33 The Point, Market Harborough, Leicestershire LE16 7QU
T: 01858 411570 F: 01858 411571 E: rob@infrades.co.uk W: www.infrades.co.uk

Confirmation of Compliance with Approved FRA in support of Application– White Post Road, Bodicote

Infrastructure Design Ltd were commissioned by David Wilson Homes Mercia Ltd to prepare a drainage design for the above site. The site had an approved FRA undertaken by GRM Ltd (GRM/P6194/FRA.FINAL) dated July 2015. The site has been designed in line with that document.

The key points to note within the FRA;

1. The Flood Risk Assessment has been carried out in accordance with the requirements of National Planning Policy Framework which replaced Planning Policy Statement 25 'Development and Flood Risk' (Ref. 4) in March 2012.
2. Regarding Fluvial flooding the site is classed as Very Low, Flood Zone 1 according to the Environment Agency's classification.
3. There are parts of the site which are underlain by a Marlstone Rock formation which have soil infiltration characteristics suitable for conventional soakaways… The potential use of individual soakaways would need to be investigated further in the detailed design stage.
4. The storm water drainage strategy will be to connect into the existing surface water drainage network on-site, via an onsite balancing pond, restricted to a flow rate of 56l/s for 1 in 100-year event or 2.71l/s Qbar.
5. Pluvial Flooding shows a low risk of flooding from surface water which appears to following a natural valley within the site.

Items 1 and 2 remain constant and confirm that in planning terms that the NPPF Guidelines were followed at the time. It can also be confirmed that all ponds etc have followed CIRIA guidance in their construction, regarding side slopes gradients etc.

Item 3 – This is covered in more detail within the IDL Drainage Calculation Report (Rev A) dated August 2020, appended to this document. In summary, the report, along with ground investigations undertaken by RSK, shows that the areas thought to be suitable for infiltration are suitable, and the designs in that area utilise this where possible. As previously discussed, this is further covered within the Drainage Calculation Report, which also includes all Private and Adopted Drainage Drawings.

Item 4 – As per Item 3, this is covered within the IDL Drainage Calculation Report and shows that the site has been restricted to a flow rate of Qbar which is 2.7/s, which is

as per the FRA. Thames Water have confirmed approval for the S104 for the site based on the drawings and Calculations with the IDL Drainage Calculation Report.

Item 5 - The original site has a natural valley running through the middle of the site. Due to planning constraints regarding public rights of ways nearby, an open route along this valley could not be created, to allow for the low-level surface water potential risk to remain within its existing pathway. The associated road pattern and more importantly the road levels have been designed to ensure that a constant fall from north to south is maintained within this road corridor, so should any surface flow arise, that it will follow this pathway. The existing and proposed flow path is shown on drawing 957-00-101, Surface Water Flow Management Plan.

The plan 957-00-101 shows the proposed road contours and the direction of fall of the proposed site levels (blue arrows). This shows that the exceedance flow paths direct runoff along the roads away from properties and towards the attenuation structures.

In the worst-case duration 1:100 year plus climate change rainfall event, the site total runoff rate will be reduced for all rainfall events. As with any site where infiltration drainage is not always possible, there is no option but to accept an increase in total runoff volumes. The measures taken to minimise impact upon flood risk downstream is the very significant reduction in runoff rate, to comply with clause S6 of the Non-Statutory Technical Standards for Sustainable Drainage, March 2015. Climate change has been accounted for in accordance with the published Government guidance: Flood risk assessments: climate change allowances (February 2019). The site drainage design should use 20% increase in rainfall and the upper end allowance of 40% to check no increase in flood risk elsewhere and site safety during the 1:100-year events. To demonstrate that the development can manage the site runoff, we have run the calculations using the higher 40% climate change allowance. The results summarised in this report demonstrate that even during the upper (40%) climate change analysis, whilst there are elements of surface flooding, surface water is adequately managed preventing an increase in flood risk on site or elsewhere. For the drainage within the public domain which would not be improved should there be any extensions etc, and not covered by Building Regulation and planning, then a further 10% of the area has been taking into account within these elements to ensure the system is future proofed in those cases.

Flood exceedance routes throughout the site, which shows that should there be any exceedance issue that the road corridors act as a conduit to allow the flows to be directed away from housing and into areas of POS and attenuation.

In summary, the site has been designed in accordance with the approved FRA, and therefore is in compliance with Condition 8 of the Outline application.

Rob Hill BSc MCIHT
Director
Infrastructure Design Ltd
August 2020 Rev A
Project 957

33 The Point, Market Harborough, Leicestershire LE16 7QU
T: 01858 411570 F: 01858 411571 E: rob@infrades.co.uk W: www.infrades.co.uk

Drainage Calculations in support of Application– White Post Road, Bodicote

Infrastructure Design Ltd were commissioned by David Wilson Homes Mercia Ltd to prepare a drainage design for the above site. Due to various replans and detailed ground investigations the original calculations have been updated

The attached calculations show the various drainage calculations and drawings, both adopted and private for the site, along with Permeability testing and zoning plans.

Section 1 SUDs Profiles

- Drawings

Section 2 Adopted System

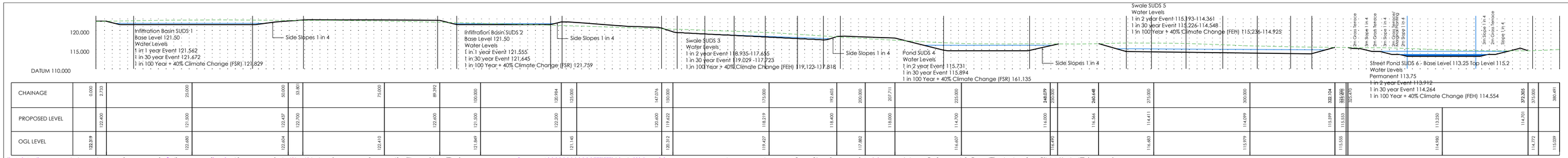
- Drawings
- Calculations

Section 3 Private System

- Drawings
- Calculations

Site investigation – RSK Letter report 252380-L01 (00) dated 29th June 2020

Rob Hill BSc MCIHT
Director
Infrastructure Design Ltd
July 2020



CHAINAGE	0.000	2.733	25.000	50.000	53.901	73.000	89.392	100.000	120.984	125.000	147.076	150.000	175.000	192.605	200.000	207.711	225.000	248.079	250.000	265.448	275.000	300.000	322.104	324.000	327.470	372.305	375.000	380.491
PROPOSED LEVEL		122.400	121.500	122.437	122.700	122.600		121.500		122.000		120.600	119.622	118.319	118.400		118.000	114.700	116.000	116.566	114.411	114.099	115.599	115.553		113.250	114.701		
OGL LEVEL	122.319		122.680	122.604		122.410		121.849		121.145		120.312	119.427		117.882		116.407		116.490		116.983	115.979		115.555	114.980		114.772	115.039	



Wet Pond Only -
Minimum of 600mm fill above liner and protection fleeces, comprising aquatic soil to be used on the planting shelves and base as per the Fabrik drawings.

Typical Pond Liner Details
Within Wet Pond element of SUDs Pond 6

REV	DESCRIPTION	DATE
B	Site redesigned and Pond liner added	12.7.20
A	Site redesigned	22.1.20

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

STATUS: Construction Issue

SCALE : 1:500
DATE : June 2019
DRAWN : IDL

TITLE :
SUDs Profiles

Sheet 1

PROJECT :
White Post Road, Bodicote

DRG. No: 957-04-12 Rev B

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

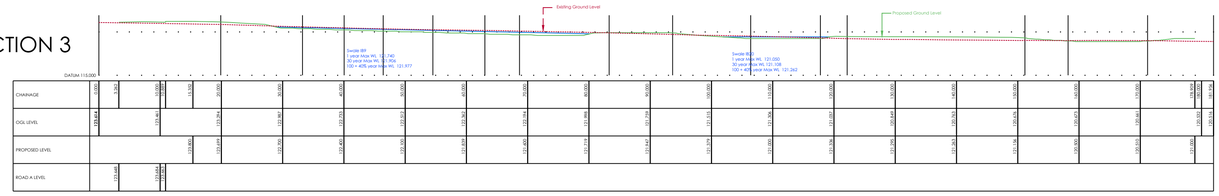
SECTION 2



CHAINAGE	0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000
OGL LEVEL	121.467	121.744	121.744	121.744	121.744	121.744	121.744	121.744	121.744	121.744	121.744
PROPOSED LEVEL		121.536	121.536							121.536	121.536


Swale B1
1 year Max WL 120.332
30 year Max WL 120.379
100 + 40% year Max WL 120.447
Swale B2
1 year Max WL 124.377
30 year Max WL 124.442
100 + 40% year Max WL 124.741
Swale B3
1 year Max WL 122.947
30 year Max WL 123.149
100 + 40% year Max WL 123.308
Swale B4
1 year Max WL 122.490
30 year Max WL 122.606
100 + 40% year Max WL 122.735
Swale B5
1 year Max WL 122.921
30 year Max WL 122.933
100 + 40% year Max WL 122.936
Section Line 1
Section Line 2
Attenuation Basin B2
Top Water Level = 124.40
Invert Level = 120.90
100 year + 40% CC = 124.370
Flow Control Manhole
Swale B1 Outfall
Swale B2 Outfall
Swale B3 Outfall
Swale B4 Outfall
Swale B5 Outfall
Attenuation Basin B1
Top Water Level = 123.60
Invert Level = 119.70
100 year + 40% CC = 123.570
Flow Control Manhole
Swale B1 Outfall
Existing Ground Level
Proposed Ground Level
Proposed Ground Level
Existing Ground Level
Existing Ground Level
Proposed Ground Level
Existing Ground Level
Proposed Ground Level
Existing Ground Level
Proposed

SECTION 3


Existing Ground Level
Proposed Ground Level
Swale 89
1 year Max WL 121.740
30 year Max WL 121.906
100 + 40% year Max WL 121.977
Swale 90
1 year Max WL 121.000
30 year Max WL 121.243
100 + 40% year Max WL 121.243
DATUM 115.000
CHAINAGE
0.000
8.000
20.000
41.382
60.000
80.000
100.000
120.000
140.000
160.000
180.000
200.000
220.000
240.000
260.000
280.000
300.000
320.000
340.000
360.000
380.000
400.000
420.000
440.000
460.000
480.000
500.000
520.000
540.000
560.000
580.000
600.000
620.000
640.000
660.000
680.000
700.000
720.000
740.000
760.000
780.000
800.000
820.000
840.000

NOTES

1. For details of gradients and routes of house drainage connections refer to house drainage layout drawings.
2. This drawing to be read in conjunction with the standard Details, Schedules and the specification for this project.
3. All manholes and gullies are to be positioned at the chainages given on the long-sections.
4. All lateral connections for house drainage shall be as stated and must extend a minimum of 500mm behind the back of the footpath. All connections when laid shall be plugged, protected as necessary and marked with a stake for future use. All lateral pipes shall be clay construction.
5. Connections into existing sewers to be "SOFFIT TO SOFFIT" unless noted, otherwise on the longitudinal sections.
6. The contractor is to check the level of existing sewers to be used as out-fall immediately they are exposed PRIOR to laying of pipes. Any discrepancies are to be reported to the Engineer.
7. Street lighting positions to be pegged on site and agreed by the Local Authority PRIOR to erection commencing.
8. This drawing MUST NOT be used for house setting out purposes.
9. All gulley connections to be made at 45°.
10. No currently available PVCu pipes are acceptable to Thames Water as stated in Thames Water Addendum (including laterals)
11. All adoptable works must be as detailed within Sewers for Adoption 6th edition together with amendments and additions by Thames Water.
12. All manholes must incorporate step rungs or ladders.
13. Trees and shrubs of a large size and/or heavy canopy or with a moderate or high water demand must not be planted within any sewer easement.
14. During construction all outfall manholes to be fitted with debris screen (mesh size 25mm), over the outgoing pipes.
15. The contractor is to check the level of existing sewers to be used as out-fall immediately they are exposed PRIOR to laying of pipes. Any discrepancies are to be reported to the Engineer. No works to any drainage to be carried out until this has been checked.
16. Existing Public sewers are protected by associated easement

S185 Diversion - refer to 957-03-185 for further details.

Adoptable foul manhole (under S104 Agreement).

Adoptable surface water manhole (under S104 Agreement).

Adoptable foul Rising Main (under S104 Agreement).
'AV' Air valve at high point. 'WC' Washout chamber at low point.

Adoptable Highway Drain (under S38 Agreement).

RG Road gully (150mm connection). (under S38 Agreement)

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

REV	DESCRIPTION

REV	DESCRIPTION	DATE
H	Redesigned for Replan	9.6.20
G	Redesigned for Replan	20.03.20
F	Gullies added, pipe runs 7.000,17.000-17.001 & 18,000-18,002, S109-S111, S120, S217, 279-283, F7, F90-91 & F50 amended S230-231 removed	22.01.20
E	Redesigned for Replan	20.12.19
D	Attenuation tank removed	13.11.19
C	Air Valve and Washout Chamber added to rising main. Attenuation tank added. Gullies added.	08.10.19
B	Sheet Key added	10.07.19
A	Detailed design	10.06.19

STATUS: Subject to Approval

SCALE : 1:500 @ A1
DATE : June 2019
DRAWN : IDL

TITLE : Adoptable Drainage Layout Sheet 1

PROJECT : White Post Road, Bodicote

DRG. No: 957-03-01 Rev H

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

NOTES

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7. Street lighting positions to be pegged on site and agreed by the Local Authority PRIOR to erection commencing.
8. This drawing MUST NOT be used for house setting out purposes.
9. All gulley connections to be made at 45°.
10. No currently available PVCu pipes are acceptable to Thames Water as stated in Thames Water Addendum (including laterals)
11. All adoptable works must be as detailed within Sewers for Adoption 6th edition together with amendments and additions by Thames Water.
12. All manholes must incorporate step irons or ladders.
13. Trees and shrubs of a large size and/or heavy canopy or with a moderate or high water demand must not be planted within any sewer easement.
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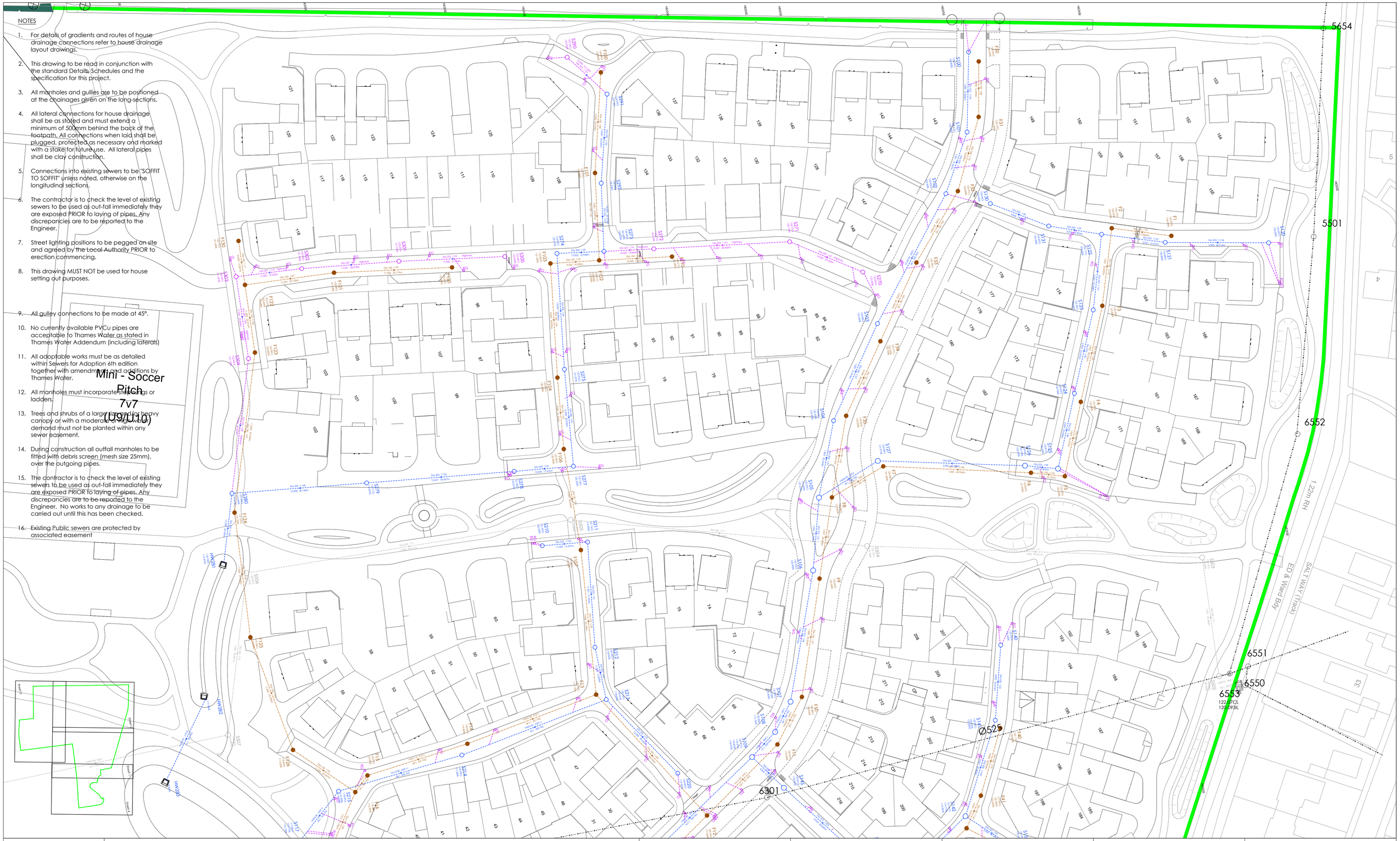
16. Existing Public sewers are protected by associated easement



DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

S185 Diversion - refer to 957-03-185 for further details.
Adoptable foul manhole (under S104 Agreement).
Adoptable surface water manhole (under S104 Agreement).
Adoptable foul Rising Main (under S104 Agreement).
'AV' Air valve at high point. 'WC' Washout chamber at low point.
Adoptable Highway Drain (under S38 Agreement).
RG Road gully (150mm connection). (under S38 Agreement)

REV	DESCRIPTION	DATE
G	Redesigned for Replan	9.6.20
F	Redesigned for Replan	20.03.20
E	Gullies added, pipe runs 7.000,17.000-17.001 & 18.000-18.002, S109-S111, S120, S217, 279-283, F7, F90-91 & F50 amended S230-231 removed	22.01.20
D	Redesigned for Replan	20.12.19
C	Gullies added.	08.10.19
B	Sheet Key added	10.07.19
A	Detailed design	10.06.19

STATUS: Subject to Approval

SCALE: 1:500 @ A1
DATE: June 2019
DRAWN: IDL

TITLE: Adoptable Drainage Layout Sheet 2

PROJECT: White Post Road, Bodicote

DRG. No: 957-03-02 Rev G

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Mini - Soccer Pitch 7v7 (U9/U10)

Adult Pitch 11v11 (Over 18's)

Flow from Existing Septic tank to be diverted to allow outfall into proposed system. Septic tank to be decommissioned. Be aware of potential Drainage Field in this area

S260 Hydrobrake Chamber 2.7l/s @ 1.75m head

NOTES

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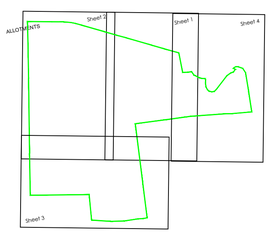
16. Existing Public sewers are protected by associated easement



DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

- S185 Diversion - refer to 957-03-185 for further details.
- Adoptable foul manhole (under S104 Agreement).
- Adoptable surface water manhole (under S104 Agreement).
- Adoptable foul Rising Main (under S104 Agreement). 'AV' Air valve at high point. 'WC' Washout chamber at low point.
- Adoptable Highway Drain (under S38 Agreement).
- RG Road gully (150mm connection). (under S38 Agreement)

REV	DESCRIPTION	REV	DESCRIPTION	DATE
		i	Hydrobrake amended to S260	19.8.20
		H	Redesigned for Replan	9.6.20
		G	Redesigned for Replan	20.03.20
		F	Gullies added, pipe runs 7.000,17.000-17.001 & 18.000-18.002, S109-S111, S120, S217, 279-283, F7, F90-91 & F50 amended S230-231 removed	22.01.20
		E	Redesigned for Replan	20.12.19
		D	Attenuation tank removed	13.11.19
		C	Attenuation tank and gullies added.	08.10.19
		B	Sheet Key added Sewer HW18-EX7101 removed form adoption	10.07.19
		A	Detailed design	10.06.19

STATUS: Subject to Approval

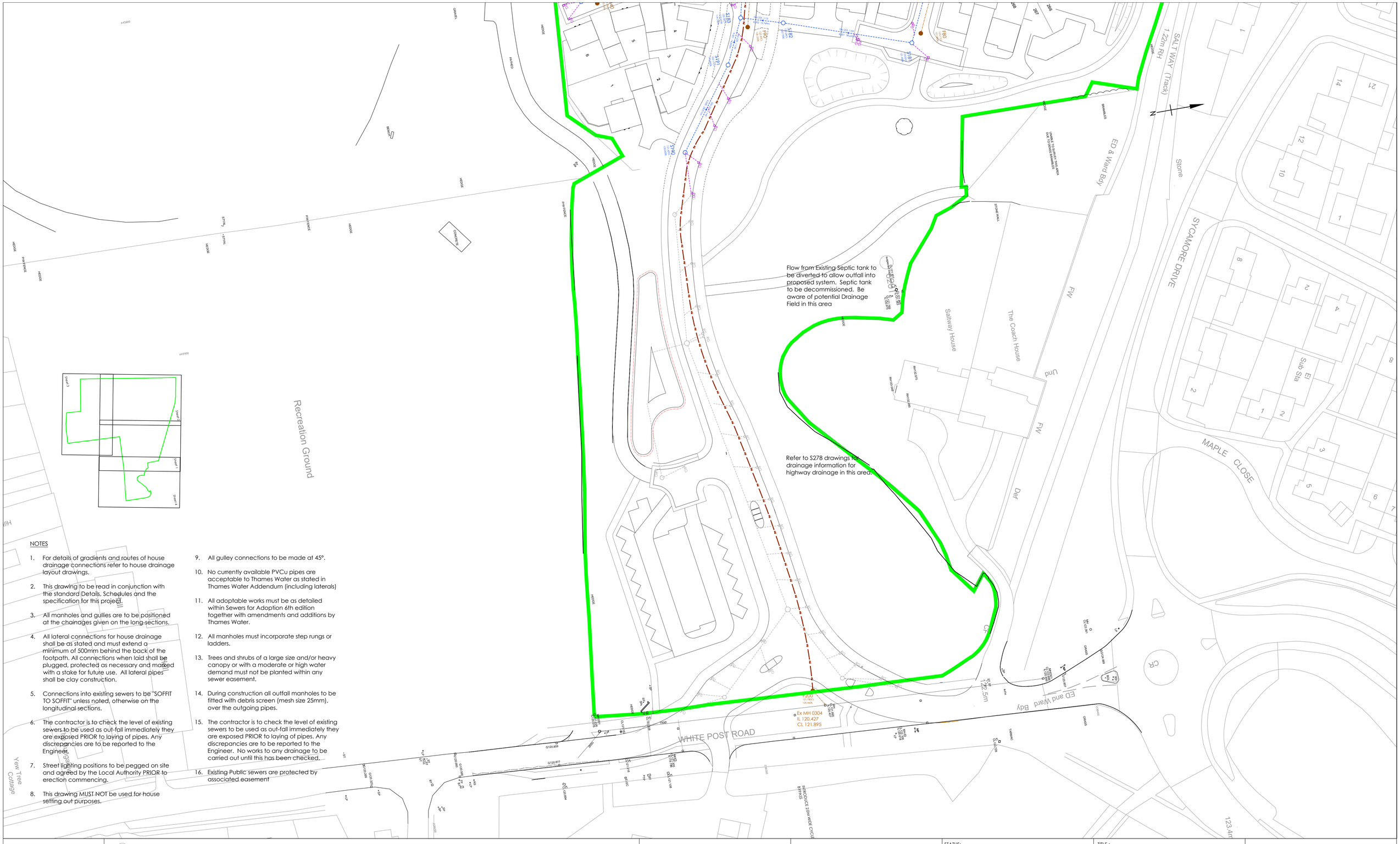
SCALE : 1:500 @ A1
DATE : June 2019
DRAWN : IDL

TITLE : Adoptable Drainage Layout Sheet 3

PROJECT : White Post Road, Bodicote

DRG. No: 957-03-03 Rev i

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



NOTES

1. For details of gradients and routes of house drainage connections refer to house drainage layout drawings.
2. This drawing to be read in conjunction with the standard Details, Schedules and the specification for this project.
3. All manholes and gullies are to be positioned at the chainages given on the long-sections.
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DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

- S185 Diversion - refer to 957-03-185 for further details.
- Adoptable foul manhole (under S104 Agreement).
- Adoptable surface water manhole (under S104 Agreement).
- Adoptable foul Rising Main (under S104 Agreement). 'AV' Air valve at high point. 'WC' Washout chamber at low point.
- Adoptable Highway Drain (under S38 Agreement).
- RG Road gully (150mm connection). (under S38 Agreement)

REV	DESCRIPTION	DATE
F	Redesigned for Replan	9.6.20
E	Redesigned for Replan	20.03.20
D	Gullies added, pipe runs 7.000,17.000-17.001 & 18.000-18.002, S109-S111, S120, S217, 279-283, F7, F90-91 & F50 amended S230-231 removed	22.01.20
C	Redesigned for Replan	20.12.19
B	Air Valve and Washout Chamber added to rising main, F200 added	08.10.19
A	Sheet Key added	10.07.19

STATUS: Subject to Approval

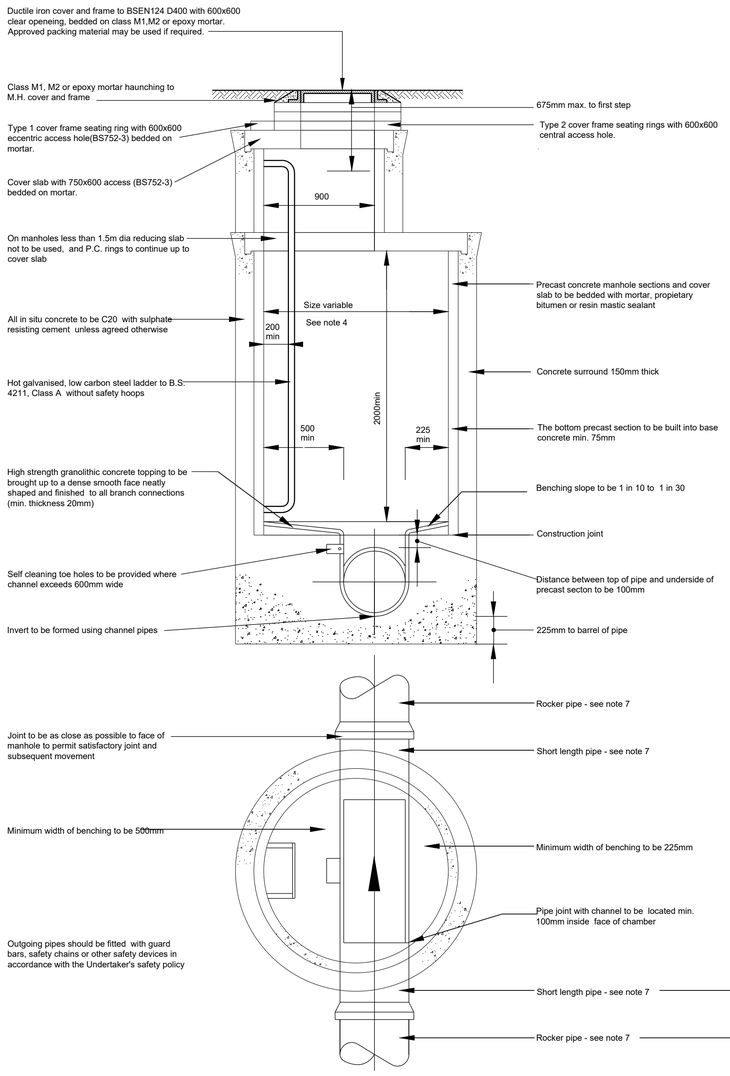
SCALE : 1:500 @ A1
DATE : June 2019
DRAWN : IDL

