



DRAINAGE STRATEGY

LAND AT ASHBY ROAD AND NORMANDY WAY, HINCKLEY

DOCUMENT CONTROL

project number: ADC3405			report reference: ADC3405-RP-C	
version	date	author	reviewer	comments
1	09.03.26	Alice Kirsz		internal draft
2	17.04.26	Alice Kirsz	Richard Winn	first issue
3	18.08.26	Alice Kirsz	Richard Winn	update to client comment

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1.0 INTRODUCTION

- 1.1 Miller Homes have commissioned ADC Infrastructure Limited to produce a Drainage Strategy report in support of a full planning application for the erection of 482 dwellings on land at Normandy Way and Ashby Road, Hinckley, comprising development across two parcels including: the northern parcel (off Ashby Road) for residential development, public open space, play provision, structural landscaping, sustainable drainage infrastructure and the provision of a new vehicular route; the southern parcel (off Normandy Way) for residential development, public open space, landscaping and drainage infrastructure. Together with associated access, internal roads, pedestrian and cycle connections, utilities and all other associated infrastructure.
- 1.2 An initial drainage strategy for both foul and surface water seeks to identify the potential constraints that need to be considered as the development proposals progress.

2.0 SITE DESCRIPTION

- 2.1 The site comprises segregated field parcels one off Ashby Road, Hinckley, which will hereafter be referred to as the northern parcel, and another off Normandy Way, Hinckley, which will hereafter be referred to as the southern parcel.
- 2.2 The location of the site is included in Figure 1 below.



Figure 1: The site location with the red line boundary shown.

- 2.3 A walkover of the site, and its immediate vicinity has been undertaken by ADC Infrastructure. Photographs were taken across the site and focused upon the existing drainage features; copies of the photos taken during the site walkover can be found in **Appendix A**.

Topography

- 2.4 A topographical survey, shown in **Appendix B**, has been undertaken. The topographical survey demonstrates ground levels within the southern parcel to decline in a south-westerly direction, with a net elevation change of approximately 9m across the parcel.
- 2.5 Ground levels within the northern parcel are shown to fall from a high point towards the parcel's southern extents to the north and south respectively, forming two alternative localised catchments. Levels declining to the south vary by approximately 13m, whilst levels declining to the north vary approximately 11m.
- 2.6 Publicly available LiDAR datasets covering the site and the surrounding area have been obtained and reviewed to gain a better appreciation of the general topography of the wider catchment.

- 2.7 Contour lines were then extracted from the LiDAR data to form a digital elevation model, an extract of which is presented within Figure 2 overleaf.

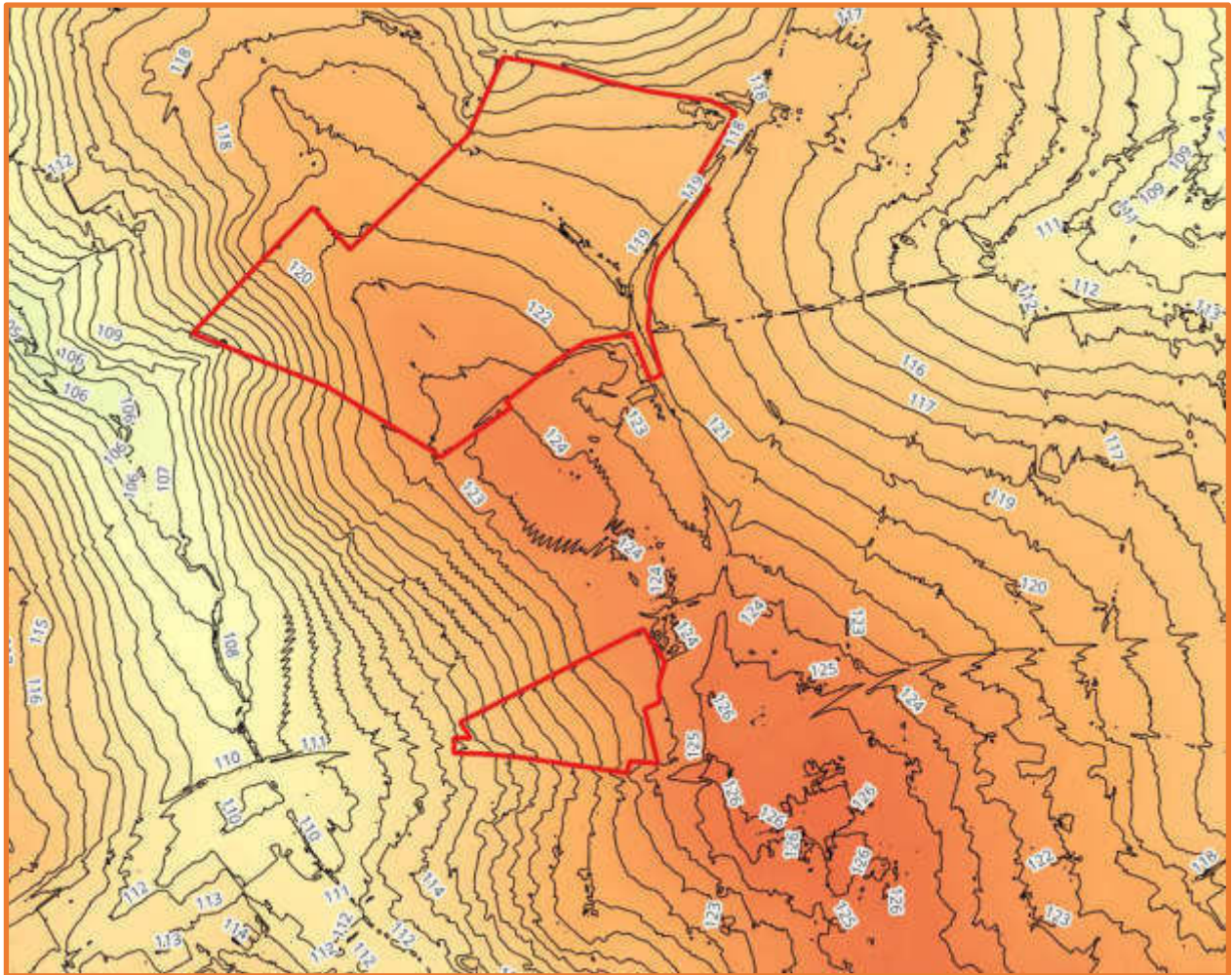


Figure 2: LiDAR map showing the elevation (m AOD) for the site and surrounding area.

- 2.8 Figure 2 demonstrates ground levels within the immediate catchment to decline towards an ordinary watercourse to the west of the site. The ordinary watercourse forms a tributary of Tweed River, which is sited approximately 1km to the north of the northern parcel.

Existing drainage

- 2.9 The site is greenfield in nature and is not currently served by an adopted sewerage network. Although the northern parcel and southern parcel are part of the same wider drainage catchment their localised regimes differ and as such the existing drainage regime within each parcel has been assessed individually.

Northern parcel

- 2.10 Surface water runoff generated within the parcel is assumed to drain primarily via overland flow towards a series of land drainage ditches on the southern, western and northern site boundaries. The ditches are intuitively located at the localised low points within the parcel and convey runoff into Tweed River and its main tributaries.

- 2.11 The site walkover confirmed the presence of the drainage ditches along the parcel boundaries, as well as a highway ditch that runs along Ashby Road parallel to the north-east site corner. Photos of the drainage ditches are provided in **Appendix A**.

Southern parcel

- 2.12 Surface water runoff generated onsite is assumed to drain primarily via overland flow towards the highway to the south.
- 2.13 There is an unnamed ordinary watercourse to the west of the parcel that flows in a northerly direction and is a tributary of Tweed River.
- 2.14 The watercourse flows as an open channel from an area of green space to the south of Normandy Way. It is then culverted beneath Normandy Way via twin 500mm culverts where it then continues to flow in a northerly direction as an open channel.
- 2.15 On the site walkover, evidence of a piped surface water drain within Normandy Way was located. A photo looking into the manhole chamber is shown in Figures 3a and b below.



Figures 3a/b: Photo of the upstream manhole chamber on the piped surface water drain (left), and a view inside the manhole chamber (right).

- 2.16 A CCTV survey to confirm the connectivity and downstream route of the drain was conducted by Onsite Central Ltd in January 2025, the outputs from the survey are presented within **Appendix C**. The survey demonstrates the drain to flow in a westerly direction within Normandy Way before out-falling into the unnamed ordinary watercourse to the west of the site (tributary of Tweed River).
- 2.17 A connection from the public 225mm surface water sewer network within Ashby Road into the drain was also confirmed.

Geology

- 2.18 The British Geological Survey (BGS) online mapping was reviewed to give an indication of the underlying ground conditions on site. The online mapping shows that the bedrock geology and superficial deposits are as follows:

Northern parcel

- **Bedrock Geology:**

- Mercia Mudstone Group-Mudstone. These sedimentary rocks are fluvial, lacustrine and marine in origin. They are detrital, deposited in lagoons or shallow seas; where a hot, arid climate also leads to the precipitation of beds of evaporites.

- **Superficial Deposits:**

- Oadby Till Member-Diamicton. These sedimentary deposits are glacial in origin. They are detrital, created by the action of ice and meltwater, they can form a wide range of deposits and geomorphologies associated with glacial and inter-glacial periods during the Quaternary.
- Dunsmore Gravel – Sand and gravel. Sedimentary superficial deposit formed between 480 and 423 thousand years ago during the Quaternary period (central band of site).

Southern parcel

- **Bedrock Geology:**

- Mercia Mudstone Group-Mudstone. These sedimentary rocks are fluvial, lacustrine and marine in origin. They are detrital, deposited in lagoons or shallow seas; where a hot, arid climate also leads to the precipitation of beds of evaporites.

- **Superficial Deposits:**

- Oadby Till Member-Diamicton. These sedimentary deposits are glacial in origin. They are detrital, created by the action of ice and meltwater, they can form a wide range of deposits and geomorphologies associated with glacial and inter-glacial periods during the Quaternary.
- Wolston Sand And Gravel - Sand and gravel. These sedimentary deposits are glacial in origin. They are detrital, created by the action of ice and meltwater, they can form a wide range of deposits and geomorphologies associated with glacial and inter-glacial periods during the Quaternary.
- Bosworth Clay Member - Clay and silt. These sedimentary deposits are glacial in origin. They are detrital, created by the action of ice and meltwater, they can form a wide range of deposits and geomorphologies associated with glacial and inter-glacial periods during the Quaternary.

Soils

2.19 The Cranfield Soil and Agrifood Institute Soilscape mapping for the site was also reviewed. The mapping defined the underlying soil classification as:

- **Soilscape 18:** Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
- **Soilscape 8:** Slightly acid loamy and clayey soils with impeded drainage

Onsite drainage implications

2.20 Based upon the available data on the nature of the underlying soils and geology, it appears as through the site will possess low infiltration rates.

2.21 However, further investigation into ground conditions is required to make an informed judgement upon the true nature of onsite infiltration capacities. It is advised that any infiltration testing should be undertaken following BRE365 guidance.

3.0 PROPOSED DEVELOPMENT

- 3.1 The development proposals are for the erection of 482 dwellings on land at Normandy Way and Ashby Road, Hinckley, comprising development across two parcels including: the northern parcel (off Ashby Road) for residential development, public open space, play provision, structural landscaping, sustainable drainage infrastructure and the provision of a new vehicular route; the southern parcel (off Normandy Way) for residential development, public open space, landscaping and drainage infrastructure. Together with associated access, internal roads, pedestrian and cycle connections, utilities and all other associated infrastructure”.



Figure 4: Presentation site layout.

4.0 PLANNING CONTEXT

Flood and Water Management Act

- 4.1 In combination with the Flood Risk Regulations, 2010 (which enact the EU Floods Directive in England and Wales), the Flood and Water Management Act places significantly greater responsibility on Local Authorities to manage and lead on local flooding issues.
- 4.2 The Lead Local Flood Authority (LLFA) for the site is Leicestershire County Council, who have the responsibility for the management of flood risk for the local area, this includes providing guidance upon drainage standards for new developments to ensure that flood risk is not increased.

The National Planning Policy Framework (NPPF)

- 4.3 The NPPF sets out the government's planning policies for England, and the expectations of how these policies should be applied. It acts as guidance for local planning authorities and decision-makers, both in drawing up plans and making decisions about individual planning applications.
- 4.4 Chapter 18 of the NPPF¹ sets out how the government intends decision-making authorities to manage flood risk and coastal change.

- 4.5 Policy F8 advises that²:

1. Development proposals which could affect drainage on or around the development site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff, in ways which are proportionate to the nature and scale of the proposal. The systems employed should provide multifunctional benefits where possible, facilitating improvements in water quality, biodiversity and amenity.

2. Sustainable Drainage Systems should:

- a) Be designed in accordance with the National Standards for Sustainable Drainage Systems
- b) Have maintenance arrangements in place to ensure an acceptable standard of operation for the anticipated lifetime of the development; and
- c) In the case of proposals for major development, take account of advice from the Lead Local Flood Authority.

3. Development proposals should not enclose existing watercourses where this is not already the case, unless there are compelling reasons to do so; and should where possible remove existing culverts and renaturalise existing river channels, unless to do so would increase flood risk, result in other environmental harm or cause harm to heritage assets

Planning Practice Guidance (PPG)

- 4.6 The PPG associated with the NPPF provides more detailed guidance on how the requirements of the NPPF can be met in practice. It includes recommendations on the allowances for climate change.

¹ (Ministry of Housing Communities & Local Government, 2026). National Planning Policy Framework. Chapter 18. Pg.83.

² Ministry of Housing Communities & Local Government, 2026). National Planning Policy Framework. Chapter 18. Pg.86.

Climate change

4.7 Climate change allowances are predictions of anticipated change for:

- Peak river flow
- Peak rainfall intensity
- Sea level rise
- Offshore wind speed and extreme wave height

4.8 The most appropriate climate change allowance for use in assessing the proposed development is peak rainfall intensity.

Peak rainfall intensity³

4.9 Peak rainfall intensity allowances should be utilised in small catchments (less than 5km²), or urbanised drainage catchments.

4.10 For flood risk assessments and strategic flood risk assessments, both the central and upper end allowances should be assessed.

4.11 The proposed site is situated within the Tame Anker and Mease Management Catchment, the table below, outlines the peak rainfall intensity allowances for a range of periods.

Tame Anker and Mease Management catchment	3.3% annual exceedance rainfall epoch (2050s)	3.3% annual exceedance rainfall epoch (2070s onwards)	1% annual exceedance rainfall epoch (2050s)	1% annual exceedance rainfall epoch (2070s onwards)
Upper end	35%	35%	40%	40%
Central	20%	25%	20%	25%

4.12 Given the anticipated life span of the development the site's drainage should be assessed via the 2070s epoch allowances; this is up to a 1 in 100-year+40% event.

³ (Environment Agency, 2022). Flood Risk Assessments: climate change allowances.

5.0 SURFACE WATER DRAINAGE STRATEGY

Existing discharge rate

- 5.1 Current proposals comprise of plans for development upon greenfield land.
- 5.2 The greenfield runoff rate has been calculated using the UK SuDS greenfield runoff tool. The full outputs are included within **Appendix D**, and a summary of the results is provided in the table below.

Northern parcel- northern catchment

Return Period	Impermeable Area (ha)	Runoff Rate (l/s)
QBar	5.72	24.9
QBar -20%	5.72	19.9
1 in 1 Year	5.72	20.7
1 in 2 Year	5.72	22.2
1 in 30 Year	5.72	49.8
1 in 100 Year	5.72	64.0

Northern parcel- southern catchment

Return Period	Impermeable Area (ha)	Runoff Rate (l/s)
QBar	1.92	8.4
QBar -20%	1.92	6.7
1 in 1 Year	1.92	6.9
1 in 2 Year	1.92	7.4
1 in 30 Year	1.92	16.7
1 in 100 Year	1.92	21.5

Southern parcel

Return Period	Impermeable Area (ha)	Runoff Rate (l/s)
QBar	1.09	4.8
QBar -20%	1.09	3.8
1 in 1 Year	1.09	4.0
1 in 2 Year	1.09	4.2
1 in 30 Year	1.09	7.1
1 in 100 Year	1.09	12.2

- 5.3 To provide a betterment upon existing runoff conditions it is proposed that runoff generated onsite is discharged at rate which provides a 20% betterment upon the greenfield QBar rate, this is in line with local policy and is less than the 1 in 2-year rate prescribed by the National Standards for SuDS.

Discharge options

- 5.4 In accordance with the Building Regulations Part H, the newly published National Standards for SuDS and prevailing best practice, surface water should look to be discharged according to the following preferential hierarchy:

- Priority 1: collected for non-potable use
 - Priority 2: infiltrated to ground
 - Priority 3: discharged to an above ground surface water body
 - Priority 4: discharged to a surface water sewer, or another piped drainage system
 - Priority 5: discharged to a combined sewer
- 5.5 In accordance with the National Standards for SuDS, it is recommended that each dwelling will have individual water butts to allow for a means of onsite rainwater harvesting. Since water butts are dependent upon the user emptying the device prior to a storm event, the attenuation provided by the water butts have not been included within the site storage calculations.
- 5.6 The British Geological Survey (BGS) mapping and Soilscales mapping were reviewed to give an indication of the underlying ground conditions. These suggest that both parcels are underlain by a mudstone bedrock which may limit the viability of the use of infiltration onsite. As such it is advised that a ground investigation that includes infiltration testing is undertaken to determine whether there is any soakage potential across the site as the proposals progress.
- 5.7 Leicestershire County Council, as the LLFA, require that sufficient evidence is provided to prove whether infiltration is a viable option to dispose of surface water runoff or not. Should the use of infiltration features be found not to be suitable, then an alternative outfall such as a watercourse or surface water sewer needs to be confirmed.
- 5.8 The use of infiltration drainage techniques appears unfeasible for both development parcels; therefore, preference should be given to the disposal of surface water runoff into the nearest above ground surface water body.

Northern parcel

- 5.9 The northern parcel is split into two natural drainage catchments both of which naturally decline towards minor watercourses/drainage ditches which under existing conditions convey flows offsite into the wider land drainage network.
- 5.10 The northern catchment within the northern parcel is to outfall into a minor watercourse which is located adjacent to the north-western boundary. The watercourse is culverted beneath Rogues Lane, the culvert discharges into open channel on the northern side of the highway, the open channel flows in a northerly direction for approximately 200m prior to forming a confluence with a mapped watercourse which is a tributary of Tweed River.
- 5.11 Images of the localised land drainage network are presented within **Appendix A**, and an image of the culvert beneath Rogues Lane is presented within Figure 5 overleaf.



Figure 5: Image demonstrating the connectivity beneath Rogues Lane of the outfall ditch serving the northern catchment of the northern parcel.

- 5.12 Surface water runoff generated within the southern catchment of the northern parcel is to discharge surface water flows into a land drainage ditch within the south-western extents of the site which discharges into a tributary of the Tweed River to the west of the site.
- 5.13 An image of the outfall ditch is presented within Figure 6 overleaf.



Figure 6: Outfall ditch; Northern parcel southern catchment.

Southern parcel

- 5.14 The site walkover confirmed the presence of the ordinary watercourse to the west, which is understood to be the main outfall for the existing surface water drainage networks within the area. There are no watercourses within the site's boundaries.
- 5.15 During the site walkover evidence of a piped surface water drain within the northern verge of Normandy Way was found. A CCTV survey of the downstream route of the 225mm drain was subsequently conducted by Onsite Central Ltd, the outputs from the survey are presented within **Appendix C**. The survey demonstrates the drain to route in a westerly direction within Normandy Way before outfalling into the aforementioned ordinary watercourse, which is a tributary of Tweed River.
- 5.16 The CCTV survey also confirmed the public surface water sewer to discharge into the drain.
- 5.17 Given the findings from the CCTV survey has confirmed the wider connectivity of the 225mm drain, it is proposed that surface water runoff is to outfall via a new gravity connection into the 225mm drain within Normandy Way to the south of the site.
- 5.18 Flows from the site discharge into the drain informally under existing conditions and since the flows from the site are to be restricted to provide a betterment upon the existing greenfield runoff rate the drain is considered to possess sufficient capacity.

Onsite surface water strategy

Northern parcel

- 5.19 The proposed onsite surface water strategy will convey surface water runoff generated on site via a below ground gravity network to the proposed attenuation basins.
- 5.20 The parcel is segregated into a northern and southern catchment; the northern catchment comprises the majority of the site area and will drain via a cascade of attenuation basins which are to be located within the north-western extents of the parcel to suit the catchment topography.
- 5.21 The proposed attenuations basins will temporarily store and treat surface water runoff, an outfall into the north-western ditch network at the restricted rate of 16.8l/s will be made from the downstream basin.
- 5.22 The southern catchment is to drain to a singular basin located within the south-western extents of the parcel. The basin will temporarily store and treat surface water runoff before it is discharged at the restricted rate of 6.4l/s into the south-western ditch network.
- 5.23 The proposed attenuation basin, and associated drainage network, has been sized using InfoDrainage software for all storms up to and including a 100-year+40% climate change critical storm event, with a 10% consideration for urban creep. The associated pipe network has been designed to ensure no surcharging for a 2-year event, no flooding for a 30-year+35% storm event and negligible flooding for a 100-year+40% storm event. The InfoDrainage calculations are shown within **Appendix E**.

Southern parcel

- 5.24 The proposed onsite surface water strategy looks to convey surface water runoff generated on site via a below ground gravity network to the proposed attenuation basin.
- 5.25 The proposed attenuation basin will be located in the western extent of the development, to suit the topography and development proposals, and will temporarily store and treat surface water runoff before it is discharged at a rate of 3.8l/s to the existing 225mm diameter piped drainage system within Normandy Way.
- 5.26 The proposed attenuation basin, and associated drainage network, has been sized using the InfoDrainage for all storms up to and including a 100-year+40% climate change critical storm event, with a 10% consideration for urban creep. The associated pipe network has been designed to ensure no surcharging for a 2-year event, no flooding for a 30-year+35% storm event and negligible flooding for a 100-year+40% storm event. The InfoDrainage calculations are shown within **Appendix F**.

Upstream treatment

- 5.27 To further enhance the treatment train onsite street trees, with attenuative pits, are to be provided adjacent to the internal highway within both parcels, this feature will provide an additional element of surface water treatment upstream of the attenuation basin, whilst also providing wider alternative benefits to the development i.e. habitat creation.

- 5.28 It is further recommended that rainwater butts are provided with all dwellings to enable a means of rainwater harvesting onsite and permeable paving is to be implemented within each private driveway to provide additional treatment upstream of the attenuation basin.
- 5.29 Given that the primary purpose of the proposed permeable paving is to provide treatment to the surface water runoff, any attenuation potential provided by the permeable paving has not been accounted for within the surface water storage calculations.
- 5.30 The design of the upstream SuDS features will be progressed at detailed design, but the principles of their inclusion are to be set as part of the full planning application.

Drainage layout

- 5.31 A drainage layout plan, drawing 3405-ADC-HDG-XX-DR-CD-0500-S1, has prepared by ADC Infrastructure, a copy of which can be found in **Appendix G**. The layout demonstrates the drainage routes within the site, the initial design for the attenuative features, alongside locations for any additional SuDS.

6.0 FOUL WATER DRAINAGE STRATEGY

Proposed discharge rate

- 6.1 Based upon the current development proposals, it is anticipated that there will up to 482 residential dwellings to be constructed onsite
- 6.2 In line with Section B3.1 of the guidance within the Design and Construction Guidance for foul and surface water sewers⁴, the peak design foul flow rate is 4000 litres per dwelling per day. This is a design peak foul water flow rate and not a daily average water usage.
- 6.3 The peak foul flow rate for the site has been calculated as follows:

$$482 \times 4000 = 1,928,000 \text{ l/day}$$
$$1,928,000 / (24 \times 60 \times 60) = 22.3 \text{ l/s}$$

Proposed discharge strategy

- 6.4 In accordance with the guidance specified within the Building Regulations Part H, foul water effluent should look to be discharged according to the following preferential hierarchy:
- a foul water sewer
 - a combined sewer
 - a septic tank
 - a cesspool

Northern Catchment

- 6.5 The site is greenfield in nature and has no foul water discharge at present. Sewer asset plans from Severn Trent Water show that there is a 400mm combined sewer running west to east parallel to Rogue's Lane to the north of the site. There is also a separate 225mm foul sewer that runs north within Ashby Road to the east of the site. The sewer then turns to the east at the highway junction adjacent to the north-east site corner.
- 6.6 From reviewing the site topographical survey, the onsite levels are shown to slope to the north-west and south-west, respectively, meaning that a pumped connection to the combined or foul sewer network to the north or east would be required. Two potential connection points have been identified, which are as follows:
- a connection into the foul sewer to the east at manhole 1502, or
 - a connection into the combined sewer to the north at manhole 1602.
- 6.7 A Developer Enquiry submission was made to Severn Trent Water for consideration. In their response (see **Appendix H**), it was stated that a connection to manhole 1502 was deemed to be the most suitable connection point for foul flows from the site.
- 6.8 Severn Trent Water also stated that due to the additional flows from the development, that sewer modelling of the adopted network would need to be undertaken to assess the impact on the adopted foul sewer.

⁴ (Sewerage Sector Guidance, 2021). Design and construction guidance for foul and surface water sewers. Section B3.1.

- 6.9 The preliminary findings of the sewer modelling study were provided by Severn Trent Water in February 2024. The study looked at two potential connection points into the adopted foul network at manholes 1502 and 1602. The results showed that at both manholes there was sufficient capacity within the network to receive the foul flows from the site, and as such a connection would not result in a significant flooding or operational impact.
- 6.10 Given the above foul flows will be conveyed by a gravity conveyed sewer network to an adoptable pumping station which is to be located at a suitable topographical low point within development.
- 6.11 The pumping station will be classed as a Type 3 compound, in line within the Design and Construction (DCG), which would require the wet wells to have an offset of 15m around them, in which no habitable buildings are to be located. This is to reduce the risk of odours or noise affecting future site users.
- 6.12 A rising main shall be laid along the northern site boundary that will pump foul effluent to the foul sewer at manhole 1502, as per the initial strategy proposed by Severn Trent Water.
- 6.13 It is recommended that the overall foul strategy is considered further with a detailed earthwork design as the proposals progress. This should also include further consultation with Severn Trent Water. A Section 106 agreement will be sought with Severn Trent Water to permit the offsite connection once planning consent has been granted.

Southern Catchment

- 6.14 The site is greenfield in nature and has no foul discharge at present. Sewer asset record plans from Severn Trent Water demonstrate there to be a 200mm pressurised rising main running west to east within Normandy Way to the south of the development parcel. There are also gravity foul sewer networks to the east within Ashby Road, and within Frobisher Close and Drake Way to the south.
- 6.15 A Developer Enquiry application was submitted to Severn Trent Water for consideration. In their response (see **Appendix H**), it was stated that the preferred connection strategy is for a gravity solution into manhole 7602. Severn Trent water also stated there is sufficient capacity within the network to accommodate the foul flows from the site, and a connection into the sewer would therefore be acceptable in principle. This is subject to the submission of a Section 106 application to Severn Trent Water once planning consent has been granted.
- 6.16 Given that a gravity solution is available for the site, Severn Trent Water stated that a pumped connection should not be explored further.
- 6.17 Given the above foul effluent from the proposed development parcel shall look to drain via a gravity network to a connection route following Normandy Way and Drake Way, where it will connect into manhole 7602.
- 6.18 It is recommended that the overall foul strategy is considered further within the detailed design phase of the development to finalise the connection strategy, in order to ensure that the proposed sewer connection is viable in terms of levels and does not clash with the existing infrastructure including the rising main within Normandy Way. This will be considered in further detail as part of the detailed drainage design, following the granting of planning consent for the proposed development.

Drainage layout

- 6.19 A drainage strategy layout plan, drawing 3405-ADC-HDG-XX-DR-CD-0500-S1 shows the proposed foul drainage layout. The plan shows a foul water drainage network for the site and details of the proposed offsite connection. A copy of the drainage layout plan can be found in **Appendix G**.

7.0 SUSTAINABLE DRAINAGE ASSESSMENT

7.1 Sustainable Drainage Systems (SuDS) remove, store, re-use, and intercept surface water by mimicking the natural water cycle. In turn this not only alleviates flood risk but also promotes benefits for water quality, amenity, recreation, health, and the local ecology⁵.

7.2 The NPPF defines Sustainable Drainage Systems as:

“A sustainable drainage system controls surface water run off close to where it falls, combining a mixture of built and nature-based techniques to mimic natural drainage as closely as possible, and accounting for the predicted impacts of climate change. The type of system that would be appropriate will vary from small scale interventions such as permeable paving and soakaways that can be used in very small developments to larger integrated schemes in major developments.”⁶

7.3 A variety of SuDS options are available to reduce or temporarily hold back the discharge of surface water runoff. The proposed development will see an increase in flows and therefore will require a drainage strategy which incorporates SuDS to ensure that flows are balanced, and that flood risk is not increased elsewhere.

7.4 The table below outlines the applicability of the use of a range of SuDS devices in relation to the proposals detailed in this report, this is in accordance with the hierarchical approach outlined in The SuDS Manual (CIRIA C753).

SuDS type	Device	Description	Reason for use	Applicability (x/✓)
Source control	Living roofs	Provide soft landscaping at roof level, intercepting and reducing surface water runoff.	The structural design of the proposed buildings is not conducive for the use of living roofs.	x
	Infiltration devices	Store runoff and allow water to percolate into the ground via natural infiltration.	A desktop review of the underlying ground conditions demonstrate that the site is not suitable for the use of infiltration features. This is subject to infiltration testing as the proposals progress.	x
	Pervious surfaces	Storm water is allowed to infiltrate through the surface into a storage layer, from which it can either infiltrate and/or slowly release to sewers.	Permeable block paving is to be utilised within the proposed private driveways.	✓

⁵ (Ciria, 2015). The SuDS Manual C753. Part B. Chapter 1.

⁶ (Ministry of Housing, Communities and Local Government, 2024). National Planning Policy Framework. Annex 2. Pg 79.

SuDS type	Device	Description	Reason for use	Applicability (x /✓)
	Rainwater harvesting	Reduces the annual average rate of runoff from the site by reusing water for non-potable uses e.g., toilet flushing.	Individual rainwater butts will be provided with each dwelling to enable a means of rainwater harvesting	✓
	Street trees	Storm water is conveyed to trees located adjacent to the internal roads, the tree pits attenuate and treat runoff	Street trees are to be located adjacent to the internal highway	✓
Permeable conveyance	Swales	Broad shallow channels that convey /store runoff and allow infiltration when ground conditions are permitting.	Due to the topography of the site combined with the site's spatial layout swales are not suitable for use within the site's drainage design.	x
	Bioretention area/ Rain garden	Shallow landscaped depression which are under drained and rely on engineered soils and enhanced vegetation and filtration to remove pollution and reduce runoff downstream.	Due to alternative landscaping criteria, BNG, and open space requirements there is not sufficient space for a bio retention area	x
	Filter strips	Wide gently sloping areas of grass or dense vegetation that remove pollutants from runoff from adjacent areas.	A desktop review of the underlying ground conditions and spatial layout of the proposed development demonstrates that the site is not suitable for the use of filter strips. This is subject to infiltration testing as the proposals progress..	x
	Filter drains and perforated pipes	Trenches filled with granular materials (which are designed to take flows from adjacent impermeable areas) that convey runoff	A desktop review of the underlying ground conditions and spatial layout of the proposed development demonstrates that the site is not conducive for the use of filter drains	x

SuDS type	Device	Description	Reason for use	Applicability (x / ✓)
		while allowing infiltration.	and perforated pipes. This is subject to infiltration testing as the proposals progress.	
End of pipe treatment	Infiltration basins	Depressions in the surface designed to store runoff and allow infiltration.	A desktop review of the underlying ground conditions demonstrates that the site is not suitable for the use of infiltration basins. This is subject to infiltration testing as the proposals progress.	x
	Attenuation Basins	Vegetated depressions in the surface, with an outlet that restricts runoff, designed to store and treat runoff.	Attenuation basins are proposed within the site's surface water drainage strategy.	✓
	Attenuation tanks	Oversized pipes or geo-cellular tanks designed to store water below ground level.	An attenuation tank could provide the necessary surface water storage required onsite, although alternative methods are preferred by the LLFA	x

7.5 Given the table above the proposed drainage combination will incorporate the following components:

- Attenuation basin
- Permeable paving
- Street trees
- Individual water butts

7.6 The site's proposed drainage combination has been selected due to spatial and topographical aspects of the site, its proposed layout, and the need to attenuate and convey onsite surface water runoff.

Water quality assessment

7.7 Any such development can give rise to pollution during both the construction and occupation phases in relation to hydrocarbons, suspended soils, and general waste. Careful consideration of the treatment of surface water runoff should provide confidence that the proposed development will not result in any detriment to the receiving waters.

7.8 The proposed impermeable areas on the site are currently divided into residential roofs, private driveways, and low traffic roads. In accordance with the CIRIA SuDS Manual C753 (2015), the

attributed pollution 'hazard' levels associated with these classifications of hardstanding are between low and very low risk.

Land Use	Pollution Hazard Level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Private driveways, residential car parks and low traffic roads and non-residential car parking with infrequent change.	Low	0.5	0.4	0.4
source: CIRIA SuDS Manual (C753) (2015) Part E. Chapter 26, Table 26.3, pg. 568				

- 7.9 As the pollution hazard risk from the development is deemed to be very low-low, then the simple index approach (SIA) is applicable. SIA uses a source to receptor pathway approach which considers three pollutants: total suspended solids (TSS), heavy metals and hydrocarbons. For the selected SuDS components, total pollution indices based on the reduction in pollution, are assigned.
- 7.10 The selected SuDS components and the associated total pollution mitigation indexes are outlined in the table below (CIRIA SuDS Manual Table 26.3 extract). The proposed SuDS treatment train has been designed to exceed the pollution values/risk occurring from proposed land uses highlighted in the table above.
- 7.11 The treatment train and land use for each parcel are the same and so the same analysis applies.
- 7.12 Where the mitigation index of an individual component is insufficient, two components or more in series will be required. A factor of 0.5 is used to account for the reduced performance of secondary or tertiary components associated with already reduced inflow concentrations as below:

Total SuDS mitigation index = mitigation index 1 + 0.5 (mitigation index 2)

Type of SuDS component	TSS	Metals	Hydrocarbons
Permeable paving surfaces	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Street trees	0.8	0.8	0.8
source: CIRIA SuDS Manual (C753) (2015) Part E. Chapter 26, Table 26.3, pg. 569			

- 7.13 Based upon the pollution mitigation indices highlighted in the table above, it is anticipated that the proposed SuDS treatment train will provide more than enough mitigation for the anticipated pollutants that will be generated by the development.

8.0 MAINTENANCE AND ADOPTION

- 8.1 The proposed drainage network will require consistent maintenance to ensure that the efficiency of the systems is sustained.
- 8.2 It is anticipated that Severn Trent will be responsible for the long-term maintenance of the adoptable foul and surface water drainage network. Whilst the attenuation pond will be the responsibility of a private management company to maintain on an ongoing basis.
- 8.3 Prior to the formal adoption of the onsite drainage networks by Severn Trent, the developer will maintain the attenuation pond and all associated pipework.
- 8.4 The onsite drainage network including the attenuation pond and associated inlets/outlets, headwalls and pipework will be subject to routine monitoring and maintenance, a detailed record of this should be upheld.

Maintenance schedules

- 8.5 The sections below express the minimum standards for the onsite maintenance regime and have been prepared from recommendations contained within the CIRIA SuDS Manual (C753).
- 8.6 It should be noted that any invasive maintenance work such as silt or vegetation removal is only required intermittently but it should be planned to be sympathetic to the requirements of the ecosystem. The window for carrying out maintenance to achieve this is usually towards the end of the growing season (September/October) although this varies with species⁷.

Storage and attenuation

- 8.7 Surface water runoff from the site is to be attenuated via a combination of attenuation basins, pervious paving, individual water butts, and Street trees. The proposed maintenance regime for the aforementioned SuDS is expressed within the table(s) below.

Operation and maintenance requirements for Street trees		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly (or as required)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets and outlets	Inspect monthly
Occasional maintenance	Check tree health and manage tree appropriately	Annually
	Remove all build up from inlets and surface and replace mulch as necessary.	Annually, or as required
	Water	As required (in periods of drought)
Monitoring	Inspect silt accumulation rates and establish appropriate removal frequencies	Half yearly
source: CIRIA SuDS Manual (C753) (2015) Part D. Chapter 19, pg. 382		

⁷ (Ciria, 2015). SuDS Manual (C753). Part D. Chapter 23. Pg 500.

Operation and maintenance requirements for attenuation basins		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin.	Half yearly (spring before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets, and overflows for blockages, and clear if required	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year), then annually or as required
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlet and forebay	Annually (or as required)
	Manage wetland plants in outlet pool –where provided	Annually (as set out in CIRIA SuDs guidance)
Occasional maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim ant trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
Remedial action	Repair erosion or other damage by reseedling or re-turfing	As required
	Realignment of riprap	As required
	Repair/ rehabilitation of inlets, outlets, and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required
source: CIRIA SuDs Manual (C753) (2015) Part D. Chapter 22, pg. 483		

Operation and maintenance requirements for pervious paving surfaces		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface).	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment.
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosphate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material.	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action.	Three-monthly, 48h after large storm
	Inspect silt accumulation rates and establish appropriate	Annually
	Monitor inspection chambers	Annually
source: CIRIA SuDS Manual (C753) (2015) Part D. Chapter 20, pg.468		

Conveyance, pipework, and flow control

- 8.8 Surface water runoff is to drain from impermeable surfaces onsite via a gravity conveyed surface water sewer.
- 8.9 A flow control device is to restrict flows discharged offsite to 20% below the equivalent greenfield Qbar rate.
- 8.10 The associated maintenance regime required to sustain the aforementioned drainage features are expressed within the table below.

Drainage Component	Maintenance Task	Frequency
Drainage Network	Inspect for blockages to ensure network is free running	Every 3 months and after any significant storm event
Surface water gullies/ Linear drainage features	Inspect for blockages and ensure that the drainage feature is free running. Jet or vacuum as appropriate.	Every 3 months and after any significant storm event
Catchpits	Inspect for and remove silt	Every 6 months and after any significant storm event
Discharge Control	Inspect for blockage and correct operation	Every 3 months and after any significant storm event
source: CIRIA SuDs Manual (C753) (2015) Part D. Chapter 28		

Connections

- 8.11 Surface water from the northern parcel is to discharge via two separate outfalls into the localised ditch network, alternatively runoff from the southern parcel is to discharge into the 225mm drain within Normandy Way. The proposed maintenance regime for these components is expressed in the table below.

Drainage Component	Maintenance Task	Frequency
Outfall pipe	Regular maintenance and monitoring to ensure sufficient operation.	Annually or as required
Drainage ditch	Monitoring of watercourse levels	Frequently post development then as required/after any storm event
source: CIRIA SuDs Manual (C753) (2015) Part D. Chapter 28		

Design life

- 8.12 The design life of the development may exceed the design life of certain components of the surface water network; this however is based upon numerous unpredictable variables.
- 8.13 During the maintenance regime it should be assessed whether any repairs are required and whether drainage components have reached the end of their functional lifetime.

9.0 CONCLUSIONS AND RECOMMENDATIONS

- 9.1 Miller Homes have commissioned ADC Infrastructure Limited to produce a Drainage Strategy report in support of a full planning application for the erection of 482 dwellings on land at Normandy Way and Ashby Road, Hinckley, comprising development across two parcels including: the northern parcel (off Ashby Road) for residential development, public open space, play provision, structural landscaping, sustainable drainage infrastructure and the provision of a new vehicular route; the southern parcel (off Normandy Way) for residential development, public open space, landscaping and drainage infrastructure. Together with associated access, internal roads, pedestrian and cycle connections, utilities and all other associated infrastructure.
- 9.2 Surface water runoff generated within the northern parcel drains primarily via overland flow towards a series of land drainage ditches on the southern, western and northern site boundaries. The ditches are intuitively located at the localised low points within the site and convey runoff into Tweed River and its main tributaries.
- 9.3 Surface water runoff generated within the southern parcel drains primarily via overland flow towards the highway to the south. During a site walkover, evidence of a piped surface water drain within Normandy Way was observed. A CCTV survey to confirm the connectivity and downstream route of the drain was conducted by Onsite Central Ltd in January 2025. The survey demonstrates the drain to flow in a westerly direction within Normandy Way before outfalling into the unnamed ordinary watercourse to the west of the site (tributary of Tweed River).
- 9.4 The proposed surface water drainage regime is to mimic existing conditions as far as is feasible.
- 9.5 Given the existing ground topography, the northern parcel is segregated into two localised drainage catchments; the northern catchment comprises the majority of the site area and will drain via a cascade of attenuation basins which are to be located within the north-western extents of the parcel. A restricted discharge, equivalent to a 20% betterment upon QBar will be made into the existing ditch network within the north-western corner.
- 9.6 The southern catchment is to drain to a singular basin located within the south-western extents of the parcel. A restricted discharge, equivalent to a 20% betterment upon QBar will be made into the existing ditch network within the south-western corner.
- 9.7 The southern field parcel will drain to a singular attenuation basin sited within the western extents of the site. A restricted discharge, equivalent to a 20% betterment upon QBar will be made into the existing 225mm diameter piped drainage system within Normandy Way.
- 9.8 Upstream SuDS in the form of individual water butts, street trees and permeable paving are to further be integrated into the development layout design.
- 9.9 Two segregated foul outfalls will be achieved from the site into the public network. A pumped discharge will be required for the northern parcel whilst a gravity discharge can be achieved from the southern parcel.
- 9.10 Provided that the recommendations of this report are followed, then the development can proceed without increasing flood risk elsewhere. The development proposals are considered sustainable from a drainage perspective.

10.0 REFERENCES

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Department for Environment, Food and Rural Affairs, 2025. *National standards for sustainable drainage systems (SuDS)*. [Online]

Available at: <https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds#introduction>

GOV.UK, 2010. *Flood and Water Management Act*. [Online] Available at: <https://www.legislation.gov.uk/ukpga/2010/29> [Accessed December 2024].

Ministry of Housing, Communities and Local Government, 2026. *National Planning Policy Framework*. [Online] Available at: <https://www.gov.uk/guidance/national-planning-policy-framework> [Accessed August 2026].

Ministry of Housing, Communities and Local Government, 2025. *Planning Practice Guidance - Flood Risk and Coastal Change*. [Online] Available at: <https://www.gov.uk/government/collections/planning-practice-guidance> [Accessed 25 September 2025].

Sewerage Sector Guidance, 2021. *Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England*, s.l.: Water UK.

APPENDIX A

SITE WALKOVER PHOTOS



Photo looking west across the southern land parcel.



Photo of the land drainage ditch along the boundary of the southern land parcel.



Photo looking towards the south-west site corner, showing the noticeable drop in gradient.



Photo of existing pond feature and outfall in the south-west site corner.



Photo of looking northwards across the central field parcel



Photo looking north-east across the northern field parcel.



Photo of the land drainage ditch along the western boundary of the northern field parcel



Photo of culvert beneath Rogue's Lane in the far north-west corner of the site.



Photo of manhole 1602 on the combined sewer in the field to the north of the site.



Photo of manhole 1502 in the junction of Ashby Road/Rogue's Lane, which is the preferred connection point for the site (left), and manhole 1401 further down Ashby Road (right).



Photos of the land drainage ditches adjacent to the eastern site boundary along Ashby Road.

