2-PRMH1-52	25.401	23.517	1.435	Open Manhole	1350
13.006	89.632	500.0	S2-PRMH1-53	25.454	23.338	1.666	Open Manhole	1500
13.007	45.056	500.0	S2-PRMH1-54	25.409	23.248	1.561	Open Manhole	1500
13.008	64.535	500.0	S2-PRMH1-38	25.326	23.119	1.607	Open Manhole	1500
14.000	73.096	30.6	S2-PRMH1-35	31.596	28.849	2.522	Open Manhole	1050
14.001	88.440	30.0	S2-PRMH1-36	27.696	25.901	1.570	Open Manhole	1050
14.002	65.170	40.0	S2-PRMH1-37	25.996	24.272	1.499	Open Manhole	1200
14.003	62.824	100.0	S2-PRMH1-38	25.326	23.569	1.457	Open Manhole	1500
13.009	12.850	262.2	S2-PRMH1-39	25.576	23.070	1.756	Open Manhole	1500
15.000	62.832	235.3	S2-PRMH1-39	25.576	24.198	1.153	Open Manhole	1500
7.010	35.192	500.0	S2-PRMH1-40	25.644	23.000	1.894	Open Manhole	1500

PIPELINE SCHEDULES for Proposed Model S2

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)
16.000	o	225	Dummy_S2-PRMH1-6	25.853	24.428	1.200	Junction	
1.010	o	750	S2-PRMH1-40	25.644	23.000	1.894	Open Manhole	1500
17.000	o	300	S2-PRMH1-21	34.939	33.496	1.143	Open Manhole	1200
18.000	o	225	S2-PRMH1-22	34.582	33.361	0.996	Open Manhole	1050
18.001	o	225	S2-PRMH1-23	34.643	33.247	1.171	Open Manhole	1050
17.001	o	300	S2-PRMH1-24	34.666	33.063	1.303	Open Manhole	1200
17.002	o	300	S2-PRMH1-25	35.130	32.620	2.210	Open Manhole	1200
17.003	o	300	S2-PRMH1-27	33.849	31.827	1.722	Open Manhole	1200
17.004	o	300	S2-PRMH1-28	31.653	29.152	2.201	Open Manhole	1200
17.005	o	300	S2-PRMH1-29	28.874	26.584	1.990	Open Manhole	1200
17.006	o	450	S2-PRMH1-30	26.331	24.188	1.693	Open Manhole	1200
1.011	o	750	S2-PRMH1-31	25.489	22.980	1.759	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., L*W (mm)
16.000	62.337	199.8	S2-PRMH1-40	25.644	24.116	1.303	Open Manhole	1500
1.010	9.967	498.4	S2-PRMH1-31	25.489	22.980	1.759	Open Manhole	1500
17.000	29.011	67.0	S2-PRMH1-24	34.666	33.063	1.303	Open Manhole	1200
18.000	34.093	300.0	S2-PRMH1-23	34.643	33.247	1.171	Open Manhole	1050
18.001	32.667	300.0	S2-PRMH1-24	34.666	33.138	1.303	Open Manhole	1200
17.001	22.142	50.0	S2-PRMH1-25	35.130	32.620	2.210	Open Manhole	1200
17.002	43.452	54.8	S2-PRMH1-27	33.849	31.827	1.723	Open Manhole	1200
17.003	68.365	25.6	S2-PRMH1-28	31.653	29.152	2.201	Open Manhole	1200
17.004	70.882	27.6	S2-PRMH1-29	28.874	26.584	1.990	Open Manhole	1200
17.005	79.095	35.2	S2-PRMH1-30	26.331	24.338	1.693	Open Manhole	1200
17.006	59.586	65.6	S2-PRMH1-31	25.489	23.280	1.759	Open Manhole	1500
1.011	73.090	500.0	S2-PRMH1-32	25.393	22.834	1.809	Open Manhole	1500

PIPELINE SCHEDULES for Proposed Model S2

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)
1.012	o	750	S2-PRMH1-32	25.393	22.834	1.809	Open Manhole	1500
19.000	o	300	S2-PRMH1-41	25.223	24.135	0.788	Open Manhole	1200
19.001	o	300	S2-PRMH1-42	25.212	23.935	0.977	Open Manhole	1200
19.002	o	375	S2-PRMH1-43	25.284	23.658	1.251	Open Manhole	1350
19.003	o	375	S2-PRMH1-44	25.340	23.498	1.467	Open Manhole	1350
19.004	o	375	S2-PRMH1-45	25.271	23.317	1.579	Open Manhole	1350
1.013	o	750	S2-PRMH1-33	25.318	22.760	1.808	Open Manhole	1500
1.014	\/	-5	S2-PRHW1-55	23.320	22.570	0.150	Junction	
1.015	o	750	S2-PRHW1-56	23.300	22.216	0.334	Junction	
1.016	o	600	S2-PRHW1-57	23.170	21.970	0.600	Junction	
1.017	o	600	S2-PRHW1-58	23.170	21.832	0.738	Junction	
1.018	o	600	S2-PRMH1-59	22.760	21.777	0.383	Open Manhole	1500
1.019	\/	-7	S2-PRHW1-60	22.710	21.756	0.454	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)
1.012	36.976	500.0	S2-PRMH1-33	25.318	22.760	1.808	Open Manhole	1500
19.000	83.428	417.1	S2-PRMH1-42	25.212	23.935	0.977	Open Manhole	1200
19.001	86.761	429.5	S2-PRMH1-43	25.284	23.733	1.251	Open Manhole	1350
19.002	79.076	494.2	S2-PRMH1-44	25.340	23.498	1.467	Open Manhole	1350
19.003	89.572	494.9	S2-PRMH1-45	25.271	23.317	1.579	Open Manhole	1350
19.004	91.177	500.0	S2-PRMH1-33	25.318	23.135	1.809	Open Manhole	1500
1.013	12.084	63.6	S2-PRHW1-55	23.320	22.570	0.000	Junction	
1.014	100.284	283.5	S2-PRHW1-56	23.300	22.216	0.484	Junction	
1.015	13.437	54.6	S2-PRHW1-57	23.170	21.970	0.450	Junction	
1.016	68.883	500.0	S2-PRHW1-58	23.170	21.832	0.738	Junction	
1.017	10.906	200.0	S2-PRMH1-59	22.760	21.777	0.383	Open Manhole	1500
1.018	10.564	500.0	S2-PRHW1-60	22.710	21.756	0.354	Junction	
1.019	25.532	56.0	OF-1	21.800	21.300	0.000	Open Manhole	0

Area Summary for Proposed Model S2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	Classification	Verge	50	0.022	0.011	0.011
	Classification	Embankments & Cuttings+40%cc	28	0.002	0.001	0.012
	Classification	Carriage way & Footway	100	0.093	0.093	0.104
	Classification	Central reserve unpaved	20	0.033	0.007	0.111
1.001	Classification	Carriage way & Footway	100	0.086	0.086	0.086
	Classification	Carriage way & Footway	100	0.037	0.037	0.123
	Classification	Verge	50	0.022	0.011	0.134
	Classification	Central reserve unpaved	20	0.043	0.009	0.142
	Classification	Embankments & Cuttings+40%cc	28	0.056	0.016	0.158
	Classification	Verge + 40%cc	70	0.018	0.013	0.171
1.002	Classification	Carriage way & Footway	100	0.113	0.113	0.113
	Classification	Central reserve unpaved	20	0.039	0.008	0.120
	Classification	Verge	50	0.019	0.010	0.130
	Classification	Embankments & Cuttings+40%cc	28	0.125	0.035	0.165
	Classification	Verge + 40%cc	70	0.015	0.010	0.175
1.003	Classification	Carriage way & Footway	100	0.107	0.107	0.107
	Classification	Central reserve paved	100	0.035	0.035	0.141
	Classification	Verge	50	0.019	0.009	0.151
	Classification	Embankments & Cuttings+40%cc	28	0.162	0.045	0.196
	Classification	Verge + 40%cc	70	0.037	0.026	0.222
1.004	-	-	100	0.000	0.000	0.000
2.000	Classification	Embankments & Cuttings+40%cc	28	0.401	0.112	0.112
	Classification	Verge + 40%cc	70	0.082	0.057	0.170
	Classification	Verge	50	0.012	0.006	0.176
	Classification	Carriage way & Footway	100	0.075	0.075	0.251
	Classification	Central reserve paved	100	0.030	0.030	0.281
1.005	-	-	100	0.000	0.000	0.000
3.000	Classification	Verge	50	0.016	0.008	0.008
	Classification	Embankments & Cuttings+40%cc	28	0.386	0.108	0.116
	Classification	Verge + 40%cc	70	0.083	0.058	0.174
	Classification	Carriage way & Footway	100	0.082	0.082	0.255
	Classification	Central reserve paved	100	0.029	0.029	0.285
1.006	-	-	100	0.000	0.000	0.000
4.000	Classification	Embankments & Cuttings+40%cc	28	0.207	0.058	0.058
	Classification	Verge + 40%cc	70	0.108	0.076	0.133
	Classification	Verge	50	0.018	0.009	0.143
	Classification	Carriage way & Footway	100	0.101	0.101	0.243
	Classification	Central reserve paved	100	0.005	0.005	0.248
	Classification	Central reserve unpaved	20	0.035	0.007	0.255
1.007	-	-	100	0.000	0.000	0.000
5.000	Classification	Verge	50	0.022	0.011	0.011
	Classification	Embankments & Cuttings+40%cc	28	0.236	0.066	0.077
	Classification	Verge + 40%cc	70	0.024	0.017	0.094
	Classification	Carriage way & Footway	100	0.129	0.129	0.223
	Classification	Central reserve paved	100	0.045	0.045	0.268

Area Summary for Proposed Model S2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.008	-	-	100	0.000	0.000	0.000
6.000	Classification	Verge	50	0.022	0.011	0.011
	Classification	Embankments & Cuttings+40%cc	28	0.083	0.023	0.034
	Classification	Verge + 40%cc	70	0.017	0.012	0.046
	Classification	Carriage way & Footway	100	0.125	0.125	0.171
	Classification	Central reserve paved	100	0.043	0.043	0.214
1.009	Classification	Central reserve paved	100	0.032	0.032	0.032
7.000	Classification	Carriage way & Footway	100	0.140	0.140	0.140
	Classification	Verge	50	0.028	0.014	0.154
	Classification	Embankments & Cuttings+40%cc	28	0.005	0.002	0.156
7.001	Classification	Carriage way & Footway	100	0.103	0.103	0.103
	Classification	Verge	50	0.018	0.009	0.113
	Classification	Embankments & Cuttings+40%cc	28	0.060	0.017	0.129
	Classification	Verge + 40%cc	70	0.014	0.010	0.139
7.002	Classification	Carriage way & Footway	100	0.126	0.126	0.126
	Classification	Verge	50	0.023	0.011	0.138
	Classification	Embankments & Cuttings+40%cc	28	0.197	0.055	0.193
	Classification	Verge + 40%cc	70	0.018	0.013	0.206
7.003	Classification	Carriage way & Footway	100	0.092	0.092	0.092
	Classification	Verge	50	0.016	0.008	0.100
	Classification	Embankments & Cuttings+40%cc	28	0.138	0.039	0.138
	Classification	Verge + 40%cc	70	0.036	0.025	0.163
7.004	-	-	100	0.000	0.000	0.000
8.000	Classification	Verge	50	0.012	0.006	0.006
	Classification	Embankments & Cuttings+40%cc	28	0.368	0.103	0.109
	Classification	Verge + 40%cc	70	0.089	0.062	0.171
	Classification	Carriage way & Footway	100	0.068	0.068	0.239
7.005	-	-	100	0.000	0.000	0.000
9.000	Classification	Verge	50	0.015	0.007	0.007
	Classification	Embankments & Cuttings+40%cc	28	0.341	0.095	0.103
	Classification	Verge + 40%cc	70	0.077	0.054	0.157
	Classification	Carriage way & Footway	100	0.078	0.078	0.235
7.006	-	-	100	0.000	0.000	0.000
10.000	Classification	Verge + 40%cc	70	0.048	0.034	0.034
	Classification	Embankments & Cuttings+40%cc	28	0.143	0.040	0.074
	Classification	Verge	50	0.018	0.009	0.083
	Classification	Carriage way & Footway	100	0.103	0.103	0.186
7.007	-	-	100	0.000	0.000	0.000
11.000	Classification	Verge	50	0.022	0.011	0.011
	Classification	Embankments & Cuttings+40%cc	28	0.148	0.041	0.052
	Classification	Verge + 40%cc	70	0.018	0.013	0.065
	Classification	Carriage way & Footway	100	0.125	0.125	0.190
7.008	-	-	100	0.000	0.000	0.000
12.000	Classification	Verge	50	0.022	0.011	0.011
	Classification	Embankments & Cuttings+40%cc	28	0.047	0.013	0.024