TITLE : Adoptable Drainage Layout Sheet 4

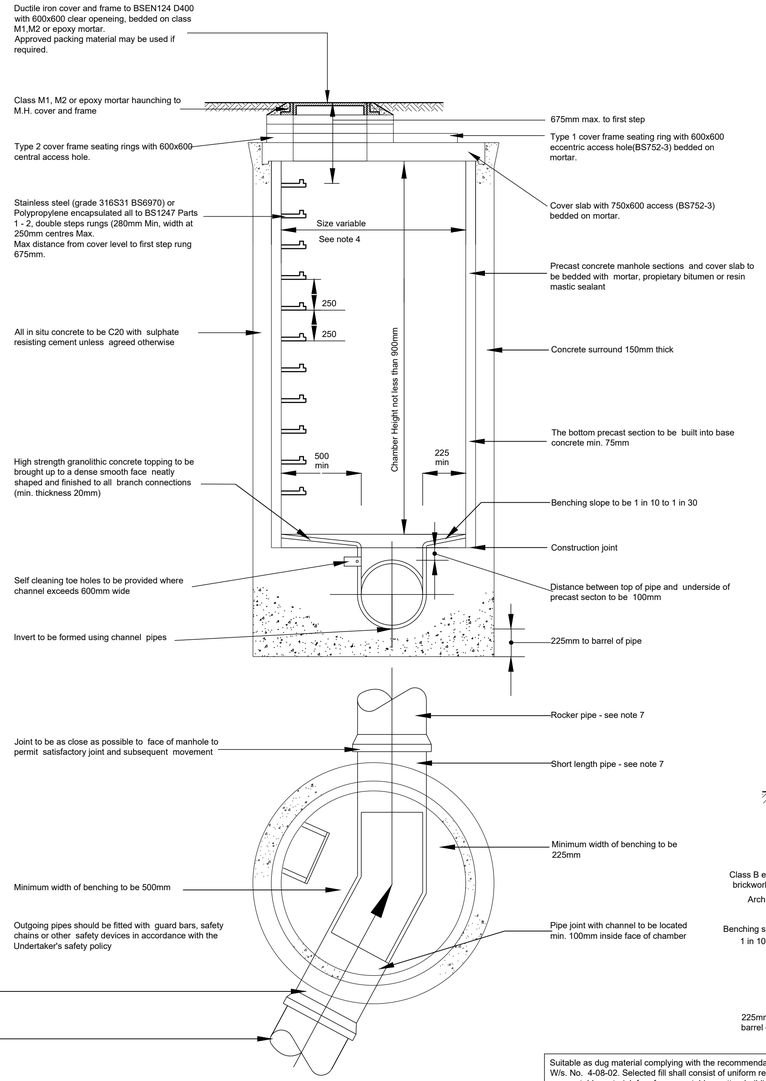
PROJECT : White Post Road, Bodicote

DRG. No: 957-03-04 Rev F

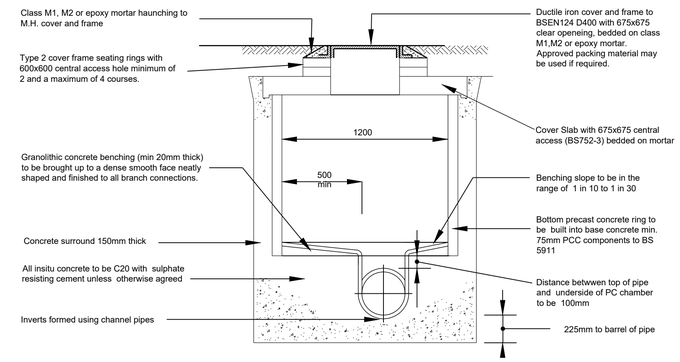
IDL LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



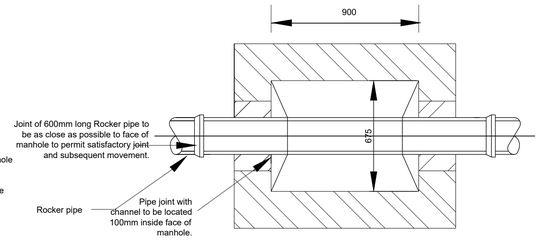
TYPICAL MANHOLE TYPE A
DEPTH OF SOFFIT 3.0 TO 6.0m

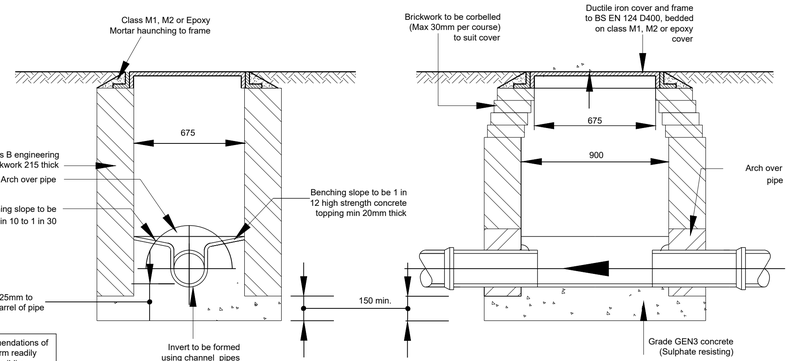


TYPICAL MANHOLE TYPE B
DEPTH OF SOFFIT 1.35 TO 3.0m

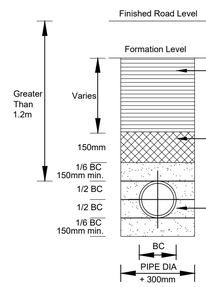


TYPICAL MANHOLE TYPE E
DEPTH OF SOFFIT 1.0 TO 1.5m



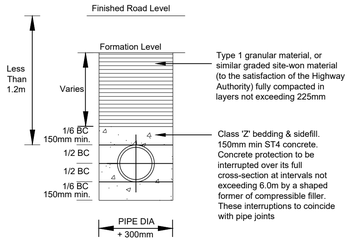


TYPICAL MANHOLE TYPE D DEPTH
OF SOFFIT LESS THAN 1.0m



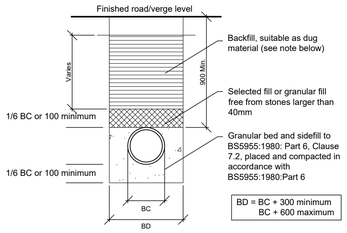
TYPICAL TRENCH THROUGH
ADOPTABLE AREAS OF HIGHWAY

MIN 1.2m OF COVER UNDER HIGHWAY
BC = denotes outside diameter of pipe



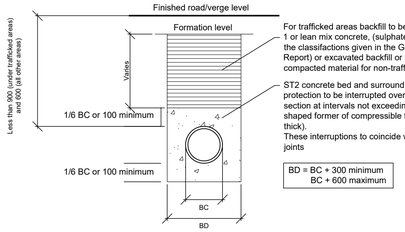
SHALLOW TRENCH THROUGH
ADOPTABLE AREAS OF HIGHWAY

LESS THAN 1.2m OF COVER UNDER HIGHWAY
BC = denotes outside diameter of pipe



TYPICAL TRENCH THROUGH
PRIVATELY MAINTAINED AREAS

MIN 0.9m OF COVER
BC = denotes outside diameter of pipe



SHALLOW TRENCH THROUGH
PRIVATELY MAINTAINED AREAS

MIN COVER AS NOTED ABOVE
BC = denotes outside diameter of pipe

Suitable as dug material complying with the recommendations of W/s. No. 4-08-02. Selected fill shall consist of uniform readily compactable material, free from vegetable matter, building rubbish and frozen materials, or materials susceptable to spontaneous combustion, and excluding clay of liquid limit greater than 80 and/or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones retained on 75mm and 37.5mm sieves respectively shall be excluded from the fill material.

1. Inter AX covers & frames, as manufactured by Stanton Plc are to be used on all adoptable manholes. Covers to be embossed with either F/W or S/W to suit (only if to be adopted)
2. Cover and Reducing slabs, shaft and chamber rings to be bedded with mortar, proprietary bitumen or resin mastic sealant. All lifting holes to be pointed.
3. Ensure all slab openings and step irons, ladders are properly aligned.
4. Chamber Diameters

Dia. of largest pipe in M.H. (mm)	Dia. of chamber ring (mm)
Less than 375	1200(1050 where depth to soffit is 1.35-1.5m)
375-450	1350
500-700	1500
750-900	1800
1050-1200	2100
1350-1500	2400
1650-1800	2700

Above sizes are minimum and may need increasing for more than one incoming pipe to accommodate adequate benching.

5. Concrete mix to be in accordance with the chemical analysis report for buried concrete for the site concerned.
6. High strength topping to B.S. 8204 to be brought up to a dense smooth face neatly shaped and finished to all branch connections. Benching slope to be not flatter than 1 in 30.
7. Rocker/Short pipe lengths

Pipe dia. (mm)	Rocker pipe length (m)
150-600	0.6
650-750	1.0
825 and over	1.25

Short length pipes to be similar length to rocker pipe.

9. Brick Manhole Widths. Chamber widths to be increased for pipes larger than 225mm dia. to give 225mm benching each side with the brickwork corbelled down to suit cover.
Manhole to large diameter sewers. Chambers with outgoing pipes greater than 450mm dia. to be fitted with guard bars, safety chains or other safety devices. Toe holes to be provided in benching of sewers greater than 600mm dia. for access to invert.
8. Bricks to be solid type and either class B engineering to B.S.3921 or special purpose concrete bricks to B.S. 6073 with Sulphate-resisting Portland cement binder. Brickwork to be in English bond.
10. All pipes built into manhole invert should be installed with soffits level.
11. PIPE BEDDING AND BACKFILL MATERIALS Granular bedding and sidefill Type A material shall be imported or selected as-dug material complying with the recommendations of W/s. No. 4-08-02. Selected fill Type B shall consist of uniform readily compactable material, free from vegetable matter, building rubbish and frozen materials, or materials susceptable to spontaneous combustion, and excluding clay of liquid limit greater than 80 and/or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones retained on 75mm and 37.5mm sieves respectively shall be excluded from the fill material. Pipe bedding and fill materials to concrete pipes shall not contain more than 0.3% sulphate, expressed as sulphur trioxide.

TRENCH WIDTHS

Pipe dia. (mm)	BC (mm)	BD(mm)
150	190	600
225	280	700
300	380	750
375	500	1050
450	580	1150
525	670	1200
600	750	1350
750	960	1560
900	1160	1760
1350	1620	2220
1500	1740	2340
1800	2090	2690

12. All Adoptable Drainage Works shall comply with the requirements of Sewers for Adoption 6th Edition Unless noted otherwise
13. All Adoptable Drainage pipes to be of spigot & socket type connection.
14. Safety chains to be added to all outgoing pipes over 450Ø.
15. All dimensions in millimetres unless specified otherwise

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Notes.

a. No currently available PVCu pipes are acceptable to Thames Water as stated in Thames Water Addendum (including laterals)

b. All adoptable works must be as detailed within Sewers for Adoption 6th edition together with amendments and additions by Thames Water.

c. All manholes must incorporate step rungs or ladders.

d. Trees and shrubs of a large size and/or heavy canopy or with a moderate or high water demand must not be planted within any sewer easement.

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Reissued due to duplicate number use	10.2.20

STATUS: Subject to Approval

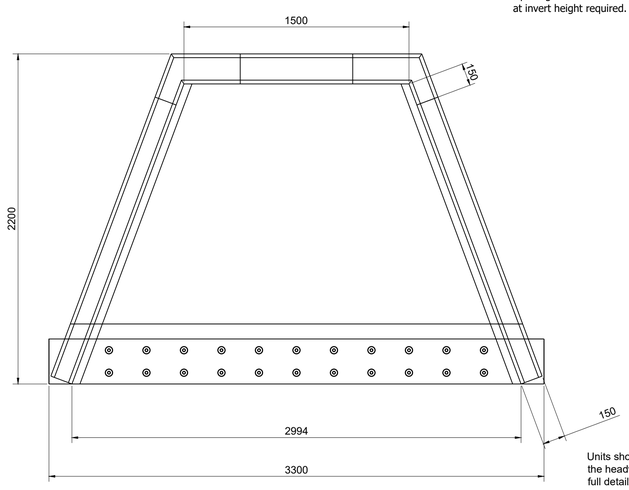
SCALE : NTS
DATE : June 2019
DRAWN : IDL

TITLE : Adoptable Drainage Standard Details Sheet 1

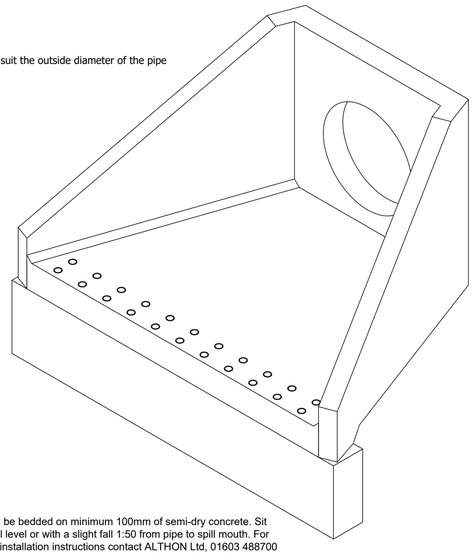
PROJECT : White Post Road, Bodicote

DRG. No: 957-03-05 Rev A

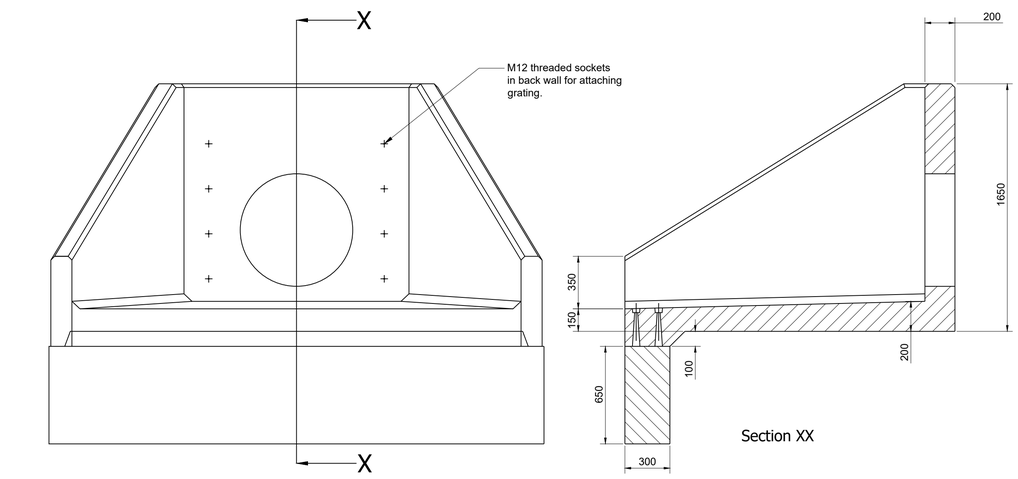
iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



Opening in back wall cast to suit the outside diameter of the pipe at invert height required.



Units should be bedded on minimum 100mm of semi-dry concrete. Sit the headwall level or with a slight fall 1:50 from pipe to spill mouth. For full detailed installation instructions contact ALTHON Ltd, 01603 488700



Section XX

HEADWALL A
ALTHON SFA15B HEADWALL DRAINAGE OUTFALL FOR PIPE SIZES UPTO 1050MMØ

1. Inter AX covers & frames, as manufactured by Stanton Plc are to be used on all adoptable manholes. Covers to be embossed with either FW or SW to suit (only if to be adopted)
2. Cover and Reducing slabs, shaft and chamber rings to be bedded with mortar, proprietary bitumen or resin mastic sealant. All lifting holes to be pointed.
3. Ensure all slab openings and step irons, ladders are properly aligned.
4. Chamber Diameters

Dia. of largest pipe in M.H. (mm)	Dia. of chamber ring (mm)
Less than 375	1200(1050 where depth to soffit is 1.35-1.5m)
375-450	1350
500-700	1500
750-900	1800
1050-1200	2100
1200-1800	2400
1650-1800	2700

Above sizes are minimum and may need increasing for more than one incoming pipe to accommodate adequate benching.

5. Concrete mix to be in accordance with the chemical analysis report for buried concrete for the site concerned.
6. High strength topping to B.S. 8204 to be brought up to a dense smooth face neatly shaped and finished to all branch connections. Benching slope to be not flatter than 1 in 30.
7. Rocker/Short pipe lengths

Pipe dia. (mm)	Rocker pipe length (m)
150-600	0.6
650-750	1.0
825 and over	1.25

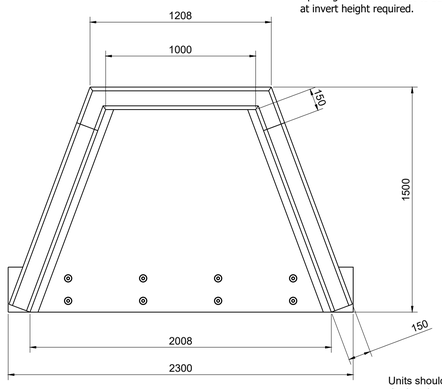
Short length pipes to be similar length to rocker pipe.

9. Brick Manhole Widths. Chamber widths to be increased for pipes larger than 225mm dia. to give 225mm benching each side with the brickwork corbelled down to suit cover.
Manhole to large diameter sewers. Chambers with outgoing pipes greater than 450mm dia. to be fitted with guard bars, safety chains or other safety devices. Toe holes to be provided in benching of sewers greater than 600mm dia. for access to invert.
8. Bricks to be solid type and either class B engineering to B.S.3921 or special purpose concrete bricks to B.S. 6073 with Sulphate-resisting Portland cement binder. Brickwork to be in English bond.
10. All pipes built into manhole invert should be installed with soffits level.
11. PIPE BEDDING AND BACKFILL MATERIALS Granular bedding and sidefill Type A material shall be imported or selected as-dug material complying with the recommendations of W/s. No. 4-08-02. Selected fill Type B shall consist of uniform readily compactable material, free from vegetable matter, building rubbish and frozen materials, or materials susceptable to spontaneous combustion, and excluding clay of liquid limit greater than 80 and/or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones retained on 75mm and 37.5mm sieves respectively shall be excluded from the fill material. Pipe bedding and fill materials to concrete pipes shall not contain more than 0.3% sulphate, expressed as sulphur trioxide.

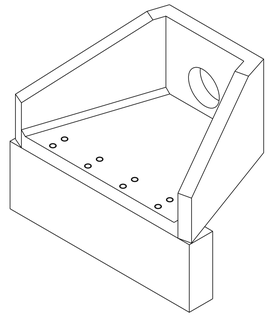
TRENCH WIDTHS

Pipe dia. (mm)	BC (mm)	BD(mm)
150	190	600
225	280	700
300	380	750
375	500	1050
450	580	1150
525	670	1200
600	750	1350
750	960	1560
900	1160	1760
1350	1620	2220
1500	1740	2340
1800	2090	2690

12. All Adoptable Drainage Works shall comply with the requirements of Sewers for Adoption 6th Edition Unless noted otherwise
13. All Adoptable Drainage pipes to be of spigot & socket type connection.
14. Safety chains to be added to all outgoing pipes over 450Ø.
15. All dimensions in millimetres unless specified otherwise

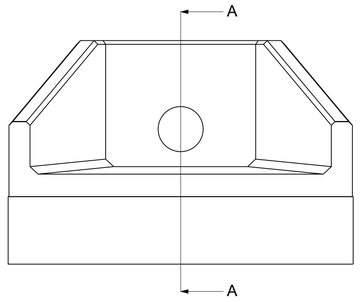


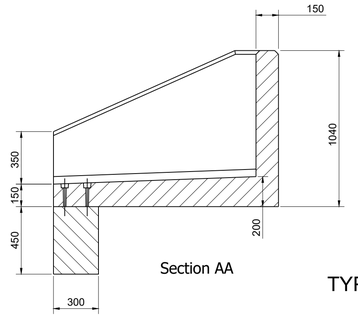
Opening in back wall cast to suit the outside diameter of the pipe at invert height required.



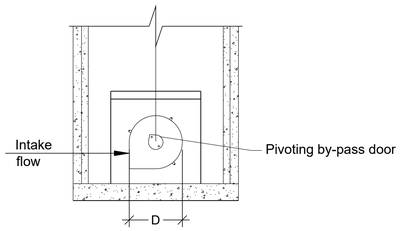
Units should be bedded on minimum 100mm of semi-dry concrete. Sit the headwall level or with a slight fall 1:50 from pipe to spill mouth. For full detailed installation instructions contact ALTHON Ltd, 01603 488700

ADOPTABLE HEADWALL SCHEDULE (all to have grilles fitted)				
REF	INLET/OUTLET	TYPE	PIPE SIZE	ALTHON REF
118,119,240,241,250,251	OUTLET	ADOPTABLE	600-825	SFA15B
281,282,283	OUTLET	ADOPTABLE	300-450	SFA10B





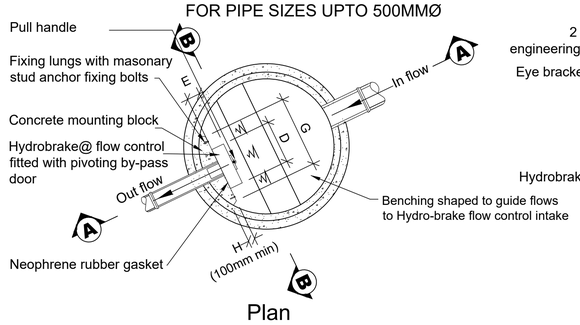
Section AA



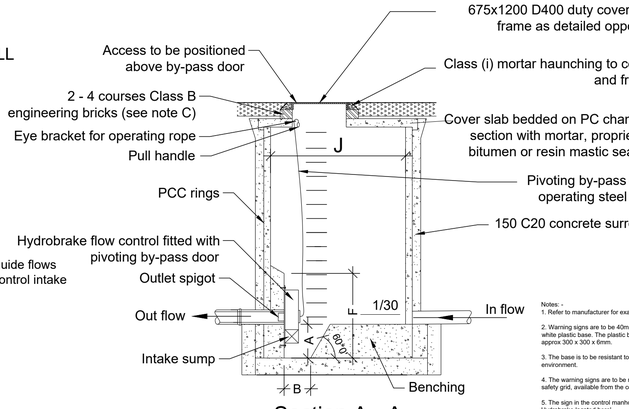
Section B - B

TYPICAL HYDROBRAKE FLOW CONTROL REFER TO TABLE

HEADWALL E
ALTHON SFA10B HEADWALL DRAINAGE OUTFALL FOR PIPE SIZES UPTO 500MMØ



Plan



Section A - A

HYDROBRAKE CHAMBER SCHEDULE							
REF	Cover Level	Hydrobrake Invert level	limited Discharge (l/s)	@ Head (m)	Sump Size A x B (mm)	Hydrobrake Size D x E (mm)	MH Chamber Size J (m)
S260	115.400	113.700	2	1.75	150x310	420x75	2.1

Notes: -
1. Refer to manufacturer for exact sump configuration.
2. Warning signs are to be 40mm high red lettering on a white plastic base. The plastic base dimensions are to be approx 300 x 300 x 6mm.
3. The base is to be resistant to attack by sewage environment.
4. The warning signs are to be mounted on a removable safety grid, available from the cover manufacturer.
5. The sign in the control manhole is to read 'Caution - Hydrobrake located here'.
6. A sign must be fitted in the upstream manhole, to read 'Caution - hydrobrake downstream'.
7. A sign must be fitted in the downstream manhole, to read 'Caution - hydrobrake upstream'.

TYPICAL `HYDROBRAKE` CATCHPIT

Hydro-International
Hydraulic modelling data for
SHE-0069-2710-1750-2710
Hydro-Brake Optimum®

Site White Post Rd Bodicote
Ref S260

TECHNICAL SPECIFICATION

	Head (m)	Flow (l/s)
Design	1.75	2.71
Flush-Flo	0.302	2.0%
Kick-Flo®	0.615	1.68
Mean Flow over head		2.082

Minimum Clearance (m²) 0.0038

Guides to modelling the Hydro-Brake Optimum® using a number of commercial modelling packages are available from Hydro International

Rob Hill 19/08/2020 21:10

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DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Notes.

a. No currently available PVCu pipes are acceptable to Thames Water as stated in Thames Water Addendum (including laterals)

b. All adoptable works must be as detailed within Sewers for Adoption 6th edition together with amendments and additions by Thames Water.

c. All manholes must incorporate step rungs or ladders.

d. Trees and shrubs of a large size and/or heavy canopy or with a moderate or high water demand must not be planted within any sewer easement.

REV	DESCRIPTION

REV	DESCRIPTION	DATE
D	Hydro Brake details amended	19.8.20
C	Hydro Brake details amended	3.7.20
B	Hydro Brake detail and Headwalls amended	10.07.19
A	Hydro Brake amended	10.07.19

STATUS: Subject to Approval

SCALE : NTS
DATE : June 2019
DRAWN : IDL

TITLE : Adoptable Drainage Standard Details Sheet 2

PROJECT : White Post Road, Bodicote

DRG. No: 957-03-06 Rev D

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

NOTES

1. For details of gradients and routes of house drainage connections refer to house drainage layout drawings.
2. This drawing to be read in conjunction with the standard Details, Schedules and the specification for this project.
3. All manholes and gullies are to be positioned at the chainages given on the long-sections.
4. All lateral connections for house drainage shall be as stated and must extend a minimum of 500mm behind the back of the footpath. All connections when laid shall be plugged,protected as necessary and marked with a stake for future use. All lateral pipes shall be clay construction.
5. Connections into existing sewers to be 'SOFFIT TO SOFFIT' unless noted, otherwise on the longitudinal sections.
6. The contractor is to check the level of existing sewers to be used as out-fall immediately they are exposed PRIOR to laying of pipes. Any discrepancies are to be reported to the Engineer.
7. Street lighting positions to be pegged on site and agreed by the Local Authority PRIOR to erection commencing.
8. This drawing MUST NOT be used for house setting out purposes.
9. All gulley connections to be made at 45°.
10. No currently available PVCu pipes are acceptable to Thames Water as stated in Thames Water Addendum (including laterals)
11. All adoptable works must be as detailed within Sewers for Adoption 6th edition together with amendments and additions by Thames Water.
12. All manholes must incorporate step rungs or ladders.
13. Trees and shrubs of a large size and/or heavy canopy or with a moderate or high water demand must not be planted within any sewer easement.
14. During construction all outfall manholes to be fitted with debris screen (mesh size 25x25mm) over the outgoing pipes.
15. The contractor is to check the level of existing sewers to be used as out-fall immediately they are exposed PRIOR to laying of pipes. Any discrepancies are to be reported to the Engineer. No works to any drainage to be carried out until this has been checked.
16. Existing Public sewers are protected by associated easement

S185 Diversion - refer to 957-03-185 for further details.
Adoptable foul manhole (under S104 Agreement).
Adoptable surface water manhole (under S104 Agreement).
Adoptable foul Rising Main (under S104 Agreement).
'AV' Air valve at high point. 'WC' Washout chamber at low point.
Adoptable Highway Drain (under S38 Agreement).
RG Road gully (150mm connection). (under S38 Agreement)

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull, B90 4GT

REV	DESCRIPTION

REV	DESCRIPTION	DATE
A	Redesigned for Replan	9.6.20
	Drawing number amended from 957-03-05 (duplicate)	10.2.20

STATUS: Subject to Approval

SCALE : 1:500 @ A0
DATE : Jan 2020
DRAWN : IDL

TITLE : Adoptable Drainage Layout Whole Site

PROJECT : White Post Road, Bodicote

DRG. No: 957-03-07 Rev A

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Soakaway SA13
2x8x0.4
Cover Level 121.80
Base Level 120.60

Soakaway SA12
4x7.5x0.4
Cover Level 121.60
Base Level 120.60

Infiltration Trench IT5
9x0.6x1.0 deep
1year max WL 120.683
30year max WL 120.841
100year + 40% max WL 121.10

Trench base level 120.60

30 year Max WL 121.
100 + 40% year Max WL 121.