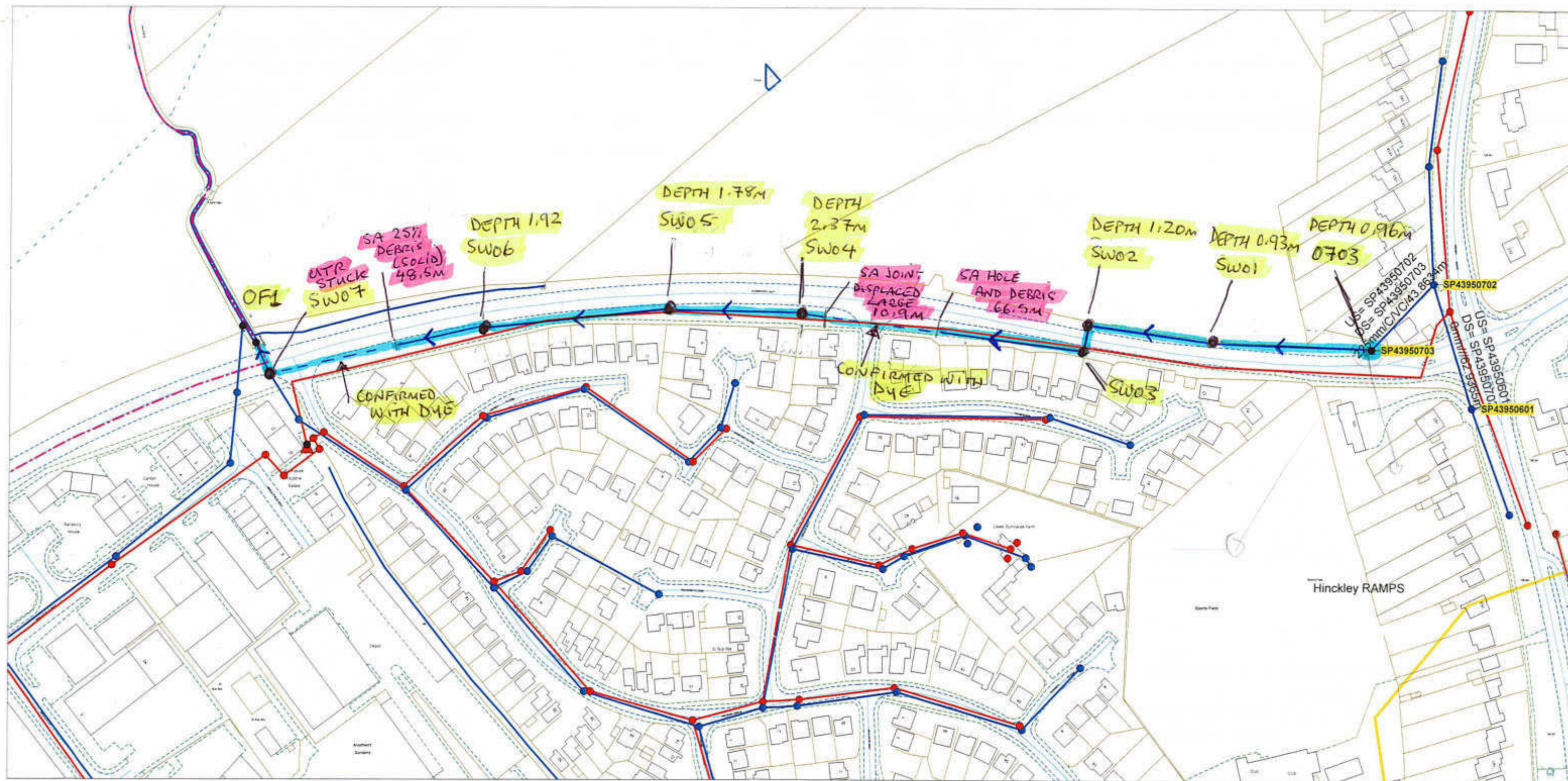
APPENDIX B

TOPOGRAPHICAL SURVEY

APPENDIX C

CCTV SURVEY OUTPUTS

CCTV JOB D/S TO ITS DISCHARGE
POINT ???



Project

Project Name: OSCC2413592 - Verge on Normandy Way
Project Description: CCTV Report
Project Number: OSCC2413592
Project Date: 21/01/2025

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OSCC2413592 - Verge on Normandy Way	OSCC2413592	21/01/2025

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Project Information

Project Name	Project Number	Project Date
OSCC2413592 - Verge on Normandy Way	OSCC2413592	21/01/2025

Client

Company: ADC Infrastructure Limited
Contact: Alice Kirsz
Department: 4th Floor, City Buildings
Street: 34 to 36 Carrington Street
Town or City: Nottingham
County: Nottinghamshire
Post Code: NG1 7FG
Email: alice.kirsz@adcinfrastructure.com

Site

Street: Normandy Way
Town or City: Hinckley
County: Leicestershire
Post Code: LE10 1SH

Contractor

Company: OnSite Central Ltd
Street: 89 Blackpole West
Town or City: Blackpole, Worcester
County: Worcestershire
Post Code: WR3 8TJ
Phone: 01905 340054

Scoring Summary

Project Name
OSCC2413592 - Verge on Normandy Way

Project Number
OSCC2413592

Project Date
21/01/2025

Structural Defects

- Grade 3: Best practice suggests consideration should be given to repairs in the medium term.
- Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.
- Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
4	SW03X	5	Hole in drain or sewer from 7 o'clock to 5 o'clock

Service / Operational Condition

- Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.
- Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.
- Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
1	SW01X	5	Roots, mass, 50% cross-sectional area loss
2	0703X	5	Roots, mass, 40% cross-sectional area loss
4	SW03X	4	Settled deposits, coarse, 30% cross-sectional area loss
5	SW03X	4	Joint displaced, large
8	SW06X	4	Settled deposits, coarse, 25% cross-sectional area loss

Abandoned Surveys

Section	PLR	Description
2	0703X	Survey abandoned
4	SW03X	Survey abandoned
5	SW03X	Survey abandoned
8	SW06X	Survey abandoned

Information

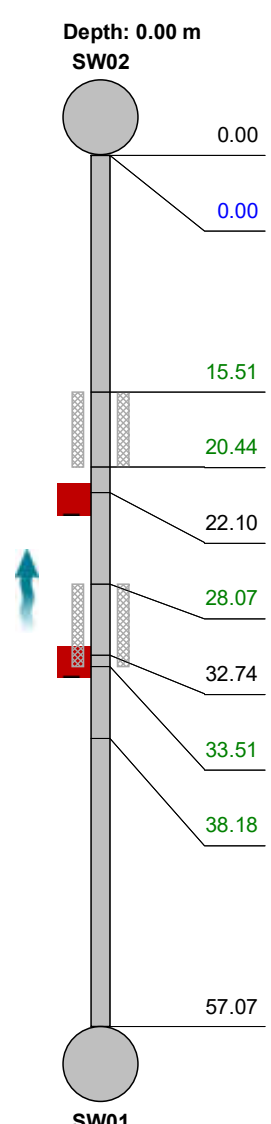
These scoring summaries are based on the SRM grading from the WRc.

Section Inspection - 07/01/2025 - SW01X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
1	1	07/01/25	9:24	OSCC2413592	No Rain Or Snow	No	SW01X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
OnSite - MH		409		Crafter	0.00 m	Not Specified	1

Town or Village:	Hinkley	Inspection Direction:	Upstream	Upstream Node:	SW01
Road:	Normandy Way	Inspected Length:	57.07 m	Upstream Pipe Depth:	1.200 m
Location:	Verge	Total Length:	57.07 m	Downstream Node:	SW02
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:495	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: SW02	00:00:03		
		0.00	WL	Water level, 5% of the vertical dimension	00:00:04		
		15.51	S01	RF	Roots, fine, start	00:02:02	
		20.44	F01	RF	Roots, fine, finish	00:02:39	2
		22.10	CN	Connection other than junction at 2 o'clock, 150mm dia	00:02:56		
		28.07	S02	RF	Roots, fine, start	00:03:44	
		32.74	CN	Connection other than junction at 2 o'clock, 150mm dia	00:04:22		
		33.51	F02	RF	Roots, fine, finish	00:04:34	2
		38.18	RM	Roots, mass, 50% cross-sectional area loss	00:05:12	SW01X_U 0701202 5_0924_0	5
		57.07	MHF	Finish node, manhole, reference: SW01	00:08:47		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	3	15.0	0.5	26.0	5.0

Section Pictures - 07/01/2025 - SW01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	SW01X	OSCC2413592	OSCC2413592

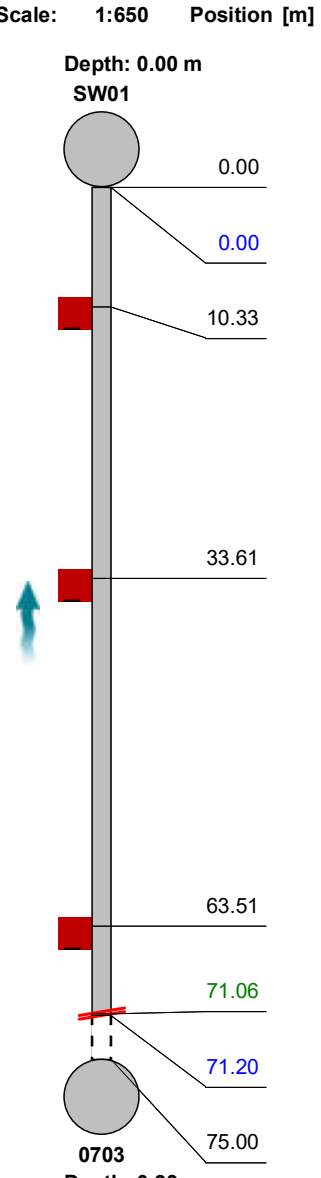


SW01X_U_07012025_0924_001.jpg, 00:05:12, 38.18 m
 Roots, mass, 50% cross-sectional area loss

Item No. 2	Insp. No. 2	Date 07/01/25	Time 9:44	Client's Job Ref OSSC2413592	Weather No Rain Or Snow	Pre Cleaned No	PLR 0703X
Operator OnSite - MH		Vehicle 409		Camera Crafter	Preset Length 0.00 m	Legal Status Not Specified	Alternative ID 1

Town or Village:	Hinkley	Inspection Direction:	Upstream	Upstream Node:	0703
Road:	Normandy Way	Inspected Length:	71.20 m	Upstream Pipe Depth:	0.930 m
Location:	Verge	Total Length:	75.00 m	Downstream Node:	SW01
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Recommendations:

Scale:	1:650	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.00 m SW01							
			MH	Start node, manhole, reference: SW01	00:00:02		
			WL	Water level, 5% of the vertical dimension	00:00:04		
			CN	Connection other than junction at 2 o'clock, 150mm dia	00:01:25		
			CN	Connection other than junction at 2 o'clock, 150mm dia	00:04:12		
			CN	Connection other than junction at 2 o'clock, 150mm dia	00:08:49		
			RM	Roots, mass, 40% cross-sectional area loss	00:10:04	0703X_U_07012025_0944_00	5
			SA	Survey abandoned: 40% ROOTS MASS	00:11:34		
0703 Depth: 0.93 m				End of pipe			

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	0.1	10.0	5.0

Section Pictures - 07/01/2025 - 0703X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Upstream	0703X	OSCC2413592	OSCC2413592



0703X_U_07012025_0944_002.jpg, 00:10:04, 71.06 m
 Roots, mass, 40% cross-sectional area loss

Section Inspection - 07/01/2025 - SW02X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
3	3	07/01/25	10:00	OSCC2413592	No Rain Or Snow	No	SW02X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
OnSite - MH		409		Crafter	0.00 m	Not Specified	1

Town or Village:	Hinkley	Inspection Direction:	Downstream	Upstream Node:	SW02
Road:	Normandy Way	Inspected Length:	10.83 m	Upstream Pipe Depth:	0.000 m
Location:	Verge	Total Length:	10.83 m	Downstream Node:	SW03
Surface Type:		Joint Length:		Downstream Pipe Depth:	1.200 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:94	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.00 m SW02 0.00 0.00 MH Start node, manhole, reference: SW02 00:00:02							
0.00 WL Water level, 5% of the vertical dimension 00:00:04							
10.83 MHF Finish node, manhole, reference: SW03 00:01:51							
SW03 Depth: 1.20 m							

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Item No. 4	Insp. No. 4	Date 07/01/25	Time 10:48	Client's Job Ref OSSC2413592	Weather No Rain Or Snow	Pre Cleaned No	PLR SW03X
Operator OnSite - MH		Vehicle 409		Camera Crafter	Preset Length 0.00 m	Legal Status Not Specified	Alternative ID 1

Town or Village:	Hinkley	Inspection Direction:	Downstream	Upstream Node:	SW03
Road:	Normandy Way	Inspected Length:	66.56 m	Upstream Pipe Depth:	0.000 m
Location:	Footway	Total Length:	70.00 m	Downstream Node:	SW04
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Recommendations:

Scale:	1:607	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.00 m SW03							
	0.00	MH	Start node, manhole, reference: SW03	00:00:03			
	0.00	WL	Water level, 5% of the vertical dimension	00:00:05			
	27.72	CN	Connection other than junction at 2 o'clock, 150mm dia	00:02:20			
	28.16	CN	Connection other than junction at 2 o'clock, 150mm dia	00:02:35			
	52.43	CN	Connection other than junction at 2 o'clock, 150mm dia	00:04:40			
	62.48	OJM	Open joint, medium	00:05:49			1
	63.05	CN	Connection other than junction at 2 o'clock, 150mm dia	00:06:01			
	65.97	H	Hole in drain or sewer from 7 o'clock to 5 o'clock	00:07:06	SW03X_D_0701202_5_1048_0		5
	66.56	DER	Settled deposits, coarse, 30% cross-sectional area loss	00:08:48	SW03X_D_0701202_5_1048_0		4
	66.56	SA	Survey abandoned: DUE TO HOLE AND DEBRIS	00:09:19			
	70.00		End of pipe				
Depth: 0.00 m SW04							

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	165.0	2.5	166.0	5.0	1	5.0	0.1	5.0	4.0

Section Pictures - 07/01/2025 - SW03X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
4	Downstream	SW03X	OSCC2413592	OSCC2413592



SW03X_D_07012025_1048_003.jpg, 00:07:06, 65.97 m
Hole in drain or sewer from 7 o'clock to 5 o'clock



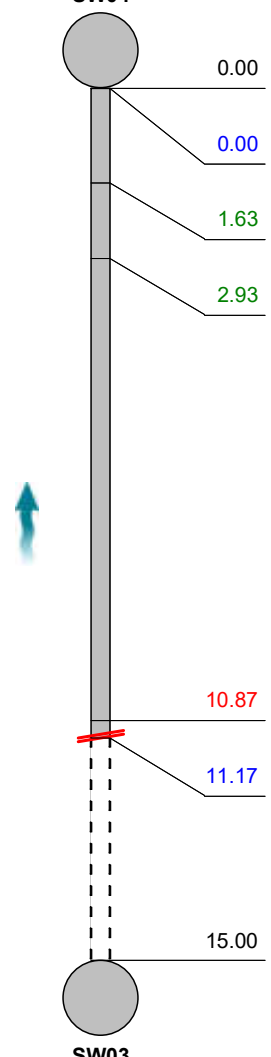
SW03X_D_07012025_1048_004.jpg, 00:08:48, 66.56 m
Settled deposits, coarse, 30% cross-sectional area loss

Section Inspection - 07/01/2025 - SW03X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
5	5	07/01/25	11:34	OSCC2413592	No Rain Or Snow	No	SW03X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
OnSite - MH		409		Crafter	0.00 m	Not Specified	1

Town or Village:	Hinkley	Inspection Direction:	Upstream	Upstream Node:	SW03
Road:	Normandy Way	Inspected Length:	11.17 m	Upstream Pipe Depth:	2.370 m
Location:	Verge	Total Length:	15.00 m	Downstream Node:	SW04
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:130	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.00 m SW04  15.00 End of pipe SW03 Depth: 2.37 m							
	0.00	CP	Start node, catchpit, reference: SW04		00:00:03		
	0.00	WL	Water level, 5% of the vertical dimension		00:00:05		
	1.63	IR	Infiltration, running from 2 o'clock to 3 o'clock		00:00:17		
	2.93	IR	Infiltration, running at 12 o'clock		00:00:30		
	10.87	JDL	Joint displaced, large		00:01:32	SW03X_U 0701202 5_1134_0	1 / 4
	11.17	SA	Survey abandoned: JOINT DISPLACED LARGE		00:02:09		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	2.0	0.2	2.0	1.0	1	5.0	0.4	5.0	4.0

Section Pictures - 07/01/2025 - SW03X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Upstream	SW03X	OSCC2413592	OSCC2413592



SW03X_U_07012025_1134_005.jpg, 00:01:32, 10.87 m
Joint displaced, large



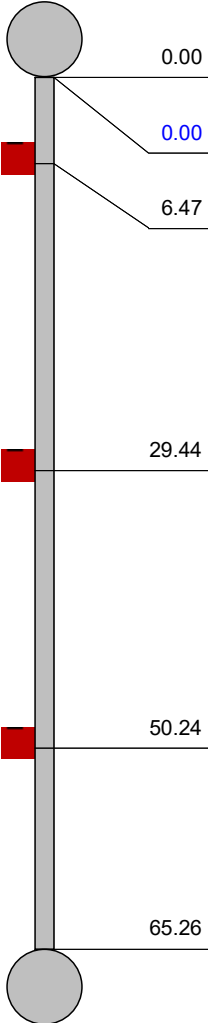
SW03X_U_07012025_1134_006.jpg, 00:01:32, 10.87 m
Joint displaced, large

Section Inspection - 07/01/2025 - SW04X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
6	6	07/01/25	11:45	OSCC2413592	No Rain Or Snow	No	SW04X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
OnSite - MH		409		Crafter	0.00 m	Not Specified	1

Town or Village:	Hinkley	Inspection Direction:	Downstream	Upstream Node:	SW04
Road:	Normandy Way	Inspected Length:	65.26 m	Upstream Pipe Depth:	0.000 m
Location:	Verge	Total Length:	65.26 m	Downstream Node:	SW05
Surface Type:		Joint Length:		Downstream Pipe Depth:	2.370 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:
Recommendations:

Scale: 1:566	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.00 m SW04						
						
	0.00	CP	Start node, catchpit, reference: SW04	00:00:02		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:04		
	6.47	CN	Connection other than junction at 2 o'clock, 150mm dia	00:00:41		
	29.44	CN	Connection other than junction at 2 o'clock, 150mm dia	00:02:46		
	50.24	CN	Connection other than junction at 2 o'clock, 150mm dia	00:04:33		
	65.26	MHF	Finish node, manhole, reference: SW05	00:06:05		
SW05 Depth: 2.37 m						

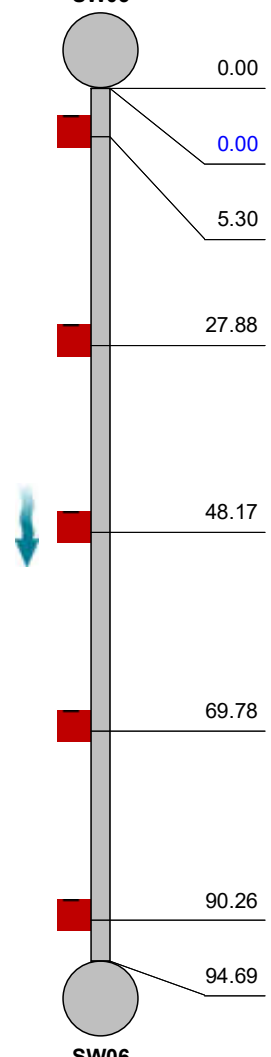
Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Inspection - 07/01/2025 - SW05X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
7	7	07/01/25	11:56	OSCC2413592	No Rain Or Snow	No	SW05X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
OnSite - MH		409		Crafter	0.00 m	Not Specified	1

Town or Village:	Hinkley	Inspection Direction:	Downstream	Upstream Node:	SW05
Road:	Normandy Way	Inspected Length:	94.69 m	Upstream Pipe Depth:	0.000 m
Location:	Verge	Total Length:	94.69 m	Downstream Node:	SW06
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:820	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.00 m SW05  SW06 Depth: 0.00 m							
		0.00	MH	Start node, manhole, reference: SW05	00:00:03		
		0.00	WL	Water level, 5% of the vertical dimension	00:00:06		
		5.30	CN	Connection other than junction at 2 o'clock, 150mm dia	00:01:22		
		27.88	CN	Connection other than junction at 2 o'clock, 150mm dia	00:03:15		
		48.17	CN	Connection other than junction at 2 o'clock, 150mm dia	00:04:52		
		69.78	CN	Connection other than junction at 2 o'clock, 150mm dia	00:06:35		
		90.26	CN	Connection other than junction at 2 o'clock, 150mm dia	00:08:15		
		94.69	MHF	Finish node, manhole, reference: SW06	00:08:46		

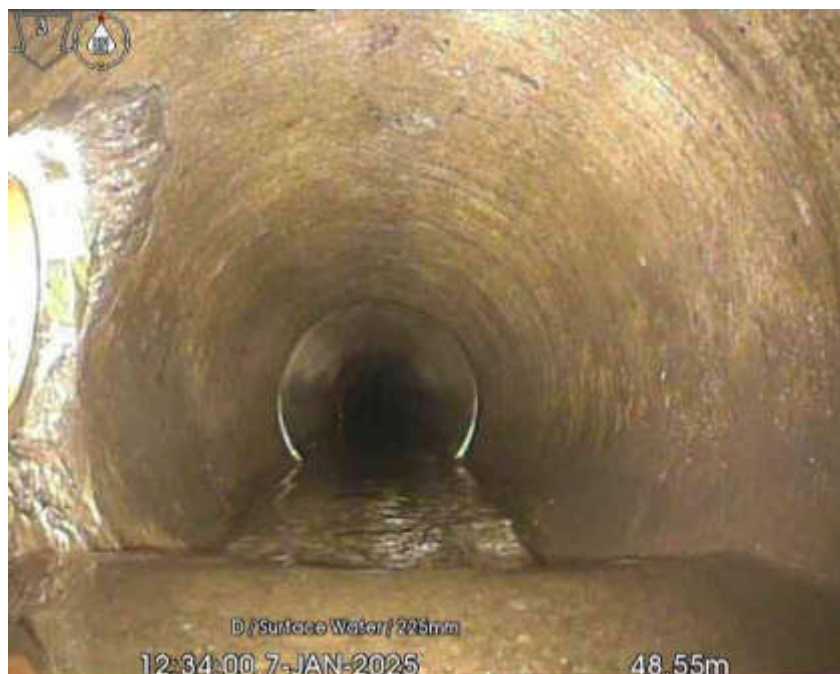
Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Pictures - 07/01/2025 - SW06X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
8	Downstream	SW06X	OSCC2413592	OSCC2413592



SW06X_D_07012025_1225_007.jpg, 00:06:02, 48.55 m
 Settled deposits, coarse, 10% cross-sectional area loss, finish



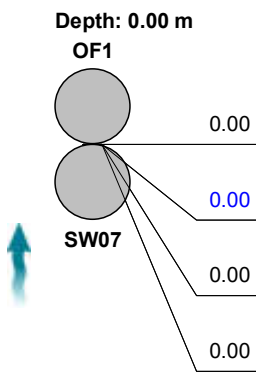
SW06X_D_07012025_1225_008.jpg, 00:06:04, 48.55 m
 Settled deposits, coarse, 25% cross-sectional area loss, SOLID

Section Inspection - 07/01/2025 - SW07X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
9	9	07/01/25	13:15	OSCC2413592	No Rain Or Snow	No	SW07X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
OnSite - MH		409		Crafter	0.00 m	Not Specified	1

Town or Village:	Hinkley	Inspection Direction:	Upstream	Upstream Node:	SW07
Road:	Normandy Way	Inspected Length:	0.00 m	Upstream Pipe Depth:	0.000 m
Location:	Verge	Total Length:	0.00 m	Downstream Node:	OF1
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	900 mm		
Flow Control:	No flow control	Material:	Concrete		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	OF	Start node, outfall, reference: OF1	00:00:01		
		0.00	WL	Water level, 5% of the vertical dimension	00:00:03		
		0.00	MHF	Finish node, manhole, reference: SW07	00:03:05		
		0.00	MHF	Finish node, manhole, reference: SW07: RECORDED IN REVERSE	00:03:10		
Depth: 0.00 m							

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

APPENDIX D

GREENFIELD RUNOFF ESTIMATES

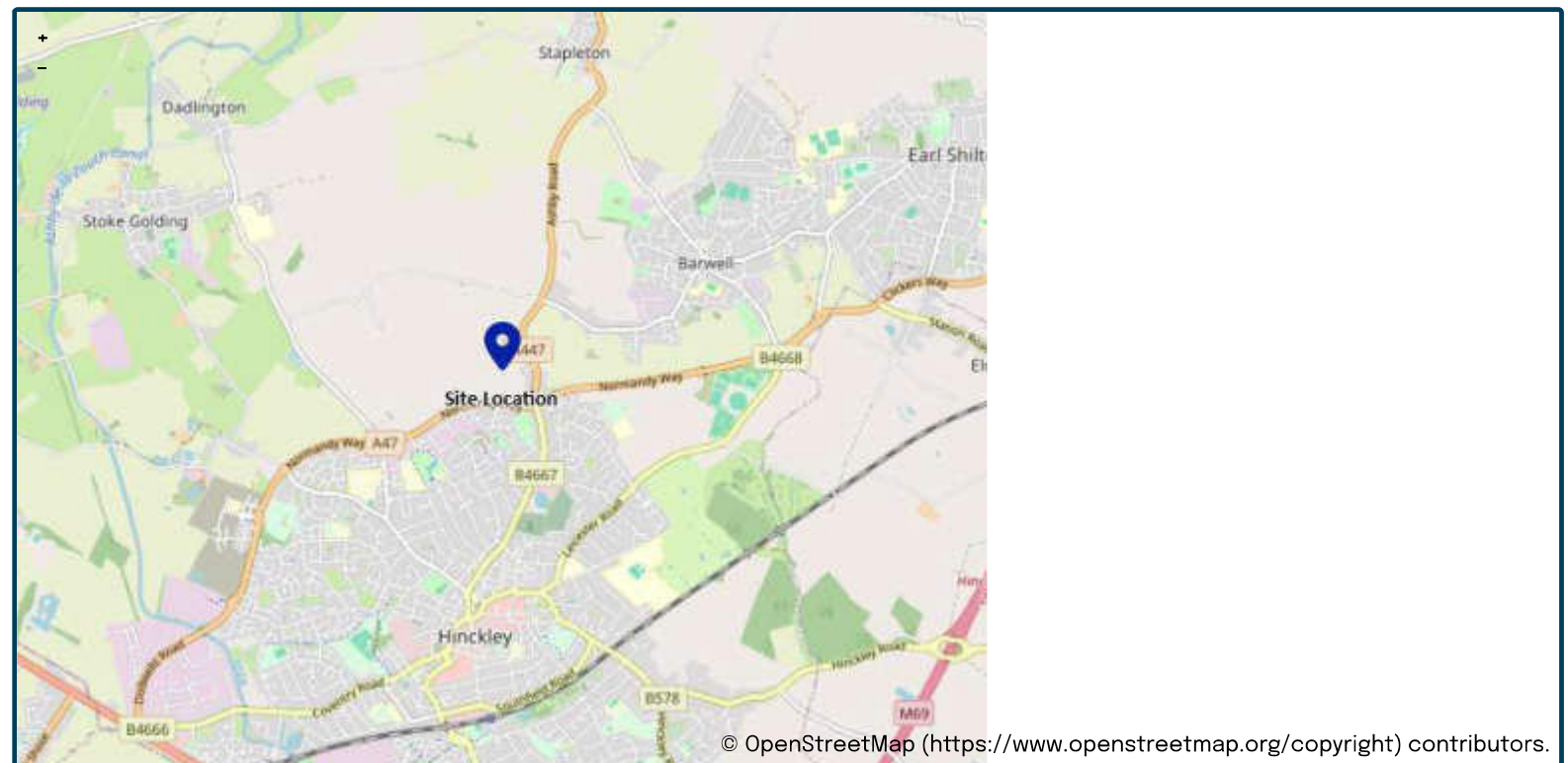
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	10/04/2026
Calculated by	ADC Infrastructure
Reference	ADC3405
Model version	2.2.3

Location

Site name	Land at Normandy Way
Site location	Hinckley



Site easting (British National Grid)	442818
Site northing (British National Grid)	295816

Site details

Total site area (ha)	1.096	ha
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Greenfield runoff

Method

Method	IH124
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IH124

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	640 mm	☒	640
How should SPR be derived?	WRAP soil type		
WRAP soil type	4	☒	4
SPR	0.47		
QBar (IH124) (l/s)	4.8 l/s		

Growth curve factors

	<u>My value</u>		<u>Map value</u>
Hydrological region	4	☒	4
1 year growth factor	0.83		
2 year growth factor	0.89		
10 year growth factor	1.49		
30 year growth factor	2		
100 year growth factor	2.57		
200 year growth factor	3.04		

Results

Method	IH124	
Flow rate 1 year (l/s)	4.0	l/s
Flow rate 2 year (l/s)	4.2	l/s
Flow rate 10 years (l/s)	7.1	l/s
Flow rate 30 years (l/s)	9.5	l/s
Flow rate 100 years (l/s)	12.2	l/s
Flow rate 200 years (l/s)	14.5	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

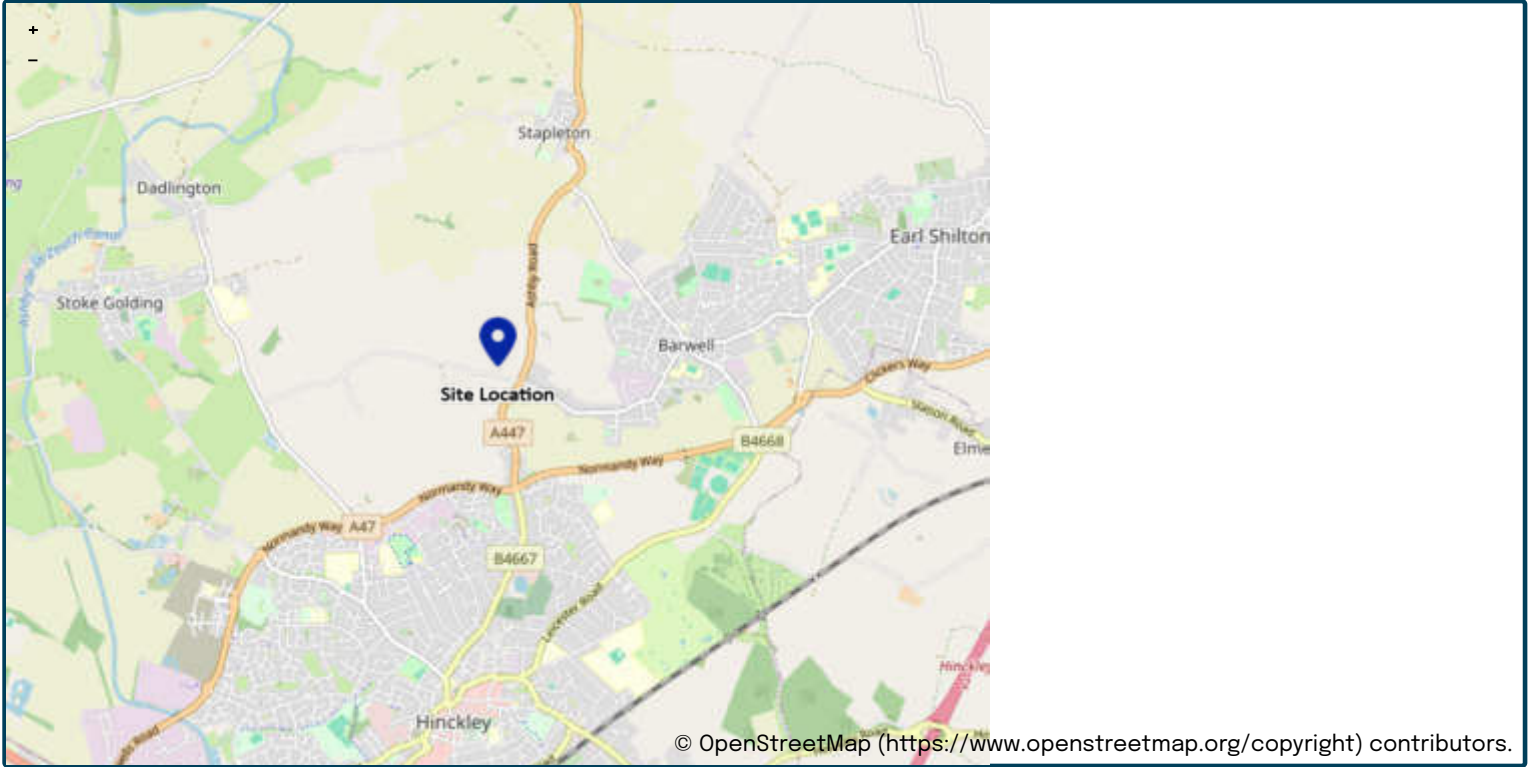
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	24/04/2026
Calculated by	Alice Kirsz
Reference	
Model version	2.2.3

Location

Site name	Ashby Road- north catchment
Site location	



Site easting (British National Grid)	442955
Site northing (British National Grid)	296506

Site details

Total site area (ha)	5.728 ha
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Greenfield runoff

Method

Method	IH124
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IH124

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	640	mm	640
How should SPR be derived?	WRAP soil type		
WRAP soil type	4		4
SPR	0.47		
QBar (IH124) (l/s)	24.9	l/s	

Growth curve factors

	<u>My value</u>		<u>Map value</u>
Hydrological region	4		4
1 year growth factor	0.83		
2 year growth factor	0.89		
10 year growth factor	1.49		
30 year growth factor	2		
100 year growth factor	2.57		
200 year growth factor	3.04		

Results

Method	IH124	
Flow rate 1 year (l/s)	20.7	l/s
Flow rate 2 year (l/s)	22.2	l/s
Flow rate 10 years (l/s)	37.1	l/s
Flow rate 30 years (l/s)	49.8	l/s
Flow rate 100 years (l/s)	64.0	l/s
Flow rate 200 years (l/s)	75.7	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

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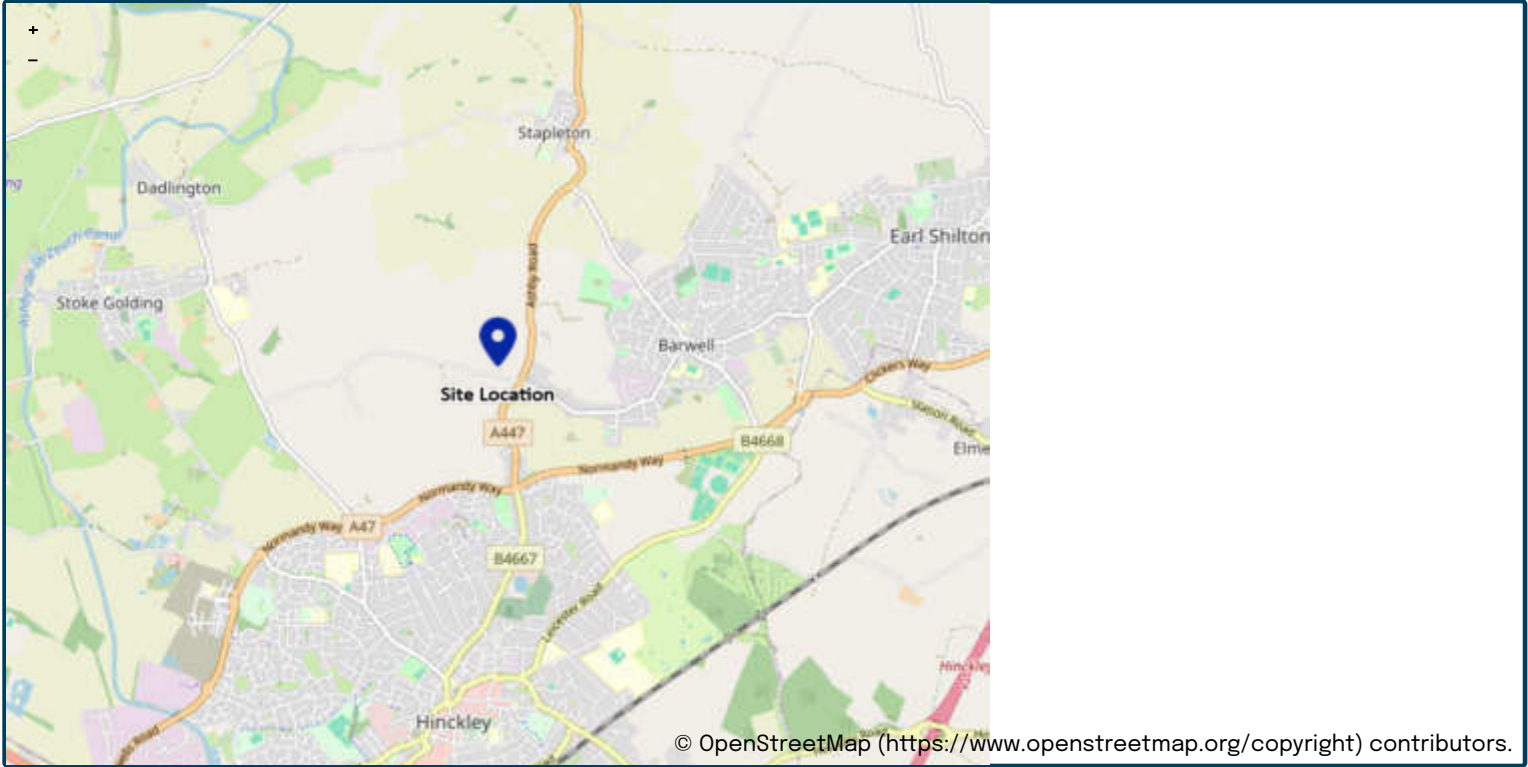
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	24/04/2026
Calculated by	Alice Kirsz
Reference	
Model version	2.2.3

Location

Site name	Ashby Road- southern catchment
Site location	



Site easting (British National Grid)	442955
Site northing (British National Grid)	296506

Site details

Total site area (ha)	1.921 ha
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Greenfield runoff

Method

Method	IH124
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IH124

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	640	mm	640
How should SPR be derived?	WRAP soil type		
WRAP soil type	4		4
SPR	0.47		
QBar (IH124) (l/s)	8.4	l/s	

Growth curve factors

	<u>My value</u>		<u>Map value</u>
Hydrological region	4		4
1 year growth factor	0.83		
2 year growth factor	0.89		
10 year growth factor	1.49		
30 year growth factor	2		
100 year growth factor	2.57		
200 year growth factor	3.04		

Results

Method	IH124	
Flow rate 1 year (l/s)	6.9	l/s
Flow rate 2 year (l/s)	7.4	l/s
Flow rate 10 years (l/s)	12.4	l/s
Flow rate 30 years (l/s)	16.7	l/s
Flow rate 100 years (l/s)	21.5	l/s
Flow rate 200 years (l/s)	25.4	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

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APPENDIX E

SURFACE WATER CALCULATIONS- NORTHERN PARCEL

Northern catchment calculations

1 in 100-year+40%

1 in 2-year

1 in 30-year

1 in 30-year+35%

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S1	0.128	1350	Type C	122.908	121.400	1.283	442714.321	296258.794
S2	0.149	1350	Type C	122.266	120.745	1.221	442754.065	296291.326
S3	0.122	1350	Type C	121.764	120.312	1.227	442809.135	296309.191
S4	0.296	1350	Type C	121.630	120.000	1.255	442795.820	296325.675
S5	0.210	1350	Type C	120.869	119.270	1.224	442853.250	296373.494
S6	0.131	1350	Type C	120.552	118.885	1.217	442881.088	296389.899
S7	0.083	1350	Type C	120.224	118.415	1.359	442913.733	296394.225
S8	0.121	1500	Type C	119.866	118.090	1.251	442917.382	296423.207
S9	0.327	1350	Type C	119.435	117.775	1.060	442932.128	296464.597
S10	0.044	1500	Type C	119.020	117.455	0.965	442989.051	296455.047
S11	0.181	1350	Type C	123.389	121.970	1.194	442835.256	296210.986
S12	0.086	1350	Type C	123.289	121.820	1.244	442779.778	296231.440
S13	0.134	1350	Type C	123.004	121.395	1.309	442803.282	296250.419
S14	0.146	1350	Type C	122.134	120.530	1.229	442842.793	296282.868
S15	0.193	1350	Type C	121.835	120.359	1.176	442905.116	296260.631
S16	0.093	1350	Type C	121.726	119.845	1.431	442868.562	296304.574
S17	0.105	1350	Type C	121.351	119.515	1.386	442887.971	296320.117
S18	0.162	1350	Type C	120.652	118.885	1.317	442931.188	296329.289
S19	0.259	1350	Type C	120.363	118.705	1.208	442947.573	296339.281
HD01	0.000	1350	Type C	120.690	119.265	1.200	442986.592	296316.443
HD02	0.000	1350	Type C	120.630	119.170	1.235	442988.624	296331.940
HD03	0.000	1350	Type C	120.605	119.025	1.355	443000.288	296350.187
HD04	0.079	1350	Type C	119.670	118.245	1.200	443018.907	296392.474
HD05	0.000	1200	Type B	120.064	118.115	1.724	443005.471	296376.334
HD06	0.051	1200	Type B	120.400	117.805	2.370	442986.353	296361.474
HD 07	0.085	1350	Type C	119.545	118.120	1.200	442939.536	296386.557
S20	0.109	1500	Type B	120.050	117.395	2.130	442971.226	296370.897
S21	0.000	1500	Type B	120.135	117.315	2.295	442982.489	296394.623
S22	0.000	---	Type C	118.690	117.200	0.965	442999.495	296422.484
S23	0.000	---	Type C	118.690	117.100	0.840	443003.184	296447.570
S24	0.000	---	Type C	118.500	117.006	0.744	443004.765	296460.692
S25	0.000	1800	Type C	118.500	116.999	0.601	443005.819	296467.438
S26	0.000	1800	Type C	118.500	116.937	0.663	443007.453	296485.910
S27	0.000	1800	Type C	118.500	116.900	0.700	443001.708	296506.464
S28	0.000	2100	Type C	118.500	116.870	1.180	442991.379	296517.109
S29	0.000	---	Type C	117.800	115.810	1.540	442976.569	296530.229
S30	0.153	1350	Type C	122.393	120.890	1.278	442689.173	296328.741
S31	0.036	1350	Type C	121.934	120.460	1.249	442719.504	296339.090
S32	0.180	1350	Type C	121.282	119.745	1.237	442755.689	296368.065
S33	0.026	1350	Type C	121.117	119.595	1.222	442759.251	296377.613
S34	0.163	1350	Type C	120.471	118.880	1.216	442794.356	296406.819
S35	0.000	1350	Type C	120.267	118.650	1.242	442805.825	296415.935
S36	0.149	1350	Type C	120.090	118.435	1.205	442818.364	296418.821
S37	0.038	1350	Type C	120.256	118.780	1.251	442835.833	296396.018
S38	0.000	1350	Type C	119.997	118.315	1.232	442829.827	296412.289
S39	0.000	1350	Type C	119.867	118.117	1.301	442847.930	296440.011
S40	0.306	1350	Type C	119.834	117.995	1.389	442857.858	296456.738
S41	0.102	1350	Type B	118.881	116.697	1.734	442890.042	296498.149
S42	0.088	1350	Type B	118.597	116.596	1.551	442872.122	296511.987
S43	0.048	1500	Type C	118.262	116.270	1.467	442889.237	296534.807
S44	0.218	1500	Type C	117.909	116.070	1.314	442904.545	296553.956
S45	0.000	---	Unknown	117.800	115.890	1.385	442912.453	296566.947
S46	0.000	---	Type B	117.800	115.510	1.615	442903.451	296574.209
S47	0.000	3000	Type C	116.774	115.258	0.841	442897.863	296583.951
S48	0.000	1500	Type C	116.671	114.960	1.036	442895.164	296590.435
S49	0.000	1500	Type C	116.304	114.875	0.754	442859.421	296599.162
S50	0.000	---	Type B	116.300	114.826	0.799	442836.888	296590.619
S51	0.018	1350	Type C	121.809	120.384	1.200	442709.900	296352.628
S52	0.070	1350	Type C	121.525	120.100	1.200	442697.054	296367.884
S53	0.093	1350	Type C	121.105	119.625	1.255	442675.657	296387.055
S54	0.093	1350	Type C	120.471	118.921	1.250	442713.095	296425.580
S55	0.167	1350	Type C	120.232	118.745	1.262	442777.550	296427.330
S56	0.138	1350	Type C	119.722	118.085	1.262	442744.654	296458.037
S57	0.000	1350	Type B	118.932	117.023	1.534	442778.050	296497.351