Area Summary for Proposed Model S2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	Verge + 40%cc	70	0.017	0.012	0.036
	Classification	Carriage way & Footway	100	0.123	0.123	0.159
7.009	-	-	100	0.000	0.000	0.000
13.000	Classification	Carriage way & Footway	100	0.075	0.075	0.075
	Classification	Verge + 40%cc	70	0.013	0.009	0.084
	Classification	Embankments & Cuttings+40%cc	28	0.006	0.002	0.085
	Classification	40%cc Carriageway&Footway	40	0.002	0.001	0.086
13.001	Classification	Carriage way & Footway	100	0.089	0.089	0.089
	Classification	Embankments & Cuttings+40%cc	28	0.038	0.011	0.100
	Classification	Verge + 40%cc	70	0.015	0.011	0.111
	Classification	40%cc Carriageway&Footway	40	0.007	0.003	0.114
13.002	Classification	Carriage way & Footway	100	0.152	0.152	0.152
	Classification	Verge + 40%cc	70	0.022	0.015	0.167
	Classification	Embankments & Cuttings+40%cc	28	0.044	0.012	0.179
	Classification	40%cc Carriageway&Footway	40	0.026	0.010	0.190
13.003	Classification	Carriage way & Footway	100	0.169	0.169	0.169
	Classification	Verge + 40%cc	70	0.023	0.016	0.185
	Classification	Embankments & Cuttings+40%cc	28	0.023	0.006	0.192
	Classification	40%cc Carriageway&Footway	40	0.038	0.015	0.207
13.004	Classification	Carriage way & Footway	100	0.114	0.114	0.114
	Classification	Embankments & Cuttings+40%cc	28	0.004	0.001	0.115
	Classification	Verge + 40%cc	70	0.007	0.005	0.120
	Classification	40%cc Carriageway&Footway	40	0.030	0.012	0.132
13.005	Classification	Carriage way & Footway	100	0.181	0.181	0.181
	Classification	40%cc Carriageway&Footway	40	0.057	0.023	0.204
13.006	Classification	Carriage way & Footway	100	0.189	0.189	0.189
	Classification	40%cc Carriageway&Footway	40	0.063	0.025	0.214
13.007	Classification	Carriage way & Footway	100	0.101	0.101	0.101
	Classification	40%cc Carriageway&Footway	40	0.034	0.014	0.115
13.008	Classification	Carriage way & Footway	100	0.162	0.162	0.162
	Classification	40%cc Carriageway&Footway	40	0.057	0.023	0.184
14.000	Classification	Carriage way & Footway	100	0.076	0.076	0.076
	Classification	40%cc Carriageway&Footway	40	0.077	0.031	0.107
14.001	Classification	Carriage way & Footway	100	0.081	0.081	0.081
	Classification	40%cc Carriageway&Footway	40	0.079	0.032	0.113
14.002	Classification	Carriage way & Footway	100	0.059	0.059	0.059
	Classification	40%cc Carriageway&Footway	40	0.060	0.024	0.083
14.003	Classification	Carriage way & Footway	100	0.060	0.060	0.060
	Classification	40%cc Carriageway&Footway	40	0.057	0.023	0.083
13.009	-	-	100	0.000	0.000	0.000
15.000	Classification	Embankments & Cuttings+40%cc	28	0.002	0.001	0.001
	Classification	Verge + 40%cc	70	0.022	0.015	0.016
	Classification	Carriage way & Footway	100	0.090	0.090	0.106
	Classification	Verge	50	0.006	0.003	0.109
7.010	-	-	100	0.000	0.000	0.000

Area Summary for Proposed Model S2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
16.000	Classification	Verge + 40%cc	70	0.017	0.012	0.012
	Classification	Embankments & Cuttings+40%cc	28	0.004	0.001	0.013
	Classification	Verge	50	0.007	0.004	0.017
	Classification	Carriage way & Footway	100	0.089	0.089	0.106
1.010	-	-	100	0.000	0.000	0.000
17.000	Classification	Carriage way & Footway	100	0.168	0.168	0.168
	Classification	40%cc Carriageway&Footway	40	0.168	0.067	0.235
	Classification	Verge + 40%cc	70	0.013	0.009	0.244
	Classification	Carriage way & Footway	100	0.037	0.037	0.281
	Classification	40%cc Carriageway&Footway	40	0.037	0.015	0.296
	Classification	Verge + 40%cc	70	0.005	0.003	0.299
	Classification	Carriage way & Footway	100	0.020	0.020	0.319
	Classification	40%cc Carriageway&Footway	40	0.020	0.008	0.328
18.000	Classification	Carriage way & Footway	100	0.033	0.033	0.033
	Classification	40%cc Carriageway&Footway	40	0.033	0.013	0.046
	Classification	Verge + 40%cc	70	0.004	0.003	0.049
	Classification	Carriage way & Footway	100	0.019	0.019	0.068
	Classification	40%cc Carriageway&Footway	40	0.019	0.008	0.076
18.001	Classification	Carriage way & Footway	100	0.033	0.033	0.033
	Classification	40%cc Carriageway&Footway	40	0.033	0.013	0.047
	Classification	Verge + 40%cc	70	0.017	0.012	0.059
	Classification	40%cc Carriageway&Footway	40	0.031	0.012	0.071
	Classification	Carriage way & Footway	100	0.031	0.031	0.102
17.001	-	-	100	0.000	0.000	0.000
17.002	-	-	100	0.000	0.000	0.000
17.003	Classification	Carriage way & Footway	100	0.087	0.087	0.087
	Classification	40%cc Carriageway&Footway	40	0.087	0.035	0.122
17.004	Classification	Carriage way & Footway	100	0.064	0.064	0.064
	Classification	40%cc Carriageway&Footway	40	0.064	0.026	0.090
17.005	Classification	Carriage way & Footway	100	0.061	0.061	0.061
	Classification	40%cc Carriageway&Footway	40	0.061	0.024	0.086
17.006	Classification	Carriage way & Footway	100	0.044	0.044	0.044
	Classification	40%cc Carriageway&Footway	40	0.044	0.018	0.061
1.011	Classification	Carriage way & Footway	100	0.052	0.052	0.052
	Classification	40%cc Carriageway&Footway	40	0.051	0.021	0.073
	Classification	Verge + 40%cc	70	0.005	0.004	0.076
	Classification	Carriage way & Footway	100	0.097	0.097	0.174
	Classification	Central reserve paved	100	0.036	0.036	0.210
1.012	Classification	Carriage way & Footway	100	0.083	0.083	0.083
	Classification	Central reserve paved	100	0.019	0.019	0.102
	Classification	40%cc Carriageway&Footway	40	0.029	0.011	0.113
19.000	Classification	Carriage way & Footway	100	0.132	0.132	0.132
	Classification	Verge + 40%cc	70	0.021	0.015	0.147
	Classification	Embankments & Cuttings+40%cc	28	0.009	0.002	0.149
	Classification	Central reserve unpaved	20	0.044	0.009	0.158

Area Summary for Proposed Model S2

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	Classification	40%cc Carriageway&Footway	40	0.012	0.005	0.163
19.001	Classification	Carriage way & Footway	100	0.152	0.152	0.152
	Classification	Central reserve unpaved	20	0.042	0.008	0.161
	Classification	Verge + 40%cc	70	0.022	0.015	0.176
	Classification	Embankments & Cuttings+40%cc	28	0.015	0.004	0.180
	Classification	40%cc Carriageway&Footway	40	0.032	0.013	0.193
19.002	Classification	Carriage way & Footway	100	0.111	0.111	0.111
	Classification	Central reserve unpaved	20	0.031	0.006	0.117
	Classification	Verge + 40%cc	70	0.016	0.011	0.128
	Classification	40%cc Carriageway&Footway	40	0.022	0.009	0.137
	Classification	Carriage way & Footway	100	0.025	0.025	0.162
	Classification	Verge + 40%cc	70	0.004	0.003	0.165
	Classification	Central reserve unpaved	20	0.007	0.001	0.167
	Classification	40%cc Carriageway&Footway	40	0.005	0.002	0.169
19.003	Classification	Carriage way & Footway	100	0.163	0.163	0.163
	Classification	Central reserve unpaved	20	0.046	0.009	0.172
	Classification	Verge + 40%cc	70	0.005	0.003	0.176
	Classification	40%cc Carriageway&Footway	40	0.035	0.014	0.190
19.004	Classification	Central reserve paved	100	0.011	0.011	0.011
	Classification	Carriage way & Footway	100	0.102	0.102	0.113
	Classification	Central reserve unpaved	20	0.017	0.003	0.116
	Classification	40%cc Carriageway&Footway	40	0.025	0.010	0.126
	Classification	Carriage way & Footway	100	0.075	0.075	0.201
	Classification	Central reserve paved	100	0.019	0.019	0.220
	Classification	40%cc Carriageway&Footway	40	0.023	0.009	0.229
1.013	-	-	100	0.000	0.000	0.000
1.014	-	-	100	0.000	0.000	0.000
1.015	-	-	100	0.000	0.000	0.000
1.016	Classification	Default	100	0.231	0.231	0.231
	Classification	Default	100	0.100	0.100	0.331
	Classification	Default	100	0.197	0.197	0.528
	Classification	Default	100	0.121	0.121	0.649
1.017	-	-	100	0.000	0.000	0.000
1.018	-	-	100	0.000	0.000	0.000
1.019	-	-	100	0.000	0.000	0.000
				Total 12.432	Total 8.513	Total 8.513

Free Flowing Outfall Details for Proposed Model S2

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.019	OF-1	21.800	21.300	0.000	0	0

Simulation Criteria for Proposed Model S2

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

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

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.200	Storm Duration (mins)	30
Ratio R	0.370		

Storage Structures for Proposed Model S2

Tank or Pond Manhole: S2-PRHW1-57, DS/PN: 1.016

Invert Level (m) 21.970

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	2318.5	0.900	2973.7	1.200	3210.2

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	S2-PRMH1-1	15 Summer	1	+0%	30/15 Summer	30/30 Summer	
1.001	S2-PRMH1-2	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
1.002	S2-PRMH1-3	15 Summer	1	+0%	30/15 Summer	30/30 Summer	
1.003	S2-PRMH1-4	30 Summer	1	+0%	5/15 Summer	30/30 Summer	
1.004	S2-PRMH1-5	30 Summer	1	+0%	5/15 Summer	100/15 Summer	
2.000	Dummy_S2-PRMH1-1	15 Summer	1	+0%			
1.005	S2-PRMH1-6	30 Summer	1	+0%	5/15 Summer	30/30 Summer	
3.000	Dummy_S2-PRMH1-2	15 Summer	1	+0%			
1.006	S2-PRMH1-7	30 Summer	1	+0%	5/15 Summer	100/15 Summer	
4.000	Dummy_S2-PRMH1-3	15 Summer	1	+0%			
1.007	S2-PRMH1-8	30 Summer	1	+0%	5/15 Summer	100/15 Summer	
5.000	Dummy_S2-PRMH1-4	15 Summer	1	+0%			
1.008	S2-PRMH1-9	30 Summer	1	+0%	5/30 Summer		
6.000	Dummy_S2-PRMH1-5	15 Summer	1	+0%			

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	S2-PRMH1-1		25.221	-0.266	0.000	0.18		16.6	OK
1.001	S2-PRMH1-2		25.113	-0.208	0.000	0.36		33.7	OK
1.002	S2-PRMH1-3		24.875	-0.184	0.000	0.49		49.3	OK
1.003	S2-PRMH1-4		24.678	-0.103	0.000	0.83		66.1	OK
1.004	S2-PRMH1-5		24.473	-0.133	0.000	0.74		63.8	OK
2.000	Dummy_S2-PRMH1-1		25.084	-0.106	0.000	0.74		39.4	OK*
1.005	S2-PRMH1-6		24.329	-0.173	0.000	0.62		81.7	OK
3.000	Dummy_S2-PRMH1-2		25.003	-0.107	0.000	0.74		39.9	OK*
1.006	S2-PRMH1-7		24.242	-0.144	0.000	0.77		103.5	OK
4.000	Dummy_S2-PRMH1-3		24.761	-0.119	0.000	0.68		35.8	OK*
1.007	S2-PRMH1-8		24.118	-0.113	0.000	0.87		118.8	OK
5.000	Dummy_S2-PRMH1-4		24.709	-0.113	0.000	0.71		37.5	OK*
1.008	S2-PRMH1-9		23.887	-0.167	0.000	0.62		125.0	OK
6.000	Dummy_S2-PRMH1-5		24.644	-0.153	0.000	0.48		30.0	OK*

