NORTH WEST cambridge

Surface Water Drainage Strategy

Condition 26

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URS

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1. INTRODUCTION

1.1 Commission

The University of Cambridge has commissioned URS to prepare a Surface Water Drainage Strategy in response to Condition 26 for the planning consent for the North West Cambridge (NWC) development ("the Development") (reference 11/1114/OUT and S/1886/11).

This document provides additional information and more detail on the Surface Water Drainage Strategy for the Development over that presented by the Flood Risk Assessment (FRA) submitted with the Application.

1.2 Background

In August 2012 planning consent was granted for the Development for which the FRA, which set out the primary, high-level considerations for surface water at the site, was prepared.

The Local Planning Authorities of Cambridge City Council and South Cambridgeshire District Council have conditioned the consent with Conditions 26 and 31 which relate to flood risk and surface water drainage (Section 1.5).

1.3 Proposed Development

The boundary of the Application Site for the Development comprises approximately 150 ha of which 97.7 ha will be available for development; the remainder will consist of large public open space and the new highway junctions on Madingley Road and Huntingdon Road.

The drainage calculations presented in this strategy are based on the site area of 97.7 ha and the v9 Development Schedule.

Given the nature of the site, predominantly greenfield at present, surface water generated from the developed, hard paved site is likely to be in excess of existing runoff rates.

1.4 Aims & Objectives

This Surface Water Drainage Strategy has been prepared to discharge Conditions 26 and 31 of the Consent for the Development and considers the philosophy of the NWC FRA in draining the site effectively without unduly affecting existing surface water drainage infrastructure and receiving watercourses.

This Surface Water Drainage Strategy has also been provided to demonstrate how the flow rate of surface water leaving the Development will be attenuated and limited to the allowable discharge rate and volume as established by the FRA.

A Surface Water Drainage Strategy will be prepared for each Reserved Matters Application (RMA), in accordance with Condition 27, and will confirm how the surface water drainage design for each plot complies with the requirements of this Strategy.

1.5 Planning Condition

The following Planning Conditions have been considered in the preparation of this Surface Water Drainage Strategy. The Informatives associated with these Conditions are included in Appendix A.

Flood Risk and Sustainable Drainage Systems

Condition 26

Prior to, or concurrently with, the submission of the first reserved matters application, a strategic site wide surface water strategy building on that set out in the Surface Water Management Strategy within the Environmental Statement shall be submitted to and approved in writing by the local planning authority.

The strategy will complement the site wide phasing plan, secured by condition 5, and shall include the provision of details of any alterations to the Washpit Brook associated with flood reduction measures (if applicable), surface and foul water drainage infrastructure (as set out in the agreed Site wide Strategy), and pollution control measures.

The development shall be fully carried out in accordance with the approved details prior to the occupation of any building.

REASON In order to safeguard against the risk of flooding, to ensure adequate flood control, maintenance and efficient use and management of water within the site, to ensure the quality of the water entering receiving water courses is appropriate and monitored and to promote the use of sustainable urban drainage systems to limit the volume and pace of water leaving the site. North West Cambridge Area Action Plan Policies NW25, NW26 and NW27.

Condition 27

Any reserved matters application shall include a detailed surface water strategy, which must be in accordance with the agreed Site Wide Surface Water Strategy (above), pursuant to the reserved matters site for which approval is sought.

The strategy shall include details of the design, location and capacity of all such SUDS features and shall include ownership, long-term management/maintenance and monitoring arrangements/responsibilities, including detailed calculations to demonstrate the capacity of receiving on-site strategic water retention features without the risk of flooding to land or buildings. The strategy should also demonstrate that the exceedence of the designed system has been considered through the provision of overland flow routes. The development shall be carried out in accordance with the approved details and no building pursuant to the particular reserved matters for which approval is being sought shall be occupied or used until such time as the approved detailed surface water measures have been fully completed in accordance with the approved details.

REASON In order to safeguard against the risk of flooding, to ensure adequate flood control, maintenance and efficient use and management of water within the site, to ensure the quality of the water entering receiving water courses is appropriate and monitored and to promote the use of sustainable urban drainage systems to limit the volume and pace of water leaving the site. North West Cambridge Area Action Plan Policies NW25, NW26 and NW27.

Condition 31

No infiltration of surface water drainage into the ground is permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approval details.

REASON To protect the quality of inland fresh waters and groundwaters in accordance with Policies P9-6 and P4-1 to P4-12 of the Environment Agency's Groundwater Protection: Policy and Practice (GP3) document. The infiltration of surface water through land affected by

contamination can result in the pollution of coastal waters, inland fresh waters and groundwaters. We encourage the use of sustainable drainage systems; however they must be carefully considered and controlled. North West Cambridge Area Action Plan Policies NW25, NW26 and NW27.

2. CONSTRAINTS AND OPPORTUNITIES

2.1 Regulatory Constraints

2.1.1 *Planning Policy*

The National Planning Policy Framework (NPPF) requires that flood risk to land and property is not increased as a result of development upstream. The associated Practice Guide notes that flood risk should not be increased for events up to a 1 in 100 year return period, with appropriate allowance for climate change.

This is commensurate with the established FRA for the Development which forms the basis for this drainage strategy which will also comply with the requirements of Section 9.1 of Cambridge County Council's document "*The Cambridgeshire Design Guide for Streets and Public Realm*".

The following local policies published by Cambridge City Council and South Cambridgeshire District Council as part of the North West Cambridge Areas Action Plan (refer to Appendix A) are also relevant to this drainage strategy:

- NW24: Climate Change & Sustainable Design and Construction

  "*Development will be required to demonstrate that it has been designed to adapt to the predicted effects of climate change"*

  "Residential development will be required to demonstrate that:

  a) All dwellings approved on or before 31 March 2013 will meet Code for Sustainable Homes Level 4 or higher, up to a maximum of 50 dwellings across the site. All dwellings above 50 will meet Code for Sustainable Homes Level 5 or higher (these Levels include water conservation measures);

  b) All dwellings approved on or after 1 April 2013 will meet Code for Sustainable Homes Level 5 or higher;

  c) There is no adverse impact on the water environment and biodiversity as a result of the implementation and management of water conservation measures"

- Policy NW25: Surface Water Drainage;

  "Surface water drainage for the site should be designed as far as possible as a sustainable drainage system (SUDS) to reduce overall runoff volumes leaving the site, control the rate of flow and improve water quality before it joins any water course or other receiving body;

  "Any surface water drainage scheme will need to be capable of reducing the downstream flood risk associated with storm events as well as normal rainfall events. All flood mitigation measures must make allowance for the forecast effects of climate change."

The "*Cambridgeshire Surface Water Management Plan, Strategic Report Assessment Report*" prepare by Cambridgeshire County Council also promotes the use of SUDS to reduce flood risk from developments.

Under the Flood and Water Management Act (2010), surface water cannot be discharged to public surface water sewers unless it can be demonstrated that there is no alternative option.

Surface water runoff, must wherever possible; be discharged to ground or an existing surface water feature, such as a watercourse.

Planning Condition 31 states, however, that 'no infiltration of surface water drainage into the ground is permitted' (without consent). Runoff from the site will have to be discharged to the receiving watercourse, the Washpit Brook.

Further planning policy information can be found in Appendix A.

2.1.2 *Pollution Control*

To discharge Planning Condition 34, a Pollution Control Strategy has been prepared. This report commits to mitigation against the risk of pollution and contaminants entering either receiving watercourses or ground water. As such, this Surface Water Drainage Strategy will provide methods for adhering to this commitment.

2.1.3 *Requirements from Flood Risk Assessment (FRA)*

An outline drainage strategy for the Development was prepared for the FRA to mimic the existing drainage regime, whilst accommodating constraints imposed by the underlying ground conditions.

The proposals included the installation of drainage across the site to allow runoff to be intercepted and attenuated via a cascading system of SUDS before being discharged to the Washpit Brook. The SUDS would be designed to ensure that the flow and volume of water that is discharged to the Washpit Brook did not exceed greenfield runoff rates for events up to and including the 1 in 100 year event with an additional 30% allowance for the effects of climate change.

The FRA also established that the flow and volume of water discharged to the Washpit Brook would not be increased but that minimum environmental flows would be maintained to comply with Policy NW24(2c).

As the surface runoff from development plots on the north eastern area of the site could not be returned to ground (Condition 31), the FRA proposed to intercept and discharge to the Washpit Brook at a rate of QBar or 2l/s/ha, or to be accommodated within Long Term Storage.

The additional area would represent an increase in the catchment of the Washpit Brook and the FRA has therefore committed to discharge surface water from the Development at the equivalent rate for the existing catchment only.

The discharge limits imposed on the proposed networks will therefore be limited to the greenfield run-off from areas within the existing catchment only regardless of whether additional flows are captured from the Storey's Field restricted area.

Drawings presenting the requirements of the FRA are included in Appendix B.

2.1.4 *Design Constraints*

It is a requirement that all drainage to be constructed near buildings in new developments must comply with the "Building Regulations 2000; Approved Document H" with further guidance being obtained from BS EN 752 "Drain and Sewer Systems Outside Buildings". Where drainage is to be adopted by the local water authority (Anglian Water), it shall be made under a Section 104 agreement. Infrastructure is to be designed and built to comply with "Sewers for Adoption 7th Edition" (SFA 7th) and any other particular requirement of Anglian Water. These documents define the design principles to be adopted, such as the rainfall intensity and peak daily foul water loading for dwellings, which are required in order to determine the diameter of pipe networks.

This strategy will use a rainfall intensity of a 1 in 30 year storm for the surface water system under SFA 7th for adoptable pipework and a 1 in 100 year storm +30% to satisfy the established Flood Risk Assessment for unadopted areas.

When discharging surface water into the Washpit Brook or its tributaries, the Environment Agency or riparian owner shall be contacted and a discharge agreement entered into. Any other requirements that the Agency has, such as water quality, shall be adhered to, and these are discussed in further detail in section 3.2.

All residential properties in the Development will be designed and constructed to meet the Code for Sustainable Homes (CfSH) Level 5 to comply with Policy NW24(2).

The CfSH states that if the volume of rainwater runoff generated by the developed site is greater than for the pre-developed runoff due to an increase in impermeable area, then it will be necessary to reduce the additional predicted volume to zero by retaining the additional water generated by a 1 in 100 year 6 hour event on site. The additional predicted volume of water should be stored at source and either discharged to ground via infiltration devices, or discharged to the receiving watercourse at a rate of QBar or 2l/s/ha, whichever is the greater.

Surface runoff will be made available for re-use as non-potable water across the Development to minimise the potable water demand and ultimately reduce the requirement for this water to be discharged to the receiving watercourse.

This approach will be used for all buildings constructed on impermeable areas of the Development as the recycling of surface water will be used to control flood risk by ensuring that the volume of runoff discharged to the Washpit Brook will not be increased by the Development.

2.2 Physical Constraints

At present, land within the Development comprises worked agricultural and research land of different uses in addition to the presence of the Traveller's Rest Pit Site of Special Scientific Interest (SSSI). Other ecological constraints are highlighted within the Biodiversity Strategy prepared in response to Condition 34.

The site is bounded by transport corridors, existing dwellings and other buildings as displayed by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0112 in Appendix C. These include the M11 to the west, the A1303 Madingley Road to the south, the A1307 Huntingdon Road to the north east and other local and private roads to the south east.

The topography of the site is characterised by a plateau, known as Storey's Field, within the east of the Development with a ridgeline running approximately north-south. To the west of this ridgeline the land slopes gently towards the M11 to a natural valley and to the Washpit Brook. Existing site levels are approximately 12 m to 14 m AOD along the banks of the this watercourse rising to a maximum of 25 m AOD at the plateau. At the far eastern extremity of the plateau land falls away north eastwards to a level of approximately 21 m AOD.

The site forms part of the headwaters of the Washpit Brook which is managed by South Cambridgeshire District Council and is classified as an Award Watercourse. A number of small field drains cross the site, which feed into the Washpit Brook and are also displayed by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0001. The Washpit Brook is the only major watercourse located within the site and downstream of the site, becomes designated as a Main River by the Environment Agency.

2.2.1 *Existing Drainage Systems*

Due to the agricultural nature of the area surrounding the Development, there is limited surface water infrastructure within the site, but there are some land drains.

Site topography indicates that in the present case the majority of surface water runoff flows in a south and western direction and that a small area situated in the north east corner of the Development will drain to the east (refer to URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0112, Appendix C).

The surface runoff from the eastern portion of the site currently infiltrates into the existing permeable strata underlying the site. The surface water runoff from the western part of the site is generally intercepted naturally by the existing drainage channels and ditches and is directed towards the Washpit Brook.

The 'Huntingdon Road Drain', which has a diameter of 150mm, is located in the north east corner of the site. The 1923 Conveyance granted the University of Cambridge the right of free and uninterrupted passage and running of water through this existing outfall drain and a right to enter Trinity College's land to break up the outfall drain for the purposes of repairing, cleansing and renewing it.

The 'Huntingdon Road Drain' passes below an existing dwelling on Huntingdon Road. This drain could be used as an outfall for a private network constructed on the Development; however it could not be used to accommodate the discharge from an adopted drainage network unless the existing property is acquired and demolished to provide an easement width in accordance with the requirements of SfA 7th.

Adopted surface water sewers under the control of Anglian Water lie below Huntingdon Road and Madingley Road.

2.2.2 *Ground Conditions*

A Geo-environmental report was prepared by URS in August 2010 based on a ground investigation at the Development. This report found that the underlying geology of the site fell generally into three categories: clays (Gault Clay); reworked chalks (Chalk Marl); and gravels (Head and Observatory). Made ground, topsoil and other smaller deposits were also found.

The site has historically been used for farming with locations of Prehistoric and Mediaeval activity. Extraction of gravel and Coprolite are known to have been carried out on the south eastern part of the site and may have also been carried out on the north western part of the site. Site investigation results indicate that these workings were backfilled with the excavated overburden material and locally with imported excavated natural materials. A historic landfill is located in the eastern part of the site.

Groundwater was recorded at a depth of between 0.9m and 3.8m below ground level within the Head Gravels and Observatory Gravels, often in the lower part. Groundwater was also encountered at a depth of 2m in the Chalk Marl and only on one occasion within the Gault Clay at a depth of 19.45m rising to 17.95m.

The inconsistent presence of shallow groundwater and variation in relative levels across the site, suggest that encountered groundwater is largely indicative of perched water above the Gault Clay, and strongly influenced by seasonal fluctuations in rainfall and in the shorter term, can be affected by antecedent weather conditions. Groundwater contained in the secondary aquifer is likely to support flow to the surface water ditches that run across the site, including the Washpit Brook, and there is therefore potential for pollutants to be transmitted to the groundwater.

On the eastern part of the site, reworked Chalk Marl is locally present overlying the Gault Clay in the area of the historic landfill. Limited depths of Made Ground are present in the eastern portion of the site, with areas of disturbed ground associated with historic Coprolite workings. The reworked chalk may be susceptible to solution if groundwater discharge is locally intensified.

The geology of the site is not therefore conducive to infiltration of surface water.

2.2.3 *Earthworks*

The documents submitted with the Planning Application require that earthworks material generated by the Development is retained on site.

The Development proposes to retain the current general ground levels as far as possible whilst allowing for building foundations, highways, and ponds to be formed. Earthworks generated by the construction works will be used to form bunds within the Western Edge area of the Development and avoid the requirement for material to be imported to the site or exported from the site.

2.2.4 *Utilities*

Existing services are present both within and around the Development.

With the exception of some larger primary gas and electricity infrastructure, the majority of the utilities are smaller and outside the Development boundary.

New infrastructure will need to be co-ordinated with the surface water drainage. This strategy will, however, consider the effect of the utilities displayed on URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0112.

3. DESIGN CRITERIA

3.1 Design Parameters

The Flood and Water Management Act 2010 (FWMA) aims to improve both flood risk management and the way our water resources are managed.

Mandatory Build Standards (MBS) will be introduced, which will require Water Authorities to adopt and maintain new sewers connecting to the public system. The Mandatory Build Standards will ultimately introduce a requirement for all new sewers, lateral drains and pumping stations serving two or more properties that connect to the public sewer to be offered for adoption to Water Authorities, in this case Anglian Water.

An Access Point (point of demarcation) at the boundary between an adoptable sewer and private drain, will be incorporated into the design at or within 1 metre of the border of each individual curtilage or property to comply with the requirements of Sewers for Adoption ^{7th} Edition or subsequent updates of this document (SfA 7th).

Any pipe and associated access upstream of the point of demarcation will be a private drain and will be designed in accordance with the Building Regulations and BS EN 752 'Drain and sewer systems outside buildings'. Drainage that extends downstream of the demarcation chamber will be designed to SfA 7th.

To comply with the requirements of Sewers for Adoption 7th Edition (SfA 7th) and BS EN 752, the pipe networks would be designed to accommodate surface water flows that do not surcharge the system for a 1 in 2 year return period storm and do not flood during a 1 in 30 year storm. However, following discussions with the LPA, the networks presented in this strategy have been also designed to accommodate sections of oversized pipework and chambers, which will be capable of accommodating runoff from adopted roads that is not fully attenuated by swales, to ensure there is no flooding during a 1 in 100 year (plus climate change) storm.

It is intended that plots will discharge to the surface water networks at a rate no greater than that of the 1 in 30 year rainfall event and will therefore need on-plot attenuation storage to provide sufficient volume for surface water generated by hard-paved and roof areas between the 30 and 100 (plus climate change) rainfall events. SUDS features will be employed to limit the rate of runoff into the drainage system.

Proposed drainage will also need to comply with the design requirements that no pipes or culverts will be designed to be at a gradient slacker than 1 in 500 and will not be laid at depths greater than 6 m but not shallower than 1.2 m in hard paved areas and 0.9 m in soft landscaped areas where practical, unless specifically agreed with the undertaker and with protection measures.

As outlined in Section 2.2 "Physical Constraints", the majority of the site is undeveloped land and there is limited existing surface water infrastructure. Existing watercourses, however, and infrastructure should be used to both reduce costs of construction and provide a more sustainable drainage infrastructure.

All drainage provision, where possible, shall operate under gravity to reduce the need for a pumped system which would be less sustainable as it would require continued energy use and increased maintenance.

The Flood and Water Management Act 2010 encourages the use of sustainable drainage in new developments and requires drainage systems to be approved by a SUDS Approving Body (SAB), which will be the unitary or County Council for the area, in this case Cambridgeshire County Council. The Act also places a duty on the local authority to adopt and maintain SUDS,

providing that they serve more than one property and have been completed to their satisfaction. Anglian Water will also adopt SUDS features located in open space, providing that they comply with their design guide and do not attract groundwater.

Once the legislation is enacted, it is envisaged that the surface water drainage network could be adopted as outlined above.The University is, however, intending to retain and maintain the SUDS features within the site and implement in accordance with its overarching management and adoption strategy. It is anticipated that SUDS will be brought forward in compliance with this document, subsequent Reserved Matters Applications and the maintenance criteria for open land set out in the S106 agreement.

Until the SAB is formed and discussions can take place with the SAB and Highway Authority, it has been assumed that as the surface water from the adoptable highways, the non-adoptable highways and private properties will discharge into the Washpit Brook, surface water runoff from all surfaces will be able to join the same surface water drainage network which discharges via the Western Edge to the Washpit Brook in accordance with the FRA.

Regardless of the adopting authority, SUDS selected by this strategy for use within the Development should be designed in accordance with the CIRIA document C697 "*The SUDS Manual*", Cambridge City Council's "*Cambridge SUDS Design and Adoption Guide*" and Cambridge County Council's "*Cambridgeshire Design Guide for Streets & Public Realm*" for individual development plots, adoptable highways, private streets and public open space. Further requirements established by the Code for Sustainable Homes will also be adhered to.

Groundwater and water running in watercourses is classified as land drainage and is and will remain the responsibility of Cambridge City Council, South Cambridgeshire District Council and the Environment Agency. This strategy therefore proposes to limit the effect on groundwater and perched water tables and on existing watercourses wherever possible.

3.2 Discharge Parameters

To comply with the NPPF in reducing flood risk, the Code for Sustainable Homes, the requirements of the Environment Agency, Cambridge City Council and South Cambridgeshire District Council, surface water discharges from the site into Anglian Water sewers or existing watercourse shall not exceed the current volumes or rates (the greenfield rate).

As part of the FRA, both the permitted surface water discharge rate and the 100 year plus climate change flood level from the Washpit Brook were established. Table 1 highlights these greenfield rates established by the FRA.

Table 2 Permitted discharge rates from FRA

Geology	Rate (litres/second)			
	1 year	QBar	30 year	100 year
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gravel/Chalk area on plateau	1.20	1.37	2.00	2.00
Restricted Clay area on plateau	2.00	2.00	2.00	2.00

As an additional constraint, the FRA proposed the draining of the area to the east of the ridgeline, Storey's Field, but as this area is not part of the original catchment of the Washpit Brook, certain restrictions apply. The FRA established, however, that a discharge rate at no greater than the lesser of 2 litres per second per hectare or Qbar could be applied to discharge from this area, if not accommodated by Long Term Storage. The overall discharge rate, as committed to by the FRA, would be based on the greenfield rates of the original Washpit Brook catchment area.

The drainage networks for this scheme will be planned such that they convey water to the Washpit Brook and discharge through an outfall at a level above that of the anticipated 1 in 100 year flood from the watercourse.

In addition, the level of discharge will be calculated to mimic the existing drainage regime from the site. It is proposed that in order to comply with the FRA, discharges from the site will meet that of the existing undeveloped site and will be maintained at the established greenfield level for the 1, 30 and 100 year return periods.

Each plot will therefore be assessed for the expected and existing surface water discharge with degree of anticipated permeability and the existing underlying geology incorporated into the calculations.

3.2.1 *Sustainable Drainage Systems – Management Train*

A series of SUDS features will be provided to accommodate and manage surface water runoff to ensure that the rate of water discharging from the Development is not in excess of the FRA's agreed runoff rates by controlling both the quantity and quality of the discharged water. The SUDS features will:

- enable the Development to mimic the existing undeveloped site conditions by managing the water at source in order that the pre and post developed hydrographs are aligned;
- provide two stages of treatment for any runoff from highways and one stage of treatment for runoff from other surfaces prior to discharge to the Western Edge; and
- collect the surface water runoff that will supply the non-potable water network.

Various options are available for the provision of attenuation storage for surface water runoff, including source control, site control and regional control as outlined by the management train found in CIRIA document C697 "*The SUDS Manual*".

3.2.1.1 *Source Control*

Source control manages surface water runoff as close as possible to where it falls as rain. Source control features attenuate surface water on plot and include features such as rainwater harvesting, green roofs, permeable block paving and storage crates and tanks.

This example of surface water attenuation is appropriate for the Development and will be adopted to convey surface water runoff from source control features on the plots to the Washpit Brook.

3.2.1.2 *Site Control*

Site control manages surface water runoff within the Development. Site control features include wetlands, detention basins, ponds and swales. This example of surface water attenuation is appropriate for the Development and will be adopted to convey surface water runoff from source control features on the plots to the Washpit Brook.

The design for the surface water drainage has also assumed that the surface water for each development plot will be restricted to the agreed rate on a plot by plot basis. This may not be practicable for construction purposes as proprietary products available may not be suitable for discharges less than 5 l/s for maintenance reasons.

It may therefore be necessary to collect and restrict water on a wider site basis involving a number of plots, or to allow water to discharge freely to the Western Edge where it can then be attenuated.

3.2.1.3 *Regional Control*

Regional control manages surface water runoff at a regional level, away from the Development. The Washpit Brook Flood Reduction Scheme prepared in response to Condition 28 describes the proposed improvements to that watercourse to reduce flood risk downstream of the Development north west of the proposed bunds within the Western Edge. This regional control will provide flood alleviation to areas such as Girton.

For the purposes of this strategy which includes areas only to the south east of the proposed Western Edge bunds and the Washpit Brook, regional control is not considered appropriate as discharges from the site will be attenuated and managed to mimic the existing condition through source and site control.

3.2.2 *Sustainable Drainage Systems – SUDS Features*

The following SUDS techniques have been considered for use by this drainage strategy. These SUDS features are listed within both the *"SUDS Manual"* (CIRIA document C697) and Cambridge City Council's *"Cambridge SUDS Design and Adoption Guide"*.

3.2.2.1 *Green Roofs & Podium Deck Storage*

Source control features such as living, or green roofs and brown roofs utilise the roof space as an attenuation feature which intercepts runoff at source and discharges water at a manageable rate and can encourage biodiversity through the careful selection of plant species. The provision of these forms of roof within the Development would reduce the volume of surface water runoff to the drainage network (through evapo-transpiration) which would not be in support of the Potable Water Supply Strategy (to harvest surface water runoff to supply the non-potable water network). Traditional green roofs therefore cannot be considered for this strategy.

However, roofs will be used as an additional living space with paved areas that may include a permeable surface and can be incorporated as part of a water-harvesting regime. Roof space at the Development has also been set aside for solar photo-voltaic panels.

3.2.2.2 *Detention Basins*

Detention basins can also be used. These site control features fill in times of heavy rainfall and assist in regulating water from a large area. Water is then released back into adjacent watercourses or surface water drainage pipework at managed rates.

Where detention basins are located close to the source of the surface water runoff, they can be designed to be small. A series of small features can be easier to maintain and offer more resilience to blockage than a large feature.

Where detention basins are provided for site control, they can require large areas of land and can therefore only be located where there is sufficient space. However, these areas can be landscaped to provide a green domain for local residents.

Detention basins also provide the facility for contaminant removal through sedimentation and biodegradation (CIRIA C697) and can provide amenity space.

3.2.2.3 *Permeable/porous surfaces*

It is anticipated that the Development will accommodate open gravelled areas and permeable paving. Permeable paving is an ideal solution for the provision of SUDS where large hard paved landscapes are proposed.

Both permeable and porous surfaces include a granular sub-base which can provide a stage of treatment of surface water through filtration and microbial action (biodegradation). The depth of the granular sub-base can be increased to suit storage requirements and could be supplemented with thin cellular storage or drainage blankets which would be wrapped in an impermeable membrane. In addition, roof drainage can discharge through porous sub-bases within areas such as driveways, thus slowing the rate of water leaving a particular area.

Any areas of gravel or permeable paving would need to be lined to minimise losses via infiltration.

3.2.2.4 *Swales*

Swales are ditches with broad bases and gently sloping sides where surface water is able to spread over a vegetated area and percolate through the soil. Due to Condition 31, poor infiltration at the site, and the risk of contaminants entering the ground, the swales will be lined with an impermeable membrane. This will also minimise losses via infiltration. The swales will, however, provide mechanisms for reducing the risk of pollution conveyance.

It is proposed that swales will perform a dual task of both attenuating the flow and reducing the velocity of water within the surface water drainage networks at the site and for conveyance of water from development plots.

To ensure velocities remain low and to provide storage, a series of check-dams will be constructed within the swales as detailed by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0143. The location, number and size of these check-dames will be determined during detailed design. In addition, within conveyance swales, scour protection will be provided to mitigate against the effects of water velocities in excess of 0.3 m/s.

3.2.2.5 *Underground attenuation features*

Underground storage features can be formed using oversized pipes or cellular tanks.

Pipe storage utilises oversized pipes and orifice plates or hydro-brakes to store surface water and attenuate flows to acceptable discharge rates and is an on-line control. Storage pipes will be placed immediately upstream of flow control devices where below ground drainage is to be employed.

Cellular pre-formed storage features can be placed off-line at the source of the additional surface water prior to it entering the main network. These cells can be placed under hard standing areas such as car parks and drives, or alternatively in courtyards. It is proposed that these features are installed with a gravel filtration layer, or beneath vegetation where appropriate, to remove contaminants from the water.

3.2.2.6 *Application of Features*

A combination of features at source level including permeable paving with gravelled/granular sub-bases and filtered cellular storage are proposed for the Development. These are shown by URS drawings NWC1-URS-SW-SWD-XX-DRG-CE-0121 to 0128. While the SUDS features shown by these plans and discussed in this drainage strategy are not exhaustive, each plot

within the Development will incorporate at least one of the suggested features at source to ensure no flooding will occur within the plot boundary for a 1 in 100 year plus climate change event. The form of attenuation that is selected will need to provide at least one level of treatment to surface water runoff from any section of road within the plot boundary prior to the discharge to the drainage network. This approach will ensure that runoff from all external paved surfaces will receive two levels of treatment prior to discharge to the Washpit Brook.

The remainder of any required attenuation provision and contaminant removal through the SUDS management train will be provided in the form of site control features, such as swales within green spaces and by detention basins within the Western Edge. Complex control devices will limit flows at the detention basins to the Washpit Brook to pre-developed rates.

3.2.3 *Volume of Runoff*

The now withdrawn Planning Policy Statement 25 (PPS25) and the CfSH require that, in addition to the rate of runoff being limited from a newly developed site, the volume should also be restricted to the pre-developed amount; a commitment also given by the FRA. This can be accomplished by preventing the additional volume of water from leaving the site through reuse (rainwater harvesting), infiltration to ground or by providing Long Term Storage (LTS) and releasing discharge at the aforementioned 2 l/s/ha.

The ground conditions across the site are not conducive to infiltration features and infiltration at the Development is not permitted (Condition 31). It is therefore proposed that LTS and recycling of surface water to provide a non-potable water network will be used to reduce the volume of runoff. The Potable Water Supply Strategy prepared in response to Condition 29 provides further information on the recycling of surface water runoff to provide a non-potable water supply for the Development.

It is proposed that this harvesting of water and provision of Long Term Storage will be provided within the detention basins at the Western Edge forming a permanently wet lagoon (retention basin). It is further proposed that a complex control will restrict the flow to the greenfield runoff rates prior to discharging into the Washpit Brook. The detention basins will therefore perform a dual function of both accommodating the LTS within lower levels of the storage area and attenuation above the LTS, all managed by a complex control system.

Harvested water will then be directed towards a non-potable site wide distribution system (refer to the Potable Water Supply Strategy).

4. SURFACE WATER DRAINAGE CATCHMENTS AND PREDICTED FLOW RATES

4.1 Introduction

The FRA defined a series of catchments for water discharging from the Development to the Washpit Brook. This strategy follows that philosophy but redefines catchments based on the Development Schedule (v9). It is therefore proposed that surface water drainage at the Development is divided into 8 networks that convey surface water from the development plots, highways and other hard paved areas towards the Washpit Brook after discharging through SUDS features.

In accordance with Section 2.1.3, "*Requirements from Flood Risk Assessment*" discharges from each network will be limited to the greenfield run-off rate derived from the original catchment area of the Washpit Brook only. Further information can be found in Tables C1-C5 in Appendix C which are summarised below:

Table C1 – Design Assumptions and Network Data (for each of the 8 networks)

Table C2 – Plot Permitted Discharge to the Western Edge (for each of the plots)

Table C3 – Network Discharge Rate to the Western Edge (for each of the 8 networks)

Table C4 – Long Term Storage (for each of the 8 networks)

Table C5 – Permitted Discharge from the Western Edge to the Washpit Brook (for each of the 8 networks)

Table 2 highlights the 8 networks and their catchment areas.

Table 3 Network Area Catchments

Network	Area Geology (ha)		Total Catchment Area (ha)	Restricted Area (ha)	Total Area Considered for Discharge to Washpit Brook (ha)
	Clay	Gravel / Chalk			
1	24.0	24.9	48.9	32.3	16.6
2	8.8	2.6	11.5	0.9	10.6
3	4.2	2.9	7.1	2.5	4.6
4	7.0	3.4	10.3	1.6	8.8
5	3.4	4.8	8.1	0.0	8.1
6	1.7	0.2	2.0	0.0	2.0
7	3.5	0.9	4.4	0.0	4.4
8	5.3	0.0	5.3	0.0	5.3
Total	**58.0**	**39.7**	**97.7**	**37.2**	**60.5**

Viewing the surface water networks by location, Network 1 is the most southern of the drainage systems with Network 8 located at the northern end of the site. The networks are shown by URS drawings NWC1-URS-UT- SW-SWD-XX-DRG-CE-0101 to 0108 (Appendix D) with the catchments outlined by URS drawing NWC1-URS- SW-SWD-XX-DRG-CE-0113.

Each network has been designed to outline detail in accordance with the design constraints set out in Section 3.1 and with the SUDS features adopted by Section 3.2.1 "*Sustainable Drainage Systems – Management Train*". This outline design exercise has been undertaken to ensure that the design criteria are achievable and to define further limits for each individual plot in terms of permitted discharge and Long Term Storage requirement.

Opportunities for the installation of specific SUDS features across the site are displayed by URS drawings NWC1- URS-SW-SWD-XX-DRG-CE-0121 to 0128. These SUDS features have been carefully selected to assist with draining each of the 8 networks and to comply with the planning policy and design parameters established earlier in this strategy.

Discharge rates within this chapter have been calculated in accordance with the Institute of Hydrology Report 124 and through the use of the computer programme Microdrainage. Each network has been allocated a discharge point and takes into account the Washpit Brook flood level and proposed ground levels.

Long Term Storage calculations have been prepared using the methodology from Department for Environment, Food and Rural Affairs (DEFRA) & the EA's report "*R&D Technical Report W5-074/A/TR/1, Preliminary Rainfall Runoff Management for Developments Revision E*" (Technical Report W5-074/A/TR/1). The Long Term Storage will be provided in the lagoons within the Western Edge to supply the non-potable water network. The volume of Long Term Storage required in each lagoon represents the total for the development plots within each drainage network (as presented in Table C4 in Appendix C).

Where discharge rates for individual plots are less than 5 l/s for the 1 in 30 year rainfall event, this strategy has grouped areas together such that the discharge rate approaches 5 l/s. It is anticipated, and the data for the outline drainage design in Appendix C confirms, that the drainage network will be able to accommodate these minor increases of discharge above the 1 in 30 year rate. Regardless of the increase in discharge from some plots, it is proposed that the SUDS management train will slow and attenuate these flows before reaching the Western Edge. This is demonstrated by the hydrograph for the Development presented in Appendix E.

Where plots have been grouped together within this Strategy, each RMA will need to consider any changes in plot area.

The results for each network can be found in Appendix C and are shown for individual plots by URS drawings NWC1- URS-SW-SWD-XX-DRG-CE-0101 to 108. Summaries for each network are provided within this section.

4.2 Network 1

This network includes the majority of the southern area of the Development and the area of restricted discharge at the Storey's Field plateau. A layout for Network 1 is shown by URS drawings NWC1-URS-SW-SWD-XX-DRG-UE-0101, 0102, 0104 and 0105 in Appendix D**.** The network is characterised by draining Storey's Field towards the natural low point within the area at the north eastern corner of the Development before passing southwards and then west through culverts towards the main conveyance swales to the south of Plots B10 and B19. The swales discharge into a detention basin shared with Network 2. Additional swales are located alongside some highways within the Development.

The results shown in Appendix C display that the network meets the design criteria. It should be noted, however, that the minimum self-cleansing velocities may not be met in flatter portions of the network including the culverted sections during lower intensity rainfall events and consideration should be given to the use of elliptical sewers during the detailed design in order to enable velocities to be maximised at low flows. Additional chambers will also be considered as a method of improving maintenance access at the RMA stage.

The relatively flat design for these sections has been proposed to allow for the drainage to pass beneath the ridgeline across the site above 3 m but without exceeding 6 m in depth from cover level to invert to avoid the requirement for maintenance operatives to be required to access excessively deep drainage.

Network 1 will also accommodate flows from the existing drainage ditch identified in Section 2.2, "*Physical Constraints*". It is anticipated that the majority of the catchment for this ditch will be captured by Network 1 further upstream, but that there will still be a small base-line flow. The route of the ditch will be replaced and enhanced where it joins Network 1, with an improvement to water quality and ecology offered by the proposed swales.

Table 3 provides the anticipated discharge from this catchment during a 1 hour storm event. As mentioned, Network 1 accommodates flows from the Storey's Field plateau which is subject to restriction by the FRA at a discharge of the lesser of Qbar or 2 l/s/ha. The calculations within Appendix C have accounted for this restriction.

Table 4 Network 1 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	32	394	2225
30	88	834	
100	130	1310	

4.3 Network 2

Network 2 is primarily located within the vicinity of the proposed adoptable highway and is bounded by Plots B2, B4, B12 and C12. Drainage is routed from underground pipes to swales within the green finger between Plots B9 and B11 prior to discharging into the combined Network 1 – Network 2 detention basin. A layout for Network 2 is shown by URS drawings NWC1-URS-SW-SWD-XX-DRG-CE-0102 and 0103 found in Appendix D. The network does not exceed 6 m in depth but does include culverted sections and may not achieve self cleansing velocity during low intensity storms. Consideration should be given to the use of elliptical sewers during the detailed design in order to enable velocities to be maximised at low flows. Additional chambers will also be considered as a method of improving maintenance access at the RMA stage.

Table 4 provides the anticipated discharge from this catchment during a 1 hour storm event.

Table 5 Network 2 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	22	312	
30	62	704	1924
100	91	1123	

4.4 Network 3

This system provides drainage to plots around the centre of the Development from Plot C3 in the north east to Plot C23 in the south west A layout for Network 3 is shown by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0103 found in Appendix D.

The below ground drainage is characterised by standard below ground drainage pipes which then discharge into a detention basin in the Western Edge via swales located close to Plot 23. Drainage within Network 3 is designed to proposed depths no greater than 3.5 m from cover level to invert with the majority less than 3 m in depth.

Preliminary design work shows that this network achieves self cleansing velocities for storm intensities at the 1 in 1 year return period to 1 in 100 year events.

Table 5 provides the anticipated discharge from this catchment during a 1 hour storm event.

Table 6 Network 3 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	10	166	
30	28	399	737
100	41	615	

4.5 Network 4

Network 4 captures water from the area bounded by Plots C1, C2, C24 and D13 including public open spaces and highways. This system collects surface water from the development plots and highways within the vicinity below ground via traditional drainage systems prior to entering swales towards the west of the Development which then convey water to detention basins close to the Washpit Brook. A layout for Network 4 is shown by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0103 in Appendix D.

Table 6 provides the anticipated discharge from this catchment during a 1 hour storm event.

Table 7 Network 4 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	19	227	
30	54	460	1603
100	80	494	

4.6 Network 5

Plot D10 is the most north eastern area served by this catchment area with Plot D7 in the west and D12 in the south. It is proposed that surface water drainage pipes will be laid beneath highways separating these plots heading towards the Western Edge and ultimately the Washpit Brook. It is intended that Network 5 will include swales wherever practical prior to connecting with a detention basin. A layout for Network 5 is shown by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-00106 in Appendix D.

The preliminary design for Network 5 includes a culverted section beneath a proposed road and upstream of a swale, to provide sufficient capacity for surface water generated by a 1 in 30 year rainfall event. No drainage in this network is deeper than 3 m from cover to invert.

Preliminary design information shows that all pipes, except for those acting as storage devices upstream of flow restrictions, achieve self-cleansing velocity.

Table 7 provides the anticipated discharge from this catchment during a 1 hour storm event.

Table 8 Network 5 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	14	175	
30	38	463	1707
100	56	750	

4.7 Network 6

Network 6 accommodates drainage from plots below the proposed access road at D4 and D12. Drains at this location have been designed to discharge at a shallow depth due to the lower elevation of the plots above ordnance datum and the need to discharge above the Washpit Brook flood level. A layout for Network 6 is shown by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE-0106 in Appendix D.

It is intended that after passing beneath highways and other paved areas within Network 6's catchment, water will be conveyed through swales towards the Washpit Brook and will discharge into a linear detention basin or larger swale shared with Network 7.

Table 8 provides the anticipated discharge from this catchment during a 1 hour storm event.

Table 9 Network 6 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	4	43	285
30	12	114	
100	18	185	

4.8 Network 7

As previously discussed, it is intended that Network 7 will share a detention basin and swale system with Network 6 due to the proximity of the Washpit Brook to the development areas served by these drainage systems. A layout for Network 7 is shown by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE- 0107 in Appendix D.

Flows, as shown by Table 9 which outlines discharges during a 1 hour storm, are higher than other networks for a comparable size due to the connection of drainage to proposed highways within the north of the Development. It is proposed, however, that where possible, these highways will drain into swales located adjacent to hard surfaces which will both provide attenuation storage and reduce the rate of runoff.

Table 10 Network 7 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	8	165	692
30	23	411	
100	34	643	

4.9 Network 8

This network will serve Plots D1, D2 and D3. It is intended that below ground drainage will pass beneath access highways between the development plots towards the Washpit Brook. The proximity of this watercourse to the development plots means that there is reduced scope for a detention basin. Attenuation for surface water drainage from this area will have to be provided for through the following mechanisms: on-plot storage, the provision of a linear detention basin - swale parallel with the Washpit Brook. A layout for Network 8 is shown by URS drawing NWC1-URS-SW-SWD-XX-DRG-CE- 0107 in Appendix D.

The anticipated discharge rate for a 1 hour storm, as shown by Table 9 is relatively high compared to the agreed discharge level. This is due to the large area for each of the plots and the estimated impermeable percentage of these areas. Detailed design of the surfaces within these plots and the associated drainage may reduce these levels.

Table 11 Network 8 Discharge Rates

Return Period	Agreed Discharge Rate to Washpit Brook (l/s)	Peak Discharge Rate To Western Edge Via Drainage (l/s)	Approximate Long Term Storage Requirement (m^3)
1	14	103	963
30	40	254	
100	59	402	

4.10 Overland flows

Attenuation storage is proposed on plot to permit surface water runoff generated by events with a return period of up to including 1 in 100 years plus climate change to be restricted to the equivalent 1 in 30 year greenfield runoff rate.

Swales have also been proposed to attenuate runoff from adopted highways. Piped surface water drainage networks that receive runoff from highways have also been designed to incorporate sections of oversized pipework and chambers in order to ensure that there is no flooding during a 1 in 100 year (plus climate change) storm, as the swales will not be capable of providing the necessary volume of attenuation storage alone.

This approach is slightly conservative, as highways, car parks and other low risk public spaces may ultimately be permitted to flood locally, providing that overland flow routes are acceptable. However, this approach is robust at this stage, as there is insufficient level information available at present to model the overland flows across the site.

In order to provide flexibility for constrained areas of the site where it may be difficult to fully contain runoff generated by a rainfall event with a return period of 1 in 100 years plus climate change, on plot attenuation storage volumes may be reduced in exceptional circumstances providing that:

- careful consideration of the falls of hard paved areas will be undertaken during detailed design to ensure that overland flows are directed away from vulnerable areas;

- additional modelling within Reserved Matters Applications defines overland flow routes due to exceedence and to demonstrate that the finished floor levels of proposed dwellings will be constructed above anticipated flood levels and will therefore not be susceptible to surface water flooding;
- the depth and velocities of the overland flow will not constitute a hazard; and
- overland flow will be intercepted by site control features before being discharged to the Washpit Brook to ensure that surface water runoff does not flow off site in an uncontrolled manner.

4.11 Detention Basins

As discussed in Section 3.2.1.2 "*Site Control*" it is proposed that detention basins will be located within the Western Edge and that these will provide attenuation and long term storage in order to allow surface water to be discharged into the Washpit Brook or its low flow channel at the rates and volumes established by the FRA. This strategy anticipates that the detention basins and control devices will be provided on line, upstream of the Washpit Brook in order to ensure that all receiving runoff is subject to an additional level of treatment. The restricted discharge will be released to the Washpit Brook via a complex control device and outfall that will be positioned above the 1 in 100 year plus climate change water level of the Washpit Brook. The location of the proposed detention basins is shown on URS drawings NWC1-URS-SW-SWD-XX-DRG-CE-0102, 00103 and 0106-0108.

4.11.1 *Attenuation Storage*

A preliminary assessment of the detention basin attenuation volumes has been undertaken based on the flow rates in Appendix C for the impermeable greenfield discharge for the outflow, and the impermeable areas for the inflow of each drainage catchment. Table 11 summaries the volume of attenuation storage that will be required for each rainfall event.

Table 12 Detention Basin Attenuation Volumes

Network	Catchment Area (ha)	Limited 1 in 1 year discharge to Washpit Brook (l/s)	Limited 1 in 30 year discharge to Washpit Brook (l/s)	Limited 1 in 100 year discharge to Washpit Brook (l/s)	Estimated 1 in 100 (+cc) year attenuation storage requirement (m^3)*
1 & 2	60.4	54	150	221	12,500
3	7.1	10	28	41	1,650
4	10.3	19	54	80	2,000
5	8.1	14	38	56	500
6 & 7	6.4	12	35	52	200+600 = 800
8	5.3	14	40	59	300**

* It should be noted that the data presented by Table 11 is based on the current Development Schedule (v9); detailed design will confirm the size of such structures.

**As identified in Section 4.9, "*Network 8*", it is unlikely that there will be sufficient open space to provide a traditional detention basin in the area and alternative storage features will be provided within the plots forming Network 8.

These figures can be refined during detailed design and reduced through the use and assessment of additional SUDS features such as permeable block paving. However, they stand as an approximation and order of magnitude of the required storage.

4.11.2 *Long Term Storage*

Section 3.2.3, "*Volume of Runoff*" established the requirement for Long Term Storage. It is proposed that the detention basins that will be constructed in the Western Edge will be deepened to enable Long Term Storage to be incorporated below the pond outfall. Water from the lower portion of the basin that is situated below the outfall is proposed to be extracted and treated at a series of treatment plants before supplying non-potable water to each drainage catchment (refer to the Potable Water Supply Strategy for further details).

This approach is intended to mimic the existing drainage regime, as runoff that would formerly have infiltrated into the existing ground or been directed away from the Washpit Brook in the northeast corner of the site will be contained within the pond, treated and recycled as non-potable water to ensure that it does not enter the Washpit Brook. This approach will also enable rainfall from less intense events to be recycled and assist in achieving the Code for Sustainable Homes objective for the first 5mm of rainfall to be prevented from leaving the site.

Tables 3 to 10 have outlined the Long Term Storage Requirement for each network and the total for the site is estimated at 10,136 m^3 as shown by Table 12 (refer to Appendix C, Table C4 for further information). Table 12 also defines the volume of water that will be required to supply the non-potable network for comparison purposes.

Table 13 Long Term Storage and Non Potable Water Replacement Volumes

Network	Long Term Storage Requirement (m^3)	Non-Potable Water Replacement Volume (m^3)	Volume selected (m^3)
1 & 2	4,149	7,800	7,800
3	737	800	800
4	1,603	1,900	1,900
5	1,707	900	1,707
6	285	30	285
7	692	400	692
8	963	40	963
Total	**10,136**	**11,870**	**14,147**

Based on the above, the total volume of water that will be stored to supply the non-potable network exceeds the total volume of Long Term Storage and it can be assumed that all Long Term Storage for the Development will be provided through rainwater harvesting. For each network, the larger of the Long Term Storage requirement or the supply for non-potable water has been taken forwards to Table 13, to derive the total volume for each structure. This approach ensures that each catchment may be developed in isolation without relying upon an

adjoining catchment for compensation and will therefore ensure that flood risk will not be increased during the construction phase of the project.

4.11.3 *Total Storage*

Table 13 highlights the total anticipated volume of the lagoon-detention basin structures within the Western Edge, which will be required to enable the basin to accommodate attenuation and long term storage.

Table 14 Total Storage Volumes

Network	LTS or Non Potable Water Replacement Volume required below basin outfall level from Table 12 (m^3)	Attenuation Storage Volume required above basin outfall level (m^3)	Total Volume of Structure (m^3)
1 & 2	7,800	12,500	20,300
3	800	1,650	2,450
4	1,900	2,000	3,900
5	1,707	500	2,207
6	285	200	485
7	692	600	1,292
8	963	300	1,263*
Total	**14,147**	**17,750**	**31,897**

*As identified in Section 4.9, "*Network 8*", it is unlikely that there will be sufficient open space to provide a traditional detention basin in the area and alternative storage features will be provided on-plot.

4.12 Swales

Table C7 in Appendix C presents the velocity and flow for each swale within the 8 drainage networks across the Development based on the outline drainage design. The detailed design and hydraulic modelling of each swale cannot be undertaken until the Reserved Matters Applications come forwards.

Check dams will be constructed within the swales to ensure velocities remain low and to provide storage. The location, number and size of these check-dams will be determined during detailed design and further details will be presented in the Drainage Strategies which will accompany the Reserved Matters Applications.

Swales are not the only form of SuDS feature promoted, as porous paving, filter strips and rainwater gardens will be used as source control features on plot. These features are promoted within this Strategy and will be detailed within the Reserved Matters Applications for each plot.

5. CONCLUSIONS

The proposed eight drainage networks have been routed horizontally and vertically to comply with the conditions laid out in Sewers for Adoption 7th edition and to achieve, where possible, self-cleansing velocities. As discussed, some areas will require the installation of low flow channels or a maintenance regime will need to be provided to ensure drainage does not become obstructed. No drainage shall require installation at depths greater than 6 m from cover level to invert.

All drainage has been designed such that there is no flooding of networks for the 1 in 100 year plus climate change event with discharges from each individual plot restricted to the 1 in 30 year rate.

All storm water generated within the Development will initially be attenuated within Source Control features that are provided on plot to enable post developed rates for storms with a return period of up to 1 in 100 year plus change event o be restricted to pre-developed rates for a 1 in 30 year return period. The attenuated runoff will subsequently be routed through other SUDS features such as swales before being discharged the proposed detention basins within the Western Edge. This cascading system of SuDS will permit surface runoff from all external paved areas to be passed through at least two forms of SuDS in order to ensure that contaminants are removed from surface runoff before it is discharged to the Washpit Brook.

The basins and the associated control devices that are provided within the Western Edge will provide sufficient attenuation storage above the outfall to provide a secondary level of attenuation in order to limit the rate of runoff from the development to the Washpit Brook to the agreed pre-developed rate for rainfall events with a return period of 1, 30 and 100 years plus climate change. Long Term Storage will also be provided within the basins, below the outlet level, which will be extracted by a site wide non potable water network, to ensure that the pre-developed runoff volumes are not increased.

A Surface Water Drainage Strategy will be prepared for each subsequent Reserved Matters Application, in accordance with Condition 27, to confirm how the surface water drainage design for each plot complies with the requirements of this Strategy.

APPENDIX A – PLANNING POLICY & INFORMATIVES

PLANNING CONDITION INFORMATIVES

Sustainable Drainage Systems

In accordance with the Environment Agency's Groundwater Protection: Policy and Practice (GP3) document, we offer the following advice on Sustainable Drainage Systems (SUDS).

Soakaways must be constructed in line with guidance provided in Building Research Establishment 365 (BRE365) – Soakaway Design.

SUDS must be constructed in line with guidance provided in Construction Industry Research and Information Association C697 (CIRIA C697) - The SUDS Manual.

Direct discharges into groundwater of surface water run-off are not acceptable.

All infiltration structures (permeable pavements, infiltration trenches, soakaways, etc.) should be constructed to as shallow a depth as possible to simulate natural infiltration.

The maximum acceptable depth for infiltration structures is two metres below existing ground level with the base of these infiltration structures at least 1.20 metres above the highest seasonal groundwater-table. Deep bore and other deep soakaway systems are not considered by the Environment Agency to be appropriate in areas where groundwater constitutes a significant resource (i.e. where aquifer yield may support or already supports abstraction).

Infiltration structures must not be constructed in contaminated ground.

Only clean, uncontaminated water should be discharged to any infiltration structure.

Infiltration structures should only be used in areas on site where they would not present a risk to groundwater. If permitted, their location must be approved in writing by the Local Planning Authority (LPA).

Prior to being discharged into any surface water sewer or soakaway system, all surface water drainage from parking areas and hard standings susceptible to oil contamination should be passed through an oil separator designed and constructed to have a capacity and details compatible with the site being drained. Roof water should not pass through the interceptor and should discharge to separate infiltration systems to those used for road and vehicle parking areas. Any SUDS from car or lorry parking areas would need to incorporate suitable measures for the protection of water quality; this is likely to include measures to mitigate the discharge of hydrocarbons to surface water or ground. Details of treatment techniques are outlined in CIRIA Report C609. The Environment Agency would wish to be consulted on any protection measures. Any oil interceptors should include separate provision for the interception and removal of sediment (as collection of solids within the interceptor will reduce the capacity and function of the interceptor). Any oil interceptors/sediment chambers should be regularly maintained in accordance with manufacturer's guidelines.

Waste storage and Processing areas: Any facilities, above ground, for the storage of potentially polluting substances should be sited on impervious bases and surrounded by impervious bund walls. The entire area where any potentially polluting substances are delivered, stored and processed should be isolated from the surface water drainage system, open ground or other porous surfaces. Potentially contaminated water and spills should be directed through an oil interceptor and prevented from seeping into the soil and groundwater below the site. The interceptor should be an adequate size to serve the surface area catchment of the site.

Drainage Strategies

The strategy identified in condition 26 shall be based upon a SUDS management train, as espoused by publication 'Sustainable Drainage Manual CIRIA C697' The strategy shall promote, where practicable, measures to control water at source to limit the rate and quantity of run-off.

If source control infiltration SUDS methods are demonstrated to be impracticable or only partly feasible, the strategy shall promote other measures such as swales, surface water retention ponds, wetlands or other surface water retention measures to promote infiltration and mimic, as far as possible, Greenfield run-off patterns.

The strategy shall include a full site detailed technical drawing setting out the final location of the strategic SUDS features and show details of each catchment area and give the associated allowable impermeable area, discharge rates and attenuation volumes.

This drawing may also contain sub catchment information. This drawing will compliment the Site Wide Strategy which will hold full details of the design, location and capacity of all such strategic SUDS features, including flow control systems and shall include ownership, long-term management/maintenance and monitoring arrangements/responsibilities, including detailed calculations to demonstrate the capacity of the measures to adequately manage surface water within the site without the risk of flooding to land or buildings.

PLANNING POLICY

Legislative and policy context

There is a very wide range of legislation, policy and guidance pertaining to water resources and impact assessment; however, this section only refers to water resources related policy and legislation that is directly relevant to the Development and its range of potential effects.

Legislation

Water Framework Directive

The Water Framework Directive (WFD) (Commission of the European Communities, 2000) establishes a framework for a European wide approach to action in the field of water policy. Its ultimate aim is to ensure all inland and near shore watercourses and waterbodies (including groundwater) are of 'Good' status or better, in terms of ecological, but also chemical, biological and physical parameters, by the year 2015. Therefore, any activities or developments that could cause detriment to a nearby water resource, or prevent the future ability of a water resource to reach its potential status, must be mitigated so as to reduce the potential for harm and allow the aims of the Directive to be realised.

A waterbody is assessed for Ecological Status and Chemical Status as part of the WFD, the methodology for determining status has been set out by the UK Technical Advisory Group on the WFD[1]. The Environment Agency is responsible for monitoring and ensuring that the targets are met. Waterbodies are classed as either: High, Good, Moderate, Poor or Bad.

The Ecological Status is based on biological quality which includes invertebrates, fish and macrophytes; physicochemical quality which includes temperature, dissolved oxygen, salinity, pH and nutrients; and hydromorphological quality which assesses the range of available habitats.

Chemical Status is assessed on the presence and concentration of Priority Substances for which standards have been established. A full list is located in the UKTAG advice for classification[1].

The elements that these criteria are based on are specific for the different waterbody type – Rivers, Lakes, Transitional Waters and Coastal Waters. The classification is assigned by comparing the feature in question with the reference values. The system works on a 'worst case' scenario, whereby if one classification is not met, then regardless of the quality of the others, the lowest value is reported[2]. The aim is to keep or restore waterbodies as close to a natural state as possible.

UKTAG[3] has proposed water quality, ecology, water abstraction and river flow standards to be adopted in order to ensure that waterbodies in the UK (including groundwater) meet the required status[4]. These are

[1] UK Technical Advisory Group on the Water Framework Directive; 2007; Recommendations on Surface Water Classification Schemes for the Purposes of the Water Framework Directive; http://www.wfduk.org/UKCLASSPUB/LibraryPublicDocs/sw_status_classification
[2] In the Draft WRMP, where Fish or Phosphorus are considered to be poor, a compromise is made between the status of phosphorus and fish and the rest of the determinants. This will be confirmed within the final RBMPs.
[3] The UKTAG (UK Technical Advisory Group) is a working group of experts drawn from environment and conservation agencies. It was formed to provide technical advice to the UK's government administrations and its own member agencies. The UKTAG also includes representatives from the Republic of Ireland.
[4] UK Environmental Standards and Conditions (Phase I) Final Report, April 2008. UK Technical Advisory Group on the Water Framework Directive.

currently in draft form as published in the draft River Basin Management Plans (RBMPs) and will not be formalised until the final RBMPs are published in December 2009 (prior to EC sign off).

WFD Groundwater Daughter Directive

The existing Groundwater Directive is to be repealed by the Water Framework Directive in 2013. New or amended regulations are expected before then to enact both the Water Framework Directive and its Daughter Directive on the protection of groundwater. This new Groundwater Directive (2006/118/EC) is commonly referred to as the Groundwater Daughter Directive.

The Water Framework Directive and the new Groundwater Directive make changes to how groundwater can be protected. These changes will provide a new regulatory setting for the protection of groundwater. However, the new or amended Regulations will be no less protective than the existing Regulations. The existing principle of preventing or limiting the inputs of List 1 or List 2 substances respectively into groundwater under the original Groundwater Regulations 1998 will remain, but will be expanded to encompass all pollutants (any substance liable to cause pollution). For example, nitrate will be included as a pollutant.

The Water Resources Act 1991

The Water Resources Act 1991 (HMSO, 1991), in particular Section 92(1)(a), stipulates that the Secretary of State (SoS) may make provisions to *"prohibit a person from having custody or control of poisonous, noxious or polluting matter unless prescribed works and precautions and other steps have been carried out or taken for the purpose of preventing or controlling the entry of the matter into any controlled waters"*. This has implications for the Proposed Development, in that all potential pollution sources of controlled waters must be mitigated.

The Urban Wastewater Treatment Directive

The Urban Waste Water Treatment Directive (UWWTD) requires secondary treatment of urban waste-water to prevent the environment from being adversely affected by the disposal of insufficiently treated urban waste water.

The Groundwater Directive (80/68/EEC) and Groundwater Regulations 1998

The Groundwater Directive aims to protect groundwater from pollution by controlling discharges and disposals of certain dangerous substances to groundwater. In the UK, the directive is implemented through the Groundwater Regulations 1998. The Directive aims to protect groundwater under these Regulations by preventing or limiting the inputs of listed substances into groundwater. Substances controlled under these Regulations fall into two lists:

- **List 1** substances are the most toxic and must be prevented from entering groundwater. Substances in this list may be disposed of to the ground, under a permit, but must not reach groundwater. They include pesticides, sheep dip, solvents, hydrocarbons, mercury, cadmium and cyanide.
- **List 2** substances are less dangerous, and can be discharged to groundwater under a permit, but must not cause pollution. Examples include sewage, trade effluent and most wastes. Substances in this list include some heavy metals and ammonia (which is present in sewage effluent), phosphorus and its compounds

Flood and Water Management Act 2010

The Flood and Water Management Act which received Royal Assent in April 2010 aims to implement the recommendations of the Pitt Review, carried out following the 2007 summer floods. The Act and the Pitt Review itself, aim to respond to the pressures of climate change and increased population, which will increase water stress, drought risk, water quality issues and flood risk.

The key features of the Act are:

- To give the Environment Agency an overview of all flood and coastal erosion risk management and unitary and county councils the lead in managing the risk of all local floods.

- To introduce an improved risk based approach to reservoir safety.

- To encourage the uptake of sustainable drainage systems by removing the automatic right to connect to sewers and providing for unitary and county councils to adopt SUDS for new developments and redevelopments.

- To allow sewerage companies to adopt drains and sewers that are connected to the adopted sewer.

- To widen the list of uses of water that water companies can control during periods of water shortage, and enable Government to add to and remove uses from the list.

- To enable water and sewerage companies to operate concessionary schemes for community groups on surface water drainage charges.

- To reduce 'bad debt' in the water industry by amending the Water Industry Act 1991 to provide a named customer and clarify who is responsible for paying the water bill.

- To make it easier for water and sewerage companies to develop and implement social tariffs where companies consider there is a good cause to do so, and in light of guidance that will be issued by the SoS following a full public consultation.

The Act aims to:

- reduce the likelihood and impacts of flooding;
- improve authority ability to manage the risk of flooding;
- improve water quality;
- give water companies better powers to conserve water during drought;
- reduce red tape and other burdens on water and sewerage companies;
- improve the overall efficiency and management of the industry; and
- reduce pollution.

The Act will reduce flood risk by delivering surface water management plans and ending the automatic right to connect to sewers for surface water drainage, requiring developers to put SUDS in place in new developments, wherever practicable.

Commencement No 1 Order brings into force provisions of the Flood and Water Management Act 2010 to provide power for Ministers to make orders and regulations to give effect to the Act. Article 3 provides that sections 4 and 36 of the Act, and some definition sections, are brought into force from 1st September 2010, so far as to enable Ministers to make orders relating to flood risk management functions. The Schedule introduced by Article 4 specifies other provisions that came into force from 1st October 2010, which includes the power to make regulations relating to levies, adoption of drains or sewers by the sewerage undertaker, liability of occupiers of residential premises for water and sewerage charges, duties of a risk management authority and special administration. Article 5 contains transitional provisions.

National Policy, Guidance and Strategy

The Code for Sustainable Homes

The Code for Sustainable Homes has been introduced to drive a step-change in sustainable home building practice. It is a standard for key elements of design and construction which affect the sustainability of a new home. The Code uses a sustainability rating system – indicated by 'stars', to communicate the overall

sustainability performance of a home. The table below summarises the mandatory minimum standards which exist under the Code for each assessment level relating to indoor water consumption:

Level 1(★)	Maximum Internal potable water consumption measured in litres per person per day (l/p/d)	120 l/p/d
Level 2(★★)		120 l/p/d
Level 3(★★★)		105 l/p/d
Level 4(★★★★)		105 l/p/d
Level 5(★★★★★)		80 l/p/d
Level 6(★★★★★★)		80 l/p/d

Mandatory minimum performance standards are set for some issues irrespective of the code level rating that is sought. One of these is the management of surface water runoff from developments which in turn relates to:

- Peak rate of runoff into watercourses – to ensure that this is no greater for the developed site than it was for the pre-development site.
- The additional predicted volume of runoff generated by the development is reduced to zero wherever possible by means of infiltration to groundwater and/or by harvesting it for reuse within the buildings as a replacement for potable water in non-potable applications such as toilet flushing or washing machine operation.

Additional credits are available for using SUDS to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters.

Future Water – The Government's Water Strategy for England

'Future Water' presents the Government's water strategy for England – its vision for sustainable delivery of secure water supplies and an improved and protected water environment.

The Government's water strategy for England aims to secure water supplies and improve the protection of the water environment. Increases in housing and climate change will make it vital to manage demand better and new reservoirs may be needed. Work to improve water quality must continue, flooding must to be managed better and metering of household use may become compulsory.

Groundwater Protection: Policy and Practice (GP3)

The Environment Agency has set out a framework for the regulation and management of groundwater in a set of documents, collectively known as Groundwater Protection: Policy and Practice (GP3). The policies and guidance within GP3 replace the previous policy covered in the Environment Agency's 'Policy and Practice for the Protection of Groundwater'.

Part 4 of GP3 "Legislation and Policies" was issued for consultation in 2007 and published in July 2008. The policies for the protection and management of groundwater have been considered in this assessment, including the control of pollutants to groundwater, contaminated land, permitted activities with respect to Source Protection Zones, and groundwater resource management.

The Pitt Review

Sir Michael Pitt was asked by Ministers to conduct an independent review of the flooding emergency that took place in June and July 2007. The Review made the recommendations that the Government should:

- establish a Cabinet Committee dedicated to tackling the risk of flooding, bringing flooding in line with other major risks such as pandemic flu and terrorism;
- publish monthly summaries of progress during the recovery phase of major flooding events, including number of households still displaced;

- ensure proper resourcing of flood resilience measures, with above inflation increases every spending review;
- establish a National Resilience Forum to facilitate national level planning for flooding and other emergencies;
- have pre planned, rather than ad hoc, financial arrangements in place for responding to the financial burden of exceptional emergencies; and
- publish an action plan to implement the recommendations in this review, with regular progress updates.

The Government's response to the Pitt Review was published in December 2008 and supported the findings of the review, indicating that Local Authorities should take the lead in implementing its recommendations.

The National Flood and Coastal Erosion Risk Management Strategy for England

The Environment Agency and DEFRA jointly published this document in July 2011 in order to identify actions that can be taken to manage the risk of flood and coastal erosion in England in order to reduce the impact on Communities that could occur as a result of climate change and development in areas at risk.

The strategy builds on existing approaches to flood and coastal risk management and promotes the use of a wide range of measures to manage risk. It also indicates that risk should be managed in a co-ordinated way within catchments and along the coast balancing the needs of communities, the economy and the environment. This strategy will form the framework within which communities have a greater role in local risk management decisions and sets out the Environment Agency's strategic overview role in flood and coastal erosion risk management (FCERM).

This approach is aligned with the recommendations made by Sir Michael Pitt in his review of the summer 2007 floods. The strategy encourages more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together to:

- ensure a clear understanding of the risks of flooding and coastal erosion, nationally and locally, so that investment in risk management can be prioritised more effectively;
- set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the remaining risk;
- manage flood and coastal erosion risks in an appropriate way, taking account of the needs of communities and the environment;
- ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice;
- help communities to recover more quickly and effectively after incidents.

The National Planning Policy Framework (NPPF)

While the NPPF is to be read as a whole in the context of flood risk and drainage the NPPF states at paragraph 100 that when determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere and only consider development in flood risk areas appropriate where informed by a site-specific flood risk assessment following the Sequential Test, and if required the Exception Test, it can be demonstrated that:

- within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and
- development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed; and it gives priority to the use of sustainable drainage systems.

Paragraph 104 of the NPPF notes that for individual developments on sites allocated in development plans through the Sequential Test, applicants need not apply the sequential test.

Local Policy, Strategy & Guidance

The Application Site lies astride the administrative boundaries of South Cambridgeshire District Council (SCDC) and Cambridge City Council (CCC). As a result, water related policies contained within both of the authorities' emerging Local Development Frameworks are relevant to the Proposed Development and have been referenced here.

North West Cambridge Area Action Plan

The principal Local Development Document that has been produced jointly by SCDC and CCC and that relates specifically to the Application Site is the North West Cambridge Area Action Plan which was adopted in October 2009. The Plan contains the following policies relevant to water resources:

- NW24: Climate Change & Sustainable Design and Construction
  1) 'Development will be required to demonstrate that it has been designed to adapt to the predicted effects of climate change'
  2) 'Residential development will be required to demonstrate that:
  a) All dwellings approved on or before 31 March 2013 will meet Code for Sustainable Homes Level 4 or higher, up to a maximum of 50 dwellings across the site. All dwellings above 50 will meet Code for Sustainable Homes Level 5 or higher (these Levels include water conservation measures);
  b) All dwellings approved on or after 1 April 2013 will meet Code for Sustainable Homes Level 5 or higher;
  c) There is no adverse impact on the water environment and biodiversity as a result of the implementation and management of water conservation measures.'
  3) 'Non residential development and student housing will be required to demonstrate that:
  f) It will incorporate water conservation measures including water saving devices, greywater and/or rainwater recycling in all buildings to significantly reduce potable water consumption; and
  g) There is no adverse impact on the water environment and biodiversity as a result of the implementation and management of water conservation measures.'

  'The East of England has the lowest rainfall in the country and is described officially as semi-arid. A high proportion of the available water resource is already being exploited and as such, even allowing for the impacts of climate change, careful management of water resources will be crucial if the economic potential of the Cambridge Sub-Region is to continue to be realised. Development at North West Cambridge provides an opportunity to design water conservation measures into the infrastructure and buildings in order to reduce per capita demand for water. This should be a fundamental approach of the development. It is important that water conservation measures are applied to each building to ensure that there is a comprehensive strategy to water use reduction across the site and measures are not applied to some buildings and not others. The CSH provides appropriate targets to improve water conservation over time, using the same dates and Code levels as for energy reduction and other sustainability requirements set out in the Code. For residential development, the 30% reduction required at Code Level 4 compared to 2006 levels equates to 105 litres/head/day, while the 47% reduction required by Code Level 5 equates to 80 litres/head/day.'

  'The principle of reuse and recycling of water is also an important part of an integrated approach to water management that will facilitate the use of water from drainage as a design feature of the development. Care must be taken to ensure that water reuse and recycling does not have an adverse effect on biodiversity, or the wider water environment, in accordance with the requirements of the Water Framework Directive.'

- Policy NW25: Surface Water Drainage
  '1. Surface water drainage for the site should be designed as far as possible as a sustainable drainage system (SUDS) to reduce overall runoff volumes leaving the site, control the rate of flow and improve water quality before it joins any water course or other receiving body;
  2. The surface water drainage system will seek to hold water on the site, ensuring that it is released to surrounding water courses at an equal, or slower, rate than was the case prior to development;
  3. Water storage areas should be designed and integrated into the development with drainage, recreation, biodiversity and amenity value; and
  4. Any surface water drainage scheme will need to be capable of reducing the downstream flood risk associated with storm events as well as normal rainfall events. All flood mitigation measures must make allowance for the forecast effects of climate change.'

  'The eastern and northern parts of the site lie above the surrounding land. The area then slopes down to the Washpit Brook and as such surface water at the site drains naturally in that direction. Apart from the immediate area along the Washpit Brook, there is little evidence of flood risk to the site itself.

  However, surface water runoff will increase as a result of development, which will create impermeable areas. As a result, full attenuation measures will be required to ensure that surface water runoff from the development does not increase the risk of flooding to the site itself and areas downstream of the development.

  The principles of Sustainable Drainage Systems (SUDS) should be employed where possible on the site to deal with surface water drainage. SUDS are an alternative approach to drainage that replicate as closely as possible the natural drainage of the site before development. This reduces the risk of flood downstream of the development, helps replenish ground water and remove pollutants gathered during runoff, benefiting local wildlife, in line with the SUDS management train.

  A Strategic Water and Drainage Strategy will be required to support a planning application. This will include a strategic scale flood risk assessment for the site and any impact on the wider catchment, and will identify the types of SUDS proposed and options for future adoption and maintenance arrangements.

- Policy NW26: Foul Drainage and Sewage Disposal
  Development of any single phase will not result in harm in the form of untreated wastewater or increased flood risk from treated wastewater. Planning conditions (which may include 'Grampian' style conditions) will link the start and phased development of the site to the availability of wastewater treatment capacity and the capacity of receiving watercourses.

  The foul water produced at the site will be directed to Cambridge Sewage Treatment Works at Milton to take advantage of consolidating existing facilities. Anglian Water are currently undertaking an appraisal of sewerage provision for the whole catchment and the outcome of that appraisal will inform the approach to be followed for foul water arising from North West Cambridge.

  In accordance with the requirements of the WFD, the treatment of wastewater must not cause deterioration of the water environment. The options for the treatment of foul drainage and sewage disposal from the site will need to be agreed with the Environment Agency to ensure that development does not result in further pressure on the water environment and compromise WFD objectives.

- Policy NW27: Management and Maintenance of Surface Water Drainage Systems
  1. All water bodies, watercourses and sustainable drainage features required to serve the development will be maintained and managed by one or more publicly accountable bodies to ensure a comprehensive and integrated approach to surface water drainage with defined areas of responsibility;
  2. No development shall commence until the written agreement of the local planning authorities has been secured stating that organisations with sufficient powers, funding, resources, expertise and integrated management are legally committed to maintain and manage all surface water systems on the North West Cambridge site in perpetuity.

  North West Cambridge's surface water drainage systems will need to be managed in perpetuity, during and beyond the lifetime of construction. The options for this are for maintenance and management to be the responsibility of one or more of the following:

  a. The City and/or District Council;
  b. A water company such as Anglian Water;
  c. A publicly accountable trust.

It is important to ensure that the body or bodies made responsible have adequate expertise and are financially stable in perpetuity. It will be the responsibility of the developer to secure and fund a suitable management and maintenance body/bodies in agreement with the Authorities.

Phase 1 Water Cycle Strategy for Major Growth Areas in and around Cambridge (October 2008)

A Phase 1 Water Cycle Strategy (WCS) was completed by consultants for Cambridgeshire Horizons. It assesses the potential impacts and constraints associated with the proposed major development areas by considering flood risk, water resources and supply, foul sewerage, wastewater treatment, water quality and water related ecology. This study establishes the most effective foul drainage and water supply strategy for all development in the Cambridge catchment and contains the following conclusions and recommendations in relation to the Proposed Development.

This strategic planning document considers how the water services infrastructure can be achieved to meet the target of 42,500 new homes in Cambridge and South Cambridgeshire by 2021. Cambridge is supplied by groundwater abstraction and is situated in an area of *Serious Water Stress* as classified by the EA. It is vital that practices are put into place to reduce water consumption significantly in the new developments and that wherever practical, rainwater is harvested and recycled within the house and on the garden. Greywater systems also need to be considered. Water neutrality i.e. no increase in water supplies for the area over the next 10 years, is potentially achievable through:

- Compulsory implementation of the Code for Sustainable Homes (aiming for Level 6)
- Compulsory metering
- Installing water smart measures in existing homes

The following conclusions were drawn from the study relating to the water resources of the proposed North West Cambridge development site:

- Flood Risk Management
  - most of the site appears to fall within the EA's Flood Zone 1
  - There is a known history of flooding on the Beck Brook/Cottenham Lode catchment downstream of the site therefore the surface water discharge from the development must be managed by means of flow attenuation and long term storage to prevent

any increase in flood risk downstream and should seek where possible to reduce the present risk.
  - It is advised that developers on this catchment undertake an independent hydraulic modelling study to:
    - Assess the current standard of protection for Histon and Impington.
    - Demonstrate that the flood risk in the Cottenham Lode catchment will not increase as a result of the combined cumulative effect of developments in the catchment.
    - Assess the opportunity for strategic flood risk mitigations options in the catchment.
    - Assess the opportunity for enhancing the level of service to areas where there is a known flood risk and make a contribution towards the cost of a scheme to enhance the level of service.
  - A site specific FRA is required by PPS25

- Groundwater and SUDS
  - The site is on variable geology of limited permeability; hence site specific surveys would be required to prepare a suitable SUDS strategy.

- Foul Drainage, Sewage Treatment and Water Quality
  - Foul water from the site will be discharged to the Cambridge WwTW. The discharge consent at the Works will not require revision to accommodate the increased flows from the strategic development sites including the NW Cambridge site before 2016; however, improvements may be needed to the treatment works in order to maintain the quality of the effluent discharged to the River Cam. Some of these improvements may be required before 2016 if the EA decide to tighten the discharge quality limits of the consent as the volume of discharge from the works increases with the increase in new development, in order to comply with the requirements of the Freshwater Fish Directive of the WFD. AWS will seek investment to facilitate these improvements through its regulatory periodic review process for implementation in AMP 5 (2010 - 2015) or AMP 6 (2015 - 2021).
  - The large diameter sewer network can accommodate al of the flow from the strategic developments without upgrade. The NW Cambridge site will connect into the branches of the tunnel network on Madingley and Histon Road but downstream of the junction of Madingley Road and Wilberforce Road to avoid connections to existing sewers that have insufficient capacity.
  - The strategic development sites around Cambridge will not be connected to the sewerage system upstream of the four combined sewer overflows (CSOs) (except that at Cambridge WwTW) and therefore the discharge volume from these CSOs is not expected to increase as a result of the strategic development sites including the North West Cambridge site.

- Water Supply
  - Currently provided by Cambridge Water Company which will also be responsible for strategic water resources for the North West Development site.
  - No specific technical constraints have been identified which might prevent growth in the study area including the Application Ste which will require a new 3.2km long 450mm diameter extension to the existing ring main to provide the required capacity.

Phase 2 Water Cycle Strategy for Major Growth Areas in and around Cambridge (October 2010)

A Phase 2 report was completed by consultants for Cambridge Horizons and considered the recommendations made in the Phase 1 report which focused on identifying a strategy and providing the technical evidence base to show how new sustainable water services infrastructure for the Major Sites in and

around Cambridge (including the North West Cambridge University site) could be delivered to maximise three opportunities:

- aspiring to water neutrality;
- improving biodiversity by protecting environmental water quality and hydromorphology, and;
- protecting and enhancing communities through sustainable surface water management.

The findings and recommendations of the WCS have been incorporated into the development proposals. The following is a summary of the findings relevant to the Proposed Development presented under the following water infrastructure headings used in the WCS report:

- Water Resources – *CSH Level 5/6 should be the target for all new homes built after 2016. To meet CSH level 5/6 will require progressive implementation of greywater recycling (GWR) and/or rainwater harvesting (RWH) systems at either a household or community scale, in addition to implementation of water efficient appliances and changes in consumers' behaviours/attitudes towards water consumption. GWR and RWH are not currently widely implemented in the UK. Challenges remain with widespread implementation of GWR and RWH, not least because of the issues surrounding adoption of GWR or RWH systems; no consistent model or legislation is currently in place to support consistent adoption and water companies are currently not permitted to charge for non-potable water.*

- Sustainable Surface Water Management – taken from Section 4.5 of the Phase 2 WCS

  4.5.4 Achieving the vision for sustainable surface water management relies on the development and subsequent implementation of planning policies and vigilant management of development through the planning process.

  Planning applications should:
  - *demonstrate the ambition for achieving 100% above ground drainage through implementation of a range of SUDS measures from source control (e.g. green roofs) to large-scale attenuation storage;*
  - *provide justification and evidence where achieving 100% above ground drainage will not be feasible due to proposed densities, topography, ground conditions, or the location of development; demonstrate that drainage proposals are aligned with the forthcoming National SUDS Standards and will be accepted by Cambridgeshire County Council (as the new SUDS Approval Body); demonstrate that proposed SUDS measures will be integrated into the built environment to provide amenity and contribute to a network of open space, and; demonstrate that proposed SUDS measures will be used to enhance the local environment and biodiversity.*

  4.5.5 The planning authorities will be responsible for implementing the recommendations through the development of planning policies and determination of planning applications, although other technical stakeholders (e.g. the Environment Agency) will provide technical advice and scrutiny of planning applications to support the planning authorities.

  4.5.6 Development where vision for sustainable surface water management may not be achievable.

  4.5.7 Overall, the evidence base supports a local policy approach which aims for 100% above ground drainage for future developments, and using SUDS to create or enhance amenity and biodiversity and contribute to the provision of green infrastructure. However, it is recognised that there are a number of site-by-site circumstances which may make it difficult to achieve the aspiration with regards to surface water management.
  - *High water table – a high water table may preclude the use of above ground drainage, as was the case at the Orchard Park development. In such cases, the planning*

application must provide evidence that above ground drainage is not possible and provide a strategy which ensure surface water runoff to the receiving watercourse is greenfield equivalent (on greenfield sites) or at a reduced rate (on brownfield sites). In some locations with a high water table it may be possible to utilise SUDS at a shallow depth, although it must be noted that this could increase the potential land take required for drainage.

- *Topography – where there is insufficient gradient to drain surface water and the potential to infiltrate surface water is poor, it may be necessary to utilise underground drainage to ensure surface water is effectively drained away from domestic and non-domestic dwellings.*

- Environmental Water Quality – taken from Section 5.4 of the Phase 2 WCS
  The Phase 2 WCS has also set out the evidence base (from the CIRIA SUS Manual) to ensure surface and ground waters are adequately protected from polluted surface water runoff, including;

  - *ensuring a sufficient number of treatment stages are provided depending on the source of surface water runoff:*
  - *roofs only – 1 treatment stage;*
    residential roads, parking areas, commercial zones – 2 treatment stages;
    refuse collection/industrial areas/loading bays/lorry parks/highways – 3 treatment stages;
  - *ensuring that typical pollutants which are generated in the urban environment are considered and treated through SUDS approaches.*

- Wastewater Infrastructure – the WCS has made an assessment of treatment capacity available for the proposed new development in the Cambridge area including the potential impacts on flood risk and river quality downstream of the Cambridge WwTW. No significant increase was predicted to flood risk as a result of increases in treated flows. There are two sources of potential pollution to receiving watercourses as a result of increases in discharges to treatment works. These are:

  - Increase in final treated discharge load
  - Increase in intermittent discharges from combined sewer overflows (CSOs), pumping stations and storm tanks at WwTW.

  In the foreseeable future, consent limits will be set with a view to meeting the requirements of the Water Framework Directive (WFD) whose aim is to ensure that good river quality standards are met throughout each waterbody. The intention will be to set the discharge consent limits based upon the quality and volume of the receiving watercourse and the volume of wastewater effluent at the point of discharge. To maintain water quality in the watercourses, the consent standards in the future on the effluent discharges from the Cambridge WwTW will need to be periodically reviewed by the EA. Improvements to the treatment works will be required as the new developments come on stream to maintain the current discharge consent standards. This has been accepted by Anglian Water and planned for in their future AMP6 programme.

- Ecological Assessment – taken from Section 7.6 of the Phase 2 WCS

  7.6.2 This assessment has followed DCLG guidance on HRA. Coarse screening has identified three European sites with the potential to be affected by hypothetical water management changes associated with proposed new developments around Cambridge. One of these (Wicken Fen Ramsar site) was discounted at the coarse screening stage since its hydrology cannot be affected by any of the proposed developments. The others (Breckland SAC and SPA and Ouse Washes SAC and Ramsar site) were discounted at the

more detailed screening stage as it has been determined that the proposals will not have any discernible effect on their hydrology or water quality.

7.6.3 Thus, it can be concluded that No Significant Effect would result from implementing the proposals and projections that are identified in the Cambridge WCS, noting that this assessment has only considered water environment consequences.

Level 1 Strategic Flood Risk Assessment (Sept 2010)

A Level 1 Strategic Flood Risk Assessment (SFRA) of the district has been completed on behalf of South Cambridgeshire District Council and Cambridge City Council by consultants, and endorsed by the Environment Agency. The study assessed the flood risk from all types of flooding in the district, taking into account the existing climate and predicted changes in the climate. The principal aim of the study was to set out flood risk constraints to help inform the preparation of the Local Development Framework (LDF) documents. The study area has been categorised into Flood Risk Zones in accordance with Planning Policy Statement 25: 'Development and Flood Risk' (PPS25). The Study replaces the previous SFRA carried out in 2005.

The SFRA is essentially a planning tool. It is an assessment of flood risk from all sources intended to inform the spatial planning process and, therefore, the level of detail and accuracy should relate to this strategic objective. The SFRA will help to steer future land use in a sequential and holistic manner, taking into consideration sustainability and the requirements of PPS25 (Development & Flood Risk).

The SFRA considers all potential sources of flood risk within the administrative area and indicates that no historical flooding has been identified at the Application Site; this would indicate that the Application site would be expected almost entirely to be located within Flood Zone 1.

Catchment Abstraction Management Strategy

Catchment Abstraction Management Strategies (CAMS) are developed by the Environment Agency to manage water resources at a local level. Through consultation with stakeholders and data acquisition within a CAMS area the documents present the current status of groundwater and outline a future framework for water use. CAMS incorporate a resource assessment that identifies how much water is available, known as the 'resource availability status', and where it is located.

The Application Site falls within the Cam and Ely Ouse Catchment Abstraction Management Strategy[5] area which has identified the Washpit Brook as within the Old West River and Old West Level Dependent Management Unit (LDMU). The area has a current water resource availability status of 'No Water Available'. The target status of the area for 2013 and indeed up to 2019 is 'No Water Available'.

Catchment Flood Management Plan

Catchment Flood Management Plans (CFMPs) are developed by the Environment Agency on river catchments in the UK. Their aim is to understand the factors that contribute to flood risk within a catchment and to develop sustainable policies on the best ways to manage flood risk within the catchment over the next 50 – 100 years.

The Application Site lies within the Great Ouse CFMP which is divided up into 25 different Policy Units. For each Policy unit the EA have defined a specific policy for managing flood risk. There are six Policy Options one of which is chosen for each Policy Unit. Policy Unit 20 (Cambridge) includes the area of the Application Site. Policy 5, which is to '*take further action to reduce flood risk (now and/or in the future)*', was chosen by the EA for this Unit. This reflects the EA's concerns that there are high numbers of people and property in Cambridge at risk of flooding now and in the future with increased development and the impact of climate change. Policy 6 will allow present actions to control flood risk to be continued (channel maintenance and flood warning) and enhanced (the creation of new flood defences).

[5] Cam & Ely Ouse Catchment Abstraction Management Strategy, Environment Agency (March 2007)

Cambridge and Milton Surface Water Management Plan

A SWMP outlines the preferred long-term strategy for the management of surface water flooding in high risk identified areas and is undertaken in consultation with local partners having responsibility for surface water management and drainage in that area. The goal of a surface water management plan is to establish a long-term action plan and to influence the future strategy of development for maintenance, investment and planning.

The Cambridge and Milton Surface Water Management Plan (SWMP) assesses the risk posed by surface water flooding within the study area by firstly identifying the areas with the highest risk of surface water flooding by comparing the modelling predictions with the historical database. This resulted in a list of eleven wetspots, which were then scored using a multi criteria analysis (MCA) method by which the impact of flooding on a wide range of receptors could be evaluated. MCA allows for the comparison of severity of flooding between geographical regions based on the perceived value of buildings. The eleven wetspots ranked in order of worst affected first after the MCA are:

1. King's Hedges and Arbury
2. Cherry Hinton (North and South)
3. North Chesterton
4. Bin Brook
5. South Chesterton
6. Milton
7. Castle School area
8. Cambridge Historic City Centre
9. Cherry Hinton Village
10. Vicar's Brook
11. Coldham's Common

The top two wetspots identified were then subjected to further more detailed computer model development and engineering options were devised. Theoretical engineering measures to reduce the surface water flood risk were introduced into the models of each wetspot. Based on national guidance and best practice, open spaces within the existing urban environment were identified as potential areas where attenuation features could be utilised. These attenuation features could be basins, ponds, wetlands, swales etc. Measures such as permeable paving and rain gardens were also identified as potential ways of controlling the surface water and reducing flood risk.

The eastern portion of the Application Site extends into the Bin Brook wetspot within which there are properties with a medium risk of flooding adjacent to the northern and eastern site boundary. However, the Bin Brook is not one of the top two wetspots identified; therefore the SWMP does not contain any prescriptive requirements for the management of surface water generated by the Proposed Development.

Other Relevant Policy, Strategy and Guidance

Pollution Prevention Guidance (PPG)

The Environment Agency produces Pollution Prevention Guidelines (PPGs) targeted at a particular industrial sector or activity giving advice on the law and good environmental practice. The following guidance notes are considered relevant to the Proposed Development:

- PPG1 – General Guide to the Prevention of Pollution (Sustainable Development);
- PPG2 – Above Ground Oil Storage (2004);
- PPG5 – Works in, near or liable to affect watercourses;
- PPG6 – Working at construction and demolition sitesi; and
- PPG13 – Vehicle washing and cleaning.

Sustainable Drainage Design and Adoption Guide

Cambridge City Council has produced the Cambridge Sustainable Drainage Design and Adoption Guide which promotes the use of sustainable drainage systems (SUDS) within Cambridge. The council has taken

the decision to adopt SUDS that are located within public open space and this document sets out their requirements for:

- Landscape vision for SUDS
- Legislation
- Principles of adoption
- Ponds and wetlands
- Retention and infiltration basins
- Swales and filter strips
- Filter drains
- Canals, rills and other channel systems
- SUDS features in private ownership
- Inlets, outlets and controls
- Waste management and other environmental issues
- Adoption requirements

APPENDIX B – FRA EXTRACTS

CATCHMENT AREA ZONE 1

TOTAL AREA 7.15ha
HIGHWAY AREA 1.02 ha
ROOF AREA 1.12ha
OTHER PAVED DEVELOPMENT AREA 1.49 ha

STORAGE REQUIREMENTS ZONE 1			
RETURN PERIOD (YEARS)	1	30	100 + CC
PERMITTED DISCHARGE RATES (l/sec)	10.45	28.83	42.73
ATTENUATED STORAGE (m^3)	551	1398	1966
LONG TERM STORAGE (m^3)	-	-	115
TOTAL STORAGE (m^3)	551	1398	2081

CATCHMENT AREA ZONE 2

TOTAL AREA 5.52 ha
HIGHWAY AREA 0.69 ha
ROOF AREA 1.01 ha
OTHER PAVED DEVELOPMENT AREA 1.1 ha

STORAGE REQUIREMENTS ZONE 2			
RETURN PERIOD (YEARS)	1	30	100 + CC
PERMITTED DISCHARGE RATES (l/sec)	7.11	19.06	29.07
ATTENUATED STORAGE (m^3)	438	1101	1550
LONG TERM STORAGE (m^3)	-	-	159
TOTAL STORAGE (m^3)	438	1101	1709

CATCHMENT AREA ZONE 3

TOTAL AREA 11.47 ha
HIGHWAY AREA 1.47 ha
ROOF AREA 3.25 ha
OTHER PAVED DEVELOPMENT AREA 2.60 ha

STORAGE REQUIREMENTS ZONE 3			
RETURN PERIOD (YEARS)	1	30	100 + CC
PERMITTED DISCHARGE RATES (l/sec)	16.89	46.57	69.05
ATTENUATED STORAGE (m^3)	1286	3107	4508
LONG TERM STORAGE (m^3)	-	-	1284
TOTAL STORAGE (m^3)	1286	3107	5792

CATCHMENT AREA ZONE 5

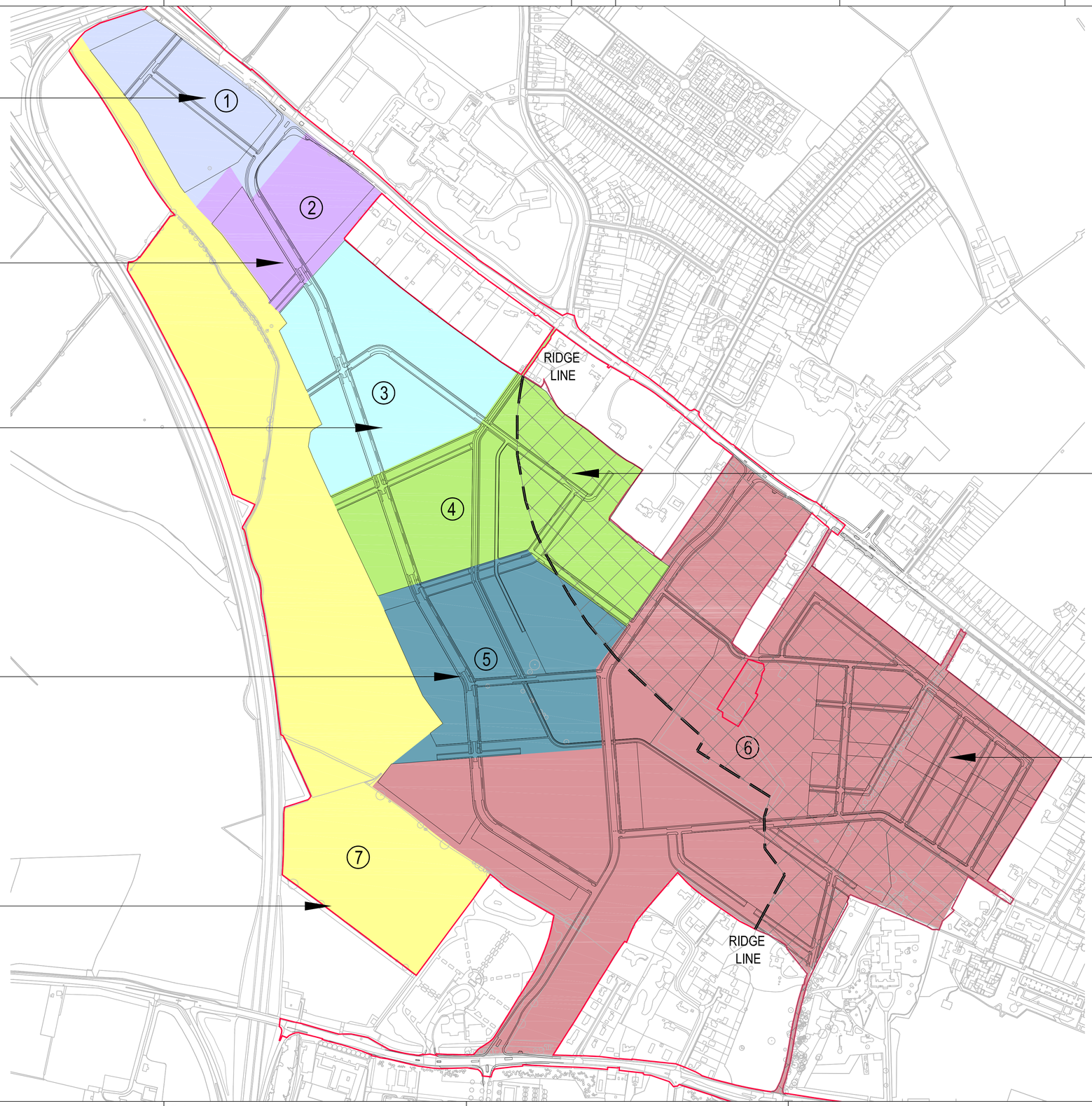
TOTAL AREA 12.43 ha
HIGHWAY AREA 3.17 ha
ROOF AREA 2.81 ha
OTHER PAVED DEVELOPMENT AREA 2.87 ha

STORAGE REQUIREMENTS ZONE 5			
RETURN PERIOD (YEARS)	1	30	100 + CC
TOTAL PERMITTED DISCHARGE RATES (l/sec)	24.8	68.3	101.3
NORTH OF RIDGE LINE			
PERMITTED DISCHARGE RATES (l/sec)	0.59	0.59	0.59
LONG TERM STORAGE (m^3)	64	158	287
SOUTH OF RIDGE LINE			
PERMITTED DISCHARGE RATES (l/sec)	24.2	67.7	100.7
ATTENUATED STORAGE (m^3)	1678	3345	5768
LONG TERM STORAGE (m^3)	-	-	1463
TOTAL STORAGE (m^3)	1742	3503	7518

CATCHMENT AREA ZONE 7

TOTAL AREA 31.65 ha
HIGHWAY AREA 0.00 ha
ROOF AREA 0.00 ha
OTHER PAVED DEVELOPMENT AREA 0.00 ha

STORAGE REQUIREMENTS ZONE 7			
RETURN PERIOD (YEARS)	1	30	100
PERMITTED DISCAHARGE RATES (l/sec)	0	0	0
ATTENUATED STORAGE (m^3)	0	0	0
LONG TERM STORAGE (m^3)	0	0	0
TOTAL STORAGE (m^3)	0	0	0



CATCHMENT AREA ZONE 4

TOTAL AREA 14.70 ha
HIGHWAY AREA 3.15 ha
ROOF AREA 3.36 ha
OTHER PAVED DEVELOPMENT AREA 2.84 ha

STORAGE REQUIREMENTS ZONE 5			
RETURN PERIOD (YEARS)	1	30	100 + CC
TOTAL PERMITTED DISCHARGE RATES (l/sec)	15.2	42.2	62.5
NORTH OF RIDGE LINE			
PERMITTED DISCHARGE RATES (l/sec)	5.57	5.57	5.57
LONG TERM STORAGE (m^3)	655	1602	2903
SOUTH OF RIDGE LINE			
PERMITTED DISCHARGE RATES (l/sec)	9.71	36.59	56.93
ATTENUATED STORAGE (m^3)	1233	2214	3767
LONG TERM STORAGE (m^3)	-	-	1267
TOTAL STORAGE (m^3)	1888	3816	7937

CATCHMENT AREA ZONE 6

TOTAL AREA 58.91 ha
HIGHWAY AREA 9.22 ha
ROOF AREA 7.93 ha
OTHER PAVED DEVELOPMENT AREA 6.66 ha

STORAGE REQUIREMENTS ZONE 5			
RETURN PERIOD (YEARS)	1	30	100 + CC
TOTAL PERMITTED DISCHARGE RATES (l/sec)	28.1	77.7	115.2
NORTH OF RIDGE LINE			
PERMITTED DISCHARGE RATES (l/sec)	19.70	19.70	19.70
LONG TERM STORAGE (m^3)	2904	7010	12612
SOUTH OF RIDGE LINE			
PERMITTED DISCHARGE RATES (l/sec)	8.47	58.02	95.50
ATTENUATED STORAGE (m^3)	2465	3675	6172
LONG TERM STORAGE (m^3)	-	-	744
TOTAL STORAGE (m^3)	5369	10685	19528

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX
NOTES: THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RISK REGISTER PRODUCED FOR INCLUSION IN THE HEALTH AND SAFETY PLAN. THE HAZARDS NOTED ARE IN ADDITION TO THE NORMAL HAZARDS AND RISKS FACED BY A COMPETENT CONTRACTOR WHEN DEALING WITH THE TYPE OF WORKS DETAILED ON THIS DRAWING.

CONSTRUCTION RISKS

MAINTENANCE/ CLEANING RISK

DEMOLITION RISKS

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
2. ANY DISCREPANCIES IN DIMENSIONS OR DETAILS ON OR BETWEEN THESE DRAWINGS SHOULD BE DRAWN TO THE ATTENTION OF THE ARCHITECT AND / OR THE ENGINEER FOR CLARIFICATION.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. DO NOT SCALE THIS DRAWING.
5. DISCHARGES INTO WATERCOURSES ARE TO BE CONTROLLED TO GREENFIELD FLOW EQUIVALENT.
6. IT IS ASSUMED THAT ZONE 7 WILL NOT REQUIRE ATTENUATION AS THE ZONE DOES NOT HAVE ANY PROPOSED DEVELOPMENT AND THEREFORE SURFACE WATER RUN OFF WILL REMAIN AT A GREEN FIELD RATE.

KEY:

- APPLICATION SITE BOUNDARY
- CATCHMENT A
- CATCHMENT B
- CATCHMENT C
- CATCHMENT D
- CATCHMENT E
- CATCHMENT F
- CATCHMENT G
- AREA OF LAND WHERE RUNOFF FROM DEVELOPED AREAS SHALL BE LIMITED TO 2 L/S/HA FOR RAINFALL EVENTS WITH A RETURN PERIOD OF UP TO 100 YEARS INCLUDING CLIMATE CHANGE

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Revision Details	By / Check	Date	Suffix
E.A COMMENCT INCORPORATED	SH / JR	08.09.11	B
RED LINE BOUNDARY AND STORAGE ESTIMATE UPDATED	JDC / JR	02.02.11	A

Drawing Status: PRELIMINARY

Client: UNIVERSITY OF CAMBRIDGE

Job Title: NORTH WEST CAMBRIDGE

Drawing Title: PROPOSED SURFACE WATER STORAGE REQUIREMENTS

Scale at A1: 1:2500

Drawn	Approved		
PH	SES		
Stage 1 check	Stage 2 check	Originated	Date
RW	JR	SW BAS	OCT 10

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Drawing Number: D127313-500-102
Rev: B

Plot Date :
AutoCAD File Name :
DB1H

APPENDIX C – CALCULATIONS

Network 1									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
A01	1	2373	365	2008	50	1004	1369	58%	Big area so assumed some landscape.
A02	1	7246	1350	5896	50	2948	4298	59%	Residential area with gardens.
A03	1	6138	2573	3565	50	1782	4356	71%	Residential area with gardens.
A04	1	2039	730	1310	50	655	1385	68%	Market flats with assumed landscape.
A05	1	7994	1064	6930	50	3465	4529	57%	Market housing with assumed gardens.
A06	1	1680	672	1008	80	806	1478	88%	Market flats with assumed landscape.
A07	1	1320	550	770	50	385	935	71%	Residential with gardens.
A08	1	7068	3310	3758	50	1879	5189	73%	Residential.
A09	1	1680	672	1008	80	806	1478	88%	Market flats with assumed landscape.
A10	1	1320	550	770	50	385	935	71%	Residential with gardens.
A11	1	5506	2403	3103	50	1551	3955	72%	Residential houses with gardens.
A12	1	1652	672	980	80	784	1456	88%	Market flats with assumed landscape.
A13	1	1298	550	748	50	374	924	71%	Residential with gardens.
A14	1	3140	1553	1587	50	793	2346	75%	Key worker residential with gardens.
A15	1	784	617	167	100	167	784	100%	Community centre & Key worker flats.
A16	1	1126	492	634	80	507	999	89%	Market flats with assumed landscape.
A17	1	797	350	447	50	223	573	72%	Residential with gardens.
A18	1	11560	1568	9992	50	4996	6564	57%	Residential houses with gardens.
A19	1	6116	3508	2608	50	1304	4812	79%	Market mixed houses with gardens.
A20	1	5486	2490	2996	50	1498	3988	73%	Key worker mixed houses with gardens.
A21	1	3745	1513	2232	50	1116	2629	70%	Market mixed houses with gardens.
A22	1	5425	2963	2462	50	1231	4194	77%	Market mixed houses with gardens.
A23	1	5731	2540	3191	50	1595	4135	72%	Key worker mixed houses with gardens.
A24	1	6047	2055	3992	50	1996	4051	67%	Market mixed houses with gardens.
A25	1	5656	728	4928	50	2464	3192	56%	Market detached houses with gardens.
A26a+b	1	12618	4404	8214	50	4107	8511	67%	Residential area with gardens.
A27	1	6873	3199	3674	80	2939	6138	89%	Academic research.
A28	1	19979	6947	13032	80	10425	17373	87%	Academic research.
A29	1	10659	3741	6918	80	5535	9275	87%	Academic research.
A30	1	2011	808	1203	80	963	1771	88%	Academic research.
B05	1	28866	5572	23293	10	2329	7902	27%	Playing fields.
B06	1	1980	1078	902	100	902	1980	100%	Local community centre.
B10a+b	1	17097	7558	9539	65	6200	13758	80%	Landscape assumed in middle of plot and maybe gardens for student housing.
B11b	1	4374	2008	2366	73	1723	3731	85%	Keyworker flats so no landscape.
B11c+d	1	4780	3511	1269	85	1080	4590	96%	Residential with landscape in middle.
B14	1	5947	2953	2994	100	2994	5947	100%	Food Store.
B15a+b	1	1325	1170	155	100	155	1325	100%	Energy centre.
B16	1	877	727	150	100	150	877	100%	Residential and retail area.
B17	1	2479	2323	156	65	101	2425	98%	Residential Area with small landscape.
B18	1	5097	2383	2714	78	2108	4491	88%	Residential with landscape in middle.
B19	1	1276	845	431	50	216	1061	83%	University market flat.
B20	1	4066	2191	1875	100	1875	4066	100%	Local community centre and residential.
B21	1	4342	2044	2298	100	2298	4342	100%	Unsure - assume all impermeable.
C05	1	11233	4356	6877	50	3438	7795	69%	Residential houses with gardens.
C06	1	10568	4190	6378	50	3189	7379	70%	Residential houses with gardens.
G01	1	650	0	650	0	0	0	0%	Grass area
G02	1	1250	0	1250	0	0	0	0%	Grass area
G03	1	1809	0	1809	0	0	0	0%	Grass area
G04	1	1425	0	1425	0	0	0	0%	Grass area
G05	1	1425	0	1425	0	0	0	0%	Grass area
G06	1	2536	0	2536	0	0	0	0%	Grass area
G07	1	629	0	629	0	0	0	0%	Grass area
G08	1	4616	0	4616	0	0	0	0%	Grass area
G09	1	844	0	844	0	0	0	0%	Grass area
G10	1	714	0	714	0	0	0	0%	Grass area
G11	1	2039	0	2039	0	0	0	0%	Grass area
G12	1	9917	0	9917	0	0	0	0%	Grass area
G13	1	4603	0	4603	0	0	0	0%	Grass area
G24	1	281	0	281	0	0	0	0%	Grass area
G25	1	2319	0	2319	0	0	0	0%	Grass area
G29	1	738	0	738	0	0	0	0%	Grass area
G30	1	241	0	241	0	0	0	0%	Grass area
G(SSSI)	1	83566	0	83566	0	0	0	0%	Grass Area near SSSI
O1	1	9008	0	9008	100	9008	9008	100%	Open space
R01	1	5180	0	5180	100	5180	5180	100%	Road
R02	1	4709	0	4709	100	4709	4709	100%	Road
R03	1	4794	0	4794	100	4794	4794	100%	Road
R04	1	4059	0	4059	100	4059	4059	100%	Road
R05	1	4680	0	4680	100	4680	4680	100%	Road
R06	1	2023	0	2023	100	2023	2023	100%	Road
R07	1	4242	0	4242	100	4242	4242	100%	Road
R08	1	3197	0	3197	100	3197	3197	100%	Road

Network 1									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
R09	1	1689	0	1689	100	1689	1689	100%	Road
R10	1	4158	0	4158	100	4158	4158	100%	Road
R11	1	775	0	775	100	775	775	100%	Road
R12	1	775	0	775	100	775	775	100%	Road
R13	1	7029	0	7029	100	7029	7029	100%	Road
R14	1	5469	0	5469	100	5469	5469	100%	Road
R15	1	1305	0	1305	100	1305	1305	100%	Road
R16	1	1978	0	1978	100	1978	1978	100%	Road
R17	1	6545	0	6545	100	6545	6545	100%	Road
R18	1	17642	0	17642	100	17642	17642	100%	Road
R19	1	6530	0	6530	100	6530	6530	100%	Road
R20	1	9872	0	9872	100	9872	9872	100%	Road
R37	1	2949	0	2949	100	2949	2949	100%	Road
R50	1	245	0	245	100	245	245	100%	Road
R51	1	1504	0	1504	100	1504	1504	100%	Road

Network 2									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	Estimated Impermeable as % of open space	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
B01	2	7949	3518	4431	90	3988	7506	94%	Landscape assumed in middle of plot.
B03	2	5330	2509	2821	80	2257	4766	89%	Houses assumed to have gardens.
B07	2	3331	1241	2090	80	1672	2913	87%	Landscape assumed within plot.
B08	2	3467	2055	1412	80	1130	3185	92%	Senior care home some landscape would be suitable.
B09	2	9357	4188	5169	13	647	4835	52%	Student housing with pavement to get around lot.
B11a	2	5110	2045	3065	72	2202	4247	83%	Café and Accommodation office.
B12	2	1644	986	658	90	592	1579	96%	Landscape assumed in middle of plot.
B13	2	2690	1716	974	100	974	2690	100%	Hotel
C14	2	1507	1191	316	100	316	1507	100%	Keyworker flats so no landscape.
C15a+b	2	3683	2500	1183	27	316	2816	76%	Houses assumed to have gardens.
C16	2	4526	2478	2048	50	1024	3502	77%	Houses assumed to have gardens.
C17	2	1949	761	1188	70	831	1593	82%	Houses assumed to have gardens.
C18	2	4688	2765	1923	50	962	3726	79%	Houses assumed to have gardens.
C19	2	975	373	601	70	421	794	81%	Houses assumed to have gardens.
G14	2	2287	0	2287	0	0	0	0%	Grass area
G15	2	1062	0	1062	0	0	0	0%	Grass area
O2	2	3893	0	3893	100	3893	3893	100%	Open area
O3	2	1945	0	1945	100	1945	1945	100%	Open area
O4	2	2729	0	2729	100	2729	2729	100%	Open area
O5	2	2675	0	2675	100	2675	2675	100%	Open area
O6	2	1205	0	1205	100	1205	1205	100%	Open area
O7	2	1152	0	1152	100	1152	1152	100%	Open area
R21	2	2311	0	2311	100	2311	2311	100%	Road
R22	2	901	0	901	100	901	901	100%	Road
R23	2	3203	0	3203	100	3203	3203	100%	Road
R24	2	1856	0	1856	100	1856	1856	100%	Road
R25	2	3445	0	3445	100	3445	3445	100%	Road
R26	2	2940	0	2940	100	2940	2940	100%	Road
R29	2	8051	0	8051	100	8051	8051	100%	Road
R31	2	1855	0	1855	100	1855	1855	100%	Road

Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
B04	21	9841	5425	4416	60	2650	8074	82%	Students need pavement to walk.

Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
B02	22	7259	3539	3720	100	3720	7259	100%	Academic research so no landscape.

Network 3									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
C03	3	6664	1202	5462	50	2731	3933	59%	Houses assumed to have gardens.
C04	3	4576	617	3959	50	1980	2597	57%	Houses assumed to have gardens.
C09	3	2514	1500	1014	100	1014	2514	100%	Keyworker flats so no landscape.
C10	3	8424	3136	5288	30	1586	4722	56%	Houses assumed to have gardens.
C11	3	4582	1350	3232	30	970	2320	51%	Houses assumed to have gardens.
C12	3	4842	1876	2966	50	1483	3359	69%	Keyworker flat & houses with gardens.
C13	3	2369	1389	980	100	980	2369	100%	Keyworker flats so no landscape.
C22	3	7720	3691	4029	100	4029	7720	100%	Academic research so no landscape.
G16	3	1488	0	1488	0	0	0	0%	Grass area
G17	3	1023	0	1023	0	0	0	0%	Grass area
G18	3	650	0	650	0	0	0	0%	Grass area
G19	3	688	0	688	0	0	0	0%	Grass area
G20	3	3395	0	3395	0	0	0	0%	Grass area
O5	3	1051	0	1051	100	1051	1051	100%	Open Space
O8	3	2751	0	2751	100	2751	2751	100%	Open Space
R26	3	1241	0	1241	100	1241	1241	100%	Road
R27	3	1914	0	1914	100	1914	1914	100%	Road
R28	3	1252	0	1252	100	1252	1252	100%	Road
R29	3	663	0	663	100	663	663	100%	Road
R30	3	2287	0	2287	100	2287	2287	100%	Road
R32	3	2753	0	2753	100	2753	2753	100%	Road
R36	3	1475	0	1475	100	1475	1475	100%	Road

Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
C23	31	5531	2650	2880	100	2880	5531	100%	Commercial research so no landscape.

Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
R38	32	1058	0	1058	100	1058	1058	100%	Commercial research so no landscape.

Network 4									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
C01	4	6853	1486	5367	70	3757	5243	77%	Market mixed houses with gardens.
C02	4	8682	1556	7126	80	5701	7257	84%	Market semi-detached houses with gardens.
C7a	4	1360	793	567	100	567	1360	100%	Key worker flats with no gardens.
C7b	4	2346	1393	952	100	952	2346	100%	Key worker flats with no gardens.
C08	4	4711	1206	3505	50	1752	2959	63%	Key worker semi-detached with gardens.
C20	4	9526	3922	5605	80	4484	8405	88%	Key worker housing with gardens.
C21	4	6311	2667	3644	80	2915	5582	88%	Community centre and Key worker housing.
C24	4	7038	3471	3567	100	3567	7038	100%	Commercial research space.
D11a	4	13953	5392	8561	80	6849	12241	88%	Student housing with gardens.
R32	4	3166	0	3166	100	3166	3166	100%	Road associated with network 4.
R33	4	1808	0	1808	100	1808	1808	100%	Road associated with network 4.
R34	4	936	0	936	100	936	936	100%	Road associated with network 4.
R35	4	3833	0	3833	100	3833	3833	100%	Road associated with network 4.
R36	4	3164	0	3164	100	3164	3164	100%	Road associated with network 4.
R39	4	1328	0	1328	100	1328	1328	100%	Road associated with network 4.
R48	4	2104	0	2104	100	2104	2104	100%	Road associated with network 4.
O8	4	5339	0	5339	100	5339	5339	100%	Open space associated with network 4.
O11	4	2042	0	2042	100	2042	2042	100%	Open space associated with network 4.
G21	4	480	0	480	0	0	0	0%	Grass area
G22	4	1604	0	1604	0	0	0	0%	Grass area
G23	4	3573	0	3573	0	0	0	0%	Grass area

Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
D13	41	13181	5593	7588	100	7588	13181	100%	Student housing.

Network 5									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
D07	5	23198	4209	18989	80	15191	19400	84%	Mixed market housing with gardens.
D08	5	7219	1370	5849	80	4679	6049	84%	Mixed market housing with gardens.
D09	5	7781	1364	6417	80	5134	6498	84%	Mixed market housing with gardens.
D10	5	7478	1668	5810	80	4648	6316	84%	Market mixed houses with gardens.
D11b	5	9804	4092	5712	100	5712	9804	100%	Commercial research.
D12	5	4624	1973	2651	80	2121	4094	89%	Student housing with gardens.
R35	5	1610	0	1610	100	1610	1610	100%	Road associated with network 5.
R40	5	9142	0	9142	100	9142	9142	100%	Road associated with network 5.
R42	5	3415	0	3415	100	3415	3415	100%	Road associated with network 5.
R52	5	850	0	850	100	850	850	100%	Road associated with network 5.
G31	5	860	0	860	0	0	0	0%	Grass area

Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
D14	51	5323	2266	3057	80	2446	4712	89%	Student housing with some landscape.

Network 6									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
R42	6	768	0	768	100	768	768	100%	Road associated with network 6.
R44	6	2485	0	2485	100	2485	2485	100%	Road associated with network 6.
R53	6	850	0	850	100	850	850	100%	Road associated with network 6.
G26	6	1286	0	0	0	0	0	0%	Grass Area
G27	6	2283	0	0	0	0	0	0%	Grass Area

Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
D4a	62	7445	3211	4233	80	3387	6598	89%	Commercial research.
D4b	61	4685	1985	2700	90	2430	4415	94%	Commercial research.

Network 7									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
D05	7	5362	1296	4066	100	4066	5362	100%	Market Flats.
D06	7	24841	5412	19429	80	15543	20955	84%	Market mixed houses with gardens.
R43	7	1197	0	1197	100	1197	1197	100%	Road associated with network 7.
R44	7	6304	0	6304	100	6304	6304	100%	Road associated with network 7.
G28	7	6530	0	0	0	0	0	0%	Grass Area

Network 8									
Plot	Network	Plot Area (m^2)	Roof Area (m^2)	Open Space (m^2)	% of open space to be impermeable	Additional impermeable area (m^2)	Total impermeable (m^2)	Total Impermeable as % of Plot	Reason
D01	8	10019	2792	7228	100	7228	10019	100%	CHP
D02	8	17228	3369	13859	90	12473	15842	92%	Commercial research.
D03	8	20298	4310	15988	90	14389	18699	92%	Commercial research.
R43	8	5793	0	5793	100	5793	5793	100%	Road

URS

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

	Plot	A1	A2(A)	A2(B)	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22
	Gravel/Chalk	2,373	5,772	1,474	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320	5,506	556	1,147	3,140	705	0	0	11,560	6,116	5,486	3,745	5,425
	Clay	0	0	0	0	0	0	0	0	0	0	0	0	1,096	151	0	79	1,126	797	0	0	0	0	0
	Gravel Area in restricted discharge	2,373	5,772	1,474	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320	5,506	556	1,147	3,140	705			11,560	6,116	5,486	3,745	5,425
	Clay Area in restricted discharge													1,096	151		79	1,126	797					
	Restricted discharge area	2,373	5,772	1,474	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320	5,506	1,652	1,298	3,140	784	1,126	797	11,560	6,116	5,486	3,745	5,425
	Total Area (sq.m)	2,373	5,772	1,474	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320	5,506	1,652	1,298	3,140	784	1,126	797	11,560	6,116	5,486	3,745	5,425
Rates (l/s)	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 yr	Restricted Gravel	0.28	0.69	0.18	0.74	0.24	0.96	0.20	0.16	0.85	0.20	0.16	0.66	0.07	0.14	0.38	0.08	0.00	0.00	1.39	0.73	0.66	0.45	0.65
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.03	0.00	0.02	0.23	0.16	0.00	0.00	0.00	0.00	0.00
	Total	0.28	0.69	0.18	0.74	0.24	0.96	0.20	0.16	0.85	0.20	0.16	0.66	0.29	0.17	0.38	0.10	0.23	0.16	1.39	0.73	0.66	0.45	0.65
	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QBAR yr	Restricted Gravel	0.33	0.79	0.20	0.84	0.28	1.10	0.23	0.18	0.97	0.23	0.18	0.75	0.08	0.16	0.43	0.10	0.00	0.00	1.58	0.84	0.75	0.51	0.74
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.03	0.00	0.02	0.23	0.16	0.00	0.00	0.00	0.00	0.00
	Total	0.33	0.79	0.20	0.84	0.28	1.10	0.23	0.18	0.97	0.23	0.18	0.75	0.30	0.19	0.43	0.11	0.23	0.16	1.58	0.84	0.75	0.51	0.74
	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 yr	Restricted Gravel	0.47	1.15	0.29	1.23	0.41	1.60	0.34	0.26	1.41	0.34	0.26	1.10	0.11	0.23	0.63	0.14	0.00	0.00	2.31	1.22	1.10	0.75	1.09
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.03	0.00	0.02	0.23	0.16	0.00	0.00	0.00	0.00	0.00
	Total	0.47	1.15	0.29	1.23	0.41	1.60	0.34	0.26	1.41	0.34	0.26	1.10	0.33	0.26	0.63	0.16	0.23	0.16	2.31	1.22	1.10	0.75	1.09
	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100 yr	Restricted Gravel	0.47	1.15	0.29	1.23	0.41	1.60	0.34	0.26	1.41	0.34	0.26	1.10	0.11	0.23	0.63	0.14	0.00	0.00	2.31	1.22	1.10	0.75	1.09
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.03	0.00	0.02	0.23	0.16	0.00	0.00	0.00	0.00	0.00
	Total	0.47	1.15	0.29	1.23	0.41	1.60	0.34	0.26	1.41	0.34	0.26	1.10	0.33	0.26	0.63	0.16	0.23	0.16	2.31	1.22	1.10	0.75	1.09

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		Plot	A23	A24	A25	A26a	A26b	A27	A28	A29	A30	A32	A33	B1	B2	B3a	B3b	B4a+b	B5	B5(A)	B6	B7	B8	B9	B10
		Gravel/Chalk	5,731	6,047	5,656	2,470	9,464	0	2,294	10,659	2,011	4,747	6,476	0	0	1,090	0	0	7,512	17,091	0	510	3,429	0	0
		Clay	0	0	0	140	544	6,873	17,685	0	0	0	0	7,949	7,259	1,689	2,551	9,841	1,639	2,624	1,980	2,821	38	9,357	17,097
		Gravel Area in restricted discharge	5,731	6,047	5,656	2,470	9,464	0	0	10,659	2,011	4,747	6,476	0	0	0	0	0	3,280	16,935	0	0	0	0	0
		Clay Area in restricted discharge				140	544	6,873	678	0		0	0	0	0	0	0	0	0	1,144	0	0	0	0	0
		Restricted discharge area	5,731	6,047	5,656	2,610	10,008	6,873	678	10,659	2,011	4,747	6,476	0	0	0	0	0	3,280	18,079	0	0	0	0	0
		Total Area (sq.m)	5,731	6,047	5,656	2,610	10,008	6,873	19,979	10,659	2,011	4,747	6,476	7,949	7,259	2,779	2,551	9,841	9,151	19,715	1,980	3,331	3,467	9,357	17,097
Rates (l/s)	1 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.51	0.02	0.00	0.06	0.41	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	4.88	0.00	0.00	0.00	0.00	2.28	2.08	0.48	0.73	2.82	0.47	0.42	0.57	0.81	0.01	2.69	4.91
		Restricted Gravel	0.69	0.73	0.68	0.30	1.14	0.00	0.00	1.28	0.24	0.57	0.78	0.00	0.00	0.00	0.00	0.00	0.39	2.03	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.03	0.11	1.37	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
		Total	0.69	0.73	0.68	0.32	1.24	1.37	5.29	1.28	0.24	0.57	0.78	2.28	2.08	0.62	0.73	2.82	1.37	2.70	0.57	0.87	0.42	2.69	4.91
	QBAR yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.58	0.02	0.00	0.07	0.47	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	5.61	0.00	0.00	0.00	0.00	2.62	2.40	0.56	0.84	3.25	0.54	0.49	0.65	0.93	0.01	3.09	5.64
		Restricted Gravel	0.79	0.83	0.77	0.34	1.30	0.00	0.00	1.46	0.28	0.65	0.89	0.00	0.00	0.00	0.00	0.00	0.45	2.32	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.03	0.11	1.37	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
		Total	0.79	0.83	0.77	0.37	1.41	1.37	6.06	1.46	0.28	0.65	0.89	2.62	2.40	0.71	0.84	3.25	1.57	3.06	0.65	1.00	0.48	3.09	5.64
	30 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	1.40	0.05	0.00	0.17	1.13	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	13.47	0.00	0.00	0.00	0.00	6.30	5.75	1.34	2.02	7.79	1.30	1.17	1.57	2.23	0.03	7.41	13.54
		Restricted Gravel	1.15	1.21	1.13	0.49	1.89	0.00	0.00	2.13	0.40	0.95	1.30	0.00	0.00	0.00	0.00	0.00	0.66	3.39	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.03	0.11	1.37	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
		Total	1.15	1.21	1.13	0.52	2.00	1.37	14.36	2.13	0.40	0.95	1.30	6.30	5.75	1.70	2.02	7.79	3.35	4.84	1.57	2.40	1.16	7.41	13.54
	100 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	2.07	0.08	0.00	0.25	1.68	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	19.97	0.00	0.00	0.00	0.00	9.33	8.52	1.98	2.99	11.55	1.92	1.74	2.32	3.31	0.04	10.99	20.07
		Restricted Gravel	1.15	1.21	1.13	0.49	1.89	0.00	0.00	2.13	0.40	0.95	1.30	0.00	0.00	0.00	0.00	0.00	0.66	3.39	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.03	0.11	1.37	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
		Total	1.15	1.21	1.13	0.52	2.00	1.37	21.23	2.13	0.40	0.95	1.30	9.33	8.52	2.52	2.99	11.55	4.65	5.43	2.32	3.56	1.72	10.99	20.07

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

	Plot	B11a	B11b	B11c+d	B12	B13	B14	B15	B16	B17	B18	B19	B21	B20	C1	C2	C3	C4	C5	C6	C7a	C7b	C8	C9
	Gravel/Chalk	0	0	0	0	0	0	0	0	0	0	0	0	0	6,853	8,682	6,664	4,539	410	0	1,325	236	4,711	0
	Clay	5,110	4,374	4,780	1,644	2,690	5,947	1,325	877	2,479	5,097	1,276	4,342	4,066	0	0	0	37	10,823	10,568	35	2,110	0	2,514
	Gravel Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	0	0	0	4,849	8,682	6,664	4,539	410	0	0	0	347	0
	Clay Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	10,823	10,568	0	0	0	0
	Restricted discharge area	0	0	0	0	0	0	0	0	0	0	0	0	0	4,849	8,682	6,664	4,576	11,233	10,568	0	0	347	0
	Total Area (sq.m)	5,110	4,374	4,780	1,644	2,690	5,947	1,325	877	2,479	5,097	1,276	4,342	4,066	6,853	8,682	6,664	4,576	11,233	10,568	1,360	2,346	4,711	2,514
Rates (l/s) 1 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.16	0.03	0.52	0.00
	Clay	1.47	1.26	1.37	0.47	0.77	1.71	0.38	0.25	0.71	1.46	0.37	1.25	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.61	0.00	0.72
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	1.04	0.80	0.54	0.05	0.00	0.00	0.00	0.04	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	2.16	2.11	0.00	0.00	0.00	0.00
	Total	1.47	1.26	1.37	0.47	0.77	1.71	0.38	0.25	0.71	1.46	0.37	1.25	1.17	0.82	1.04	0.80	0.55	2.21	2.11	0.17	0.63	0.57	0.72
QBAR yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.18	0.03	0.60	0.00
	Clay	1.69	1.44	1.58	0.54	0.89	1.96	0.44	0.29	0.82	1.68	0.42	1.43	1.34	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.70	0.00	0.83
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	1.19	0.91	0.62	0.06	0.00	0.00	0.00	0.05	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	2.16	2.11	0.00	0.00	0.00	0.00
	Total	1.69	1.44	1.58	0.54	0.89	1.96	0.44	0.29	0.82	1.68	0.42	1.43	1.34	0.94	1.19	0.91	0.63	2.22	2.11	0.19	0.73	0.65	0.83
30 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.44	0.08	1.44	0.00
	Clay	4.05	3.46	3.79	1.30	2.13	4.71	1.05	0.69	1.96	4.04	1.01	3.44	3.22	0.00	0.00	0.00	0.00	0.00	0.00	0.03	1.67	0.00	1.99
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	1.74	1.33	0.91	0.08	0.00	0.00	0.00	0.07	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	2.16	2.11	0.00	0.00	0.00	0.00
	Total	4.05	3.46	3.79	1.30	2.13	4.71	1.05	0.69	1.96	4.04	1.01	3.44	3.22	1.63	1.74	1.33	0.92	2.25	2.11	0.47	1.75	1.51	1.99
100 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00	0.00	0.00	0.00	0.65	0.12	2.14	0.00
	Clay	6.00	5.14	5.61	1.93	3.16	6.98	1.56	1.03	2.91	5.98	1.50	5.10	4.77	0.00	0.00	0.00	0.00	0.00	0.00	0.04	2.48	0.00	2.95
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	1.74	1.33	0.91	0.08	0.00	0.00	0.00	0.07	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	2.16	2.11	0.00	0.00	0.00	0.00
	Total	6.00	5.14	5.61	1.93	3.16	6.98	1.56	1.03	2.91	5.98	1.50	5.10	4.77	1.95	1.74	1.33	0.92	2.25	2.11	0.69	2.59	2.21	2.95

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		Plot	C10 & C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	D1	D2	D3	D4	D5	D6	D7	D8	D9
		Gravel/Chalk	10,934	205	845	1,507	789	1,986	1,949	3,146	975	0	0	0	0	0	0	0	0	0	18	8,727	18,789	7,219	7,781
		Clay	2,072	4,637	1,524	0	2,894	2,540	0	1,542	0	9,526	6,311	7,720	5,531	7,038	10,019	17,228	20,298	12,130	5,344	16,114	4,409	0	0
		Gravel Area in restricted discharge	5,755	0	0	0	0	0	0	1,366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Clay Area in restricted discharge	0	0	0	0	214	948	0	1,480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Restricted discharge area	5,755	0	0	0	214	948	0	2,846	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total Area (sq.m)	13,006	4,842	2,369	1,507	3,683	4,526	1,949	4,688	975	9,526	6,311	7,720	5,531	7,038	10,019	17,228	20,298	12,130	5,362	24,841	23,198	7,219	7,781
Rates (l/s)	1 yr	Gravel/Chalk	0.62	0.02	0.10	0.18	0.09	0.24	0.23	0.21	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	2.25	0.87	0.93
		Clay	0.59	1.33	0.44	0.00	0.77	0.46	0.00	0.02	0.00	2.73	1.81	2.22	1.59	2.02	2.88	4.94	5.83	3.48	1.53	4.62	1.27	0.00	0.00
		Restricted Gravel	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.04	0.19	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	1.91	1.36	0.54	0.18	0.91	0.88	0.23	0.69	0.12	2.73	1.81	2.22	1.59	2.02	2.88	4.94	5.83	3.48	1.54	5.67	3.52	0.87	0.93
	QBAR yr	Gravel/Chalk	0.71	0.03	0.12	0.21	0.11	0.27	0.27	0.24	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	2.57	0.99	1.07
		Clay	0.68	1.53	0.50	0.00	0.88	0.53	0.00	0.02	0.00	3.14	2.08	2.55	1.83	2.32	3.31	5.69	6.70	4.00	1.76	5.32	1.45	0.00	0.00
		Restricted Gravel	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.04	0.19	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	2.18	1.56	0.62	0.21	1.04	0.99	0.27	0.75	0.13	3.14	2.08	2.55	1.83	2.32	3.31	5.69	6.70	4.00	1.77	6.51	4.03	0.99	1.07
	30 yr	Gravel/Chalk	1.71	0.07	0.28	0.50	0.26	0.66	0.64	0.59	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	2.88	6.20	2.38	2.57
		Clay	1.64	3.67	1.21	0.00	2.12	1.26	0.00	0.05	0.00	7.54	5.00	6.11	4.38	5.57	7.94	13.64	16.08	9.61	4.23	12.76	3.49	0.00	0.00
		Restricted Gravel	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.04	0.19	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	4.50	3.74	1.49	0.50	2.43	2.11	0.64	1.21	0.32	7.54	5.00	6.11	4.38	5.57	7.94	13.64	16.08	9.61	4.24	15.64	9.69	2.38	2.57
	100 yr	Gravel/Chalk	2.54	0.10	0.41	0.74	0.39	0.97	0.96	0.87	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	4.28	9.21	3.54	3.81
		Clay	2.43	5.44	1.79	0.00	3.15	1.87	0.00	0.07	0.00	11.18	7.41	9.06	6.49	8.26	11.76	20.23	23.83	14.24	6.27	18.92	5.18	0.00	0.00
		Restricted Gravel	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.04	0.19	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	6.12	5.54	2.20	0.74	3.58	3.03	0.96	1.51	0.48	11.18	7.41	9.06	6.49	8.26	11.76	20.23	23.83	14.24	6.28	23.19	14.38	3.54	3.81

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

	Plot	D10	D11a	D11b	D12	D13	D14	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17
	Gravel/Chalk	7,478	2,931	1,334	0	0	0	650	1,250	1,809	1,425	1,425	2,536	629	4,616	844	0	753	9,917	4,459	0	0	0	0
	Clay	0	11,022	8,470	4,624	13,181	5,323	0	0	0	0	0	0	0	0	0	714	1,286	0	144	2,287	1,062	1,488	1,023
	Gravel Area in restricted discharge	0	0	0	0	0	0	650	1,250	1,809	1,425	1,425	2,536	629	4,616	844	0	753	9,917	3,276	0	0	0	0
	Clay Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	528	1,286	0	144	0	0	0	0
	Restricted discharge area	0	0	0	0	0	0	650	1,250	1,809	1,425	1,425	2,536	629	4,616	844	528	2,039	9,917	3,420	0	0	0	0
	Total Area (sq.m)	7,478	13,953	9,804	4,624	13,181	5,323	650	1,250	1,809	1,425	1,425	2,536	629	4,616	844	714	2,039	9,917	4,603	2,287	1,062	1,488	1,023
Rates (l/s)	Gravel/Chalk	0.90	0.35	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
	Clay	0.00	3.16	2.43	1.33	3.78	1.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.66	0.30	0.43	0.29
1 yr	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.15	0.22	0.17	0.17	0.30	0.08	0.55	0.10	0.00	0.09	1.19	0.39	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.26	0.00	0.03	0.00	0.00	0.00	0.00
	Total	0.90	3.52	2.59	1.33	3.78	1.53	0.08	0.15	0.22	0.17	0.17	0.30	0.08	0.55	0.10	0.16	0.35	1.19	0.56	0.66	0.30	0.43	0.29
	Gravel/Chalk	1.02	0.40	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00
	Clay	0.00	3.64	2.80	1.53	4.35	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.75	0.35	0.49	0.34
QBAR yr	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.17	0.25	0.20	0.20	0.35	0.09	0.63	0.12	0.00	0.10	1.36	0.45	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.26	0.00	0.03	0.00	0.00	0.00	0.00
	Total	1.02	4.04	2.98	1.53	4.35	1.76	0.09	0.17	0.25	0.20	0.20	0.35	0.09	0.63	0.12	0.17	0.36	1.36	0.64	0.75	0.35	0.49	0.34
	Gravel/Chalk	2.47	0.97	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
	Clay	0.00	8.73	6.71	3.66	10.44	4.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	1.81	0.84	1.18	0.81
30 yr	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.36	0.29	0.29	0.51	0.13	0.92	0.17	0.00	0.15	1.98	0.66	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.26	0.00	0.03	0.00	0.00	0.00	0.00
	Total	2.47	9.70	7.15	3.66	10.44	4.22	0.13	0.25	0.36	0.29	0.29	0.51	0.13	0.92	0.17	0.25	0.41	1.98	1.07	1.81	0.84	1.18	0.81
	Gravel/Chalk	3.66	1.44	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00
	Clay	0.00	12.94	9.94	5.43	15.47	6.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	2.68	1.25	1.75	1.20
100 yr	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.36	0.29	0.29	0.51	0.13	0.92	0.17	0.00	0.15	1.98	0.66	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.26	0.00	0.03	0.00	0.00	0.00	0.00
	Total	3.66	14.38	10.60	5.43	15.47	6.25	0.13	0.25	0.36	0.29	0.29	0.51	0.13	0.92	0.17	0.32	0.41	1.98	1.26	2.68	1.25	1.75	1.20

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		Plot	G18	G19	G20	G21	G22	G23	G24	G25	G26	G27	G28	G29	G30	G31	G(SSSI)	O1	O2	O3	O4	O5	O6	O7	O8
		Gravel/Chalk	0	0	1,071	0	0	756	281	0	0	2,200	0	0	0	0	13,612	0	37	1,138	2,729	2,272	199	0	1,207
		Clay	650	688	2,324	480	1,604	2,817	0	2,319	2,136	83	6,530	738	241	860	69,595	9,008	3,856	807	0	1,454	1,006	1,152	6,883
		Gravel Area in restricted discharge	0	0	1,071	0	0	0	281	0	0	0	0	0	0	0	13,612	0	0	0	0	0	0	0	0
		Clay Area in restricted discharge	0	0	2,280	0	0	0	0	0	0	0	0	0	0	0	35,575	0	0	532	0	0	0	0	0
		Restricted discharge area	0	0	3,350	0	0	0	281	0	0	0	0	0	0	0	49,187	0	0	532	0	0	0	0	0
		Total Area (sq.m)	650	688	3,395	480	1,604	3,573	281	2,319	1,286	2,283	6,530	738	241	860	83,207	9,008	3,893	1,945	2,729	3,726	1,205	1,152	8,090
Rates (l/s)	1 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.33	0.27	0.02	0.00	0.14
		Clay	0.19	0.20	0.01	0.14	0.46	0.81	0.00	0.67	0.61	0.02	1.87	0.21	0.07	0.25	9.76	2.59	1.11	0.08	0.00	0.42	0.29	0.33	1.98
		Restricted Gravel	0.00	0.00	0.13	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.12	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00
		Total	0.19	0.20	0.60	0.14	0.46	0.90	0.03	0.67	0.61	0.29	1.87	0.21	0.07	0.25	18.51	2.59	1.11	0.32	0.33	0.69	0.31	0.33	2.12
	QBAR yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.16	0.37	0.31	0.03	0.00	0.17
		Clay	0.21	0.23	0.01	0.16	0.53	0.93	0.00	0.77	0.70	0.03	2.15	0.24	0.08	0.28	11.23	2.97	1.27	0.09	0.00	0.48	0.33	0.38	2.27
		Restricted Gravel	0.00	0.00	0.15	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.12	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00
		Total	0.21	0.23	0.62	0.16	0.53	1.03	0.04	0.77	0.70	0.33	2.15	0.24	0.08	0.28	20.21	2.97	1.28	0.35	0.37	0.79	0.36	0.38	2.44
	30 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.38	0.90	0.75	0.07	0.00	0.40
		Clay	0.51	0.54	0.04	0.38	1.27	2.23	0.00	1.84	1.69	0.07	5.17	0.58	0.19	0.68	26.94	7.13	3.05	0.22	0.00	1.15	0.80	0.91	5.45
		Restricted Gravel	0.00	0.00	0.21	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.12	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00
		Total	0.51	0.54	0.71	0.38	1.27	2.48	0.06	1.84	1.69	0.79	5.17	0.58	0.19	0.68	36.78	7.13	3.07	0.70	0.90	1.90	0.86	0.91	5.85
	100 yr	Gravel/Chalk	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.56	1.34	1.11	0.10	0.00	0.59
		Clay	0.76	0.81	0.05	0.56	1.88	3.31	0.00	2.72	2.51	0.10	7.67	0.87	0.28	1.01	39.94	10.58	4.53	0.32	0.00	1.71	1.18	1.35	8.08
		Restricted Gravel	0.00	0.00	0.21	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.12	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00
		Total	0.76	0.81	0.72	0.56	1.88	3.68	0.06	2.72	2.51	1.18	7.67	0.87	0.28	1.01	49.78	10.58	4.55	0.99	1.34	2.82	1.28	1.35	8.67

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		Plot	O11	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22
		Gravel/Chalk	2,042	5,180	4,709	4,794	4,059	4,680	2,023	4,242	3,197	1,689	3,712	775	33	1,800	3,673	1,305	1,637	0	4,898	0	0	0	0
		Clay	0	0	0	0	0	0	0	0	0	0	446	0	742	5,229	1,796	0	341	6,545	12,744	6,530	9,872	2,311	901
		Gravel Area in restricted discharge	55	5,180	4,709	4,794	4,059	4,680	2,023	4,242	3,197	1,689	3,712	775	33	1,800	3,672	1,305	1,638	0	1,791	0	0	0	0
		Clay Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	446	0	742	2,796	1,105	0	340	6,545	1,916	0	0	0	0
		Restricted discharge area	55	5,180	4,709	4,794	4,059	4,680	2,023	4,242	3,197	1,689	4,158	775	775	4,595	4,778	1,305	1,978	6,545	3,707	0	0	0	0
		Total Area (sq.m)	2,042	5,180	4,709	4,794	4,059	4,680	2,023	4,242	3,197	1,689	4,158	775	775	7,029	5,469	1,305	1,978	6,545	17,642	6,530	9,872	2,311	901
Rates (l/s)		Gravel/Chalk	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.20	0.00	0.00	0.00	3.11	1.87	2.83	0.66	0.26
	1 yr	Restricted Gravel	0.01	0.62	0.57	0.58	0.49	0.56	0.24	0.51	0.38	0.20	0.45	0.09	0.00	0.22	0.44	0.16	0.20	0.00	0.21	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.15	0.56	0.22	0.00	0.07	1.31	0.38	0.00	0.00	0.00	0.00
		Total	0.25	0.62	0.57	0.58	0.49	0.56	0.24	0.51	0.38	0.20	0.53	0.09	0.15	1.47	0.86	0.16	0.26	1.31	4.08	1.87	2.83	0.66	0.26
		Gravel/Chalk	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.23	0.00	0.00	0.00	3.57	2.15	3.26	0.76	0.30
	QBAR yr	Restricted Gravel	0.01	0.71	0.65	0.66	0.56	0.64	0.28	0.58	0.44	0.23	0.51	0.11	0.00	0.25	0.50	0.18	0.22	0.00	0.25	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.15	0.56	0.22	0.00	0.07	1.31	0.38	0.00	0.00	0.00	0.00
		Total	0.28	0.71	0.65	0.66	0.56	0.64	0.28	0.58	0.44	0.23	0.60	0.11	0.15	1.61	0.95	0.18	0.29	1.31	4.63	2.15	3.26	0.76	0.30
		Gravel/Chalk	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00	0.00	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93	0.55	0.00	0.00	0.00	8.58	5.17	7.82	1.83	0.71
	30 yr	Restricted Gravel	0.01	1.04	0.94	0.96	0.81	0.94	0.40	0.85	0.64	0.34	0.74	0.16	0.01	0.36	0.73	0.26	0.33	0.00	0.36	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.15	0.56	0.22	0.00	0.07	1.31	0.38	0.00	0.00	0.00	0.00
		Total	0.67	1.04	0.94	0.96	0.81	0.94	0.40	0.85	0.64	0.34	0.83	0.16	0.16	2.85	1.50	0.26	0.40	1.31	10.34	5.17	7.82	1.83	0.71
		Gravel/Chalk	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52	0.00	0.00	0.00	0.00
		Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	0.81	0.00	0.00	0.00	12.71	7.67	11.59	2.71	1.06
	100 yr	Restricted Gravel	0.01	1.04	0.94	0.96	0.81	0.94	0.40	0.85	0.64	0.34	0.74	0.16	0.01	0.36	0.73	0.26	0.33	0.00	0.36	0.00	0.00	0.00	0.00
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.15	0.56	0.22	0.00	0.07	1.31	0.38	0.00	0.00	0.00	0.00
		Total	0.98	1.04	0.94	0.96	0.81	0.94	0.40	0.85	0.64	0.34	0.83	0.16	0.16	3.78	1.77	0.26	0.40	1.31	14.98	7.67	11.59	2.71	1.06

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

	Plot	R23	R24	R25	R26	R27	R28	R29	R31	R30	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42	R43	R44	R45
	Gravel/Chalk	0	0	3,070	0	0	0	1,376	835	970	5,919	18	0	0	0	700	0	0	5,131	0	0	0	566	961
	Clay	3,203	1,856	375	4,181	1,914	1,252	7,338	1,020	1,317	0	1,790	936	5,443	4,639	2,249	1,058	1,328	4,012	835	4,183	6,990	8,223	2,910
	Gravel Area in restricted discharge	0	0	0	0	0	0	0	0	970	3,840	0	0	0	0	0	0	0	0	0	0	0	0	0
	Clay Area in restricted discharge	0	0	0	0	0	0	4,296	0	809	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Restricted discharge area	0	0	0	0	0	0	4,296	0	1,779	3,840	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Area (sq.m)	3,203	1,856	3,445	4,181	1,914	1,252	8,714	1,855	2,287	5,919	1,808	936	5,443	4,639	2,949	1,058	1,328	9,142	835	4,183	6,990	8,789	3,871
Rates (l/s) 1 yr	Gravel/Chalk	0.00	0.00	0.37	0.00	0.00	0.00	0.17	0.10	0.00	0.25	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.62	0.00	0.00	0.00	0.07	0.12
	Clay	0.92	0.53	0.11	1.20	0.55	0.36	0.87	0.29	0.15	0.00	0.51	0.27	1.56	1.33	0.65	0.30	0.38	1.15	0.24	1.20	2.01	2.36	0.84
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.92	0.53	0.48	1.20	0.55	0.36	1.90	0.39	0.42	0.71	0.52	0.27	1.56	1.33	0.73	0.30	0.38	1.77	0.24	1.20	2.01	2.43	0.95
QBAR yr	Gravel/Chalk	0.00	0.00	0.42	0.00	0.00	0.00	0.19	0.11	0.00	0.28	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.70	0.00	0.00	0.00	0.08	0.13
	Clay	1.06	0.61	0.12	1.38	0.63	0.41	1.00	0.34	0.17	0.00	0.59	0.31	1.80	1.53	0.74	0.35	0.44	1.32	0.28	1.38	2.31	2.71	0.96
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	1.06	0.61	0.54	1.38	0.63	0.41	2.05	0.45	0.46	0.81	0.59	0.31	1.80	1.53	0.84	0.35	0.44	2.03	0.28	1.38	2.31	2.79	1.09
30 yr	Gravel/Chalk	0.00	0.00	1.01	0.00	0.00	0.00	0.45	0.28	0.00	0.69	0.01	0.00	0.00	0.00	0.23	0.00	0.00	1.69	0.00	0.00	0.00	0.19	0.32
	Clay	2.54	1.47	0.30	3.31	1.52	0.99	2.41	0.81	0.40	0.00	1.42	0.74	4.31	3.67	1.78	0.84	1.05	3.18	0.66	3.31	5.54	6.51	2.30
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	2.54	1.47	1.31	3.31	1.52	0.99	3.72	1.08	0.76	1.45	1.42	0.74	4.31	3.67	2.01	0.84	1.05	4.87	0.66	3.31	5.54	6.70	2.62
100 yr	Gravel/Chalk	0.00	0.00	1.50	0.00	0.00	0.00	0.67	0.41	0.00	1.02	0.01	0.00	0.00	0.00	0.34	0.00	0.00	2.51	0.00	0.00	0.00	0.28	0.47
	Clay	3.76	2.18	0.44	4.91	2.25	1.47	3.57	1.20	0.60	0.00	2.10	1.10	6.39	5.45	2.64	1.24	1.56	4.71	0.98	4.91	8.21	9.65	3.42
	Restricted Gravel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Restricted Clay	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	3.76	2.18	1.94	4.91	2.25	1.47	5.10	1.61	0.95	1.79	2.11	1.10	6.39	5.45	2.98	1.24	1.56	7.22	0.98	4.91	8.21	9.93	3.89

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		Plot	R48	R50	R51	R52	R53	Total
		Gravel/Chalk	1,678	0	0	0	0	408,950
		Clay	426	245	1,504	850	850	584,546
		Gravel Area in restricted discharge	490	0	0	0	0	287,078
		Clay Area in restricted discharge	0	0	0	0	0	96,038
		Restricted discharge area	490	0	0	0	0	383,117
		Total Area (sq.m)	2,104	245	1,504	850	850	**992,647**
Rates (l/s)	1 yr	Gravel/Chalk	0.14	0.00	0.00	0.00	0.00	15
		Clay	0.12	0.07	0.43	0.24	0.24	140
		Restricted Gravel	0.06	0.00	0.00	0.00	0.00	34
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	19
		Total	0.32	0.07	0.43	0.24	0.24	**208.00**
	QBAR yr	Gravel/Chalk	0.16	0.00	0.00	0.00	0.00	17
		Clay	0.14	0.08	0.50	0.28	0.28	161
		Restricted Gravel	0.07	0.00	0.00	0.00	0.00	39
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	19
		Total	0.37	0.08	0.50	0.28	0.28	**235.88**
	30 yr	Gravel/Chalk	0.39	0.00	0.00	0.00	0.00	40
		Clay	0.34	0.19	1.19	0.67	0.67	386
		Restricted Gravel	0.10	0.00	0.00	0.00	0.00	57
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	19
		Total	0.83	0.19	1.19	0.67	0.67	**502.39**
	100 yr	Gravel/Chalk	0.58	0.00	0.00	0.00	0.00	60
		Clay	0.50	0.29	1.77	1.00	1.00	572
		Restricted Gravel	0.10	0.00	0.00	0.00	0.00	57
		Restricted Clay	0.00	0.00	0.00	0.00	0.00	19
		Total	1.18	0.29	1.77	1.00	1.00	**707.85**

Network 1														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
A01	2373	58	0.28	0.47	0.47	0.12	0.20	0.20	4.87	11.72	20.03	4.99	11.91	20.22
A02	7246	59	0.87	1.45	1.45	0.35	0.59	0.59	15.28	36.78	62.87	15.64	37.37	63.46
A03	6138	71	0.74	1.23	1.23	0.21	0.36	0.36	15.49	37.28	63.72	15.70	37.64	64.08
A04	2039	68	0.24	0.41	0.41	0.08	0.13	0.13	4.92	11.85	20.25	5.00	11.98	20.39
A05	7994	57	0.96	1.60	1.60	0.42	0.69	0.69	16.10	38.76	66.25	16.52	39.45	66.95
A06	1680	88	0.20	0.34	0.34	0.02	0.04	0.04	5.26	12.65	21.63	5.28	12.69	21.67
A07	1320	71	0.16	0.26	0.26	0.05	0.08	0.08	3.32	8.00	13.68	3.37	8.08	13.75
A08	7068	73	0.85	1.41	1.41	0.23	0.37	0.37	18.45	44.41	75.90	18.67	44.78	76.28
A09	1680	88	0.20	0.34	0.34	0.02	0.04	0.04	5.26	12.65	21.63	5.28	12.69	21.67
A10	1320	71	0.16	0.26	0.26	0.05	0.08	0.08	3.32	8.00	13.68	3.37	8.08	13.75
A11	5506	72	0.66	1.10	1.10	0.19	0.31	0.31	14.06	33.84	57.85	14.25	34.15	58.16
A12	1652	88	0.29	0.33	0.33	0.03	0.04	0.04	5.18	12.46	21.30	5.21	12.50	21.34
A13	1298	71	0.17	0.26	0.26	0.05	0.07	0.07	3.29	7.91	13.52	3.33	7.98	13.59
A14	3140	75	0.38	0.63	0.63	0.10	0.16	0.16	8.34	20.08	34.33	8.44	20.24	34.48
A15	784	100	0.10	0.16	0.16	0.00	0.00	0.00	2.79	6.71	11.47	2.79	6.71	11.47
A16	1126	89	0.23	0.23	0.23	0.03	0.03	0.03	3.55	8.55	14.61	3.58	8.58	14.64
A17	797	72	0.16	0.16	0.16	0.04	0.04	0.04	2.04	4.91	8.39	2.08	4.95	8.43
A18	11560	57	1.39	2.31	2.31	0.60	1.00	1.00	23.34	56.18	96.02	23.94	57.18	97.02
A19	6116	79	0.73	1.22	1.22	0.16	0.26	0.26	17.11	41.19	70.40	17.27	41.45	70.66
A20	5486	73	0.66	1.10	1.10	0.18	0.30	0.30	14.18	34.13	58.34	14.36	34.43	58.64
A21	3745	70	0.45	0.75	0.75	0.13	0.22	0.22	9.35	22.50	38.46	9.48	22.72	38.68
A22	5425	77	0.65	1.09	1.09	0.15	0.25	0.25	14.91	35.90	61.36	15.06	36.14	61.60
A23	5731	72	0.69	1.15	1.15	0.19	0.32	0.32	14.70	35.39	60.50	14.90	35.71	60.82
A24	6047	67	0.73	1.21	1.21	0.24	0.40	0.40	14.40	34.67	59.26	14.65	35.07	59.66
A25	5656	56	0.68	1.13	1.13	0.30	0.49	0.49	11.35	27.32	46.69	11.65	27.81	47.19
A26a+b	12618	67	1.57	2.52	2.52	0.51	0.82	0.82	30.26	72.84	124.51	30.77	73.66	125.33
A27	6873	89	1.37	1.37	1.37	0.15	0.15	0.15	21.82	52.53	89.79	21.97	52.68	89.93
A28	19979	87	5.29	14.36	21.23	0.69	1.87	2.77	61.77	148.68	254.14	62.46	150.56	256.91
A29	10659	87	1.28	2.13	2.13	0.17	0.28	0.28	32.98	79.38	135.68	33.14	79.66	135.96
A30	2011	88	0.24	0.40	0.40	0.03	0.05	0.05	6.30	15.15	25.90	6.32	15.20	25.95
B05	28866	27	4.08	8.19	10.08	2.96	5.95	7.32	28.09	67.62	115.59	31.06	73.57	122.91
B06	1980	100	0.57	1.57	2.32	0.00	0.00	0.00	7.04	16.95	28.96	7.04	16.95	28.96
B10a+b	17097	80	4.91	13.54	20.07	0.96	2.64	3.92	48.92	117.75	201.27	49.88	120.39	205.18
B11b	4374	85	1.26	3.46	5.14	0.19	0.51	0.76	13.26	31.93	54.57	13.45	32.44	55.33
B11c+d	4780	96	1.37	3.79	5.61	0.05	0.15	0.22	16.32	39.29	67.15	16.38	39.44	67.37
B14	5947	100	1.65	4.56	6.75	0.00	0.00	0.00	21.14	50.90	87.00	21.14	50.90	87.00
B15a+b	1325	100	0.38	1.05	1.56	0.00	0.00	0.00	4.71	11.34	19.38	4.71	11.34	19.38
B16	877	100	0.31	0.85	1.26	0.00	0.00	0.00	3.12	7.51	12.83	3.12	7.51	12.83
B17	2479	98	0.71	1.96	2.91	0.02	0.04	0.06	8.62	20.75	35.47	8.64	20.79	35.53
B18	5097	88	1.46	4.04	5.98	0.17	0.48	0.71	15.97	38.44	65.70	16.14	38.92	66.41
B19	1276	83	0.37	1.01	1.50	0.06	0.17	0.25	3.77	9.08	15.51	3.83	9.25	15.77
B20	4066	100	1.17	3.22	4.77	0.00	0.00	0.00	14.46	34.80	59.48	14.46	34.80	59.48
B21	4342	100	1.25	3.44	5.10	0.00	0.00	0.00	15.44	37.16	63.51	15.44	37.16	63.51
C05	11233	69	2.21	2.25	2.25	0.69	0.70	0.70	27.56	66.33	113.38	28.24	67.03	114.08
C06	10568	70	2.11	2.11	2.11	0.63	0.63	0.63	26.30	63.31	108.22	26.94	63.94	108.85
G01	650	0	0.08	0.13	0.13	0.08	0.13	0.13	0.00	0.00	0.00	0.08	0.13	0.13
G02	1250	0	0.15	0.25	0.25	0.15	0.25	0.25	0.00	0.00	0.00	0.15	0.25	0.25
G03	1809	0	0.22	0.36	0.36	0.22	0.36	0.36	0.00	0.00	0.00	0.22	0.36	0.36
G04	1425	0	0.17	0.29	0.29	0.17	0.29	0.29	0.00	0.00	0.00	0.17	0.29	0.29
G05	1425	0	0.17	0.29	0.29	0.17	0.29	0.29	0.00	0.00	0.00	0.17	0.29	0.29
G06	2536	0	0.30	0.51	0.51	0.30	0.51	0.51	0.00	0.00	0.00	0.30	0.51	0.51
G07	629	0	0.08	0.13	0.13	0.08	0.13	0.13	0.00	0.00	0.00	0.08	0.13	0.13
G08	4616	0	0.55	0.92	0.92	0.55	0.92	0.92	0.00	0.00	0.00	0.55	0.92	0.92
G09	844	0	0.10	0.17	0.17	0.10	0.17	0.17	0.00	0.00	0.00	0.10	0.17	0.17

Network 1														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
G10	714	0	0.16	0.25	0.32	0.16	0.25	0.32	0.00	0.00	0.00	0.16	0.25	0.32
G11	2039	0	0.35	0.41	0.41	0.35	0.41	0.41	0.00	0.00	0.00	0.35	0.41	0.41
G12	9917	0	1.19	1.98	1.98	1.19	1.98	1.98	0.00	0.00	0.00	1.19	1.98	1.98
G13	4603	0	0.56	1.07	1.26	0.56	1.07	1.26	0.00	0.00	0.00	0.56	1.07	1.26
G24	281	0	0.03	0.06	0.06	0.03	0.06	0.06	0.00	0.00	0.00	0.03	0.06	0.06
G25	2319	0	0.67	1.84	2.72	0.67	1.84	2.72	0.00	0.00	0.00	0.67	1.84	2.72
G29	738	0	0.21	0.58	0.87	0.21	0.58	0.87	0.00	0.00	0.00	0.21	0.58	0.87
G30	241	0	0.07	0.19	0.28	0.07	0.19	0.28	0.00	0.00	0.00	0.07	0.19	0.28
G(SSSI)	83566	0	18.51	36.78	49.78	18.51	36.78	49.78	0.00	0.00	0.00	18.51	36.78	49.78
O1	9008	100	2.59	7.13	10.58	0.00	0.00	0.00	32.03	77.09	131.77	32.03	77.09	131.77
R01	5180	100	0.62	1.04	1.04	0.00	0.00	0.00	18.42	44.33	75.78	18.42	44.33	75.78
R02	4709	100	0.57	0.94	0.94	0.00	0.00	0.00	16.74	40.30	68.89	16.74	40.30	68.89
R03	4794	100	0.58	0.96	0.96	0.00	0.00	0.00	17.05	41.03	70.13	17.05	41.03	70.13
R04	4059	100	0.49	0.81	0.81	0.00	0.00	0.00	14.43	34.74	59.38	14.43	34.74	59.38
R05	4680	100	0.56	0.94	0.94	0.00	0.00	0.00	16.64	40.05	68.46	16.64	40.05	68.46
R06	2023	100	0.24	0.40	0.40	0.00	0.00	0.00	7.19	17.31	29.59	7.19	17.31	29.59
R07	4242	100	0.51	0.85	0.85	0.00	0.00	0.00	15.08	36.30	62.05	15.08	36.30	62.05
R08	3197	100	0.38	0.64	0.64	0.00	0.00	0.00	11.37	27.36	46.77	11.37	27.36	46.77
R09	1689	100	0.20	0.34	0.34	0.00	0.00	0.00	6.01	14.46	24.71	6.01	14.46	24.71
R10	4158	100	0.53	0.83	0.83	0.00	0.00	0.00	14.78	35.59	60.83	14.78	35.59	60.83
R11	775	100	0.09	0.16	0.16	0.00	0.00	0.00	2.76	6.63	11.34	2.76	6.63	11.34
R12	775	100	0.15	0.16	0.16	0.00	0.00	0.00	2.76	6.63	11.34	2.76	6.63	11.34
R13	7029	100	1.47	2.85	3.78	0.00	0.00	0.00	24.99	60.16	102.82	24.99	60.16	102.82
R14	5469	100	0.86	1.50	1.77	0.00	0.00	0.00	19.45	46.81	80.00	19.45	46.81	80.00
R15	1305	100	0.16	0.26	0.26	0.00	0.00	0.00	4.64	11.17	19.09	4.64	11.17	19.09
R16	1978	100	0.26	0.40	0.40	0.00	0.00	0.00	7.03	16.93	28.94	7.03	16.93	28.94
R17	6545	100	1.31	1.31	1.31	0.00	0.00	0.00	23.27	56.01	95.74	23.27	56.01	95.74
R18	17642	100	4.08	10.34	14.98	0.00	0.00	0.00	62.73	150.99	258.08	62.73	150.99	258.08
R19	6530	100	1.87	5.17	7.67	0.00	0.00	0.00	23.22	55.89	95.52	23.22	55.89	95.52
R20	9872	100	2.83	7.82	11.59	0.00	0.00	0.00	35.10	84.49	144.41	35.10	84.49	144.41
R37	2949	100	0.73	2.01	2.98	0.00	0.00	0.00	10.49	25.24	43.14	10.49	25.24	43.14
R50	245	100	0.07	0.19	0.29	0.00	0.00	0.00	0.87	2.10	3.58	0.87	2.10	3.58
R51	1504	100	0.43	1.19	1.77	0.00	0.00	0.00	5.35	12.87	22.00	5.35	12.87	22.00
Total			**91**	**191**	**252**							**1086**	**2597**	**4410**

Network 2														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
B01	7949	94	2.28	6.30	9.33	0.14	0.38	0.56	26.57	63.95	109.31	26.70	64.33	109.87
B03	5330	89	1.35	3.72	5.51	0.15	0.41	0.61	16.87	40.60	69.39	17.01	41.01	70.00
B07	3331	87	0.87	2.40	3.56	0.11	0.31	0.46	10.30	24.80	42.39	10.42	25.11	42.86
B08	3467	92	0.42	1.16	1.72	0.03	0.09	0.14	11.34	27.30	46.66	11.37	27.39	46.80
B09	9357	52	2.69	7.41	10.99	1.29	3.56	5.28	17.30	41.64	71.18	18.59	45.20	76.45
B11a	5110	83	1.47	4.05	6.00	0.25	0.69	1.02	15.08	36.30	62.04	15.33	36.99	63.06
B12	1644	96	0.47	1.30	1.93	0.02	0.05	0.08	5.61	13.51	23.09	5.63	13.56	23.17
B13	2690	100	0.77	2.13	3.16	0.00	0.00	0.00	9.56	23.02	39.35	9.56	23.02	39.35
C14	1507	100	0.18	0.50	0.74	0.00	0.00	0.00	5.36	12.90	22.04	5.36	12.90	22.04
C15a+b	3683	76	0.91	2.43	3.58	0.22	0.58	0.86	9.95	23.95	40.94	10.17	24.54	41.80
C16	4526	77	0.88	2.11	3.03	0.20	0.49	0.70	12.39	29.83	50.98	12.59	30.31	51.68
C17	1949	82	0.23	0.64	0.96	0.04	0.12	0.17	5.68	13.68	23.38	5.72	13.79	23.55
C18	4688	79	0.69	1.21	1.51	0.14	0.25	0.32	13.17	31.70	54.18	13.31	31.95	54.49
C19	975	81	0.12	0.32	0.48	0.02	0.06	0.09	2.81	6.76	11.55	2.83	6.82	11.64
G14	2287	0	0.66	1.81	2.68	0.66	1.81	2.68	0.00	0.00	0.00	0.66	1.81	2.68
G15	1062	0	0.30	0.84	1.25	0.30	0.84	1.25	0.00	0.00	0.00	0.30	0.84	1.25

Network 2

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
O2	3893	100	1.11	3.07	4.55	0.00	0.00	0.00	13.84	33.32	56.95	13.84	33.32	56.95
O3	1945	100	0.32	0.70	0.99	0.00	0.00	0.00	6.92	16.65	28.45	6.92	16.65	28.45
O4	2729	100	0.33	0.90	1.34	0.00	0.00	0.00	9.70	23.36	39.92	9.70	23.36	39.92
O5	2675	100	0.39	1.07	1.59	0.00	0.00	0.00	9.51	22.89	39.13	9.51	22.89	39.13
O6	1205	100	0.31	0.86	1.28	0.00	0.00	0.00	4.28	10.31	17.63	4.28	10.31	17.63
O7	1152	100	0.33	0.91	1.35	0.00	0.00	0.00	4.10	9.86	16.85	4.10	9.86	16.85
R21	2311	100	0.66	1.83	2.71	0.00	0.00	0.00	8.22	19.78	33.81	8.22	19.78	33.81
R22	901	100	0.26	0.71	1.06	0.00	0.00	0.00	3.20	7.71	13.18	3.20	7.71	13.18
R23	3203	100	0.92	2.54	3.76	0.00	0.00	0.00	11.39	27.41	46.86	11.39	27.41	46.86
R24	1856	100	0.53	1.47	2.18	0.00	0.00	0.00	6.60	15.88	27.15	6.60	15.88	27.15
R25	3445	100	0.48	1.31	1.94	0.00	0.00	0.00	12.25	29.48	50.40	12.25	29.48	50.40
R26	2940	100	0.83	2.29	3.39	0.00	0.00	0.00	10.45	25.16	43.01	10.45	25.16	43.01
R29	8051	100	1.82	3.50	4.78	0.00	0.00	0.00	28.63	68.90	117.77	28.63	68.90	117.77
R31	1855	100	0.39	1.08	1.61	0.00	0.00	0.00	6.60	15.88	27.14	6.60	15.88	27.14

Network 21

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
B04	9,841	82	2.82	7.79	11.55	0.51	1.40	2.08	28.69	69.06	118.05	29.20	70.46	120.13

Network 22

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
B02	7259	100	2.08	5.75	8.52	0.00	0.00	0.00	25.81	62.12	106.19	25.81	62.12	106.19
Total			**28**	**74**	**109**							**356**	**859**	**1465**

Network 3

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
C03	6664	59	0.80	1.33	1.33	0.33	0.55	0.55	13.98	33.65	57.52	14.31	34.19	58.06
C04	4576	57	0.55	0.92	0.92	0.24	0.40	0.40	9.27	22.32	38.16	9.51	22.72	38.55
C09	2514	100	0.72	1.99	2.95	0.00	0.00	0.00	8.94	21.52	36.78	8.94	21.52	36.78
C10	8424	56	1.24	2.91	3.96	0.55	1.28	1.74	16.77	40.37	69.01	17.32	41.65	70.75
C11	4582	51	0.67	1.59	2.16	0.33	0.78	1.06	8.31	20.00	34.18	8.64	20.78	35.24
C12	4842	69	1.36	3.74	5.54	0.42	1.16	1.72	11.88	28.59	48.87	12.30	29.75	50.59
C13	2369	100	0.54	1.49	2.20	0.00	0.00	0.00	8.42	20.27	34.66	8.42	20.27	34.66
C22	7720	100	2.22	6.11	9.06	0.00	0.00	0.00	27.45	66.07	112.93	27.45	66.07	112.93
G16	1488	0	0.43	1.18	1.75	0.43	1.18	1.75	0.00	0.00	0.00	0.43	1.18	1.75
G17	1023	0	0.29	0.81	1.20	0.29	0.81	1.20	0.00	0.00	0.00	0.29	0.81	1.20
G18	650	0	0.19	0.51	0.76	0.19	0.51	0.76	0.00	0.00	0.00	0.19	0.51	0.76
G19	688	0	0.20	0.54	0.81	0.20	0.54	0.81	0.00	0.00	0.00	0.20	0.54	0.81
G20	3395	0	0.60	0.71	0.72	0.60	0.71	0.72	0.00	0.00	0.00	0.60	0.71	0.72
O5	1051	100	0.30	0.83	1.23	0.00	0.00	0.00	3.74	8.99	15.37	3.74	8.99	15.37
O8	2751	100	0.79	2.18	3.23	0.00	0.00	0.00	9.78	23.54	40.24	9.78	23.54	40.24
R26	1241	100	0.36	0.98	1.46	0.00	0.00	0.00	4.41	10.62	18.15	4.41	10.62	18.15
R27	1914	100	0.55	1.52	2.25	0.00	0.00	0.00	6.81	16.38	28.00	6.81	16.38	28.00
R28	1252	100	0.36	0.99	1.47	0.00	0.00	0.00	4.45	10.72	18.32	4.45	10.72	18.32
R29	663	100	0.08	0.22	0.32	0.00	0.00	0.00	2.36	5.67	9.70	2.36	5.67	9.70
R30	2287	100	0.42	0.76	0.95	0.00	0.00	0.00	8.13	19.57	33.46	8.13	19.57	33.46
R32	2753	100	0.33	0.55	0.55	0.00	0.00	0.00	9.79	23.56	40.27	9.79	23.56	40.27
R36	1477	100	0.42	1.17	1.73	0.00	0.00	0.00	5.25	12.64	21.61	5.25	12.64	21.61

Network 31														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
C23	5,531	100	1.59	4.38	6.49	0.00	0.00	0.00	19.66	47.33	80.90	19.66	47.33	80.90

Network 32														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
R38	1,058	100	0.3	0.84	1.24	0.00	0.00	0.00	3.76	9.05	15.48	3.76	9.05	15.48
Total			**15**	**38**	**54**							**187**	**449**	**764**

Network 4														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
C01	6853	77	0.82	1.63	1.95	0.19	0.37	0.45	18.76	45.16	77.19	18.95	45.54	77.64
C02	8682	84	1.04	1.74	1.74	0.17	0.28	0.28	25.93	62.41	106.68	26.10	62.69	106.96
C7a	1360	100	0.17	0.47	0.69	0.00	0.00	0.00	4.83	11.64	19.89	4.83	11.64	19.89
C7b	2346	100	0.63	1.75	2.59	0.00	0.00	0.00	8.34	20.07	34.31	8.34	20.07	34.31
C08	4711	63	0.57	1.51	2.21	0.21	0.56	0.82	10.55	25.40	43.42	10.76	25.96	44.23
C20	9526	88	2.73	7.54	11.18	0.33	0.90	1.34	29.81	71.75	122.63	30.13	72.65	123.98
C21	6311	88	1.81	5.00	7.41	0.22	0.60	0.89	19.75	47.53	81.24	19.96	48.13	82.13
C24	7038	100	2.02	5.57	8.26	0.00	0.00	0.00	25.02	60.23	102.96	25.02	60.23	102.96
D11a	13953	88	3.52	9.70	14.38	0.42	1.16	1.73	43.66	105.08	179.62	44.08	106.25	181.35
R32	3166	100	0.38	0.90	1.24	0.00	0.00	0.00	11.26	27.10	46.31	11.26	27.10	46.31
R33	1808	100	0.52	1.42	2.11	0.00	0.00	0.00	6.43	15.47	26.45	6.43	15.47	26.45
R34	936	100	0.27	0.74	1.10	0.00	0.00	0.00	3.33	8.01	13.69	3.33	8.01	13.69
R35	3833	100	1.10	3.04	4.50	0.00	0.00	0.00	13.63	32.80	56.07	13.63	32.80	56.07
R36	3162	100	0.91	2.50	3.71	0.00	0.00	0.00	11.24	27.06	46.26	11.24	27.06	46.26
R39	1328	100	0.38	1.05	1.56	0.00	0.00	0.00	4.72	11.37	19.43	4.72	11.37	19.43
R48	2104	100	0.32	0.83	1.18	0.00	0.00	0.00	7.48	18.01	30.78	7.48	18.01	30.78
O8	5339	100	1.33	3.67	5.44	0.00	0.00	0.00	18.98	45.69	78.10	18.98	45.69	78.10
O11	2042	100	0.25	0.67	0.98	0.00	0.00	0.00	7.26	17.48	29.87	7.26	17.48	29.87
G21	480	0	0.14	0.38	0.56	0.14	0.38	0.56	0.00	0.00	0.00	0.14	0.38	0.56
G22	1604	0	0.46	1.27	1.88	0.46	1.27	1.88	0.00	0.00	0.00	0.46	1.27	1.88
G23	3573	0	0.90	2.48	3.68	0.90	2.48	3.68	0.00	0.00	0.00	0.90	2.48	3.68

Network 41														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
D13	13181	100	3.78	10.44	15.47	0.00	0.00	0.00	46.87	112.81	192.82	46.87	112.81	192.82
Total			**24**	**64**	**94**							**321**	**773**	**1319**

Network 5														
Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
D07	23198	84	3.52	9.69	14.38	0.56	1.55	2.30	69.28	166.77	285.06	69.85	168.32	287.36
D08	7219	84	0.87	2.38	3.54	0.14	0.38	0.57	21.56	51.90	88.71	21.70	52.28	89.27
D09	7781	84	0.93	2.57	3.81	0.15	0.41	0.61	23.24	55.94	95.61	23.39	56.35	96.22
D10	7478	84	0.90	2.47	3.66	0.14	0.40	0.59	22.33	53.76	91.89	22.48	54.15	92.48
D11b	9804	100	2.59	7.15	10.60	0.00	0.00	0.00	34.86	83.91	143.43	34.86	83.91	143.43
D12	4624	89	1.33	3.66	5.43	0.15	0.40	0.60	14.63	35.22	60.20	14.78	35.62	60.80
R35	1610	100	0.46	1.28	1.89	0.00	0.00	0.00	5.72	13.78	23.55	5.72	13.78	23.55
R40	9142	100	1.77	4.87	7.22	0.00	0.00	0.00	32.50	78.24	133.73	32.50	78.24	133.73

Network 5

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
R42	3415	100	0.98	2.70	4.01	0.00	0.00	0.00	12.14	29.23	49.96	12.14	29.23	49.96
R52	850	100	0.24	0.67	1.00	0.00	0.00	0.00	3.02	7.27	12.43	3.02	7.27	12.43
G31	860	0	0.25	0.68	1.01	0.25	0.68	1.01	0.00	0.00	0.00	0.25	0.68	1.01

Network 51

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
D14	5323	89	1.53	4.22	6.25	0.17	0.46	0.69	16.84	40.54	69.30	17.01	41.01	69.99
Total			**15**	**42**	**63**							**258**	**621**	**1060**

Network 6

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
R42	768	100	0.22	0.61	0.90	0.00	0.00	0.00	2.73	6.57	11.23	2.73	6.57	11.23
R44	2485	100	0.67	1.85	2.74	0.00	0.00	0.00	8.84	21.27	36.35	8.84	21.27	36.35
R53	850	100	0.24	0.67	1.00	0.00	0.00	0.00	3.02	7.27	12.43	3.02	7.27	12.43
G26	1286	0	0.37	1.02	1.51	0.37	1.02	1.51	0.00	0.00	0.00	0.37	1.02	1.51
G27	2283	0	0.29	0.79	1.18	0.29	0.79	1.18	0.00	0.00	0.00	0.29	0.79	1.18

Network 61 & 62

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
D4a	7445	89	2.14	5.90	8.74	0.24	0.65	0.96	23.56	56.71	96.93	23.79	57.36	97.89
D4b	4685	94	1.34	3.71	5.50	0.08	0.22	0.33	15.66	37.69	64.42	15.74	37.91	64.75
Total			**5**	**15**	**22**							**55**	**132**	**225**

Network 7

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
D05	5362	100	1.54	4.24	6.28	0.00	0.00	0.00	19.07	45.89	78.45	19.07	45.89	78.45
D06	24841	84	5.67	15.64	23.19	0.91	2.50	3.71	74.19	178.58	305.25	75.10	181.08	308.96
R43	1197	100	0.34	0.95	1.41	0.00	0.00	0.00	4.26	10.24	17.51	4.26	10.24	17.51
R44	6304	100	1.76	4.85	7.19	0.00	0.00	0.00	22.41	53.95	92.22	22.41	53.95	92.22
G28	6530	0	1.87	5.17	7.67	1.87	5.17	7.67	0.00	0.00	0.00	1.87	5.17	7.67
Total			**11**	**31**	**46**							**123**	**296**	**505**

Network 8

Details			Greenfield Rate (l/s)			Greenfield Surface (l/s)			Impermeable surface (l/s)			Imp + Green (l/s)		
Plot	Area (m^2)	IMP (%)	1 year	30 year	100 year	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)	M1-60	M30-60	M100-60 (+CC)
D01	10019	100	2.88	7.94	11.76	0.00	0.00	0.00	35.62	85.75	146.57	35.62	85.75	146.57
D02	17228	92	4.94	13.64	20.23	0.40	1.09	1.62	56.35	135.65	231.86	56.75	136.74	233.48
D03	20298	92	5.83	16.08	23.83	0.47	1.29	1.91	66.40	159.82	273.18	66.86	161.11	275.08
R43	5793	100	1.66	4.59	6.80	0.00	0.00	0.00	20.60	49.58	84.74	20.60	49.58	84.74
Total			**15**	**42**	**63**							**180**	**433**	**740**

Network 1									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
A01	2,373	2,373	0	0.00	58	0	2.9	63	**0**
A02	7,246	7,246	0	0.00	59	0	3.0	63	**0**
A03	6,138	6,138	0	0.00	71	0	3.5	63	**0**
A04	2,039	2,039	0	0.00	68	0	3.4	63	**0**
A05	7,994	7,994	0	0.00	57	0	2.8	63	**0**
A06	1,680	1,680	0	0.00	88	0	4.4	63	**0**
A07	1,320	1,320	0	0.00	71	0	3.5	63	**0**
A08	7,068	7,068	0	0.00	73	0	3.7	63	**0**
A09	1,680	1,680	0	0.00	88	0	4.4	63	**0**
A10	1,320	1,320	0	0.00	71	0	3.5	63	**0**
A11	5,506	5,506	0	0.00	72	0	3.6	63	**0**
A12	556	556	0	0.00	88	0	4.4	63	**0**
A13	1,147	1,147	0	0.00	71	0	3.6	63	**0**
A14	3,140	3,140	0	0.00	75	0	3.7	63	**0**
A15	705	705	0	0.00	100	0	5.0	63	**0**
A16	0	0	0	0.00	89	0	4.4	63	**0**
A17	0	0	0	0.00	72	0	3.6	63	**0**
A18	11,560	11,560	0	0.00	57	0	2.8	63	**0**
A19	6,116	6,116	0	0.00	79	0	3.9	63	**0**
A20	5,486	5,486	0	0.00	73	0	3.6	63	**0**
A21	3,745	3,745	0	0.00	70	0	3.5	63	**0**
A22	5,425	5,425	0	0.00	77	0	3.9	63	**0**
A23	5,731	5,731	0	0.00	72	0	3.6	63	**0**
A24	6,047	6,047	0	0.00	67	0	3.3	63	**0**
A25	5,656	5,656	0	0.00	56	0	2.8	63	**0**
A26a+b	11,934	11,934	0	0.00	67	0	3.4	63	**0**
A27	0	0	0	0.00	89	0	4.5	63	**0**
A28	2,294	0	2,294	0.23	87	0.1995	4.3	63	**55**
A29	10,659	10,659	0	0.00	87	0	4.3	63	**0**
A30	2,011	2,011	0	0.00	88	0	4.4	63	**0**
B05	24,603	20,215	4,388	0.44	27	0.1201	1.5	63	**11**
B06	0	0	0	0.00	100	0	5.0	63	**0**
B10a+b	0	0	0	0.00	80	0	4.0	63	**0**
B11b	0	0	0	0.00	85	0	4.3	63	**0**
B11c+d	0	0	0	0.00	96	0	4.8	63	**0**
B14	0	0	0	0.00	100	0	5.0	63	**0**
B15a+b	0	0	0	0.00	100	0	5.0	63	**0**
B16	0	0	0	0.00	100	0	5.0	63	**0**
B17	0	0	0	0.00	98	0	4.9	63	**0**
B18	0	0	0	0.00	88	0	4.4	63	**0**
B19	0	0	0	0.00	83	0	4.2	63	**0**
B20	0	0	0	0.00	100	0	5.0	63	**0**
B21	0	0	0	0.00	100	0	5.0	63	**0**
C05	410	410	0	0.00	69	0	3.5	63	**0**
C06	0	0	0	0.00	70	0	3.5	63	**0**
G01	650	650	0	0.00	0	0	0.0	63	**0**
G02	1,250	1,250	0	0.00	0	0	0.0	63	**0**
G03	1,809	1,809	0	0.00	0	0	0.0	63	**0**
G04	1,425	1,425	0	0.00	0	0	0.0	63	**0**
G05	1,425	1,425	0	0.00	0	0	0.0	63	**0**
G06	2,536	2,536	0	0.00	0	0	0.0	63	**0**
G07	629	629	0	0.00	0	0	0.0	63	**0**
G08	4,616	4,616	0	0.00	0	0	0.0	63	**0**
G09	844	844	0	0.00	0	0	0.0	63	**0**
G10	0	0	0	0.00	0	0	0.0	63	**0**
G11	753	753	0	0.00	0	0	0.0	63	**0**
G12	9,917	9,917	0	0.00	0	0	0.0	63	**0**
G13	4,459	3,276	1,183	0.12	0	0	0.0	63	**0**

Network 1									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
G24	281	281	0	0.00	0	0	0.0	63	**0**
G25	0	0	0	0.00	0	0	0.0	63	**0**
G29	0	0	0	0.00	0	0	0.0	63	**0**
G30	0	0	0	0.00	0	0	0.0	63	**0**
O1	0	0	0	0.00	100	0	5.0	63	**0**
R01	5,180	5,180	0	0.00	100	0	5.0	63	**0**
R02	4,709	4,709	0	0.00	100	0	5.0	63	**0**
R03	4,794	4,794	0	0.00	100	0	5.0	63	**0**
R04	4,059	4,059	0	0.00	100	0	5.0	63	**0**
R05	4,680	4,680	0	0.00	100	0	5.0	63	**0**
R06	2,023	2,023	0	0.00	100	0	5.0	63	**0**
R07	4,242	4,242	0	0.00	100	0	5.0	63	**0**
R08	3,197	3,197	0	0.00	100	0	5.0	63	**0**
R09	1,689	1,689	0	0.00	100	0	5.0	63	**0**
R10	3,712	3,712	0	0.00	100	0	5.0	63	**0**
R11	775	775	0	0.00	100	0	5.0	63	**0**
R12	33	33	0	0.00	100	0	5.0	63	**0**
R13	1,800	1,800	0	0.00	100	0	5.0	63	**0**
R14	3,673	3,673	0	0.00	100	0	5.0	63	**0**
R15	1,305	1,305	0	0.00	100	0	5.0	63	**0**
R16	1,637	1,637	0	0.00	100	0	5.0	63	**0**
R17	0	0	0	0.00	100	0	5.0	63	**0**
R18	4,898	1,791	3,107	0.31	100	0.3107	5.0	63	**98**
R19	0	0	0	0.00	100	0	5.0	63	**0**
R20	0	0	0	0.00	100	0	5.0	63	**0**
R37	700	0	700	0.07	100	0.0700	5.0	63	**22**
R50	0	0	0	0.00	100	0	5.0	63	**0**
R51	0	0	0	0.00	100	0	5.0	63	**0**

Subtotal	186

Network 1									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
A01	0	0	0	0.00	58	0	1.9	63	**0**
A02	0	0	0	0.00	59	0	2.0	63	**0**
A03	0	0	0	0.00	71	0	2.3	63	**0**
A04	0	0	0	0.00	68	0	2.2	63	**0**
A05	0	0	0	0.00	57	0	1.9	63	**0**
A06	0	0	0	0.00	88	0	2.8	63	**0**
A07	0	0	0	0.00	71	0	2.3	63	**0**
A08	0	0	0	0.00	73	0	2.4	63	**0**
A09	0	0	0	0.00	88	0	2.8	63	**0**
A10	0	0	0	0.00	71	0	2.3	63	**0**
A11	0	0	0	0.00	72	0	2.4	63	**0**
A12	1,096	1,096	0	0.00	88	0	2.8	63	**0**
A13	151	151	0	0.00	71	0	2.3	63	**0**
A14	0	0	0	0.00	75	0	2.4	63	**0**
A15	79	79	0	0.00	100	0	3.2	63	**0**
A16	1,126	1,126	0	0.00	89	0	2.9	63	**0**
A17	797	797	0	0.00	72	0	2.4	63	**0**
A18	0	0	0	0.00	57	0	1.9	63	**0**
A19	0	0	0	0.00	79	0	2.6	63	**0**
A20	0	0	0	0.00	73	0	2.4	63	**0**
A21	0	0	0	0.00	70	0	2.3	63	**0**
A22	0	0	0	0.00	77	0	2.5	63	**0**
A23	0	0	0	0.00	72	0	2.4	63	**0**

Network 1									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
A24	0	0	0	0.00	67	0	2.2	63	**0**
A25	0	0	0	0.00	56	0	1.9	63	**0**
A26a+b	684	684	0	0.00	67	0	2.2	63	**0**
A27	6,873	6,873	0	0.00	89	0	2.9	63	**0**
A28	17,685	678	17,007	1.70	87	1.4788	2.8	63	**262**
A29	0	0	0	0.00	87	0	2.8	63	**0**
A30	0	0	0	0.00	88	0	2.8	63	**0**
B05	4,263	1,144	3,119	0.31	27	0.0854	0.9	63	**5**
B06	1,980	0	1,980	0.20	100	0.1980	3.2	63	**40**
B10a+b	17,097	0	17,097	1.71	80	1.3758	2.6	63	**226**
B11b	4,374	0	4,374	0.44	85	0.3731	2.8	63	**65**
B11c+d	4,780	0	4,780	0.48	96	0.4590	3.1	63	**89**
B14	5,947	0	5,947	0.59	100	0.5947	3.2	63	**120**
B15a+b	1,325	0	1,325	0.13	100	0.1325	3.2	63	**27**
B16	877	0	877	0.09	100	0.0877	3.2	63	**18**
B17	2,479	0	2,479	0.25	98	0.2425	3.1	63	**48**
B18	5,097	0	5,097	0.51	88	0.4492	2.8	63	**80**
B19	1,276	0	1,276	0.13	83	0.1061	2.7	63	**18**
B20	4,066	0	4,066	0.41	100	0.4066	3.2	63	**82**
B21	4,342	0	4,342	0.43	100	0.4342	3.2	63	**87**
C05	10,823	10,823	0	0.00	69	0	2.3	63	**0**
C06	10,568	10,568	0	0.00	70	0	2.3	63	**0**
G01	0	0	0	0.00	0	0	0.0	63	**0**
G02	0	0	0	0.00	0	0	0.0	63	**0**
G03	0	0	0	0.00	0	0	0.0	63	**0**
G04	0	0	0	0.00	0	0	0.0	63	**0**
G05	0	0	0	0.00	0	0	0.0	63	**0**
G06	0	0	0	0.00	0	0	0.0	63	**0**
G07	0	0	0	0.00	0	0	0.0	63	**0**
G08	0	0	0	0.00	0	0	0.0	63	**0**
G09	0	0	0	0.00	0	0	0.0	63	**0**
G10	714	528	186	0.02	0	0	0.0	63	**0**
G11	1,286	1,286	0	0.00	0	0	0.0	63	**0**
G12	0	0	0	0.00	0	0	0.0	63	**0**
G13	144	144	0	0.00	0	0	0.0	63	**0**
G24	0	0	0	0.00	0	0	0.0	63	**0**
G25	2,319	0	2,319	0.23	0	0	0.0	63	**0**
G29	738	0	738	0.07	0	0	0.0	63	**0**
G30	241	0	241	0.02	0	0	0.0	63	**0**
O1	9,008	0	9,008	0.90	100	0.9008	3.2	63	**181**
R01	0	0	0	0.00	100	0	3.2	63	**0**
R02	0	0	0	0.00	100	0	3.2	63	**0**
R03	0	0	0	0.00	100	0	3.2	63	**0**
R04	0	0	0	0.00	100	0	3.2	63	**0**
R05	0	0	0	0.00	100	0	3.2	63	**0**
R06	0	0	0	0.00	100	0	3.2	63	**0**
R07	0	0	0	0.00	100	0	3.2	63	**0**
R08	0	0	0	0.00	100	0	3.2	63	**0**
R09	0	0	0	0.00	100	0	3.2	63	**0**
R10	446	446	0	0.00	100	0	3.2	63	**0**
R11	0	0	0	0.00	100	0	3.2	63	**0**
R12	742	742	0	0.00	100	0	3.2	63	**0**
R13	5,229	2,796	2,433	0.24	100	0.2433	3.2	63	**49**
R14	1,796	1,105	691	0.07	100	0.0691	3.2	63	**14**
R15	0	0	0	0.00	100	0	3.2	63	**0**
R16	341	341	0	0.00	100	0	3.2	63	**0**
R17	6,545	6,545	0	0.00	100	0	3.2	63	**0**
R18	12,744	1,916	10,828	1.08	100	1.0828	3.2	63	**218**

Network 1									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
R19	6,530	0	6,530	0.65	100	0.6530	3.2	63	**132**
R20	9,872	0	9,872	0.99	100	0.9872	3.2	63	**199**
R37	2,249	0	2,249	0.22	100	0.2249	3.2	63	**45**
R50	245	0	245	0.02	100	0.0245	3.2	63	**5**
R51	1,504	0	1,504	0.15	100	0.1504	3.2	63	**30**

Subtotal	2040
Total	**2225**

Network 2									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
B01	0	0	0	0.00	94	0	4.7	63	**0**
B02	0	0	0	0.00	100	0	5.0	63	**0**
B03	1,090	0	1,090	0.11	89	0.0975	4.5	63	**27**
B04	0		0	0.00	82	0	4.1	63	**0**
B07	510	0	510	0.05	87	0.0446	4.4	63	**12**
B08	3,429	0	3,429	0.34	92	0.3150	4.6	63	**91**
B09	0	0	0	0.00	52	0	2.6	63	**0**
B11a	0	0	0	0.00	83	0	4.2	63	**0**
B12	0	0	0	0.00	96	0	4.8	63	**0**
B13	0	0	0	0.00	100	0	5.0	63	**0**
C14	1,507	0	1,507	0.15	100	0.1507	5.0	63	**47**
C15a+b	789	0	789	0.08	76	0.0603	3.8	63	**15**
C16	1,986	0	1,986	0.20	77	0.1537	3.9	63	**37**
C17	1,949	0	1,949	0.19	82	0.1593	4.1	63	**41**
C18	3,146	1,366	1,780	0.18	79	0.1415	4.0	63	**35**
C19	975	0	975	0.10	81	0.0795	4.1	63	**20**
G14	0	0	0	0.00	0	0	0.0	63	**0**
G15	0	0	0	0.00	0	0	0.0	63	**0**
O2	37	0	37	0.00	100	0.0037	5.0	63	**1**
O3	1,138	0	1,138	0.11	100	0.1138	5.0	63	**36**
O4	2,729	0	2,729	0.27	100	0.2729	5.0	63	**86**
O5	2,272	0	2,272	0.23	100	0.2272	5.0	63	**71**
O6	199	0	199	0.02	100	0.0199	5.0	63	**6**
O7	0	0	0	0.00	100	0	5.0	63	**0**
R21	0	0	0	0.00	100	0	5.0	63	**0**
R22	0	0	0	0.00	100	0	5.0	63	**0**
R23	0	0	0	0.00	100	0	5.0	63	**0**
R24	0	0	0	0.00	100	0	5.0	63	**0**
R25	3,070	0	3,070	0.31	100	0.3070	5.0	63	**97**
R26	0	0	0	0.00	100	0	5.0	63	**0**
R29	713	0	713	0.07	100	0.0713	5.0	63	**22**
R31	835	0	835	0.08	100	0.0835	5.0	63	**26**

Subtotal	673

Network 2									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
B01	7,949	0	7,949	0.79	94	0.7506	3.0	63	**143**
B02	7,259	0	7,259	0.73	100	0.7259	3.2	63	**146**
B03	4,240	0	4,240	0.42	89	0.3791	2.9	63	**69**
B04	9,841	0	9,841	0.98	82	0.8074	2.7	63	**135**

Network 2									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
B07	2,821	0	2,821	0.28	87	0.2467	2.8	63	**44**
B08	38	0	38	0.00	92	0.0035	3.0	63	**1**
B09	9,357	0	9,357	0.94	52	0.4835	1.7	63	**53**
B11a	5,110	0	5,110	0.51	83	0.4247	2.7	63	**72**
B12	1,644	0	1,644	0.16	96	0.1578	3.1	63	**31**
B13	2,690	0	2,690	0.27	100	0.2690	3.2	63	**54**
C14	0	0	0	0.00	100	0	3.2	63	**0**
C15a+b	2,894	214	2,680	0.27	76	0.2049	2.5	63	**32**
C16	2,540	948	1,592	0.16	77	0.1232	2.5	63	**20**
C17	0	0	0	0.00	82	0	2.7	63	**0**
C18	1,542	1,480	62	0.01	79	0.0049	2.6	63	**1**
C19	0	0	0	0.00	81	0	2.6	63	**0**
G14	2,287	0	2,287	0.23	0	0	0.0	63	**0**
G15	1,062	0	1,062	0.11	0	0	0.0	63	**0**
O2	3,856	0	3,856	0.39	100	0.3856	3.2	63	**78**
O3	807	532	275	0.03	100	0.0275	3.2	63	**6**
O4	0	0	0	0.00	100	0	3.2	63	**0**
O5	403	0	403	0.04	100	0.0403	3.2	63	**8**
O6	1,006	0	1,006	0.10	100	0.1006	3.2	63	**20**
O7	1,152	0	1,152	0.12	100	0.1152	3.2	63	**23**
R21	2,311	0	2,311	0.23	100	0.2311	3.2	63	**47**
R22	901	0	901	0.09	100	0.0901	3.2	63	**18**
R23	3,203	0	3,203	0.32	100	0.3203	3.2	63	**65**
R24	1,856	0	1,856	0.19	100	0.1856	3.2	63	**37**
R25	375	0	375	0.04	100	0.0375	3.2	63	**8**
R26	2,940	0	2,940	0.29	100	0.2940	3.2	63	**59**
R29	7,338	4,296	3,042	0.30	100	0.3042	3.2	63	**61**
R31	1,020	0	1,020	0.10	100	0.1020	3.2	63	**21**

Subtotal	1251
Total	**1924**

Network 3									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
C03	6,664	6,664	0	0.00	59	0	2.9	63	**0**
C04	4,539	4,539	0	0.00	57	0	2.8	63	**0**
C09	0	0	0	0.00	100	0	5.0	63	**0**
C10&C11	10,934	5,755	5,179	0.52	56	0.2903	2.8	63	**51**
C12	205	0	205	0.02	69	0.0142	3.5	63	**3**
C13	845	0	845	0.08	100	0.0845	5.0	63	**27**
C22	0	0	0	0.00	100	0	5.0	63	**0**
C23	0	0	0	0.00	100	0	5.0	63	**0**
G16	0	0	0	0.00	0	0	0.0	63	**0**
G17	0	0	0	0.00	0	0	0.0	63	**0**
G18	0	0	0	0.00	0	0	0.0	63	**0**
G19	0	0	0	0.00	0	0	0.0	63	**0**
G20	1,071	1,071	0	0.00	0	0	0.0	63	**0**
O5	0	0	0	0.00	100	0	5.0	63	**0**
O8	0	0	0	0.00	100	0	5.0	63	**0**
R26	0	0	0	0.00	100	0	5.0	63	**0**
R27	0	0	0	0.00	100	0	5.0	63	**0**
R28	0	0	0	0.00	100	0	5.0	63	**0**
R29	663	0	663	0.07	100	0.0663	5.0	63	**21**
R30	970	970	0	0.00	100	0	5.0	63	**0**

Network 3									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
R32	2,753	2,753	0	0.00	100	0	5.0	63	**0**
R36	0	0	0	0.00	100	0	5.0	63	**0**
R38	0	0	0	0.00	100	0	5.0	63	**0**

Subtotal	**102**

Network 3									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
C03	0	0	0	0.00	59	0	2.0	63	**0**
C04	37	37	0	0.00	57	0	1.9	63	**0**
C09	2,514	0	2,514	0.25	100	0.2514	3.2	63	**51**
C10&C11	2,072	0	2,072	0.21	56	0.1162	1.9	63	**14**
C12	4,637	0	4,637	0.46	69	0.3217	2.3	63	**46**
C13	1,524	0	1,524	0.15	100	0.1524	3.2	63	**31**
C22	7,720	0	7,720	0.77	100	0.7720	3.2	63	**155**
C23	5,531	0	5,531	0.55	100	0.5531	3.2	63	**111**
G16	1,488	0	1,488	0.15	0	0	0.0	63	**0**
G17	1,023	0	1,023	0.10	0	0	0.0	63	**0**
G18	650	0	650	0.07	0	0	0.0	63	**0**
G19	688	0	688	0.07	0	0	0.0	63	**0**
G20	2,324	2,280	44	0.00	0	0	0.0	63	**0**
O5	1,051	0	1,051	0.11	100	0.1051	3.2	63	**21**
O8	2,751	0	2,751	0.28	100	0.2751	3.2	63	**55**
R26	1,241	0	1,241	0.12	100	0.1241	3.2	63	**25**
R27	1,914	0	1,914	0.19	100	0.1914	3.2	63	**39**
R28	1,252	0	1,252	0.13	100	0.1252	3.2	63	**25**
R29	0	0	0	0.00	100	0	3.2	63	**0**
R30	1,317	809	508	0.05	100	0.0508	3.2	63	**10**
R32	0	0	0	0.00	100	0	3.2	63	**0**
R36	1,477	0	1,477	0.15	100	0.1477	3.2	63	**30**
R38	1,058	0	1,058	0.11	100	0.1058	3.2	63	**21**

Subtotal	**635**
Total	**737**

Network 4									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
C01	6,853	4,849	2,004	0.20	77	0.1533	3.8	63	**37**
C02	8,682	8,682	0	0.00	84	0	4.2	63	**0**
C7a	1,325	0	1,325	0.13	100	0.1325	5.0	63	**42**
C7b	236	0	236	0.02	100	0.0236	5.0	63	**7**
C08	4,711	347	4,364	0.44	63	0.2741	3.1	63	**54**
C20	0	0	0	0.00	88	0	4.4	63	**0**
C21	0	0	0	0.00	88	0	4.4	63	**0**
C24	0	0	0	0.00	100	0	5.0	63	**0**
D11a	2,931	0	2,931	0.29	88	0.2571	4.4	63	**71**
D13	0	0	0	0.00	100	0	5.0	63	**0**
R32	3,166	1,087	2,079	0.21	100	0.2079	5.0	63	**65**
R33	18	0	18	0.00	100	0.0018	5.0	63	**1**
R34	0	0	0	0.00	100	0	5.0	63	**0**
R35	0	0	0	0.00	100	0	5.0	63	**0**
R36	0	0	0	0.00	100	0	5.0	63	**0**

Network 4									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
R39	0	0	0	0.00	100	0	5.0	63	**0**
R48	1,678	490	1,188	0.12	100	0.1188	5.0	63	**37**
O8	1,207	0	1,207	0.12	100	0.1207	5.0	63	**38**
O11	2,042	55	1,987	0.20	100	0.1987	5.0	63	**63**
G21	0	0	0	0.00	0	0	0.0	63	**0**
G22	0	0	0	0.00	0	0	0.0	63	**0**
G23	756	0	756	0.08	0	0	0.0	63	**0**

Subtotal	**415**

Network 4									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
C01	0	0	0	0.00	77	0	2.5	63	**0**
C02	0	0	0	0.00	84	0	2.7	63	**0**
C7a	35	0	35	0.00	100	0.0035	3.2	63	**1**
C7b	2,110	0	2,110	0.21	100	0.2110	3.2	63	**42**
C08	0	0	0	0.00	63	0	2.1	63	**0**
C20	9,526	0	9,526	0.95	88	0.8405	2.8	63	**151**
C21	6,311	0	6,311	0.63	88	0.5582	2.9	63	**100**
C24	7,038	0	7,038	0.70	100	0.7038	3.2	63	**142**
D11a	11,022	0	11,022	1.10	88	0.9669	2.8	63	**172**
D13	13,181	0	13,181	1.32	100	1.3181	3.2	63	**265**
R32	0	0	0	0.00	100	0	3.2	63	**0**
R33	1,790	0	1,790	0.18	100	0.1790	3.2	63	**36**
R34	936	0	936	0.09	100	0.0936	3.2	63	**19**
R35	3,833	0	3,833	0.38	100	0.3833	3.2	63	**77**
R36	3,162	0	3,162	0.32	100	0.3162	3.2	63	**64**
R39	1,328	0	1,328	0.13	100	0.1328	3.2	63	**27**
R48	426	0	426	0.04	100	0.0426	3.2	63	**9**
O8	4,132	0	4,132	0.41	100	0.4132	3.2	63	**83**
O11	0	0	0	0.00	100	0	3.2	63	**0**
G21	480	0	480	0.05	0	0	0.0	63	**0**
G22	1,604	0	1,604	0.16	0	0	0.0	63	**0**
G23	2,817	0	2,817	0.28	0	0	0.0	63	**0**

Subtotal	**1188**
Total	**1603**

Network 5									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D07	18,789	0	18,789	1.88	84	1.5713	4.2	63	**414**
D08	7,219	0	7,219	0.72	84	0.6049	4.2	63	**159**
D09	7,781	0	7,781	0.78	84	0.6498	4.2	63	**171**
D10	7,478	0	7,478	0.75	84	0.6316	4.2	63	**168**
D11b	1,334	0	1,334	0.13	100	0.1334	5.0	63	**42**
D12	0	0	0	0.00	89	0	4.4	63	**0**
D14	0	0	0	0.00	89	0	4.4	63	**0**
R35	0	0	0	0.00	100	0	5.0	63	**0**
R40	5,131	0	5,131	0.51	100	0.5131	5.0	63	**161**
R42	0	0	0	0.00	100	0	5.0	63	**0**
R52	0	0	0	0.00	100	0	5.0	63	**0**

Network 5									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
G31	0	0	0	0.00	0	0	0.0	63	**0**

Subtotal	**1116**

Network 5									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D07	4,409	0	4,409	0.44	84	0.3687	2.7	63	**63**
D08	0	0	0	0.00	84	0	2.7	63	**0**
D09	0	0	0	0.00	84	0	2.7	63	**0**
D10	0	0	0	0.00	84	0	2.7	63	**0**
D11b	8,470	0	8,470	0.85	100	0.8470	3.2	63	**171**
D12	4,624	0	4,624	0.46	89	0.4094	2.9	63	**74**
D14	5,323	0	5,323	0.53	89	0.4737	2.9	63	**86**
R35	1,610	0	1,610	0.16	100	0.1610	3.2	63	**32**
R40	4,012	0	4,012	0.40	100	0.4012	3.2	63	**81**
R42	3,415	0	3,415	0.34	100	0.3415	3.2	63	**69**
R52	850	0	850	0.09	100	0.0850	3.2	63	**17**
G31	860	0	860	0.09	0	0	0.0	63	**0**

Subtotal	**592**
Total	**1707**

Network 6									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D4	0	0	0	0.00	90	0	4.5	63	**0**
R42	0	0	0	0.00	100	0	5.0	63	**0**
R44	262	0	262	0.03	100	0.0262	5.0	63	**8**
R53	0	0	0	0.00	100	0	5.0	63	**0**
G26	0	0	0	0.00	0	0	0.0	63	**0**
G27	2,200	0	2,200	0.22	0	0	0.0	63	**0**

Subtotal	**8**

Network 6									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D4	12,130	0	12,130	1.21	90	1.0917	2.9	63	**199**
R42	768	0	768	0.08	100	0.0768	3.2	63	**15**
R44	2,223	0	2,223	0.22	100	0.2223	3.2	63	**45**
R53	850	0	850	0.09	100	0.0850	3.2	63	**17**
G26	2,136	0	2,136	0.21	0	0	0.0	63	**0**
G27	83	0	83	0.01	0	0	0.0	63	**0**

Subtotal	**277**
Total	**285**

Network 7									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D05	18	0	18	0.00	100	0.0018	5.0	63	**1**
D06	8,727	0	8,727	0.87	84	0.7362	4.2	63	**195**
R43	0	0	0	0.00	100	0	5.0	63	**0**
R44	304	0	304	0.03	100	0.0304	5.0	63	**10**
G28	0	0	0	0.00	0	0	0.0	63	**0**
Subtotal									**206**

Network 7									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D05	5,344	0	5,344	0.53	100	0.5344	3.2	63	**108**
D06	16,114	0	16,114	1.61	84	1.3593	2.7	63	**234**
R43	1,197	0	1,197	0.12	100	0.1197	3.2	63	**24**
R44	6,000	0	6,000	0.60	100	0.6000	3.2	63	**121**
G28	6,530	0	6,530	0.65	0	0	0.0	63	**0**
Subtotal									**486**
Total									**692**

Network 8									
Gravel									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D01	0	0	0	0.00	100	0	5.0	63	**0**
D02	0	0	0	0.00	92	0	4.6	63	**0**
D03	0	0	0	0.00	92	0	4.6	63	**0**
R43	0	0	0	0.00	100	0	5.0	63	**0**
Subtotal									**0**

Network 8									
Clay									
Plot	Area (m^2)	Restricted Area (m^2)	Area for LTS (m^2)	Area for LTS (ha)	PIMP (%)	AP (ha)	LTF	RD (mm)	**LTS Volume (m^3)**
D01	10,019	0	10,019	1.00	100	1.0019	3.2	63	**202**
D02	17,228	0	17,228	1.72	92	1.5842	3.0	63	**295**
D03	20,298	0	20,298	2.03	92	1.8699	3.0	63	**349**
R43	5,793	0	5,793	0.58	100	0.5793	3.2	63	**117**
Subtotal									963
Total									**963**

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
		Plot											
		Gravel/Chalk	248,899	2,373	7,246	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320
		Clay	240,074	0	0	0	0	0	0	0	0	0	0
		Gravel Area in restricted discharge	237,228	2,373	7,246	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320
		Clay Area in restricted discharge	85,442										
		Restricted discharge area	322,670	2,373	7,246	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320
		Total Area (sq.m)	488,974	2,373	7,246	6,138	2,039	7,994	1,680	1,320	7,068	1,680	1,320
		Percentage Impermeable (%)		57.7%	59.3%	71.0%	67.9%	56.7%	88.0%	70.8%	73.4%	88.0%	70.8%
		Gravel (Restricted)	142,041	1,369	4,298	4,356	1,384	4,529	1,478	935	5,189	1,478	935
		Clay (Restricted)	39,006	0	0	0	0	0	0	0	0	0	0
		New Restricted Area (sq.m)	181,048	1,369	4,298	4,356	1,384	4,529	1,478	935	5,189	1,478	935
		Area Gravel	149,044	1,369	4,298	4,356	1,384	4,529	1,478	935	5,189	1,478	935
		Area Clay	146,604	0	0	0	0	0	0	0	0	0	0
		New Total Area (sq.m)	295,648	1,369	4,298	4,356	1,384	4,529	1,478	935	5,189	1,478	935
Rates (l/s)	1 yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	QBAR yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30 yr	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100 yr	Gravel/Chalk	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
		Plot											
		Gravel/Chalk	248,899	5,506	556	1,147	3,140	705	0	0	11,560	6,116	5,486
		Clay	240,074	0	1,096	151	0	79	1,126	797	0	0	0
		Gravel Area in restricted discharge	237,228	5,506	556	1,147	3,140	705			11,560	6,116	5,486
		Clay Area in restricted discharge	85,442		1,096	151		79	1,126	797			
		Restricted discharge area	322,670	5,506	1,652	1,298	3,140	784	1,126	797	11,560	6,116	5,486
		Total Area (sq.m)	488,974	5,506	1,652	1,298	3,140	784	1,126	797	11,560	6,116	5,486
		Percentage Impermeable (%)		71.8%	88.1%	71.2%	74.7%	100.0%	88.7%	72.0%	56.8%	78.7%	72.7%
		Gravel (Restricted)	142,041	3,955	490	816	2,347	705	0	0	6,564	4,812	3,988
		Clay (Restricted)	39,006	0	966	108	0	79	999	574	0	0	0
		New Restricted Area (sq.m)	181,048	3,955	1,456	924	2,347	784	999	574	6,564	4,812	3,988
		Area Gravel	149,044	3,955	490	816	2,347	705	0	0	6,564	4,812	3,988
		Area Clay	146,604	0	966	108	0	79	999	574	0	0	0
		New Total Area (sq.m)	295,648	3,955	1,456	924	2,347	784	999	574	6,564	4,812	3,988
Rates (l/s)	1 yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	QBAR yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30 yr	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100 yr	Gravel/Chalk	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	A21	A22	A23	A24	A25	A26	A27	A28	A29	A30
		Plot											
		Gravel/Chalk	248,899	3,745	5,425	5,731	6,047	5,656	11,934	0	2,294	10,659	2,011
		Clay	240,074	0	0	0	0	0	684	6,873	17,685	0	0
		Gravel Area in restricted discharge	237,228	3,745	5,425	5,731	6,047	5,656	11,934		0	10,659	2,011
		Clay Area in restricted discharge	85,442						684	6,873	678	0	
		Restricted discharge area	322,670	3,745	5,425	5,731	6,047	5,656	12,618	6,873	678	10,659	2,011
		Total Area (sq.m)	488,974	3,745	5,425	5,731	6,047	5,656	12,618	6,873	19,979	10,659	2,011
		Percentage Impermeable (%)		70.2%	77.3%	72.2%	67.0%	56.4%	67.5%	89.3%	87.0%	87.0%	88.0%
		Gravel (Restricted)	142,041	2,629	4,194	4,136	4,051	3,192	8,050	0	0	9,275	1,770
		Clay (Restricted)	39,006	0	0	0	0	0	461	6,138	589	0	0
		New Restricted Area (sq.m)	181,048	2,629	4,194	4,136	4,051	3,192	8,511	6,138	589	9,275	1,770
		Area Gravel	149,044	2,629	4,194	4,136	4,051	3,192	8,050	0	1,994	9,275	1,770
		Area Clay	146,604	0	0	0	0	0	461	6,138	15,378	0	0
		New Total Area (sq.m)	295,648	2,629	4,194	4,136	4,051	3,192	8,511	6,138	17,373	9,275	1,770
Rates (l/s)	1 yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00
		Clay	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.24	0.00	0.00
		Total To WB	32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.48	0.00	0.00
	QBAR yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00
		Clay	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.88	0.00	0.00
		Total To WB	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.00	0.00
	30 yr	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00
		Clay	85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.71	0.00	0.00
		Total To WB	88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.37	0.00	0.00
	100 yr	Gravel/Chalk	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
		Clay	126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.36	0.00	0.00
		Total To WB	130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.34	0.00	0.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	B5	B6	B10	B11b	B11c+d	B14	B15	B16	B17	B18
		Plot											
		Gravel/Chalk	248,899	24,603	0	0	0	0	0	0	0	0	0
		Clay	240,074	4,263	1,980	17,097	4,374	4,780	5,947	1,325	877	2,479	5,097
		Gravel Area in restricted discharge	237,228	20,215	0	0	0	0	0	0	0	0	0
		Clay Area in restricted discharge	85,442	1,144	0	0	0	0	0	0	0	0	0
		Restricted discharge area	322,670	21,359	0	0	0	0	0	0	0	0	0
		Total Area (sq.m)	488,974	28,866	1,980	17,097	4,374	4,780	5,947	1,325	877	2,479	5,097
		Percentage Impermeable (%)		27.4%	100.0%	80.5%	85.3%	96.0%	100.0%	100.0%	100.0%	97.8%	88.1%
		Gravel (Restricted)	142,041	5,534	0	0	0	0	0	0	0	0	0
		Clay (Restricted)	39,006	313	0	0	0	0	0	0	0	0	0
		New Restricted Area (sq.m)	181,048	5,847	0	0	0	0	0	0	0	0	0
		Area Gravel	149,044	6,735	0	0	0	0	0	0	0	0	0
		Area Clay	146,604	1,167	1,980	13,758	3,731	4,590	5,947	1,325	877	2,425	4,492
		New Total Area (sq.m)	295,648	7,902	1,980	13,758	3,731	4,590	5,947	1,325	877	2,425	4,492
Rates (l/s)		Gravel/Chalk	1	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1 yr	Clay	31	0.25	0.57	3.95	1.07	1.32	1.71	0.38	0.25	0.70	1.29
		Total To WB	32	0.39	0.57	3.95	1.07	1.32	1.71	0.38	0.25	0.70	1.29
		Gravel/Chalk	1	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	QBAR yr	Clay	36	0.28	0.65	4.54	1.23	1.51	1.96	0.44	0.29	0.80	1.48
		Total To WB	36	0.45	0.65	4.54	1.23	1.51	1.96	0.44	0.29	0.80	1.48
		Gravel/Chalk	2	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30 yr	Clay	85	0.68	1.57	10.90	2.95	3.64	4.71	1.05	0.69	1.92	3.56
		Total To WB	88	1.07	1.57	10.90	2.95	3.64	4.71	1.05	0.69	1.92	3.56
		Gravel/Chalk	3	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100 yr	Clay	126	1.00	2.32	16.15	4.38	5.39	6.98	1.56	1.03	2.85	5.27
		Total To WB	130	1.59	2.32	16.15	4.38	5.39	6.98	1.56	1.03	2.85	5.27

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	B19	B20	B21	C5	C6	G1	G2	G3	G4	G5
		Plot											
		Gravel/Chalk	248,899	0	0	0	410	0	650	1,250	1,809	1,425	1,425
		Clay	240,074	1,276	4,066	4,342	10,823	10,568	0	0	0	0	0
		Gravel Area in restricted discharge	237,228	0	0	0	410	0	650	1,250	1,809	1,425	1,425
		Clay Area in restricted discharge	85,442	0	0	0	10,823	10,568	0	0	0	0	0
		Restricted discharge area	322,670	0	0	0	11,233	10,568	650	1,250	1,809	1,425	1,425
		Total Area (sq.m)	488,974	1,276	4,066	4,342	11,233	10,568	650	1,250	1,809	1,425	1,425
		Percentage Impermeable (%)		83.1%	100.0%	100.0%	69.4%	69.8%	0.0%	0.0%	0.0%	0.0%	0.0%
		Gravel (Restricted)	142,041	0	0	0	284	0	0	0	0	0	0
		Clay (Restricted)	39,006	0	0	0	7,510	7,379	0	0	0	0	0
		New Restricted Area (sq.m)	181,048	0	0	0	7,794	7,379	0	0	0	0	0
		Area Gravel	149,044	0	0	0	284	0	0	0	0	0	0
		Area Clay	146,604	1,061	4,066	4,342	7,510	7,379	0	0	0	0	0
		New Total Area (sq.m)	295,648	1,061	4,066	4,342	7,794	7,379	0	0	0	0	0
Rates (l/s)	1 yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	31	0.30	1.17	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	32	0.30	1.17	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	QBAR yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	36	0.35	1.34	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	36	0.35	1.34	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30 yr	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	85	0.84	3.22	3.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	88	0.84	3.22	3.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100 yr	Gravel/Chalk	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	126	1.25	4.77	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total To WB	130	1.25	4.77	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		TOTALS	G6	G7	G8	G9	G10	G11	G12	G13	G24	G25
	Plot											
	Gravel/Chalk	248,899	2,536	629	4,616	844	0	753	9,917	4,459	281	0
	Clay	240,074	0	0	0	0	714	1,286	0	144	0	2,319
	Gravel Area in restricted discharge	237,228	2,536	629	4,616	844	0	753	9,917	3,276	281	0
	Clay Area in restricted discharge	85,442	0	0	0	0	528	1,286	0	144	0	0
	Restricted discharge area	322,670	2,536	629	4,616	844	528	2,039	9,917	3,420	281	0
	Total Area (sq.m)	488,974	2,536	629	4,616	844	714	2,039	9,917	4,603	281	2,319
	Percentage Impermeable (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Gravel (Restricted)	142,041	0	0	0	0	0	0	0	0	0	0
	Clay (Restricted)	39,006	0	0	0	0	0	0	0	0	0	0
	New Restricted Area (sq.m)	181,048	0	0	0	0	0	0	0	0	0	0
	Area Gravel	149,044	0	0	0	0	0	0	0	0	0	0
	Area Clay	146,604	0	0	0	0	0	0	0	0	0	0
	New Total Area (sq.m)	295,648	0	0	0	0	0	0	0	0	0	0
Rates (l/s)	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 yr	Clay	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QBAR yr	Clay	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 yr	Clay	85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gravel/Chalk	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100 yr	Clay	126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		TOTALS	G29	G30	G(SSSI)	O1	R1	R2	R3	R4	R5	R6
	Plot											
	Gravel/Chalk	248,899	0	0	13,612	0	5,180	4,709	4,794	4,059	4,680	2,023
	Clay	240,074	738	241	69,595	9,008	0	0	0	0	0	0
	Gravel Area in restricted discharge	237,228	0	0	13,612	0	5,180	4,709	4,794	4,059	4,680	2,023
	Clay Area in restricted discharge	85,442	0	0	35,575	0	0	0	0	0	0	0
	Restricted discharge area	322,670	0	0	49,187	0	5,180	4,709	4,794	4,059	4,680	2,023
	Total Area (sq.m)	488,974	738	241	83,207	9,008	5,180	4,709	4,794	4,059	4,680	2,023
	Percentage Impermeable (%)		0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Gravel (Restricted)	142,041	0	0	0	0	5,180	4,709	4,794	4,059	4,680	2,023
	Clay (Restricted)	39,006	0	0	0	0	0	0	0	0	0	0
	New Restricted Area (sq.m)	181,048	0	0	0	0	5,180	4,709	4,794	4,059	4,680	2,023
	Area Gravel	149,044	0	0	0	0	5,180	4,709	4,794	4,059	4,680	2,023
	Area Clay	146,604	0	0	0	9,008	0	0	0	0	0	0
	New Total Area (sq.m)	295,648	0	0	0	9,008	5,180	4,709	4,794	4,059	4,680	2,023
Rates (l/s)	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 yr	Clay	31	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	32	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00	0.00	0.00
	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QBAR yr	Clay	36	0.00	0.00	0.00	2.97	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	36	0.00	0.00	0.00	2.97	0.00	0.00	0.00	0.00	0.00	0.00
	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 yr	Clay	85	0.00	0.00	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	88	0.00	0.00	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00
	Gravel/Chalk	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100 yr	Clay	126	0.00	0.00	0.00	10.58	0.00	0.00	0.00	0.00	0.00	0.00
	Total To WB	130	0.00	0.00	0.00	10.58	0.00	0.00	0.00	0.00	0.00	0.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
		Plot											
		Gravel/Chalk	248,899	4,242	3,197	1,689	3,712	775	33	1,800	3,673	1,305	1,637
		Clay	240,074	0	0	0	446	0	742	5,229	1,796	0	341
		Gravel Area in restricted discharge	237,228	4,242	3,197	1,689	3,712	775	33	1,800	3,672	1,305	1,638
		Clay Area in restricted discharge	85,442	0	0	0	446	0	742	2,796	1,105	0	340
		Restricted discharge area	322,670	4,242	3,197	1,689	4,158	775	775	4,595	4,778	1,305	1,978
		Total Area (sq.m)	488,974	4,242	3,197	1,689	4,158	775	775	7,029	5,469	1,305	1,978
		Percentage Impermeable (%)		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		Gravel (Restricted)	142,041	4,242	3,197	1,689	3,712	775	33	1,800	3,672	1,305	1,638
		Clay (Restricted)	39,006	0	0	0	446	0	742	2,796	1,105	0	340
		New Restricted Area (sq.m)	181,048	4,242	3,197	1,689	4,158	775	775	4,595	4,778	1,305	1,978
		Area Gravel	149,044	4,242	3,197	1,689	3,712	775	33	1,800	3,673	1,305	1,637
		Area Clay	146,604	0	0	0	446	0	742	5,229	1,796	0	341
		New Total Area (sq.m)	295,648	4,242	3,197	1,689	4,158	775	775	7,029	5,469	1,305	1,978
Rates (l/s)	1 yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	31	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.20	0.00	0.00
		Total To WB	32	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.20	0.00	0.00
	QBAR yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	36	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.23	0.00	0.00
		Total To WB	36	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.23	0.00	0.00
	30 yr	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	85	0.00	0.00	0.00	0.00	0.00	0.00	1.93	0.55	0.00	0.00
		Total To WB	88	0.00	0.00	0.00	0.00	0.00	0.00	1.93	0.55	0.00	0.00
	100 yr	Gravel/Chalk	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Clay	126	0.00	0.00	0.00	0.00	0.00	0.00	2.86	0.81	0.00	0.00
		Total To WB	130	0.00	0.00	0.00	0.00	0.00	0.00	2.86	0.81	0.00	0.00