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S58	0.079	1350	Type C	118.209	116.750	1.234	442856.446	296524.613
S59	0.294	1350	Type C	117.180	115.396	1.409	442823.667	296549.564
S60	0.000	---	Type B	116.300	114.940	0.685	442817.969	296562.779
S61	0.000	---	Unknown	116.300	114.800	1.275	442823.703	296591.404
S62	0.000	3000	Type B	116.300	114.520	1.555	442820.162	296598.370
S63	0.000	1350	Type C	115.004	114.330	0.449	442812.214	296614.112

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S1	121.400	S2	120.820	Circ	225	51.360	89	0.600	1.283	1.221
1.001	S2	120.745	S4	120.075	Circ	300	54.068	81	0.600	1.221	1.255
2.000	S3	120.312	S4	120.150	Circ	225	21.189	131	0.600	1.227	1.255
1.002	S4	120.000	S5	119.270	Circ	375	74.732	102	0.600	1.255	1.224
1.003	S5	119.270	S6	118.960	Circ	375	32.312	104	0.600	1.224	1.217
1.004	S6	118.885	S7	118.415	Circ	450	32.930	70	0.600	1.217	1.359
1.005	S7	118.415	S8	118.165	Circ	450	29.211	117	0.600	1.359	1.251
1.006	S8	118.090	S9	117.850	Circ	525	43.938	183	0.600	1.251	1.060
1.007	S9	117.775	S10	117.455	Circ	600	57.719	180	0.600	1.060	0.965
1.008	S10	117.455	S25	117.340	Circ	600	20.850	181	0.600	0.965	0.560
3.000	S11	121.970	S13	121.470	Circ	225	50.767	102	0.600	1.194	1.309
4.000	S12	121.820	S13	121.470	Circ	225	30.210	86	0.600	1.244	1.309
3.001	S13	121.395	S14	120.605	Circ	300	51.127	65	0.600	1.309	1.229
3.002	S14	120.530	S16	119.920	Circ	375	33.693	55	0.600	1.229	1.431
5.000	S15	120.359	S16	119.995	Circ	300	57.160	157	0.600	1.176	1.431
3.003	S16	119.845	S17	119.515	Circ	450	24.866	75	0.600	1.431	1.386
3.004	S17	119.515	S18	118.885	Circ	450	44.180	70	0.600	1.386	1.317
3.005	S18	118.885	S19	118.705	Circ	450	19.191	107	0.600	1.317	1.208
3.006	S19	118.705	S20	117.470	Circ	450	39.485	32	0.600	1.208	2.130
6.000	HD01	119.265	HD02	119.245	Circ	225	15.629	781	0.600	1.200	1.160
6.001	HD02	119.170	HD03	119.025	Circ	225	21.657	149	0.600	1.235	1.355
6.002	HD03	119.025	HD06	117.805	Circ	225	17.933	15	0.600	1.355	2.370
7.000	HD04	118.245	HD05	118.115	Circ	225	21.001	162	0.600	1.200	1.724
7.001	HD05	118.115	HD06	117.805	Circ	225	24.214	78	0.600	1.724	2.370
6.003	HD06	117.805	S20	117.695	Circ	225	17.822	162	0.600	2.370	2.130
8.000	HD 07	118.120	S20	117.695	Circ	225	35.348	83	0.600	1.200	2.130
3.007	S20	117.395	S21	117.315	Circ	525	26.264	330	0.600	2.130	2.295
3.008	S21	117.315	S22	117.200	Circ	525	32.641	283	0.600	2.295	0.965
3.009	S22	117.200	S23	117.100	Circ	900	25.356	254	0.600	0.590	0.690
3.010	S23	117.100	S24	117.006	Circ	750	13.218	140	0.600	0.840	0.744
3.011	S24	117.006	S25	116.999	Circ	900	6.828	948	0.600	0.594	0.601
1.009	S25	116.999	S26	116.937	Circ	900	18.544	303	0.600	0.601	0.663
1.010	S26	116.937	S27	116.900	Circ	900	21.341	569	0.600	0.663	0.700
1.011	S27	116.900	S28	116.870	Circ	900	14.833	497	0.600	0.700	0.730
1.012	S28	116.870	S29	115.810	Circ	450	19.784	19	0.600	1.180	1.540
1.013	S29	115.810	S46	115.510	Circ	675	85.326	284	0.600	1.315	1.615
9.000	S30	120.890	S31	120.460	Circ	225	32.048	75	0.600	1.278	1.249
9.001	S31	120.460	S32	119.820	Circ	225	46.356	72	0.600	1.249	1.237
9.002	S32	119.745	S33	119.595	Circ	300	10.191	68	0.600	1.237	1.222
9.003	S33	119.595	S34	118.955	Circ	300	45.666	71	0.600	1.222	1.216
9.004	S34	118.880	S35	118.650	Circ	375	14.651	64	0.600	1.216	1.242
9.005	S35	118.650	S36	118.510	Circ	375	12.867	92	0.600	1.242	1.205
9.006	S36	118.435	S38	118.315	Circ	450	13.193	110	0.600	1.205	1.232
10.000	S37	118.780	S38	118.540	Circ	225	17.344	72	0.600	1.251	1.232
9.007	S38	118.315	S39	118.117	Circ	450	33.110	167	0.600	1.232	1.301
9.008	S39	118.117	S40	117.995	Circ	450	19.451	160	0.600	1.301	1.389
9.009	S40	117.995	S41	116.697	Circ	450	52.447	40	0.600	1.389	1.734
9.010	S41	116.697	S42	116.596	Circ	450	22.641	224	0.600	1.734	1.551
9.011	S42	116.596	S43	116.345	Circ	450	28.525	114	0.600	1.551	1.467
9.012	S43	116.270	S44	116.070	Circ	525	24.515	123	0.600	1.467	1.314
9.013	S44	116.070	S45	115.890	Circ	525	15.209	84	0.600	1.314	1.385
9.014	S45	115.890	S46	115.660	Circ	525	11.566	50	0.600	1.385	1.615
1.014	S46	115.510	S47	115.258	Circ	675	11.230	45	0.600	1.615	0.841
1.015	S47	115.258	S48	114.960	Circ	675	7.024	24	0.600	0.841	1.036
1.016	S48	114.960	S49	114.875	Circ	675	36.793	431	0.600	1.036	0.754

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.017	S49	114.875	S50	114.826	Circ	675	24.098	500	0.600	0.754	0.799
1.018	S50	114.826	S61	114.800	Circ	675	13.208	500	0.600	0.799	0.825
11.000	S51	120.384	S52	120.100	Circ	225	19.944	70	0.600	1.200	1.200
11.001	S52	120.100	S53	119.625	Circ	225	28.729	60	0.600	1.200	1.255
11.002	S53	119.625	S54	118.996	Circ	225	53.719	85	0.600	1.255	1.250
11.003	S54	118.921	S56	118.160	Circ	300	45.271	59	0.600	1.250	1.262
12.000	S55	118.745	S56	118.235	Circ	225	45.001	88	0.600	1.262	1.262
11.004	S56	118.085	S57	117.023	Circ	375	51.584	49	0.600	1.262	1.534
11.005	S57	117.023	S59	115.396	Circ	375	69.333	43	0.600	1.534	1.409
13.000	S58	116.750	S59	115.546	Circ	225	41.195	34	0.600	1.234	1.409
11.006	S59	115.396	S60	115.240	Circ	375	14.392	92	0.600	1.409	0.685
11.007	S60	114.940	S61	114.800	Circ	675	29.193	209	0.600	0.685	0.825
1.019	S61	114.800	S62	114.520	Circ	225	7.815	28	0.600	1.275	1.555
1.020	S62	114.520	S63	114.330	Circ	225	17.635	93	0.600	1.555	0.449

Outfall Details

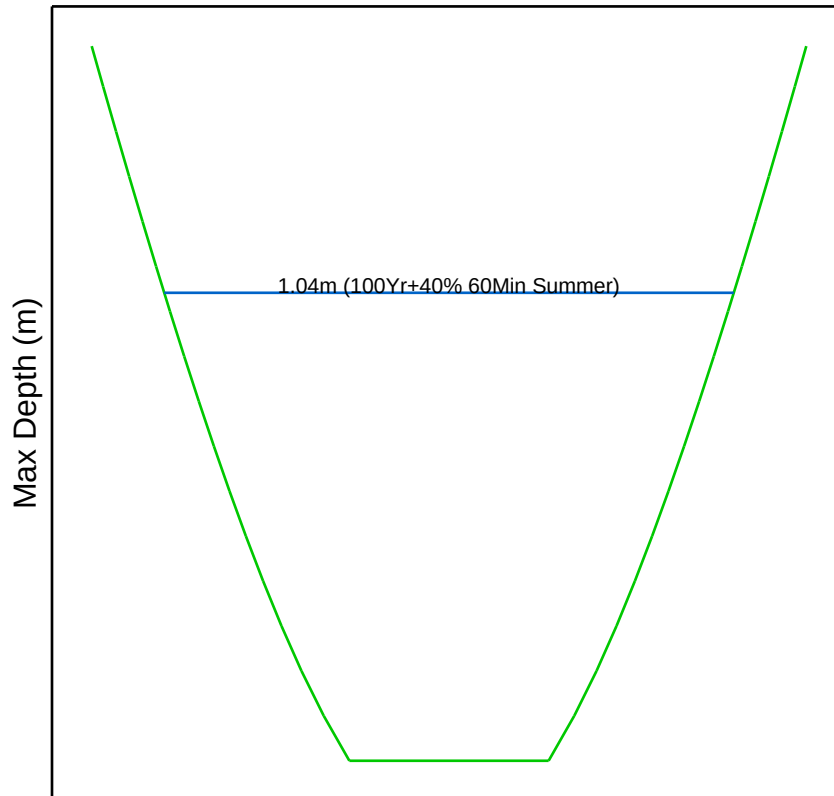
Outfall Manhole S63 : Free Discharge

Flow Control Details

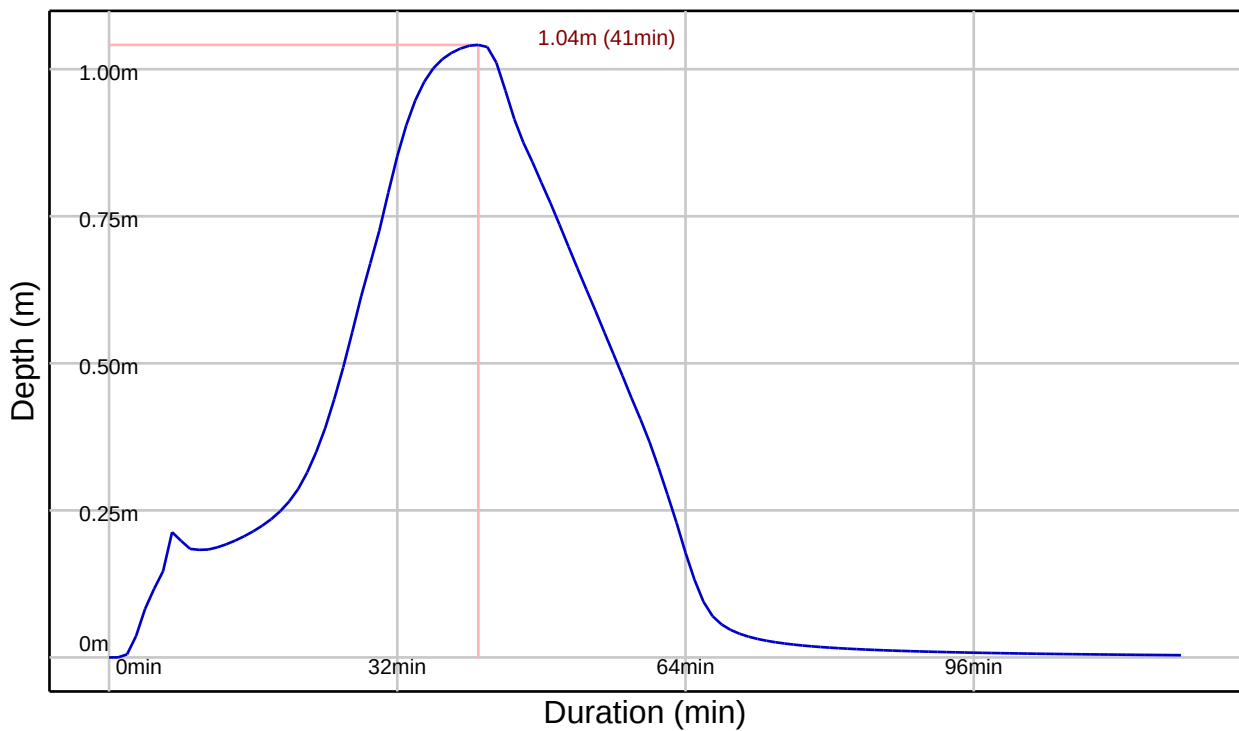
Pond Structure at Manhole S23

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
117.100	1.590	187.057	118.390	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S23



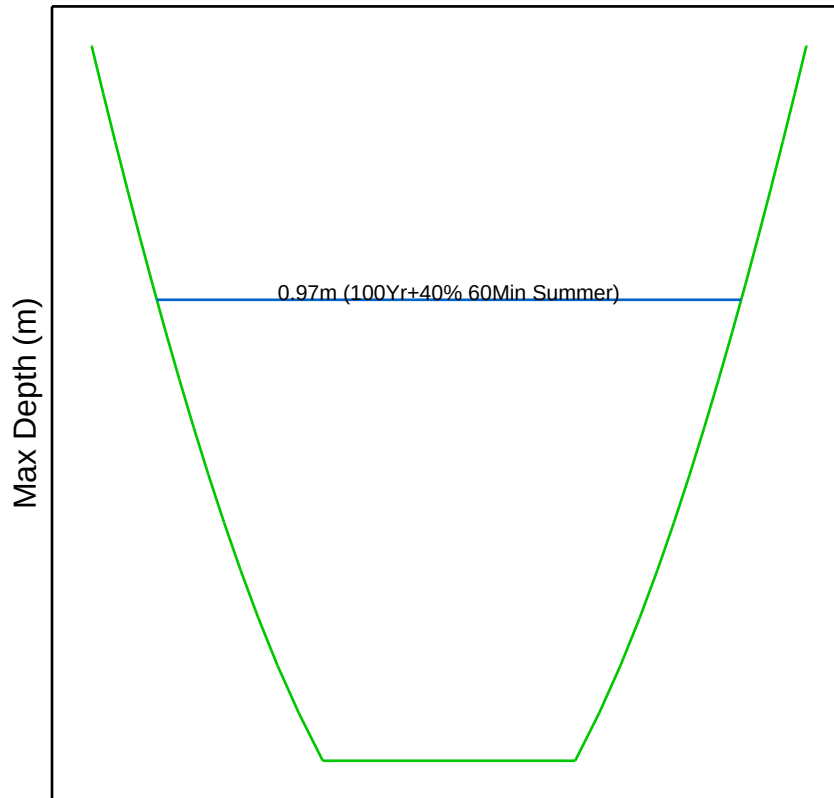
Pond 6 at S23 (100Yr+40% 60Min Summer)



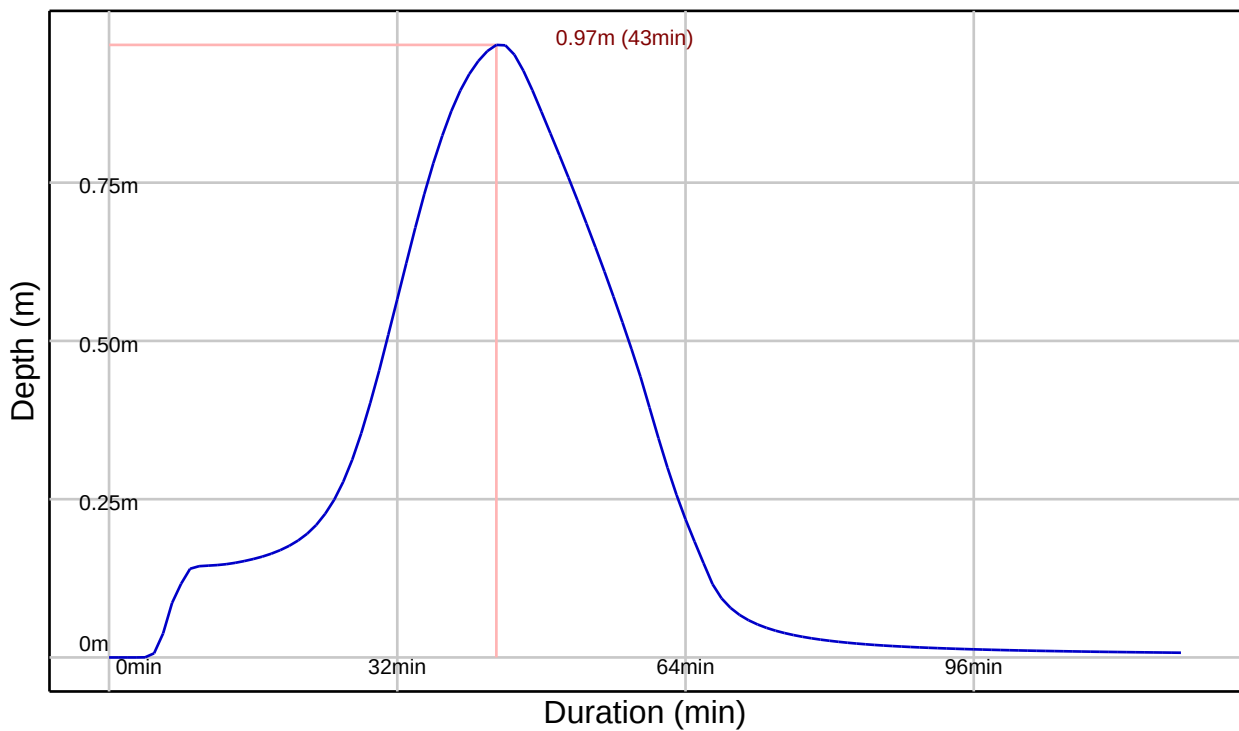
Pond Structure at Manhole S28

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
117.000	1.500	398.995	118.200	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S28



Pond 5 at S28 (100Yr+40% 60Min Summer)

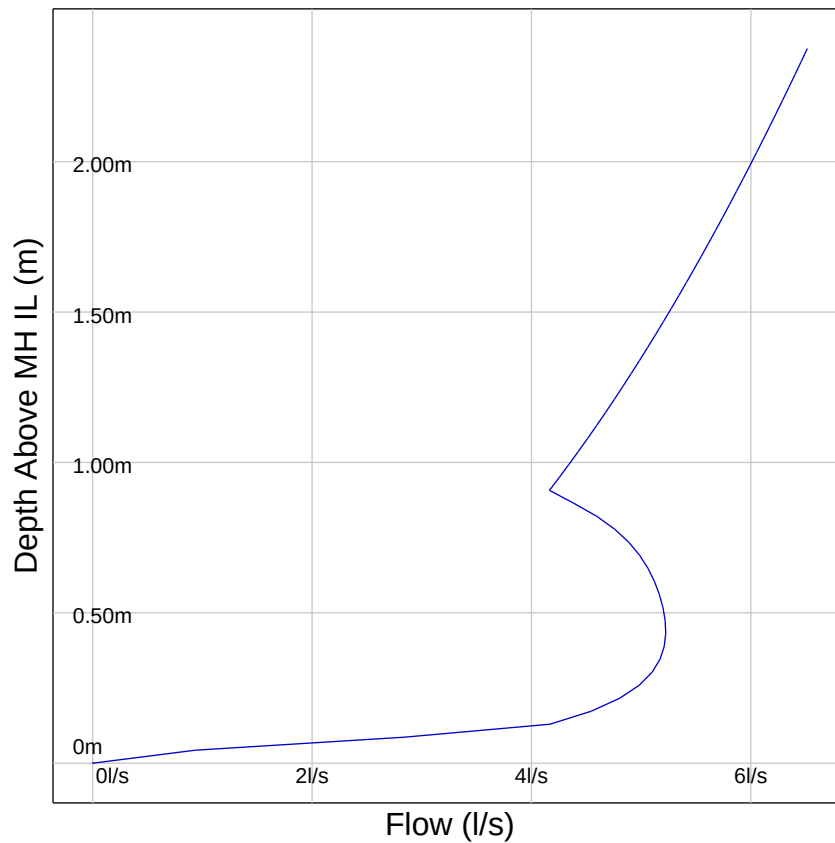


Controls within Manhole S46

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0101-6000-2000-6000	2.000	6.000	0.000	0.439	5.224	0.902	4.152

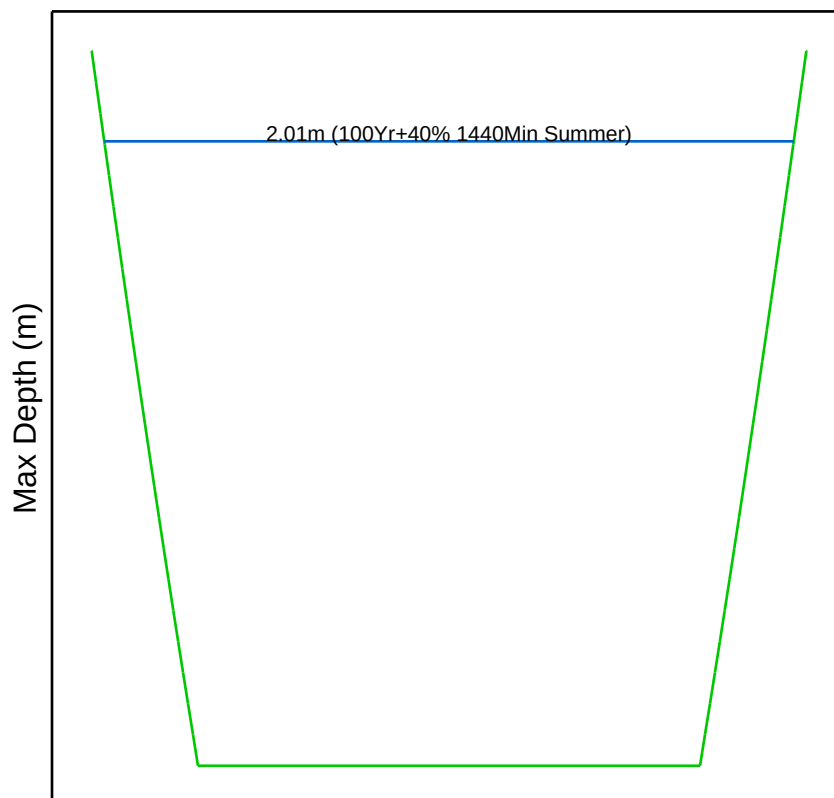
Hydro-Brake® Optimum Control from S46 to S47



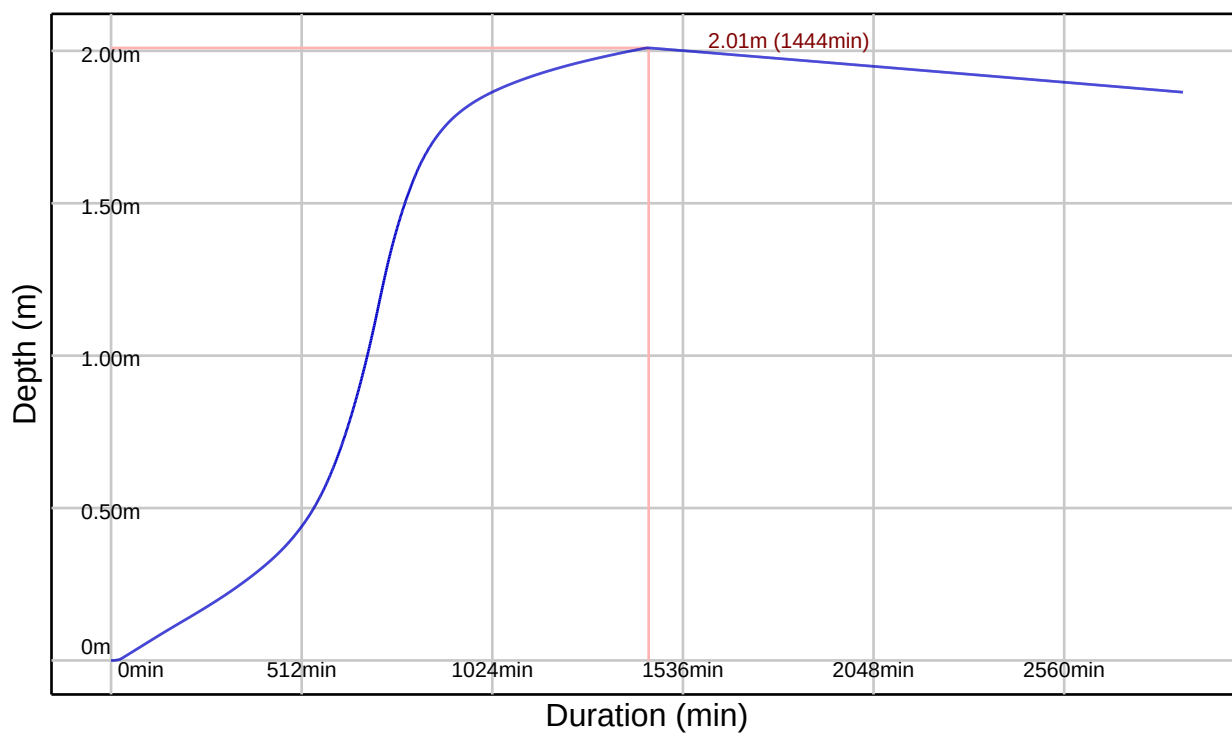
Pond Structure at Manhole S46

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
115.500	2.300	4534.000	117.500	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S46



Pond 3 at S46 (100Yr+40% 1440Min Summer)

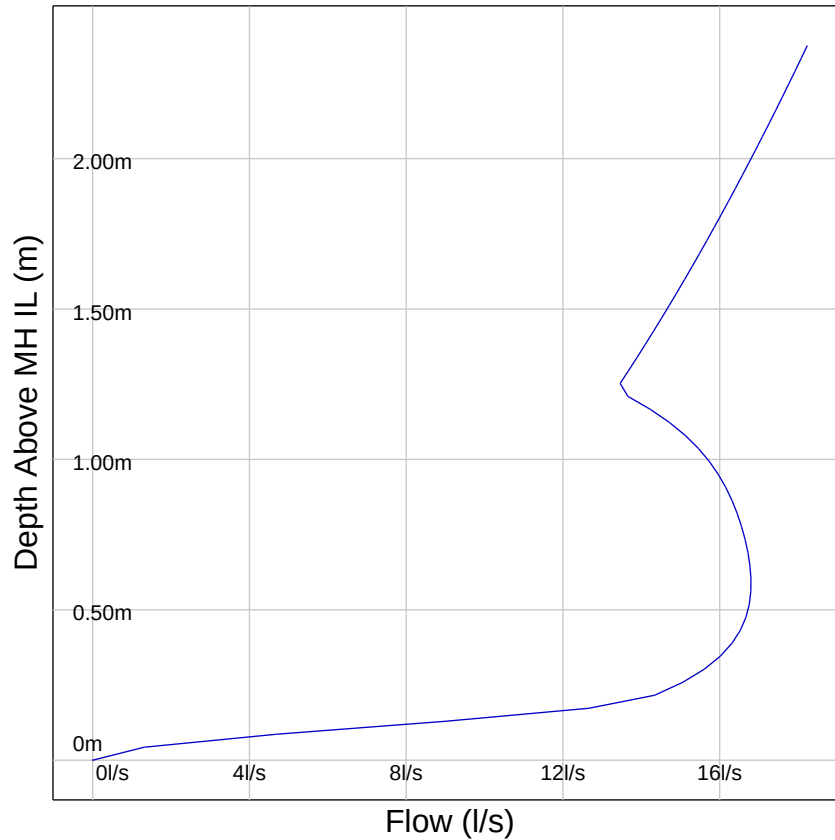


Controls within Manhole S61

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0169-1680-2000-1680	2.000	16.800	0.000	0.587	16.800	1.229	13.339

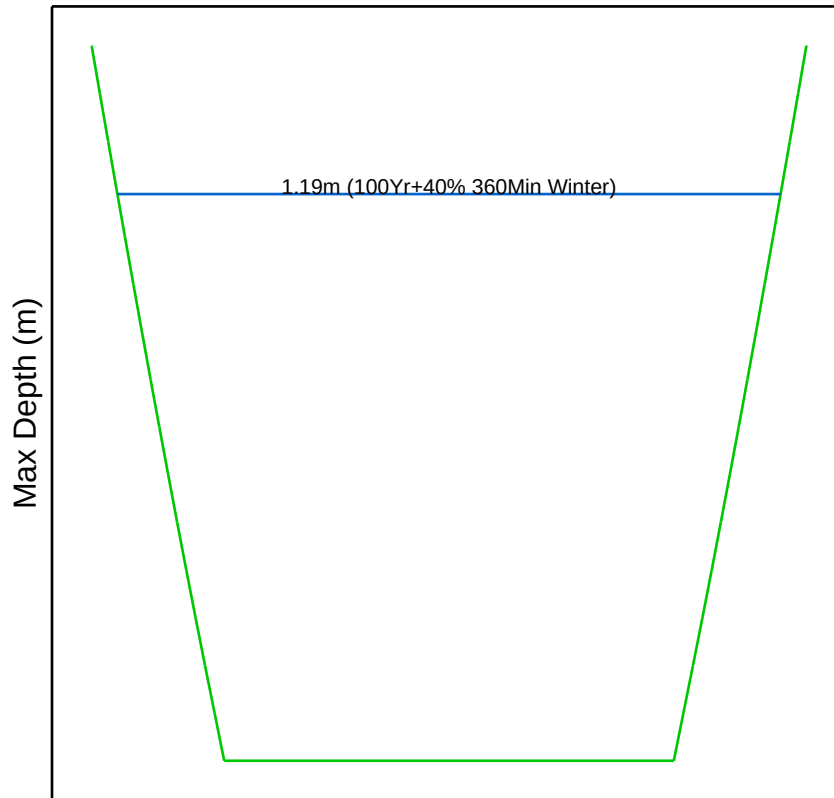
Hydro-Brake® Optimum Control from S61 to S62



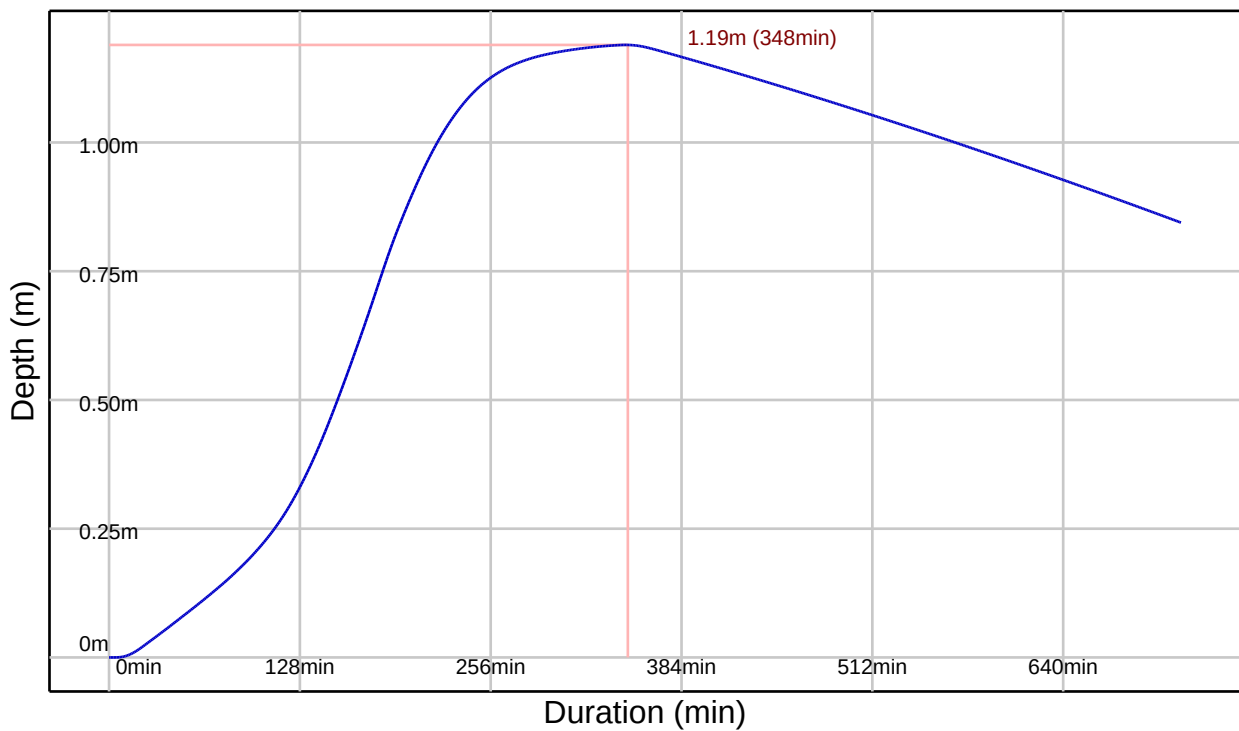
Pond Structure at Manhole S61

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
114.800	1.500	577.684	116.000	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S61



Pond 2 at S61 (100Yr+40% 360Min Winter)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (100, +40%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
100Yr+40% 60Min Winter	53.806	0.00	0.58	100Yr+40% 480Min Summer	11.426	0.00	0.71
100Yr+40% 60Min Summer	53.806	0.00	0.58	100Yr+40% 480Min Winter	11.426	0.00	0.70
100Yr+40% 120Min Winter	32.943	0.00	0.66	100Yr+40% 600Min Summer	9.514	0.00	0.70
100Yr+40% 120Min Summer	32.943	0.00	0.69	100Yr+40% 600Min Winter	9.514	0.00	0.69
100Yr+40% 180Min Winter	24.503	0.00	0.75	100Yr+40% 720Min Summer	8.166	0.00	0.69
100Yr+40% 180Min Summer	24.503	0.00	0.74	100Yr+40% 720Min Winter	8.166	0.00	0.68
100Yr+40% 240Min Winter	19.707	0.00	0.76	100Yr+40% 960Min Summer	6.409	0.00	0.66
100Yr+40% 240Min Summer	19.707	0.00	0.76	100Yr+40% 960Min Winter	6.409	0.00	0.66
100Yr+40% 360Min Winter	14.374	0.00	0.74	100Yr+40% 1440Min Winter	4.554	0.00	0.61
100Yr+40% 360Min Summer	14.374	0.00	0.74	100Yr+40% 1440Min Summer	4.554	0.00	0.63

Simulation Results

Return Period (yrs) + Climate Change (%):

100yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	60 min Summer	33	122.739	1.339	55.156		Flood Risk
S2	60 min Summer	33	122.216	1.471	117.092		Flood Risk
S3	60 min Summer	32	121.764	1.452	58.764	2.996	Flood
S4	60 min Summer	32	121.630	1.630	291.717	11.593	Flood
S5	60 min Summer	33	120.762	1.492	308.123		Flood Risk
S6	60 min Summer	33	119.951	1.066	365.803		Surcharged
S7	60 min Summer	33	119.499	1.084	400.776		Surcharged
S8	60 min Summer	33	119.012	0.922	451.386		Surcharged
S9	60 min Summer	34	118.615	0.840	566.961		Surcharged
S10	60 min Summer	36	118.230	0.775	530.515		Surcharged
S11	60 min Summer	32	123.389	1.419	87.273	1.161	Flood
S12	60 min Summer	34	122.648	0.828	32.134		Surcharged
S13	60 min Summer	34	122.534	1.139	149.631		Surcharged
S14	60 min Summer	34	121.628	1.098	202.251		Surcharged
S15	60 min Summer	34	121.514	1.155	71.734		Surcharged
S16	60 min Summer	34	121.274	1.429	308.340		Surcharged
S17	60 min Summer	34	121.021	1.506	345.296		Surcharged
S18	60 min Summer	34	120.499	1.614	404.214		Flood Risk
S19	60 min Summer	34	120.140	1.435	500.984		Flood Risk
HD01	60 min Summer	36	119.268	0.003	0.000		OK
HD02	60 min Summer	35	119.275	0.105	0.000		OK
HD03	60 min Summer	35	119.273	0.248	0.420		Surcharged
HD04	60 min Summer	34	119.395	1.150	29.192		Flood Risk
HD05	60 min Summer	35	119.331	1.216	25.654		Surcharged
HD06	60 min Summer	35	119.270	1.465	42.974		Surcharged
HD 07	60 min Summer	34	119.271	1.151	31.411		Flood Risk
S20	60 min Summer	35	119.141	1.746	600.511		Surcharged
S21	60 min Summer	35	118.675	1.359	602.818		Surcharged
S22	60 min Summer	40	118.160	0.960	498.320		Surcharged
S23	60 min Summer	41	118.141	1.041	467.694		Surcharged
S24	60 min Summer	41	118.125	1.119	470.039		Surcharged
S25	60 min Summer	41	118.122	1.124	858.404		Surcharged
S26	60 min Summer	42	118.072	1.135	816.334		Surcharged
S27	60 min Summer	42	118.021	1.121	817.280		Surcharged
S28	60 min Summer	43	117.968	0.968	751.685		Surcharged
S29	1440 min Summer	1449	117.509	1.699	0.479		Flood Risk
S30	60 min Summer	34	122.206	1.316	56.827		Flood Risk
S31	60 min Summer	34	121.799	1.339	72.425		Flood Risk
S32	60 min Summer	34	120.942	1.197	137.899		Surcharged
S33	60 min Summer	34	120.753	1.158	148.479		Surcharged
S34	60 min Summer	34	119.931	1.051	209.333		Surcharged
S35	60 min Summer	34	119.737	1.087	210.724		Surcharged
S36	60 min Summer	34	119.560	1.125	266.908		Surcharged
S37	60 min Summer	34	119.457	0.677	14.180		Surcharged
S38	60 min Summer	34	119.442	1.127	282.462		Surcharged
S39	60 min Summer	34	119.166	1.049	283.809		Surcharged
S40	60 min Summer	33	118.985	0.990	405.714		Surcharged
S41	60 min Summer	33	118.156	1.459	445.578		Surcharged
S42	60 min Summer	33	117.665	1.069	481.484		Surcharged
S43	1440 min Summer	1444	117.510	1.240	0.972		Surcharged
S44	1440 min Summer	1443	117.510	1.440	1.140		Surcharged
S45	1440 min Summer	1443	117.510	1.620	1.152		Flood Risk
S46	1440 min Summer	1442	117.510	2.010	6.312		Flood Risk
S47	360 min Winter	346	115.990	0.731	8.602		Surcharged
S48	360 min Winter	344	115.992	1.032	3.839		Surcharged
S49	360 min Winter	345	115.990	1.115	5.695		Surcharged
S50	360 min Winter	347	115.990	1.163	4.876		Surcharged
S51	60 min Summer	33	120.495	0.111	7.795		OK
S52	60 min Summer	33	120.494	0.394	37.092		Surcharged
S53	60 min Summer	33	120.343	0.718	77.610		Surcharged

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S54	60 min Summer	31	119.134	0.213	121.132		OK
S55	60 min Summer	32	119.464	0.719	80.738		Surcharged
S56	60 min Summer	33	118.391	0.306	256.351		OK
S57	60 min Summer	33	117.562	0.539	258.712		Surcharged
S58	60 min Summer	31	116.874	0.124	40.376		OK
S59	60 min Summer	31	116.449	1.053	436.235		Surcharged
S60	360 min Winter	347	115.989	1.049	9.456		Surcharged
S61	360 min Winter	347	115.989	1.189	14.329		Surcharged
S62	1440 min Winter	745	114.605	0.085	16.797		OK
S63	600 min Winter	1072	114.412	0.082	16.797		Outfall

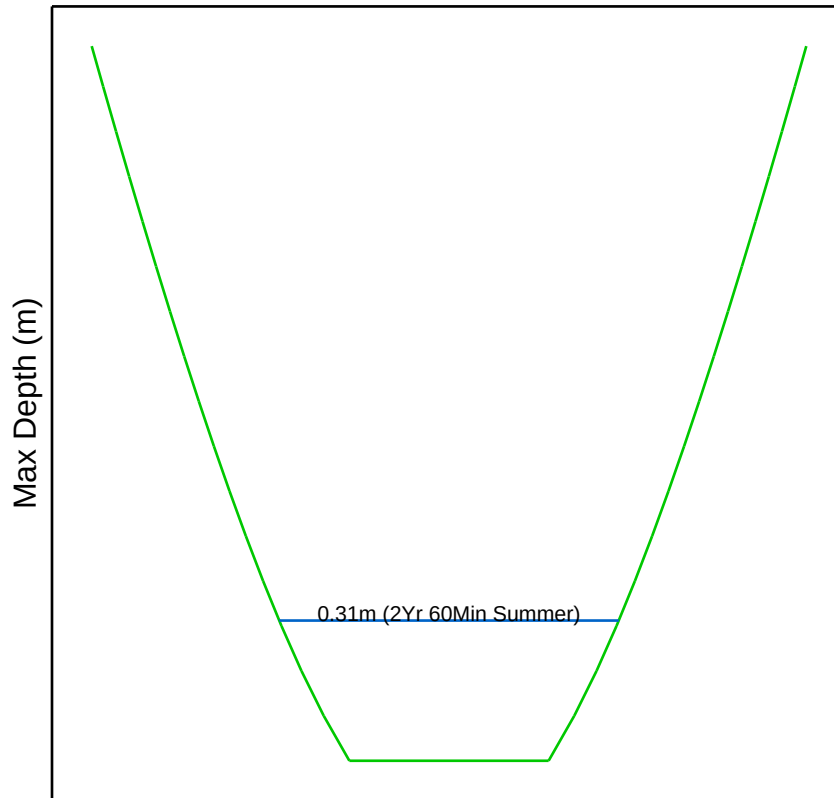
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	29	S1	S2	0.225	1.544	52.959	0.959	OK
1.001	60 min Summer	33	S2	S4	0.300	1.635	115.565	0.934	Surcharged
2.000	60 min Summer	30	S3	S4	0.225	1.235	49.110	1.085	OK
1.002	60 min Summer	31	S4	S5	0.375	2.134	235.687	1.193	Surcharged
1.003	60 min Summer	32	S5	S6	0.375	2.828	312.293	1.595	Surcharged
1.004	60 min Summer	32	S6	S7	0.450	2.298	365.487	0.946	OK
1.005	60 min Summer	33	S7	S8	0.450	2.508	398.922	1.335	OK
1.006	60 min Summer	33	S8	S9	0.525	2.072	448.527	1.255	OK
1.007	60 min Summer	32	S9	S10	0.600	2.090	590.955	1.156	Surcharged
1.008	60 min Summer	33	S10	S25	0.600	2.168	599.863	1.176	Surcharged
3.000	60 min Summer	31	S11	S13	0.225	1.919	76.319	1.481	OK
4.000	60 min Summer	31	S12	S13	0.225	1.246	39.270	0.702	OK
3.001	60 min Summer	30	S13	S14	0.300	2.230	151.446	1.095	Surcharged
3.002	60 min Summer	30	S14	S16	0.375	2.502	205.078	0.761	Surcharged
5.000	60 min Summer	30	S15	S16	0.300	1.407	82.537	0.934	Surcharged
3.003	60 min Summer	29	S16	S17	0.450	2.290	309.884	0.832	OK
3.004	60 min Summer	35	S17	S18	0.450	2.186	347.748	0.900	OK
3.005	60 min Summer	35	S18	S19	0.450	2.552	405.923	1.297	OK
3.006	60 min Summer	33	S19	S20	0.450	3.174	504.810	0.881	OK
6.000	60 min Summer	36	HD01	HD02	0.016	0.017	0.007	0.000	OK
6.001	60 min Summer	37	HD02	HD03	0.165	0.189	2.722	0.064	OK
6.002	60 min Summer	38	HD03	HD06	0.225	0.306	7.329	0.054	OK
7.000	60 min Summer	32	HD04	HD05	0.225	1.240	34.857	0.856	OK
7.001	60 min Summer	43	HD05	HD06	0.225	0.876	31.055	0.528	OK
6.003	60 min Summer	43	HD06	S20	0.225	1.301	51.748	1.272	OK
8.000	60 min Summer	32	HD 07	S20	0.225	1.121	36.643	0.643	OK
3.007	60 min Summer	33	S20	S21	0.525	2.854	617.796	2.328	OK
3.008	60 min Summer	33	S21	S22	0.525	2.820	610.543	2.128	OK
3.009	60 min Summer	35	S22	S23	0.900	1.391	604.600	0.484	OK
3.010	60 min Summer	37	S23	S24	0.750	1.186	523.830	0.502	Surcharged
3.011	60 min Summer	37	S24	S25	0.900	0.822	523.154	0.816	OK
1.009	60 min Summer	35	S25	S26	0.900	1.658	1054.976	0.925	OK
1.010	60 min Summer	35	S26	S27	0.900	1.652	1050.857	1.266	OK
1.011	60 min Summer	40	S27	S28	0.900	2.180	1046.719	1.178	OK
1.012	60 min Summer	37	S28	S29	0.450	4.553	724.058	0.964	OK
1.013	60 min Summer	38	S29	S46	0.675	2.047	716.549	1.294	Surcharged
9.000	60 min Summer	31	S30	S31	0.225	1.668	66.319	1.101	OK
9.001	60 min Summer	36	S31	S32	0.225	1.820	72.348	1.184	OK
9.002	60 min Summer	32	S32	S33	0.300	2.037	144.020	1.067	Surcharged
9.003	60 min Summer	35	S33	S34	0.300	2.170	149.554	1.136	Surcharged
9.004	60 min Summer	33	S34	S35	0.375	2.049	212.003	0.845	Surcharged
9.005	60 min Summer	35	S35	S36	0.375	2.097	212.788	1.020	Surcharged
9.006	60 min Summer	33	S36	S38	0.450	1.716	269.697	0.875	OK
10.000	60 min Summer	30	S37	S38	0.225	1.124	18.137	0.296	OK
9.007	60 min Summer	36	S38	S39	0.450	1.805	286.996	1.150	OK
9.008	60 min Summer	37	S39	S40	0.450	2.108	299.045	1.172	OK
9.009	60 min Summer	34	S40	S41	0.450	2.541	404.127	0.793	OK
9.010	60 min Summer	34	S41	S42	0.450	2.807	446.417	2.077	OK
9.011	180 min Summer	163	S42	S43	0.450	2.211	320.772	1.058	OK
9.012	120 min Summer	90	S43	S44	0.525	2.039	425.353	0.972	OK
9.013	60 min Summer	55	S44	S45	0.525	2.864	599.083	1.136	OK