PN	US/MH Name	Level Exceeded
1.000	S2-PRMH1-1	10
1.001	S2-PRMH1-2	5
1.002	S2-PRMH1-3	9
1.003	S2-PRMH1-4	10
1.004	S2-PRMH1-5	6
2.000	Dummy_S2-PRMH1-1	
1.005	S2-PRMH1-6	8
3.000	Dummy_S2-PRMH1-2	
1.006	S2-PRMH1-7	6
4.000	Dummy_S2-PRMH1-3	
1.007	S2-PRMH1-8	6
5.000	Dummy_S2-PRMH1-4	
1.008	S2-PRMH1-9	
6.000	Dummy_S2-PRMH1-5	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.009	S2-PRMH1-10	60 Summer	1	+0%	5/15 Summer		
7.000	S2-PRMH1-11	15 Summer	1	+0%	30/15 Summer	30/30 Summer	
7.001	S2-PRMH1-12	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
7.002	S2-PRMH1-13	30 Summer	1	+0%	5/15 Summer	30/30 Summer	
7.003	S2-PRMH1-14	30 Summer	1	+0%	5/15 Summer	30/30 Summer	
7.004	S2-PRMH1-15	30 Summer	1	+0%	5/30 Summer	30/30 Summer	
8.000	Dummy_S2-PRMH1-7	15 Summer	1	+0%			
7.005	S2-PRMH1-16	30 Summer	1	+0%	5/30 Summer	100/15 Summer	
9.000	Dummy_S2-PRMH1-8	15 Summer	1	+0%			
7.006	S2-PRMH1-17	30 Summer	1	+0%	5/30 Summer	100/15 Summer	
10.000	Dummy_S2-PRMH1-9	15 Summer	1	+0%			
7.007	S2-PRMH1-18	30 Summer	1	+0%	5/15 Summer	100/15 Summer	
11.000	Dummy_S2-PRMH1-10	15 Summer	1	+0%			
7.008	S2-PRMH1-19	30 Summer	1	+0%	5/15 Summer	100/15 Summer	
12.000	Dummy_S2-PRMH1-11	15 Summer	1	+0%			
7.009	S2-PRMH1-20	30 Summer	1	+0%	5/15 Summer		
13.000	S2-PRMH1-46	15 Summer	1	+0%	30/15 Summer		
13.001	S2-PRMH1-47	15 Summer	1	+0%	30/15 Summer	30/60 Summer	
13.002	S2-PRMH1-48	15 Summer	1	+0%	30/15 Summer	30/30 Summer	
13.003	S2-PRMH1-49	30 Summer	1	+0%	30/15 Summer	30/30 Summer	
13.004	S2-PRMH1-50	30 Summer	1	+0%	5/30 Summer	100/30 Summer	
13.005	S2-PRMH1-51	30 Summer	1	+0%	5/30 Summer	30/60 Summer	
13.006	S2-PRMH1-52	30 Summer	1	+0%	5/15 Summer	100/30 Summer	
13.007	S2-PRMH1-53	60 Summer	1	+0%	5/30 Summer		
13.008	S2-PRMH1-54	60 Summer	1	+0%	5/15 Summer	100/30 Summer	
14.000	S2-PRMH1-34	15 Summer	1	+0%			
14.001	S2-PRMH1-35	15 Summer	1	+0%	30/15 Summer		
14.002	S2-PRMH1-36	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
14.003	S2-PRMH1-37	15 Summer	1	+0%	30/15 Summer		
13.009	S2-PRMH1-38	60 Summer	1	+0%	5/15 Summer	100/30 Summer	
15.000	Dummy_S2-PRMH1-12	15 Summer	1	+0%			
7.010	S2-PRMH1-39	60 Summer	1	+0%	5/15 Summer		
16.000	Dummy_S2-PRMH1-6	15 Summer	1	+0%			
1.010	S2-PRMH1-40	60 Summer	1	+0%	5/15 Summer		
17.000	S2-PRMH1-21	15 Summer	1	+0%	30/15 Summer	100/15 Summer	
18.000	S2-PRMH1-22	15 Summer	1	+0%	5/15 Summer	30/15 Summer	
18.001	S2-PRMH1-23	15 Summer	1	+0%	5/15 Summer	100/15 Summer	
17.001	S2-PRMH1-24	15 Summer	1	+0%	30/15 Summer		
17.002	S2-PRMH1-25	15 Summer	1	+0%	30/15 Summer		
17.003	S2-PRMH1-27	15 Summer	1	+0%	30/15 Summer		
17.004	S2-PRMH1-28	15 Summer	1	+0%	30/15 Summer		
17.005	S2-PRMH1-29	15 Summer	1	+0%	30/15 Summer		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.009	S2-PRMH1-10		23.805	-0.071	0.000	0.65		127.6	OK
7.000	S2-PRMH1-11		25.186	-0.251	0.000	0.23		20.5	OK
7.001	S2-PRMH1-12		25.013	-0.214	0.000	0.36		34.6	OK
7.002	S2-PRMH1-13		24.862	-0.147	0.000	0.64		51.5	OK
7.003	S2-PRMH1-14		24.691	-0.121	0.000	0.78		61.9	OK
7.004	S2-PRMH1-15		24.532	-0.133	0.000	0.73		60.1	OK
8.000	Dummy_S2-PRMH1-7		25.023	-0.127	0.000	0.63		33.5	OK*
7.005	S2-PRMH1-16		24.369	-0.197	0.000	0.55		72.1	OK
9.000	Dummy_S2-PRMH1-8		25.036	-0.134	0.000	0.59		33.0	OK*
7.006	S2-PRMH1-17		24.281	-0.176	0.000	0.66		89.0	OK
10.000	Dummy_S2-PRMH1-9		24.858	-0.062	0.000	0.88		26.0	OK*
7.007	S2-PRMH1-18		24.148	-0.156	0.000	0.73		98.8	OK
11.000	Dummy_S2-PRMH1-10		24.820	-0.150	0.000	0.50		26.6	OK*
7.008	S2-PRMH1-19		23.979	-0.145	0.000	0.77		104.8	OK
12.000	Dummy_S2-PRMH1-11		24.690	-0.079	0.000	0.75		22.3	OK*
7.009	S2-PRMH1-20		23.863	-0.085	0.000	0.79		104.5	OK
13.000	S2-PRMH1-46		24.705	-0.214	0.000	0.18		13.1	OK
13.001	S2-PRMH1-47		24.515	-0.157	0.000	0.43		26.1	OK
13.002	S2-PRMH1-48		24.360	-0.264	0.000	0.32		43.8	OK
13.003	S2-PRMH1-49		24.211	-0.235	0.000	0.44		60.0	OK
13.004	S2-PRMH1-50		24.050	-0.219	0.000	0.51		67.4	OK
13.005	S2-PRMH1-51		23.947	-0.199	0.000	0.56		76.5	OK
13.006	S2-PRMH1-52		23.876	-0.091	0.000	0.56		76.7	OK
13.007	S2-PRMH1-53		23.834	-0.104	0.000	0.26		70.1	OK
13.008	S2-PRMH1-54		23.816	-0.032	0.000	0.27		74.1	OK
14.000	S2-PRMH1-34		31.306	-0.160	0.000	0.18		16.4	OK
14.001	S2-PRMH1-35		28.939	-0.135	0.000	0.33		30.8	OK
14.002	S2-PRMH1-36		26.017	-0.109	0.000	0.51		40.8	OK
14.003	S2-PRMH1-37		24.344	-0.153	0.000	0.48		51.0	OK
13.009	S2-PRMH1-38		23.794	-0.075	0.000	0.22		85.3	OK
15.000	Dummy_S2-PRMH1-12		24.579	-0.111	0.000	0.51		15.3	OK*
7.010	S2-PRMH1-39		23.784	-0.036	0.000	0.54		192.3	OK
16.000	Dummy_S2-PRMH1-6		24.535	-0.118	0.000	0.46		14.9	OK*
1.010	S2-PRMH1-40		23.750	0.000	0.000	1.82		320.1	OK
17.000	S2-PRMH1-21		33.631	-0.165	0.000	0.41		50.9	OK
18.000	S2-PRMH1-22		33.463	-0.123	0.000	0.41		11.5	OK
18.001	S2-PRMH1-23		33.409	-0.063	0.000	0.85		23.7	OK
17.001	S2-PRMH1-24		33.232	-0.131	0.000	0.61		73.4	OK
17.002	S2-PRMH1-25		32.781	-0.139	0.000	0.56		72.3	OK
17.003	S2-PRMH1-27		31.965	-0.162	0.000	0.42		86.8	OK
17.004	S2-PRMH1-28		29.300	-0.152	0.000	0.48		97.1	OK

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
17.005	S2-PRMH1-29		26.751	-0.133	0.000	0.59		106.4	OK

PN	US/MH Name	Level Exceeded
1.009	S2-PRMH1-10	
7.000	S2-PRMH1-11	10
7.001	S2-PRMH1-12	4
7.002	S2-PRMH1-13	10
7.003	S2-PRMH1-14	10
7.004	S2-PRMH1-15	9
8.000	Dummy_S2-PRMH1-7	
7.005	S2-PRMH1-16	5
9.000	Dummy_S2-PRMH1-8	
7.006	S2-PRMH1-17	7
10.000	Dummy_S2-PRMH1-9	
7.007	S2-PRMH1-18	6
11.000	Dummy_S2-PRMH1-10	
7.008	S2-PRMH1-19	6
12.000	Dummy_S2-PRMH1-11	
7.009	S2-PRMH1-20	
13.000	S2-PRMH1-46	
13.001	S2-PRMH1-47	8
13.002	S2-PRMH1-48	10
13.003	S2-PRMH1-49	10
13.004	S2-PRMH1-50	2
13.005	S2-PRMH1-51	8
13.006	S2-PRMH1-52	4
13.007	S2-PRMH1-53	
13.008	S2-PRMH1-54	1
14.000	S2-PRMH1-34	
14.001	S2-PRMH1-35	
14.002	S2-PRMH1-36	3
14.003	S2-PRMH1-37	
13.009	S2-PRMH1-38	4
15.000	Dummy_S2-PRMH1-12	
7.010	S2-PRMH1-39	
16.000	Dummy_S2-PRMH1-6	
1.010	S2-PRMH1-40	
17.000	S2-PRMH1-21	3

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Level Exceeded
18.000	S2-PRMH1-22	5
18.001	S2-PRMH1-23	3
17.001	S2-PRMH1-24	
17.002	S2-PRMH1-25	
17.003	S2-PRMH1-27	
17.004	S2-PRMH1-28	
17.005	S2-PRMH1-29	