Geology	Permitted Rates (l/s/ha) Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		TOTALS	R17	R18	R19	R20	R37	R50	R51
	Plot								
	Gravel/Chalk	248,899	0	4,898	0	0	700	0	0
	Clay	240,074	6,545	12,744	6,530	9,872	2,249	245	1,504
	Gravel Area in restricted discharge	237,228	0	1,791	0	0	0	0	0
	Clay Area in restricted discharge	85,442	6,545	1,916	0	0	0	0	0
	Restricted discharge area	322,670	6,545	3,707	0	0	0	0	0
	Total Area (sq.m)	488,974	6,545	17,642	6,530	9,872	2,949	245	1,504
	Percentage Impermeable (%)		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Gravel (Restricted)	142,041	0	1,791	0	0	0	0	0
	Clay (Restricted)	39,006	6,545	1,916	0	0	0	0	0
	New Restricted Area (sq.m)	181,048	6,545	3,707	0	0	0	0	0
	Area Gravel	149,044	0	4,898	0	0	700	0	0
	Area Clay	146,604	6,545	12,744	6,530	9,872	2,249	245	1,504
	New Total Area (sq.m)	295,648	6,545	17,642	6,530	9,872	2,949	245	1,504
	Gravel/Chalk	1	0.00	0.37	0.00	0.00	0.08	0.00	0.00
1 yr	Clay	31	0.00	3.11	1.87	2.83	0.65	0.07	0.43
	Total To WB	32	0.00	3.48	1.87	2.83	0.73	0.07	0.43
	Gravel/Chalk	1	0.00	0.43	0.00	0.00	0.10	0.00	0.00
QBAR yr	Clay	36	0.00	3.57	2.15	3.26	0.74	0.08	0.50
	Total To WB	36	0.00	4.00	2.15	3.26	0.84	0.08	0.50
	Gravel/Chalk	2	0.00	1.03	0.00	0.00	0.23	0.00	0.00
30 yr	Clay	85	0.00	8.58	5.17	7.82	1.78	0.19	1.19
	Total To WB	88	0.00	9.60	5.17	7.82	2.01	0.19	1.19
	Gravel/Chalk	3	0.00	1.52	0.00	0.00	0.34	0.00	0.00
100 yr	Clay	126	0.00	12.71	7.67	11.59	2.64	0.29	1.77
	Total To WB	130	0.00	14.23	7.67	11.59	2.98	0.29	1.77

Rates (l/s)

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	B1	B2	B3	B4a+b	B7	B8	B9	B11a	B12	B13
		Plot											
		Gravel/Chalk	26,374	0	0	1,090	0	510	3,429	0	0	0	0
		Clay	88,443	7,949	7,259	4,240	9,841	2,821	38	9,357	5,110	1,644	2,690
		Gravel Area in restricted discharge	1,366	0	0	0	0	0	0	0	0	0	0
		Clay Area in restricted discharge	7,471	0	0	0	0	0	0	0	0	0	0
		Restricted discharge area	8,837	0	0	0	0	0	0	0	0	0	0
		Total Area (sq.m)	114,816	7,949	7,259	5,330	9,841	3,331	3,467	9,357	5,110	1,644	2,690
		Percentage Impermeable (%)		94.4%	100.0%	89.4%	82.0%	87.5%	91.9%	51.7%	83.1%	96.0%	100.0%
		Gravel (Restricted)	1,085	0	0	0	0	0	0	0	0	0	0
		Clay (Restricted)	6,902	0	0	0	0	0	0	0	0	0	0
		New Restricted Area (sq.m)	7,988	0	0	0	0	0	0	0	0	0	0
		Area Gravel	24,098	0	0	975	0	446	3,150	0	0	0	0
		Area Clay	75,055	7,506	7,259	3,791	8,074	2,467	35	4,835	4,247	1,578	2,690
		New Total Area (sq.m)	99,153	7,506	7,259	4,766	8,074	2,913	3,185	4,835	4,247	1,578	2,690
Rates (l/s)	1 yr	Gravel/Chalk	3	0.00	0.00	0.12	0.00	0.05	0.38	0.00	0.00	0.00	0.00
		Clay	20	2.15	2.08	1.09	2.32	0.71	0.01	1.39	1.22	0.45	0.77
		Total To WB	22	2.15	2.08	1.21	2.32	0.76	0.39	1.39	1.22	0.45	0.77
	QBAR yr	Gravel/Chalk	3	0.00	0.00	0.13	0.00	0.06	0.43	0.00	0.00	0.00	0.00
		Clay	22	2.48	2.40	1.25	2.66	0.81	0.01	1.60	1.40	0.52	0.89
		Total To WB	26	2.48	2.40	1.38	2.66	0.88	0.44	1.60	1.40	0.52	0.89
	30 yr	Gravel/Chalk	8	0.00	0.00	0.32	0.00	0.15	1.04	0.00	0.00	0.00	0.00
		Clay	54	5.94	5.75	3.00	6.39	1.95	0.03	3.83	3.36	1.25	2.13
		Total To WB	62	5.94	5.75	3.32	6.39	2.10	1.07	3.83	3.36	1.25	2.13
	100 yr	Gravel/Chalk	11	0.00	0.00	0.48	0.00	0.22	1.54	0.00	0.00	0.00	0.00
		Clay	80	8.81	8.52	4.45	9.48	2.90	0.04	5.68	4.99	1.85	3.16
		Total To WB	91	8.81	8.52	4.93	9.48	3.11	1.58	5.68	4.99	1.85	3.16

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		TOTALS	C14	C15	C16	C17	C18	C19	G14	G15	O2	O3
	Plot		C14	C15	C16	C17	C18	C19	G14	G15	O2	O3
	Gravel/Chalk	26,374	1,507	789	1,986	1,949	3,146	975	0	0	37	1,138
	Clay	88,443	0	2,894	2,540	0	1,542	0	2,287	1,062	3,856	807
	Gravel Area in restricted discharge	1,366	0	0	0	0	1,366	0	0	0	0	0
	Clay Area in restricted discharge	7,471	0	214	948	0	1,480	0	0	0	0	532
	Restricted discharge area	8,837	0	214	948	0	2,846	0	0	0	0	532
	Total Area (sq.m)	114,816	1,507	3,683	4,526	1,949	4,688	975	2,287	1,062	3,893	1,945
	Percentage Impermeable (%)		100.0%	76.5%	77.4%	81.7%	79.5%	81.5%	0.0%	0.0%	100.0%	100.0%
	Gravel (Restricted)	1,085	0	0	0	0	1,085	0	0	0	0	0
	Clay (Restricted)	6,902	0	163	734	0	1,177	0	0	0	0	532
	New Restricted Area (sq.m)	7,988	0	163	734	0	2,262	0	0	0	0	532
	Area Gravel	24,098	1,507	603	1,536	1,593	2,501	795	0	0	37	1,138
	Area Clay	75,055	0	2,213	1,966	0	1,226	0	0	0	3,856	807
	New Total Area (sq.m)	99,153	1,507	2,816	3,502	1,593	3,726	795	0	0	3,893	1,945
Rates (l/s)	Gravel/Chalk	3	0.18	0.07	0.18	0.19	0.17	0.10	0.00	0.00	0.00	0.14
1 yr	Clay	20	0.00	0.59	0.35	0.00	0.01	0.00	0.00	0.00	1.11	0.08
	Total To WB	22	0.18	0.66	0.54	0.19	0.18	0.10	0.00	0.00	1.11	0.22
	Gravel/Chalk	3	0.21	0.08	0.21	0.22	0.19	0.11	0.00	0.00	0.01	0.16
QBAR yr	Clay	22	0.00	0.68	0.41	0.00	0.02	0.00	0.00	0.00	1.27	0.09
	Total To WB	26	0.21	0.76	0.62	0.22	0.21	0.11	0.00	0.00	1.28	0.25
	Gravel/Chalk	8	0.50	0.20	0.51	0.53	0.47	0.26	0.00	0.00	0.01	0.38
30 yr	Clay	54	0.00	1.62	0.98	0.00	0.04	0.00	0.00	0.00	3.05	0.22
	Total To WB	62	0.50	1.82	1.48	0.53	0.51	0.26	0.00	0.00	3.07	0.59
	Gravel/Chalk	11	0.74	0.30	0.75	0.78	0.69	0.39	0.00	0.00	0.02	0.56
100 yr	Clay	80	0.00	2.41	1.45	0.00	0.06	0.00	0.00	0.00	4.53	0.32
	Total To WB	91	0.74	2.70	2.20	0.78	0.75	0.39	0.00	0.00	4.55	0.88

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

			TOTALS	O4	O5	O6	O7	R21	R22	R23	R24	R25	R26
		Plot											
		Gravel/Chalk	26,374	2,729	2,272	199	0	0	0	0	0	3,070	0
		Clay	88,443	0	403	1,006	1,152	2,311	901	3,203	1,856	375	2,940
		Gravel Area in restricted discharge	1,366	0	0	0	0	0	0	0	0	0	0
		Clay Area in restricted discharge	7,471	0	0	0	0	0	0	0	0	0	0
		Restricted discharge area	8,837	0	0	0	0	0	0	0	0	0	0
		Total Area (sq.m)	114,816	2,729	2,675	1,205	1,152	2,311	901	3,203	1,856	3,445	2,940
		Percentage Impermeable (%)		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		Gravel (Restricted)	1,085	0	0	0	0	0	0	0	0	0	0
		Clay (Restricted)	6,902	0	0	0	0	0	0	0	0	0	0
		New Restricted Area (sq.m)	7,988	0	0	0	0	0	0	0	0	0	0
		Area Gravel	24,098	2,729	2,272	199	0	0	0	0	0	3,070	0
		Area Clay	75,055	0	403	1,006	1,152	2,311	901	3,203	1,856	375	2,940
		New Total Area (sq.m)	99,153	2,729	2,675	1,205	1,152	2,311	901	3,203	1,856	3,445	2,940
Rates (l/s)	1 yr	Gravel/Chalk	3	0.33	0.27	0.02	0.00	0.00	0.00	0.00	0.00	0.37	0.00
		Clay	20	0.00	0.12	0.29	0.33	0.66	0.26	0.92	0.53	0.11	0.84
		Total To WB	22	0.33	0.39	0.31	0.33	0.66	0.26	0.92	0.53	0.48	0.84
	QBAR yr	Gravel/Chalk	3	0.37	0.31	0.03	0.00	0.00	0.00	0.00	0.00	0.42	0.00
		Clay	22	0.00	0.13	0.33	0.38	0.76	0.30	1.06	0.61	0.12	0.97
		Total To WB	26	0.37	0.44	0.36	0.38	0.76	0.30	1.06	0.61	0.54	0.97
	30 yr	Gravel/Chalk	8	0.90	0.75	0.07	0.00	0.00	0.00	0.00	0.00	1.01	0.00
		Clay	54	0.00	0.32	0.80	0.91	1.83	0.71	2.54	1.47	0.30	2.33
		Total To WB	62	0.90	1.07	0.86	0.91	1.83	0.71	2.54	1.47	1.31	2.33
	100 yr	Gravel/Chalk	11	1.34	1.11	0.10	0.00	0.00	0.00	0.00	0.00	1.50	0.00
		Clay	80	0.00	0.47	1.18	1.35	2.71	1.06	3.76	2.18	0.44	3.45
		Total To WB	91	1.34	1.59	1.28	1.35	2.71	1.06	3.76	2.18	1.94	3.45

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Chalk	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted Gr/C	1.20	1.37	2.00	2.00
Restricted Cl	2.00	2.00	2.00	2.00

		TOTALS	R29	R31
	Plot			
	Gravel/Chalk	26,374	713	835
	Clay	88,443	7,338	1,020
	Gravel Area in restricted discharge	1,366	0	0
	Clay Area in restricted discharge	7,471	4,296	0
	Restricted discharge area	8,837	4,296	0
	Total Area (sq.m)	114,816	8,051	1,855
	Percentage Impermeable (%)		100.0%	100.0%
	Gravel (Restricted)	1,085	0	0
	Clay (Restricted)	6,902	4,296	0
	New Restricted Area (sq.m)	7,988	4,296	0
	Area Gravel	24,098	713	835
	Area Clay	75,055	7,338	1,020
	New Total Area (sq.m)	99,153	8,051	1,855
Rates (l/s)	Gravel/Chalk	3	0.09	0.10
1 yr	Clay	20	0.87	0.29
	Total To WB	22	0.96	0.39
	Gravel/Chalk	3	0.10	0.11
QBAR yr	Clay	22	1.00	0.34
	Total To WB	26	1.10	0.45
	Gravel/Chalk	8	0.24	0.28
30 yr	Clay	54	2.41	0.81
	Total To WB	62	2.64	1.08
	Gravel/Chalk	11	0.35	0.41
100 yr	Clay	80	3.57	1.20
	Total To WB	91	3.92	1.61

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

		TOTALS	C3	C4	C9	C10 & C11	C12	C13	C22	C23	G16	G17	G18
	Plot												
	Gravel/Chalk	28,645	6,664	4,539	0	10,934	205	845	0	0	0	0	0
	Clay	42,268	0	37	2,514	2,072	4,637	1,524	7,720	5,531	1,488	1,023	650
	Gravel Area in restricted discharge	21,752	6,664	4,539	0	5,755	0	0	0	0	0	0	0
	Clay Area in restricted discharge	3,126	0	37	0	0	0	0	0	0	0	0	0
	Restricted discharge area	24,877	6,664	4,576	0	5,755	0	0	0	0	0	0	0
	Total Area (sq.m)	70,913	6,664	4,576	2,514	13,006	4,842	2,369	7,720	5,531	1,488	1,023	650
	Percentage Impermeable (%)		59.0%	56.7%	100.0%	54.1%	69.4%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%
	Gravel (Restricted)	13,345	3,933	2,576	0	3,113	0	0	0	0	0	0	0
	Clay (Restricted)	830	0	21	0	0	0	0	0	0	0	0	0
	New Restricted Area (sq.m)	14,175	3,933	2,597	0	3,113	0	0	0	0	0	0	0
	Area Gravel	17,798	3,933	2,576	0	5,915	143	845	0	0	0	0	0
	Area Clay	33,708	0	21	2,514	1,121	3,217	1,524	7,720	5,531	0	0	0
	New Total Area (sq.m)	51,506	3,933	2,597	2,514	7,036	3,359	2,369	7,720	5,531	0	0	0
Rates (l/s)													
	Gravel/Chalk	1	0.00	0.00	0.00	0.34	0.02	0.10	0.00	0.00	0.00	0.00	0.00
1 yr	Clay	9	0.00	0.00	0.72	0.32	0.92	0.44	2.22	1.59	0.00	0.00	0.00
	Total To WB	10	0.00	0.00	0.72	0.66	0.94	0.54	2.22	1.59	0.00	0.00	0.00
	Gravel/Chalk	1	0.00	0.00	0.00	0.38	0.02	0.12	0.00	0.00	0.00	0.00	0.00
QBAR yr	Clay	11	0.00	0.00	0.83	0.37	1.06	0.50	2.55	1.83	0.00	0.00	0.00
	Total To WB	11	0.00	0.00	0.83	0.75	1.08	0.62	2.55	1.83	0.00	0.00	0.00
	Gravel/Chalk	1	0.00	0.00	0.00	0.92	0.05	0.28	0.00	0.00	0.00	0.00	0.00
30 yr	Clay	26	0.00	0.00	1.99	0.89	2.55	1.21	6.11	4.38	0.00	0.00	0.00
	Total To WB	28	0.00	0.00	1.99	1.81	2.59	1.49	6.11	4.38	0.00	0.00	0.00
	Gravel/Chalk	2	0.00	0.00	0.00	1.37	0.07	0.41	0.00	0.00	0.00	0.00	0.00
100 yr	Clay	39	0.00	0.00	2.95	1.32	3.78	1.79	9.06	6.49	0.00	0.00	0.00
	Total To WB	41	0.00	0.00	2.95	2.69	3.85	2.20	9.06	6.49	0.00	0.00	0.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

			TOTALS	G19	G20	O5	O8	R26	R27	R28	R29	R30	R32	R36
		Plot												
		Gravel/Chalk	28,645	0	1,071	0	0	0	0	0	663	970	2,753	0
		Clay	42,268	688	2,324	1,051	2,751	1,241	1,914	1,252	0	1,317	0	1,477
		Gravel Area in restricted discharge	21,752	0	1,071	0	0	0	0	0	0	970	2,753	0
		Clay Area in restricted discharge	3,126	0	2,280	0	0	0	0	0	0	809	0	0
		Restricted discharge area	24,877	0	3,350	0	0	0	0	0	0	1,779	2,753	0
		Total Area (sq.m)	70,913	688	3,395	1,051	2,751	1,241	1,914	1,252	663	2,287	2,753	1,477
		Percentage Impermeable (%)		0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		Gravel (Restricted)	13,345	0	0	0	0	0	0	0	0	970	2,753	0
		Clay (Restricted)	830	0	0	0	0	0	0	0	0	809	0	0
		New Restricted Area (sq.m)	14,175	0	0	0	0	0	0	0	0	1,779	2,753	0
		Area Gravel	17,798	0	0	0	0	0	0	0	663	970	2,753	0
		Area Clay	33,708	0	0	1,051	2,751	1,241	1,914	1,252	0	1,317	0	1,477
		New Total Area (sq.m)	51,506	0	0	1,051	2,751	1,241	1,914	1,252	663	2,287	2,753	1,477
Rates (l/s)	1 yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00
		Clay	9	0.00	0.00	0.30	0.79	0.36	0.55	0.36	0.00	0.15	0.00	0.42
		Total To WB	10	0.00	0.00	0.30	0.79	0.36	0.55	0.36	0.08	0.15	0.00	0.42
	QBAR yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00
		Clay	11	0.00	0.00	0.35	0.91	0.41	0.63	0.41	0.00	0.17	0.00	0.49
		Total To WB	11	0.00	0.00	0.35	0.91	0.41	0.63	0.41	0.09	0.17	0.00	0.49
	30 yr	Gravel/Chalk	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00
		Clay	26	0.00	0.00	0.83	2.18	0.98	1.52	0.99	0.00	0.40	0.00	1.17
		Total To WB	28	0.00	0.00	0.83	2.18	0.98	1.52	0.99	0.22	0.40	0.00	1.17
	100 yr	Gravel/Chalk	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00
		Clay	39	0.00	0.00	1.23	3.23	1.46	2.25	1.47	0.00	0.60	0.00	1.73
		Total To WB	41	0.00	0.00	1.23	3.23	1.46	2.25	1.47	0.32	0.60	0.00	1.73

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

	TOTALS	
Plot		R38
Gravel/Chalk	28,645	0
Clay	42,268	1,058
Gravel Area in restricted discharge	21,752	0
Clay Area in restricted discharge	3,126	0
Restricted discharge area	24,877	0
Total Area (sq.m)	70,913	1,058
Percentage Impermeable (%)		100.0%
Gravel (Restricted)	13,345	0
Clay (Restricted)	830	0
New Restricted Area (sq.m)	14,175	0
Area Gravel	17,798	0
Area Clay	33,708	1,058
New Total Area (sq.m)	51,506	1,058

Rates (l/s)

	Gravel/Chalk	1	0.00
1 yr	Clay	9	0.30
	Total To WB	10	0.30
	Gravel/Chalk	1	0.00
QBAR yr	Clay	11	0.35
	Total To WB	11	0.35
	Gravel/Chalk	1	0.00
30 yr	Clay	26	0.84
	Total To WB	28	0.84
	Gravel/Chalk	2	0.00
100 yr	Clay	39	1.24
	Total To WB	41	1.24

	Permitted Rates (l/s/ha)				
Geology	Rate 1	QBar	Rate 30	Rate 100	
Gravel/Cha	1.20	1.37	3.30	4.90	
Clay	2.87	3.30	7.92	11.74	
Restricted	1.20	1.37	2.00	2.00	
Restricted	2.00	2.00	2.00	2.00	TOTALS

		Plot		C1	C2	C7a	C7b	C8	C20	C21	C24	D11a	D13	O8
		Gravel/Chalk	33,605	6,853	8,682	1,325	236	4,711	0	0	0	2,931	0	1,207
		Clay	69,731	0	0	35	2,110	0	9,526	6,311	7,038	11,022	13,181	4,132
		Gravel Area in restricted discharge	15,510	4,849	8,682	0	0	347	0	0	0	0	0	0
		Clay Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	0	0
		Restricted discharge area	15,510	4,849	8,682	0	0	347	0	0	0	0	0	0
		Total Area (sq.m)	103,336	6,853	8,682	1,360	2,346	4,711	9,526	6,311	7,038	13,953	13,181	5,339
		Percentage Impermeable (%)		76.5%	83.6%	100.0%	100.0%	62.8%	88.2%	88.5%	100.0%	87.7%	100.0%	100.0%
		Gravel (Restricted)	12,816	3,710	7,257	0	0	218	0	0	0	0	0	0
		Clay (Restricted)	0	0	0	0	0	0	0	0	0	0	0	0
		New Restricted Area (sq.m)	12,816	3,710	7,257	0	0	218	0	0	0	0	0	0
		Area Gravel	27,702	5,243	7,257	1,325	236	2,959	0	0	0	2,571	0	1,207
		Area Clay	61,628	0	0	35	2,110	0	8,405	5,582	7,038	9,669	13,181	4,132
		New Total Area (sq.m)	89,329	5,243	7,257	1,360	2,346	2,959	8,405	5,582	7,038	12,241	13,181	5,339
Rates (l/s)	1 yr	Gravel/Chalk	2	0.18	0.00	0.16	0.03	0.33	0.00	0.00	0.00	0.31	0.00	0.14
		Clay	18	0.00	0.00	0.01	0.61	0.00	2.41	1.60	2.02	2.78	3.78	1.19
		Total To WB	19	0.18	0.00	0.17	0.63	0.33	2.41	1.60	2.02	3.08	3.78	1.33
	QBAR yr	Gravel/Chalk	2	0.21	0.00	0.18	0.03	0.38	0.00	0.00	0.00	0.35	0.00	0.17
		Clay	20	0.00	0.00	0.01	0.70	0.00	2.77	1.84	2.32	3.19	4.35	1.36
		Total To WB	22	0.21	0.00	0.19	0.73	0.38	2.77	1.84	2.32	3.54	4.35	1.53
	30 yr	Gravel/Chalk	5	0.51	0.00	0.44	0.08	0.90	0.00	0.00	0.00	0.85	0.00	0.40
		Clay	49	0.00	0.00	0.03	1.67	0.00	6.66	4.42	5.57	7.66	10.44	3.27
		Total To WB	54	0.51	0.00	0.47	1.75	0.90	6.66	4.42	5.57	8.51	10.44	3.67
	100 yr	Gravel/Chalk	7	0.75	0.00	0.65	0.12	1.34	0.00	0.00	0.00	1.26	0.00	0.59
		Clay	72	0.00	0.00	0.04	2.48	0.00	9.87	6.55	8.26	11.35	15.47	4.85
		Total To WB	80	0.75	0.00	0.69	2.59	1.34	9.87	6.55	8.26	12.61	15.47	5.44

	Permitted Rates (l/s/ha)				
Geology	Rate 1	QBar	Rate 30	Rate 100	
Gravel/Cha	1.20	1.37	3.30	4.90	
Clay	2.87	3.30	7.92	11.74	
Restricted	1.20	1.37	2.00	2.00	
Restricted	2.00	2.00	2.00	2.00	TOTALS

	Plot		O11	G21	G22	G23	R32	R33	R34	R35	R36	R39	R48
	Gravel/Chalk	33,605	2,042	0	0	756	3,166	18	0	0	0	0	1,678
	Clay	69,731	0	480	1,604	2,817	0	1,790	936	3,833	3,162	1,328	426
	Gravel Area in restricted discharge	15,510	55	0	0	0	1,087	0	0	0	0	0	490
	Clay Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	0	0
	Restricted discharge area	15,510	55	0	0	0	1,087	0	0	0	0	0	490
	Total Area (sq.m)	103,336	2,042	480	1,604	3,573	3,166	1,808	936	3,833	3,162	1,328	2,104
	Percentage Impermeable (%)		100.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Gravel (Restricted)	12,816	55	0	0	0	1,087	0	0	0	0	0	490
	Clay (Restricted)	0	0	0	0	0	0	0	0	0	0	0	0
	New Restricted Area (sq.m)	12,816	55	0	0	0	1,087	0	0	0	0	0	490
	Area Gravel	27,702	2,042	0	0	0	3,166	18	0	0	0	0	1,678
	Area Clay	61,628	0	0	0	0	0	1,790	936	3,833	3,162	1,328	426
	New Total Area (sq.m)	89,329	2,042	0	0	0	3,166	1,808	936	3,833	3,162	1,328	2,104
Rates (l/s)	Gravel/Chalk	2	0.24	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.14
1 yr	Clay	18	0.00	0.00	0.00	0.00	0.00	0.51	0.27	1.10	0.91	0.38	0.12
	Total To WB	19	0.24	0.00	0.00	0.00	0.25	0.52	0.27	1.10	0.91	0.38	0.26
	Gravel/Chalk	2	0.27	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.16
QBAR yr	Clay	20	0.00	0.00	0.00	0.00	0.00	0.59	0.31	1.26	1.04	0.44	0.14
	Total To WB	22	0.27	0.00	0.00	0.00	0.28	0.59	0.31	1.26	1.04	0.44	0.30
	Gravel/Chalk	5	0.66	0.00	0.00	0.00	0.69	0.01	0.00	0.00	0.00	0.00	0.39
30 yr	Clay	49	0.00	0.00	0.00	0.00	0.00	1.42	0.74	3.04	2.50	1.05	0.34
	Total To WB	54	0.66	0.00	0.00	0.00	0.69	1.42	0.74	3.04	2.50	1.05	0.73
	Gravel/Chalk	7	0.97	0.00	0.00	0.00	1.02	0.01	0.00	0.00	0.00	0.00	0.58
100 yr	Clay	72	0.00	0.00	0.00	0.00	0.00	2.10	1.10	4.50	3.71	1.56	0.50
	Total To WB	80	0.97	0.00	0.00	0.00	1.02	2.11	1.10	4.50	3.71	1.56	1.08

Permitted Rates (l/s/ha)

Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

		TOTALS	D7	D8	D9	D10	D11b	D12	D14	G31	R35	R40
	Plot											
	Gravel/Chalk	47,732	18,789	7,219	7,781	7,478	1,334	0	0	0	0	5,131
	Clay	33,573	4,409	0	0	0	8,470	4,624	5,323	860	1,610	4,012
	Gravel Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	0
	Clay Area in restricted discharge	0	0	0	0	0	0	0	0	0	0	0
	Restricted discharge area	0	0	0	0	0	0	0	0	0	0	0
	Total Area (sq.m)	81,304	23,198	7,219	7,781	7,478	9,804	4,624	5,323	860	1,610	9,142
	Percentage Impermeable (%)		83.6%	83.8%	83.5%	84.5%	100.0%	88.5%	88.5%	0.0%	100.0%	100.0%
	Gravel (Restricted)	0	0	0	0	0	0	0	0	0	0	0
	Clay (Restricted)	0	0	0	0	0	0	0	0	0	0	0
	New Restricted Area (sq.m)	0	0	0	0	0	0	0	0	0	0	0
	Area Gravel	41,040	15,713	6,049	6,498	6,316	1,334	0	0	0	0	5,131
	Area Clay	30,849	3,687	0	0	0	8,470	4,094	4,712	0	1,610	4,012
	New Total Area (sq.m)	71,889	19,400	6,049	6,498	6,316	9,804	4,094	4,712	0	1,610	9,142
Rates (l/s)	Gravel/Chalk	5	1.89	0.73	0.78	0.76	0.16	0.00	0.00	0.00	0.00	0.62
1 yr	Clay	9	1.06	0.00	0.00	0.00	2.43	1.17	1.35	0.00	0.46	1.15
	Total To WB	14	2.94	0.73	0.78	0.76	2.59	1.17	1.35	0.00	0.46	1.77
	Gravel/Chalk	6	2.15	0.83	0.89	0.87	0.18	0.00	0.00	0.00	0.00	0.70
QBAR yr	Clay	10	1.22	0.00	0.00	0.00	2.80	1.35	1.55	0.00	0.53	1.32
	Total To WB	16	3.37	0.83	0.89	0.87	2.98	1.35	1.55	0.00	0.53	2.03
	Gravel/Chalk	14	5.19	2.00	2.14	2.08	0.44	0.00	0.00	0.00	0.00	1.69
30 yr	Clay	24	2.92	0.00	0.00	0.00	6.71	3.24	3.73	0.00	1.28	3.18
	Total To WB	38	8.11	2.00	2.14	2.08	7.15	3.24	3.73	0.00	1.28	4.87
	Gravel/Chalk	20	7.70	2.96	3.18	3.09	0.65	0.00	0.00	0.00	0.00	2.51
100 yr	Clay	36	4.33	0.00	0.00	0.00	9.94	4.81	5.53	0.00	1.89	4.71
	Total To WB	56	12.03	2.96	3.18	3.09	10.60	4.81	5.53	0.00	1.89	7.22

Permitted Rates (l/s/ha)

Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

		TOTALS	R42	R52
	Plot			
	Gravel/Chalk	47,732	0	0
	Clay	33,573	3,415	850
	Gravel Area in restricted discharge	0	0	0
	Clay Area in restricted discharge	0	0	0
	Restricted discharge area	0	0	0
	Total Area (sq.m)	81,304	3,415	850
	Percentage Impermeable (%)		100.0%	100.0%
	Gravel (Restricted)	0	0	0
	Clay (Restricted)	0	0	0
	New Restricted Area (sq.m)	0	0	0
	Area Gravel	41,040	0	0
	Area Clay	30,849	3,415	850
	New Total Area (sq.m)	71,889	3,415	850
Rates (l/s)				
	Gravel/Chalk	5	0.00	0.00
1 yr	Clay	9	0.98	0.24
	Total To WB	14	0.98	0.24
	Gravel/Chalk	6	0.00	0.00
QBAR yr	Clay	10	1.13	0.28
	Total To WB	16	1.13	0.28
	Gravel/Chalk	14	0.00	0.00
30 yr	Clay	24	2.70	0.67
	Total To WB	38	2.70	0.67
	Gravel/Chalk	20	0.00	0.00
100 yr	Clay	36	4.01	1.00
	Total To WB	56	4.01	1.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

		TOTALS	D4	G26	G27	R42	R44	R53
	Plot							
	Gravel/Chalk	2,462	0	0	2,200	0	262	0
	Clay	17,340	12,130	1,286	83	768	2,223	850
	Gravel Area in restricted discharge	0	0	0	0	0	0	0
	Clay Area in restricted discharge	0	0	0	0	0	0	0
	Restricted discharge area	0	0	0	0	0	0	0
	Total Area (sq.m)	19,802	12,130	1,286	2,283	768	2,485	850
	Percentage Impermeable (%)		90.8%	0.0%	0.0%	100.0%	100.0%	100.0%
	Gravel (Restricted)	0	0	0	0	0	0	0
	Clay (Restricted)	0	0	0	0	0	0	0
	New Restricted Area (sq.m)	0	0	0	0	0	0	0
	Area Gravel	262	0	0	0	0	262	0
	Area Clay	14,854	11,013	0	0	768	2,223	850
	New Total Area (sq.m)	15,116	11,013	0	0	768	2,485	850
Rates (l/s)	Gravel/Chalk	0	0.00	0.00	0.00	0.00	0.03	0.00
1 yr	Clay	4	3.16	0.00	0.00	0.22	0.64	0.24
	Total	4	3.16	0.00	0.00	0.22	0.67	0.24
	Gravel/Chalk	0	0.00	0.00	0.00	0.00	0.04	0.00
QBAR yr	Clay	5	3.63	0.00	0.00	0.25	0.73	0.28
	Total	5	3.63	0.00	0.00	0.25	0.77	0.28
	Gravel/Chalk	0	0.00	0.00	0.00	0.00	0.09	0.00
30 yr	Clay	12	8.72	0.00	0.00	0.61	1.76	0.67
	Total	12	8.72	0.00	0.00	0.61	1.85	0.67
	Gravel/Chalk	0	0.00	0.00	0.00	0.00	0.13	0.00
100 yr	Clay	17	12.93	0.00	0.00	0.90	2.61	1.00
	Total	18	12.93	0.00	0.00	0.90	2.74	1.00

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

		TOTALS	D5	D6	G28	R43	R44
	Plot						
	Gravel/Chalk	9,049	18	8,727	0	0	304
	Clay	35,185	5,344	16,114	6,530	1,197	6,000
	Gravel Area in restricted discharge	0	0	0	0	0	0
	Clay Area in restricted discharge	0	0	0	0	0	0
	Restricted discharge area	0	0	0	0	0	0
	Total Area (sq.m)	44,234	5,362	24,841	6,530	1,197	6,304
	Percentage Impermeable (%)		100.0%	84.4%	0.0%	100.0%	100.0%
	Gravel (Restricted)	0	0	0	0	0	0
	Clay (Restricted)	0	0	0	0	0	0
	New Restricted Area (sq.m)	0	0	0	0	0	0
	Area Gravel	7,684	18	7,362	0	0	304
	Area Clay	26,134	5,344	13,593	0	1,197	6,000
	New Total Area (sq.m)	33,818	5,362	20,955	0	1,197	6,304
Rates (l/s)							
	Gravel/Chalk	1	0.00	0.88	0.00	0.00	0.04
1 yr	Clay	8	1.53	3.90	0.00	0.34	1.72
	Total	8	1.54	4.78	0.00	0.34	1.76
	Gravel/Chalk	1	0.00	1.01	0.00	0.00	0.04
QBAR yr	Clay	9	1.76	4.49	0.00	0.40	1.98
	Total	10	1.77	5.49	0.00	0.40	2.02
	Gravel/Chalk	3	0.01	2.43	0.00	0.00	0.10
30 yr	Clay	21	4.23	10.77	0.00	0.95	4.75
	Total	23	4.24	13.20	0.00	0.95	4.85
	Gravel/Chalk	4	0.01	3.61	0.00	0.00	0.15
100 yr	Clay	31	6.27	15.96	0.00	1.41	7.04
	Total	34	6.28	19.57	0.00	1.41	7.19

	Permitted Rates (l/s/ha)			
Geology	Rate 1	QBar	Rate 30	Rate 100
Gravel/Cha	1.20	1.37	3.30	4.90
Clay	2.87	3.30	7.92	11.74
Restricted	1.20	1.37	2.00	2.00
Restricted	2.00	2.00	2.00	2.00

		TOTALS	D1	D2	D3	R43
	Plot					
	Gravel/Chalk	0	0	0	0	0
	Clay	53,339	10,019	17,228	20,298	5,793
	Gravel Area in restricted discharge	0	0	0	0	0
	Clay Area in restricted discharge	0	0	0	0	0
	Restricted discharge area	0	0	0	0	0
	Total Area (sq.m)	53,339	10,019	17,228	20,298	5,793
	Percentage Impermeable (%)		100.0%	92.0%	92.1%	100.0%
	Gravel (Restricted)	0	0	0	0	0
	Clay (Restricted)	0	0	0	0	0
	New Restricted Area (sq.m)	0	0	0	0	0
	Area Gravel	0	0	0	0	0
	Area Clay	50,354	10,019	15,842	18,699	5,793
	New Total Area (sq.m)	50,354	10,019	15,842	18,699	5,793
Rates (l/s)						
	Gravel/Chalk	0	0.00	0.00	0.00	0.00
1 yr	Clay	14	2.88	4.55	5.37	1.66
	Total	14	2.88	4.55	5.37	1.66
	Gravel/Chalk	0	0.00	0.00	0.00	0.00
QBAR yr	Clay	17	3.31	5.23	6.17	1.91
	Total	17	3.31	5.23	6.17	1.91
	Gravel/Chalk	0	0.00	0.00	0.00	0.00
30 yr	Clay	40	7.94	12.55	14.81	4.59
	Total	40	7.94	12.55	14.81	4.59
	Gravel/Chalk	0	0.00	0.00	0.00	0.00
100 yr	Clay	59	11.76	18.60	21.95	6.80
	Total	59	11.76	18.60	21.95	6.80

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 1.SWS

Pipe Sizes 121106 NETWORK 99 Manhole Sizes 121106 NETWORK 99

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.450	Maximum Backdrop Height (m)	20.000
Maximum Rainfall (mm/hr)	1	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.000	20.438	0.293	69.8	0.137	5.00	0.0	0.600		o	300
1.001	26.962	0.530	50.9	0.000	0.00	0.0	0.600		o	300
2.000	24.863	0.188	132.3	0.139	5.00	0.0	0.600		o	300
2.001	9.889	0.033	300.0	0.000	0.00	0.0	0.600		o	300
1.002	15.991	0.053	301.7	0.029	0.00	0.0	0.600		o	375
1.003	9.540	0.032	298.1	0.000	0.00	0.0	0.600		o	375
1.004	89.146	0.299	298.1	0.000	0.00	0.0	0.600		o	450
1.005	72.864	0.131	556.2	0.000	0.00	0.0	0.600		o	450
1.006	49.326	0.285	173.1	0.000	0.00	0.0	0.600		o	600
3.000	17.598	0.088	200.0	0.228	5.00	0.0	0.600		o	450
3.001	31.163	0.156	199.8	0.227	0.00	0.0	0.600		o	600
4.000	6.676	0.089	75.0	0.421	5.00	0.0	0.600		o	450
4.001	27.399	0.365	75.1	0.157	0.00	0.0	0.600		o	450
4.002	41.275	0.825	50.0	0.064	0.00	0.0	0.600		o	450

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	1.00	5.18	22.438	0.137	0.0	0.0	0.0	1.89	133.2	0.4
1.001	1.00	5.38	22.145	0.137	0.0	0.0	0.0	2.21	156.2	0.4
2.000	1.00	5.30	21.836	0.139	0.0	0.0	0.0	1.37	96.5	0.4
2.001	1.00	5.49	21.648	0.139	0.0	0.0	0.0	0.90	63.8	0.4
1.002	1.00	5.74	21.540	0.305	0.0	0.0	0.0	1.04	114.6	0.8
1.003	1.00	5.90	21.487	0.305	0.0	0.0	0.0	1.04	115.3	0.8
1.004	1.00	7.16	21.380	0.305	0.0	0.0	0.0	1.17	186.4	0.8
1.005	1.00	8.58	21.081	0.305	0.0	0.0	0.0	0.85	136.0	0.8
1.006	1.00	9.03	20.800	0.305	0.0	0.0	0.0	1.85	522.5	0.8
3.000	1.00	5.20	22.223	0.228	0.0	0.0	0.0	1.43	228.1	0.6
3.001	1.00	5.51	21.985	0.455	0.0	0.0	0.0	1.72	486.1	1.2
4.000	1.00	5.05	23.334	0.421	0.0	0.0	0.0	2.35	373.7	1.1
4.001	1.00	5.24	23.245	0.578	0.0	0.0	0.0	2.35	373.5	1.6
4.002	1.00	5.48	22.880	0.642	0.0	0.0	0.0	2.88	458.0	1.7

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
3.002	41.085	0.327	125.6	0.064	0.00	0.0	0.600		o	600
5.000	32.893	0.219	150.2	0.436	5.00	0.0	0.600		o	450
5.001	24.684	0.165	149.6	0.000	0.00	0.0	0.600		o	450
3.003	100.723	0.936	107.6	0.000	0.00	0.0	0.600		o	600
3.004	16.171	0.051	317.1	0.186	0.00	0.0	0.600		o	600
1.007	26.857	0.182	148.0	0.000	0.00	0.0	0.600		o	600
6.000	18.360	0.125	146.9	0.036	5.00	0.0	0.600	3	\=/	1000
6.001	33.828	0.226	149.7	0.000	0.00	0.0	0.600	3	\=/	1000
6.002	42.649	0.284	150.2	0.021	0.00	0.0	0.600	3	\=/	1000
6.003	94.280	0.629	149.9	0.039	0.00	0.0	0.600	3	\=/	1000
6.004	30.752	0.201	153.0	0.134	0.00	0.0	0.600	3	\=/	1000
6.005	9.014	0.060	150.2	0.000	0.00	0.0	0.600		o	225
6.006	97.244	0.648	150.1	0.176	0.00	0.0	0.600	3	\=/	1000
6.007	11.485	0.077	149.2	0.000	0.00	0.0	0.600		o	225
1.008	22.325	0.045	496.1	0.000	0.00	0.0	0.600		[]	-1
1.009	33.568	0.112	299.7	0.054	0.00	0.0	0.600		[]	-1
7.000	16.178	0.054	299.6	0.101	5.00	0.0	0.600		o	300
7.001	10.792	0.036	299.8	0.000	0.00	0.0	0.600		o	300
7.002	33.067	0.131	252.4	0.023	0.00	0.0	0.600	3	\=/	1000
8.000	17.954	0.122	147.2	0.058	5.00	0.0	0.600		o	300

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)
3.002	1.00	5.82	21.829	1.161	0.0	0.0	0.0	2.17	613.9	3.1
5.000	1.00	5.33	22.111	0.436	0.0	0.0	0.0	1.66	263.5	1.2
5.001	1.00	5.58	21.892	0.436	0.0	0.0	0.0	1.66	264.0	1.2
3.003	1.00	6.54	21.502	1.597	0.0	0.0	0.0	2.35	663.7	4.3
3.004	1.00	6.74	20.566	1.783	0.0	0.0	0.0	1.36	385.1	4.8
1.007	1.00	9.25	20.515	2.088	0.0	0.0	0.0	2.00	565.4	5.7
6.000	1.00	5.18	23.063	0.036	0.0	0.0	0.0	1.67	362.6	0.1
6.001	1.00	5.53	22.938	0.036	0.0	0.0	0.0	1.65	359.1	0.1
6.002	1.00	5.96	22.712	0.057	0.0	0.0	0.0	1.65	358.5	0.2
6.003	1.00	6.91	22.428	0.096	0.0	0.0	0.0	1.65	358.9	0.3
6.004	1.00	7.22	21.799	0.230	0.0	0.0	0.0	1.63	355.2	0.6
6.005	1.00	7.36	21.598	0.230	0.0	0.0	0.0	1.06	42.3	0.6
6.006	1.00	8.35	21.538	0.406	0.0	0.0	0.0	1.65	358.7	1.1
6.007	1.00	8.53	20.890	0.406	0.0	0.0	0.0	1.07	42.5	1.1
1.008	1.00	9.55	20.334	2.494	0.0	0.0	0.0	1.25	749.7	6.8
1.009	1.00	9.90	20.289	2.548	0.0	0.0	0.0	1.61	966.7	6.9
7.000	1.00	5.30	24.015	0.101	0.0	0.0	0.0	0.90	63.8	0.3
7.001	1.00	5.50	23.961	0.101	0.0	0.0	0.0	0.90	63.8	0.3
7.002	1.00	5.93	23.925	0.124	0.0	0.0	0.0	1.27	275.9	0.3
8.000	1.00	5.23	24.163	0.058	0.0	0.0	0.0	1.29	91.5	0.2

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
8.001	11.379	0.033	344.8	0.000	0.00	0.0	0.600		o	300
9.000	8.059	0.113	71.3	0.078	5.00	0.0	0.600		o	300
9.001	22.316	0.056	398.5	0.000	0.00	0.0	0.600		o	300
8.002	20.288	0.214	94.8	0.000	0.00	0.0	0.600		o	300
7.003	14.292	0.109	131.1	0.130	0.00	0.0	0.600		o	300
7.004	35.239	0.176	200.0	0.000	0.00	0.0	0.600		3 \=/	1000
7.005	17.521	0.117	149.8	0.056	0.00	0.0	0.600		o	300
7.006	18.017	0.180	100.0	0.014	0.00	0.0		0.045	3 \=/	1000
10.000	15.638	0.052	300.7	0.236	5.00	0.0	0.600		o	300
10.001	36.675	0.122	300.0	0.000	0.00	0.0	0.600		o	300
7.007	66.868	0.669	100.0	0.020	0.00	0.0		0.045	3 \=/	1000
11.000	46.491	0.465	100.0	0.012	5.00	0.0		0.045	3 \=/	1000
11.001	20.469	0.205	99.8	0.000	0.00	0.0		0.045	o	300
12.000	18.626	0.062	300.4	0.236	5.00	0.0	0.600		o	300
12.001	34.487	0.130	265.3	0.000	0.00	0.0	0.600		o	300
12.002	43.627	0.145	300.9	0.027	0.00	0.0	0.600		3 \=/	1000
12.003	18.857	0.126	149.7	0.103	0.00	0.0	0.600		o	300
11.002	64.502	0.645	100.0	0.000	0.00	0.0		0.045	3 \=/	1000
11.003	22.213	0.222	100.1	0.000	0.00	0.0		0.045	o	375

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)
8.001	1.00	5.46	24.041	0.058	0.0	0.0	0.0	0.84	59.4	0.2
9.000	1.00	5.07	24.204	0.078	0.0	0.0	0.0	1.86	131.8	0.2
9.001	1.00	5.55	24.091	0.078	0.0	0.0	0.0	0.78	55.2	0.2
8.002	1.00	5.76	24.008	0.136	0.0	0.0	0.0	1.62	114.2	0.4
7.003	1.00	6.11	23.794	0.389	0.0	0.0	0.0	1.37	96.9	1.1
7.004	1.00	6.52	23.685	0.389	0.0	0.0	0.0	1.43	310.3	1.1
7.005	1.00	6.75	23.509	0.445	0.0	0.0	0.0	1.28	90.7	1.2
7.006	1.00	7.33	23.392	0.459	0.0	0.0	0.0	0.52	112.0	1.2
10.000	1.00	5.29	23.306	0.236	0.0	0.0	0.0	0.90	63.7	0.6
10.001	1.00	5.97	23.254	0.236	0.0	0.0	0.0	0.90	63.8	0.6
7.007	1.00	9.49	23.132	0.715	0.0	0.0	0.0	0.52	112.0	1.9
11.000	1.00	6.50	24.000	0.012	0.0	0.0	0.0	0.52	112.0	0.0
11.001	1.00	7.37	23.385	0.012	0.0	0.0	0.0	0.40	28.0	0.0
12.000	1.00	5.34	23.860	0.236	0.0	0.0	0.0	0.90	63.8	0.6
12.001	1.00	5.94	23.798	0.236	0.0	0.0	0.0	0.96	67.9	0.6
12.002	1.00	6.57	23.668	0.263	0.0	0.0	0.0	1.16	252.5	0.7
12.003	1.00	6.81	23.373	0.366	0.0	0.0	0.0	1.28	90.7	1.0
11.002	1.00	9.45	23.180	0.378	0.0	0.0	0.0	0.52	112.0	1.0
11.003	1.00	10.26	22.310	0.378	0.0	0.0	0.0	0.46	50.6	1.0

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
7.008	43.366	0.505	85.9	0.075	0.00	0.0		0.045	3 \=/	1000
13.000	43.366	0.289	150.0	0.397	5.00	0.0	0.600		o	375
13.001	33.624	0.112	300.2	0.000	0.00	0.0	0.600		o	375
7.009	44.389	0.444	100.0	0.045	0.00	0.0		0.045	3 \=/	1000
14.000	30.016	0.100	300.0	0.240	5.00	0.0	0.600		o	300
14.001	32.864	0.110	300.0	0.000	0.00	0.0	0.600		o	300
15.000	15.277	0.051	300.0	0.027	5.00	0.0	0.600		3 \=/	1000
14.002	36.985	0.123	300.0	0.024	0.00	0.0	0.600		3 \=/	1000
16.000	51.503	0.172	300.0	0.012	5.00	0.0	0.600		3 \=/	1000
14.003	8.000	0.053	150.9	0.000	0.00	0.0	0.600		[]	-1
17.000	40.379	0.135	299.1	0.120	5.00	0.0	0.600		o	300
17.001	32.282	0.108	298.9	0.120	0.00	0.0	0.600		o	300
18.000	41.413	0.276	150.0	0.093	5.00	0.0	0.600		3 \=/	1000
17.002	7.843	0.026	301.7	0.000	0.00	0.0	0.600		o	375
17.003	63.752	0.213	300.0	0.000	0.00	0.0	0.600		o	375
14.004	4.998	0.017	300.0	0.000	0.00	0.0	0.600		o	375
14.005	107.452	0.358	300.1	0.130	0.00	0.0	0.600		3 \=/	1000

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	1.00	11.56	22.088	1.168	0.0	0.0	0.0	0.56	120.9	3.2
13.000	1.00	5.49	22.274	0.397	0.0	0.0	0.0	1.48	163.1	1.1
13.001	1.00	6.03	21.985	0.397	0.0	0.0	0.0	1.04	114.9	1.1
7.009	1.00	13.00	21.583	1.609	0.0	0.0	0.0	0.52	112.0	4.4
14.000	1.00	5.55	23.483	0.240	0.0	0.0	0.0	0.90	63.8	0.6
14.001	1.00	6.16	23.383	0.240	0.0	0.0	0.0	0.90	63.8	0.6
15.000	1.00	5.22	23.800	0.027	0.0	0.0	0.0	1.16	252.9	0.1
14.002	1.00	6.69	23.273	0.291	0.0	0.0	0.0	1.16	252.9	0.8
16.000	1.00	5.74	23.224	0.012	0.0	0.0	0.0	1.16	252.9	0.0
14.003	1.00	6.75	22.602	0.303	0.0	0.0	0.0	2.28	1365.4	0.8
17.000	1.00	5.74	22.600	0.120	0.0	0.0	0.0	0.90	63.9	0.3
17.001	1.00	6.34	22.465	0.240	0.0	0.0	0.0	0.90	63.9	0.6
18.000	1.00	5.42	23.000	0.093	0.0	0.0	0.0	1.65	358.7	0.3
17.002	1.00	6.47	22.282	0.333	0.0	0.0	0.0	1.04	114.6	0.9
17.003	1.00	7.49	22.256	0.333	0.0	0.0	0.0	1.04	115.0	0.9
14.004	1.00	7.57	22.043	0.636	0.0	0.0	0.0	1.04	115.0	1.7
14.005	1.00	9.11	22.027	0.766	0.0	0.0	0.0	1.16	252.8	2.1

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
14.006	18.657	0.062	300.9	0.169	0.00	0.0	0.600		o	375
7.010	39.963	0.133	300.5	0.062	0.00	0.0		0.045	3 \=/	1000
19.000	70.233	0.468	150.1	0.258	5.00	0.0	0.600		o	375
19.001	39.530	0.264	149.7	0.258	0.00	0.0	0.600		o	450
7.011	11.847	0.417	28.4	0.047	0.00	0.0	0.600		o	450
1.010	79.188	0.818	96.8	0.060	0.00	0.0	0.600		[]	-1
20.000	34.017	0.183	185.9	0.162	5.00	0.0	0.600		o	300
20.001	8.939	0.091	98.2	0.162	0.00	0.0	0.600		o	450
1.011	71.390	0.143	499.2	0.000	0.00	0.0	0.600		[]	-2
1.012	72.027	0.144	500.2	0.000	0.00	0.0	0.600		[]	-2
21.000	44.360	0.148	299.7	0.162	5.00	0.0	0.600		o	300
21.001	32.108	0.400	80.3	0.162	0.00	0.0	0.600		o	450
1.013	6.481	0.013	500.0	0.000	0.00	0.0	0.600		[]	-2
22.000	41.179	0.137	300.6	0.019	5.00	0.0	0.600		3 \=/	1000
23.000	74.029	0.494	150.0	0.242	5.00	0.0	0.600		o	375
23.001	10.984	0.055	200.0	0.306	0.00	0.0	0.600		o	450
22.001	16.007	0.053	302.0	0.075	0.00	0.0	0.600		3 \=/	1000

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
14.006	1.00	9.41	21.444	0.935	0.0	0.0	0.0	1.04	114.8	2.5
7.010	1.00	15.24	21.139	2.606	0.0	0.0	0.0	0.30	64.6	7.1
19.000	1.00	5.79	21.726	0.258	0.0	0.0	0.0	1.48	163.1	0.7
19.001	1.00	6.19	21.183	0.516	0.0	0.0	0.0	1.66	263.9	1.4
7.011	1.00	15.29	20.706	3.170	0.0	0.0	0.0	3.83	608.5	8.6
1.010	1.00	15.75	20.139	5.778	0.0	0.0	0.0	2.84	1706.8	15.6
20.000	1.00	5.49	20.052	0.162	0.0	0.0	0.0	1.15	81.3	0.4
20.001	1.00	5.57	19.719	0.324	0.0	0.0	0.0	2.05	326.3	0.9
1.011	1.00	16.63	19.321	6.101	0.0	0.0	0.0	1.35	1218.4	16.5
1.012	1.00	17.52	19.178	6.101	0.0	0.0	0.0	1.35	1217.2	16.5
21.000	1.00	5.82	19.889	0.162	0.0	0.0	0.0	0.90	63.8	0.4
21.001	1.00	6.05	19.741	0.324	0.0	0.0	0.0	2.27	361.2	0.9
1.013	1.00	17.60	19.034	6.425	0.0	0.0	0.0	1.35	1217.4	17.4
22.000	1.00	5.59	21.000	0.019	0.0	0.0	0.0	1.16	252.6	0.1
23.000	1.00	5.84	20.997	0.242	0.0	0.0	0.0	1.48	163.1	0.7
23.001	1.00	5.96	20.428	0.548	0.0	0.0	0.0	1.43	228.1	1.5
22.001	1.00	6.19	20.374	0.642	0.0	0.0	0.0	1.16	252.0	1.7

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
22.002	11.082	0.074	150.0	0.028	0.00	0.0	0.600		o	300
24.000	88.888	0.296	300.3	0.044	5.00	0.0	0.600	3	\=/	1000
24.001	13.105	0.044	297.8	0.138	0.00	0.0	0.600		o	300
22.003	35.373	0.236	150.0	0.044	0.00	0.0	0.600	3	\=/	1000
25.000	34.001	0.113	300.9	0.201	5.00	0.0	0.600		o	300
25.001	23.713	0.079	300.2	0.200	0.00	0.0	0.600		o	450
22.004	25.861	0.172	150.0	0.000	0.00	0.0	0.600	3	\=/	1000
22.005	15.489	0.103	150.4	0.045	0.00	0.0	0.600		o	450
26.000	55.215	0.461	119.8	0.000	5.00	0.0	0.600	3	\=/	1000
26.001	7.259	0.048	151.2	0.000	0.00	0.0	0.600		o	300
22.006	57.661	0.192	300.3	0.049	0.00	0.0	0.600	3	\=/	1000
27.000	17.645	0.179	98.6	0.263	5.00	0.0	0.600		o	375
27.001	36.721	0.122	301.0	0.134	0.00	0.0	0.600		o	375
22.007	8.560	0.050	171.2	0.124	0.00	0.0	0.600		o	375
1.014	22.671	0.076	298.3	0.037	0.00	0.0	0.600		[]	-2
1.015	73.553	0.147	500.4	0.000	0.00	0.0	0.600		[]	-2
28.000	39.029	0.130	300.2	0.012	5.00	0.0	0.600	3	\=/	1000

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)
22.002	1.00	6.34	20.321	0.670	0.0	0.0	0.0	1.28	90.6	1.8
24.000	1.00	6.27	20.878	0.044	0.0	0.0	0.0	1.16	252.8	0.1
24.001	1.00	6.52	20.432	0.182	0.0	0.0	0.0	0.91	64.0	0.5
22.003	1.00	6.87	20.247	0.896	0.0	0.0	0.0	1.65	358.8	2.4
25.000	1.00	5.63	20.315	0.201	0.0	0.0	0.0	0.90	63.7	0.5
25.001	1.00	5.97	20.052	0.401	0.0	0.0	0.0	1.17	185.8	1.1
22.004	1.00	7.13	19.973	1.297	0.0	0.0	0.0	1.65	358.8	3.5
22.005	1.00	7.29	19.801	1.342	0.0	0.0	0.0	1.66	263.3	3.6
26.000	1.00	5.50	20.290	0.000	0.0	0.0	0.0	1.85	401.8	0.0
26.001	1.00	5.59	19.679	0.000	0.0	0.0	0.0	1.28	90.2	0.0
22.006	1.00	8.12	19.631	1.391	0.0	0.0	0.0	1.16	252.7	3.8
27.000	1.00	5.16	20.144	0.263	0.0	0.0	0.0	1.83	201.6	0.7
27.001	1.00	5.75	19.965	0.397	0.0	0.0	0.0	1.04	114.8	1.1
22.007	1.00	8.22	19.439	1.911	0.0	0.0	0.0	1.38	152.6	5.2
1.014	1.00	17.82	19.021	8.373	0.0	0.0	0.0	1.75	1579.5	22.7
1.015	1.00	18.72	18.645	8.373	0.0	0.0	0.0	1.35	1217.0	22.7
28.000	1.00	5.56	22.500	0.012	0.0	0.0	0.0	1.16	252.8	0.0

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
29.000	51.394	0.343	149.8	0.209	5.00	0.0	0.600		o	300
29.001	10.658	0.071	150.1	0.209	0.00	0.0	0.600		o	375
29.002	13.777	0.092	150.0	0.000	0.00	0.0	0.600		o	375
28.001	17.336	0.116	150.0	0.000	0.00	0.0	0.600	3	\=/	1000
28.002	17.107	0.057	300.1	0.000	0.00	0.0	0.600		o	300
30.000	90.182	0.601	150.0	0.011	5.00	0.0	0.600	3	\=/	1000
30.001	14.403	0.096	150.0	0.139	0.00	0.0	0.600		o	300
28.003	27.381	0.183	149.6	0.000	0.00	0.0	0.600	3	\=/	1500
31.000	25.901	0.173	149.7	0.207	5.00	0.0	0.600		o	375
31.001	12.682	0.085	149.2	0.206	0.00	0.0	0.600		o	450
31.002	14.041	0.094	149.4	0.000	0.00	0.0	0.600		o	450
28.004	27.381	0.183	149.6	0.000	0.00	0.0	0.600	3	\=/	1500
28.005	18.683	0.125	149.5	0.000	0.00	0.0	0.600		o	450
32.000	98.373	0.656	150.0	0.010	5.00	0.0	0.600	3	\=/	1000
32.001	16.102	0.107	150.5	0.149	0.00	0.0	0.600		o	300
28.006	31.390	0.209	150.0	0.000	0.00	0.0	0.600	3	\=/	1500
33.000	43.761	0.384	114.0	0.203	5.00	0.0	0.600		o	300
33.001	15.073	0.151	99.8	0.202	0.00	0.0	0.600		o	375
28.007	22.072	0.074	298.3	0.000	0.00	0.0	0.600	3	\=/	1000

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
29.000	1.00	5.67	22.574	0.209	0.0	0.0	0.0	1.28	90.6	0.6
29.001	1.00	5.79	22.156	0.418	0.0	0.0	0.0	1.48	163.1	1.1
29.002	1.00	5.94	22.085	0.418	0.0	0.0	0.0	1.48	163.1	1.1
28.001	1.00	6.12	21.993	0.430	0.0	0.0	0.0	1.65	358.8	1.2
28.002	1.00	6.43	21.728	0.430	0.0	0.0	0.0	0.90	63.8	1.2
30.000	1.00	5.91	22.639	0.011	0.0	0.0	0.0	1.65	358.8	0.0
30.001	1.00	6.10	21.888	0.150	0.0	0.0	0.0	1.28	90.6	0.4
28.003	1.00	6.70	21.671	0.580	0.0	0.0	0.0	1.72	504.2	1.6
31.000	1.00	5.29	21.463	0.207	0.0	0.0	0.0	1.48	163.3	0.6
31.001	1.00	5.42	21.215	0.413	0.0	0.0	0.0	1.66	264.4	1.1
31.002	1.00	5.56	21.130	0.413	0.0	0.0	0.0	1.66	264.2	1.1
28.004	1.00	6.96	21.036	0.993	0.0	0.0	0.0	1.72	504.2	2.7
28.005	1.00	7.15	20.853	0.993	0.0	0.0	0.0	1.66	264.1	2.7
32.000	1.00	5.99	22.325	0.010	0.0	0.0	0.0	1.65	358.8	0.0
32.001	1.00	6.20	21.669	0.159	0.0	0.0	0.0	1.28	90.4	0.4
28.006	1.00	7.46	20.728	1.152	0.0	0.0	0.0	1.72	503.6	3.1
33.000	1.00	5.50	21.420	0.203	0.0	0.0	0.0	1.47	104.1	0.5
33.001	1.00	5.63	20.961	0.405	0.0	0.0	0.0	1.81	200.3	1.1
28.007	1.00	7.77	20.519	1.557	0.0	0.0	0.0	1.17	253.6	4.2

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
34.000	81.189	0.541	150.1	0.158	5.00	0.0	0.600		o	300
34.001	24.054	0.160	150.3	0.158	0.00	0.0	0.600		o	375
34.002	21.533	0.144	150.0	0.000	0.00	0.0	0.600		o	375
34.003	11.059	0.037	300.0	0.000	0.00	0.0	0.600		3 \=/	1000
28.008	9.933	0.892	11.1	0.000	0.00	0.0	0.600		o	300
1.016	26.295	0.053	500.0	0.000	0.00	0.0	0.600		[]	-2
1.017	100.387	0.201	499.4	0.172	0.00	0.0	0.600		[]	-2
35.000	35.346	2.627	13.5	0.109	5.00	0.0	0.600		o	150
1.018	17.730	0.069	257.0	0.049	0.00	0.0	0.600		[]	-2
36.000	75.046	0.460	163.1	0.084	5.00	0.0		0.045	3 \=/	1000
36.001	53.561	0.460	116.4	0.131	0.00	0.0		0.045	3 \=/	1000
36.002	11.656	0.039	298.9	0.105	0.00	0.0	0.600		o	300
1.019	51.378	0.103	500.0	0.000	0.00	0.0	0.600		[]	-2
1.020	121.665	0.243	500.7	0.100	0.00	0.0	0.600		[]	-2
1.021	81.714	0.163	501.3	0.000	0.00	0.0	0.600		[]	-2
1.022	30.973	0.062	499.6	0.000	0.00	0.0	0.600		[]	-3
37.000	10.262	0.073	140.6	0.306	5.00	0.0	0.600		o	375
37.001	13.368	0.089	150.2	0.305	0.00	0.0	0.600		o	450
37.002	52.567	0.350	150.2	0.000	0.00	0.0	0.600		o	450

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)
34.000	1.00	6.06	21.030	0.158	0.0	0.0	0.0	1.28	90.6	0.4
34.001	1.00	6.33	20.414	0.317	0.0	0.0	0.0	1.48	163.0	0.9
34.002	1.00	6.57	20.254	0.317	0.0	0.0	0.0	1.48	163.1	0.9
34.003	1.00	6.73	20.110	0.317	0.0	0.0	0.0	1.16	252.9	0.9
28.008	1.00	7.81	19.924	1.874	0.0	0.0	0.0	4.74	334.9	5.1
1.016	1.00	19.05	18.498	10.247	0.0	0.0	0.0	1.35	1217.4	27.8
1.017	1.00	20.28	18.446	10.419	0.0	0.0	0.0	1.35	1218.1	28.2
35.000	1.00	5.21	21.659	0.109	0.0	0.0	0.0	2.76	48.8	0.3
1.018	1.00	20.44	18.245	10.577	0.0	0.0	0.0	1.89	1702.7	28.6
36.000	1.00	8.10	22.850	0.084	0.0	0.0	0.0	0.40	87.7	0.2
36.001	1.00	9.97	22.390	0.215	0.0	0.0	0.0	0.48	103.8	0.6
36.002	1.00	10.19	21.930	0.320	0.0	0.0	0.0	0.90	63.9	0.9
1.019	1.00	21.07	18.176	10.897	0.0	0.0	0.0	1.35	1217.4	29.5
1.020	1.00	22.57	18.073	10.997	0.0	0.0	0.0	1.35	1216.6	29.8
1.021	1.00	23.58	17.830	10.997	0.0	0.0	0.0	1.35	1215.8	29.8
1.022	1.00	23.95	17.667	10.997	0.0	0.0	0.0	1.39	1506.6	29.8
37.000	1.00	5.11	23.236	0.306	0.0	0.0	0.0	1.53	168.6	0.8
37.001	1.00	5.25	23.163	0.611	0.0	0.0	0.0	1.66	263.5	1.7
37.002	1.00	5.78	23.074	0.611	0.0	0.0	0.0	1.66	263.5	1.7

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
38.000	56.465	0.803	70.3	0.423	5.00	0.0	0.600		o	450
38.001	31.113	0.076	409.4	0.423	0.00	0.0	0.600		o	450
37.003	12.638	0.118	107.5	0.000	0.00	0.0	0.600		o	450
1.023	20.301	0.041	495.1	0.000	0.00	0.0	0.600		[]	-3
1.024	77.204	0.154	501.3	0.232	0.00	0.0	0.600		[]	-3
39.000	18.279	0.061	299.7	0.089	5.00	0.0	0.600		o	375
39.001	9.909	0.033	300.3	0.088	0.00	0.0	0.600		o	375
39.002	72.250	0.278	259.9	0.254	0.00	0.0	0.600		o	450
39.003	47.517	0.158	300.7	0.000	0.00	0.0	0.600		o	450
40.000	42.191	0.186	226.8	0.927	5.00	0.0	0.600		o	525
40.001	22.435	0.130	172.5	0.000	0.00	0.0	0.600		o	525
39.004	41.400	0.276	150.0	0.000	0.00	0.0	0.600		o	300
1.025	69.410	0.139	499.4	0.000	0.00	0.0	0.600		[]	-3
1.026	53.365	0.107	498.7	0.000	0.00	0.0	0.600		[]	-3
1.027	61.948	0.124	499.6	0.128	0.00	0.0	0.600		[]	-3
41.000	24.791	0.367	67.6	0.869	5.00	0.0	0.600		o	450
41.001	73.728	2.458	30.0	0.869	0.00	0.0	0.600		o	600
41.002	10.172	0.339	30.0	0.000	0.00	0.0	0.600		o	450
1.028	80.002	0.160	500.0	0.000	0.00	0.0	0.600		[]	-3
1.029	66.606	0.133	500.8	0.167	0.00	0.0	0.600		[]	-3

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)
38.000	1.00	5.39	23.338	0.423	0.0	0.0	0.0	2.43	386.0	1.1
38.001	1.00	5.91	22.535	0.846	0.0	0.0	0.0	1.00	158.8	2.3
37.003	1.00	6.01	22.459	1.457	0.0	0.0	0.0	1.96	311.8	3.9
1.023	1.00	24.19	17.605	12.454	0.0	0.0	0.0	1.40	1513.4	33.7
1.024	1.00	25.12	17.564	12.686	0.0	0.0	0.0	1.39	1503.9	34.4
39.000	1.00	5.29	21.775	0.089	0.0	0.0	0.0	1.04	115.0	0.2
39.001	1.00	5.45	21.714	0.177	0.0	0.0	0.0	1.04	114.9	0.5
39.002	1.00	6.41	21.681	0.431	0.0	0.0	0.0	1.26	199.8	1.2
39.003	1.00	7.09	21.403	0.431	0.0	0.0	0.0	1.17	185.6	1.2
40.000	1.00	5.47	21.393	0.927	0.0	0.0	0.0	1.48	321.0	2.5
40.001	1.00	5.69	21.207	0.927	0.0	0.0	0.0	1.70	368.5	2.5
39.004	1.00	7.63	21.077	1.358	0.0	0.0	0.0	1.28	90.6	3.7
1.025	1.00	25.94	17.410	14.044	0.0	0.0	0.0	1.40	1506.9	38.0
1.026	1.00	26.58	17.271	14.044	0.0	0.0	0.0	1.40	1507.8	38.0
1.027	1.00	27.32	17.164	14.172	0.0	0.0	0.0	1.39	1506.6	38.4
41.000	1.00	5.17	21.913	0.869	0.0	0.0	0.0	2.48	393.9	2.4
41.001	1.00	5.44	21.546	1.738	0.0	0.0	0.0	4.46	1260.3	4.7
41.002	1.00	5.49	19.088	1.738	0.0	0.0	0.0	3.72	592.0	4.7
1.028	1.00	28.28	17.040	15.910	0.0	0.0	0.0	1.39	1505.9	43.1
1.029	1.00	29.07	16.880	16.077	0.0	0.0	0.0	1.39	1504.7	43.5

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
42.000	36.219	0.121	299.3	0.117	5.00	0.0		0.045	3 \=/	1000
42.001	106.330	0.729	145.9	0.111	0.00	0.0	0.600		3 \=/	1000
42.002	23.390	0.400	58.5	0.156	0.00	0.0		0.045	3 \=/	1000
42.003	39.203	0.744	52.7	0.101	0.00	0.0	0.600		o	300
42.004	119.257	2.385	50.0	0.035	0.00	0.0		0.045	3 \=/	1000
42.005	25.475	0.170	150.0	0.083	0.00	0.0	0.600		o	300
1.030	53.591	0.107	500.9	0.020	0.00	0.0	0.600		[]	-3
43.000	24.225	0.081	299.1	0.203	5.00	0.0	0.600		o	300
43.001	60.801	0.203	299.5	0.204	0.00	0.0	0.600		o	375
43.002	29.135	1.041	28.0	0.000	0.00	0.0	0.600		o	375
43.003	15.118	0.488	31.0	0.000	0.00	0.0	0.600		o	375
1.031	17.977	0.036	499.4	0.056	0.00	0.0	0.600		[]	-3
1.032	24.625	0.626	39.3	0.000	0.00	0.0	0.600		[]	-3
44.000	40.674	0.509	79.9	0.000	5.00	0.0	0.600		o	225
44.001	26.716	0.082	325.8	0.152	0.00	0.0	0.600		o	450
45.000	65.336	0.327	199.8	0.415	5.00	0.0	0.600		o	450
45.001	26.362	0.132	199.7	0.415	0.00	0.0	0.600		o	450
46.000	62.599	0.471	132.9	0.370	5.00	0.0	0.600		o	450
46.001	71.959	0.480	149.9	0.370	0.00	0.0	0.600		o	450
45.002	19.095	0.127	150.0	0.000	0.00	0.0	0.600		o	450

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)
42.000	1.00	7.03	24.250	0.117	0.0	0.0	0.0	0.30	64.8	0.3
42.001	1.00	8.09	24.129	0.228	0.0	0.0	0.0	1.67	363.9	0.6
42.002	1.00	8.67	23.400	0.384	0.0	0.0	0.0	0.67	146.5	1.0
42.003	1.00	8.97	23.000	0.485	0.0	0.0	0.0	2.17	153.4	1.3
42.004	1.00	11.69	22.256	0.520	0.0	0.0	0.0	0.73	158.5	1.4
42.005	1.00	12.03	19.871	0.603	0.0	0.0	0.0	1.28	90.6	1.6
1.030	1.00	29.72	16.747	16.700	0.0	0.0	0.0	1.39	1504.6	45.2
43.000	1.00	5.45	20.061	0.203	0.0	0.0	0.0	0.90	63.9	0.5
43.001	1.00	6.42	19.980	0.407	0.0	0.0	0.0	1.04	115.1	1.1
43.002	1.00	6.56	19.777	0.407	0.0	0.0	0.0	3.44	379.5	1.1
43.003	1.00	6.64	18.736	0.407	0.0	0.0	0.0	3.27	360.7	1.1
1.031	1.00	29.93	16.640	17.163	0.0	0.0	0.0	1.40	1506.9	46.5
1.032	1.00	30.01	16.604	17.163	0.0	0.0	0.0	5.00	5404.3	46.5
44.000	1.00	5.46	22.112	0.000	0.0	0.0	0.0	1.46	58.2	0.0
44.001	1.00	5.86	21.378	0.152	0.0	0.0	0.0	1.12	178.3	0.4
45.000	1.00	5.76	21.844	0.415	0.0	0.0	0.0	1.43	228.2	1.1
45.001	1.00	6.07	21.517	0.830	0.0	0.0	0.0	1.43	228.2	2.2
46.000	1.00	5.59	22.379	0.370	0.0	0.0	0.0	1.76	280.2	1.0
46.001	1.00	6.32	21.908	0.741	0.0	0.0	0.0	1.66	263.7	2.0
45.002	1.00	6.51	21.385	1.571	0.0	0.0	0.0	1.66	263.6	4.3

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
44.002	22.609	0.082	275.7	0.000	0.00	0.0	0.600		o	450
44.003	49.073	0.164	299.2	0.000	0.00	0.0	0.600		o	450
44.004	35.393	0.118	299.9	0.170	0.00	0.0	0.600		o	450
47.000	40.996	0.292	140.4	0.000	5.00	0.0		0.045	3 \=/	1000
47.001	53.270	0.368	144.8	0.042	0.00	0.0		0.045	3 \=/	1000
47.002	32.232	0.195	165.3	0.051	0.00	0.0		0.045	3 \=/	1000
47.003	27.591	0.195	141.5	0.048	0.00	0.0	0.600		o	225
48.000	50.838	0.102	498.4	0.250	5.00	0.0		0.045	3 \=/	1000
48.001	48.058	0.096	500.6	0.116	0.00	0.0		0.045	3 \=/	1000
48.002	44.498	0.089	500.0	0.109	0.00	0.0		0.045	3 \=/	1000
48.003	14.757	0.030	491.9	0.085	0.00	0.0		0.045	3 \=/	1000
48.004	20.434	0.041	498.4	0.000	0.00	0.0		0.045	3 \=/	1000
48.005	8.433	0.719	11.7	0.000	0.00	0.0		0.045	3 \=/	1000
47.004	83.841	0.578	145.1	0.000	0.00	0.0	0.600		o	375
44.005	77.078	0.257	299.9	0.000	0.00	0.0	0.600		o	600
49.000	86.904	0.511	170.1	0.115	5.00	0.0		0.045	3 \=/	1000
49.001	3.932	0.018	218.4	0.181	0.00	0.0		0.045	3 \=/	1000
49.002	6.059	0.037	163.8	0.000	0.00	0.0		0.045	3 \=/	1000
49.003	10.025	0.054	185.6	0.000	0.00	0.0		0.045	3 \=/	1000
49.004	31.325	0.181	173.1	0.072	0.00	0.0		0.045	3 \=/	1000
49.005	15.495	1.121	13.8	0.075	0.00	0.0	0.600		o	300

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)
44.002	1.00	6.82	21.258	1.723	0.0	0.0	0.0	1.22	193.9	4.7
44.003	1.00	7.52	21.176	1.723	0.0	0.0	0.0	1.17	186.1	4.7
44.004	1.00	8.02	21.012	1.893	0.0	0.0	0.0	1.17	185.9	5.1
47.000	1.00	6.57	22.964	0.000	0.0	0.0	0.0	0.43	94.6	0.0
47.001	1.00	8.65	22.672	0.042	0.0	0.0	0.0	0.43	93.1	0.1
47.002	1.00	9.99	22.304	0.093	0.0	0.0	0.0	0.40	87.1	0.3
47.003	1.00	10.40	22.034	0.141	0.0	0.0	0.0	1.10	43.6	0.4
48.000	1.00	8.67	22.840	0.250	0.0	0.0	0.0	0.23	50.2	0.7
48.001	1.00	12.15	22.738	0.366	0.0	0.0	0.0	0.23	50.1	1.0
48.002	1.00	15.37	22.642	0.475	0.0	0.0	0.0	0.23	50.1	1.3
48.003	1.00	16.43	22.553	0.560	0.0	0.0	0.0	0.23	50.5	1.5
48.004	1.00	17.90	22.523	0.560	0.0	0.0	0.0	0.23	50.2	1.5
48.005	1.00	18.00	22.482	0.560	0.0	0.0	0.0	1.50	327.2	1.5
47.004	1.00	18.93	21.538	0.701	0.0	0.0	0.0	1.50	165.9	1.9
44.005	1.00	19.85	20.735	2.594	0.0	0.0	0.0	1.40	396.1	7.0
49.000	1.00	8.67	22.850	0.115	0.0	0.0	0.0	0.40	85.9	0.3
49.001	1.00	8.85	22.339	0.296	0.0	0.0	0.0	0.35	75.8	0.8
49.002	1.00	9.11	22.321	0.296	0.0	0.0	0.0	0.40	87.6	0.8
49.003	1.00	9.55	22.284	0.296	0.0	0.0	0.0	0.38	82.2	0.8
49.004	1.00	10.88	22.230	0.368	0.0	0.0	0.0	0.39	85.2	1.0
49.005	1.00	10.94	22.049	0.443	0.0	0.0	0.0	4.25	300.5	1.2

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
44.006	23.936	0.080	299.2	0.039	0.00	0.0	0.600		[]	-1
44.007	14.027	0.047	298.4	0.000	0.00	0.0	0.600		[]	-1
44.008	55.656	0.186	299.2	0.000	0.00	0.0	0.600		[]	-1
50.000	32.383	0.578	56.0	0.390	5.00	0.0	0.600		o	375
50.001	21.284	0.417	51.0	0.390	0.00	0.0	0.600		o	375
51.000	39.261	0.732	53.6	0.150	5.00	0.0		0.045	3 \=/	1000
51.001	2.887	0.019	151.9	0.000	0.00	0.0	0.600		o	300
51.002	12.589	0.157	80.2	0.107	0.00	0.0		0.045	3 \=/	1000
51.003	3.774	0.025	151.0	0.000	0.00	0.0	0.600		o	300
44.009	7.951	0.013	611.6	0.000	0.00	0.0	0.600		[]	-1
44.010	54.934	0.498	110.3	0.000	0.00	0.0	0.600		[]	-1
52.000	40.354	0.764	52.8	0.198	5.00	0.0	0.600		o	300
52.001	30.457	0.564	54.0	0.000	0.00	0.0	0.600		o	300
53.000	27.049	0.605	44.7	0.098	5.00	0.0		0.045	3 \=/	1000
53.001	26.597	0.315	84.4	0.000	0.00	0.0	0.600		o	300
44.011	39.247	0.585	67.1	0.158	0.00	0.0	0.600		[]	-1
44.012	42.068	0.555	75.8	0.154	0.00	0.0	0.600		[]	-1
44.013	37.267	0.719	51.8	0.000	0.00	0.0	0.600		[]	-1
44.014	63.203	0.211	299.5	0.000	0.00	0.0	0.600		[]	-1
44.015	22.512	0.358	62.9	0.000	0.00	0.0	0.600		[]	-1
54.000	35.002	0.675	51.9	0.113	5.00	0.0		0.045	3 \=/	1000

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)
44.006	1.00	20.09	20.478	3.076	0.0	0.0	0.0	1.61	967.6	8.3
44.007	1.00	20.24	20.398	3.076	0.0	0.0	0.0	1.61	968.8	8.3
44.008	1.00	20.81	20.351	3.076	0.0	0.0	0.0	1.61	967.5	8.3
50.000	1.00	5.22	21.610	0.390	0.0	0.0	0.0	2.43	267.8	1.1
50.001	1.00	5.36	21.032	0.779	0.0	0.0	0.0	2.54	280.7	2.1
51.000	1.00	5.93	21.832	0.150	0.0	0.0	0.0	0.70	153.0	0.4
51.001	1.00	5.97	20.950	0.150	0.0	0.0	0.0	1.27	90.0	0.4
51.002	1.00	6.33	20.931	0.257	0.0	0.0	0.0	0.58	125.1	0.7
51.003	1.00	6.38	20.624	0.257	0.0	0.0	0.0	1.28	90.3	0.7
44.009	1.00	20.93	20.165	4.112	0.0	0.0	0.0	1.12	674.5	11.1
44.010	1.00	21.27	20.152	4.112	0.0	0.0	0.0	2.66	1598.5	11.1
52.000	1.00	5.31	21.432	0.198	0.0	0.0	0.0	2.17	153.3	0.5
52.001	1.00	5.55	20.668	0.198	0.0	0.0	0.0	2.14	151.6	0.5
53.000	1.00	5.59	21.174	0.098	0.0	0.0	0.0	0.77	167.6	0.3
53.001	1.00	5.84	20.419	0.098	0.0	0.0	0.0	1.71	121.0	0.3
44.011	1.00	21.47	19.654	4.566	0.0	0.0	0.0	3.42	2051.9	12.4
44.012	1.00	21.68	19.069	4.720	0.0	0.0	0.0	3.22	1929.9	12.8
44.013	1.00	21.84	18.514	4.720	0.0	0.0	0.0	3.89	2335.5	12.8
44.014	1.00	22.50	17.795	4.720	0.0	0.0	0.0	1.61	967.0	12.8
44.015	1.00	22.60	16.740	4.720	0.0	0.0	0.0	3.53	2119.6	12.8
54.000	1.00	5.82	19.114	0.113	0.0	0.0	0.0	0.72	155.6	0.3

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
54.001	9.531	0.095	100.3	0.000	0.00	0.0	0.600		o	300
54.002	7.032	0.120	58.6	0.104	0.00	0.0		0.045	3 \=/	1000
54.003	3.134	0.054	58.0	0.000	0.00	0.0	0.600		o	300
54.004	23.439	0.401	58.5	0.041	0.00	0.0		0.045	3 \=/	1000
54.005	10.517	0.180	58.4	0.000	0.00	0.0	0.600		o	300
54.006	10.770	0.184	58.5	0.219	0.00	0.0		0.045	3 \=/	1000
54.007	8.715	0.149	58.5	0.000	0.00	0.0		0.045	3 \=/	1000
54.008	15.431	0.358	43.1	0.000	0.00	0.0	0.600		o	300
1.033	14.163	0.142	99.7	0.000	0.00	0.0	0.600		[]	-3
1.034	30.624	0.341	89.8	0.120	0.00	0.0	0.600		[]	-3
1.035	49.922	0.282	177.0	0.000	0.00	0.0	0.600		[]	-3
55.000	55.912	1.208	46.3	0.028	5.00	0.0		0.045	3 \=/	1000
55.001	18.766	0.702	26.7	0.133	0.00	0.0	0.600		o	300
1.036	15.163	0.030	505.4	0.000	0.00	0.0	0.600		[]	-4
1.037	14.725	0.029	507.8	0.045	0.00	0.0	0.600		[]	-4
56.000	22.675	0.045	503.9	0.177	5.00	0.0		0.045	3 \=/	1000
56.001	12.865	0.086	149.6	0.000	0.00	0.0	0.600		o	300
1.038	34.042	0.068	500.0	0.000	0.00	0.0	0.600		[]	-4
57.000	40.004	0.167	239.5	0.266	5.00	0.0		0.045	3 \=/	1000
57.001	8.278	0.028	295.6	0.081	0.00	0.0		0.045	3 \=/	1000
57.002	27.778	0.056	496.0	0.000	0.00	0.0		0.045	3 \=/	1000
57.003	25.759	0.052	495.4	0.063	0.00	0.0		0.045	3 \=/	1000

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)
54.001	1.00	5.92	18.289	0.113	0.0	0.0	0.0	1.57	111.0	0.3
54.002	1.00	6.09	18.194	0.217	0.0	0.0	0.0	0.67	146.4	0.6
54.003	1.00	6.12	17.924	0.217	0.0	0.0	0.0	2.07	146.2	0.6
54.004	1.00	6.70	17.870	0.258	0.0	0.0	0.0	0.67	146.6	0.7
54.005	1.00	6.78	17.319	0.258	0.0	0.0	0.0	2.06	145.7	0.7
54.006	1.00	7.05	17.139	0.477	0.0	0.0	0.0	0.67	146.5	1.3
54.007	1.00	7.26	16.955	0.477	0.0	0.0	0.0	0.67	146.5	1.3
54.008	1.00	7.37	16.656	0.477	0.0	0.0	0.0	2.40	169.8	1.3
1.033	1.00	30.09	15.978	22.361	0.0	0.0	0.0	3.14	3388.7	60.6
1.034	1.00	30.24	15.836	22.481	0.0	0.0	0.0	3.31	3572.0	60.9
1.035	1.00	30.60	15.495	22.481	0.0	0.0	0.0	2.35	2540.1	60.9
55.000	1.00	6.23	17.443	0.028	0.0	0.0	0.0	0.76	164.7	0.1
55.001	1.00	6.33	16.235	0.161	0.0	0.0	0.0	3.05	215.8	0.4
1.036	1.00	30.77	15.213	22.642	0.0	0.0	0.0	1.42	1787.3	61.3
1.037	1.00	30.95	15.183	22.687	0.0	0.0	0.0	1.42	1783.2	61.4
56.000	1.00	6.65	15.707	0.177	0.0	0.0	0.0	0.23	49.9	0.5
56.001	1.00	6.81	15.662	0.177	0.0	0.0	0.0	1.28	90.7	0.5
1.038	1.00	31.35	15.126	22.864	0.0	0.0	0.0	1.43	1797.1	61.9
57.000	1.00	7.00	16.129	0.266	0.0	0.0	0.0	0.33	72.4	0.7
57.001	1.00	7.46	15.962	0.347	0.0	0.0	0.0	0.30	65.2	0.9
57.002	1.00	9.47	15.934	0.347	0.0	0.0	0.0	0.23	50.3	0.9
57.003	1.00	11.32	15.878	0.410	0.0	0.0	0.0	0.23	50.3	1.1

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
57.004	28.933	0.058	498.8	0.049	0.00	0.0		0.045	3	\=/ 1000
57.005	12.263	0.025	490.5	0.045	0.00	0.0		0.045	3	\=/ 1000
58.000	66.184	0.110	601.7	0.000	5.00	0.0		0.045	1.5	_/ 500
58.001	35.602	0.071	501.4	0.000	0.00	0.0		0.045		o 450
57.006	30.430	0.061	498.9	0.021	0.00	0.0		0.045	3	\=/ 1000
57.007	15.897	0.079	200.0	0.000	0.00	0.0		0.045	3	\=/ 1000
57.008	7.890	0.039	202.3	0.000	0.00	0.0		0.045		o 450
1.039	54.209	0.179	302.8	0.000	0.00	0.0	0.600		3	\=/ 1000
59.000	15.695	0.052	301.8	0.106	5.00	0.0	0.600			o 300
59.001	9.378	0.031	302.5	0.000	0.00	0.0	0.600			o 300
60.000	15.953	0.106	150.5	0.007	5.00	0.0	0.600			o 150
59.002	11.065	0.037	299.1	0.018	0.00	0.0	0.600			o 300
1.040	77.080	0.154	500.0	0.000	0.00	0.0		0.045	3	\=/ 2000
61.000	16.572	0.055	301.3	0.434	5.00	0.0	0.600			o 375
61.001	15.737	0.052	302.6	0.000	0.00	0.0	0.600			o 375
1.041	52.888	0.106	498.9	0.000	0.00	0.0		0.045	3	\=/ 2000
1.042	40.411	0.081	498.9	0.000	0.00	0.0		0.045	3	\=/ 2000
1.043	4.696	0.009	500.0	0.000	0.00	0.0		0.045	3	\=/ 2000

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)
57.004	1.00	13.41	15.826	0.459	0.0	0.0	0.0	0.23	50.2	1.2
57.005	1.00	14.29	15.768	0.504	0.0	0.0	0.0	0.23	50.6	1.4
58.000	1.00	8.82	15.450	0.000	0.0	0.0	0.0	0.29	82.4	0.0
58.001	1.00	11.38	15.340	0.000	0.0	0.0	0.0	0.23	36.8	0.0
57.006	1.00	16.49	15.269	0.525	0.0	0.0	0.0	0.23	50.2	1.4
57.007	1.00	17.22	15.208	0.525	0.0	0.0	0.0	0.36	79.2	1.4
57.008	1.00	17.58	15.129	0.525	0.0	0.0	0.0	0.36	57.9	1.4
1.039	1.00	32.13	15.058	23.389	0.0	0.0	0.0	1.16	251.7	63.3
59.000	1.00	5.29	15.000	0.106	0.0	0.0	0.0	0.90	63.6	0.3
59.001	1.00	5.46	14.948	0.106	0.0	0.0	0.0	0.90	63.5	0.3
60.000	1.00	5.33	15.300	0.007	0.0	0.0	0.0	0.82	14.4	0.0
59.002	1.00	5.67	14.917	0.131	0.0	0.0	0.0	0.90	63.9	0.4
1.040	1.00	37.31	14.879	23.520	0.0	0.0	0.0	0.25	91.1	63.7
61.000	1.00	5.27	14.800	0.434	0.0	0.0	0.0	1.04	114.7	1.2
61.001	1.00	5.52	14.745	0.434	0.0	0.0	0.0	1.04	114.4	1.2
1.041	1.00	40.86	14.693	23.954	0.0	0.0	0.0	0.25	91.2	64.9
1.042	1.00	43.57	14.587	23.954	0.0	0.0	0.0	0.25	91.2	64.9
1.043	1.00	43.89	14.506	23.954	0.0	0.0	0.0	0.25	91.1	64.9

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
62.000	19.461	0.165	117.9	1.063	5.00	0.0	0.600		o	450
62.001	45.710	0.858	53.3	0.000	0.00	0.0	0.600		o	300
63.000	77.733	1.943	40.0	0.205	5.00	0.0	0.600		o	225
62.002	46.069	0.618	74.5	0.000	0.00	0.0	0.600		o	375
62.003	26.513	0.155	171.1	0.165	0.00	0.0	0.600		o	450
62.004	19.466	0.160	121.7	0.000	0.00	0.0	0.600		o	450
62.005	51.458	0.239	215.3	0.000	0.00	0.0	0.600		o	450
62.006	49.690	0.318	156.3	0.000	0.00	0.0	0.600		o	450
64.000	22.971	0.096	239.3	0.065	5.00	0.0		0.045	3 \=/	1000
64.001	25.409	0.119	213.5	0.069	0.00	0.0		0.045	3 \=/	1000
64.002	28.086	0.143	196.4	0.067	0.00	0.0		0.045	3 \=/	1000
64.003	25.063	0.134	187.0	0.077	0.00	0.0		0.045	3 \=/	1000
64.004	29.219	0.156	187.3	0.068	0.00	0.0		0.045	3 \=/	1000
64.005	3.616	0.024	150.0	0.090	0.00	0.0	0.600		o	300
62.007	22.317	0.074	300.0	0.000	0.00	0.0	0.600		o	450
65.000	12.670	0.042	301.7	0.899	5.00	0.0	0.600		o	450
65.001	24.002	0.153	156.9	0.000	0.00	0.0	0.600		o	450
66.000	19.835	0.383	51.8	0.085	5.00	0.0	0.600		o	225
66.001	33.009	0.264	125.0	0.148	0.00	0.0	0.600		o	300
66.002	42.677	1.046	40.8	0.030	0.00	0.0	0.600		o	300
66.003	27.125	0.942	28.8	0.048	0.00	0.0	0.600		o	300

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)
62.000	1.00	5.17	17.058	1.063	0.0	0.0	0.0	1.87	297.6	2.9
62.001	1.00	5.53	16.893	1.063	0.0	0.0	0.0	2.16	152.6	2.9
63.000	1.00	5.62	18.128	0.205	0.0	0.0	0.0	2.07	82.5	0.6
62.002	1.00	5.99	15.960	1.268	0.0	0.0	0.0	2.10	232.0	3.4
62.003	1.00	6.27	15.267	1.433	0.0	0.0	0.0	1.55	246.8	3.9
62.004	1.00	6.45	15.112	1.433	0.0	0.0	0.0	1.84	293.0	3.9
62.005	1.00	7.07	14.952	1.433	0.0	0.0	0.0	1.38	219.7	3.9
62.006	1.00	7.58	14.713	1.433	0.0	0.0	0.0	1.62	258.3	3.9
64.000	1.00	6.15	15.656	0.065	0.0	0.0	0.0	0.33	72.4	0.2
64.001	1.00	7.35	15.560	0.134	0.0	0.0	0.0	0.35	76.7	0.4
64.002	1.00	8.62	15.441	0.201	0.0	0.0	0.0	0.37	79.9	0.5
64.003	1.00	9.73	15.298	0.278	0.0	0.0	0.0	0.38	81.9	0.8
64.004	1.00	11.03	15.164	0.346	0.0	0.0	0.0	0.38	81.9	0.9
64.005	1.00	11.07	14.858	0.436	0.0	0.0	0.0	1.28	90.6	1.2
62.007	1.00	11.39	14.395	1.869	0.0	0.0	0.0	1.17	185.8	5.1
65.000	1.00	5.18	16.758	0.899	0.0	0.0	0.0	1.17	185.3	2.4
65.001	1.00	5.43	16.716	0.899	0.0	0.0	0.0	1.62	257.8	2.4
66.000	1.00	5.18	19.498	0.085	0.0	0.0	0.0	1.82	72.4	0.2
66.001	1.00	5.57	19.040	0.233	0.0	0.0	0.0	1.40	99.3	0.6
66.002	1.00	5.86	18.776	0.263	0.0	0.0	0.0	2.47	174.5	0.7
66.003	1.00	6.01	17.730	0.311	0.0	0.0	0.0	2.94	207.9	0.8

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
65.002	70.865	1.402	50.5	0.029	0.00	0.0	0.600		o	450
65.003	17.512	0.500	35.0	0.125	0.00	0.0	0.600		o	450
65.004	41.085	0.332	123.8	0.000	0.00	0.0	0.600		o	450
65.005	12.348	0.041	301.2	0.000	0.00	0.0	0.600		o	450
67.000	82.697	0.686	120.5	0.143	5.00	0.0		0.045	3 \=/	1000
67.001	2.584	0.017	150.0	0.000	0.00	0.0	0.600		o	300
67.002	24.302	0.049	496.0	0.075	0.00	0.0		0.045	3 \=/	1000
67.003	8.343	0.028	298.0	0.093	0.00	0.0	0.600		o	300
62.008	35.292	0.071	497.1	0.093	0.00	0.0	0.600		[]	-1
62.009	25.739	0.051	504.7	0.028	0.00	0.0	0.600		[]	-1
62.010	7.353	0.015	500.0	0.026	0.00	0.0	0.600		[]	-1
1.044	22.519	0.045	500.4	0.096	0.00	0.0		0.045	3 \=/	2000
1.045	49.613	0.099	501.1	0.000	0.00	0.0		0.045	3 \=/	2000
1.046	8.899	0.018	500.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.047	45.070	0.090	500.8	0.000	0.00	0.0		0.045	3 \=/	2000
1.048	12.090	0.024	503.8	0.000	0.00	0.0		0.045	3 \=/	2000
1.049	37.497	0.069	543.4	0.000	0.00	0.0		0.045	3 \=/	2000
68.000	32.277	0.108	298.9	0.456	5.00	0.0	0.600		o	375
69.000	23.908	0.048	498.1	0.456	5.00	0.0	0.600		o	375
69.001	75.090	0.501	149.9	0.456	0.00	0.0	0.600		o	600
68.001	32.229	0.570	56.5	0.000	0.00	0.0	0.600		o	600

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)
65.002	1.00	6.43	16.563	1.239	0.0	0.0	0.0	2.86	455.7	3.4
65.003	1.00	6.51	15.161	1.364	0.0	0.0	0.0	3.44	547.8	3.7
65.004	1.00	6.89	14.661	1.364	0.0	0.0	0.0	1.83	290.5	3.7
65.005	1.00	7.06	14.329	1.364	0.0	0.0	0.0	1.17	185.5	3.7
67.000	1.00	7.94	15.732	0.143	0.0	0.0	0.0	0.47	102.0	0.4
67.001	1.00	7.97	14.896	0.143	0.0	0.0	0.0	1.28	90.6	0.4
67.002	1.00	9.72	14.879	0.218	0.0	0.0	0.0	0.23	50.3	0.6
67.003	1.00	9.88	14.830	0.311	0.0	0.0	0.0	0.91	64.0	0.8
62.008	1.00	11.86	14.138	3.637	0.0	0.0	0.0	1.25	749.0	9.9
62.009	1.00	12.21	14.067	3.665	0.0	0.0	0.0	1.24	743.3	9.9
62.010	1.00	12.31	14.016	3.691	0.0	0.0	0.0	1.24	746.8	10.0
1.044	1.00	45.40	14.001	27.741	0.0	0.0	0.0	0.25	91.1	75.1
1.045	1.00	48.74	13.956	27.741	0.0	0.0	0.0	0.25	91.0	75.1
1.046	1.00	49.34	13.857	27.741	0.0	0.0	0.0	0.25	91.1	75.1
1.047	1.00	52.37	13.839	27.741	0.0	0.0	0.0	0.25	91.1	75.1
1.048	1.00	53.19	13.749	27.741	0.0	0.0	0.0	0.25	90.8	75.1
1.049	1.00	55.81	13.725	27.741	0.0	0.0	0.0	0.24	87.4	75.1
68.000	1.00	5.52	15.000	0.456	0.0	0.0	0.0	1.04	115.2	1.2
69.000	1.00	5.49	15.000	0.456	0.0	0.0	0.0	0.81	88.9	1.2
69.001	1.00	6.12	14.727	0.912	0.0	0.0	0.0	1.99	561.8	2.5
68.001	1.00	6.29	14.226	1.368	0.0	0.0	0.0	3.24	916.9	3.7

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.050	31.693	0.106	300.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.051	10.757	0.036	300.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.052	7.113	0.047	150.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.053	8.098	0.040	200.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.054	20.351	0.102	200.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.055	22.344	0.112	200.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.056	27.105	0.136	200.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.057	12.641	0.063	200.0	0.000	0.00	0.0		0.045	3 \=/	2000
70.000	27.065	0.271	99.9	0.066	5.00	0.0	0.600		o	225
70.001	25.526	0.734	34.8	0.041	0.00	0.0	0.600		o	300
71.000	23.594	0.236	100.0	0.185	5.00	0.0	0.600		o	225
71.001	25.935	0.288	90.1	0.000	0.00	0.0	0.600		o	300
72.000	12.143	0.030	411.6	0.280	5.00	0.0	0.600		o	375
72.001	16.716	0.030	566.6	0.000	0.00	0.0	0.600		o	375
73.000	11.133	0.018	618.5	0.151	5.00	0.0	0.600		o	375
73.001	13.340	0.016	833.8	0.000	0.00	0.0	0.600		o	375
72.002	13.380	0.046	290.9	0.000	0.00	0.0	0.600		o	300
71.002	23.503	0.162	145.1	0.073	0.00	0.0	0.600		o	300
71.003	18.816	0.620	30.3	0.052	0.00	0.0	0.600		o	375
71.004	8.276	0.026	318.3	0.000	0.00	0.0	0.600		o	375
70.002	44.534	0.568	78.4	0.020	0.00	0.0	0.600		o	375

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)
1.050	1.00	57.46	13.656	29.109	0.0	0.0	0.0	0.32	117.6	78.8
1.051	1.00	58.02	13.550	29.109	0.0	0.0	0.0	0.32	117.6	78.8
1.052	1.00	58.28	13.515	29.109	0.0	0.0	0.0	0.45	166.4	78.8
1.053	1.00	58.63	13.467	29.109	0.0	0.0	0.0	0.39	144.1	78.8
1.054	1.00	59.49	13.427	29.109	0.0	0.0	0.0	0.39	144.1	78.8
1.055	1.00	60.44	13.325	29.109	0.0	0.0	0.0	0.39	144.1	78.8
1.056	1.00	61.60	13.213	29.109	0.0	0.0	0.0	0.39	144.1	78.8
1.057	1.00	62.13	13.078	29.109	0.0	0.0	0.0	0.39	144.1	78.8
70.000	1.00	5.34	21.026	0.066	0.0	0.0	0.0	1.31	52.0	0.2
70.001	1.00	5.50	20.680	0.107	0.0	0.0	0.0	2.68	189.1	0.3
71.000	1.00	5.30	21.513	0.185	0.0	0.0	0.0	1.31	52.0	0.5
71.001	1.00	5.56	21.202	0.185	0.0	0.0	0.0	1.66	117.2	0.5
72.000	1.00	5.23	21.009	0.280	0.0	0.0	0.0	0.89	97.9	0.8
72.001	1.00	5.60	20.980	0.280	0.0	0.0	0.0	0.75	83.3	0.8
73.000	1.00	5.26	20.877	0.151	0.0	0.0	0.0	0.72	79.7	0.4
73.001	1.00	5.62	20.859	0.151	0.0	0.0	0.0	0.62	68.4	0.4
72.002	1.00	5.86	20.843	0.431	0.0	0.0	0.0	0.92	64.8	1.2
71.002	1.00	6.16	20.797	0.689	0.0	0.0	0.0	1.30	92.1	1.9
71.003	1.00	6.25	20.560	0.741	0.0	0.0	0.0	3.30	364.4	2.0
71.004	1.00	6.39	19.940	0.741	0.0	0.0	0.0	1.01	111.6	2.0
70.002	1.00	6.75	19.871	0.868	0.0	0.0	0.0	2.05	226.2	2.3

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
70.003	32.165	0.438	73.4	0.082	0.00	0.0	0.600		o	375
74.000	17.227	0.510	33.8	0.528	5.00	0.0	0.600		o	375
74.001	12.383	0.468	26.5	0.000	0.00	0.0	0.600		o	375
70.004	8.292	0.099	83.8	0.000	0.00	0.0	0.600		o	450
75.000	29.121	0.195	149.3	0.023	5.00	0.0	0.600		o	150
76.000	18.304	0.139	131.7	0.079	5.00	0.0	0.600		o	375
76.001	10.879	0.793	13.7	0.000	0.00	0.0	0.600		o	300
77.000	60.192	0.241	250.0	0.349	5.00	0.0	0.600		o	450
77.001	10.119	0.040	250.0	0.000	0.00	0.0	0.600		o	450
77.002	39.056	0.130	300.0	0.000	0.00	0.0	0.600		o	450
78.000	28.785	0.288	100.0	0.160	5.00	0.0	0.600		o	375
78.001	17.885	0.275	65.0	0.000	0.00	0.0	0.600		o	375
77.003	19.400	0.065	298.5	0.000	0.00	0.0	0.600		o	375
79.000	28.279	0.141	200.6	0.375	5.00	0.0	0.600		o	375
79.001	14.823	0.119	124.6	0.000	0.00	0.0	0.600		o	300
79.002	36.821	1.285	28.7	0.000	0.00	0.0	0.600		o	300
80.000	32.271	0.216	149.4	0.052	5.00	0.0	0.600		o	300
80.001	29.464	0.795	37.1	0.048	0.00	0.0	0.600		o	300

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)
70.003	1.00	7.01	19.303	0.950	0.0	0.0	0.0	2.12	233.8	2.6
74.000	1.00	5.09	19.883	0.528	0.0	0.0	0.0	3.13	345.4	1.4
74.001	1.00	5.15	19.373	0.528	0.0	0.0	0.0	3.53	390.4	1.4
70.004	1.00	7.07	18.790	1.478	0.0	0.0	0.0	2.22	353.5	4.0
75.000	1.00	5.59	20.782	0.023	0.0	0.0	0.0	0.82	14.5	0.1
76.000	1.00	5.19	21.930	0.079	0.0	0.0	0.0	1.58	174.2	0.2
76.001	1.00	5.24	21.791	0.079	0.0	0.0	0.0	4.27	301.6	0.2
77.000	1.00	5.78	21.506	0.349	0.0	0.0	0.0	1.28	203.8	0.9
77.001	1.00	5.91	21.265	0.349	0.0	0.0	0.0	1.28	203.8	0.9
77.002	1.00	6.47	21.225	0.349	0.0	0.0	0.0	1.17	185.8	0.9
78.000	1.00	5.26	21.672	0.160	0.0	0.0	0.0	1.81	200.1	0.4
78.001	1.00	5.40	21.384	0.160	0.0	0.0	0.0	2.25	248.6	0.4
77.003	1.00	6.78	21.095	0.509	0.0	0.0	0.0	1.04	115.3	1.4
79.000	1.00	5.37	22.579	0.375	0.0	0.0	0.0	1.28	140.9	1.0
79.001	1.00	5.54	22.438	0.375	0.0	0.0	0.0	1.41	99.5	1.0
79.002	1.00	5.75	22.319	0.375	0.0	0.0	0.0	2.95	208.4	1.0
80.000	1.00	5.42	22.045	0.052	0.0	0.0	0.0	1.28	90.8	0.1
80.001	1.00	5.61	21.829	0.100	0.0	0.0	0.0	2.59	183.1	0.3

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
77.004	11.182	0.036	310.6	0.044	0.00	0.0	0.600		o	450
76.002	34.368	0.561	61.3	0.016	0.00	0.0	0.600		o	450
75.001	29.559	0.148	199.7	0.117	0.00	0.0	0.600		o	450
75.002	12.996	0.043	302.2	0.064	0.00	0.0	0.600		o	525
75.003	34.293	0.199	172.3	0.000	0.00	0.0	0.600		o	525
75.004	28.753	1.115	25.8	0.102	0.00	0.0	0.600		o	525
70.005	69.633	0.232	300.1	0.055	0.00	0.0	0.600		[]	-2
70.006	39.731	0.132	301.0	0.000	0.00	0.0	0.600		[]	-2
70.007	7.465	0.025	298.6	0.213	0.00	0.0	0.600		[]	-2
81.000	47.961	0.160	299.8	0.048	5.00	0.0	0.600		o	300
82.000	6.610	0.132	50.0	0.319	5.00	0.0	0.600		o	375
82.001	23.993	0.960	25.0	0.007	0.00	0.0	0.600		o	375
83.000	45.830	1.432	32.0	0.037	5.00	0.0	0.600		o	300
84.000	6.533	0.327	20.0	0.144	5.00	0.0	0.600		o	525
84.001	30.653	0.307	100.0	0.145	0.00	0.0	0.600		o	525
83.001	10.210	0.079	129.2	0.028	0.00	0.0	0.600		o	375
82.002	24.990	0.167	149.6	0.042	0.00	0.0	0.600		o	450
85.000	9.625	0.193	50.0	0.269	5.00	0.0	0.600		o	300

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)
77.004	1.00	6.94	20.884	1.028	0.0	0.0	0.0	1.15	182.6	2.8
76.002	1.00	7.16	20.848	1.123	0.0	0.0	0.0	2.60	413.7	3.0
75.001	1.00	7.51	20.287	1.263	0.0	0.0	0.0	1.43	228.2	3.4
75.002	1.00	7.68	20.064	1.327	0.0	0.0	0.0	1.28	277.8	3.6
75.003	1.00	8.01	20.021	1.327	0.0	0.0	0.0	1.70	368.7	3.6
75.004	1.00	8.12	19.822	1.429	0.0	0.0	0.0	4.42	957.6	3.9
70.005	1.00	8.78	18.541	2.962	0.0	0.0	0.0	1.75	1574.6	8.0
70.006	1.00	9.16	18.309	2.962	0.0	0.0	0.0	1.75	1572.4	8.0
70.007	1.00	9.23	18.177	3.175	0.0	0.0	0.0	1.75	1578.7	8.6
81.000	1.00	5.89	19.927	0.048	0.0	0.0	0.0	0.90	63.8	0.1
82.000	1.00	5.04	20.100	0.319	0.0	0.0	0.0	2.57	283.6	0.9
82.001	1.00	5.15	19.968	0.326	0.0	0.0	0.0	3.64	401.7	0.9
83.000	1.00	5.27	20.600	0.037	0.0	0.0	0.0	2.79	197.2	0.1
84.000	1.00	5.02	19.730	0.144	0.0	0.0	0.0	5.02	1087.8	0.4
84.001	1.00	5.25	19.403	0.290	0.0	0.0	0.0	2.24	484.9	0.8
83.001	1.00	5.38	19.093	0.355	0.0	0.0	0.0	1.59	175.9	1.0
82.002	1.00	5.63	18.933	0.723	0.0	0.0	0.0	1.66	264.0	2.0
85.000	1.00	5.07	20.392	0.269	0.0	0.0	0.0	2.23	157.5	0.7