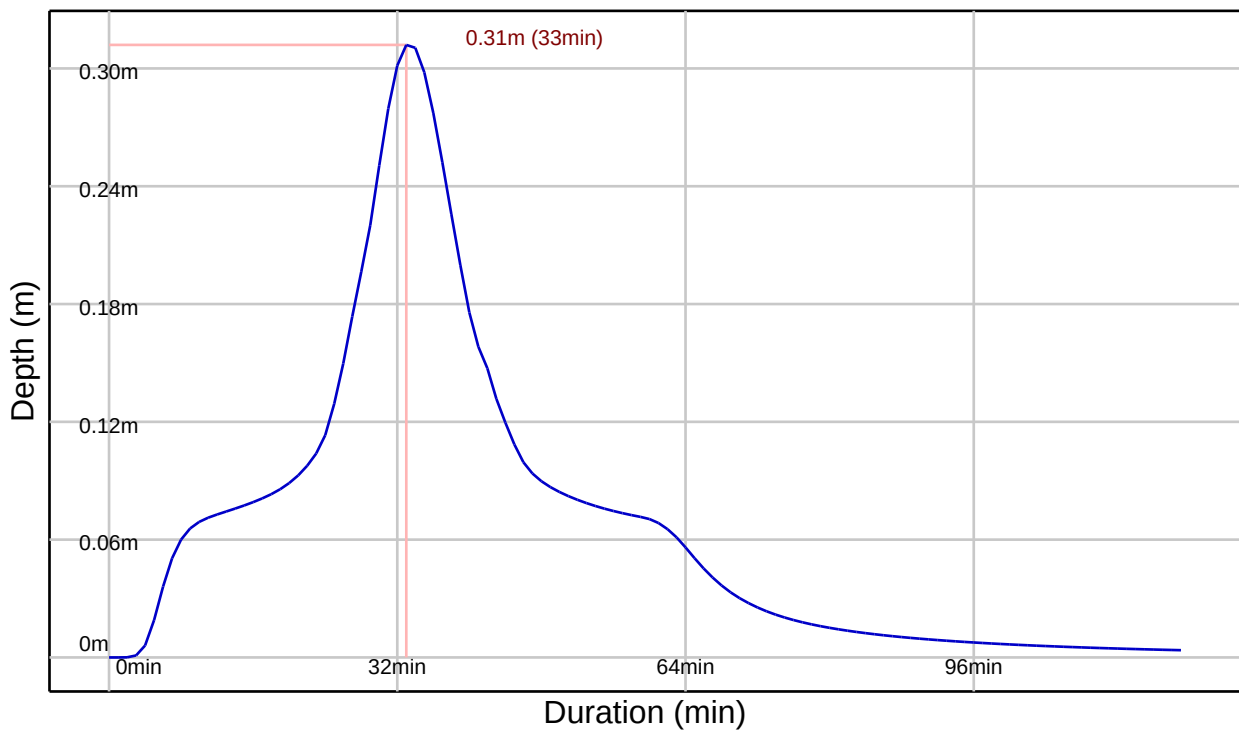
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
9.014	60 min Summer	45	S45	S46	0.525	3.325	598.639	0.874	OK
1.014	360 min Winter	339	S46	S47	0.580	1.149	16.836	0.012	OK
1.015	600 min Winter	1133	S47	S48	0.675	0.680	40.412	0.021	Surcharged
1.016	1440 min Winter	847	S48	S49	0.675	0.396	20.732	0.046	Surcharged
1.017	720 min Summer	1278	S49	S50	0.675	0.157	22.303	0.054	Surcharged
1.018	1440 min Winter	1597	S50	S61	0.675	0.136	32.613	0.078	Surcharged
11.000	60 min Summer	33	S51	S52	0.168	0.558	9.161	0.148	OK
11.001	60 min Summer	31	S52	S53	0.225	1.136	38.852	0.580	OK
11.002	60 min Summer	33	S53	S54	0.219	1.954	77.104	1.372	OK
11.003	60 min Summer	32	S54	S56	0.221	2.257	121.635	0.843	OK
12.000	60 min Summer	32	S55	S56	0.220	2.011	79.451	1.436	OK
11.004	60 min Summer	33	S56	S57	0.340	2.876	266.962	0.928	OK
11.005	60 min Summer	34	S57	S59	0.375	2.351	259.662	0.845	Surcharged
13.000	60 min Summer	31	S58	S59	0.175	1.463	39.879	0.447	OK
11.006	60 min Summer	31	S59	S60	0.375	3.909	431.696	2.074	Surcharged
11.007	60 min Summer	39	S60	S61	0.675	1.895	428.445	0.662	Surcharged
1.019	1440 min Winter	745	S61	S62	0.072	1.526	16.797	0.170	OK
1.020	1440 min Winter	745	S62	S63	0.084	1.243	16.797	0.312	OK

Pond Depth/Area Diagram at S23



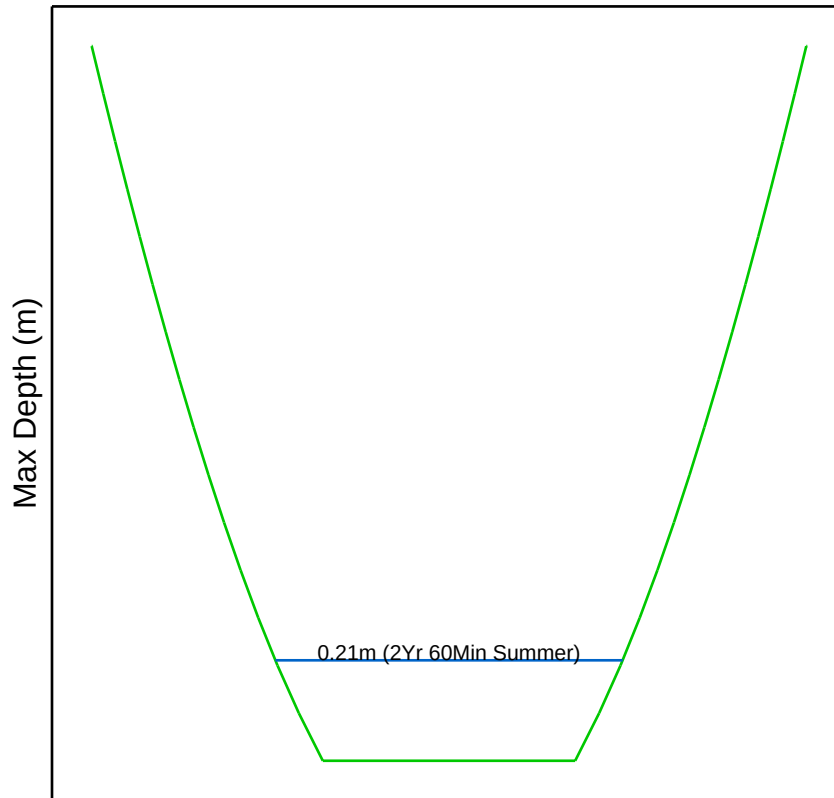
Pond 6 at S23 (2Yr 60Min Summer)



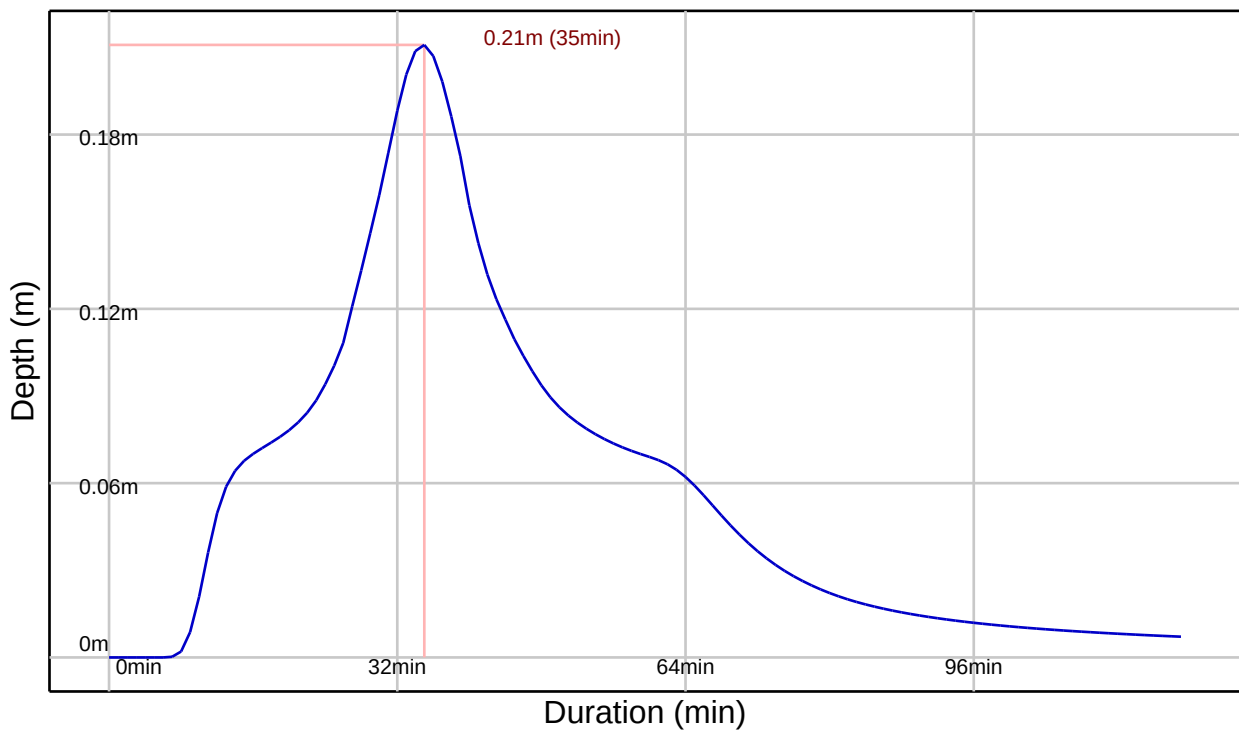
Pond Structure at Manhole S28

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
117.000	1.500	398.995	118.200	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S28



Pond 5 at S28 (2Yr 60Min Summer)

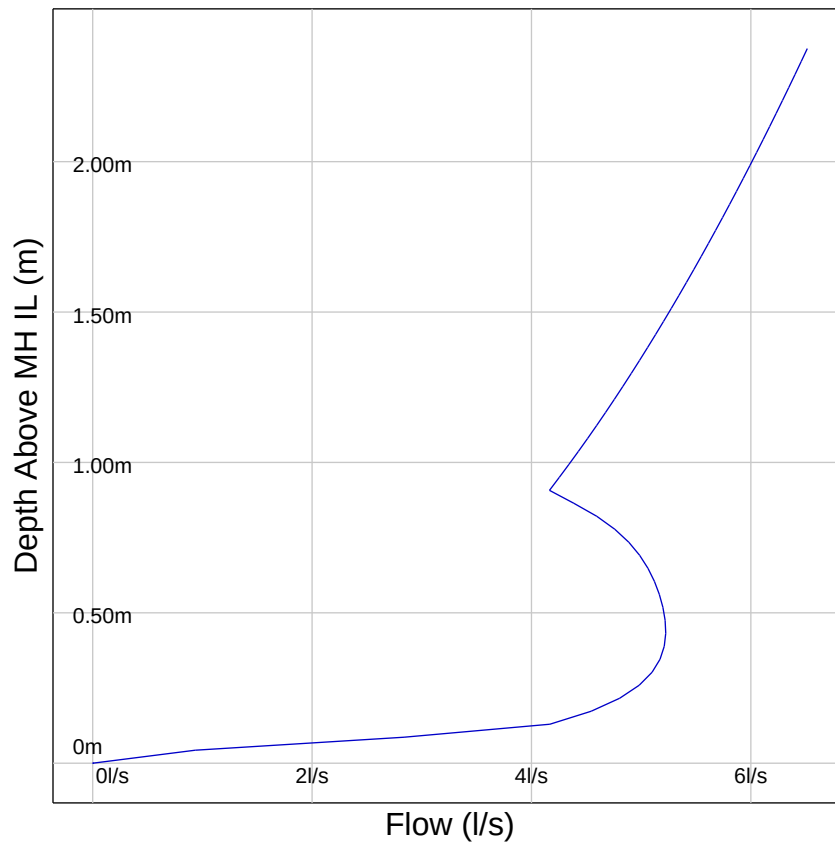


Controls within Manhole S46

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0101-6000-2000-6000	2.000	6.000	0.000	0.439	5.224	0.902	4.152

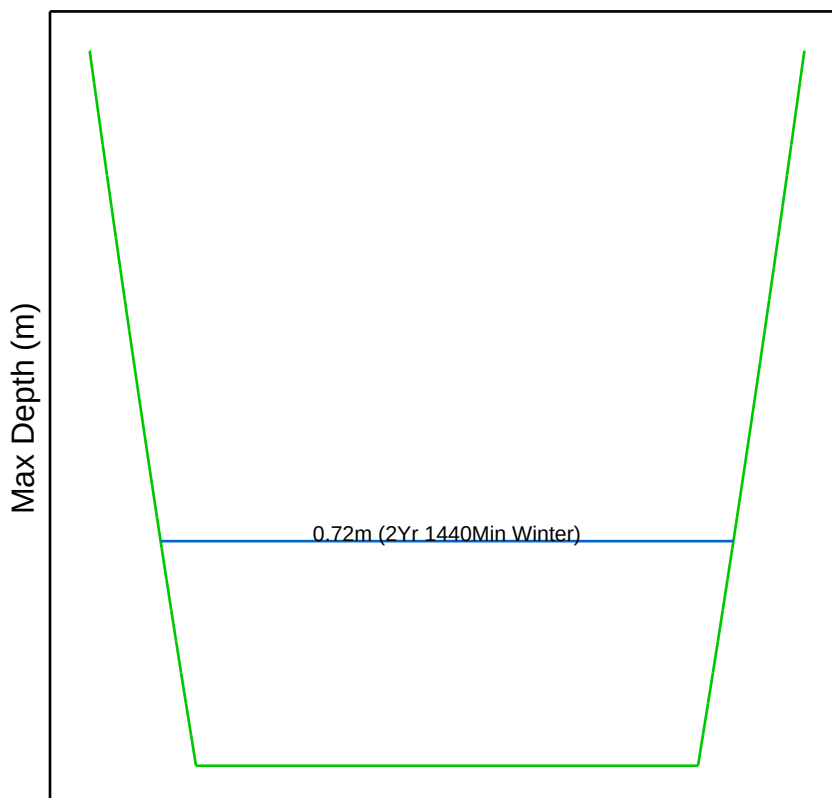
Hydro-Brake® Optimum Control from S46 to S47



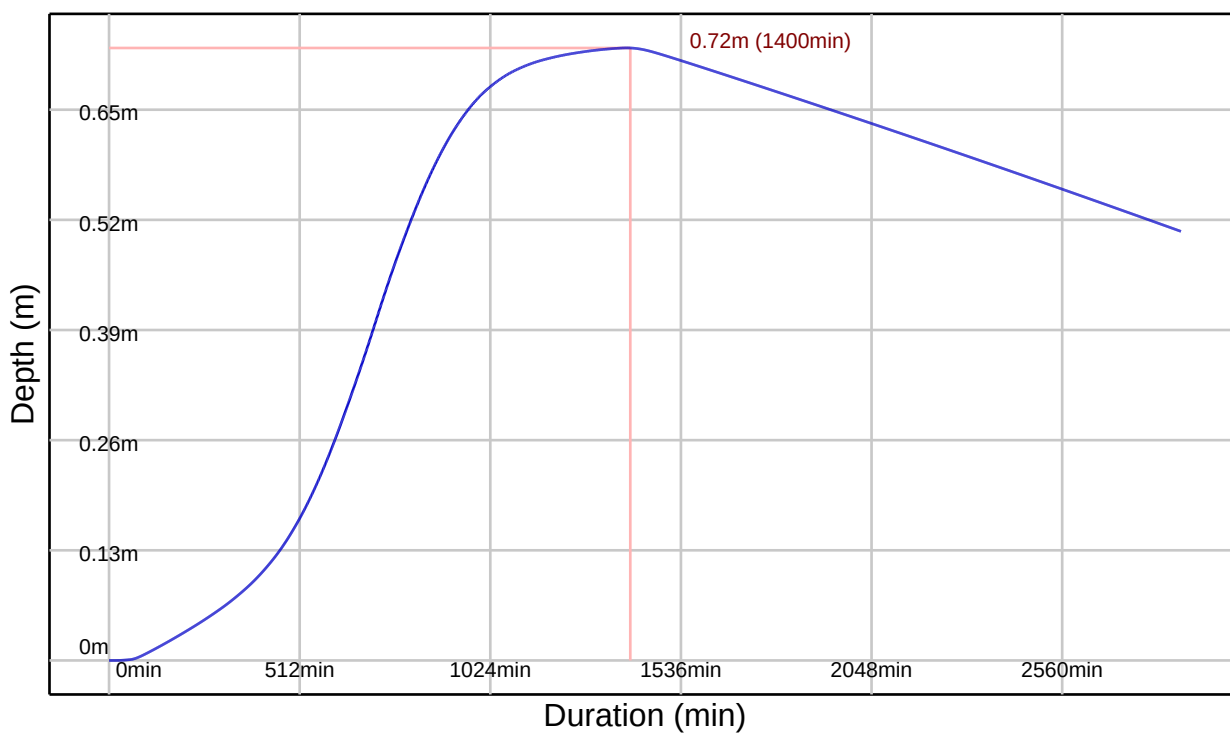
Pond Structure at Manhole S46

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
115.500	2.300	4534.000	117.500	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S46



Pond 3 at S46 (2Yr 1440Min Winter)

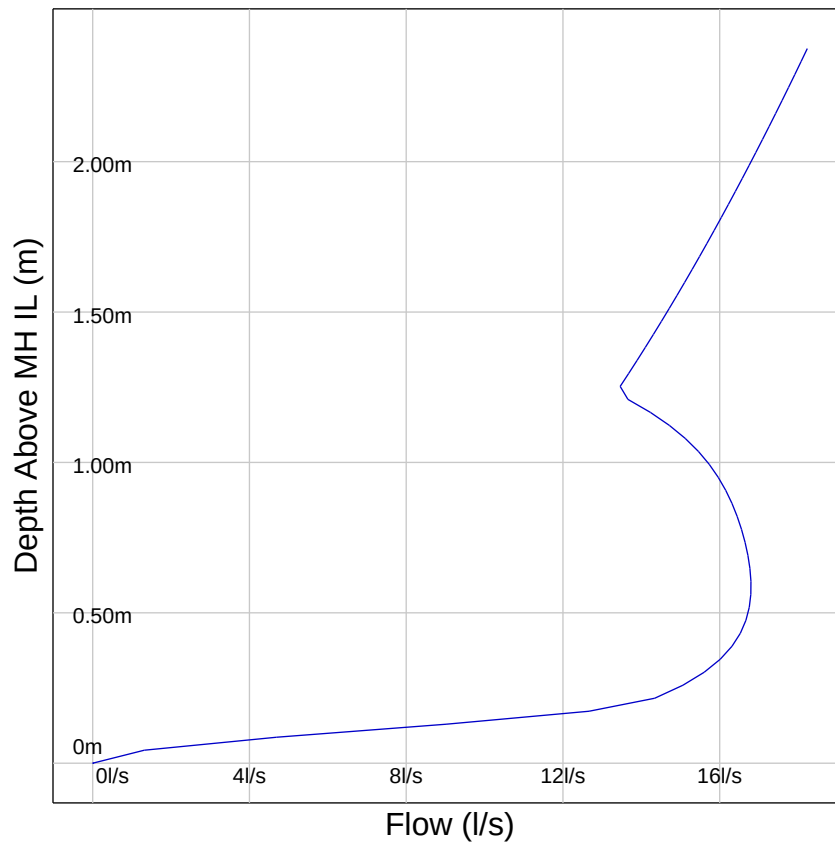


Controls within Manhole S61

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0169-1680-2000-1680	2.000	16.800	0.000	0.587	16.800	1.229	13.339

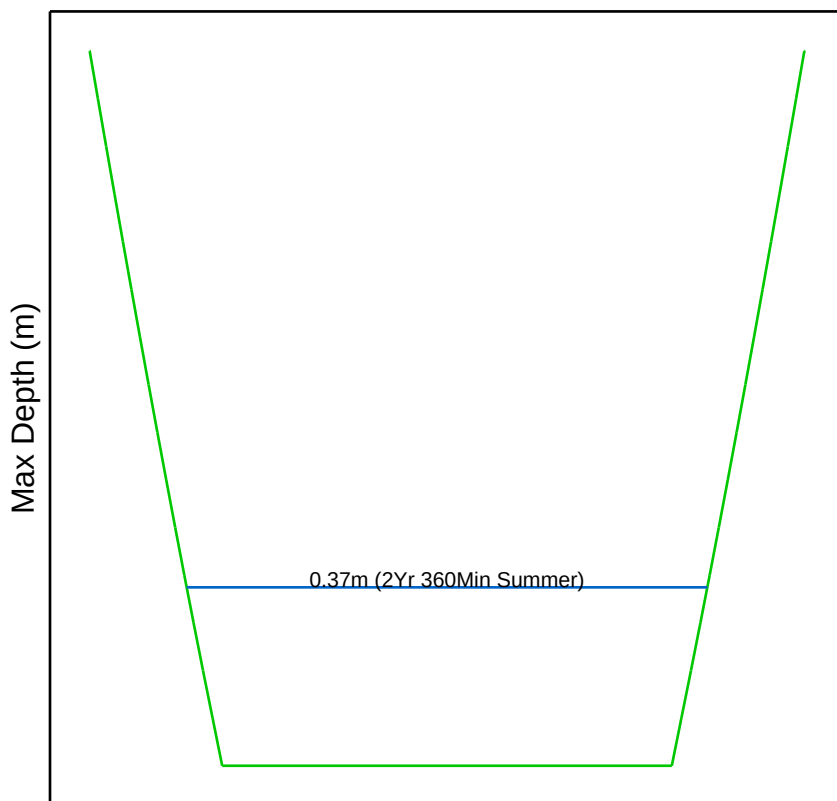
Hydro-Brake® Optimum Control from S61 to S62



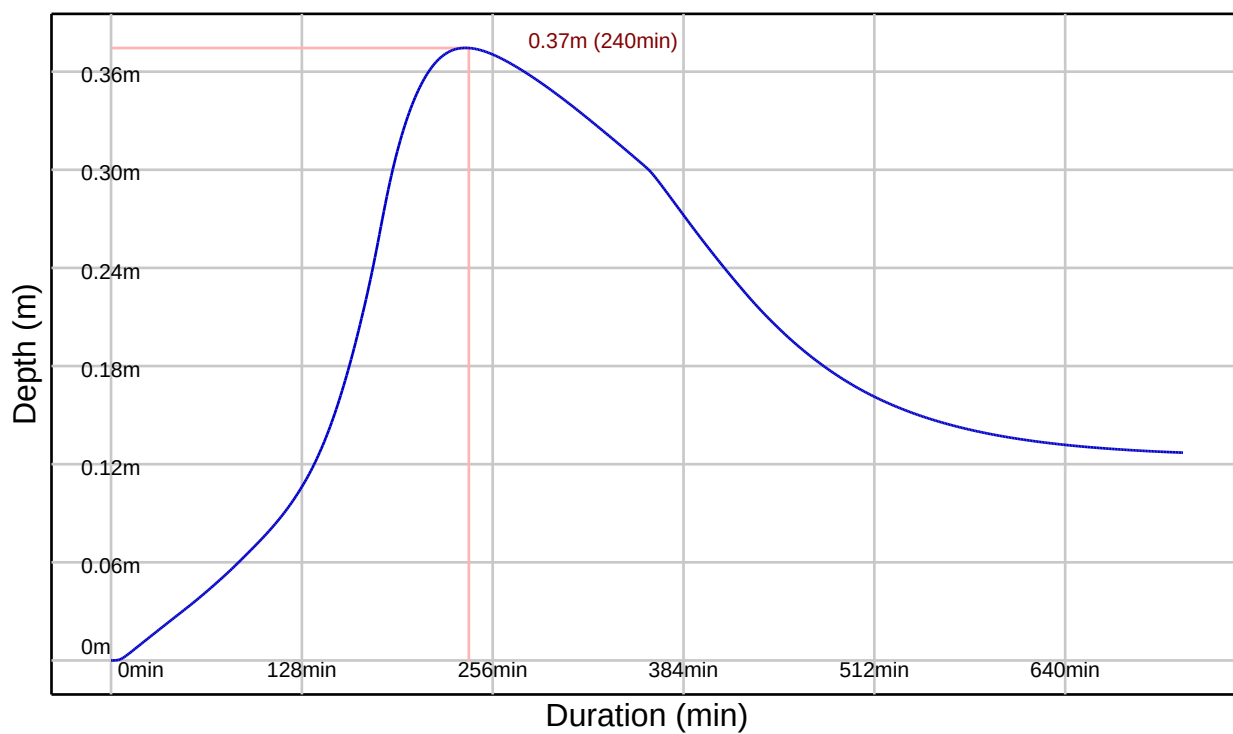
Pond Structure at Manhole S61

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
114.800	1.500	577.684	116.000	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S61



Pond 2 at S61 (2Yr 360Min Summer)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (2, +0%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
2Yr 60Min Winter	12.200	0.00	-0.16	2Yr 480Min Summer	3.497	0.00	-0.01
2Yr 60Min Summer	12.200	0.00	-0.16	2Yr 480Min Winter	3.497	0.00	-0.01
2Yr 120Min Winter	8.700	0.00	-0.05	2Yr 600Min Summer	2.939	0.00	-0.00
2Yr 120Min Summer	8.700	0.00	-0.05	2Yr 600Min Winter	2.939	0.00	0.00
2Yr 180Min Winter	6.982	0.00	-0.03	2Yr 720Min Summer	2.534	0.00	-0.00
2Yr 180Min Summer	6.982	0.00	-0.02	2Yr 720Min Winter	2.534	0.00	-0.00
2Yr 240Min Winter	5.705	0.00	-0.03	2Yr 960Min Summer	2.010	0.00	-0.01
2Yr 240Min Summer	5.705	0.00	-0.02	2Yr 960Min Winter	2.010	0.00	-0.01
2Yr 360Min Winter	4.304	0.00	-0.01	2Yr 1440Min Winter	1.451	0.00	-0.01
2Yr 360Min Summer	4.304	0.00	-0.02	2Yr 1440Min Summer	1.451	0.00	-0.01

Simulation Results

Return Period (yrs) + Climate Change (%):

2yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	60 min Summer	31	121.479	0.079	14.697		OK
S2	60 min Summer	31	120.848	0.103	31.842		OK
S3	60 min Summer	31	120.397	0.086	14.010		OK
S4	60 min Summer	31	120.162	0.162	79.771		OK
S5	60 min Summer	31	119.466	0.196	103.727		OK
S6	60 min Summer	31	119.055	0.170	117.671		OK
S7	60 min Summer	32	118.624	0.209	126.612		OK
S8	60 min Summer	32	118.321	0.231	140.664		OK
S9	60 min Summer	32	118.020	0.245	176.899		OK
S10	60 min Summer	32	117.708	0.253	182.090		OK
S11	60 min Summer	31	122.069	0.099	20.806		OK
S12	60 min Summer	31	121.884	0.064	9.965		OK
S13	60 min Summer	31	121.514	0.119	46.085		OK
S14	60 min Summer	31	120.653	0.123	62.724		OK
S15	60 min Summer	31	120.460	0.102	22.246		OK
S16	60 min Summer	31	120.003	0.158	95.345		OK
S17	60 min Summer	31	119.674	0.159	107.372		OK
S18	60 min Summer	31	119.085	0.200	125.669		OK
S19	60 min Summer	31	118.860	0.155	154.852		OK
HD01	60 min Winter	0	119.265	0.000	0.000		OK
HD02	60 min Winter	0	119.170	0.000	0.000		OK
HD03	60 min Winter	0	119.025	0.000	0.000		OK
HD04	60 min Summer	31	118.317	0.072	9.053		OK
HD05	60 min Summer	31	118.173	0.058	9.055		OK
HD06	60 min Summer	31	117.899	0.094	14.922		OK
HD 07	60 min Summer	31	118.182	0.062	9.741		OK
S20	60 min Summer	31	117.723	0.328	191.460		OK
S21	60 min Summer	32	117.617	0.302	191.007		OK
S22	60 min Summer	32	117.457	0.257	191.778		OK
S23	60 min Summer	33	117.412	0.312	187.011		OK
S24	60 min Summer	33	117.428	0.422	179.977		OK
S25	60 min Summer	33	117.426	0.427	359.041		OK
S26	60 min Summer	34	117.392	0.455	356.820		OK
S27	60 min Summer	34	117.351	0.451	358.389		OK
S28	60 min Summer	35	117.211	0.211	347.307		OK
S29	1440 min Winter	1391	116.223	0.413	3.565		OK
S30	60 min Summer	31	120.972	0.082	17.623		OK
S31	60 min Summer	31	120.552	0.092	21.824		OK
S32	60 min Summer	31	119.865	0.120	42.488		OK
S33	60 min Summer	31	119.716	0.121	45.501		OK
S34	60 min Summer	31	119.013	0.133	64.053		OK
S35	60 min Summer	31	118.796	0.146	63.988		OK
S36	60 min Summer	31	118.604	0.169	81.002		OK
S37	60 min Summer	31	118.820	0.040	4.397		OK
S38	60 min Summer	31	118.498	0.183	85.296		OK
S39	60 min Summer	32	118.294	0.178	84.908		OK
S40	60 min Summer	32	118.139	0.144	118.962		OK
S41	60 min Summer	32	116.947	0.250	130.528		OK
S42	60 min Summer	32	116.817	0.220	140.814		OK
S43	60 min Summer	32	116.486	0.216	146.361		OK
S44	60 min Summer	32	116.286	0.216	170.404		OK
S45	960 min Winter	705	116.229	0.339	4.694		OK
S46	1440 min Winter	1389	116.223	0.723	5.646		Surcharged
S47	960 min Winter	526	115.281	0.023	5.224		OK
S48	360 min Summer	237	115.175	0.215	5.207		OK
S49	360 min Summer	239	115.175	0.300	5.221		OK
S50	360 min Summer	238	115.175	0.348	5.218		OK
S51	60 min Summer	31	120.411	0.027	2.077		OK
S52	60 min Summer	31	120.158	0.058	10.184		OK
S53	60 min Summer	31	119.719	0.094	20.838		OK

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S54	60 min Summer	31	119.016	0.094	31.347		OK
S55	60 min Summer	31	118.837	0.091	19.248		OK
S56	60 min Summer	31	118.208	0.123	66.210		OK
S57	60 min Summer	32	117.138	0.115	65.354		OK
S58	60 min Summer	31	116.798	0.048	9.155		OK
S59	60 min Summer	32	115.597	0.201	106.868		OK
S60	360 min Summer	238	115.174	0.234	10.480		OK
S61	360 min Summer	238	115.175	0.375	15.711		Surcharged
S62	360 min Summer	238	114.603	0.083	15.747		OK
S63	360 min Summer	238	114.410	0.080	15.747		Outfall

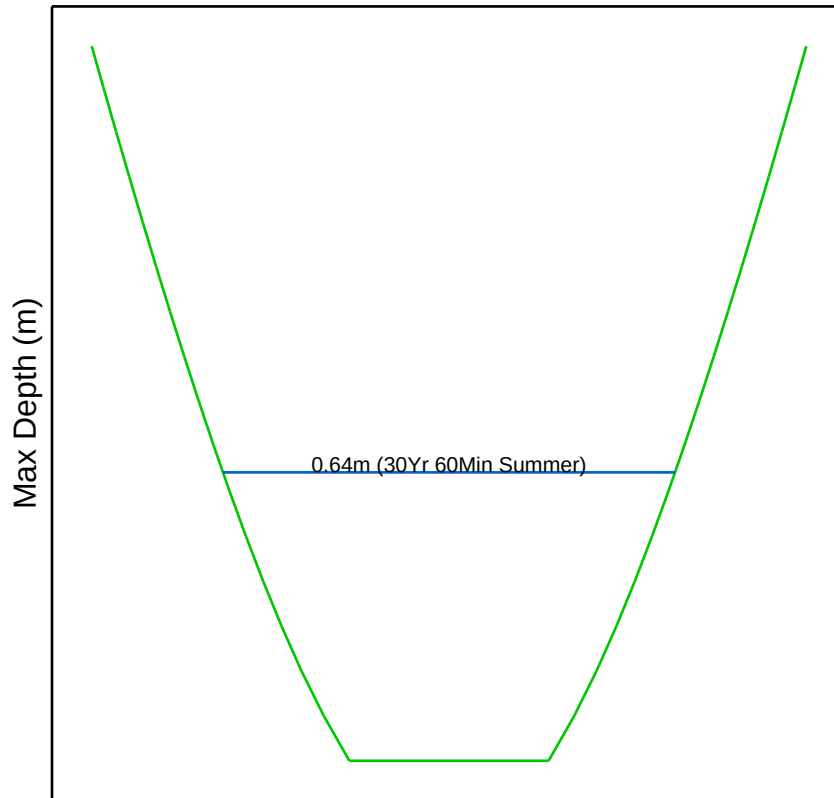
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	31	S1	S2	0.078	1.191	14.636	0.265	OK
1.001	60 min Summer	31	S2	S4	0.102	1.488	31.653	0.256	OK
2.000	60 min Summer	31	S3	S4	0.085	1.024	14.012	0.310	OK
1.002	60 min Summer	31	S4	S5	0.179	1.529	79.501	0.402	OK
1.003	60 min Summer	32	S5	S6	0.191	1.815	102.793	0.525	OK
1.004	60 min Summer	32	S6	S7	0.189	1.850	117.531	0.304	OK
1.005	60 min Summer	32	S7	S8	0.203	1.826	127.365	0.426	OK
1.006	60 min Summer	32	S8	S9	0.226	1.584	141.094	0.395	OK
1.007	60 min Summer	32	S9	S10	0.249	1.601	177.317	0.347	OK
1.008	60 min Summer	32	S10	S25	0.244	1.684	181.409	0.356	OK
3.000	60 min Summer	31	S11	S13	0.098	1.243	20.738	0.402	OK
4.000	60 min Summer	31	S12	S13	0.063	1.083	9.958	0.178	OK
3.001	60 min Summer	31	S13	S14	0.118	1.782	45.901	0.332	OK
3.002	60 min Summer	31	S14	S16	0.121	2.017	62.532	0.232	OK
5.000	60 min Summer	31	S15	S16	0.101	1.059	22.095	0.250	OK
3.003	60 min Summer	31	S16	S17	0.158	1.909	95.218	0.256	OK
3.004	60 min Summer	31	S17	S18	0.180	1.810	106.987	0.277	OK
3.005	60 min Summer	32	S18	S19	0.178	2.150	125.214	0.400	OK
3.006	60 min Summer	31	S19	S20	0.204	2.202	154.374	0.269	OK
6.000	60 min Winter	0	HD01	HD02	0.000	0.000	0.000	0.000	OK
6.001	60 min Winter	0	HD02	HD03	0.000	0.000	0.000	0.000	OK
6.002	60 min Summer	31	HD03	HD06	0.047	0.000	0.000	0.000	OK
7.000	60 min Summer	31	HD04	HD05	0.065	0.946	9.055	0.222	OK
7.001	60 min Summer	31	HD05	HD06	0.076	0.764	9.046	0.154	OK
6.003	60 min Summer	31	HD06	S20	0.092	0.963	14.794	0.364	OK
8.000	60 min Summer	31	HD 07	S20	0.062	1.090	9.726	0.171	OK
3.007	60 min Summer	32	S20	S21	0.315	1.410	191.007	0.720	OK
3.008	60 min Summer	32	S21	S22	0.280	1.638	191.778	0.668	OK
3.009	60 min Summer	33	S22	S23	0.284	1.234	191.317	0.153	OK
3.010	60 min Summer	34	S23	S24	0.367	0.895	185.221	0.178	OK
3.011	60 min Summer	34	S24	S25	0.425	0.649	186.059	0.290	OK
1.009	60 min Summer	33	S25	S26	0.441	1.155	357.856	0.314	OK
1.010	60 min Summer	34	S26	S27	0.453	1.117	358.389	0.432	OK
1.011	60 min Summer	34	S27	S28	0.330	1.708	359.358	0.404	OK
1.012	60 min Summer	35	S28	S29	0.299	3.125	350.187	0.466	OK
1.013	1440 min Winter	1391	S29	S46	0.544	0.550	33.167	0.060	OK
9.000	60 min Summer	31	S30	S31	0.087	1.244	17.634	0.293	OK
9.001	60 min Summer	31	S31	S32	0.092	1.424	21.694	0.355	OK
9.002	60 min Summer	31	S32	S33	0.121	1.598	42.465	0.315	OK
9.003	60 min Summer	31	S33	S34	0.120	1.712	45.224	0.344	OK
9.004	60 min Summer	31	S34	S35	0.140	1.708	63.988	0.255	OK
9.005	60 min Summer	31	S35	S36	0.141	1.680	63.795	0.306	OK
9.006	60 min Summer	31	S36	S38	0.176	1.403	80.900	0.263	OK
10.000	60 min Summer	31	S37	S38	0.040	0.920	4.396	0.072	OK
9.007	60 min Summer	31	S38	S39	0.180	1.431	84.983	0.341	OK
9.008	60 min Summer	32	S39	S40	0.161	1.670	85.391	0.335	OK
9.009	60 min Summer	32	S40	S41	0.197	1.786	119.365	0.234	OK
9.010	60 min Summer	32	S41	S42	0.235	1.560	131.197	0.610	OK
9.011	60 min Summer	32	S42	S43	0.214	1.892	141.143	0.466	OK
9.012	60 min Summer	32	S43	S44	0.216	1.750	146.463	0.335	OK
9.013	1440 min Summer	1429	S44	S45	0.245	1.356	23.836	0.045	OK

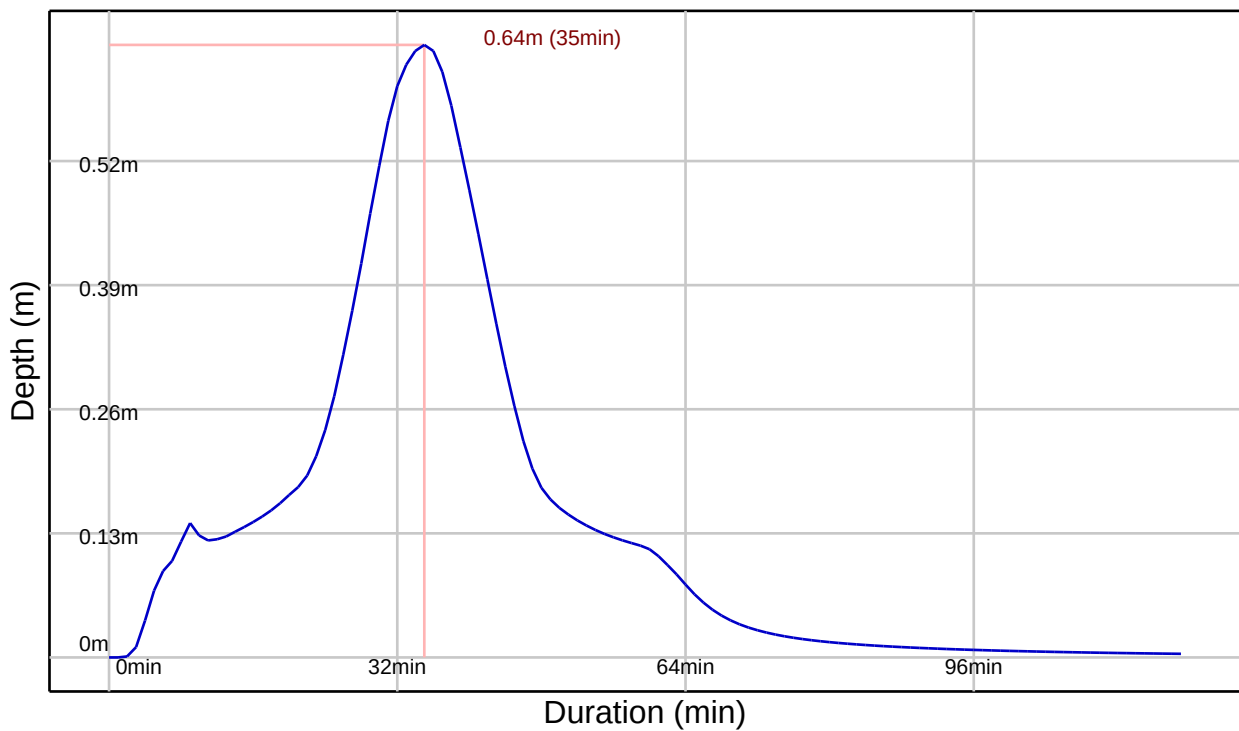
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
9.014	1440 min Summer	1429	S45	S46	0.431	1.188	76.353	0.112	OK
1.014	180 min Summer	130	S46	S47	0.026	1.149	5.224	0.004	OK
1.015	360 min Summer	237	S47	S48	0.119	0.700	5.224	0.003	OK
1.016	360 min Summer	372	S48	S49	0.257	0.394	5.395	0.012	OK
1.017	360 min Summer	372	S49	S50	0.324	0.219	5.803	0.014	OK
1.018	360 min Summer	372	S50	S61	0.361	0.130	6.048	0.015	OK
11.000	60 min Summer	31	S51	S52	0.043	0.394	2.076	0.033	OK
11.001	60 min Summer	31	S52	S53	0.076	0.864	10.176	0.152	OK
11.002	60 min Summer	31	S53	S54	0.093	1.322	20.600	0.367	OK
11.003	60 min Summer	31	S54	S56	0.094	1.655	31.094	0.216	OK
12.000	60 min Summer	31	S55	S56	0.091	1.283	19.217	0.347	OK
11.004	60 min Summer	31	S56	S57	0.119	2.195	66.076	0.230	OK
11.005	60 min Summer	32	S57	S59	0.158	1.484	65.810	0.214	OK
13.000	60 min Summer	31	S58	S59	0.050	1.458	9.181	0.103	OK
11.006	60 min Summer	32	S59	S60	0.193	1.879	107.848	0.518	OK
11.007	360 min Summer	238	S60	S61	0.304	0.904	44.173	0.068	OK
1.019	360 min Summer	238	S61	S62	0.070	1.487	15.747	0.159	OK
1.020	360 min Summer	238	S62	S63	0.082	1.204	15.747	0.292	OK