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
17.006	S2-PRMH1-30	15 Summer	1	+0%	30/30 Summer			
1.011	S2-PRMH1-31	60 Summer	1	+0%	5/15 Summer			
1.012	S2-PRMH1-32	60 Summer	1	+0%	5/30 Summer			
19.000	S2-PRMH1-41	15 Summer	1	+0%	30/15 Summer	30/15 Summer		
19.001	S2-PRMH1-42	15 Summer	1	+0%	5/15 Summer	30/15 Summer		
19.002	S2-PRMH1-43	30 Summer	1	+0%	5/15 Summer	100/15 Summer		
19.003	S2-PRMH1-44	30 Summer	1	+0%	5/15 Summer	100/15 Summer		
19.004	S2-PRMH1-45	30 Summer	1	+0%	5/15 Summer			
1.013	S2-PRMH1-33	60 Summer	1	+0%	30/15 Summer			
1.014	S2-PRHW1-55	60 Summer	1	+0%				
1.015	S2-PRHW1-56	60 Summer	1	+0%	100/30 Summer			
1.016	S2-PRHW1-57	180 Summer	1	+0%	30/60 Summer			
1.017	S2-PRHW1-58	180 Summer	1	+0%				
1.018	S2-PRMH1-59	240 Summer	1	+0%	30/60 Summer	30/600 Summer		
1.019	S2-PRHW1-60	240 Summer	1	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
17.006	S2-PRMH1-30	24.358	-0.280	0.000	0.30		111.9	OK	
1.011	S2-PRMH1-31	23.500	-0.230	0.000	0.78		351.2	OK	
1.012	S2-PRMH1-32	23.342	-0.242	0.000	0.79		350.3	OK	
19.000	S2-PRMH1-41	24.284	-0.151	0.000	0.43		22.3	OK	12
19.001	S2-PRMH1-42	24.149	-0.086	0.000	0.77		39.7	OK	12
19.002	S2-PRMH1-43	23.879	-0.154	0.000	0.62		52.9	OK	5
19.003	S2-PRMH1-44	23.751	-0.122	0.000	0.76		64.8	OK	1
19.004	S2-PRMH1-45	23.600	-0.092	0.000	0.92		78.3	OK	
1.013	S2-PRMH1-33	23.177	-0.333	0.000	0.59		406.0	OK	
1.014	S2-PRHW1-55	22.743	-0.427	0.000	0.13		401.5	OK	
1.015	S2-PRHW1-56	22.581	-0.385	0.000	0.48		369.8	OK*	
1.016	S2-PRHW1-57	22.309	-0.261	0.000	0.46		139.3	OK*	
1.017	S2-PRHW1-58	22.244	-0.188	0.000	0.40		138.2	OK*	
1.018	S2-PRMH1-59	22.253	-0.124	0.000	0.92		139.5	OK	
1.019	S2-PRHW1-60	21.841	-0.415	0.000	0.06		139.0	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
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	0	Number of Storage Structures	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.370
Region	England and Wales	Cv (Summer)	1.000
M5-60 (mm)	18.200	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	0.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 5, 30, 100
Climate Change (%)	0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	S2-PRMH1-1	15 Summer	5	+0%	30/15 Summer	30/30 Summer	
1.001	S2-PRMH1-2	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
1.002	S2-PRMH1-3	15 Summer	5	+0%	30/15 Summer	30/30 Summer	
1.003	S2-PRMH1-4	15 Winter	5	+0%	5/15 Summer	30/30 Summer	
1.004	S2-PRMH1-5	15 Summer	5	+0%	5/15 Summer	100/15 Summer	
2.000	Dummy_S2-PRMH1-1	15 Summer	5	+0%			
1.005	S2-PRMH1-6	15 Summer	5	+0%	5/15 Summer	30/30 Summer	
3.000	Dummy_S2-PRMH1-2	15 Summer	5	+0%			
1.006	S2-PRMH1-7	30 Summer	5	+0%	5/15 Summer	100/15 Summer	
4.000	Dummy_S2-PRMH1-3	15 Summer	5	+0%			
1.007	S2-PRMH1-8	30 Summer	5	+0%	5/15 Summer	100/15 Summer	
5.000	Dummy_S2-PRMH1-4	15 Summer	5	+0%			
1.008	S2-PRMH1-9	30 Summer	5	+0%	5/30 Summer		
6.000	Dummy_S2-PRMH1-5	15 Summer	5	+0%			

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	S2-PRMH1-1		25.256	-0.231	0.000	0.29		27.8	OK
1.001	S2-PRMH1-2		25.174	-0.147	0.000	0.61		56.5	OK
1.002	S2-PRMH1-3		25.019	-0.040	0.000	0.70		70.7	OK
1.003	S2-PRMH1-4		24.878	0.097	0.000	1.17		92.6	SURCHARGED
1.004	S2-PRMH1-5		24.683	0.077	0.000	1.10		95.2	SURCHARGED
2.000	Dummy_S2-PRMH1-1		25.190	0.000	0.000	1.24		65.9	SURCHARGED*
1.005	S2-PRMH1-6		24.601	0.099	0.000	0.83		110.3	SURCHARGED
3.000	Dummy_S2-PRMH1-2		25.110	0.000	0.000	1.24		66.7	SURCHARGED*
1.006	S2-PRMH1-7		24.563	0.177	0.000	1.05		141.7	SURCHARGED
4.000	Dummy_S2-PRMH1-3		24.880	0.000	0.000	1.13		59.6	SURCHARGED*
1.007	S2-PRMH1-8		24.419	0.188	0.000	1.23		166.7	SURCHARGED
5.000	Dummy_S2-PRMH1-4		24.822	0.000	0.000	1.19		62.7	SURCHARGED*
1.008	S2-PRMH1-9		24.191	0.137	0.000	0.89		178.4	SURCHARGED
6.000	Dummy_S2-PRMH1-5		24.703	-0.094	0.000	0.81		50.1	OK*

PN	US/MH Name	Level Exceeded
1.000	S2-PRMH1-1	10
1.001	S2-PRMH1-2	5
1.002	S2-PRMH1-3	9
1.003	S2-PRMH1-4	10
1.004	S2-PRMH1-5	6
2.000	Dummy_S2-PRMH1-1	
1.005	S2-PRMH1-6	8
3.000	Dummy_S2-PRMH1-2	
1.006	S2-PRMH1-7	6
4.000	Dummy_S2-PRMH1-3	
1.007	S2-PRMH1-8	6
5.000	Dummy_S2-PRMH1-4	
1.008	S2-PRMH1-9	
6.000	Dummy_S2-PRMH1-5	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.009	S2-PRMH1-10	30 Summer	5	+0%	5/15 Summer		
7.000	S2-PRMH1-11	15 Summer	5	+0%	30/15 Summer	30/30 Summer	
7.001	S2-PRMH1-12	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
7.002	S2-PRMH1-13	15 Summer	5	+0%	5/15 Summer	30/30 Summer	
7.003	S2-PRMH1-14	30 Summer	5	+0%	5/15 Summer	30/30 Summer	
7.004	S2-PRMH1-15	30 Summer	5	+0%	5/30 Summer	30/30 Summer	
8.000	Dummy_S2-PRMH1-7	15 Summer	5	+0%			
7.005	S2-PRMH1-16	30 Winter	5	+0%	5/30 Summer	100/15 Summer	
9.000	Dummy_S2-PRMH1-8	15 Summer	5	+0%			
7.006	S2-PRMH1-17	30 Summer	5	+0%	5/30 Summer	100/15 Summer	
10.000	Dummy_S2-PRMH1-9	15 Summer	5	+0%			
7.007	S2-PRMH1-18	15 Summer	5	+0%	5/15 Summer	100/15 Summer	
11.000	Dummy_S2-PRMH1-10	15 Summer	5	+0%			
7.008	S2-PRMH1-19	30 Summer	5	+0%	5/15 Summer	100/15 Summer	
12.000	Dummy_S2-PRMH1-11	15 Summer	5	+0%			
7.009	S2-PRMH1-20	30 Summer	5	+0%	5/15 Summer		
13.000	S2-PRMH1-46	15 Summer	5	+0%	30/15 Summer		
13.001	S2-PRMH1-47	15 Summer	5	+0%	30/15 Summer	30/60 Summer	
13.002	S2-PRMH1-48	15 Summer	5	+0%	30/15 Summer	30/30 Summer	
13.003	S2-PRMH1-49	15 Summer	5	+0%	30/15 Summer	30/30 Summer	
13.004	S2-PRMH1-50	15 Summer	5	+0%	5/30 Summer	100/30 Summer	
13.005	S2-PRMH1-51	15 Summer	5	+0%	5/30 Summer	30/60 Summer	
13.006	S2-PRMH1-52	30 Summer	5	+0%	5/15 Summer	100/30 Summer	
13.007	S2-PRMH1-53	30 Summer	5	+0%	5/30 Summer		
13.008	S2-PRMH1-54	30 Summer	5	+0%	5/15 Summer	100/30 Summer	
14.000	S2-PRMH1-34	15 Summer	5	+0%			
14.001	S2-PRMH1-35	15 Summer	5	+0%	30/15 Summer		
14.002	S2-PRMH1-36	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
14.003	S2-PRMH1-37	15 Summer	5	+0%	30/15 Summer		
13.009	S2-PRMH1-38	60 Summer	5	+0%	5/15 Summer	100/30 Summer	
15.000	Dummy_S2-PRMH1-12	15 Summer	5	+0%			
7.010	S2-PRMH1-39	60 Summer	5	+0%	5/15 Summer		
16.000	Dummy_S2-PRMH1-6	15 Summer	5	+0%			
1.010	S2-PRMH1-40	60 Summer	5	+0%	5/15 Summer		
17.000	S2-PRMH1-21	15 Summer	5	+0%	30/15 Summer	100/15 Summer	
18.000	S2-PRMH1-22	15 Summer	5	+0%	5/15 Summer	30/15 Summer	
18.001	S2-PRMH1-23	15 Summer	5	+0%	5/15 Summer	100/15 Summer	
17.001	S2-PRMH1-24	15 Summer	5	+0%	30/15 Summer		
17.002	S2-PRMH1-25	15 Summer	5	+0%	30/15 Summer		
17.003	S2-PRMH1-27	15 Summer	5	+0%	30/15 Summer		
17.004	S2-PRMH1-28	15 Summer	5	+0%	30/15 Summer		
17.005	S2-PRMH1-29	15 Summer	5	+0%	30/15 Summer		

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.009	S2-PRMH1-10		24.046	0.170	0.000	0.97		190.8
7.000	S2-PRMH1-11		25.227	-0.210	0.000	0.38		34.3
7.001	S2-PRMH1-12		25.077	-0.150	0.000	0.58		55.5
7.002	S2-PRMH1-13		25.021	0.012	0.000	0.95		76.5
7.003	S2-PRMH1-14		24.859	0.047	0.000	1.13		90.5
7.004	S2-PRMH1-15		24.729	0.064	0.000	1.01		83.3
8.000	Dummy_S2-PRMH1-7		25.150	0.000	0.000	1.06		56.0
7.005	S2-PRMH1-16		24.602	0.036	0.000	0.77		101.1
9.000	Dummy_S2-PRMH1-8		25.108	-0.062	0.000	0.99		55.1
7.006	S2-PRMH1-17		24.575	0.118	0.000	0.94		126.8
10.000	Dummy_S2-PRMH1-9		24.920	0.000	0.000	1.44		42.9
7.007	S2-PRMH1-18		24.315	0.011	0.000	1.00		135.4
11.000	Dummy_S2-PRMH1-10		24.881	-0.089	0.000	0.84		44.5
7.008	S2-PRMH1-19		24.335	0.211	0.000	1.03		139.1
12.000	Dummy_S2-PRMH1-11		24.769	0.000	0.000	1.24		36.9
7.009	S2-PRMH1-20		24.137	0.189	0.000	1.10		146.2
13.000	S2-PRMH1-46		24.732	-0.187	0.000	0.29		22.0
13.001	S2-PRMH1-47		24.570	-0.102	0.000	0.72		43.7
13.002	S2-PRMH1-48		24.425	-0.199	0.000	0.54		73.0
13.003	S2-PRMH1-49		24.292	-0.154	0.000	0.72		98.2
13.004	S2-PRMH1-50		24.170	-0.099	0.000	0.77		101.5
13.005	S2-PRMH1-51		24.117	-0.029	0.000	0.78		106.6
13.006	S2-PRMH1-52		24.161	0.194	0.000	0.77		105.2
13.007	S2-PRMH1-53		24.054	0.116	0.000	0.42		111.2
13.008	S2-PRMH1-54		24.025	0.177	0.000	0.44		120.3
14.000	S2-PRMH1-34		31.326	-0.140	0.000	0.30		27.4
14.001	S2-PRMH1-35		28.971	-0.103	0.000	0.55		51.4
14.002	S2-PRMH1-36		26.064	-0.062	0.000	0.85		68.2
14.003	S2-PRMH1-37		24.403	-0.094	0.000	0.80		84.6
13.009	S2-PRMH1-38		24.008	0.139	0.000	0.40		156.9
15.000	Dummy_S2-PRMH1-12		24.626	-0.064	0.000	0.86		25.5
7.010	S2-PRMH1-39		23.990	0.170	0.000	0.84		300.3
16.000	Dummy_S2-PRMH1-6		24.577	-0.076	0.000	0.77		24.9
1.010	S2-PRMH1-40		23.940	0.190	0.000	2.80		492.6
17.000	S2-PRMH1-21		33.682	-0.114	0.000	0.69		85.2
18.000	S2-PRMH1-22		33.626	0.040	0.000	0.66		18.5
18.001	S2-PRMH1-23		33.574	0.102	0.000	1.37		38.3
17.001	S2-PRMH1-24		33.302	-0.061	0.000	0.99		119.7
17.002	S2-PRMH1-25		32.847	-0.073	0.000	0.92		119.2
17.003	S2-PRMH1-27		32.014	-0.113	0.000	0.70		142.5
17.004	S2-PRMH1-28		29.355	-0.097	0.000	0.78		158.9

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
17.005	S2-PRMH1-29		26.819	-0.065	0.000	0.95		172.1