RAMP

HEDGE

Precast concrete used in connection with the new sewers to be suitable for use in SS Class 4 conditions.

Depth and location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 4661 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. ring sections, circular ring no BS 5911 or polypropylene manholes where shown on plans, where less than 1.0m deep, all with 150mm concrete surround, size and positioning to comply with the construction requirements of BS378 Part 2. Covers to be cast iron, light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater downpipes, 600 above finished ground levels.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in Part 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295, b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Bed concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement: a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carriageway, drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain K range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (602) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

REV	DESCRIPTION

REV	DESCRIPTION	DATE
E	Redesigned for Replan	06.07.20
D	Internal unit drainage reviewed	06.04.20
C	Redesigned for Replan	20.03.20
B	Amended following new site layout	23.01.20
A	Saltway House foul connection added	12.07.19

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 1

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-01 Rev E

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc, are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295, b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M",

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363, Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where drop shafts occur, invert levels and (depth to invert) of incoming pipes are given.

Swale IB7
1 year Max WL 122.647
30 year Max WL 122.702
100 + 40% year Max WL 122.791

Swale IB8
1 year Max WL 121.495
30 year Max WL 121.655
100 + 40% year Max WL 121.842

Soakaway SA15
8x5x0.4
Cover Level 123.5
Base Level 121.55

Rumble

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- Road gully (150mm connection).
- Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- Storm rodding eye.
- Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

REV	DESCRIPTION

REV	DESCRIPTION	DATE
F	IB7 & 8 amended	12.7.20
E	Redesigned for Replan	06.07.20
D	Internal unit drainage reviewed	06.04.20
C	Redesigned for Replan	20.03.20
B	Amended following new site layout	23.01.20
A	Saltway House foul connection added	12.07.19

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 2

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-02 Rev F

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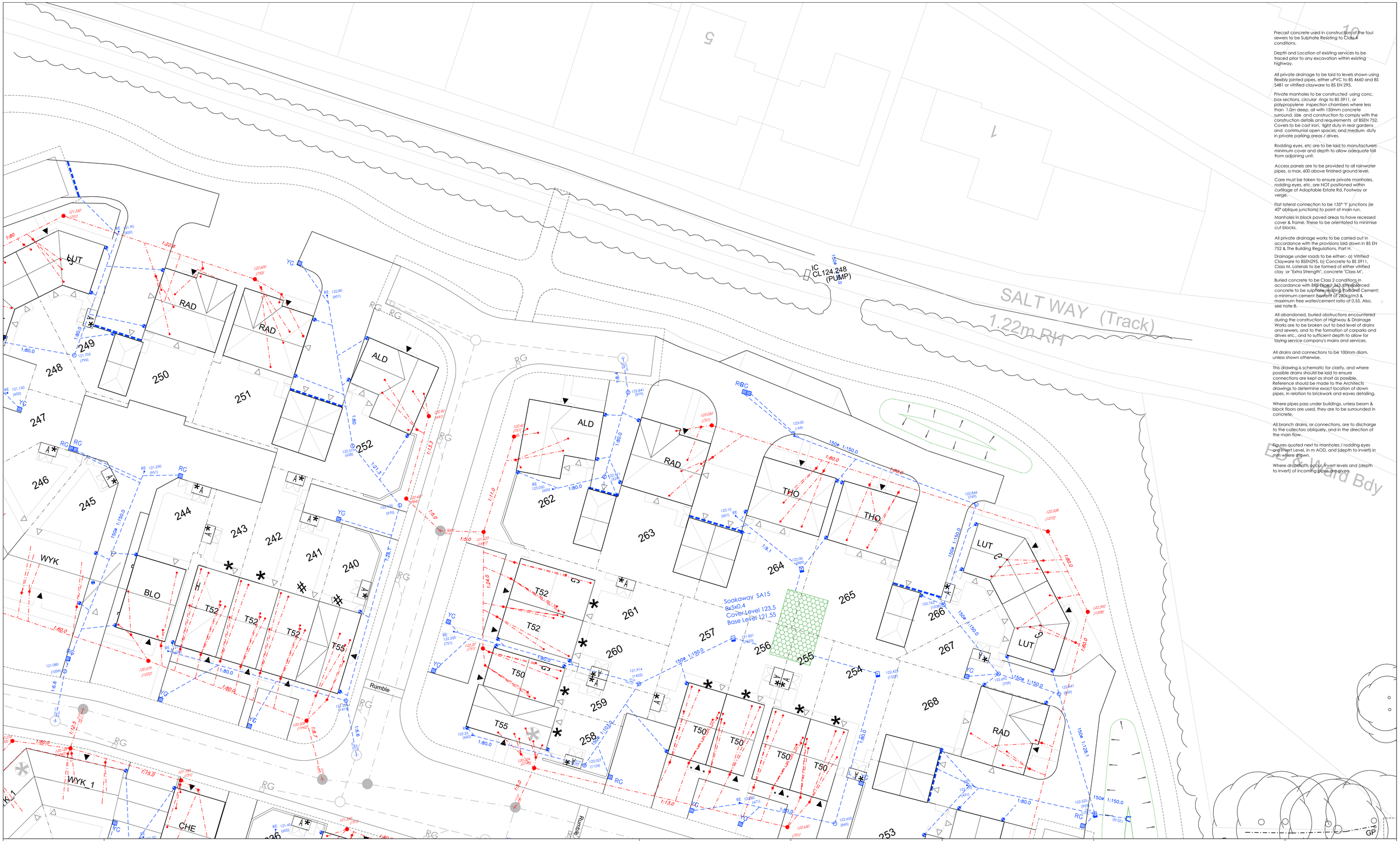
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, invert levels and (depth to invert) of incoming pipes are given.

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION	DATE
D	Redesigned for Replan	06.07.20
C	Internal unit drainage reviewed	06.04.20
B	Redesigned for Replan	20.03.20
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 3

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-03 Rev D

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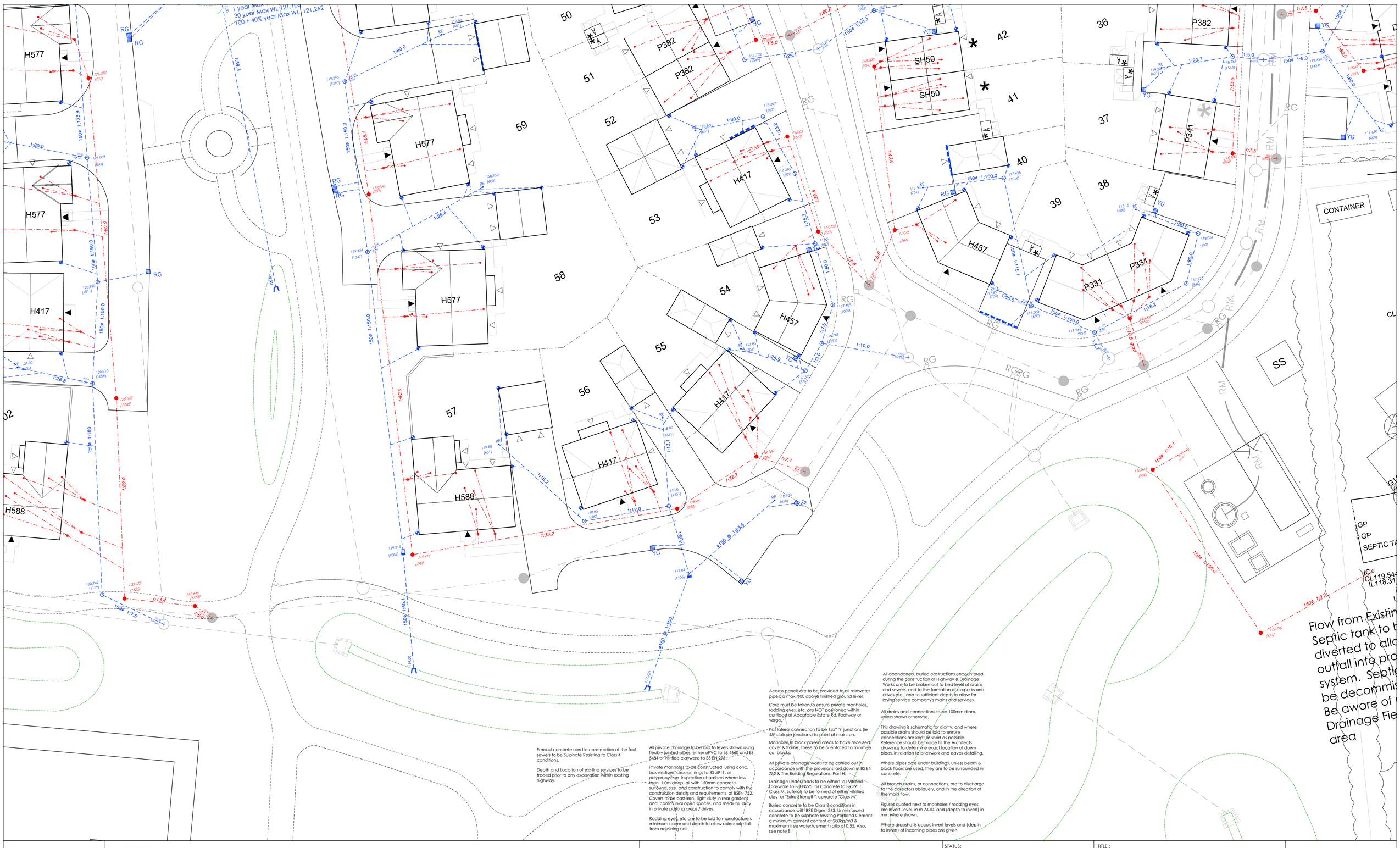
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or Vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd. Footway or verge.

Plot lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or 'Extra Strength' concrete 'Class M'.

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep. (123.456 (750))
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION

REV	DESCRIPTION	DATE
F	Redesigned for Replan	06.07.20
E	Internal unit drainage reviewed	06.04.20
D	Redesigned for Replan	20.03.20
C	Amended following new site layout	23.01.20
B	Note re septic tank added	8.10.19
A	Cricket Club foul connection added	12.07.19

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 4

PROJECT :
White Post Road, Bodicote

DRG. No:
957-07-04 Rev F

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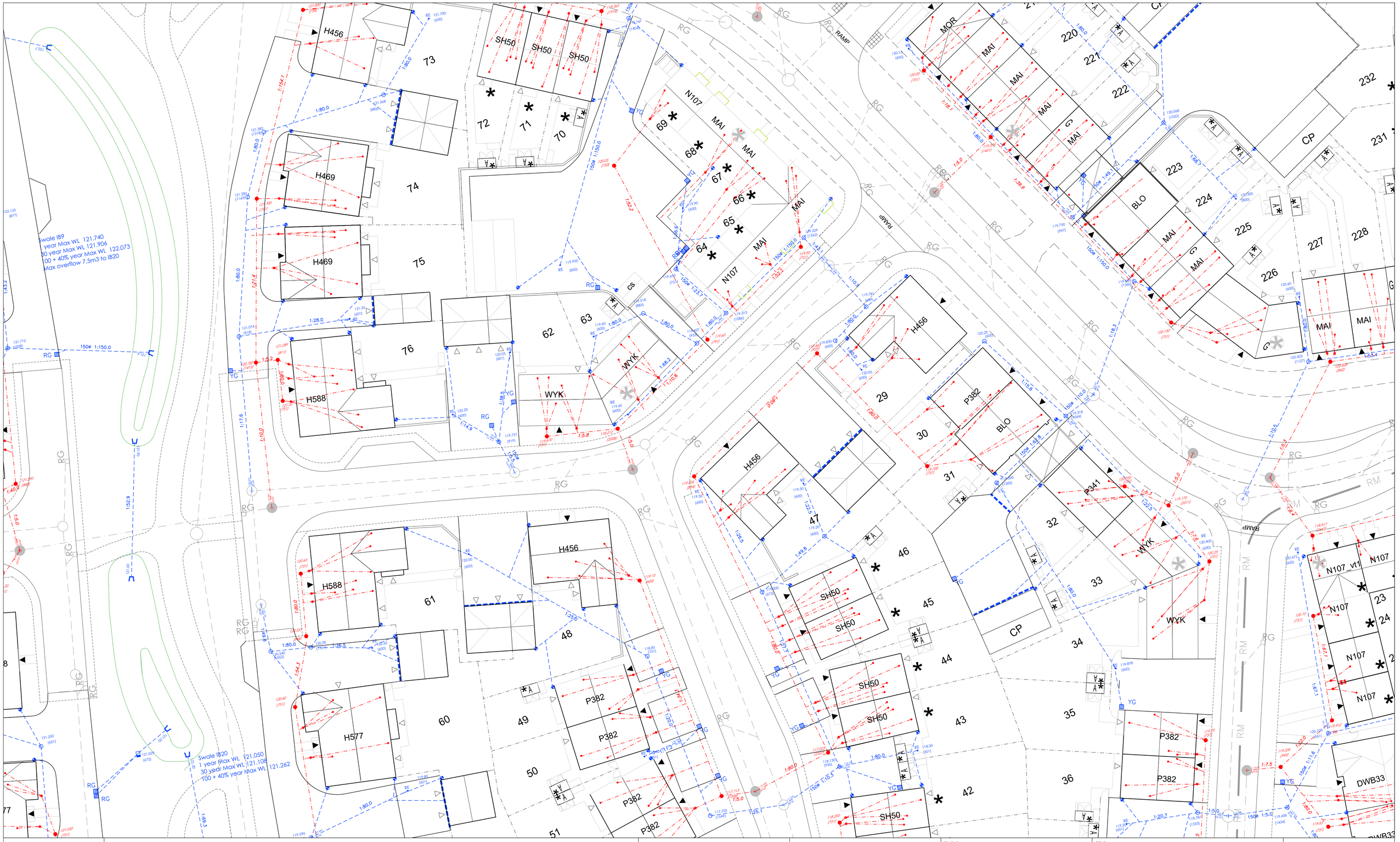
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- Road gully (150mm connection).
- Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- Storm rodding eye.
- Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

For Notes refer to drawing 957-07-01

REV	DESCRIPTION

REV	DESCRIPTION	DATE
D	Redesigned for Replan	06.07.20
C	Internal unit drainage reviewed	06.04.20
B	Redesigned for Replan	20.03.20
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :

Private Drainage Layout Sheet 5

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-05 Rev D

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Leicestershire LE16 7QU
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Swale IB5
1 year Max WL 122.823
30 year Max WL 122.853
100 + 40% year Max WL 122.906

Swale IB9
1 year Max WL 121.740
30 year Max WL 121.906
100 + 40% year Max WL 122.073
Max overflow 7.5m3 to IB20

Bus Stop

RAMP

For Notes refer to drawing 957-07-01

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- Road gully (150mm connection).
- Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain K range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- Storm rodding eye.
- Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

REV	DESCRIPTION

REV	DESCRIPTION	DATE
D	Redesigned for Replan	06.07.20
C	Internal unit drainage reviewed	06.04.20
B	Redesigned for Replan	20.03.20
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 6

PROJECT :
White Post Road, Bodicote

DRG. No:
957-07-06 Rev D

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33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adaptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame, These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, invert levels and (depth to invert) of incoming pipes are given.

MH6553
CL121.923
IL120.093

Swale IB10
1 year Max WL 121.536
30 year Max WL 121.584
100 + 40% year Max WL 121.652

Swale IB4
1 year Max WL 122.490
30 year Max WL 122.606
100 + 40% year Max WL 122.735

Swale IB5
1 year Max WL 122.823
30 year Max WL 122.853
100 + 40% year Max WL 122.906

Rumble

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- Storm rodding eye.
- Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION	DATE
D	Redesigned for Replan	06.07.20
C	Internal unit drainage reviewed	06.04.20
B	Redesigned for Replan	20.03.20
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 7

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-07 Rev D

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INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

For Notes refer to drawing 957-07-01

REV	DESCRIPTION	REV	DESCRIPTION	DATE
		D	Redesigned for Replan	06.07.20
		C	Internal unit drainage reviewed	06.04.20
		B	Redesigned for Replan	20.03.20
		A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 8

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-08 Rev D

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33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd. Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295, b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength" concrete "Class M", unreinforced concrete to BS 5911, Class M.

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be Sulphate resisting Portland Cement; a minimum cement content of 280 kg/m3 & maximum free water cement ratio of 0.55. Also, see above.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

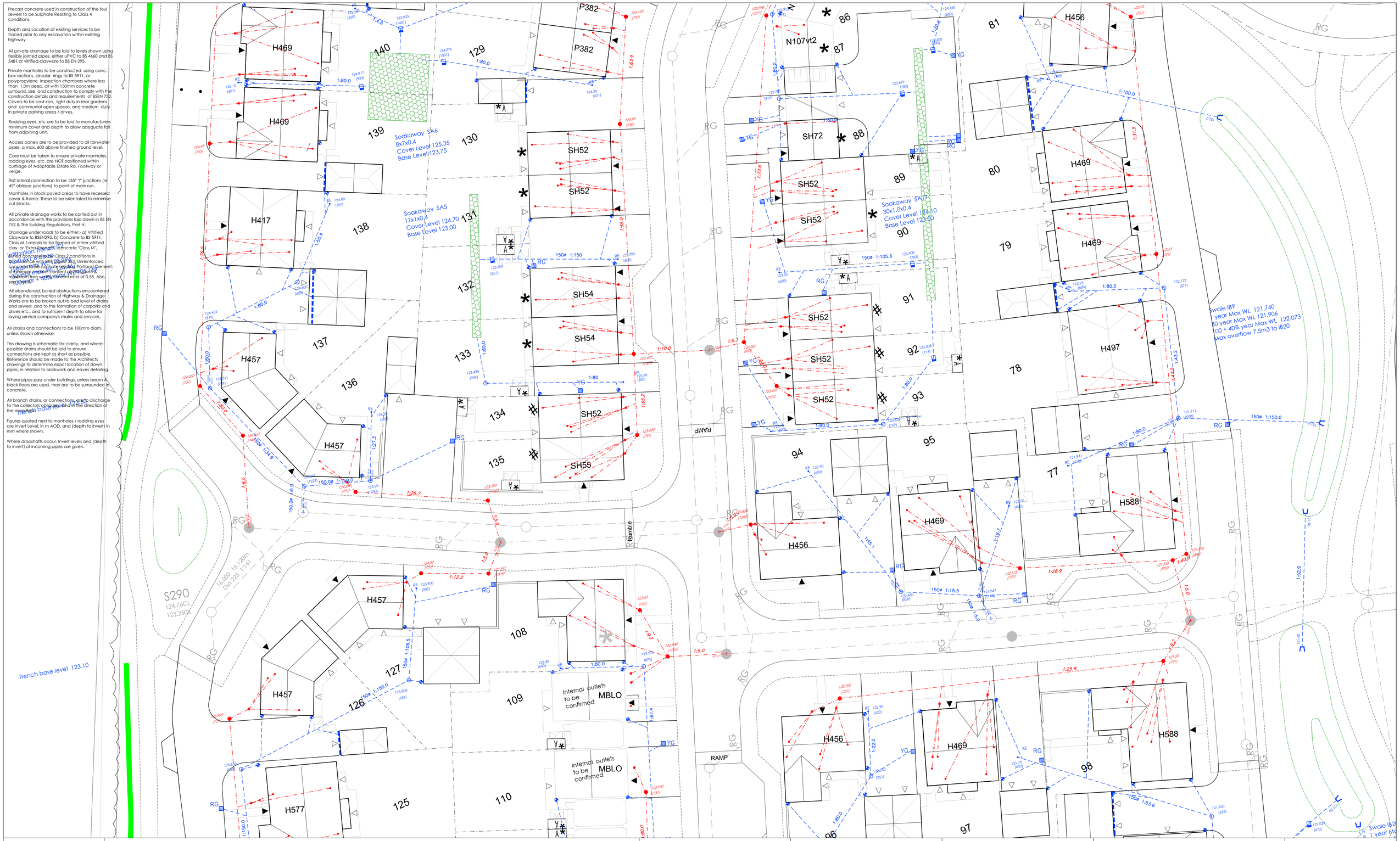
This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.



DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION	DATE
D	Redesigned for Replan	06.07.20
C	Internal unit drainage reviewed	06.04.20
B	Redesigned for Replan	20.03.20
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 9

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-09 Rev D

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INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° "Y" junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

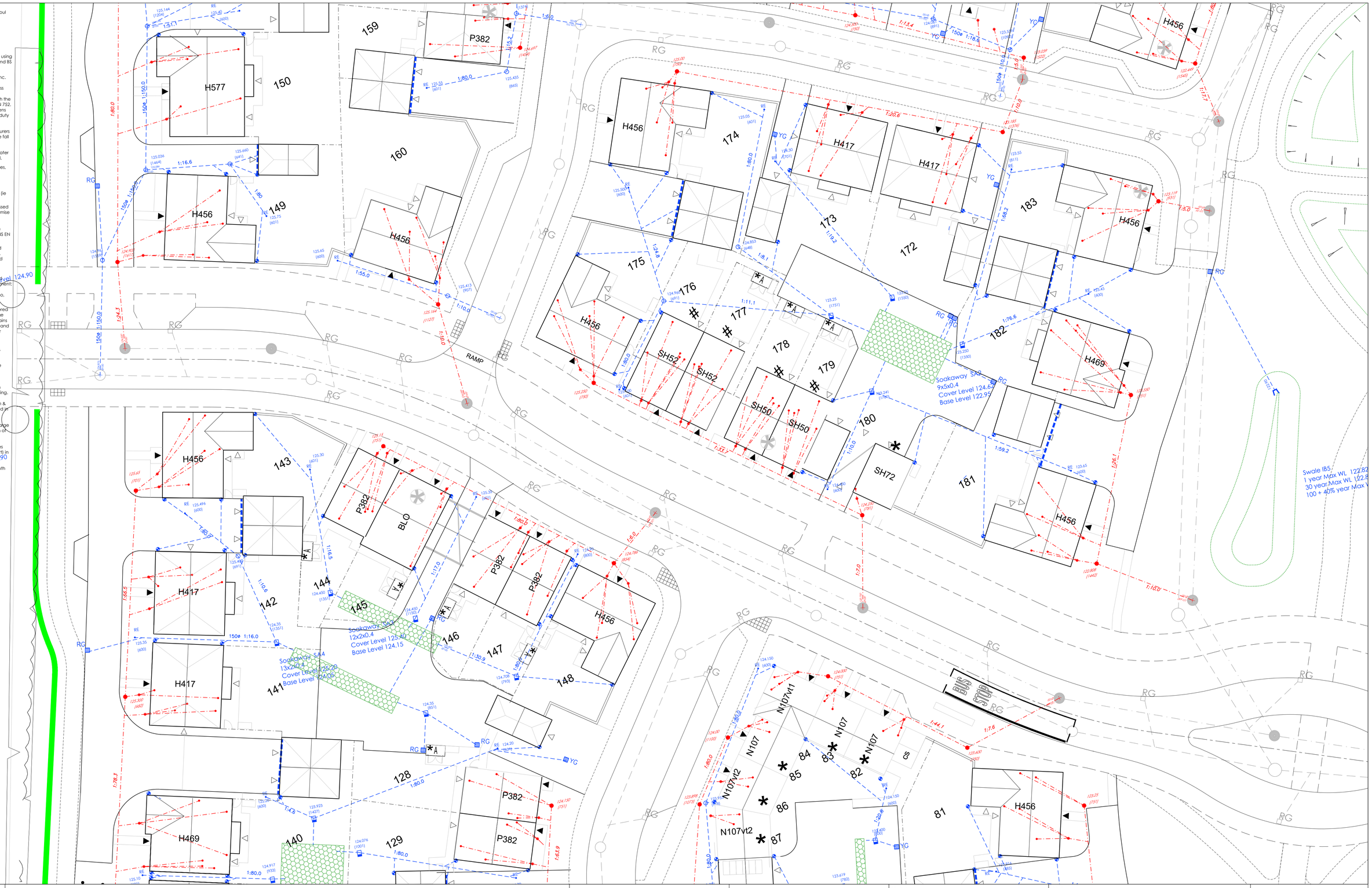
This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshaft or drop, invert levels and (depth to invert) of incoming pipes are given.



DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
- YG Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- RE 122.856 (600) Storm rodding eye.
- 123.456 (750) Private SW uPVC chamber. Non man entry type when greater than 1200 deep.
- 75.60 (600) Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION	DATE
D	Redesigned for Replan	06.07.20
C	Internal unit drainage reviewed	06.04.20
B	Redesigned for Replan	20.03.20
A	Amended following new site layout	23.01.20

STATUS:

SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 10

PROJECT :
White Post Road, Bodicote

DRG. No: 957-07-10 Rev D

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571

Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295.

Private manholes to be constructed using conc. box sections, circular rings to BS 5911, or polypropylene inspection chambers where less than 1.0m deep, all with 150mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communial open spaces, and medium duty in private parking areas / drives.

Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.

Access panels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

All private drainage works to be carried out in accordance with the provisions laid down in BS EN 752 & The Building Regulations, Part H.

Drainage under roads to be either:- a) Vitrified Clayware to BSEN295. b) Concrete to BS 5911, Class M. Laterals to be formed of either vitrified clay or "Extra Strength", concrete "Class M".

Buried concrete to be Class 2 conditions in accordance with BRE Digest 363. Unreinforced concrete to be sulphate resisting Portland Cement; a minimum cement content of 280kg/m3 & maximum free water/cement ratio of 0.55. Also, see note 8.

All abandoned, buried concrete encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

Infiltration Trench IT1
51x0.6x1.5 deep
1year max WL 125.381
30year max WL 125.781
100year + 40% max WL 126.370

Swale IB1
1 year Max WL 125.332
30 year Max WL 125.378
100 + 40% year Max WL 125.447

Swale IB2
1 year Max WL 124.577
30 year Max WL 124.667
100 + 40% year Max WL 124.761

Swale IB3
1 year Max WL 123.065
30 year Max WL 123.169
100 + 40% year Max WL 123.