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
85.001	14.993	0.300	50.0	0.000	0.00	0.0	0.600		o	300
82.003	25.055	0.081	309.3	0.016	0.00	0.0	0.600		o	450
82.004	15.761	0.105	150.0	0.091	0.00	0.0	0.600		o	450
81.001	16.120	0.062	260.0	0.000	0.00	0.0	0.600		o	450
81.002	19.512	0.062	314.7	0.015	0.00	0.0	0.600		o	450
81.003	20.932	0.138	151.7	0.018	0.00	0.0	0.600		o	450
70.008	14.860	0.100	148.6	0.086	0.00	0.0	0.600		oo	-13
70.009	17.618	0.088	200.2	0.025	0.00	0.0		0.045	3 \=/	1000
70.010	11.291	0.023	490.9	0.022	0.00	0.0	0.600		[]	-2
70.011	16.309	0.033	494.2	0.012	0.00	0.0		0.045	3 \=/	1000
70.012	10.949	0.022	497.7	0.019	0.00	0.0	0.600		[]	-2
70.013	16.262	0.033	492.8	0.017	0.00	0.0		0.045	3 \=/	1000
70.014	12.121	0.024	505.0	0.020	0.00	0.0	0.600		[]	-2
70.015	21.133	0.042	503.2	0.015	0.00	0.0		0.045	3 \=/	1000
86.000	12.484	0.468	26.7	0.371	5.00	0.0	0.600		o	300
86.001	16.404	0.068	241.1	0.000	0.00	0.0	0.600		o	300
87.000	18.275	0.274	66.7	0.424	5.00	0.0	0.600		o	375
88.000	18.015	0.073	246.8	0.157	5.00	0.0	0.600		o	375
88.001	107.105	1.491	71.8	0.000	0.00	0.0	0.600		o	375
87.001	66.738	2.729	24.5	0.000	0.00	0.0	0.600		o	375

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)
85.001	1.00	5.18	20.200	0.269	0.0	0.0	0.0	2.23	157.5	0.7
82.003	1.00	5.99	18.766	1.008	0.0	0.0	0.0	1.15	183.0	2.7
82.004	1.00	6.15	18.685	1.099	0.0	0.0	0.0	1.66	263.6	3.0
81.001	1.00	6.37	18.580	1.147	0.0	0.0	0.0	1.26	199.8	3.1
81.002	1.00	6.65	18.518	1.162	0.0	0.0	0.0	1.14	181.4	3.1
81.003	1.00	6.86	18.456	1.180	0.0	0.0	0.0	1.65	262.2	3.2
70.008	1.00	9.36	18.152	4.441	0.0	0.0	0.0	2.00	1127.5	12.0
70.009	1.00	10.16	18.052	4.466	0.0	0.0	0.0	0.36	79.2	12.1
70.010	1.00	10.30	17.514	4.488	0.0	0.0	0.0	1.37	1228.7	12.2
70.011	1.00	11.47	17.491	4.500	0.0	0.0	0.0	0.23	50.4	12.2
70.012	1.00	11.61	17.008	4.519	0.0	0.0	0.0	1.36	1220.3	12.2
70.013	1.00	12.78	16.986	4.536	0.0	0.0	0.0	0.23	50.5	12.3
70.014	1.00	12.93	16.953	4.556	0.0	0.0	0.0	1.35	1211.3	12.3
70.015	1.00	14.46	16.929	4.571	0.0	0.0	0.0	0.23	49.9	12.4
86.000	1.00	5.07	16.088	0.371	0.0	0.0	0.0	3.06	216.0	1.0
86.001	1.00	5.34	15.620	0.371	0.0	0.0	0.0	1.01	71.3	1.0
87.000	1.00	5.14	18.677	0.424	0.0	0.0	0.0	2.22	245.4	1.1
88.000	1.00	5.26	19.967	0.157	0.0	0.0	0.0	1.15	126.9	0.4
88.001	1.00	6.10	19.894	0.157	0.0	0.0	0.0	2.14	236.4	0.4
87.001	1.00	6.40	18.403	0.582	0.0	0.0	0.0	3.68	406.1	1.6

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
86.002	25.545	0.085	300.0	0.000	0.00	0.0	0.600		o	375
70.016	18.003	0.218	82.6	0.019	0.00	0.0	0.600		[]	-2
89.000	47.712	0.591	80.7	0.068	5.00	0.0	0.600		o	300
89.001	16.618	0.291	57.1	0.115	0.00	0.0	0.600		o	300
90.000	32.662	0.653	50.0	0.747	5.00	0.0	0.600		o	450
90.001	31.603	0.790	40.0	0.000	0.00	0.0	0.600		o	450
90.002	35.486	0.887	40.0	0.090	0.00	0.0	0.600		o	450
89.002	45.121	0.564	80.0	0.234	0.00	0.0	0.600		o	450
89.003	22.833	0.223	102.4	0.000	0.00	0.0	0.600		o	450
91.000	32.732	1.101	29.7	0.018	5.00	0.0	0.600		o	150
92.000	27.374	0.114	240.1	0.474	5.00	0.0	0.600		o	375
92.001	44.697	0.772	57.9	0.000	0.00	0.0	0.600		o	375
91.001	56.371	1.070	52.7	0.070	0.00	0.0	0.600		o	450
89.004	17.274	0.264	65.4	0.198	0.00	0.0	0.600		o	450
89.005	38.288	0.264	145.0	0.000	0.00	0.0	0.600		o	450
93.000	29.215	0.513	56.9	0.562	5.00	0.0	0.600		o	375
93.001	21.744	0.613	35.5	0.000	0.00	0.0	0.600		o	300
89.006	54.193	1.117	48.5	0.097	0.00	0.0	0.600		[]	-2

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)
86.002	1.00	6.81	15.477	0.953	0.0	0.0	0.0	1.04	115.0	2.6
70.016	1.00	14.55	15.392	5.543	0.0	0.0	0.0	3.35	3012.3	15.0
89.000	1.00	5.45	18.938	0.068	0.0	0.0	0.0	1.75	123.8	0.2
89.001	1.00	5.59	18.197	0.183	0.0	0.0	0.0	2.08	147.4	0.5
90.000	1.00	5.19	20.030	0.747	0.0	0.0	0.0	2.88	458.1	2.0
90.001	1.00	5.35	19.377	0.747	0.0	0.0	0.0	3.22	512.4	2.0
90.002	1.00	5.54	18.587	0.837	0.0	0.0	0.0	3.22	512.5	2.3
89.002	1.00	5.92	17.700	1.254	0.0	0.0	0.0	2.27	361.8	3.4
89.003	1.00	6.11	17.136	1.254	0.0	0.0	0.0	2.01	319.5	3.4
91.000	1.00	5.29	19.440	0.018	0.0	0.0	0.0	1.85	32.8	0.0
92.000	1.00	5.39	19.075	0.474	0.0	0.0	0.0	1.16	128.7	1.3
92.001	1.00	5.70	18.961	0.474	0.0	0.0	0.0	2.39	263.4	1.3
91.001	1.00	6.04	18.039	0.562	0.0	0.0	0.0	2.81	446.3	1.5
89.004	1.00	6.22	16.913	2.015	0.0	0.0	0.0	2.52	400.2	5.5
89.005	1.00	6.60	16.649	2.015	0.0	0.0	0.0	1.69	268.2	5.5
93.000	1.00	5.20	17.717	0.562	0.0	0.0	0.0	2.41	265.6	1.5
93.001	1.00	5.34	17.204	0.562	0.0	0.0	0.0	2.65	187.2	1.5
89.006	1.00	6.81	16.235	2.673	0.0	0.0	0.0	4.37	3933.6	7.2

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Network Design Table for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
70.017	17.160	0.057	301.1	0.186	0.00	0.0	0.600		[]	-2
70.018	12.831	0.026	493.5	0.009	0.00	0.0		0.045	3 \=/	1500
70.019	10.588	0.021	504.2	0.018	0.00	0.0		0.045	3 \=/	1500
70.020	23.867	0.048	497.2	0.013	0.00	0.0		0.045	3 \=/	1500
70.021	13.364	0.027	495.0	0.030	0.00	0.0	0.600		[]	-3
70.022	24.890	0.083	299.9	0.020	0.00	0.0	0.600		[]	-3
70.023	16.005	0.032	500.2	0.000	0.00	0.0		0.045	3 \=/	1500
94.000	20.382	0.183	111.4	0.402	5.00	0.0	0.600		o	300
94.001	50.763	0.661	76.8	0.402	0.00	0.0	0.600		o	300
95.000	22.043	0.333	66.2	0.365	5.00	0.0	0.600		o	300
95.001	25.467	1.130	22.5	0.365	0.00	0.0	0.600		o	300
95.002	7.319	0.073	100.3	0.000	0.00	0.0	0.600		o	300
95.003	114.846	0.484	237.3	0.000	0.00	0.0	0.600		3 \=/	1500
95.004	53.675	0.208	258.1	0.000	0.00	0.0	0.600		3 \=/	1500
94.002	51.354	0.337	152.4	0.000	0.00	0.0		0.045	3 \=/	1500
1.058	53.635	0.107	501.3	0.000	0.00	0.0		0.045	3 \=/	2400
1.059	15.671	0.001	15671.0	0.000	0.00	0.0	0.600		o	825

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)
70.017	1.00	14.71	15.118	8.402	0.0	0.0	0.0	1.75	1572.2	22.8
70.018	1.00	15.60	15.061	8.411	0.0	0.0	0.0	0.24	71.0	22.8
70.019	1.00	16.33	15.035	8.429	0.0	0.0	0.0	0.24	70.2	22.8
70.020	1.00	17.98	15.014	8.442	0.0	0.0	0.0	0.24	70.7	22.9
70.021	1.00	18.14	14.966	8.472	0.0	0.0	0.0	1.40	1513.6	22.9
70.022	1.00	18.37	14.939	8.492	0.0	0.0	0.0	1.80	1948.5	23.0
70.023	1.00	19.47	14.856	8.492	0.0	0.0	0.0	0.24	70.5	23.0
94.000	1.00	5.23	15.640	0.402	0.0	0.0	0.0	1.49	105.3	1.1
94.001	1.00	5.70	15.457	0.804	0.0	0.0	0.0	1.80	126.9	2.2
95.000	1.00	5.19	17.265	0.365	0.0	0.0	0.0	1.94	136.8	1.0
95.001	1.00	5.32	16.932	0.730	0.0	0.0	0.0	3.33	235.1	2.0
95.002	1.00	5.40	15.802	0.730	0.0	0.0	0.0	1.57	111.0	2.0
95.003	1.00	6.80	15.729	0.730	0.0	0.0	0.0	1.37	399.6	2.0
95.004	1.00	7.48	15.245	0.730	0.0	0.0	0.0	1.31	383.0	2.0
94.002	1.00	9.44	14.796	1.534	0.0	0.0	0.0	0.44	127.7	4.2
1.058	1.00	65.69	13.014	39.135	0.0	0.0	0.0	0.25	107.6	106.0
1.059	1.00	66.84	12.907	39.135	0.0	0.0	0.0	0.23	121.5	106.0

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
15	23.938	1.500	Open Manhole	1050	1.000	22.438	300				
16	23.645	1.500	Open Manhole	1050	1.001	22.145	300	1.000	22.145	300	
17	23.336	1.500	Open Manhole	1050	2.000	21.836	300				
18	23.148	1.500	Open Manhole	1050	2.001	21.648	300	2.000	21.648	300	
19	23.124	1.584	Open Manhole	1050	1.002	21.540	375	1.001	21.615	300	
								2.001	21.615	300	
20	23.044	1.557	Open Manhole	1050	1.003	21.487	375	1.002	21.487	375	
21	23.008	1.628	Open Manhole	1050	1.004	21.380	450	1.003	21.455	375	
24	23.661	2.580	Open Manhole	1200	1.005	21.081	450	1.004	21.081	450	
25	23.588	2.788	Open Manhole	1200	1.006	20.800	600	1.005	20.950	450	
26	23.723	1.500	Open Manhole	1050	3.000	22.223	450				
27	23.839	1.854	Open Manhole	1050	3.001	21.985	600	3.000	22.135	450	
12	24.834	1.500	Open Manhole	1050	4.000	23.334	450				
13	24.859	1.614	Open Manhole	1050	4.001	23.245	450	4.000	23.245	450	
14	24.655	1.775	Open Manhole	1050	4.002	22.880	450	4.001	22.880	450	
28	24.203	2.374	Open Manhole	1200	3.002	21.829	600	3.001	21.829	600	
								4.002	22.055	450	76
29	23.611	1.500	Open Manhole	1050	5.000	22.111	450				
30	23.979	2.087	Open Manhole	1200	5.001	21.892	450	5.000	21.892	450	
31	23.746	2.244	Open Manhole	1200	3.003	21.502	600	3.002	21.502	600	
								5.001	21.727	450	75
20	22.655	2.089	Open Manhole	1500	3.004	20.566	600	3.003	20.566	600	
13	22.523	2.008	Open Manhole	1500	1.007	20.515	600	1.006	20.515	600	
								3.004	20.515	600	
9	24.413	1.350	Junction		6.000	23.063	1000				
10	24.388	1.450	Junction		6.001	22.938	1000	6.000	22.938	1000	
11	23.902	1.190	Junction		6.002	22.712	1000	6.001	22.712	1000	
12	24.700	2.272	Junction		6.003	22.428	1000	6.002	22.428	1000	
23	23.624	1.825	Junction		6.004	21.799	1000	6.003	21.799	1000	
26	23.652	2.054	Junction		6.005	21.598	225	6.004	21.598	1000	
24	23.606	2.068	Junction		6.006	21.538	1000	6.005	21.538	225	
25	22.360	1.470	Junction	0	6.007	20.890	225	6.006	20.890	1000	
32	22.215	1.882	Open Manhole	1200	1.008	20.334	-1	1.007	20.334	600	
								6.007	20.813	225	29
35	22.107	1.819	Open Manhole	1200	1.009	20.289	-1	1.008	20.289	-1	
36	25.515	1.500	Open Manhole	1050	7.000	24.015	300				
37	25.527	1.566	Open Manhole	1050	7.001	23.961	300	7.000	23.961	300	
38	25.577	1.652	Open Manhole	1050	7.002	23.925	1000	7.001	23.925	300	
39	25.663	1.500	Open Manhole	1050	8.000	24.163	300				
40	25.541	1.500	Open Manhole	1050	8.001	24.041	300	8.000	24.041	300	
41	25.704	1.500	Open Manhole	1050	9.000	24.204	300				
42	25.591	1.500	Open Manhole	1050	9.001	24.091	300	9.000	24.091	300	
43	25.570	1.562	Open Manhole	1050	8.002	24.008	300	8.001	24.008	300	
								9.001	24.035	300	27
44	25.422	1.628	Open Manhole		7.003	23.794	300	7.002	23.794	1000	
								8.002	23.794	300	
34	25.373	1.688	Junction		7.004	23.685	1000	7.003	23.685	300	

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
45	25.076	1.567	Junction		7.005	23.509	300	7.004	23.509	1000	
1	25.040	1.648	Junction		7.006	23.392	1000	7.005	23.392	300	
46	24.806	1.500	Open Manhole	1050	10.000	23.306	300				
47	25.039	1.785	Open Manhole		10.001	23.254	300	10.000	23.254	300	
26	24.563	1.431	Junction		7.007	23.132	1000	7.006	23.212	1000	80
								10.001	23.132	300	
47	25.395	1.395	Junction		11.000	24.000	1000				
49	24.772	1.387	Junction		11.001	23.385	300	11.000	23.535	1000	
1	25.360	1.500	Open Manhole	1050	12.000	23.860	300				
2	25.344	1.546	Open Manhole		12.001	23.798	300	12.000	23.798	300	
3	25.276	1.608	Junction		12.002	23.668	1000	12.001	23.668	300	
57	24.895	1.522	Junction		12.003	23.373	300	12.002	23.523	1000	
50	24.491	1.311	Junction		11.002	23.180	1000	11.001	23.180	300	
								12.003	23.247	300	217
51	23.773	1.463	Junction		11.003	22.310	375	11.002	22.535	1000	
2	23.535	1.447	Junction		7.008	22.088	1000	7.007	22.463	1000	375
								11.003	22.088	375	
49	23.774	1.500	Open Manhole	1050	13.000	22.274	375				
50	23.396	1.411	Open Manhole		13.001	21.985	375	13.000	21.985	375	
48	23.021	1.438	Junction		7.009	21.583	1000	7.008	21.583	1000	
								13.001	21.873	375	515
4	24.983	1.500	Open Manhole	1050	14.000	23.483	300				
5	24.590	1.207	Open Manhole	1050	14.001	23.383	300	14.000	23.383	300	
58	24.277	0.477	Junction	0	15.000	23.800	1000				
6	24.125	0.852	Open Manhole		14.002	23.273	1000	14.001	23.273	300	
								15.000	23.749	1000	476
7	24.574	1.350	Junction		16.000	23.224	1000				
8	23.946	1.344	Junction	0	14.003	22.602	-1	14.002	23.150	1000	98
								16.000	23.052	1000	
22	24.100	1.500	Open Manhole	1050	17.000	22.600	300				
23	23.762	1.297	Open Manhole	1050	17.001	22.465	300	17.000	22.465	300	
64	23.875	0.875	Junction	0	18.000	23.000	1000				
64	23.669	1.387	Open Manhole	1200	17.002	22.282	375	17.001	22.357	300	
								18.000	22.724	1000	217
61	23.627	1.371	Open Manhole	1350	17.003	22.256	375	17.002	22.256	375	
63	23.918	1.875	Open Manhole		14.004	22.043	375	14.003	22.549	-1	731
								17.003	22.043	375	
68	23.838	1.811	Junction		14.005	22.027	1000	14.004	22.027	375	
55	22.683	1.239	Junction		14.006	21.444	375	14.005	21.669	1000	
3	22.524	1.385	Junction	0	7.010	21.139	1000	7.009	21.139	1000	
								14.006	21.382	375	468
33	23.226	1.500	Open Manhole	1050	19.000	21.726	375				
34	22.420	1.237	Open Manhole	1050	19.001	21.183	450	19.000	21.258	375	
4	22.009	1.303	Open Manhole	1050	7.011	20.706	450	7.010	21.006	1000	
								19.001	20.919	450	213
53	21.911	1.772	Open Manhole	1200	1.010	20.139	-1	1.009	20.177	-1	37
								7.011	20.289	450	

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
62	21.402	1.350	Open Manhole	1050	20.000	20.052	300				
63	21.219	1.500	Open Manhole	1200	20.001	19.719	450	20.000	19.869	300	
64	21.405	2.084	Open Manhole	1500	1.011	19.321	-2	1.010	19.321	-1	
								20.001	19.628	450	157
73	21.139	1.961	Open Manhole	1000 x 1500	1.012	19.178	-2	1.011	19.178	-2	
74	21.389	1.500	Open Manhole	1200	21.000	19.889	300				
75	21.389	1.648	Open Manhole	1200	21.001	19.741	450	21.000	19.741	300	
76	21.415	2.381	Open Manhole	1000 x 1500	1.013	19.034	-2	1.012	19.034	-2	
								21.001	19.341	450	157
391	21.897	0.897	Junction		22.000	21.000	1000				
59	22.497	1.500	Open Manhole	1350	23.000	20.997	375				
60	21.955	1.527	Open Manhole		23.001	20.428	450	23.000	20.503	375	
389	21.690	1.317	Junction		22.001	20.374	1000	22.000	20.863	1000	489
								23.001	20.374	450	
83	21.596	1.276	Junction	0	22.002	20.321	300	22.001	20.321	1000	
58	22.464	1.586	Junction		24.000	20.878	1000				
61	21.664	1.232	Junction	0	24.001	20.432	300	24.000	20.582	1000	
392	21.507	1.260	Open Manhole		22.003	20.247	1000	22.002	20.247	300	
								24.001	20.388	300	291
70	21.815	1.500	Open Manhole	1200	25.000	20.315	300				
71	21.473	1.421	Open Manhole		25.001	20.052	450	25.000	20.202	300	
395	21.330	1.357	Junction		22.004	19.973	1000	22.003	20.011	1000	38
								25.001	19.973	450	
393	21.201	1.400	Junction	0	22.005	19.801	450	22.004	19.801	1000	
68	21.800	1.510	Junction		26.000	20.290	1000				
72	21.329	1.650	Junction	0	26.001	19.679	300	26.000	19.829	1000	
397	21.175	1.544	Open Manhole		22.006	19.631	1000	22.005	19.698	450	67
								26.001	19.631	300	
77	21.644	1.500	Open Manhole	1200	27.000	20.144	375				
78	21.465	1.500	Open Manhole		27.001	19.965	375	27.000	19.965	375	
93	21.410	1.971	Junction	0	22.007	19.439	375	22.006	19.439	1000	
								27.001	19.843	375	629
81	21.440	2.419	Open Manhole	1000 x 1500	1.014	19.021	-2	1.013	19.021	-2	
								22.007	19.389	375	218
79	21.543	2.898	Open Manhole	1000 x 1500	1.015	18.645	-2	1.014	18.945	-2	
365	23.362	0.862	Junction		28.000	22.500	1000				
55	24.074	1.500	Open Manhole	1050	29.000	22.574	300				
56	23.024	0.868	Open Manhole	1350	29.001	22.156	375	29.000	22.231	300	
62	23.018	0.933	Open Manhole		29.002	22.085	375	29.001	22.085	375	
86	22.931	0.938	Junction		28.001	21.993	1000	28.000	22.370	1000	377
								29.002	21.993	375	
366	22.694	0.966	Junction	0	28.002	21.728	300	28.001	21.878	1000	
54	24.139	1.500	Open Manhole	1050	30.000	22.639	1000				
57	22.655	0.767	Open Manhole	1050	30.001	21.888	300	30.000	22.038	1000	
367	22.539	0.869	Open Manhole		28.003	21.671	1500	28.002	21.671	300	
								30.001	21.792	300	271
66	22.963	1.500	Open Manhole	1200	31.000	21.463	375				

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
67	22.614	1.399	Open Manhole	1200	31.001	21.215	450	31.000	21.290	375	
68	22.433	1.303	Open Manhole		31.002	21.130	450	31.001	21.130	450	
87	22.397	1.361	Junction		28.004	21.036	1500	28.003	21.488	1500	452
								31.002	21.036	450	
368	22.271	1.418	Junction	0	28.005	20.853	450	28.004	20.853	1500	
65	23.675	1.350	Open Manhole	1200	32.000	22.325	1000				
69	22.251	0.582	Open Manhole	1200	32.001	21.669	300	32.000	21.669	1000	
369	22.248	1.520	Open Manhole		28.006	20.728	1500	28.005	20.728	450	
								32.001	21.562	300	834
80	22.920	1.500	Open Manhole	1200	33.000	21.420	300				
81	22.536	1.575	Open Manhole		33.001	20.961	375	33.000	21.036	300	
93	22.236	1.717	Junction	0	28.007	20.519	1000	28.006	20.519	1500	
								33.001	20.810	375	516
82	22.530	1.500	Open Manhole	1200	34.000	21.030	300				
83	22.168	1.754	Open Manhole	1200	34.001	20.414	375	34.000	20.489	300	
99	21.976	1.722	Open Manhole		34.002	20.254	375	34.001	20.254	375	
96	22.088	1.978	Junction	0	34.003	20.110	1000	34.002	20.110	375	
90	22.216	2.292	Open Manhole	1200	28.008	19.924	300	28.007	20.445	1000	371
								34.003	20.074	1000	
85	22.206	3.708	Open Manhole	1000 x 1500	1.016	18.498	-2	1.015	18.498	-2	
								28.008	19.032	300	233
84	22.508	4.062	Open Manhole	1000 x 1500	1.017	18.446	-2	1.016	18.446	-2	
85	23.009	1.350	Open Manhole	1200	35.000	21.659	150				
86	23.301	5.056	Open Manhole	1000 x 1500	1.018	18.245	-2	1.017	18.245	-2	
								35.000	19.032	150	337
1	24.200	1.350	Junction		36.000	22.850	1000				
134	23.771	1.381	Junction		36.001	22.390	1000	36.000	22.390	1000	
2	23.430	1.500	Junction	0	36.002	21.930	300	36.001	21.930	1000	
92	23.490	5.314	Open Manhole	1000 x 1500	1.019	18.176	-2	1.018	18.176	-2	
								36.002	21.891	300	3265
87	23.570	5.497	Open Manhole	1000 x 1500	1.020	18.073	-2	1.019	18.073	-2	
88	23.309	5.479	Open Manhole	1000 x 1500	1.021	17.830	-2	1.020	17.830	-2	
91	23.666	5.999	Open Manhole	1000 x 1500	1.022	17.667	-3	1.021	17.667	-2	
94	24.736	1.500	Open Manhole	1200	37.000	23.236	375				
95	24.663	1.500	Open Manhole	1200	37.001	23.163	450	37.000	23.163	375	
96	24.078	1.004	Open Manhole	1200	37.002	23.074	450	37.001	23.074	450	
89	24.838	1.500	Open Manhole	1200	38.000	23.338	450				
90	24.035	1.500	Open Manhole	1200	38.001	22.535	450	38.000	22.535	450	
145	23.944	1.485	Open Manhole	1350	37.003	22.459	450	37.002	22.724	450	265
								38.001	22.459	450	
92	23.849	6.244	Open Manhole	1000 x 1500	1.023	17.605	-3	1.022	17.605	-3	
								37.003	22.341	450	4587
93	23.549	5.985	Open Manhole	1000 x 1500	1.024	17.564	-3	1.023	17.564	-3	
97	23.275	1.500	Open Manhole	1200	39.000	21.775	375				
98	23.381	1.667	Open Manhole	1200	39.001	21.714	375	39.000	21.714	375	
99	23.299	1.618	Open Manhole	1200	39.002	21.681	450	39.001	21.681	375	
100	22.903	1.500	Open Manhole	1200	39.003	21.403	450	39.002	21.403	450	

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
102	22.893	1.500	Open Manhole	1200	40.000	21.393	525				
103	22.783	1.576	Open Manhole	1200	40.001	21.207	525	40.000	21.207	525	
151	23.200	2.123	Open Manhole	1500	39.004	21.077	300	39.003	21.245	450	318
								40.001	21.077	525	
101	23.487	6.077	Open Manhole	1000 x 1500	1.025	17.410	-3	1.024	17.410	-3	
								39.004	20.801	300	3091
104	22.656	5.385	Open Manhole	1000 x 1500	1.026	17.271	-3	1.025	17.271	-3	
105	21.832	4.668	Open Manhole	1200 x 1800	1.027	17.164	-3	1.026	17.164	-3	
106	23.413	1.500	Open Manhole	1200	41.000	21.913	450				
107	23.046	1.500	Open Manhole	1200	41.001	21.546	600	41.000	21.546	450	
108	21.572	2.484	Open Manhole	1200	41.002	19.088	450	41.001	19.088	600	
109	21.427	4.387	Open Manhole	1200 x 1800	1.028	17.040	-3	1.027	17.040	-3	
								41.002	18.749	450	1559
110	20.156	3.276	Open Manhole	1200 x 1800	1.029	16.880	-3	1.028	16.880	-3	
1	25.600	1.350	Open Manhole		42.000	24.250	1000				
2	25.400	1.271	Junction		42.001	24.129	1000	42.000	24.129	1000	
3	25.000	1.600	Junction		42.002	23.400	1000	42.001	23.400	1000	
4	24.600	1.600	Junction		42.003	23.000	300	42.002	23.000	1000	
5	23.800	1.544	Junction		42.004	22.256	1000	42.003	22.256	300	
6	21.800	1.929	Junction	0	42.005	19.871	300	42.004	19.871	1000	
111	21.794	5.047	Open Manhole	1200 x 1800	1.030	16.747	-3	1.029	16.747	-3	
								42.005	19.701	300	2504
112	21.561	1.500	Open Manhole	1200	43.000	20.061	300				
113	22.346	2.366	Open Manhole	1200	43.001	19.980	375	43.000	19.980	300	
114	21.421	1.644	Open Manhole	1200	43.002	19.777	375	43.001	19.777	375	
115	20.236	1.500	Open Manhole	1200	43.003	18.736	375	43.002	18.736	375	
116	19.748	3.108	Open Manhole	1000 x 1500	1.031	16.640	-3	1.030	16.640	-3	
								43.003	18.248	375	1383
117	18.952	2.348	Open Manhole	1000 x 1500	1.032	16.604	-3	1.031	16.604	-3	
118	23.537	1.425	Open Manhole	1200	44.000	22.112	225				
121	23.614	2.236	Open Manhole	1200	44.001	21.378	450	44.000	21.603	225	
119	23.444	1.600	Open Manhole	1200	45.000	21.844	450				
120	23.924	2.407	Open Manhole	1200	45.001	21.517	450	45.000	21.517	450	
122	23.879	1.500	Open Manhole	1200	46.000	22.379	450				
123	23.995	2.087	Open Manhole	1200	46.001	21.908	450	46.000	21.908	450	
177	23.834	2.449	Open Manhole	1200	45.002	21.385	450	45.001	21.385	450	
								46.001	21.428	450	43
177	23.683	2.425	Open Manhole	1200	44.002	21.258	450	44.001	21.296	450	38
								45.002	21.258	450	
122	23.800	2.624	Open Manhole	1350	44.003	21.176	450	44.002	21.176	450	
124	23.888	2.876	Open Manhole	1200	44.004	21.012	450	44.003	21.012	450	
125	24.314	1.350	Junction		47.000	22.964	1000				
126	24.458	1.786	Junction		47.001	22.672	1000	47.000	22.672	1000	
127	24.281	1.977	Junction	0	47.002	22.304	1000	47.001	22.304	1000	
143	24.000	1.966	Open Manhole	1500	47.003	22.034	225	47.002	22.109	1000	
128	23.890	1.050	Junction		48.000	22.840	1000				
129	23.897	1.159	Junction		48.001	22.738	1000	48.000	22.738	1000	

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
130	23.769	1.127	Junction		48.002	22.642	1000	48.001	22.642	1000	
131	24.191	1.638	Junction		48.003	22.553	1000	48.002	22.553	1000	
132	24.107	1.584	Junction	0	48.004	22.523	1000	48.003	22.523	1000	
133	23.993	1.511	Open Manhole	1050	48.005	22.482	1000	48.004	22.482	1000	
134	23.831	2.293	Open Manhole	1200	47.004	21.538	375	47.003	21.839	225	151
								48.005	21.763	1000	
135	23.366	2.631	Open Manhole	1200	44.005	20.735	600	44.004	20.894	450	9
								47.004	20.960	375	
136	23.900	1.050	Junction		49.000	22.850	1000				
137	23.389	1.050	Junction		49.001	22.339	1000	49.000	22.339	1000	
138	23.371	1.050	Junction		49.002	22.321	1000	49.001	22.321	1000	
139	23.334	1.050	Junction		49.003	22.284	1000	49.002	22.284	1000	
140	23.280	1.050	Junction	0	49.004	22.230	1000	49.003	22.230	1000	
141	23.099	1.050	Open Manhole	1050	49.005	22.049	300	49.004	22.049	1000	
142	22.850	2.372	Open Manhole	1200	44.006	20.478	-1	44.005	20.478	600	
								49.005	20.928	300	150
143	22.702	2.304	Open Manhole	1200	44.007	20.398	-1	44.006	20.398	-1	
144	22.882	2.531	Open Manhole	1200	44.008	20.351	-1	44.007	20.351	-1	
145	23.110	1.500	Open Manhole	1200	50.000	21.610	375				
146	22.530	1.498	Open Manhole	1200	50.001	21.032	375	50.000	21.032	375	
1	22.882	1.050	Open Manhole	1200	51.000	21.832	1000				
2	22.450	1.500	Open Manhole	1200	51.001	20.950	300	51.000	21.100	1000	
3	22.417	1.486	Open Manhole	1200	51.002	20.931	1000	51.001	20.931	300	
4	22.278	1.654	Open Manhole	1200	51.003	20.624	300	51.002	20.774	1000	
147	22.264	2.099	Open Manhole	1200	44.009	20.165	-1	44.008	20.165	-1	
								50.001	20.615	375	225
								51.003	20.599	300	134
148	22.224	2.072	Open Manhole	1200	44.010	20.152	-1	44.009	20.152	-1	
149	22.932	1.500	Open Manhole	1200	52.000	21.432	300				
150	22.168	1.500	Open Manhole	1200	52.001	20.668	300	52.000	20.668	300	
1	22.224	1.050	Open Manhole	1200	53.000	21.174	1000				
2	21.919	1.500	Open Manhole	1200	53.001	20.419	300	53.000	20.569	1000	
151	21.604	1.950	Open Manhole	1200	44.011	19.654	-1	44.010	19.654	-1	
								52.001	20.104	300	150
								53.001	20.104	300	150
152	21.019	1.950	Open Manhole	1200	44.012	19.069	-1	44.011	19.069	-1	
153	20.464	1.950	Open Manhole	1200	44.013	18.514	-1	44.012	18.514	-1	
154	19.745	1.950	Open Manhole	1200	44.014	17.795	-1	44.013	17.795	-1	
155	18.540	1.800	Open Manhole	1200	44.015	16.740	-1	44.014	17.584	-1	844
1	20.464	1.350	Junction		54.000	19.114	1000				
2	19.789	1.500	Junction		54.001	18.289	300	54.000	18.439	1000	
3	19.700	1.506	Junction		54.002	18.194	1000	54.001	18.194	300	
4	19.569	1.645	Junction		54.003	17.924	300	54.002	18.074	1000	
5	19.510	1.640	Junction		54.004	17.870	1000	54.003	17.870	300	
6	19.046	1.727	Junction		54.005	17.319	300	54.004	17.469	1000	
7	18.840	1.701	Junction		54.006	17.139	1000	54.005	17.139	300	
8	18.627	1.672	Junction	0	54.007	16.955	1000	54.006	16.955	1000	

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
9	18.531	1.875	Open Manhole	1200	54.008	16.656	300	54.007	16.806	1000	
156	18.248	2.270	Open Manhole	1000 x 1500	1.033	15.978	-3	1.032	15.978	-3	
								44.015	16.382	-1	404
								54.008	16.298	300	20
157	18.106	2.270	Open Manhole	1000 x 1500	1.034	15.836	-3	1.033	15.836	-3	
158	17.765	2.270	Open Manhole	1000 x 1500	1.035	15.495	-3	1.034	15.495	-3	
159	18.493	1.050	Open Manhole	1050	55.000	17.443	1000				
160	17.285	1.050	Open Manhole	1050	55.001	16.235	300	55.000	16.235	1000	
161	16.883	1.670	Open Manhole	1200 x 2100	1.036	15.213	-4	1.035	15.213	-3	
								55.001	15.533	300	20
162	17.247	2.064	Open Manhole	1200 x 2100	1.037	15.183	-4	1.036	15.183	-4	
1	16.757	1.050	Junction		56.000	15.707	1000				
2	16.797	1.135	Junction	0	56.001	15.662	300	56.000	15.662	1000	
173	16.853	1.727	Open Manhole		1.038	15.126	-4	1.037	15.154	-4	28
								56.001	15.576	300	
163	17.179	1.050	Junction		57.000	16.129	1000				
164	17.012	1.050	Junction	0	57.001	15.962	1000	57.000	15.962	1000	
165	16.984	1.050	Open Manhole		57.002	15.934	1000	57.001	15.934	1000	
166	16.630	0.752	Junction	0	57.003	15.878	1000	57.002	15.878	1000	
167	16.433	0.607	Open Manhole		57.004	15.826	1000	57.003	15.826	1000	
168	17.242	1.474	Junction		57.005	15.768	1000	57.004	15.768	1000	
244	18.353	2.903	Junction		58.000	15.450	500				
245	16.872	1.532	Junction		58.001	15.340	450	58.000	15.340	500	
169	16.650	1.381	Junction		57.006	15.269	1000	57.005	15.743	1000	474
								58.001	15.269	450	
170	16.166	0.958	Junction		57.007	15.208	1000	57.006	15.208	1000	
246	16.188	1.060	Junction		57.008	15.129	450	57.007	15.129	1000	
174	16.133	1.075	Junction		1.039	15.058	1000	1.038	15.058	-4	
								57.008	15.090	450	32
175	16.309	1.309	Open Manhole	1200	59.000	15.000	300				
176	16.252	1.304	Open Manhole	1200	59.001	14.948	300	59.000	14.948	300	
177	16.428	1.128	Open Manhole	1200	60.000	15.300	150				
178	16.179	1.262	Open Manhole		59.002	14.917	300	59.001	14.917	300	
								60.000	15.194	150	127
179	16.038	1.159	Junction		1.040	14.879	2000	1.039	14.879	1000	
								59.002	14.880	300	151
180	16.000	1.200	Open Manhole	1200	61.000	14.800	375				
181	16.019	1.274	Open Manhole		61.001	14.745	375	61.000	14.745	375	
182	15.828	1.135	Junction		1.041	14.693	2000	1.040	14.725	2000	32
								61.001	14.693	375	
183	15.692	1.105	Junction		1.042	14.587	2000	1.041	14.587	2000	
184	15.633	1.127	Junction	0	1.043	14.506	2000	1.042	14.506	2000	
185	18.558	1.500	Open Manhole	1200	62.000	17.058	450				
186	18.393	1.500	Open Manhole	1200	62.001	16.893	300	62.000	16.893	450	
187	19.478	1.350	Open Manhole	1200	63.000	18.128	225				
188	17.535	1.575	Open Manhole	1200	62.002	15.960	375	62.001	16.035	300	
								63.000	16.185	225	75

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
189	16.917	1.650	Open Manhole	1200	62.003	15.267	450	62.002	15.342	375	
190	16.762	1.650	Open Manhole	1200	62.004	15.112	450	62.003	15.112	450	
191	16.602	1.650	Open Manhole	1200	62.005	14.952	450	62.004	14.952	450	
192	16.363	1.650	Open Manhole	1200	62.006	14.713	450	62.005	14.713	450	
193	16.706	1.050	Junction		64.000	15.656	1000				
194	16.610	1.050	Junction		64.001	15.560	1000	64.000	15.560	1000	
195	16.491	1.050	Junction		64.002	15.441	1000	64.001	15.441	1000	
196	16.348	1.050	Junction		64.003	15.298	1000	64.002	15.298	1000	
197	16.214	1.050	Junction	0	64.004	15.164	1000	64.003	15.164	1000	
198	16.058	1.200	Open Manhole	1200	64.005	14.858	300	64.004	15.008	1000	
199	16.045	1.650	Open Manhole	1200	62.007	14.395	450	62.006	14.395	450	
								64.005	14.834	300	289
200	18.258	1.500	Open Manhole	1200	65.000	16.758	450				
201	18.259	1.543	Open Manhole	1200	65.001	16.716	450	65.000	16.716	450	
202	20.848	1.350	Open Manhole	1200	66.000	19.498	225				
203	20.465	1.425	Open Manhole	1200	66.001	19.040	300	66.000	19.115	225	
204	20.201	1.425	Open Manhole	1200	66.002	18.776	300	66.001	18.776	300	
205	19.155	1.425	Open Manhole	1200	66.003	17.730	300	66.002	17.730	300	
206	18.213	1.650	Open Manhole	1200	65.002	16.563	450	65.001	16.563	450	
								66.003	16.788	300	75
207	16.740	1.579	Open Manhole	1200	65.003	15.161	450	65.002	15.161	450	
212	16.240	1.579	Open Manhole	1200	65.004	14.661	450	65.003	14.661	450	
213	15.908	1.579	Open Manhole	1200	65.005	14.329	450	65.004	14.329	450	
1	16.782	1.050	Junction		67.000	15.732	1000				
2	16.096	1.200	Junction		67.001	14.896	300	67.000	15.046	1000	
3	16.096	1.217	Junction	0	67.002	14.879	1000	67.001	14.879	300	
4	15.920	1.090	Open Manhole	1200	67.003	14.830	300	67.002	14.830	1000	
214	15.850	1.712	Open Manhole	1200	62.008	14.138	-1	62.007	14.321	450	33
								65.005	14.288	450	
								67.003	14.802	300	214
215	15.833	1.766	Open Manhole	1200	62.009	14.067	-1	62.008	14.067	-1	
216	15.701	1.685	Open Manhole	1200	62.010	14.016	-1	62.009	14.016	-1	
217	15.663	1.662	Open Manhole		1.044	14.001	2000	1.043	14.497	2000	495
								62.010	14.001	-1	
218	15.440	1.484	Junction		1.045	13.956	2000	1.044	13.956	2000	
222	15.009	1.152	Junction		1.046	13.857	2000	1.045	13.857	2000	
223	15.057	1.218	Junction		1.047	13.839	2000	1.046	13.839	2000	
224	14.975	1.226	Junction		1.048	13.749	2000	1.047	13.749	2000	
228	14.500	0.775	Junction		1.049	13.725	2000	1.048	13.725	2000	
225	16.000	1.000	Open Manhole	1200	68.000	15.000	375				
219	16.000	1.000	Open Manhole	1200	69.000	15.000	375				
221	16.000	1.273	Open Manhole	1200	69.001	14.727	600	69.000	14.952	375	
227	16.000	1.774	Open Manhole		68.001	14.226	600	68.000	14.892	375	441
								69.001	14.226	600	
304	14.500	0.844	Junction		1.050	13.656	2000	1.049	13.656	2000	
								68.001	13.656	600	
229	14.495	0.945	Junction		1.051	13.550	2000	1.050	13.550	2000	

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
230	14.400	0.886	Junction		1.052	13.515	2000	1.051	13.515	2000	
231	14.421	0.954	Junction		1.053	13.467	2000	1.052	13.467	2000	
232	14.507	1.080	Junction		1.054	13.427	2000	1.053	13.427	2000	
233	14.543	1.218	Junction		1.055	13.325	2000	1.054	13.325	2000	
234	14.523	1.310	Junction		1.056	13.213	2000	1.055	13.213	2000	
235	15.000	1.922	Junction		1.057	13.078	2000	1.056	13.078	2000	
1	22.451	1.425	Open Manhole	1200	70.000	21.026	225				
2	22.384	1.704	Open Manhole	1200	70.001	20.680	300	70.000	20.755	225	
26	22.863	1.350	Open Manhole	1050	71.000	21.513	225				
27	22.691	1.489	Open Manhole	1050	71.001	21.202	300	71.000	21.277	225	
31	22.584	1.575	Open Manhole	1050	72.000	21.009	375				
315	22.577	1.598	Open Manhole	1350	72.001	20.980	375	72.000	20.980	375	
33	22.452	1.575	Open Manhole	1050	73.000	20.877	375				
34	22.492	1.633	Open Manhole	1050	73.001	20.859	375	73.000	20.859	375	
316	22.644	1.801	Open Manhole	1350	72.002	20.843	300	72.001	20.950	375	182
								73.001	20.843	375	
28	22.520	1.723	Open Manhole	1200	71.002	20.797	300	71.001	20.914	300	117
								72.002	20.797	300	
29	22.510	1.950	Open Manhole	1050	71.003	20.560	375	71.002	20.635	300	
30	22.301	2.361	Open Manhole	1050	71.004	19.940	375	71.003	19.940	375	
3	22.112	2.241	Open Manhole	1350	70.002	19.871	375	70.001	19.946	300	
								71.004	19.914	375	43
4	21.534	2.231	Open Manhole	1050	70.003	19.303	375	70.002	19.303	375	
35	21.458	1.575	Open Manhole	1200	74.000	19.883	375				
325	21.416	2.043	Open Manhole	1350	74.001	19.373	375	74.000	19.373	375	
5	21.152	2.362	Open Manhole	1200	70.004	18.790	450	70.003	18.865	375	
								74.001	18.905	375	40
36	22.612	1.830	Open Manhole	1200	75.000	20.782	150				
41	23.505	1.575	Open Manhole	1050	76.000	21.930	375				
42	23.366	1.575	Open Manhole	1350	76.001	21.791	300	76.000	21.791	375	
44	23.156	1.650	Open Manhole	1200	77.000	21.506	450				
45	22.842	1.577	Open Manhole	1200	77.001	21.265	450	77.000	21.265	450	
46	22.794	1.569	Open Manhole	1200	77.002	21.225	450	77.001	21.225	450	
54	23.247	1.575	Open Manhole	1050	78.000	21.672	375				
55	23.056	1.672	Open Manhole	1050	78.001	21.384	375	78.000	21.384	375	
47	23.735	2.640	Open Manhole	1200	77.003	21.095	375	77.002	21.095	450	
								78.001	21.109	375	14
49	24.154	1.575	Open Manhole	1200	79.000	22.579	375				
50	23.938	1.500	Open Manhole	1200	79.001	22.438	300	79.000	22.438	375	
51	23.819	1.500	Open Manhole	1200	79.002	22.319	300	79.001	22.319	300	
52	23.545	1.500	Open Manhole	1200	80.000	22.045	300				
53	23.659	1.830	Open Manhole	1200	80.001	21.829	300	80.000	21.829	300	
48	23.520	2.636	Open Manhole	1500	77.004	20.884	450	77.003	21.030	375	71
								79.002	21.034	300	
								80.001	21.034	300	
43	23.279	2.431	Open Manhole	1200	76.002	20.848	450	76.001	20.998	300	
								77.004	20.848	450	

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
37	22.480	2.193	Open Manhole	1200	75.001	20.287	450	75.000	20.587	150	
								76.002	20.287	450	
38	22.330	2.266	Open Manhole	1350	75.002	20.064	525	75.001	20.139	450	
39	22.144	2.123	Open Manhole	1350	75.003	20.021	525	75.002	20.021	525	
40	21.547	1.725	Open Manhole	1350	75.004	19.822	525	75.003	19.822	525	
6	21.053	2.512	Open Manhole	1350	70.005	18.541	-2	70.004	18.691	450	
								75.004	18.707	525	91
7	21.313	3.004	Open Manhole	1350	70.006	18.309	-2	70.005	18.309	-2	
8	21.392	3.215	Open Manhole	1500	70.007	18.177	-2	70.006	18.177	-2	
58	21.627	1.700	Open Manhole	1200	81.000	19.927	300				
62	21.877	1.777	Open Manhole	1200	82.000	20.100	375				
63	21.850	1.882	Open Manhole	1200	82.001	19.968	375	82.000	19.968	375	
67	22.540	1.940	Open Manhole	1200	83.000	20.600	300				
56	21.655	1.925	Open Manhole	1200	84.000	19.730	525				
57	21.648	2.245	Open Manhole	1200	84.001	19.403	525	84.000	19.403	525	
68	21.784	2.691	Open Manhole	1200	83.001	19.093	375	83.000	19.168	300	
								84.001	19.097	525	154
64	21.758	2.825	Open Manhole	1200	82.002	18.933	450	82.001	19.008	375	
								83.001	19.014	375	6
69	21.967	1.575	Open Manhole	1200	85.000	20.392	300				
70	21.881	1.682	Open Manhole	1200	85.001	20.200	300	85.000	20.200	300	
65	21.832	3.066	Open Manhole	1200	82.003	18.766	450	82.002	18.766	450	
								85.001	19.900	300	984
66	21.617	2.932	Open Manhole	1200	82.004	18.685	450	82.003	18.685	450	
59	21.372	2.792	Open Manhole	1200	81.001	18.580	450	81.000	19.767	300	1037
								82.004	18.580	450	
60	21.269	2.751	Open Manhole	1200	81.002	18.518	450	81.001	18.518	450	
61	21.172	2.716	Open Manhole	1200	81.003	18.456	450	81.002	18.456	450	
9	21.362	3.210	Open Manhole		70.008	18.152	-13	70.007	18.152	-2	
								81.003	18.318	450	16
10	21.062	3.010	Junction		70.009	18.052	1000	70.008	18.052	-13	
11	20.660	3.146	Junction		70.010	17.514	-2	70.009	17.964	1000	
12	20.230	2.739	Junction		70.011	17.491	1000	70.010	17.491	-2	
13	19.637	2.629	Junction		70.012	17.008	-2	70.011	17.458	1000	
14	19.281	2.295	Junction		70.013	16.986	1000	70.012	16.986	-2	
15	18.754	1.801	Junction		70.014	16.953	-2	70.013	16.953	1000	
16	18.270	1.341	Junction	0	70.015	16.929	1000	70.014	16.929	-2	
208	17.588	1.500	Open Manhole	1200	86.000	16.088	300				
209	17.120	1.500	Open Manhole	1200	86.001	15.620	300	86.000	15.620	300	
73	20.177	1.500	Open Manhole	1050	87.000	18.677	375				
71	21.542	1.575	Open Manhole	1050	88.000	19.967	375				
72	21.469	1.575	Open Manhole	1050	88.001	19.894	375	88.000	19.894	375	
75	19.628	1.225	Open Manhole	1050	87.001	18.403	375	87.000	18.403	375	
								88.001	18.403	375	
379	17.388	1.911	Open Manhole	1350	86.002	15.477	375	86.001	15.552	300	
								87.001	15.674	375	197
17	17.442	2.050	Open Manhole	1500	70.016	15.392	-2	70.015	16.887	1000	1495

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
								86.002	15.392	375	
76	20.438	1.500	Open Manhole	1200	89.000	18.938	300				
77	19.697	1.500	Open Manhole	1200	89.001	18.197	300	89.000	18.347	300	150
82	21.680	1.650	Open Manhole	1200	90.000	20.030	450				
83	21.217	1.840	Open Manhole	1200	90.001	19.377	450	90.000	19.377	450	
84	20.834	2.247	Open Manhole	1200	90.002	18.587	450	90.001	18.587	450	
78	19.515	1.815	Open Manhole	1200	89.002	17.700	450	89.001	17.906	300	56
								90.002	17.700	450	
79	18.876	1.740	Open Manhole	1200	89.003	17.136	450	89.002	17.136	450	
85	20.790	1.350	Open Manhole	1200	91.000	19.440	150				
87	20.575	1.500	Open Manhole	1200	92.000	19.075	375				
88	20.967	2.006	Open Manhole	1200	92.001	18.961	375	92.000	18.961	375	
86	19.711	1.672	Open Manhole	1350	91.001	18.039	450	91.000	18.339	150	
								92.001	18.189	375	75
80	18.619	1.706	Open Manhole	1350	89.004	16.913	450	89.003	16.913	450	
								91.001	16.969	450	56
316	19.000	2.351	Open Manhole	1350	89.005	16.649	450	89.004	16.649	450	
89	19.217	1.500	Open Manhole	1050	93.000	17.717	375				
90	18.704	1.500	Open Manhole	1050	93.001	17.204	300	93.000	17.204	375	
81	18.091	1.856	Open Manhole	1350	89.006	16.235	-2	89.005	16.385	450	
								93.001	16.591	300	56
18	16.868	1.750	Open Manhole		70.017	15.118	-2	70.016	15.174	-2	56
								89.006	15.118	-2	
19	16.680	1.619	Junction		70.018	15.061	1500	70.017	15.061	-2	
20	16.450	1.415	Junction	0	70.019	15.035	1500	70.018	15.035	1500	
21	16.246	1.232	Open Manhole	1500	70.020	15.014	1500	70.019	15.014	1500	
22	15.886	0.920	Open Manhole	1500	70.021	14.966	-3	70.020	14.966	1500	
23	15.760	0.821	Open Manhole	1500	70.022	14.939	-3	70.021	14.939	-3	
24	15.700	0.844	Open Manhole		70.023	14.856	1500	70.022	14.856	-3	
3	17.140	1.500	Open Manhole	1050	94.000	15.640	300				
2	16.957	1.500	Open Manhole		94.001	15.457	300	94.000	15.457	300	
1	18.765	1.500	Open Manhole	1050	95.000	17.265	300				
2	18.432	1.500	Open Manhole	1050	95.001	16.932	300	95.000	16.932	300	
3	17.302	1.500	Open Manhole		95.002	15.802	300	95.001	15.802	300	
3	17.200	1.471	Junction		95.003	15.729	1500	95.002	15.729	300	
5	16.149	0.904	Junction		95.004	15.245	1500	95.003	15.245	1500	
4	16.296	1.500	Junction		94.002	14.796	1500	94.001	14.796	300	
								95.004	15.037	1500	241
236	15.048	2.034	Junction	0	1.058	13.014	2400	1.057	13.014	2000	
								70.023	14.824	1500	1809
								94.002	14.459	1500	1445
237	15.000	2.093	Open Manhole	1500	1.059	12.907	825	1.058	12.907	2400	
	15.000	2.094	Open Manhole	0		OUTFALL		1.059	12.906	825	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	300	15	23.938	22.438	1.200	Open Manhole	1050
1.001	o	300	16	23.645	22.145	1.200	Open Manhole	1050
2.000	o	300	17	23.336	21.836	1.200	Open Manhole	1050
2.001	o	300	18	23.148	21.648	1.200	Open Manhole	1050
1.002	o	375	19	23.124	21.540	1.209	Open Manhole	1050
1.003	o	375	20	23.044	21.487	1.182	Open Manhole	1050
1.004	o	450	21	23.008	21.380	1.178	Open Manhole	1050
1.005	o	450	24	23.661	21.081	2.130	Open Manhole	1200
1.006	o	600	25	23.588	20.800	2.188	Open Manhole	1200
3.000	o	450	26	23.723	22.223	1.050	Open Manhole	1050
3.001	o	600	27	23.839	21.985	1.254	Open Manhole	1050
4.000	o	450	12	24.834	23.334	1.050	Open Manhole	1050
4.001	o	450	13	24.859	23.245	1.164	Open Manhole	1050
4.002	o	450	14	24.655	22.880	1.325	Open Manhole	1050
3.002	o	600	28	24.203	21.829	1.774	Open Manhole	1200
5.000	o	450	29	23.611	22.111	1.050	Open Manhole	1050
5.001	o	450	30	23.979	21.892	1.637	Open Manhole	1200
3.003	o	600	31	23.746	21.502	1.644	Open Manhole	1200
3.004	o	600	20	22.655	20.566	1.489	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	20.438	69.8	16	23.645	22.145	1.200	Open Manhole	1050
1.001	26.962	50.9	19	23.124	21.615	1.209	Open Manhole	1050
2.000	24.863	132.3	18	23.148	21.648	1.200	Open Manhole	1050
2.001	9.889	300.0	19	23.124	21.615	1.209	Open Manhole	1050
1.002	15.991	301.7	20	23.044	21.487	1.182	Open Manhole	1050
1.003	9.540	298.1	21	23.008	21.455	1.178	Open Manhole	1050
1.004	89.146	298.1	24	23.661	21.081	2.130	Open Manhole	1200
1.005	72.864	556.2	25	23.588	20.950	2.188	Open Manhole	1200
1.006	49.326	173.1	13	22.523	20.515	1.408	Open Manhole	1500
3.000	17.598	200.0	27	23.839	22.135	1.254	Open Manhole	1050
3.001	31.163	199.8	28	24.203	21.829	1.774	Open Manhole	1200
4.000	6.676	75.0	13	24.859	23.245	1.164	Open Manhole	1050
4.001	27.399	75.1	14	24.655	22.880	1.325	Open Manhole	1050
4.002	41.275	50.0	28	24.203	22.055	1.698	Open Manhole	1200
3.002	41.085	125.6	31	23.746	21.502	1.644	Open Manhole	1200
5.000	32.893	150.2	30	23.979	21.892	1.637	Open Manhole	1200
5.001	24.684	149.6	31	23.746	21.727	1.569	Open Manhole	1200
3.003	100.723	107.6	20	22.655	20.566	1.489	Open Manhole	1500
3.004	16.171	317.1	13	22.523	20.515	1.408	Open Manhole	1500

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.007	o	600	13	22.523	20.515	1.408	Open Manhole	1500
6.000	3 \=/	1000	9	24.413	23.063	1.200	Junction	
6.001	3 \=/	1000	10	24.388	22.938	1.300	Junction	
6.002	3 \=/	1000	11	23.902	22.712	1.040	Junction	
6.003	3 \=/	1000	12	24.700	22.428	2.122	Junction	
6.004	3 \=/	1000	23	23.624	21.799	1.675	Junction	
6.005	o	225	26	23.652	21.598	1.904	Junction	
6.006	3 \=/	1000	24	23.606	21.538	1.918	Junction	
6.007	o	225	25	22.360	20.890	1.320	Junction	
1.008	[]	-1	32	22.215	20.334	1.282	Open Manhole	1200
1.009	[]	-1	35	22.107	20.289	1.219	Open Manhole	1200
7.000	o	300	36	25.515	24.015	1.200	Open Manhole	1050
7.001	o	300	37	25.527	23.961	1.266	Open Manhole	1050
7.002	3 \=/	1000	38	25.577	23.925	1.502	Open Manhole	1050
8.000	o	300	39	25.663	24.163	1.200	Open Manhole	1050
8.001	o	300	40	25.541	24.041	1.200	Open Manhole	1050
9.000	o	300	41	25.704	24.204	1.200	Open Manhole	1050
9.001	o	300	42	25.591	24.091	1.200	Open Manhole	1050
8.002	o	300	43	25.570	24.008	1.262	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)
1.007	26.857	148.0	32	22.215	20.334	1.282	Open Manhole	1200
6.000	18.360	146.9	10	24.388	22.938	1.300	Junction	
6.001	33.828	149.7	11	23.902	22.712	1.040	Junction	
6.002	42.649	150.2	12	24.700	22.428	2.122	Junction	
6.003	94.280	149.9	23	23.624	21.799	1.675	Junction	
6.004	30.752	153.0	26	23.652	21.598	1.904	Junction	
6.005	9.014	150.2	24	23.606	21.538	1.918	Junction	
6.006	97.244	150.1	25	22.360	20.890	1.320	Junction	
6.007	11.485	149.2	32	22.215	20.813	1.252	Open Manhole	1200
1.008	22.325	496.1	35	22.107	20.289	1.219	Open Manhole	1200
1.009	33.568	299.7	53	21.911	20.177	1.135	Open Manhole	1200
7.000	16.178	299.6	37	25.527	23.961	1.266	Open Manhole	1050
7.001	10.792	299.8	38	25.577	23.925	1.352	Open Manhole	1050
7.002	33.067	252.4	44	25.422	23.794	1.478	Open Manhole	1050
8.000	17.954	147.2	40	25.541	24.041	1.200	Open Manhole	1050
8.001	11.379	344.8	43	25.570	24.008	1.262	Open Manhole	1050
9.000	8.059	71.3	42	25.591	24.091	1.200	Open Manhole	1050
9.001	22.316	398.5	43	25.570	24.035	1.235	Open Manhole	1050
8.002	20.288	94.8	44	25.422	23.794	1.328	Open Manhole	1050

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
7.003	o	300	44	25.422	23.794	1.478	Open Manhole	1050
7.004	3 \=/	1000	34	25.373	23.685	1.538	Junction	
7.005	o	300	45	25.076	23.509	1.417	Junction	
7.006	3 \=/	1000	1	25.040	23.392	1.498	Junction	
10.000	o	300	46	24.806	23.306	1.200	Open Manhole	1050
10.001	o	300	47	25.039	23.254	1.485	Open Manhole	1050
7.007	3 \=/	1000	26	24.563	23.132	1.281	Junction	
11.000	3 \=/	1000	47	25.395	24.000	1.245	Junction	
11.001	o	300	49	24.772	23.385	1.087	Junction	
12.000	o	300	1	25.360	23.860	1.200	Open Manhole	1050
12.001	o	300	2	25.344	23.798	1.246	Open Manhole	1050
12.002	3 \=/	1000	3	25.276	23.668	1.458	Junction	
12.003	o	300	57	24.895	23.373	1.222	Junction	
11.002	3 \=/	1000	50	24.491	23.180	1.161	Junction	
11.003	o	375	51	23.773	22.310	1.088	Junction	
7.008	3 \=/	1000	2	23.535	22.088	1.297	Junction	
13.000	o	375	49	23.774	22.274	1.125	Open Manhole	1050
13.001	o	375	50	23.396	21.985	1.036	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)
7.003	14.292	131.1	34	25.373	23.685	1.538	Junction	
7.004	35.239	200.0	45	25.076	23.509	1.417	Junction	
7.005	17.521	149.8	1	25.040	23.392	1.498	Junction	
7.006	18.017	100.0	26	24.563	23.212	1.201	Junction	
10.000	15.638	300.7	47	25.039	23.254	1.485	Open Manhole	1050
10.001	36.675	300.0	26	24.563	23.132	1.131	Junction	
7.007	66.868	100.0	2	23.535	22.463	0.922	Junction	
11.000	46.491	100.0	49	24.772	23.535	1.087	Junction	
11.001	20.469	99.8	50	24.491	23.180	1.011	Junction	
12.000	18.626	300.4	2	25.344	23.798	1.246	Open Manhole	1050
12.001	34.487	265.3	3	25.276	23.668	1.308	Junction	
12.002	43.627	300.9	57	24.895	23.523	1.222	Junction	
12.003	18.857	149.7	50	24.491	23.247	0.944	Junction	
11.002	64.502	100.0	51	23.773	22.535	1.088	Junction	
11.003	22.213	100.1	2	23.535	22.088	1.072	Junction	
7.008	43.366	85.9	48	23.021	21.583	1.288	Junction	
13.000	43.366	150.0	50	23.396	21.985	1.036	Open Manhole	1050
13.001	33.624	300.2	48	23.021	21.873	0.773	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
7.009	3 \=/	1000	48	23.021	21.583	1.288	Junction	
14.000	o	300	4	24.983	23.483	1.200	Open Manhole	1050
14.001	o	300	5	24.590	23.383	0.907	Open Manhole	1050
15.000	3 \=/	1000	58	24.277	23.800	0.327	Junction	
14.002	3 \=/	1000	6	24.125	23.273	0.702	Open Manhole	1050
16.000	3 \=/	1000	7	24.574	23.224	1.200	Junction	
14.003	[]	-1	8	23.946	22.602	0.744	Junction	
17.000	o	300	22	24.100	22.600	1.200	Open Manhole	1050
17.001	o	300	23	23.762	22.465	0.997	Open Manhole	1050
18.000	3 \=/	1000	64	23.875	23.000	0.725	Junction	
17.002	o	375	64	23.669	22.282	1.012	Open Manhole	1200
17.003	o	375	61	23.627	22.256	0.996	Open Manhole	1350
14.004	o	375	63	23.918	22.043	1.500	Open Manhole	3000
14.005	3 \=/	1000	68	23.838	22.027	1.661	Junction	
14.006	o	375	55	22.683	21.444	0.864	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)
7.009	44.389	100.0	3	22.524	21.139	1.235	Junction	
14.000	30.016	300.0	5	24.590	23.383	0.907	Open Manhole	1050
14.001	32.864	300.0	6	24.125	23.273	0.552	Open Manhole	1050
15.000	15.277	300.0	6	24.125	23.749	0.226	Open Manhole	1050
14.002	36.985	300.0	8	23.946	23.150	0.646	Junction	
16.000	51.503	300.0	8	23.946	23.052	0.744	Junction	
14.003	8.000	150.9	63	23.918	22.549	0.769	Open Manhole	3000
17.000	40.379	299.1	23	23.762	22.465	0.997	Open Manhole	1050
17.001	32.282	298.9	64	23.669	22.357	1.012	Open Manhole	1200
18.000	41.413	150.0	64	23.669	22.724	0.795	Open Manhole	1200
17.002	7.843	301.7	61	23.627	22.256	0.996	Open Manhole	1350
17.003	63.752	300.0	63	23.918	22.043	1.500	Open Manhole	3000
14.004	4.998	300.0	68	23.838	22.027	1.436	Junction	
14.005	107.452	300.1	55	22.683	21.669	0.864	Junction	
14.006	18.657	300.9	3	22.524	21.382	0.767	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
7.010	3 \=/	1000	3	22.524	21.139	1.235	Junction	
19.000	o	375	33	23.226	21.726	1.125	Open Manhole	1050
19.001	o	450	34	22.420	21.183	0.787	Open Manhole	1050
7.011	o	450	4	22.009	20.706	0.853	Open Manhole	1050
1.010	[]	-1	53	21.911	20.139	1.172	Open Manhole	1200
20.000	o	300	62	21.402	20.052	1.050	Open Manhole	1050
20.001	o	450	63	21.219	19.719	1.050	Open Manhole	1200
1.011	[]	-2	64	21.405	19.321	1.484	Open Manhole	1500
1.012	[]	-2	73	21.139	19.178	1.361	Open Manhole	1000 x 1500
21.000	o	300	74	21.389	19.889	1.200	Open Manhole	1200
21.001	o	450	75	21.389	19.741	1.198	Open Manhole	1200
1.013	[]	-2	76	21.415	19.034	1.781	Open Manhole	1000 x 1500
22.000	3 \=/	1000	391	21.897	21.000	0.747	Junction	
23.000	o	375	59	22.497	20.997	1.125	Open Manhole	1350
23.001	o	450	60	21.955	20.428	1.077	Open Manhole	1350
22.001	3 \=/	1000	389	21.690	20.374	1.167	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)
7.010	39.963	300.5	4	22.009	21.006	0.853	Open Manhole	1050
19.000	70.233	150.1	34	22.420	21.258	0.787	Open Manhole	1050
19.001	39.530	149.7	4	22.009	20.919	0.640	Open Manhole	1050
7.011	11.847	28.4	53	21.911	20.289	1.172	Open Manhole	1200
1.010	79.188	96.8	64	21.405	19.321	1.484	Open Manhole	1500
20.000	34.017	185.9	63	21.219	19.869	1.050	Open Manhole	1200
20.001	8.939	98.2	64	21.405	19.628	1.327	Open Manhole	1500
1.011	71.390	499.2	73	21.139	19.178	1.361	Open Manhole	1000 x 1500
1.012	72.027	500.2	76	21.415	19.034	1.781	Open Manhole	1000 x 1500
21.000	44.360	299.7	75	21.389	19.741	1.348	Open Manhole	1200
21.001	32.108	80.3	76	21.415	19.341	1.624	Open Manhole	1000 x 1500
1.013	6.481	500.0	81	21.440	19.021	1.819	Open Manhole	1000 x 1500
22.000	41.179	300.6	389	21.690	20.863	0.677	Junction	
23.000	74.029	150.0	60	21.955	20.503	1.077	Open Manhole	1350
23.001	10.984	200.0	389	21.690	20.374	0.867	Junction	
22.001	16.007	302.0	83	21.596	20.321	1.126	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
22.002	o	300	83	21.596	20.321	1.126	Junction	
24.000	3 \=/	1000	58	22.464	20.878	1.436	Junction	
24.001	o	300	61	21.664	20.432	0.932	Junction	
22.003	3 \=/	1000	392	21.507	20.247	1.110	Open Manhole	1200
25.000	o	300	70	21.815	20.315	1.200	Open Manhole	1200
25.001	o	450	71	21.473	20.052	0.971	Open Manhole	1200
22.004	3 \=/	1000	395	21.330	19.973	1.207	Junction	
22.005	o	450	393	21.201	19.801	1.250	Junction	
26.000	3 \=/	1000	68	21.800	20.290	1.360	Junction	
26.001	o	300	72	21.329	19.679	1.350	Junction	
22.006	3 \=/	1000	397	21.175	19.631	1.394	Open Manhole	1200
27.000	o	375	77	21.644	20.144	1.125	Open Manhole	1200
27.001	o	375	78	21.465	19.965	1.125	Open Manhole	1200
22.007	o	375	93	21.410	19.439	1.821	Junction	
1.014	[]	-2	81	21.440	19.021	2.119	Open Manhole	1000 x 1500
1.015	[]	-2	79	21.543	18.645	2.298	Open Manhole	1000 x 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)
22.002	11.082	150.0	392	21.507	20.247	1.110	Open Manhole	1200
24.000	88.888	300.3	61	21.664	20.582	0.932	Junction	
24.001	13.105	297.8	392	21.507	20.388	0.819	Open Manhole	1200
22.003	35.373	150.0	395	21.330	20.011	1.170	Junction	
25.000	34.001	300.9	71	21.473	20.202	0.971	Open Manhole	1200
25.001	23.713	300.2	395	21.330	19.973	0.907	Junction	
22.004	25.861	150.0	393	21.201	19.801	1.250	Junction	
22.005	15.489	150.4	397	21.175	19.698	1.327	Open Manhole	1200
26.000	55.215	119.8	72	21.329	19.829	1.350	Junction	
26.001	7.259	151.2	397	21.175	19.631	1.244	Open Manhole	1200
22.006	57.661	300.3	93	21.410	19.439	1.821	Junction	
27.000	17.645	98.6	78	21.465	19.965	1.125	Open Manhole	1200
27.001	36.721	301.0	93	21.410	19.843	1.192	Junction	
22.007	8.560	171.2	81	21.440	19.389	1.901	Open Manhole	1000 x 1500
1.014	22.671	298.3	79	21.543	18.945	2.298	Open Manhole	1000 x 1500
1.015	73.553	500.4	85	22.206	18.498	3.108	Open Manhole	1000 x 1500

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
28.000	3 \=/	1000	365	23.362	22.500	0.712	Junction	
29.000	o	300	55	24.074	22.574	1.200	Open Manhole	1050
29.001	o	375	56	23.024	22.156	0.493	Open Manhole	1350
29.002	o	375	62	23.018	22.085	0.558	Open Manhole	1350
28.001	3 \=/	1000	86	22.931	21.993	0.788	Junction	
28.002	o	300	366	22.694	21.728	0.666	Junction	
30.000	3 \=/	1000	54	24.139	22.639	1.350	Open Manhole	1050
30.001	o	300	57	22.655	21.888	0.467	Open Manhole	1050
28.003	3 \=/	1500	367	22.539	21.671	0.719	Open Manhole	1200
31.000	o	375	66	22.963	21.463	1.125	Open Manhole	1200
31.001	o	450	67	22.614	21.215	0.949	Open Manhole	1200
31.002	o	450	68	22.433	21.130	0.853	Open Manhole	1200
28.004	3 \=/	1500	87	22.397	21.036	1.211	Junction	
28.005	o	450	368	22.271	20.853	1.268	Junction	
32.000	3 \=/	1000	65	23.675	22.325	1.200	Open Manhole	1200
32.001	o	300	69	22.251	21.669	0.432	Open Manhole	1200
28.006	3 \=/	1500	369	22.248	20.728	1.370	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)
28.000	39.029	300.2	86	22.931	22.370	0.411	Junction	
29.000	51.394	149.8	56	23.024	22.231	0.493	Open Manhole	1350
29.001	10.658	150.1	62	23.018	22.085	0.558	Open Manhole	1350
29.002	13.777	150.0	86	22.931	21.993	0.563	Junction	
28.001	17.336	150.0	366	22.694	21.878	0.666	Junction	
28.002	17.107	300.1	367	22.539	21.671	0.569	Open Manhole	1200
30.000	90.182	150.0	57	22.655	22.038	0.467	Open Manhole	1050
30.001	14.403	150.0	367	22.539	21.792	0.447	Open Manhole	1200
28.003	27.381	149.6	87	22.397	21.488	0.759	Junction	
31.000	25.901	149.7	67	22.614	21.290	0.949	Open Manhole	1200
31.001	12.682	149.2	68	22.433	21.130	0.853	Open Manhole	1200
31.002	14.041	149.4	87	22.397	21.036	0.911	Junction	
28.004	27.381	149.6	368	22.271	20.853	1.268	Junction	
28.005	18.683	149.5	369	22.248	20.728	1.370	Open Manhole	1200
32.000	98.373	150.0	69	22.251	21.669	0.432	Open Manhole	1200
32.001	16.102	150.5	369	22.248	21.562	0.536	Open Manhole	1200
28.006	31.390	150.0	93	22.236	20.519	1.567	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
33.000	o	300	80	22.920	21.420	1.200	Open Manhole	1200
33.001	o	375	81	22.536	20.961	1.200	Open Manhole	1200
28.007	3 \=/	1000	93	22.236	20.519	1.567	Junction	
34.000	o	300	82	22.530	21.030	1.200	Open Manhole	1200
34.001	o	375	83	22.168	20.414	1.379	Open Manhole	1200
34.002	o	375	99	21.976	20.254	1.347	Open Manhole	1350
34.003	3 \=/	1000	96	22.088	20.110	1.828	Junction	
28.008	o	300	90	22.216	19.924	1.992	Open Manhole	1200
1.016	[]	-2	85	22.206	18.498	3.108	Open Manhole	1000 x 1500
1.017	[]	-2	84	22.508	18.446	3.462	Open Manhole	1000 x 1500
35.000	o	150	85	23.009	21.659	1.200	Open Manhole	1200
1.018	[]	-2	86	23.301	18.245	4.456	Open Manhole	1000 x 1500
36.000	3 \=/	1000	1	24.200	22.850	1.200	Junction	
36.001	3 \=/	1000	134	23.771	22.390	1.231	Junction	
36.002	o	300	2	23.430	21.930	1.350	Junction	
1.019	[]	-2	92	23.490	18.176	4.714	Open Manhole	1000 x 1500
1.020	[]	-2	87	23.570	18.073	4.897	Open Manhole	1000 x 1500
1.021	[]	-2	88	23.309	17.830	4.879	Open Manhole	1000 x 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)
33.000	43.761	114.0	81	22.536	21.036	1.200	Open Manhole	1200
33.001	15.073	99.8	93	22.236	20.810	1.051	Junction	
28.007	22.072	298.3	90	22.216	20.445	1.621	Open Manhole	1200
34.000	81.189	150.1	83	22.168	20.489	1.379	Open Manhole	1200
34.001	24.054	150.3	99	21.976	20.254	1.347	Open Manhole	1350
34.002	21.533	150.0	96	22.088	20.110	1.603	Junction	
34.003	11.059	300.0	90	22.216	20.074	1.992	Open Manhole	1200
28.008	9.933	11.1	85	22.206	19.032	2.875	Open Manhole	1000 x 1500
1.016	26.295	500.0	84	22.508	18.446	3.462	Open Manhole	1000 x 1500
1.017	100.387	499.4	86	23.301	18.245	4.456	Open Manhole	1000 x 1500
35.000	35.346	13.5	86	23.301	19.032	4.119	Open Manhole	1000 x 1500
1.018	17.730	257.0	92	23.490	18.176	4.714	Open Manhole	1000 x 1500
36.000	75.046	163.1	134	23.771	22.390	1.231	Junction	
36.001	53.561	116.4	2	23.430	21.930	1.350	Junction	
36.002	11.656	298.9	92	23.490	21.891	1.449	Open Manhole	1000 x 1500
1.019	51.378	500.0	87	23.570	18.073	4.897	Open Manhole	1000 x 1500
1.020	121.665	500.7	88	23.309	17.830	4.879	Open Manhole	1000 x 1500
1.021	81.714	501.3	91	23.666	17.667	5.399	Open Manhole	1000 x 1500

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.022	[]	-3	91	23.666	17.667	5.399	Open Manhole	1000 x 1500
37.000	o	375	94	24.736	23.236	1.125	Open Manhole	1200
37.001	o	450	95	24.663	23.163	1.050	Open Manhole	1200
37.002	o	450	96	24.078	23.074	0.554	Open Manhole	1200
38.000	o	450	89	24.838	23.338	1.050	Open Manhole	1200
38.001	o	450	90	24.035	22.535	1.050	Open Manhole	1200
37.003	o	450	145	23.944	22.459	1.035	Open Manhole	1350
1.023	[]	-3	92	23.849	17.605	5.644	Open Manhole	1000 x 1500
1.024	[]	-3	93	23.549	17.564	5.385	Open Manhole	1000 x 1500
39.000	o	375	97	23.275	21.775	1.125	Open Manhole	1200
39.001	o	375	98	23.381	21.714	1.292	Open Manhole	1200
39.002	o	450	99	23.299	21.681	1.168	Open Manhole	1200
39.003	o	450	100	22.903	21.403	1.050	Open Manhole	1200
40.000	o	525	102	22.893	21.393	0.975	Open Manhole	1200
40.001	o	525	103	22.783	21.207	1.051	Open Manhole	1200
39.004	o	300	151	23.200	21.077	1.823	Open Manhole	1500
1.025	[]	-3	101	23.487	17.410	5.477	Open Manhole	1000 x 1500
1.026	[]	-3	104	22.656	17.271	4.785	Open Manhole	1000 x 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)
1.022	30.973	499.6	92	23.849	17.605	5.644	Open Manhole	1000 x 1500
37.000	10.262	140.6	95	24.663	23.163	1.125	Open Manhole	1200
37.001	13.368	150.2	96	24.078	23.074	0.554	Open Manhole	1200
37.002	52.567	150.2	145	23.944	22.724	0.770	Open Manhole	1350
38.000	56.465	70.3	90	24.035	22.535	1.050	Open Manhole	1200
38.001	31.113	409.4	145	23.944	22.459	1.035	Open Manhole	1350
37.003	12.638	107.5	92	23.849	22.341	1.058	Open Manhole	1000 x 1500
1.023	20.301	495.1	93	23.549	17.564	5.385	Open Manhole	1000 x 1500
1.024	77.204	501.3	101	23.487	17.410	5.477	Open Manhole	1000 x 1500
39.000	18.279	299.7	98	23.381	21.714	1.292	Open Manhole	1200
39.001	9.909	300.3	99	23.299	21.681	1.243	Open Manhole	1200
39.002	72.250	259.9	100	22.903	21.403	1.050	Open Manhole	1200
39.003	47.517	300.7	151	23.200	21.245	1.505	Open Manhole	1500
40.000	42.191	226.8	103	22.783	21.207	1.051	Open Manhole	1200
40.001	22.435	172.5	151	23.200	21.077	1.598	Open Manhole	1500
39.004	41.400	150.0	101	23.487	20.801	2.386	Open Manhole	1000 x 1500
1.025	69.410	499.4	104	22.656	17.271	4.785	Open Manhole	1000 x 1500
1.026	53.365	498.7	105	21.832	17.164	4.068	Open Manhole	1200 x 1800

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.027	[]	-3	105	21.832	17.164	4.068	Open Manhole	1200 x 1800
41.000	o	450	106	23.413	21.913	1.050	Open Manhole	1200
41.001	o	600	107	23.046	21.546	0.900	Open Manhole	1200
41.002	o	450	108	21.572	19.088	2.034	Open Manhole	1200
1.028	[]	-3	109	21.427	17.040	3.787	Open Manhole	1200 x 1800
1.029	[]	-3	110	20.156	16.880	2.676	Open Manhole	1200 x 1800
42.000	3 \=/	1000	1	25.600	24.250	1.200	Open Manhole	1200
42.001	3 \=/	1000	2	25.400	24.129	1.121	Junction	
42.002	3 \=/	1000	3	25.000	23.400	1.450	Junction	
42.003	o	300	4	24.600	23.000	1.450	Junction	
42.004	3 \=/	1000	5	23.800	22.256	1.394	Junction	
42.005	o	300	6	21.800	19.871	1.779	Junction	
1.030	[]	-3	111	21.794	16.747	4.447	Open Manhole	1200 x 1800
43.000	o	300	112	21.561	20.061	1.200	Open Manhole	1200
43.001	o	375	113	22.346	19.980	1.991	Open Manhole	1200
43.002	o	375	114	21.421	19.777	1.269	Open Manhole	1200
43.003	o	375	115	20.236	18.736	1.125	Open Manhole	1200
1.031	[]	-3	116	19.748	16.640	2.508	Open Manhole	1000 x 1500
1.032	[]	-3	117	18.952	16.604	1.748	Open Manhole	1000 x 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)
1.027	61.948	499.6	109	21.427	17.040	3.787	Open Manhole	1200 x 1800
41.000	24.791	67.6	107	23.046	21.546	1.050	Open Manhole	1200
41.001	73.728	30.0	108	21.572	19.088	1.884	Open Manhole	1200
41.002	10.172	30.0	109	21.427	18.749	2.228	Open Manhole	1200 x 1800
1.028	80.002	500.0	110	20.156	16.880	2.676	Open Manhole	1200 x 1800
1.029	66.606	500.8	111	21.794	16.747	4.447	Open Manhole	1200 x 1800
42.000	36.219	299.3	2	25.400	24.129	1.121	Junction	
42.001	106.330	145.9	3	25.000	23.400	1.450	Junction	
42.002	23.390	58.5	4	24.600	23.000	1.450	Junction	
42.003	39.203	52.7	5	23.800	22.256	1.394	Junction	
42.004	119.257	50.0	6	21.800	19.871	1.779	Junction	
42.005	25.475	150.0	111	21.794	19.701	1.943	Open Manhole	1200 x 1800
1.030	53.591	500.9	116	19.748	16.640	2.508	Open Manhole	1000 x 1500
43.000	24.225	299.1	113	22.346	19.980	2.066	Open Manhole	1200
43.001	60.801	299.5	114	21.421	19.777	1.269	Open Manhole	1200
43.002	29.135	28.0	115	20.236	18.736	1.125	Open Manhole	1200
43.003	15.118	31.0	116	19.748	18.248	1.125	Open Manhole	1000 x 1500
1.031	17.977	499.4	117	18.952	16.604	1.748	Open Manhole	1000 x 1500
1.032	24.625	39.3	156	18.248	15.978	1.670	Open Manhole	1000 x 1500

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
44.000	o	225	118	23.537	22.112	1.200	Open Manhole	1200
44.001	o	450	121	23.614	21.378	1.786	Open Manhole	1200
45.000	o	450	119	23.444	21.844	1.150	Open Manhole	1200
45.001	o	450	120	23.924	21.517	1.957	Open Manhole	1200
46.000	o	450	122	23.879	22.379	1.050	Open Manhole	1200
46.001	o	450	123	23.995	21.908	1.637	Open Manhole	1200
45.002	o	450	177	23.834	21.385	1.999	Open Manhole	1200
44.002	o	450	177	23.683	21.258	1.975	Open Manhole	1200
44.003	o	450	122	23.800	21.176	2.174	Open Manhole	1350
44.004	o	450	124	23.888	21.012	2.426	Open Manhole	1200
47.000	3 \=/	1000	125	24.314	22.964	1.200	Junction	
47.001	3 \=/	1000	126	24.458	22.672	1.636	Junction	
47.002	3 \=/	1000	127	24.281	22.304	1.827	Junction	
47.003	o	225	143	24.000	22.034	1.741	Open Manhole	1500
48.000	3 \=/	1000	128	23.890	22.840	0.900	Junction	
48.001	3 \=/	1000	129	23.897	22.738	1.009	Junction	
48.002	3 \=/	1000	130	23.769	22.642	0.977	Junction	
48.003	3 \=/	1000	131	24.191	22.553	1.488	Junction	
48.004	3 \=/	1000	132	24.107	22.523	1.434	Junction	
48.005	3 \=/	1000	133	23.993	22.482	1.361	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)
44.000	40.674	79.9	121	23.614	21.603	1.786	Open Manhole	1200
44.001	26.716	325.8	177	23.683	21.296	1.937	Open Manhole	1200
45.000	65.336	199.8	120	23.924	21.517	1.957	Open Manhole	1200
45.001	26.362	199.7	177	23.834	21.385	1.999	Open Manhole	1200
46.000	62.599	132.9	123	23.995	21.908	1.637	Open Manhole	1200
46.001	71.959	149.9	177	23.834	21.428	1.956	Open Manhole	1200
45.002	19.095	150.0	177	23.683	21.258	1.975	Open Manhole	1200
44.002	22.609	275.7	122	23.800	21.176	2.174	Open Manhole	1350
44.003	49.073	299.2	124	23.888	21.012	2.426	Open Manhole	1200
44.004	35.393	299.9	135	23.366	20.894	2.022	Open Manhole	1200
47.000	40.996	140.4	126	24.458	22.672	1.636	Junction	
47.001	53.270	144.8	127	24.281	22.304	1.827	Junction	
47.002	32.232	165.3	143	24.000	22.109	1.741	Open Manhole	1500
47.003	27.591	141.5	134	23.831	21.839	1.767	Open Manhole	1200
48.000	50.838	498.4	129	23.897	22.738	1.009	Junction	
48.001	48.058	500.6	130	23.769	22.642	0.977	Junction	
48.002	44.498	500.0	131	24.191	22.553	1.488	Junction	
48.003	14.757	491.9	132	24.107	22.523	1.434	Junction	
48.004	20.434	498.4	133	23.993	22.482	1.361	Open Manhole	1050
48.005	8.433	11.7	134	23.831	21.763	1.918	Open Manhole	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
47.004	o	375	134	23.831	21.538	1.918	Open Manhole	1200
44.005	o	600	135	23.366	20.735	2.031	Open Manhole	1200
49.000	3 \=/	1000	136	23.900	22.850	0.900	Junction	
49.001	3 \=/	1000	137	23.389	22.339	0.900	Junction	
49.002	3 \=/	1000	138	23.371	22.321	0.900	Junction	
49.003	3 \=/	1000	139	23.334	22.284	0.900	Junction	
49.004	3 \=/	1000	140	23.280	22.230	0.900	Junction	
49.005	o	300	141	23.099	22.049	0.750	Open Manhole	1050
44.006	[]	-1	142	22.850	20.478	1.772	Open Manhole	1200
44.007	[]	-1	143	22.702	20.398	1.704	Open Manhole	1200
44.008	[]	-1	144	22.882	20.351	1.931	Open Manhole	1200
50.000	o	375	145	23.110	21.610	1.125	Open Manhole	1200
50.001	o	375	146	22.530	21.032	1.123	Open Manhole	1200
51.000	3 \=/	1000	1	22.882	21.832	0.900	Open Manhole	1200
51.001	o	300	2	22.450	20.950	1.200	Open Manhole	1200
51.002	3 \=/	1000	3	22.417	20.931	1.336	Open Manhole	1200
51.003	o	300	4	22.278	20.624	1.354	Open Manhole	1200
44.009	[]	-1	147	22.264	20.165	1.499	Open Manhole	1200
44.010	[]	-1	148	22.224	20.152	1.472	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)
47.004	83.841	145.1	135	23.366	20.960	2.031	Open Manhole	1200
44.005	77.078	299.9	142	22.850	20.478	1.772	Open Manhole	1200
49.000	86.904	170.1	137	23.389	22.339	0.900	Junction	
49.001	3.932	218.4	138	23.371	22.321	0.900	Junction	
49.002	6.059	163.8	139	23.334	22.284	0.900	Junction	
49.003	10.025	185.6	140	23.280	22.230	0.900	Junction	
49.004	31.325	173.1	141	23.099	22.049	0.900	Open Manhole	1050
49.005	15.495	13.8	142	22.850	20.928	1.622	Open Manhole	1200
44.006	23.936	299.2	143	22.702	20.398	1.704	Open Manhole	1200
44.007	14.027	298.4	144	22.882	20.351	1.931	Open Manhole	1200
44.008	55.656	299.2	147	22.264	20.165	1.499	Open Manhole	1200
50.000	32.383	56.0	146	22.530	21.032	1.123	Open Manhole	1200
50.001	21.284	51.0	147	22.264	20.615	1.274	Open Manhole	1200
51.000	39.261	53.6	2	22.450	21.100	1.200	Open Manhole	1200
51.001	2.887	151.9	3	22.417	20.931	1.186	Open Manhole	1200
51.002	12.589	80.2	4	22.278	20.774	1.354	Open Manhole	1200
51.003	3.774	151.0	147	22.264	20.599	1.365	Open Manhole	1200
44.009	7.951	611.6	148	22.224	20.152	1.472	Open Manhole	1200
44.010	54.934	110.3	151	21.604	19.654	1.350	Open Manhole	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
52.000	o	300	149	22.932	21.432	1.200	Open Manhole	1200
52.001	o	300	150	22.168	20.668	1.200	Open Manhole	1200
53.000	3 \=/	1000	1	22.224	21.174	0.900	Open Manhole	1200
53.001	o	300	2	21.919	20.419	1.200	Open Manhole	1200
44.011	[]	-1	151	21.604	19.654	1.350	Open Manhole	1200
44.012	[]	-1	152	21.019	19.069	1.350	Open Manhole	1200
44.013	[]	-1	153	20.464	18.514	1.350	Open Manhole	1200
44.014	[]	-1	154	19.745	17.795	1.350	Open Manhole	1200
44.015	[]	-1	155	18.540	16.740	1.200	Open Manhole	1200
54.000	3 \=/	1000	1	20.464	19.114	1.200	Junction	
54.001	o	300	2	19.789	18.289	1.200	Junction	
54.002	3 \=/	1000	3	19.700	18.194	1.356	Junction	
54.003	o	300	4	19.569	17.924	1.345	Junction	
54.004	3 \=/	1000	5	19.510	17.870	1.490	Junction	
54.005	o	300	6	19.046	17.319	1.427	Junction	
54.006	3 \=/	1000	7	18.840	17.139	1.551	Junction	
54.007	3 \=/	1000	8	18.627	16.955	1.522	Junction	
54.008	o	300	9	18.531	16.656	1.575	Open Manhole	1200
1.033	[]	-3	156	18.248	15.978	1.670	Open Manhole	1000 x 1500
1.034	[]	-3	157	18.106	15.836	1.670	Open Manhole	1000 x 1500
1.035	[]	-3	158	17.765	15.495	1.670	Open Manhole	1000 x 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)
52.000	40.354	52.8	150	22.168	20.668	1.200	Open Manhole	1200
52.001	30.457	54.0	151	21.604	20.104	1.200	Open Manhole	1200
53.000	27.049	44.7	2	21.919	20.569	1.200	Open Manhole	1200
53.001	26.597	84.4	151	21.604	20.104	1.200	Open Manhole	1200
44.011	39.247	67.1	152	21.019	19.069	1.350	Open Manhole	1200
44.012	42.068	75.8	153	20.464	18.514	1.350	Open Manhole	1200
44.013	37.267	51.8	154	19.745	17.795	1.350	Open Manhole	1200
44.014	63.203	299.5	155	18.540	17.584	0.356	Open Manhole	1200
44.015	22.512	62.9	156	18.248	16.382	1.266	Open Manhole	1000 x 1500
54.000	35.002	51.9	2	19.789	18.439	1.200	Junction	
54.001	9.531	100.3	3	19.700	18.194	1.206	Junction	
54.002	7.032	58.6	4	19.569	18.074	1.345	Junction	
54.003	3.134	58.0	5	19.510	17.870	1.340	Junction	
54.004	23.439	58.5	6	19.046	17.469	1.427	Junction	
54.005	10.517	58.4	7	18.840	17.139	1.401	Junction	
54.006	10.770	58.5	8	18.627	16.955	1.522	Junction	
54.007	8.715	58.5	9	18.531	16.806	1.575	Open Manhole	1200
54.008	15.431	43.1	156	18.248	16.298	1.650	Open Manhole	1000 x 1500
1.033	14.163	99.7	157	18.106	15.836	1.670	Open Manhole	1000 x 1500
1.034	30.624	89.8	158	17.765	15.495	1.670	Open Manhole	1000 x 1500
1.035	49.922	177.0	161	16.883	15.213	1.070	Open Manhole	1200 x 2100

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
55.000	3 \=/	1000	159	18.493	17.443	0.900	Open Manhole	1050
55.001	o	300	160	17.285	16.235	0.750	Open Manhole	1050
1.036	[]	-4	161	16.883	15.213	1.070	Open Manhole	1200 x 2100
1.037	[]	-4	162	17.247	15.183	1.464	Open Manhole	1200 x 2100
56.000	3 \=/	1000	1	16.757	15.707	0.900	Junction	
56.001	o	300	2	16.797	15.662	0.985	Junction	
1.038	[]	-4	173	16.853	15.126	1.127	Open Manhole	1200 x 2100
57.000	3 \=/	1000	163	17.179	16.129	0.900	Junction	
57.001	3 \=/	1000	164	17.012	15.962	0.900	Junction	
57.002	3 \=/	1000	165	16.984	15.934	0.900	Open Manhole	1050
57.003	3 \=/	1000	166	16.630	15.878	0.602	Junction	
57.004	3 \=/	1000	167	16.433	15.826	0.457	Open Manhole	1050
57.005	3 \=/	1000	168	17.242	15.768	1.324	Junction	
58.000	1.5 _/	500	244	18.353	15.450	2.603	Junction	
58.001	o	450	245	16.872	15.340	1.382	Junction	
57.006	3 \=/	1000	169	16.650	15.269	1.231	Junction	
57.007	3 \=/	1000	170	16.166	15.208	0.808	Junction	
57.008	o	450	246	16.188	15.129	0.910	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)
55.000	55.912	46.3	160	17.285	16.235	0.900	Open Manhole	1050
55.001	18.766	26.7	161	16.883	15.533	1.050	Open Manhole	1200 x 2100
1.036	15.163	505.4	162	17.247	15.183	1.464	Open Manhole	1200 x 2100
1.037	14.725	507.8	173	16.853	15.154	1.099	Open Manhole	1200 x 2100
56.000	22.675	503.9	2	16.797	15.662	0.985	Junction	
56.001	12.865	149.6	173	16.853	15.576	1.127	Open Manhole	1200 x 2100
1.038	34.042	500.0	174	16.133	15.058	0.475	Junction	
57.000	40.004	239.5	164	17.012	15.962	0.900	Junction	
57.001	8.278	295.6	165	16.984	15.934	0.900	Open Manhole	1050
57.002	27.778	496.0	166	16.630	15.878	0.602	Junction	
57.003	25.759	495.4	167	16.433	15.826	0.457	Open Manhole	1050
57.004	28.933	498.8	168	17.242	15.768	1.324	Junction	
57.005	12.263	490.5	169	16.650	15.743	0.757	Junction	
58.000	66.184	601.7	245	16.872	15.340	1.232	Junction	
58.001	35.602	501.4	169	16.650	15.269	1.231	Junction	
57.006	30.430	498.9	170	16.166	15.208	0.808	Junction	
57.007	15.897	200.0	246	16.188	15.129	0.910	Junction	
57.008	7.890	202.3	174	16.133	15.090	0.893	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.039	3 \=/	1000	174	16.133	15.058	0.925	Junction	
59.000	o	300	175	16.309	15.000	1.009	Open Manhole	1200
59.001	o	300	176	16.252	14.948	1.004	Open Manhole	1200
60.000	o	150	177	16.428	15.300	0.978	Open Manhole	1200
59.002	o	300	178	16.179	14.917	0.962	Open Manhole	1200
1.040	3 \=/	2000	179	16.038	14.879	1.009	Junction	
61.000	o	375	180	16.000	14.800	0.825	Open Manhole	1200
61.001	o	375	181	16.019	14.745	0.899	Open Manhole	1200
1.041	3 \=/	2000	182	15.828	14.693	0.985	Junction	
1.042	3 \=/	2000	183	15.692	14.587	0.955	Junction	
1.043	3 \=/	2000	184	15.633	14.506	0.977	Junction	
62.000	o	450	185	18.558	17.058	1.050	Open Manhole	1200
62.001	o	300	186	18.393	16.893	1.200	Open Manhole	1200
63.000	o	225	187	19.478	18.128	1.125	Open Manhole	1200
62.002	o	375	188	17.535	15.960	1.200	Open Manhole	1200
62.003	o	450	189	16.917	15.267	1.200	Open Manhole	1200
62.004	o	450	190	16.762	15.112	1.200	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.039	54.209	302.8	179	16.038	14.879	1.009	Junction	
59.000	15.695	301.8	176	16.252	14.948	1.004	Open Manhole	1200
59.001	9.378	302.5	178	16.179	14.917	0.962	Open Manhole	1200
60.000	15.953	150.5	178	16.179	15.194	0.835	Open Manhole	1200
59.002	11.065	299.1	179	16.038	14.880	0.858	Junction	
1.040	77.080	500.0	182	15.828	14.725	0.953	Junction	
61.000	16.572	301.3	181	16.019	14.745	0.899	Open Manhole	1200
61.001	15.737	302.6	182	15.828	14.693	0.760	Junction	
1.041	52.888	498.9	183	15.692	14.587	0.955	Junction	
1.042	40.411	498.9	184	15.633	14.506	0.977	Junction	
1.043	4.696	500.0	217	15.663	14.497	1.016	Open Manhole	1200 x 2000
62.000	19.461	117.9	186	18.393	16.893	1.050	Open Manhole	1200
62.001	45.710	53.3	188	17.535	16.035	1.200	Open Manhole	1200
63.000	77.733	40.0	188	17.535	16.185	1.125	Open Manhole	1200
62.002	46.069	74.5	189	16.917	15.342	1.200	Open Manhole	1200
62.003	26.513	171.1	190	16.762	15.112	1.200	Open Manhole	1200
62.004	19.466	121.7	191	16.602	14.952	1.200	Open Manhole	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
62.005	o	450	191	16.602	14.952	1.200	Open Manhole	1200
62.006	o	450	192	16.363	14.713	1.200	Open Manhole	1200
64.000	3 \=/	1000	193	16.706	15.656	0.900	Junction	
64.001	3 \=/	1000	194	16.610	15.560	0.900	Junction	
64.002	3 \=/	1000	195	16.491	15.441	0.900	Junction	
64.003	3 \=/	1000	196	16.348	15.298	0.900	Junction	
64.004	3 \=/	1000	197	16.214	15.164	0.900	Junction	
64.005	o	300	198	16.058	14.858	0.900	Open Manhole	1200
62.007	o	450	199	16.045	14.395	1.200	Open Manhole	1200
65.000	o	450	200	18.258	16.758	1.050	Open Manhole	1200
65.001	o	450	201	18.259	16.716	1.093	Open Manhole	1200
66.000	o	225	202	20.848	19.498	1.125	Open Manhole	1200
66.001	o	300	203	20.465	19.040	1.125	Open Manhole	1200
66.002	o	300	204	20.201	18.776	1.125	Open Manhole	1200
66.003	o	300	205	19.155	17.730	1.125	Open Manhole	1200
65.002	o	450	206	18.213	16.563	1.200	Open Manhole	1200
65.003	o	450	207	16.740	15.161	1.129	Open Manhole	1200
65.004	o	450	212	16.240	14.661	1.129	Open Manhole	1200
65.005	o	450	213	15.908	14.329	1.129	Open Manhole	1200
67.000	3 \=/	1000	1	16.782	15.732	0.900	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)
62.005	51.458	215.3	192	16.363	14.713	1.200	Open Manhole	1200
62.006	49.690	156.3	199	16.045	14.395	1.200	Open Manhole	1200
64.000	22.971	239.3	194	16.610	15.560	0.900	Junction	
64.001	25.409	213.5	195	16.491	15.441	0.900	Junction	
64.002	28.086	196.4	196	16.348	15.298	0.900	Junction	
64.003	25.063	187.0	197	16.214	15.164	0.900	Junction	
64.004	29.219	187.3	198	16.058	15.008	0.900	Open Manhole	1200
64.005	3.616	150.0	199	16.045	14.834	0.911	Open Manhole	1200
62.007	22.317	300.0	214	15.850	14.321	1.079	Open Manhole	1200
65.000	12.670	301.7	201	18.259	16.716	1.093	Open Manhole	1200
65.001	24.002	156.9	206	18.213	16.563	1.200	Open Manhole	1200
66.000	19.835	51.8	203	20.465	19.115	1.125	Open Manhole	1200
66.001	33.009	125.0	204	20.201	18.776	1.125	Open Manhole	1200
66.002	42.677	40.8	205	19.155	17.730	1.125	Open Manhole	1200
66.003	27.125	28.8	206	18.213	16.788	1.125	Open Manhole	1200
65.002	70.865	50.5	207	16.740	15.161	1.129	Open Manhole	1200
65.003	17.512	35.0	212	16.240	14.661	1.129	Open Manhole	1200
65.004	41.085	123.8	213	15.908	14.329	1.129	Open Manhole	1200
65.005	12.348	301.2	214	15.850	14.288	1.112	Open Manhole	1200
67.000	82.697	120.5	2	16.096	15.046	0.900	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
67.001	o	300	2	16.096	14.896	0.900	Junction	
67.002	3 \=/	1000	3	16.096	14.879	1.067	Junction	
67.003	o	300	4	15.920	14.830	0.940	Open Manhole	1200
62.008	[]	-1	214	15.850	14.138	1.112	Open Manhole	1200
62.009	[]	-1	215	15.833	14.067	1.166	Open Manhole	1200
62.010	[]	-1	216	15.701	14.016	1.085	Open Manhole	1200
1.044	3 \=/	2000	217	15.663	14.001	1.512	Open Manhole	1200 x 2000
1.045	3 \=/	2000	218	15.440	13.956	1.334	Junction	
1.046	3 \=/	2000	222	15.009	13.857	1.002	Junction	
1.047	3 \=/	2000	223	15.057	13.839	1.068	Junction	
1.048	3 \=/	2000	224	14.975	13.749	1.076	Junction	
1.049	3 \=/	2000	228	14.500	13.725	0.625	Junction	
68.000	o	375	225	16.000	15.000	0.625	Open Manhole	1200
69.000	o	375	219	16.000	15.000	0.625	Open Manhole	1200
69.001	o	600	221	16.000	14.727	0.673	Open Manhole	1200
68.001	o	600	227	16.000	14.226	1.174	Open Manhole	1200
1.050	3 \=/	2000	304	14.500	13.656	0.694	Junction	
1.051	3 \=/	2000	229	14.495	13.550	0.795	Junction	
1.052	3 \=/	2000	230	14.400	13.515	0.736	Junction	
1.053	3 \=/	2000	231	14.421	13.467	0.804	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)
67.001	2.584	150.0	3	16.096	14.879	0.917	Junction	
67.002	24.302	496.0	4	15.920	14.830	0.940	Open Manhole	1200
67.003	8.343	298.0	214	15.850	14.802	0.898	Open Manhole	1200
62.008	35.292	497.1	215	15.833	14.067	1.166	Open Manhole	1200
62.009	25.739	504.7	216	15.701	14.016	1.085	Open Manhole	1200
62.010	7.353	500.0	217	15.663	14.001	1.062	Open Manhole	1200 x 2000
1.044	22.519	500.4	218	15.440	13.956	1.334	Junction	
1.045	49.613	501.1	222	15.009	13.857	1.002	Junction	
1.046	8.899	500.0	223	15.057	13.839	1.068	Junction	
1.047	45.070	500.8	224	14.975	13.749	1.076	Junction	
1.048	12.090	503.8	228	14.500	13.725	0.625	Junction	
1.049	37.497	543.4	304	14.500	13.656	0.694	Junction	
68.000	32.277	298.9	227	16.000	14.892	0.733	Open Manhole	1200
69.000	23.908	498.1	221	16.000	14.952	0.673	Open Manhole	1200
69.001	75.090	149.9	227	16.000	14.226	1.174	Open Manhole	1200
68.001	32.229	56.5	304	14.500	13.656	0.244	Junction	
1.050	31.693	300.0	229	14.495	13.550	0.795	Junction	
1.051	10.757	300.0	230	14.400	13.515	0.736	Junction	
1.052	7.113	150.0	231	14.421	13.467	0.804	Junction	
1.053	8.098	200.0	232	14.507	13.427	0.930	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.054	3 \=/	2000	232	14.507	13.427	0.930	Junction	
1.055	3 \=/	2000	233	14.543	13.325	1.068	Junction	
1.056	3 \=/	2000	234	14.523	13.213	1.160	Junction	
1.057	3 \=/	2000	235	15.000	13.078	1.772	Junction	
70.000	o	225	1	22.451	21.026	1.200	Open Manhole	1200
70.001	o	300	2	22.384	20.680	1.404	Open Manhole	1200
71.000	o	225	26	22.863	21.513	1.125	Open Manhole	1050
71.001	o	300	27	22.691	21.202	1.189	Open Manhole	1050
72.000	o	375	31	22.584	21.009	1.200	Open Manhole	1050
72.001	o	375	315	22.577	20.980	1.223	Open Manhole	1350
73.000	o	375	33	22.452	20.877	1.200	Open Manhole	1050
73.001	o	375	34	22.492	20.859	1.258	Open Manhole	1050
72.002	o	300	316	22.644	20.843	1.501	Open Manhole	1350
71.002	o	300	28	22.520	20.797	1.423	Open Manhole	1200
71.003	o	375	29	22.510	20.560	1.575	Open Manhole	1050
71.004	o	375	30	22.301	19.940	1.986	Open Manhole	1050
70.002	o	375	3	22.112	19.871	1.866	Open Manhole	1350
70.003	o	375	4	21.534	19.303	1.856	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)
1.054	20.351	200.0	233	14.543	13.325	1.068	Junction	
1.055	22.344	200.0	234	14.523	13.213	1.160	Junction	
1.056	27.105	200.0	235	15.000	13.078	1.772	Junction	
1.057	12.641	200.0	236	15.048	13.014	1.884	Junction	
70.000	27.065	99.9	2	22.384	20.755	1.404	Open Manhole	1200
70.001	25.526	34.8	3	22.112	19.946	1.866	Open Manhole	1350
71.000	23.594	100.0	27	22.691	21.277	1.189	Open Manhole	1050
71.001	25.935	90.1	28	22.520	20.914	1.306	Open Manhole	1200
72.000	12.143	411.6	315	22.577	20.980	1.223	Open Manhole	1350
72.001	16.716	566.6	316	22.644	20.950	1.319	Open Manhole	1350
73.000	11.133	618.5	34	22.492	20.859	1.258	Open Manhole	1050
73.001	13.340	833.8	316	22.644	20.843	1.426	Open Manhole	1350
72.002	13.380	290.9	28	22.520	20.797	1.423	Open Manhole	1200
71.002	23.503	145.1	29	22.510	20.635	1.575	Open Manhole	1050
71.003	18.816	30.3	30	22.301	19.940	1.986	Open Manhole	1050
71.004	8.276	318.3	3	22.112	19.914	1.823	Open Manhole	1350
70.002	44.534	78.4	4	21.534	19.303	1.856	Open Manhole	1050
70.003	32.165	73.4	5	21.152	18.865	1.912	Open Manhole	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
74.000	o	375	35	21.458	19.883	1.200	Open Manhole	1200
74.001	o	375	325	21.416	19.373	1.668	Open Manhole	1350
70.004	o	450	5	21.152	18.790	1.912	Open Manhole	1200
75.000	o	150	36	22.612	20.782	1.680	Open Manhole	1200
76.000	o	375	41	23.505	21.930	1.200	Open Manhole	1050
76.001	o	300	42	23.366	21.791	1.275	Open Manhole	1350
77.000	o	450	44	23.156	21.506	1.200	Open Manhole	1200
77.001	o	450	45	22.842	21.265	1.127	Open Manhole	1200
77.002	o	450	46	22.794	21.225	1.119	Open Manhole	1200
78.000	o	375	54	23.247	21.672	1.200	Open Manhole	1050
78.001	o	375	55	23.056	21.384	1.297	Open Manhole	1050
77.003	o	375	47	23.735	21.095	2.265	Open Manhole	1200
79.000	o	375	49	24.154	22.579	1.200	Open Manhole	1200
79.001	o	300	50	23.938	22.438	1.200	Open Manhole	1200
79.002	o	300	51	23.819	22.319	1.200	Open Manhole	1200
80.000	o	300	52	23.545	22.045	1.200	Open Manhole	1200
80.001	o	300	53	23.659	21.829	1.530	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)
74.000	17.227	33.8	325	21.416	19.373	1.668	Open Manhole	1350
74.001	12.383	26.5	5	21.152	18.905	1.872	Open Manhole	1200
70.004	8.292	83.8	6	21.053	18.691	1.912	Open Manhole	1350
75.000	29.121	149.3	37	22.480	20.587	1.743	Open Manhole	1200
76.000	18.304	131.7	42	23.366	21.791	1.200	Open Manhole	1350
76.001	10.879	13.7	43	23.279	20.998	1.981	Open Manhole	1200
77.000	60.192	250.0	45	22.842	21.265	1.127	Open Manhole	1200
77.001	10.119	250.0	46	22.794	21.225	1.119	Open Manhole	1200
77.002	39.056	300.0	47	23.735	21.095	2.190	Open Manhole	1200
78.000	28.785	100.0	55	23.056	21.384	1.297	Open Manhole	1050
78.001	17.885	65.0	47	23.735	21.109	2.251	Open Manhole	1200
77.003	19.400	298.5	48	23.520	21.030	2.115	Open Manhole	1500
79.000	28.279	200.6	50	23.938	22.438	1.125	Open Manhole	1200
79.001	14.823	124.6	51	23.819	22.319	1.200	Open Manhole	1200
79.002	36.821	28.7	48	23.520	21.034	2.186	Open Manhole	1500
80.000	32.271	149.4	53	23.659	21.829	1.530	Open Manhole	1200
80.001	29.464	37.1	48	23.520	21.034	2.186	Open Manhole	1500