PN	US/MH Name	Status	Level Exceeded
1.009	S2-PRMH1-10	SURCHARGED	
7.000	S2-PRMH1-11	OK	10
7.001	S2-PRMH1-12	OK	4
7.002	S2-PRMH1-13	SURCHARGED	10
7.003	S2-PRMH1-14	SURCHARGED	10
7.004	S2-PRMH1-15	SURCHARGED	9
8.000	Dummy_S2-PRMH1-7	SURCHARGED*	
7.005	S2-PRMH1-16	SURCHARGED	5
9.000	Dummy_S2-PRMH1-8	OK*	
7.006	S2-PRMH1-17	SURCHARGED	7
10.000	Dummy_S2-PRMH1-9	SURCHARGED*	
7.007	S2-PRMH1-18	SURCHARGED	6
11.000	Dummy_S2-PRMH1-10	OK*	
7.008	S2-PRMH1-19	SURCHARGED	6
12.000	Dummy_S2-PRMH1-11	SURCHARGED*	
7.009	S2-PRMH1-20	SURCHARGED	
13.000	S2-PRMH1-46	OK	
13.001	S2-PRMH1-47	OK	8
13.002	S2-PRMH1-48	OK	10
13.003	S2-PRMH1-49	OK	10
13.004	S2-PRMH1-50	OK	2
13.005	S2-PRMH1-51	OK	8
13.006	S2-PRMH1-52	SURCHARGED	4
13.007	S2-PRMH1-53	SURCHARGED	
13.008	S2-PRMH1-54	SURCHARGED	1
14.000	S2-PRMH1-34	OK	
14.001	S2-PRMH1-35	OK	
14.002	S2-PRMH1-36	OK	3
14.003	S2-PRMH1-37	OK	
13.009	S2-PRMH1-38	SURCHARGED	4
15.000	Dummy_S2-PRMH1-12	OK*	
7.010	S2-PRMH1-39	SURCHARGED	
16.000	Dummy_S2-PRMH1-6	OK*	
1.010	S2-PRMH1-40	SURCHARGED	
17.000	S2-PRMH1-21	OK	3

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Status	Level Exceeded
18.000	S2-PRMH1-22	SURCHARGED	5
18.001	S2-PRMH1-23	SURCHARGED	3
17.001	S2-PRMH1-24	OK	
17.002	S2-PRMH1-25	OK	
17.003	S2-PRMH1-27	OK	
17.004	S2-PRMH1-28	OK	
17.005	S2-PRMH1-29	OK	

5 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
17.006	S2-PRMH1-30	15 Summer	5	+0%	30/30 Summer			
1.011	S2-PRMH1-31	60 Summer	5	+0%	5/15 Summer			
1.012	S2-PRMH1-32	60 Summer	5	+0%	5/30 Summer			
19.000	S2-PRMH1-41	15 Summer	5	+0%	30/15 Summer	30/15 Summer		
19.001	S2-PRMH1-42	15 Summer	5	+0%	5/15 Summer	30/15 Summer		
19.002	S2-PRMH1-43	15 Summer	5	+0%	5/15 Summer	100/15 Summer		
19.003	S2-PRMH1-44	30 Summer	5	+0%	5/15 Summer	100/15 Summer		
19.004	S2-PRMH1-45	30 Summer	5	+0%	5/15 Summer			
1.013	S2-PRMH1-33	60 Summer	5	+0%	30/15 Summer			
1.014	S2-PRHW1-55	60 Summer	5	+0%				
1.015	S2-PRHW1-56	60 Summer	5	+0%	100/30 Summer			
1.016	S2-PRHW1-57	180 Summer	5	+0%	30/60 Summer			
1.017	S2-PRHW1-58	180 Summer	5	+0%				
1.018	S2-PRMH1-59	180 Summer	5	+0%	30/60 Summer	30/600 Summer		
1.019	S2-PRHW1-60	180 Summer	5	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
17.006	S2-PRMH1-30	24.413	-0.225	0.000	0.50		182.5	OK	
1.011	S2-PRMH1-31	23.847	0.117	0.000	1.28		578.3	SURCHARGED	
1.012	S2-PRMH1-32	23.601	0.017	0.000	1.32		583.4	SURCHARGED	
19.000	S2-PRMH1-41	24.431	-0.004	0.000	0.70		36.3	OK	12
19.001	S2-PRMH1-42	24.349	0.114	0.000	1.17		60.1	SURCHARGED	12
19.002	S2-PRMH1-43	24.084	0.051	0.000	0.84		71.1	SURCHARGED	5
19.003	S2-PRMH1-44	23.992	0.119	0.000	1.02		87.1	SURCHARGED	1
19.004	S2-PRMH1-45	23.797	0.105	0.000	1.25		106.2	SURCHARGED	
1.013	S2-PRMH1-33	23.362	-0.148	0.000	1.00		680.3	OK	
1.014	S2-PRHW1-55	22.817	-0.353	0.000	0.22		664.9	OK	
1.015	S2-PRHW1-56	22.706	-0.260	0.000	0.76		589.5	OK*	
1.016	S2-PRHW1-57	22.466	-0.104	0.000	0.69		212.5	OK*	
1.017	S2-PRHW1-58	22.396	-0.036	0.000	0.61		212.4	OK*	
1.018	S2-PRMH1-59	22.377	0.000	0.000	1.40		212.4	OK	
1.019	S2-PRHW1-60	21.862	-0.394	0.000	0.09		212.2	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	S2-PRMH1-1	15 Summer	30	+0%	30/15 Summer	30/30 Summer	
1.001	S2-PRMH1-2	15 Summer	30	+0%	30/15 Summer	100/15 Summer	
1.002	S2-PRMH1-3	15 Summer	30	+0%	30/15 Summer	30/30 Summer	
1.003	S2-PRMH1-4	30 Summer	30	+0%	5/15 Summer	30/30 Summer	
1.004	S2-PRMH1-5	15 Summer	30	+0%	5/15 Summer	100/15 Summer	
2.000	Dummy_S2-PRMH1-1	15 Summer	30	+0%			
1.005	S2-PRMH1-6	30 Summer	30	+0%	5/15 Summer	30/30 Summer	
3.000	Dummy_S2-PRMH1-2	15 Summer	30	+0%			
1.006	S2-PRMH1-7	30 Summer	30	+0%	5/15 Summer	100/15 Summer	
4.000	Dummy_S2-PRMH1-3	15 Summer	30	+0%			
1.007	S2-PRMH1-8	30 Summer	30	+0%	5/15 Summer	100/15 Summer	
5.000	Dummy_S2-PRMH1-4	15 Summer	30	+0%			
1.008	S2-PRMH1-9	30 Summer	30	+0%	5/30 Summer		
6.000	Dummy_S2-PRMH1-5	15 Summer	30	+0%			

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	S2-PRMH1-1		26.127	0.640	0.000	0.37		35.0	SURCHARGED
1.001	S2-PRMH1-2		26.115	0.794	0.000	0.76		70.0	SURCHARGED
1.002	S2-PRMH1-3		26.082	1.023	0.000	0.97		97.6	SURCHARGED
1.003	S2-PRMH1-4		26.139	1.358	13.406	1.64		129.8	FLOOD
1.004	S2-PRMH1-5		25.797	1.191	0.000	1.32		114.3	SURCHARGED
2.000	Dummy_S2-PRMH1-1		25.190	0.000	0.000	1.80		95.4	SURCHARGED*
1.005	S2-PRMH1-6		26.081	1.579	0.701	1.19		158.1	FLOOD
3.000	Dummy_S2-PRMH1-2		25.110	0.000	0.000	1.79		96.6	SURCHARGED*
1.006	S2-PRMH1-7		26.006	1.620	0.000	1.47		197.7	SURCHARGED
4.000	Dummy_S2-PRMH1-3		24.880	0.000	0.000	1.63		86.4	SURCHARGED*
1.007	S2-PRMH1-8		25.753	1.522	0.000	1.67		226.6	SURCHARGED
5.000	Dummy_S2-PRMH1-4		24.822	0.000	0.000	1.73		91.2	SURCHARGED*
1.008	S2-PRMH1-9		25.318	1.264	0.000	1.27		255.2	SURCHARGED
6.000	Dummy_S2-PRMH1-5		24.797	0.000	0.000	1.18		72.9	SURCHARGED*

PN	US/MH Name	Level Exceeded
1.000	S2-PRMH1-1	10
1.001	S2-PRMH1-2	5
1.002	S2-PRMH1-3	9
1.003	S2-PRMH1-4	10
1.004	S2-PRMH1-5	6
2.000	Dummy_S2-PRMH1-1	
1.005	S2-PRMH1-6	8
3.000	Dummy_S2-PRMH1-2	
1.006	S2-PRMH1-7	6
4.000	Dummy_S2-PRMH1-3	
1.007	S2-PRMH1-8	6
5.000	Dummy_S2-PRMH1-4	
1.008	S2-PRMH1-9	
6.000	Dummy_S2-PRMH1-5	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.009	S2-PRMH1-10	30 Summer	30	+0%	5/15 Summer		
7.000	S2-PRMH1-11	30 Summer	30	+0%	30/15 Summer	30/30 Summer	
7.001	S2-PRMH1-12	15 Summer	30	+0%	30/15 Summer	100/15 Summer	
7.002	S2-PRMH1-13	15 Summer	30	+0%	5/15 Summer	30/30 Summer	
7.003	S2-PRMH1-14	30 Summer	30	+0%	5/15 Summer	30/30 Summer	
7.004	S2-PRMH1-15	30 Summer	30	+0%	5/30 Summer	30/30 Summer	
8.000	Dummy_S2-PRMH1-7	15 Summer	30	+0%			
7.005	S2-PRMH1-16	30 Summer	30	+0%	5/30 Summer	100/15 Summer	
9.000	Dummy_S2-PRMH1-8	15 Summer	30	+0%			
7.006	S2-PRMH1-17	30 Summer	30	+0%	5/30 Summer	100/15 Summer	
10.000	Dummy_S2-PRMH1-9	15 Summer	30	+0%			
7.007	S2-PRMH1-18	30 Summer	30	+0%	5/15 Summer	100/15 Summer	
11.000	Dummy_S2-PRMH1-10	15 Summer	30	+0%			
7.008	S2-PRMH1-19	30 Summer	30	+0%	5/15 Summer	100/15 Summer	
12.000	Dummy_S2-PRMH1-11	15 Summer	30	+0%			
7.009	S2-PRMH1-20	30 Summer	30	+0%	5/15 Summer		
13.000	S2-PRMH1-46	15 Summer	30	+0%	30/15 Summer		
13.001	S2-PRMH1-47	15 Summer	30	+0%	30/15 Summer	30/60 Summer	
13.002	S2-PRMH1-48	15 Summer	30	+0%	30/15 Summer	30/30 Summer	
13.003	S2-PRMH1-49	15 Winter	30	+0%	30/15 Summer	30/30 Summer	
13.004	S2-PRMH1-50	15 Summer	30	+0%	5/30 Summer	100/30 Summer	
13.005	S2-PRMH1-51	30 Summer	30	+0%	5/30 Summer	30/60 Summer	
13.006	S2-PRMH1-52	30 Summer	30	+0%	5/15 Summer	100/30 Summer	
13.007	S2-PRMH1-53	30 Summer	30	+0%	5/30 Summer		
13.008	S2-PRMH1-54	30 Summer	30	+0%	5/15 Summer	100/30 Summer	
14.000	S2-PRMH1-34	15 Summer	30	+0%			
14.001	S2-PRMH1-35	15 Summer	30	+0%	30/15 Summer		
14.002	S2-PRMH1-36	15 Summer	30	+0%	30/15 Summer	100/15 Summer	
14.003	S2-PRMH1-37	15 Summer	30	+0%	30/15 Summer		
13.009	S2-PRMH1-38	30 Summer	30	+0%	5/15 Summer	100/30 Summer	
15.000	Dummy_S2-PRMH1-12	15 Summer	30	+0%			
7.010	S2-PRMH1-39	60 Summer	30	+0%	5/15 Summer		
16.000	Dummy_S2-PRMH1-6	15 Summer	30	+0%			
1.010	S2-PRMH1-40	60 Summer	30	+0%	5/15 Summer		
17.000	S2-PRMH1-21	15 Summer	30	+0%	30/15 Summer	100/15 Summer	
18.000	S2-PRMH1-22	15 Summer	30	+0%	5/15 Summer	30/15 Summer	
18.001	S2-PRMH1-23	15 Summer	30	+0%	5/15 Summer	100/15 Summer	
17.001	S2-PRMH1-24	15 Summer	30	+0%	30/15 Summer		
17.002	S2-PRMH1-25	15 Summer	30	+0%	30/15 Summer		
17.003	S2-PRMH1-27	15 Summer	30	+0%	30/15 Summer		
17.004	S2-PRMH1-28	15 Summer	30	+0%	30/15 Summer		
17.005	S2-PRMH1-29	15 Summer	30	+0%	30/15 Summer		