1.22m RH

Rumble

Internal outlets to be confirmed

MBLO

Legend

- Foul connection.
- Foul shallow access.
- Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- Road gully (150mm connection).
- Yard gully (100mm connection).
- Preformed slotted drainage channel as Messrs Aco drain k range or similar approved with 100 dia outlet connection to drainage system.
- Rainwater downpipe.
- Storm rodding eye.
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- Private SW uPVC catchpit.(depth greater than 1200 to be non man entry chamber)
- Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

REV	DESCRIPTION

REV	DESCRIPTION	DATE
D	Redesigned for Replan	06.07.20
C	Internal unit drainage reviewed	06.04.20
B	Redesigned for Replan	20.03.20
A	Amended following new site layout	23.01.20

STATUS:

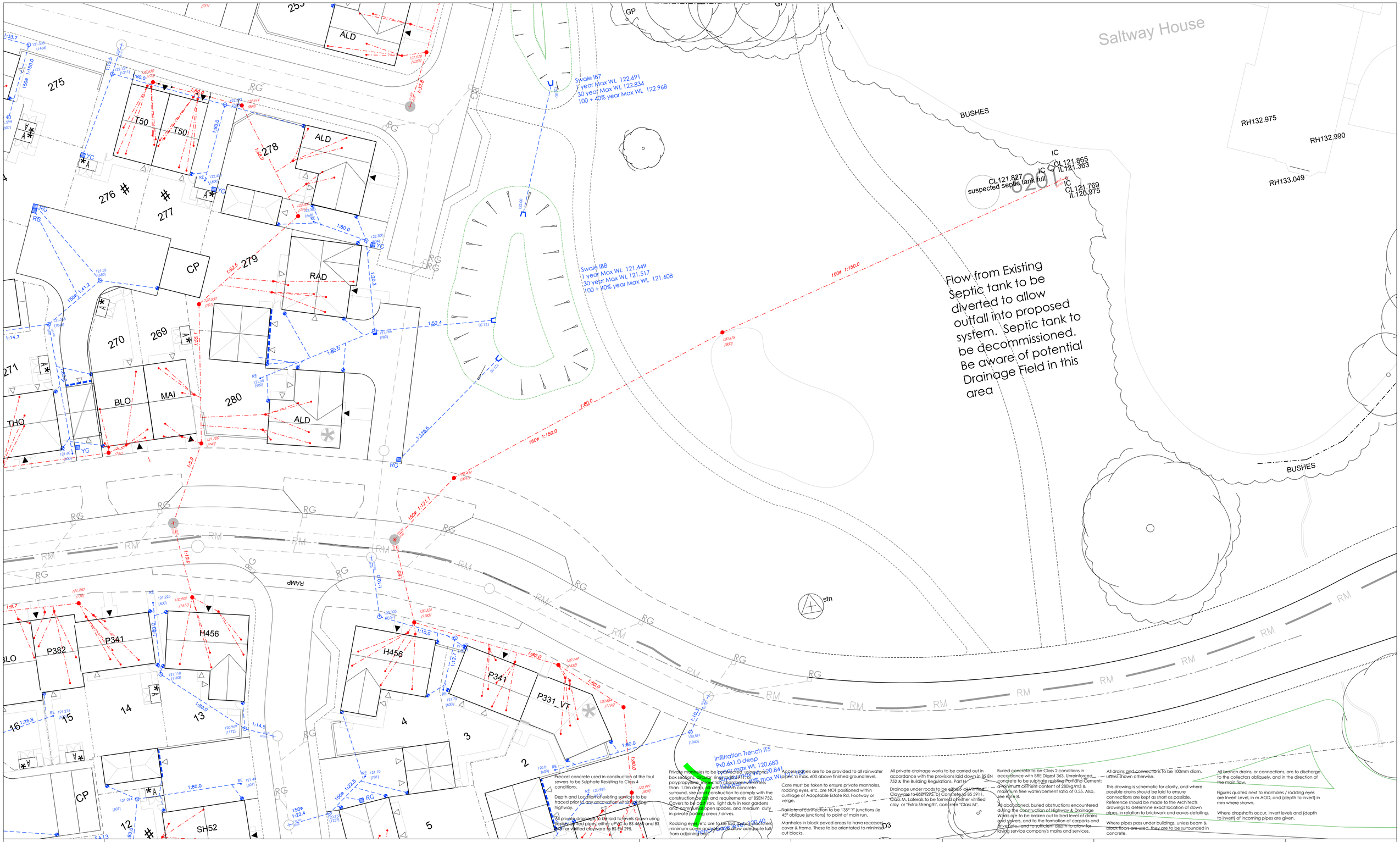
SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE :
Private Drainage Layout Sheet 11

PROJECT :
White Post Road, Bodicote

DRG. No:
957-07-11 Rev D

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



Precast concrete used in construction of the foul sewers to be Sulphate Resisting to Class 4 conditions.

Depth and Location of existing services to be traced prior to any excavation within existing highway.

All private drainage to be laid to levels shown using flexible jointed pipes, either uPVC to BS 4660 and BS 4691 or vitrified clayware to BS EN 295.

Private manholes to be constructed using precast box sections, circular ring and cast iron or polypropylene inspection chamber where less than 1.0m deep, all with 1.00mm concrete surround, size and construction to comply with the construction details and requirements of BSEN 752. Covers to be cast iron, light duty in rear gardens and communal open spaces, and medium duty in private parking areas / drives.

Rodding eyes etc are to be laid to gradient of minimum cover and vertical drop allow adequate fall from adjoining pipe.

Access pipels are to be provided to all rainwater pipes, a max. 600 above finished ground level.

Care must be taken to ensure private manholes, rodding eyes, etc. are NOT positioned within curtilage of Adoptable Estate Rd, Footway or verge.

Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) to point of main run.

Manholes in block paved areas to have recessed cover & frame. These to be orientated to minimise cut blocks.

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All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of carparks and drives etc., and to sufficient depth to allow for laying service company's mains and services.

All drains and connections to be 100mm diam. unless shown otherwise.

This drawing is schematic for clarity, and where possible drains should be laid to ensure connections are kept as short as possible. Reference should be made to the Architects drawings to determine exact location of down pipes, in relation to brickwork and eaves detailing.

Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.

All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.

Figures quoted next to manholes / rodding eyes are Invert Level, in m AOD, and (depth to invert) in mm where shown.

Where dropshafts occur, Invert levels and (depth to invert) of incoming pipes are given.

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
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B90 4GT

Legend

- Foul connection.
- Foul shallow access.
- 123.456 (750) Private foul uPVC chamber. Non man entry type when greater than 1200 deep.
- RG Road gully (150mm connection).
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- 123.400 Precast Swale Outlet
- Soakaway Storage - crates - permeable surround.
- Infiltration Trench

REV	DESCRIPTION	DATE
E	Redesigned for Replan	06.07.20
D	Internal unit drainage reviewed	06.04.20
C	Redesigned for Replan	20.03.20
B	Amended following new site layout	23.01.20
A	Note re septic tank added	8.10.19

STATUS:

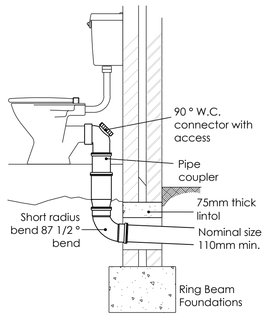
SCALE : 1:200 @ A1
DATE : May 2019
DRAWN : IDL

TITLE : Private Drainage Layout Sheet 12

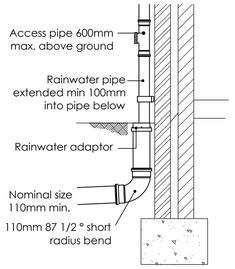
PROJECT : White Post Road, Bodicote

DRG. No: 957-07-12 Rev E

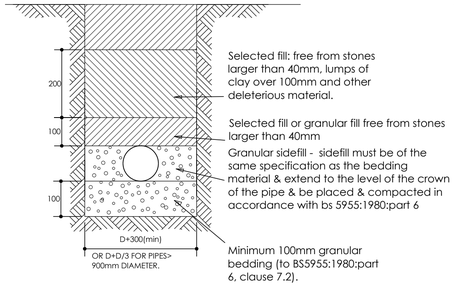
iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571



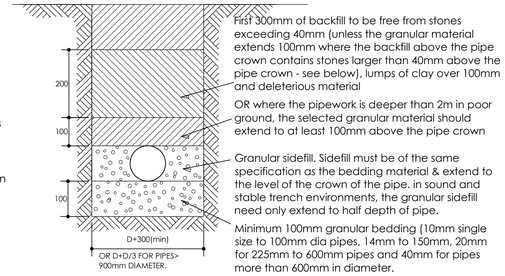
W.C. DIRECT TO DRAIN



EXTERNAL R.W.P. TO DRAIN



BEDDING DETAIL FOR uPVC PIPES



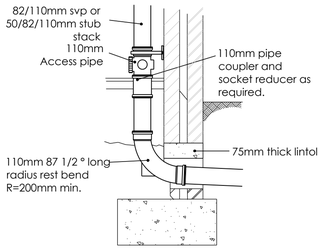
CLASS B : BEDDING FACTOR 1.9
FOR USE WITH CONCRETE & CLAY PIPES

TABLE 11 MIN. DIMENSIONS FOR ACCESS FITTINGS AND INSPECTION CHAMBERS					
TYPE	DEPTH TO INVERT FROM COVER LEVEL (m)	INTERNAL SIZES		COVER SIZES	
		RECTANGULAR LENGTH AND WIDTH	CIRCULAR DIAMETER	RECTANGULAR LENGTH AND WIDTH	CIRCULAR DIAMETER
Rodding Eye		As drain but min 100			Same size as pipework (1)
Access Fittings small 150 dia 150x100	0.6 or less, except where situated in a chamber	150x100	150	150x100 (1)	Same size as access fitting
large 225x100		225x100	225	225x100 (1)	
Inspection Chamber Shallow	0.6 or less	225x100	190 (2)	-	190 (1)
	1.2 or less	450x450	450	Min 430x430	430
Deep	>1.2 but <3.0	450x450	450	max 300x300 (3)	Access restricted to max 350 (3)

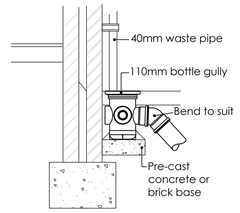
Notes:
(1) The clear opening may be reduced by 20mm in order to provide proper support for the cover and frame.
(2) Drains upto 150mm.
(3) A larger clear opening may be used in conjunction with a restricted access. The size is restricted for health and safety reasons to deter entry.

TABLE 12 MINIMUM DIMENSIONS FOR MANHOLES					
TYPE	SIZE OF LARGEST PIPE (DN)	MIN. INTERNAL DIMENSIONS (1) RECTANGULAR LENGTH AND WIDTH	CIRCULAR DIAMETER	MIN. CLEAR OPENING SIZE (1) RECTANGULAR LENGTH AND WIDTH	CIRCULAR DIAMETER
MANHOLE <1.5m deep to soffit	<= 150 225 300 >300	750 x 675 (7) 1200 x 675 1200 x 750 1800 x (DN+450)	1000 (7) 1200 1200 The larger of 1800 or (DN+450)	750 x 675 (2) 1200 x 675 (2)	na (3)
>1.5m deep to soffit	<= 225 300 375-450 >450	1200 x 1000 1200 x 1075 1350 x 1225 1800 x (DN+775)	1200 1200 1200 The larger of 1800 or (DN+775)	600 x 600	600
MANHOLE SHAFT (4) >3.0m deep to soffit of pipe	Steps (5)	1050 x 800	1050	600 x 600	600
	Ladder (5)	1200 x 800	1200		
	Winch (6)	900 x 800	900	600 x 600	600

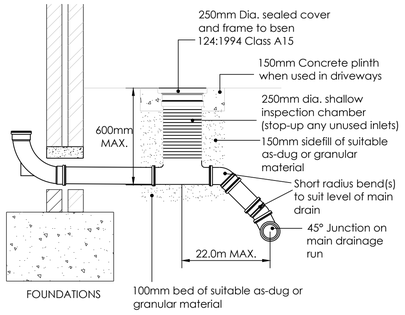
Notes:
(1) Larger sizes may be required for manholes on bends or where there are junctions.
(2) May be reduced to 600 by 600 where required by highway loading considerations, subject to a safe system of work being specified.
(3) Not applicable due to working space needed.
(4) Minimum height of chamber in shafted manhole 2m from benching to underside of reducing slab.
(5) Min clear space between ladder or steps and the opposite face of the shaft should be approximately 900mm.
(6) Winch only - no steps of ladders, permanent or removable.
(7) The minimum size of any manhole serving a sewer (i.e. any drain serving more than one property) should be 1200mm x 675mm rectangular or 1200mm diameter.



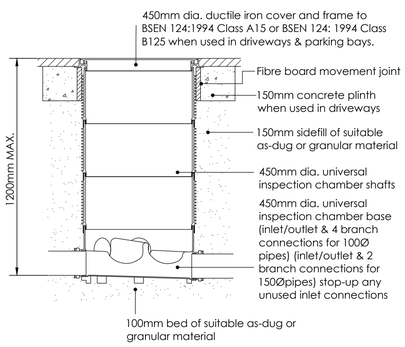
SOIL AND VENT PIPE CONNECTION
AND STUB STACK CONNECTION



EXTERNAL WASTE PIPE TO BACK INLET GULLY



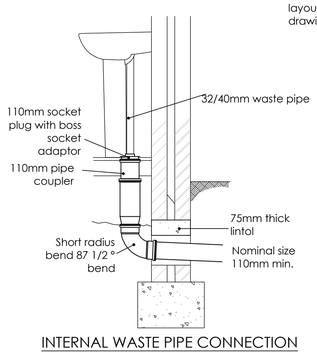
SHALLOW INSPECTION CHAMBER
For use in soft areas & driveways only



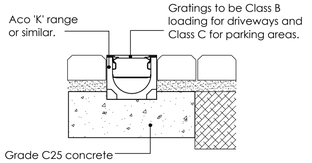
1.2m MAX. UNIVERSAL INSPECTION CHAMBER
for use in soft areas, driveways and parking bays only



RODDING EYE



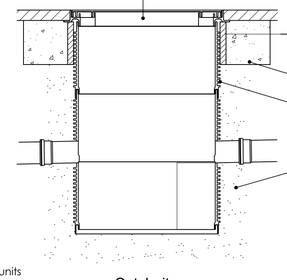
INTERNAL WASTE PIPE CONNECTION



NOTES:
1. Roddable trapped sump units to be positioned at connection to drain, see layouts.
2. Loadings to BSEN 124: 1994

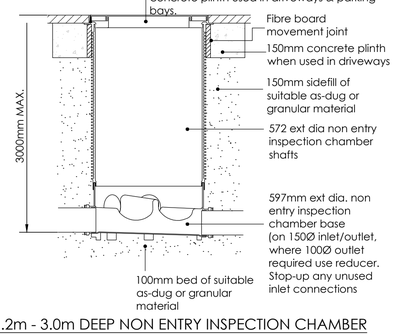
'ACO' DRAINAGE DETAIL

In order to restrict access 350mm dia. (or 300mm x 300mm sq cover max and frame with 150mm concrete plinth.

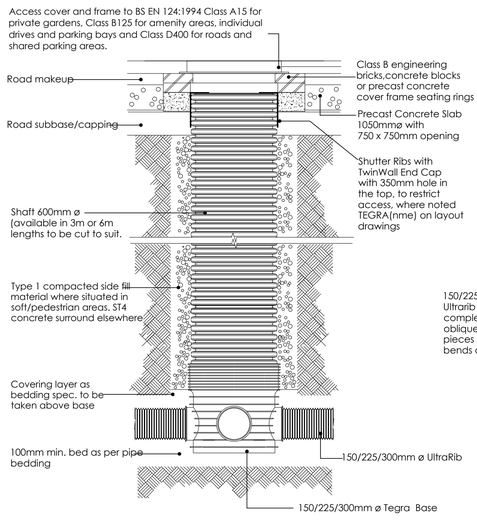


Catchpit

In order to restrict access 350mm max dia. polypropylene cover and frame with 150mm concrete plinth used in driveways & parking bays.

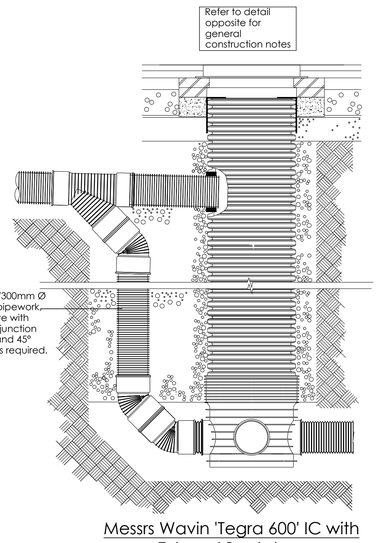


1.2m - 3.0m DEEP NON ENTRY INSPECTION CHAMBER
for use in soft areas, driveways and parking bays only

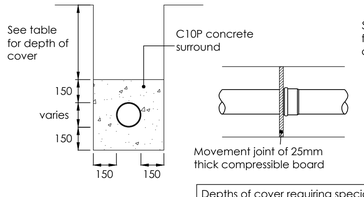


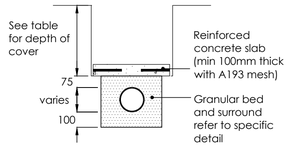
Messrs Wavin 'Tegra 600' Inspection chamber

For use in any trafficked areas (up to D400 rating) and / or where pipe diameters >150 and up to 300mm dia.



Messrs Wavin 'Tegra 600' IC with External Backdrop

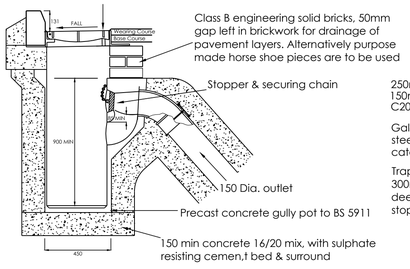




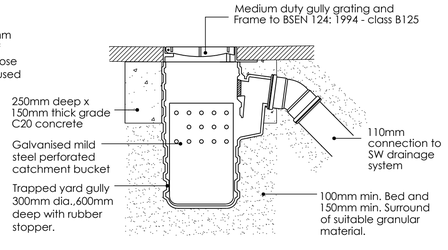
Depths of cover requiring special protection	
Less than 600mm	Gardens and grassed areas
Less than 900mm	Roads, drives & parking areas

SPECIAL PROTECTION-GROUND LOADS (H1. DIAG's 11 & 12)

Ductile iron non-rock hinged road gully, grating shall be 450mm x 450mm nominal size, class D400 in accordance with BS EN 124 and HA 104/09 of DMRB, with captive hinge and a minimum waterway area of 900 sq.cm



TRAPPED ROAD GULLY



TRAPPED YARD GULLY
WHERE NOTE 'YG' ON LAYOUTS
(Ensure yard gulley is suitable for 100m2 min drainage area)

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

1. All private drainage works to be constructed in accordance with the latest edition of the Building Regulations Part H (Drainage & Waste Disposal) and to BSEN752 (Building Drainage).
2. All pipes running through walls to have at least 50mm clearance all round and the opening masked with rigid sheet material.

REV	DESCRIPTION	REV	DESCRIPTION	DATE

STATUS:

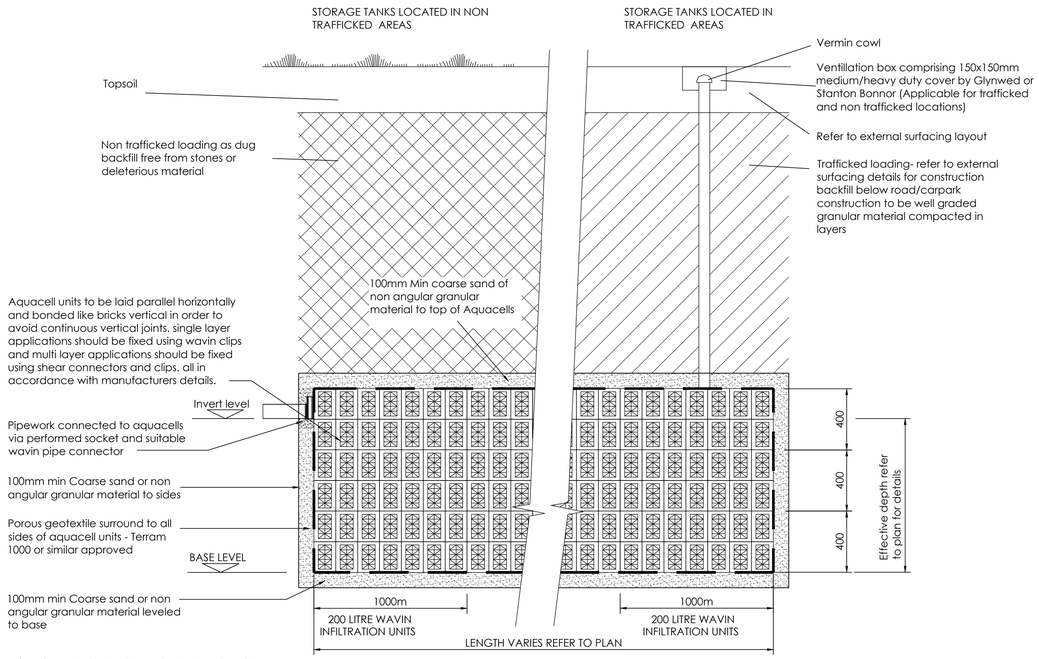
SCALE : Not to Scale
DATE : May 2019
DRAWN : IDL

TITLE : Private Drainage Details Sheet 1

PROJECT : White Post Road, Bodicote

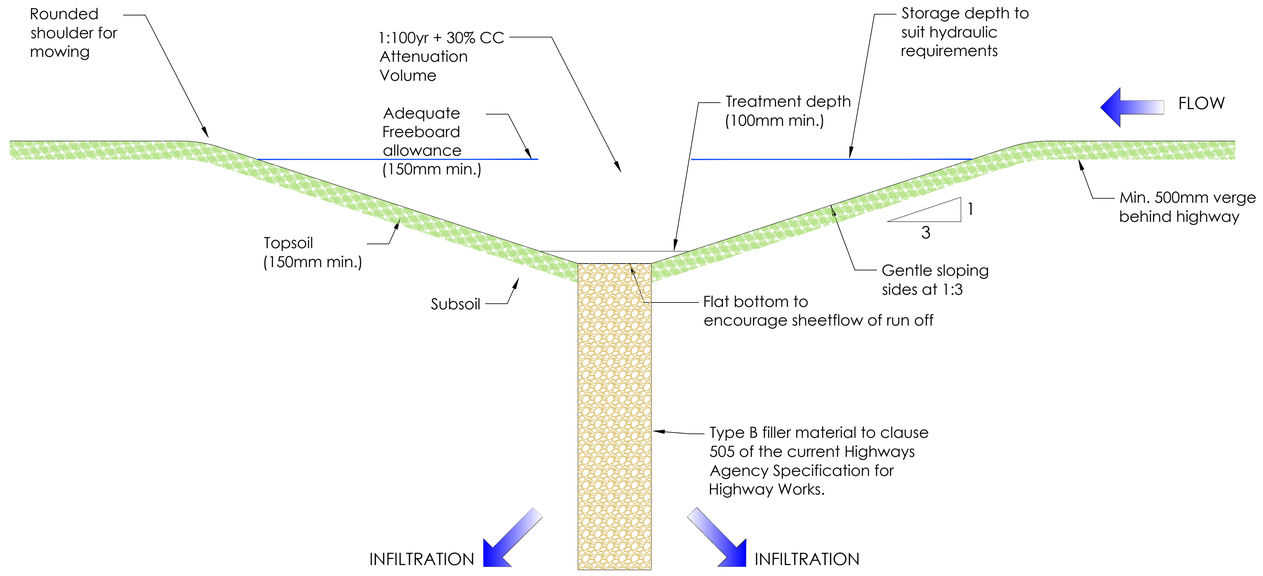
DRG. No: 957-07-14

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411751
Email: info@infrades.co.uk URL: www.infrades.co.uk

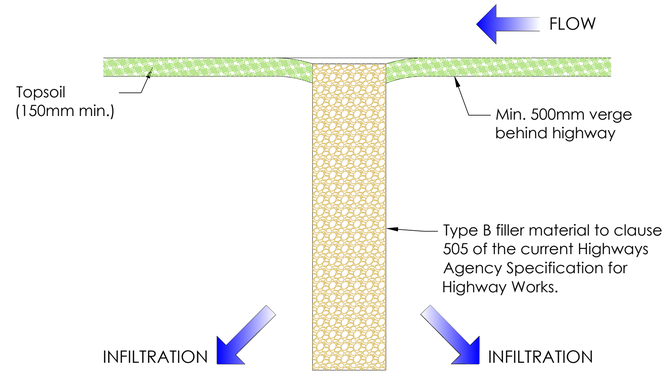


AQUACELL UNITS 1m x 0.5m x 0.4m DEEP. SIZE OF SOAKAWAY VARIES REFER TO PLAN FOR DETAILS

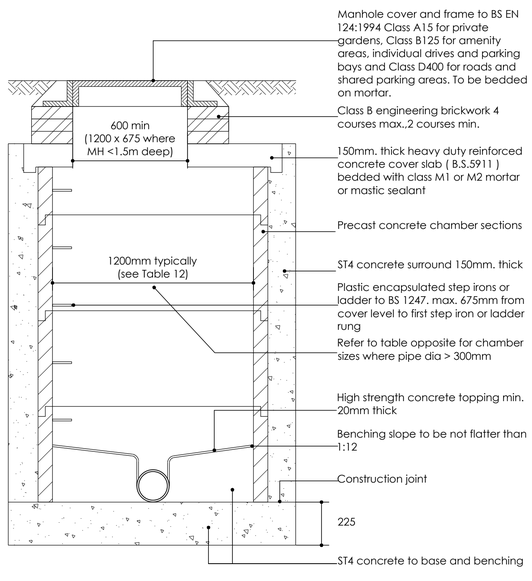
WAVIN AQUACELL SOAKAWAY
(or other similar approved)
Typical detail indicates a structure 3 units deep.

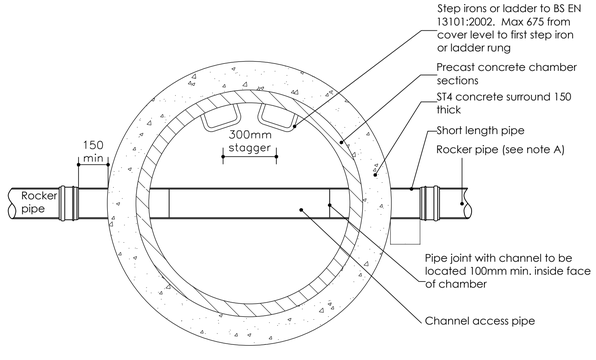


Swale with Infiltration trench



Infiltration trench





Typical Precast Concrete Manhole Detail

DAVID WILSON HOMES
David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull
B90 4GT

1. All private drainage works to be constructed in accordance with the latest edition of the Building Regulations Part H (Drainage & Waste Disposal) and to BSEN752 (Building Drainage).
2. All pipes running through walls to have at least 50mm clearance all round and the opening masked with rigid sheet material.