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
77.004	o	450	48	23.520	20.884	2.186	Open Manhole	1500
76.002	o	450	43	23.279	20.848	1.981	Open Manhole	1200
75.001	o	450	37	22.480	20.287	1.743	Open Manhole	1200
75.002	o	525	38	22.330	20.064	1.741	Open Manhole	1350
75.003	o	525	39	22.144	20.021	1.598	Open Manhole	1350
75.004	o	525	40	21.547	19.822	1.200	Open Manhole	1350
70.005	[]	-2	6	21.053	18.541	1.912	Open Manhole	1350
70.006	[]	-2	7	21.313	18.309	2.404	Open Manhole	1350
70.007	[]	-2	8	21.392	18.177	2.615	Open Manhole	1500
81.000	o	300	58	21.627	19.927	1.400	Open Manhole	1200
82.000	o	375	62	21.877	20.100	1.402	Open Manhole	1200
82.001	o	375	63	21.850	19.968	1.507	Open Manhole	1200
83.000	o	300	67	22.540	20.600	1.640	Open Manhole	1200
84.000	o	525	56	21.655	19.730	1.400	Open Manhole	1200
84.001	o	525	57	21.648	19.403	1.720	Open Manhole	1200
83.001	o	375	68	21.784	19.093	2.316	Open Manhole	1200
82.002	o	450	64	21.758	18.933	2.375	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)
77.004	11.182	310.6	43	23.279	20.848	1.981	Open Manhole	1200
76.002	34.368	61.3	37	22.480	20.287	1.743	Open Manhole	1200
75.001	29.559	199.7	38	22.330	20.139	1.741	Open Manhole	1350
75.002	12.996	302.2	39	22.144	20.021	1.598	Open Manhole	1350
75.003	34.293	172.3	40	21.547	19.822	1.200	Open Manhole	1350
75.004	28.753	25.8	6	21.053	18.707	1.821	Open Manhole	1350
70.005	69.633	300.1	7	21.313	18.309	2.404	Open Manhole	1350
70.006	39.731	301.0	8	21.392	18.177	2.615	Open Manhole	1500
70.007	7.465	298.6	9	21.362	18.152	2.610	Open Manhole	1350
81.000	47.961	299.8	59	21.372	19.767	1.305	Open Manhole	1200
82.000	6.610	50.0	63	21.850	19.968	1.507	Open Manhole	1200
82.001	23.993	25.0	64	21.758	19.008	2.375	Open Manhole	1200
83.000	45.830	32.0	68	21.784	19.168	2.316	Open Manhole	1200
84.000	6.533	20.0	57	21.648	19.403	1.720	Open Manhole	1200
84.001	30.653	100.0	68	21.784	19.097	2.162	Open Manhole	1200
83.001	10.210	129.2	64	21.758	19.014	2.369	Open Manhole	1200
82.002	24.990	149.6	65	21.832	18.766	2.616	Open Manhole	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
85.000	o	300	69	21.967	20.392	1.275	Open Manhole	1200
85.001	o	300	70	21.881	20.200	1.382	Open Manhole	1200
82.003	o	450	65	21.832	18.766	2.616	Open Manhole	1200
82.004	o	450	66	21.617	18.685	2.482	Open Manhole	1200
81.001	o	450	59	21.372	18.580	2.342	Open Manhole	1200
81.002	o	450	60	21.269	18.518	2.301	Open Manhole	1200
81.003	o	450	61	21.172	18.456	2.266	Open Manhole	1200
70.008	oo	-13	9	21.362	18.152	2.610	Open Manhole	1350
70.009	3 \=/	1000	10	21.062	18.052	2.860	Junction	
70.010	[]	-2	11	20.660	17.514	2.546	Junction	
70.011	3 \=/	1000	12	20.230	17.491	2.589	Junction	
70.012	[]	-2	13	19.637	17.008	2.029	Junction	
70.013	3 \=/	1000	14	19.281	16.986	2.145	Junction	
70.014	[]	-2	15	18.754	16.953	1.651	Junction	
70.015	3 \=/	1000	16	18.270	16.929	1.191	Junction	
86.000	o	300	208	17.588	16.088	1.200	Open Manhole	1200
86.001	o	300	209	17.120	15.620	1.200	Open Manhole	1200
87.000	o	375	73	20.177	18.677	1.125	Open Manhole	1050
88.000	o	375	71	21.542	19.967	1.200	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)
85.000	9.625	50.0	70	21.881	20.200	1.382	Open Manhole	1200
85.001	14.993	50.0	65	21.832	19.900	1.632	Open Manhole	1200
82.003	25.055	309.3	66	21.617	18.685	2.482	Open Manhole	1200
82.004	15.761	150.0	59	21.372	18.580	2.342	Open Manhole	1200
81.001	16.120	260.0	60	21.269	18.518	2.301	Open Manhole	1200
81.002	19.512	314.7	61	21.172	18.456	2.266	Open Manhole	1200
81.003	20.932	151.7	9	21.362	18.318	2.594	Open Manhole	1350
70.008	14.860	148.6	10	21.062	18.052	2.410	Junction	
70.009	17.618	200.2	11	20.660	17.964	2.546	Junction	
70.010	11.291	490.9	12	20.230	17.491	2.139	Junction	
70.011	16.309	494.2	13	19.637	17.458	2.029	Junction	
70.012	10.949	497.7	14	19.281	16.986	1.695	Junction	
70.013	16.262	492.8	15	18.754	16.953	1.651	Junction	
70.014	12.121	505.0	16	18.270	16.929	1.191	Junction	
70.015	21.133	503.2	17	17.442	16.887	0.405	Open Manhole	1500
86.000	12.484	26.7	209	17.120	15.620	1.200	Open Manhole	1200
86.001	16.404	241.1	379	17.388	15.552	1.536	Open Manhole	1350
87.000	18.275	66.7	75	19.628	18.403	0.850	Open Manhole	1050
88.000	18.015	246.8	72	21.469	19.894	1.200	Open Manhole	1050

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
88.001	o	375	72	21.469	19.894	1.200	Open Manhole	1050
87.001	o	375	75	19.628	18.403	0.850	Open Manhole	1050
86.002	o	375	379	17.388	15.477	1.536	Open Manhole	1350
70.016	[]	-2	17	17.442	15.392	1.900	Open Manhole	1500
89.000	o	300	76	20.438	18.938	1.200	Open Manhole	1200
89.001	o	300	77	19.697	18.197	1.200	Open Manhole	1200
90.000	o	450	82	21.680	20.030	1.200	Open Manhole	1200
90.001	o	450	83	21.217	19.377	1.390	Open Manhole	1200
90.002	o	450	84	20.834	18.587	1.797	Open Manhole	1200
89.002	o	450	78	19.515	17.700	1.365	Open Manhole	1200
89.003	o	450	79	18.876	17.136	1.290	Open Manhole	1200
91.000	o	150	85	20.790	19.440	1.200	Open Manhole	1200
92.000	o	375	87	20.575	19.075	1.125	Open Manhole	1200
92.001	o	375	88	20.967	18.961	1.631	Open Manhole	1200
91.001	o	450	86	19.711	18.039	1.222	Open Manhole	1350
89.004	o	450	80	18.619	16.913	1.256	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)
88.001	107.105	71.8	75	19.628	18.403	0.850	Open Manhole	1050
87.001	66.738	24.5	379	17.388	15.674	1.339	Open Manhole	1350
86.002	25.545	300.0	17	17.442	15.392	1.675	Open Manhole	1500
70.016	18.003	82.6	18	16.868	15.174	1.544	Open Manhole	1500
89.000	47.712	80.7	77	19.697	18.347	1.050	Open Manhole	1200
89.001	16.618	57.1	78	19.515	17.906	1.309	Open Manhole	1200
90.000	32.662	50.0	83	21.217	19.377	1.390	Open Manhole	1200
90.001	31.603	40.0	84	20.834	18.587	1.797	Open Manhole	1200
90.002	35.486	40.0	78	19.515	17.700	1.365	Open Manhole	1200
89.002	45.121	80.0	79	18.876	17.136	1.290	Open Manhole	1200
89.003	22.833	102.4	80	18.619	16.913	1.256	Open Manhole	1350
91.000	32.732	29.7	86	19.711	18.339	1.222	Open Manhole	1350
92.000	27.374	240.1	88	20.967	18.961	1.631	Open Manhole	1200
92.001	44.697	57.9	86	19.711	18.189	1.147	Open Manhole	1350
91.001	56.371	52.7	80	18.619	16.969	1.200	Open Manhole	1350
89.004	17.274	65.4	316	19.000	16.649	1.901	Open Manhole	1350

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
89.005	o	450	316	19.000	16.649	1.901	Open Manhole	1350
93.000	o	375	89	19.217	17.717	1.125	Open Manhole	1050
93.001	o	300	90	18.704	17.204	1.200	Open Manhole	1050
89.006	[]	-2	81	18.091	16.235	1.256	Open Manhole	1350
70.017	[]	-2	18	16.868	15.118	1.600	Open Manhole	1500
70.018	3 \=/	1500	19	16.680	15.061	1.469	Junction	
70.019	3 \=/	1500	20	16.450	15.035	1.265	Junction	
70.020	3 \=/	1500	21	16.246	15.014	1.082	Open Manhole	1500
70.021	[]	-3	22	15.886	14.966	0.770	Open Manhole	1500
70.022	[]	-3	23	15.760	14.939	0.671	Open Manhole	1500
70.023	3 \=/	1500	24	15.700	14.856	0.694	Open Manhole	1500
94.000	o	300	3	17.140	15.640	1.200	Open Manhole	1050
94.001	o	300	2	16.957	15.457	1.200	Open Manhole	1050
95.000	o	300	1	18.765	17.265	1.200	Open Manhole	1050
95.001	o	300	2	18.432	16.932	1.200	Open Manhole	1050
95.002	o	300	3	17.302	15.802	1.200	Open Manhole	1050
95.003	3 \=/	1500	3	17.200	15.729	1.321	Junction	
95.004	3 \=/	1500	5	16.149	15.245	0.754	Junction	
94.002	3 \=/	1500	4	16.296	14.796	1.350	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)
89.005	38.288	145.0	81	18.091	16.385	1.256	Open Manhole	1350
93.000	29.215	56.9	90	18.704	17.204	1.125	Open Manhole	1050
93.001	21.744	35.5	81	18.091	16.591	1.200	Open Manhole	1350
89.006	54.193	48.5	18	16.868	15.118	1.150	Open Manhole	1500
70.017	17.160	301.1	19	16.680	15.061	1.469	Junction	
70.018	12.831	493.5	20	16.450	15.035	1.265	Junction	
70.019	10.588	504.2	21	16.246	15.014	1.082	Open Manhole	1500
70.020	23.867	497.2	22	15.886	14.966	0.770	Open Manhole	1500
70.021	13.364	495.0	23	15.760	14.939	0.671	Open Manhole	1500
70.022	24.890	299.9	24	15.700	14.856	0.694	Open Manhole	1500
70.023	16.005	500.2	236	15.048	14.824	0.074	Junction	
94.000	20.382	111.4	2	16.957	15.457	1.200	Open Manhole	1050
94.001	50.763	76.8	4	16.296	14.796	1.200	Junction	
95.000	22.043	66.2	2	18.432	16.932	1.200	Open Manhole	1050
95.001	25.467	22.5	3	17.302	15.802	1.200	Open Manhole	1050
95.002	7.319	100.3	3	17.200	15.729	1.171	Junction	
95.003	114.846	237.3	5	16.149	15.245	0.754	Junction	
95.004	53.675	258.1	4	16.296	15.037	1.109	Junction	
94.002	51.354	152.4	236	15.048	14.459	0.439	Junction	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.058	3 \=/	2400	236	15.048	13.014	1.884	Junction	
1.059	o	825	237	15.000	12.907	1.943	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)
1.058	53.635	501.3	237	15.000	12.907	1.943	Open Manhole	1500
1.059	15.671	15671.0		15.000	12.906	1.944	Open Manhole	0

Simulation Criteria for NETWORK 1.SWS

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)	120
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	2

Number of Input Hydrographs	1	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	26	Number of Storage Structures	26	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	60
Ratio R	0.450		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%					
1.001	15 Winter	1	0%					
2.000	15 Winter	1	0%	30/15 Winter				
2.001	15 Winter	1	0%	30/15 Summer				
1.002	15 Winter	1	0%	30/15 Summer				
1.003	15 Winter	1	0%	30/15 Summer				
1.004	15 Winter	1	0%					
1.005	15 Winter	1	0%	100/15 Winter				
1.006	15 Winter	1	0%	100/360 Winter				
3.000	15 Winter	1	0%	100/15 Summer				
3.001	15 Winter	1	0%	100/15 Summer				
4.000	15 Winter	1	0%	100/15 Summer				
4.001	15 Winter	1	0%	100/15 Summer				
4.002	15 Winter	1	0%	100/15 Summer				
3.002	15 Winter	1	0%	100/15 Summer				
5.000	15 Winter	1	0%	100/15 Summer				
5.001	15 Winter	1	0%	100/15 Summer				
3.003	15 Winter	1	0%	100/15 Summer				
3.004	15 Winter	1	0%	30/15 Summer				
1.007	360 Winter	1	0%	100/60 Winter				
6.000	15 Winter	1	0%					
6.001	15 Winter	1	0%					
6.002	15 Winter	1	0%					
6.003	15 Winter	1	0%					
6.004	15 Winter	1	0%					
6.005	15 Winter	1	0%	30/15 Summer				
6.006	15 Winter	1	0%					
6.007	15 Winter	1	0%	30/15 Summer				
1.008	15 Winter	1	0%					
1.009	15 Winter	1	0%					
7.000	15 Winter	1	0%	100/15 Summer				
7.001	15 Winter	1	0%	100/15 Summer				
7.002	15 Winter	1	0%					
8.000	15 Winter	1	0%	100/15 Summer				
8.001	15 Winter	1	0%	100/15 Summer				
9.000	15 Winter	1	0%	100/15 Summer				
9.001	15 Winter	1	0%	100/15 Summer				
8.002	15 Winter	1	0%	100/15 Summer				
7.003	15 Winter	1	0%	30/15 Summer				
7.004	15 Winter	1	0%					
7.005	15 Winter	1	0%	30/15 Summer				
7.006	15 Winter	1	0%					
10.000	15 Winter	1	0%	30/15 Summer				
10.001	15 Winter	1	0%	30/15 Summer				
7.007	15 Winter	1	0%					
11.000	15 Winter	1	0%					
11.001	15 Winter	1	0%					
12.000	15 Winter	1	0%	30/15 Summer				
12.001	15 Winter	1	0%	30/15 Summer				
12.002	15 Winter	1	0%					

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
12.003	15 Winter	1	0%	30/15 Summer				
11.002	15 Winter	1	0%					
11.003	15 Winter	1	0%	30/15 Summer				
7.008	15 Winter	1	0%					
13.000	15 Winter	1	0%	100/15 Summer				
13.001	15 Winter	1	0%	30/15 Summer				
7.009	15 Winter	1	0%					
14.000	15 Winter	1	0%	30/15 Summer				
14.001	15 Winter	1	0%	30/15 Summer				
15.000	15 Winter	1	0%					
14.002	15 Winter	1	0%					
16.000	15 Winter	1	0%					
14.003	15 Winter	1	0%					
17.000	15 Winter	1	0%	30/15 Summer				
17.001	15 Winter	1	0%	30/15 Summer				
18.000	15 Winter	1	0%					
17.002	15 Winter	1	0%	30/15 Summer				
17.003	15 Winter	1	0%	30/15 Summer				
14.004	15 Winter	1	0%	30/15 Summer				
14.005	15 Winter	1	0%					
14.006	15 Winter	1	0%	30/15 Summer				
7.010	15 Winter	1	0%					
19.000	15 Winter	1	0%	100/15 Summer				
19.001	15 Winter	1	0%	100/15 Summer				
7.011	480 Winter	1	0%	30/60 Winter				
1.010	30 Winter	1	0%					
20.000	15 Winter	1	0%	100/15 Summer				
20.001	15 Winter	1	0%	100/15 Summer				
1.011	15 Winter	1	0%					
1.012	15 Winter	1	0%					
21.000	15 Winter	1	0%	100/15 Summer				
21.001	15 Winter	1	0%					
1.013	15 Winter	1	0%					
22.000	15 Winter	1	0%					
23.000	15 Winter	1	0%	100/15 Summer				
23.001	15 Winter	1	0%	30/15 Summer				
22.001	15 Winter	1	0%					
22.002	15 Winter	1	0%	30/15 Summer				
24.000	15 Winter	1	0%					
24.001	15 Winter	1	0%	100/15 Summer				
22.003	15 Winter	1	0%					
25.000	15 Winter	1	0%	30/15 Summer				
25.001	15 Winter	1	0%	100/15 Summer				
22.004	15 Winter	1	0%					
22.005	15 Winter	1	0%	30/15 Summer				
26.000	360 Winter	1	0%					
26.001	15 Winter	1	0%	100/30 Winter				
22.006	15 Winter	1	0%					
27.000	15 Winter	1	0%	30/15 Summer				
27.001	15 Winter	1	0%	30/15 Summer				
22.007	360 Winter	1	0%	30/60 Winter				
1.014	15 Winter	1	0%					
1.015	15 Winter	1	0%					
28.000	15 Winter	1	0%					
29.000	15 Winter	1	0%	100/15 Summer				
29.001	15 Winter	1	0%	30/15 Summer				
29.002	15 Winter	1	0%	30/15 Summer				
28.001	15 Winter	1	0%					
28.002	15 Winter	1	0%	30/15 Summer				
30.000	8640 Winter	1	0%					
30.001	15 Winter	1	0%	100/15 Summer				
28.003	15 Winter	1	0%					

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
31.000	15 Winter	1	0%	100/15 Summer				
31.001	15 Winter	1	0%	100/15 Summer				
31.002	15 Winter	1	0%	100/15 Summer				
28.004	15 Winter	1	0%					
28.005	15 Winter	1	0%	30/15 Summer				
32.000	4320 Winter	1	0%					
32.001	15 Winter	1	0%					
28.006	15 Winter	1	0%					
33.000	15 Winter	1	0%	100/15 Summer				
33.001	15 Winter	1	0%	100/15 Summer				
28.007	15 Winter	1	0%					
34.000	15 Winter	1	0%	100/15 Summer				
34.001	15 Winter	1	0%	100/15 Summer				
34.002	15 Winter	1	0%	100/15 Summer				
34.003	15 Winter	1	0%					
28.008	960 Winter	1	0%	30/30 Winter				
1.016	15 Winter	1	0%					
1.017	15 Winter	1	0%					
35.000	15 Winter	1	0%	100/15 Summer				
1.018	30 Winter	1	0%					
36.000	15 Winter	1	0%					
36.001	15 Winter	1	0%					
36.002	15 Winter	1	0%	30/15 Summer				
1.019	30 Winter	1	0%					
1.020	30 Winter	1	0%					
1.021	30 Winter	1	0%					
1.022	30 Winter	1	0%					
37.000	15 Winter	1	0%	30/15 Summer				
37.001	15 Winter	1	0%	30/15 Summer				
37.002	15 Winter	1	0%	100/15 Summer				
38.000	15 Winter	1	0%	100/15 Summer				
38.001	15 Winter	1	0%	30/15 Summer				
37.003	360 Winter	1	0%	30/120 Winter				
1.023	30 Winter	1	0%					
1.024	30 Winter	1	0%					
39.000	15 Winter	1	0%	100/15 Summer				
39.001	15 Winter	1	0%	100/15 Summer				
39.002	15 Winter	1	0%	100/15 Summer				
39.003	15 Winter	1	0%	100/15 Summer				
40.000	15 Winter	1	0%	30/15 Summer				
40.001	15 Winter	1	0%	30/15 Winter				
39.004	360 Winter	1	0%	30/30 Winter				
1.025	30 Winter	1	0%					
1.026	30 Winter	1	0%					
1.027	30 Winter	1	0%					
41.000	15 Winter	1	0%	100/15 Summer				
41.001	15 Winter	1	0%					
41.002	120 Winter	1	0%	30/60 Winter				
1.028	30 Winter	1	0%					
1.029	30 Winter	1	0%					
42.000	15 Winter	1	0%					
42.001	15 Winter	1	0%					
42.002	15 Winter	1	0%					
42.003	15 Winter	1	0%	30/15 Winter				
42.004	15 Winter	1	0%					
42.005	15 Winter	1	0%	30/15 Summer				
1.030	60 Winter	1	0%					
43.000	15 Winter	1	0%	30/15 Summer				
43.001	15 Winter	1	0%	30/15 Summer				
43.002	15 Winter	1	0%					
43.003	120 Winter	1	0%	30/30 Winter				
1.031	60 Winter	1	0%					

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.032	60 Winter	1	0%					
44.000	360 Winter	1	0%					
44.001	15 Winter	1	0%					
45.000	15 Winter	1	0%	100/15 Summer				
45.001	15 Winter	1	0%	30/15 Summer				
46.000	15 Winter	1	0%	100/15 Summer				
46.001	15 Winter	1	0%	100/15 Summer				
45.002	360 Winter	1	0%	30/180 Winter				
44.002	15 Winter	1	0%					
44.003	15 Winter	1	0%					
44.004	15 Winter	1	0%					
47.000	360 Winter	1	0%					
47.001	15 Winter	1	0%					
47.002	15 Winter	1	0%					
47.003	15 Winter	1	0%	30/15 Summer				
48.000	15 Winter	1	0%					
48.001	15 Winter	1	0%					
48.002	15 Winter	1	0%					
48.003	15 Winter	1	0%					
48.004	15 Winter	1	0%					
48.005	15 Winter	1	0%					
47.004	15 Winter	1	0%	100/15 Summer				
44.005	15 Winter	1	0%					
49.000	15 Winter	1	0%					
49.001	15 Winter	1	0%					
49.002	15 Winter	1	0%					
49.003	15 Winter	1	0%					
49.004	15 Winter	1	0%					
49.005	15 Winter	1	0%					
44.006	15 Winter	1	0%					
44.007	15 Winter	1	0%					
44.008	15 Winter	1	0%					
50.000	15 Winter	1	0%					
50.001	120 Winter	1	0%	30/120 Winter				
51.000	15 Winter	1	0%					
51.001	15 Winter	1	0%	100/15 Summer				
51.002	15 Winter	1	0%					
51.003	15 Winter	1	0%	30/15 Summer				
44.009	15 Winter	1	0%	100/15 Winter				
44.010	15 Winter	1	0%					
52.000	15 Winter	1	0%					
52.001	60 Winter	1	0%					
53.000	15 Winter	1	0%					
53.001	15 Winter	1	0%					
44.011	30 Winter	1	0%					
44.012	30 Winter	1	0%					
44.013	30 Winter	1	0%					
44.014	30 Winter	1	0%					
44.015	30 Winter	1	0%					
54.000	15 Winter	1	0%					
54.001	15 Winter	1	0%					
54.002	15 Winter	1	0%					
54.003	15 Winter	1	0%	30/15 Summer				
54.004	15 Winter	1	0%					
54.005	15 Winter	1	0%	100/15 Summer				
54.006	15 Winter	1	0%					
54.007	15 Winter	1	0%					
54.008	15 Winter	1	0%	30/15 Summer				
1.033	30 Winter	1	0%					
1.034	30 Winter	1	0%					
1.035	30 Winter	1	0%					
55.000	15 Winter	1	0%					

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
55.001	15 Winter	1	0%					
1.036	30 Winter	1	0%	100/15 Summer				
1.037	30 Winter	1	0%					
56.000	15 Winter	1	0%					
56.001	15 Winter	1	0%	100/15 Summer				
1.038	30 Winter	1	0%					
57.000	15 Winter	1	0%					
57.001	15 Winter	1	0%					
57.002	15 Winter	1	0%					
57.003	15 Winter	1	0%					
57.004	15 Winter	1	0%					
57.005	15 Winter	1	0%					
58.000	360 Summer	1	0%					
58.001	360 Summer	1	0%	100/120 Summer				
57.006	15 Winter	1	0%					
57.007	30 Winter	1	0%					
57.008	15 Winter	1	0%	30/15 Winter				
1.039	30 Winter	1	0%					
59.000	15 Winter	1	0%	100/15 Summer				
59.001	240 Winter	1	0%	100/15 Summer				
60.000	15 Winter	1	0%					
59.002	240 Winter	1	0%	30/120 Winter				
1.040	30 Winter	1	0%					
61.000	15 Winter	1	0%	30/15 Summer				
61.001	240 Winter	1	0%	30/30 Summer				
1.041	60 Winter	1	0%					
1.042	60 Winter	1	0%					
1.043	60 Winter	1	0%					
62.000	15 Winter	1	0%	30/15 Summer				
62.001	180 Winter	1	0%	30/15 Winter				
63.000	15 Winter	1	0%	100/15 Summer				
62.002	15 Winter	1	0%					
62.003	15 Winter	1	0%					
62.004	15 Winter	1	0%					
62.005	15 Winter	1	0%	100/15 Winter				
62.006	15 Winter	1	0%	100/15 Summer				
64.000	15 Winter	1	0%					
64.001	15 Winter	1	0%					
64.002	15 Winter	1	0%					
64.003	15 Winter	1	0%					
64.004	15 Winter	1	0%					
64.005	15 Winter	1	0%	30/15 Summer				
62.007	15 Winter	1	0%	30/15 Summer				
65.000	15 Winter	1	0%	30/15 Summer				
65.001	120 Winter	1	0%	30/120 Winter				
66.000	15 Winter	1	0%	100/15 Summer				
66.001	15 Winter	1	0%	100/15 Summer				
66.002	15 Winter	1	0%					
66.003	15 Winter	1	0%					
65.002	15 Winter	1	0%					
65.003	15 Winter	1	0%					
65.004	15 Winter	1	0%	100/15 Summer				
65.005	15 Winter	1	0%	30/15 Summer				
67.000	15 Winter	1	0%					
67.001	15 Winter	1	0%	30/15 Summer				
67.002	15 Winter	1	0%					
67.003	15 Winter	1	0%	30/15 Summer				
62.008	60 Winter	1	0%	100/15 Summer				
62.009	60 Winter	1	0%	100/15 Summer				
62.010	60 Winter	1	0%	100/15 Summer				
1.044	60 Winter	1	0%					
1.045	60 Winter	1	0%					

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.046	60 Winter	1	0%					
1.047	60 Winter	1	0%					
1.048	60 Winter	1	0%					
1.049	60 Winter	1	0%					
68.000	15 Winter	1	0%	30/15 Summer				
69.000	15 Winter	1	0%	30/15 Summer				
69.001	15 Winter	1	0%					
68.001	120 Winter	1	0%	100/30 Summer				
1.050	60 Winter	1	0%					
1.051	60 Winter	1	0%					
1.052	60 Winter	1	0%					
1.053	60 Winter	1	0%					
1.054	60 Winter	1	0%					
1.055	60 Winter	1	0%					
1.056	60 Winter	1	0%					
1.057	60 Winter	1	0%					
70.000	15 Winter	1	0%					
70.001	15 Winter	1	0%					
71.000	15 Winter	1	0%	30/15 Summer				
71.001	15 Winter	1	0%	100/15 Summer				
72.000	15 Winter	1	0%	30/15 Summer				
72.001	15 Winter	1	0%	30/15 Summer				
73.000	15 Winter	1	0%	30/15 Summer				
73.001	15 Winter	1	0%	30/30 Winter				
72.002	120 Winter	1	0%	30/15 Winter				
71.002	15 Winter	1	0%	100/15 Summer				
71.003	15 Winter	1	0%	100/15 Summer				
71.004	15 Winter	1	0%	30/15 Summer				
70.002	15 Winter	1	0%	100/15 Summer				
70.003	15 Winter	1	0%	30/15 Summer				
74.000	15 Winter	1	0%	100/15 Summer				
74.001	15 Winter	1	0%	100/15 Summer				
70.004	15 Winter	1	0%	30/15 Summer				
75.000	15 Winter	1	0%					
76.000	15 Winter	1	0%					
76.001	15 Winter	1	0%					
77.000	15 Winter	1	0%	100/15 Summer				
77.001	15 Winter	1	0%	30/15 Summer				
77.002	15 Winter	1	0%	30/15 Summer				
78.000	15 Winter	1	0%	100/15 Summer				
78.001	15 Winter	1	0%	100/15 Summer				
77.003	15 Winter	1	0%	30/15 Summer				
79.000	15 Winter	1	0%	30/15 Summer				
79.001	15 Winter	1	0%	30/15 Summer				
79.002	15 Winter	1	0%	100/15 Summer				
80.000	15 Winter	1	0%					
80.001	15 Winter	1	0%					
77.004	15 Winter	1	0%	30/15 Summer				
76.002	240 Winter	1	0%	30/120 Winter				
75.001	15 Winter	1	0%					
75.002	15 Winter	1	0%					
75.003	15 Winter	1	0%					
75.004	15 Winter	1	0%					
70.005	15 Winter	1	0%					
70.006	15 Winter	1	0%					
70.007	15 Winter	1	0%					
81.000	15 Winter	1	0%					
82.000	15 Winter	1	0%	100/15 Summer				
82.001	15 Winter	1	0%	100/15 Summer				
83.000	15 Winter	1	0%	100/15 Summer				
84.000	15 Winter	1	0%	30/15 Summer				
84.001	15 Winter	1	0%	30/15 Summer				

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
83.001	30 Winter	1	0%	1/15 Summer				
82.002	60 Winter	1	0%	1/15 Summer				
85.000	15 Winter	1	0%	100/15 Summer				
85.001	15 Winter	1	0%	100/15 Summer				
82.003	60 Winter	1	0%	1/15 Summer				
82.004	120 Winter	1	0%	1/15 Summer				
81.001	15 Winter	1	0%					
81.002	15 Winter	1	0%					
81.003	15 Winter	1	0%					
70.008	15 Winter	1	0%					
70.009	15 Winter	1	0%					
70.010	15 Winter	1	0%					
70.011	15 Winter	1	0%					
70.012	15 Winter	1	0%	100/15 Winter				
70.013	15 Winter	1	0%					
70.014	15 Winter	1	0%	100/15 Summer				
70.015	15 Winter	1	0%					
86.000	15 Winter	1	0%	30/15 Winter				
86.001	15 Winter	1	0%	30/15 Summer				
87.000	15 Winter	1	0%	100/15 Summer				
88.000	15 Winter	1	0%					
88.001	15 Winter	1	0%					
87.001	15 Winter	1	0%					
86.002	120 Winter	1	0%	30/30 Summer				
70.016	15 Winter	1	0%	100/15 Winter				
89.000	15 Winter	1	0%					
89.001	15 Winter	1	0%	100/15 Summer				
90.000	15 Winter	1	0%	100/15 Summer				
90.001	60 Winter	1	0%	1/30 Winter				
90.002	15 Winter	1	0%					
89.002	15 Winter	1	0%	100/15 Summer				
89.003	15 Winter	1	0%	100/15 Summer				
91.000	15 Winter	1	0%					
92.000	15 Winter	1	0%	30/15 Summer				
92.001	60 Winter	1	0%	30/30 Winter				
91.001	15 Winter	1	0%					
89.004	15 Winter	1	0%	30/15 Summer				
89.005	15 Winter	1	0%	30/15 Summer				
93.000	15 Winter	1	0%	100/15 Summer				
93.001	120 Winter	1	0%	30/15 Winter				
89.006	15 Winter	1	0%					
70.017	15 Winter	1	0%	100/15 Summer				
70.018	15 Winter	1	0%					
70.019	15 Winter	1	0%					
70.020	15 Winter	1	0%					
70.021	15 Winter	1	0%	100/15 Summer				
70.022	15 Winter	1	0%	100/15 Summer				
70.023	15 Winter	1	0%					
94.000	15 Winter	1	0%	30/15 Summer				
94.001	120 Winter	1	0%	30/15 Winter				
95.000	15 Winter	1	0%	30/15 Winter				
95.001	120 Winter	1	0%	30/15 Winter				
95.002	30 Winter	1	0%					
95.003	60 Winter	1	0%					
95.004	120 Summer	1	0%					
94.002	180 Summer	1	0%					
1.058	1440 Winter	1	0%					
1.059	1440 Winter	1	0%	100/480 Winter				

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	15	22.521	-0.217	0.000	0.17	0.0	19.8	OK
1.001	16	22.220	-0.225	0.000	0.14	0.0	19.6	OK
2.000	17	21.934	-0.202	0.000	0.23	0.0	19.8	OK
2.001	18	21.780	-0.168	0.000	0.40	0.0	20.0	OK
1.002	19	21.724	-0.191	0.000	0.46	0.0	42.9	OK
1.003	20	21.677	-0.185	0.000	0.50	0.0	42.3	OK
1.004	21	21.530	-0.300	0.000	0.23	0.0	39.8	OK
1.005	24	21.252	-0.279	0.000	0.31	0.0	39.2	OK
1.006	25	20.917	-0.483	0.000	0.08	0.0	38.8	OK
3.000	26	22.358	-0.315	0.000	0.19	0.0	32.5	OK
3.001	27	22.146	-0.439	0.000	0.15	0.0	60.4	OK
4.000	12	23.522	-0.262	0.000	0.36	0.0	60.4	OK
4.001	13	23.399	-0.296	0.000	0.25	0.0	79.4	OK
4.002	14	23.022	-0.308	0.000	0.22	0.0	87.9	OK
3.002	28	22.051	-0.378	0.000	0.30	0.0	154.9	OK
5.000	29	22.272	-0.289	0.000	0.27	0.0	62.0	OK
5.001	30	22.055	-0.287	0.000	0.28	0.0	62.7	OK
3.003	31	21.748	-0.354	0.000	0.34	0.0	212.1	OK
3.004	20	20.987	-0.179	0.000	0.83	0.0	229.2	OK
1.007	13	20.720	-0.395	0.000	0.01	0.0	6.1	OK
6.000	9	23.070	-1.343	0.000	0.00	0.0	5.2	OK
6.001	10	22.944	-1.444	0.000	0.00	0.0	5.1	OK
6.002	11	22.723	-1.179	0.000	0.00	0.0	7.8	OK
6.003	12	22.439	-2.261	0.000	0.00	0.0	12.5	OK
6.004	23	21.831	-1.793	0.000	0.00	0.0	28.4	OK
6.005	26	21.748	-0.075	0.000	0.77	0.0	26.7	OK*
6.006	24	21.582	-2.024	0.000	0.00	0.0	46.3	OK
6.007	25	21.095	-0.020	0.000	1.00	0.0	39.1	OK*
1.008	32	20.415	-0.519	0.000	0.09	0.0	44.1	OK
1.009	35	20.354	-0.534	0.000	0.06	0.0	46.7	OK
7.000	36	24.122	-0.193	0.000	0.26	0.0	14.3	OK
7.001	37	24.070	-0.191	0.000	0.28	0.0	14.4	OK
7.002	38	23.980	-1.597	0.000	0.00	0.0	17.0	OK
8.000	39	24.228	-0.235	0.000	0.11	0.0	8.3	OK
8.001	40	24.132	-0.209	0.000	0.19	0.0	8.2	OK
9.000	41	24.277	-0.227	0.000	0.13	0.0	11.3	OK
9.001	42	24.189	-0.202	0.000	0.23	0.0	11.2	OK
8.002	43	24.098	-0.210	0.000	0.20	0.0	19.5	OK
7.003	44	23.966	-0.128	0.000	0.62	0.0	50.2	OK
7.004	34	23.747	-1.626	0.000	0.00	0.0	50.0	OK
7.005	45	23.683	-0.126	0.000	0.64	0.0	54.6	OK*
7.006	1	23.493	-1.546	0.000	0.00	0.0	55.8	OK
10.000	46	23.481	-0.125	0.000	0.62	0.0	33.5	OK
10.001	47	23.417	-0.137	0.000	0.55	0.0	32.5	OK
7.007	26	23.263	-1.300	0.000	0.01	0.0	87.6	OK
11.000	47	24.007	-1.388	0.000	0.00	0.0	1.7	OK
11.001	49	23.433	-0.252	0.000	0.06	0.0	1.7	OK*
12.000	1	24.032	-0.128	0.000	0.61	0.0	33.6	OK
12.001	2	23.955	-0.143	0.000	0.52	0.0	32.8	OK
12.002	3	23.717	-1.559	0.000	0.00	0.0	36.2	OK
12.003	57	23.531	-0.142	0.000	0.54	0.0	47.8	OK*
11.002	50	23.276	-1.215	0.000	0.00	0.0	49.2	OK
11.003	51	22.605	-0.080	0.000	0.97	0.0	48.9	OK*
7.008	2	22.249	-1.286	0.000	0.01	0.0	142.0	OK
13.000	49	22.436	-0.213	0.000	0.38	0.0	56.4	OK
13.001	50	22.183	-0.177	0.000	0.54	0.0	55.9	OK
7.009	48	21.777	-1.245	0.000	0.01	0.0	194.1	OK
14.000	4	23.652	-0.131	0.000	0.59	0.0	34.0	OK
14.001	5	23.547	-0.136	0.000	0.57	0.0	33.1	OK
15.000	58	23.814	-0.463	0.000	0.00	0.0	3.9	OK
14.002	6	23.327	-0.799	0.000	0.01	0.0	39.2	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
16.000	7	23.227	-1.347	0.000	0.00	0.0	1.7	OK
14.003	8	22.642	-0.561	0.000	0.06	0.0	40.6	OK*
17.000	22	22.711	-0.189	0.000	0.28	0.0	16.9	OK
17.001	23	22.621	-0.144	0.000	0.52	0.0	30.4	OK
18.000	64	23.023	-0.852	0.000	0.00	0.0	13.3	OK
17.002	64	22.478	-0.179	0.000	0.54	0.0	42.7	OK
17.003	61	22.420	-0.211	0.000	0.38	0.0	40.7	OK
14.004	63	22.344	-0.075	0.000	1.00	0.0	76.4	OK
14.005	68	22.110	-1.728	0.000	0.00	0.0	87.0	OK
14.006	55	21.731	-0.088	0.000	0.93	0.0	99.9	OK*
7.010	3	21.460	-1.064	0.000	0.04	0.0	292.9	OK
19.000	33	21.851	-0.250	0.000	0.23	0.0	36.2	OK
19.001	34	21.347	-0.286	0.000	0.29	0.0	67.3	OK
7.011	4	20.992	-0.165	0.000	0.02	0.0	7.8	OK
1.010	53	20.184	-0.555	0.000	0.04	0.0	56.0	OK
20.000	62	20.168	-0.184	0.000	0.31	0.0	23.3	OK
20.001	63	19.873	-0.296	0.000	0.25	0.0	43.2	OK
1.011	64	19.408	-0.513	0.000	0.08	0.0	85.3	OK
1.012	73	19.271	-0.507	0.000	0.08	0.0	83.3	OK
21.000	74	20.020	-0.169	0.000	0.38	0.0	22.6	OK
21.001	75	19.850	-0.341	0.000	0.13	0.0	42.0	OK
1.013	76	19.164	-0.470	0.000	0.16	0.0	108.6	OK
22.000	391	21.007	-0.890	0.000	0.00	0.0	2.7	OK
23.000	59	21.118	-0.254	0.000	0.22	0.0	33.8	OK
23.001	60	20.647	-0.231	0.000	0.43	0.0	70.6	OK
22.001	389	20.626	-1.064	0.000	0.01	0.0	78.8	OK
22.002	83	20.620	0.000	0.000	1.02	0.0	69.7	OK*
24.000	58	20.888	-1.576	0.000	0.00	0.0	6.4	OK
24.001	61	20.560	-0.172	0.000	0.38	0.0	23.2	OK*
22.003	392	20.320	-1.186	0.000	0.01	0.0	96.2	OK
25.000	70	20.466	-0.149	0.000	0.49	0.0	28.6	OK
25.001	71	20.235	-0.267	0.000	0.34	0.0	52.8	OK
22.004	395	20.119	-1.211	0.000	0.01	0.0	143.4	OK
22.005	393	20.106	-0.145	0.000	0.80	0.0	144.3	OK*
26.000	68	20.290	-1.510	0.000	0.00	0.0	0.0	OK
26.001	72	19.747	-0.232	0.000	0.01	0.0	0.3	OK*
22.006	397	19.747	-1.428	0.000	0.01	0.0	148.8	OK
27.000	77	20.266	-0.253	0.000	0.23	0.0	37.9	OK
27.001	78	20.159	-0.181	0.000	0.53	0.0	54.5	OK
22.007	93	19.660	-0.154	0.000	0.05	0.0	5.0	OK*
1.014	81	19.113	-0.508	0.000	0.10	0.0	115.4	OK
1.015	79	18.751	-0.495	0.000	0.11	0.0	113.5	OK
28.000	365	22.504	-0.858	0.000	0.00	0.0	1.7	OK
29.000	55	22.698	-0.176	0.000	0.35	0.0	29.6	OK
29.001	56	22.347	-0.184	0.000	0.51	0.0	54.9	OK
29.002	62	22.264	-0.196	0.000	0.46	0.0	54.7	OK
28.001	86	22.046	-0.886	0.000	0.01	0.0	56.0	OK
28.002	366	21.950	-0.077	0.000	0.90	0.0	55.1	OK*
30.000	54	22.641	-1.498	0.000	0.00	0.0	0.0	OK
30.001	57	21.989	-0.199	0.000	0.25	0.0	18.6	OK
28.003	367	21.720	-0.819	0.000	0.01	0.0	72.3	OK
31.000	66	21.580	-0.258	0.000	0.21	0.0	29.4	OK
31.001	67	21.393	-0.272	0.000	0.32	0.0	54.9	OK
31.002	68	21.304	-0.276	0.000	0.32	0.0	55.2	OK
28.004	87	21.131	-1.266	0.000	0.01	0.0	125.1	OK
28.005	368	21.106	-0.197	0.000	0.61	0.0	120.6	OK*
32.000	65	22.327	-1.348	0.000	0.00	0.0	0.0	OK
32.001	69	21.771	-0.198	0.000	0.25	0.0	19.2	OK
28.006	369	20.802	-1.446	0.000	0.01	0.0	138.0	OK
33.000	80	21.533	-0.187	0.000	0.30	0.0	28.8	OK
33.001	81	21.116	-0.220	0.000	0.35	0.0	53.6	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
28.007	93	20.645	-1.591	0.000	0.01	0.0	183.3	OK
34.000	82	21.135	-0.195	0.000	0.25	0.0	21.9	OK
34.001	83	20.552	-0.237	0.000	0.29	0.0	40.7	OK
34.002	99	20.393	-0.236	0.000	0.29	0.0	40.5	OK
34.003	96	20.163	-1.925	0.000	0.00	0.0	40.6	OK
28.008	90	20.162	-0.061	0.000	0.02	0.0	5.2	OK
1.016	85	18.615	-0.483	0.000	0.13	0.0	111.7	OK
1.017	84	18.549	-0.497	0.000	0.10	0.0	113.9	OK
35.000	85	21.719	-0.090	0.000	0.33	0.0	15.7	OK
1.018	86	18.346	-0.498	0.000	0.11	0.0	120.1	OK
36.000	1	22.899	-1.301	0.000	0.00	0.0	12.3	OK
36.001	134	22.462	-1.309	0.000	0.00	0.0	27.5	OK
36.002	2	22.101	-0.129	0.000	0.61	0.0	37.5	OK*
1.019	92	18.303	-0.473	0.000	0.14	0.0	140.6	OK
1.020	87	18.191	-0.482	0.000	0.13	0.0	142.5	OK
1.021	88	17.948	-0.482	0.000	0.13	0.0	140.7	OK
1.022	91	17.792	-0.474	0.000	0.12	0.0	139.5	OK
37.000	94	23.414	-0.197	0.000	0.41	0.0	43.7	OK
37.001	95	23.385	-0.228	0.000	0.48	0.0	81.2	OK
37.002	96	23.255	-0.269	0.000	0.34	0.0	81.2	OK
38.000	89	23.464	-0.324	0.000	0.17	0.0	60.1	OK
38.001	90	22.844	-0.141	0.000	0.80	0.0	110.2	OK
37.003	145	22.659	-0.250	0.000	0.03	0.0	5.0	OK
1.023	92	17.727	-0.478	0.000	0.16	0.0	144.4	OK
1.024	93	17.671	-0.493	0.000	0.11	0.0	147.2	OK
39.000	97	21.892	-0.258	0.000	0.13	0.0	12.5	OK
39.001	98	21.867	-0.222	0.000	0.28	0.0	23.3	OK
39.002	99	21.846	-0.285	0.000	0.28	0.0	52.0	OK
39.003	100	21.573	-0.280	0.000	0.31	0.0	51.8	OK
40.000	102	21.650	-0.268	0.000	0.47	0.0	131.9	OK
40.001	103	21.461	-0.271	0.000	0.47	0.0	129.4	OK
39.004	151	21.276	-0.101	0.000	0.06	0.0	5.0	OK
1.025	101	17.521	-0.489	0.000	0.12	0.0	151.2	OK
1.026	104	17.387	-0.484	0.000	0.12	0.0	150.1	OK
1.027	105	17.277	-0.487	0.000	0.12	0.0	149.7	OK
41.000	106	22.107	-0.256	0.000	0.38	0.0	124.9	OK
41.001	107	21.725	-0.421	0.000	0.19	0.0	223.3	OK
41.002	108	19.271	-0.267	0.000	0.04	0.0	14.4	OK
1.028	109	17.154	-0.486	0.000	0.12	0.0	163.3	OK
1.029	110	16.999	-0.481	0.000	0.13	0.0	162.3	OK
42.000	1	24.322	-1.278	0.000	0.00	0.0	16.9	OK
42.001	2	24.165	-1.235	0.000	0.00	0.0	30.4	OK
42.002	3	23.482	-1.518	0.000	0.00	0.0	49.0	OK
42.003	4	23.131	-0.169	0.000	0.39	0.0	60.3	OK*
42.004	5	22.347	-1.453	0.000	0.00	0.0	63.2	OK
42.005	6	20.073	-0.098	0.000	0.79	0.0	71.4	OK*
1.030	111	16.876	-0.471	0.000	0.14	0.0	168.8	OK
43.000	112	20.221	-0.140	0.000	0.50	0.0	28.7	OK
43.001	113	20.167	-0.188	0.000	0.48	0.0	51.2	OK
43.002	114	19.875	-0.277	0.000	0.15	0.0	51.3	OK
43.003	115	18.898	-0.213	0.000	0.02	0.0	5.0	OK
1.031	116	16.773	-0.467	0.000	0.21	0.0	174.4	OK
1.032	117	16.654	-0.550	0.000	0.06	0.0	174.4	OK
44.000	118	22.112	-0.225	0.000	0.00	0.0	0.0	OK
44.001	121	21.483	-0.345	0.000	0.12	0.0	18.5	OK
45.000	119	22.008	-0.286	0.000	0.28	0.0	58.2	OK
45.001	120	21.758	-0.209	0.000	0.55	0.0	106.2	OK
46.000	122	22.518	-0.311	0.000	0.20	0.0	52.5	OK
46.001	123	22.105	-0.253	0.000	0.39	0.0	96.7	OK
45.002	177	21.588	-0.247	0.000	0.02	0.0	5.0	OK
44.002	177	21.364	-0.344	0.000	0.13	0.0	20.4	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
44.003	122	21.279	-0.347	0.000	0.12	0.0	20.1	OK
44.004	124	21.159	-0.303	0.000	0.23	0.0	37.9	OK
47.000	125	22.964	-1.350	0.000	0.00	0.0	0.0	OK
47.001	126	22.693	-1.765	0.000	0.00	0.0	5.1	OK
47.002	127	22.350	-1.931	0.000	0.00	0.0	11.0	OK
47.003	143	22.135	-0.124	0.000	0.41	0.0	16.6	OK
48.000	128	22.980	-0.910	0.000	0.01	0.0	34.0	OK
48.001	129	22.891	-1.006	0.000	0.01	0.0	41.1	OK
48.002	130	22.803	-0.966	0.000	0.01	0.0	46.9	OK
48.003	131	22.714	-1.477	0.000	0.01	0.0	51.2	OK
48.004	132	22.674	-1.433	0.000	0.01	0.0	51.2	OK
48.005	133	22.535	-1.458	0.000	0.00	0.0	51.0	OK
47.004	134	21.700	-0.213	0.000	0.39	0.0	61.4	OK
44.005	135	20.939	-0.396	0.000	0.25	0.0	91.1	OK
49.000	136	22.910	-0.990	0.000	0.00	0.0	16.5	OK
49.001	137	22.442	-0.947	0.000	0.01	0.0	37.9	OK
49.002	138	22.416	-0.955	0.000	0.01	0.0	37.7	OK
49.003	139	22.382	-0.952	0.000	0.01	0.0	38.0	OK
49.004	140	22.337	-0.943	0.000	0.01	0.0	46.2	OK
49.005	141	22.143	-0.206	0.000	0.22	0.0	54.4	OK
44.006	142	20.624	-0.454	0.000	0.19	0.0	136.0	OK
44.007	143	20.550	-0.448	0.000	0.22	0.0	135.6	OK
44.008	144	20.506	-0.445	0.000	0.16	0.0	133.6	OK
50.000	145	21.734	-0.251	0.000	0.24	0.0	56.2	OK
50.001	146	21.167	-0.240	0.000	0.03	0.0	8.2	OK
51.000	1	21.882	-1.000	0.000	0.00	0.0	21.4	OK
51.001	2	21.087	-0.163	0.000	0.42	0.0	21.6	OK
51.002	3	21.006	-1.411	0.000	0.00	0.0	34.8	OK
51.003	4	20.798	-0.126	0.000	0.63	0.0	34.9	OK
44.009	147	20.423	-0.342	0.000	0.39	0.0	152.4	OK
44.010	148	20.253	-0.499	0.000	0.11	0.0	152.5	OK
52.000	149	21.523	-0.209	0.000	0.20	0.0	28.3	OK
52.001	150	20.724	-0.244	0.000	0.02	0.0	2.8	OK
53.000	1	21.211	-1.013	0.000	0.00	0.0	14.2	OK
53.001	2	20.491	-0.228	0.000	0.13	0.0	14.0	OK
44.011	151	19.745	-0.509	0.000	0.10	0.0	164.9	OK
44.012	152	19.168	-0.501	0.000	0.11	0.0	173.5	OK
44.013	153	18.601	-0.513	0.000	0.10	0.0	173.7	OK
44.014	154	17.951	-0.444	0.000	0.21	0.0	173.4	OK
44.015	155	16.836	-0.504	0.000	0.14	0.0	173.6	OK
54.000	1	19.156	-1.308	0.000	0.00	0.0	16.4	OK
54.001	2	18.383	-0.206	0.000	0.21	0.0	16.2	OK*
54.002	3	18.255	-1.445	0.000	0.00	0.0	28.9	OK
54.003	4	18.071	-0.153	0.000	0.47	0.0	29.1	OK*
54.004	5	17.936	-1.574	0.000	0.00	0.0	34.2	OK
54.005	6	17.435	-0.184	0.000	0.32	0.0	34.2	OK*
54.006	7	17.231	-1.609	0.000	0.00	0.0	60.6	OK
54.007	8	17.047	-1.580	0.000	0.00	0.0	60.6	OK
54.008	9	16.792	-0.164	0.000	0.42	0.0	60.4	OK
1.033	156	16.099	-0.479	0.000	0.23	0.0	330.5	OK
1.034	157	15.945	-0.491	0.000	0.15	0.0	337.0	OK
1.035	158	15.628	-0.467	0.000	0.17	0.0	336.3	OK
55.000	159	17.457	-1.036	0.000	0.00	0.0	4.0	OK
55.001	160	16.301	-0.234	0.000	0.11	0.0	20.2	OK
1.036	161	15.435	-0.377	0.000	0.41	0.0	341.5	OK
1.037	162	15.395	-0.388	0.000	0.42	0.0	342.3	OK
56.000	1	15.825	-0.932	0.000	0.01	0.0	25.0	OK
56.001	2	15.781	-0.181	0.000	0.33	0.0	24.2	OK*
1.038	173	15.350	-0.376	0.000	0.26	0.0	348.2	OK
57.000	163	16.236	-0.943	0.000	0.01	0.0	37.7	OK
57.001	164	16.099	-0.913	0.000	0.01	0.0	42.7	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
57.002	165	16.085	-0.899	0.000	0.02	0.0	41.2	OK
57.003	166	16.034	-0.596	0.000	0.03	0.0	44.1	OK
57.004	167	15.981	-0.452	0.000	0.06	0.0	45.2	OK
57.005	168	15.913	-1.329	0.000	0.01	0.0	47.6	OK
58.000	244	15.615	-2.738	0.000	0.00	0.0	15.8	OK
58.001	245	15.545	-0.245	0.000	0.43	0.0	15.7	OK*
57.006	169	15.437	-1.213	0.000	0.01	0.0	46.3	OK
57.007	170	15.400	-0.766	0.000	0.01	0.0	39.4	OK
57.008	246	15.395	-0.183	0.000	0.66	0.0	38.0	OK*
1.039	174	15.287	-0.846	0.000	0.05	0.0	381.9	OK
59.000	175	15.112	-0.188	0.000	0.28	0.0	15.0	OK
59.001	176	15.109	-0.139	0.000	0.06	0.0	2.8	OK
60.000	177	15.327	-0.123	0.000	0.07	0.0	1.0	OK
59.002	178	15.108	-0.109	0.000	0.04	0.0	2.1	OK
1.040	179	15.207	-0.831	0.000	0.07	0.0	365.9	OK
61.000	180	15.027	-0.148	0.000	0.66	0.0	61.8	OK
61.001	181	15.022	-0.098	0.000	0.05	0.0	4.6	OK
1.041	182	15.032	-0.796	0.000	0.07	0.0	342.8	OK
1.042	183	14.905	-0.787	0.000	0.08	0.0	339.6	OK
1.043	184	14.783	-0.850	0.000	0.05	0.0	340.0	OK
62.000	185	17.331	-0.177	0.000	0.66	0.0	151.3	OK
62.001	186	17.075	-0.118	0.000	0.06	0.0	8.4	OK
63.000	187	18.223	-0.130	0.000	0.37	0.0	29.6	OK
62.002	188	16.060	-0.275	0.000	0.16	0.0	34.5	OK
62.003	189	15.423	-0.294	0.000	0.26	0.0	53.4	OK
62.004	190	15.261	-0.301	0.000	0.24	0.0	53.9	OK
62.005	191	15.109	-0.293	0.000	0.26	0.0	52.9	OK
62.006	192	14.857	-0.306	0.000	0.22	0.0	51.9	OK
64.000	193	15.704	-1.002	0.000	0.00	0.0	9.3	OK
64.001	194	15.626	-0.984	0.000	0.00	0.0	17.8	OK
64.002	195	15.521	-0.970	0.000	0.01	0.0	25.5	OK
64.003	196	15.392	-0.956	0.000	0.01	0.0	34.6	OK
64.004	197	15.268	-0.946	0.000	0.01	0.0	42.0	OK
64.005	198	15.084	-0.074	0.000	0.92	0.0	50.2	OK
62.007	199	14.663	-0.182	0.000	0.66	0.0	101.3	OK
65.000	200	17.108	-0.100	0.000	0.94	0.0	128.2	OK
65.001	201	16.894	-0.272	0.000	0.04	0.0	7.8	OK
66.000	202	19.564	-0.159	0.000	0.19	0.0	12.3	OK
66.001	203	19.160	-0.180	0.000	0.33	0.0	30.3	OK
66.002	204	18.869	-0.207	0.000	0.21	0.0	33.9	OK
66.003	205	17.823	-0.207	0.000	0.21	0.0	39.7	OK
65.002	206	16.664	-0.349	0.000	0.11	0.0	48.0	OK
65.003	207	15.280	-0.331	0.000	0.16	0.0	61.9	OK
65.004	212	14.810	-0.301	0.000	0.24	0.0	61.7	OK
65.005	213	14.542	-0.237	0.000	0.45	0.0	61.5	OK
67.000	1	15.794	-0.988	0.000	0.00	0.0	20.8	OK
67.001	2	15.045	-0.151	0.000	0.33	0.0	20.4	OK*
67.002	3	15.041	-1.055	0.000	0.01	0.0	28.4	OK
67.003	4	15.025	-0.105	0.000	0.75	0.0	36.2	OK
62.008	214	14.442	-0.296	0.000	0.22	0.0	130.9	OK
62.009	215	14.408	-0.259	0.000	0.23	0.0	128.4	OK
62.010	216	14.382	-0.234	0.000	0.31	0.0	126.4	OK
1.044	217	14.376	-1.287	0.000	0.05	0.0	387.7	OK
1.045	218	14.327	-1.114	0.000	0.05	0.0	386.2	OK
1.046	222	14.223	-0.787	0.000	0.09	0.0	383.1	OK
1.047	223	14.203	-0.854	0.000	0.07	0.0	382.3	OK
1.048	224	14.099	-0.877	0.000	0.09	0.0	380.9	OK
1.049	228	14.066	-0.434	0.000	0.19	0.0	380.4	OK
68.000	225	15.220	-0.155	0.000	0.64	0.0	65.5	OK
69.000	219	15.271	-0.104	0.000	0.86	0.0	64.8	OK
69.001	221	14.922	-0.405	0.000	0.23	0.0	118.0	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
68.001	227	14.404	-0.422	0.000	0.02	0.0	13.5	OK
1.050	304	13.948	-0.552	0.000	0.12	0.0	393.0	OK
1.051	229	13.843	-0.653	0.000	0.10	0.0	393.2	OK
1.052	230	13.756	-0.645	0.000	0.08	0.0	393.2	OK
1.053	231	13.728	-0.693	0.000	0.08	0.0	393.1	OK
1.054	232	13.686	-0.820	0.000	0.06	0.0	392.9	OK
1.055	233	13.586	-0.957	0.000	0.05	0.0	392.9	OK
1.056	234	13.476	-1.048	0.000	0.04	0.0	393.0	OK
1.057	235	13.382	-1.618	0.000	0.02	0.0	393.6	OK
70.000	1	21.094	-0.157	0.000	0.19	0.0	9.4	OK
70.001	2	20.740	-0.240	0.000	0.09	0.0	14.5	OK
71.000	26	21.635	-0.103	0.000	0.55	0.0	26.3	OK
71.001	27	21.305	-0.197	0.000	0.25	0.0	26.6	OK
72.000	31	21.252	-0.132	0.000	0.61	0.0	39.2	OK
72.001	315	21.224	-0.131	0.000	0.75	0.0	39.3	OK
73.000	33	21.079	-0.173	0.000	0.46	0.0	21.3	OK
73.001	34	21.054	-0.180	0.000	0.53	0.0	21.3	OK
72.002	316	21.022	-0.121	0.000	0.09	0.0	4.9	OK
71.002	28	20.931	-0.166	0.000	0.41	0.0	33.8	OK
71.003	29	20.651	-0.284	0.000	0.13	0.0	39.8	OK
71.004	30	20.135	-0.180	0.000	0.52	0.0	39.9	OK
70.002	3	20.004	-0.242	0.000	0.27	0.0	56.1	OK
70.003	4	19.447	-0.231	0.000	0.31	0.0	65.3	OK
74.000	35	20.017	-0.241	0.000	0.27	0.0	76.1	OK
74.001	325	19.510	-0.238	0.000	0.28	0.0	75.3	OK
70.004	5	19.089	-0.151	0.000	0.77	0.0	137.1	OK
75.000	36	20.832	-0.100	0.000	0.24	0.0	3.3	OK
76.000	41	22.001	-0.304	0.000	0.08	0.0	11.5	OK
76.001	42	21.835	-0.256	0.000	0.05	0.0	11.3	OK
77.000	44	21.665	-0.291	0.000	0.26	0.0	48.9	OK
77.001	45	21.447	-0.268	0.000	0.34	0.0	48.1	OK
77.002	46	21.401	-0.273	0.000	0.29	0.0	47.2	OK
78.000	54	21.762	-0.285	0.000	0.13	0.0	22.9	OK
78.001	55	21.468	-0.291	0.000	0.11	0.0	22.8	OK
77.003	47	21.328	-0.141	0.000	0.68	0.0	65.0	OK
79.000	49	22.754	-0.200	0.000	0.43	0.0	53.4	OK
79.001	50	22.614	-0.124	0.000	0.65	0.0	53.8	OK
79.002	51	22.426	-0.193	0.000	0.28	0.0	53.6	OK
80.000	52	22.106	-0.239	0.000	0.09	0.0	7.4	OK
80.001	53	21.886	-0.243	0.000	0.08	0.0	13.3	OK
77.004	48	21.272	-0.062	0.000	1.00	0.0	128.5	OK
76.002	43	21.041	-0.257	0.000	0.02	0.0	5.7	OK
75.001	37	20.382	-0.355	0.000	0.10	0.0	19.5	OK
75.002	38	20.193	-0.396	0.000	0.14	0.0	27.1	OK
75.003	39	20.124	-0.422	0.000	0.09	0.0	27.0	OK
75.004	40	19.897	-0.450	0.000	0.05	0.0	38.4	OK
70.005	6	18.659	-0.482	0.000	0.13	0.0	179.3	OK
70.006	7	18.447	-0.462	0.000	0.15	0.0	172.4	OK
70.007	8	18.370	-0.407	0.000	0.25	0.0	189.8	OK
81.000	58	19.995	-0.232	0.000	0.12	0.0	7.0	OK
82.000	62	20.248	-0.227	0.000	0.32	0.0	46.0	OK
82.001	63	20.060	-0.283	0.000	0.13	0.0	46.4	OK
83.000	67	20.634	-0.266	0.000	0.03	0.0	5.3	OK
84.000	56	19.822	-0.433	0.000	0.05	0.0	20.9	OK
84.001	57	19.814	-0.114	0.000	0.08	0.0	34.0	OK
83.001	68	19.769	0.301	0.000	0.31	0.0	33.8	SURCHARGED
82.002	64	19.701	0.318	0.000	0.22	0.0	49.5	SURCHARGED
85.000	69	20.516	-0.176	0.000	0.35	0.0	38.8	OK
85.001	70	20.311	-0.188	0.000	0.29	0.0	38.4	OK
82.003	65	19.600	0.384	0.000	0.46	0.0	70.1	SURCHARGED
82.004	66	19.542	0.407	0.000	0.03	0.0	5.7	SURCHARGED

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
81.001	59	18.666	-0.364	0.000	0.08	0.0	12.5	OK
81.002	60	18.612	-0.356	0.000	0.10	0.0	14.3	OK
81.003	61	18.539	-0.367	0.000	0.08	0.0	16.3	OK
70.008	9	18.354	-0.398	0.000	0.31	0.0	212.6	OK
70.009	10	18.303	-2.759	0.000	0.00	0.0	215.2	OK
70.010	11	17.812	-0.302	0.000	0.23	0.0	216.7	OK*
70.011	12	17.800	-2.430	0.000	0.01	0.0	216.2	OK
70.012	13	17.314	-0.294	0.000	0.23	0.0	217.9	OK*
70.013	14	17.302	-1.979	0.000	0.01	0.0	218.0	OK
70.014	15	17.257	-0.296	0.000	0.23	0.0	216.1	OK*
70.015	16	17.244	-1.026	0.000	0.04	0.0	218.0	OK
86.000	208	16.204	-0.184	0.000	0.31	0.0	53.6	OK
86.001	209	15.842	-0.078	0.000	0.89	0.0	53.6	OK
87.000	73	18.819	-0.233	0.000	0.30	0.0	61.1	OK
88.000	71	20.086	-0.256	0.000	0.21	0.0	22.4	OK
88.001	72	19.973	-0.296	0.000	0.10	0.0	21.9	OK
87.001	75	18.521	-0.257	0.000	0.22	0.0	82.5	OK
86.002	379	15.672	-0.180	0.000	0.09	0.0	8.8	OK
70.016	17	15.490	-0.502	0.000	0.15	0.0	226.9	OK
89.000	76	18.997	-0.241	0.000	0.08	0.0	9.8	OK
89.001	77	18.286	-0.211	0.000	0.19	0.0	23.8	OK
90.000	82	20.190	-0.290	0.000	0.27	0.0	107.7	OK
90.001	83	19.841	0.014	0.000	0.01	0.0	6.3	SURCHARGED
90.002	84	18.644	-0.393	0.000	0.04	0.0	17.4	OK
89.002	78	17.841	-0.309	0.000	0.21	0.0	69.7	OK
89.003	79	17.293	-0.293	0.000	0.26	0.0	69.9	OK
91.000	85	19.469	-0.121	0.000	0.08	0.0	2.6	OK
92.000	87	19.288	-0.162	0.000	0.60	0.0	67.6	OK
92.001	88	19.128	-0.208	0.000	0.03	0.0	6.1	OK
91.001	86	18.095	-0.394	0.000	0.04	0.0	15.0	OK
89.004	80	17.103	-0.260	0.000	0.37	0.0	108.2	OK
89.005	316	16.862	-0.237	0.000	0.46	0.0	108.0	OK
93.000	89	17.870	-0.222	0.000	0.35	0.0	80.9	OK
93.001	90	17.392	-0.112	0.000	0.03	0.0	5.0	OK
89.006	81	16.281	-0.554	0.000	0.04	0.0	123.4	OK
70.017	18	15.434	-0.284	0.000	0.31	0.0	315.8	OK
70.018	19	15.414	-1.266	0.000	0.04	0.0	315.7	OK
70.019	20	15.381	-1.069	0.000	0.06	0.0	313.3	OK
70.020	21	15.352	-0.894	0.000	0.07	0.0	312.3	OK
70.021	22	15.242	-0.324	0.000	0.44	0.0	302.8	OK
70.022	23	15.218	-0.320	0.000	0.23	0.0	298.7	OK
70.023	24	15.190	-0.510	0.000	0.20	0.0	297.9	OK
94.000	3	15.815	-0.125	0.000	0.63	0.0	57.7	OK
94.001	2	15.633	-0.124	0.000	0.07	0.0	7.8	OK
95.000	1	17.405	-0.160	0.000	0.44	0.0	52.6	OK
95.001	2	17.113	-0.119	0.000	0.03	0.0	5.7	OK
95.002	3	15.860	-0.242	0.000	0.08	0.0	5.7	OK
95.003	3	15.735	-1.465	0.000	0.00	0.0	5.7	OK
95.004	5	15.254	-0.895	0.000	0.00	0.0	5.7	OK
94.002	4	14.837	-1.459	0.000	0.00	0.0	13.5	OK
1.058	236	13.363	-1.686	0.000	0.01	0.0	207.5	OK
1.059	237	13.356	-0.376	0.000	0.24	0.0	54.0	OK

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

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%					
1.001	15 Winter	30	0%					
2.000	15 Winter	30	0%	30/15 Winter				
2.001	15 Winter	30	0%	30/15 Summer				
1.002	15 Winter	30	0%	30/15 Summer				
1.003	15 Winter	30	0%	30/15 Summer				
1.004	15 Winter	30	0%					
1.005	15 Winter	30	0%	100/15 Winter				
1.006	600 Winter	30	0%	100/360 Winter				
3.000	15 Winter	30	0%	100/15 Summer				
3.001	15 Winter	30	0%	100/15 Summer				
4.000	15 Winter	30	0%	100/15 Summer				
4.001	15 Winter	30	0%	100/15 Summer				
4.002	15 Winter	30	0%	100/15 Summer				
3.002	15 Winter	30	0%	100/15 Summer				
5.000	15 Winter	30	0%	100/15 Summer				
5.001	15 Winter	30	0%	100/15 Summer				
3.003	15 Winter	30	0%	100/15 Summer				
3.004	15 Winter	30	0%	30/15 Summer				
1.007	600 Winter	30	0%	100/60 Winter				
6.000	15 Winter	30	0%					
6.001	15 Winter	30	0%					
6.002	15 Winter	30	0%					
6.003	15 Winter	30	0%					
6.004	15 Winter	30	0%					
6.005	15 Winter	30	0%	30/15 Summer				
6.006	15 Winter	30	0%					
6.007	15 Winter	30	0%	30/15 Summer				
1.008	15 Winter	30	0%					
1.009	15 Winter	30	0%					
7.000	15 Winter	30	0%	100/15 Summer				
7.001	15 Winter	30	0%	100/15 Summer				
7.002	15 Winter	30	0%					
8.000	15 Winter	30	0%	100/15 Summer				
8.001	15 Winter	30	0%	100/15 Summer				
9.000	15 Winter	30	0%	100/15 Summer				
9.001	15 Winter	30	0%	100/15 Summer				
8.002	15 Winter	30	0%	100/15 Summer				
7.003	15 Winter	30	0%	30/15 Summer				
7.004	15 Winter	30	0%					
7.005	15 Winter	30	0%	30/15 Summer				
7.006	15 Winter	30	0%					
10.000	15 Winter	30	0%	30/15 Summer				
10.001	15 Winter	30	0%	30/15 Summer				
7.007	15 Winter	30	0%					
11.000	15 Winter	30	0%					
11.001	15 Winter	30	0%					
12.000	15 Winter	30	0%	30/15 Summer				
12.001	15 Winter	30	0%	30/15 Summer				
12.002	15 Winter	30	0%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
12.003	15 Winter	30	0%	30/15 Summer				
11.002	15 Winter	30	0%					
11.003	15 Winter	30	0%	30/15 Summer				
7.008	15 Winter	30	0%					
13.000	15 Winter	30	0%	100/15 Summer				
13.001	15 Winter	30	0%	30/15 Summer				
7.009	15 Winter	30	0%					
14.000	15 Winter	30	0%	30/15 Summer				
14.001	15 Winter	30	0%	30/15 Summer				
15.000	15 Winter	30	0%					
14.002	15 Winter	30	0%					
16.000	15 Winter	30	0%					
14.003	15 Winter	30	0%					
17.000	15 Winter	30	0%	30/15 Summer				
17.001	15 Winter	30	0%	30/15 Summer				
18.000	15 Winter	30	0%					
17.002	15 Winter	30	0%	30/15 Summer				
17.003	15 Winter	30	0%	30/15 Summer				
14.004	15 Winter	30	0%	30/15 Summer				
14.005	15 Winter	30	0%					
14.006	15 Winter	30	0%	30/15 Summer				
7.010	15 Winter	30	0%					
19.000	15 Winter	30	0%	100/15 Summer				
19.001	15 Winter	30	0%	100/15 Summer				
7.011	720 Winter	30	0%	30/60 Winter				
1.010	15 Winter	30	0%					
20.000	15 Winter	30	0%	100/15 Summer				
20.001	15 Winter	30	0%	100/15 Summer				
1.011	15 Winter	30	0%					
1.012	15 Winter	30	0%					
21.000	15 Winter	30	0%	100/15 Summer				
21.001	15 Winter	30	0%					
1.013	15 Winter	30	0%					
22.000	15 Winter	30	0%					
23.000	15 Winter	30	0%	100/15 Summer				
23.001	15 Winter	30	0%	30/15 Summer				
22.001	15 Winter	30	0%					
22.002	15 Winter	30	0%	30/15 Summer				
24.000	15 Winter	30	0%					
24.001	15 Winter	30	0%	100/15 Summer				
22.003	15 Winter	30	0%					
25.000	15 Winter	30	0%	30/15 Summer				
25.001	15 Winter	30	0%	100/15 Summer				
22.004	15 Winter	30	0%					
22.005	15 Winter	30	0%	30/15 Summer				
26.000	360 Winter	30	0%					
26.001	600 Winter	30	0%	100/30 Winter				
22.006	600 Winter	30	0%					
27.000	15 Winter	30	0%	30/15 Summer				
27.001	15 Winter	30	0%	30/15 Summer				
22.007	600 Winter	30	0%	30/60 Winter				
1.014	15 Winter	30	0%					
1.015	15 Winter	30	0%					
28.000	15 Winter	30	0%					
29.000	15 Winter	30	0%	100/15 Summer				
29.001	15 Winter	30	0%	30/15 Summer				
29.002	15 Summer	30	0%	30/15 Summer				
28.001	15 Winter	30	0%					
28.002	15 Winter	30	0%	30/15 Summer				
30.000	15 Winter	30	0%					
30.001	15 Winter	30	0%	100/15 Summer				
28.003	15 Winter	30	0%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
31.000	15 Winter	30	0%	100/15 Summer				
31.001	15 Winter	30	0%	100/15 Summer				
31.002	15 Winter	30	0%	100/15 Summer				
28.004	15 Winter	30	0%					
28.005	15 Winter	30	0%	30/15 Summer				
32.000	15 Winter	30	0%					
32.001	15 Winter	30	0%					
28.006	15 Winter	30	0%					
33.000	15 Winter	30	0%	100/15 Summer				
33.001	15 Winter	30	0%	100/15 Summer				
28.007	15 Winter	30	0%					
34.000	15 Winter	30	0%	100/15 Summer				
34.001	15 Winter	30	0%	100/15 Summer				
34.002	15 Winter	30	0%	100/15 Summer				
34.003	960 Winter	30	0%					
28.008	960 Winter	30	0%	30/30 Winter				
1.016	15 Winter	30	0%					
1.017	30 Winter	30	0%					
35.000	15 Winter	30	0%	100/15 Summer				
1.018	30 Winter	30	0%					
36.000	15 Winter	30	0%					
36.001	15 Winter	30	0%					
36.002	15 Winter	30	0%	30/15 Summer				
1.019	30 Winter	30	0%					
1.020	30 Winter	30	0%					
1.021	30 Winter	30	0%					
1.022	30 Winter	30	0%					
37.000	15 Winter	30	0%	30/15 Summer				
37.001	15 Winter	30	0%	30/15 Summer				
37.002	15 Winter	30	0%	100/15 Summer				
38.000	15 Winter	30	0%	100/15 Summer				
38.001	15 Winter	30	0%	30/15 Summer				
37.003	480 Winter	30	0%	30/120 Winter				
1.023	30 Winter	30	0%					
1.024	30 Winter	30	0%					
39.000	15 Winter	30	0%	100/15 Summer				
39.001	15 Winter	30	0%	100/15 Summer				
39.002	15 Winter	30	0%	100/15 Summer				
39.003	15 Winter	30	0%	100/15 Summer				
40.000	15 Winter	30	0%	30/15 Summer				
40.001	15 Winter	30	0%	30/15 Winter				
39.004	480 Winter	30	0%	30/30 Winter				
1.025	30 Winter	30	0%					
1.026	30 Winter	30	0%					
1.027	30 Winter	30	0%					
41.000	15 Winter	30	0%	100/15 Summer				
41.001	15 Winter	30	0%					
41.002	180 Winter	30	0%	30/60 Winter				
1.028	30 Winter	30	0%					
1.029	60 Winter	30	0%					
42.000	15 Winter	30	0%					
42.001	15 Winter	30	0%					
42.002	15 Winter	30	0%					
42.003	15 Winter	30	0%	30/15 Winter				
42.004	15 Winter	30	0%					
42.005	15 Winter	30	0%	30/15 Summer				
1.030	60 Winter	30	0%					
43.000	15 Winter	30	0%	30/15 Summer				
43.001	15 Winter	30	0%	30/15 Summer				
43.002	15 Winter	30	0%					
43.003	120 Winter	30	0%	30/30 Winter				
1.031	60 Winter	30	0%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.032	60 Winter	30	0%					
44.000	360 Winter	30	0%					
44.001	15 Winter	30	0%					
45.000	15 Winter	30	0%	100/15 Summer				
45.001	15 Winter	30	0%	30/15 Summer				
46.000	15 Winter	30	0%	100/15 Summer				
46.001	15 Winter	30	0%	100/15 Summer				
45.002	600 Winter	30	0%	30/180 Winter				
44.002	15 Winter	30	0%					
44.003	15 Winter	30	0%					
44.004	15 Winter	30	0%					
47.000	360 Winter	30	0%					
47.001	15 Winter	30	0%					
47.002	15 Winter	30	0%					
47.003	15 Winter	30	0%	30/15 Summer				
48.000	15 Winter	30	0%					
48.001	15 Winter	30	0%					
48.002	15 Winter	30	0%					
48.003	15 Winter	30	0%					
48.004	15 Winter	30	0%					
48.005	15 Winter	30	0%					
47.004	15 Winter	30	0%	100/15 Summer				
44.005	15 Winter	30	0%					
49.000	15 Winter	30	0%					
49.001	15 Winter	30	0%					
49.002	15 Winter	30	0%					
49.003	15 Winter	30	0%					
49.004	15 Winter	30	0%					
49.005	15 Winter	30	0%					
44.006	15 Winter	30	0%					
44.007	15 Winter	30	0%					
44.008	15 Winter	30	0%					
50.000	15 Winter	30	0%					
50.001	180 Winter	30	0%	30/120 Winter				
51.000	15 Winter	30	0%					
51.001	15 Winter	30	0%	100/15 Summer				
51.002	15 Winter	30	0%					
51.003	15 Winter	30	0%	30/15 Summer				
44.009	15 Winter	30	0%	100/15 Winter				
44.010	15 Winter	30	0%					
52.000	15 Winter	30	0%					
52.001	60 Winter	30	0%					
53.000	15 Winter	30	0%					
53.001	15 Winter	30	0%					
44.011	15 Winter	30	0%					
44.012	15 Winter	30	0%					
44.013	15 Winter	30	0%					
44.014	15 Winter	30	0%					
44.015	15 Winter	30	0%					
54.000	15 Winter	30	0%					
54.001	15 Winter	30	0%					
54.002	15 Winter	30	0%					
54.003	15 Winter	30	0%	30/15 Summer				
54.004	15 Winter	30	0%					
54.005	15 Winter	30	0%	100/15 Summer				
54.006	15 Winter	30	0%					
54.007	15 Winter	30	0%					
54.008	15 Winter	30	0%	30/15 Summer				
1.033	30 Winter	30	0%					
1.034	30 Winter	30	0%					
1.035	30 Winter	30	0%					
55.000	15 Winter	30	0%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
55.001	15 Winter	30	0%					
1.036	30 Winter	30	0%	100/15 Summer				
1.037	30 Winter	30	0%					
56.000	15 Winter	30	0%					
56.001	15 Winter	30	0%	100/15 Summer				
1.038	30 Winter	30	0%					
57.000	15 Winter	30	0%					
57.001	15 Winter	30	0%					
57.002	15 Winter	30	0%					
57.003	15 Winter	30	0%					
57.004	15 Winter	30	0%					
57.005	15 Winter	30	0%					
58.000	360 Summer	30	0%					
58.001	360 Summer	30	0%	100/120 Summer				
57.006	30 Winter	30	0%					
57.007	30 Winter	30	0%					
57.008	30 Winter	30	0%	30/15 Winter				
1.039	30 Winter	30	0%					
59.000	240 Winter	30	0%	100/15 Summer				
59.001	240 Winter	30	0%	100/15 Summer				
60.000	15 Winter	30	0%					
59.002	240 Winter	30	0%	30/120 Winter				
1.040	30 Winter	30	0%					
61.000	180 Winter	30	0%	30/15 Summer				
61.001	180 Winter	30	0%	30/30 Summer				
1.041	30 Winter	30	0%					
1.042	30 Winter	30	0%					
1.043	30 Winter	30	0%					
62.000	15 Winter	30	0%	30/15 Summer				
62.001	180 Winter	30	0%	30/15 Winter				
63.000	15 Winter	30	0%	100/15 Summer				
62.002	15 Winter	30	0%					
62.003	15 Winter	30	0%					
62.004	15 Winter	30	0%					
62.005	15 Winter	30	0%	100/15 Winter				
62.006	15 Winter	30	0%	100/15 Summer				
64.000	15 Winter	30	0%					
64.001	15 Winter	30	0%					
64.002	15 Winter	30	0%					
64.003	15 Winter	30	0%					
64.004	15 Winter	30	0%					
64.005	15 Winter	30	0%	30/15 Summer				
62.007	15 Winter	30	0%	30/15 Summer				
65.000	15 Winter	30	0%	30/15 Summer				
65.001	180 Winter	30	0%	30/120 Winter				
66.000	15 Winter	30	0%	100/15 Summer				
66.001	15 Winter	30	0%	100/15 Summer				
66.002	15 Winter	30	0%					
66.003	15 Winter	30	0%					
65.002	15 Winter	30	0%					
65.003	15 Winter	30	0%					
65.004	15 Winter	30	0%	100/15 Summer				
65.005	15 Winter	30	0%	30/15 Summer				
67.000	15 Winter	30	0%					
67.001	15 Winter	30	0%	30/15 Summer				
67.002	15 Winter	30	0%					
67.003	15 Winter	30	0%	30/15 Summer				
62.008	60 Winter	30	0%	100/15 Summer				
62.009	60 Winter	30	0%	100/15 Summer				
62.010	60 Winter	30	0%	100/15 Summer				
1.044	60 Winter	30	0%					
1.045	60 Winter	30	0%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.046	60 Winter	30	0%					
1.047	60 Winter	30	0%					
1.048	60 Winter	30	0%					
1.049	60 Winter	30	0%					
68.000	15 Winter	30	0%	30/15 Summer				
69.000	15 Winter	30	0%	30/15 Summer				
69.001	15 Winter	30	0%					
68.001	180 Winter	30	0%	100/30 Summer				
1.050	60 Winter	30	0%					
1.051	60 Winter	30	0%					
1.052	60 Winter	30	0%					
1.053	60 Winter	30	0%					
1.054	60 Winter	30	0%					
1.055	60 Winter	30	0%					
1.056	1440 Winter	30	0%					
1.057	1440 Winter	30	0%					
70.000	15 Winter	30	0%					
70.001	15 Winter	30	0%					
71.000	15 Winter	30	0%	30/15 Summer				
71.001	15 Winter	30	0%	100/15 Summer				
72.000	15 Winter	30	0%	30/15 Summer				
72.001	15 Winter	30	0%	30/15 Summer				
73.000	120 Winter	30	0%	30/15 Summer				
73.001	120 Winter	30	0%	30/30 Winter				
72.002	120 Winter	30	0%	30/15 Winter				
71.002	15 Winter	30	0%	100/15 Summer				
71.003	15 Winter	30	0%	100/15 Summer				
71.004	15 Summer	30	0%	30/15 Summer				
70.002	15 Winter	30	0%	100/15 Summer				
70.003	15 Winter	30	0%	30/15 Summer				
74.000	15 Winter	30	0%	100/15 Summer				
74.001	15 Winter	30	0%	100/15 Summer				
70.004	15 Winter	30	0%	30/15 Summer				
75.000	15 Winter	30	0%					
76.000	15 Winter	30	0%					
76.001	15 Winter	30	0%					
77.000	15 Winter	30	0%	100/15 Summer				
77.001	15 Winter	30	0%	30/15 Summer				
77.002	15 Winter	30	0%	30/15 Summer				
78.000	15 Winter	30	0%	100/15 Summer				
78.001	15 Winter	30	0%	100/15 Summer				
77.003	15 Winter	30	0%	30/15 Summer				
79.000	15 Winter	30	0%	30/15 Summer				
79.001	15 Winter	30	0%	30/15 Summer				
79.002	15 Winter	30	0%	100/15 Summer				
80.000	15 Winter	30	0%					
80.001	15 Winter	30	0%					
77.004	15 Winter	30	0%	30/15 Summer				
76.002	360 Winter	30	0%	30/120 Winter				
75.001	15 Winter	30	0%					
75.002	15 Winter	30	0%					
75.003	15 Winter	30	0%					
75.004	15 Winter	30	0%					
70.005	15 Winter	30	0%					
70.006	15 Winter	30	0%					
70.007	15 Winter	30	0%					
81.000	15 Winter	30	0%					
82.000	15 Winter	30	0%	100/15 Summer				
82.001	15 Winter	30	0%	100/15 Summer				
83.000	15 Winter	30	0%	100/15 Summer				
84.000	15 Winter	30	0%	30/15 Summer				
84.001	15 Winter	30	0%	30/15 Summer				

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
83.001	15 Winter	30	0%	1/15 Summer				
82.002	15 Winter	30	0%	1/15 Summer				
85.000	15 Winter	30	0%	100/15 Summer				
85.001	15 Winter	30	0%	100/15 Summer				
82.003	15 Winter	30	0%	1/15 Summer				
82.004	240 Winter	30	0%	1/15 Summer				
81.001	15 Winter	30	0%					
81.002	15 Winter	30	0%					
81.003	15 Winter	30	0%					
70.008	15 Winter	30	0%					
70.009	15 Winter	30	0%					
70.010	15 Winter	30	0%					
70.011	15 Winter	30	0%					
70.012	15 Winter	30	0%	100/15 Winter				
70.013	15 Winter	30	0%					
70.014	15 Winter	30	0%	100/15 Summer				
70.015	15 Winter	30	0%					
86.000	15 Winter	30	0%	30/15 Winter				
86.001	15 Winter	30	0%	30/15 Summer				
87.000	15 Winter	30	0%	100/15 Summer				
88.000	15 Winter	30	0%					
88.001	15 Winter	30	0%					
87.001	15 Winter	30	0%					
86.002	180 Winter	30	0%	30/30 Summer				
70.016	15 Winter	30	0%	100/15 Winter				
89.000	15 Winter	30	0%					
89.001	15 Winter	30	0%	100/15 Summer				
90.000	15 Winter	30	0%	100/15 Summer				
90.001	180 Winter	30	0%	1/30 Winter				
90.002	15 Winter	30	0%					
89.002	15 Winter	30	0%	100/15 Summer				
89.003	15 Winter	30	0%	100/15 Summer				
91.000	15 Winter	30	0%					
92.000	15 Winter	30	0%	30/15 Summer				
92.001	120 Winter	30	0%	30/30 Winter				
91.001	15 Winter	30	0%					
89.004	15 Winter	30	0%	30/15 Summer				
89.005	15 Winter	30	0%	30/15 Summer				
93.000	15 Winter	30	0%	100/15 Summer				
93.001	180 Winter	30	0%	30/15 Winter				
89.006	15 Winter	30	0%					
70.017	15 Winter	30	0%	100/15 Summer				
70.018	15 Winter	30	0%					
70.019	15 Winter	30	0%					
70.020	15 Winter	30	0%					
70.021	15 Winter	30	0%	100/15 Summer				
70.022	15 Winter	30	0%	100/15 Summer				
70.023	15 Winter	30	0%					
94.000	15 Winter	30	0%	30/15 Summer				
94.001	180 Winter	30	0%	30/15 Winter				
95.000	15 Winter	30	0%	30/15 Winter				
95.001	180 Winter	30	0%	30/15 Winter				
95.002	15 Summer	30	0%					
95.003	240 Summer	30	0%					
95.004	60 Summer	30	0%					
94.002	1440 Summer	30	0%					
1.058	1440 Winter	30	0%					
1.059	1440 Winter	30	0%	100/480 Winter				

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	15	22.574	-0.164	0.000	0.42	0.0	48.8	OK
1.001	16	22.268	-0.177	0.000	0.34	0.0	48.2	OK
2.000	17	22.144	0.008	0.000	0.56	0.0	48.1	SURCHARGED
2.001	18	22.035	0.087	0.000	0.81	0.0	40.2	SURCHARGED
1.002	19	21.966	0.051	0.000	1.00	0.0	92.8	SURCHARGED
1.003	20	21.884	0.022	0.000	1.13	0.0	94.5	SURCHARGED
1.004	21	21.613	-0.217	0.000	0.50	0.0	88.8	OK
1.005	24	21.353	-0.178	0.000	0.68	0.0	85.9	OK
1.006	25	21.040	-0.360	0.000	0.02	0.0	9.1	OK
3.000	26	22.444	-0.229	0.000	0.47	0.0	80.1	OK
3.001	27	22.299	-0.286	0.000	0.41	0.0	160.7	OK
4.000	12	23.666	-0.118	0.000	0.88	0.0	148.4	OK
4.001	13	23.514	-0.181	0.000	0.65	0.0	206.2	OK
4.002	14	23.125	-0.205	0.000	0.56	0.0	228.2	OK
3.002	28	22.236	-0.193	0.000	0.78	0.0	411.6	OK
5.000	29	22.385	-0.176	0.000	0.66	0.0	151.9	OK
5.001	30	22.170	-0.172	0.000	0.69	0.0	153.3	OK
3.003	31	22.071	-0.031	0.000	0.84	0.0	517.5	OK
3.004	20	21.400	0.234	0.000	2.02	0.0	557.4	SURCHARGED
1.007	13	21.040	-0.075	0.000	0.01	0.0	6.1	OK
6.000	9	23.079	-1.334	0.000	0.00	0.0	12.8	OK
6.001	10	22.954	-1.434	0.000	0.00	0.0	12.6	OK
6.002	11	22.741	-1.161	0.000	0.00	0.0	20.3	OK
6.003	12	22.459	-2.241	0.000	0.00	0.0	34.3	OK
6.004	23	21.937	-1.687	0.000	0.00	0.0	73.6	OK
6.005	26	21.931	0.108	0.000	1.72	0.0	59.5	SURCHARGED*
6.006	24	21.618	-1.988	0.000	0.00	0.0	115.6	OK
6.007	25	21.286	0.171	0.000	1.83	0.0	71.6	SURCHARGED*
1.008	32	20.451	-0.482	0.000	0.15	0.0	77.8	OK
1.009	35	20.384	-0.504	0.000	0.11	0.0	81.7	OK
7.000	36	24.206	-0.109	0.000	0.65	0.0	35.1	OK
7.001	37	24.172	-0.089	0.000	0.67	0.0	33.8	OK
7.002	38	24.150	-1.427	0.000	0.00	0.0	39.7	OK
8.000	39	24.267	-0.196	0.000	0.26	0.0	20.5	OK
8.001	40	24.208	-0.133	0.000	0.43	0.0	19.1	OK
9.000	41	24.323	-0.181	0.000	0.33	0.0	27.7	OK
9.001	42	24.254	-0.137	0.000	0.56	0.0	27.5	OK
8.002	43	24.195	-0.113	0.000	0.43	0.0	43.1	OK
7.003	44	24.147	0.053	0.000	1.26	0.0	101.8	SURCHARGED
7.004	34	23.845	-1.528	0.000	0.00	0.0	100.9	OK
7.005	45	23.835	0.026	0.000	1.16	0.0	99.3	SURCHARGED*
7.006	1	23.532	-1.507	0.000	0.01	0.0	100.3	OK
10.000	46	23.765	0.159	0.000	1.50	0.0	80.6	SURCHARGED
10.001	47	23.644	0.090	0.000	1.33	0.0	78.5	SURCHARGED
7.007	26	23.315	-1.248	0.000	0.01	0.0	174.2	OK
11.000	47	24.018	-1.377	0.000	0.00	0.0	4.2	OK
11.001	49	23.463	-0.222	0.000	0.15	0.0	4.2	OK*
12.000	1	24.303	0.143	0.000	1.46	0.0	80.4	SURCHARGED
12.001	2	24.168	0.070	0.000	1.26	0.0	78.8	SURCHARGED
12.002	3	23.770	-1.506	0.000	0.00	0.0	85.8	OK
12.003	57	23.709	0.036	0.000	1.18	0.0	104.5	SURCHARGED*
11.002	50	23.324	-1.167	0.000	0.01	0.0	106.6	OK
11.003	51	22.937	0.252	0.000	1.49	0.0	75.2	SURCHARGED*
7.008	2	22.304	-1.231	0.000	0.02	0.0	255.8	OK
13.000	49	22.647	-0.002	0.000	0.89	0.0	133.4	OK
13.001	50	22.416	0.056	0.000	1.29	0.0	132.4	SURCHARGED
7.009	48	21.873	-1.148	0.000	0.03	0.0	395.6	OK
14.000	4	23.959	0.176	0.000	1.38	0.0	79.9	SURCHARGED
14.001	5	23.765	0.082	0.000	1.34	0.0	78.5	SURCHARGED
15.000	58	23.823	-0.454	0.000	0.01	0.0	9.6	OK
14.002	6	23.363	-0.763	0.000	0.02	0.0	92.6	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
16.000	7	23.232	-1.342	0.000	0.00	0.0	4.2	OK
14.003	8	22.682	-0.520	0.000	0.13	0.0	96.2	OK*
17.000	22	23.023	0.123	0.000	0.63	0.0	37.5	SURCHARGED
17.001	23	22.949	0.184	0.000	1.22	0.0	71.2	SURCHARGED
18.000	64	23.038	-0.837	0.000	0.01	0.0	32.7	OK
17.002	64	22.799	0.142	0.000	1.22	0.0	96.8	SURCHARGED
17.003	61	22.764	0.133	0.000	0.84	0.0	90.9	SURCHARGED
14.004	63	22.610	0.192	0.000	2.42	0.0	185.9	SURCHARGED
14.005	68	22.164	-1.674	0.000	0.01	0.0	203.3	OK
14.006	55	21.971	0.152	0.000	1.76	0.0	188.6	SURCHARGED*
7.010	3	21.587	-0.938	0.000	0.08	0.0	572.7	OK
19.000	33	21.936	-0.165	0.000	0.58	0.0	88.8	OK
19.001	34	21.486	-0.147	0.000	0.77	0.0	180.7	OK
7.011	4	21.315	0.159	0.000	0.02	0.0	7.8	SURCHARGED
1.010	53	20.212	-0.527	0.000	0.07	0.0	99.1	OK
20.000	62	20.252	-0.100	0.000	0.76	0.0	56.4	OK
20.001	63	19.997	-0.172	0.000	0.68	0.0	115.2	OK
1.011	64	19.477	-0.444	0.000	0.19	0.0	199.5	OK
1.012	73	19.361	-0.417	0.000	0.17	0.0	178.6	OK
21.000	74	20.125	-0.064	0.000	0.93	0.0	55.6	OK
21.001	75	19.930	-0.261	0.000	0.36	0.0	111.7	OK
1.013	76	19.294	-0.341	0.000	0.36	0.0	242.2	OK
22.000	391	21.019	-0.878	0.000	0.00	0.0	6.6	OK
23.000	59	21.198	-0.174	0.000	0.54	0.0	83.1	OK
23.001	60	20.992	0.113	0.000	1.03	0.0	168.1	SURCHARGED
22.001	389	20.953	-0.737	0.000	0.02	0.0	189.2	OK
22.002	83	20.942	0.321	0.000	2.35	0.0	160.0	SURCHARGED*
24.000	58	20.904	-1.560	0.000	0.00	0.0	15.6	OK
24.001	61	20.671	-0.061	0.000	0.99	0.0	60.7	OK*
22.003	392	20.419	-1.088	0.000	0.02	0.0	224.5	OK
25.000	70	20.659	0.044	0.000	1.19	0.0	69.6	SURCHARGED
25.001	71	20.456	-0.046	0.000	0.88	0.0	135.7	OK
22.004	395	20.391	-0.939	0.000	0.02	0.0	295.7	OK
22.005	393	20.375	0.125	0.000	1.55	0.0	281.3	SURCHARGED*
26.000	68	20.290	-1.510	0.000	0.00	0.0	0.0	OK
26.001	72	19.960	-0.019	0.000	0.00	0.0	0.1	OK*
22.006	397	19.960	-1.215	0.000	0.00	0.0	41.2	OK
27.000	77	20.563	0.044	0.000	0.55	0.0	90.4	SURCHARGED
27.001	78	20.413	0.073	0.000	1.30	0.0	134.6	SURCHARGED
22.007	93	19.960	0.146	0.000	0.05	0.0	5.0	SURCHARGED*
1.014	81	19.182	-0.439	0.000	0.23	0.0	250.7	OK
1.015	79	18.824	-0.421	0.000	0.23	0.0	245.7	OK
28.000	365	22.511	-0.851	0.000	0.00	0.0	4.2	OK
29.000	55	22.854	-0.020	0.000	0.83	0.0	70.7	OK
29.001	56	22.613	0.082	0.000	1.31	0.0	139.9	SURCHARGED
29.002	62	22.483	0.023	0.000	1.15	0.0	136.0	SURCHARGED
28.001	86	22.213	-0.719	0.000	0.03	0.0	139.9	OK
28.002	366	22.203	0.176	0.000	2.03	0.0	124.4	SURCHARGED*
30.000	54	22.644	-1.495	0.000	0.00	0.0	3.9	OK
30.001	57	22.083	-0.105	0.000	0.75	0.0	56.7	OK
28.003	367	21.753	-0.787	0.000	0.03	0.0	161.2	OK
31.000	66	21.656	-0.182	0.000	0.51	0.0	72.4	OK
31.001	67	21.548	-0.117	0.000	0.87	0.0	147.7	OK
31.002	68	21.455	-0.125	0.000	0.86	0.0	148.5	OK
28.004	87	21.379	-1.018	0.000	0.02	0.0	297.9	OK
28.005	368	21.365	0.062	0.000	1.28	0.0	255.7	SURCHARGED*
32.000	65	22.330	-1.345	0.000	0.00	0.0	3.5	OK
32.001	69	21.857	-0.112	0.000	0.71	0.0	54.2	OK
28.006	369	20.846	-1.402	0.000	0.02	0.0	294.4	OK
33.000	80	21.615	-0.105	0.000	0.73	0.0	70.8	OK
33.001	81	21.256	-0.080	0.000	0.95	0.0	144.2	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
28.007	93	20.706	-1.529	0.000	0.02	0.0	396.5	OK
34.000	82	21.207	-0.123	0.000	0.61	0.0	53.5	OK
34.001	83	20.668	-0.121	0.000	0.77	0.0	108.2	OK
34.002	99	20.504	-0.125	0.000	0.78	0.0	108.0	OK
34.003	96	20.487	-1.601	0.000	0.00	0.0	6.3	OK
28.008	90	20.487	0.264	0.000	0.02	0.0	5.2	SURCHARGED
1.016	85	18.696	-0.402	0.000	0.28	0.0	245.4	OK
1.017	84	18.618	-0.427	0.000	0.23	0.0	248.2	OK
35.000	85	21.764	-0.045	0.000	0.82	0.0	38.7	OK
1.018	86	18.435	-0.410	0.000	0.24	0.0	261.3	OK
36.000	1	22.933	-1.267	0.000	0.00	0.0	30.1	OK
36.001	134	22.517	-1.254	0.000	0.01	0.0	75.1	OK
36.002	2	22.288	0.058	0.000	1.35	0.0	83.1	SURCHARGED*
1.019	92	18.396	-0.380	0.000	0.31	0.0	316.2	OK
1.020	87	18.276	-0.397	0.000	0.28	0.0	316.8	OK
1.021	88	18.034	-0.396	0.000	0.29	0.0	312.5	OK
1.022	91	17.883	-0.384	0.000	0.28	0.0	308.9	OK
37.000	94	23.767	0.156	0.000	1.02	0.0	109.5	SURCHARGED
37.001	95	23.668	0.055	0.000	1.31	0.0	221.3	SURCHARGED
37.002	96	23.421	-0.103	0.000	0.94	0.0	225.3	OK
38.000	89	23.543	-0.245	0.000	0.42	0.0	147.2	OK
38.001	90	23.257	0.272	0.000	2.14	0.0	293.5	SURCHARGED
37.003	145	22.981	0.072	0.000	0.03	0.0	5.0	SURCHARGED
1.023	92	17.810	-0.395	0.000	0.34	0.0	313.3	OK
1.024	93	17.744	-0.420	0.000	0.24	0.0	317.4	OK
39.000	97	22.071	-0.079	0.000	0.33	0.0	31.6	OK
39.001	98	22.030	-0.059	0.000	0.76	0.0	64.0	OK
39.002	99	22.002	-0.129	0.000	0.80	0.0	149.2	OK
39.003	100	21.726	-0.127	0.000	0.85	0.0	143.4	OK
40.000	102	21.975	0.057	0.000	1.13	0.0	316.7	SURCHARGED
40.001	103	21.743	0.011	0.000	1.11	0.0	307.5	SURCHARGED
39.004	151	21.590	0.213	0.000	0.06	0.0	5.0	SURCHARGED
1.025	101	17.595	-0.415	0.000	0.25	0.0	317.6	OK
1.026	104	17.463	-0.408	0.000	0.25	0.0	314.4	OK
1.027	105	17.349	-0.415	0.000	0.25	0.0	312.2	OK
41.000	106	22.260	-0.103	0.000	0.93	0.0	306.6	OK
41.001	107	21.847	-0.299	0.000	0.49	0.0	566.9	OK
41.002	108	19.612	0.074	0.000	0.04	0.0	14.4	SURCHARGED
1.028	109	17.221	-0.418	0.000	0.25	0.0	323.8	OK
1.029	110	17.074	-0.406	0.000	0.25	0.0	314.7	OK
42.000	1	24.369	-1.231	0.000	0.01	0.0	41.5	OK
42.001	2	24.195	-1.205	0.000	0.00	0.0	80.2	OK
42.002	3	23.545	-1.455	0.000	0.01	0.0	135.3	OK
42.003	4	23.307	0.007	0.000	1.01	0.0	155.0	SURCHARGED*
42.004	5	22.410	-1.390	0.000	0.01	0.0	163.8	OK
42.005	6	20.443	0.273	0.000	1.63	0.0	148.1	SURCHARGED*
1.030	111	16.960	-0.386	0.000	0.27	0.0	334.7	OK
43.000	112	20.613	0.252	0.000	1.23	0.0	70.0	SURCHARGED
43.001	113	20.491	0.136	0.000	1.22	0.0	131.9	SURCHARGED
43.002	114	19.942	-0.210	0.000	0.40	0.0	133.0	OK
43.003	115	19.214	0.103	0.000	0.02	0.0	5.0	SURCHARGED
1.031	116	16.863	-0.376	0.000	0.41	0.0	340.8	OK
1.032	117	16.688	-0.516	0.000	0.11	0.0	340.7	OK
44.000	118	22.112	-0.225	0.000	0.00	0.0	0.0	OK
44.001	121	21.571	-0.257	0.000	0.38	0.0	57.5	OK
45.000	119	22.245	-0.049	0.000	0.65	0.0	138.6	OK
45.001	120	22.093	0.126	0.000	1.43	0.0	276.4	SURCHARGED
46.000	122	22.608	-0.221	0.000	0.50	0.0	128.8	OK
46.001	123	22.332	-0.026	0.000	1.00	0.0	246.0	OK
45.002	177	21.907	0.072	0.000	0.02	0.0	5.0	SURCHARGED
44.002	177	21.446	-0.262	0.000	0.36	0.0	57.9	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
44.003	122	21.365	-0.261	0.000	0.33	0.0	56.0	OK
44.004	124	21.281	-0.181	0.000	0.64	0.0	105.2	OK
47.000	125	22.964	-1.350	0.000	0.00	0.0	0.0	OK
47.001	126	22.727	-1.731	0.000	0.00	0.0	15.9	OK
47.002	127	22.395	-1.886	0.000	0.00	0.0	34.6	OK
47.003	143	22.286	0.027	0.000	1.09	0.0	44.1	SURCHARGED
48.000	128	23.072	-0.818	0.000	0.03	0.0	83.3	OK
48.001	129	22.987	-0.910	0.000	0.03	0.0	101.5	OK
48.002	130	22.894	-0.875	0.000	0.03	0.0	113.6	OK
48.003	131	22.792	-1.399	0.000	0.02	0.0	120.2	OK
48.004	132	22.751	-1.356	0.000	0.02	0.0	120.3	OK
48.005	133	22.569	-1.424	0.000	0.00	0.0	120.0	OK
47.004	134	21.836	-0.077	0.000	0.96	0.0	151.8	OK
44.005	135	21.089	-0.246	0.000	0.64	0.0	230.6	OK
49.000	136	22.950	-0.950	0.000	0.01	0.0	38.3	OK
49.001	137	22.512	-0.877	0.000	0.02	0.0	101.1	OK
49.002	138	22.479	-0.892	0.000	0.02	0.0	101.5	OK
49.003	139	22.446	-0.888	0.000	0.02	0.0	101.0	OK
49.004	140	22.410	-0.870	0.000	0.02	0.0	121.3	OK
49.005	141	22.213	-0.136	0.000	0.57	0.0	143.8	OK
44.006	142	20.801	-0.277	0.000	0.49	0.0	347.4	OK
44.007	143	20.741	-0.257	0.000	0.56	0.0	345.4	OK
44.008	144	20.700	-0.251	0.000	0.41	0.0	342.4	OK
50.000	145	21.817	-0.168	0.000	0.58	0.0	138.2	OK
50.001	146	21.416	0.009	0.000	0.03	0.0	8.2	SURCHARGED
51.000	1	21.916	-0.966	0.000	0.01	0.0	52.8	OK
51.001	2	21.204	-0.046	0.000	1.00	0.0	51.4	OK
51.002	3	21.059	-1.358	0.000	0.01	0.0	89.6	OK
51.003	4	21.013	0.089	0.000	1.62	0.0	89.1	SURCHARGED
44.009	147	20.636	-0.129	0.000	1.02	0.0	394.6	OK
44.010	148	20.351	-0.401	0.000	0.29	0.0	394.9	OK
52.000	149	21.582	-0.150	0.000	0.49	0.0	69.5	OK
52.001	150	20.786	-0.182	0.000	0.04	0.0	5.0	OK
53.000	1	21.237	-0.987	0.000	0.00	0.0	34.9	OK
53.001	2	20.536	-0.183	0.000	0.32	0.0	34.5	OK
44.011	151	19.833	-0.421	0.000	0.26	0.0	424.5	OK
44.012	152	19.260	-0.409	0.000	0.28	0.0	437.4	OK
44.013	153	18.681	-0.433	0.000	0.24	0.0	437.1	OK
44.014	154	18.103	-0.292	0.000	0.52	0.0	437.2	OK
44.015	155	16.930	-0.410	0.000	0.34	0.0	436.9	OK
54.000	1	19.185	-1.279	0.000	0.00	0.0	40.2	OK
54.001	2	18.444	-0.145	0.000	0.51	0.0	39.8	OK*
54.002	3	18.302	-1.398	0.000	0.00	0.0	78.9	OK
54.003	4	18.256	0.032	0.000	1.28	0.0	78.3	SURCHARGED*
54.004	5	17.988	-1.522	0.000	0.00	0.0	92.3	OK
54.005	6	17.537	-0.082	0.000	0.87	0.0	92.9	OK*
54.006	7	17.304	-1.536	0.000	0.01	0.0	170.5	OK
54.007	8	17.119	-1.508	0.000	0.01	0.0	168.6	OK
54.008	9	17.071	0.115	0.000	1.16	0.0	165.3	SURCHARGED
1.033	156	16.216	-0.362	0.000	0.54	0.0	776.8	OK
1.034	157	16.037	-0.399	0.000	0.35	0.0	788.3	OK
1.035	158	15.759	-0.336	0.000	0.39	0.0	786.1	OK
55.000	159	17.473	-1.020	0.000	0.00	0.0	9.8	OK
55.001	160	16.352	-0.183	0.000	0.32	0.0	60.2	OK
1.036	161	15.652	-0.160	0.000	0.95	0.0	797.5	OK
1.037	162	15.608	-0.175	0.000	0.97	0.0	799.2	OK
56.000	1	15.905	-0.852	0.000	0.02	0.0	60.9	OK
56.001	2	15.867	-0.095	0.000	0.80	0.0	58.9	OK*
1.038	173	15.521	-0.205	0.000	0.61	0.0	818.2	OK
57.000	163	16.303	-0.876	0.000	0.02	0.0	91.9	OK
57.001	164	16.192	-0.820	0.000	0.03	0.0	105.6	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
57.002	165	16.180	-0.804	0.000	0.04	0.0	103.2	OK
57.003	166	16.125	-0.505	0.000	0.08	0.0	109.8	OK
57.004	167	16.069	-0.364	0.000	0.14	0.0	112.0	OK
57.005	168	15.992	-1.250	0.000	0.02	0.0	115.5	OK
58.000	244	15.742	-2.611	0.000	0.00	0.0	36.6	OK
58.001	245	15.698	-0.092	0.000	0.99	0.0	36.4	OK*
57.006	169	15.602	-1.048	0.000	0.02	0.0	100.5	OK
57.007	170	15.593	-0.573	0.000	0.02	0.0	77.2	OK
57.008	246	15.585	0.006	0.000	1.31	0.0	76.0	SURCHARGED*
1.039	174	15.441	-0.692	0.000	0.12	0.0	880.8	OK
59.000	175	15.250	-0.050	0.000	0.12	0.0	6.4	OK
59.001	176	15.248	0.000	0.000	0.12	0.0	6.1	OK
60.000	177	15.344	-0.106	0.000	0.18	0.0	2.4	OK
59.002	178	15.244	0.027	0.000	0.09	0.0	4.7	SURCHARGED
1.040	179	15.387	-0.651	0.000	0.18	0.0	854.3	OK
61.000	180	15.333	0.158	0.000	0.34	0.0	31.4	SURCHARGED
61.001	181	15.330	0.210	0.000	0.05	0.0	5.0	SURCHARGED
1.041	182	15.211	-0.617	0.000	0.17	0.0	815.2	OK
1.042	183	15.074	-0.618	0.000	0.18	0.0	807.6	OK
1.043	184	14.932	-0.701	0.000	0.12	0.0	805.8	OK
62.000	185	17.781	0.273	0.000	1.64	0.0	375.2	SURCHARGED
62.001	186	17.404	0.211	0.000	0.06	0.0	8.4	SURCHARGED
63.000	187	18.297	-0.056	0.000	0.91	0.0	72.7	OK
62.002	188	16.121	-0.214	0.000	0.38	0.0	81.0	OK
62.003	189	15.538	-0.179	0.000	0.66	0.0	136.7	OK
62.004	190	15.365	-0.197	0.000	0.61	0.0	136.9	OK
62.005	191	15.226	-0.176	0.000	0.67	0.0	134.0	OK
62.006	192	15.012	-0.151	0.000	0.53	0.0	123.3	OK
64.000	193	15.740	-0.966	0.000	0.01	0.0	22.7	OK
64.001	194	15.675	-0.935	0.000	0.01	0.0	47.5	OK
64.002	195	15.578	-0.913	0.000	0.01	0.0	70.2	OK
64.003	196	15.456	-0.892	0.000	0.02	0.0	93.6	OK
64.004	197	15.367	-0.847	0.000	0.02	0.0	107.0	OK
64.005	198	15.322	0.164	0.000	2.07	0.0	112.5	SURCHARGED
62.007	199	14.926	0.081	0.000	1.54	0.0	235.5	SURCHARGED
65.000	200	17.475	0.267	0.000	2.32	0.0	316.9	SURCHARGED
65.001	201	17.221	0.055	0.000	0.04	0.0	7.8	SURCHARGED
66.000	202	19.606	-0.117	0.000	0.46	0.0	30.2	OK
66.001	203	19.272	-0.068	0.000	0.93	0.0	84.9	OK
66.002	204	18.943	-0.133	0.000	0.58	0.0	94.8	OK
66.003	205	17.900	-0.130	0.000	0.60	0.0	111.9	OK
65.002	206	16.734	-0.279	0.000	0.30	0.0	129.4	OK
65.003	207	15.370	-0.241	0.000	0.43	0.0	171.0	OK
65.004	212	14.956	-0.155	0.000	0.65	0.0	168.3	OK
65.005	213	14.812	0.033	0.000	1.25	0.0	169.3	SURCHARGED
67.000	1	15.835	-0.947	0.000	0.01	0.0	49.8	OK
67.001	2	15.246	0.050	0.000	0.61	0.0	37.5	SURCHARGED*
67.002	3	15.186	-0.910	0.000	0.01	0.0	57.2	OK
67.003	4	15.180	0.050	0.000	1.57	0.0	75.5	SURCHARGED
62.008	214	14.738	0.000	0.000	0.48	0.0	289.4	OK
62.009	215	14.667	0.000	0.000	0.51	0.0	284.8	OK
62.010	216	14.586	-0.030	0.000	0.69	0.0	282.4	OK
1.044	217	14.567	-1.096	0.000	0.10	0.0	881.2	OK
1.045	218	14.511	-0.929	0.000	0.10	0.0	876.0	OK
1.046	222	14.399	-0.611	0.000	0.21	0.0	870.4	OK
1.047	223	14.384	-0.674	0.000	0.16	0.0	868.0	OK
1.048	224	14.273	-0.702	0.000	0.20	0.0	865.5	OK
1.049	228	14.241	-0.259	0.000	0.44	0.0	864.8	FLOOD RISK*
68.000	225	15.515	0.140	0.000	1.55	0.0	159.3	SURCHARGED
69.000	219	15.525	0.150	0.000	2.12	0.0	158.6	SURCHARGED
69.001	221	15.077	-0.250	0.000	0.61	0.0	314.5	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
68.001	227	14.733	-0.093	0.000	0.02	0.0	13.5	OK
1.050	304	14.102	-0.398	0.000	0.28	0.0	875.7	OK
1.051	229	13.996	-0.499	0.000	0.22	0.0	876.6	OK
1.052	230	13.891	-0.510	0.000	0.18	0.0	876.7	OK
1.053	231	13.868	-0.553	0.000	0.17	0.0	876.5	OK
1.054	232	13.827	-0.679	0.000	0.13	0.0	876.1	OK
1.055	233	13.725	-0.818	0.000	0.10	0.0	875.3	OK
1.056	234	13.666	-0.857	0.000	0.02	0.0	245.7	OK
1.057	235	13.653	-1.347	0.000	0.01	0.0	244.7	OK
70.000	1	21.137	-0.114	0.000	0.48	0.0	23.1	OK
70.001	2	20.778	-0.202	0.000	0.23	0.0	38.5	OK
71.000	26	21.917	0.179	0.000	1.33	0.0	63.5	SURCHARGED
71.001	27	21.370	-0.132	0.000	0.60	0.0	62.8	OK
72.000	31	21.425	0.041	0.000	1.54	0.0	98.8	SURCHARGED
72.001	315	21.371	0.017	0.000	1.90	0.0	99.1	SURCHARGED
73.000	33	21.330	0.078	0.000	0.33	0.0	15.4	SURCHARGED
73.001	34	21.329	0.095	0.000	0.36	0.0	14.6	SURCHARGED
72.002	316	21.328	0.185	0.000	0.09	0.0	5.0	SURCHARGED
71.002	28	21.065	-0.032	0.000	1.00	0.0	81.7	OK
71.003	29	20.709	-0.226	0.000	0.33	0.0	98.6	OK
71.004	30	20.340	0.025	0.000	1.29	0.0	98.0	SURCHARGED
70.002	3	20.103	-0.143	0.000	0.69	0.0	143.1	OK
70.003	4	19.764	0.086	0.000	0.79	0.0	164.0	SURCHARGED
74.000	35	20.110	-0.148	0.000	0.67	0.0	187.1	OK
74.001	325	19.691	-0.057	0.000	0.69	0.0	183.7	OK
70.004	5	19.484	0.244	0.000	1.91	0.0	338.9	SURCHARGED
75.000	36	20.865	-0.067	0.000	0.59	0.0	8.2	OK
76.000	41	22.043	-0.262	0.000	0.20	0.0	28.2	OK
76.001	42	21.862	-0.229	0.000	0.12	0.0	27.9	OK
77.000	44	21.849	-0.107	0.000	0.62	0.0	116.6	OK
77.001	45	21.782	0.067	0.000	0.71	0.0	100.6	SURCHARGED
77.002	46	21.758	0.084	0.000	0.58	0.0	95.8	SURCHARGED
78.000	54	21.819	-0.228	0.000	0.32	0.0	56.3	OK
78.001	55	21.726	-0.034	0.000	0.24	0.0	48.9	OK
77.003	47	21.662	0.192	0.000	1.42	0.0	136.8	SURCHARGED
79.000	49	23.033	0.079	0.000	1.02	0.0	126.3	SURCHARGED
79.001	50	22.883	0.145	0.000	1.51	0.0	125.5	SURCHARGED
79.002	51	22.497	-0.122	0.000	0.66	0.0	126.4	OK
80.000	52	22.141	-0.204	0.000	0.22	0.0	18.1	OK
80.001	53	21.924	-0.205	0.000	0.22	0.0	36.0	OK
77.004	48	21.539	0.205	0.000	2.21	0.0	283.7	SURCHARGED
76.002	43	21.365	0.067	0.000	0.02	0.0	5.7	SURCHARGED
75.001	37	20.452	-0.285	0.000	0.28	0.0	55.0	OK
75.002	38	20.297	-0.292	0.000	0.40	0.0	77.6	OK
75.003	39	20.199	-0.347	0.000	0.25	0.0	78.2	OK
75.004	40	19.955	-0.392	0.000	0.14	0.0	112.4	OK
70.005	6	18.769	-0.372	0.000	0.34	0.0	456.0	OK
70.006	7	18.600	-0.309	0.000	0.37	0.0	434.4	OK
70.007	8	18.536	-0.241	0.000	0.60	0.0	464.1	OK
81.000	58	20.036	-0.191	0.000	0.29	0.0	17.2	OK
82.000	62	20.357	-0.118	0.000	0.79	0.0	113.0	OK
82.001	63	20.205	-0.138	0.000	0.33	0.0	113.5	OK
83.000	67	20.653	-0.247	0.000	0.07	0.0	13.0	OK
84.000	56	20.518	0.263	0.000	0.11	0.0	46.4	SURCHARGED
84.001	57	20.363	0.435	0.000	0.23	0.0	92.2	SURCHARGED
83.001	68	20.179	0.711	0.000	1.02	0.0	111.8	SURCHARGED
82.002	64	20.080	0.697	0.000	1.06	0.0	233.5	SURCHARGED
85.000	69	20.611	-0.081	0.000	0.87	0.0	95.2	OK
85.001	70	20.392	-0.108	0.000	0.71	0.0	94.2	OK
82.003	65	19.895	0.679	0.000	2.14	0.0	328.7	SURCHARGED
82.004	66	19.865	0.730	0.000	0.03	0.0	5.7	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
81.001	59	18.698	-0.332	0.000	0.14	0.0	22.5	OK
81.002	60	18.650	-0.318	0.000	0.18	0.0	27.0	OK
81.003	61	18.575	-0.331	0.000	0.15	0.0	32.3	OK
70.008	9	18.511	-0.241	0.000	0.73	0.0	504.4	OK
70.009	10	18.422	-2.640	0.000	0.01	0.0	508.8	OK
70.010	11	17.981	-0.133	0.000	0.53	0.0	512.4	OK*
70.011	12	17.957	-2.273	0.000	0.02	0.0	514.6	OK
70.012	13	17.504	-0.104	0.000	0.54	0.0	516.0	OK*
70.013	14	17.479	-1.802	0.000	0.03	0.0	512.3	OK
70.014	15	17.434	-0.119	0.000	0.55	0.0	512.7	OK*
70.015	16	17.407	-0.863	0.000	0.10	0.0	511.3	OK
86.000	208	16.403	0.015	0.000	0.74	0.0	127.5	SURCHARGED
86.001	209	16.137	0.217	0.000	2.10	0.0	126.8	SURCHARGED
87.000	73	18.921	-0.131	0.000	0.74	0.0	150.1	OK
88.000	71	20.164	-0.178	0.000	0.53	0.0	55.2	OK
88.001	72	20.020	-0.249	0.000	0.24	0.0	53.8	OK
87.001	75	18.598	-0.180	0.000	0.53	0.0	202.4	OK
86.002	379	16.039	0.187	0.000	0.09	0.0	8.8	SURCHARGED
70.016	17	15.676	-0.316	0.000	0.35	0.0	524.6	OK
89.000	76	19.031	-0.207	0.000	0.20	0.0	23.8	OK
89.001	77	18.355	-0.142	0.000	0.54	0.0	67.2	OK
90.000	82	20.302	-0.178	0.000	0.67	0.0	264.6	OK
90.001	83	20.116	0.289	0.000	0.01	0.0	6.3	SURCHARGED
90.002	84	18.678	-0.359	0.000	0.09	0.0	40.6	OK
89.002	78	17.953	-0.197	0.000	0.60	0.0	195.1	OK
89.003	79	17.515	-0.071	0.000	0.70	0.0	183.6	OK
91.000	85	19.486	-0.104	0.000	0.20	0.0	6.3	OK
92.000	87	19.577	0.127	0.000	1.48	0.0	166.0	SURCHARGED
92.001	88	19.449	0.113	0.000	0.03	0.0	6.1	SURCHARGED
91.001	86	18.132	-0.357	0.000	0.09	0.0	38.6	OK
89.004	80	17.423	0.060	0.000	0.95	0.0	276.2	SURCHARGED
89.005	316	17.175	0.076	0.000	1.17	0.0	277.4	SURCHARGED
93.000	89	17.987	-0.105	0.000	0.85	0.0	198.6	OK
93.001	90	17.743	0.239	0.000	0.03	0.0	5.0	SURCHARGED
89.006	81	16.327	-0.508	0.000	0.09	0.0	306.4	OK
70.017	18	15.647	-0.071	0.000	0.73	0.0	744.0	OK
70.018	19	15.597	-1.083	0.000	0.10	0.0	738.2	OK
70.019	20	15.562	-0.887	0.000	0.14	0.0	733.4	OK
70.020	21	15.537	-0.709	0.000	0.17	0.0	728.8	OK
70.021	22	15.464	-0.102	0.000	1.01	0.0	698.0	OK
70.022	23	15.431	-0.108	0.000	0.52	0.0	687.3	OK
70.023	24	15.373	-0.327	0.000	0.46	0.0	689.9	OK
94.000	3	16.192	0.252	0.000	1.54	0.0	141.4	SURCHARGED
94.001	2	15.960	0.203	0.000	0.07	0.0	7.8	SURCHARGED
95.000	1	17.605	0.040	0.000	1.06	0.0	127.5	SURCHARGED
95.001	2	17.445	0.213	0.000	0.03	0.0	5.7	SURCHARGED
95.002	3	15.861	-0.241	0.000	0.08	0.0	5.7	OK
95.003	3	15.735	-1.465	0.000	0.00	0.0	5.7	OK
95.004	5	15.254	-0.895	0.000	0.00	0.0	5.7	OK
94.002	4	14.837	-1.459	0.000	0.00	0.0	13.5	OK
1.058	236	13.648	-1.400	0.000	0.02	0.0	344.4	OK
1.059	237	13.635	-0.097	0.000	0.66	0.0	150.0	OK