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.009	S2-PRMH1-10		25.018	1.142	0.000	1.40		275.7
7.000	S2-PRMH1-11		26.247	0.810	8.251	0.68		61.5
7.001	S2-PRMH1-12		25.939	0.712	0.000	0.72		68.8
7.002	S2-PRMH1-13		25.901	0.892	0.000	1.28		102.4
7.003	S2-PRMH1-14		26.222	1.410	1.269	1.55		123.8
7.004	S2-PRMH1-15		26.135	1.470	4.726	1.29		106.3
8.000	Dummy_S2-PRMH1-7		25.150	0.000	0.000	1.55		81.9
7.005	S2-PRMH1-16		26.106	1.540	0.000	1.06		139.6
9.000	Dummy_S2-PRMH1-8		25.170	0.000	0.000	1.45		80.6
7.006	S2-PRMH1-17		26.038	1.581	0.000	1.22		164.4
10.000	Dummy_S2-PRMH1-9		24.920	0.000	0.000	2.05		60.9
7.007	S2-PRMH1-18		25.896	1.592	0.000	1.35		183.6
11.000	Dummy_S2-PRMH1-10		24.970	0.000	0.000	1.23		65.1
7.008	S2-PRMH1-19		25.593	1.469	0.000	1.45		196.8
12.000	Dummy_S2-PRMH1-11		24.769	0.000	0.000	1.78		52.9
7.009	S2-PRMH1-20		25.185	1.237	0.000	1.59		211.3
13.000	S2-PRMH1-46		24.973	0.054	0.000	0.41		30.6
13.001	S2-PRMH1-47		24.963	0.291	0.000	1.02		61.8
13.002	S2-PRMH1-48		24.937	0.313	0.000	0.78		106.3
13.003	S2-PRMH1-49		24.908	0.462	0.000	0.88		119.7
13.004	S2-PRMH1-50		24.864	0.595	0.000	0.92		122.6
13.005	S2-PRMH1-51		25.247	1.101	0.000	1.05		142.9
13.006	S2-PRMH1-52		25.158	1.191	0.000	1.21		164.1
13.007	S2-PRMH1-53		24.974	1.036	0.000	0.65		172.7
13.008	S2-PRMH1-54		24.934	1.086	0.000	0.69		189.3
14.000	S2-PRMH1-34		31.346	-0.120	0.000	0.44		40.1
14.001	S2-PRMH1-35		29.376	0.302	0.000	0.86		79.8
14.002	S2-PRMH1-36		27.414	1.288	0.000	1.27		101.0
14.003	S2-PRMH1-37		24.765	0.268	0.000	1.18		124.5
13.009	S2-PRMH1-38		24.882	1.013	0.000	0.72		278.5
15.000	Dummy_S2-PRMH1-12		24.690	0.000	0.000	1.25		37.0
7.010	S2-PRMH1-39		24.819	0.999	0.000	1.21		433.1
16.000	Dummy_S2-PRMH1-6		24.653	0.000	0.000	1.12		36.2
1.010	S2-PRMH1-40		24.715	0.965	0.000	4.06		713.7
17.000	S2-PRMH1-21		34.470	0.674	0.000	0.92		113.4
18.000	S2-PRMH1-22		34.582	0.996	0.055	0.86		24.0
18.001	S2-PRMH1-23		34.528	1.056	0.000	2.00		56.1
17.001	S2-PRMH1-24		34.114	0.751	0.000	1.34		163.0
17.002	S2-PRMH1-25		33.392	0.472	0.000	1.20		155.8
17.003	S2-PRMH1-27		32.254	0.127	0.000	0.88		179.0
17.004	S2-PRMH1-28		30.235	0.783	0.000	0.97		196.4

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
17.005	S2-PRMH1-29		27.833	0.949	0.000	1.19		214.6

PN	US/MH Name	Status	Level Exceeded
1.009	S2-PRMH1-10	SURCHARGED	
7.000	S2-PRMH1-11	FLOOD	10
7.001	S2-PRMH1-12	SURCHARGED	4
7.002	S2-PRMH1-13	SURCHARGED	10
7.003	S2-PRMH1-14	FLOOD	10
7.004	S2-PRMH1-15	FLOOD	9
8.000	Dummy_S2-PRMH1-7	SURCHARGED*	
7.005	S2-PRMH1-16	SURCHARGED	5
9.000	Dummy_S2-PRMH1-8	SURCHARGED*	
7.006	S2-PRMH1-17	SURCHARGED	7
10.000	Dummy_S2-PRMH1-9	SURCHARGED*	
7.007	S2-PRMH1-18	SURCHARGED	6
11.000	Dummy_S2-PRMH1-10	SURCHARGED*	
7.008	S2-PRMH1-19	SURCHARGED	6
12.000	Dummy_S2-PRMH1-11	SURCHARGED*	
7.009	S2-PRMH1-20	SURCHARGED	
13.000	S2-PRMH1-46	SURCHARGED	
13.001	S2-PRMH1-47	SURCHARGED	8
13.002	S2-PRMH1-48	SURCHARGED	10
13.003	S2-PRMH1-49	SURCHARGED	10
13.004	S2-PRMH1-50	SURCHARGED	2
13.005	S2-PRMH1-51	SURCHARGED	8
13.006	S2-PRMH1-52	SURCHARGED	4
13.007	S2-PRMH1-53	SURCHARGED	
13.008	S2-PRMH1-54	SURCHARGED	1
14.000	S2-PRMH1-34	OK	
14.001	S2-PRMH1-35	SURCHARGED	
14.002	S2-PRMH1-36	SURCHARGED	3
14.003	S2-PRMH1-37	SURCHARGED	
13.009	S2-PRMH1-38	SURCHARGED	4
15.000	Dummy_S2-PRMH1-12	SURCHARGED*	
7.010	S2-PRMH1-39	SURCHARGED	
16.000	Dummy_S2-PRMH1-6	SURCHARGED*	
1.010	S2-PRMH1-40	SURCHARGED	
17.000	S2-PRMH1-21	SURCHARGED	3

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Status	Level Exceeded
18.000	S2-PRMH1-22	FLOOD	5
18.001	S2-PRMH1-23	SURCHARGED	3
17.001	S2-PRMH1-24	SURCHARGED	
17.002	S2-PRMH1-25	SURCHARGED	
17.003	S2-PRMH1-27	SURCHARGED	
17.004	S2-PRMH1-28	SURCHARGED	
17.005	S2-PRMH1-29	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
17.006	S2-PRMH1-30	15 Summer	30	+0%	30/30 Summer			
1.011	S2-PRMH1-31	30 Summer	30	+0%	5/15 Summer			
1.012	S2-PRMH1-32	30 Summer	30	+0%	5/30 Summer			
19.000	S2-PRMH1-41	30 Summer	30	+0%	30/15 Summer	30/15 Summer		
19.001	S2-PRMH1-42	15 Summer	30	+0%	5/15 Summer	30/15 Summer		
19.002	S2-PRMH1-43	30 Winter	30	+0%	5/15 Summer	100/15 Summer		
19.003	S2-PRMH1-44	30 Summer	30	+0%	5/15 Summer	100/15 Summer		
19.004	S2-PRMH1-45	30 Summer	30	+0%	5/15 Summer			
1.013	S2-PRMH1-33	30 Summer	30	+0%	30/15 Summer			
1.014	S2-PRHW1-55	60 Summer	30	+0%				
1.015	S2-PRHW1-56	30 Winter	30	+0%	100/30 Summer			
1.016	S2-PRHW1-57	180 Winter	30	+0%	30/60 Summer			
1.017	S2-PRHW1-58	180 Winter	30	+0%				
1.018	S2-PRMH1-59	120 Summer	30	+0%	30/60 Summer	30/600 Summer		
1.019	S2-PRHW1-60	120 Winter	30	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
17.006	S2-PRMH1-30	24.461	-0.177	0.000	0.62		228.4	OK	
1.011	S2-PRMH1-31	24.559	0.829	0.000	1.93		866.9	SURCHARGED	
1.012	S2-PRMH1-32	24.007	0.423	0.000	1.96		869.7	SURCHARGED	
19.000	S2-PRMH1-41	25.233	0.798	10.876	1.17		60.7	FLOOD	12
19.001	S2-PRMH1-42	25.217	0.982	5.271	1.39		71.3	FLOOD	12
19.002	S2-PRMH1-43	24.940	0.907	0.000	1.16		98.2	SURCHARGED	5
19.003	S2-PRMH1-44	24.892	1.019	0.000	1.52		130.1	SURCHARGED	1
19.004	S2-PRMH1-45	24.365	0.673	0.000	1.97		167.1	SURCHARGED	
1.013	S2-PRMH1-33	23.695	0.185	0.000	1.47		1002.4	SURCHARGED	
1.014	S2-PRHW1-55	22.946	-0.224	0.000	0.32		967.6	OK	
1.015	S2-PRHW1-56	22.849	-0.117	0.000	1.00		777.0	OK*	
1.016	S2-PRHW1-57	22.613	0.043	0.000	1.14		348.7	SURCHARGED*	
1.017	S2-PRHW1-58	22.432	0.000	0.000	1.00		347.1	SURCHARGED*	
1.018	S2-PRMH1-59	22.392	0.015	0.000	2.29		347.1	SURCHARGED	
1.019	S2-PRHW1-60	21.899	-0.357	0.000	0.14		347.1	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
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 0 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.370
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.200 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 0.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 5, 30, 100
Climate Change (%) 0, 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	S2-PRMH1-1	30 Summer	100	+0%	30/15 Summer	30/30 Summer	
1.001	S2-PRMH1-2	60 Summer	100	+0%	30/15 Summer	100/15 Summer	
1.002	S2-PRMH1-3	15 Winter	100	+0%	30/15 Summer	30/30 Summer	
1.003	S2-PRMH1-4	15 Summer	100	+0%	5/15 Summer	30/30 Summer	
1.004	S2-PRMH1-5	30 Summer	100	+0%	5/15 Summer	100/15 Summer	
2.000	Dummy_S2-PRMH1-1	15 Summer	100	+0%			
1.005	S2-PRMH1-6	30 Summer	100	+0%	5/15 Summer	30/30 Summer	
3.000	Dummy_S2-PRMH1-2	15 Summer	100	+0%			
1.006	S2-PRMH1-7	15 Winter	100	+0%	5/15 Summer	100/15 Summer	
4.000	Dummy_S2-PRMH1-3	15 Summer	100	+0%			
1.007	S2-PRMH1-8	15 Summer	100	+0%	5/15 Summer	100/15 Summer	
5.000	Dummy_S2-PRMH1-4	15 Summer	100	+0%			
1.008	S2-PRMH1-9	15 Summer	100	+0%	5/30 Summer		
6.000	Dummy_S2-PRMH1-5	15 Summer	100	+0%			

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	S2-PRMH1-1		26.260	0.773	22.104	0.97		91.5	FLOOD
1.001	S2-PRMH1-2		26.329	1.008	0.204	0.77		71.3	FLOOD
1.002	S2-PRMH1-3		26.241	1.182	6.906	1.01		101.7	FLOOD
1.003	S2-PRMH1-4		26.153	1.372	27.396	1.97		156.2	FLOOD
1.004	S2-PRMH1-5		26.162	1.556	1.758	1.74		150.4	FLOOD
2.000	Dummy_S2-PRMH1-1		25.190	0.000	0.000	2.30		121.9	SURCHARGED*
1.005	S2-PRMH1-6		26.104	1.602	23.772	1.49		196.8	FLOOD
3.000	Dummy_S2-PRMH1-2		25.110	0.000	0.000	2.28		122.8	SURCHARGED*
1.006	S2-PRMH1-7		26.058	1.672	7.666	1.58		213.1	FLOOD
4.000	Dummy_S2-PRMH1-3		24.880	0.000	0.000	2.09		110.8	SURCHARGED*
1.007	S2-PRMH1-8		25.971	1.740	0.987	1.81		245.9	FLOOD
5.000	Dummy_S2-PRMH1-4		24.822	0.000	0.000	2.16		114.0	SURCHARGED*
1.008	S2-PRMH1-9		25.700	1.646	0.000	1.39		279.6	SURCHARGED
6.000	Dummy_S2-PRMH1-5		24.797	0.000	0.000	1.51		93.1	SURCHARGED*