REV	DESCRIPTION	REV	DESCRIPTION	DATE

STATUS:

SCALE : Not to Scale
DATE : May 2019
DRAWN : IDL

TITLE : Private Drainage Details Sheet 2

PROJECT : White Post Road, Bodicote

DRG. No: 957-07-15

INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411751
Email: info@infrades.co.uk URL: www.infrades.co.uk

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	9.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
Time of Entry (mins)	2.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
100	0.087	2.00	126.242	1200	445487.285	238495.242	1.442
101	0.040	2.00	126.106	1200	445510.642	238490.652	1.456
102	0.086	2.00	125.902	1200	445527.568	238481.260	1.452
103	0.050	2.00	124.829	1200	445562.043	238454.534	1.479
104	0.018	2.00	123.929	1200	445588.207	238436.682	1.504
120	0.076	2.00	125.490	1200	445558.591	238573.190	1.490
121	0.006	2.00	125.878	1200	445553.153	238542.956	2.078
130	0.018	2.00	126.044	1200	445532.770	238493.760	1.444
131	0.004	2.00	126.199	1200	445542.356	238509.693	1.999
122	0.062	2.00	126.114	1200	445547.497	238524.742	2.464
123	0.029	2.00	125.337	1200	445569.200	238518.411	1.837
124	0.080	2.00	124.504	1200	445592.637	238508.593	1.554
125	0.023	2.00	123.806	1500	445613.833	238499.903	1.456
126	0.000	2.00	123.923	1500	445611.254	238490.391	1.748
127	0.021	2.00	124.000	1500	445602.243	238447.540	2.025
105	0.043	2.00	123.254	1500	445609.948	238428.432	1.654
106	0.131	2.00	122.522	1500	445630.958	238422.969	1.622
107	0.083	2.00	121.031	1500	445668.204	238409.589	1.706
108	0.015	2.00	120.859	1500	445676.235	238403.539	1.759
140	0.046	2.00	122.696	1200	445662.505	238474.032	1.696
141	0.113	2.00	122.088	1200	445684.198	238468.559	1.863
150	0.000	2.00	122.525	1200	445746.094	238491.814	1.675
151	0.111	2.00	122.194	1200	445734.255	238490.735	1.544
152	0.085	2.00	121.988	1200	445723.105	238468.185	1.638
142	0.069	2.00	121.712	1500	445710.738	238454.875	1.937
143	0.000	2.00	121.421	1500	445724.597	238434.717	2.021
144	0.083	2.00	121.200	1500	445717.284	238421.909	2.100
145	0.035	2.00	120.810	1500	445693.065	238403.206	1.860
109	0.126	2.00	120.714	1500	445682.404	238395.482	2.039
110	0.162	2.00	120.857	1500	445711.658	238352.330	2.482
160	0.092	2.00	121.553	1200	445737.725	238428.099	1.528
170	0.022	2.00	123.775	1200	445811.658	238458.826	1.550
171	0.121	2.00	123.550	1200	445794.790	238463.977	1.450
172	0.000	2.00	122.423	1200	445772.278	238417.889	2.323
173	0.009	2.00	122.273	1200	445769.397	238412.761	2.498
174	0.057	2.00	122.633	1200	445785.595	238405.354	3.008
175	0.062	2.00	122.187	1200	445773.001	238379.632	2.762
176	0.090	2.00	122.006	1500	445770.581	238364.913	2.906
180	0.038	2.00	123.310	1200	445811.510	238396.637	1.510
181	0.029	2.00	123.015	1200	445846.321	238380.349	1.615
182	0.000	2.00	122.236	1200	445833.853	238343.753	1.486

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Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
190	0.070	2.00	121.621	1200	445866.733	238308.336	1.621
191	0.012	2.00	122.171	1200	445843.345	238325.433	2.371
183	0.031	2.00	122.322	1200	445830.192	238331.541	2.697
184	0.060	2.00	122.171	1500	445810.078	238336.376	2.696
177	0.092	2.00	121.661	1500	445769.825	238337.955	2.761
111	0.056	2.00	121.115	1500	445726.967	238336.938	3.140
112	0.117	2.00	120.220	1500	445718.773	238300.169	2.695
200	0.033	2.00	122.053	1200	445815.484	238312.566	1.453
201	0.016	2.00	121.918	1200	445814.994	238301.913	1.468
202	0.033	2.00	121.715	1200	445817.202	238285.718	1.465
203	0.000	2.00	121.877	1200	445795.992	238282.778	1.927
204	0.086	2.00	120.949	1200	445752.981	238284.276	1.949
113	0.000	2.00	119.685	1500	445715.581	238287.398	2.360
114	0.000	2.00	119.236	1500	445712.991	238279.095	2.036
115	0.020	2.00	118.771	1500	445707.229	238272.503	1.896
116	0.053	2.00	118.093	1500	445694.489	238268.472	1.893
210	0.030	2.00	121.427	1200	445609.742	238344.943	1.427
211	0.080	2.00	121.757	1200	445611.008	238358.421	1.857
212	0.045	2.00	120.341	1200	445642.201	238355.139	1.441
220	0.103	2.00	120.486	1200	445683.336	238372.895	1.436
213	0.039	2.00	120.101	1200	445658.067	238355.761	1.526
214	0.144	2.00	118.987	1200	445666.870	238310.653	1.787
215	0.102	2.00	118.095	1350	445671.069	238272.667	1.645
117	0.000	2.00	117.850	1800	445683.804	238258.618	2.075
118	0.000		116.922		445687.337	238250.785	1.339
270	0.103	2.00	125.019	1200	445546.227	238452.922	1.519
271	0.038	2.00	124.730	1200	445533.573	238433.057	1.580
272	0.012	2.00	124.208	1200	445528.642	238392.939	1.458
290	0.023	2.00	124.760	1200	445468.119	238377.456	1.510
291	0.073	2.00	124.927	1200	445480.936	238387.232	1.777
292	0.017	2.00	124.567	1200	445506.734	238380.920	1.617
273	0.012	2.00	124.094	1200	445526.824	238378.187	1.619
274	0.043	2.00	123.917	1200	445524.996	238364.349	1.842
275	0.061	2.00	122.919	1200	445559.282	238360.544	1.844
277	0.015	2.00	122.165	1200	445588.118	238358.176	1.640
278	0.017	2.00	121.798	1500	445586.538	238340.571	1.648
279	0.000	2.00	122.114	1500	445582.310	238296.808	2.314
300	0.036	2.00	123.641	1200	445523.206	238348.941	1.441
301	0.027	2.00	123.260	1200	445519.129	238317.682	1.510
302	0.034	2.00	122.900	1200	445516.257	238288.847	1.475
303	0.041	2.00	122.590	1200	445515.230	238269.242	1.315
304	0.000	2.00	122.450	1200	445539.826	238268.614	1.325
280	0.082	2.00	121.550	1500	445578.420	238256.829	2.025
281	0.000	2.00	120.326		445598.334	238250.875	1.626
282	0.000	2.00	118.422		445637.154	238238.539	0.972
283	0.000		116.886		445659.014	238222.795	1.303
119	0.000	2.00	116.506		445680.400	238231.012	1.206
240	0.000		116.705		445698.981	238212.763	1.705
241	0.000	2.00	115.700		445692.988	238166.175	1.700
250	0.000		115.411		445690.621	238144.903	1.859
251	0.000	2.00	115.400		445691.441	238122.889	1.850
260	0.000		115.400	2100	445701.336	238120.282	1.900

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Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
261			115.043	1500	445707.350	238123.844	2.602

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.035	41.2	11.8	1.217	1.231	0.087	0.0	82	0.896
1.001	1.329	52.8	17.2	1.231	1.227	0.127	0.0	88	1.192
1.002	2.082	82.8	28.9	1.227	1.253	0.213	0.0	92	1.903
1.003	2.148	85.4	35.6	1.254	1.203	0.263	0.0	102	2.056
1.004	2.834	200.3	38.1	1.204	1.279	0.281	0.0	88	2.198
2.000	1.052	41.8	10.3	1.265	1.853	0.076	0.0	76	0.875
2.001	1.158	46.0	11.1	1.853	2.239	0.082	0.0	75	0.957
3.000	1.923	76.5	2.4	1.219	1.774	0.018	0.0	28	0.889
3.001	2.443	97.1	3.0	1.774	2.239	0.022	0.0	27	1.108
2.002	1.063	42.2	22.5	2.239	1.612	0.166	0.0	116	1.077
2.003	1.929	76.7	26.4	1.612	1.329	0.195	0.0	91	1.755
2.004	2.123	84.4	37.3	1.329	1.231	0.275	0.0	105	2.062
2.005	1.316	52.3	40.4	1.231	1.448	0.298	0.0	149	1.449
2.006	1.058	74.8	40.4	1.448	1.725	0.298	0.0	157	1.079
2.007	1.899	134.2	43.2	1.725	1.279	0.319	0.0	117	1.699
1.005	3.264	360.5	87.1	1.279	1.247	0.643	0.0	125	2.706
1.006	3.538	390.8	104.9	1.247	1.255	0.774	0.0	132	3.018
1.007	3.047	484.6	116.1	1.256	1.309	0.857	0.0	149	2.521
1.008	3.355	533.5	118.2	1.309	1.439	0.872	0.0	143	2.716
4.000	2.321	92.3	6.2	1.471	1.562	0.046	0.0	39	1.329
4.001	1.576	111.4	21.5	1.563	1.487	0.159	0.0	89	1.226
5.000	1.700	67.6	0.0	1.450	1.319	0.000	0.0	0	0.000
5.001	1.428	56.8	15.0	1.319	1.413	0.111	0.0	79	1.209
5.002	2.007	79.8	26.6	1.413	1.563	0.196	0.0	89	1.809
4.002	2.247	248.1	57.5	1.562	1.646	0.424	0.0	122	1.839
4.003	2.241	247.6	69.9	1.646	1.650	0.516	0.0	136	1.938
4.004	1.419	225.7	81.2	1.650	1.410	0.599	0.0	186	1.307
4.005	1.981	315.0	85.9	1.410	1.439	0.634	0.0	160	1.695
1.009	1.844	521.3	221.2	1.439	1.882	1.632	0.0	272	1.771
1.010	3.309	935.6	243.1	1.882	2.540	1.794	0.0	208	2.803
6.000	2.360	93.8	12.5	1.303	1.646	0.092	0.0	55	1.648
7.000	1.098	43.7	3.0	1.325	1.225	0.022	0.0	40	0.635
7.001	2.594	103.1	19.4	1.225	2.098	0.143	0.0	65	1.996
7.002	2.710	107.8	19.4	2.098	2.198	0.143	0.0	65	2.071
7.003	1.442	101.9	20.6	2.198	2.708	0.152	0.0	91	1.137
7.004	1.312	92.7	28.3	2.708	2.462	0.209	0.0	113	1.156
7.005	2.038	144.1	36.7	2.462	2.531	0.271	0.0	103	1.712
7.006	1.559	172.1	48.9	2.531	2.386	0.361	0.0	137	1.350
8.000	1.334	53.0	5.1	1.285	1.390	0.038	0.0	47	0.850
8.001	1.698	67.5	9.1	1.390	1.261	0.067	0.0	56	1.196
8.002	3.782	150.4	9.1	1.261	2.401	0.067	0.0	37	2.110
9.000	1.084	43.1	9.5	1.396	2.146	0.070	0.0	72	0.874
9.001	1.083	43.1	11.1	2.146	2.397	0.082	0.0	78	0.912
8.003	1.337	94.5	24.4	2.397	2.396	0.180	0.0	103	1.125
8.004	1.752	123.9	32.5	2.396	2.386	0.240	0.0	105	1.484

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Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
6.005	2.190	241.9	93.9	2.386	2.465	0.693	0.0	162	2.058
1.011	2.866	1025.5	344.6	2.465	2.020	2.543	0.0	269	2.596
1.012	3.234	1157.2	360.5	2.020	1.685	2.660	0.0	257	2.872
10.000	1.553	61.7	4.5	1.228	1.243	0.033	0.0	41	0.911
10.001	1.448	57.6	6.6	1.243	1.240	0.049	0.0	51	0.972
10.002	1.549	61.6	11.1	1.240	1.702	0.082	0.0	65	1.183
10.003	1.948	77.5	11.1	1.702	1.724	0.082	0.0	58	1.396
10.004	2.373	94.4	22.8	1.724	1.686	0.168	0.0	75	1.964
1.014	3.144	1125.0	383.3	1.685	1.361	2.828	0.0	271	2.858
1.015	5.065	1812.5	383.3	1.361	1.221	2.828	0.0	209	4.063
1.016	5.906	2113.3	386.0	1.221	1.218	2.848	0.0	193	4.549
1.017	4.075	1458.3	393.2	1.218	1.325	2.901	0.0	238	3.488
11.000	1.122	44.6	4.1	1.202	1.632	0.030	0.0	46	0.706
11.001	2.343	93.1	14.9	1.632	1.215	0.110	0.0	60	1.722
11.002	1.644	65.4	21.0	1.216	1.226	0.155	0.0	87	1.467
12.000	1.498	59.6	14.0	1.211	1.226	0.103	0.0	74	1.232
11.003	2.728	192.9	40.3	1.226	1.487	0.297	0.0	92	2.168
11.004	2.094	148.0	59.8	1.487	1.270	0.441	0.0	133	1.987
11.005	2.282	252.0	73.6	1.270	1.325	0.543	0.0	138	1.988
1.018	3.020	1334.3	466.7	1.325	0.497	3.444	0.0	305	2.764
15.000	1.596	63.5	14.0	1.294	1.355	0.103	0.0	72	1.288
15.001	1.301	51.7	19.1	1.355	1.233	0.141	0.0	94	1.204
15.002	1.518	60.4	20.7	1.233	1.319	0.153	0.0	91	1.381
16.000	1.027	40.8	3.1	1.285	1.552	0.023	0.0	42	0.609
16.002	1.133	45.0	13.0	1.552	1.392	0.096	0.0	83	0.985
16.003	1.841	73.2	15.3	1.392	1.319	0.113	0.0	70	1.466
15.003	2.670	188.7	37.7	1.319	1.542	0.278	0.0	91	2.100
15.004	2.685	189.8	43.5	1.542	1.544	0.321	0.0	97	2.189
15.005	2.172	153.5	51.8	1.544	1.340	0.382	0.0	120	1.967
15.006	2.052	145.1	53.8	1.340	1.273	0.397	0.0	126	1.904
15.007	1.615	178.4	56.1	1.273	1.939	0.414	0.0	144	1.435
15.008	1.497	165.3	56.1	1.939	1.650	0.414	0.0	151	1.359
17.000	1.564	62.2	4.9	1.216	1.285	0.036	0.0	43	0.941
17.001	1.385	55.1	8.5	1.285	1.250	0.063	0.0	59	1.008
17.002	1.141	45.4	13.1	1.250	1.090	0.097	0.0	83	0.993
17.003	1.018	40.5	18.7	1.090	1.100	0.138	0.0	108	0.999
17.004	2.491	99.0	18.7	1.100	1.652	0.138	0.0	66	1.931
14.010	1.403	155.0	85.9	1.650	0.551	0.634	0.0	200	1.438
14.011	3.605	14424.6	85.9	0.626	-0.028	0.634	0.0	146	1.000
14.012	1.908	303.4	85.9	0.522	0.611	0.634	0.0	164	1.642
1.021	2.614	739.2	0.0	0.606	1.105	0.000	0.0	0	0.000
1.022	10.529	60662.5	0.0	0.505	0.500	0.000	0.0	0	0.000
1.023	3.334	942.6	0.0	1.100	1.211	0.000	0.0	0	0.000
1.025	1.698	480.1	0.0	1.250	1.300	0.000	0.0	0	0.000
1.026	7.089	783.0	0.0	1.525	2.227	0.000	0.0	0	0.000

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Normal	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	240	Check Discharge Volume	x

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Storm Durations

60	180	360	600	960	2880	8640
120	240	480	720	1440	5760	10080

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	20	0	0
100	40	0	0
100	40	10	0

Node 260 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	113.500	Product Number	CTL-SHE-0069-2700-1750-2700
Design Depth (m)	1.750	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.7	Min Node Diameter (mm)	1200

Node 283 Online Orifice Control

Flap Valve	x	Invert Level (m)	115.583	Discharge Coefficient	1.000
Replaces Downstream Link	x	Diameter (m)	0.600		

Node 118 Online Orifice Control

Flap Valve	x	Invert Level (m)	115.583	Discharge Coefficient	1.000
Replaces Downstream Link	x	Diameter (m)	0.750		

Node 281 Online Orifice Control

Flap Valve	x	Invert Level (m)	118.700	Discharge Coefficient	1.000
Replaces Downstream Link	✓	Diameter (m)	0.450		

Node 251 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.25020	Porosity	1.00	Main Channel Length (m)	22.000
Side Inf Coefficient (m/hr)	0.25020	Invert Level (m)	113.550	Main Channel Slope (1:X)	10000.0
Safety Factor	5.0	Time to half empty (mins)		Main Channel n	0.030

Inlets

250

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	878.0	407.0	0.800	1712.0	1241.0	1.550	2844.0	2373.0
0.750	1437.0	966.0	1.500	2392.0	1921.0			

Node 119 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.05508	Porosity	1.00	Main Channel Length (m)	17.000
Side Inf Coefficient (m/hr)	0.05508	Invert Level (m)	115.300	Main Channel Slope (1:X)	60.0
Safety Factor	2.0	Time to half empty (mins)	7	Main Channel n	0.030

Inlets

283 | 118

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.0	0.0	0.300	454.0	454.0	0.900	707.0	707.0	1.500	997.0	997.0
0.100	145.0	145.0	0.500	535.0	535.0	1.100	800.0	800.0			
0.200	416.0	416.0	0.700	619.0	619.0	1.300	897.0	897.0			

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Results for 2 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	31	124.870	0.070	8.9	0.1645	0.0000	OK
60 minute summer	101	31	124.725	0.075	12.8	0.1260	0.0000	OK
60 minute summer	102	32	124.527	0.077	21.3	0.1782	0.0000	OK
60 minute summer	103	32	123.436	0.086	25.9	0.1547	0.0000	OK
60 minute summer	104	32	122.502	0.077	27.7	0.1054	0.0000	OK
60 minute summer	120	31	124.065	0.065	7.8	0.1404	0.0000	OK
60 minute summer	121	32	123.864	0.064	8.2	0.0757	0.0000	OK
60 minute summer	130	31	124.624	0.024	1.8	0.0330	0.0000	OK
60 minute summer	131	32	124.223	0.023	2.2	0.0272	0.0000	OK
60 minute summer	122	32	123.752	0.102	16.3	0.1670	0.0000	OK
60 minute summer	123	32	123.576	0.076	19.1	0.1102	0.0000	OK
60 minute summer	124	32	123.037	0.087	26.7	0.1871	0.0000	OK
60 minute summer	125	32	122.482	0.132	29.0	0.2751	0.0000	OK
60 minute summer	126	32	122.307	0.132	28.9	0.2327	0.0000	OK
60 minute summer	127	33	122.077	0.102	30.6	0.2018	0.0000	OK
60 minute summer	105	32	121.707	0.107	61.5	0.2447	0.0000	OK
60 minute summer	106	32	121.010	0.110	73.8	0.3723	0.0000	OK
60 minute summer	107	32	119.453	0.128	81.0	0.3508	0.0000	OK
60 minute summer	108	32	119.238	0.138	82.2	0.2666	0.0000	OK
60 minute summer	140	31	121.034	0.034	4.7	0.0574	0.0000	OK
60 minute summer	141	31	120.303	0.078	16.1	0.1829	0.0000	OK
60 minute summer	150	1	120.850	0.000	0.0	0.0000	0.0000	OK
60 minute summer	151	31	120.717	0.067	11.3	0.1721	0.0000	OK
60 minute summer	152	31	120.429	0.079	19.8	0.1719	0.0000	OK
60 minute summer	142	31	119.886	0.110	41.9	0.2740	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	8.7	0.785	0.211	0.2638	
60 minute summer	101	1.001	102	12.6	1.072	0.238	0.2274	
60 minute summer	102	1.002	103	21.0	1.651	0.254	0.5586	
60 minute summer	103	1.003	104	26.0	1.893	0.305	0.4358	
60 minute summer	104	1.004	105	27.8	1.984	0.139	0.3254	
60 minute summer	120	2.000	121	7.6	0.817	0.181	0.2846	
60 minute summer	121	2.001	122	8.2	0.615	0.177	0.2550	
60 minute summer	130	3.000	131	1.8	0.811	0.023	0.0406	
60 minute summer	131	3.001	122	2.2	0.242	0.022	0.1564	
60 minute summer	122	2.002	123	16.3	1.116	0.387	0.3317	
60 minute summer	123	2.003	124	19.1	1.479	0.249	0.3287	
60 minute summer	124	2.004	125	26.8	1.402	0.317	0.4384	
60 minute summer	125	2.005	126	28.9	1.274	0.552	0.2234	
60 minute summer	126	2.006	127	28.6	1.134	0.382	1.1066	
60 minute summer	127	2.007	105	30.6	1.504	0.228	0.4195	
60 minute summer	105	1.005	106	61.3	2.328	0.170	0.5731	
60 minute summer	106	1.006	107	73.1	2.744	0.187	1.0553	
60 minute summer	107	1.007	108	80.8	2.070	0.167	0.3925	
60 minute summer	108	1.008	109	81.8	2.224	0.153	0.3746	
60 minute summer	140	4.000	141	4.6	1.215	0.050	0.0847	
60 minute summer	141	4.001	142	15.7	1.109	0.141	0.4231	
60 minute summer	150	5.000	151	0.0	0.000	0.000	0.0588	
60 minute summer	151	5.001	152	11.1	0.991	0.195	0.2813	
60 minute summer	152	5.002	142	19.3	1.612	0.242	0.2183	
60 minute summer	142	4.002	143	41.9	1.415	0.169	0.7251	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	143	32	119.526	0.125	50.9	0.2217	0.0000	OK
60 minute summer	144	32	119.257	0.157	59.3	0.4027	0.0000	OK
60 minute summer	145	32	119.101	0.151	63.0	0.3239	0.0000	OK
60 minute summer	109	32	118.909	0.233	156.7	0.7011	0.0000	OK
60 minute summer	110	32	118.560	0.185	171.1	0.5680	0.0000	OK
60 minute summer	160	31	120.075	0.050	9.4	0.1156	0.0000	OK
60 minute summer	170	31	122.259	0.034	2.2	0.0479	0.0000	OK
60 minute summer	171	31	122.156	0.056	14.5	0.1572	0.0000	OK
60 minute summer	172	32	120.163	0.063	14.2	0.0710	0.0000	OK
60 minute summer	173	32	119.860	0.085	15.0	0.1027	0.0000	OK
60 minute summer	174	32	119.725	0.100	20.5	0.1514	0.0000	OK
60 minute summer	175	32	119.513	0.088	26.5	0.1394	0.0000	OK
60 minute summer	176	32	119.219	0.119	35.1	0.2837	0.0000	OK
60 minute summer	180	31	121.840	0.040	3.9	0.0660	0.0000	OK
60 minute summer	181	32	121.451	0.051	6.8	0.0760	0.0000	OK
60 minute summer	182	32	120.783	0.033	6.6	0.0374	0.0000	OK
60 minute summer	190	31	120.061	0.061	7.1	0.1211	0.0000	OK
60 minute summer	191	32	119.869	0.069	8.2	0.0845	0.0000	OK
60 minute summer	183	32	119.717	0.091	17.7	0.1245	0.0000	OK
60 minute summer	184	32	119.565	0.090	23.4	0.1991	0.0000	OK
60 minute summer	177	32	119.043	0.143	67.2	0.3491	0.0000	OK
60 minute summer	111	33	118.212	0.237	241.0	0.5035	0.0000	OK
60 minute summer	112	33	117.784	0.259	252.6	0.6829	0.0000	OK
60 minute summer	200	31	120.635	0.035	3.4	0.0562	0.0000	OK
60 minute summer	201	31	120.494	0.044	4.9	0.0591	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	143	4.003	144	51.4	1.693	0.207	0.4477	
60 minute summer	144	4.004	145	59.7	1.243	0.264	1.4699	
60 minute summer	145	4.005	109	62.9	1.458	0.200	0.5679	
60 minute summer	109	1.009	110	155.8	1.796	0.299	4.5623	
60 minute summer	110	1.010	111	170.6	1.934	0.182	1.9201	
60 minute summer	160	6.000	143	9.3	1.475	0.099	0.0923	
60 minute summer	170	7.000	171	2.2	0.384	0.049	0.1010	
60 minute summer	171	7.001	172	14.2	1.702	0.137	0.4270	
60 minute summer	172	7.002	173	14.1	1.709	0.131	0.0485	
60 minute summer	173	7.003	174	15.1	0.813	0.148	0.3305	
60 minute summer	174	7.004	175	20.6	1.086	0.222	0.5425	
60 minute summer	175	7.005	176	26.5	1.557	0.184	0.2537	
60 minute summer	176	7.006	177	35.2	1.026	0.204	0.9261	
60 minute summer	180	8.000	181	3.8	0.658	0.071	0.2210	
60 minute summer	181	8.001	182	6.6	1.299	0.098	0.1999	
60 minute summer	182	8.002	183	6.6	1.877	0.044	0.0451	
60 minute summer	190	9.000	191	7.0	0.746	0.161	0.2712	
60 minute summer	191	9.001	183	8.1	0.814	0.187	0.1435	
60 minute summer	183	8.003	184	17.7	0.989	0.188	0.3713	
60 minute summer	184	8.004	177	23.2	1.338	0.188	0.6997	
60 minute summer	177	6.005	111	66.4	1.811	0.274	1.5751	
60 minute summer	111	1.011	112	242.9	2.044	0.237	4.4793	
60 minute summer	112	1.012	113	253.9	1.968	0.219	1.6987	
60 minute summer	200	10.000	201	3.3	0.712	0.054	0.0502	
60 minute summer	201	10.001	202	4.8	0.725	0.084	0.1092	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	31	120.307	0.057	8.2	0.0906	0.0000	OK
60 minute summer	203	32	119.999	0.049	8.0	0.0554	0.0000	OK
60 minute summer	204	32	119.065	0.065	16.5	0.1300	0.0000	OK
60 minute summer	113	33	117.593	0.268	269.3	0.4739	0.0000	OK
60 minute summer	114	33	117.405	0.205	269.8	0.3624	0.0000	OK
60 minute summer	115	33	117.048	0.173	271.7	0.3414	0.0000	OK
60 minute summer	116	33	116.433	0.233	276.2	0.5429	0.0000	OK
60 minute summer	210	31	120.040	0.040	3.1	0.0614	0.0000	OK
60 minute summer	211	31	119.952	0.052	11.2	0.1039	0.0000	OK
60 minute summer	212	31	118.978	0.078	15.6	0.1374	0.0000	OK
60 minute summer	220	31	119.114	0.064	10.5	0.1649	0.0000	OK
60 minute summer	213	32	118.654	0.079	29.4	0.1289	0.0000	OK
60 minute summer	214	32	117.313	0.113	43.7	0.3108	0.0000	OK
60 minute summer	215	32	116.579	0.129	53.3	0.3445	0.0000	OK
60 minute summer	117	33	116.071	0.296	326.8	0.7539	0.0000	OK
60 minute summer	118	33	115.919	0.335	327.2	0.0000	0.0000	OK
60 minute summer	270	31	123.561	0.061	10.5	0.1519	0.0000	OK
60 minute summer	271	31	123.230	0.080	14.2	0.1284	0.0000	OK
60 minute summer	272	32	122.831	0.081	15.1	0.1052	0.0000	OK
60 minute summer	290	31	123.286	0.036	2.3	0.0513	0.0000	OK
60 minute summer	291	31	123.222	0.072	9.7	0.1404	0.0000	OK
60 minute summer	292	32	123.011	0.061	11.1	0.0820	0.0000	OK
60 minute summer	273	32	122.562	0.087	27.4	0.1109	0.0000	OK
60 minute summer	274	32	122.157	0.082	31.5	0.1313	0.0000	OK
60 minute summer	275	32	121.179	0.104	37.3	0.1856	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	8.0	1.139	0.131	0.1524	
60 minute summer	203	10.003	204	8.1	1.034	0.105	0.3389	
60 minute summer	204	10.004	113	16.4	1.771	0.174	0.3475	
60 minute summer	113	1.014	114	269.8	2.421	0.240	0.9719	
60 minute summer	114	1.015	115	270.0	3.310	0.149	0.7152	
60 minute summer	115	1.016	116	271.8	3.014	0.129	1.2107	
60 minute summer	116	1.017	117	276.3	2.634	0.189	1.5328	
60 minute summer	210	11.000	211	3.0	0.525	0.068	0.0787	
60 minute summer	211	11.001	212	11.0	1.172	0.118	0.2978	
60 minute summer	212	11.002	213	15.3	1.306	0.234	0.1869	
60 minute summer	220	12.000	213	10.1	1.111	0.170	0.2794	
60 minute summer	213	11.003	214	29.4	1.522	0.152	0.8964	
60 minute summer	214	11.004	215	43.6	1.820	0.294	0.9151	
60 minute summer	215	11.005	117	53.4	1.715	0.212	0.5914	
60 minute summer	117	1.018	118	327.2	2.281	0.245	1.2341	
60 minute summer	118	Flow through pond	119	384.7	0.271	0.002	41.3648	
60 minute summer	270	15.000	271	10.3	0.975	0.163	0.2504	
60 minute summer	271	15.001	272	14.0	1.103	0.270	0.5130	
60 minute summer	272	15.002	273	15.2	1.225	0.251	0.1840	
60 minute summer	290	16.000	291	2.3	0.311	0.055	0.1205	
60 minute summer	291	16.002	292	9.4	0.971	0.209	0.2590	
60 minute summer	292	16.003	273	11.1	1.311	0.152	0.1723	
60 minute summer	273	15.003	274	27.4	1.690	0.145	0.2266	
60 minute summer	274	15.004	275	31.5	1.703	0.166	0.6408	
60 minute summer	275	15.005	277	37.3	1.613	0.243	0.6690	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	277	32	120.640	0.115	38.7	0.1505	0.0000	OK
60 minute summer	278	32	120.270	0.120	39.9	0.2364	0.0000	OK
60 minute summer	279	33	119.925	0.125	39.9	0.2203	0.0000	OK
60 minute summer	300	31	122.237	0.037	3.7	0.0597	0.0000	OK
60 minute summer	301	32	121.801	0.051	6.4	0.0756	0.0000	OK
60 minute summer	302	32	121.495	0.070	9.6	0.1119	0.0000	OK
60 minute summer	303	32	121.370	0.095	13.5	0.1663	0.0000	OK
60 minute summer	304	32	121.182	0.057	13.5	0.0640	0.0000	OK
60 minute summer	280	33	119.696	0.171	60.0	0.4398	0.0000	OK
60 minute summer	281	33	118.843	0.143	59.7	0.0000	0.0000	OK
60 minute summer	282	33	117.585	0.135	59.7	0.0000	0.0000	OK
60 minute summer	283	33	115.739	0.156	59.2	0.0000	0.0000	OK
60 minute summer	119	35	115.586	0.286	384.7	0.0000	0.0000	OK
60 minute summer	240	35	115.152	0.152	356.8	0.0000	0.0000	OK
60 minute summer	241	35	114.251	0.251	357.5	0.0000	0.0000	OK
360 minute winter	250	352	114.131	0.579	99.3	0.0000	0.0000	OK
360 minute winter	251	352	114.131	0.581	89.9	0.0000	0.0000	OK
360 minute winter	260	352	114.131	0.631	6.8	2.1857	0.0000	SURCHARGED
60 minute summer	261	1	112.441	0.000	2.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	277	15.006	278	38.3	1.651	0.264	0.4106	
60 minute summer	278	15.007	279	39.9	1.292	0.224	1.3650	
60 minute summer	279	15.008	280	40.0	0.992	0.242	1.6222	
60 minute summer	300	17.000	301	3.6	0.670	0.058	0.1702	
60 minute summer	301	17.001	302	6.2	0.725	0.113	0.2501	
60 minute summer	302	17.002	303	9.6	0.725	0.211	0.2595	
60 minute summer	303	17.003	304	13.5	1.155	0.334	0.2911	
60 minute summer	304	17.004	280	13.3	1.729	0.134	0.3108	
60 minute summer	280	14.010	281	59.7	1.281	0.385	0.9686	
60 minute summer	281	Orifice	282	59.7				
60 minute summer	282	14.012	283	59.2	1.479	0.195	1.0781	
60 minute summer	283	Flow through pond	119	384.7	0.271	0.002	41.3648	
60 minute summer	119	1.021	240	356.8	3.828	0.483	2.4604	
60 minute summer	119	Infiltration		3.4				
60 minute summer	240	1.022	241	357.5	2.234	0.006	8.0864	
60 minute summer	241	1.023	250	358.1	3.217	0.380	2.3832	
360 minute winter	250	Flow through pond	251	89.9	0.025	0.002	635.1928	
360 minute winter	251	1.025	260	6.8	0.277	0.014	2.8695	
360 minute winter	251	Infiltration		11.6				
360 minute winter	260	Hydro-Brake®	261	2.1				60.3