Pond Depth/Area Diagram at S23



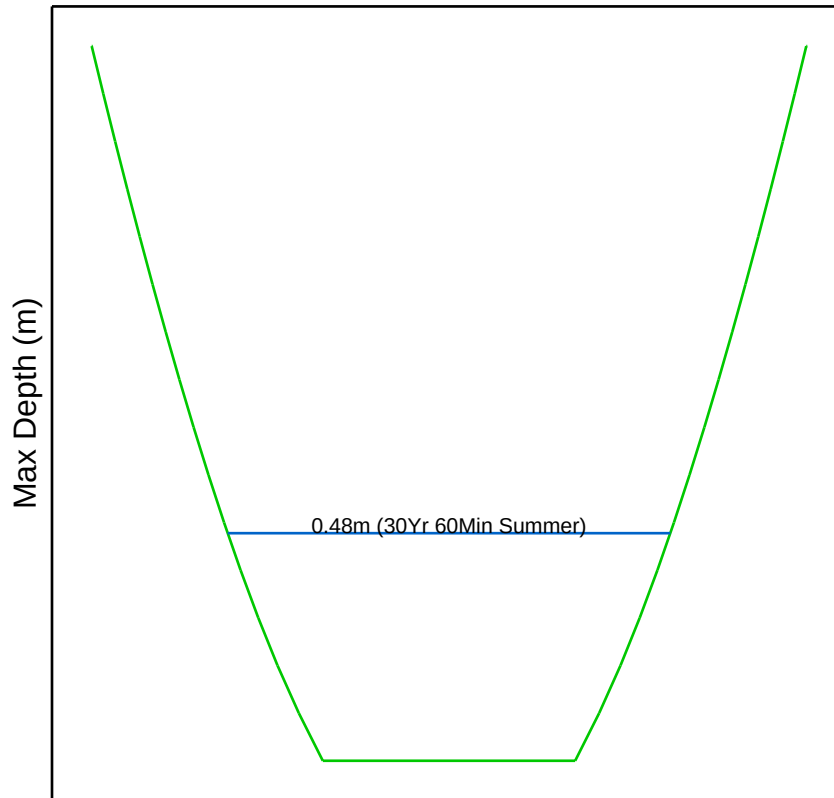
Pond 6 at S23 (30Yr 60Min Summer)



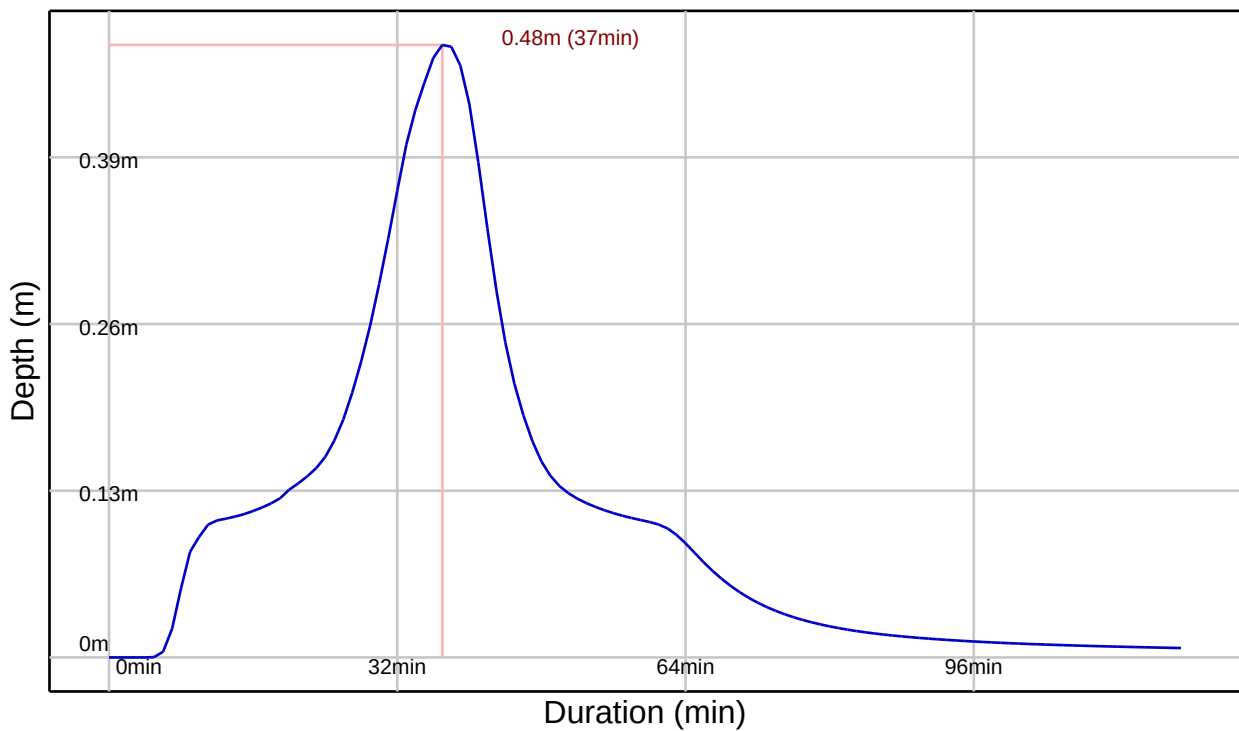
Pond Structure at Manhole S28

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
117.000	1.500	398.995	118.200	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S28



Pond 5 at S28 (30Yr 60Min Summer)

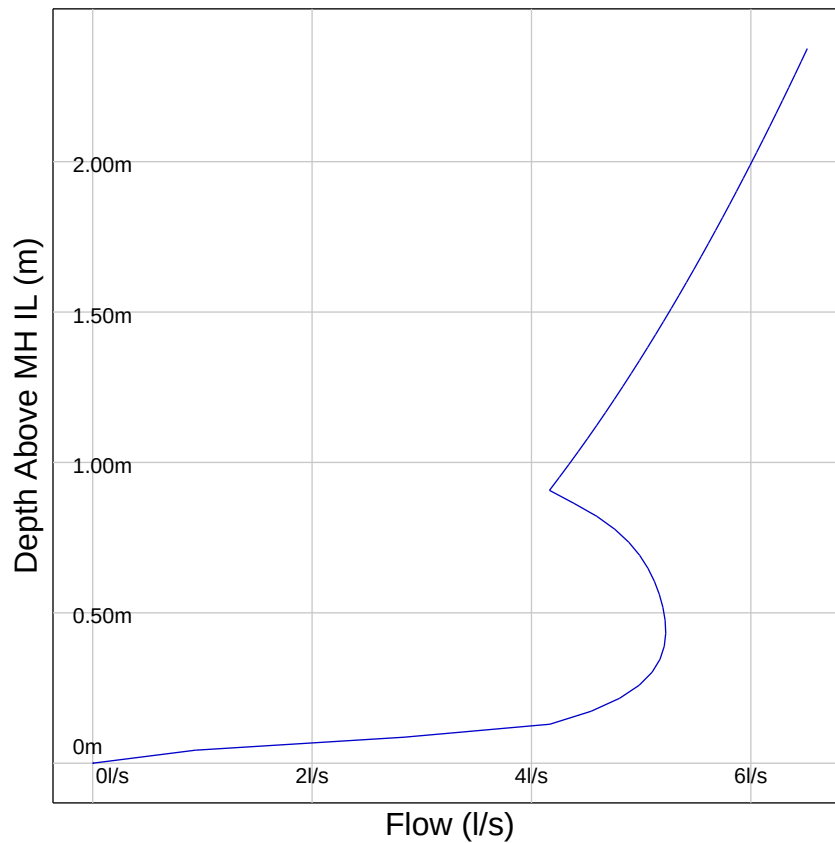


Controls within Manhole S46

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0101-6000-2000-6000	2.000	6.000	0.000	0.439	5.224	0.902	4.152

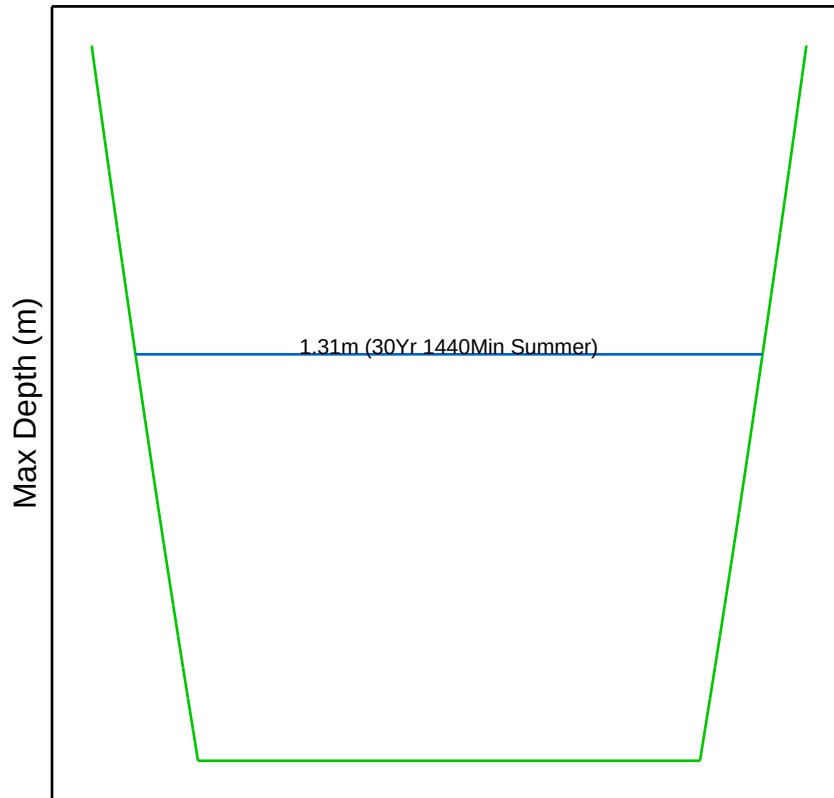
Hydro-Brake® Optimum Control from S46 to S47



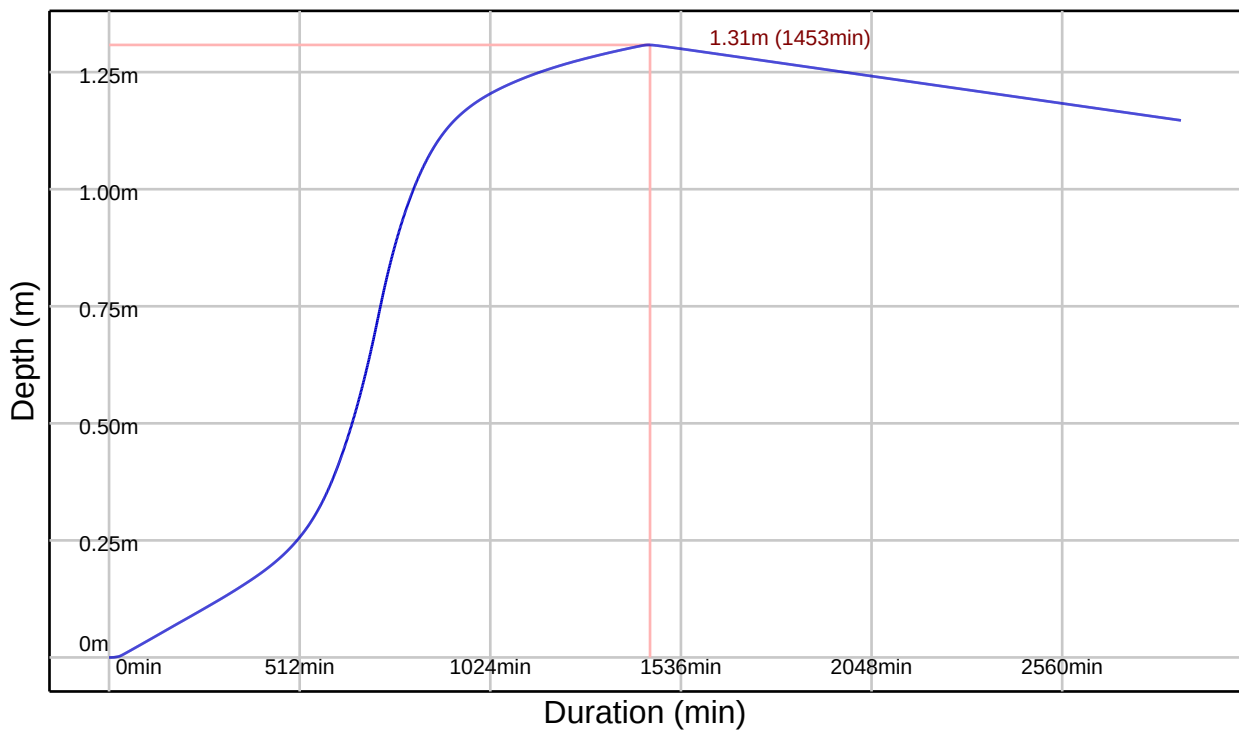
Pond Structure at Manhole S46

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
115.500	2.300	4534.000	117.500	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S46



Pond 3 at S46 (30Yr 1440Min Summer)

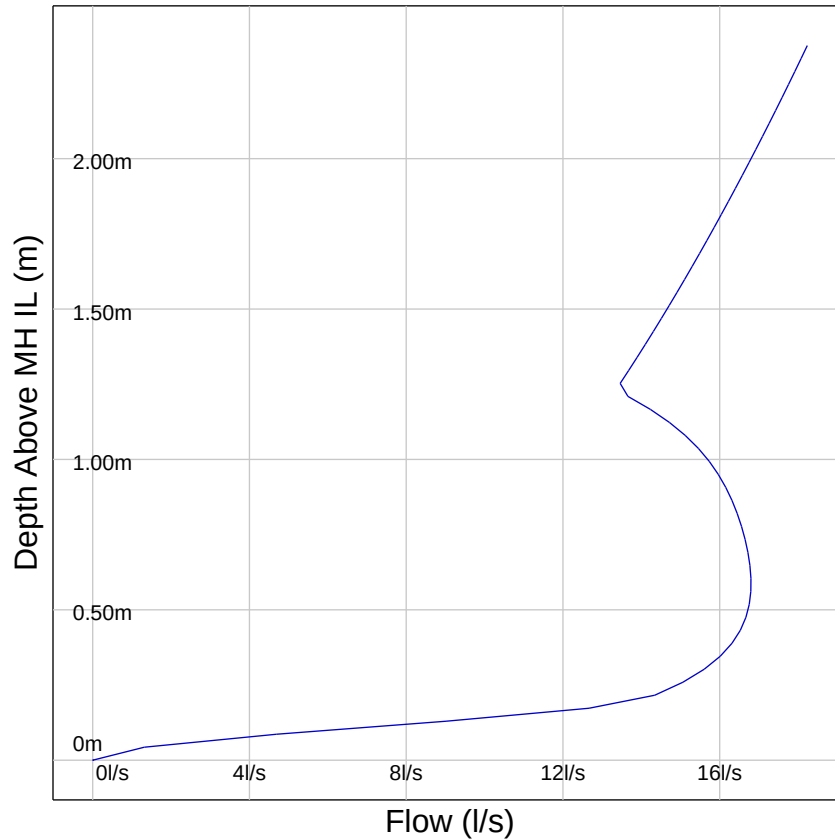


Controls within Manhole S61

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0169-1680-2000-1680	2.000	16.800	0.000	0.587	16.800	1.229	13.339

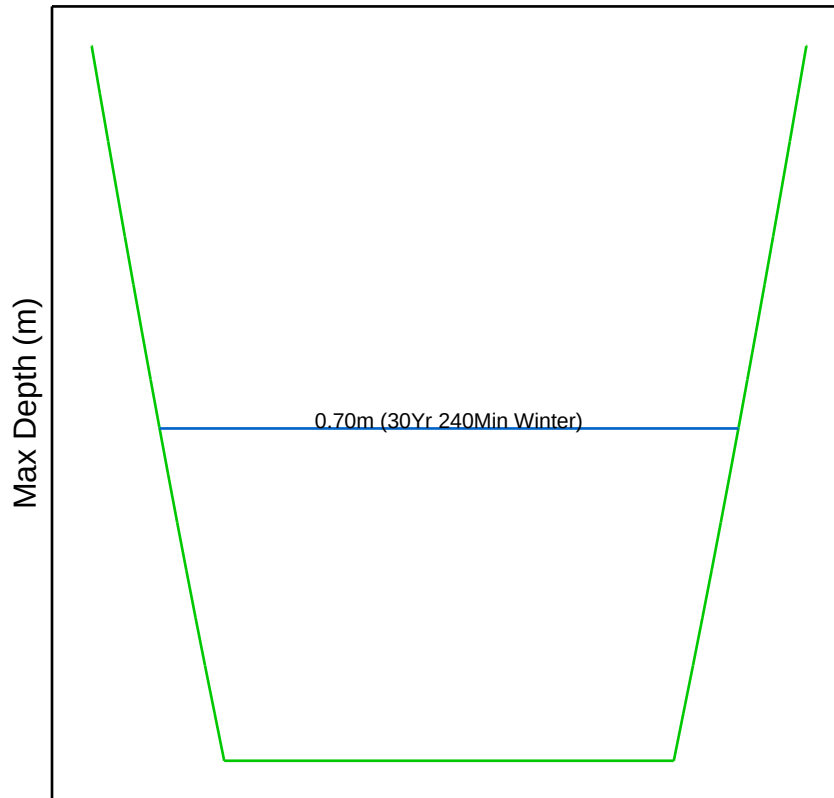
Hydro-Brake® Optimum Control from S61 to S62



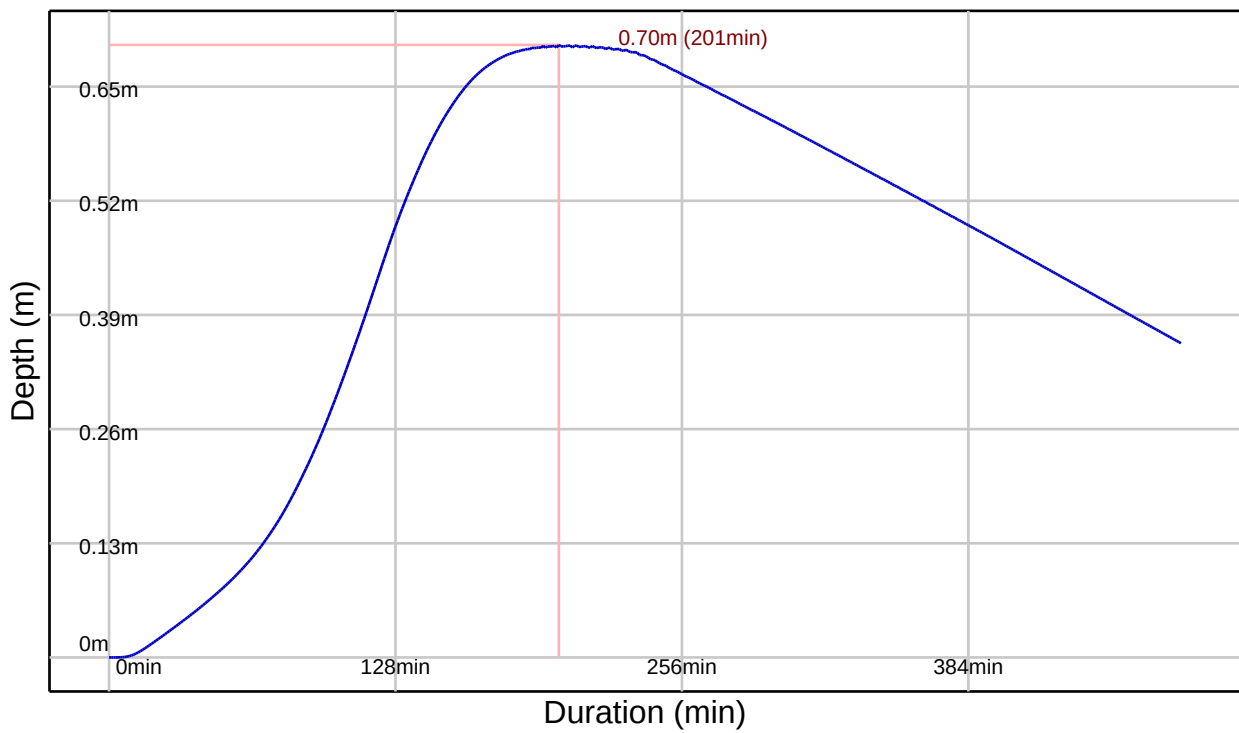
Pond Structure at Manhole S61

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
114.800	1.500	577.684	116.000	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S61



Pond 2 at S61 (30Yr 240Min Winter)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (30, +0%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
30Yr 60Min Winter	30.208	0.00	0.16	30Yr 480Min Summer	6.628	0.00	0.31
30Yr 60Min Summer	30.208	0.00	0.23	30Yr 480Min Winter	6.628	0.00	0.30
30Yr 120Min Winter	18.851	0.00	0.20	30Yr 600Min Summer	5.520	0.00	0.31
30Yr 120Min Summer	18.851	0.00	0.23	30Yr 600Min Winter	5.520	0.00	0.31
30Yr 180Min Winter	14.173	0.00	0.23	30Yr 720Min Summer	4.737	0.00	0.31
30Yr 180Min Summer	14.173	0.00	0.23	30Yr 720Min Winter	4.737	0.00	0.31
30Yr 240Min Winter	11.392	0.00	0.24	30Yr 960Min Summer	3.722	0.00	0.30
30Yr 240Min Summer	11.392	0.00	0.26	30Yr 960Min Winter	3.722	0.00	0.31
30Yr 360Min Winter	8.325	0.00	0.27	30Yr 1440Min Winter	2.658	0.00	0.27
30Yr 360Min Summer	8.325	0.00	0.30	30Yr 1440Min Summer	2.658	0.00	0.27

Simulation Results

Return Period (yrs) + Climate Change (%):

30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	60 min Summer	31	121.533	0.133	36.389		OK
S2	60 min Summer	31	120.915	0.170	78.935		OK
S3	60 min Summer	31	120.463	0.151	34.688		OK
S4	60 min Summer	32	120.396	0.396	188.838		Surcharged
S5	60 min Summer	31	119.793	0.523	246.984		Surcharged
S6	60 min Summer	31	119.189	0.304	278.749		OK
S7	60 min Summer	32	118.800	0.385	300.710		OK
S8	60 min Summer	32	118.500	0.410	335.617		OK
S9	60 min Summer	32	118.207	0.432	424.627		OK
S10	60 min Summer	32	117.893	0.438	436.857		OK
S11	60 min Summer	31	122.154	0.184	51.517		OK
S12	60 min Summer	31	121.922	0.102	24.674		OK
S13	60 min Summer	31	121.605	0.210	114.076		OK
S14	60 min Summer	31	120.739	0.209	155.263		OK
S15	60 min Summer	31	120.530	0.171	55.081		OK
S16	60 min Summer	31	120.120	0.275	236.624		OK
S17	60 min Summer	31	119.797	0.282	266.256		OK
S18	60 min Summer	31	119.254	0.369	311.970		OK
S19	60 min Summer	32	119.016	0.311	379.894		OK
HD01	60 min Winter	0	119.265	0.000	0.000		OK
HD02	60 min Winter	0	119.170	0.000	0.000		OK
HD03	60 min Winter	0	119.025	0.000	0.000		OK
HD04	60 min Summer	33	118.400	0.155	19.063		OK
HD05	60 min Summer	33	118.381	0.266	18.530		Surcharged
HD06	60 min Summer	33	118.350	0.545	30.591		Surcharged
HD 07	60 min Summer	33	118.339	0.219	20.512		OK
S20	60 min Summer	33	118.284	0.889	438.888		Surcharged
S21	60 min Summer	33	118.035	0.720	441.735		Surcharged
S22	60 min Summer	35	117.747	0.547	388.356		OK
S23	60 min Summer	35	117.742	0.642	388.842		OK
S24	60 min Summer	35	117.739	0.734	386.495		OK
S25	60 min Summer	35	117.738	0.739	758.512		OK
S26	60 min Summer	35	117.694	0.756	759.510		OK
S27	60 min Summer	36	117.646	0.746	729.874		OK
S28	60 min Summer	37	117.478	0.478	685.025		Surcharged
S29	1440 min Summer	1450	116.808	0.998	4.199		Surcharged
S30	60 min Summer	31	121.032	0.142	43.634		OK
S31	60 min Summer	31	120.625	0.165	54.013		OK
S32	60 min Summer	31	119.964	0.219	105.266		OK
S33	60 min Summer	31	119.811	0.216	112.723		OK
S34	60 min Summer	31	119.119	0.239	158.812		OK
S35	60 min Summer	31	118.909	0.259	158.678		OK
S36	60 min Summer	31	118.745	0.310	200.994		OK
S37	60 min Summer	31	118.842	0.062	10.888		OK
S38	60 min Summer	31	118.639	0.324	211.560		OK
S39	60 min Summer	32	118.421	0.304	210.049		OK
S40	60 min Summer	32	118.247	0.252	294.058		OK
S41	60 min Summer	32	117.348	0.651	322.182		Surcharged
S42	60 min Summer	32	117.095	0.498	342.492		Surcharged
S43	1440 min Summer	1458	116.811	0.541	0.774		Surcharged
S44	1440 min Summer	1456	116.810	0.740	0.730		Surcharged
S45	1440 min Summer	1453	116.809	0.919	1.219		Surcharged
S46	1440 min Summer	1449	116.808	1.308	4.564		Surcharged
S47	240 min Winter	195	115.509	0.250	4.287		OK
S48	240 min Winter	205	115.509	0.549	15.424		OK
S49	240 min Winter	207	115.504	0.629	4.366		OK
S50	240 min Winter	203	115.498	0.672	17.713		OK
S51	60 min Summer	31	120.427	0.043	5.143		OK
S52	60 min Summer	31	120.194	0.093	25.219		OK
S53	60 min Summer	31	119.794	0.169	51.614		OK

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S54	60 min Summer	31	119.079	0.158	77.763		OK
S55	60 min Summer	31	118.907	0.162	47.659		OK
S56	60 min Summer	31	118.292	0.206	164.369		OK
S57	60 min Summer	31	117.213	0.190	164.163		OK
S58	60 min Summer	31	116.826	0.076	22.668		OK
S59	60 min Summer	32	115.907	0.511	264.382		Surcharged
S60	240 min Winter	207	115.572	0.632	14.656		OK
S61	240 min Winter	201	115.498	0.698	51.891		Surcharged
S62	480 min Winter	333	114.606	0.086	16.797		OK
S63	480 min Winter	333	114.413	0.083	16.797		Outfall

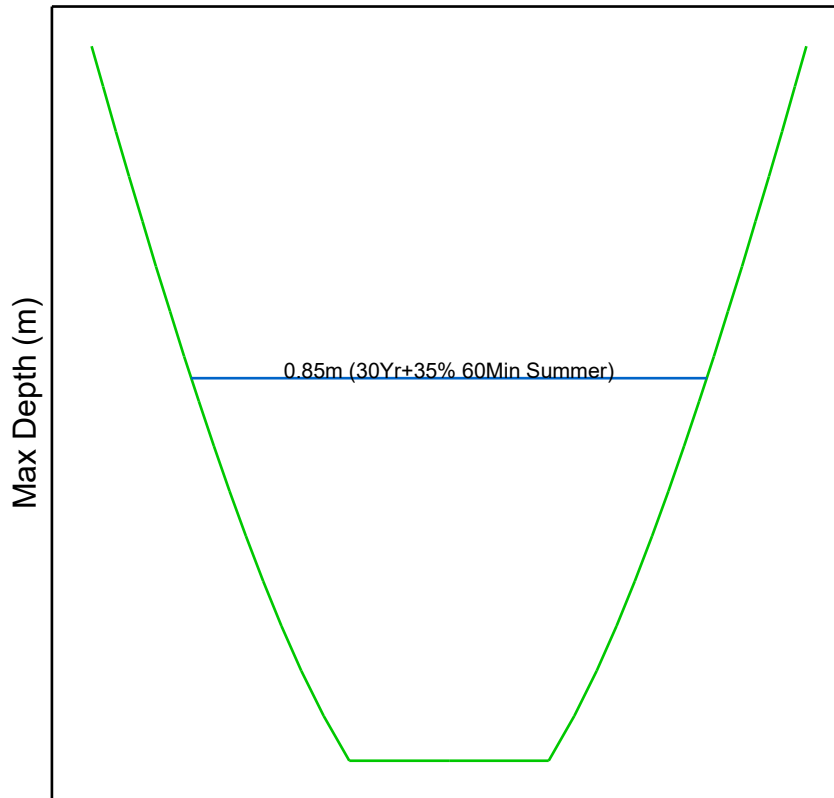
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	31	S1	S2	0.132	1.499	36.331	0.658	OK
1.001	60 min Summer	32	S2	S4	0.233	1.623	78.857	0.637	OK
2.000	60 min Summer	32	S3	S4	0.187	1.245	34.851	0.770	OK
1.002	60 min Summer	32	S4	S5	0.375	1.759	187.000	0.946	Surcharged
1.003	60 min Summer	32	S5	S6	0.360	2.217	241.632	1.234	OK
1.004	60 min Summer	32	S6	S7	0.344	2.146	278.236	0.720	OK
1.005	60 min Summer	32	S7	S8	0.368	2.177	302.703	1.013	OK
1.006	60 min Summer	32	S8	S9	0.396	1.919	336.017	0.940	OK
1.007	60 min Summer	32	S9	S10	0.435	1.938	425.046	0.831	OK
1.008	60 min Summer	32	S10	S25	0.418	2.075	436.263	0.855	OK
3.000	60 min Summer	31	S11	S13	0.181	1.501	51.288	0.995	OK
4.000	60 min Summer	31	S12	S13	0.119	1.239	24.684	0.441	OK
3.001	60 min Summer	31	S13	S14	0.205	2.204	113.608	0.822	OK
3.002	60 min Summer	31	S14	S16	0.204	2.528	155.130	0.575	OK
5.000	60 min Summer	31	S15	S16	0.169	1.338	54.956	0.622	OK
3.003	60 min Summer	31	S16	S17	0.279	2.287	236.163	0.634	OK
3.004	60 min Summer	31	S17	S18	0.326	2.156	265.714	0.688	OK
3.005	60 min Summer	32	S18	S19	0.340	2.500	310.091	0.991	OK
3.006	60 min Summer	32	S19	S20	0.381	2.671	381.118	0.665	OK
6.000	60 min Winter	0	HD01	HD02	0.000	0.000	0.000	0.000	OK
6.001	60 min Winter	0	HD02	HD03	0.000	0.000	0.000	0.000	OK
6.002	60 min Summer	29	HD03	HD06	0.113	0.000	0.000	0.000	OK
7.000	60 min Summer	33	HD04	HD05	0.190	1.199	23.029	0.565	OK
7.001	60 min Summer	35	HD05	HD06	0.225	0.882	23.548	0.400	OK
6.003	60 min Summer	36	HD06	S20	0.225	1.033	39.752	0.977	OK
8.000	60 min Summer	33	HD 07	S20	0.222	1.143	23.036	0.404	OK
3.007	60 min Summer	32	S20	S21	0.525	2.095	453.441	1.709	OK
3.008	60 min Summer	33	S21	S22	0.525	2.080	448.800	1.564	OK
3.009	60 min Summer	35	S22	S23	0.594	1.256	443.019	0.355	OK
3.010	60 min Summer	35	S23	S24	0.688	0.962	399.320	0.383	OK
3.011	60 min Summer	35	S24	S25	0.736	0.735	398.284	0.621	OK
1.009	60 min Summer	35	S25	S26	0.748	1.521	826.715	0.725	OK
1.010	60 min Summer	36	S26	S27	0.751	1.556	822.728	0.991	OK
1.011	60 min Summer	37	S27	S28	0.608	2.115	804.992	0.906	OK
1.012	60 min Summer	36	S28	S29	0.450	4.304	676.841	0.901	OK
1.013	180 min Summer	169	S29	S46	0.675	1.644	473.999	0.856	Surcharged
9.000	60 min Summer	31	S30	S31	0.153	1.519	43.637	0.724	OK
9.001	60 min Summer	31	S31	S32	0.162	1.751	53.779	0.880	OK
9.002	60 min Summer	31	S32	S33	0.218	1.918	105.206	0.780	OK
9.003	60 min Summer	31	S33	S34	0.211	2.111	112.192	0.852	OK
9.004	60 min Summer	31	S34	S35	0.249	2.039	158.678	0.632	OK
9.005	60 min Summer	31	S35	S36	0.247	2.063	158.389	0.759	OK
9.006	60 min Summer	31	S36	S38	0.317	1.676	200.672	0.651	OK
10.000	60 min Summer	31	S37	S38	0.081	1.119	10.888	0.178	OK
9.007	60 min Summer	31	S38	S39	0.313	1.782	210.700	0.844	OK
9.008	60 min Summer	32	S39	S40	0.278	2.074	210.977	0.827	OK
9.009	60 min Summer	32	S40	S41	0.351	2.224	294.555	0.578	OK
9.010	60 min Summer	32	S41	S42	0.450	2.004	318.691	1.483	OK
9.011	60 min Summer	32	S42	S43	0.425	2.220	340.166	1.122	OK
9.012	1440 min Summer	1395	S43	S44	0.525	1.204	49.726	0.114	OK
9.013	360 min Summer	311	S44	S45	0.525	2.205	135.709	0.257	OK

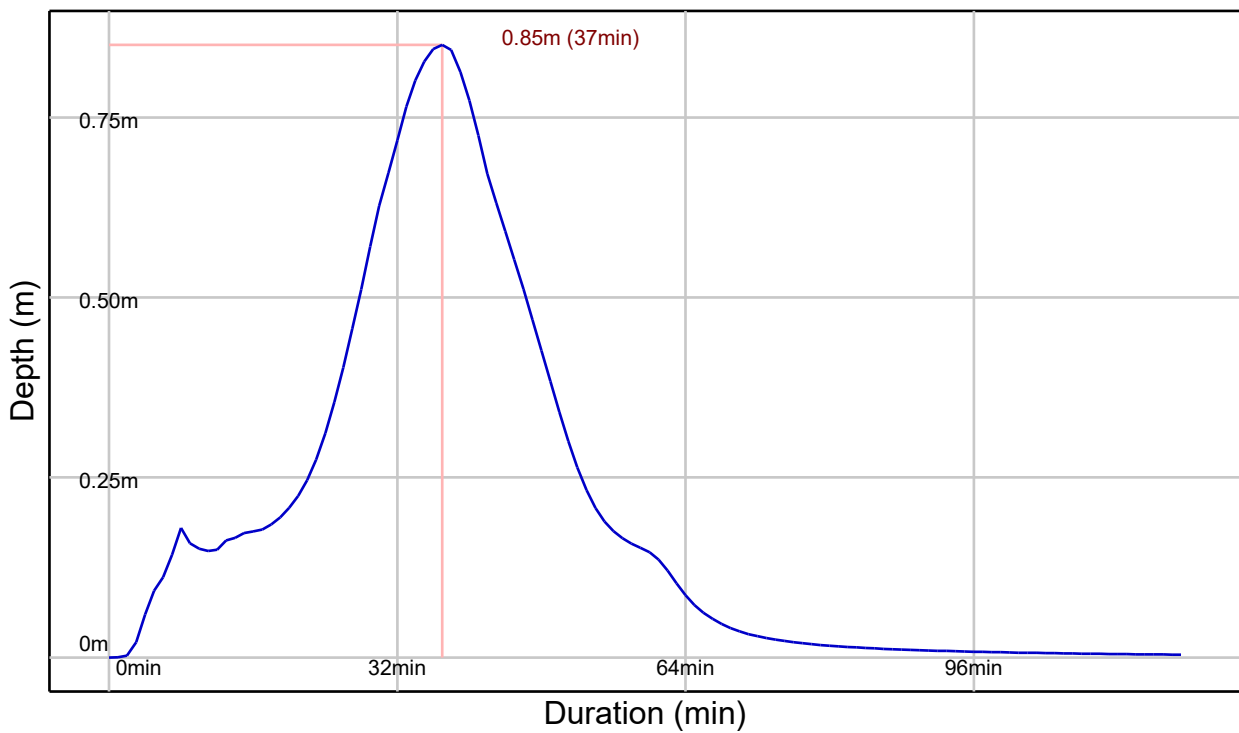
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
9.014	120 min Summer	131	S45	S46	0.525	2.827	290.605	0.424	OK
1.014	240 min Winter	195	S46	S47	0.138	1.149	5.224	0.004	OK
1.015	240 min Winter	301	S47	S48	0.397	0.673	29.909	0.015	OK
1.016	240 min Winter	213	S48	S49	0.588	0.318	15.110	0.034	OK
1.017	240 min Winter	207	S49	S50	0.650	0.119	18.754	0.045	OK
1.018	240 min Winter	208	S50	S61	0.673	0.059	20.662	0.050	OK
11.000	60 min Summer	31	S51	S52	0.068	0.506	5.143	0.083	OK
11.001	60 min Summer	31	S52	S53	0.131	1.058	25.214	0.376	OK
11.002	60 min Summer	31	S53	S54	0.167	1.621	51.153	0.910	OK
11.003	60 min Summer	31	S54	S56	0.155	2.098	77.388	0.536	OK
12.000	60 min Summer	31	S55	S56	0.159	1.582	47.615	0.861	OK
11.004	60 min Summer	31	S56	S57	0.198	2.773	164.163	0.571	OK
11.005	60 min Summer	31	S57	S59	0.282	1.829	163.228	0.531	OK
13.000	60 min Summer	31	S58	S59	0.151	1.476	22.668	0.254	OK
11.006	60 min Summer	32	S59	S60	0.364	2.441	267.170	1.284	OK
11.007	240 min Winter	207	S60	S61	0.653	1.133	74.073	0.114	OK
1.019	180 min Summer	125	S61	S62	0.073	1.513	16.797	0.170	OK
1.020	480 min Winter	333	S62	S63	0.085	1.225	16.797	0.312	OK

Pond Depth/Area Diagram at S23



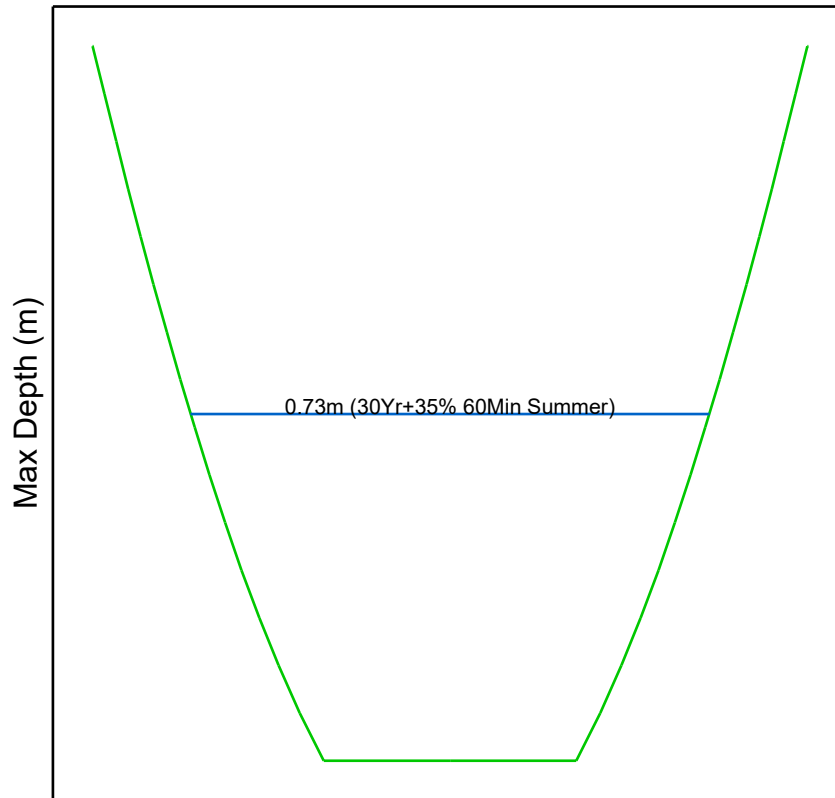
Pond 6 at S23 (30Yr+35% 60Min Summer)



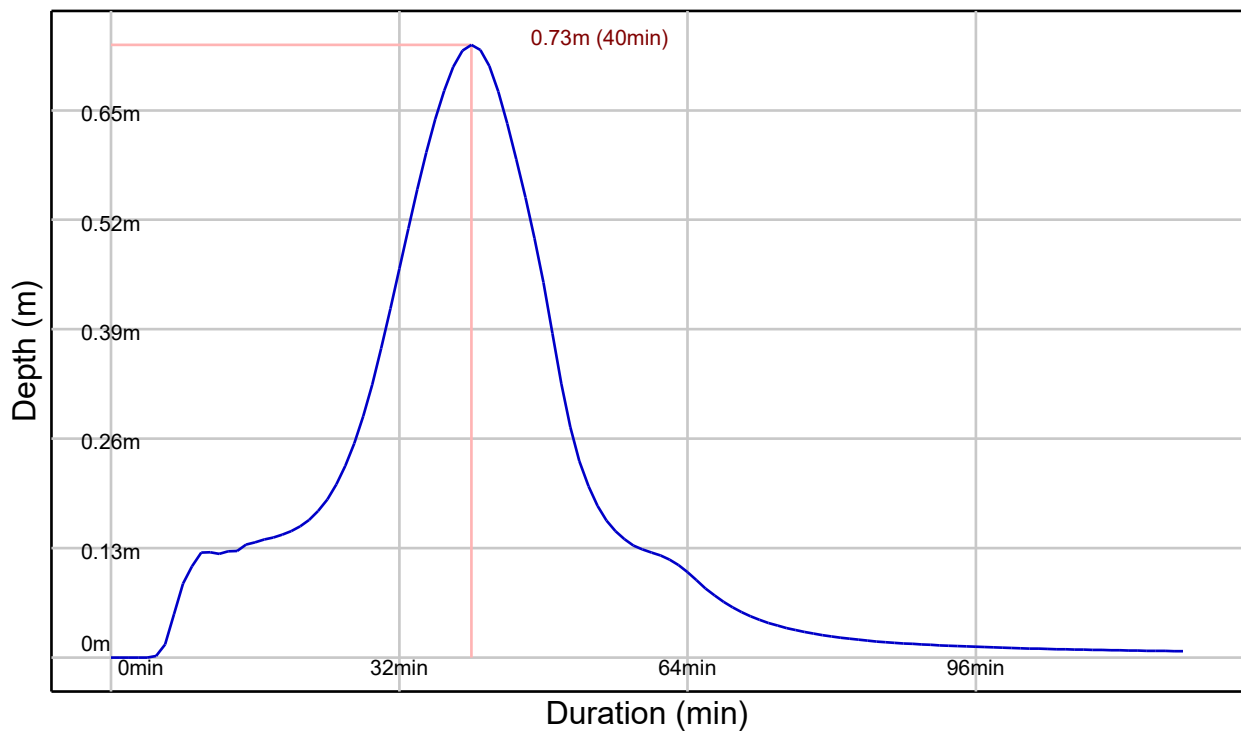
Pond Structure at Manhole S28

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
117.000	1.500	398.995	118.200	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S28