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

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+30%					
1.001	15 Winter	100	+30%					
2.000	15 Winter	100	+30%	30/15 Winter				
2.001	15 Winter	100	+30%	30/15 Summer				
1.002	15 Winter	100	+30%	30/15 Summer				
1.003	15 Winter	100	+30%	30/15 Summer				
1.004	15 Winter	100	+30%					
1.005	15 Winter	100	+30%	100/15 Winter				
1.006	960 Winter	100	+30%	100/360 Winter				
3.000	15 Winter	100	+30%	100/15 Summer				
3.001	15 Winter	100	+30%	100/15 Summer				
4.000	15 Winter	100	+30%	100/15 Summer				
4.001	15 Winter	100	+30%	100/15 Summer				
4.002	15 Winter	100	+30%	100/15 Summer				
3.002	15 Winter	100	+30%	100/15 Summer				
5.000	15 Winter	100	+30%	100/15 Summer				
5.001	15 Winter	100	+30%	100/15 Summer				
3.003	15 Winter	100	+30%	100/15 Summer				
3.004	15 Winter	100	+30%	30/15 Summer				
1.007	960 Winter	100	+30%	100/60 Winter				
6.000	15 Winter	100	+30%					
6.001	15 Winter	100	+30%					
6.002	15 Winter	100	+30%					
6.003	15 Winter	100	+30%					
6.004	15 Winter	100	+30%					
6.005	15 Winter	100	+30%	30/15 Summer				
6.006	15 Winter	100	+30%					
6.007	30 Winter	100	+30%	30/15 Summer				
1.008	30 Winter	100	+30%					
1.009	15 Winter	100	+30%					
7.000	15 Winter	100	+30%	100/15 Summer				
7.001	15 Winter	100	+30%	100/15 Summer				
7.002	15 Winter	100	+30%					
8.000	15 Winter	100	+30%	100/15 Summer				
8.001	15 Winter	100	+30%	100/15 Summer				
9.000	15 Winter	100	+30%	100/15 Summer				
9.001	15 Winter	100	+30%	100/15 Summer				
8.002	15 Winter	100	+30%	100/15 Summer				
7.003	15 Winter	100	+30%	30/15 Summer				
7.004	15 Winter	100	+30%					
7.005	15 Winter	100	+30%	30/15 Summer				
7.006	15 Winter	100	+30%					
10.000	15 Winter	100	+30%	30/15 Summer				
10.001	15 Winter	100	+30%	30/15 Summer				
7.007	15 Winter	100	+30%					
11.000	15 Winter	100	+30%					
11.001	15 Winter	100	+30%					
12.000	15 Winter	100	+30%	30/15 Summer				
12.001	15 Winter	100	+30%	30/15 Summer				
12.002	15 Winter	100	+30%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
12.003	15 Winter	100	+30%	30/15 Summer				
11.002	15 Winter	100	+30%					
11.003	15 Winter	100	+30%	30/15 Summer				
7.008	15 Winter	100	+30%					
13.000	15 Winter	100	+30%	100/15 Summer				
13.001	15 Winter	100	+30%	30/15 Summer				
7.009	15 Winter	100	+30%					
14.000	15 Winter	100	+30%	30/15 Summer				
14.001	15 Winter	100	+30%	30/15 Summer				
15.000	15 Winter	100	+30%					
14.002	15 Winter	100	+30%					
16.000	15 Winter	100	+30%					
14.003	15 Winter	100	+30%					
17.000	15 Winter	100	+30%	30/15 Summer				
17.001	15 Winter	100	+30%	30/15 Summer				
18.000	15 Winter	100	+30%					
17.002	15 Winter	100	+30%	30/15 Summer				
17.003	15 Winter	100	+30%	30/15 Summer				
14.004	15 Winter	100	+30%	30/15 Summer				
14.005	15 Winter	100	+30%					
14.006	30 Winter	100	+30%	30/15 Summer				
7.010	960 Winter	100	+30%					
19.000	15 Winter	100	+30%	100/15 Summer				
19.001	15 Winter	100	+30%	100/15 Summer				
7.011	960 Winter	100	+30%	30/60 Winter				
1.010	15 Winter	100	+30%					
20.000	15 Winter	100	+30%	100/15 Summer				
20.001	15 Winter	100	+30%	100/15 Summer				
1.011	15 Winter	100	+30%					
1.012	15 Winter	100	+30%					
21.000	15 Winter	100	+30%	100/15 Summer				
21.001	15 Winter	100	+30%					
1.013	15 Winter	100	+30%					
22.000	15 Winter	100	+30%					
23.000	15 Winter	100	+30%	100/15 Summer				
23.001	15 Winter	100	+30%	30/15 Summer				
22.001	15 Winter	100	+30%					
22.002	15 Winter	100	+30%	30/15 Summer				
24.000	15 Winter	100	+30%					
24.001	15 Winter	100	+30%	100/15 Summer				
22.003	15 Winter	100	+30%					
25.000	15 Winter	100	+30%	30/15 Summer				
25.001	15 Winter	100	+30%	100/15 Summer				
22.004	15 Winter	100	+30%					
22.005	15 Winter	100	+30%	30/15 Summer				
26.000	960 Winter	100	+30%					
26.001	960 Winter	100	+30%	100/30 Winter				
22.006	960 Winter	100	+30%					
27.000	15 Winter	100	+30%	30/15 Summer				
27.001	15 Winter	100	+30%	30/15 Summer				
22.007	960 Winter	100	+30%	30/60 Winter				
1.014	15 Winter	100	+30%					
1.015	15 Winter	100	+30%					
28.000	15 Winter	100	+30%					
29.000	15 Winter	100	+30%	100/15 Summer				
29.001	15 Winter	100	+30%	30/15 Summer				
29.002	15 Winter	100	+30%	30/15 Summer				
28.001	15 Winter	100	+30%					
28.002	15 Winter	100	+30%	30/15 Summer				
30.000	15 Winter	100	+30%					
30.001	15 Winter	100	+30%	100/15 Summer				
28.003	15 Winter	100	+30%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
31.000	15 Winter	100	+30%	100/15 Summer				
31.001	15 Winter	100	+30%	100/15 Summer				
31.002	15 Winter	100	+30%	100/15 Summer				
28.004	15 Winter	100	+30%					
28.005	15 Winter	100	+30%	30/15 Summer				
32.000	15 Winter	100	+30%					
32.001	15 Winter	100	+30%					
28.006	1440 Winter	100	+30%					
33.000	15 Winter	100	+30%	100/15 Summer				
33.001	15 Winter	100	+30%	100/15 Summer				
28.007	1440 Winter	100	+30%					
34.000	15 Winter	100	+30%	100/15 Summer				
34.001	15 Winter	100	+30%	100/15 Summer				
34.002	1440 Winter	100	+30%	100/15 Summer				
34.003	1440 Winter	100	+30%					
28.008	1440 Winter	100	+30%	30/30 Winter				
1.016	15 Winter	100	+30%					
1.017	30 Winter	100	+30%					
35.000	15 Winter	100	+30%	100/15 Summer				
1.018	30 Winter	100	+30%					
36.000	15 Winter	100	+30%					
36.001	15 Winter	100	+30%					
36.002	15 Winter	100	+30%	30/15 Summer				
1.019	30 Winter	100	+30%					
1.020	30 Winter	100	+30%					
1.021	30 Winter	100	+30%					
1.022	30 Winter	100	+30%					
37.000	15 Winter	100	+30%	30/15 Summer				
37.001	15 Winter	100	+30%	30/15 Summer				
37.002	15 Winter	100	+30%	100/15 Summer				
38.000	15 Winter	100	+30%	100/15 Summer				
38.001	15 Winter	100	+30%	30/15 Summer				
37.003	720 Winter	100	+30%	30/120 Winter				
1.023	30 Winter	100	+30%					
1.024	30 Winter	100	+30%					
39.000	15 Winter	100	+30%	100/15 Summer				
39.001	15 Winter	100	+30%	100/15 Summer				
39.002	15 Winter	100	+30%	100/15 Summer				
39.003	720 Winter	100	+30%	100/15 Summer				
40.000	15 Winter	100	+30%	30/15 Summer				
40.001	15 Winter	100	+30%	30/15 Winter				
39.004	720 Winter	100	+30%	30/30 Winter				
1.025	30 Winter	100	+30%					
1.026	30 Winter	100	+30%					
1.027	30 Winter	100	+30%					
41.000	15 Winter	100	+30%	100/15 Summer				
41.001	15 Winter	100	+30%					
41.002	240 Winter	100	+30%	30/60 Winter				
1.028	30 Winter	100	+30%					
1.029	60 Winter	100	+30%					
42.000	15 Winter	100	+30%					
42.001	15 Winter	100	+30%					
42.002	15 Winter	100	+30%					
42.003	15 Winter	100	+30%	30/15 Winter				
42.004	15 Winter	100	+30%					
42.005	15 Winter	100	+30%	30/15 Summer				
1.030	60 Winter	100	+30%					
43.000	15 Winter	100	+30%	30/15 Summer				
43.001	15 Winter	100	+30%	30/15 Summer				
43.002	15 Winter	100	+30%					
43.003	180 Winter	100	+30%	30/30 Winter				
1.031	60 Winter	100	+30%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.032	60 Winter	100	+30%					
44.000	360 Winter	100	+30%					
44.001	15 Winter	100	+30%					
45.000	15 Winter	100	+30%	100/15 Summer				
45.001	15 Winter	100	+30%	30/15 Summer				
46.000	15 Winter	100	+30%	100/15 Summer				
46.001	15 Winter	100	+30%	100/15 Summer				
45.002	960 Winter	100	+30%	30/180 Winter				
44.002	15 Winter	100	+30%					
44.003	15 Winter	100	+30%					
44.004	15 Winter	100	+30%					
47.000	360 Winter	100	+30%					
47.001	15 Winter	100	+30%					
47.002	15 Winter	100	+30%					
47.003	15 Winter	100	+30%	30/15 Summer				
48.000	15 Winter	100	+30%					
48.001	15 Winter	100	+30%					
48.002	15 Winter	100	+30%					
48.003	15 Winter	100	+30%					
48.004	15 Winter	100	+30%					
48.005	15 Winter	100	+30%					
47.004	15 Winter	100	+30%	100/15 Summer				
44.005	15 Winter	100	+30%					
49.000	15 Winter	100	+30%					
49.001	15 Winter	100	+30%					
49.002	15 Winter	100	+30%					
49.003	15 Winter	100	+30%					
49.004	15 Winter	100	+30%					
49.005	15 Winter	100	+30%					
44.006	15 Winter	100	+30%					
44.007	15 Winter	100	+30%					
44.008	15 Summer	100	+30%					
50.000	15 Winter	100	+30%					
50.001	240 Winter	100	+30%	30/120 Winter				
51.000	15 Winter	100	+30%					
51.001	15 Winter	100	+30%	100/15 Summer				
51.002	15 Winter	100	+30%					
51.003	15 Winter	100	+30%	30/15 Summer				
44.009	15 Winter	100	+30%	100/15 Winter				
44.010	15 Winter	100	+30%					
52.000	15 Winter	100	+30%					
52.001	120 Winter	100	+30%					
53.000	15 Winter	100	+30%					
53.001	15 Winter	100	+30%					
44.011	15 Winter	100	+30%					
44.012	15 Winter	100	+30%					
44.013	15 Winter	100	+30%					
44.014	15 Winter	100	+30%					
44.015	15 Winter	100	+30%					
54.000	15 Winter	100	+30%					
54.001	15 Winter	100	+30%					
54.002	15 Winter	100	+30%					
54.003	15 Winter	100	+30%	30/15 Summer				
54.004	15 Winter	100	+30%					
54.005	15 Winter	100	+30%	100/15 Summer				
54.006	15 Winter	100	+30%					
54.007	15 Winter	100	+30%					
54.008	15 Winter	100	+30%	30/15 Summer				
1.033	30 Winter	100	+30%					
1.034	30 Winter	100	+30%					
1.035	30 Winter	100	+30%					
55.000	15 Winter	100	+30%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
55.001	15 Winter	100	+30%					
1.036	30 Winter	100	+30%	100/15 Summer				
1.037	60 Winter	100	+30%					
56.000	15 Winter	100	+30%					
56.001	15 Winter	100	+30%	100/15 Summer				
1.038	30 Winter	100	+30%					
57.000	15 Winter	100	+30%					
57.001	15 Winter	100	+30%					
57.002	15 Winter	100	+30%					
57.003	15 Winter	100	+30%					
57.004	15 Winter	100	+30%					
57.005	15 Winter	100	+30%					
58.000	240 Summer	100	+30%					
58.001	240 Summer	100	+30%	100/120 Summer				
57.006	30 Winter	100	+30%					
57.007	30 Winter	100	+30%					
57.008	30 Winter	100	+30%	30/15 Winter				
1.039	30 Winter	100	+30%					
59.000	240 Winter	100	+30%	100/15 Summer				
59.001	240 Winter	100	+30%	100/15 Summer				
60.000	240 Winter	100	+30%					
59.002	240 Winter	100	+30%	30/120 Winter				
1.040	30 Winter	100	+30%					
61.000	240 Winter	100	+30%	30/15 Summer				
61.001	240 Winter	100	+30%	30/30 Summer				
1.041	30 Winter	100	+30%					
1.042	30 Winter	100	+30%					
1.043	30 Winter	100	+30%					
62.000	15 Winter	100	+30%	30/15 Summer				
62.001	240 Winter	100	+30%	30/15 Winter				
63.000	15 Winter	100	+30%	100/15 Summer				
62.002	15 Winter	100	+30%					
62.003	15 Winter	100	+30%					
62.004	15 Winter	100	+30%					
62.005	15 Winter	100	+30%	100/15 Winter				
62.006	15 Winter	100	+30%	100/15 Summer				
64.000	15 Winter	100	+30%					
64.001	15 Winter	100	+30%					
64.002	15 Winter	100	+30%					
64.003	15 Winter	100	+30%					
64.004	15 Winter	100	+30%					
64.005	15 Winter	100	+30%	30/15 Summer				
62.007	15 Winter	100	+30%	30/15 Summer				
65.000	15 Winter	100	+30%	30/15 Summer				
65.001	240 Winter	100	+30%	30/120 Winter				
66.000	15 Winter	100	+30%	100/15 Summer				
66.001	15 Winter	100	+30%	100/15 Summer				
66.002	15 Winter	100	+30%					
66.003	15 Winter	100	+30%					
65.002	15 Winter	100	+30%					
65.003	15 Winter	100	+30%					
65.004	15 Winter	100	+30%	100/15 Summer				
65.005	15 Winter	100	+30%	30/15 Summer				
67.000	15 Winter	100	+30%					
67.001	15 Winter	100	+30%	30/15 Summer				
67.002	15 Winter	100	+30%					
67.003	15 Winter	100	+30%	30/15 Summer				
62.008	15 Winter	100	+30%	100/15 Summer				
62.009	60 Winter	100	+30%	100/15 Summer				
62.010	60 Winter	100	+30%	100/15 Summer				
1.044	60 Winter	100	+30%					
1.045	60 Winter	100	+30%					

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.046	60 Winter	100	+30%					
1.047	60 Winter	100	+30%					
1.048	60 Winter	100	+30%					
1.049	60 Winter	100	+30%					
68.000	15 Winter	100	+30%	30/15 Summer				
69.000	15 Winter	100	+30%	30/15 Summer				
69.001	15 Winter	100	+30%					
68.001	240 Winter	100	+30%	100/30 Summer				
1.050	60 Winter	100	+30%					
1.051	60 Winter	100	+30%					
1.052	60 Winter	100	+30%					
1.053	60 Winter	100	+30%					
1.054	2160 Winter	100	+30%					
1.055	2160 Winter	100	+30%					
1.056	2160 Winter	100	+30%					
1.057	2160 Winter	100	+30%					
70.000	15 Winter	100	+30%					
70.001	15 Winter	100	+30%					
71.000	15 Winter	100	+30%	30/15 Summer				
71.001	15 Winter	100	+30%	100/15 Summer				
72.000	180 Winter	100	+30%	30/15 Summer				
72.001	180 Winter	100	+30%	30/15 Summer				
73.000	180 Winter	100	+30%	30/15 Summer				
73.001	180 Winter	100	+30%	30/30 Winter				
72.002	180 Winter	100	+30%	30/15 Winter				
71.002	15 Winter	100	+30%	100/15 Summer				
71.003	15 Winter	100	+30%	100/15 Summer				
71.004	15 Winter	100	+30%	30/15 Summer				
70.002	15 Winter	100	+30%	100/15 Summer				
70.003	15 Winter	100	+30%	30/15 Summer				
74.000	15 Winter	100	+30%	100/15 Summer				
74.001	15 Winter	100	+30%	100/15 Summer				
70.004	15 Winter	100	+30%	30/15 Summer				
75.000	15 Winter	100	+30%					
76.000	15 Winter	100	+30%					
76.001	15 Winter	100	+30%					
77.000	15 Winter	100	+30%	100/15 Summer				
77.001	15 Winter	100	+30%	30/15 Summer				
77.002	15 Winter	100	+30%	30/15 Summer				
78.000	15 Winter	100	+30%	100/15 Summer				
78.001	15 Winter	100	+30%	100/15 Summer				
77.003	15 Winter	100	+30%	30/15 Summer				
79.000	15 Winter	100	+30%	30/15 Summer				
79.001	15 Winter	100	+30%	30/15 Summer				
79.002	15 Winter	100	+30%	100/15 Summer				
80.000	15 Winter	100	+30%					
80.001	15 Winter	100	+30%					
77.004	15 Winter	100	+30%	30/15 Summer				
76.002	480 Winter	100	+30%	30/120 Winter				
75.001	15 Winter	100	+30%					
75.002	15 Winter	100	+30%					
75.003	15 Winter	100	+30%					
75.004	15 Winter	100	+30%					
70.005	15 Winter	100	+30%					
70.006	15 Winter	100	+30%					
70.007	15 Winter	100	+30%					
81.000	15 Winter	100	+30%					
82.000	15 Winter	100	+30%	100/15 Summer				
82.001	15 Winter	100	+30%	100/15 Summer				
83.000	15 Winter	100	+30%	100/15 Summer				
84.000	15 Winter	100	+30%	30/15 Summer				
84.001	15 Winter	100	+30%	30/15 Summer				

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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
83.001	15 Winter	100	+30%	1/15 Summer				
82.002	15 Winter	100	+30%	1/15 Summer				
85.000	15 Winter	100	+30%	100/15 Summer				
85.001	15 Winter	100	+30%	100/15 Summer				
82.003	15 Winter	100	+30%	1/15 Summer				
82.004	360 Winter	100	+30%	1/15 Summer				
81.001	15 Winter	100	+30%					
81.002	15 Winter	100	+30%					
81.003	15 Winter	100	+30%					
70.008	15 Winter	100	+30%					
70.009	15 Winter	100	+30%					
70.010	30 Summer	100	+30%					
70.011	15 Winter	100	+30%					
70.012	15 Winter	100	+30%	100/15 Winter				
70.013	15 Winter	100	+30%					
70.014	15 Winter	100	+30%	100/15 Summer				
70.015	15 Winter	100	+30%					
86.000	15 Winter	100	+30%	30/15 Winter				
86.001	240 Winter	100	+30%	30/15 Summer				
87.000	15 Winter	100	+30%	100/15 Summer				
88.000	15 Winter	100	+30%					
88.001	15 Winter	100	+30%					
87.001	15 Winter	100	+30%					
86.002	240 Winter	100	+30%	30/30 Summer				
70.016	15 Winter	100	+30%	100/15 Winter				
89.000	15 Winter	100	+30%					
89.001	15 Winter	100	+30%	100/15 Summer				
90.000	15 Winter	100	+30%	100/15 Summer				
90.001	240 Winter	100	+30%	1/30 Winter				
90.002	15 Winter	100	+30%					
89.002	15 Winter	100	+30%	100/15 Summer				
89.003	15 Winter	100	+30%	100/15 Summer				
91.000	15 Winter	100	+30%					
92.000	15 Winter	100	+30%	30/15 Summer				
92.001	180 Winter	100	+30%	30/30 Winter				
91.001	15 Winter	100	+30%					
89.004	15 Winter	100	+30%	30/15 Summer				
89.005	15 Winter	100	+30%	30/15 Summer				
93.000	15 Winter	100	+30%	100/15 Summer				
93.001	240 Winter	100	+30%	30/15 Winter				
89.006	15 Winter	100	+30%					
70.017	15 Winter	100	+30%	100/15 Summer				
70.018	15 Winter	100	+30%					
70.019	15 Winter	100	+30%					
70.020	15 Winter	100	+30%					
70.021	15 Winter	100	+30%	100/15 Summer				
70.022	15 Winter	100	+30%	100/15 Summer				
70.023	15 Winter	100	+30%					
94.000	15 Winter	100	+30%	30/15 Summer				
94.001	240 Winter	100	+30%	30/15 Winter				
95.000	15 Winter	100	+30%	30/15 Winter				
95.001	240 Winter	100	+30%	30/15 Winter				
95.002	15 Summer	100	+30%					
95.003	240 Winter	100	+30%					
95.004	15 Summer	100	+30%					
94.002	2160 Summer	100	+30%					
1.058	2160 Winter	100	+30%					
1.059	2160 Winter	100	+30%	100/480 Winter				

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	15	22.627	-0.111	0.000	0.71	0.0	82.5	OK
1.001	16	22.372	-0.073	0.000	0.57	0.0	79.5	OK
2.000	17	22.468	0.332	0.000	0.92	0.0	79.4	SURCHARGED
2.001	18	22.308	0.360	0.000	1.59	0.0	79.0	SURCHARGED
1.002	19	22.208	0.293	0.000	1.85	0.0	171.9	SURCHARGED
1.003	20	22.010	0.148	0.000	2.05	0.0	172.5	SURCHARGED
1.004	21	21.744	-0.086	0.000	0.92	0.0	161.5	OK
1.005	24	21.548	0.017	0.000	1.07	0.0	136.5	SURCHARGED
1.006	25	21.469	0.069	0.000	0.02	0.0	10.1	SURCHARGED
3.000	26	23.636	0.963	0.000	0.66	0.0	111.0	FLOOD RISK
3.001	27	23.533	0.948	0.000	0.53	0.0	210.9	SURCHARGED
4.000	12	24.292	0.508	0.000	1.41	0.0	238.9	SURCHARGED
4.001	13	24.153	0.458	0.000	1.05	0.0	332.2	SURCHARGED
4.002	14	23.859	0.529	0.000	0.81	0.0	330.2	SURCHARGED
3.002	28	23.388	0.959	0.000	1.02	0.0	535.2	SURCHARGED
5.000	29	23.411	0.850	0.000	0.96	0.0	219.0	FLOOD RISK
5.001	30	23.208	0.866	0.000	0.95	0.0	210.0	SURCHARGED
3.003	31	23.057	0.955	0.000	1.18	0.0	731.8	SURCHARGED
3.004	20	21.726	0.560	0.000	2.88	0.0	795.6	SURCHARGED
1.007	13	21.470	0.355	0.000	0.01	0.0	6.1	SURCHARGED
6.000	9	23.090	-1.323	0.000	0.00	0.0	21.7	OK
6.001	10	22.964	-1.424	0.000	0.00	0.0	21.3	OK
6.002	11	22.751	-1.151	0.000	0.00	0.0	34.2	OK
6.003	12	22.480	-2.220	0.000	0.00	0.0	57.7	OK
6.004	23	22.058	-1.566	0.000	0.00	0.0	109.9	OK
6.005	26	22.049	0.226	0.000	2.22	0.0	76.7	SURCHARGED*
6.006	24	21.641	-1.965	0.000	0.00	0.0	173.9	OK
6.007	25	21.417	0.302	0.000	2.25	0.0	88.0	SURCHARGED*
1.008	32	20.468	-0.466	0.000	0.18	0.0	94.1	OK
1.009	35	20.404	-0.484	0.000	0.14	0.0	106.0	OK
7.000	36	24.441	0.126	0.000	1.06	0.0	57.2	SURCHARGED
7.001	37	24.378	0.117	0.000	1.12	0.0	56.6	SURCHARGED
7.002	38	24.327	-1.250	0.000	0.00	0.0	68.1	OK
8.000	39	24.567	0.104	0.000	0.40	0.0	31.4	SURCHARGED
8.001	40	24.473	0.132	0.000	0.65	0.0	28.7	SURCHARGED
9.000	41	24.620	0.116	0.000	0.53	0.0	44.4	SURCHARGED
9.001	42	24.511	0.120	0.000	0.86	0.0	41.8	SURCHARGED
8.002	43	24.444	0.136	0.000	0.67	0.0	66.7	SURCHARGED
7.003	44	24.317	0.223	0.000	1.77	0.0	143.0	SURCHARGED
7.004	34	23.974	-1.399	0.000	0.01	0.0	141.9	OK
7.005	45	23.961	0.152	0.000	1.55	0.0	133.2	SURCHARGED*
7.006	1	23.557	-1.483	0.000	0.01	0.0	134.4	OK
10.000	46	24.362	0.756	0.000	2.47	0.0	132.6	SURCHARGED
10.001	47	24.041	0.487	0.000	2.21	0.0	130.1	SURCHARGED
7.007	26	23.357	-1.206	0.000	0.02	0.0	257.9	OK
11.000	47	24.030	-1.365	0.000	0.00	0.0	7.1	OK
11.001	49	23.489	-0.196	0.000	0.26	0.0	7.2	OK*
12.000	1	24.907	0.747	0.000	2.40	0.0	132.2	SURCHARGED
12.001	2	24.542	0.444	0.000	2.09	0.0	130.6	SURCHARGED
12.002	3	23.894	-1.382	0.000	0.01	0.0	137.7	OK
12.003	57	23.879	0.206	0.000	1.65	0.0	147.1	SURCHARGED*
11.002	50	23.350	-1.141	0.000	0.01	0.0	151.0	OK
11.003	51	23.127	0.442	0.000	1.75	0.0	88.6	SURCHARGED*
7.008	2	22.348	-1.187	0.000	0.02	0.0	354.2	OK
13.000	49	23.385	0.736	0.000	1.45	0.0	217.0	SURCHARGED
13.001	50	22.743	0.383	0.000	2.11	0.0	217.2	SURCHARGED
7.009	48	21.926	-1.095	0.000	0.04	0.0	580.1	OK
14.000	4	24.654	0.871	0.000	2.25	0.0	130.4	SURCHARGED
14.001	5	24.118	0.435	0.000	2.22	0.0	129.5	SURCHARGED
15.000	58	23.831	-0.446	0.000	0.01	0.0	16.2	OK
14.002	6	23.391	-0.734	0.000	0.03	0.0	153.0	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
16.000	7	23.237	-1.337	0.000	0.00	0.0	7.1	OK
14.003	8	22.825	-0.377	0.000	0.21	0.0	158.1	OK*
17.000	22	23.687	0.787	0.000	1.08	0.0	64.4	SURCHARGED
17.001	23	23.525	0.760	0.000	2.12	0.0	123.8	FLOOD RISK
18.000	64	23.095	-0.780	0.000	0.01	0.0	55.2	OK
17.002	64	23.092	0.435	0.000	1.39	0.0	110.0	SURCHARGED
17.003	61	23.027	0.396	0.000	1.00	0.0	108.6	SURCHARGED
14.004	63	22.817	0.399	0.000	3.36	0.0	258.0	SURCHARGED
14.005	68	22.214	-1.624	0.000	0.01	0.0	296.8	OK
14.006	55	22.136	0.317	0.000	2.30	0.0	246.8	SURCHARGED*
7.010	3	21.722	-0.802	0.000	0.01	0.0	87.7	OK
19.000	33	22.194	0.093	0.000	0.94	0.0	145.2	SURCHARGED
19.001	34	21.751	0.118	0.000	1.23	0.0	287.3	SURCHARGED
7.011	4	21.721	0.565	0.000	0.02	0.0	7.8	FLOOD RISK
1.010	53	20.232	-0.508	0.000	0.09	0.0	140.8	OK
20.000	62	20.495	0.143	0.000	1.27	0.0	95.0	SURCHARGED
20.001	63	20.186	0.017	0.000	1.11	0.0	189.1	SURCHARGED
1.011	64	19.548	-0.373	0.000	0.30	0.0	311.9	OK
1.012	73	19.450	-0.328	0.000	0.27	0.0	284.7	OK
21.000	74	20.421	0.232	0.000	1.56	0.0	92.9	SURCHARGED
21.001	75	19.997	-0.194	0.000	0.60	0.0	186.7	OK
1.013	76	19.391	-0.243	0.000	0.60	0.0	400.9	OK
22.000	391	21.204	-0.693	0.000	0.00	0.0	10.6	OK
23.000	59	21.770	0.398	0.000	0.85	0.0	131.5	SURCHARGED
23.001	60	21.406	0.528	0.000	1.82	0.0	295.9	SURCHARGED
22.001	389	21.204	-0.487	0.000	0.02	0.0	256.0	OK
22.002	83	21.186	0.565	0.000	2.88	0.0	196.3	SURCHARGED*
24.000	58	20.923	-1.541	0.000	0.00	0.0	25.8	OK
24.001	61	20.789	0.057	0.000	1.37	0.0	84.1	SURCHARGED*
22.003	392	20.591	-0.916	0.000	0.03	0.0	288.1	OK
25.000	70	21.063	0.448	0.000	1.96	0.0	114.4	SURCHARGED
25.001	71	20.644	0.142	0.000	1.46	0.0	225.8	SURCHARGED
22.004	395	20.570	-0.760	0.000	0.03	0.0	401.4	OK
22.005	393	20.551	0.301	0.000	2.03	0.0	367.2	SURCHARGED*
26.000	68	20.302	-1.498	0.000	0.00	0.0	0.0	OK
26.001	72	20.302	0.323	0.000	0.01	0.0	0.4	SURCHARGED*
22.006	397	20.302	-0.873	0.000	0.00	0.0	45.3	OK
27.000	77	21.002	0.483	0.000	0.94	0.0	155.8	SURCHARGED
27.001	78	20.842	0.502	0.000	2.26	0.0	233.9	SURCHARGED
22.007	93	20.302	0.488	0.000	0.05	0.0	5.0	SURCHARGED*
1.014	81	19.259	-0.362	0.000	0.37	0.0	413.9	OK
1.015	79	18.902	-0.344	0.000	0.38	0.0	403.8	OK
28.000	365	22.518	-0.844	0.000	0.00	0.0	7.1	OK
29.000	55	23.684	0.810	0.000	1.35	0.0	115.2	SURCHARGED
29.001	56	23.018	0.487	0.000	2.10	0.0	224.8	FLOOD RISK
29.002	62	22.697	0.237	0.000	1.89	0.0	224.3	SURCHARGED
28.001	86	22.447	-0.484	0.000	0.04	0.0	223.8	OK
28.002	366	22.431	0.403	0.000	2.81	0.0	172.6	FLOOD RISK*
30.000	54	22.647	-1.492	0.000	0.00	0.0	6.5	OK
30.001	57	22.202	0.014	0.000	1.12	0.0	84.8	SURCHARGED
28.003	367	21.775	-0.765	0.000	0.04	0.0	243.4	OK
31.000	66	22.008	0.170	0.000	0.87	0.0	123.2	SURCHARGED
31.001	67	21.876	0.211	0.000	1.43	0.0	242.2	SURCHARGED
31.002	68	21.680	0.100	0.000	1.41	0.0	244.4	SURCHARGED
28.004	87	21.593	-0.804	0.000	0.03	0.0	457.2	OK
28.005	368	21.574	0.271	0.000	1.83	0.0	363.9	SURCHARGED*
32.000	65	22.333	-1.342	0.000	0.00	0.0	5.9	OK
32.001	69	21.937	-0.033	0.000	1.00	0.0	76.6	OK
28.006	369	20.909	-1.339	0.000	0.00	0.0	28.1	OK
33.000	80	22.103	0.383	0.000	1.19	0.0	115.9	SURCHARGED
33.001	81	21.541	0.205	0.000	1.54	0.0	233.7	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
28.007	93	20.909	-1.327	0.000	0.00	0.0	37.9	OK
34.000	82	21.494	0.164	0.000	1.00	0.0	87.3	SURCHARGED
34.001	83	20.920	0.131	0.000	1.20	0.0	168.0	SURCHARGED
34.002	99	20.910	0.281	0.000	0.05	0.0	7.4	SURCHARGED
34.003	96	20.909	-1.179	0.000	0.00	0.0	7.2	OK
28.008	90	20.909	0.685	0.000	0.02	0.0	5.2	SURCHARGED
1.016	85	18.775	-0.323	0.000	0.45	0.0	397.3	OK
1.017	84	18.691	-0.355	0.000	0.37	0.0	402.1	OK
35.000	85	22.610	0.801	0.000	1.14	0.0	53.7	SURCHARGED
1.018	86	18.527	-0.317	0.000	0.38	0.0	422.7	OK
36.000	1	22.961	-1.239	0.000	0.01	0.0	48.7	OK
36.001	134	22.555	-1.216	0.000	0.01	0.0	125.8	OK
36.002	2	22.418	0.188	0.000	2.00	0.0	122.9	SURCHARGED*
1.019	92	18.488	-0.287	0.000	0.51	0.0	517.8	OK
1.020	87	18.362	-0.311	0.000	0.47	0.0	520.4	OK
1.021	88	18.122	-0.308	0.000	0.47	0.0	508.5	OK
1.022	91	17.978	-0.289	0.000	0.45	0.0	500.5	OK
37.000	94	24.495	0.884	0.000	1.65	0.0	177.4	FLOOD RISK
37.001	95	24.299	0.686	0.000	2.07	0.0	349.4	SURCHARGED
37.002	96	23.895	0.371	0.000	1.44	0.0	346.6	FLOOD RISK
38.000	89	24.191	0.403	0.000	0.68	0.0	241.3	SURCHARGED
38.001	90	23.835	0.850	0.000	3.41	0.0	467.7	FLOOD RISK
37.003	145	23.418	0.509	0.000	0.03	0.0	5.0	SURCHARGED
1.023	92	17.904	-0.301	0.000	0.55	0.0	504.4	OK
1.024	93	17.816	-0.348	0.000	0.39	0.0	510.7	OK
39.000	97	22.555	0.405	0.000	0.54	0.0	51.7	SURCHARGED
39.001	98	22.474	0.385	0.000	1.20	0.0	101.6	SURCHARGED
39.002	99	22.419	0.288	0.000	1.30	0.0	242.6	SURCHARGED
39.003	100	22.015	0.162	0.000	0.11	0.0	17.9	SURCHARGED
40.000	102	22.688	0.770	0.000	1.84	0.0	515.9	FLOOD RISK
40.001	103	22.039	0.307	0.000	1.86	0.0	515.7	SURCHARGED
39.004	151	22.014	0.637	0.000	0.06	0.0	5.0	SURCHARGED
1.025	101	17.669	-0.341	0.000	0.39	0.0	507.1	OK
1.026	104	17.539	-0.332	0.000	0.40	0.0	501.6	OK
1.027	105	17.422	-0.342	0.000	0.39	0.0	498.7	OK
41.000	106	22.895	0.532	0.000	1.56	0.0	512.7	SURCHARGED
41.001	107	21.965	-0.181	0.000	0.83	0.0	946.9	OK
41.002	108	20.077	0.539	0.000	0.04	0.0	14.4	SURCHARGED
1.028	109	17.295	-0.345	0.000	0.39	0.0	508.7	OK
1.029	110	17.158	-0.321	0.000	0.39	0.0	494.5	OK
42.000	1	24.405	-1.195	0.000	0.01	0.0	69.9	OK
42.001	2	24.218	-1.182	0.000	0.01	0.0	135.5	OK
42.002	3	23.640	-1.360	0.000	0.01	0.0	224.5	OK
42.003	4	23.626	0.326	0.000	1.21	0.0	185.2	SURCHARGED*
42.004	5	22.423	-1.377	0.000	0.01	0.0	197.6	OK
42.005	6	20.630	0.460	0.000	1.95	0.0	176.4	SURCHARGED*
1.030	111	17.060	-0.287	0.000	0.43	0.0	538.5	OK
43.000	112	21.398	1.037	0.000	2.06	0.0	117.4	FLOOD RISK
43.001	113	21.081	0.726	0.000	2.03	0.0	218.8	SURCHARGED
43.002	114	19.999	-0.153	0.000	0.66	0.0	219.9	OK
43.003	115	19.656	0.545	0.000	0.02	0.0	5.0	SURCHARGED
1.031	116	16.970	-0.270	0.000	0.66	0.0	546.3	OK
1.032	117	16.720	-0.484	0.000	0.18	0.0	545.9	OK
44.000	118	22.112	-0.225	0.000	0.00	0.0	0.0	OK
44.001	121	21.642	-0.186	0.000	0.64	0.0	97.1	OK
45.000	119	23.025	0.731	0.000	1.12	0.0	236.8	SURCHARGED
45.001	120	22.617	0.650	0.000	2.40	0.0	462.8	SURCHARGED
46.000	122	23.440	0.611	0.000	0.81	0.0	208.9	SURCHARGED
46.001	123	23.144	0.786	0.000	1.58	0.0	389.2	SURCHARGED
45.002	177	22.343	0.508	0.000	0.02	0.0	5.0	SURCHARGED
44.002	177	21.534	-0.174	0.000	0.56	0.0	90.1	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
44.003	122	21.496	-0.130	0.000	0.52	0.0	88.0	OK
44.004	124	21.447	-0.015	0.000	1.00	0.0	162.8	OK
47.000	125	22.964	-1.350	0.000	0.00	0.0	0.0	OK
47.001	126	22.747	-1.711	0.000	0.00	0.0	26.9	OK
47.002	127	22.455	-1.826	0.000	0.00	0.0	51.0	OK
47.003	143	22.448	0.189	0.000	1.33	0.0	53.8	SURCHARGED
48.000	128	23.145	-0.745	0.000	0.05	0.0	141.0	OK
48.001	129	23.061	-0.836	0.000	0.05	0.0	171.1	OK
48.002	130	22.970	-0.799	0.000	0.05	0.0	190.2	OK
48.003	131	22.870	-1.321	0.000	0.03	0.0	201.1	OK
48.004	132	22.828	-1.279	0.000	0.03	0.0	200.9	OK
48.005	133	22.599	-1.394	0.000	0.01	0.0	200.4	OK
47.004	134	22.408	0.495	0.000	1.37	0.0	216.1	SURCHARGED
44.005	135	21.205	-0.130	0.000	0.94	0.0	340.0	OK
49.000	136	22.980	-0.920	0.000	0.01	0.0	64.7	OK
49.001	137	22.568	-0.821	0.000	0.04	0.0	169.7	OK
49.002	138	22.534	-0.837	0.000	0.03	0.0	169.8	OK
49.003	139	22.502	-0.832	0.000	0.03	0.0	168.5	OK
49.004	140	22.468	-0.812	0.000	0.04	0.0	203.3	OK
49.005	141	22.281	-0.068	0.000	0.95	0.0	239.4	OK
44.006	142	20.969	-0.109	0.000	0.77	0.0	547.6	OK
44.007	143	20.909	-0.089	0.000	0.89	0.0	549.7	OK
44.008	144	20.865	-0.086	0.000	0.59	0.0	489.6	OK
50.000	145	21.909	-0.076	0.000	0.98	0.0	233.3	OK
50.001	146	21.764	0.357	0.000	0.03	0.0	8.2	SURCHARGED
51.000	1	21.944	-0.938	0.000	0.01	0.0	89.2	OK
51.001	2	21.340	0.090	0.000	1.71	0.0	87.8	SURCHARGED
51.002	3	21.188	-1.229	0.000	0.01	0.0	146.0	OK
51.003	4	21.181	0.257	0.000	2.47	0.0	136.0	SURCHARGED
44.009	147	20.765	0.000	0.000	1.67	0.0	644.6	SURCHARGED
44.010	148	20.443	-0.309	0.000	0.47	0.0	643.2	OK
52.000	149	21.644	-0.088	0.000	0.82	0.0	117.4	OK
52.001	150	20.880	-0.088	0.000	0.04	0.0	5.0	OK
53.000	1	21.259	-0.965	0.000	0.01	0.0	58.9	OK
53.001	2	20.577	-0.142	0.000	0.54	0.0	58.3	OK
44.011	151	19.916	-0.338	0.000	0.43	0.0	696.3	OK
44.012	152	19.348	-0.321	0.000	0.45	0.0	719.4	OK
44.013	153	18.756	-0.358	0.000	0.40	0.0	718.3	OK
44.014	154	18.254	-0.141	0.000	0.85	0.0	718.2	OK
44.015	155	17.022	-0.318	0.000	0.56	0.0	716.6	OK
54.000	1	19.209	-1.255	0.000	0.00	0.0	68.0	OK
54.001	2	18.509	-0.080	0.000	0.87	0.0	67.3	OK*
54.002	3	18.415	-1.285	0.000	0.01	0.0	129.6	OK
54.003	4	18.411	0.187	0.000	2.06	0.0	126.5	SURCHARGED*
54.004	5	18.022	-1.488	0.000	0.01	0.0	149.1	OK
54.005	6	17.741	0.122	0.000	1.32	0.0	140.6	SURCHARGED*
54.006	7	17.404	-1.436	0.000	0.01	0.0	258.9	OK
54.007	8	17.396	-1.231	0.000	0.01	0.0	230.0	OK
54.008	9	17.392	0.436	0.000	1.50	0.0	214.4	SURCHARGED
1.033	156	16.342	-0.236	0.000	0.87	0.0	1257.8	OK
1.034	157	16.131	-0.305	0.000	0.58	0.0	1286.8	OK
1.035	158	15.939	-0.156	0.000	0.63	0.0	1282.4	OK
55.000	159	17.484	-1.009	0.000	0.00	0.0	16.5	OK
55.001	160	16.394	-0.141	0.000	0.55	0.0	101.8	OK
1.036	161	15.830	0.017	0.000	1.56	0.0	1302.6	SURCHARGED
1.037	162	15.783	0.000	0.000	1.47	0.0	1201.8	OK
56.000	1	16.000	-0.757	0.000	0.04	0.0	101.8	OK
56.001	2	15.984	0.022	0.000	1.18	0.0	87.0	SURCHARGED*
1.038	173	15.675	-0.051	0.000	1.00	0.0	1347.8	OK
57.000	163	16.365	-0.814	0.000	0.04	0.0	155.1	OK
57.001	164	16.267	-0.745	0.000	0.05	0.0	179.7	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
57.002	165	16.256	-0.728	0.000	0.06	0.0	174.9	OK
57.003	166	16.200	-0.430	0.000	0.13	0.0	185.6	OK
57.004	167	16.146	-0.287	0.000	0.23	0.0	189.8	FLOOD RISK
57.005	168	16.070	-1.172	0.000	0.04	0.0	196.0	OK
58.000	244	15.957	-2.396	0.000	0.00	0.0	69.5	OK
58.001	245	15.943	0.153	0.000	1.86	0.0	68.6	SURCHARGED*
57.006	169	15.758	-0.892	0.000	0.03	0.0	172.6	OK
57.007	170	15.749	-0.417	0.000	0.03	0.0	130.8	OK
57.008	246	15.737	0.158	0.000	2.11	0.0	121.9	SURCHARGED*
1.039	174	15.573	-0.560	0.000	0.19	0.0	1442.4	OK
59.000	175	15.391	0.091	0.000	0.21	0.0	11.0	SURCHARGED
59.001	176	15.387	0.139	0.000	0.22	0.0	10.9	SURCHARGED
60.000	177	15.385	-0.065	0.000	0.06	0.0	0.7	OK
59.002	178	15.384	0.167	0.000	0.10	0.0	5.0	SURCHARGED
1.040	179	15.526	-0.512	0.000	0.28	0.0	1383.6	OK
61.000	180	15.839	0.664	0.000	0.47	0.0	43.9	FLOOD RISK
61.001	181	15.836	0.716	0.000	0.05	0.0	5.0	FLOOD RISK
1.041	182	15.344	-0.484	0.000	0.28	0.0	1301.0	OK
1.042	183	15.203	-0.489	0.000	0.29	0.0	1288.4	OK
1.043	184	15.048	-0.585	0.000	0.19	0.0	1286.7	OK
62.000	185	18.530	1.022	0.000	2.69	0.0	614.8	FLOOD RISK
62.001	186	17.856	0.663	0.000	0.06	0.0	8.4	SURCHARGED
63.000	187	19.461	1.108	0.000	1.25	0.0	100.0	FLOOD RISK
62.002	188	16.150	-0.185	0.000	0.51	0.0	108.7	OK
62.003	189	15.620	-0.097	0.000	0.95	0.0	197.3	OK
62.004	190	15.489	-0.073	0.000	0.87	0.0	195.7	OK
62.005	191	15.421	0.019	0.000	0.94	0.0	187.4	SURCHARGED
62.006	192	15.272	0.109	0.000	0.70	0.0	164.7	SURCHARGED
64.000	193	15.770	-0.936	0.000	0.01	0.0	38.4	OK
64.001	194	15.711	-0.899	0.000	0.02	0.0	80.2	OK
64.002	195	15.624	-0.867	0.000	0.02	0.0	118.7	OK
64.003	196	15.529	-0.819	0.000	0.03	0.0	149.7	OK
64.004	197	15.498	-0.716	0.000	0.03	0.0	156.1	OK
64.005	198	15.485	0.327	0.000	2.77	0.0	150.7	SURCHARGED
62.007	199	15.114	0.269	0.000	2.07	0.0	316.2	SURCHARGED
65.000	200	18.048	0.840	0.000	3.88	0.0	529.0	FLOOD RISK
65.001	201	17.675	0.509	0.000	0.04	0.0	7.8	SURCHARGED
66.000	202	19.905	0.182	0.000	0.77	0.0	50.5	SURCHARGED
66.001	203	19.687	0.347	0.000	1.50	0.0	136.6	SURCHARGED
66.002	204	19.006	-0.070	0.000	0.94	0.0	153.1	OK
66.003	205	17.966	-0.064	0.000	0.96	0.0	179.8	OK
65.002	206	16.783	-0.230	0.000	0.47	0.0	201.2	OK
65.003	207	15.514	-0.097	0.000	0.66	0.0	262.7	OK
65.004	212	15.304	0.193	0.000	0.99	0.0	255.7	SURCHARGED
65.005	213	14.996	0.217	0.000	1.86	0.0	253.1	SURCHARGED
67.000	1	15.865	-0.917	0.000	0.01	0.0	82.5	OK
67.001	2	15.344	0.148	0.000	0.97	0.0	59.6	SURCHARGED*
67.002	3	15.315	-0.781	0.000	0.02	0.0	94.4	OK
67.003	4	15.307	0.178	0.000	2.43	0.0	117.1	SURCHARGED
62.008	214	14.799	0.061	0.000	1.16	0.0	691.1	SURCHARGED
62.009	215	14.757	0.090	0.000	0.86	0.0	479.6	SURCHARGED
62.010	216	14.738	0.122	0.000	1.17	0.0	474.8	SURCHARGED
1.044	217	14.728	-0.936	0.000	0.18	0.0	1491.1	OK
1.045	218	14.669	-0.771	0.000	0.17	0.0	1481.1	OK
1.046	222	14.551	-0.458	0.000	0.35	0.0	1469.3	OK
1.047	223	14.537	-0.521	0.000	0.27	0.0	1466.5	OK
1.048	224	14.421	-0.554	0.000	0.34	0.0	1461.5	OK
1.049	228	14.395	-0.105	0.000	0.74	0.0	1460.8	FLOOD RISK*
68.000	225	15.958	0.583	0.000	2.53	0.0	260.0	FLOOD RISK
69.000	219	15.896	0.521	0.000	3.50	0.0	262.2	FLOOD RISK
69.001	221	15.293	-0.034	0.000	0.99	0.0	508.0	OK

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
68.001	227	15.177	0.351	0.000	0.02	0.0	13.5	SURCHARGED
1.050	304	14.237	-0.263	0.000	0.46	0.0	1469.1	FLOOD RISK*
1.051	229	14.131	-0.365	0.000	0.36	0.0	1471.2	OK
1.052	230	14.012	-0.389	0.000	0.30	0.0	1471.4	OK
1.053	231	13.990	-0.431	0.000	0.29	0.0	1471.4	OK
1.054	232	13.952	-0.554	0.000	0.04	0.0	281.8	OK
1.055	233	13.939	-0.604	0.000	0.03	0.0	280.7	OK
1.056	234	13.924	-0.599	0.000	0.03	0.0	279.1	OK
1.057	235	13.906	-1.094	0.000	0.01	0.0	277.0	OK
70.000	1	21.183	-0.068	0.000	0.81	0.0	39.0	OK
70.001	2	20.970	-0.010	0.000	0.38	0.0	64.6	OK
71.000	26	22.683	0.945	0.000	2.10	0.0	100.1	FLOOD RISK
71.001	27	21.821	0.319	0.000	0.88	0.0	92.3	SURCHARGED
72.000	31	21.783	0.399	0.000	0.57	0.0	36.7	SURCHARGED
72.001	315	21.781	0.426	0.000	0.69	0.0	35.8	SURCHARGED
73.000	33	21.781	0.529	0.000	0.41	0.0	19.3	SURCHARGED
73.001	34	21.780	0.546	0.000	0.47	0.0	19.0	SURCHARGED
72.002	316	21.779	0.636	0.000	0.09	0.0	5.0	SURCHARGED
71.002	28	21.577	0.480	0.000	1.40	0.0	114.8	SURCHARGED
71.003	29	21.251	0.316	0.000	0.49	0.0	147.9	SURCHARGED
71.004	30	20.983	0.668	0.000	1.98	0.0	150.8	SURCHARGED
70.002	3	20.863	0.617	0.000	0.92	0.0	191.8	SURCHARGED
70.003	4	20.405	0.727	0.000	1.05	0.0	217.8	SURCHARGED
74.000	35	20.995	0.737	0.000	1.01	0.0	281.0	SURCHARGED
74.001	325	20.450	0.702	0.000	1.05	0.0	282.3	SURCHARGED
70.004	5	19.914	0.674	0.000	2.82	0.0	500.9	SURCHARGED
75.000	36	20.905	-0.027	0.000	0.99	0.0	13.8	OK
76.000	41	22.079	-0.226	0.000	0.33	0.0	47.7	OK
76.001	42	21.885	-0.206	0.000	0.21	0.0	47.2	OK
77.000	44	22.779	0.823	0.000	0.91	0.0	171.0	SURCHARGED
77.001	45	22.590	0.875	0.000	1.18	0.0	168.5	FLOOD RISK
77.002	46	22.534	0.859	0.000	1.01	0.0	166.0	FLOOD RISK
78.000	54	22.726	0.679	0.000	0.49	0.0	85.7	SURCHARGED
78.001	55	22.580	0.821	0.000	0.37	0.0	75.2	SURCHARGED
77.003	47	22.402	0.933	0.000	2.45	0.0	236.0	SURCHARGED
79.000	49	24.069	1.115	0.000	1.53	0.0	188.8	FLOOD RISK
79.001	50	23.739	1.001	0.000	2.22	0.0	184.8	FLOOD RISK
79.002	51	23.166	0.547	0.000	0.96	0.0	183.8	SURCHARGED
80.000	52	22.173	-0.172	0.000	0.37	0.0	30.6	OK
80.001	53	22.054	-0.075	0.000	0.37	0.0	60.8	OK
77.004	48	22.002	0.668	0.000	3.71	0.0	476.6	SURCHARGED
76.002	43	21.794	0.496	0.000	0.02	0.0	5.7	SURCHARGED
75.001	37	20.507	-0.230	0.000	0.47	0.0	92.5	OK
75.002	38	20.384	-0.205	0.000	0.66	0.0	130.2	OK
75.003	39	20.259	-0.287	0.000	0.42	0.0	131.4	OK
75.004	40	19.998	-0.349	0.000	0.24	0.0	189.1	OK
70.005	6	18.866	-0.275	0.000	0.51	0.0	693.8	OK
70.006	7	18.764	-0.145	0.000	0.55	0.0	641.0	OK
70.007	8	18.694	-0.083	0.000	0.90	0.0	692.8	OK
81.000	58	20.075	-0.152	0.000	0.48	0.0	29.1	OK
82.000	62	21.475	1.000	0.000	1.19	0.0	169.6	SURCHARGED
82.001	63	21.281	0.938	0.000	0.49	0.0	169.7	SURCHARGED
83.000	67	21.212	0.312	0.000	0.11	0.0	20.7	SURCHARGED
84.000	56	21.538	1.283	0.000	0.17	0.0	73.0	FLOOD RISK
84.001	57	21.363	1.435	0.000	0.36	0.0	146.4	FLOOD RISK
83.001	68	21.186	1.718	0.000	1.58	0.0	173.9	SURCHARGED
82.002	64	20.978	1.595	0.000	1.64	0.0	361.7	SURCHARGED
85.000	69	21.194	0.502	0.000	1.34	0.0	146.9	SURCHARGED
85.001	70	20.861	0.362	0.000	1.07	0.0	141.6	SURCHARGED
82.003	65	20.514	1.298	0.000	3.32	0.0	509.5	SURCHARGED
82.004	66	20.310	1.175	0.000	0.03	0.0	5.7	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
81.001	59	18.742	-0.288	0.000	0.22	0.0	33.8	OK
81.002	60	18.719	-0.249	0.000	0.28	0.0	40.4	OK
81.003	61	18.699	-0.207	0.000	0.22	0.0	46.2	OK
70.008	9	18.665	-0.087	0.000	1.08	0.0	749.9	OK
70.009	10	18.496	-2.566	0.000	0.01	0.0	756.7	OK
70.010	11	18.114	0.000	0.000	0.73	0.0	700.1	OK*
70.011	12	18.063	-2.167	0.000	0.03	0.0	764.7	OK
70.012	13	17.616	0.008	0.000	0.81	0.0	768.8	SURCHARGED*
70.013	14	17.598	-1.683	0.000	0.05	0.0	769.1	OK
70.014	15	17.559	0.006	0.000	0.83	0.0	774.3	SURCHARGED*
70.015	16	17.510	-0.760	0.000	0.16	0.0	779.4	OK
86.000	208	17.308	0.920	0.000	1.19	0.0	203.9	FLOOD RISK
86.001	209	17.057	1.137	0.000	0.64	0.0	38.7	FLOOD RISK
87.000	73	19.211	0.159	0.000	1.25	0.0	253.0	SURCHARGED
88.000	71	20.248	-0.094	0.000	0.89	0.0	93.2	OK
88.001	72	20.063	-0.206	0.000	0.40	0.0	90.9	OK
87.001	75	18.680	-0.098	0.000	0.90	0.0	343.6	OK
86.002	379	17.054	1.202	0.000	0.09	0.0	8.8	SURCHARGED
70.016	17	16.019	0.027	0.000	0.53	0.0	782.0	SURCHARGED
89.000	76	19.061	-0.177	0.000	0.34	0.0	40.0	OK
89.001	77	18.811	0.314	0.000	0.83	0.0	103.9	SURCHARGED
90.000	82	20.742	0.262	0.000	1.09	0.0	433.2	SURCHARGED
90.001	83	20.498	0.671	0.000	0.01	0.0	6.3	SURCHARGED
90.002	84	18.707	-0.330	0.000	0.14	0.0	64.2	OK
89.002	78	18.655	0.505	0.000	0.81	0.0	263.4	SURCHARGED
89.003	79	18.306	0.720	0.000	0.96	0.0	253.6	SURCHARGED
91.000	85	19.501	-0.089	0.000	0.34	0.0	10.7	OK
92.000	87	20.032	0.582	0.000	2.46	0.0	276.9	SURCHARGED
92.001	88	19.909	0.573	0.000	0.03	0.0	6.1	SURCHARGED
91.001	86	18.163	-0.326	0.000	0.15	0.0	61.4	OK
89.004	80	18.100	0.737	0.000	1.38	0.0	400.2	SURCHARGED
89.005	316	17.578	0.479	0.000	1.70	0.0	402.6	SURCHARGED
93.000	89	18.599	0.507	0.000	1.41	0.0	328.8	SURCHARGED
93.001	90	18.217	0.713	0.000	0.03	0.0	5.0	SURCHARGED
89.006	81	16.355	-0.480	0.000	0.14	0.0	448.0	OK
70.017	18	15.861	0.143	0.000	1.12	0.0	1143.5	SURCHARGED
70.018	19	15.745	-0.935	0.000	0.15	0.0	1137.7	OK
70.019	20	15.723	-0.726	0.000	0.21	0.0	1120.1	OK
70.020	21	15.708	-0.537	0.000	0.26	0.0	1110.0	OK
70.021	22	15.655	0.089	0.000	1.60	0.0	1109.4	FLOOD RISK
70.022	23	15.592	0.054	0.000	0.84	0.0	1110.6	FLOOD RISK
70.023	24	15.508	-0.191	0.000	0.75	0.0	1109.1	FLOOD RISK
94.000	3	16.932	0.992	0.000	2.49	0.0	228.9	FLOOD RISK
94.001	2	16.419	0.662	0.000	0.07	0.0	7.8	SURCHARGED
95.000	1	18.272	0.707	0.000	1.74	0.0	210.1	SURCHARGED
95.001	2	17.898	0.666	0.000	0.03	0.0	5.7	SURCHARGED
95.002	3	15.861	-0.241	0.000	0.08	0.0	5.7	OK
95.003	3	15.735	-1.465	0.000	0.00	0.0	5.7	OK
95.004	5	15.254	-0.895	0.000	0.00	0.0	5.7	OK
94.002	4	14.837	-1.459	0.000	0.00	0.0	13.5	OK
1.058	236	13.900	-1.148	0.000	0.02	0.0	385.9	OK
1.059	237	13.884	0.152	0.000	0.97	0.0	221.0	SURCHARGED

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 3.SWS

Pipe Sizes NETWORK 4 Manhole Sizes NETWORK 4

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.450	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	20	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for NETWORK 3.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.000	38.122	0.381	100.1	0.142	5.00	0.0	0.600		o	225
1.001	34.800	0.696	50.0	0.000	0.00	0.0	0.600		o	225
2.000	29.325	0.098	299.2	0.196	5.00	0.0	0.600		o	450
2.001	46.237	0.154	300.2	0.196	0.00	0.0	0.600		o	450
3.000	49.124	0.164	299.5	0.131	5.00	0.0	0.600		o	450
3.001	24.347	0.280	87.0	0.131	0.00	0.0	0.600		o	450
2.002	6.751	0.023	293.5	0.000	0.00	0.0	0.600		o	450
2.003	7.241	0.103	70.3	0.000	0.00	0.0	0.600		o	450
1.002	18.539	0.101	183.6	0.000	0.00	0.0	0.600		o	450

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	20.00	5.49	22.165	0.142	0.0	0.0	0.0	1.31	52.0	7.7
1.001	20.00	5.80	21.784	0.142	0.0	0.0	0.0	1.85	73.7	7.7
2.000	20.00	5.42	21.413	0.196	0.0	0.0	0.0	1.17	186.1	10.6
2.001	20.00	6.08	21.293	0.393	0.0	0.0	0.0	1.17	185.8	21.3
3.000	20.00	5.70	21.598	0.131	0.0	0.0	0.0	1.17	186.0	7.1
3.001	20.00	5.89	21.419	0.261	0.0	0.0	0.0	2.18	346.9	14.1
2.002	20.00	6.17	21.139	0.654	0.0	0.0	0.0	1.18	187.9	35.4
2.003	20.00	6.22	21.116	0.654	0.0	0.0	0.0	2.43	386.0	35.4
1.002	20.00	6.43	20.863	0.796	0.0	0.0	0.0	1.50	238.1	43.1

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Network Design Table for NETWORK 3.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.003	67.808	0.136	500.0	0.133	0.00	0.0		0.045	3 \=/	1100
4.000	12.004	0.040	300.0	0.117	5.00	0.0	0.600		o	300
4.001	48.766	0.454	107.4	0.117	0.00	0.0	0.600		o	300
5.000	28.432	0.095	299.3	0.236	5.00	0.0	0.600		o	450
5.001	48.967	0.163	300.0	0.236	0.00	0.0	0.600		o	450
4.002	66.622	0.666	100.0	0.000	0.00	0.0	0.600		o	300
1.004	44.693	0.089	500.0	0.103	0.00	0.0		0.045	3 \=/	2100
1.005	28.478	0.095	300.0	0.096	0.00	0.0	0.600		o	375
1.006	69.909	0.233	300.0	0.098	0.00	0.0	0.600		o	375
6.000	19.128	0.478	40.0	0.167	5.00	0.0	0.600		o	300
6.001	13.154	0.376	35.0	0.167	0.00	0.0	0.600		o	300
6.002	13.402	0.609	22.0	0.000	0.00	0.0	0.600		o	300
1.007	10.385	0.026	400.0	0.120	0.00	0.0	0.600		o	450
1.008	20.385	0.041	500.0	0.000	0.00	0.0		0.045	3 \=/	3000
7.000	16.265	0.542	30.0	0.126	5.00	0.0	0.600		o	300

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)
1.003	20.00	11.28	20.762	0.929	0.0	0.0	0.0	0.23	54.2	50.3
4.000	20.00	5.22	22.293	0.117	0.0	0.0	0.0	0.90	63.8	6.3
4.001	20.00	5.76	22.253	0.234	0.0	0.0	0.0	1.52	107.2	12.7
5.000	20.00	5.41	22.057	0.236	0.0	0.0	0.0	1.17	186.1	12.8
5.001	20.00	6.10	21.962	0.472	0.0	0.0	0.0	1.17	185.8	25.5
4.002	20.00	6.81	21.799	0.705	0.0	0.0	0.0	1.57	111.1	38.2
1.004	20.00	14.27	20.626	1.737	0.0	0.0	0.0	0.25	95.3	94.1
1.005	20.00	14.73	20.537	1.833	0.0	0.0	0.0	1.04	115.0	99.3
1.006	20.00	15.85	20.442	1.931	0.0	0.0	0.0	1.04	115.0	104.6
6.000	20.00	5.13	21.966	0.167	0.0	0.0	0.0	2.49	176.2	9.0
6.001	20.00	5.21	21.488	0.334	0.0	0.0	0.0	2.67	188.5	18.1
6.002	20.00	5.28	21.112	0.334	0.0	0.0	0.0	3.37	238.0	18.1
1.007	20.00	16.02	20.209	2.385	0.0	0.0	0.0	1.01	160.7	129.2
1.008	20.00	17.34	20.183	2.385	0.0	0.0	0.0	0.26	132.7	129.2
7.000	20.00	5.09	21.665	0.126	0.0	0.0	0.0	2.88	203.6	6.8

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Network Design Table for NETWORK 3.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
7.001	64.861	0.800	81.1	0.125	0.00	0.0	0.600		o	300
8.000	27.988	0.622	45.0	0.237	5.00	0.0	0.600		o	300
8.001	17.512	0.438	40.0	0.000	0.00	0.0	0.600		o	300
1.009	6.815	0.023	300.0	0.000	0.00	0.0	0.600		o	450
9.000	59.859	0.399	150.0	0.161	5.00	0.0	0.600		o	300
1.010	17.622	0.059	298.7	0.000	0.00	0.0	0.600		o	450
10.000	56.313	0.282	200.0	0.062	5.00	0.0	0.600		o	300
1.011	86.357	1.727	50.0	0.157	0.00	0.0		0.045	3 \=/	1200
1.012	29.706	1.485	20.0	0.116	0.00	0.0	0.600		o	525
11.000	19.627	0.639	30.7	0.386	5.00	0.0	0.600		o	375
11.001	27.894	0.465	60.0	0.386	0.00	0.0	0.600		o	300
11.002	14.830	0.148	100.0	0.000	0.00	0.0	0.600		o	300
11.003	45.833	0.153	300.0	0.104	0.00	0.0	0.600		o	300
11.004	12.517	0.042	298.0	0.000	0.00	0.0	0.600		o	450

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	20.00	5.71	21.123	0.251	0.0	0.0	0.0	1.75	123.5	13.6
8.000	20.00	5.20	21.499	0.237	0.0	0.0	0.0	2.35	166.1	12.8
8.001	20.00	5.32	20.877	0.237	0.0	0.0	0.0	2.49	176.2	12.8
1.009	20.00	17.44	20.142	2.873	0.0	0.0	0.0	1.17	185.8	155.6
9.000	20.00	5.78	20.812	0.161	0.0	0.0	0.0	1.28	90.6	8.7
1.010	20.00	17.69	20.120	3.034	0.0	0.0	0.0	1.17	186.3	164.3
10.000	20.00	5.85	20.623	0.062	0.0	0.0	0.0	1.11	78.3	3.4
1.011	20.00	19.63	20.061	3.253	0.0	0.0	0.0	0.74	184.1	176.2
1.012	20.00	19.72	18.333	3.369	0.0	0.0	0.0	5.02	1087.8	182.5
11.000	20.00	5.10	18.845	0.386	0.0	0.0	0.0	3.28	362.2	20.9
11.001	20.00	5.33	18.206	0.772	0.0	0.0	0.0	2.03	143.7	41.8
11.002	20.00	5.49	17.741	0.772	0.0	0.0	0.0	1.57	111.1	41.8
11.003	20.00	6.33	17.593	0.876	0.0	0.0	0.0	0.90	63.8	47.4
11.004	20.00	6.51	17.290	0.876	0.0	0.0	0.0	1.17	186.5	47.4

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Network Design Table for NETWORK 3.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
12.000	58.759	0.734	80.0	0.059	5.00	0.0	0.600		o	150
12.001	17.971	0.225	80.0	0.000	0.00	0.0	0.600		o	150
1.013	58.286	0.583	100.0	0.184	0.00	0.0		0.045	3 \=/	1000
1.014	22.006	0.550	40.0	0.000	0.00	0.0		0.045	3 \=/	1000
13.000	10.651	0.213	50.0	0.553	5.00	0.0	0.600		o	375
13.001	29.877	1.195	25.0	0.000	0.00	0.0	0.600		o	375
13.002	9.575	0.383	25.0	0.000	0.00	0.0	0.600		o	375
14.000	67.292	0.421	160.0	0.106	5.00	0.0	0.600		o	300
14.001	10.870	0.136	79.9	0.000	0.00	0.0		0.045	3 \=/	1500
14.002	41.594	0.520	80.0	0.000	0.00	0.0		0.045	3 \=/	1500
13.003	37.339	0.075	497.9	0.000	0.00	0.0	0.600		3 \=/	1500
1.015	8.015	0.016	500.0	0.000	0.00	0.0		0.045	3 \=/	6500
1.016	3.540	0.007	500.0	0.000	0.00	0.0		0.045	3 \=/	6500
1.017	5.170	0.010	500.0	0.000	0.00	0.0		0.045	3 \=/	6500

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
12.000	20.00	5.87	19.131	0.059	0.0	0.0	0.0	1.12	19.9	3.2
12.001	20.00	6.14	18.397	0.059	0.0	0.0	0.0	1.12	19.9	3.2
1.013	20.00	21.02	16.698	4.488	0.0	0.0	0.0	0.75	428.5	243.1
1.014	20.00	21.32	16.115	4.488	0.0	0.0	0.0	1.19	677.4	243.1
13.000	20.00	5.07	16.412	0.553	0.0	0.0	0.0	2.57	283.6	30.0
13.001	20.00	5.21	16.199	0.553	0.0	0.0	0.0	3.64	401.7	30.0
13.002	20.00	5.25	15.004	0.553	0.0	0.0	0.0	3.64	401.7	30.0
14.000	20.00	5.90	15.133	0.106	0.0	0.0	0.0	1.24	87.7	5.7
14.001	20.00	6.20	14.712	0.106	0.0	0.0	0.0	0.60	176.3	5.7
14.002	20.00	7.36	14.576	0.106	0.0	0.0	0.0	0.60	176.3	5.7
13.003	20.00	8.02	14.056	0.659	0.0	0.0	0.0	0.94	274.8	35.7
1.015	20.00	21.82	13.981	5.147	0.0	0.0	0.0	0.27	279.3	278.8
1.016	20.00	22.04	13.965	5.147	0.0	0.0	0.0	0.27	279.3	278.8
1.017	20.00	22.37	13.958	5.147	0.0	0.0	0.0	0.27	279.3	278.8

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Manhole Schedules for NETWORK 3.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	23.590	1.425	Open Manhole	1050	1.000	22.165	225				
2	23.210	1.426	Open Manhole	1050	1.001	21.784	225	1.000	21.784	225	
2	22.913	1.500	Open Manhole	1050	2.000	21.413	450				
3	22.829	1.536	Open Manhole	1350	2.001	21.293	450	2.000	21.315	450	22
4	23.098	1.500	Open Manhole	1050	3.000	21.598	450				
5	23.386	1.967	Open Manhole	1200	3.001	21.419	450	3.000	21.434	450	15
6	23.207	2.068	Open Manhole	1350	2.002	21.139	450	2.001	21.139	450	
								3.001	21.139	450	
7	23.396	2.280	Open Manhole	1350	2.003	21.116	450	2.002	21.116	450	
7	23.348	2.485	Open Manhole		1.002	20.863	450	1.001	21.088	225	
								2.003	21.013	450	150
10	23.380	2.618	Junction		1.003	20.762	1100	1.002	20.762	450	
8	23.793	1.500	Open Manhole	1050	4.000	22.293	300				
9	23.854	1.601	Open Manhole	1050	4.001	22.253	300	4.000	22.253	300	
16	23.557	1.500	Open Manhole	1200	5.000	22.057	450				
17	23.465	1.503	Open Manhole	1200	5.001	21.962	450	5.000	21.962	450	
11	23.758	1.959	Open Manhole		4.002	21.799	300	4.001	21.799	300	
								5.001	21.799	450	
12	23.657	3.031	Junction	0	1.004	20.626	2100	1.003	20.626	1100	
								4.002	21.133	300	656
14	23.546	3.009	Open Manhole	1350	1.005	20.537	375	1.004	20.537	2100	
15	23.624	3.182	Open Manhole	1350	1.006	20.442	375	1.005	20.442	375	
19	23.466	1.500	Open Manhole	1050	6.000	21.966	300				
20	23.458	1.970	Open Manhole	1050	6.001	21.488	300	6.000	21.488	300	
21	23.350	2.238	Open Manhole	1050	6.002	21.112	300	6.001	21.112	300	
22	23.320	3.111	Open Manhole	1500	1.007	20.209	450	1.006	20.209	375	
								6.002	20.503	300	444
23	23.285	3.102	Open Manhole	1500	1.008	20.183	3000	1.007	20.183	450	
24	23.165	1.500	Open Manhole	1050	7.000	21.665	300				
25	22.653	1.530	Open Manhole	1050	7.001	21.123	300	7.000	21.123	300	
26	22.999	1.500	Open Manhole	1050	8.000	21.499	300				
27	23.287	2.410	Open Manhole	1200	8.001	20.877	300	8.000	20.877	300	
24	23.416	3.273	Open Manhole	1200	1.009	20.142	450	1.008	20.142	3000	
								7.001	20.323	300	331
								8.001	20.439	300	447
26	22.312	1.500	Open Manhole	1200	9.000	20.812	300				
27	22.830	2.710	Open Manhole	1500	1.010	20.120	450	1.009	20.120	450	
								9.000	20.413	300	443

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Manhole Schedules for NETWORK 3.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
31	22.713	2.090	Open Manhole	1200	10.000	20.623	300				

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Manhole Schedules for NETWORK 3.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
32	22.543	2.482	Open Manhole	1800	1.011	20.061	1200	1.010	20.061	450	
								10.000	20.341	300	431
33	21.051	2.718	Open Manhole	1800	1.012	18.333	525	1.011	18.333	1200	
34	20.345	1.500	Open Manhole	1050	11.000	18.845	375				
35	19.706	1.500	Open Manhole	1050	11.001	18.206	300	11.000	18.206	375	
36	19.231	1.490	Open Manhole	1050	11.002	17.741	300	11.001	17.741	300	
37	18.984	1.391	Open Manhole	1200	11.003	17.593	300	11.002	17.593	300	
38	20.375	3.085	Open Manhole	1200	11.004	17.290	450	11.003	17.440	300	
39	20.481	1.350	Open Manhole	1500	12.000	19.131	150				
40	20.928	2.531	Open Manhole	1500	12.001	18.397	150	12.000	18.397	150	
41	20.194	3.496	Open Manhole		1.013	16.698	1000	1.012	16.848	525	
								11.004	17.248	450	700
								12.001	18.172	150	1324
42	20.194	4.079	Junction		1.014	16.115	1000	1.013	16.115	1000	
1	17.942	1.530	Open Manhole	1350	13.000	16.412	375				
2	17.701	1.502	Open Manhole	1350	13.001	16.199	375	13.000	16.199	375	
3	16.786	1.782	Open Manhole		13.002	15.004	375	13.001	15.004	375	
1	16.633	1.500	Open Manhole		14.000	15.133	300				
2	16.000	1.288	Junction		14.001	14.712	1500	14.000	14.712	300	
3	16.000	1.424	Junction		14.002	14.576	1500	14.001	14.576	1500	
3	16.187	2.131	Junction		13.003	14.056	1500	13.002	14.621	375	789
								14.002	14.056	1500	
43	16.383	2.401	Junction		1.015	13.981	6500	1.014	15.565	1000	1734
								13.003	13.981	1500	
44	15.793	1.828	Junction		1.016	13.965	6500	1.015	13.965	6500	
45	15.561	1.603	Junction	0	1.017	13.958	6500	1.016	13.958	6500	
	15.287	1.339	Open Manhole	0		OUTFALL		1.017	13.948	6500	

Simulation Criteria for NETWORK 3.SWS

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

Number of Input Hydrographs	0	Number of Storage Structures	8
Number of Online Controls	8	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

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Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	30
Ratio R	0.450		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%	100/15 Summer				
1.001	15 Winter	1	0%	100/15 Summer				
2.000	15 Winter	1	0%	100/15 Summer				
2.001	15 Winter	1	0%	100/15 Summer				
3.000	15 Winter	1	0%	100/360 Winter				
3.001	15 Winter	1	0%	100/60 Winter				
2.002	180 Winter	1	0%	30/120 Winter				
2.003	180 Winter	1	0%					
1.002	15 Winter	1	0%					
1.003	15 Winter	1	0%					
4.000	15 Winter	1	0%	100/15 Summer				
4.001	15 Winter	1	0%	100/15 Summer				
5.000	15 Winter	1	0%	100/15 Summer				
5.001	15 Winter	1	0%	100/15 Summer				
4.002	180 Winter	1	0%	30/30 Summer				
1.004	15 Winter	1	0%					
1.005	15 Winter	1	0%	30/15 Summer				
1.006	15 Winter	1	0%	30/15 Summer				
6.000	15 Winter	1	0%	100/60 Winter				
6.001	60 Winter	1	0%	30/15 Summer				
6.002	30 Winter	1	0%					
1.007	15 Winter	1	0%	100/15 Summer				
1.008	15 Winter	1	0%					
7.000	15 Winter	1	0%	100/60 Winter				
7.001	60 Winter	1	0%	30/15 Summer				
8.000	15 Winter	1	0%	100/120 Winter				
8.001	60 Winter	1	0%	30/15 Summer				
1.009	15 Winter	1	0%	30/15 Winter				
9.000	15 Winter	1	0%	100/15 Summer				
1.010	30 Winter	1	0%	100/15 Summer				
10.000	15 Winter	1	0%					
1.011	15 Winter	1	0%					
1.012	15 Winter	1	0%					
11.000	15 Winter	1	0%					
11.001	120 Winter	1	0%	30/15 Winter				
11.002	30 Winter	1	0%					
11.003	15 Winter	1	0%	100/15 Summer				

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
11.004	15 Winter	1	0%					
12.000	15 Winter	1	0%	30/15 Winter				
12.001	15 Winter	1	0%	30/15 Winter				
1.013	15 Winter	1	0%					
1.014	15 Winter	1	0%					
13.000	15 Winter	1	0%	30/15 Winter				
13.001	120 Winter	1	0%	30/30 Winter				
13.002	15 Winter	1	0%					
14.000	15 Winter	1	0%					
14.001	15 Winter	1	0%					
14.002	15 Winter	1	0%					
13.003	960 Winter	1	0%					
1.015	960 Winter	1	0%					
1.016	960 Winter	1	0%					
1.017	960 Winter	1	0%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	22.267	-0.123	0.000	0.41	0.0	20.2	OK
1.001	2	21.867	-0.142	0.000	0.29	0.0	20.4	OK
2.000	2	21.546	-0.317	0.000	0.17	0.0	27.8	OK
2.001	3	21.464	-0.279	0.000	0.30	0.0	50.9	OK
3.000	4	21.698	-0.350	0.000	0.11	0.0	18.4	OK
3.001	5	21.522	-0.347	0.000	0.12	0.0	34.2	OK
2.002	6	21.327	-0.262	0.000	0.04	0.0	4.7	OK
2.003	7	21.164	-0.402	0.000	0.03	0.0	4.7	OK
1.002	7	20.968	-0.345	0.000	0.12	0.0	22.0	OK
1.003	10	20.899	-2.481	0.000	0.00	0.0	37.5	OK
4.000	8	22.412	-0.181	0.000	0.33	0.0	16.8	OK
4.001	9	22.368	-0.185	0.000	0.31	0.0	31.0	OK
5.000	16	22.213	-0.294	0.000	0.21	0.0	33.3	OK
5.001	17	22.150	-0.262	0.000	0.36	0.0	60.9	OK
4.002	11	21.982	-0.117	0.000	0.05	0.0	5.0	OK
1.004	12	20.773	-2.884	0.000	0.00	0.0	47.8	OK
1.005	14	20.734	-0.178	0.000	0.54	0.0	54.6	OK
1.006	15	20.646	-0.171	0.000	0.56	0.0	60.3	OK
6.000	19	22.046	-0.220	0.000	0.16	0.0	24.1	OK
6.001	20	21.656	-0.132	0.000	0.03	0.0	5.0	OK
6.002	21	21.144	-0.268	0.000	0.03	0.0	5.0	OK
1.007	22	20.498	-0.161	0.000	0.74	0.0	71.9	OK
1.008	23	20.422	-2.863	0.000	0.00	0.0	71.1	OK
7.000	24	21.730	-0.235	0.000	0.11	0.0	18.2	OK
7.001	25	21.284	-0.139	0.000	0.04	0.0	5.0	OK
8.000	26	21.596	-0.203	0.000	0.23	0.0	34.2	OK
8.001	27	21.038	-0.139	0.000	0.03	0.0	5.0	OK
1.009	24	20.418	-0.174	0.000	0.69	0.0	80.1	OK
9.000	26	20.918	-0.194	0.000	0.27	0.0	23.5	OK
1.010	27	20.366	-0.203	0.000	0.58	0.0	85.5	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
10.000	31	20.692	-0.231	0.000	0.12	0.0	9.0	OK
1.011	32	20.167	-2.376	0.000	0.00	0.0	99.2	OK
1.012	33	18.454	-0.405	0.000	0.12	0.0	109.1	OK
11.000	34	18.954	-0.266	0.000	0.18	0.0	55.7	OK
11.001	35	18.388	-0.118	0.000	0.05	0.0	6.1	OK
11.002	36	17.791	-0.250	0.000	0.07	0.0	6.1	OK
11.003	37	17.700	-0.193	0.000	0.27	0.0	16.3	OK
11.004	38	17.393	-0.347	0.000	0.12	0.0	16.2	OK
12.000	39	19.201	-0.080	0.000	0.42	0.0	8.2	OK
12.001	40	18.466	-0.080	0.000	0.44	0.0	8.1	OK
1.013	41	16.873	-3.321	0.000	0.00	0.0	147.6	OK
1.014	42	16.247	-3.947	0.000	0.00	0.0	147.7	OK
13.000	1	16.588	-0.199	0.000	0.44	0.0	79.4	OK
13.001	2	16.380	-0.194	0.000	0.01	0.0	5.0	OK
13.002	3	15.041	-0.338	0.000	0.02	0.0	5.0	OK
14.000	1	15.220	-0.213	0.000	0.18	0.0	14.9	OK
14.001	2	14.748	-1.252	0.000	0.00	0.0	14.8	OK
14.002	3	14.612	-1.388	0.000	0.00	0.0	14.7	OK
13.003	3	14.399	-1.789	0.000	0.00	0.0	4.9	OK
1.015	43	14.399	-1.983	0.000	0.00	0.0	39.7	OK
1.016	44	14.399	-1.394	0.000	0.00	0.0	39.0	OK
1.017	45	14.399	-1.162	0.000	0.00	0.0	10.0	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%	100/15 Summer				
1.001	15 Winter	30	0%	100/15 Summer				
2.000	15 Winter	30	0%	100/15 Summer				
2.001	240 Winter	30	0%	100/15 Summer				
3.000	15 Winter	30	0%	100/360 Winter				
3.001	240 Winter	30	0%	100/60 Winter				
2.002	240 Winter	30	0%	30/120 Winter				
2.003	30 Winter	30	0%					
1.002	15 Winter	30	0%					
1.003	15 Winter	30	0%					
4.000	15 Winter	30	0%	100/15 Summer				
4.001	15 Winter	30	0%	100/15 Summer				
5.000	15 Winter	30	0%	100/15 Summer				
5.001	15 Winter	30	0%	100/15 Summer				
4.002	240 Winter	30	0%	30/30 Summer				
1.004	15 Winter	30	0%					
1.005	15 Winter	30	0%	30/15 Summer				
1.006	15 Winter	30	0%	30/15 Summer				
6.000	15 Winter	30	0%	100/60 Winter				
6.001	120 Winter	30	0%	30/15 Summer				
6.002	15 Winter	30	0%					
1.007	30 Winter	30	0%	100/15 Summer				
1.008	15 Winter	30	0%					
7.000	15 Winter	30	0%	100/60 Winter				
7.001	60 Winter	30	0%	30/15 Summer				
8.000	15 Winter	30	0%	100/120 Winter				
8.001	60 Winter	30	0%	30/15 Summer				
1.009	15 Winter	30	0%	30/15 Winter				
9.000	15 Winter	30	0%	100/15 Summer				
1.010	15 Winter	30	0%	100/15 Summer				
10.000	15 Winter	30	0%					
1.011	15 Winter	30	0%					
1.012	15 Winter	30	0%					
11.000	15 Winter	30	0%					
11.001	180 Winter	30	0%	30/15 Winter				
11.002	15 Winter	30	0%					
11.003	15 Winter	30	0%	100/15 Summer				

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
11.004	15 Winter	30	0%					
12.000	15 Winter	30	0%	30/15 Winter				
12.001	15 Winter	30	0%	30/15 Winter				
1.013	15 Winter	30	0%					
1.014	15 Winter	30	0%					
13.000	15 Winter	30	0%	30/15 Winter				
13.001	180 Winter	30	0%	30/30 Winter				
13.002	15 Summer	30	0%					
14.000	15 Winter	30	0%					
14.001	15 Winter	30	0%					
14.002	2160 Winter	30	0%					
13.003	2160 Winter	30	0%					
1.015	2160 Winter	30	0%					
1.016	2160 Winter	30	0%					
1.017	2160 Winter	30	0%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	22.376	-0.014	0.000	1.00	0.0	49.1	OK
1.001	2	21.924	-0.085	0.000	0.70	0.0	48.9	OK
2.000	2	21.663	-0.200	0.000	0.43	0.0	68.4	OK
2.001	3	21.627	-0.116	0.000	0.14	0.0	23.6	OK
3.000	4	21.759	-0.289	0.000	0.27	0.0	45.1	OK
3.001	5	21.626	-0.243	0.000	0.06	0.0	16.1	OK
2.002	6	21.625	0.036	0.000	0.04	0.0	5.0	SURCHARGED
2.003	7	21.165	-0.401	0.000	0.03	0.0	5.0	OK
1.002	7	21.050	-0.263	0.000	0.30	0.0	53.4	OK
1.003	10	21.010	-2.370	0.000	0.00	0.0	94.7	OK
4.000	8	22.505	-0.088	0.000	0.80	0.0	41.4	OK
4.001	9	22.467	-0.086	0.000	0.82	0.0	82.8	OK
5.000	16	22.365	-0.142	0.000	0.52	0.0	82.2	OK
5.001	17	22.325	-0.087	0.000	0.96	0.0	162.0	OK
4.002	11	22.288	0.190	0.000	0.05	0.0	5.0	SURCHARGED
1.004	12	20.952	-2.706	0.000	0.00	0.0	99.6	OK
1.005	14	20.946	0.034	0.000	0.93	0.0	93.8	SURCHARGED
1.006	15	20.872	0.055	0.000	0.93	0.0	101.1	SURCHARGED
6.000	19	22.096	-0.170	0.000	0.39	0.0	59.3	OK
6.001	20	21.985	0.198	0.000	0.03	0.0	5.0	SURCHARGED
6.002	21	21.144	-0.268	0.000	0.03	0.0	5.0	OK
1.007	22	20.659	0.000	0.000	1.26	0.0	123.5	OK
1.008	23	20.597	-2.688	0.000	0.00	0.0	124.4	OK
7.000	24	21.769	-0.196	0.000	0.26	0.0	44.8	OK
7.001	25	21.608	0.185	0.000	0.04	0.0	5.0	SURCHARGED
8.000	26	21.661	-0.138	0.000	0.56	0.0	84.1	OK
8.001	27	21.365	0.188	0.000	0.03	0.0	5.0	SURCHARGED
1.009	24	20.596	0.003	0.000	1.10	0.0	128.0	SURCHARGED
9.000	26	20.992	-0.120	0.000	0.66	0.0	56.5	OK
1.010	27	20.566	-0.003	0.000	1.00	0.0	147.3	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
10.000	31	20.735	-0.188	0.000	0.30	0.0	22.2	OK
1.011	32	20.224	-2.318	0.000	0.00	0.0	210.6	OK
1.012	33	18.519	-0.339	0.000	0.27	0.0	242.2	OK
11.000	34	19.023	-0.197	0.000	0.45	0.0	137.0	OK
11.001	35	18.724	0.218	0.000	0.05	0.0	6.1	SURCHARGED
11.002	36	17.807	-0.234	0.000	0.07	0.0	6.3	OK
11.003	37	17.790	-0.103	0.000	0.76	0.0	45.4	OK
11.004	38	17.468	-0.272	0.000	0.33	0.0	45.5	OK
12.000	39	19.299	0.018	0.000	1.00	0.0	19.5	SURCHARGED
12.001	40	18.549	0.003	0.000	1.01	0.0	18.8	SURCHARGED
1.013	41	16.977	-3.218	0.000	0.00	0.0	363.5	OK
1.014	42	16.333	-3.861	0.000	0.00	0.0	361.7	OK
13.000	1	16.812	0.025	0.000	1.07	0.0	192.9	SURCHARGED
13.001	2	16.708	0.134	0.000	0.01	0.0	5.0	SURCHARGED
13.002	3	15.041	-0.338	0.000	0.02	0.0	5.0	OK
14.000	1	15.275	-0.158	0.000	0.43	0.0	36.2	OK
14.001	2	14.773	-1.228	0.000	0.00	0.0	36.1	OK
14.002	3	14.696	-1.304	0.000	0.00	0.0	1.1	OK
13.003	3	14.696	-1.491	0.000	0.00	0.0	5.0	OK
1.015	43	14.696	-1.686	0.000	0.00	0.0	42.9	OK
1.016	44	14.696	-1.097	0.000	0.00	0.0	41.6	OK
1.017	45	14.696	-0.865	0.000	0.00	0.0	28.0	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+30%	100/15 Summer				
1.001	15 Winter	100	+30%	100/15 Summer				
2.000	360 Winter	100	+30%	100/15 Summer				
2.001	360 Winter	100	+30%	100/15 Summer				
3.000	360 Winter	100	+30%	100/360 Winter				
3.001	360 Winter	100	+30%	100/60 Winter				
2.002	360 Winter	100	+30%	30/120 Winter				
2.003	15 Winter	100	+30%					
1.002	15 Winter	100	+30%					
1.003	15 Winter	100	+30%					
4.000	15 Winter	100	+30%	100/15 Summer				
4.001	15 Winter	100	+30%	100/15 Summer				
5.000	15 Winter	100	+30%	100/15 Summer				
5.001	360 Winter	100	+30%	100/15 Summer				
4.002	360 Winter	100	+30%	30/30 Summer				
1.004	30 Winter	100	+30%					
1.005	30 Winter	100	+30%	30/15 Summer				
1.006	30 Winter	100	+30%	30/15 Summer				
6.000	180 Winter	100	+30%	100/60 Winter				
6.001	180 Winter	100	+30%	30/15 Summer				
6.002	30 Summer	100	+30%					
1.007	15 Winter	100	+30%	100/15 Summer				
1.008	15 Winter	100	+30%					
7.000	120 Winter	100	+30%	100/60 Winter				
7.001	120 Winter	100	+30%	30/15 Summer				
8.000	120 Winter	100	+30%	100/120 Winter				
8.001	120 Winter	100	+30%	30/15 Summer				
1.009	15 Winter	100	+30%	30/15 Winter				
9.000	15 Winter	100	+30%	100/15 Summer				
1.010	15 Winter	100	+30%	100/15 Summer				
10.000	15 Winter	100	+30%					
1.011	15 Winter	100	+30%					
1.012	15 Winter	100	+30%					
11.000	240 Winter	100	+30%					
11.001	240 Winter	100	+30%	30/15 Winter				
11.002	15 Winter	100	+30%					
11.003	15 Winter	100	+30%	100/15 Summer				

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
11.004	15 Winter	100	+30%					
12.000	15 Winter	100	+30%	30/15 Winter				
12.001	15 Winter	100	+30%	30/15 Winter				
1.013	15 Winter	100	+30%					
1.014	15 Winter	100	+30%					
13.000	15 Winter	100	+30%	30/15 Winter				
13.001	240 Winter	100	+30%	30/30 Winter				
13.002	15 Winter	100	+30%					
14.000	15 Winter	100	+30%					
14.001	2160 Winter	100	+30%					
14.002	2160 Winter	100	+30%					
13.003	2160 Winter	100	+30%					
1.015	2160 Winter	100	+30%					
1.016	2160 Winter	100	+30%					
1.017	2160 Winter	100	+30%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	23.046	0.656	0.000	1.58	0.0	77.9	SURCHARGED
1.001	2	22.111	0.102	0.000	1.07	0.0	74.5	SURCHARGED
2.000	2	22.054	0.191	0.000	0.09	0.0	14.4	SURCHARGED
2.001	3	22.054	0.311	0.000	0.16	0.0	27.5	SURCHARGED
3.000	4	22.053	0.005	0.000	0.06	0.0	9.8	SURCHARGED
3.001	5	22.053	0.184	0.000	0.06	0.0	18.0	SURCHARGED
2.002	6	22.052	0.463	0.000	0.04	0.0	5.0	SURCHARGED
2.003	7	21.174	-0.392	0.000	0.03	0.0	5.2	OK
1.002	7	21.163	-0.150	0.000	0.44	0.0	78.8	OK
1.003	10	21.137	-2.243	0.000	0.01	0.0	143.3	OK
4.000	8	23.008	0.415	0.000	1.34	0.0	69.0	SURCHARGED
4.001	9	22.935	0.382	0.000	1.33	0.0	134.4	SURCHARGED
5.000	16	22.769	0.262	0.000	0.88	0.0	139.6	SURCHARGED
5.001	17	22.731	0.319	0.000	0.20	0.0	33.3	SURCHARGED
4.002	11	22.729	0.630	0.000	0.05	0.0	5.0	SURCHARGED
1.004	12	21.127	-2.530	0.000	0.00	0.0	111.2	OK
1.005	14	21.126	0.214	0.000	1.13	0.0	114.0	SURCHARGED
1.006	15	21.030	0.213	0.000	1.13	0.0	122.9	SURCHARGED
6.000	19	22.452	0.186	0.000	0.14	0.0	21.9	SURCHARGED
6.001	20	22.449	0.662	0.000	0.03	0.0	5.0	SURCHARGED
6.002	21	21.144	-0.268	0.000	0.03	0.0	5.0	OK
1.007	22	20.765	0.106	0.000	1.75	0.0	171.6	SURCHARGED
1.008	23	20.701	-2.584	0.000	0.01	0.0	167.5	OK
7.000	24	22.079	0.114	0.000	0.13	0.0	22.7	SURCHARGED
7.001	25	22.076	0.653	0.000	0.04	0.0	5.0	SURCHARGED
8.000	26	21.838	0.039	0.000	0.28	0.0	42.7	SURCHARGED
8.001	27	21.831	0.654	0.000	0.03	0.0	5.0	SURCHARGED
1.009	24	20.700	0.108	0.000	1.46	0.0	169.1	SURCHARGED
9.000	26	21.195	0.083	0.000	1.08	0.0	92.7	SURCHARGED
1.010	27	20.656	0.086	0.000	1.57	0.0	230.6	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
10.000	31	20.774	-0.149	0.000	0.51	0.0	37.5	OK
1.011	32	20.266	-2.276	0.000	0.00	0.0	321.1	OK
1.012	33	18.570	-0.289	0.000	0.41	0.0	372.3	OK
11.000	34	19.180	-0.040	0.000	0.13	0.0	40.8	OK
11.001	35	19.178	0.672	0.000	0.05	0.0	6.1	SURCHARGED
11.002	36	17.946	-0.095	0.000	0.10	0.0	9.5	OK
11.003	37	17.941	0.048	0.000	1.13	0.0	67.7	SURCHARGED
11.004	38	17.513	-0.227	0.000	0.49	0.0	67.0	OK
12.000	39	20.078	0.797	0.000	1.35	0.0	26.3	SURCHARGED
12.001	40	18.731	0.184	0.000	1.36	0.0	25.3	SURCHARGED
1.013	41	17.043	-3.151	0.000	0.01	0.0	552.4	OK
1.014	42	16.383	-3.811	0.000	0.00	0.0	551.7	OK
13.000	1	17.269	0.482	0.000	1.80	0.0	325.8	SURCHARGED
13.001	2	17.163	0.589	0.000	0.01	0.0	5.0	SURCHARGED
13.002	3	15.041	-0.338	0.000	0.02	0.0	5.0	OK
14.000	1	15.331	-0.102	0.000	0.73	0.0	61.2	OK
14.001	2	14.932	-1.068	0.000	0.00	0.0	1.9	OK
14.002	3	14.932	-1.068	0.000	0.00	0.0	1.8	OK
13.003	3	14.932	-1.255	0.000	0.00	0.0	6.0	OK
1.015	43	14.932	-1.450	0.000	0.00	0.0	57.7	OK
1.016	44	14.932	-0.861	0.000	0.00	0.0	56.4	OK
1.017	45	14.932	-0.629	0.000	0.00	0.0	38.5	OK