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Results for 30 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	31	124.921	0.121	23.1	0.2839	0.0000	OK
60 minute summer	101	31	124.781	0.131	33.3	0.2195	0.0000	OK
60 minute summer	102	31	124.582	0.132	55.5	0.3065	0.0000	OK
60 minute summer	103	32	123.503	0.153	67.8	0.2766	0.0000	OK
60 minute summer	104	32	122.555	0.130	72.3	0.1780	0.0000	OK
60 minute summer	120	31	124.110	0.110	20.2	0.2364	0.0000	OK
60 minute summer	121	32	123.906	0.106	21.4	0.1261	0.0000	OK
60 minute summer	130	31	124.638	0.038	4.8	0.0529	0.0000	OK
60 minute summer	131	31	124.237	0.037	5.8	0.0434	0.0000	OK
60 minute summer	122	32	123.844	0.194	43.1	0.3163	0.0000	OK
60 minute summer	123	32	123.632	0.132	50.0	0.1904	0.0000	OK
60 minute summer	124	33	123.193	0.243	69.9	0.5246	0.0000	SURCHARGED
60 minute summer	125	32	122.743	0.393	72.4	0.8195	0.0000	SURCHARGED
60 minute summer	126	32	122.411	0.236	72.4	0.4174	0.0000	OK
60 minute summer	127	32	122.153	0.178	78.2	0.3523	0.0000	OK
60 minute summer	105	32	121.785	0.185	160.2	0.4220	0.0000	OK
60 minute summer	106	32	121.087	0.187	192.5	0.6334	0.0000	OK
60 minute summer	107	32	119.551	0.226	212.4	0.6199	0.0000	OK
60 minute summer	108	32	119.350	0.250	216.0	0.4851	0.0000	OK
60 minute summer	140	31	121.055	0.055	12.2	0.0923	0.0000	OK
60 minute summer	141	31	120.358	0.133	42.1	0.3107	0.0000	OK
60 minute summer	150	1	120.850	0.000	0.0	0.0000	0.0000	OK
60 minute summer	151	31	120.766	0.116	29.5	0.2982	0.0000	OK
60 minute summer	152	31	120.493	0.143	51.5	0.3104	0.0000	OK
60 minute summer	142	31	119.975	0.200	109.7	0.4963	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	22.7	0.993	0.552	0.5444	
60 minute summer	101	1.001	102	32.7	1.364	0.619	0.4662	
60 minute summer	102	1.002	103	54.6	2.078	0.659	1.1521	
60 minute summer	103	1.003	104	67.8	2.384	0.794	0.9011	
60 minute summer	104	1.004	105	72.6	2.564	0.363	0.6586	
60 minute summer	120	2.000	121	19.8	1.056	0.473	0.5757	
60 minute summer	121	2.001	122	21.1	0.757	0.459	0.5220	
60 minute summer	130	3.000	131	4.7	1.086	0.062	0.0812	
60 minute summer	131	3.001	122	5.8	0.291	0.059	0.3225	
60 minute summer	122	2.002	123	42.8	1.394	1.014	0.6835	
60 minute summer	123	2.003	124	50.1	1.726	0.654	0.8030	
60 minute summer	124	2.004	125	66.3	1.699	0.786	0.9111	
60 minute summer	125	2.005	126	72.4	1.820	1.382	0.3864	
60 minute summer	126	2.006	127	73.0	1.406	0.976	2.2587	
60 minute summer	127	2.007	105	76.9	1.878	0.573	0.8460	
60 minute summer	105	1.005	106	160.0	2.938	0.444	1.1825	
60 minute summer	106	1.006	107	191.8	3.543	0.491	2.1432	
60 minute summer	107	1.007	108	212.3	2.495	0.438	0.8565	
60 minute summer	108	1.008	109	215.6	2.488	0.404	0.9714	
60 minute summer	140	4.000	141	12.1	1.582	0.131	0.1714	
60 minute summer	141	4.001	142	40.9	1.428	0.367	0.8604	
60 minute summer	150	5.000	151	0.0	0.000	0.000	0.1227	
60 minute summer	151	5.001	152	28.9	1.223	0.510	0.5946	
60 minute summer	152	5.002	142	50.5	2.021	0.633	0.4554	
60 minute summer	142	4.002	143	109.0	1.702	0.439	1.5677	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	143	32	119.625	0.225	132.7	0.3970	0.0000	OK
60 minute summer	144	32	119.379	0.279	154.1	0.7136	0.0000	OK
60 minute summer	145	32	119.231	0.281	164.3	0.6022	0.0000	OK
60 minute summer	109	32	119.099	0.424	411.2	1.2722	0.0000	OK
60 minute summer	110	32	118.734	0.359	450.2	1.1025	0.0000	OK
60 minute summer	160	31	120.108	0.083	24.4	0.1940	0.0000	OK
60 minute summer	170	31	122.280	0.055	5.8	0.0773	0.0000	OK
60 minute summer	171	31	122.193	0.093	37.8	0.2604	0.0000	OK
60 minute summer	172	32	120.214	0.114	37.2	0.1291	0.0000	OK
60 minute summer	173	32	119.929	0.154	38.9	0.1848	0.0000	OK
60 minute summer	174	32	119.800	0.175	53.4	0.2648	0.0000	OK
60 minute summer	175	32	119.576	0.151	69.3	0.2385	0.0000	OK
60 minute summer	176	32	119.313	0.213	92.0	0.5081	0.0000	OK
60 minute summer	180	31	121.865	0.065	10.1	0.1068	0.0000	OK
60 minute summer	181	31	121.484	0.084	17.6	0.1247	0.0000	OK
60 minute summer	182	32	120.801	0.051	17.2	0.0580	0.0000	OK
60 minute summer	190	31	120.103	0.103	18.6	0.2048	0.0000	OK
60 minute summer	191	32	119.919	0.119	21.5	0.1470	0.0000	OK
60 minute summer	183	32	119.784	0.159	46.2	0.2165	0.0000	OK
60 minute summer	184	32	119.626	0.151	61.5	0.3345	0.0000	OK
60 minute summer	177	32	119.172	0.271	177.3	0.6608	0.0000	OK
60 minute summer	111	32	118.430	0.455	637.0	0.9669	0.0000	OK
60 minute summer	112	33	118.034	0.509	661.6	1.3421	0.0000	OK
60 minute summer	200	31	120.657	0.057	8.8	0.0901	0.0000	OK
60 minute summer	201	31	120.523	0.073	12.9	0.0987	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	143	4.003	144	133.5	2.059	0.539	0.9595	
60 minute summer	144	4.004	145	155.6	1.501	0.689	3.1718	
60 minute summer	145	4.005	109	164.4	1.677	0.522	1.3493	
60 minute summer	109	1.009	110	410.0	2.119	0.786	10.1275	
60 minute summer	110	1.010	111	446.6	2.211	0.477	4.3985	
60 minute summer	160	6.000	143	24.1	1.900	0.257	0.1866	
60 minute summer	170	7.000	171	5.7	0.505	0.131	0.2020	
60 minute summer	171	7.001	172	37.2	2.089	0.361	0.9147	
60 minute summer	172	7.002	173	36.7	2.096	0.340	0.1030	
60 minute summer	173	7.003	174	39.2	0.992	0.385	0.7042	
60 minute summer	174	7.004	175	53.9	1.378	0.582	1.1206	
60 minute summer	175	7.005	176	69.7	2.009	0.484	0.5174	
60 minute summer	176	7.006	177	92.5	1.230	0.537	2.0226	
60 minute summer	180	8.000	181	9.9	0.861	0.186	0.4418	
60 minute summer	181	8.001	182	17.2	1.720	0.255	0.3910	
60 minute summer	182	8.002	183	17.3	2.043	0.115	0.1351	
60 minute summer	190	9.000	191	18.3	0.941	0.424	0.5623	
60 minute summer	191	9.001	183	21.3	1.043	0.494	0.2957	
60 minute summer	183	8.003	184	46.6	1.267	0.493	0.7604	
60 minute summer	184	8.004	177	62.0	1.499	0.500	1.7016	
60 minute summer	177	6.005	111	176.5	2.240	0.730	3.3772	
60 minute summer	111	1.011	112	635.1	2.337	0.619	10.2392	
60 minute summer	112	1.012	113	664.9	2.340	0.575	3.7401	
60 minute summer	200	10.000	201	8.7	0.918	0.141	0.1015	
60 minute summer	201	10.001	202	12.7	0.929	0.221	0.2246	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	31	120.347	0.097	21.5	0.1529	0.0000	OK
60 minute summer	203	32	120.030	0.080	21.2	0.0906	0.0000	OK
60 minute summer	204	32	119.111	0.110	43.5	0.2223	0.0000	OK
60 minute summer	113	33	117.818	0.493	704.8	0.8711	0.0000	OK
60 minute summer	114	33	117.573	0.372	706.5	0.6582	0.0000	OK
60 minute summer	115	33	117.196	0.321	711.7	0.6352	0.0000	OK
60 minute summer	116	33	116.666	0.466	724.2	1.0845	0.0000	OK
60 minute summer	210	31	120.066	0.066	8.0	0.1025	0.0000	OK
60 minute summer	211	31	119.985	0.085	29.0	0.1700	0.0000	OK
60 minute summer	212	31	119.040	0.140	40.6	0.2466	0.0000	OK
60 minute summer	220	31	119.160	0.110	27.3	0.2822	0.0000	OK
60 minute summer	213	31	118.705	0.130	77.0	0.2134	0.0000	OK
60 minute summer	214	32	117.405	0.205	114.4	0.5613	0.0000	OK
60 minute summer	215	32	116.685	0.235	139.0	0.6269	0.0000	OK
60 minute summer	117	33	116.375	0.600	855.0	1.5262	0.0000	OK
60 minute summer	118	33	116.217	0.634	855.8	0.0000	0.0000	OK
60 minute summer	270	31	123.602	0.102	27.3	0.2530	0.0000	OK
60 minute summer	271	31	123.290	0.140	37.1	0.2249	0.0000	OK
60 minute summer	272	32	122.897	0.147	39.4	0.1906	0.0000	OK
60 minute summer	290	31	123.308	0.058	6.1	0.0831	0.0000	OK
60 minute summer	291	31	123.273	0.123	25.4	0.2402	0.0000	OK
60 minute summer	292	32	123.054	0.104	29.3	0.1400	0.0000	OK
60 minute summer	273	32	122.633	0.158	71.9	0.2017	0.0000	OK
60 minute summer	274	32	122.217	0.142	82.8	0.2266	0.0000	OK
60 minute summer	275	32	121.264	0.188	98.2	0.3380	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	21.2	1.477	0.344	0.3076	
60 minute summer	203	10.003	204	21.3	1.331	0.275	0.6894	
60 minute summer	204	10.004	113	43.1	2.283	0.457	0.7090	
60 minute summer	113	1.014	114	706.5	2.924	0.628	2.0927	
60 minute summer	114	1.015	115	707.4	3.832	0.390	1.6162	
60 minute summer	115	1.016	116	712.8	3.320	0.337	2.8742	
60 minute summer	116	1.017	117	725.8	2.654	0.498	4.0738	
60 minute summer	210	11.000	211	7.9	0.671	0.176	0.1589	
60 minute summer	211	11.001	212	28.7	1.449	0.308	0.6212	
60 minute summer	212	11.002	213	40.0	1.638	0.612	0.3886	
60 minute summer	220	12.000	213	26.6	1.428	0.446	0.5696	
60 minute summer	213	11.003	214	76.2	1.906	0.395	1.8459	
60 minute summer	214	11.004	215	113.7	2.284	0.769	1.9030	
60 minute summer	215	11.005	117	139.8	2.106	0.555	1.2987	
60 minute summer	117	1.018	118	855.8	2.394	0.641	3.0859	
60 minute summer	118	Flow through pond	119	930.8	0.332	0.005	125.6364	
60 minute summer	270	15.000	271	27.0	1.245	0.425	0.5096	
60 minute summer	271	15.001	272	36.2	1.374	0.700	1.0697	
60 minute summer	272	15.002	273	39.7	1.535	0.657	0.3841	
60 minute summer	290	16.000	291	6.0	0.402	0.147	0.2439	
60 minute summer	291	16.002	292	24.8	1.238	0.551	0.5325	
60 minute summer	292	16.003	273	29.2	1.685	0.399	0.3512	
60 minute summer	273	15.003	274	72.1	2.051	0.382	0.4906	
60 minute summer	274	15.004	275	83.1	2.091	0.438	1.3688	
60 minute summer	275	15.005	277	98.4	1.951	0.641	1.4571	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	277	32	120.740	0.215	102.1	0.2829	0.0000	OK
60 minute summer	278	32	120.359	0.209	105.8	0.4116	0.0000	OK
60 minute summer	279	33	120.019	0.219	105.3	0.3876	0.0000	OK
60 minute summer	300	31	122.259	0.059	9.6	0.0961	0.0000	OK
60 minute summer	301	31	121.833	0.083	16.6	0.1234	0.0000	OK
60 minute summer	302	32	121.550	0.125	25.1	0.1992	0.0000	OK
60 minute summer	303	32	121.443	0.168	35.2	0.2954	0.0000	OK
60 minute summer	304	32	121.218	0.092	35.4	0.1046	0.0000	OK
60 minute summer	280	33	119.869	0.344	158.2	0.8859	0.0000	OK
60 minute summer	281	33	118.973	0.272	157.5	0.0000	0.0000	OK
60 minute summer	282	33	117.681	0.230	157.5	0.0000	0.0000	OK
60 minute summer	283	34	115.884	0.301	156.9	0.0000	0.0000	OK
60 minute summer	119	35	115.833	0.533	930.8	0.0000	0.0000	OK
60 minute summer	240	35	115.208	0.208	818.8	0.0000	0.0000	OK
360 minute winter	241	360	114.597	0.597	204.6	0.0000	0.0000	OK
360 minute winter	250	360	114.597	1.045	302.6	0.0000	0.0000	OK
360 minute winter	251	360	114.597	1.047	155.7	0.0000	0.0000	SURCHARGED
360 minute winter	260	360	114.597	1.097	7.0	3.7983	0.0000	SURCHARGED
60 minute summer	261	1	112.441	0.000	2.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	277	15.006	278	101.6	2.047	0.700	0.8756	
60 minute summer	278	15.007	279	105.3	1.635	0.590	2.8324	
60 minute summer	279	15.008	280	105.8	1.192	0.640	3.4706	
60 minute summer	300	17.000	301	9.4	0.880	0.151	0.3391	
60 minute summer	301	17.001	302	16.1	0.907	0.293	0.5201	
60 minute summer	302	17.002	303	24.9	0.910	0.550	0.5353	
60 minute summer	303	17.003	304	35.4	1.486	0.875	0.5809	
60 minute summer	304	17.004	280	35.4	1.954	0.358	1.0396	
60 minute summer	280	14.010	281	157.5	1.580	1.016	2.0579	
60 minute summer	281	Orifice	282	157.5				
60 minute summer	282	14.012	283	156.9	1.923	0.517	2.1989	
60 minute summer	283	Flow through pond	119	930.8	0.332	0.005	125.6364	
60 minute summer	119	1.021	240	818.8	4.570	1.108	4.5738	
60 minute summer	119	Infiltration		4.2				
60 minute summer	240	1.022	241	817.6	2.271	0.013	20.4542	
360 minute winter	241	1.023	250	302.6	1.801	0.321	6.0254	
360 minute winter	250	Flow through pond	251	155.7	0.032	0.004	1396.7131	
360 minute winter	251	1.025	260	7.0	0.340	0.015	2.8824	
360 minute winter	251	Infiltration		20.6				
360 minute winter	260	Hydro-Brake®	261	2.2				69.6