PN	US/MH Name	Level Exceeded
1.000	S2-PRMH1-1	10
1.001	S2-PRMH1-2	5
1.002	S2-PRMH1-3	9
1.003	S2-PRMH1-4	10
1.004	S2-PRMH1-5	6
2.000	Dummy_S2-PRMH1-1	
1.005	S2-PRMH1-6	8
3.000	Dummy_S2-PRMH1-2	
1.006	S2-PRMH1-7	6
4.000	Dummy_S2-PRMH1-3	
1.007	S2-PRMH1-8	6
5.000	Dummy_S2-PRMH1-4	
1.008	S2-PRMH1-9	
6.000	Dummy_S2-PRMH1-5	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.009	S2-PRMH1-10	30 Summer	100	+0%	5/15 Summer		
7.000	S2-PRMH1-11	30 Summer	100	+0%	30/15 Summer	30/30 Summer	
7.001	S2-PRMH1-12	30 Summer	100	+0%	30/15 Summer	100/15 Summer	
7.002	S2-PRMH1-13	15 Winter	100	+0%	5/15 Summer	30/30 Summer	
7.003	S2-PRMH1-14	15 Summer	100	+0%	5/15 Summer	30/30 Summer	
7.004	S2-PRMH1-15	30 Winter	100	+0%	5/30 Summer	30/30 Summer	
8.000	Dummy_S2-PRMH1-7	15 Summer	100	+0%			
7.005	S2-PRMH1-16	30 Winter	100	+0%	5/30 Summer	100/15 Summer	
9.000	Dummy_S2-PRMH1-8	15 Summer	100	+0%			
7.006	S2-PRMH1-17	30 Summer	100	+0%	5/30 Summer	100/15 Summer	
10.000	Dummy_S2-PRMH1-9	15 Summer	100	+0%			
7.007	S2-PRMH1-18	15 Summer	100	+0%	5/15 Summer	100/15 Summer	
11.000	Dummy_S2-PRMH1-10	15 Summer	100	+0%			
7.008	S2-PRMH1-19	60 Summer	100	+0%	5/15 Summer	100/15 Summer	
12.000	Dummy_S2-PRMH1-11	15 Summer	100	+0%			
7.009	S2-PRMH1-20	15 Summer	100	+0%	5/15 Summer		
13.000	S2-PRMH1-46	15 Summer	100	+0%	30/15 Summer		
13.001	S2-PRMH1-47	30 Summer	100	+0%	30/15 Summer	30/60 Summer	
13.002	S2-PRMH1-48	15 Summer	100	+0%	30/15 Summer	30/30 Summer	
13.003	S2-PRMH1-49	30 Winter	100	+0%	30/15 Summer	30/30 Summer	
13.004	S2-PRMH1-50	30 Winter	100	+0%	5/30 Summer	100/30 Summer	
13.005	S2-PRMH1-51	30 Winter	100	+0%	5/30 Summer	30/60 Summer	
13.006	S2-PRMH1-52	15 Winter	100	+0%	5/15 Summer	100/30 Summer	
13.007	S2-PRMH1-53	30 Summer	100	+0%	5/30 Summer		
13.008	S2-PRMH1-54	30 Summer	100	+0%	5/15 Summer	100/30 Summer	
14.000	S2-PRMH1-34	15 Summer	100	+0%			
14.001	S2-PRMH1-35	15 Summer	100	+0%	30/15 Summer		
14.002	S2-PRMH1-36	15 Winter	100	+0%	30/15 Summer	100/15 Summer	
14.003	S2-PRMH1-37	15 Summer	100	+0%	30/15 Summer		
13.009	S2-PRMH1-38	30 Summer	100	+0%	5/15 Summer	100/30 Summer	
15.000	Dummy_S2-PRMH1-12	15 Summer	100	+0%			
7.010	S2-PRMH1-39	30 Summer	100	+0%	5/15 Summer		
16.000	Dummy_S2-PRMH1-6	15 Summer	100	+0%			
1.010	S2-PRMH1-40	15 Winter	100	+0%	5/15 Summer		
17.000	S2-PRMH1-21	15 Summer	100	+0%	30/15 Summer	100/15 Summer	
18.000	S2-PRMH1-22	15 Summer	100	+0%	5/15 Summer	30/15 Summer	
18.001	S2-PRMH1-23	30 Summer	100	+0%	5/15 Summer	100/15 Summer	
17.001	S2-PRMH1-24	15 Summer	100	+0%	30/15 Summer		
17.002	S2-PRMH1-25	15 Winter	100	+0%	30/15 Summer		
17.003	S2-PRMH1-27	15 Summer	100	+0%	30/15 Summer		
17.004	S2-PRMH1-28	15 Summer	100	+0%	30/15 Summer		
17.005	S2-PRMH1-29	15 Summer	100	+0%	30/15 Summer		

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
1.009	S2-PRMH1-10		25.562	1.686	0.000	1.56		306.8
7.000	S2-PRMH1-11		26.269	0.832	29.670	1.35		122.2
7.001	S2-PRMH1-12		26.326	1.099	0.828	1.09		104.7
7.002	S2-PRMH1-13		26.253	1.244	8.022	1.48		118.3
7.003	S2-PRMH1-14		26.225	1.413	4.151	1.97		157.0
7.004	S2-PRMH1-15		26.161	1.496	30.548	2.09		171.7
8.000	Dummy_S2-PRMH1-7		25.150	0.000	0.000	1.97		104.4
7.005	S2-PRMH1-16		26.152	1.586	1.905	1.30		170.8
9.000	Dummy_S2-PRMH1-8		25.170	0.000	0.000	1.85		103.1
7.006	S2-PRMH1-17		26.115	1.658	34.856	1.52		204.0
10.000	Dummy_S2-PRMH1-9		24.920	0.000	0.000	2.57		76.2
7.007	S2-PRMH1-18		26.070	1.766	1.128	1.46		198.8
11.000	Dummy_S2-PRMH1-10		24.970	0.000	0.000	1.55		82.1
7.008	S2-PRMH1-19		25.936	1.812	2.369	1.49		202.4
12.000	Dummy_S2-PRMH1-11		24.769	0.000	0.000	2.23		66.2
7.009	S2-PRMH1-20		25.615	1.667	0.000	1.63		216.4
13.000	S2-PRMH1-46		25.415	0.496	0.000	0.50		36.9
13.001	S2-PRMH1-47		25.356	0.684	19.280	1.45		87.9
13.002	S2-PRMH1-48		25.327	0.703	7.128	0.81		109.9
13.003	S2-PRMH1-49		25.330	0.884	40.097	1.34		181.8
13.004	S2-PRMH1-50		25.333	1.064	0.049	1.20		159.6
13.005	S2-PRMH1-51		25.316	1.170	55.960	1.43		194.2
13.006	S2-PRMH1-52		25.392	1.425	0.000	1.47		199.7
13.007	S2-PRMH1-53		25.447	1.509	0.000	0.84		222.2
13.008	S2-PRMH1-54		25.409	1.561	0.078	0.92		254.1
14.000	S2-PRMH1-34		31.409	-0.057	0.000	0.56		51.5
14.001	S2-PRMH1-35		30.750	1.676	0.000	0.99		92.4
14.002	S2-PRMH1-36		27.698	1.572	1.593	1.30		103.6
14.003	S2-PRMH1-37		25.622	1.125	0.000	1.30		138.0
13.009	S2-PRMH1-38		25.341	1.472	15.311	0.92		358.8
15.000	Dummy_S2-PRMH1-12		24.690	0.000	0.000	1.60		47.4
7.010	S2-PRMH1-39		25.317	1.497	0.000	1.40		498.6
16.000	Dummy_S2-PRMH1-6		24.653	0.000	0.000	1.44		46.5
1.010	S2-PRMH1-40		25.159	1.409	0.000	4.57		804.2
17.000	S2-PRMH1-21		34.944	1.148	4.672	1.05		129.6
18.000	S2-PRMH1-22		34.592	1.006	10.877	2.23		62.5
18.001	S2-PRMH1-23		34.645	1.173	1.403	2.37		66.4
17.001	S2-PRMH1-24		34.635	1.272	0.000	1.46		176.4
17.002	S2-PRMH1-25		33.941	1.021	0.000	1.22		158.4
17.003	S2-PRMH1-27		33.251	1.124	0.000	0.90		183.1
17.004	S2-PRMH1-28		30.975	1.523	0.000	1.01		206.4

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
17.005	S2-PRMH1-29		28.338	1.454	0.000	1.28		230.6

PN	US/MH Name	Status	Level Exceeded
1.009	S2-PRMH1-10	SURCHARGED	
7.000	S2-PRMH1-11	FLOOD	10
7.001	S2-PRMH1-12	FLOOD	4
7.002	S2-PRMH1-13	FLOOD	10
7.003	S2-PRMH1-14	FLOOD	10
7.004	S2-PRMH1-15	FLOOD	9
8.000	Dummy_S2-PRMH1-7	SURCHARGED*	
7.005	S2-PRMH1-16	FLOOD	5
9.000	Dummy_S2-PRMH1-8	SURCHARGED*	
7.006	S2-PRMH1-17	FLOOD	7
10.000	Dummy_S2-PRMH1-9	SURCHARGED*	
7.007	S2-PRMH1-18	FLOOD	6
11.000	Dummy_S2-PRMH1-10	SURCHARGED*	
7.008	S2-PRMH1-19	FLOOD	6
12.000	Dummy_S2-PRMH1-11	SURCHARGED*	
7.009	S2-PRMH1-20	SURCHARGED	
13.000	S2-PRMH1-46	SURCHARGED	
13.001	S2-PRMH1-47	FLOOD	8
13.002	S2-PRMH1-48	FLOOD	10
13.003	S2-PRMH1-49	FLOOD	10
13.004	S2-PRMH1-50	FLOOD	2
13.005	S2-PRMH1-51	FLOOD	8
13.006	S2-PRMH1-52	SURCHARGED	4
13.007	S2-PRMH1-53	SURCHARGED	
13.008	S2-PRMH1-54	FLOOD	1
14.000	S2-PRMH1-34	OK	
14.001	S2-PRMH1-35	SURCHARGED	
14.002	S2-PRMH1-36	FLOOD	3
14.003	S2-PRMH1-37	SURCHARGED	
13.009	S2-PRMH1-38	FLOOD	4
15.000	Dummy_S2-PRMH1-12	SURCHARGED*	
7.010	S2-PRMH1-39	SURCHARGED	
16.000	Dummy_S2-PRMH1-6	SURCHARGED*	
1.010	S2-PRMH1-40	SURCHARGED	
17.000	S2-PRMH1-21	FLOOD	3

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Status	Level Exceeded
18.000	S2-PRMH1-22	FLOOD	5
18.001	S2-PRMH1-23	FLOOD	3
17.001	S2-PRMH1-24	SURCHARGED	
17.002	S2-PRMH1-25	SURCHARGED	
17.003	S2-PRMH1-27	SURCHARGED	
17.004	S2-PRMH1-28	SURCHARGED	
17.005	S2-PRMH1-29	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Proposed Model S2

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
17.006	S2-PRMH1-30	15 Summer	100	+0%	30/30 Summer			
1.011	S2-PRMH1-31	30 Summer	100	+0%	5/15 Summer			
1.012	S2-PRMH1-32	60 Summer	100	+0%	5/30 Summer			
19.000	S2-PRMH1-41	30 Summer	100	+0%	30/15 Summer	30/15 Summer		
19.001	S2-PRMH1-42	15 Summer	100	+0%	5/15 Summer	30/15 Summer		
19.002	S2-PRMH1-43	15 Summer	100	+0%	5/15 Summer	100/15 Summer		
19.003	S2-PRMH1-44	30 Winter	100	+0%	5/15 Summer	100/15 Summer		
19.004	S2-PRMH1-45	15 Summer	100	+0%	5/15 Summer			
1.013	S2-PRMH1-33	60 Summer	100	+0%	30/15 Summer			
1.014	S2-PRHW1-55	60 Summer	100	+0%				
1.015	S2-PRHW1-56	60 Winter	100	+0%	100/30 Summer			
1.016	S2-PRHW1-57	180 Summer	100	+0%	30/60 Summer			
1.017	S2-PRHW1-58	180 Summer	100	+0%				
1.018	S2-PRMH1-59	180 Summer	100	+0%	30/60 Summer	30/600 Summer		
1.019	S2-PRHW1-60	180 Summer	100	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
17.006	S2-PRMH1-30	25.165	0.527	0.000	0.68		250.0	SURCHARGED	
1.011	S2-PRMH1-31	24.987	1.257	0.000	2.22		998.4	SURCHARGED	
1.012	S2-PRMH1-32	24.283	0.699	0.000	2.28		1011.4	SURCHARGED	
19.000	S2-PRMH1-41	25.247	0.812	23.980	1.55		80.6	FLOOD	12
19.001	S2-PRMH1-42	25.237	1.002	25.391	1.75		90.1	FLOOD	12
19.002	S2-PRMH1-43	25.293	1.260	9.443	1.19		100.9	FLOOD	5
19.003	S2-PRMH1-44	25.216	1.343	0.000	1.62		138.0	SURCHARGED	1
19.004	S2-PRMH1-45	24.810	1.118	0.000	2.36		200.6	SURCHARGED	
1.013	S2-PRMH1-33	23.858	0.348	0.000	1.74		1187.7	SURCHARGED	
1.014	S2-PRHW1-55	23.116	-0.054	0.000	0.38		1144.7	OK	
1.015	S2-PRHW1-56	23.073	0.107	0.000	1.26		980.6	SURCHARGED*	
1.016	S2-PRHW1-57	22.806	0.236	0.000	1.22		372.3	SURCHARGED*	
1.017	S2-PRHW1-58	22.432	0.000	0.000	1.07		372.3	SURCHARGED*	
1.018	S2-PRMH1-59	22.464	0.087	0.000	2.46		372.4	SURCHARGED	
1.019	S2-PRHW1-60	21.905	-0.351	0.000	0.15		372.4	OK	