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 4.SWS

Pipe Sizes NETWORK 4 Manhole Sizes NETWORK 4

FSR Rainfall Model - England and Wales

Return Period (years)	1	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.450	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	20	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for NETWORK 4.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.000	84.449	0.563	150.0	0.100	5.00	0.0	0.600		o	300
1.001	34.483	0.230	149.9	0.099	0.00	0.0	0.600		o	300
2.000	11.156	0.037	301.5	0.243	5.00	0.0	0.600		o	450
2.001	23.091	0.077	299.9	0.243	0.00	0.0	0.600		o	450
2.002	51.803	0.418	123.9	0.243	0.00	0.0	0.600		o	450
3.000	18.620	0.062	300.3	0.264	5.00	0.0	0.600		o	450
3.001	34.272	0.114	300.6	0.264	0.00	0.0	0.600		o	450
2.003	14.407	0.072	200.0	0.000	0.00	0.0	0.600		o	450
4.000	52.288	0.949	55.1	0.117	5.00	0.0	0.600		o	225

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	20.00	6.10	21.569	0.100	0.0	0.0	0.0	1.28	90.6	5.4
1.001	20.00	6.55	21.011	0.199	0.0	0.0	0.0	1.28	90.6	10.8
2.000	20.00	5.16	21.886	0.243	0.0	0.0	0.0	1.17	185.4	13.1
2.001	20.00	5.49	21.849	0.486	0.0	0.0	0.0	1.17	185.9	26.3
2.002	20.00	5.96	21.742	0.728	0.0	0.0	0.0	1.83	290.3	39.4
3.000	20.00	5.27	21.499	0.264	0.0	0.0	0.0	1.17	185.7	14.3
3.001	20.00	5.76	21.437	0.528	0.0	0.0	0.0	1.17	185.6	28.6
2.003	20.00	6.13	21.323	1.257	0.0	0.0	0.0	1.43	228.1	68.1
4.000	20.00	5.49	22.350	0.117	0.0	0.0	0.0	1.77	70.2	6.3

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Network Design Table for NETWORK 4.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
2.004	70.805	0.550	128.7	0.103	0.00	0.0	0.600		o	300
1.002	26.301	0.658	40.0	0.097	0.00	0.0		0.045	3 \=/	1000
5.000	28.806	0.096	300.1	0.149	5.00	0.0	0.600		o	450
5.001	41.609	0.693	60.0	0.149	0.00	0.0	0.600		o	450
5.002	38.659	0.129	299.7	0.000	0.00	0.0	0.600		o	450
5.003	20.230	0.202	100.0	0.000	0.00	0.0	0.600		o	450
6.000	10.205	0.034	300.1	0.068	5.00	0.0	0.600		o	300
6.001	24.524	0.565	43.4	0.068	0.00	0.0	0.600		o	300
7.000	11.910	0.040	297.8	0.117	5.00	0.0	0.600		o	375
7.001	25.892	0.118	220.0	0.117	0.00	0.0	0.600		o	375
7.002	47.445	0.438	108.3	0.037	0.00	0.0	0.600		o	375
6.002	31.431	0.495	63.5	0.095	0.00	0.0	0.600		o	375
5.004	19.840	0.066	300.6	0.117	0.00	0.0	0.600		o	450
1.003	15.571	0.389	40.0	0.000	0.00	0.0		0.045	3 \=/	1000

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)
2.004	20.00	6.98	21.251	1.477	0.0	0.0	0.0	1.38	97.8	80.0
1.002	20.00	7.52	20.701	1.773	0.0	0.0	0.0	0.81	177.2	96.0
5.000	20.00	5.41	20.941	0.149	0.0	0.0	0.0	1.17	185.8	8.1
5.001	20.00	5.67	20.845	0.297	0.0	0.0	0.0	2.63	417.9	16.1
5.002	20.00	6.23	20.152	0.297	0.0	0.0	0.0	1.17	185.9	16.1
5.003	20.00	6.39	20.023	0.297	0.0	0.0	0.0	2.03	323.4	16.1
6.000	20.00	5.19	21.059	0.068	0.0	0.0	0.0	0.90	63.8	3.7
6.001	20.00	5.36	21.019	0.136	0.0	0.0	0.0	2.39	169.2	7.4
7.000	20.00	5.19	20.985	0.117	0.0	0.0	0.0	1.04	115.4	6.3
7.001	20.00	5.54	20.945	0.234	0.0	0.0	0.0	1.22	134.5	12.7
7.002	20.00	6.00	20.827	0.271	0.0	0.0	0.0	1.74	192.2	14.7
6.002	20.00	6.23	20.379	0.502	0.0	0.0	0.0	2.28	251.5	27.2
5.004	20.00	6.68	19.809	0.916	0.0	0.0	0.0	1.17	185.7	49.6
1.003	20.00	7.84	19.743	2.689	0.0	0.0	0.0	0.81	177.1	145.6

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Network Design Table for NETWORK 4.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.004	17.977	1.198	15.0	0.000	0.00	0.0	0.600		o	300
1.005	19.220	0.481	40.0	0.040	0.00	0.0		0.045	3 \=/	1000
8.000	16.011	0.160	100.1	0.278	5.00	0.0	0.600		o	375
8.001	43.067	0.431	99.9	0.278	0.00	0.0	0.600		o	375
8.002	19.395	0.194	100.0	0.000	0.00	0.0	0.600		o	375
1.006	57.434	1.373	41.8	0.040	0.00	0.0		0.045	3 \=/	1100
1.007	46.006	1.150	40.0	0.040	0.00	0.0		0.045	3 \=/	1100
9.000	41.410	0.148	279.8	0.614	5.00	0.0	0.600		o	525
9.001	59.715	0.442	135.0	0.614	0.00	0.0	0.600		o	525
1.008	26.929	0.620	43.4	0.060	0.00	0.0	0.600		[]	-1
10.000	89.269	0.970	92.0	0.189	5.00	0.0	0.600		o	300
11.000	31.230	0.156	200.2	0.419	5.00	0.0	0.600		o	375
11.001	72.402	0.467	155.0	0.419	0.00	0.0	0.600		o	375
12.000	42.231	1.207	35.0	0.313	5.00	0.0	0.600		o	375
12.001	107.061	2.379	45.0	0.191	0.00	0.0	0.600		o	450

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)
1.004	20.00	7.91	19.354	2.689	0.0	0.0	0.0	4.08	288.3	145.6
1.005	20.00	8.31	18.156	2.729	0.0	0.0	0.0	0.81	177.2	147.8
8.000	20.00	5.15	18.672	0.278	0.0	0.0	0.0	1.81	200.1	15.1
8.001	20.00	5.54	18.512	0.556	0.0	0.0	0.0	1.81	200.2	30.1
8.002	20.00	5.72	18.081	0.556	0.0	0.0	0.0	1.81	200.1	30.1
1.006	20.00	9.49	17.675	3.325	0.0	0.0	0.0	0.81	187.3	180.1
1.007	20.00	10.42	16.302	3.365	0.0	0.0	0.0	0.82	191.5	182.3
9.000	20.00	5.52	15.500	0.614	0.0	0.0	0.0	1.33	288.8	33.3
9.001	20.00	6.03	15.352	1.228	0.0	0.0	0.0	1.93	417.0	66.5
1.008	20.00	10.53	14.702	4.654	0.0	0.0	0.0	4.25	2552.0	252.1
10.000	20.00	5.91	15.500	0.189	0.0	0.0	0.0	1.64	115.9	10.2
11.000	20.00	5.41	15.900	0.419	0.0	0.0	0.0	1.28	141.0	22.7
11.001	20.00	6.24	15.744	0.838	0.0	0.0	0.0	1.45	160.5	45.4
12.000	20.00	5.23	19.982	0.313	0.0	0.0	0.0	3.07	339.3	17.0
12.001	20.00	5.82	18.700	0.504	0.0	0.0	0.0	3.04	483.0	27.3

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Network Design Table for NETWORK 4.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
12.002	54.754	1.053	52.0	0.217	0.00	0.0	0.600		o	375
11.002	69.602	0.820	84.9	0.196	0.00	0.0	0.600		o	375
1.009	19.332	0.064	302.1	0.222	0.00	0.0	0.600		[]	-1
1.010	47.058	0.650	72.4	0.094	0.00	0.0		0.045	3 \=/	1000
13.000	25.385	0.391	64.9	0.352	5.00	0.0	0.600		o	300
13.001	50.481	0.337	149.8	0.352	0.00	0.0	0.600		o	300
1.011	31.610	0.421	75.0	0.000	0.00	0.0		0.045	3 \=/	1000
14.000	37.137	0.371	100.1	0.330	5.00	0.0	0.600		o	450
14.001	41.321	0.275	150.3	0.330	0.00	0.0	0.600		o	450
15.000	44.784	0.224	199.9	0.330	5.00	0.0	0.600		o	450
15.001	59.316	0.715	83.0	0.330	0.00	0.0	0.600		o	450
14.002	21.120	0.112	188.6	0.000	0.00	0.0		0.045	o	525
14.003	90.857	0.413	220.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.012	6.696	0.022	300.0	0.000	0.00	0.0		0.045	3 \=/	8800

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)
12.002	20.00	6.18	16.321	0.721	0.0	0.0	0.0	2.52	278.1	39.1
11.002	20.00	6.83	15.268	1.755	0.0	0.0	0.0	1.97	217.3	95.0
1.009	20.00	10.73	14.082	6.819	0.0	0.0	0.0	1.60	962.9	369.4
1.010	20.00	11.62	14.018	6.913	0.0	0.0	0.0	0.88	503.6	374.5
13.000	20.00	5.22	14.300	0.352	0.0	0.0	0.0	1.95	138.1	19.1
13.001	20.00	5.87	13.909	0.704	0.0	0.0	0.0	1.28	90.6	38.1
1.011	20.00	12.23	13.368	7.617	0.0	0.0	0.0	0.87	494.7	412.6
14.000	20.00	5.30	14.200	0.330	0.0	0.0	0.0	2.03	323.2	17.9
14.001	20.00	5.72	13.829	0.660	0.0	0.0	0.0	1.66	263.4	35.7
15.000	20.00	5.52	14.500	0.330	0.0	0.0	0.0	1.43	228.1	17.9
15.001	20.00	5.96	14.276	0.660	0.0	0.0	0.0	2.23	355.2	35.7
14.002	20.00	6.81	13.479	1.320	0.0	0.0	0.0	0.42	90.5	71.5
14.003	20.00	10.86	13.367	1.320	0.0	0.0	0.0	0.37	137.4	71.5
1.012	20.00	12.54	12.947	8.937	0.0	0.0	0.0	0.35	485.3	484.1

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Network Design Table for NETWORK 4.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.013	5.886	0.020	300.0	0.000	0.00	0.0	0.600		o	675

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)
1.013	20.00	12.61	12.924	8.937	0.0	0.0	0.0	1.51	539.6	484.1

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Manhole Schedules for NETWORK 4.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	22.919	1.350	Open Manhole	1050	1.000	21.569	300				
2	22.781	1.775	Open Manhole		1.001	21.011	300	1.000	21.006	300	
3	23.386	1.500	Open Manhole	1050	2.000	21.886	450				
4	23.406	1.557	Open Manhole	1050	2.001	21.849	450	2.000	21.849	450	
5	23.676	1.934	Open Manhole	1200	2.002	21.742	450	2.001	21.772	450	30
6	22.999	1.500	Open Manhole	1050	3.000	21.499	450				
7	22.968	1.531	Open Manhole	1050	3.001	21.437	450	3.000	21.437	450	
11	23.224	1.901	Open Manhole	1200	2.003	21.323	450	2.002	21.324	450	1
								3.001	21.323	450	
9	23.700	1.350	Open Manhole	1350	4.000	22.350	225				
9	23.700	2.449	Open Manhole		2.004	21.251	300	2.003	21.251	450	
								4.000	21.401	225	75
12	21.714	1.013	Junction		1.002	20.701	1000	1.001	20.781	300	230
								2.004	20.701	300	
13	22.441	1.500	Open Manhole	1050	5.000	20.941	450				
14	22.395	1.550	Open Manhole	1050	5.001	20.845	450	5.000	20.845	450	
18	21.553	1.401	Open Manhole	1050	5.002	20.152	450	5.001	20.152	450	
18	22.487	2.464	Open Manhole	1350	5.003	20.023	450	5.002	20.023	450	
15	22.559	1.500	Open Manhole	1050	6.000	21.059	300				
16	22.689	1.670	Open Manhole	1050	6.001	21.019	300	6.000	21.025	300	6
49	22.560	1.575	Open Manhole	1350	7.000	20.985	375				
50	22.689	1.744	Open Manhole	1350	7.001	20.945	375	7.000	20.945	375	
20	21.959	1.131	Open Manhole	1350	7.002	20.827	375	7.001	20.827	375	
17	21.954	1.575	Open Manhole	1350	6.002	20.379	375	6.001	20.454	300	
								7.002	20.389	375	10
18	21.652	1.843	Open Manhole		5.004	19.809	450	5.003	19.821	450	12
								6.002	19.884	375	
19	21.101	1.358	Junction		1.003	19.743	1000	1.002	20.043	1000	300
								5.004	19.743	450	
24	20.743	1.389	Junction		1.004	19.354	300	1.003	19.354	1000	
25	19.951	1.795	Junction		1.005	18.156	1000	1.004	18.156	300	
20	20.172	1.500	Open Manhole	1350	8.000	18.672	375				
21	19.898	1.386	Open Manhole	1350	8.001	18.512	375	8.000	18.512	375	
22	19.211	1.130	Open Manhole		8.002	18.081	375	8.001	18.081	375	
23	18.500	0.825	Junction		1.006	17.675	1100	1.005	17.675	1000	
								8.002	17.887	375	437
24	18.250	1.948	Junction	0	1.007	16.302	1100	1.006	16.302	1100	
26	17.100	1.600	Open Manhole	1350	9.000	15.500	525				

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Manhole Schedules for NETWORK 4.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
27	17.002	1.650	Open Manhole	1350	9.001	15.352	525	9.000	15.352	525	

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Manhole Schedules for NETWORK 4.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
25	18.100	3.398	Open Manhole	1500	1.008	14.702	-1	1.007	15.152	1100	
								9.001	14.910	525	133
29	17.000	1.500	Open Manhole	1050	10.000	15.500	300				
30	17.500	1.600	Open Manhole	1350	11.000	15.900	375				
31	17.511	1.767	Open Manhole	1350	11.001	15.744	375	11.000	15.744	375	
32	21.557	1.575	Open Manhole	1500	12.000	19.982	375				
33	20.500	1.800	Open Manhole	1500	12.001	18.700	450	12.000	18.775	375	
34	19.500	3.179	Open Manhole	1500	12.002	16.321	375	12.001	16.321	450	
32	18.500	3.232	Open Manhole	1500	11.002	15.268	375	11.001	15.277	375	9
								12.002	15.268	375	
35	16.500	2.418	Open Manhole		1.009	14.082	-1	1.008	14.082	-1	
								10.000	14.530	300	148
								11.002	14.448	375	141
36	16.200	2.182	Junction		1.010	14.018	1000	1.009	14.018	-1	
37	15.800	1.500	Open Manhole	1050	13.000	14.300	300				
38	15.500	1.591	Open Manhole		13.001	13.909	300	13.000	13.909	300	
39	15.300	1.932	Junction		1.011	13.368	1000	1.010	13.368	1000	
								13.001	13.572	300	204
1	15.700	1.500	Open Manhole	1350	14.000	14.200	450				
2	15.500	1.671	Open Manhole	1350	14.001	13.829	450	14.000	13.829	450	
5	16.000	1.500	Open Manhole	1350	15.000	14.500	450				
6	15.700	1.424	Open Manhole	1350	15.001	14.276	450	15.000	14.276	450	
3	15.300	1.821	Open Manhole		14.002	13.479	525	14.001	13.554	450	
								15.001	13.561	450	7
3	15.100	1.733	Junction		14.003	13.367	2000	14.002	13.367	525	
40	14.400	1.453	Junction		1.012	12.947	8800	1.011	12.947	1000	
								14.003	12.954	2000	7
42	14.141	1.217	Junction	0	1.013	12.924	675	1.012	12.924	8800	
	14.100	1.195	Open Manhole	0		OUTFALL		1.013	12.905	675	

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Simulation Criteria for NETWORK 4.SWS

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

Number of Input Hydrographs	0	Number of Storage Structures	8
Number of Online Controls	8	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)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	30
Ratio R	0.450		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%					
1.001	15 Winter	1	0%	100/15 Summer				
2.000	15 Winter	1	0%	100/15 Summer				
2.001	15 Winter	1	0%	30/15 Summer				
2.002	15 Winter	1	0%	100/15 Summer				
3.000	15 Winter	1	0%	100/15 Summer				
3.001	15 Winter	1	0%	30/15 Summer				
2.003	360 Winter	1	0%	30/120 Winter				
4.000	15 Winter	1	0%	100/15 Summer				
2.004	15 Winter	1	0%	100/15 Summer				
1.002	15 Winter	1	0%					
5.000	15 Winter	1	0%					
5.001	15 Winter	1	0%					
5.002	15 Winter	1	0%	100/60 Winter				
5.003	15 Winter	1	0%	100/30 Summer				
6.000	15 Winter	1	0%					
6.001	15 Winter	1	0%					
7.000	15 Winter	1	0%	100/15 Summer				
7.001	15 Winter	1	0%	100/15 Summer				
7.002	15 Winter	1	0%	100/15 Summer				
6.002	15 Winter	1	0%	100/15 Summer				
5.004	120 Winter	1	0%	30/30 Summer				
1.003	15 Winter	1	0%					
1.004	15 Winter	1	0%					
1.005	15 Winter	1	0%					
8.000	15 Winter	1	0%	100/15 Summer				
8.001	15 Winter	1	0%	30/15 Summer				
8.002	120 Winter	1	0%	30/30 Winter				
1.006	15 Winter	1	0%					
1.007	15 Winter	1	0%					
9.000	15 Winter	1	0%	100/15 Summer				
9.001	180 Winter	1	0%	100/30 Summer				
1.008	15 Winter	1	0%					
10.000	15 Winter	1	0%					
11.000	15 Winter	1	0%	30/15 Summer				
11.001	120 Winter	1	0%	30/30 Winter				
12.000	15 Winter	1	0%					

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
12.001	15 Winter	1	0%	100/15 Summer				
12.002	15 Winter	1	0%	30/15 Summer				
11.002	15 Winter	1	0%	30/15 Summer				
1.009	15 Winter	1	0%	100/15 Summer				
1.010	15 Winter	1	0%					
13.000	15 Winter	1	0%	100/15 Summer				
13.001	180 Winter	1	0%	30/15 Winter				
1.011	15 Winter	1	0%					
14.000	15 Winter	1	0%	100/15 Summer				
14.001	15 Winter	1	0%	100/15 Summer				
15.000	15 Winter	1	0%	100/15 Summer				
15.001	15 Winter	1	0%	100/15 Summer				
14.002	180 Winter	1	0%	30/60 Winter				
14.003	720 Winter	1	0%					
1.012	720 Winter	1	0%					
1.013	720 Winter	1	0%	100/360 Winter				

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	21.651	-0.218	0.000	0.16	0.0	13.7	OK
1.001	2	21.125	-0.186	0.000	0.30	0.0	25.3	OK
2.000	3	22.073	-0.263	0.000	0.26	0.0	34.6	OK
2.001	4	22.053	-0.246	0.000	0.42	0.0	64.3	OK
2.002	5	21.926	-0.266	0.000	0.35	0.0	92.8	OK
3.000	6	21.680	-0.269	0.000	0.25	0.0	37.3	OK
3.001	7	21.643	-0.244	0.000	0.43	0.0	69.5	OK
2.003	11	21.521	-0.252	0.000	0.03	0.0	5.0	OK
4.000	9	22.427	-0.148	0.000	0.25	0.0	16.8	OK
2.004	9	21.366	-0.185	0.000	0.30	0.0	28.4	OK
1.002	12	20.788	-0.926	0.000	0.01	0.0	64.7	OK
5.000	13	21.051	-0.340	0.000	0.13	0.0	21.1	OK
5.001	14	20.943	-0.352	0.000	0.11	0.0	39.4	OK
5.002	18	20.300	-0.302	0.000	0.23	0.0	38.5	OK
5.003	18	20.140	-0.333	0.000	0.15	0.0	38.7	OK
6.000	15	21.150	-0.209	0.000	0.20	0.0	9.8	OK
6.001	16	21.088	-0.231	0.000	0.12	0.0	18.0	OK
7.000	49	21.106	-0.254	0.000	0.19	0.0	16.8	OK
7.001	50	21.077	-0.243	0.000	0.27	0.0	31.0	OK
7.002	20	20.940	-0.262	0.000	0.20	0.0	34.8	OK
6.002	17	20.516	-0.238	0.000	0.28	0.0	63.6	OK
5.004	18	20.117	-0.142	0.000	0.03	0.0	5.0	OK
1.003	19	19.833	-1.268	0.000	0.00	0.0	69.8	OK
1.004	24	19.457	-0.197	0.000	0.25	0.0	69.9	OK*
1.005	25	18.249	-1.702	0.000	0.00	0.0	74.2	OK
8.000	20	18.801	-0.246	0.000	0.26	0.0	40.1	OK
8.001	21	18.679	-0.208	0.000	0.40	0.0	74.0	OK
8.002	22	18.258	-0.198	0.000	0.03	0.0	5.0	OK
1.006	23	17.769	-0.731	0.000	0.01	0.0	81.4	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.007	24	16.399	-1.851	0.000	0.00	0.0	85.6	OK
9.000	26	15.716	-0.309	0.000	0.35	0.0	88.1	OK
9.001	27	15.533	-0.344	0.000	0.03	0.0	9.7	OK
1.008	25	14.758	-0.544	0.000	0.06	0.0	99.2	OK
10.000	29	15.601	-0.199	0.000	0.25	0.0	27.6	OK
11.000	30	16.085	-0.190	0.000	0.48	0.0	59.7	OK
11.001	31	15.921	-0.198	0.000	0.05	0.0	7.5	OK
12.000	32	20.078	-0.279	0.000	0.15	0.0	45.2	OK
12.001	33	18.816	-0.334	0.000	0.15	0.0	67.8	OK
12.002	34	16.477	-0.219	0.000	0.36	0.0	93.6	OK
11.002	32	15.476	-0.167	0.000	0.59	0.0	120.9	OK
1.009	35	14.330	-0.352	0.000	0.40	0.0	266.8	OK
1.010	36	14.240	-1.960	0.000	0.01	0.0	275.8	OK
13.000	37	14.435	-0.165	0.000	0.41	0.0	50.7	OK
13.001	38	14.091	-0.118	0.000	0.07	0.0	5.6	OK
1.011	39	13.587	-1.713	0.000	0.01	0.0	281.8	OK
14.000	1	14.324	-0.326	0.000	0.16	0.0	46.9	OK
14.001	2	14.020	-0.259	0.000	0.37	0.0	87.7	OK
15.000	5	14.647	-0.303	0.000	0.23	0.0	46.9	OK
15.001	6	14.434	-0.292	0.000	0.27	0.0	86.9	OK
14.002	3	13.737	-0.267	0.000	0.12	0.0	10.4	OK
14.003	3	13.417	-1.683	0.000	0.00	0.0	10.4	OK
1.012	40	13.413	-0.986	0.000	0.00	0.0	68.5	OK
1.013	42	13.413	-0.186	0.000	0.04	0.0	19.0	OK*

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%					
1.001	15 Winter	30	0%	100/15 Summer				
2.000	15 Winter	30	0%	100/15 Summer				
2.001	15 Winter	30	0%	30/15 Summer				
2.002	15 Winter	30	0%	100/15 Summer				
3.000	15 Winter	30	0%	100/15 Summer				
3.001	15 Winter	30	0%	30/15 Summer				
2.003	480 Winter	30	0%	30/120 Winter				
4.000	15 Winter	30	0%	100/15 Summer				
2.004	15 Winter	30	0%	100/15 Summer				
1.002	15 Winter	30	0%					
5.000	15 Winter	30	0%					
5.001	15 Winter	30	0%					
5.002	240 Winter	30	0%	100/60 Winter				
5.003	240 Winter	30	0%	100/30 Summer				
6.000	15 Winter	30	0%					
6.001	15 Winter	30	0%					
7.000	15 Winter	30	0%	100/15 Summer				
7.001	15 Winter	30	0%	100/15 Summer				
7.002	15 Winter	30	0%	100/15 Summer				
6.002	15 Winter	30	0%	100/15 Summer				
5.004	240 Winter	30	0%	30/30 Summer				
1.003	15 Winter	30	0%					
1.004	15 Winter	30	0%					
1.005	15 Winter	30	0%					
8.000	15 Winter	30	0%	100/15 Summer				
8.001	15 Winter	30	0%	30/15 Summer				
8.002	180 Winter	30	0%	30/30 Winter				
1.006	15 Winter	30	0%					
1.007	15 Winter	30	0%					
9.000	15 Winter	30	0%	100/15 Summer				
9.001	180 Winter	30	0%	100/30 Summer				
1.008	15 Winter	30	0%					
10.000	15 Winter	30	0%					
11.000	15 Winter	30	0%	30/15 Summer				
11.001	180 Winter	30	0%	30/30 Winter				
12.000	15 Winter	30	0%					

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
12.001	15 Winter	30	0%	100/15 Summer				
12.002	15 Winter	30	0%	30/15 Summer				
11.002	15 Winter	30	0%	30/15 Summer				
1.009	15 Winter	30	0%	100/15 Summer				
1.010	15 Winter	30	0%					
13.000	15 Winter	30	0%	100/15 Summer				
13.001	180 Winter	30	0%	30/15 Winter				
1.011	15 Winter	30	0%					
14.000	15 Winter	30	0%	100/15 Summer				
14.001	15 Winter	30	0%	100/15 Summer				
15.000	15 Winter	30	0%	100/15 Summer				
15.001	15 Winter	30	0%	100/15 Summer				
14.002	180 Winter	30	0%	30/60 Winter				
14.003	1440 Winter	30	0%					
1.012	1440 Winter	30	0%					
1.013	1440 Winter	30	0%	100/360 Winter				

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	21.703	-0.166	0.000	0.39	0.0	33.7	OK
1.001	2	21.221	-0.090	0.000	0.81	0.0	67.6	OK
2.000	3	22.329	-0.007	0.000	0.63	0.0	83.5	OK
2.001	4	22.304	0.005	0.000	1.09	0.0	168.2	SURCHARGED
2.002	5	22.102	-0.090	0.000	0.96	0.0	254.1	OK
3.000	6	21.944	-0.005	0.000	0.62	0.0	92.3	OK
3.001	7	21.909	0.022	0.000	1.13	0.0	182.8	SURCHARGED
2.003	11	21.838	0.065	0.000	0.03	0.0	5.0	SURCHARGED
4.000	9	22.479	-0.096	0.000	0.60	0.0	40.8	OK
2.004	9	21.462	-0.089	0.000	0.80	0.0	74.6	OK
1.002	12	20.847	-0.867	0.000	0.02	0.0	174.3	OK
5.000	13	21.121	-0.270	0.000	0.33	0.0	51.8	OK
5.001	14	21.010	-0.285	0.000	0.28	0.0	105.4	OK
5.002	18	20.435	-0.167	0.000	0.11	0.0	18.4	OK
5.003	18	20.434	-0.039	0.000	0.07	0.0	17.1	OK
6.000	15	21.207	-0.152	0.000	0.48	0.0	24.1	OK
6.001	16	21.138	-0.181	0.000	0.33	0.0	49.7	OK
7.000	49	21.207	-0.153	0.000	0.47	0.0	41.4	OK
7.001	50	21.186	-0.134	0.000	0.71	0.0	83.2	OK
7.002	20	21.028	-0.175	0.000	0.54	0.0	96.5	OK
6.002	17	20.636	-0.118	0.000	0.79	0.0	177.1	OK
5.004	18	20.434	0.175	0.000	0.03	0.0	5.0	SURCHARGED
1.003	19	19.892	-1.209	0.000	0.01	0.0	179.2	OK
1.004	24	19.531	-0.123	0.000	0.65	0.0	178.2	OK*
1.005	25	18.312	-1.639	0.000	0.01	0.0	190.2	OK
8.000	20	18.976	-0.071	0.000	0.62	0.0	96.5	OK
8.001	21	18.920	0.033	0.000	1.04	0.0	190.9	SURCHARGED
8.002	22	18.583	0.127	0.000	0.03	0.0	5.0	SURCHARGED
1.006	23	17.834	-0.666	0.000	0.03	0.0	205.9	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.007	24	16.463	-1.787	0.000	0.00	0.0	217.0	OK
9.000	26	15.881	-0.144	0.000	0.85	0.0	214.3	OK
9.001	27	15.856	-0.021	0.000	0.03	0.0	9.7	OK
1.008	25	14.809	-0.493	0.000	0.14	0.0	242.1	OK
10.000	29	15.669	-0.131	0.000	0.59	0.0	66.2	OK
11.000	30	16.324	0.049	0.000	1.17	0.0	146.1	SURCHARGED
11.001	31	16.248	0.129	0.000	0.05	0.0	7.5	SURCHARGED
12.000	32	20.138	-0.219	0.000	0.36	0.0	111.2	OK
12.001	33	18.898	-0.252	0.000	0.38	0.0	177.0	OK
12.002	34	16.974	0.278	0.000	0.88	0.0	228.0	SURCHARGED
11.002	32	16.193	0.550	0.000	1.28	0.0	262.6	SURCHARGED
1.009	35	14.597	-0.085	0.000	0.93	0.0	625.5	OK
1.010	36	14.344	-1.856	0.000	0.01	0.0	648.4	OK
13.000	37	14.567	-0.033	0.000	1.00	0.0	123.4	OK
13.001	38	14.423	0.214	0.000	0.07	0.0	5.6	SURCHARGED
1.011	39	13.703	-1.597	0.000	0.02	0.0	647.9	OK
14.000	1	14.402	-0.248	0.000	0.41	0.0	115.6	OK
14.001	2	14.206	-0.073	0.000	0.99	0.0	233.5	OK
15.000	5	14.746	-0.204	0.000	0.56	0.0	115.0	OK
15.001	6	14.563	-0.163	0.000	0.71	0.0	231.8	OK
14.002	3	14.066	0.062	0.000	0.12	0.0	10.4	SURCHARGED
14.003	3	13.596	-1.504	0.000	0.00	0.0	10.4	OK
1.012	40	13.595	-0.804	0.000	0.00	0.0	70.7	OK
1.013	42	13.595	-0.004	0.000	0.12	0.0	54.0	OK*

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+30%					
1.001	15 Winter	100	+30%	100/15 Summer				
2.000	15 Winter	100	+30%	100/15 Summer				
2.001	15 Winter	100	+30%	30/15 Summer				
2.002	15 Winter	100	+30%	100/15 Summer				
3.000	720 Winter	100	+30%	100/15 Summer				
3.001	720 Winter	100	+30%	30/15 Summer				
2.003	720 Winter	100	+30%	30/120 Winter				
4.000	15 Winter	100	+30%	100/15 Summer				
2.004	15 Winter	100	+30%	100/15 Summer				
1.002	15 Winter	100	+30%					
5.000	15 Winter	100	+30%					
5.001	15 Winter	100	+30%					
5.002	360 Winter	100	+30%	100/60 Winter				
5.003	360 Winter	100	+30%	100/30 Summer				
6.000	15 Winter	100	+30%					
6.001	15 Winter	100	+30%					
7.000	15 Winter	100	+30%	100/15 Summer				
7.001	15 Winter	100	+30%	100/15 Summer				
7.002	15 Winter	100	+30%	100/15 Summer				
6.002	15 Winter	100	+30%	100/15 Summer				
5.004	360 Winter	100	+30%	30/30 Summer				
1.003	15 Winter	100	+30%					
1.004	15 Winter	100	+30%					
1.005	15 Winter	100	+30%					
8.000	15 Winter	100	+30%	100/15 Summer				
8.001	15 Winter	100	+30%	30/15 Summer				
8.002	240 Winter	100	+30%	30/30 Winter				
1.006	15 Winter	100	+30%					
1.007	15 Winter	100	+30%					
9.000	240 Winter	100	+30%	100/15 Summer				
9.001	240 Winter	100	+30%	100/30 Summer				
1.008	15 Winter	100	+30%					
10.000	15 Winter	100	+30%					
11.000	15 Winter	100	+30%	30/15 Summer				
11.001	240 Winter	100	+30%	30/30 Winter				
12.000	15 Winter	100	+30%					

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
12.001	15 Winter	100	+30%	100/15 Summer				
12.002	15 Winter	100	+30%	30/15 Summer				
11.002	15 Winter	100	+30%	30/15 Summer				
1.009	15 Winter	100	+30%	100/15 Summer				
1.010	15 Winter	100	+30%					
13.000	15 Winter	100	+30%	100/15 Summer				
13.001	240 Winter	100	+30%	30/15 Winter				
1.011	15 Winter	100	+30%					
14.000	15 Winter	100	+30%	100/15 Summer				
14.001	15 Winter	100	+30%	100/15 Summer				
15.000	15 Winter	100	+30%	100/15 Summer				
15.001	15 Winter	100	+30%	100/15 Summer				
14.002	240 Winter	100	+30%	30/60 Winter				
14.003	1440 Winter	100	+30%					
1.012	1440 Winter	100	+30%					
1.013	1440 Winter	100	+30%	100/360 Winter				

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	21.754	-0.115	0.000	0.65	0.0	56.9	OK
1.001	2	21.458	0.147	0.000	1.28	0.0	106.7	SURCHARGED
2.000	3	23.089	0.753	0.000	1.07	0.0	141.5	FLOOD RISK
2.001	4	23.050	0.751	0.000	1.80	0.0	276.8	SURCHARGED
2.002	5	22.799	0.607	0.000	1.54	0.0	408.2	SURCHARGED
3.000	6	22.278	0.329	0.000	0.07	0.0	11.0	SURCHARGED
3.001	7	22.278	0.391	0.000	0.13	0.0	21.7	SURCHARGED
2.003	11	22.277	0.504	0.000	0.03	0.0	5.0	SURCHARGED
4.000	9	22.701	0.126	0.000	0.96	0.0	64.7	SURCHARGED
2.004	9	21.820	0.269	0.000	1.20	0.0	112.4	SURCHARGED
1.002	12	20.887	-0.826	0.000	0.03	0.0	266.4	OK
5.000	13	21.184	-0.207	0.000	0.55	0.0	87.5	OK
5.001	14	21.068	-0.227	0.000	0.48	0.0	178.3	OK
5.002	18	20.872	0.270	0.000	0.13	0.0	21.8	SURCHARGED
5.003	18	20.871	0.398	0.000	0.08	0.0	20.1	SURCHARGED
6.000	15	21.268	-0.091	0.000	0.81	0.0	40.7	OK
6.001	16	21.181	-0.138	0.000	0.56	0.0	84.0	OK
7.000	49	21.447	0.087	0.000	0.78	0.0	68.7	SURCHARGED
7.001	50	21.418	0.098	0.000	1.17	0.0	137.2	SURCHARGED
7.002	20	21.273	0.071	0.000	0.83	0.0	146.6	SURCHARGED
6.002	17	20.968	0.214	0.000	1.19	0.0	266.3	SURCHARGED
5.004	18	20.870	0.611	0.000	0.03	0.0	5.0	SURCHARGED
1.003	19	19.926	-1.175	0.000	0.02	0.0	269.8	OK
1.004	24	19.593	-0.061	0.000	0.99	0.0	271.7	OK*
1.005	25	18.348	-1.603	0.000	0.01	0.0	288.9	OK
8.000	20	19.846	0.799	0.000	1.01	0.0	158.4	SURCHARGED
8.001	21	19.685	0.798	0.000	1.68	0.0	307.6	FLOOD RISK
8.002	22	19.020	0.564	0.000	0.03	0.0	5.0	FLOOD RISK
1.006	23	17.872	-0.628	0.000	0.05	0.0	312.0	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 4.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.007	24	16.503	-1.747	0.000	0.01	0.0	329.4	OK
9.000	26	16.312	0.287	0.000	0.25	0.0	62.8	SURCHARGED
9.001	27	16.310	0.433	0.000	0.03	0.0	9.7	SURCHARGED
1.008	25	14.862	-0.440	0.000	0.22	0.0	365.0	OK
10.000	29	15.780	-0.020	0.000	0.97	0.0	109.1	OK
11.000	30	16.723	0.448	0.000	1.96	0.0	245.3	SURCHARGED
11.001	31	16.705	0.586	0.000	0.05	0.0	7.5	SURCHARGED
12.000	32	20.195	-0.162	0.000	0.61	0.0	187.8	OK
12.001	33	19.875	0.725	0.000	0.60	0.0	277.8	SURCHARGED
12.002	34	19.339	2.643	0.000	1.22	0.0	314.5	FLOOD RISK
11.002	32	17.745	2.102	0.000	1.86	0.0	381.8	SURCHARGED
1.009	35	14.795	0.113	0.000	1.41	0.0	951.5	SURCHARGED
1.010	36	14.433	-1.767	0.000	0.02	0.0	995.7	OK
13.000	37	15.271	0.671	0.000	1.62	0.0	200.4	SURCHARGED
13.001	38	14.877	0.668	0.000	0.07	0.0	5.6	SURCHARGED
1.011	39	13.784	-1.516	0.000	0.03	0.0	999.8	OK
14.000	1	14.899	0.249	0.000	0.68	0.0	192.6	SURCHARGED
14.001	2	14.735	0.456	0.000	1.61	0.0	378.9	SURCHARGED
15.000	5	15.074	0.124	0.000	0.90	0.0	184.7	SURCHARGED
15.001	6	14.886	0.160	0.000	1.10	0.0	361.2	SURCHARGED
14.002	3	14.508	0.504	0.000	0.12	0.0	10.4	SURCHARGED
14.003	3	13.712	-1.388	0.000	0.00	0.0	10.5	OK
1.012	40	13.712	-0.688	0.000	0.00	0.0	89.9	OK
1.013	42	13.712	0.112	0.000	0.15	0.0	71.8	SURCHARGED*

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 5.SWS

Pipe Sizes NETWORK 5 Manhole Sizes NETWORK 5

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.450	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	20	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for NETWORK 5.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.000	30.635	0.928	33.0	0.327	5.00	0.0	0.600		o	450
1.001	49.103	1.693	29.0	0.327	0.00	0.0	0.600		o	450
2.000	27.367	0.547	50.0	0.314	5.00	0.0	0.600		o	450
2.001	57.531	1.991	28.9	0.314	0.00	0.0	0.600		o	450
2.002	81.554	0.700	116.5	0.000	0.00	0.0	0.600		o	450
1.002	82.466	0.230	358.5	0.000	0.00	0.0	0.600		o	525
3.000	20.555	0.069	297.9	0.303	5.00	0.0	0.600		o	450
3.001	49.309	2.493	19.8	0.303	0.00	0.0	0.600		o	450
1.003	15.490	0.103	150.4	0.000	0.00	0.0	0.600		o	525

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	20.00	5.14	20.763	0.327	0.0	0.0	0.0	3.55	564.3	17.7
1.001	20.00	5.36	19.835	0.654	0.0	0.0	0.0	3.79	602.2	35.4
2.000	20.00	5.16	21.383	0.314	0.0	0.0	0.0	2.88	458.0	17.0
2.001	20.00	5.41	20.836	0.628	0.0	0.0	0.0	3.79	603.3	34.0
2.002	20.00	6.13	18.845	0.628	0.0	0.0	0.0	1.88	299.4	34.0
1.002	20.00	7.30	18.067	1.282	0.0	0.0	0.0	1.18	254.8	69.4
3.000	20.00	5.29	20.451	0.303	0.0	0.0	0.0	1.17	186.5	16.4
3.001	20.00	5.47	20.382	0.606	0.0	0.0	0.0	4.59	729.6	32.8
1.003	20.00	7.44	17.814	1.888	0.0	0.0	0.0	1.82	394.9	102.3

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Network Design Table for NETWORK 5.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
4.000	165.521	3.700	44.7	0.214	5.00	0.0	0.600		o	300
1.004	35.124	0.808	43.5	0.223	0.00	0.0	0.600		o	525
1.005	41.579	1.935	21.5	0.098	0.00	0.0	0.600		o	525
1.006	42.793	1.426	30.0	0.060	0.00	0.0	0.600		o	375
5.000	22.649	0.453	50.0	0.974	5.00	0.0	0.600		o	450
5.001	45.886	1.478	31.0	0.974	0.00	0.0	0.600		o	450
6.000	66.612	1.776	37.5	0.105	5.00	0.0	0.600		o	225
5.002	70.055	0.778	90.0	0.164	0.00	0.0	0.600		o	450
7.000	17.131	0.114	150.3	0.490	5.00	0.0	0.600		o	375
7.001	49.077	1.402	35.0	0.490	0.00	0.0	0.600		o	375
7.002	53.895	0.359	150.0	0.141	0.00	0.0	0.600		o	375
1.007	15.180	0.030	500.0	0.084	0.00	0.0		0.045	3	\=/ 2100
1.008	18.855	0.038	496.2	0.156	0.00	0.0		0.045	3	\=/ 2100
1.009	61.174	0.122	501.4	0.085	0.00	0.0		0.045	3	\=/ 2200

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	20.00	6.17	21.518	0.214	0.0	0.0	0.0	2.36	166.6	11.6
1.004	20.00	7.61	17.593	2.325	0.0	0.0	0.0	3.40	736.9	126.0
1.005	20.00	7.76	16.785	2.423	0.0	0.0	0.0	4.85	1049.3	131.3
1.006	20.00	7.97	14.850	2.483	0.0	0.0	0.0	3.32	366.5	134.5
5.000	20.00	5.13	16.001	0.974	0.0	0.0	0.0	2.88	458.2	52.8
5.001	20.00	5.34	15.548	1.949	0.0	0.0	0.0	3.66	582.0	105.6
6.000	20.00	5.52	16.071	0.105	0.0	0.0	0.0	2.14	85.2	5.7
5.002	20.00	6.06	14.070	2.218	0.0	0.0	0.0	2.14	341.0	120.1
7.000	20.00	5.19	15.381	0.490	0.0	0.0	0.0	1.48	163.0	26.5
7.001	20.00	5.46	15.267	0.980	0.0	0.0	0.0	3.07	339.2	53.1
7.002	20.00	6.07	13.865	1.121	0.0	0.0	0.0	1.48	163.1	60.7
1.007	20.00	8.66	13.292	5.906	0.0	0.0	0.0	0.37	331.0	319.9
1.008	20.00	9.51	13.261	6.062	0.0	0.0	0.0	0.37	332.3	328.4
1.009	20.00	12.27	13.223	6.147	0.0	0.0	0.0	0.37	343.4	333.0

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Network Design Table for NETWORK 5.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
8.000	22.297	0.223	100.0	0.237	5.00	0.0	0.600		o	300
8.001	26.250	0.239	110.0	0.237	0.00	0.0	0.600		o	300
8.002	22.454	0.187	120.0	0.000	0.00	0.0	0.600		o	300
8.003	70.465	0.141	499.8	0.000	0.00	0.0		0.045	3 \=/	2000
9.000	28.001	0.093	301.1	0.411	5.00	0.0	0.600		o	375
9.001	28.731	0.096	299.3	0.000	0.00	0.0	0.600		o	375
8.004	46.745	0.093	500.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.010	11.092	0.037	300.0	0.000	0.00	0.0		0.045	3 \=/	6900
1.011	9.919	0.033	300.0	0.000	0.00	0.0		0.045	3 \=/	6900

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)
8.000	20.00	5.24	13.800	0.237	0.0	0.0	0.0	1.57	111.1	12.8
8.001	20.00	5.53	13.577	0.473	0.0	0.0	0.0	1.50	105.9	25.6
8.002	20.00	5.79	13.338	0.473	0.0	0.0	0.0	1.43	101.4	25.6
8.003	20.00	9.00	13.151	0.473	0.0	0.0	0.0	0.37	318.2	25.6
9.000	20.00	5.45	13.200	0.411	0.0	0.0	0.0	1.04	114.7	22.3
9.001	20.00	5.91	13.107	0.411	0.0	0.0	0.0	1.04	115.1	22.3
8.004	20.00	12.14	13.010	0.885	0.0	0.0	0.0	0.25	91.1	47.9
1.010	20.00	12.81	12.917	7.032	0.0	0.0	0.0	0.35	382.2	380.9
1.011	20.00	13.28	12.880	7.032	0.0	0.0	0.0	0.35	382.2	380.9

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Manhole Schedules for NETWORK 5.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	22.263	1.500	Open Manhole	1050	1.000	20.763	450				
2	22.506	2.671	Open Manhole	1200	1.001	19.835	450	1.000	19.835	450	
3	22.883	1.500	Open Manhole	1350	2.000	21.383	450				
4	22.750	1.914	Open Manhole	1350	2.001	20.836	450	2.000	20.836	450	
5	21.915	3.070	Open Manhole	1350	2.002	18.845	450	2.001	18.845	450	
6	20.468	2.401	Open Manhole	1050	1.002	18.067	525	1.001	18.142	450	
								2.002	18.145	450	3
7	21.951	1.500	Open Manhole	1050	3.000	20.451	450				
8	22.118	1.736	Open Manhole	1200	3.001	20.382	450	3.000	20.382	450	
9	19.389	1.575	Open Manhole	1200	1.003	17.814	525	1.002	17.837	525	23
								3.001	17.889	450	
10	22.868	1.350	Open Manhole	1050	4.000	21.518	300				
10	18.640	1.047	Open Manhole	1200	1.004	17.593	525	1.003	17.711	525	118
								4.000	17.818	300	
11	18.360	1.575	Open Manhole	1500	1.005	16.785	525	1.004	16.785	525	
11	16.425	1.575	Open Manhole	1200	1.006	14.850	375	1.005	14.850	525	
12	17.576	1.575	Open Manhole	1350	5.000	16.001	450				
13	17.934	2.386	Open Manhole	1350	5.001	15.548	450	5.000	15.548	450	
14	17.421	1.350	Open Manhole	1800	6.000	16.071	225				
15	15.646	1.576	Open Manhole	1500	5.002	14.070	450	5.001	14.070	450	
								6.000	14.295	225	
16	16.881	1.500	Open Manhole	1050	7.000	15.381	375				
17	17.017	1.750	Open Manhole	1050	7.001	15.267	375	7.000	15.267	375	
18	15.400	1.535	Open Manhole	1050	7.002	13.865	375	7.001	13.865	375	
19	14.700	1.408	Open Manhole	1500	1.007	13.292	2100	1.006	13.424	375	207
								5.002	13.292	450	
								7.002	13.506	375	289
20	14.500	1.239	Open Manhole	1500	1.008	13.261	2100	1.007	13.261	2100	
23	14.400	1.177	Open Manhole		1.009	13.223	2200	1.008	13.223	2100	
1	15.400	1.600	Open Manhole	1050	8.000	13.800	300				
2	15.200	1.623	Open Manhole	1050	8.001	13.577	300	8.000	13.577	300	
3	15.000	1.662	Open Manhole		8.002	13.338	300	8.001	13.338	300	
3	14.800	1.649	Junction		8.003	13.151	2000	8.002	13.151	300	
21	14.700	1.500	Open Manhole	1050	9.000	13.200	375				
22	14.607	1.500	Open Manhole		9.001	13.107	375	9.000	13.107	375	
28	14.600	1.590	Junction		8.004	13.010	2000	8.003	13.010	2000	
								9.001	13.011	375	226
24	14.300	1.383	Junction		1.010	12.917	6900	1.009	13.101	2200	334

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Manhole Schedules for NETWORK 5.SWS

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)
								8.004	12.917	2000	

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Manhole Schedules for NETWORK 5.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
27	14.000	1.120	Junction	0	1.011	12.880	6900	1.010	12.880	6900	
	13.800	0.953	Open Manhole	0		OUTFALL		1.011	12.847	6900	

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PIPELINE SCHEDULES for NETWORK 5.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	450	1	22.263	20.763	1.050	Open Manhole	1050
1.001	o	450	2	22.506	19.835	2.221	Open Manhole	1200
2.000	o	450	3	22.883	21.383	1.050	Open Manhole	1350
2.001	o	450	4	22.750	20.836	1.464	Open Manhole	1350
2.002	o	450	5	21.915	18.845	2.620	Open Manhole	1350
1.002	o	525	6	20.468	18.067	1.876	Open Manhole	1050
3.000	o	450	7	21.951	20.451	1.050	Open Manhole	1050
3.001	o	450	8	22.118	20.382	1.286	Open Manhole	1200
1.003	o	525	9	19.389	17.814	1.050	Open Manhole	1200
4.000	o	300	10	22.868	21.518	1.050	Open Manhole	1050
1.004	o	525	10	18.640	17.593	0.522	Open Manhole	1200
1.005	o	525	11	18.360	16.785	1.050	Open Manhole	1500
1.006	o	375	11	16.425	14.850	1.200	Open Manhole	1200
5.000	o	450	12	17.576	16.001	1.125	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	30.635	33.0	2	22.506	19.835	2.221	Open Manhole	1200
1.001	49.103	29.0	6	20.468	18.142	1.876	Open Manhole	1050
2.000	27.367	50.0	4	22.750	20.836	1.464	Open Manhole	1350
2.001	57.531	28.9	5	21.915	18.845	2.620	Open Manhole	1350
2.002	81.554	116.5	6	20.468	18.145	1.873	Open Manhole	1050
1.002	82.466	358.5	9	19.389	17.837	1.027	Open Manhole	1200
3.000	20.555	297.9	8	22.118	20.382	1.286	Open Manhole	1200
3.001	49.309	19.8	9	19.389	17.889	1.050	Open Manhole	1200
1.003	15.490	150.4	10	18.640	17.711	0.404	Open Manhole	1200
4.000	165.521	44.7	10	18.640	17.818	0.522	Open Manhole	1200
1.004	35.124	43.5	11	18.360	16.785	1.050	Open Manhole	1500
1.005	41.579	21.5	11	16.425	14.850	1.050	Open Manhole	1200
1.006	42.793	30.0	19	14.700	13.424	0.901	Open Manhole	1500
5.000	22.649	50.0	13	17.934	15.548	1.936	Open Manhole	1350

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PIPELINE SCHEDULES for NETWORK 5.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
5.001	o	450	13	17.934	15.548	1.936	Open Manhole	1350
6.000	o	225	14	17.421	16.071	1.125	Open Manhole	1800
5.002	o	450	15	15.646	14.070	1.126	Open Manhole	1500
7.000	o	375	16	16.881	15.381	1.125	Open Manhole	1050
7.001	o	375	17	17.017	15.267	1.375	Open Manhole	1050
7.002	o	375	18	15.400	13.865	1.160	Open Manhole	1050
1.007	3 \=/	2100	19	14.700	13.292	1.108	Open Manhole	1500
1.008	3 \=/	2100	20	14.500	13.261	0.939	Open Manhole	1500
1.009	3 \=/	2200	23	14.400	13.223	0.877	Open Manhole	1500
8.000	o	300	1	15.400	13.800	1.300	Open Manhole	1050
8.001	o	300	2	15.200	13.577	1.323	Open Manhole	1050
8.002	o	300	3	15.000	13.338	1.362	Open Manhole	1050
8.003	3 \=/	2000	3	14.800	13.151	1.349	Junction	
9.000	o	375	21	14.700	13.200	1.125	Open Manhole	1050
9.001	o	375	22	14.607	13.107	1.125	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)
5.001	45.886	31.0	15	15.646	14.070	1.126	Open Manhole	1500
6.000	66.612	37.5	15	15.646	14.295	1.126	Open Manhole	1500
5.002	70.055	90.0	19	14.700	13.292	0.958	Open Manhole	1500
7.000	17.131	150.3	17	17.017	15.267	1.375	Open Manhole	1050
7.001	49.077	35.0	18	15.400	13.865	1.160	Open Manhole	1050
7.002	53.895	150.0	19	14.700	13.506	0.820	Open Manhole	1500
1.007	15.180	500.0	20	14.500	13.261	0.939	Open Manhole	1500
1.008	18.855	496.2	23	14.400	13.223	0.877	Open Manhole	1500
1.009	61.174	501.4	24	14.300	13.101	0.899	Junction	
8.000	22.297	100.0	2	15.200	13.577	1.323	Open Manhole	1050
8.001	26.250	110.0	3	15.000	13.338	1.362	Open Manhole	1050
8.002	22.454	120.0	3	14.800	13.151	1.349	Junction	
8.003	70.465	499.8	28	14.600	13.010	1.290	Junction	
9.000	28.001	301.1	22	14.607	13.107	1.125	Open Manhole	1050
9.001	28.731	299.3	28	14.600	13.011	1.214	Junction	

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PIPELINE SCHEDULES for NETWORK 5.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
8.004	3 \=/	2000	28	14.600	13.010	1.440	Junction	
1.010	3 \=/	6900	24	14.300	12.917	1.233	Junction	
1.011	3 \=/	6900	27	14.000	12.880	0.970	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)
8.004	46.745	500.0	24	14.300	12.917	1.233	Junction	
1.010	11.092	300.0	27	14.000	12.880	0.970	Junction	
1.011	9.919	300.0		13.800	12.847	0.803	Open Manhole	0

Simulation Criteria for NETWORK 5.SWS

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

Number of Input Hydrographs	0	Number of Storage Structures	6
Number of Online Controls	6	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)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	30
Ratio R	0.450		

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

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%					
1.001	15 Winter	1	0%	100/15 Summer				
2.000	15 Winter	1	0%					
2.001	15 Winter	1	0%	100/15 Summer				
2.002	15 Winter	1	0%	30/15 Summer				
1.002	15 Winter	1	0%	30/15 Summer				
3.000	15 Winter	1	0%	100/15 Summer				
3.001	15 Winter	1	0%					
1.003	360 Winter	1	0%	30/240 Winter				
4.000	15 Winter	1	0%					
1.004	15 Winter	1	0%					
1.005	15 Winter	1	0%					
1.006	15 Winter	1	0%	100/15 Summer				
5.000	15 Winter	1	0%	100/15 Summer				
5.001	240 Winter	1	0%	30/120 Winter				
6.000	15 Winter	1	0%					
5.002	15 Winter	1	0%					
7.000	15 Winter	1	0%	30/15 Summer				
7.001	180 Winter	1	0%	30/30 Winter				
7.002	15 Winter	1	0%					
1.007	960 Winter	1	0%					
1.008	960 Winter	1	0%					
1.009	960 Winter	1	0%					
8.000	15 Winter	1	0%	100/15 Summer				
8.001	120 Winter	1	0%	30/15 Winter				
8.002	960 Winter	1	0%	30/180 Winter				
8.003	960 Winter	1	0%					
9.000	960 Winter	1	0%	30/15 Summer				
9.001	960 Winter	1	0%	1/480 Winter				
8.004	960 Winter	1	0%					
1.010	960 Winter	1	0%					
1.011	960 Winter	1	0%					

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

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	20.857	-0.356	0.000	0.10	0.0	47.3	OK
1.001	2	19.956	-0.329	0.000	0.16	0.0	86.9	OK
2.000	3	21.485	-0.348	0.000	0.12	0.0	45.4	OK
2.001	4	20.953	-0.333	0.000	0.15	0.0	83.4	OK
2.002	5	19.014	-0.281	0.000	0.29	0.0	82.0	OK
1.002	6	18.393	-0.199	0.000	0.70	0.0	165.6	OK
3.000	7	20.617	-0.284	0.000	0.28	0.0	43.1	OK
3.001	8	20.487	-0.345	0.000	0.12	0.0	80.3	OK
1.003	9	18.035	-0.304	0.000	0.03	0.0	7.4	OK
4.000	10	21.607	-0.211	0.000	0.19	0.0	30.8	OK
1.004	10	17.703	-0.415	0.000	0.10	0.0	60.1	OK
1.005	11	16.883	-0.427	0.000	0.08	0.0	71.6	OK
1.006	11	14.974	-0.251	0.000	0.23	0.0	78.4	OK
5.000	12	16.192	-0.259	0.000	0.37	0.0	140.1	OK
5.001	13	15.741	-0.257	0.000	0.02	0.0	9.7	OK
6.000	14	16.136	-0.160	0.000	0.18	0.0	15.1	OK
5.002	15	14.176	-0.344	0.000	0.12	0.0	39.4	OK
7.000	16	15.578	-0.178	0.000	0.53	0.0	70.3	OK
7.001	17	15.450	-0.192	0.000	0.02	0.0	7.1	OK
7.002	18	13.959	-0.281	0.000	0.14	0.0	21.4	OK
1.007	19	13.554	-1.145	0.000	0.01	0.0	34.1	OK
1.008	20	13.554	-0.946	0.000	0.01	0.0	35.4	OK
1.009	23	13.553	-0.847	0.000	0.01	0.0	36.0	OK
8.000	1	13.923	-0.177	0.000	0.35	0.0	34.1	OK
8.001	2	13.752	-0.125	0.000	0.05	0.0	5.0	OK
8.002	3	13.550	-0.089	0.000	0.04	0.0	3.9	OK
8.003	3	13.549	-1.251	0.000	0.00	0.0	3.8	OK
9.000	21	13.546	-0.029	0.000	0.04	0.0	3.9	OK
9.001	22	13.546	0.064	0.000	0.03	0.0	2.7	SURCHARGED
8.004	28	13.549	-1.051	0.000	0.00	0.0	4.1	OK
1.010	24	13.549	-0.750	0.000	0.00	0.0	30.5	OK
1.011	27	13.548	-0.451	0.000	0.00	0.0	14.0	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 5.SWS

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%					
1.001	15 Winter	30	0%	100/15 Summer				
2.000	15 Winter	30	0%					
2.001	15 Winter	30	0%	100/15 Summer				
2.002	15 Winter	30	0%	30/15 Summer				
1.002	15 Winter	30	0%	30/15 Summer				
3.000	15 Winter	30	0%	100/15 Summer				
3.001	15 Winter	30	0%					
1.003	480 Winter	30	0%	30/240 Winter				
4.000	15 Winter	30	0%					
1.004	15 Winter	30	0%					
1.005	15 Winter	30	0%					
1.006	15 Winter	30	0%	100/15 Summer				
5.000	15 Winter	30	0%	100/15 Summer				
5.001	360 Winter	30	0%	30/120 Winter				
6.000	15 Winter	30	0%					
5.002	15 Winter	30	0%					
7.000	15 Winter	30	0%	30/15 Summer				
7.001	240 Winter	30	0%	30/30 Winter				
7.002	15 Winter	30	0%					
1.007	1440 Winter	30	0%					
1.008	1440 Winter	30	0%					
1.009	1440 Winter	30	0%					
8.000	120 Winter	30	0%	100/15 Summer				
8.001	180 Winter	30	0%	30/15 Winter				
8.002	1440 Winter	30	0%	30/180 Winter				
8.003	1440 Winter	30	0%					
9.000	1440 Winter	30	0%	30/15 Summer				
9.001	1440 Winter	30	0%	1/480 Winter				
8.004	1440 Winter	30	0%					
1.010	1440 Winter	30	0%					
1.011	1440 Winter	30	0%					

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 5.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	20.912	-0.301	0.000	0.24	0.0	116.1	OK
1.001	2	20.044	-0.241	0.000	0.44	0.0	239.2	OK
2.000	3	21.548	-0.285	0.000	0.29	0.0	111.5	OK
2.001	4	21.039	-0.247	0.000	0.41	0.0	229.8	OK
2.002	5	19.461	0.166	0.000	0.75	0.0	210.9	SURCHARGED
1.002	6	19.080	0.488	0.000	1.69	0.0	399.7	SURCHARGED
3.000	7	20.735	-0.166	0.000	0.70	0.0	105.8	OK
3.001	8	20.562	-0.270	0.000	0.33	0.0	218.9	OK
1.003	9	18.359	0.020	0.000	0.03	0.0	7.4	SURCHARGED
4.000	10	21.663	-0.155	0.000	0.46	0.0	75.8	OK
1.004	10	17.774	-0.344	0.000	0.25	0.0	157.1	OK
1.005	11	16.952	-0.358	0.000	0.21	0.0	191.6	OK
1.006	11	15.076	-0.149	0.000	0.64	0.0	213.7	OK
5.000	12	16.342	-0.109	0.000	0.91	0.0	344.0	OK
5.001	13	16.074	0.076	0.000	0.02	0.0	9.7	SURCHARGED
6.000	14	16.178	-0.118	0.000	0.45	0.0	37.0	OK
5.002	15	14.252	-0.268	0.000	0.33	0.0	104.5	OK
7.000	16	15.832	0.076	0.000	1.31	0.0	173.2	SURCHARGED
7.001	17	15.779	0.137	0.000	0.02	0.0	7.1	SURCHARGED
7.002	18	14.029	-0.210	0.000	0.39	0.0	59.5	OK
1.007	19	13.748	-0.952	0.000	0.01	0.0	39.9	OK
1.008	20	13.745	-0.755	0.000	0.01	0.0	41.2	OK
1.009	23	13.740	-0.660	0.000	0.01	0.0	41.1	OK
8.000	1	14.080	-0.020	0.000	0.25	0.0	24.7	OK
8.001	2	14.076	0.199	0.000	0.05	0.0	5.0	SURCHARGED
8.002	3	13.723	0.085	0.000	0.06	0.0	5.0	SURCHARGED
8.003	3	13.721	-1.080	0.000	0.00	0.0	4.8	OK
9.000	21	13.764	0.189	0.000	0.06	0.0	5.8	SURCHARGED
9.001	22	13.762	0.280	0.000	0.02	0.0	1.9	SURCHARGED
8.004	28	13.720	-0.880	0.000	0.00	0.0	4.4	OK
1.010	24	13.720	-0.580	0.000	0.00	0.0	34.9	OK
1.011	27	13.712	-0.288	0.000	0.00	0.0	34.4	FLOOD RISK*

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 5.SWS

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+30%					
1.001	15 Winter	100	+30%	100/15 Summer				
2.000	15 Winter	100	+30%					
2.001	15 Winter	100	+30%	100/15 Summer				
2.002	15 Winter	100	+30%	30/15 Summer				
1.002	15 Winter	100	+30%	30/15 Summer				
3.000	15 Winter	100	+30%	100/15 Summer				
3.001	15 Winter	100	+30%					
1.003	720 Winter	100	+30%	30/240 Winter				
4.000	15 Winter	100	+30%					
1.004	15 Winter	100	+30%					
1.005	15 Winter	100	+30%					
1.006	15 Winter	100	+30%	100/15 Summer				
5.000	15 Winter	100	+30%	100/15 Summer				
5.001	480 Winter	100	+30%	30/120 Winter				
6.000	15 Winter	100	+30%					
5.002	15 Winter	100	+30%					
7.000	360 Winter	100	+30%	30/15 Summer				
7.001	360 Winter	100	+30%	30/30 Winter				
7.002	15 Winter	100	+30%					
1.007	1440 Winter	100	+30%					
1.008	1440 Winter	100	+30%					
1.009	1440 Winter	100	+30%					
8.000	240 Winter	100	+30%	100/15 Summer				
8.001	240 Winter	100	+30%	30/15 Winter				
8.002	1440 Winter	100	+30%	30/180 Winter				
8.003	1440 Winter	100	+30%					
9.000	240 Winter	100	+30%	30/15 Summer				
9.001	240 Winter	100	+30%	1/480 Winter				
8.004	1440 Winter	100	+30%					
1.010	1440 Winter	100	+30%					
1.011	1440 Winter	100	+30%					

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 5.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m^3)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	20.963	-0.250	0.000	0.40	0.0	196.3	OK
1.001	2	20.840	0.555	0.000	0.66	0.0	359.2	SURCHARGED
2.000	3	21.741	-0.092	0.000	0.48	0.0	188.4	OK
2.001	4	21.632	0.346	0.000	0.63	0.0	348.3	SURCHARGED
2.002	5	20.991	1.696	0.000	1.12	0.0	315.3	SURCHARGED
1.002	6	20.120	1.528	0.000	2.67	0.0	633.5	SURCHARGED
3.000	7	20.916	0.015	0.000	1.18	0.0	178.4	SURCHARGED
3.001	8	20.626	-0.206	0.000	0.56	0.0	369.2	OK
1.003	9	18.810	0.471	0.000	0.03	0.0	7.4	SURCHARGED
4.000	10	21.721	-0.097	0.000	0.78	0.0	128.0	OK
1.004	10	17.834	-0.284	0.000	0.42	0.0	261.9	OK
1.005	11	17.005	-0.305	0.000	0.35	0.0	321.1	OK
1.006	11	15.390	0.165	0.000	1.06	0.0	354.4	SURCHARGED
5.000	12	17.036	0.585	0.000	1.51	0.0	571.2	SURCHARGED
5.001	13	16.527	0.529	0.000	0.02	0.0	9.7	SURCHARGED
6.000	14	16.220	-0.076	0.000	0.76	0.0	62.5	OK
5.002	15	14.312	-0.208	0.000	0.54	0.0	170.2	OK
7.000	16	16.237	0.481	0.000	0.27	0.0	36.0	SURCHARGED
7.001	17	16.235	0.593	0.000	0.02	0.0	7.1	SURCHARGED
7.002	18	14.084	-0.156	0.000	0.63	0.0	95.9	OK
1.007	19	13.884	-0.816	0.000	0.01	0.0	50.2	OK
1.008	20	13.881	-0.619	0.000	0.01	0.0	52.9	OK
1.009	23	13.875	-0.525	0.000	0.01	0.0	53.4	OK
8.000	1	14.542	0.442	0.000	0.25	0.0	24.5	SURCHARGED
8.001	2	14.539	0.662	0.000	0.05	0.0	5.0	SURCHARGED
8.002	3	13.859	0.220	0.000	0.06	0.0	5.0	SURCHARGED
8.003	3	13.853	-0.947	0.000	0.00	0.0	5.0	OK
9.000	21	14.040	0.465	0.000	0.42	0.0	42.0	SURCHARGED
9.001	22	14.036	0.554	0.000	0.05	0.0	5.0	SURCHARGED
8.004	28	13.852	-0.748	0.000	0.00	0.0	10.4	OK
1.010	24	13.849	-0.450	0.000	0.00	0.0	47.8	OK
1.011	27	13.840	-0.160	0.000	0.00	0.0	46.8	FLOOD RISK*

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 6.SWS

Pipe Sizes NETWORK 6 Manhole Sizes NETWORK 6

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.450	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	20	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for NETWORK 6.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.000	76.508	1.997	38.3	0.132	5.00	0.0	0.600		o	225
2.000	22.476	0.151	148.8	0.000	5.00	0.0	0.600		o	225
2.001	27.043	0.179	151.1	0.077	0.00	0.0	0.600		o	225
1.001	33.249	0.831	40.0	0.117	0.00	0.0		0.045	3 \=/	1000
1.002	26.708	0.445	60.0	0.000	0.00	0.0		0.045	3 \=/	1000
1.003	6.687	0.167	40.0	0.000	0.00	0.0		0.045	3 \=/	1000
3.000	28.286	0.094	300.9	0.441	5.00	0.0	0.600		o	375
3.001	29.630	0.198	150.0	0.000	0.00	0.0	0.600		o	375
3.002	5.637	0.028	201.3	0.000	0.00	0.0	0.600		o	375
4.000	25.041	0.250	100.2	0.663	5.00	0.0	0.600		o	450
4.001	24.175	0.081	300.0	0.000	0.00	0.0	0.600		o	450
4.002	5.946	0.059	100.8	0.000	0.00	0.0	0.600		o	450
4.003	57.391	0.115	499.1	0.000	0.00	0.0		0.045	3 \=/	1000

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	20.00	5.60	17.227	0.132	0.0	0.0	0.0	2.12	84.3	7.1
2.000	20.00	5.35	15.560	0.000	0.0	0.0	0.0	1.07	42.5	0.0
2.001	20.00	5.77	15.409	0.077	0.0	0.0	0.0	1.06	42.2	4.2
1.001	20.00	6.46	15.230	0.326	0.0	0.0	0.0	0.81	177.2	17.7
1.002	20.00	7.12	14.399	0.326	0.0	0.0	0.0	0.66	144.6	17.7
1.003	20.00	7.26	13.954	0.326	0.0	0.0	0.0	0.81	177.1	17.7
3.000	20.00	5.45	14.268	0.441	0.0	0.0	0.0	1.04	114.8	23.9
3.001	20.00	5.79	14.174	0.441	0.0	0.0	0.0	1.48	163.1	23.9
3.002	20.00	5.86	13.976	0.441	0.0	0.0	0.0	1.27	140.6	23.9
4.000	20.00	5.21	14.286	0.663	0.0	0.0	0.0	2.03	323.1	35.9
4.001	20.00	5.55	14.036	0.663	0.0	0.0	0.0	1.17	185.8	35.9
4.002	20.00	5.60	13.955	0.663	0.0	0.0	0.0	2.03	322.1	35.9
4.003	20.00	9.75	13.896	0.663	0.0	0.0	0.0	0.23	50.2	35.9

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Network Design Table for NETWORK 6.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
3.003	71.534	0.220	325.2	0.000	0.00	0.0		0.045	3 \=/	1000
1.004	8.795	0.018	488.6	0.000	0.00	0.0		0.045	3 \=/	1700
1.005	3.982	0.008	497.8	0.000	0.00	0.0		0.045	3 \=/	1700

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)
3.003	20.00	13.92	13.781	1.104	0.0	0.0	0.0	0.29	62.1	59.8
1.004	20.00	14.51	13.561	1.430	0.0	0.0	0.0	0.25	79.6	77.5
1.005	20.00	14.79	13.543	1.430	0.0	0.0	0.0	0.24	78.9	77.5

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Manhole Schedules for NETWORK 6.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	18.577	1.350	Open Manhole	1800	1.000	17.227	225				
2	16.985	1.425	Open Manhole	1200	2.000	15.560	225				
3	17.360	1.951	Open Manhole	1200	2.001	15.409	225	2.000	15.409	225	
4	17.600	2.370	Open Manhole	1500	1.001	15.230	1000	1.000	15.230	225	
								2.001	15.230	225	
6	15.399	1.000	Open Manhole		1.002	14.399	1000	1.001	14.399	1000	
7	14.954	1.000	Junction		1.003	13.954	1000	1.002	13.954	1000	
1	15.737	1.469	Open Manhole	1350	3.000	14.268	375				
2	15.967	1.793	Open Manhole	1350	3.001	14.174	375	3.000	14.174	375	
3	15.500	1.524	Open Manhole		3.002	13.976	375	3.001	13.976	375	
1	15.936	1.650	Open Manhole	1350	4.000	14.286	450				
2	15.721	1.685	Open Manhole	1350	4.001	14.036	450	4.000	14.036	450	
3	15.600	1.645	Open Manhole		4.002	13.955	450	4.001	13.955	450	
4	15.500	1.604	Junction		4.003	13.896	1000	4.002	13.896	450	
4	15.000	1.219	Junction		3.003	13.781	1000	3.002	13.948	375	392
								4.003	13.781	1000	
8	14.711	1.150	Junction		1.004	13.561	1700	1.003	13.787	1000	225
								3.003	13.561	1000	
17	14.500	0.957	Junction	0	1.005	13.543	1700	1.004	13.543	1700	
	14.200	0.665	Open Manhole	0		OUTFALL		1.005	13.535	1700	

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PIPELINE SCHEDULES for NETWORK 6.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	1	18.577	17.227	1.125	Open Manhole	1800
2.000	o	225	2	16.985	15.560	1.200	Open Manhole	1200
2.001	o	225	3	17.360	15.409	1.726	Open Manhole	1200
1.001	3 \=/	1000	4	17.600	15.230	2.220	Open Manhole	1500
1.002	3 \=/	1000	6	15.399	14.399	0.850	Open Manhole	1200
1.003	3 \=/	1000	7	14.954	13.954	0.850	Junction	
3.000	o	375	1	15.737	14.268	1.094	Open Manhole	1350
3.001	o	375	2	15.967	14.174	1.418	Open Manhole	1350
3.002	o	375	3	15.500	13.976	1.149	Open Manhole	1350
4.000	o	450	1	15.936	14.286	1.200	Open Manhole	1350
4.001	o	450	2	15.721	14.036	1.235	Open Manhole	1350
4.002	o	450	3	15.600	13.955	1.195	Open Manhole	1350
4.003	3 \=/	1000	4	15.500	13.896	1.454	Junction	
3.003	3 \=/	1000	4	15.000	13.781	1.069	Junction	
1.004	3 \=/	1700	8	14.711	13.561	1.000	Junction	
1.005	3 \=/	1700	17	14.500	13.543	0.807	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	76.508	38.3	4	17.600	15.230	2.145	Open Manhole	1500
2.000	22.476	148.8	3	17.360	15.409	1.726	Open Manhole	1200
2.001	27.043	151.1	4	17.600	15.230	2.145	Open Manhole	1500
1.001	33.249	40.0	6	15.399	14.399	0.850	Open Manhole	1200
1.002	26.708	60.0	7	14.954	13.954	0.850	Junction	
1.003	6.687	40.0	8	14.711	13.787	0.774	Junction	
3.000	28.286	300.9	2	15.967	14.174	1.418	Open Manhole	1350
3.001	29.630	150.0	3	15.500	13.976	1.149	Open Manhole	1350
3.002	5.637	201.3	4	15.000	13.948	0.677	Junction	
4.000	25.041	100.2	2	15.721	14.036	1.235	Open Manhole	1350
4.001	24.175	300.0	3	15.600	13.955	1.195	Open Manhole	1350
4.002	5.946	100.8	4	15.500	13.896	1.154	Junction	
4.003	57.391	499.1	4	15.000	13.781	1.069	Junction	
3.003	71.534	325.2	8	14.711	13.561	1.000	Junction	
1.004	8.795	488.6	17	14.500	13.543	0.807	Junction	
1.005	3.982	497.8		14.200	13.535	0.515	Open Manhole	0

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Simulation Criteria for NETWORK 6.SWS

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	2	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	30
Ratio R	0.450		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 6.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%					
2.000	360 Winter	1	0%					
2.001	15 Winter	1	0%	100/15 Summer				
1.001	15 Winter	1	0%					
1.002	15 Winter	1	0%					
1.003	15 Winter	1	0%					
3.000	15 Winter	1	0%	30/15 Summer				
3.001	15 Winter	1	0%	30/15 Summer				
3.002	15 Winter	1	0%	30/15 Summer				
4.000	15 Winter	1	0%	30/15 Summer				
4.001	15 Winter	1	0%	30/15 Summer				
4.002	15 Winter	1	0%	30/15 Summer				
4.003	15 Winter	1	0%					
3.003	360 Winter	1	0%					
1.004	480 Winter	1	0%					
1.005	480 Winter	1	0%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	17.301	-0.151	0.000	0.23	0.0	18.7	OK
2.000	2	15.560	-0.225	0.000	0.00	0.0	0.0	OK
2.001	3	15.484	-0.150	0.000	0.24	0.0	9.4	OK
1.001	4	15.297	-2.303	0.000	0.00	0.0	42.4	OK
1.002	6	14.475	-0.923	0.000	0.01	0.0	42.4	OK
1.003	7	14.021	-0.933	0.000	0.01	0.0	42.4	OK
3.000	1	14.486	-0.157	0.000	0.62	0.0	62.8	OK
3.001	2	14.346	-0.203	0.000	0.43	0.0	61.8	OK
3.002	3	14.208	-0.144	0.000	0.70	0.0	61.9	OK
4.000	1	14.472	-0.264	0.000	0.35	0.0	95.4	OK
4.001	2	14.294	-0.192	0.000	0.61	0.0	95.1	OK
4.002	3	14.197	-0.209	0.000	0.55	0.0	93.7	OK
4.003	4	14.099	-1.401	0.000	0.01	0.0	93.8	OK
3.003	4	13.963	-1.037	0.000	0.00	0.0	7.1	OK
1.004	8	13.878	-0.833	0.000	0.00	0.0	9.4	OK
1.005	17	13.878	-0.622	0.000	0.00	0.0	4.0	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 6.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%					
2.000	360 Winter	30	0%					
2.001	15 Winter	30	0%	100/15 Summer				
1.001	15 Winter	30	0%					
1.002	15 Winter	30	0%					
1.003	15 Winter	30	0%					
3.000	15 Winter	30	0%	30/15 Summer				
3.001	15 Winter	30	0%	30/15 Summer				
3.002	15 Winter	30	0%	30/15 Summer				
4.000	15 Winter	30	0%	30/15 Summer				
4.001	15 Winter	30	0%	30/15 Summer				
4.002	15 Winter	30	0%	30/15 Summer				
4.003	180 Winter	30	0%					
3.003	180 Winter	30	0%					
1.004	480 Winter	30	0%					
1.005	480 Winter	30	0%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	17.350	-0.102	0.000	0.56	0.0	45.9	OK
2.000	2	15.560	-0.225	0.000	0.00	0.0	0.0	OK
2.001	3	15.555	-0.079	0.000	0.74	0.0	28.8	OK
1.001	4	15.352	-2.248	0.000	0.00	0.0	116.9	OK
1.002	6	14.531	-0.868	0.000	0.02	0.0	116.2	OK
1.003	7	14.071	-0.882	0.000	0.02	0.0	117.5	OK
3.000	1	14.836	0.193	0.000	1.44	0.0	145.4	SURCHARGED
3.001	2	14.637	0.088	0.000	0.99	0.0	142.7	SURCHARGED
3.002	3	14.439	0.087	0.000	1.61	0.0	143.3	SURCHARGED
4.000	1	14.810	0.074	0.000	0.82	0.0	222.1	SURCHARGED
4.001	2	14.641	0.155	0.000	1.40	0.0	216.3	SURCHARGED
4.002	3	14.476	0.071	0.000	1.29	0.0	218.2	SURCHARGED
4.003	4	14.230	-1.271	0.000	0.01	0.0	51.4	OK
3.003	4	14.230	-0.771	0.000	0.00	0.0	9.6	OK
1.004	8	14.051	-0.660	0.000	0.00	0.0	12.9	OK
1.005	17	14.052	-0.449	0.000	0.00	0.0	11.0	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 6.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+30%					
2.000	15 Winter	100	+30%					
2.001	15 Winter	100	+30%	100/15 Summer				
1.001	15 Winter	100	+30%					
1.002	15 Winter	100	+30%					
1.003	720 Winter	100	+30%					
3.000	15 Winter	100	+30%	30/15 Summer				
3.001	15 Winter	100	+30%	30/15 Summer				
3.002	15 Winter	100	+30%	30/15 Summer				
4.000	15 Winter	100	+30%	30/15 Summer				
4.001	15 Winter	100	+30%	30/15 Summer				
4.002	15 Winter	100	+30%	30/15 Summer				
4.003	360 Winter	100	+30%					
3.003	360 Winter	100	+30%					
1.004	720 Winter	100	+30%					
1.005	720 Winter	100	+30%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	17.404	-0.048	0.000	0.95	0.0	77.6	OK
2.000	2	15.703	-0.082	0.000	0.03	0.0	1.2	OK
2.001	3	15.704	0.070	0.000	1.17	0.0	46.0	SURCHARGED
1.001	4	15.390	-2.210	0.000	0.00	0.0	193.2	OK
1.002	6	14.575	-0.824	0.000	0.03	0.0	193.2	OK
1.003	7	14.175	-0.779	0.000	0.00	0.0	13.9	OK
3.000	1	15.704	1.061	0.000	2.30	0.0	231.8	FLOOD RISK
3.001	2	15.175	0.626	0.000	1.61	0.0	232.4	SURCHARGED
3.002	3	14.653	0.302	0.000	2.61	0.0	232.0	SURCHARGED
4.000	1	15.674	0.938	0.000	1.36	0.0	367.4	FLOOD RISK
4.001	2	15.204	0.718	0.000	2.34	0.0	362.3	SURCHARGED
4.002	3	14.746	0.341	0.000	2.15	0.0	364.4	SURCHARGED
4.003	4	14.548	-0.953	0.000	0.01	0.0	48.4	OK
3.003	4	14.548	-0.453	0.000	0.00	0.0	9.6	OK
1.004	8	14.176	-0.536	0.000	0.00	0.0	17.4	OK
1.005	17	14.175	-0.325	0.000	0.00	0.0	14.1	OK

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 7.SWS

Pipe Sizes NETWORK 7 Manhole Sizes NETWORK 7

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.450	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	20	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for NETWORK 7.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.000	70.724	0.471	150.2	0.600	5.00	0.0	0.600		o	450
1.001	40.997	0.273	150.2	0.170	0.00	0.0	0.600		o	450
2.000	44.698	0.298	150.0	0.270	5.00	0.0	0.600		o	450
2.001	35.561	1.210	29.4	0.270	0.00	0.0	0.600		o	450
1.002	30.454	0.761	40.0	0.098	0.00	0.0	0.600		o	450
3.000	15.328	0.051	300.5	0.992	5.00	0.0	0.600		[]	-1
3.001	68.957	2.551	27.0	0.992	0.00	0.0	0.600		o	450
3.002	62.524	0.313	199.8	0.000	0.00	0.0	0.600		o	450
3.003	52.629	0.478	110.0	0.270	0.00	0.0	0.600		o	450
3.004	6.856	0.316	21.7	0.071	0.00	0.0	0.600		o	450
1.003	83.188	1.664	50.0	0.000	0.00	0.0		0.045	3 \=/	2000
1.004	22.158	0.554	40.0	0.000	0.00	0.0		0.045	3 \=/	3000
1.005	22.158	0.554	40.0	0.000	0.00	0.0	0.600		o	600

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	20.00	5.71	17.238	0.600	0.0	0.0	0.0	1.66	263.5	32.5
1.001	20.00	6.12	16.767	0.770	0.0	0.0	0.0	1.66	263.5	41.7
2.000	20.00	5.45	18.874	0.270	0.0	0.0	0.0	1.66	263.7	14.6
2.001	20.00	5.61	18.576	0.540	0.0	0.0	0.0	3.76	598.2	29.2
1.002	20.00	6.28	16.494	1.408	0.0	0.0	0.0	3.22	512.5	76.3
3.000	20.00	5.16	20.320	0.992	0.0	0.0	0.0	1.61	965.4	53.7
3.001	20.00	5.45	20.269	1.984	0.0	0.0	0.0	3.92	623.8	107.5
3.002	20.00	6.18	17.718	1.984	0.0	0.0	0.0	1.43	228.2	107.5
3.003	20.00	6.63	17.405	2.254	0.0	0.0	0.0	1.94	308.2	122.1
3.004	20.00	6.66	16.927	2.325	0.0	0.0	0.0	4.38	696.6	125.9
1.003	20.00	8.42	15.733	3.733	0.0	0.0	0.0	0.78	288.2	202.2
1.004	20.00	8.83	14.069	3.733	0.0	0.0	0.0	0.91	469.1	202.2
1.005	20.00	8.93	13.515	3.733	0.0	0.0	0.0	3.86	1090.9	202.2

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Manhole Schedules for NETWORK 7.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	18.813	1.575	Open Manhole	1050	1.000	17.238	450				
2	19.164	2.397	Open Manhole	1200	1.001	16.767	450	1.000	16.767	450	
3	20.524	1.650	Open Manhole	1050	2.000	18.874	450				
4	20.229	1.653	Open Manhole	1050	2.001	18.576	450	2.000	18.576	450	
5	19.059	2.565	Open Manhole	1200	1.002	16.494	450	1.001	16.494	450	
								2.001	17.366	450	872
6	21.895	1.575	Open Manhole	1350	3.000	20.320	-1				
7	22.024	1.755	Open Manhole	1350	3.001	20.269	450	3.000	20.269	-1	
8	19.293	1.575	Open Manhole	1350	3.002	17.718	450	3.001	17.718	450	
9	19.836	2.431	Open Manhole	1350	3.003	17.405	450	3.002	17.405	450	
10	18.816	1.889	Open Manhole	1350	3.004	16.927	450	3.003	16.927	450	
11	18.420	2.687	Open Manhole	1350	1.003	15.733	2000	1.002	15.733	450	
								3.004	16.611	450	1178
12	16.000	1.931	Open Manhole	1350	1.004	14.069	3000	1.003	14.069	2000	
13	15.800	2.285	Open Manhole	1500	1.005	13.515	600	1.004	13.515	3000	
13	15.500	2.539	Open Manhole	0		OUTFALL		1.005	12.961	600	

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PIPELINE SCHEDULES for NETWORK 7.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	450	1	18.813	17.238	1.125	Open Manhole	1050
1.001	o	450	2	19.164	16.767	1.947	Open Manhole	1200
2.000	o	450	3	20.524	18.874	1.200	Open Manhole	1050
2.001	o	450	4	20.229	18.576	1.203	Open Manhole	1050
1.002	o	450	5	19.059	16.494	2.115	Open Manhole	1200
3.000	[]	-1	6	21.895	20.320	0.975	Open Manhole	1350
3.001	o	450	7	22.024	20.269	1.305	Open Manhole	1350
3.002	o	450	8	19.293	17.718	1.125	Open Manhole	1350
3.003	o	450	9	19.836	17.405	1.981	Open Manhole	1350
3.004	o	450	10	18.816	16.927	1.439	Open Manhole	1350
1.003	3 \=/	2000	11	18.420	15.733	2.537	Open Manhole	1350
1.004	3 \=/	3000	12	16.000	14.069	1.781	Open Manhole	1350
1.005	o	600	13	15.800	13.515	2.135	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	70.724	150.2	2	19.164	16.767	1.947	Open Manhole	1200
1.001	40.997	150.2	5	19.059	16.494	2.115	Open Manhole	1200
2.000	44.698	150.0	4	20.229	18.576	1.203	Open Manhole	1050
2.001	35.561	29.4	5	19.059	17.366	1.243	Open Manhole	1200
1.002	30.454	40.0	11	18.420	15.733	2.237	Open Manhole	1350
3.000	15.328	300.5	7	22.024	20.269	1.155	Open Manhole	1350
3.001	68.957	27.0	8	19.293	17.718	1.125	Open Manhole	1350
3.002	62.524	199.8	9	19.836	17.405	1.981	Open Manhole	1350
3.003	52.629	110.0	10	18.816	16.927	1.439	Open Manhole	1350
3.004	6.856	21.7	11	18.420	16.611	1.359	Open Manhole	1350
1.003	83.188	50.0	12	16.000	14.069	1.781	Open Manhole	1350
1.004	22.158	40.0	13	15.800	13.515	2.135	Open Manhole	1500
1.005	22.158	40.0	13	15.500	12.961	2.389	Open Manhole	0

Simulation Criteria for NETWORK 7.SWS

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 3 Number of Storage Structures 3 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.450
Return Period (years)	2	Profile Type	Summer
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.000	Cv (Winter)	0.840

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Synthetic Rainfall Details

Storm Duration (mins) 30

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 7.SWS

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%)	0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%	100/15 Summer				
1.001	15 Winter	1	0%	30/15 Winter				
2.000	15 Winter	1	0%	100/60 Winter				
2.001	120 Winter	1	0%	30/120 Winter				
1.002	15 Winter	1	0%					
3.000	15 Winter	1	0%	100/30 Summer				
3.001	180 Winter	1	0%	30/120 Winter				
3.002	30 Winter	1	0%					
3.003	15 Winter	1	0%					
3.004	15 Winter	1	0%					
1.003	15 Winter	1	0%					
1.004	720 Winter	1	0%					
1.005	720 Winter	1	0%	1/360 Winter				

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	17.424	-0.264	0.000	0.34	0.0	84.6	OK
1.001	2	16.977	-0.240	0.000	0.44	0.0	102.9	OK
2.000	3	18.997	-0.327	0.000	0.16	0.0	38.4	OK
2.001	4	18.745	-0.281	0.000	0.01	0.0	5.0	OK
1.002	5	16.653	-0.291	0.000	0.27	0.0	118.3	OK
3.000	6	20.478	-0.442	0.000	0.22	0.0	142.3	OK
3.001	7	20.449	-0.270	0.000	0.03	0.0	15.5	OK
3.002	8	17.798	-0.370	0.000	0.07	0.0	15.5	OK
3.003	9	17.518	-0.337	0.000	0.14	0.0	39.5	OK
3.004	10	17.043	-0.334	0.000	0.15	0.0	47.5	OK
1.003	11	15.841	-2.578	0.000	0.00	0.0	166.4	OK
1.004	12	14.198	-1.802	0.000	0.00	0.0	34.1	OK
1.005	13	14.199	0.084	0.000	0.01	0.0	8.0	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 7.SWS

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%)	0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%	100/15 Summer				
1.001	15 Winter	30	0%	30/15 Winter				
2.000	15 Winter	30	0%	100/60 Winter				
2.001	180 Winter	30	0%	30/120 Winter				
1.002	15 Winter	30	0%					
3.000	180 Winter	30	0%	100/30 Summer				
3.001	180 Winter	30	0%	30/120 Winter				
3.002	120 Winter	30	0%					
3.003	15 Winter	30	0%					
3.004	15 Winter	30	0%					
1.003	15 Winter	30	0%					
1.004	1440 Winter	30	0%					
1.005	1440 Winter	30	0%	1/360 Winter				

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	17.565	-0.123	0.000	0.84	0.0	207.6	OK
1.001	2	17.242	0.025	0.000	1.06	0.0	249.6	SURCHARGED
2.000	3	19.074	-0.250	0.000	0.40	0.0	94.0	OK
2.001	4	19.047	0.021	0.000	0.01	0.0	5.0	SURCHARGED
1.002	5	16.756	-0.188	0.000	0.63	0.0	279.3	OK
3.000	6	20.782	-0.138	0.000	0.12	0.0	75.0	OK
3.001	7	20.777	0.058	0.000	0.03	0.0	15.5	SURCHARGED
3.002	8	17.798	-0.370	0.000	0.07	0.0	15.5	OK
3.003	9	17.607	-0.248	0.000	0.40	0.0	112.4	OK
3.004	10	17.137	-0.239	0.000	0.43	0.0	137.4	OK
1.003	11	15.917	-2.503	0.000	0.00	0.0	412.6	OK
1.004	12	14.483	-1.517	0.000	0.00	0.0	37.7	OK
1.005	13	14.481	0.366	0.000	0.03	0.0	23.0	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 7.SWS

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status ON
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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+30%	100/15 Summer				
1.001	15 Winter	100	+30%	30/15 Winter				
2.000	240 Winter	100	+30%	100/60 Winter				
2.001	240 Winter	100	+30%	30/120 Winter				
1.002	15 Winter	100	+30%					
3.000	240 Winter	100	+30%	100/30 Summer				
3.001	240 Winter	100	+30%	30/120 Winter				
3.002	960 Winter	100	+30%					
3.003	15 Winter	100	+30%					
3.004	15 Winter	100	+30%					
1.003	15 Winter	100	+30%					
1.004	960 Winter	100	+30%					
1.005	960 Winter	100	+30%	1/360 Winter				

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	18.595	0.907	0.000	1.31	0.0	321.9	FLOOD RISK
1.001	2	17.754	0.537	0.000	1.70	0.0	398.2	SURCHARGED
2.000	3	19.478	0.154	0.000	0.12	0.0	27.6	SURCHARGED
2.001	4	19.476	0.450	0.000	0.01	0.0	5.0	SURCHARGED
1.002	5	16.887	-0.057	0.000	1.00	0.0	441.0	OK
3.000	6	21.230	0.310	0.000	0.16	0.0	101.0	SURCHARGED
3.001	7	21.229	0.510	0.000	0.03	0.0	15.5	SURCHARGED
3.002	8	17.798	-0.370	0.000	0.07	0.0	15.5	OK
3.003	9	17.675	-0.180	0.000	0.65	0.0	184.0	OK
3.004	10	17.214	-0.162	0.000	0.71	0.0	225.7	OK
1.003	11	15.970	-2.449	0.000	0.01	0.0	650.4	OK
1.004	12	14.866	-1.134	0.000	0.00	0.0	59.0	OK
1.005	13	14.862	0.747	0.000	0.05	0.0	34.0	SURCHARGED

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 8.SWS

Pipe Sizes NETWORK 8 Manhole Sizes NETWORK 8

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.450	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	20	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for NETWORK 8.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
1.000	16.400	0.137	119.7	0.791	5.00	0.0	0.600		o	525
1.001	36.651	0.092	398.4	0.791	0.00	0.0	0.600		o	525
1.002	96.629	0.871	110.9	0.190	0.00	0.0	0.600		o	525
1.003	78.644	0.602	130.6	0.160	0.00	0.0	0.600		o	600
2.000	27.881	0.093	300.0	0.049	5.00	0.0	0.600		o	300
2.001	27.881	0.209	133.4	0.050	0.00	0.0	0.600		o	450
1.004	11.585	0.290	40.0	0.130	0.00	0.0	0.600		[]	-3
3.000	33.058	0.220	150.3	0.500	5.00	0.0	0.600		o	525
3.001	20.396	0.136	150.0	0.500	0.00	0.0	0.600		o	600
3.002	23.072	0.210	109.9	0.000	0.00	0.0	0.600		[]	-1
1.005	21.221	0.071	298.9	0.000	0.00	0.0	0.045	3	\=/	3000
1.006	32.587	0.109	299.0	0.041	0.00	0.0	0.045	3	\=/	3100
4.000	36.040	0.240	150.2	0.934	5.00	0.0	0.600		o	525

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	20.00	5.13	15.275	0.791	0.0	0.0	0.0	2.05	443.0	42.9
1.001	20.00	5.68	15.138	1.582	0.0	0.0	0.0	1.12	241.6	85.7
1.002	20.00	6.44	15.046	1.772	0.0	0.0	0.0	2.13	460.2	96.0
1.003	20.00	7.05	14.100	1.932	0.0	0.0	0.0	2.13	602.0	104.7
2.000	20.00	5.51	14.100	0.049	0.0	0.0	0.0	0.90	63.8	2.7
2.001	20.00	5.78	13.857	0.099	0.0	0.0	0.0	1.76	279.7	5.4
1.004	20.00	7.09	13.498	2.161	0.0	0.0	0.0	4.96	5359.2	117.1
3.000	20.00	5.30	13.875	0.500	0.0	0.0	0.0	1.83	395.1	27.1
3.001	20.00	5.47	13.580	1.000	0.0	0.0	0.0	1.99	561.6	54.2
3.002	20.00	5.62	13.444	1.000	0.0	0.0	0.0	2.67	1601.7	54.2
1.005	20.00	8.16	13.208	3.161	0.0	0.0	0.0	0.33	171.6	171.2
1.006	20.00	9.79	13.137	3.202	0.0	0.0	0.0	0.33	177.0	173.5
4.000	20.00	5.33	14.275	0.934	0.0	0.0	0.0	1.83	395.2	50.6

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Network Design Table for NETWORK 8.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)
4.001	70.057	0.400	175.1	0.934	0.00	0.0	0.600		o	525
4.002	64.531	0.430	150.0	0.000	0.00	0.0	0.600		o	600
4.003	13.943	0.046	303.1	0.000	0.00	0.0		0.045	3 \=/	2000
1.007	23.687	0.079	299.8	0.000	0.00	0.0		0.045	3 \=/	5000

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)
4.001	20.00	6.02	14.035	1.868	0.0	0.0	0.0	1.69	365.7	101.2
4.002	20.00	6.56	13.560	1.868	0.0	0.0	0.0	1.99	561.6	101.2
4.003	20.00	7.29	13.130	1.868	0.0	0.0	0.0	0.32	117.0	101.2
1.007	20.00	10.95	13.028	5.070	0.0	0.0	0.0	0.34	279.4	274.6

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Manhole Schedules for NETWORK 8.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	17.000	1.725	Open Manhole	1200	1.000	15.275	525				
2	16.863	1.725	Open Manhole	1200	1.001	15.138	525	1.000	15.138	525	
3	16.941	1.895	Open Manhole	1200	1.002	15.046	525	1.001	15.046	525	
4	15.900	1.800	Open Manhole	1500	1.003	14.100	600	1.002	14.175	525	
11	15.600	1.500	Open Manhole	1200	2.000	14.100	300				
8	15.600	1.743	Open Manhole	1200	2.001	13.857	450	2.000	14.007	300	
5	15.600	2.102	Open Manhole	1500	1.004	13.498	-3	1.003	13.498	600	
								2.001	13.648	450	
9	15.600	1.725	Open Manhole	1200	3.000	13.875	525				
10	15.400	1.820	Open Manhole	1500 x 1500	3.001	13.580	600	3.000	13.655	525	
7	15.000	1.556	Open Manhole	1500 x 1500	3.002	13.444	-1	3.001	13.444	600	
10	15.400	2.192	Open Manhole		1.005	13.208	3000	1.004	13.208	-3	
								3.002	13.234	-1	476
6	15.100	1.963	Junction	0	1.006	13.137	3100	1.005	13.137	3000	
12	16.000	1.725	Open Manhole	1200	4.000	14.275	525				
13	15.800	1.765	Open Manhole	1200	4.001	14.035	525	4.000	14.035	525	
14	15.400	1.840	Open Manhole	1200	4.002	13.560	600	4.001	13.635	525	
15	15.600	2.470	Open Manhole	1500	4.003	13.130	2000	4.002	13.130	600	
7	15.400	2.372	Open Manhole	1500 x 1000	1.007	13.028	5000	1.006	13.028	3100	
								4.003	13.084	2000	55
8	14.500	1.551	Open Manhole	0		OUTFALL		1.007	12.949	5000	

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PIPELINE SCHEDULES for NETWORK 8.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	525	1	17.000	15.275	1.200	Open Manhole	1200
1.001	o	525	2	16.863	15.138	1.200	Open Manhole	1200
1.002	o	525	3	16.941	15.046	1.370	Open Manhole	1200
1.003	o	600	4	15.900	14.100	1.200	Open Manhole	1500
2.000	o	300	11	15.600	14.100	1.200	Open Manhole	1200
2.001	o	450	8	15.600	13.857	1.293	Open Manhole	1200
1.004	[]	-3	5	15.600	13.498	1.502	Open Manhole	1500
3.000	o	525	9	15.600	13.875	1.200	Open Manhole	1200
3.001	o	600	10	15.400	13.580	1.220	Open Manhole	1500 x 1500
3.002	[]	-1	7	15.000	13.444	0.956	Open Manhole	1500 x 1500
1.005	3 \=/	3000	10	15.400	13.208	2.042	Open Manhole	1500 x 1500
1.006	3 \=/	3100	6	15.100	13.137	1.813	Junction	
4.000	o	525	12	16.000	14.275	1.200	Open Manhole	1200
4.001	o	525	13	15.800	14.035	1.240	Open Manhole	1200
4.002	o	600	14	15.400	13.560	1.240	Open Manhole	1200
4.003	3 \=/	2000	15	15.600	13.130	2.320	Open Manhole	1500
1.007	3 \=/	5000	7	15.400	13.028	2.222	Open Manhole	1500 x 1000

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	16.400	119.7	2	16.863	15.138	1.200	Open Manhole	1200
1.001	36.651	398.4	3	16.941	15.046	1.370	Open Manhole	1200
1.002	96.629	110.9	4	15.900	14.175	1.200	Open Manhole	1500
1.003	78.644	130.6	5	15.600	13.498	1.502	Open Manhole	1500
2.000	27.881	300.0	8	15.600	14.007	1.293	Open Manhole	1200
2.001	27.881	133.4	5	15.600	13.648	1.502	Open Manhole	1500
1.004	11.585	40.0	10	15.400	13.208	1.592	Open Manhole	1500 x 1500
3.000	33.058	150.3	10	15.400	13.655	1.220	Open Manhole	1500 x 1500
3.001	20.396	150.0	7	15.000	13.444	0.956	Open Manhole	1500 x 1500
3.002	23.072	109.9	10	15.400	13.234	1.566	Open Manhole	1500 x 1500
1.005	21.221	298.9	6	15.100	13.137	1.813	Junction	
1.006	32.587	299.0	7	15.400	13.028	2.222	Open Manhole	1500 x 1000
4.000	36.040	150.2	13	15.800	14.035	1.240	Open Manhole	1200
4.001	70.057	175.1	14	15.400	13.635	1.240	Open Manhole	1200
4.002	64.531	150.0	15	15.600	13.130	1.870	Open Manhole	1500
4.003	13.943	303.1	7	15.400	13.084	2.166	Open Manhole	1500 x 1000
1.007	23.687	299.8	8	14.500	12.949	1.401	Open Manhole	0

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Simulation Criteria for NETWORK 8.SWS

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	4	Number of Storage Structures	4	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	30
Ratio R	0.450		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 8.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%	100/15 Summer				
1.001	60 Winter	1	0%	30/60 Winter				
1.002	15 Winter	1	0%					
1.003	15 Winter	1	0%					
2.000	15 Winter	1	0%					
2.001	15 Winter	1	0%	100/720 Winter				
1.004	480 Winter	1	0%	30/240 Winter				
3.000	15 Winter	1	0%	100/60 Winter				
3.001	600 Winter	1	0%	30/180 Winter				
3.002	480 Winter	1	0%	30/180 Summer				
1.005	480 Winter	1	0%					
1.006	480 Winter	1	0%					
4.000	15 Winter	1	0%	100/15 Summer				
4.001	120 Winter	1	0%	100/30 Summer				
4.002	480 Winter	1	0%	100/360 Summer				
4.003	480 Winter	1	0%					
1.007	480 Winter	1	0%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	15.508	-0.292	0.000	0.40	0.0	113.5	OK
1.001	2	15.374	-0.289	0.000	0.07	0.0	13.6	OK
1.002	3	15.148	-0.423	0.000	0.08	0.0	36.1	OK
1.003	4	14.227	-0.473	0.000	0.10	0.0	55.0	OK
2.000	11	14.170	-0.230	0.000	0.12	0.0	7.1	OK
2.001	8	13.925	-0.382	0.000	0.06	0.0	13.2	OK
1.004	5	13.891	-0.207	0.000	0.01	0.0	22.6	OK
3.000	9	14.041	-0.359	0.000	0.21	0.0	71.2	OK
3.001	10	13.877	-0.303	0.000	0.02	0.0	7.9	OK
3.002	7	13.891	-0.153	0.000	0.01	0.0	7.8	OK
1.005	10	13.891	-1.509	0.000	0.00	0.0	28.2	OK
1.006	6	13.891	-1.209	0.000	0.00	0.0	25.0	OK
4.000	12	14.506	-0.294	0.000	0.39	0.0	133.2	OK
4.001	13	14.214	-0.346	0.000	0.05	0.0	16.1	OK
4.002	14	13.894	-0.266	0.000	0.03	0.0	16.1	OK
4.003	15	13.891	-1.708	0.000	0.00	0.0	15.2	OK
1.007	7	13.891	-1.509	0.000	0.00	0.0	14.0	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 8.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	180 Winter	30	0%	100/15 Summer				
1.001	180 Winter	30	0%	30/60 Winter				
1.002	15 Winter	30	0%					
1.003	15 Winter	30	0%					
2.000	15 Winter	30	0%					
2.001	1440 Winter	30	0%	100/720 Winter				
1.004	1440 Winter	30	0%	30/240 Winter				
3.000	1440 Winter	30	0%	100/60 Winter				
3.001	1440 Winter	30	0%	30/180 Winter				
3.002	1440 Winter	30	0%	30/180 Summer				
1.005	1440 Winter	30	0%					
1.006	1440 Winter	30	0%					
4.000	15 Winter	30	0%	100/15 Summer				
4.001	180 Winter	30	0%	100/30 Summer				
4.002	1440 Winter	30	0%	100/360 Summer				
4.003	1440 Winter	30	0%					
1.007	1440 Winter	30	0%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	15.719	-0.081	0.000	0.21	0.0	60.4	OK
1.001	2	15.717	0.054	0.000	0.07	0.0	13.6	SURCHARGED
1.002	3	15.204	-0.367	0.000	0.19	0.0	81.7	OK
1.003	4	14.307	-0.393	0.000	0.25	0.0	137.8	OK
2.000	11	14.213	-0.187	0.000	0.30	0.0	17.3	OK
2.001	8	14.138	-0.169	0.000	0.01	0.0	1.4	OK
1.004	5	14.138	0.040	0.000	0.01	0.0	21.0	SURCHARGED
3.000	9	14.202	-0.198	0.000	0.02	0.0	7.3	OK
3.001	10	14.201	0.021	0.000	0.02	0.0	7.3	SURCHARGED
3.002	7	14.137	0.093	0.000	0.01	0.0	7.0	SURCHARGED
1.005	10	14.137	-1.263	0.000	0.00	0.0	24.4	OK
1.006	6	14.137	-0.963	0.000	0.00	0.0	21.2	OK
4.000	12	14.692	-0.108	0.000	0.96	0.0	326.2	OK
4.001	13	14.543	-0.017	0.000	0.05	0.0	16.1	OK
4.002	14	14.144	-0.016	0.000	0.03	0.0	15.9	OK
4.003	15	14.137	-1.463	0.000	0.00	0.0	15.6	OK
1.007	7	14.137	-1.264	0.000	0.00	0.0	36.7	OK

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 8.SWS

Margin for Flood Risk Warning (mm) 300.0 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, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	240 Winter	100	+30%	100/15 Summer				
1.001	240 Winter	100	+30%	30/60 Winter				
1.002	15 Winter	100	+30%					
1.003	15 Winter	100	+30%					
2.000	1440 Winter	100	+30%					
2.001	1440 Winter	100	+30%	100/720 Winter				
1.004	1440 Winter	100	+30%	30/240 Winter				
3.000	240 Winter	100	+30%	100/60 Winter				
3.001	240 Winter	100	+30%	30/180 Winter				
3.002	1440 Winter	100	+30%	30/180 Summer				
1.005	1440 Winter	100	+30%					
1.006	1440 Winter	100	+30%					
4.000	15 Winter	100	+30%	100/15 Summer				
4.001	240 Winter	100	+30%	100/30 Summer				
4.002	1440 Winter	100	+30%	100/360 Summer				
4.003	1440 Winter	100	+30%					
1.007	1440 Winter	100	+30%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	16.203	0.403	0.000	0.29	0.0	81.1	SURCHARGED
1.001	2	16.201	0.538	0.000	0.07	0.0	13.6	SURCHARGED
1.002	3	15.247	-0.324	0.000	0.30	0.0	129.2	OK
1.003	4	14.373	-0.327	0.000	0.41	0.0	224.6	OK
2.000	11	14.321	-0.079	0.000	0.02	0.0	1.2	OK
2.001	8	14.320	0.013	0.000	0.01	0.0	2.2	SURCHARGED
1.004	5	14.320	0.222	0.000	0.01	0.0	26.8	SURCHARGED
3.000	9	14.660	0.260	0.000	0.15	0.0	51.2	SURCHARGED
3.001	10	14.659	0.479	0.000	0.02	0.0	7.9	SURCHARGED
3.002	7	14.320	0.276	0.000	0.01	0.0	7.9	SURCHARGED
1.005	10	14.319	-1.081	0.000	0.00	0.0	33.0	OK
1.006	6	14.319	-0.781	0.000	0.00	0.0	30.8	OK
4.000	12	15.189	0.389	0.000	1.62	0.0	550.3	SURCHARGED
4.001	13	14.998	0.438	0.000	0.05	0.0	16.1	SURCHARGED
4.002	14	14.323	0.163	0.000	0.03	0.0	16.2	SURCHARGED
4.003	15	14.318	-1.281	0.000	0.00	0.0	16.2	OK
1.007	7	14.318	-1.082	0.000	0.00	0.0	44.3	OK