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	33	125.019	0.219	36.3	0.5126	0.0000	OK
60 minute summer	101	32	124.935	0.285	52.3	0.4794	0.0000	SURCHARGED
60 minute summer	102	32	124.779	0.329	86.6	0.7619	0.0000	SURCHARGED
60 minute summer	103	32	123.795	0.445	99.0	0.8037	0.0000	SURCHARGED
60 minute summer	104	32	122.584	0.159	101.3	0.2179	0.0000	OK
60 minute summer	120	34	124.502	0.502	31.7	1.0798	0.0000	SURCHARGED
60 minute summer	121	34	124.439	0.639	31.3	0.7594	0.0000	SURCHARGED
60 minute summer	130	31	124.648	0.048	7.5	0.0660	0.0000	OK
60 minute summer	131	34	124.386	0.186	9.8	0.2178	0.0000	OK
60 minute summer	122	34	124.380	0.730	54.9	1.1932	0.0000	SURCHARGED
60 minute summer	123	33	124.105	0.605	60.9	0.8754	0.0000	SURCHARGED
60 minute summer	124	33	123.757	0.807	87.3	1.7435	0.0000	SURCHARGED
60 minute summer	125	33	123.002	0.652	93.0	1.3580	0.0000	SURCHARGED
60 minute summer	126	33	122.533	0.358	92.3	0.6322	0.0000	SURCHARGED
60 minute summer	127	33	122.188	0.213	99.2	0.4211	0.0000	OK
60 minute summer	105	32	121.823	0.223	214.7	0.5098	0.0000	OK
60 minute summer	106	32	121.126	0.226	265.4	0.7630	0.0000	OK
60 minute summer	107	33	119.765	0.440	301.3	1.2064	0.0000	OK
60 minute summer	108	33	119.665	0.565	295.0	1.0954	0.0000	SURCHARGED
60 minute summer	140	31	121.069	0.069	19.2	0.1155	0.0000	OK
60 minute summer	141	31	120.401	0.176	66.1	0.4121	0.0000	OK
60 minute summer	150	1	120.850	0.000	0.0	0.0000	0.0000	OK
60 minute summer	151	31	120.808	0.158	46.3	0.4048	0.0000	OK
60 minute summer	152	32	120.638	0.288	81.6	0.6248	0.0000	SURCHARGED
60 minute summer	142	33	120.183	0.408	167.3	1.0112	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	35.6	1.069	0.865	0.9431	
60 minute summer	101	1.001	102	50.8	1.440	0.962	0.7698	
60 minute summer	102	1.002	103	78.2	2.155	0.944	1.7349	
60 minute summer	103	1.003	104	94.3	2.498	1.104	1.2589	
60 minute summer	104	1.004	105	101.3	2.775	0.506	0.8487	
60 minute summer	120	2.000	121	29.0	1.113	0.693	1.2217	
60 minute summer	121	2.001	122	29.5	0.762	0.641	0.7585	
60 minute summer	130	3.000	131	7.4	1.238	0.097	0.3710	
60 minute summer	131	3.001	122	12.2	0.395	0.125	0.5954	
60 minute summer	122	2.002	123	51.9	1.440	1.229	0.8991	
60 minute summer	123	2.003	124	60.3	1.719	0.786	1.0106	
60 minute summer	124	2.004	125	84.5	2.124	1.001	0.9111	
60 minute summer	125	2.005	126	92.3	2.320	1.762	0.3919	
60 minute summer	126	2.006	127	92.1	1.432	1.231	2.7142	
60 minute summer	127	2.007	105	99.1	1.973	0.738	1.0339	
60 minute summer	105	1.005	106	214.4	3.170	0.595	1.4925	
60 minute summer	106	1.006	107	269.0	3.780	0.688	3.4907	
60 minute summer	107	1.007	108	288.7	2.503	0.596	1.5888	
60 minute summer	108	1.008	109	295.3	2.563	0.553	1.6079	
60 minute summer	140	4.000	141	19.0	1.627	0.206	0.3055	
60 minute summer	141	4.001	142	64.6	1.581	0.580	1.4861	
60 minute summer	150	5.000	151	0.0	0.000	0.000	0.1765	
60 minute summer	151	5.001	152	46.2	1.277	0.814	0.8738	
60 minute summer	152	5.002	142	76.5	2.107	0.958	0.7226	
60 minute summer	142	4.002	143	168.4	1.738	0.679	2.6982	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	143	33	119.953	0.553	206.5	0.9775	0.0000	SURCHARGED
60 minute summer	144	33	119.754	0.654	235.7	1.6717	0.0000	SURCHARGED
60 minute summer	145	33	119.607	0.657	234.5	1.4079	0.0000	SURCHARGED
60 minute summer	109	33	119.490	0.815	569.6	2.4471	0.0000	SURCHARGED
60 minute summer	110	33	119.044	0.668	625.2	2.0542	0.0000	SURCHARGED
60 minute summer	160	31	120.124	0.099	38.3	0.2316	0.0000	OK
60 minute summer	170	31	122.294	0.069	9.2	0.0978	0.0000	OK
60 minute summer	171	31	122.221	0.121	59.4	0.3381	0.0000	OK
60 minute summer	172	31	120.254	0.154	58.6	0.1742	0.0000	OK
60 minute summer	173	33	120.118	0.343	61.5	0.4124	0.0000	SURCHARGED
60 minute summer	174	33	120.035	0.410	84.4	0.6187	0.0000	SURCHARGED
60 minute summer	175	33	119.860	0.435	107.4	0.6865	0.0000	SURCHARGED
60 minute summer	176	33	119.729	0.629	136.2	1.5004	0.0000	SURCHARGED
60 minute summer	180	31	121.883	0.083	15.8	0.1353	0.0000	OK
60 minute summer	181	31	121.508	0.108	27.6	0.1609	0.0000	OK
60 minute summer	182	32	120.814	0.064	26.9	0.0728	0.0000	OK
60 minute summer	190	31	120.135	0.135	29.2	0.2697	0.0000	OK
60 minute summer	191	32	119.962	0.162	33.7	0.1998	0.0000	OK
60 minute summer	183	33	119.931	0.306	72.3	0.4168	0.0000	SURCHARGED
60 minute summer	184	33	119.850	0.375	95.6	0.8286	0.0000	SURCHARGED
60 minute summer	177	33	119.585	0.685	249.1	1.6681	0.0000	SURCHARGED
60 minute summer	111	33	118.747	0.772	868.8	1.6398	0.0000	SURCHARGED
60 minute summer	112	33	118.271	0.746	908.4	1.9662	0.0000	SURCHARGED
60 minute summer	200	31	120.673	0.073	13.8	0.1152	0.0000	OK
60 minute summer	201	31	120.546	0.096	20.4	0.1294	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	143	4.003	144	201.2	2.040	0.813	1.6268	
60 minute summer	144	4.004	145	219.9	1.519	0.974	4.8484	
60 minute summer	145	4.005	109	224.4	1.668	0.713	2.0859	
60 minute summer	109	1.009	110	558.6	2.130	1.072	14.6847	
60 minute summer	110	1.010	111	611.7	2.228	0.654	6.1149	
60 minute summer	160	6.000	143	38.1	1.931	0.406	0.4113	
60 minute summer	170	7.000	171	9.1	0.570	0.208	0.2823	
60 minute summer	171	7.001	172	58.6	2.309	0.568	1.2991	
60 minute summer	172	7.002	173	57.8	2.161	0.536	0.1979	
60 minute summer	173	7.003	174	60.6	1.049	0.594	1.2542	
60 minute summer	174	7.004	175	81.6	1.435	0.880	2.0168	
60 minute summer	175	7.005	176	98.7	2.016	0.685	1.0504	
60 minute summer	176	7.006	177	127.0	1.276	0.738	2.9746	
60 minute summer	180	8.000	181	15.5	0.969	0.293	0.6161	
60 minute summer	181	8.001	182	26.9	1.936	0.399	0.5426	
60 minute summer	182	8.002	183	27.1	2.012	0.180	0.3097	
60 minute summer	190	9.000	191	28.7	1.038	0.666	0.8002	
60 minute summer	191	9.001	183	33.1	1.137	0.767	0.5041	
60 minute summer	183	8.003	184	72.0	1.367	0.762	1.4568	
60 minute summer	184	8.004	177	90.3	1.506	0.729	2.8368	
60 minute summer	177	6.005	111	238.2	2.329	0.985	4.7284	
60 minute summer	111	1.011	112	868.9	2.434	0.847	13.4477	
60 minute summer	112	1.012	113	908.7	2.546	0.785	4.6670	
60 minute summer	200	10.000	201	13.7	1.007	0.221	0.1450	
60 minute summer	201	10.001	202	20.0	1.024	0.348	0.3200	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	31	120.377	0.127	33.8	0.2003	0.0000	OK
60 minute summer	203	32	120.053	0.102	33.3	0.1159	0.0000	OK
60 minute summer	204	31	119.142	0.142	68.4	0.2861	0.0000	OK
60 minute summer	113	33	117.973	0.648	970.0	1.1444	0.0000	OK
60 minute summer	114	33	117.680	0.480	970.9	0.8484	0.0000	OK
60 minute summer	115	33	117.350	0.475	978.6	0.9393	0.0000	OK
60 minute summer	116	33	116.996	0.795	998.3	1.8511	0.0000	SURCHARGED
60 minute summer	210	31	120.086	0.086	12.5	0.1329	0.0000	OK
60 minute summer	211	31	120.010	0.110	45.6	0.2189	0.0000	OK
60 minute summer	212	32	119.109	0.209	63.9	0.3664	0.0000	OK
60 minute summer	220	31	119.198	0.148	42.9	0.3791	0.0000	OK
60 minute summer	213	32	118.762	0.187	119.7	0.3070	0.0000	OK
60 minute summer	214	33	117.919	0.718	177.4	1.9707	0.0000	SURCHARGED
60 minute summer	215	33	116.940	0.490	202.9	1.3081	0.0000	SURCHARGED
60 minute summer	117	33	116.625	0.850	1201.2	2.1621	0.0000	SURCHARGED
60 minute summer	118	36	116.357	0.774	1201.7	0.0000	0.0000	OK
60 minute summer	270	31	123.636	0.135	42.9	0.3369	0.0000	OK
60 minute summer	271	32	123.416	0.266	58.1	0.4288	0.0000	SURCHARGED
60 minute summer	272	32	122.966	0.216	60.4	0.2796	0.0000	OK
60 minute summer	290	31	123.323	0.073	9.6	0.1050	0.0000	OK
60 minute summer	291	31	123.317	0.167	39.9	0.3252	0.0000	OK
60 minute summer	292	31	123.088	0.138	46.1	0.1853	0.0000	OK
60 minute summer	273	32	122.689	0.214	109.2	0.2737	0.0000	OK
60 minute summer	274	33	122.281	0.206	126.3	0.3287	0.0000	OK
60 minute summer	275	33	121.676	0.601	149.8	1.0781	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	33.3	1.650	0.540	0.4319	
60 minute summer	203	10.003	204	33.3	1.531	0.430	0.9410	
60 minute summer	204	10.004	113	68.0	2.439	0.721	1.1774	
60 minute summer	113	1.014	114	970.9	3.052	0.863	2.7121	
60 minute summer	114	1.015	115	971.9	3.885	0.536	2.3633	
60 minute summer	115	1.016	116	980.4	3.274	0.464	4.1780	
60 minute summer	116	1.017	117	999.5	2.800	0.685	5.1887	
60 minute summer	210	11.000	211	12.3	0.746	0.277	0.2240	
60 minute summer	211	11.001	212	45.1	1.548	0.485	0.8968	
60 minute summer	212	11.002	213	62.5	1.748	0.957	0.5668	
60 minute summer	220	12.000	213	41.8	1.580	0.702	0.8104	
60 minute summer	213	11.003	214	118.0	1.969	0.612	2.6788	
60 minute summer	214	11.004	215	166.0	2.358	1.122	2.6912	
60 minute summer	215	11.005	117	201.8	2.111	0.801	2.0915	
60 minute summer	117	1.018	118	1201.7	2.734	0.901	3.6968	
60 minute summer	118	Flow through pond	119	1406.3	0.355	0.008	250.7882	
60 minute summer	270	15.000	271	42.3	1.325	0.667	0.7483	
60 minute summer	271	15.001	272	55.4	1.446	1.072	1.5958	
60 minute summer	272	15.002	273	58.8	1.628	0.974	0.5400	
60 minute summer	290	16.000	291	9.5	0.441	0.232	0.3440	
60 minute summer	291	16.002	292	39.0	1.366	0.866	0.7579	
60 minute summer	292	16.003	273	45.7	1.795	0.624	0.5184	
60 minute summer	273	15.003	274	109.6	2.167	0.581	0.7338	
60 minute summer	274	15.004	275	124.5	2.135	0.656	2.1028	
60 minute summer	275	15.005	277	141.1	2.005	0.919	2.0374	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	277	33	121.072	0.547	146.9	0.7190	0.0000	SURCHARGED
60 minute summer	278	33	120.624	0.474	152.7	0.9348	0.0000	SURCHARGED
60 minute summer	279	34	120.362	0.562	148.1	0.9938	0.0000	SURCHARGED
60 minute summer	300	31	122.274	0.074	15.0	0.1211	0.0000	OK
60 minute summer	301	31	121.857	0.107	26.1	0.1587	0.0000	OK
60 minute summer	302	32	121.729	0.304	39.6	0.4845	0.0000	SURCHARGED
60 minute summer	303	32	121.597	0.322	52.7	0.5646	0.0000	SURCHARGED
60 minute summer	304	33	121.240	0.115	51.5	0.1297	0.0000	OK
60 minute summer	280	33	120.093	0.568	226.0	1.4631	0.0000	SURCHARGED
60 minute summer	281	33	119.045	0.345	224.0	0.0000	0.0000	OK
60 minute summer	282	34	117.739	0.289	223.9	0.0000	0.0000	OK
60 minute summer	283	37	116.089	0.506	224.6	0.0000	0.0000	OK
60 minute summer	119	37	116.063	0.763	1406.3	0.0000	0.0000	SURCHARGED
60 minute summer	240	37	115.233	0.232	1102.1	0.0000	0.0000	OK
480 minute winter	241	472	114.999	0.999	253.1	0.0000	0.0000	SURCHARGED
480 minute winter	250	472	114.999	1.447	416.1	0.0000	0.0000	OK
480 minute winter	251	472	114.999	1.449	223.0	0.0000	0.0000	SURCHARGED
480 minute winter	260	472	114.999	1.499	7.0	5.1917	0.0000	SURCHARGED
60 minute summer	261	1	112.441	0.000	2.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	277	15.006	278	146.1	2.096	1.007	1.2447	
60 minute summer	278	15.007	279	148.1	1.665	0.830	4.8494	
60 minute summer	279	15.008	280	149.0	1.351	0.901	4.4304	
60 minute summer	300	17.000	301	14.8	0.991	0.238	0.4715	
60 minute summer	301	17.001	302	25.4	0.956	0.462	0.8426	
60 minute summer	302	17.002	303	36.7	0.931	0.809	0.7808	
60 minute summer	303	17.003	304	51.5	1.513	1.272	0.7393	
60 minute summer	304	17.004	280	51.7	1.947	0.522	1.2125	
60 minute summer	280	14.010	281	224.0	2.033	1.446	2.2323	
60 minute summer	281	Orifice	282	223.9				
60 minute summer	282	14.012	283	224.6	2.087	0.740	2.8985	
60 minute summer	283	Flow through pond	119	1406.3	0.355	0.008	250.7882	
60 minute summer	119	1.021	240	1102.1	5.049	1.491	4.9806	
60 minute summer	119	Infiltration		4.9				
60 minute summer	240	1.022	241	1101.8	2.266	0.018	70.3377	
480 minute winter	241	1.023	250	416.1	1.762	0.441	6.0287	
480 minute winter	250	Flow through pond	251	223.0	0.034	0.006	2259.6511	
480 minute winter	251	1.025	260	7.0	0.347	0.015	2.8824	
480 minute winter	251	Infiltration		26.0				
480 minute winter	260	Hydro-Brake®	261	2.5				93.9

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	33	125.483	0.683	42.3	1.5979	0.0000	SURCHARGED
60 minute summer	101	33	125.373	0.723	56.1	1.2149	0.0000	SURCHARGED
60 minute summer	102	33	125.181	0.731	90.0	1.6925	0.0000	SURCHARGED
60 minute summer	103	33	123.993	0.643	103.4	1.1627	0.0000	SURCHARGED
60 minute summer	104	33	122.592	0.167	109.7	0.2283	0.0000	OK
60 minute summer	120	34	124.942	0.942	37.0	2.0263	0.0000	SURCHARGED
60 minute summer	121	34	124.863	1.062	32.7	1.2633	0.0000	SURCHARGED
60 minute summer	130	34	124.803	0.203	8.8	0.2807	0.0000	OK
60 minute summer	131	34	124.798	0.598	21.5	0.7007	0.0000	SURCHARGED
60 minute summer	122	34	124.792	1.142	60.0	1.8662	0.0000	SURCHARGED
60 minute summer	123	34	124.473	0.973	63.8	1.4077	0.0000	SURCHARGED
60 minute summer	124	33	124.057	1.107	95.5	2.3927	0.0000	SURCHARGED
60 minute summer	125	33	123.155	0.805	101.5	1.6770	0.0000	SURCHARGED
60 minute summer	126	34	122.597	0.422	100.8	0.7452	0.0000	SURCHARGED
60 minute summer	127	34	122.204	0.229	108.4	0.4518	0.0000	OK
60 minute summer	105	32	121.837	0.236	234.6	0.5408	0.0000	OK
60 minute summer	106	33	121.164	0.264	293.6	0.8925	0.0000	OK
60 minute summer	107	33	120.234	0.909	327.6	2.4907	0.0000	SURCHARGED
60 minute summer	108	33	120.105	1.005	323.1	1.9479	0.0000	SURCHARGED
60 minute summer	140	31	121.075	0.075	22.4	0.1252	0.0000	OK
60 minute summer	141	33	120.736	0.511	77.1	1.1982	0.0000	SURCHARGED
60 minute summer	150	34	121.242	0.392	8.6	0.4432	0.0000	SURCHARGED
60 minute summer	151	34	121.238	0.588	54.0	1.5101	0.0000	SURCHARGED
60 minute summer	152	34	121.062	0.712	85.8	1.5448	0.0000	SURCHARGED
60 minute summer	142	33	120.627	0.852	179.8	2.1131	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	37.9	1.072	0.922	0.9467	
60 minute summer	101	1.001	102	50.9	1.440	0.964	0.7698	
60 minute summer	102	1.002	103	82.5	2.152	0.997	1.7349	
60 minute summer	103	1.003	104	102.6	2.580	1.201	1.2591	
60 minute summer	104	1.004	105	109.8	2.790	0.548	0.9162	
60 minute summer	120	2.000	121	29.8	1.114	0.712	1.2217	
60 minute summer	121	2.001	122	31.3	0.786	0.679	0.7585	
60 minute summer	130	3.000	131	8.8	1.270	0.115	0.7211	
60 minute summer	131	3.001	122	15.8	0.546	0.163	0.6325	
60 minute summer	122	2.002	123	56.3	1.451	1.332	0.8991	
60 minute summer	123	2.003	124	65.7	1.724	0.856	1.0106	
60 minute summer	124	2.004	125	92.4	2.323	1.094	0.9111	
60 minute summer	125	2.005	126	100.8	2.535	1.926	0.3919	
60 minute summer	126	2.006	127	100.7	1.473	1.345	2.8038	
60 minute summer	127	2.007	105	108.2	2.003	0.806	1.1114	
60 minute summer	105	1.005	106	234.9	3.219	0.652	1.6931	
60 minute summer	106	1.006	107	288.8	3.784	0.739	3.8226	
60 minute summer	107	1.007	108	317.2	2.495	0.655	1.5931	
60 minute summer	108	1.008	109	322.1	2.571	0.604	1.6079	
60 minute summer	140	4.000	141	22.2	1.576	0.241	0.5691	
60 minute summer	141	4.001	142	74.5	1.594	0.669	2.1027	
60 minute summer	150	5.000	151	-8.6	-0.309	-0.127	0.4728	
60 minute summer	151	5.001	152	47.2	1.279	0.832	1.0005	
60 minute summer	152	5.002	142	75.5	2.107	0.946	0.7226	
60 minute summer	142	4.002	143	172.2	1.738	0.694	2.6982	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	143	33	120.387	0.987	213.5	1.7432	0.0000	SURCHARGED
60 minute summer	144	33	120.176	1.076	237.5	2.7524	0.0000	SURCHARGED
60 minute summer	145	33	120.018	1.068	233.6	2.2883	0.0000	SURCHARGED
60 minute summer	109	33	119.892	1.217	602.3	3.6543	0.0000	SURCHARGED
60 minute summer	110	33	119.373	0.998	664.7	3.0661	0.0000	SURCHARGED
60 minute summer	160	33	120.473	0.448	44.7	1.0450	0.0000	SURCHARGED
60 minute summer	170	31	122.300	0.075	10.7	0.1058	0.0000	OK
60 minute summer	171	31	122.233	0.133	69.3	0.3722	0.0000	OK
60 minute summer	172	33	120.720	0.620	68.4	0.7012	0.0000	SURCHARGED
60 minute summer	173	33	120.585	0.810	64.9	0.9742	0.0000	SURCHARGED
60 minute summer	174	33	120.494	0.869	88.9	1.3122	0.0000	SURCHARGED
60 minute summer	175	33	120.302	0.877	112.1	1.3855	0.0000	SURCHARGED
60 minute summer	176	33	120.156	1.056	139.1	2.5208	0.0000	SURCHARGED
60 minute summer	180	31	121.890	0.090	18.5	0.1473	0.0000	OK
60 minute summer	181	31	121.519	0.118	32.3	0.1765	0.0000	OK
60 minute summer	182	32	120.820	0.070	31.5	0.0789	0.0000	OK
60 minute summer	190	34	120.545	0.545	34.0	1.0864	0.0000	SURCHARGED
60 minute summer	191	34	120.471	0.671	39.6	0.8269	0.0000	SURCHARGED
60 minute summer	183	34	120.404	0.779	75.7	1.0605	0.0000	SURCHARGED
60 minute summer	184	34	120.300	0.825	100.0	1.8251	0.0000	SURCHARGED
60 minute summer	177	33	119.991	1.090	258.5	2.6542	0.0000	SURCHARGED
60 minute summer	111	33	119.023	1.048	941.8	2.2260	0.0000	SURCHARGED
60 minute summer	112	33	118.463	0.938	987.4	2.4727	0.0000	SURCHARGED
60 minute summer	200	31	120.679	0.079	16.0	0.1254	0.0000	OK
60 minute summer	201	31	120.556	0.106	23.7	0.1427	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	143	4.003	144	199.8	2.040	0.807	1.6268	
60 minute summer	144	4.004	145	222.5	1.519	0.986	4.8484	
60 minute summer	145	4.005	109	237.7	1.657	0.755	2.0859	
60 minute summer	109	1.009	110	603.7	2.144	1.158	14.6847	
60 minute summer	110	1.010	111	663.9	2.357	0.710	6.1149	
60 minute summer	160	6.000	143	41.3	1.931	0.440	0.5847	
60 minute summer	170	7.000	171	10.6	0.590	0.242	0.3168	
60 minute summer	171	7.001	172	68.4	2.353	0.663	1.6283	
60 minute summer	172	7.002	173	60.8	2.161	0.564	0.2339	
60 minute summer	173	7.003	174	63.0	1.048	0.618	1.2542	
60 minute summer	174	7.004	175	83.9	1.434	0.905	2.0168	
60 minute summer	175	7.005	176	101.9	2.015	0.707	1.0504	
60 minute summer	176	7.006	177	134.8	1.277	0.783	2.9746	
60 minute summer	180	8.000	181	18.2	1.010	0.343	0.6923	
60 minute summer	181	8.001	182	31.5	2.012	0.466	0.6092	
60 minute summer	182	8.002	183	31.7	2.030	0.211	0.3202	
60 minute summer	190	9.000	191	33.8	1.057	0.783	1.1522	
60 minute summer	191	9.001	183	37.6	1.140	0.872	0.5768	
60 minute summer	183	8.003	184	72.8	1.347	0.771	1.4568	
60 minute summer	184	8.004	177	90.4	1.506	0.730	2.8368	
60 minute summer	177	6.005	111	257.9	2.355	1.066	4.7284	
60 minute summer	111	1.011	112	941.3	2.637	0.918	13.4477	
60 minute summer	112	1.012	113	987.1	2.765	0.853	4.6993	
60 minute summer	200	10.000	201	15.9	1.034	0.257	0.1641	
60 minute summer	201	10.001	202	23.3	1.054	0.406	0.3617	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	31	120.390	0.140	39.3	0.2212	0.0000	OK
60 minute summer	203	32	120.062	0.112	38.8	0.1266	0.0000	OK
60 minute summer	204	32	119.158	0.158	79.9	0.3174	0.0000	OK
60 minute summer	113	33	118.116	0.791	1059.2	1.3971	0.0000	SURCHARGED
60 minute summer	114	33	117.739	0.539	1058.8	0.9516	0.0000	OK
60 minute summer	115	34	117.451	0.576	1065.9	1.1390	0.0000	OK
60 minute summer	116	34	117.206	1.006	1083.9	2.3411	0.0000	SURCHARGED
60 minute summer	210	31	120.094	0.094	14.6	0.1459	0.0000	OK
60 minute summer	211	31	120.021	0.121	53.3	0.2419	0.0000	OK
60 minute summer	212	33	119.339	0.439	74.0	0.7715	0.0000	SURCHARGED
60 minute summer	220	31	119.216	0.166	50.1	0.4269	0.0000	OK
60 minute summer	213	33	119.007	0.432	137.2	0.7096	0.0000	SURCHARGED
60 minute summer	214	33	118.322	1.122	200.5	3.0773	0.0000	SURCHARGED
60 minute summer	215	33	117.134	0.684	229.9	1.8275	0.0000	SURCHARGED
60 minute summer	117	35	116.779	1.004	1303.4	2.5563	0.0000	SURCHARGED
60 minute summer	118	36	116.512	0.928	1301.9	0.0000	0.0000	OK
60 minute summer	270	33	123.851	0.350	50.1	0.8716	0.0000	SURCHARGED
60 minute summer	271	33	123.690	0.540	63.9	0.8712	0.0000	SURCHARGED
60 minute summer	272	33	123.189	0.439	65.0	0.5683	0.0000	SURCHARGED
60 minute summer	290	31	123.340	0.090	11.2	0.1294	0.0000	OK
60 minute summer	291	31	123.337	0.187	46.0	0.3654	0.0000	OK
60 minute summer	292	33	123.106	0.156	52.9	0.2094	0.0000	OK
60 minute summer	273	33	122.922	0.447	120.7	0.5711	0.0000	SURCHARGED
60 minute summer	274	33	122.644	0.569	139.3	0.9097	0.0000	SURCHARGED
60 minute summer	275	33	122.064	0.989	162.3	1.7731	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	38.8	1.708	0.630	0.4859	
60 minute summer	203	10.003	204	38.8	1.565	0.501	1.0635	
60 minute summer	204	10.004	113	78.7	2.441	0.834	1.3040	
60 minute summer	113	1.014	114	1058.8	3.050	0.941	2.8804	
60 minute summer	114	1.015	115	1058.0	3.827	0.584	2.7523	
60 minute summer	115	1.016	116	1063.0	3.272	0.503	4.5523	
60 minute summer	116	1.017	117	1081.3	3.029	0.741	5.1887	
60 minute summer	210	11.000	211	14.4	0.769	0.323	0.2541	
60 minute summer	211	11.001	212	52.1	1.552	0.559	0.9660	
60 minute summer	212	11.002	213	69.5	1.758	1.063	0.6315	
60 minute summer	220	12.000	213	48.8	1.615	0.818	1.0587	
60 minute summer	213	11.003	214	130.5	1.968	0.677	3.2364	
60 minute summer	214	11.004	215	183.7	2.608	1.241	2.6912	
60 minute summer	215	11.005	117	228.9	2.109	0.908	2.0915	
60 minute summer	117	1.018	118	1301.9	2.958	0.976	3.7820	
60 minute summer	118	Flow through pond	119	1492.7	0.372	0.009	316.5757	
60 minute summer	270	15.000	271	46.6	1.327	0.735	0.9367	
60 minute summer	271	15.001	272	59.6	1.499	1.153	1.6075	
60 minute summer	272	15.002	273	62.1	1.596	1.028	0.5912	
60 minute summer	290	16.000	291	10.9	0.444	0.268	0.4042	
60 minute summer	291	16.002	292	45.0	1.407	0.999	0.8493	
60 minute summer	292	16.003	273	54.1	1.805	0.739	0.7014	
60 minute summer	273	15.003	274	118.4	2.161	0.628	0.9829	
60 minute summer	274	15.004	275	132.6	2.134	0.699	2.4292	
60 minute summer	275	15.005	277	149.8	2.128	0.976	2.0374	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	277	33	121.359	0.834	156.5	1.0956	0.0000	SURCHARGED
60 minute summer	278	33	120.832	0.682	161.8	1.3449	0.0000	SURCHARGED
60 minute summer	279	33	120.522	0.722	161.9	1.2752	0.0000	SURCHARGED
60 minute summer	300	31	122.281	0.081	17.5	0.1313	0.0000	OK
60 minute summer	301	33	121.910	0.160	30.3	0.2388	0.0000	OK
60 minute summer	302	32	121.853	0.428	44.2	0.6815	0.0000	SURCHARGED
60 minute summer	303	32	121.697	0.422	59.7	0.7405	0.0000	SURCHARGED
60 minute summer	304	32	121.248	0.123	58.3	0.1393	0.0000	OK
60 minute summer	280	33	120.197	0.672	251.1	1.7305	0.0000	SURCHARGED
60 minute summer	281	33	119.072	0.372	251.2	0.0000	0.0000	OK
60 minute summer	282	33	117.763	0.313	251.2	0.0000	0.0000	OK
60 minute summer	283	38	116.195	0.612	250.9	0.0000	0.0000	OK
60 minute summer	119	39	116.174	0.874	1492.7	0.0000	0.0000	SURCHARGED
60 minute summer	240	39	115.238	0.238	1172.1	0.0000	0.0000	OK
480 minute winter	241	472	115.161	1.161	295.9	0.0000	0.0000	SURCHARGED
480 minute winter	250	464	115.142	1.590	374.5	0.0000	0.0000	OK
480 minute winter	251	464	115.142	1.592	203.7	0.0000	0.0000	FLOOD RISK
480 minute winter	260	464	115.142	1.642	7.8	5.6880	0.0000	FLOOD RISK
60 minute summer	261	1	112.441	0.000	2.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	277	15.006	278	155.2	2.204	1.070	1.2447	
60 minute summer	278	15.007	279	161.9	1.664	0.907	4.8494	
60 minute summer	279	15.008	280	162.6	1.474	0.984	4.4304	
60 minute summer	300	17.000	301	17.2	1.020	0.277	0.6557	
60 minute summer	301	17.001	302	27.7	0.957	0.504	1.0149	
60 minute summer	302	17.002	303	40.8	1.027	0.900	0.7808	
60 minute summer	303	17.003	304	58.3	1.664	1.440	0.7627	
60 minute summer	304	17.004	280	58.1	1.952	0.587	1.2509	
60 minute summer	280	14.010	281	251.2	2.278	1.621	2.2566	
60 minute summer	281	Orifice	282	251.2				
60 minute summer	282	14.012	283	250.9	2.130	0.827	3.2105	
60 minute summer	283	Flow through pond	119	1492.7	0.372	0.009	316.5757	
60 minute summer	119	1.021	240	1172.1	5.182	1.586	5.0217	
60 minute summer	119	Infiltration		5.3				
60 minute summer	240	1.022	241	1171.7	2.262	0.019	98.4619	
480 minute winter	241	1.023	250	374.5	1.847	0.397	6.0287	
480 minute winter	250	Flow through pond	251	203.7	0.029	0.006	2631.1289	
480 minute winter	251	1.025	260	7.8	0.325	0.016	2.8824	
480 minute winter	251	Infiltration		33.0				
480 minute winter	260	Hydro-Brake®	261	2.6				97.4