Pond 5 at S28 (30Yr+35% 60Min Summer)

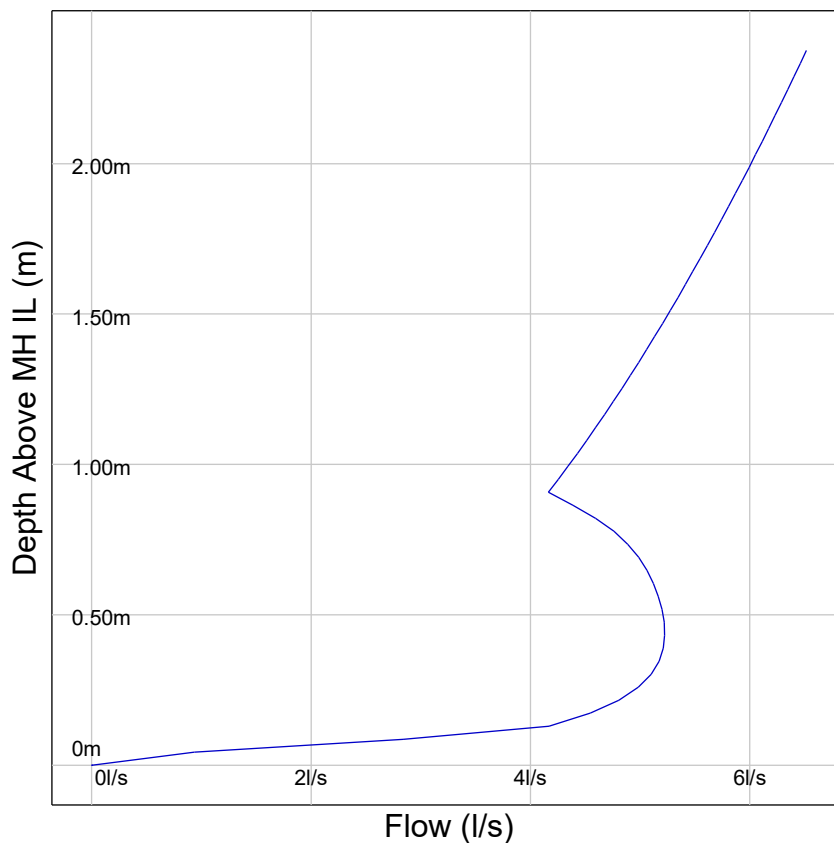


Controls within Manhole S46

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0101-6000-2000-6000	2.000	6.000	0.000	0.439	5.224	0.902	4.152

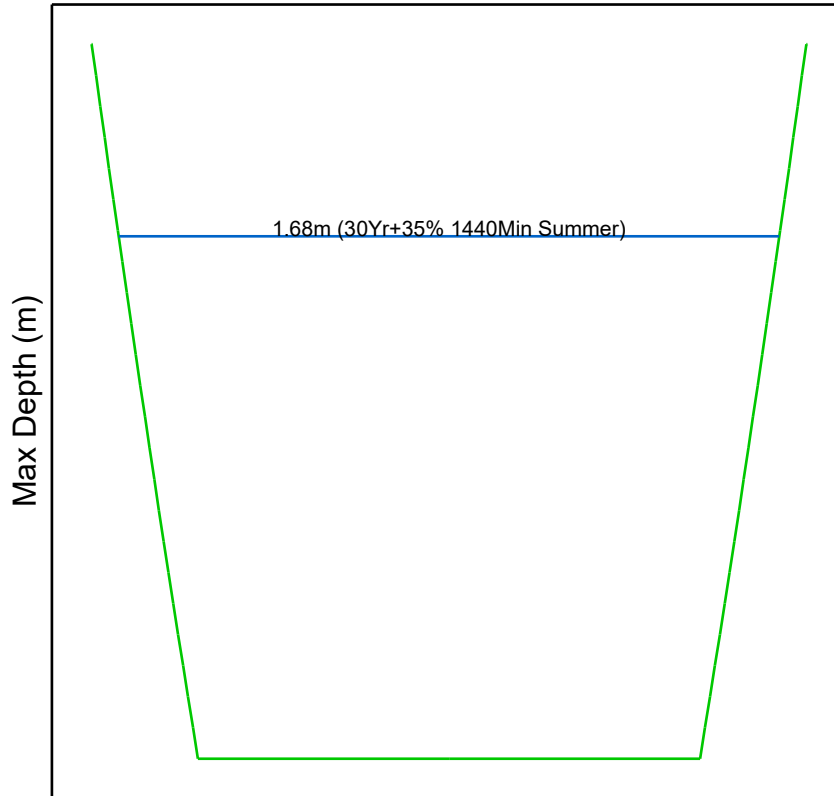
Hydro-Brake® Optimum Control from S46 to S47



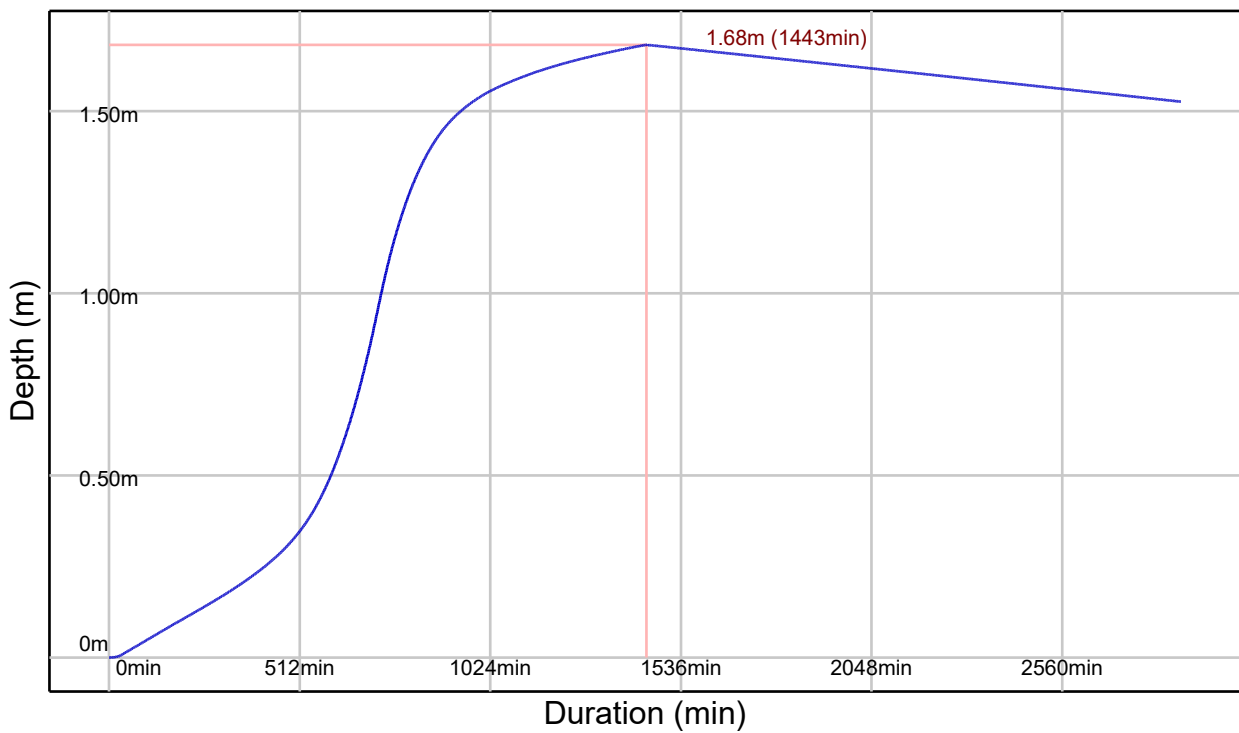
Pond Structure at Manhole S46

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
115.500	2.300	4534.000	117.500	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S46



Pond 3 at S46 (30Yr+35% 1440Min Summer)

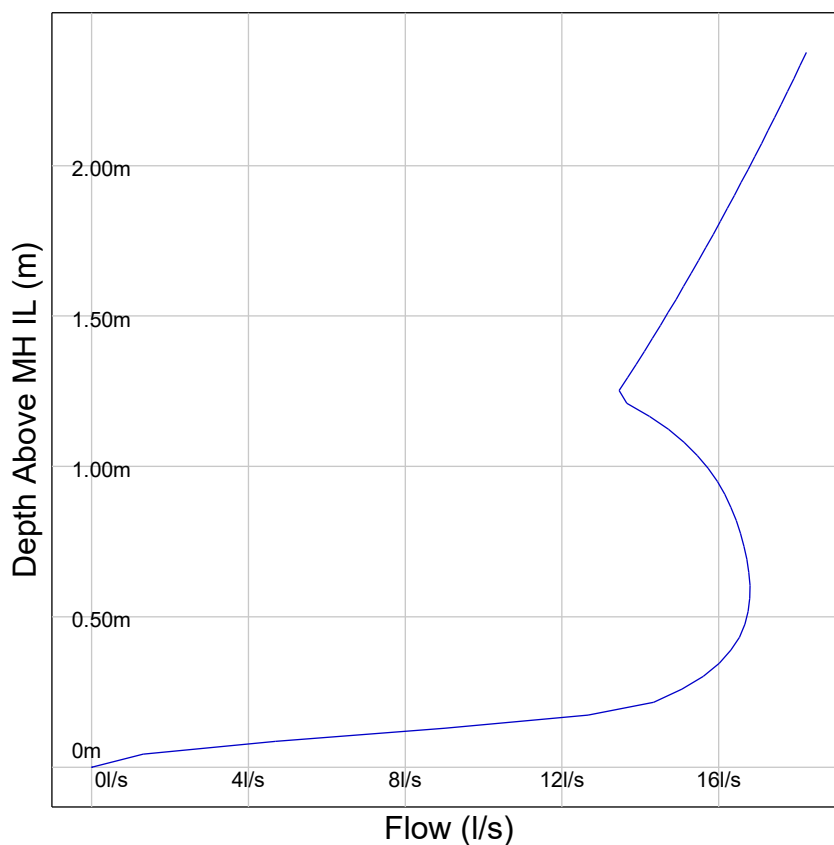


Controls within Manhole S61

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0169-1680-2000-1680	2.000	16.800	0.000	0.587	16.800	1.229	13.339

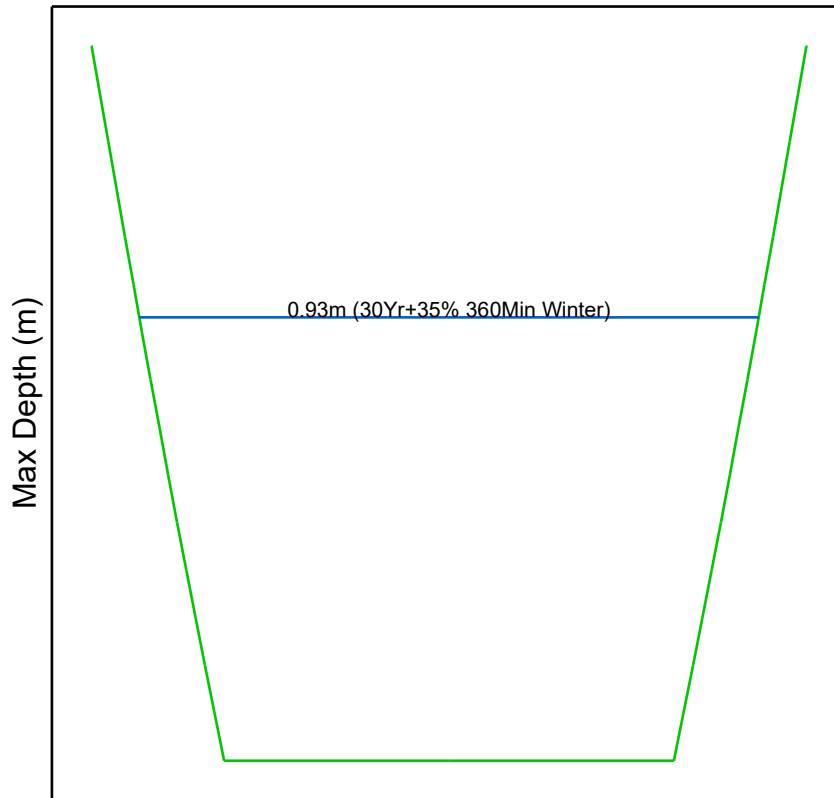
Hydro-Brake® Optimum Control from S61 to S62



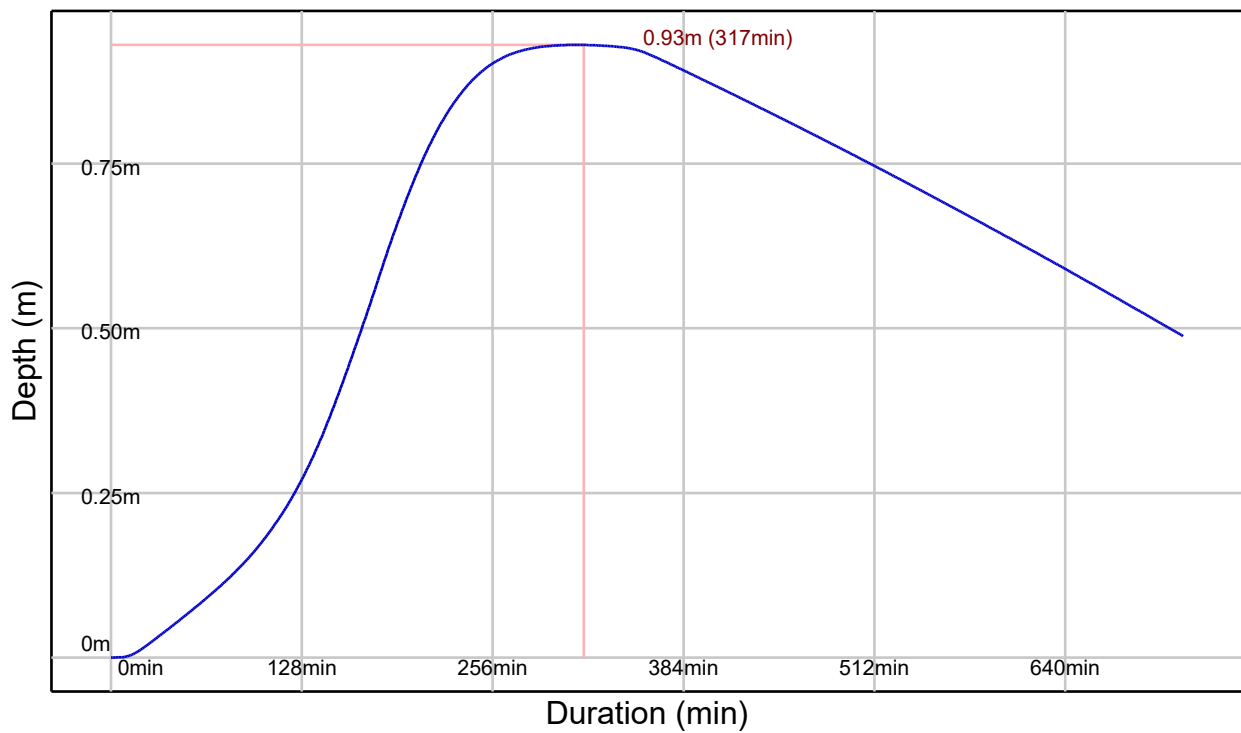
Pond Structure at Manhole S61

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
114.800	1.500	577.684	116.000	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S61



Pond 2 at S61 (30Yr+35% 360Min Winter)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (30, +35%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
30Yr+35% 60Min Winter	40.780	0.00	0.28	30Yr+35% 480Min Summer	8.948	0.00	0.54
30Yr+35% 60Min Summer	40.780	0.00	0.23	30Yr+35% 480Min Winter	8.948	0.00	0.52
30Yr+35% 120Min Winter	25.448	0.00	0.38	30Yr+35% 600Min Summer	7.452	0.00	0.54
30Yr+35% 120Min Summer	25.448	0.00	0.40	30Yr+35% 600Min Winter	7.452	0.00	0.51
30Yr+35% 180Min Winter	19.133	0.00	0.45	30Yr+35% 720Min Summer	6.395	0.00	0.52
30Yr+35% 180Min Summer	19.133	0.00	0.43	30Yr+35% 720Min Winter	6.395	0.00	0.49
30Yr+35% 240Min Winter	15.379	0.00	0.48	30Yr+35% 960Min Summer	5.025	0.00	0.48
30Yr+35% 240Min Summer	15.379	0.00	0.47	30Yr+35% 960Min Winter	5.025	0.00	0.46
30Yr+35% 360Min Winter	11.238	0.00	0.52	30Yr+35% 1440Min Winter	3.588	0.00	0.48
30Yr+35% 360Min Summer	11.238	0.00	0.52	30Yr+35% 1440Min Summer	3.588	0.00	0.42

Simulation Results

Return Period (yrs) + Climate Change (%):

30yr+35%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	60 min Summer	33	121.673	0.273	41.735		Surcharged
S2	60 min Summer	33	121.368	0.623	88.971		Surcharged
S3	60 min Summer	33	121.165	0.853	39.784		Surcharged
S4	60 min Summer	33	121.038	1.038	223.724		Surcharged
S5	60 min Summer	33	120.125	0.855	291.332		Surcharged
S6	60 min Summer	33	119.404	0.519	333.777		Surcharged
S7	60 min Summer	33	119.024	0.609	361.483		Surcharged
S8	60 min Summer	33	118.621	0.531	401.969		Surcharged
S9	60 min Summer	32	118.302	0.527	519.025		OK
S10	60 min Summer	35	118.030	0.575	488.075		OK
S11	60 min Summer	32	122.437	0.467	66.123		Surcharged
S12	60 min Summer	30	121.944	0.124	33.273		OK
S13	60 min Summer	32	121.670	0.275	145.935		OK
S14	60 min Summer	33	120.802	0.272	190.621		OK
S15	60 min Summer	33	120.580	0.221	63.173		OK
S16	60 min Summer	33	120.435	0.590	284.631		Surcharged
S17	60 min Summer	33	120.223	0.708	316.273		Surcharged
S18	60 min Summer	33	119.790	0.905	366.803		Surcharged
S19	60 min Summer	33	119.499	0.794	449.123		Surcharged
HD01	60 min Winter	0	119.265	0.000	0.000		OK
HD02	60 min Winter	0	119.170	0.000	0.000		OK
HD03	60 min Winter	0	119.025	0.000	0.000		OK
HD04	60 min Summer	34	118.903	0.658	22.072		Surcharged
HD05	60 min Summer	34	118.864	0.749	22.548		Surcharged
HD06	60 min Summer	34	118.817	1.012	37.080		Surcharged
HD 07	60 min Summer	34	118.797	0.677	23.750		Surcharged
S20	60 min Summer	34	118.721	1.326	533.017		Surcharged
S21	60 min Summer	35	118.361	1.046	518.797		Surcharged
S22	60 min Summer	37	117.963	0.763	476.760		OK
S23	60 min Summer	37	117.951	0.851	477.566		Surcharged
S24	60 min Summer	37	117.933	0.927	477.912		Surcharged
S25	60 min Summer	37	117.930	0.931	894.091		Surcharged
S26	60 min Summer	38	117.873	0.935	861.577		Surcharged
S27	60 min Summer	38	117.815	0.915	862.639		Surcharged
S28	60 min Summer	40	117.728	0.728	711.141		Surcharged
S29	1440 min Summer	1435	117.206	1.396	13.842		Surcharged
S30	60 min Summer	32	121.181	0.291	56.006		Surcharged
S31	60 min Summer	33	120.833	0.373	64.657		Surcharged
S32	60 min Summer	32	120.096	0.351	131.381		Surcharged
S33	60 min Summer	32	119.929	0.334	139.812		Surcharged
S34	60 min Summer	31	119.185	0.305	200.803		OK
S35	60 min Summer	32	119.008	0.358	196.760		OK
S36	60 min Summer	32	118.869	0.434	251.129		OK
S37	60 min Summer	31	118.853	0.073	14.699		OK
S38	60 min Summer	32	118.774	0.459	264.628		Surcharged
S39	60 min Summer	32	118.552	0.435	263.971		OK
S40	60 min Summer	32	118.406	0.411	375.362		OK
S41	60 min Summer	32	117.788	1.091	411.093		Surcharged
S42	60 min Summer	32	117.374	0.778	439.465		Surcharged
S43	1440 min Summer	1443	117.182	0.912	1.001		Surcharged
S44	1440 min Summer	1443	117.182	1.112	1.047		Surcharged
S45	1440 min Summer	1443	117.182	1.292	1.092		Surcharged
S46	1440 min Summer	1443	117.182	1.682	1.109		Surcharged
S47	360 min Winter	313	115.732	0.474	2.225		OK
S48	360 min Winter	315	115.734	0.774	5.733		Surcharged
S49	360 min Winter	314	115.731	0.857	5.015		Surcharged
S50	360 min Winter	314	115.731	0.905	4.782		Surcharged
S51	60 min Summer	31	120.433	0.050	6.943		OK
S52	60 min Summer	31	120.211	0.111	34.046		OK
S53	60 min Summer	32	119.976	0.352	66.661		Surcharged

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S54	60 min Summer	32	119.105	0.184	98.046		OK
S55	60 min Summer	32	119.045	0.299	61.172		Surcharged
S56	60 min Summer	31	118.327	0.242	211.320		OK
S57	60 min Summer	32	117.265	0.242	210.908		OK
S58	60 min Summer	31	116.839	0.089	30.602		OK
S59	60 min Summer	32	116.160	0.764	348.533		Surcharged
S60	360 min Winter	312	115.731	0.791	11.548		Surcharged
S61	360 min Winter	313	115.731	0.931	15.980		Surcharged
S62	1440 min Summer	791	114.606	0.086	16.797		OK
S63	1440 min Summer	791	114.413	0.083	16.797		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	33	S1	S2	0.225	1.550	48.803	0.884	OK
1.001	60 min Summer	31	S2	S4	0.300	1.607	91.550	0.740	Surcharged
2.000	60 min Summer	31	S3	S4	0.225	1.248	42.041	0.929	OK
1.002	60 min Summer	33	S4	S5	0.375	2.015	222.535	1.126	Surcharged
1.003	60 min Summer	33	S5	S6	0.375	2.635	290.958	1.486	Surcharged
1.004	60 min Summer	33	S6	S7	0.450	2.155	334.378	0.865	OK
1.005	60 min Summer	34	S7	S8	0.450	2.289	363.146	1.216	OK
1.006	60 min Summer	33	S8	S9	0.488	1.978	403.270	1.129	OK
1.007	60 min Summer	34	S9	S10	0.538	1.986	519.442	1.016	OK
1.008	60 min Summer	36	S10	S25	0.578	2.135	536.331	1.052	OK
3.000	60 min Summer	32	S11	S13	0.215	1.663	65.083	1.263	OK
4.000	60 min Summer	32	S12	S13	0.159	1.236	33.336	0.596	OK
3.001	60 min Summer	32	S13	S14	0.277	2.262	146.887	1.062	OK
3.002	60 min Summer	33	S14	S16	0.323	2.499	201.190	0.746	OK
5.000	60 min Summer	33	S15	S16	0.260	1.409	75.287	0.852	OK
3.003	60 min Summer	32	S16	S17	0.450	2.290	297.836	0.799	OK
3.004	60 min Summer	31	S17	S18	0.450	2.148	323.096	0.836	OK
3.005	60 min Summer	33	S18	S19	0.450	2.490	364.477	1.165	OK
3.006	60 min Summer	32	S19	S20	0.450	2.843	447.725	0.781	OK
6.000	60 min Winter	0	HD01	HD02	0.000	0.000	0.000	0.000	OK
6.001	60 min Winter	0	HD02	HD03	0.000	0.000	0.000	0.000	OK
6.002	60 min Winter	27	HD03	HD06	0.113	0.000	0.000	0.000	OK
7.000	60 min Summer	32	HD04	HD05	0.225	1.204	25.702	0.631	OK
7.001	60 min Summer	39	HD05	HD06	0.225	0.885	28.852	0.490	OK
6.003	60 min Summer	38	HD06	S20	0.225	1.257	49.982	1.229	OK
8.000	60 min Summer	32	HD 07	S20	0.225	1.131	28.135	0.494	OK
3.007	60 min Summer	33	S20	S21	0.525	2.499	540.995	2.039	OK
3.008	60 min Summer	33	S21	S22	0.525	2.477	536.247	1.869	OK
3.009	60 min Summer	37	S22	S23	0.807	1.334	527.401	0.423	OK
3.010	60 min Summer	37	S23	S24	0.750	1.082	477.912	0.458	Surcharged
3.011	60 min Summer	37	S24	S25	0.900	0.751	477.934	0.745	OK
1.009	60 min Summer	35	S25	S26	0.900	1.585	930.123	0.816	OK
1.010	60 min Summer	37	S26	S27	0.900	1.631	926.207	1.116	OK
1.011	60 min Summer	40	S27	S28	0.812	2.175	922.789	1.038	OK
1.012	60 min Summer	39	S28	S29	0.450	4.463	709.782	0.945	OK
1.013	60 min Summer	41	S29	S46	0.675	2.051	706.799	1.276	Surcharged
9.000	60 min Summer	32	S30	S31	0.225	1.564	57.452	0.954	OK
9.001	60 min Summer	34	S31	S32	0.225	1.744	67.958	1.112	OK
9.002	60 min Summer	32	S32	S33	0.300	1.959	132.026	0.979	Surcharged
9.003	60 min Summer	33	S33	S34	0.288	2.164	139.512	1.060	OK
9.004	60 min Summer	31	S34	S35	0.330	2.054	201.633	0.804	OK
9.005	60 min Summer	32	S35	S36	0.358	2.084	200.864	0.963	OK
9.006	60 min Summer	32	S36	S38	0.442	1.714	256.315	0.832	OK
10.000	60 min Summer	31	S37	S38	0.148	1.114	14.699	0.240	OK
9.007	60 min Summer	32	S38	S39	0.442	1.797	267.755	1.073	OK
9.008	60 min Summer	33	S39	S40	0.423	2.044	265.073	1.039	OK
9.009	60 min Summer	32	S40	S41	0.431	2.441	376.787	0.739	OK
9.010	60 min Summer	32	S41	S42	0.450	2.561	407.340	1.895	OK
9.011	600 min Summer	560	S42	S43	0.450	1.738	100.794	0.333	OK
9.012	180 min Summer	183	S43	S44	0.525	1.908	260.299	0.595	OK
9.013	120 min Summer	97	S44	S45	0.525	2.520	391.039	0.741	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
9.014	60 min Summer	53	S45	S46	0.525	3.261	532.988	0.778	OK
1.014	360 min Winter	439	S46	S47	0.351	1.149	44.691	0.032	OK
1.015	360 min Winter	652	S47	S48	0.575	0.676	35.585	0.018	OK
1.016	720 min Winter	605	S48	S49	0.675	0.390	15.472	0.034	Surcharged
1.017	960 min Winter	597	S49	S50	0.675	0.227	21.598	0.052	Surcharged
1.018	960 min Winter	1058	S50	S61	0.675	0.134	26.236	0.063	Surcharged
11.000	60 min Summer	31	S51	S52	0.080	0.546	6.943	0.112	OK
11.001	60 min Summer	31	S52	S53	0.168	1.093	34.042	0.508	OK
11.002	60 min Summer	33	S53	S54	0.214	1.636	63.903	1.137	OK
11.003	60 min Summer	32	S54	S56	0.180	2.214	98.241	0.681	OK
12.000	60 min Summer	32	S55	S56	0.213	1.589	61.657	1.114	OK
11.004	60 min Summer	32	S56	S57	0.242	2.878	210.908	0.733	OK
11.005	60 min Summer	32	S57	S59	0.309	2.175	211.491	0.689	OK
13.000	60 min Summer	31	S58	S59	0.157	1.463	30.602	0.343	OK
11.006	60 min Summer	32	S59	S60	0.375	3.165	349.565	1.680	Surcharged
11.007	120 min Summer	90	S60	S61	0.675	1.486	243.691	0.376	Surcharged
1.019	960 min Summer	949	S61	S62	0.073	1.513	16.797	0.170	OK
1.020	1440 min Summer	791	S62	S63	0.085	1.225	16.797	0.312	OK

Southern catchment calculations

1 in 100-year+40%

1 in 2-year

1 in 30-year

1 in 30-year+35%

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S64	0.211	1350	Type C	123.578	122.130	1.223	442755.853	296144.072
S65	0.041	1350	Type C	123.192	121.700	1.192	442723.953	296182.878
S66	0.070	1350	Type C	123.309	121.895	1.189	442731.903	296192.478
S67	0.031	1350	Type C	123.205	121.625	1.280	442723.277	296189.396
S68	0.106	1350	Type C	122.989	121.390	1.299	442706.177	296189.539
S69	0.129	1200	Type B	122.971	121.132	1.615	442680.865	296231.854
S70	0.000	1350	Type B	122.603	120.705	1.523	442665.070	296213.724
S71	0.116	1350	Type B	122.437	120.525	1.537	442661.188	296205.630
S72	0.138	1350	Type C	121.658	119.997	1.286	442649.386	296172.777
S73	0.057	1350	Type C	120.828	119.315	1.138	442631.832	296178.800
S74	0.062	1350	Type C	119.290	117.920	0.995	442594.754	296204.656
S75	0.065	1350	Type C	121.317	119.780	1.312	442614.549	296256.685
S76	0.056	1350	Type B	120.401	117.480	2.471	442603.841	296230.575
S77	0.044	1350	Type B	119.243	116.865	1.853	442579.890	296239.001
S78	0.102	1350	Type C	115.333	113.770	1.038	442523.049	296244.480
S79	0.000	---	Type C	115.300	113.610	1.165	442504.715	296253.407
S80	0.045	1350	Type C	122.668	121.047	1.396	442665.889	296257.640
S81	0.034	1350	Type C	122.530	120.904	1.400	442658.661	296267.006
S82	0.071	1350	Type C	122.456	120.975	1.256	442655.328	296291.165
S83	0.082	1350	Type C	122.390	120.832	1.333	442649.410	296272.705
S84	0.094	1350	Type C	121.739	120.305	1.209	442612.465	296336.737
S85	0.048	1350	Type B	121.910	120.075	1.610	442606.434	296320.295
S86	0.108	1200	Type B	121.679	119.660	1.719	442596.694	296289.849
S87	0.211	1350	Type C	118.738	116.975	1.388	442534.188	296305.316
S88	0.000	---	Type C	115.300	113.710	1.140	442507.967	296288.074
S89	0.000	---	Unknown	115.300	113.500	1.275	442473.730	296267.549
S90	0.000	3000	Type B	115.300	113.450	1.625	442467.534	296266.072
S91	0.000	---	Type C	113.300	112.580	0.495	442457.793	296263.539

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S64	122.130	S65	121.775	Circ	225	50.234	142	0.600	1.223	1.192
1.001	S65	121.700	S67	121.625	Circ	300	6.554	87	0.600	1.192	1.280
2.000	S66	121.895	S67	121.700	Circ	225	9.160	47	0.600	1.189	1.280
1.002	S67	121.625	S68	121.390	Circ	300	17.101	73	0.600	1.280	1.299
1.003	S68	121.390	S70	120.780	Circ	300	47.693	78	0.600	1.299	1.523
3.000	S69	121.132	S70	120.855	Circ	225	24.045	87	0.600	1.615	1.523
1.004	S70	120.705	S71	120.525	Circ	375	8.977	50	0.600	1.523	1.537
1.005	S71	120.525	S72	119.997	Circ	375	34.908	66	0.600	1.537	1.286
1.006	S72	119.997	S73	119.315	Circ	375	18.558	27	0.600	1.286	1.138
1.007	S73	119.315	S74	117.920	Circ	375	45.203	32	0.600	1.138	0.995
1.008	S74	117.920	S76	117.555	Circ	375	27.465	75	0.600	0.995	2.471
4.000	S75	119.780	S76	117.705	Circ	225	28.221	14	0.600	1.312	2.471
1.009	S76	117.480	S77	116.940	Circ	450	25.390	47	0.600	2.471	1.853
1.010	S77	116.865	S78	113.770	Circ	525	57.104	18	0.600	1.853	1.038
1.011	S78	113.770	S79	113.610	Circ	525	20.392	127	0.600	1.038	1.165
1.012	S79	113.610	S89	113.500	Circ	525	34.060	310	0.600	1.165	1.275
5.000	S80	121.047	S81	120.904	Circ	225	11.831	83	0.600	1.396	1.400
5.001	S81	120.904	S83	120.832	Circ	225	10.866	150	0.600	1.400	1.333
6.000	S82	120.975	S83	120.832	Circ	225	19.384	136	0.600	1.256	1.333
5.002	S83	120.832	S86	119.735	Circ	225	55.433	51	0.600	1.333	1.719
7.000	S84	120.305	S85	120.075	Circ	225	17.514	76	0.600	1.209	1.610
7.001	S85	120.075	S86	119.735	Circ	225	31.966	94	0.600	1.610	1.719
5.003	S86	119.660	S87	117.050	Circ	300	64.391	25	0.600	1.719	1.388
5.004	S87	116.975	S88	113.785	Circ	375	31.381	10	0.600	1.388	1.140
5.005	S88	113.710	S89	113.575	Circ	450	39.918	296	0.600	1.140	1.275
1.013	S89	113.500	S90	113.450	Circ	525	6.370	127	0.600	1.275	1.325
1.014	S90	113.450	S91	112.580	Circ	225	10.065	12	0.600	1.625	0.495

Outfall Details

Outfall Manhole S91 : Free Discharge

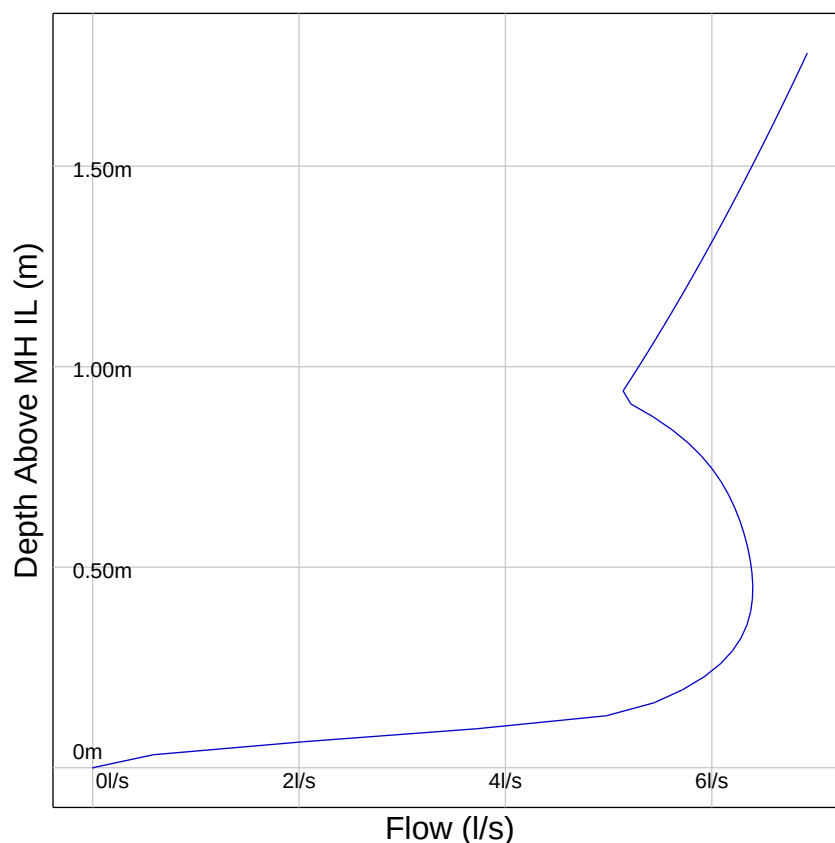
Flow Control Details

Controls within Manhole S89

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0111-6400-1500-6400	1.500	6.400	0.000	0.447	6.397	0.922	5.094

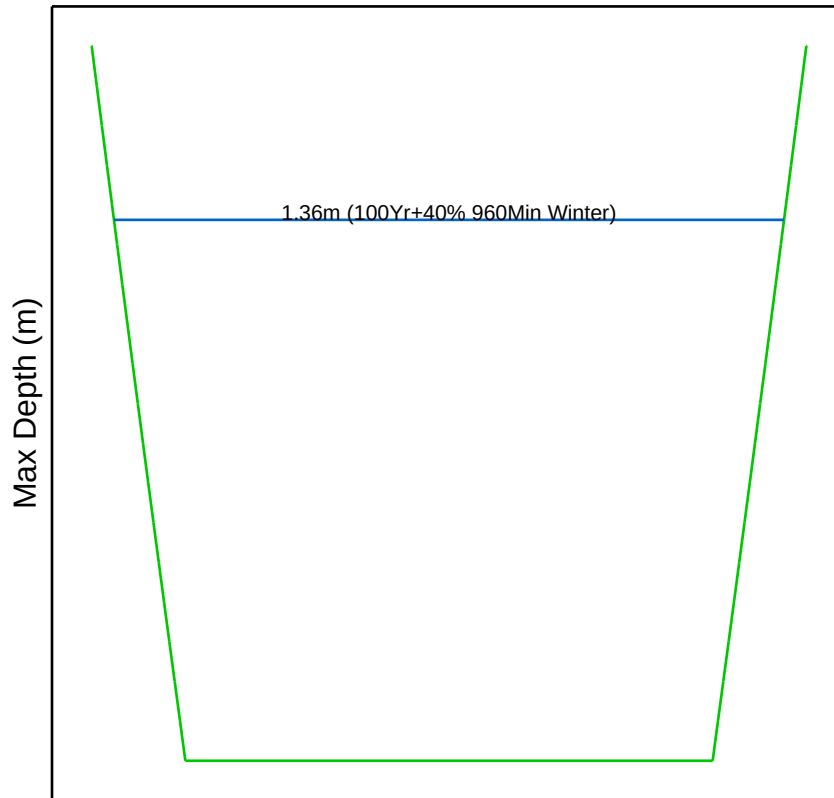
Hydro-Brake® Optimum Control from S89 to S90



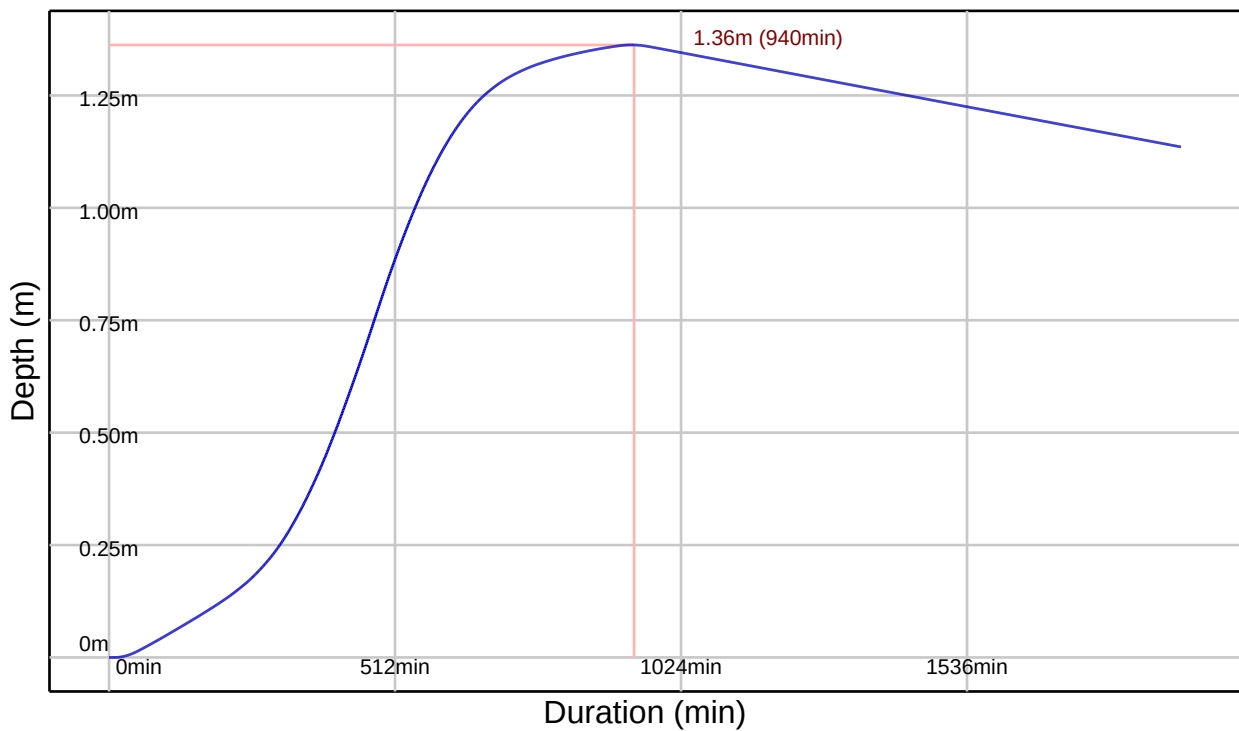
Pond Structure at Manhole S89

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
113.500	1.800	1847.496	115.000	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S89



Pond 1 at S89 (100Yr+40% 960Min Winter)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (100, +40%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
100Yr+40% 60Min Winter	53.806	0.00	0.65	100Yr+40% 480Min Summer	11.426	0.00	0.97
100Yr+40% 60Min Summer	53.806	0.00	0.74	100Yr+40% 480Min Winter	11.426	0.00	0.97
100Yr+40% 120Min Winter	32.943	0.00	0.85	100Yr+40% 600Min Summer	9.514	0.00	0.93
100Yr+40% 120Min Summer	32.943	0.00	0.81	100Yr+40% 600Min Winter	9.514	0.00	0.93
100Yr+40% 180Min Winter	24.503	0.00	0.95	100Yr+40% 720Min Summer	8.166	0.00	0.88
100Yr+40% 180Min Summer	24.503	0.00	0.94	100Yr+40% 720Min Winter	8.166	0.00	0.85
100Yr+40% 240Min Winter	19.707	0.00	0.99	100Yr+40% 960Min Summer	6.409	0.00	0.74
100Yr+40% 240Min Summer	19.707	0.00	0.98	100Yr+40% 960Min Winter	6.409	0.00	0.74
100Yr+40% 360Min Winter	14.374	0.00	1.00	100Yr+40% 1440Min Winter	4.554	0.00	0.53
100Yr+40% 360Min Summer	14.374	0.00	1.00	100Yr+40% 1440Min Summer	4.554	0.00	0.52

Simulation Results

Return Period (yrs) + Climate Change (%):

100yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S64	60 min Summer	32	123.578	1.448	101.830	7.981	Flood
S65	60 min Summer	34	122.821	1.121	79.316		Surcharged
S66	60 min Summer	34	122.801	0.906	26.111		Surcharged
S67	60 min Summer	34	122.775	1.150	118.867		Surcharged
S68	60 min Summer	34	122.556	1.166	159.579		Surcharged
S69	60 min Summer	33	121.816	0.684	55.773		Surcharged
S70	60 min Summer	34	121.542	0.837	212.726		Surcharged
S71	60 min Summer	34	121.400	0.875	259.064		Surcharged
S72	60 min Summer	33	120.782	0.784	320.069		Surcharged
S73	60 min Summer	33	120.248	0.933	342.606		Surcharged
S74	60 min Summer	33	118.915	0.995	366.940		Surcharged
S75	60 min Summer	31	119.853	0.073	33.257		OK
S76	60 min Summer	32	117.834	0.354	420.261		OK
S77	60 min Summer	32	117.086	0.221	441.025		OK
S78	960 min Winter	935	114.862	1.092	3.956		Surcharged
S79	960 min Winter	935	114.862	1.252	3.956		Surcharged
S80	60 min Summer	34	121.738	0.691	16.605		Surcharged
S81	60 min Summer	34	121.724	0.820	30.248		Surcharged
S82	60 min Summer	33	121.737	0.762	30.720		Surcharged
S83	60 min Summer	34	121.682	0.850	89.351		Surcharged
S84	60 min Summer	32	120.631	0.326	45.641		Surcharged
S85	60 min Summer	32	120.491	0.416	69.086		Surcharged
S86	60 min Summer	32	119.894	0.234	210.685		OK
S87	60 min Summer	31	117.156	0.181	313.554		OK
S88	960 min Winter	935	114.862	1.152	2.129		Surcharged
S89	960 min Winter	935	114.862	1.362	6.086		Surcharged
S90	1440 min Summer	641	113.481	0.031	6.397		OK
S91	1440 min Summer	641	112.610	0.030	6.397		Outfall

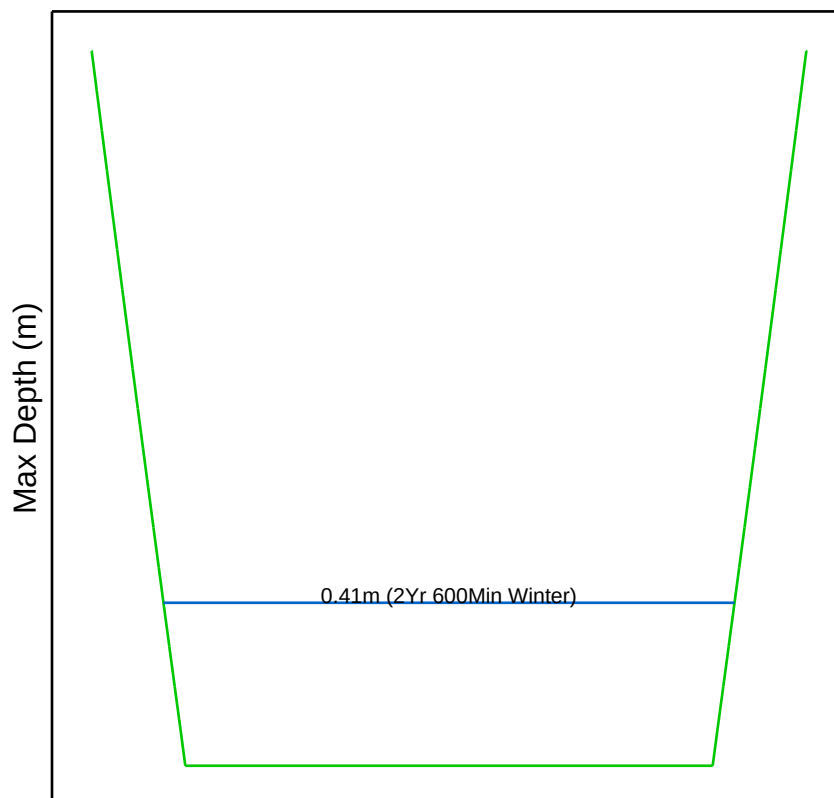
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	30	S64	S65	0.225	2.040	81.128	1.863	OK
1.001	60 min Summer	30	S65	S67	0.300	1.323	88.176	0.742	Surcharged
2.000	60 min Summer	32	S66	S67	0.225	1.351	30.333	0.399	OK
1.002	60 min Summer	37	S67	S68	0.300	1.749	123.642	0.949	Surcharged
1.003	60 min Summer	36	S68	S70	0.300	2.315	163.362	1.300	Surcharged
3.000	60 min Summer	31	S69	S70	0.225	1.600	59.464	1.067	OK
1.004	60 min Summer	36	S70	S71	0.375	2.202	217.368	0.766	Surcharged
1.005	60 min Summer	34	S71	S72	0.375	2.686	261.802	1.063	Surcharged
1.006	60 min Summer	33	S72	S73	0.375	3.364	317.747	0.826	Surcharged
1.007	60 min Summer	34	S73	S74	0.375	3.083	340.546	0.966	Surcharged
1.008	60 min Summer	33	S74	S76	0.375	3.310	365.561	1.584	Surcharged
4.000	60 min Summer	32	S75	S76	0.100	2.673	33.257	0.235	OK
1.009	60 min Summer	32	S76	S77	0.334	3.318	419.787	0.889	OK
1.010	60 min Summer	32	S77	S78	0.373	2.682	440.857	0.389	OK
1.011	60 min Summer	32	S78	S79	0.525	2.239	484.694	1.130	OK
1.012	60 min Summer	34	S79	S89	0.525	2.291	482.724	1.761	OK
5.000	60 min Summer	30	S80	S81	0.225	0.781	18.804	0.330	OK
5.001	60 min Summer	33	S81	S83	0.225	0.831	31.546	0.746	OK
6.000	60 min Summer	31	S82	S83	0.225	0.850	30.942	0.695	OK
5.002	60 min Summer	34	S83	S86	0.225	2.318	92.161	1.258	OK
7.000	60 min Summer	31	S84	S85	0.225	1.228	46.178	0.775	OK
7.001	60 min Summer	32	S85	S86	0.217	1.752	68.808	1.284	OK
5.003	60 min Summer	32	S86	S87	0.229	3.635	210.384	0.937	OK
5.004	60 min Summer	31	S87	S88	0.278	3.569	313.309	0.489	OK
5.005	60 min Summer	34	S88	S89	0.450	2.032	313.541	1.677	OK
1.013	1440 min Winter	603	S89	S90	0.036	0.990	6.397	0.015	OK

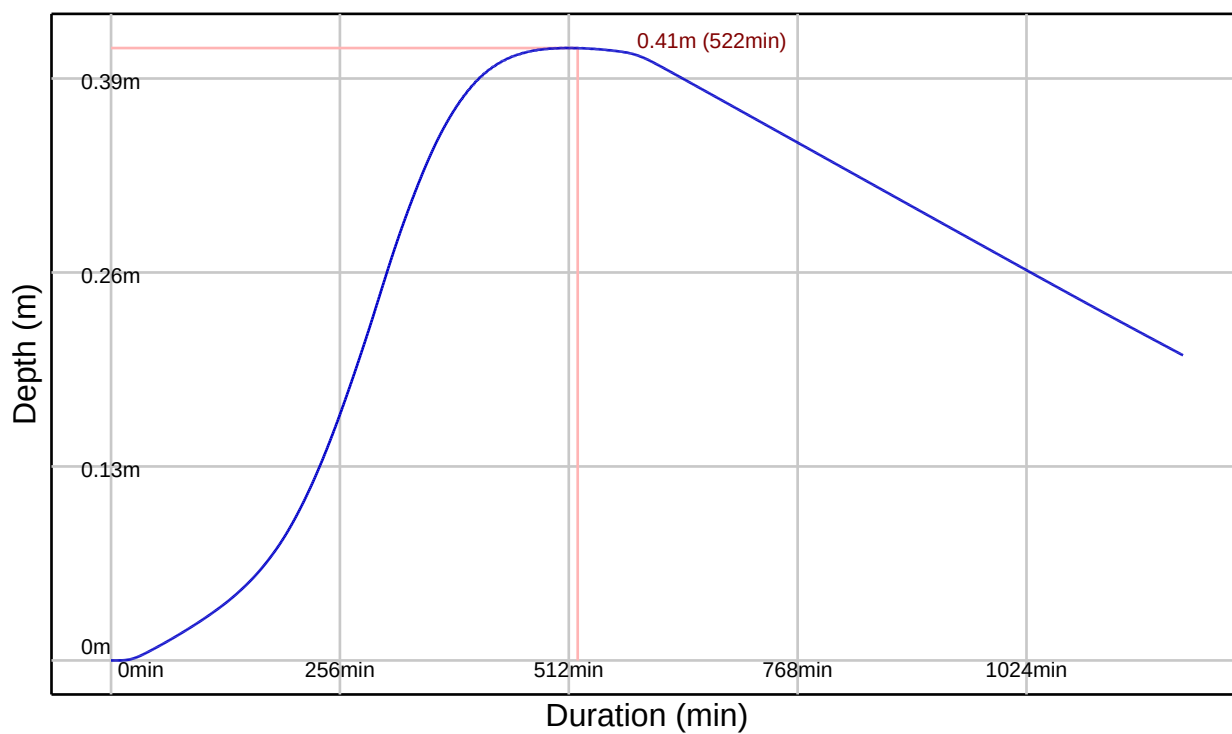
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.014	1440 min Summer	641	S90	S91	0.030	2.003	6.397	0.042	OK

Pond Depth/Area Diagram at S89



Pond 1 at S89 (2Yr 600Min Winter)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (2, +0%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
2Yr 60Min Winter	12.200	0.00	-0.07	2Yr 480Min Summer	3.497	0.00	-0.03
2Yr 60Min Summer	12.200	0.00	-0.07	2Yr 480Min Winter	3.497	0.00	-0.03
2Yr 120Min Winter	8.700	0.00	-0.03	2Yr 600Min Summer	2.939	0.00	-0.04
2Yr 120Min Summer	8.700	0.00	-0.03	2Yr 600Min Winter	2.939	0.00	-0.04
2Yr 180Min Winter	6.982	0.00	-0.03	2Yr 720Min Summer	2.534	0.00	-0.03
2Yr 180Min Summer	6.982	0.00	-0.03	2Yr 720Min Winter	2.534	0.00	-0.03
2Yr 240Min Winter	5.705	0.00	-0.03	2Yr 960Min Summer	2.010	0.00	-0.02
2Yr 240Min Summer	5.705	0.00	-0.03	2Yr 960Min Winter	2.010	0.00	-0.02
2Yr 360Min Winter	4.304	0.00	-0.03	2Yr 1440Min Winter	1.451	0.00	-0.01
2Yr 360Min Summer	4.304	0.00	-0.03	2Yr 1440Min Summer	1.451	0.00	-0.01

Simulation Results

Return Period (yrs) + Climate Change (%):

2yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S64	60 min Summer	31	122.249	0.120	24.257		OK
S65	60 min Summer	31	121.808	0.108	28.868		OK
S66	60 min Summer	31	121.944	0.049	8.079		OK
S67	60 min Summer	31	121.741	0.116	40.471		OK
S68	60 min Summer	31	121.525	0.135	52.697		OK
S69	60 min Summer	31	121.211	0.079	14.835		OK
S70	60 min Summer	31	120.837	0.132	67.154		OK
S71	60 min Summer	31	120.675	0.150	80.421		OK
S72	60 min Summer	31	120.127	0.129	96.141		OK
S73	60 min Summer	31	119.450	0.135	102.519		OK
S74	60 min Summer	32	118.106	0.186	108.747		OK
S75	60 min Summer	31	119.815	0.035	7.541		OK
S76	60 min Summer	32	117.640	0.160	122.865		OK
S77	60 min Summer	32	116.981	0.116	127.970		OK
S78	60 min Summer	32	113.996	0.226	139.288		OK
S79	600 min Winter	410	113.939	0.329	8.878		OK
S80	60 min Summer	31	121.091	0.044	5.138		OK
S81	60 min Summer	31	120.976	0.072	9.105		OK
S82	60 min Summer	31	121.038	0.063	8.171		OK
S83	60 min Summer	31	120.926	0.094	26.742		OK
S84	60 min Summer	31	120.368	0.063	10.872		OK
S85	60 min Summer	31	120.160	0.085	16.427		OK
S86	60 min Summer	31	119.761	0.101	55.358		OK
S87	60 min Summer	31	117.062	0.087	79.387		OK
S88	60 min Summer	31	113.915	0.205	79.320		OK
S89	600 min Winter	509	113.911	0.411	6.260		OK
S90	600 min Winter	514	113.480	0.030	6.355		OK
S91	600 min Winter	514	112.610	0.030	6.355		Outfall

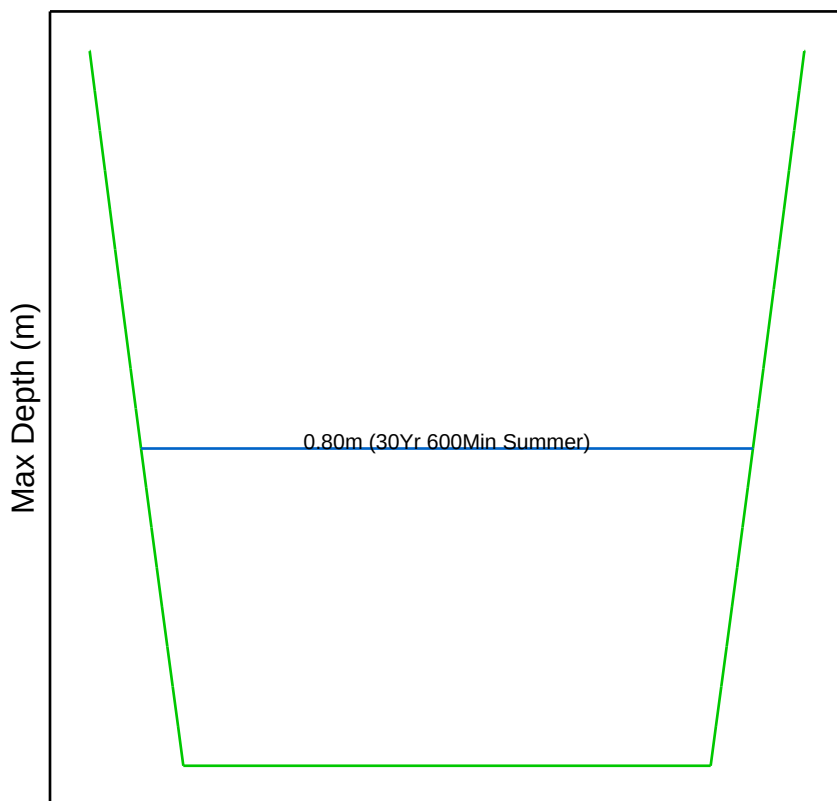
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	31	S64	S65	0.118	1.139	24.156	0.555	OK
1.001	60 min Summer	31	S65	S67	0.112	1.201	28.850	0.243	OK
2.000	60 min Summer	31	S66	S67	0.048	1.297	8.079	0.106	OK
1.002	60 min Summer	31	S67	S68	0.126	1.437	40.433	0.310	OK
1.003	60 min Summer	31	S68	S70	0.134	1.721	52.318	0.416	OK
3.000	60 min Summer	31	S69	S70	0.078	1.206	14.836	0.266	OK
1.004	60 min Summer	31	S70	S71	0.141	1.770	67.095	0.236	OK
1.005	60 min Summer	31	S71	S72	0.140	2.144	80.219	0.326	OK
1.006	60 min Summer	31	S72	S73	0.132	2.759	95.906	0.249	OK
1.007	60 min Summer	32	S73	S74	0.160	2.274	102.151	0.290	OK
1.008	60 min Summer	32	S74	S76	0.181	2.078	109.467	0.474	OK
4.000	60 min Summer	31	S75	S76	0.035	1.931	7.541	0.053	OK
1.009	60 min Summer	32	S76	S77	0.156	2.523	123.157	0.261	OK
1.010	60 min Summer	32	S77	S78	0.171	2.096	128.099	0.113	OK
1.011	60 min Summer	32	S78	S79	0.240	1.454	139.657	0.326	OK
1.012	600 min Winter	475	S79	S89	0.365	0.780	35.131	0.128	OK
5.000	60 min Summer	31	S80	S81	0.058	0.637	5.138	0.090	OK
5.001	60 min Summer	31	S81	S83	0.083	0.689	9.110	0.215	OK
6.000	60 min Summer	31	S82	S83	0.078	0.666	8.170	0.184	OK
5.002	60 min Summer	31	S83	S86	0.093	1.714	26.580	0.363	OK
7.000	60 min Summer	31	S84	S85	0.074	0.954	10.872	0.182	OK
7.001	60 min Summer	31	S85	S86	0.084	1.202	16.391	0.306	OK
5.003	60 min Summer	31	S86	S87	0.100	2.662	55.070	0.245	OK
5.004	60 min Summer	31	S87	S88	0.108	3.289	79.320	0.124	OK
5.005	600 min Winter	509	S88	S89	0.268	0.664	14.147	0.076	OK
1.013	600 min Winter	515	S89	S90	0.036	0.988	6.355	0.015	OK

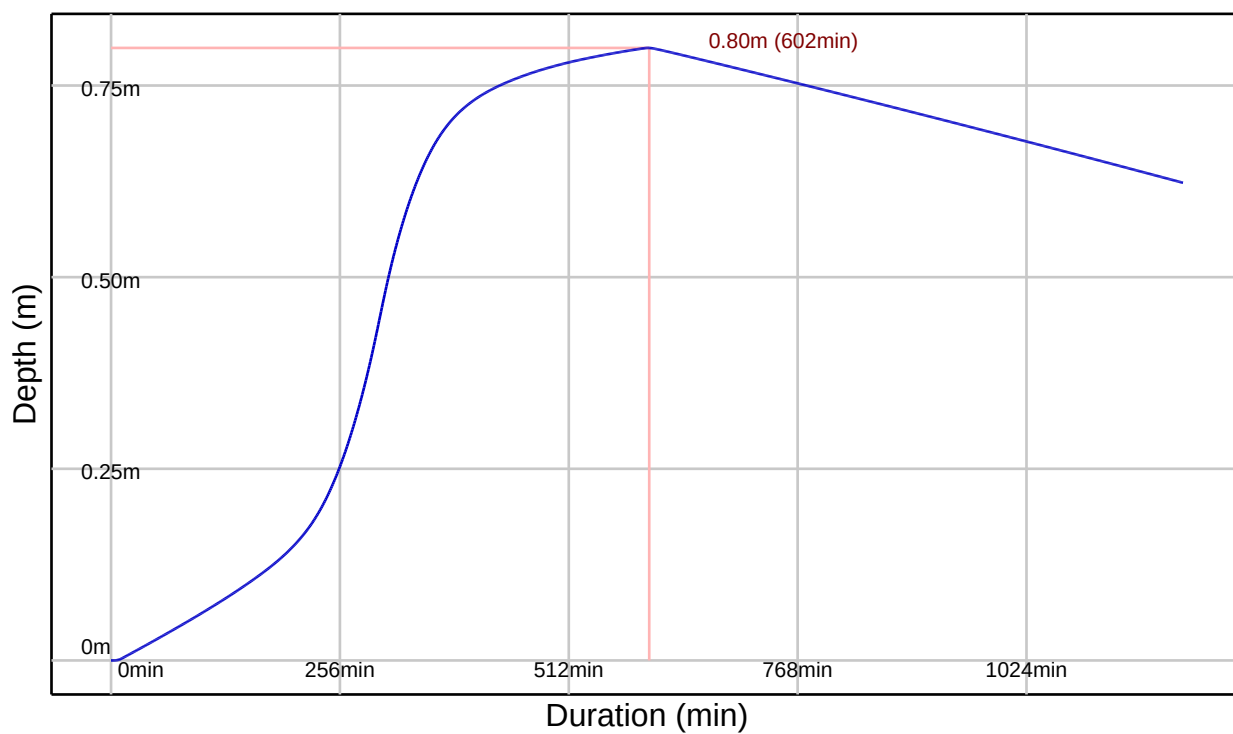
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.014	600 min Winter	514	S90	S91	0.030	2.000	6.355	0.041	OK

Pond Depth/Area Diagram at S89



Pond 1 at S89 (30Yr 600Min Summer)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (30, +0%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
30Yr 60Min Winter	30.208	0.00	-0.05	30Yr 480Min Summer	6.628	0.00	0.07
30Yr 60Min Summer	30.208	0.00	-0.03	30Yr 480Min Winter	6.628	0.00	0.07
30Yr 120Min Winter	18.851	0.00	0.01	30Yr 600Min Summer	5.520	0.00	0.03
30Yr 120Min Summer	18.851	0.00	0.03	30Yr 600Min Winter	5.520	0.00	-0.01
30Yr 180Min Winter	14.173	0.00	0.06	30Yr 720Min Summer	4.737	0.00	0.00
30Yr 180Min Summer	14.173	0.00	0.06	30Yr 720Min Winter	4.737	0.00	-0.03
30Yr 240Min Winter	11.392	0.00	0.09	30Yr 960Min Summer	3.722	0.00	-0.08
30Yr 240Min Summer	11.392	0.00	0.09	30Yr 960Min Winter	3.722	0.00	-0.04
30Yr 360Min Winter	8.325	0.00	0.10	30Yr 1440Min Winter	2.658	0.00	-0.01
30Yr 360Min Summer	8.325	0.00	0.10	30Yr 1440Min Summer	2.658	0.00	-0.04

Simulation Results

Return Period (yrs) + Climate Change (%):

30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S64	60 min Summer	32	122.542	0.412	57.118		Surcharged
S65	60 min Summer	32	121.894	0.194	67.673		OK
S66	60 min Summer	31	121.975	0.080	20.004		OK
S67	60 min Summer	32	121.834	0.209	95.192		OK
S68	60 min Summer	32	121.638	0.248	124.296		OK
S69	60 min Summer	31	121.267	0.135	36.733		OK
S70	60 min Summer	31	120.941	0.236	160.414		OK
S71	60 min Summer	31	120.783	0.258	193.227		OK
S72	60 min Summer	31	120.219	0.221	232.103		OK
S73	60 min Summer	32	119.546	0.231	246.411		OK
S74	60 min Summer	32	118.405	0.485	263.898		Surcharged
S75	60 min Summer	31	119.835	0.055	18.671		OK
S76	60 min Summer	32	117.751	0.271	295.650		OK
S77	60 min Summer	32	117.047	0.182	307.335		OK
S78	600 min Summer	599	114.299	0.529	5.284		Surcharged
S79	600 min Summer	600	114.299	0.689	4.674		Surcharged
S80	60 min Summer	31	121.116	0.069	12.721		OK
S81	60 min Summer	31	121.033	0.128	22.545		OK
S82	60 min Summer	31	121.078	0.103	20.232		OK
S83	60 min Summer	31	121.000	0.168	66.172		OK
S84	60 min Summer	31	120.412	0.107	26.919		OK
S85	60 min Summer	31	120.223	0.148	40.671		OK
S86	60 min Summer	31	119.830	0.170	137.171		OK
S87	60 min Summer	31	117.115	0.140	196.971		OK
S88	600 min Summer	601	114.299	0.589	1.644		Surcharged
S89	600 min Summer	601	114.299	0.799	5.600		Surcharged
S90	1440 min Winter	2240	113.481	0.031	6.397		OK
S91	1440 min Winter	2240	112.610	0.030	6.397		Outfall

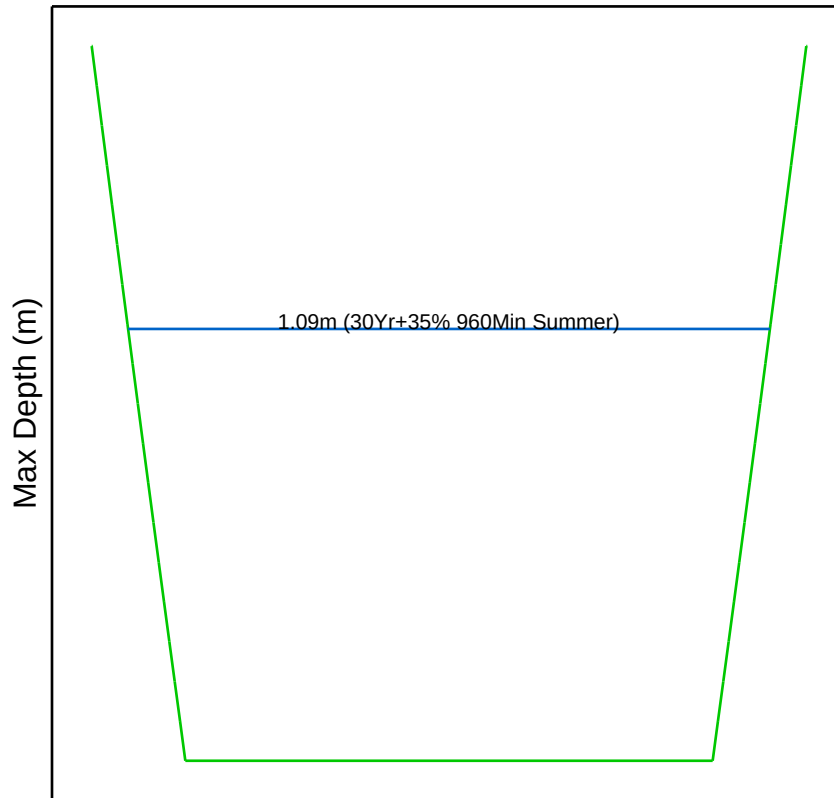
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	32	S64	S65	0.210	1.464	56.578	1.299	OK
1.001	60 min Summer	32	S65	S67	0.202	1.382	67.730	0.570	OK
2.000	60 min Summer	31	S66	S67	0.107	1.360	19.991	0.263	OK
1.002	60 min Summer	32	S67	S68	0.228	1.655	95.415	0.732	OK
1.003	60 min Summer	32	S68	S70	0.241	2.055	125.076	0.995	OK
3.000	60 min Summer	31	S69	S70	0.132	1.511	36.738	0.659	OK
1.004	60 min Summer	32	S70	S71	0.247	2.094	160.653	0.566	OK
1.005	60 min Summer	31	S71	S72	0.240	2.601	192.680	0.783	OK
1.006	60 min Summer	32	S72	S73	0.225	3.359	231.665	0.602	OK
1.007	60 min Summer	32	S73	S74	0.303	2.648	247.057	0.701	OK
1.008	60 min Summer	32	S74	S76	0.363	2.415	262.534	1.138	OK
4.000	60 min Summer	31	S75	S76	0.055	2.510	18.671	0.132	OK
1.009	60 min Summer	32	S76	S77	0.259	3.112	295.422	0.626	OK
1.010	60 min Summer	32	S77	S78	0.293	2.472	307.044	0.271	OK
1.011	600 min Winter	555	S78	S79	0.525	0.991	111.718	0.260	OK
1.012	180 min Summer	132	S79	S89	0.525	1.294	182.138	0.665	OK
5.000	60 min Summer	31	S80	S81	0.099	0.762	12.721	0.223	OK
5.001	60 min Summer	31	S81	S83	0.148	0.816	22.515	0.532	OK
6.000	60 min Summer	31	S82	S83	0.136	0.819	20.232	0.454	OK
5.002	60 min Summer	31	S83	S86	0.166	2.101	65.850	0.899	OK
7.000	60 min Summer	31	S84	S85	0.128	1.160	26.917	0.452	OK
7.001	60 min Summer	31	S85	S86	0.145	1.497	40.647	0.759	OK
5.003	60 min Summer	31	S86	S87	0.168	3.359	136.760	0.609	OK
5.004	60 min Summer	31	S87	S88	0.218	3.244	196.881	0.307	OK
5.005	180 min Summer	148	S88	S89	0.450	1.130	103.583	0.554	OK
1.013	960 min Winter	1904	S89	S90	0.036	0.990	6.397	0.015	OK

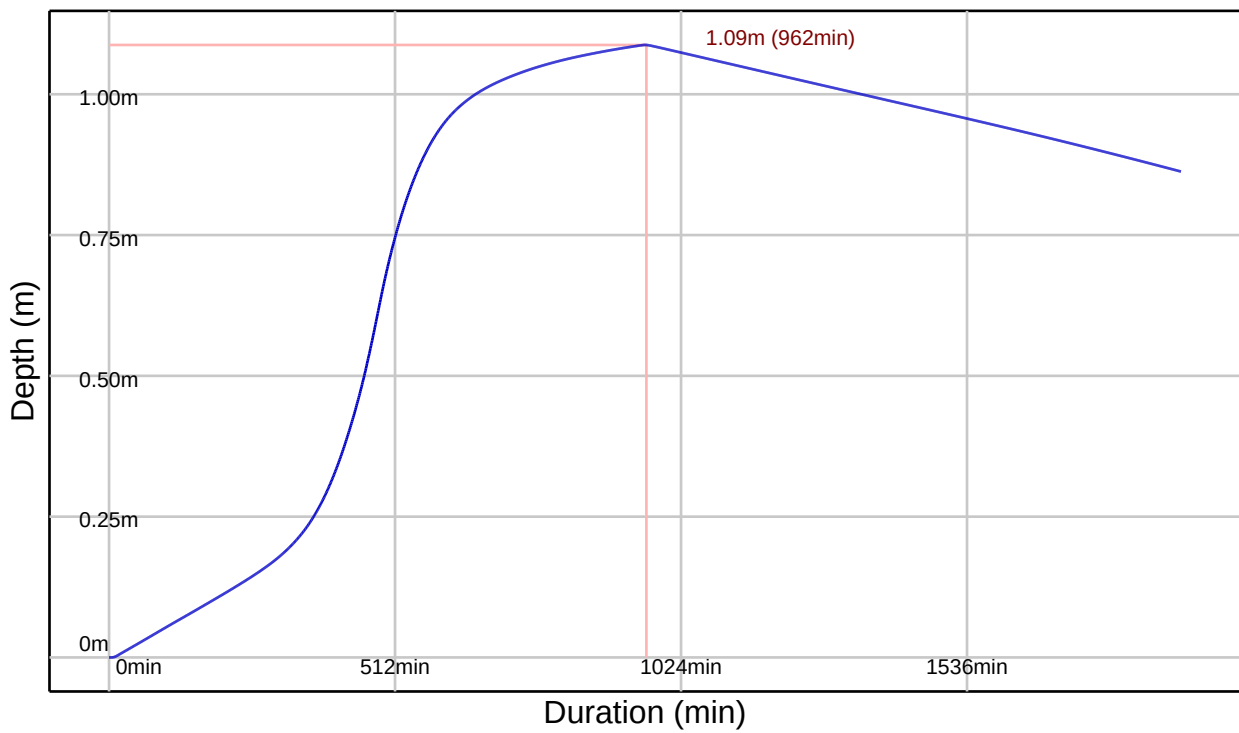
Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.014	1440 min Winter	2240	S90	S91	0.030	2.003	6.397	0.042	OK

Pond Depth/Area Diagram at S89



Pond 1 at S89 (30Yr+35% 960Min Summer)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_442861_296095_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (30, +35%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
30Yr+35% 60Min Winter	40.780	0.00	0.14	30Yr+35% 480Min Summer	8.948	0.00	0.65
30Yr+35% 60Min Summer	40.780	0.00	0.22	30Yr+35% 480Min Winter	8.948	0.00	0.65
30Yr+35% 120Min Winter	25.448	0.00	0.40	30Yr+35% 600Min Summer	7.452	0.00	0.60
30Yr+35% 120Min Summer	25.448	0.00	0.39	30Yr+35% 600Min Winter	7.452	0.00	0.60
30Yr+35% 180Min Winter	19.133	0.00	0.57	30Yr+35% 720Min Summer	6.395	0.00	0.54
30Yr+35% 180Min Summer	19.133	0.00	0.55	30Yr+35% 720Min Winter	6.395	0.00	0.50
30Yr+35% 240Min Winter	15.379	0.00	0.63	30Yr+35% 960Min Summer	5.025	0.00	0.37
30Yr+35% 240Min Summer	15.379	0.00	0.62	30Yr+35% 960Min Winter	5.025	0.00	0.37
30Yr+35% 360Min Winter	11.238	0.00	0.67	30Yr+35% 1440Min Winter	3.588	0.00	0.11
30Yr+35% 360Min Summer	11.238	0.00	0.67	30Yr+35% 1440Min Summer	3.588	0.00	0.10

Simulation Results

Return Period (yrs) + Climate Change (%):

30yr+35%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S64	60 min Summer	33	123.152	1.023	68.980		Surcharged
S65	60 min Summer	33	122.199	0.499	85.533		Surcharged
S66	60 min Summer	33	122.167	0.272	22.975		Surcharged
S67	60 min Summer	33	122.148	0.523	118.348		Surcharged
S68	60 min Summer	33	121.936	0.546	153.051		Surcharged
S69	60 min Summer	31	121.300	0.168	49.590		OK
S70	60 min Summer	32	120.989	0.284	197.779		OK
S71	60 min Summer	32	120.835	0.310	240.100		OK
S72	60 min Summer	33	120.274	0.277	280.874		OK
S73	60 min Summer	33	119.771	0.456	301.830		Surcharged
S74	60 min Summer	33	118.706	0.786	324.550		Surcharged
S75	60 min Summer	31	119.843	0.063	25.206		OK
S76	60 min Summer	31	117.798	0.318	369.672		OK
S77	60 min Summer	32	117.071	0.206	386.782		OK
S78	960 min Summer	958	114.587	0.817	4.746		Surcharged
S79	960 min Summer	959	114.588	0.978	4.239		Surcharged
S80	60 min Summer	33	121.209	0.162	14.610		OK
S81	60 min Summer	33	121.202	0.298	26.326		Surcharged
S82	60 min Summer	33	121.212	0.237	23.238		Surcharged
S83	60 min Summer	33	121.171	0.339	77.492		Surcharged
S84	60 min Summer	30	120.438	0.133	36.295		OK
S85	60 min Summer	31	120.267	0.192	54.929		OK
S86	60 min Summer	31	119.859	0.199	173.514		OK
S87	60 min Summer	31	117.136	0.161	254.248		OK
S88	960 min Summer	960	114.587	0.877	1.578		Surcharged
S89	960 min Summer	960	114.588	1.088	5.229		Surcharged
S90	720 min Winter	333	113.481	0.031	6.397		OK
S91	720 min Winter	333	112.610	0.030	6.397		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	60 min Summer	32	S64	S65	0.225	1.831	72.786	1.671	OK
1.001	60 min Summer	33	S65	S67	0.300	1.396	85.343	0.718	Surcharged
2.000	60 min Summer	32	S66	S67	0.225	1.366	25.571	0.336	OK
1.002	60 min Summer	33	S67	S68	0.300	1.672	118.174	0.907	Surcharged
1.003	60 min Summer	33	S68	S70	0.291	2.176	152.373	1.212	OK
3.000	60 min Summer	31	S69	S70	0.164	1.598	49.597	0.890	OK
1.004	60 min Summer	32	S70	S71	0.297	2.168	197.738	0.697	OK
1.005	60 min Summer	32	S71	S72	0.292	2.675	240.108	0.975	OK
1.006	60 min Summer	33	S72	S73	0.326	3.384	290.305	0.754	OK
1.007	60 min Summer	32	S73	S74	0.375	2.825	307.205	0.872	Surcharged
1.008	60 min Summer	33	S74	S76	0.375	2.940	324.683	1.407	Surcharged
4.000	60 min Summer	31	S75	S76	0.078	2.642	25.206	0.178	OK
1.009	60 min Summer	32	S76	S77	0.302	3.261	370.699	0.785	OK
1.010	60 min Summer	32	S77	S78	0.365	2.510	387.753	0.342	OK
1.011	120 min Summer	101	S78	S79	0.525	1.592	311.510	0.726	OK
1.012	60 min Summer	37	S79	S89	0.525	2.282	412.340	1.505	OK
5.000	60 min Summer	33	S80	S81	0.194	0.780	17.062	0.299	OK
5.001	60 min Summer	31	S81	S83	0.225	0.830	27.385	0.648	OK
6.000	60 min Summer	32	S82	S83	0.225	0.845	25.419	0.571	OK
5.002	60 min Summer	33	S83	S86	0.220	2.149	78.824	1.076	OK
7.000	60 min Summer	31	S84	S85	0.162	1.203	36.362	0.610	OK
7.001	60 min Summer	31	S85	S86	0.187	1.559	54.757	1.022	OK
5.003	60 min Summer	31	S86	S87	0.196	3.532	172.964	0.770	OK
5.004	60 min Summer	31	S87	S88	0.268	3.219	254.152	0.396	OK
5.005	60 min Summer	52	S88	S89	0.450	1.687	252.655	1.351	OK
1.013	960 min Winter	441	S89	S90	0.036	0.990	6.397	0.015	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.014	720 min Winter	333	S90	S91	0.030	2.003	6.397	0.042	OK

APPENDIX F

SURFACE WATER CALCULATIONS- SOUTHERN PARCEL

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW18 Private Road

Type : Catchment Area

Area (ha)	0.048
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW17 Private Road

Type : Catchment Area

Area (ha)	0.043
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW2 Private Drive

Type : Catchment Area

Area (ha)	0.044
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW5 Private Road

Type : Catchment Area

Area (ha)	0.056
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW9 Private Road

Type : Catchment Area

Area (ha)	0.023
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW1 Private Road B

Type : Catchment Area

Area (ha)	0.026
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW1 Private Road A

Type : Catchment Area

Area (ha)	0.003
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW3 Road

Type : Catchment Area

Area (ha)	0.069
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW14 Road

Type : Catchment Area

Area (ha)	0.039
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW16 Road

Type : Catchment Area

Area (ha)	0.079
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW15 Private Road

Type : Catchment Area

Area (ha)	0.026
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW6 Road

Type : Catchment Area

Area (ha)	0.072
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW19 Road

Type : Catchment Area

Area (ha)	0.051
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW8 Road

Type : Catchment Area

Area (ha)	0.046
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW9 Road

Type : Catchment Area

Area (ha)	0.051
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by: RM	Checked by:	Approved By:	
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW11 Road

Type : Catchment Area

Area (ha)	0.019
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



SW9 Dwelling A

Type : Catchment Area

Area (ha)	0.013
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW09 Dwelling B

Type : Catchment Area

Area (ha)	0.009
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW9 Dwelling C

Type : Catchment Area

Area (ha)	0.009
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW5 Dwelling A

Type : Catchment Area

Area (ha)	0.012
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW7 Dwelling A

Type : Catchment Area

Area (ha)	0.011
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW7 Dwelling B

Type : Catchment Area

Area (ha)	0.007
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW5 Dwelling B

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW5 Dwelling C

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW6 Dwelling

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW4 Dwelling B

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW2 Dwelling A

Type : Catchment Area

Area (ha)	0.009
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW2 Dwelling B

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW2 Dwelling C

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW2 Dwelling D

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW2 Dwelling E

Type : Catchment Area

Area (ha)	0.012
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW1 Dwelling B

Type : Catchment Area

Area (ha)	0.013
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW4 Dwelling D

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW4 Dwelling C

Type : Catchment Area

Area (ha)	0.009
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW13 Dwelling B

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



DW14 Dwelling B

Type : Catchment Area

Area (ha)	0.012
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW15 Dwelling B

Type : Catchment Area

Area (ha)	0.012
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW15 Dwelling A

Type : Catchment Area

Area (ha)	0.011
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW17 Dwelling C

Type : Catchment Area

Area (ha)	0.014
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW17 Dwelling B

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW17 Dwelling A

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW18 Dwelling D

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW18 Dwelling C

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW18 Dwelling B

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW18 Dwelling A

Type : Catchment Area

Area (ha)	0.014
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW10 Dwelling

Type : Catchment Area

Area (ha)	0.018
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW8 Dwelling

Type : Catchment Area

Area (ha)	0.015
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW7 Dwelling C

Type : Catchment Area

Area (ha)	0.015
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Inflows Storm Phase: SW	Designed by:	Checked by:	Approved By:	
	RM			
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



SW13 Dwelling A

Type : Catchment Area

Area (ha)	0.015
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW14 Dwelling A

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



SW4 Dwelling A

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW1 Dwelling A

Type : Catchment Area

Area (ha)	0.011
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



Direct runoff on Basin Area

Type : Catchment Area

Area (ha)	0.15
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.300
Winter Volumetric Runoff	0.300
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Junctions Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
SW12	Manhole	442847.240	295776.818	118.915	2.958	115.957	Circular	1.350
SW19	Manhole	442861.327	295743.571	118.446	2.249	116.197	Circular	1.350
SW16	Manhole	442968.169	295725.740	121.848	2.868	118.980	Circular	1.200
SW18	Manhole	442886.995	295738.689	119.176	2.326	116.850	Circular	1.350
SW11	Manhole	442860.826	295778.830	119.892	3.592	116.300	Circular	1.350
SW10	Manhole	442869.027	295787.148	120.278	3.686	116.592	Circular	1.350
SW8	Manhole	442914.463	295786.761	121.497	3.754	117.743	Circular	1.350
SW7	Manhole	442931.409	295787.448	121.980	3.813	118.167	Circular	1.350
SW6	Manhole	442941.156	295791.266	122.270	3.840	118.430	Circular	1.350
SW4	Manhole	442974.243	295806.785	123.184	3.466	119.718	Circular	1.200
SW3	Manhole	442987.905	295810.930	123.383	3.114	120.269	Circular	1.200
SW2	Manhole	442987.173	295835.191	123.567	2.009	121.558	Circular	1.200
SW1	Manhole	443009.251	295810.443	123.659	2.172	121.487	Circular	1.200
SW5	Manhole	442924.302	295830.811	122.351	1.622	120.729	Circular	1.200
SW14	Manhole	442971.474	295761.867	122.305	2.343	119.962	Circular	1.200
SW13	Manhole	442968.949	295775.159	122.484	2.109	120.375	Circular	1.200
SW20	Manhole	442849.709	295746.310	118.330	2.432	115.898	Circular	1.350
SW9	Manhole	442881.068	295790.367	120.585	3.681	116.904	Circular	1.350
SW17	Manhole	442945.489	295728.820	121.104	2.696	118.408	Circular	1.200
SW15	Manhole	442989.127	295722.776	122.662	3.078	119.584	Circular	1.200

Name	Lock
SW12	None
SW19	None
SW16	None
SW18	None
SW11	None
SW10	None
SW8	None
SW7	None
SW6	None
SW4	None
SW3	None
SW2	None
SW1	None
SW5	None
SW14	None
SW13	None
SW20	None
SW9	None
SW17	None
SW15	None

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
SW12	Inlet	SW1.008	(None)	No Restriction
SW19	Inlet	SW19 Road SW4.004	(None)	No Restriction
SW16	Inlet	SW16 Road SW4.001 SW5.000	(None)	No Restriction
SW18	Inlet	SW4.003 SW18 Private Road SW18 Dwelling A SW18 Dwelling B SW18 Dwelling C SW18 Dwelling D	(None)	No Restriction