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Network 1 and 2

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
6.000	0.1	5.2	0.4	12.8	0.6	21.7
6.001	0.1	5.1	0.3	12.6	0.5	21.3
6.002	0.3	7.8	0.7	20.3	0.8	34.2
6.003	0.1	12.5	0.3	34.3	0.6	57.7
6.004	0.4	28.4	0.8	73.6	0.8	109.9
6.006	0.5	46.3	1.2	115.6	1.3	173.9
7.002	0.3	17.0	0.3	39.7	0.3	68.1
7.004	0.7	50.0	0.7	100.9	0.7	141.9
7.006	0.4	55.8	0.5	100.3	0.5	134.4
7.007	0.5	87.6	0.6	174.2	0.7	257.9
11.000	0.0	1.7	0.1	4.2	0.2	7.1
12.002	0.6	36.2	0.7	85.8	0.7	137.7
11.002	0.4	49.2	0.5	106.6	0.6	151.0
7.008	0.6	142.0	0.7	255.8	0.8	354.2
7.009	0.6	194.1	0.7	395.6	0.8	580.1
15.000	0.3	3.9	0.4	9.6	0.5	16.2
14.002	0.6	39.2	0.8	92.6	1.0	153.0
16.000	0.0	1.7	0.1	4.2	0.2	7.1
18.000	0.6	13.3	0.8	32.7	0.9	55.2
14.005	0.9	87.0	1.1	203.3	1.2	296.8
7.010	0.5	292.9	0.5	572.7	0.3	87.7
22.000	0.2	2.7	0.4	6.6	0.4	10.6
22.001	0.3	78.8	0.3	189.2	0.4	256.0
24.000	0.1	6.4	0.3	15.6	0.5	25.8
22.003	1.1	96.2	1.3	224.5	1.3	288.1
22.004	0.9	143.4	0.9	295.7	1.0	401.4
26.000	0.0	0.0	0.0	0.0	0.0	0.0
22.006	1.0	148.8	0.5	41.2	0.4	45.3
28.000	0.1	1.7	0.3	4.2	0.4	7.1
28.001	0.9	56.0	1.1	139.9	1.0	223.8
30.000	0.0	0.0	0.1	3.9	0.1	6.5
28.003	0.9	72.3	1.1	161.2	1.3	243.4
28.004	0.9	125.1	0.9	297.9	0.9	457.2
32.000	0.0	0.0	0.1	3.5	0.2	5.9
28.006	1.1	138.0	1.3	294.4	0.6	28.1
28.007	1.1	183.3	1.4	396.5	0.6	37.9
34.003	0.5	40.6	0.1	6.3	0.1	7.2
36.000	0.2	12.3	0.3	30.1	0.3	48.7
36.001	0.3	27.5	0.4	75.1	0.5	125.8
42.000	0.2	16.9	0.3	41.5	0.3	69.9
42.001	0.8	30.4	1.1	80.2	1.3	135.5
42.002	0.5	49.0	0.7	135.3	0.8	224.5
42.004	0.6	63.2	0.7	163.8	0.8	197.6
47.000	0.0	0.0	0.0	0.0	0.0	0.0
47.001	0.1	5.1	0.2	15.9	0.3	26.9

Network 1 and 2

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
47.002	0.1	11.0	0.3	34.6	0.3	51.0
48.000	0.2	34.0	0.2	83.3	0.3	141.0
48.001	0.2	41.1	0.2	101.5	0.3	171.1
48.002	0.2	46.9	0.3	113.6	0.3	190.2
48.003	0.2	51.2	0.3	120.2	0.3	201.1
48.004	0.2	51.2	0.3	120.3	0.3	200.9
48.005	0.8	51.0	1.1	120.0	1.3	200.4
49.000	0.2	16.5	0.3	38.3	0.4	64.7
49.001	0.3	37.9	0.4	101.1	0.4	169.7
49.002	0.3	37.7	0.4	101.5	0.5	169.8
49.003	0.3	38.0	0.4	101.0	0.5	168.5
49.004	0.3	46.2	0.4	121.3	0.5	203.3
51.000	0.4	21.4	0.5	52.8	0.6	89.2
51.002	0.4	34.8	0.5	89.6	0.5	146.0
53.000	0.4	14.2	0.5	34.9	0.6	58.9
54.000	0.4	16.4	0.5	40.2	0.6	68.0
54.002	0.4	28.9	0.6	78.9	0.6	129.6
54.004	0.4	34.2	0.6	92.3	0.7	149.1
54.006	0.5	60.6	0.7	170.5	0.8	258.9
54.007	0.5	60.6	0.7	168.6	0.7	230.0
55.000	0.2	4.0	0.3	9.8	0.4	16.5
56.000	0.2	25.0	0.2	60.9	0.2	101.8
57.000	0.3	37.7	0.4	91.9	0.4	155.1
57.001	0.2	42.7	0.3	105.6	0.3	179.7
57.002	0.2	41.2	0.3	103.2	0.3	174.9
57.003	0.2	44.1	0.3	109.8	0.3	185.6
57.004	0.2	45.2	0.3	112.0	0.3	189.8
57.005	0.2	47.6	0.3	115.5	0.3	196.0
57.006	0.2	46.3	0.2	100.5	0.3	172.6
57.007	0.2	39.4	0.2	77.2	0.2	130.8
1.039	1.0	381.9	1.2	880.8	1.2	1442.4
1.040	0.4	365.9	0.5	854.3	0.6	1383.6
1.041	0.3	342.8	0.5	815.2	0.5	1301.0
1.042	0.4	339.6	0.5	807.6	0.5	1288.4
1.043	0.4	340.0	0.6	805.8	0.7	1286.7
64.000	0.2	9.3	0.2	22.7	0.3	38.4
64.001	0.2	17.8	0.3	47.5	0.4	80.2
64.002	0.3	25.5	0.4	70.2	0.4	118.7
64.003	0.3	34.6	0.4	93.6	0.4	149.7
64.004	0.3	42.0	0.4	107.0	0.4	156.1
67.000	0.3	20.8	0.4	49.8	0.5	82.5
67.002	0.1	28.4	0.2	57.2	0.2	94.4
1.044	0.3	387.7	0.4	881.2	0.5	1491.1
1.045	0.3	386.2	0.4	876.0	0.5	1481.1
1.046	0.3	383.1	0.4	870.4	0.5	1469.3
1.047	0.3	382.3	0.4	868.0	0.5	1466.5
1.048	0.3	380.9	0.5	865.5	0.5	1461.5

Network 1 and 2

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
1.049	0.4	380.4	0.5	864.8	0.5	1460.8
1.050	0.5	393.0	0.6	875.7	0.7	1469.1
1.051	0.5	393.2	0.6	876.6	0.7	1471.2
1.052	0.6	393.2	0.7	876.7	0.8	1471.4
1.053	0.5	393.1	0.7	876.5	0.8	1471.4
1.054	0.5	392.9	0.7	876.1	0.5	281.8
1.055	0.5	392.9	0.7	875.3	0.5	280.7
1.056	0.5	393.0	0.4	245.7	0.4	279.0
1.057	0.5	393.7	0.3	244.7	0.3	276.9
70.009	0.5	235.5	0.7	556.7	0.7	799.6
70.011	0.4	237.2	0.5	563.3	0.5	806.6
70.013	0.4	238.3	0.4	559.2	0.5	818.7
70.015	0.4	237.2	0.5	557.7	0.5	829.2
70.018	0.4	333.9	0.5	772.4	0.5	1210.0
70.019	0.4	331.2	0.5	770.6	0.5	1191.0
70.020	0.4	330.3	0.5	761.7	0.5	1160.5
70.023	0.4	315.6	0.4	720.7	0.5	1161.9
95.003	0.1	5.7	0.1	5.7	0.1	5.7
95.004	0.4	5.7	0.4	5.7	0.4	5.7
94.002	0.2	13.5	0.2	13.5	0.2	13.5
1.058	0.3	207.6	0.3	346.6	0.3	388.5

Network 3

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
1.003	0.2	37.5	0.2	94.7	0.3	143.3
1.004	0.1	47.8	0.2	99.6	0.2	111.2
1.008	0.1	71.1	0.1	124.4	0.1	167.5
1.011	0.6	99.2	0.8	210.6	0.9	321.1
1.013	0.6	147.6	0.7	363.5	0.8	552.4
1.014	0.4	147.7	1.0	361.7	1.1	551.7
14.001	0.3	14.8	0.4	36.1	0.1	1.9
14.002	0.3	14.7	0.0	1.1	0.0	1.8
13.003	0.0	4.9	0.0	5.0	0.0	6.0
1.015	0.1	39.7	0.1	42.9	0.1	57.7
1.016	0.1	39.0	0.1	41.6	0.1	56.4
1.017	0.0	10.0	0.0	28.0	0.0	38.5

Network 4

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
1.002	0.6	64.7	0.8	174.3	0.9	266.4
1.003	0.6	69.8	0.8	179.2	1.0	269.8
1.005	0.6	74.2	0.8	190.2	1.0	288.9
1.006	0.6	81.4	0.8	205.9	1.0	312.0
1.007	0.6	85.6	0.9	217.0	1.0	329.4
1.010	0.8	275.8	1.0	648.4	1.1	955.7
1.011	0.9	281.8	1.0	647.9	1.1	999.8
14.003	0.2	10.4	0.2	10.4	0.2	10.5
1.012	0.4	68.5	0.1	54.0	0.1	89.9

Network 5

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
1.007	0.1	34.1	0.1	39.9	0.1	50.2
1.008	0.1	35.4	0.1	41.2	0.1	52.9
1.009	0.2	36.0	0.1	41.1	0.1	53.4
8.003	0.0	3.8	0.0	4.8	0.0	5.0
8.004	0.0	4.1	0.0	4.4	0.0	10.4
1.010	0.1	30.5	0.1	34.9	0.1	47.8
1.011	0.0	14.0	0.1	34.4	0.1	46.8

Network 6

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
1.001	0.4	42.4	0.7	116.9	0.8	193.2
1.002	0.5	42.4	0.6	116.2	0.7	193.2
1.003	0.5	42.4	0.7	117.5	0.3	13.9
4.003	0.3	93.8	0.2	51.4	0.1	48.4
3.003	0.2	7.1	0.3	9.6	0.3	9.6
1.004	0.1	9.4	0.1	12.9	0.1	17.4
1.005	0.0	4.0	0.1	11.0	0.1	14.1

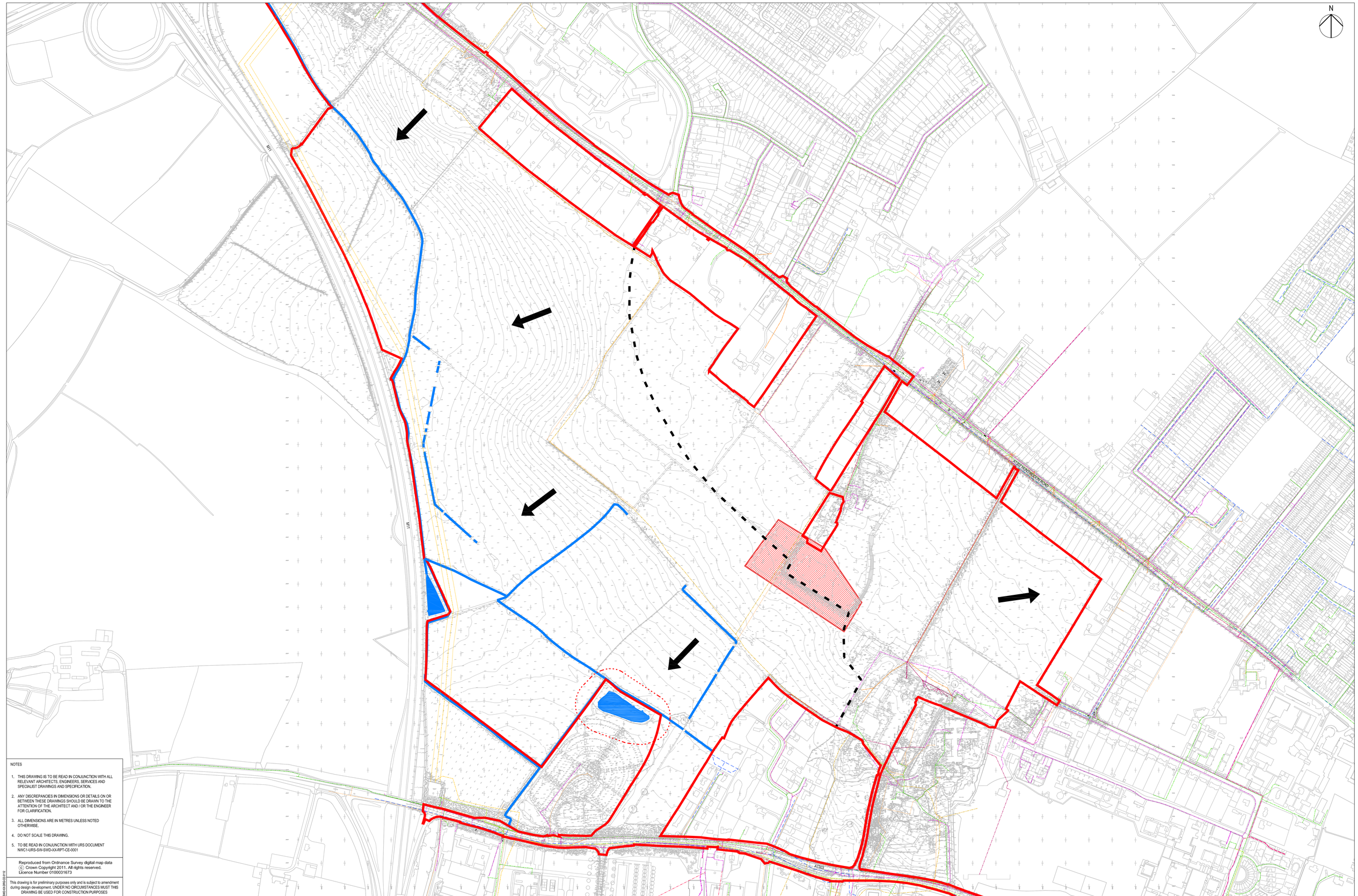
Network 7

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
1.003	0.7	166.4	0.9	412.6	1.0	650.4
1.004	0.5	34.1	0.5	37.7	0.5	59.0

Network 8

	Event					
	1 Year		30 Year		100 Year + CC	
Swale/Pipe Number	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)	Velocity (m/s)	Flow (l/s)
1.005	0.1	28.2	0.1	24.4	0.1	33.0
1.006	0.1	25.0	0.1	21.2	0.1	30.8
4.003	0.1	15.2	0.1	15.6	0.1	16.2
1.007	0.0	14.0	0.0	36.7	0.1	44.3

APPENDIX D – DRAWINGS



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Revision Details	By / Check	Date	Suffix
FIRST ISSUE	SG / RT	27/02/13	P01

KEY

- PLANNING APPLICATION BOUNDARY
- NEWT PROTECTION BOUNDARY
- SITE OF SPECIAL SCIENTIFIC INTEREST (TRAVELLER'S REST PIT)
- APPROXIMATE LINE OF PLATEAU
- GENERAL FALL OF LAND
- EXISTING WATERCOURSE
- EXISTING WATER BODY
- EXISTING HIGH PRESSURE GAS
- EXISTING MEDIUM PRESSURE GAS
- EXISTING INTERMEDIATE PRESSURE GAS
- EXISTING LOW PRESSURE GAS
- EXISTING ELECTRICITY - LV
- EXISTING ELECTRICITY - OVERHEAD
- EXISTING ELECTRICITY - UNDERGROUND
- EXISTING SW DRAINAGE

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTHWEST CAMBRIDGE

Drawing Title: SURFACE WATER DRAINAGE CONSTRAINTS PLAN

Designed	Drawn	Checked	Approved	Date
RT	SG	RT	SS	27/02/13

URS Internal Project No.: Project No
Suitability: S1 - CO-ORDINATION
Scale @ A0: 1:2500

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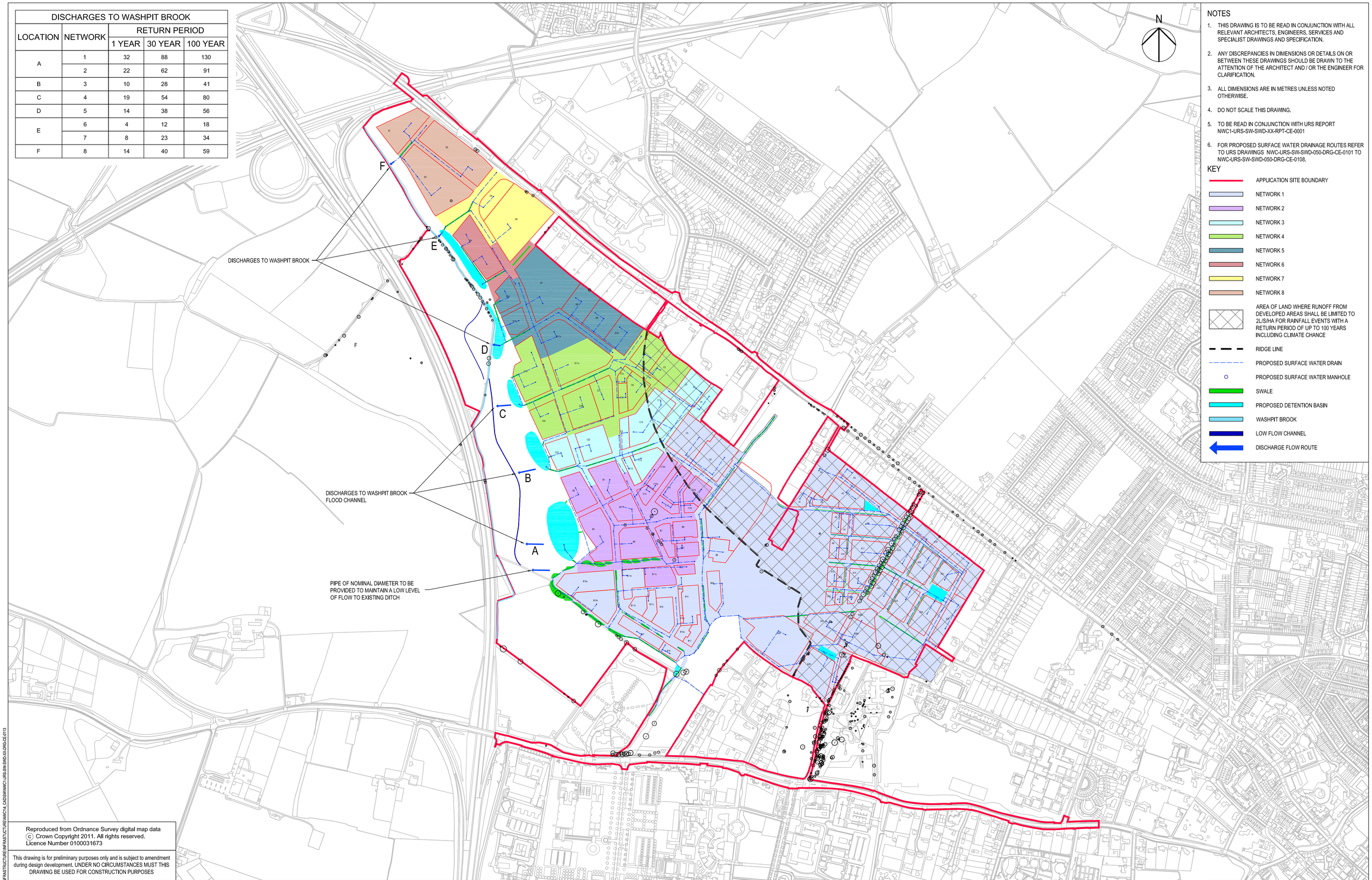
URS

Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0112
Rev: P01

DISCHARGES TO WASHPIT BROOK				
LOCATION	NETWORK	RETURN PERIOD		
		1 YEAR	30 YEAR	100 YEAR
A	1	32	88	130
	2	22	62	91
B	3	10	28	41
C	4	19	54	80
D	5	14	38	56
E	6	4	12	18
	7	8	23	34
F	8	14	40	59



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6. FOR PROPOSED SURFACE WATER DRAINAGE ROUTES REFER TO URS DRAWINGS NWC-URS-SW-SWD-050-DRG-CE-0101 TO NWC-URS-SW-SWD-050-DRG-CE-0108.

KEY

- APPLICATION SITE BOUNDARY
- NETWORK 1
- NETWORK 2
- NETWORK 3
- NETWORK 4
- NETWORK 5
- NETWORK 6
- NETWORK 7
- NETWORK 8
- AREA OF LAND WHERE RUNOFF FROM DEVELOPED AREAS SHALL BE LIMITED TO 2L/S/HA FOR RAINFALL EVENTS WITH A RETURN PERIOD OF UP TO 100 YEARS INCLUDING CLIMATE CHANCE
- RIDGE LINE
- PROPOSED SURFACE WATER DRAIN
- PROPOSED SURFACE WATER MANHOLE
- SWALE
- PROPOSED DETENTION BASIN
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

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Revision Details	By / Check	Date	Suffix
PIPE TO EXISTING DITCH ANNOTATION ADDED	SG / SES	29/04/13	P04
SW DRAINAGE LAYOUT AMENDED	SG / SES	17/04/13	P03
DISCHARGE RATES AMENDED AND LOW FLOW CHANNEL ADDED	SG / AS	28/03/13	P02
FIRST ISSUE	JC / AS	27/02/13	P01

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Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY CATCHMENT AREAS

Designed	Drawn	Checked	Approved	Date
AS	JC	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

Scale @ A1: 1:5000

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0113

Rev: P04

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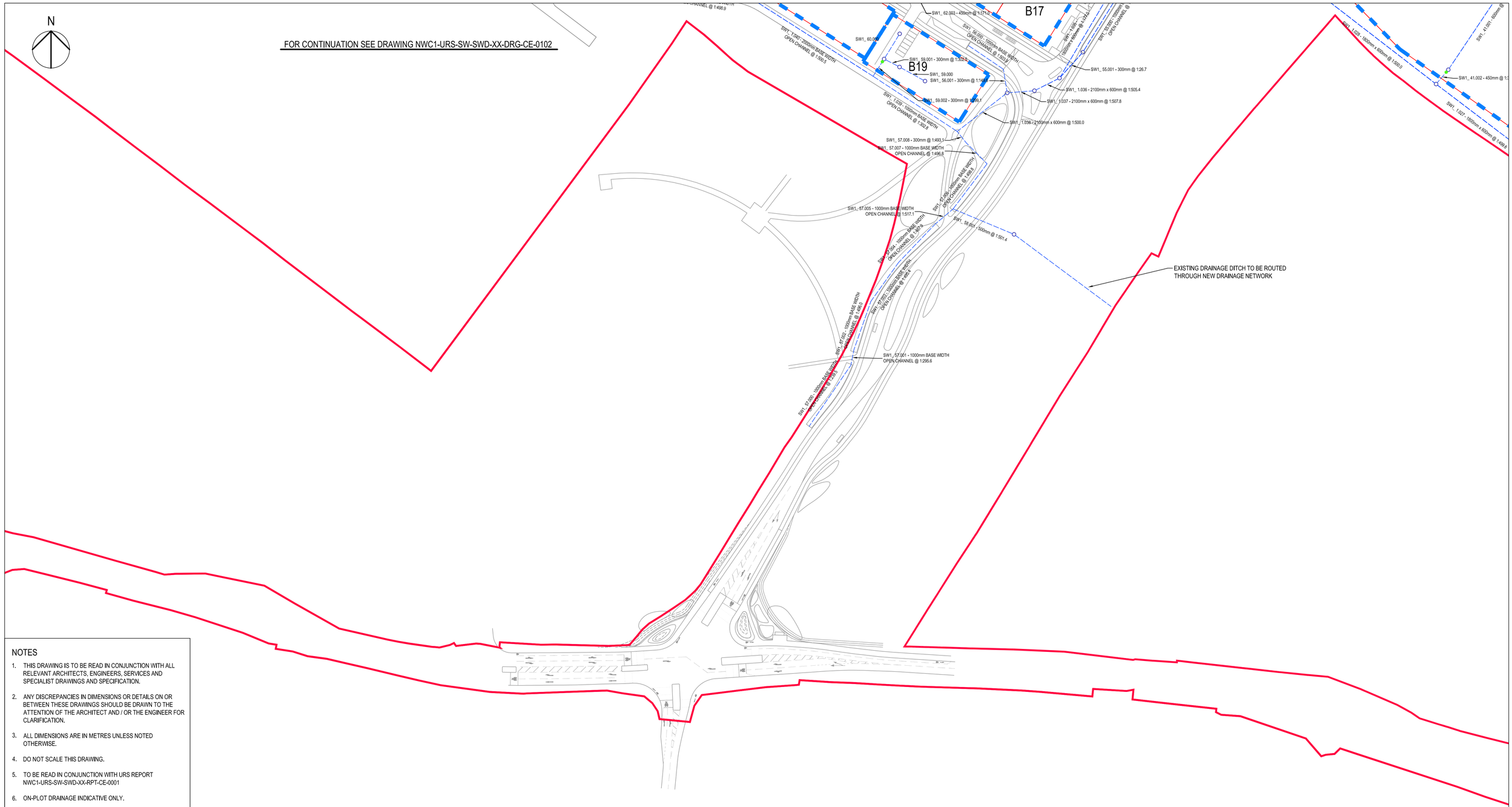

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6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

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Revision Details	By / Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG / SES	17/04/13	P03
KEY UPDATED	SG / AS	27/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

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Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 1 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

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Rev: P03

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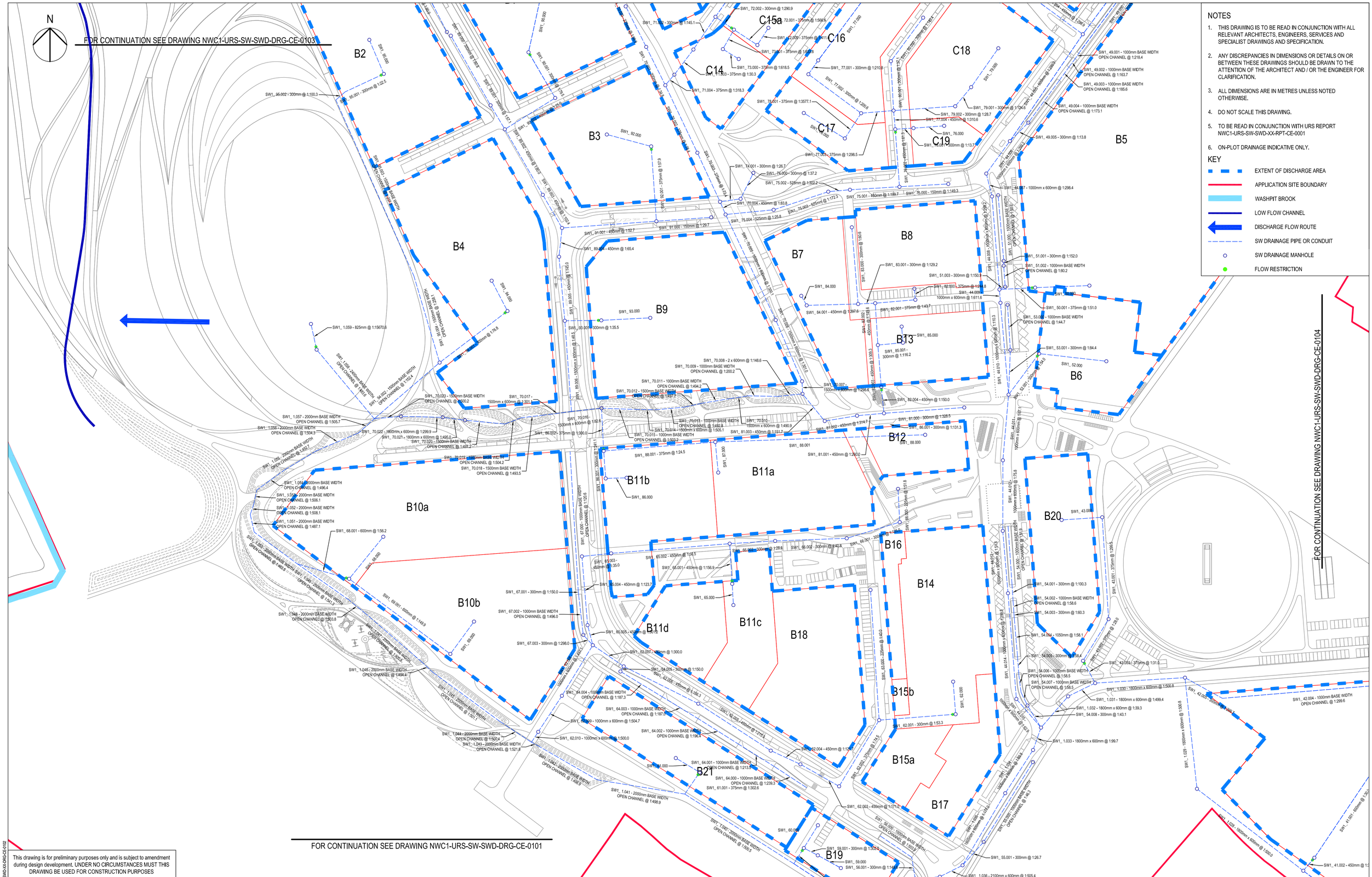

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6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

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Revision Details	By / Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG / SES	17/04/13	P03
LOW FLOW CHANNEL ADDED AND KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

Rev Date: 18/04/2013 00:00:01
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Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 2 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

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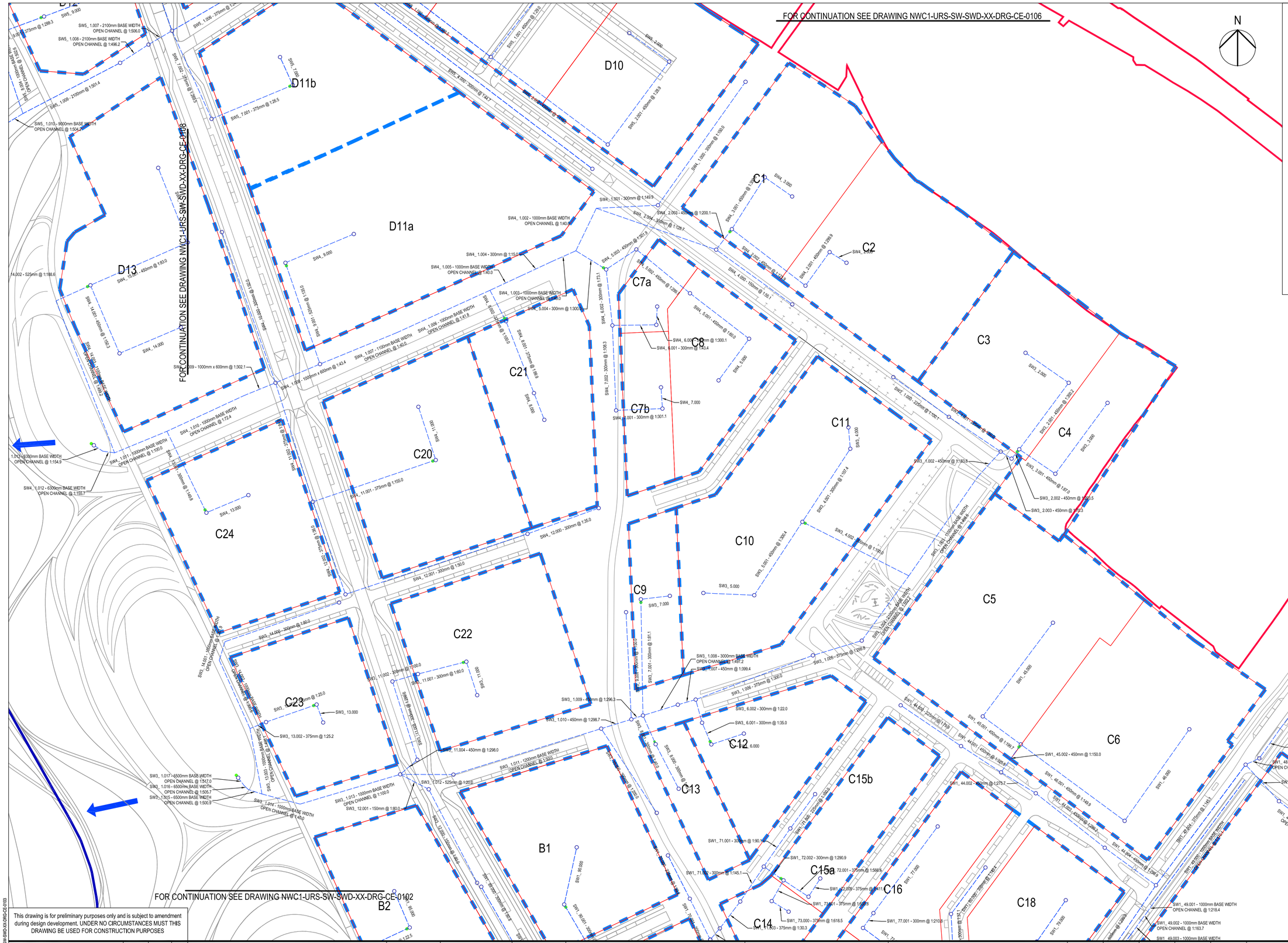
Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0102
Rev: P03



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5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

Revision Details	By	Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG	SES	17/04/13	P03
LOW FLOW CHANNEL ADDED AND KEY UPDATED	SG	AS	27/03/13	P02
FIRST ISSUE	SG	AS	27/02/13	P01

File Date: 18/04/2013 08:04:27AM
File Name: K:\NWC1\5 CADS\SW\NWC1-URS-SW-SWD-XX-DRG-CE-0103

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

In addition to the hazard/risks normally associated with the types of work detailed on this drawing take note of above. It is assumed that all works on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 3 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No
Suitability: S1 CO-ORDINATION
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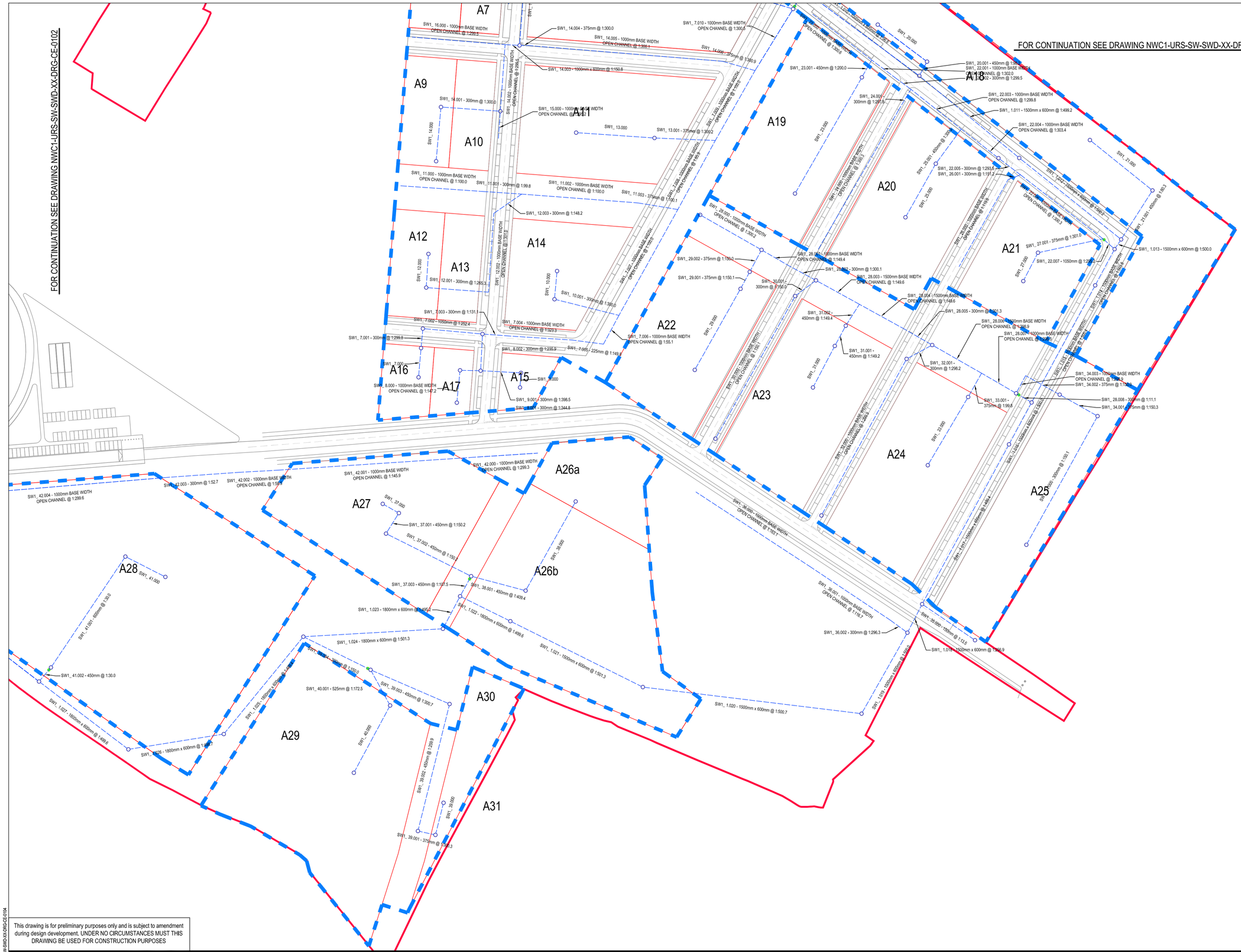
Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0103
Rev: P03



NOTES

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5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

N

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

Revision Details	By / Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG / SES	17/04/13	P03
BOUNDARIES AMENDED AND KEY UPDATED	SG / RT	27/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 4 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No
Suitability: S1 CO-ORDINATION
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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0104
Rev: P03

File Date : 18/04/2013 08:58:07
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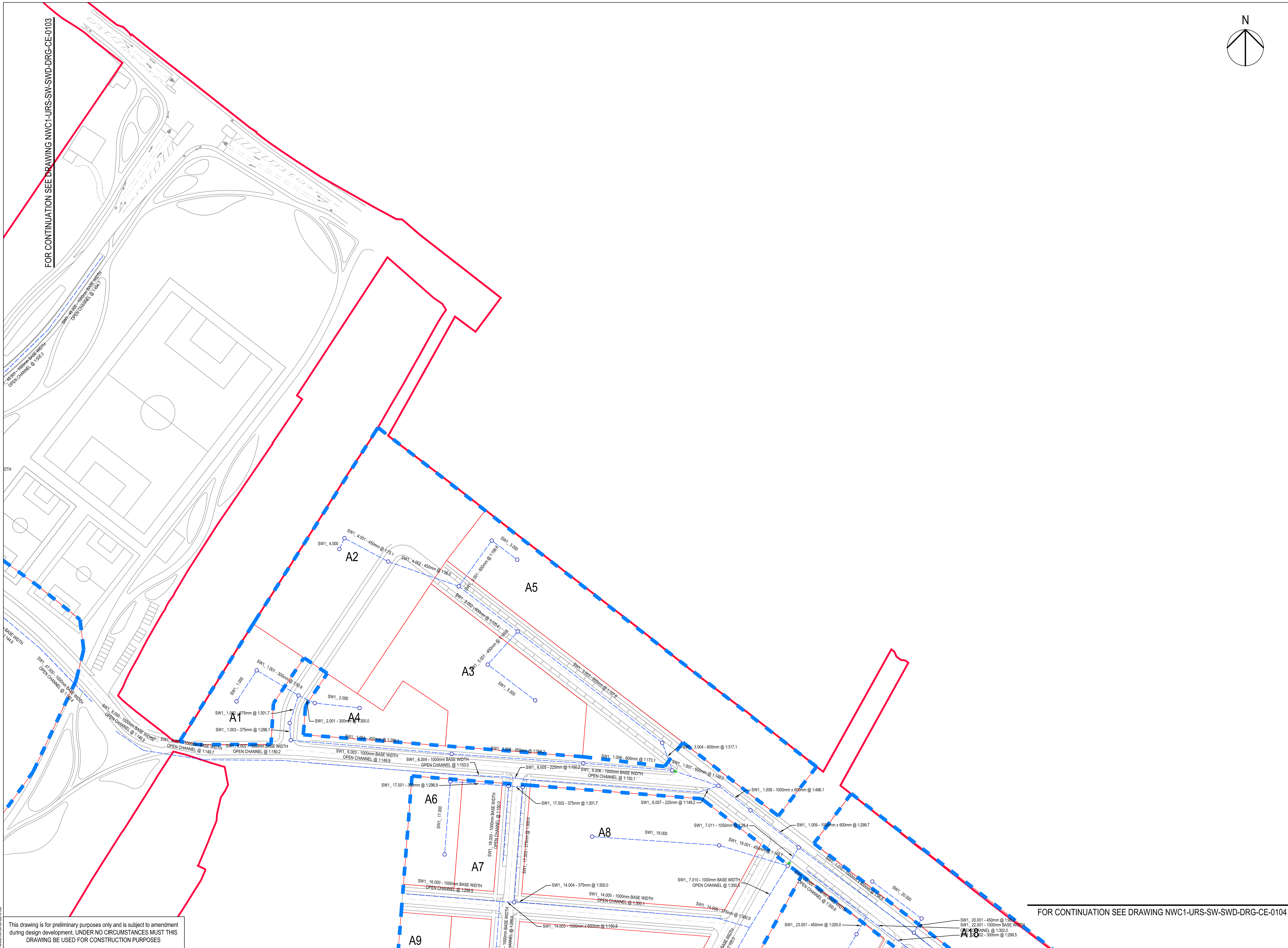

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5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

Revision Details	By / Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG / SES	17/04/13	P03
BOUNDARIES AMENDED AND KEY UPDATED	SG / RT	27/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 5 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0105

Rev: P03

Plot Date: 18/04/2013 9:55:59 AM
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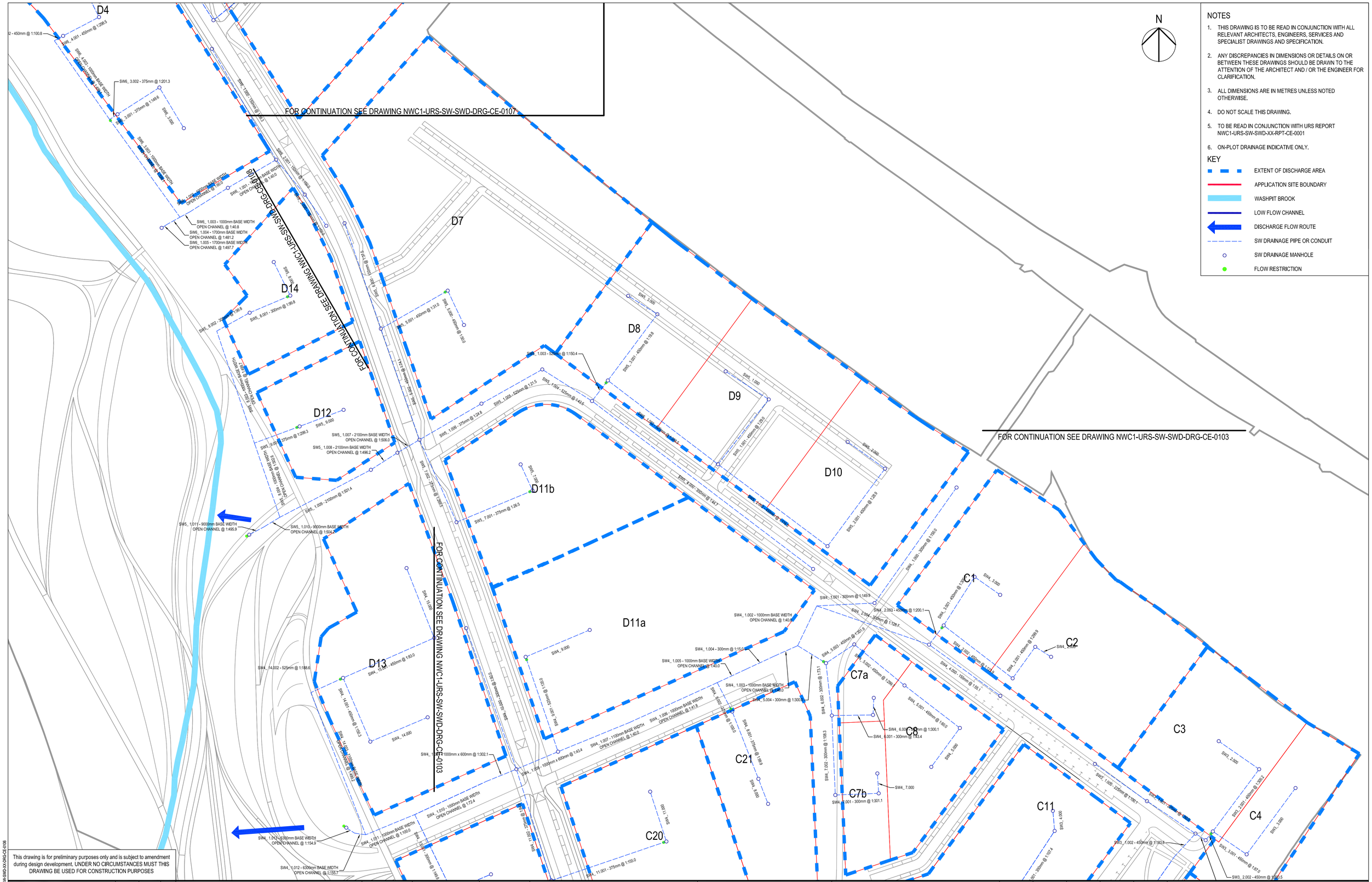

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5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

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Revision Details	By / Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG / SES	17/04/13	P03
LOW FLOW CHANNEL ADDED AND KEY UPDATED	SG / RT	27/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

Plot Date : 10/04/2013 08:08:00
File Name : K:\NWC1\3. CADS\SW\NWC1-URS-SW-SWD-XX-DRG-CE-0106

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 6 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No
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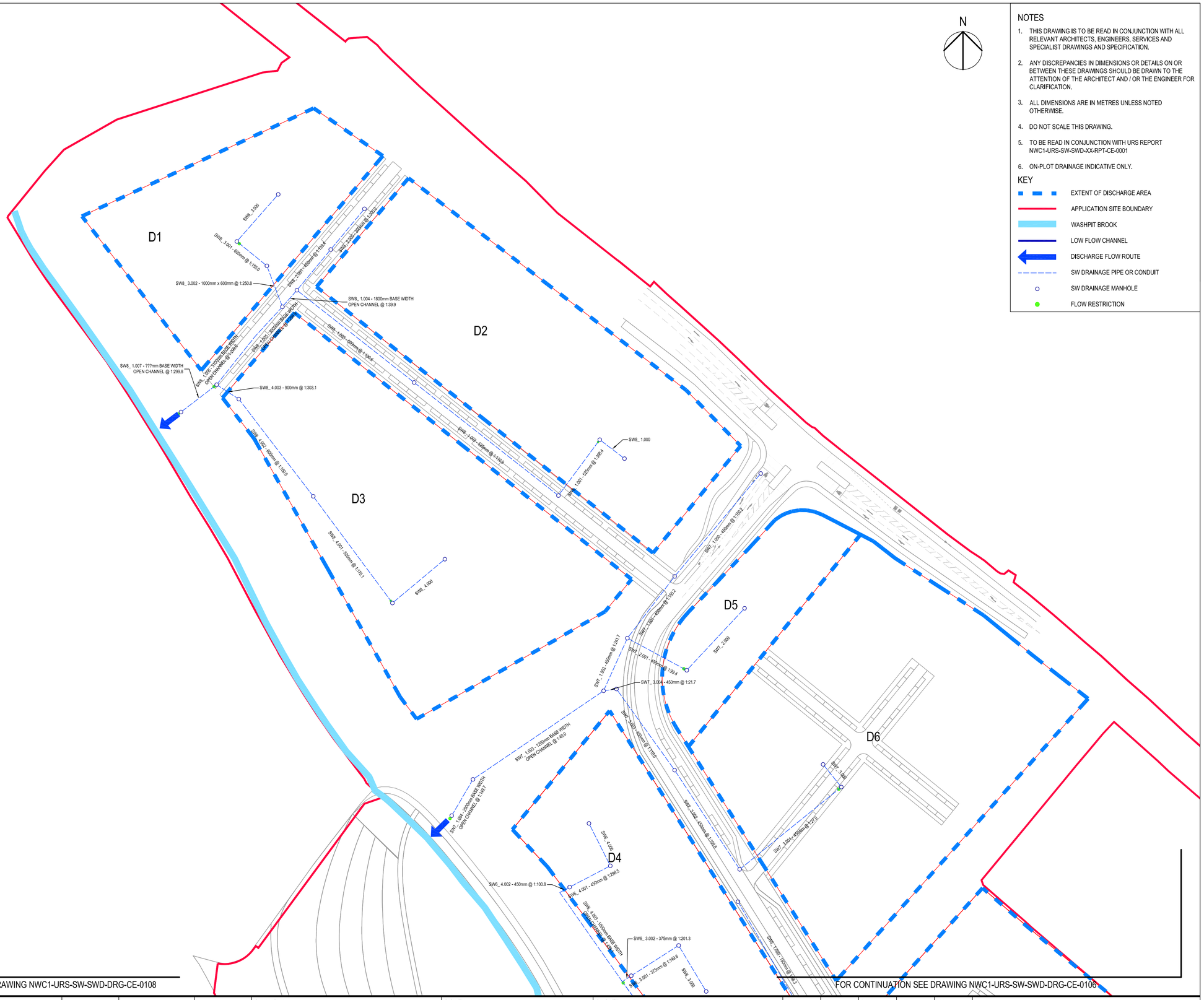
Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0106
Rev: P03



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5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

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FOR CONTINUATION SEE DRAWING NWC1-URS-SW-SWD-DRG-CE-0108

FOR CONTINUATION SEE DRAWING NWC1-URS-SW-SWD-DRG-CE-0106

Revision Details	By / Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG / SES	17/04/13	P03
DISCHARGE TO WASHPIT BROOK SHOWN AND KEY UPDATED	SG / RT	27/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS
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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX		

Purpose of issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 7 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

Scale @ A1: 1:1000

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0107

Rev: P03

Plot Date : 15/03/2013 13:01:20 AM
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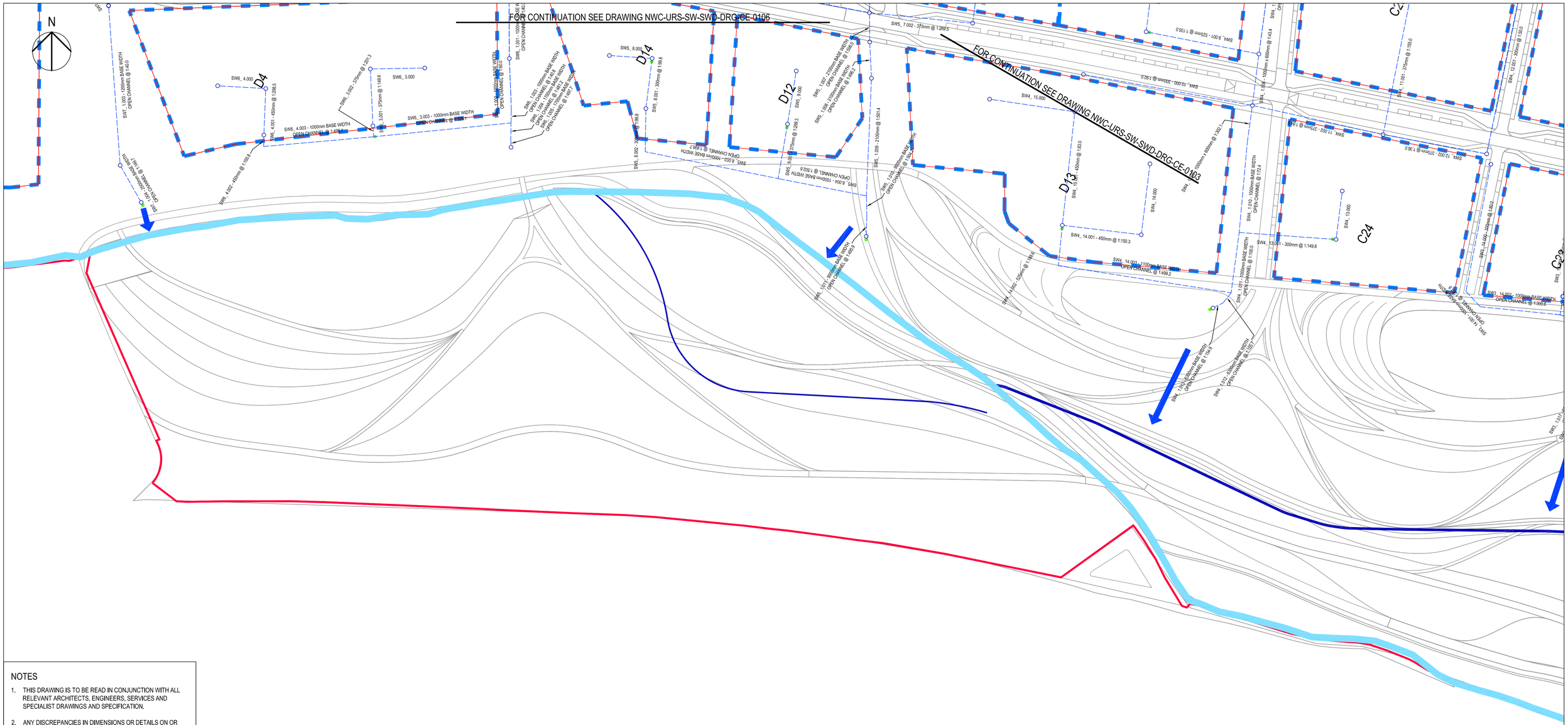

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5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ON-PLOT DRAINAGE INDICATIVE ONLY.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE
- SW DRAINAGE PIPE OR CONDUIT
- SW DRAINAGE MANHOLE
- FLOW RESTRICTION

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Revision Details	By / Check	Date	Suffix
SW DRAINAGE LAYOUT UPDATED	SG / SES	17/04/13	P03
LOW FLOW CHANNEL ADDED AND KEY UPDATED	SG / RT	27/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY GENERAL ARRANGEMENT SHEET 8 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0108

Rev: P03

File Date : 18/06/2013 10:02:56 AM
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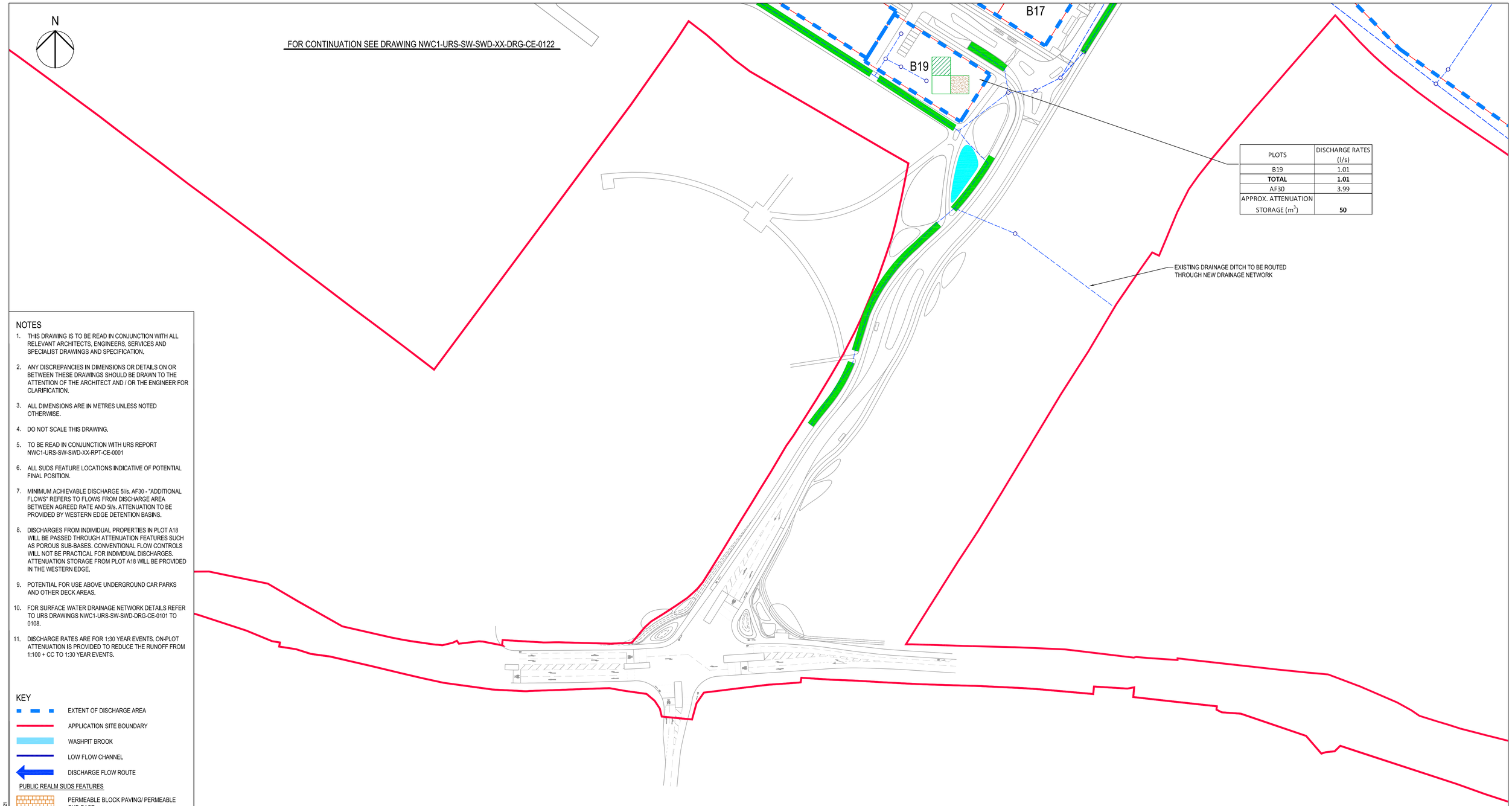

PLOTS	DISCHARGE RATES (l/s)
B19	1.01
TOTAL	**1.01**
AF30	3.99
APPROX. ATTENUATION STORAGE (m^3)	**50**

NOTES

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4. DO NOT SCALE THIS DRAWING.
5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ALL SUDS FEATURE LOCATIONS INDICATIVE OF POTENTIAL FINAL POSITION.
7. MINIMUM ACHIEVABLE DISCHARGE 5l/s. AF30 - "ADDITIONAL FLOWS" REFERS TO FLOWS FROM DISCHARGE AREA BETWEEN AGREED RATE AND 5l/s. ATTENUATION TO BE PROVIDED BY WESTERN EDGE DETENTION BASINS.
8. DISCHARGES FROM INDIVIDUAL PROPERTIES IN PLOT A18 WILL BE PASSED THROUGH ATTENUATION FEATURES SUCH AS POROUS SUB-BASES. CONVENTIONAL FLOW CONTROLS WILL NOT BE PRACTICAL FOR INDIVIDUAL DISCHARGES. ATTENUATION STORAGE FROM PLOT A18 WILL BE PROVIDED IN THE WESTERN EDGE.
9. POTENTIAL FOR USE ABOVE UNDERGROUND CAR PARKS AND OTHER DECK AREAS.
10. FOR SURFACE WATER DRAINAGE NETWORK DETAILS REFER TO URS DRAWINGS NWC1-URS-SW-SWD-DRG-CE-0101 TO 0108.
11. DISCHARGE RATES ARE FOR 1:30 YEAR EVENTS. ON-PLOT ATTENUATION IS PROVIDED TO REDUCE THE RUNOFF FROM 1:100 + CC TO 1:30 YEAR EVENTS.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

PUBLIC REALM SUDS FEATURES

- PERMEABLE BLOCK PAVING/ PERMEABLE SUB-BASE
- SWALE
- DETENTION BASIN

ON-PLOT ATTENUATION SELECTION OPTIONS

- GENERAL ATTENUATION STORAGE
- PERMEABLE PAVING
- GRAVELLED AREA
- GREEN ROOF/ PODIUM DECK STORAGE (SEE NOTE 9)

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED	SG / SES	29/04/13	P04
DISCHARGE AND ATTENUATION TABLES AMENDED.	SG / SES	17/04/13	P03
KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS
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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 1 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0121

Rev: P04

Plot Date: 30/04/2013 08:08:00
File Name: 38A-MP-00116800-TRANSPORT INFRASTRUCTURE\INFRASTRUCTURE\NWC1\4_CAD\SW\NWC1-URS-SW-SWD-XX-DRG-CE-0121

PLOTS	DISCHARGE RATES (l/s)
B2	5.75
TOTAL	**5.75**
APPROX. ATTENUATION STORAGE (m^3)	**375**

PLOTS	DISCHARGE RATES (l/s)
B3	3.72
TOTAL	**3.72**
AF30	1.28
APPROX. ATTENUATION STORAGE (m^3)	**220**

PLOTS	DISCHARGE RATES (l/s)
B4	7.79
TOTAL	**7.79**
APPROX. ATTENUATION STORAGE (m^3)	**395**

PLOTS	DISCHARGE RATES (l/s)
B9	7.41
TOTAL	**7.41**
APPROX. ATTENUATION STORAGE (m^3)	**270**

PLOTS	DISCHARGE RATES (l/s)
B11a	4.05
B11b	3.46
B12	1.30
TOTAL	**8.81**
APPROX. ATTENUATION STORAGE (m^3)	**431**

PLOTS	DISCHARGE RATES (l/s)
B10	13.54
TOTAL	**13.54**
APPROX. ATTENUATION STORAGE (m^3)	**665**

PLOTS	DISCHARGE RATES (l/s)
B11c+d	3.79
B18	4.04
TOTAL	**7.83**
APPROX. ATTENUATION STORAGE (m^3)	**450**

PLOTS	DISCHARGE RATES (l/s)
B21	3.44
TOTAL	**3.44**
AF30	1.56
APPROX. ATTENUATION STORAGE (m^3)	**205**

PLOTS	DISCHARGE RATES (l/s)
C16	2.11
C17	0.64
C18	1.21
C19	0.32
TOTAL	**4.28**
AF30	0.72
APPROX. ATTENUATION STORAGE (m^3)	**635**

PLOTS	DISCHARGE RATES (l/s)
B5	8.19
TOTAL	**8.19**
APPROX. ATTENUATION STORAGE (m^3)	**380**

PLOTS	DISCHARGE RATES (l/s)
B6	1.57
TOTAL	**1.57**
AF30	3.43
APPROX. ATTENUATION STORAGE (m^3)	**85**

PLOTS	DISCHARGE RATES (l/s)
B7	2.40
B8	1.16
B13	2.13
TOTAL	**5.69**
APPROX. ATTENUATION STORAGE (m^3)	**620**

PLOTS	DISCHARGE RATES (l/s)
B20	3.22
TOTAL	**3.22**
AF30	1.78
APPROX. ATTENUATION STORAGE (m^3)	**190**

PLOTS	DISCHARGE RATES (l/s)
B14	4.56
B15	1.05
B16	0.85
B17	1.96
TOTAL	**8.42**
APPROX. ATTENUATION STORAGE (m^3)	**545**

NOTES

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5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ALL SUDS FEATURE LOCATIONS INDICATIVE OF POTENTIAL FINAL POSITION.
7. MINIMUM ACHIEVABLE DISCHARGE 5l/s. AF30 - "ADDITIONAL FLOWS" REFERS TO FLOWS FROM DISCHARGE AREA BETWEEN AGREED RATE AND 5l/s. ATTENUATION TO BE PROVIDED BY WESTERN EDGE DETENTION BASINS.
8. DISCHARGES FROM INDIVIDUAL PROPERTIES IN PLOT A18 WILL BE PASSED THROUGH ATTENUATION FEATURES SUCH AS POROUS SUB-BASES. CONVENTIONAL FLOW CONTROLS WILL NOT BE PRACTICAL FOR INDIVIDUAL DISCHARGES. ATTENUATION STORAGE FROM PLOT A18 WILL BE PROVIDED IN THE WESTERN EDGE.
9. POTENTIAL FOR USE ABOVE UNDERGROUND CAR PARKS AND OTHER DECK AREAS.
10. FOR SURFACE WATER DRAINAGE NETWORK DETAILS REFER TO URS DRAWINGS NWC1-URS-SW-SWD-DRG-CE-0101 TO 0108.
11. DISCHARGE RATES ARE FOR 1:30 YEAR EVENTS. ON-PLOT ATTENUATION IS PROVIDED TO REDUCE THE RUNOFF FROM 1:100 + CC TO 1:30 YEAR EVENTS.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

PUBLIC REALM SUDS FEATURES

- PERMEABLE BLOCK PAVING/ PERMEABLE SUB-BASE
- SWALE
- DETENTION BASIN

ON-PLOT ATTENUATION SELECTION OPTIONS

- GENERAL ATTENUATION STORAGE
- PERMEABLE PAVING
- GRAVELLED AREA
- GREEN ROOF/ PODIUM DECK STORAGE (SEE NOTE 9)

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File Date : 30/04/2013 08:59:59AM
File Name : 18-AW0016802 - TRANSPORT INFRASTRUCTURE\INFRASTRUCTURE\NWC14_CAD-SW\NWC1-URS-SW-SWD-XX-DRG-CE-0122

Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED	SG / SES	29/04/13	P04
DISCHARGE AND ATTENUATION TABLES AMENDED.	SG / SES	17/04/13	P03
KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 2 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No
Suitability: S1 CO-ORDINATION
Scale @ A1: 1:1000

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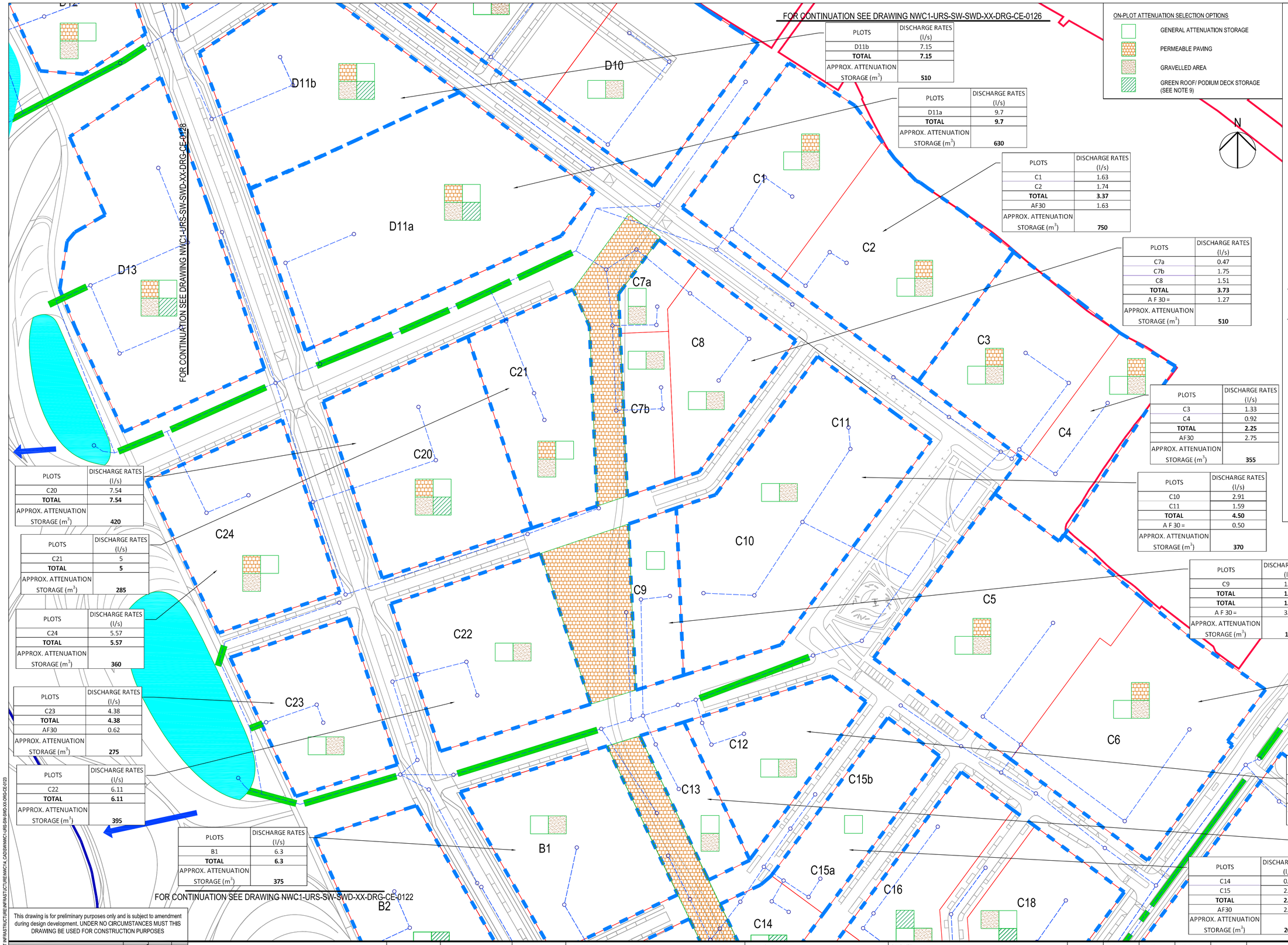
Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0122
Rev: P04



PLOTS	DISCHARGE RATES (l/s)
D11b	7.15
TOTAL	**7.15**
APPROX. ATTENUATION STORAGE (m^3)	**510**

PLOTS	DISCHARGE RATES (l/s)
D11a	9.7
TOTAL	**9.7**
APPROX. ATTENUATION STORAGE (m^3)	**630**

PLOTS	DISCHARGE RATES (l/s)
C1	1.63
C2	1.74
TOTAL	**3.37**
AF30	1.63
APPROX. ATTENUATION STORAGE (m^3)	**750**

PLOTS	DISCHARGE RATES (l/s)
C7a	0.47
C7b	1.75
C8	1.51
TOTAL	**3.73**
A F 30 =	1.27
APPROX. ATTENUATION STORAGE (m^3)	**510**

PLOTS	DISCHARGE RATES (l/s)
C3	1.33
C4	0.92
TOTAL	**2.25**
AF30	2.75
APPROX. ATTENUATION STORAGE (m^3)	**355**

PLOTS	DISCHARGE RATES (l/s)
C10	2.91
C11	1.59
TOTAL	**4.50**
A F 30 =	0.50
APPROX. ATTENUATION STORAGE (m^3)	**370**

PLOTS	DISCHARGE RATES (l/s)
C9	1.99
TOTAL	**1.99**
TOTAL	**1.99**
A F 30 =	3.01
APPROX. ATTENUATION STORAGE (m^3)	**105**

PLOTS	DISCHARGE RATES (l/s)
C5	2.25
C6	2.11
TOTAL	**4.36**
AF30	0.64
APPROX. ATTENUATION STORAGE (m^3)	**985**

PLOTS	DISCHARGE RATES (l/s)
C12	3.74
TOTAL	**3.74**
A F 30 =	1.26
APPROX. ATTENUATION STORAGE (m^3)	**150**

PLOTS	DISCHARGE RATES (l/s)
C13	1.49
TOTAL	**1.49**
A F 30 =	3.51
APPROX. ATTENUATION STORAGE (m^3)	**95**

PLOTS	DISCHARGE RATES (l/s)
C14	0.50
C15	2.43
TOTAL	**2.93**
AF30	2.07
APPROX. ATTENUATION STORAGE (m^3)	**205**

PLOTS	DISCHARGE RATES (l/s)
C20	7.54
TOTAL	**7.54**
APPROX. ATTENUATION STORAGE (m^3)	**420**

PLOTS	DISCHARGE RATES (l/s)
C21	5
TOTAL	**5**
APPROX. ATTENUATION STORAGE (m^3)	**285**

PLOTS	DISCHARGE RATES (l/s)
C24	5.57
TOTAL	**5.57**
APPROX. ATTENUATION STORAGE (m^3)	**360**

PLOTS	DISCHARGE RATES (l/s)
C23	4.38
TOTAL	**4.38**
AF30	0.62
APPROX. ATTENUATION STORAGE (m^3)	**275**

PLOTS	DISCHARGE RATES (l/s)
C22	6.11
TOTAL	**6.11**
APPROX. ATTENUATION STORAGE (m^3)	**395**

PLOTS	DISCHARGE RATES (l/s)
B1	6.3
TOTAL	**6.3**
APPROX. ATTENUATION STORAGE (m^3)	**375**

ON-PLOT ATTENUATION SELECTION OPTIONS

- GENERAL ATTENUATION STORAGE
- PERMEABLE PAVING
- GRAVELLED AREA
- GREEN ROOF/ PODIUM DECK STORAGE (SEE NOTE 9)

NOTES

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7. MINIMUM ACHIEVABLE DISCHARGE 5l/s. AF30 - "ADDITIONAL FLOWS" REFERS TO FLOWS FROM DISCHARGE AREA BETWEEN AGREED RATE AND 5l/s. ATTENUATION TO BE PROVIDED BY WESTERN EDGE DETENTION BASINS.
8. DISCHARGES FROM INDIVIDUAL PROPERTIES IN PLOT A18 WILL BE PASSED THROUGH ATTENUATION FEATURES SUCH AS POROUS SUB-BASES. CONVENTIONAL FLOW CONTROLS WILL NOT BE PRACTICAL FOR INDIVIDUAL DISCHARGES. ATTENUATION STORAGE FROM PLOT A18 WILL BE PROVIDED IN THE WESTERN EDGE.
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10. FOR SURFACE WATER DRAINAGE NETWORK DETAILS REFER TO URS DRAWINGS NWC1-URS-SW-SWD-DRG-CE-0101 TO 0108.
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KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

PUBLIC REALM SUDS FEATURES

- PERMEABLE BLOCK PAVING/ PERMEABLE SUB-BASE
- SWALE
- DETENTION BASIN

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Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED	SG / SES	29/04/13	P04
DISCHARGE AND ATTENUATION TABLES AMENDED.	SG / SES	17/04/13	P03
KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 3 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No
Suitability: S1 CO-ORDINATION
Scale @ A1: 1:1000

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0123
Rev: P04

Plot Date: 30/04/2013 08:56:59AM
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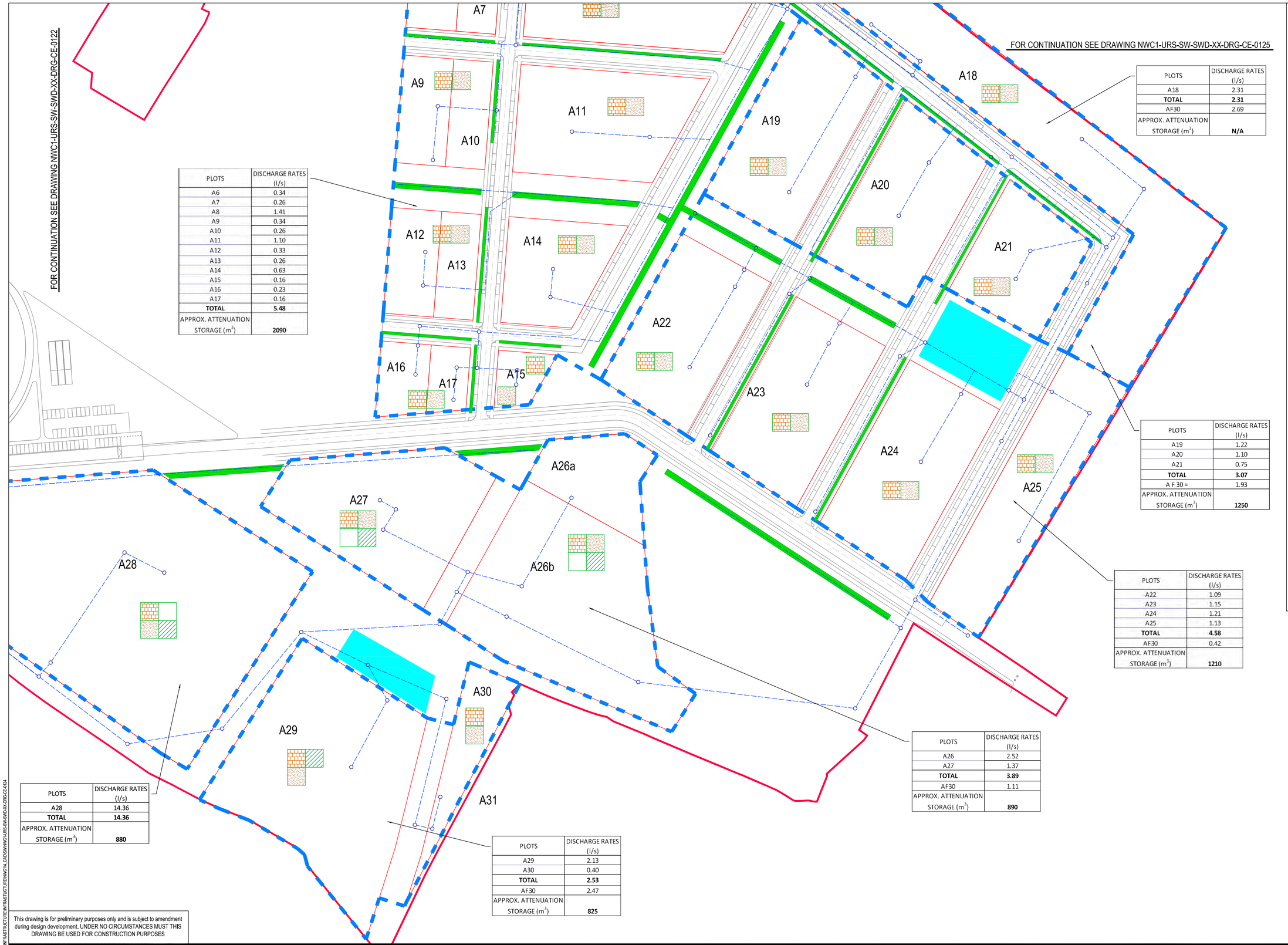

PLOTS	DISCHARGE RATES (l/s)
A6	0.34
A7	0.26
A8	1.41
A9	0.34
A10	0.26
A11	1.10
A12	0.33
A13	0.26
A14	0.63
A15	0.16
A16	0.23
A17	0.16
TOTAL	**5.48**
APPROX. ATTENUATION STORAGE (m^3)	**2090**

PLOTS	DISCHARGE RATES (l/s)
A18	2.31
TOTAL	**2.31**
AF30	2.69
APPROX. ATTENUATION STORAGE (m^3)	**N/A**

PLOTS	DISCHARGE RATES (l/s)
A19	1.22
A20	1.10
A21	0.75
TOTAL	**3.07**
A F 30 =	1.93
APPROX. ATTENUATION STORAGE (m^3)	**1250**

PLOTS	DISCHARGE RATES (l/s)
A22	1.09
A23	1.15
A24	1.21
A25	1.13
TOTAL	**4.58**
AF30	0.42
APPROX. ATTENUATION STORAGE (m^3)	**1210**

PLOTS	DISCHARGE RATES (l/s)
A26	2.52
A27	1.37
TOTAL	**3.89**
AF30	1.11
APPROX. ATTENUATION STORAGE (m^3)	**890**

PLOTS	DISCHARGE RATES (l/s)
A28	14.36
TOTAL	**14.36**
APPROX. ATTENUATION STORAGE (m^3)	**880**

PLOTS	DISCHARGE RATES (l/s)
A29	2.13
A30	0.40
TOTAL	**2.53**
AF30	2.47
APPROX. ATTENUATION STORAGE (m^3)	**825**

NOTES

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KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

PUBLIC REALM SUDS FEATURES

- PERMEABLE BLOCK PAVING/ PERMEABLE SUB-BASE
- SWALE
- DETENTION BASIN

ON-PLOT ATTENUATION SELECTION OPTIONS

- GENERAL ATTENUATION STORAGE
- PERMEABLE PAVING
- GRAVELLED AREA
- GREEN ROOF/ PODIUM DECK STORAGE (SEE NOTE 9)

N

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Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED	SG / SES	29/04/13	P04
DISCHARGE AND ATTENUATION TABLES AMENDED.	SG / SES	17/04/13	P03
BOUNDARIES UPDATED & KEY AMENDED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 4 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No
Suitability: S1 CO-ORDINATION
Scale @ A1: 1:1000

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0124
Rev: P04

Plot Date: 30/04/2013 08:56:00 AM
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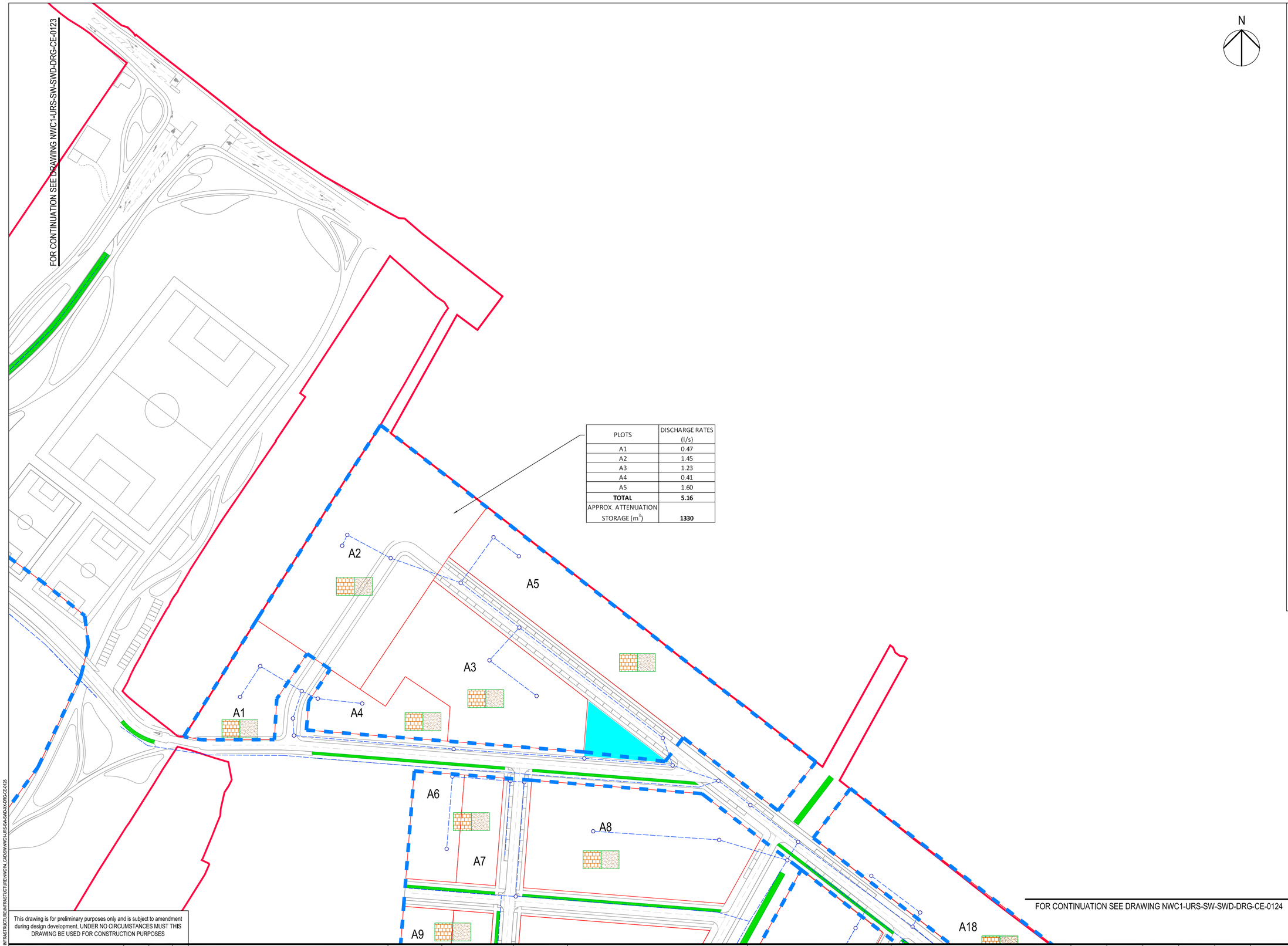

PLOTS	DISCHARGE RATES (l/s)
A1	0.47
A2	1.45
A3	1.23
A4	0.41
A5	1.60
TOTAL	**5.16**
APPROX. ATTENUATION STORAGE (m^3)	**1330**

NOTES

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11. DISCHARGE RATES ARE FOR 1:30 YEAR EVENTS. ON-PLOT ATTENUATION IS PROVIDED TO REDUCE THE RUNOFF FROM 1:100 + CC TO 1:30 YEAR EVENTS.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

PUBLIC REALM SUDS FEATURES

- PERMEABLE BLOCK PAVING/ PERMEABLE SUB-BASE
- SWALE
- DETENTION BASIN

ON-PLOT ATTENUATION SELECTION OPTIONS

- GENERAL ATTENUATION STORAGE
- PERMEABLE PAVING
- GRAVELLED AREA
- GREEN ROOF/ PODIUM DECK STORAGE (SEE NOTE 9)

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Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED	SG / SES	29/04/13	P04
DISCHARGE AND ATTENUATION TABLES AMENDED.	SG / SES	17/04/13	P03
BOUNDARIES AMENDED AND KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 5 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

Scale @ A1: 1:1000

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0125

Rev: P04

File Date: 30/04/2013 08:08:08 AM
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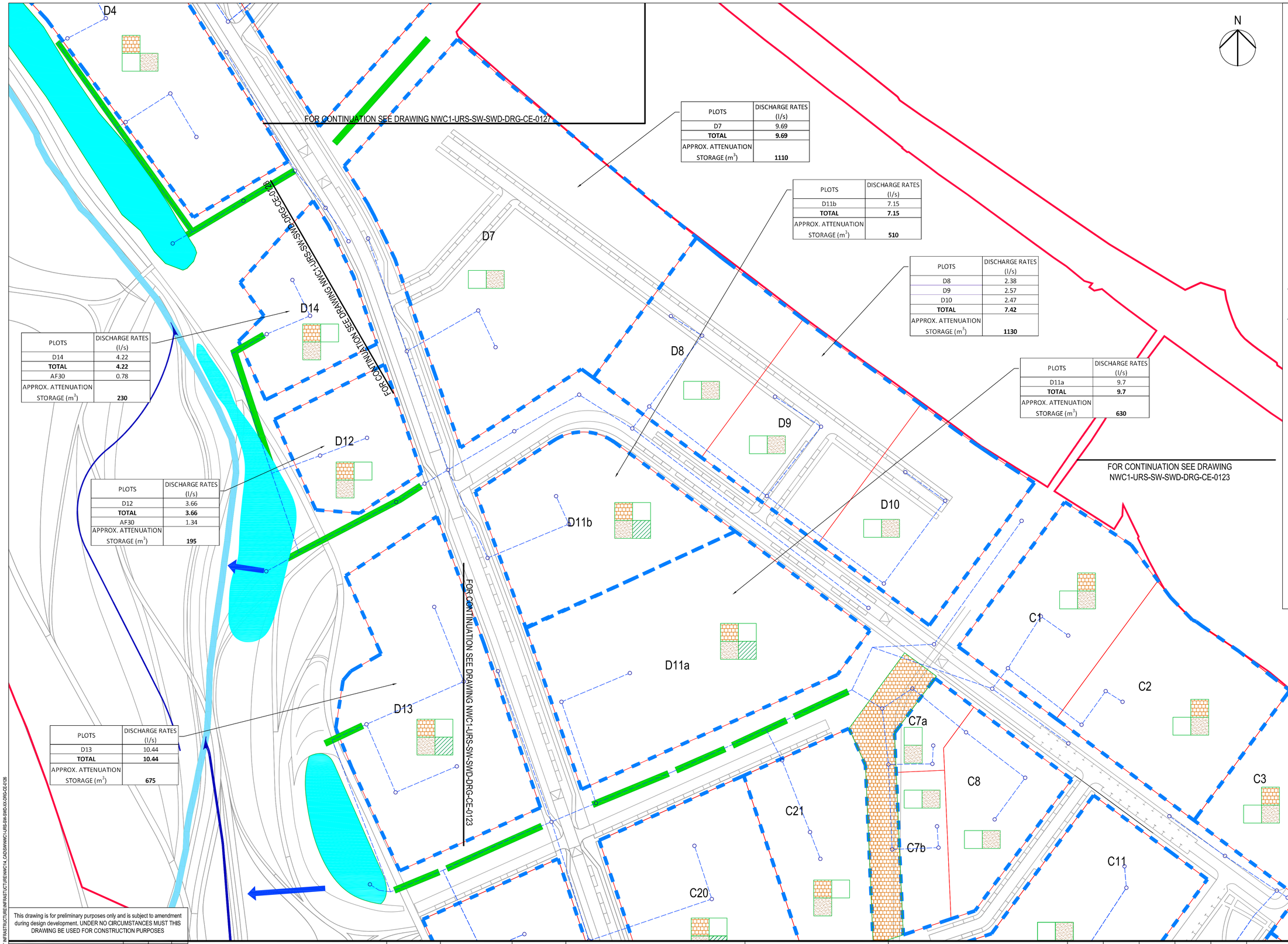

PLOTS	DISCHARGE RATES (l/s)
D7	9.69
TOTAL	**9.69**
APPROX. ATTENUATION STORAGE (m^3)	**1110**

PLOTS	DISCHARGE RATES (l/s)
D11b	7.15
TOTAL	**7.15**
APPROX. ATTENUATION STORAGE (m^3)	**510**

PLOTS	DISCHARGE RATES (l/s)
D8	2.38
D9	2.57
D10	2.47
TOTAL	**7.42**
APPROX. ATTENUATION STORAGE (m^3)	**1130**

PLOTS	DISCHARGE RATES (l/s)
D11a	9.7
TOTAL	**9.7**
APPROX. ATTENUATION STORAGE (m^3)	**630**

PLOTS	DISCHARGE RATES (l/s)
D14	4.22
TOTAL	**4.22**
AF30	0.78
APPROX. ATTENUATION STORAGE (m^3)	**230**

PLOTS	DISCHARGE RATES (l/s)
D12	3.66
TOTAL	**3.66**
AF30	1.34
APPROX. ATTENUATION STORAGE (m^3)	**195**

PLOTS	DISCHARGE RATES (l/s)
D13	10.44
TOTAL	**10.44**
APPROX. ATTENUATION STORAGE (m^3)	**675**

NOTES

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3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. DO NOT SCALE THIS DRAWING.
5. TO BE READ IN CONJUNCTION WITH URS REPORT NWC1-URS-SW-SWD-XX-RPT-CE-0001
6. ALL SUDS FEATURE LOCATIONS INDICATIVE OF POTENTIAL FINAL POSITION.
7. MINIMUM ACHIEVABLE DISCHARGE 5l/s. AF30 - "ADDITIONAL FLOWS" REFERS TO FLOWS FROM DISCHARGE AREA BETWEEN AGREED RATE AND 5l/s. ATTENUATION TO BE PROVIDED BY WESTERN EDGE DETENTION BASINS.
8. DISCHARGES FROM INDIVIDUAL PROPERTIES IN PLOT A18 WILL BE PASSED THROUGH ATTENUATION FEATURES SUCH AS POROUS SUB-BASES. CONVENTIONAL FLOW CONTROLS WILL NOT BE PRACTICAL FOR INDIVIDUAL DISCHARGES. ATTENUATION STORAGE FROM PLOT A18 WILL BE PROVIDED IN THE WESTERN EDGE.
9. POTENTIAL FOR USE ABOVE UNDERGROUND CAR PARKS AND OTHER DECK AREAS.
10. FOR SURFACE WATER DRAINAGE NETWORK DETAILS REFER TO URS DRAWINGS NWC1-URS-SW-SWD-DRG-CE-0101 TO 0108.
11. DISCHARGE RATES ARE FOR 1:30 YEAR EVENTS. ON-PLOT ATTENUATION IS PROVIDED TO REDUCE THE RUNOFF FROM 1:100 + CC TO 1:30 YEAR EVENTS.

KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

PUBLIC REALM SUDS FEATURES

- PERMEABLE BLOCK PAVING/ PERMEABLE SUB-BASE
- SWALE
- DETENTION BASIN

ON-PLOT ATTENUATION SELECTION OPTIONS

- GENERAL ATTENUATION STORAGE
- PERMEABLE PAVING
- GRAVELLED AREA
- GREEN ROOF/ PODIUM DECK STORAGE (SEE NOTE 9)

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Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED	SG / SES	29/04/13	P04
DISCHARGE AND ATTENUATION TABLES AMENDED.	SG / SES	17/04/13	P03
BOUNDARIES AMENDED AND KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS

In addition to the hazard/risks normally associated with the types of work detailed on this drawing take note of above. It is assumed that all works on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 6 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

Scale @ A1: 1:1000

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Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0126

Rev: P04

File Date: 5/04/2013 08:58:44
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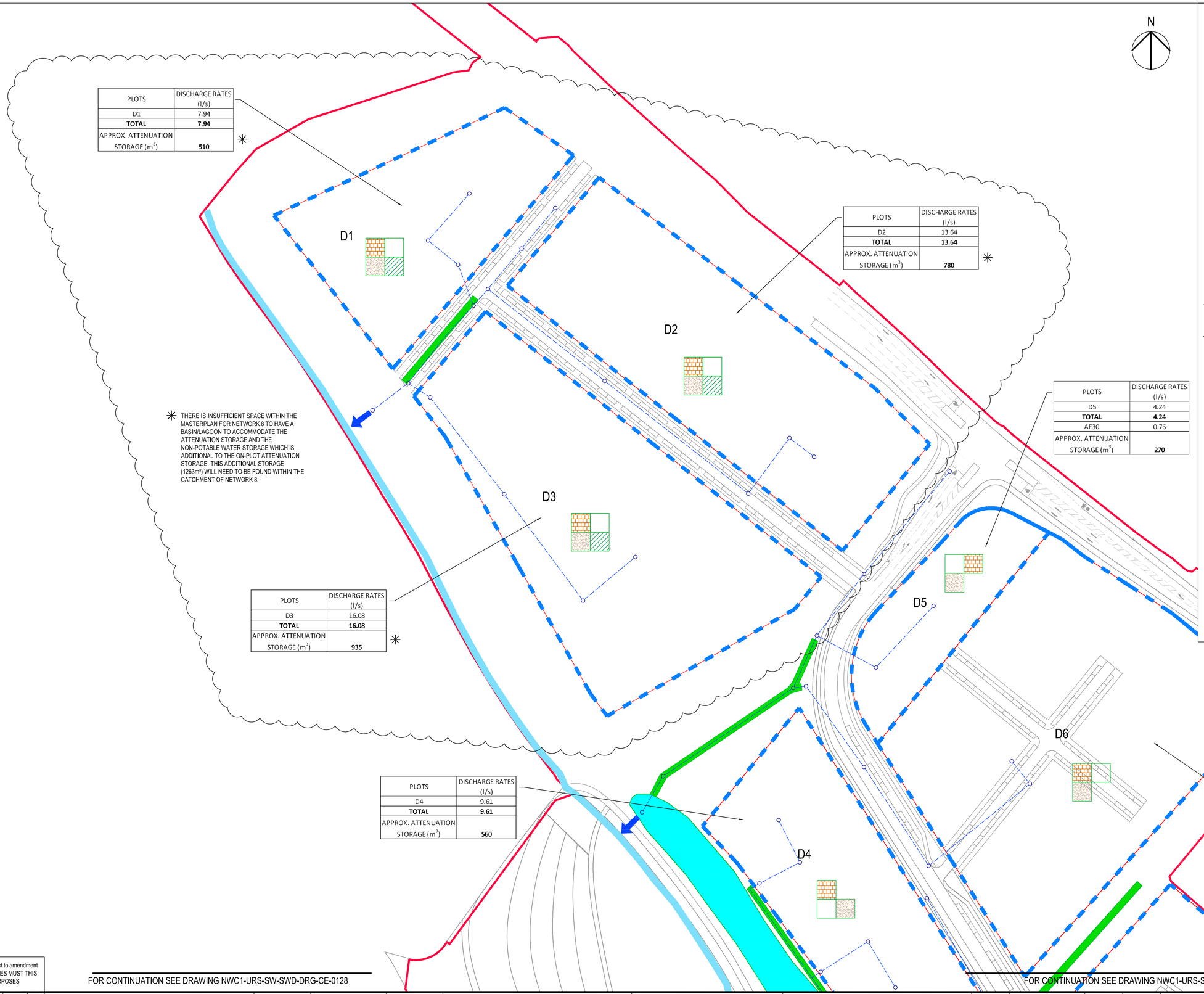

PLOTS	DISCHARGE RATES (l/s)
D1	7.94
TOTAL	**7.94**
APPROX. ATTENUATION STORAGE (m^3)	**510** ✳

PLOTS	DISCHARGE RATES (l/s)
D2	13.64
TOTAL	**13.64**
APPROX. ATTENUATION STORAGE (m^3)	**780** ✳

PLOTS	DISCHARGE RATES (l/s)
D5	4.24
TOTAL	**4.24**
AF30	0.76
APPROX. ATTENUATION STORAGE (m^3)	**270**

PLOTS	DISCHARGE RATES (l/s)
D3	16.08
TOTAL	**16.08**
APPROX. ATTENUATION STORAGE (m^3)	**935** ✳

PLOTS	DISCHARGE RATES (l/s)
D4	9.61
TOTAL	**9.61**
APPROX. ATTENUATION STORAGE (m^3)	**560**

PLOTS	DISCHARGE RATES (l/s)
D6	15.64
TOTAL	**15.64**
APPROX. ATTENUATION STORAGE (m^3)	**1015**

✳ THERE IS INSUFFICIENT SPACE WITHIN THE MASTERPLAN FOR NETWORK 8 TO HAVE A BASIN/LAGOON TO ACCOMMODATE THE ATTENUATION STORAGE AND THE NON-POTABLE WATER STORAGE WHICH IS ADDITIONAL TO THE ON-PLOT ATTENUATION STORAGE. THIS ADDITIONAL STORAGE (1263m³) WILL NEED TO BE FOUND WITHIN THE CATCHMENT OF NETWORK 8.

FOR CONTINUATION SEE DRAWING NWC1-URS-SW-SWD-DRG-CE-0128

FOR CONTINUATION SEE DRAWING NWC1-URS-SW-SWD-DRG-CE-0126

NOTES

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KEY

- EXTENT OF DISCHARGE AREA
- APPLICATION SITE BOUNDARY
- WASHPIT BROOK
- LOW FLOW CHANNEL
- DISCHARGE FLOW ROUTE

PUBLIC REALM SUDS FEATURES

- PERMEABLE BLOCK PAVING/ PERMEABLE SUB-BASE
- SWALE
- DETENTION BASIN

ON-PLOT ATTENUATION SELECTION OPTIONS

- GENERAL ATTENUATION STORAGE
- PERMEABLE PAVING
- GRAVELLED AREA
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Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED AND ADDITIONAL STORAGE FOR NETWORK 8 AMENDED	SG / SES	29/04/13	P04
DISCHARGE AND ATTENUATION TABLES AMENDED.	SG / SES	17/04/13	P03
KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

CONSTRUCTION RISKS	MAINTENANCE / CLEANING RISK	DEMOLITION RISKS
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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 7 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No

Suitability: S1 CO-ORDINATION

Scale @ A1: 1:1000

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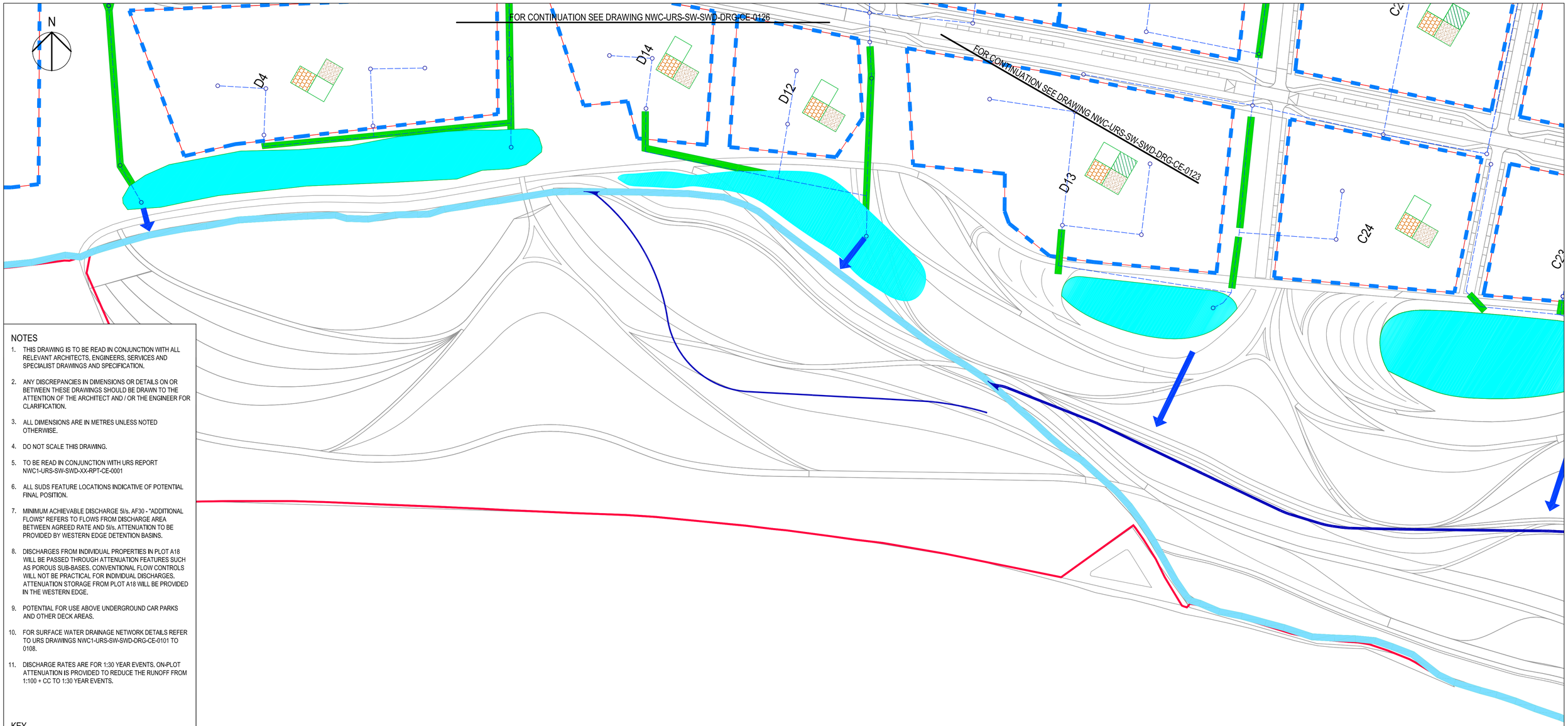
Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0127

Rev: P04

File Date: 10/04/2013 08:08:00
File Name: 38-WP-03716800 TRANSPORT INFRASTRUCTURE\INFRASTRUCTURE\NWC1\4. CADS\NWC1-URS-SW-SWD-XX-DRG-CE-0127



NOTES

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Revision Details	By / Check	Date	Suffix
NOTE 11 REVISED	SG / SES	29/04/13	P03
KEY UPDATED	SG / RT	25/03/13	P02
FIRST ISSUE	SG / AS	27/02/13	P01

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

Purpose of Issue: FOR INFORMATION

Client: UNIVERSITY OF CAMBRIDGE

Project Title: NORTH WEST CAMBRIDGE

Drawing Title: SW DRAINAGE STRATEGY POTENTIAL SUDS LOCATIONS SHEET 8 OF 8

Designed	Drawn	Checked	Approved	Date
AS	SG	SES	DAJS	27/02/2013

URS Internal Project No.: Project No
Suitability: S1 CO-ORDINATION
Scale @ A1: 1:1000

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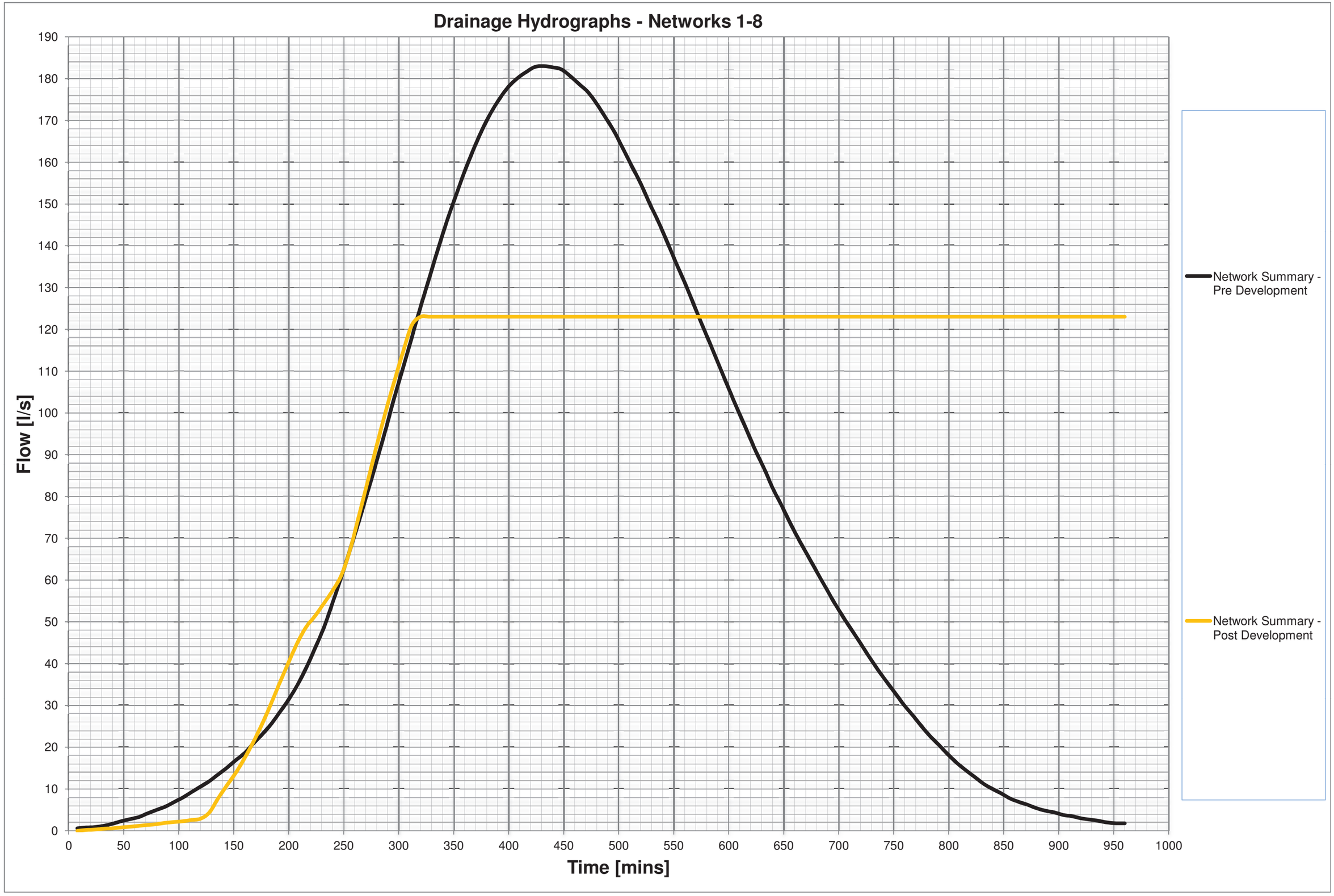
Drawing Number: NWC1-URS-SW-SWD-XX-DRG-CE-0128
Rev: P03

APPENDIX E – SITE HYDROGRAPH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Network Summary - Post Development