Appendix D. Maintenance Schedules

Operation and Maintenance Requirements for Attenuation Basins (GCC)

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Annually
	Grass cut - for verges, spillways, and access routes	Annually
	Manage other vegetation and remove nuisance plants	Annually
	Hedge cutting	Annually
	Inspect inlets, outlets and overflows for blockages and clear if required	Annually
	Inspect banksides, structures, pipework etc for evidence of physical damage	Annually
	Check any penstocks and other mechanical devices	Annually
	Remove sediment from inlets, outlets and forebay	Annually
	Tidy all dead growth before start of growing season	Annually
Occasional Maintenance	Reseed areas of poor vegetation growth	As required
	Remove sediment from inlets, outlets, forebay and main basin when required.	Every 5 years, or As Required
Remedial Maintenance	Repair erosion or other damage by reseeding or re-turfing	As Required
	Re-alignment of rip-rap	As Required
	Repair/ rehabilitations of inlets, outlets, and overflows	As Required
	Relevel uneven surfaces and reinstate design levels	As Required

Operation and Maintenance Requirements for Detention Basins (National Highways)

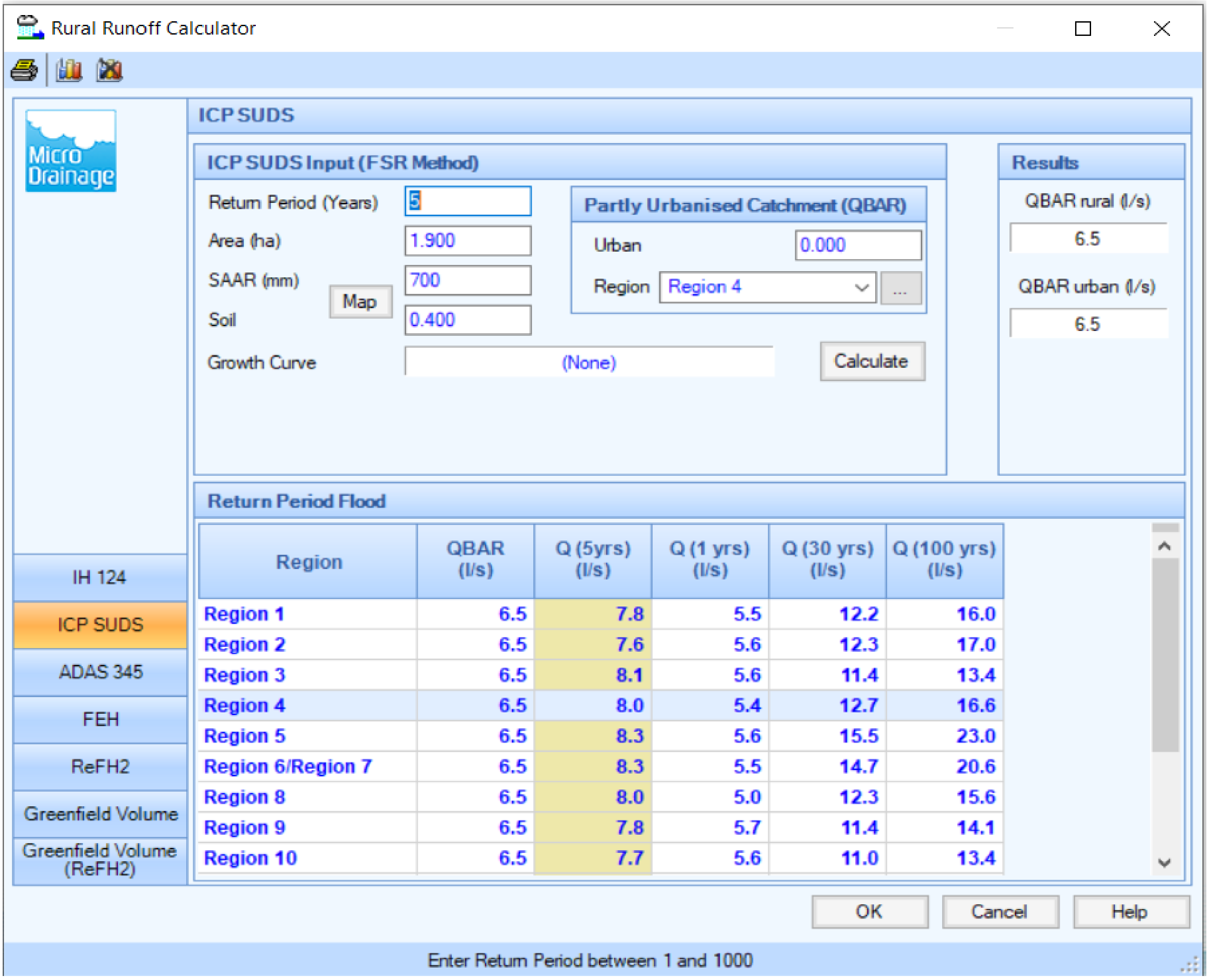
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	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 banksides, 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
	Check any penstocks and other mechanical devices	Annually
	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 (likely to be minimal requirements where effective upstream source control is provided)
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

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
	Inspect 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
	Inspect inlets and facility surface for silt accumulation, establish 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 deposits and prevent compaction of the soil surface	As required
	Remove build-up of sediment on 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

Appendix E. Calculations

QBAR CALCULATION FOR LINK ROAD



Modified Rational Method Calculations for Existing B4634 Catchment

Sl.No.	MRM Calculation	Network Reference
1.	A = 220 m^2 Catchment area for developed site = 0.022 ha **Qp** = **6.5** **l/s** 100 year **5.2** **l/s** 30 year **3.7** **l/s** 5 year **2.2** **l/s** 1 year	Network 1
2.	A = 365 m^2 Catchment area for developed site = 0.037 ha **Qp** = **10.9** **l/s** 100 year **8.7** **l/s** 30 year **6.2** **l/s** 5 year **3.8** **l/s** 1 year	Network 3
3.	A = 730 m^2 Catchment area for developed site = 0.073 ha **Qp** = **21.4** **l/s** 100 year **17.1** **l/s** 30 year **12.2** **l/s** 5 year **7.4** **l/s** 1 year	Network 4
4.	A = 465 m^2 Catchment area for developed site = 0.047 ha **Qp** = **13.8** **l/s** 100 year **11** **l/s** 30 year **7.9** **l/s** 5 year **4.8** **l/s** 1 year	Network 5

5.	A = 620 m^2 Catchment area for developed site = 0.062 ha Qp = 18.2 l/s 100 year 14.5 l/s 30 year 10.4 l/s 5 year 6.3 l/s 1 year	Network 6
6.	A = 230 m^2 Catchment area for developed site = 0.023 ha Qp = 6.8 l/s 100 year 5.4 l/s 30 year 3.8 l/s 5 year 2.3 l/s 1 year	Network 7
7.	A = 1065 m^2 Catchment area for developed site = 0.107 ha Qp = 31.4 l/s 100 year 25.1 l/s 30 year 17.9 l/s 5 year 10.9 l/s 1 year	Network 8
8.	A = 535 m^2 Catchment area for developed site = 0.054 ha Qp = 15.9 l/s 100 year 12.7 l/s 30 year 9 l/s 5 year 5.5 l/s 1 year	Network 9

Guly Calculation

Gully spacing to DMRB CD 526

(For roads with a gradient steeper than 1 in 200)

Longitudinal gradient $1/S_L$:				**Cross fall $1/S_C$:**	
Gradient	1/ 37.453184	Taken from highway design		Gradient 1/	42.194093
S_L:	0.026700			S_C:	0.023700

Mannings roughness for channel:

Road surface:	Blacktop (average condition)		
Mannings n:	0.017		(Table 5.3N)

Maximum permitted flow width: 1 m

Gully type determination:

Total gully area A_g:	0.262	m^2	(Area of smallest rectangle that includes all the slots)
Waterway area:	0.12	m^2	(Area of the openings in the grating)
Grating pattern:	Diagonal bars		(As per manufacurers specification)
Coefficient C_B:	1.5		(Table A.1)
A_g/Waterway area p:	45.802	%	
Grating parameter G:	41.761	s/m^2	(Eq. A.1)
Grating type	Q		(Table A.2)
Coefficient G_d	45	s/m^2	(Table A.2)

Rainfall intensity

Design return period N:	5	years	(No flooding as per Item 2.7 of HD 33/16)
2min-M5 rainfall:	3	mm	(Figure E.1)
Design storm duration T:	5.000	minutes	(Eq. 5.14.1)
gradient	100		
Intensity I:	65.31	mm/hr	(Eq. 5.13.1)

Maintenance factor

Situation:	Subject to substantial leaf falls or vehicle spillages	
Maintenance factor m:	1.0	(Table 5.6N4)

Flow capacity of kerb channel

Depth of water against kerb H:	0.024	m	(Eq. C.1)
Flow area upstream of grating A_f:	0.0119	m^2	(Eq. C.2)
Hydraulic radius of channel R:	0.011572	m	(Eq. C.3)
Flow capacity Q:	0.006221	m^3/s	(Eq. C.4)

Flow collection efficiency of gully

η:	88.19	%	(Eq. C.5)
Status:	Gully efficiency satisfactory		

Roughness and grating efficiency factor

k_n	1.000	(Eq. B.2)

Catchment width

Effective catchment width W_e:	11.16	m	**gully is placed at 27m**

Gully spacing

Maximum design spacing S_p	**27**	**m**	(Eq. C.7)	**Result is matching**

Check critical storm duration

Time for water to reach kerb t_s	3	min	
Flow velocity V	0.525	m/s	
Time for water to reach gully t_g	0.860	min	(Eq. 5.14.1N2b)
Critical storm duration T	3.860	min	(Eq. 5.14.1)
By-pass Flow	0.0007621	m^3/s	

Appendix F. Routine Runoff Assessment Results

Routine runoff assessment results (with mitigation)

Drainage catchment	Receiving water feature	Mitigation	Compliance with Environmental Quality Standards annual average concentrations of soluble pollutants (concentration in µg/l)		Acute impacts from soluble pollutants		Chronic impacts due to sediment related pollutants
			Copper	Zinc	Copper	Zinc	
J1	Leigh Brook	Pond, ditch	Compliant (0.92)	Compliant (0.34)	Pass	Pass	Pass
Link Road	River Chelt	Swale, pond, ditch	Non-Compliant (3.50)	Compliant (0.01)	Pass	Pass	Pass
A4019 main line at Elms Park	River Chelt	Pond, ditch	Non-Compliant (3.52)	Compliant (0.08)	Pass	Pass	Pass
Combined pond	Leigh Brook	Link road section: swale, pond, ditch A4019 section: pond, ditch	Non-Compliant (1.11)	Compliant (0.88)	Pass	Pass	Pass
S1	River Chelt	Pond, ditch	Non-Compliant (4.07)	Compliant (0.31)	Pass	Pass	Pass
S2	Leigh Brook	Swale, pond, ditch	Non-Compliant (1.54)	Compliant (2.93)	Pass	Pass	Pass
B Road	River Chelt	N/A	Non-Compliant (4.07)	Compliant (0.00)	Pass	Pass	Pass
Cumulative: J1 & combined basin	Leigh Brook	J1: Pond, ditch Combined basin: Link Road section: swale, pond, ditch A4019 section: pond, ditch	Non-Compliant (1.16)	Compliant (1.00)	Pass	Pass	Pass

M-BAT assessment

Drainage catchment	Predicted No Effect Concentration (PNEC) (µg/l)	Annual average concentration of copper predicted by HEWRAT (µg/l)	Compliant with site specific copper EQS threshold value
J1	12.50	0.92	Yes
Link Road	12.23	3.50	Yes
A4019 main line at Elms Park	12.23	3.52	Yes
Combined pond	12.50	1.11	Yes
S1	25.10	4.07	Yes
S2	12.50	1.54	Yes
B Road	25.10	4.07	Yes
Cumulative: J1 & combined basin	12.50	1.16	Yes

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