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
SW11	Inlet	SW11 Road SW1.007	(None)	No Restriction
SW10	Inlet	SW1.006 SW10 Dwelling	(None)	No Restriction
SW8	Inlet	SW8 Road SW1.004 SW8 Dwelling	(None)	No Restriction
SW7	Inlet	SW1.003 SW7 Dwelling B SW7 Dwelling A SW7 Dwelling C	(None)	No Restriction
SW6	Inlet	SW1.002 SW3.000 SW6 Road SW6 Dwelling	(None)	No Restriction
SW4	Inlet	SW1.001 SW4 Dwelling A SW4 Dwelling B SW4 Dwelling C SW4 Dwelling D	(None)	No Restriction
SW3	Inlet	SW3 Road SW1.000 SW2.000	(None)	No Restriction
SW2	Inlet (1)	SW2 Dwelling A SW2 Dwelling B SW2 Dwelling C SW2 Dwelling D SW2 Private Drive SW2 Dwelling E	(None)	No Restriction
SW1	Inlet	SW1 Dwelling A SW1 Dwelling B SW1 Private Road B SW1 Private Road A	(None)	No Restriction
SW5	Inlet	SW5 Private Road SW5 Dwelling A SW5 Dwelling B SW5 Dwelling C	(None)	No Restriction
SW14	Inlet	SW4.000 SW14 Road SW14 Dwelling A DW14 Dwelling B	(None)	No Restriction
SW13	Inlet	SW13 Dwelling A SW13 Dwelling B	(None)	No Restriction
SW20	Inlet	SW4.005	(None)	No Restriction
SW9	Inlet	SW9 Road SW1.005 SW9 Dwelling A SW9 Private Road SW09 Dwelling B SW9 Dwelling C	(None)	No Restriction
SW17	Inlet	SW4.002 SW17 Dwelling A SW17 Dwelling B SW17 Dwelling C SW17 Private Road	(None)	No Restriction
SW15	Inlet	SW15 Private Road SW15 Dwelling A SW15 Dwelling B	(None)	No Restriction

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SW12	Outlet	SW1.009	Free Discharge
SW19	Outlet	SW4.005	Free Discharge
SW16	Outlet	SW4.002	Free Discharge
SW18	Outlet	SW4.004	Free Discharge
SW11	Outlet	SW1.008	Free Discharge
SW10	Outlet	SW1.007	Free Discharge
SW8	Outlet	SW1.005	Free Discharge
SW7	Outlet	SW1.004	Free Discharge
SW6	Outlet	SW1.003	Free Discharge
SW4	Outlet	SW1.002	Free Discharge
SW3	Outlet	SW1.001	Free Discharge
SW2	Outlet	SW2.000	Free Discharge
SW1	Outlet	SW1.000	Free Discharge
SW5	Outlet	SW3.000	Free Discharge
SW14	Outlet	SW4.001	Free Discharge
SW13	Outlet	SW4.000	Free Discharge
SW20	Outlet	SW4.006	Free Discharge
SW9	Outlet	SW1.006	Free Discharge
SW17	Outlet	SW4.003	Free Discharge
SW15	Outlet	SW5.000	Free Discharge

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Stormwater Controls Storm Phase: SW	Designed by: RM	Checked by:	Approved By:	
ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				



Attenuation Basin

Type : Pond

Dimensions

Exceedance Level (m)	117.000
Depth (m)	1.300
Base Level (m)	115.700
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	1190.947

Depth (m)	Area (m²)	Volume (m³)
0.000	1012.34	0.000
0.100	1046.46	102.935
0.200	1081.14	209.310
0.300	1116.39	319.182
0.400	1152.21	432.608
0.500	1188.59	549.643
0.600	1225.54	670.345
0.700	1263.05	794.770
0.800	1301.13	922.974
0.900	1339.77	1055.014
1.000	1378.98	1190.947
1.100	1418.75	1330.829
1.200	1459.09	1474.717
1.300	1500.00	1622.667

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	SW1.009
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	SW4.006
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Lateral Inflow
Incoming Item(s)	Direct runoff on Basin Area
Bypass Destination	(None)
Capacity Type	No Restriction

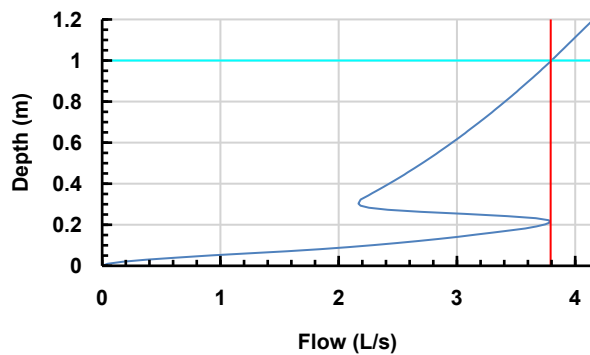
ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Stormwater Controls Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	115.700
Design Depth (m)	1.000
Design Flow (L/s)	3.8
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐

Unit Reference	CHE-0089-3800-1000-3800
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Advanced

Perimeter	Circular
Length (m)	70.200
Friction Scheme	Manning's n
n	0.022

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
		Designed by: RM	Checked by:		Approved By:
Report Details: Type: Connections Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
SW1.000	21.352	Pipe	19.993		0.6	150	123.659	121.487
SW1.001	14.277	Pipe	29.994		0.6	300	123.383	120.269
SW1.002	36.546	Pipe	30.005		0.6	300	123.184	119.718
SW1.003	10.468	Pipe	39.801		0.6	375	122.270	118.430
SW1.004	16.961	Pipe	40.002		0.6	375	121.980	118.167
SW1.005	33.589	Pipe	40.035		0.6	375	121.497	117.743
SW1.006	12.463	Pipe	39.945		0.6	375	120.585	116.904
SW1.007	11.681	Pipe	40.003		0.6	375	120.278	116.592
SW1.008	13.734	Pipe	40.042		0.6	375	119.892	116.300
SW1.009	10.271	Pipe	39.965		0.6	375	118.915	115.957
SW2.000	24.272	Pipe	19.993		0.6	225	123.567	121.558
SW3.000	42.987	Pipe	20.003		0.6	225	122.351	120.729
SW4.000	13.530	Pipe	40.030		0.6	150	122.484	120.375
SW4.001	36.278	Pipe	39.997		0.6	225	122.305	119.962
SW4.002	22.888	Pipe	40.014		0.6	300	121.848	118.980
SW4.003	59.321	Pipe	40.001		0.6	300	121.104	118.408
SW4.004	26.128	Pipe	40.012		0.6	375	119.176	116.850
SW4.005	11.936	Pipe	39.921		0.6	375	118.446	116.197
SW4.006	7.925	Pipe	40.027		0.6	375	118.330	115.898
SW5.000	21.167	Pipe	40.012		0.6	225	122.662	119.584

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Culvert Type	Culvert Entrance	Wall Thickness (mm)	Material
SW1.000	123.383	120.419		All	(None)	(None)	0	
SW1.001	123.184	119.793		All	(None)	(None)	0	
SW1.002	122.270	118.500		All	(None)	(None)	0	
SW1.003	121.980	118.167		All	(None)	(None)	0	
SW1.004	121.497	117.743		All	(None)	(None)	0	
SW1.005	120.585	116.904		All	(None)	(None)	0	
SW1.006	120.278	116.592		All	(None)	(None)	0	
SW1.007	119.892	116.300		All	(None)	(None)	0	
SW1.008	118.915	115.957		All	(None)	(None)	0	
SW1.009	118.342	115.700		All	(None)	(None)	0	
SW2.000	123.383	120.344		All	(None)	(None)	0	
SW3.000	122.270	118.580		All	(None)	(None)	0	
SW4.000	122.305	120.037		All	(None)	(None)	0	
SW4.001	121.848	119.055		All	(None)	(None)	0	
SW4.002	121.104	118.408		All	(None)	(None)	0	
SW4.003	119.176	116.925		All	(None)	(None)	0	
SW4.004	118.446	116.197		All	(None)	(None)	0	
SW4.005	118.330	115.898		All	(None)	(None)	0	
SW4.006	118.030	115.700		All	(None)	(None)	0	
SW5.000	121.848	119.055		All	(None)	(None)	0	

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026	
		Designed by: RM	Checked by:
		Approved By:	
Report Details: Type: Connections Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG	



Name	Trench Width (mm)	Bedding Material	Surrounding Material
SW1.000	0		
SW1.001	0		
SW1.002	0		
SW1.003	0		
SW1.004	0		
SW1.005	0		
SW1.006	0		
SW1.007	0		
SW1.008	0		
SW1.009	0		
SW2.000	0		
SW3.000	0		
SW4.000	0		
SW4.001	0		
SW4.002	0		
SW4.003	0		
SW4.004	0		
SW4.005	0		
SW4.006	0		
SW5.000	0		

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Manhole Schedule Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SW12	118.915 115.957	Diameter / Length: 1.350	{1} SW1.008	Pipe	115.957	Diam/Width:375	Manhole
E:442847.240 N:295776.818	2.958		{a} SW1.009	Pipe	115.957	Diam/Width:375	Not Applicable
SW19	118.446 116.197	Diameter / Length: 1.350	{1} SW4.004	Pipe	116.197	Diam/Width:375	Manhole
E:442861.327 N:295743.571	2.249		{a} SW4.005	Pipe	116.197	Diam/Width:375	Not Applicable
SW16	121.848 118.980	Diameter / Length: 1.200	{1} SW4.001	Pipe	119.055	Diam/Width:225	Manhole
E:442968.169 N:295725.740	2.868		{2} SW5.000	Pipe	119.055	Diam/Width:225	
			{a} SW4.002	Pipe	118.980	Diam/Width:300	Not Applicable
SW18	119.176 116.850	Diameter / Length: 1.350	{1} SW4.003	Pipe	116.925	Diam/Width:300	Manhole
E:442886.995 N:295738.689	2.326		{a} SW4.004	Pipe	116.850	Diam/Width:375	Not Applicable
SW11	119.892 116.300	Diameter / Length: 1.350	{1} SW1.007	Pipe	116.300	Diam/Width:375	Manhole
E:442860.826 N:295778.830	3.592		{a} SW1.008	Pipe	116.300	Diam/Width:375	Not Applicable

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Manhole Schedule Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SW10	120.278 116.592	Diameter / Length: 1.350	{1} SW1.006	Pipe	116.592	Diam/Width:375	Manhole
E:442869.027 N:295787.148	3.686						
			{a} SW1.007	Pipe	116.592	Diam/Width:375	Not Applicable
SW8	121.497 117.743	Diameter / Length: 1.350	{1} SW1.004	Pipe	117.743	Diam/Width:375	Manhole
E:442914.463 N:295786.761	3.754						
			{a} SW1.005	Pipe	117.743	Diam/Width:375	Not Applicable
SW7	121.980 118.167	Diameter / Length: 1.350	{1} SW1.003	Pipe	118.167	Diam/Width:375	Manhole
E:442931.409 N:295787.448	3.813						
			{a} SW1.004	Pipe	118.167	Diam/Width:375	Not Applicable
SW6	122.270 118.430	Diameter / Length: 1.350	{1} SW1.002	Pipe	118.500	Diam/Width:300	Manhole
E:442941.156 N:295791.266	3.840		{2} SW3.000	Pipe	118.580	Diam/Width:225	
			{a} SW1.003	Pipe	118.430	Diam/Width:375	Not Applicable
SW4	123.184 119.718	Diameter / Length: 1.200	{1} SW1.001	Pipe	119.793	Diam/Width:300	Manhole
E:442974.243 N:295806.785	3.466						
			{a} SW1.002	Pipe	119.718	Diam/Width:300	Not Applicable

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Manhole Schedule Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SW3	123.383 120.269	Diameter / Length: 1.200	{1} SW1.000	Pipe	120.419	Diam/Width:150	Manhole
E:442987.905 N:295810.930	3.114		{2} SW2.000	Pipe	120.344	Diam/Width:225	
			{a} SW1.001	Pipe	120.269	Diam/Width:300	Not Applicable
SW2	123.567 121.558	Diameter / Length: 1.200					Manhole
E:442987.173 N:295835.191	2.009						
			{a} SW2.000	Pipe	121.558	Diam/Width:225	Not Applicable
SW1	123.659 121.487	Diameter / Length: 1.200					Manhole
E:443009.251 N:295810.443	2.172						
			{a} SW1.000	Pipe	121.487	Diam/Width:150	Not Applicable
SW5	122.351 120.729	Diameter / Length: 1.200					Manhole
E:442924.302 N:295830.811	1.622						
			{a} SW3.000	Pipe	120.729	Diam/Width:225	Not Applicable
SW14	122.305 119.962	Diameter / Length: 1.200	{1} SW4.000	Pipe	120.037	Diam/Width:150	Manhole
E:442971.474 N:295761.867	2.343						
			{a} SW4.001	Pipe	119.962	Diam/Width:225	Not Applicable

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Manhole Schedule Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SW13	122.484 120.375	Diameter / Length: 1.200					Manhole
E:442968.949 N:295775.159	2.109						
			{a} SW4.000	Pipe	120.375	Diam/Width:150	Not Applicable
SW20	118.330 115.898	Diameter / Length: 1.350	{1} SW4.005	Pipe	115.898	Diam/Width:375	Manhole
E:442849.709 N:295746.310	2.432						
			{a} SW4.006	Pipe	115.898	Diam/Width:375	Not Applicable
SW9	120.585 116.904	Diameter / Length: 1.350	{1} SW1.005	Pipe	116.904	Diam/Width:375	Manhole
E:442881.068 N:295790.367	3.681						
			{a} SW1.006	Pipe	116.904	Diam/Width:375	Not Applicable
SW17	121.104 118.408	Diameter / Length: 1.200	{1} SW4.002	Pipe	118.408	Diam/Width:300	Manhole
E:442945.489 N:295728.820	2.696						
			{a} SW4.003	Pipe	118.408	Diam/Width:300	Not Applicable
SW15	122.662 119.584	Diameter / Length: 1.200					Manhole
E:442989.127 N:295722.776	3.078						
			{a} SW5.000	Pipe	119.584	Diam/Width:225	Not Applicable

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Inflow Summary Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Direct runoff on Basin Area	Attenuation Basin		Time of Concentration	0.150	100	0	100	0.150
DW14 Dwelling B	SW14		Time of Concentration	0.012	100	10	110	0.013
SW1 Dwelling A	SW1		Time of Concentration	0.011	100	10	110	0.012
SW1 Dwelling B	SW1		Time of Concentration	0.013	100	10	110	0.015
SW1 Private Road A	SW1		Time of Concentration	0.003	100	0	100	0.003
SW1 Private Road B	SW1		Time of Concentration	0.026	100	0	100	0.026
SW2 Dwelling A	SW2		Time of Concentration	0.009	100	10	110	0.010
SW2 Dwelling B	SW2		Time of Concentration	0.010	100	10	110	0.011
SW2 Dwelling C	SW2		Time of Concentration	0.010	100	10	110	0.011
SW2 Dwelling D	SW2		Time of Concentration	0.010	100	10	110	0.011
SW2 Dwelling E	SW2		Time of Concentration	0.012	100	10	110	0.013
SW2 Private Drive	SW2		Time of Concentration	0.044	100	0	100	0.044
SW3 Road	SW3		Time of Concentration	0.069	100	0	100	0.069
SW4 Dwelling B	SW4		Time of Concentration	0.010	100	10	110	0.011
SW4 Dwelling A	SW4		Time of Concentration	0.010	100	10	110	0.011
SW4 Dwelling C	SW4		Time of Concentration	0.009	100	10	110	0.010
SW4 Dwelling D	SW4		Time of Concentration	0.010	100	10	110	0.011
SW5 Dwelling A	SW5		Time of Concentration	0.012	100	10	110	0.013
SW5 Dwelling B	SW5		Time of Concentration	0.010	100	10	110	0.011
SW5 Dwelling C	SW5		Time of Concentration	0.010	100	10	110	0.011
SW5 Private Road	SW5		Time of Concentration	0.056	100	0	100	0.056
SW6 Dwelling	SW6		Time of Concentration	0.010	100	10	110	0.011
SW6 Road	SW6		Time of Concentration	0.072	100	0	100	0.072
SW7 Dwelling A	SW7		Time of Concentration	0.011	100	10	110	0.012
SW7 Dwelling B	SW7		Time of Concentration	0.007	100	10	110	0.007
SW7 Dwelling C	SW7		Time of Concentration	0.015	100	10	110	0.017
SW8 Dwelling	SW8		Time of Concentration	0.015	100	10	110	0.017
SW8 Road	SW8		Time of Concentration	0.046	100	0	100	0.046
SW09 Dwelling B	SW9		Time of Concentration	0.009	100	10	110	0.010
SW9 Dwelling A	SW9		Time of Concentration	0.013	100	10	110	0.015
SW9 Dwelling C	SW9		Time of Concentration	0.009	100	10	110	0.010
SW9 Private Road	SW9		Time of Concentration	0.023	100	0	100	0.023

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
		Designed by: RM	Checked by:		Approved By:
Report Details: Type: Inflow Summary Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			

SW9 Road	SW9		Time of Concentration	0.051	100	0	100	0.051
SW10 Dwelling	SW10		Time of Concentration	0.018	100	10	110	0.019
SW11 Road	SW11		Time of Concentration	0.019	100	0	100	0.019
SW13 Dwelling A	SW13		Time of Concentration	0.015	100	10	110	0.017
SW13 Dwelling B	SW13		Time of Concentration	0.010	100	10	110	0.011
SW14 Dwelling A	SW14		Time of Concentration	0.010	100	10	110	0.011
SW14 Road	SW14		Time of Concentration	0.039	100	0	100	0.039
SW15 Dwelling A	SW15		Time of Concentration	0.011	100	10	110	0.012
SW15 Dwelling B	SW15		Time of Concentration	0.012	100	10	110	0.013
SW15 Private Road	SW15		Time of Concentration	0.026	100	0	100	0.026
SW16 Road	SW16		Time of Concentration	0.079	100	0	100	0.079
SW17 Dwelling A	SW17		Time of Concentration	0.010	100	10	110	0.011
SW17 Dwelling B	SW17		Time of Concentration	0.010	100	10	110	0.011
SW17 Dwelling C	SW17		Time of Concentration	0.014	100	10	110	0.016
SW17 Private Road	SW17		Time of Concentration	0.043	100	0	100	0.043
SW18 Dwelling A	SW18		Time of Concentration	0.014	100	10	110	0.016
SW18 Dwelling B	SW18		Time of Concentration	0.010	100	10	110	0.011
SW18 Dwelling C	SW18		Time of Concentration	0.010	100	10	110	0.011
SW18 Dwelling D	SW18		Time of Concentration	0.010	100	10	110	0.011
SW18 Private Road	SW18		Time of Concentration	0.048	100	0	100	0.048
SW19 Road	SW19		Time of Concentration	0.051	100	0	100	0.051
TOTAL		0.0		1.246				1.286

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Title: Rainfall Analysis Criteria	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Use Catchment Values
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall		
FEH	Type: FEH	
Site Location	GB 442926 295766 SP 42926 95766	
Rainfall Version	2022	
Summer	☒	
Winter	☒	

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	40.000
30.0	35.000
2.0	0.000
30.0	0.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026			
Report Details: Type: Junctions Summary Storm Phase: SW	Designed by: RM	Checked by:	Approved By:	
	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			



FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Depth

ADC3405: Southern Catchment Land at Normandy Way Hinckley				Date: 09/04/2026				
Report Details: Type: Junctions Summary Storm Phase: SW				Designed by: RM	Checked by:	Approved By:		
				ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG				

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SW12	FEH: 100 years: +40 %: 30 mins: Summer	118.9 15	115.9 57	116.61 1	0.654	324.5	0.936	0.000	324.4	293.046	Surcharged
SW19	FEH: 100 years: +40 %: 15 mins: Summer	118.4 46	116.1 97	116.68 2	0.485	296.6	0.694	0.000	276.6	147.046	Surcharged
SW16	FEH: 100 years: +40 %: 15 mins: Summer	121.8 48	118.9 80	119.29 9	0.319	165.4	0.361	0.000	132.1	72.219	Surcharged
SW18	FEH: 100 years: +40 %: 15 mins: Summer	119.1 76	116.8 50	117.14 7	0.297	255.9	0.425	0.000	258.0	130.242	OK
SW11	FEH: 100 years: +40 %: 15 mins: Summer	119.8 92	116.3 00	117.18 7	0.887	372.8	1.269	0.000	365.2	223.932	Surcharged
SW10	FEH: 100 years: +40 %: 15 mins: Summer	120.2 78	116.5 92	117.80 8	1.216	369.9	1.740	0.000	358.5	217.736	Surcharged
SW8	FEH: 100 years: +40 %: 15 mins: Summer	121.4 97	117.7 43	119.25 6	1.513	306.9	2.165	0.000	289.4	175.998	Surcharged
SW7	FEH: 100 years: +40 %: 15 mins: Summer	121.9 80	118.1 67	119.65 7	1.490	279.3	2.133	0.000	259.8	155.703	Surcharged
SW6	FEH: 100 years: +40 %: 15 mins: Summer	122.2 70	118.4 30	119.94 0	1.510	275.1	2.161	0.000	252.0	143.922	Surcharged
SW4	FEH: 100 years: +40 %: 15 mins: Summer	123.1 84	119.7 18	120.65 0	0.932	168.9	1.054	0.000	144.7	86.474	Surcharged
SW3	FEH: 100 years: +40 %: 15 mins: Summer	123.3 83	120.2 69	120.94 4	0.675	158.4	0.764	0.000	136.9	72.718	Surcharged
SW2	FEH: 100 years: +40 %: 15 mins: Summer	123.5 67	121.5 58	121.68 9	0.131	74.3	0.149	0.000	73.8	32.135	OK
SW1	FEH: 100 years: +40 %: 15 mins: Summer	123.6 59	121.4 87	121.69 2	0.205	42.0	0.232	0.000	32.6	18.080	Surcharged
SW5	FEH: 100 years: +40 %: 15 mins: Summer	122.3 51	120.7 29	120.85 3	0.124	68.7	0.141	0.000	68.0	29.599	OK
SW14	FEH: 100 years: +40 %: 15 mins: Summer	122.3 05	119.9 62	120.12 1	0.159	67.5	0.180	0.000	66.6	29.437	OK
SW13	FEH: 100 years: +40 %: 15 mins: Summer	122.4 84	120.3 75	120.47 8	0.103	20.9	0.117	0.000	20.3	9.057	OK
SW20	FEH: 100 years: +40 %: 1440 mins: Winter	118.3 30	115.8 98	116.59 9	0.701	14.4	1.003	0.000	14.3	491.636	Surcharged
SW9	FEH: 100 years: +40 %: 15 mins: Summer	120.5 85	116.9 04	118.42 9	1.525	370.3	2.182	0.000	355.3	211.402	Surcharged
SW17	FEH: 100 years: +40 %: 15 mins: Summer	121.1 04	118.4 08	118.93 2	0.524	192.8	0.592	0.000	182.9	98.605	Surcharged
SW15	FEH: 100 years: +40 %: 15 mins: Summer	122.6 62	119.5 84	119.69 3	0.109	38.7	0.123	0.000	39.0	16.751	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026		
Report Details: Type: Junctions Summary Storm Phase: SW		Designed by: RM	Checked by:	Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SW12	FEH: 30 years: +35 %: 960 mins: Winter	118.9 15	115.9 57	116.41 0	0.453	24.1	0.648	0.000	23.9	549.743	Surcharged
SW19	FEH: 30 years: +35 %: 15 mins: Summer	118.4 46	116.1 97	116.50 7	0.310	239.8	0.444	0.000	234.0	113.213	OK
SW16	FEH: 30 years: +35 %: 15 mins: Summer	121.8 48	118.9 80	119.18 7	0.207	126.3	0.234	0.000	121.9	55.668	OK
SW18	FEH: 30 years: +35 %: 15 mins: Summer	119.1 76	116.8 50	117.10 5	0.255	213.1	0.364	0.000	210.0	100.303	OK
SW11	FEH: 30 years: +35 %: 15 mins: Summer	119.8 92	116.3 00	116.85 5	0.555	314.3	0.795	0.000	309.7	172.410	Surcharged
SW10	FEH: 30 years: +35 %: 15 mins: Summer	120.2 78	116.5 92	117.30 9	0.717	309.2	1.027	0.000	303.3	167.631	Surcharged
SW8	FEH: 30 years: +35 %: 15 mins: Summer	121.4 97	117.7 43	118.37 4	0.631	257.4	0.903	0.000	243.1	135.589	Surcharged
SW7	FEH: 30 years: +35 %: 15 mins: Summer	121.9 80	118.1 67	118.66 2	0.495	215.8	0.708	0.000	221.2	119.960	Surcharged
SW6	FEH: 30 years: +35 %: 15 mins: Summer	122.2 70	118.4 30	118.81 0	0.380	248.1	0.543	0.000	194.8	110.882	Surcharged
SW4	FEH: 30 years: +35 %: 15 mins: Summer	123.1 84	119.7 18	119.91 7	0.199	149.8	0.225	0.000	148.0	66.843	OK
SW3	FEH: 30 years: +35 %: 15 mins: Summer	123.3 83	120.2 69	120.46 7	0.198	128.0	0.224	0.000	125.1	56.280	OK
SW2	FEH: 30 years: +35 %: 15 mins: Summer	123.5 67	121.5 58	121.67 4	0.116	57.3	0.131	0.000	56.6	24.859	OK
SW1	FEH: 30 years: +35 %: 15 mins: Summer	123.6 59	121.4 87	121.59 5	0.108	32.3	0.122	0.000	31.4	14.026	OK
SW5	FEH: 30 years: +35 %: 15 mins: Summer	122.3 51	120.7 29	120.83 4	0.105	52.9	0.119	0.000	52.0	22.879	OK
SW14	FEH: 30 years: +35 %: 15 mins: Summer	122.3 05	119.9 62	120.09 7	0.135	52.0	0.153	0.000	50.9	22.779	OK
SW13	FEH: 30 years: +35 %: 15 mins: Summer	122.4 84	120.3 75	120.46 1	0.086	16.1	0.097	0.000	15.6	6.985	OK
SW20	FEH: 30 years: +35 %: 960 mins: Winter	118.3 30	115.8 98	116.41 0	0.512	15.9	0.732	0.000	15.7	360.980	Surcharged
SW9	FEH: 30 years: +35 %: 15 mins: Summer	120.5 85	116.9 04	117.76 1	0.857	305.4	1.226	0.000	298.0	162.776	Surcharged
SW17	FEH: 30 years: +35 %: 15 mins: Summer	121.1 04	118.4 08	118.64 9	0.241	168.7	0.273	0.000	156.9	75.910	OK
SW15	FEH: 30 years: +35 %: 15 mins: Summer	122.6 62	119.5 84	119.67 8	0.094	29.8	0.107	0.000	29.3	12.926	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Junctions Summary Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SW12	FEH: 2 years: +0 %: 15 mins: Summer	118.9 15	115.9 57	116.14 3	0.186	121.5	0.267	0.000	119.6	60.393	OK
SW19	FEH: 2 years: +0 %: 15 mins: Summer	118.4 46	116.1 97	116.34 4	0.147	83.6	0.210	0.000	81.4	39.707	OK
SW16	FEH: 2 years: +0 %: 15 mins: Summer	121.8 48	118.9 80	119.08 5	0.105	43.4	0.118	0.000	42.7	19.535	OK
SW18	FEH: 2 years: +0 %: 15 mins: Summer	119.1 76	116.8 50	116.97 8	0.128	74.5	0.183	0.000	73.2	35.188	OK
SW11	FEH: 2 years: +0 %: 15 mins: Summer	119.8 92	116.3 00	116.48 6	0.186	123.8	0.266	0.000	121.5	60.391	OK
SW10	FEH: 2 years: +0 %: 15 mins: Summer	120.2 78	116.5 92	116.78 0	0.188	122.1	0.269	0.000	119.9	58.735	OK
SW8	FEH: 2 years: +0 %: 15 mins: Summer	121.4 97	117.7 43	117.89 3	0.150	102.6	0.215	0.000	99.9	47.566	OK
SW7	FEH: 2 years: +0 %: 15 mins: Summer	121.9 80	118.1 67	118.31 8	0.151	91.6	0.216	0.000	89.9	42.084	OK
SW6	FEH: 2 years: +0 %: 15 mins: Summer	122.2 70	118.4 30	118.58 2	0.152	85.1	0.217	0.000	84.2	38.899	OK
SW4	FEH: 2 years: +0 %: 15 mins: Summer	123.1 84	119.7 18	119.82 4	0.106	52.4	0.120	0.000	50.5	23.506	OK
SW3	FEH: 2 years: +0 %: 15 mins: Summer	123.3 83	120.2 69	120.37 1	0.102	44.6	0.116	0.000	43.8	19.757	OK
SW2	FEH: 2 years: +0 %: 15 mins: Summer	123.5 67	121.5 58	121.62 2	0.064	20.1	0.073	0.000	19.5	8.728	OK
SW1	FEH: 2 years: +0 %: 15 mins: Summer	123.6 59	121.4 87	121.54 2	0.055	11.3	0.063	0.000	11.0	4.927	OK
SW5	FEH: 2 years: +0 %: 15 mins: Summer	122.3 51	120.7 29	120.78 9	0.060	18.6	0.068	0.000	17.7	8.066	OK
SW14	FEH: 2 years: +0 %: 15 mins: Summer	122.3 05	119.9 62	120.03 4	0.072	18.2	0.081	0.000	17.2	7.986	OK
SW13	FEH: 2 years: +0 %: 15 mins: Summer	122.4 84	120.3 75	120.42 1	0.046	5.6	0.052	0.000	5.4	2.450	OK
SW20	FEH: 2 years: +0 %: 15 mins: Summer	118.3 30	115.8 98	116.04 7	0.149	81.4	0.213	0.000	80.1	39.707	OK
SW9	FEH: 2 years: +0 %: 15 mins: Summer	120.5 85	116.9 04	117.08 9	0.185	121.8	0.265	0.000	118.2	57.047	OK
SW17	FEH: 2 years: +0 %: 15 mins: Summer	121.1 04	118.4 08	118.52 7	0.119	59.1	0.134	0.000	54.8	26.623	OK
SW15	FEH: 2 years: +0 %: 15 mins: Summer	122.6 62	119.5 84	119.63 9	0.055	10.4	0.062	0.000	10.0	4.533	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026		
Report Details: Type: Junctions Summary Storm Phase: SW		Designed by: RM	Checked by:	Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SW12	FEH: 30 years: +0 %: 15 mins: Summer	118.9 15	115.9 57	116.25 7	0.300	253.9	0.430	0.000	250.9	127.524	OK
SW19	FEH: 30 years: +0 %: 15 mins: Summer	118.4 46	116.1 97	116.43 9	0.242	178.1	0.347	0.000	173.7	83.839	OK
SW16	FEH: 30 years: +0 %: 15 mins: Summer	121.8 48	118.9 80	119.14 6	0.166	92.6	0.188	0.000	90.7	41.236	OK
SW18	FEH: 30 years: +0 %: 15 mins: Summer	119.1 76	116.8 50	117.05 4	0.204	158.5	0.292	0.000	156.0	74.290	OK
SW11	FEH: 30 years: +0 %: 15 mins: Summer	119.8 92	116.3 00	116.63 0	0.330	258.1	0.472	0.000	253.9	127.507	OK
SW10	FEH: 30 years: +0 %: 15 mins: Summer	120.2 78	116.5 92	116.93 9	0.347	254.8	0.496	0.000	249.9	123.980	OK
SW8	FEH: 30 years: +0 %: 15 mins: Summer	121.4 97	117.7 43	117.98 9	0.246	216.2	0.353	0.000	210.2	100.334	OK
SW7	FEH: 30 years: +0 %: 15 mins: Summer	121.9 80	118.1 67	118.41 4	0.247	192.9	0.354	0.000	189.4	88.782	OK
SW6	FEH: 30 years: +0 %: 15 mins: Summer	122.2 70	118.4 30	118.68 3	0.253	183.8	0.362	0.000	177.4	82.054	OK
SW4	FEH: 30 years: +0 %: 15 mins: Summer	123.1 84	119.7 18	119.88 2	0.164	111.1	0.186	0.000	109.4	49.592	OK
SW3	FEH: 30 years: +0 %: 15 mins: Summer	123.3 83	120.2 69	120.43 0	0.161	94.3	0.182	0.000	92.8	41.676	OK
SW2	FEH: 30 years: +0 %: 15 mins: Summer	123.5 67	121.5 58	121.65 5	0.097	42.4	0.110	0.000	41.4	18.414	OK
SW1	FEH: 30 years: +0 %: 15 mins: Summer	123.6 59	121.4 87	121.57 4	0.087	23.9	0.098	0.000	23.3	10.386	OK
SW5	FEH: 30 years: +0 %: 15 mins: Summer	122.3 51	120.7 29	120.81 9	0.090	39.2	0.101	0.000	38.9	17.006	OK
SW14	FEH: 30 years: +0 %: 15 mins: Summer	122.3 05	119.9 62	120.07 2	0.110	38.5	0.125	0.000	36.8	16.866	OK
SW13	FEH: 30 years: +0 %: 15 mins: Summer	122.4 84	120.3 75	120.44 6	0.071	11.9	0.080	0.000	11.5	5.171	OK
SW20	FEH: 30 years: +0 %: 960 mins: Winter	118.3 30	115.8 98	116.22 6	0.328	11.7	0.469	0.000	12.0	267.568	OK
SW9	FEH: 30 years: +0 %: 15 mins: Summer	120.5 85	116.9 04	117.24 9	0.345	256.4	0.493	0.000	246.5	120.396	OK
SW17	FEH: 30 years: +0 %: 15 mins: Summer	121.1 04	118.4 08	118.59 8	0.190	125.3	0.215	0.000	116.9	56.225	OK
SW15	FEH: 30 years: +0 %: 15 mins: Summer	122.6 62	119.5 84	119.66 5	0.081	22.1	0.092	0.000	21.7	9.568	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
		Designed by: RM	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			



**FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By:
Max. Avg. Depth**

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Basin	FEH: 100 years: +40 %: 1440 mins: Winter	116.599	116.599	0.899	0.899	37.5	1053.614	0.000	0.000	3.8	523.426	11.531	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
		Designed by: RM	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			



FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Basin	FEH: 30 years: +35 %: 960 mins: Winter	116.410	116.410	0.710	0.710	41.2	807.016	0.000	0.000	3.8	312.941	32.237	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
		Designed by: RM	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Basin	FEH: 2 years: +0 %: 720 mins: Summer	115.997	115.997	0.297	0.297	35.6	315.804	0.000	0.000	3.8	206.532	73.483	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
		Designed by: RM	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			



FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Basin	FEH: 30 years: +0 %: 960 mins: Winter	116.226	116.226	0.526	0.526	30.7	580.633	0.000	0.000	3.8	270.477	51.246	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



DRN



FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.000	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	SW1	SW3	123.659	121.617	0.150	18.093	2.2	0.98	39.0	OK
SW1.001	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW3	SW4	123.383	120.944	0.300	72.718	2.2	0.67	136.9	Surcharged
SW1.002	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW4	SW6	123.184	120.650	0.300	86.474	2.2	0.71	144.7	Surcharged
SW1.003	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW6	SW7	122.270	119.940	0.375	143.922	2.3	0.79	252.0	Surcharged
SW1.004	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW7	SW8	121.980	119.657	0.375	155.703	2.4	0.82	259.8	Surcharged
SW1.005	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW8	SW9	121.497	119.256	0.375	175.998	2.6	0.91	289.4	Surcharged
SW1.006	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW9	SW10	120.585	118.429	0.375	211.402	3.2	1.12	355.3	Surcharged
SW1.007	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW10	SW11	120.278	117.808	0.375	217.736	3.2	1.13	358.5	Surcharged
SW1.008	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW11	SW12	119.892	117.187	0.375	223.932	3.3	1.15	365.2	Surcharged
SW1.009	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW12	Attenuation Basin	118.915	116.508	0.375	223.467	3.6	1.14	360.5	Surcharged
SW2.000	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW2	SW3	123.567	121.689	0.225	32.135	2.1	0.63	73.8	OK
SW3.000	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW5	SW6	122.351	120.853	0.225	29.599	2.0	0.58	68.0	OK
SW4.000	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW13	SW14	122.484	120.478	0.098	9.057	1.7	0.72	20.3	OK
SW4.001	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW14	SW16	122.305	120.121	0.201	29.437	1.8	0.81	66.6	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026		
		Designed by: RM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: SW		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



SW4.002	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	SW16	SW17	121.848	119.231	0.300	72.199	2.1	0.85	150.0	OK
SW4.003	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW17	SW18	121.104	118.932	0.300	98.605	2.6	1.04	182.9	Surcharged
SW4.004	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW18	SW19	119.176	117.147	0.375	130.242	2.3	0.81	258.0	OK
SW4.005	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW19	SW20	118.446	116.682	0.375	147.046	2.5	0.87	276.6	Surcharged
SW4.006	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW20	Attenuation Basin	118.330	116.220	0.262	146.421	3.7	0.85	269.9	OK
SW5.000	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW15	SW16	122.662	119.693	0.176	16.751	1.4	0.47	39.0	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		


DRN



FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.000	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW1	SW3	123.659	121.595	0.104	14.026	2.4	0.78	31.4	OK
SW1.001	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW3	SW4	123.383	120.467	0.184	56.280	2.8	0.61	125.1	OK
SW1.002	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW4	SW6	123.184	119.917	0.254	66.843	2.3	0.73	148.0	OK
SW1.003	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	SW6	SW7	122.270	118.750	0.321	110.859	2.2	0.71	226.0	OK
SW1.004	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	SW7	SW8	121.980	118.488	0.375	119.935	2.2	0.73	230.0	OK
SW1.005	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW8	SW9	121.497	118.374	0.375	135.589	2.2	0.77	243.1	Surcharged
SW1.006	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW9	SW10	120.585	117.761	0.375	162.776	2.7	0.94	298.0	Surcharged
SW1.007	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW10	SW11	120.278	117.309	0.375	167.631	2.7	0.96	303.3	Surcharged
SW1.008	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW11	SW12	119.892	116.855	0.375	172.410	2.8	0.98	309.7	Surcharged
SW1.009	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW12	Attenuation Basin	118.915	116.327	0.249	172.381	3.9	0.95	302.7	OK
SW2.000	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW2	SW3	123.567	121.674	0.120	24.859	2.6	0.48	56.6	OK
SW3.000	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW5	SW6	122.351	120.834	0.167	22.879	2.0	0.44	52.0	OK
SW4.000	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW13	SW14	122.484	120.461	0.083	6.985	1.6	0.55	15.6	OK
SW4.001	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW14	SW16	122.305	120.097	0.133	22.779	2.1	0.62	50.9	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley				Date: 09/04/2026									
				Designed by: RM		Checked by:						Approved By:	
Report Details: Type: Connections Summary Storm Phase: SW				ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG									

SW4.002	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW16	SW17	121.848	119.187	0.224	55.668	2.2	0.69	121.9	OK
SW4.003	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW17	SW18	121.104	118.649	0.230	75.910	2.7	0.89	156.9	OK
SW4.004	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW18	SW19	119.176	117.105	0.282	100.303	2.4	0.66	210.0	OK
SW4.005	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW19	SW20	118.446	116.507	0.297	113.213	2.5	0.74	234.0	OK
SW4.006	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW20	Attenuati on Basin	118.330	116.183	0.209	112.957	3.7	0.73	231.3	OK
SW5.000	FEH: 30 years: +35 %: 15 mins: Summer	Pipe	SW15	SW16	122.662	119.678	0.113	12.926	1.5	0.36	29.3	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley		Date: 09/04/2026			
Report Details: Type: Connections Summary Storm Phase: SW		Designed by: RM	Checked by:		Approved By:
		ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.000	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW1	SW3	123.659	121.542	0.055	4.927	1.9	0.27	11.0	OK
SW1.001	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW3	SW4	123.383	120.371	0.098	19.757	2.2	0.21	43.8	OK
SW1.002	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW4	SW6	123.184	119.824	0.104	23.506	2.3	0.25	50.5	OK
SW1.003	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW6	SW7	122.270	118.582	0.151	38.899	2.0	0.26	84.2	OK
SW1.004	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW7	SW8	121.980	118.318	0.150	42.084	2.2	0.28	89.9	OK
SW1.005	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW8	SW9	121.497	117.893	0.168	47.566	2.1	0.32	99.9	OK
SW1.006	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW9	SW10	120.585	117.089	0.187	57.047	2.2	0.37	118.2	OK
SW1.007	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW10	SW11	120.278	116.780	0.187	58.735	2.2	0.38	119.9	OK
SW1.008	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW11	SW12	119.892	116.486	0.186	60.391	2.2	0.38	121.5	OK
SW1.009	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW12	Attenuation Basin	118.915	116.143	0.128	60.393	3.6	0.38	119.6	OK
SW2.000	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW2	SW3	123.567	121.622	0.063	8.728	2.1	0.17	19.5	OK
SW3.000	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW5	SW6	122.351	120.789	0.060	8.066	2.1	0.15	17.7	OK
SW4.000	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW13	SW14	122.484	120.421	0.045	2.450	1.2	0.19	5.4	OK
SW4.001	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW14	SW16	122.305	120.034	0.071	7.986	1.6	0.21	17.2	OK
SW4.002	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW16	SW17	121.848	119.085	0.112	19.535	1.8	0.24	42.7	OK
SW4.003	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW17	SW18	121.104	118.527	0.117	26.623	2.2	0.31	54.8	OK
SW4.004	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW18	SW19	119.176	116.978	0.138	35.188	2.0	0.23	73.2	OK
SW4.005	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW19	SW20	118.446	116.344	0.148	39.707	2.0	0.26	81.4	OK
SW4.006	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW20	Attenuation Basin	118.330	116.047	0.109	39.707	3.0	0.25	80.1	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley				Date: 09/04/2026									
Report Details: Type: Connections Summary Storm Phase: SW				Designed by: RM		Checked by:						Approved By:	
				ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG									
SW5.000	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	SW15	SW16	122.662	119.639	0.054	4.533	1.4	0.12	10.0	OK	

ADC3405: Southern Catchment Land at Normandy Way Hinckley	Date: 09/04/2026		
	Designed by: RM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: SW	ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG		



DRN



FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.000	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW1	SW3	123.659	121.574	0.084	10.386	2.3	0.58	23.3	OK
SW1.001	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW3	SW4	123.383	120.430	0.151	41.676	2.6	0.46	92.8	OK
SW1.002	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW4	SW6	123.184	119.882	0.174	49.592	2.6	0.54	109.4	OK
SW1.003	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW6	SW7	122.270	118.683	0.250	82.054	2.3	0.56	177.4	OK
SW1.004	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW7	SW8	121.980	118.414	0.247	88.782	2.5	0.6	189.4	OK
SW1.005	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW8	SW9	121.497	117.989	0.296	100.334	2.3	0.66	210.2	OK
SW1.006	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW9	SW10	120.585	117.249	0.346	120.396	2.3	0.78	246.5	OK
SW1.007	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW10	SW11	120.278	116.939	0.338	123.980	2.4	0.79	249.9	OK
SW1.008	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW11	SW12	119.892	116.630	0.315	127.507	2.6	0.8	253.9	OK
SW1.009	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW12	Attenuation Basin	118.915	116.257	0.205	127.524	4.1	0.79	250.9	OK
SW2.000	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW2	SW3	123.567	121.655	0.095	18.414	2.6	0.35	41.4	OK
SW3.000	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW5	SW6	122.351	120.819	0.096	17.006	2.4	0.33	38.9	OK
SW4.000	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW13	SW14	122.484	120.446	0.069	5.171	1.5	0.41	11.5	OK
SW4.001	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW14	SW16	122.305	120.072	0.108	16.866	2.0	0.45	36.8	OK

ADC3405: Southern Catchment Land at Normandy Way Hinckley				Date: 09/04/2026									
				Designed by: RM		Checked by:						Approved By:	
Report Details: Type: Connections Summary Storm Phase: SW				ADC Infrastructure: 34-36 Carrington Street Nottingham NG1 7FG									

SW4.002	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW16	SW17	121.848	119.146	0.178	41.236	2.1	0.51	90.7	OK
SW4.003	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW17	SW18	121.104	118.598	0.184	56.225	2.6	0.66	116.9	OK
SW4.004	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW18	SW19	119.176	117.054	0.223	74.290	2.3	0.49	156.0	OK
SW4.005	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW19	SW20	118.446	116.439	0.238	83.839	2.4	0.55	173.7	OK
SW4.006	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW20	Attenuati on Basin	118.330	116.131	0.172	83.840	3.5	0.54	171.5	OK
SW5.000	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	SW15	SW16	122.662	119.665	0.086	9.568	1.6	0.26	21.7	OK