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	100	33	125.801	1.001	46.5	2.4605	0.0000	SURCHARGED
60 minute summer	101	33	125.678	1.028	54.9	1.7838	0.0000	SURCHARGED
60 minute summer	102	33	125.466	1.016	91.9	2.4733	0.0000	SURCHARGED
60 minute summer	103	33	124.148	0.798	109.5	1.4959	0.0000	SURCHARGED
60 minute summer	104	32	122.597	0.172	116.4	0.2398	0.0000	OK
60 minute summer	120	34	125.269	1.269	40.7	2.8585	0.0000	FLOOD RISK
60 minute summer	121	34	125.178	1.378	34.2	1.6454	0.0000	SURCHARGED
60 minute summer	130	34	125.111	0.511	13.1	0.7185	0.0000	SURCHARGED
60 minute summer	131	34	125.107	0.907	11.9	1.0654	0.0000	SURCHARGED
60 minute summer	122	34	125.100	1.450	62.8	2.4434	0.0000	SURCHARGED
60 minute summer	123	34	124.745	1.245	67.6	1.8402	0.0000	SURCHARGED
60 minute summer	124	34	124.274	1.324	99.8	2.9978	0.0000	FLOOD RISK
60 minute summer	125	34	123.267	0.916	107.1	1.9383	0.0000	SURCHARGED
60 minute summer	126	34	122.643	0.468	106.4	0.8263	0.0000	SURCHARGED
60 minute summer	127	34	122.216	0.241	114.4	0.4804	0.0000	OK
60 minute summer	105	34	121.889	0.289	249.9	0.6759	0.0000	OK
60 minute summer	106	34	121.494	0.594	312.6	2.1046	0.0000	SURCHARGED
60 minute summer	107	34	120.565	1.240	343.8	3.5187	0.0000	SURCHARGED
60 minute summer	108	34	120.429	1.329	335.9	2.5986	0.0000	SURCHARGED
60 minute summer	140	34	121.127	0.127	24.6	0.2192	0.0000	OK
60 minute summer	141	34	121.110	0.885	84.8	2.1820	0.0000	SURCHARGED
60 minute summer	150	34	121.667	0.817	7.8	0.9240	0.0000	SURCHARGED
60 minute summer	151	34	121.666	1.016	59.4	2.7561	0.0000	SURCHARGED
60 minute summer	152	34	121.475	1.125	83.5	2.5581	0.0000	SURCHARGED
60 minute summer	142	34	120.997	1.222	190.5	3.1174	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	100	1.000	101	36.1	1.075	0.877	0.9467	
60 minute summer	101	1.001	102	52.4	1.429	0.992	0.7698	
60 minute summer	102	1.002	103	87.3	2.196	1.055	1.7349	
60 minute summer	103	1.003	104	108.6	2.731	1.271	1.2592	
60 minute summer	104	1.004	105	117.3	2.787	0.585	1.0844	
60 minute summer	120	2.000	121	31.2	1.100	0.746	1.2217	
60 minute summer	121	2.001	122	31.8	0.825	0.691	0.7585	
60 minute summer	130	3.000	131	10.0	1.252	0.130	0.7395	
60 minute summer	131	3.001	122	15.7	0.424	0.161	0.6325	
60 minute summer	122	2.002	123	58.8	1.478	1.391	0.8991	
60 minute summer	123	2.003	124	69.2	1.740	0.902	1.0106	
60 minute summer	124	2.004	125	97.6	2.455	1.157	0.9111	
60 minute summer	125	2.005	126	106.4	2.675	2.033	0.3919	
60 minute summer	126	2.006	127	106.4	1.538	1.422	2.8688	
60 minute summer	127	2.007	105	114.4	2.016	0.852	1.1781	
60 minute summer	105	1.005	106	247.2	3.219	0.686	2.1866	
60 minute summer	106	1.006	107	302.3	3.789	0.774	4.3651	
60 minute summer	107	1.007	108	328.4	2.486	0.678	1.5931	
60 minute summer	108	1.008	109	333.3	2.601	0.625	1.6079	
60 minute summer	140	4.000	141	24.4	1.590	0.265	0.7028	
60 minute summer	141	4.001	142	76.8	1.575	0.689	2.1027	
60 minute summer	150	5.000	151	10.3	0.313	0.152	0.4728	
60 minute summer	151	5.001	152	46.7	1.290	0.823	1.0005	
60 minute summer	152	5.002	142	79.3	2.186	0.993	0.7226	
60 minute summer	142	4.002	143	168.1	1.739	0.677	2.6982	

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	143	34	120.740	1.340	207.4	2.3669	0.0000	SURCHARGED
60 minute summer	144	34	120.510	1.410	234.4	3.7178	0.0000	SURCHARGED
60 minute summer	145	34	120.340	1.390	245.1	3.0315	0.0000	SURCHARGED
60 minute summer	109	34	120.203	1.528	619.7	4.7782	0.0000	SURCHARGED
60 minute summer	110	34	119.650	1.275	690.1	4.0847	0.0000	SURCHARGED
60 minute summer	160	34	120.831	0.806	49.2	1.9796	0.0000	SURCHARGED
60 minute summer	170	31	122.304	0.079	11.8	0.1136	0.0000	OK
60 minute summer	171	32	122.247	0.147	76.3	0.4366	0.0000	OK
60 minute summer	172	34	121.154	1.054	75.2	1.1922	0.0000	SURCHARGED
60 minute summer	173	34	121.008	1.233	70.5	1.4914	0.0000	SURCHARGED
60 minute summer	174	34	120.905	1.280	85.0	1.9812	0.0000	SURCHARGED
60 minute summer	175	34	120.690	1.265	109.5	2.0558	0.0000	SURCHARGED
60 minute summer	176	34	120.529	1.429	147.9	3.4981	0.0000	SURCHARGED
60 minute summer	180	31	121.895	0.095	20.3	0.1600	0.0000	OK
60 minute summer	181	31	121.526	0.125	35.5	0.1915	0.0000	OK
60 minute summer	182	34	120.841	0.090	34.7	0.1023	0.0000	OK
60 minute summer	190	34	120.950	0.950	37.4	1.9778	0.0000	SURCHARGED
60 minute summer	191	34	120.871	1.071	39.9	1.3303	0.0000	SURCHARGED
60 minute summer	183	34	120.802	1.177	83.3	1.6288	0.0000	SURCHARGED
60 minute summer	184	34	120.689	1.214	106.0	2.7396	0.0000	SURCHARGED
60 minute summer	177	34	120.348	1.448	270.1	3.6200	0.0000	SURCHARGED
60 minute summer	111	34	119.281	1.306	972.5	2.8219	0.0000	SURCHARGED
60 minute summer	112	34	118.685	1.160	1021.8	3.1577	0.0000	SURCHARGED
60 minute summer	200	31	120.684	0.084	17.7	0.1370	0.0000	OK
60 minute summer	201	31	120.563	0.113	26.1	0.1550	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	143	4.003	144	198.5	2.044	0.802	1.6268	
60 minute summer	144	4.004	145	229.9	1.519	1.018	4.8484	
60 minute summer	145	4.005	109	243.0	1.673	0.771	2.0859	
60 minute summer	109	1.009	110	621.7	2.207	1.193	14.6847	
60 minute summer	110	1.010	111	682.6	2.424	0.730	6.1149	
60 minute summer	160	6.000	143	43.3	1.899	0.461	0.5847	
60 minute summer	170	7.000	171	11.6	0.603	0.267	0.3482	
60 minute summer	171	7.001	172	75.2	2.390	0.730	1.7254	
60 minute summer	172	7.002	173	66.0	2.153	0.612	0.2339	
60 minute summer	173	7.003	174	61.8	1.046	0.606	1.2542	
60 minute summer	174	7.004	175	83.1	1.446	0.896	2.0168	
60 minute summer	175	7.005	176	106.7	2.022	0.740	1.0504	
60 minute summer	176	7.006	177	141.2	1.282	0.820	2.9746	
60 minute summer	180	8.000	181	20.0	1.033	0.376	0.7427	
60 minute summer	181	8.001	182	34.7	2.052	0.513	0.6585	
60 minute summer	182	8.002	183	34.2	2.044	0.227	0.3486	
60 minute summer	190	9.000	191	33.9	1.065	0.786	1.1522	
60 minute summer	191	9.001	183	37.2	1.168	0.863	0.5768	
60 minute summer	183	8.003	184	76.0	1.377	0.804	1.4568	
60 minute summer	184	8.004	177	94.7	1.501	0.764	2.8368	
60 minute summer	177	6.005	111	269.1	2.440	1.113	4.7284	
60 minute summer	111	1.011	112	973.4	2.727	0.949	13.4477	
60 minute summer	112	1.012	113	1019.4	2.856	0.881	4.6993	
60 minute summer	200	10.000	201	17.5	1.050	0.284	0.1784	
60 minute summer	201	10.001	202	25.7	1.071	0.447	0.3923	

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	202	31	120.400	0.150	43.4	0.2435	0.0000	OK
60 minute summer	203	32	120.069	0.119	42.8	0.1342	0.0000	OK
60 minute summer	204	32	119.187	0.187	88.0	0.3933	0.0000	OK
60 minute summer	113	34	118.316	0.991	1099.5	1.7506	0.0000	SURCHARGED
60 minute summer	114	34	117.952	0.752	1096.2	1.3293	0.0000	SURCHARGED
60 minute summer	115	34	117.683	0.808	1103.7	1.6147	0.0000	SURCHARGED
60 minute summer	116	34	117.348	1.148	1125.6	2.7361	0.0000	SURCHARGED
60 minute summer	210	31	120.098	0.098	16.0	0.1565	0.0000	OK
60 minute summer	211	32	120.053	0.153	58.7	0.3172	0.0000	OK
60 minute summer	212	33	119.685	0.785	80.8	1.4268	0.0000	SURCHARGED
60 minute summer	220	33	119.578	0.528	55.1	1.4293	0.0000	SURCHARGED
60 minute summer	213	33	119.318	0.743	137.2	1.2571	0.0000	SURCHARGED
60 minute summer	214	33	118.582	1.382	198.8	4.0140	0.0000	SURCHARGED
60 minute summer	215	34	117.281	0.831	242.0	2.3247	0.0000	SURCHARGED
60 minute summer	117	35	116.897	1.122	1358.4	2.8544	0.0000	SURCHARGED
60 minute summer	118	36	116.609	1.025	1357.2	0.0000	0.0000	OK
60 minute summer	270	33	124.153	0.653	55.1	1.7119	0.0000	SURCHARGED
60 minute summer	271	33	123.973	0.822	66.1	1.3653	0.0000	SURCHARGED
60 minute summer	272	34	123.420	0.670	67.0	0.8794	0.0000	SURCHARGED
60 minute summer	290	34	123.480	0.230	12.3	0.3374	0.0000	SURCHARGED
60 minute summer	291	34	123.471	0.320	50.2	0.6522	0.0000	SURCHARGED
60 minute summer	292	34	123.313	0.363	57.6	0.4937	0.0000	SURCHARGED
60 minute summer	273	34	123.124	0.649	128.3	0.8397	0.0000	SURCHARGED
60 minute summer	274	33	122.839	0.764	137.2	1.2561	0.0000	SURCHARGED
60 minute summer	275	33	122.245	1.170	161.4	2.1743	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	202	10.002	203	42.8	1.744	0.694	0.5242	
60 minute summer	203	10.003	204	42.8	1.550	0.553	1.2161	
60 minute summer	204	10.004	113	85.2	2.410	0.903	1.4088	
60 minute summer	113	1.014	114	1096.2	3.071	0.974	3.1050	
60 minute summer	114	1.015	115	1095.0	3.864	0.604	3.1253	
60 minute summer	115	1.016	116	1102.6	3.267	0.522	4.7703	
60 minute summer	116	1.017	117	1124.1	3.149	0.771	5.1887	
60 minute summer	210	11.000	211	15.9	0.771	0.357	0.2969	
60 minute summer	211	11.001	212	56.7	1.564	0.609	1.0732	
60 minute summer	212	11.002	213	68.4	1.728	1.047	0.6315	
60 minute summer	220	12.000	213	49.9	1.612	0.838	1.2142	
60 minute summer	213	11.003	214	129.2	1.980	0.670	3.2364	
60 minute summer	214	11.004	215	191.3	2.716	1.292	2.6912	
60 minute summer	215	11.005	117	240.0	2.176	0.952	2.0915	
60 minute summer	117	1.018	118	1357.2	3.084	1.017	3.7820	
60 minute summer	118	Flow through pond	119	1470.8	0.390	0.008	361.4630	
60 minute summer	270	15.000	271	45.8	1.324	0.721	0.9367	
60 minute summer	271	15.001	272	60.6	1.523	1.171	1.6075	
60 minute summer	272	15.002	273	64.9	1.646	1.075	0.5912	
60 minute summer	290	16.000	291	11.3	0.476	0.277	0.6411	
60 minute summer	291	16.002	292	48.5	1.391	1.078	1.0563	
60 minute summer	292	16.003	273	56.9	1.820	0.778	0.8064	
60 minute summer	273	15.003	274	115.7	2.151	0.613	0.9829	
60 minute summer	274	15.004	275	131.0	2.131	0.690	2.4292	
60 minute summer	275	15.005	277	154.2	2.190	1.004	2.0374	

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	277	33	121.498	0.973	160.7	1.2960	0.0000	SURCHARGED
60 minute summer	278	33	120.934	0.784	167.9	1.5640	0.0000	SURCHARGED
60 minute summer	279	33	120.600	0.800	167.7	1.4143	0.0000	SURCHARGED
60 minute summer	300	31	122.285	0.085	19.3	0.1427	0.0000	OK
60 minute summer	301	33	122.044	0.294	33.4	0.4474	0.0000	SURCHARGED
60 minute summer	302	33	121.947	0.522	46.6	0.8545	0.0000	SURCHARGED
60 minute summer	303	33	121.758	0.483	62.4	0.8779	0.0000	SURCHARGED
60 minute summer	304	33	121.258	0.133	62.3	0.1502	0.0000	OK
60 minute summer	280	33	120.250	0.724	265.1	1.9256	0.0000	SURCHARGED
60 minute summer	281	33	119.086	0.386	265.3	0.0000	0.0000	OK
60 minute summer	282	33	117.777	0.327	265.3	0.0000	0.0000	OK
60 minute summer	283	39	116.268	0.685	265.0	0.0000	0.0000	OK
60 minute summer	119	40	116.242	0.942	1470.8	0.0000	0.0000	FLOOD RISK
480 minute winter	240	472	115.298	0.298	566.0	0.0000	0.0000	OK
480 minute winter	241	440	115.277	1.277	737.8	0.0000	0.0000	SURCHARGED
480 minute winter	250	472	115.236	1.683	310.1	0.0000	0.0000	OK
480 minute winter	251	472	115.236	1.685	172.4	0.0000	0.0000	FLOOD RISK
480 minute winter	260	472	115.236	1.736	7.1	6.0118	0.0000	FLOOD RISK
60 minute summer	261	1	112.441	0.000	2.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	277	15.006	278	160.5	2.279	1.106	1.2447	
60 minute summer	278	15.007	279	167.7	1.687	0.940	4.8494	
60 minute summer	279	15.008	280	168.5	1.528	1.019	4.4304	
60 minute summer	300	17.000	301	19.0	1.042	0.306	0.8361	
60 minute summer	301	17.001	302	29.6	0.954	0.538	1.1525	
60 minute summer	302	17.002	303	43.9	1.104	0.968	0.7808	
60 minute summer	303	17.003	304	62.3	1.738	1.539	0.7891	
60 minute summer	304	17.004	280	62.2	1.961	0.628	1.2942	
60 minute summer	280	14.010	281	265.3	2.405	1.712	2.2632	
60 minute summer	281	Orifice	282	265.3				
60 minute summer	282	14.012	283	265.0	2.148	0.873	3.5795	
60 minute summer	283	Flow through pond	119	1470.8	0.390	0.008	361.4630	
60 minute summer	119	1.021	240	1215.6	5.354	1.644	5.0469	
60 minute summer	119	Infiltration		5.6				
480 minute winter	240	1.022	241	712.7	2.145	0.012	155.0976	
480 minute winter	241	1.023	250	310.1	1.900	0.329	6.0287	
480 minute winter	250	Flow through pond	251	172.4	0.029	0.005	2896.8093	
480 minute winter	251	1.025	260	7.1	0.291	0.015	2.8824	
480 minute winter	251	Infiltration		33.0				
480 minute winter	260	Hydro-Brake®	261	2.7				99.7

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Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	9.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
Time of Entry (mins)	2.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
100	0.087	2.00	126.242	1200	445487.285	238495.242	1.442
101	0.040	2.00	126.106	1200	445510.642	238490.652	1.456
102	0.086	2.00	125.902	1200	445527.568	238481.260	1.452
103	0.050	2.00	124.829	1200	445562.043	238454.534	1.479
104	0.018	2.00	123.929	1200	445588.207	238436.682	1.504
120	0.076	2.00	125.490	1200	445558.591	238573.190	1.490
121	0.006	2.00	125.878	1200	445553.153	238542.956	2.078
130	0.018	2.00	126.044	1200	445532.770	238493.760	1.444
131	0.004	2.00	126.199	1200	445542.356	238509.693	1.999
122	0.062	2.00	126.114	1200	445547.497	238524.742	2.464
123	0.029	2.00	125.337	1200	445569.200	238518.411	1.837
124	0.080	2.00	124.504	1200	445592.637	238508.593	1.554
125	0.023	2.00	123.806	1500	445613.833	238499.903	1.456
126	0.000	2.00	123.923	1500	445611.254	238490.391	1.748
127	0.021	2.00	124.000	1500	445602.243	238447.540	2.025
105	0.043	2.00	123.254	1500	445609.948	238428.432	1.654
106	0.131	2.00	122.522	1500	445630.958	238422.969	1.622
107	0.083	2.00	121.031	1500	445668.204	238409.589	1.706
108	0.015	2.00	120.859	1500	445676.235	238403.539	1.759
140	0.046	2.00	122.696	1200	445662.505	238474.032	1.696
141	0.113	2.00	122.088	1200	445684.198	238468.559	1.863
150	0.000	2.00	122.525	1200	445746.094	238491.814	1.675
151	0.111	2.00	122.194	1200	445734.255	238490.735	1.544
152	0.085	2.00	121.988	1200	445723.105	238468.185	1.638
142	0.069	2.00	121.712	1500	445710.738	238454.875	1.937
143	0.000	2.00	121.421	1500	445724.597	238434.717	2.021
144	0.083	2.00	121.200	1500	445717.284	238421.909	2.100
145	0.035	2.00	120.810	1500	445693.065	238403.206	1.860
109	0.126	2.00	120.714	1500	445682.404	238395.482	2.039
110	0.162	2.00	120.857	1500	445711.658	238352.330	2.482
160	0.092	2.00	121.553	1200	445737.725	238428.099	1.528
170	0.022	2.00	123.775	1200	445811.658	238458.826	1.550
171	0.121	2.00	123.550	1200	445794.790	238463.977	1.450
172	0.000	2.00	122.423	1200	445772.278	238417.889	2.323
173	0.009	2.00	122.273	1200	445769.397	238412.761	2.498
174	0.057	2.00	122.633	1200	445785.595	238405.354	3.008
175	0.062	2.00	122.187	1200	445773.001	238379.632	2.762
176	0.090	2.00	122.006	1500	445770.581	238364.913	2.906
180	0.038	2.00	123.310	1200	445811.510	238396.637	1.510
181	0.029	2.00	123.015	1200	445846.321	238380.349	1.615
182	0.000	2.00	122.236	1200	445833.853	238343.753	1.486

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Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
190	0.070	2.00	121.621	1200	445866.733	238308.336	1.621
191	0.012	2.00	122.171	1200	445843.345	238325.433	2.371
183	0.031	2.00	122.322	1200	445830.192	238331.541	2.697
184	0.060	2.00	122.171	1500	445810.078	238336.376	2.696
177	0.092	2.00	121.661	1500	445769.825	238337.955	2.761
111	0.056	2.00	121.115	1500	445726.967	238336.938	3.140
112	0.117	2.00	120.220	1500	445718.773	238300.169	2.695
200	0.033	2.00	122.053	1200	445815.484	238312.566	1.453
201	0.016	2.00	121.918	1200	445814.994	238301.913	1.468
202	0.033	2.00	121.715	1200	445817.202	238285.718	1.465
203	0.000	2.00	121.877	1200	445795.992	238282.778	1.927
204	0.086	2.00	120.949	1200	445752.981	238284.276	1.949
113	0.000	2.00	119.685	1500	445715.581	238287.398	2.360
114	0.000	2.00	119.236	1500	445712.991	238279.095	2.036
115	0.020	2.00	118.771	1500	445707.229	238272.503	1.896
116	0.053	2.00	118.093	1500	445694.489	238268.472	1.893
210	0.030	2.00	121.427	1200	445609.742	238344.943	1.427
211	0.080	2.00	121.757	1200	445611.008	238358.421	1.857
212	0.045	2.00	120.341	1200	445642.201	238355.139	1.441
220	0.103	2.00	120.486	1200	445683.336	238372.895	1.436
213	0.039	2.00	120.101	1200	445658.067	238355.761	1.526
214	0.144	2.00	118.987	1200	445666.870	238310.653	1.787
215	0.102	2.00	118.095	1350	445671.069	238272.667	1.645
117	0.000	2.00	117.850	1800	445683.804	238258.618	2.075
118	0.000		116.922		445687.337	238250.785	1.339
270	0.103	2.00	125.019	1200	445546.227	238452.922	1.519
271	0.038	2.00	124.730	1200	445533.573	238433.057	1.580
272	0.012	2.00	124.208	1200	445528.642	238392.939	1.458
290	0.023	2.00	124.760	1200	445468.119	238377.456	1.510
291	0.073	2.00	124.927	1200	445480.936	238387.232	1.777
292	0.017	2.00	124.567	1200	445506.734	238380.920	1.617
273	0.012	2.00	124.094	1200	445526.824	238378.187	1.619
274	0.043	2.00	123.917	1200	445524.996	238364.349	1.842
275	0.061	2.00	122.919	1200	445559.282	238360.544	1.844
277	0.015	2.00	122.165	1200	445588.118	238358.176	1.640
278	0.017	2.00	121.798	1500	445586.538	238340.571	1.648
279	0.000	2.00	122.114	1500	445582.310	238296.808	2.314
300	0.036	2.00	123.641	1200	445523.206	238348.941	1.441
301	0.027	2.00	123.260	1200	445519.129	238317.682	1.510
302	0.034	2.00	122.900	1200	445516.257	238288.847	1.475
303	0.041	2.00	122.590	1200	445515.230	238269.242	1.315
304	0.000	2.00	122.450	1200	445539.826	238268.614	1.325
280	0.082	2.00	121.550	1500	445578.420	238256.829	2.025
281	0.000	2.00	120.326		445598.334	238250.875	1.626
282	0.000	2.00	118.422		445637.154	238238.539	0.972
283	0.000		116.886		445659.014	238222.795	1.303
119	0.000	2.00	116.506		445680.400	238231.012	1.206
240	0.000		116.705		445698.981	238212.763	1.705
241	0.000	2.00	115.700		445692.988	238166.175	1.700
250	0.000		115.411		445690.621	238144.903	1.859
251	0.000	2.00	115.400		445691.441	238122.889	1.850
260	0.000		115.400	2100	445701.336	238120.282	1.900

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Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
261			115.043	1500	445707.350	238123.844	2.602

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.035	41.2	11.8	1.217	1.231	0.087	0.0	82	0.896
1.001	1.329	52.8	17.2	1.231	1.227	0.127	0.0	88	1.192
1.002	2.082	82.8	28.9	1.227	1.253	0.213	0.0	92	1.903
1.003	2.148	85.4	35.6	1.254	1.203	0.263	0.0	102	2.056
1.004	2.834	200.3	38.1	1.204	1.279	0.281	0.0	88	2.198
2.000	1.052	41.8	10.3	1.265	1.853	0.076	0.0	76	0.875
2.001	1.158	46.0	11.1	1.853	2.239	0.082	0.0	75	0.957
3.000	1.923	76.5	2.4	1.219	1.774	0.018	0.0	28	0.889
3.001	2.443	97.1	3.0	1.774	2.239	0.022	0.0	27	1.108
2.002	1.063	42.2	22.5	2.239	1.612	0.166	0.0	116	1.077
2.003	1.929	76.7	26.4	1.612	1.329	0.195	0.0	91	1.755
2.004	2.123	84.4	37.3	1.329	1.231	0.275	0.0	105	2.062
2.005	1.316	52.3	40.4	1.231	1.448	0.298	0.0	149	1.449
2.006	1.058	74.8	40.4	1.448	1.725	0.298	0.0	157	1.079
2.007	1.899	134.2	43.2	1.725	1.279	0.319	0.0	117	1.699
1.005	3.264	360.5	87.1	1.279	1.247	0.643	0.0	125	2.706
1.006	3.538	390.8	104.9	1.247	1.255	0.774	0.0	132	3.018
1.007	3.047	484.6	116.1	1.256	1.309	0.857	0.0	149	2.521
1.008	3.355	533.5	118.2	1.309	1.439	0.872	0.0	143	2.716
4.000	2.321	92.3	6.2	1.471	1.562	0.046	0.0	39	1.329
4.001	1.576	111.4	21.5	1.563	1.487	0.159	0.0	89	1.226
5.000	1.700	67.6	0.0	1.450	1.319	0.000	0.0	0	0.000
5.001	1.428	56.8	15.0	1.319	1.413	0.111	0.0	79	1.209
5.002	2.007	79.8	26.6	1.413	1.563	0.196	0.0	89	1.809
4.002	2.247	248.1	57.5	1.562	1.646	0.424	0.0	122	1.839
4.003	2.241	247.6	69.9	1.646	1.650	0.516	0.0	136	1.938
4.004	1.419	225.7	81.2	1.650	1.410	0.599	0.0	186	1.307
4.005	1.981	315.0	85.9	1.410	1.439	0.634	0.0	160	1.695
1.009	1.844	521.3	221.2	1.439	1.882	1.632	0.0	272	1.771
1.010	3.309	935.6	243.1	1.882	2.540	1.794	0.0	208	2.803
6.000	2.360	93.8	12.5	1.303	1.646	0.092	0.0	55	1.648
7.000	1.098	43.7	3.0	1.325	1.225	0.022	0.0	40	0.635
7.001	2.594	103.1	19.4	1.225	2.098	0.143	0.0	65	1.996
7.002	2.710	107.8	19.4	2.098	2.198	0.143	0.0	65	2.071
7.003	1.442	101.9	20.6	2.198	2.708	0.152	0.0	91	1.137
7.004	1.312	92.7	28.3	2.708	2.462	0.209	0.0	113	1.156
7.005	2.038	144.1	36.7	2.462	2.531	0.271	0.0	103	1.712
7.006	1.559	172.1	48.9	2.531	2.386	0.361	0.0	137	1.350
8.000	1.334	53.0	5.1	1.285	1.390	0.038	0.0	47	0.850
8.001	1.698	67.5	9.1	1.390	1.261	0.067	0.0	56	1.196
8.002	3.782	150.4	9.1	1.261	2.401	0.067	0.0	37	2.110
9.000	1.084	43.1	9.5	1.396	2.146	0.070	0.0	72	0.874
9.001	1.083	43.1	11.1	2.146	2.397	0.082	0.0	78	0.912
8.003	1.337	94.5	24.4	2.397	2.396	0.180	0.0	103	1.125
8.004	1.752	123.9	32.5	2.396	2.386	0.240	0.0	105	1.484

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Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
6.005	2.190	241.9	93.9	2.386	2.465	0.693	0.0	162	2.058
1.011	2.866	1025.5	344.6	2.465	2.020	2.543	0.0	269	2.596
1.012	3.234	1157.2	360.5	2.020	1.685	2.660	0.0	257	2.872
10.000	1.553	61.7	4.5	1.228	1.243	0.033	0.0	41	0.911
10.001	1.448	57.6	6.6	1.243	1.240	0.049	0.0	51	0.972
10.002	1.549	61.6	11.1	1.240	1.702	0.082	0.0	65	1.183
10.003	1.948	77.5	11.1	1.702	1.724	0.082	0.0	58	1.396
10.004	2.373	94.4	22.8	1.724	1.686	0.168	0.0	75	1.964
1.014	3.144	1125.0	383.3	1.685	1.361	2.828	0.0	271	2.858
1.015	5.065	1812.5	383.3	1.361	1.221	2.828	0.0	209	4.063
1.016	5.906	2113.3	386.0	1.221	1.218	2.848	0.0	193	4.549
1.017	4.075	1458.3	393.2	1.218	1.325	2.901	0.0	238	3.488
11.000	1.122	44.6	4.1	1.202	1.632	0.030	0.0	46	0.706
11.001	2.343	93.1	14.9	1.632	1.215	0.110	0.0	60	1.722
11.002	1.644	65.4	21.0	1.216	1.226	0.155	0.0	87	1.467
12.000	1.498	59.6	14.0	1.211	1.226	0.103	0.0	74	1.232
11.003	2.728	192.9	40.3	1.226	1.487	0.297	0.0	92	2.168
11.004	2.094	148.0	59.8	1.487	1.270	0.441	0.0	133	1.987
11.005	2.282	252.0	73.6	1.270	1.325	0.543	0.0	138	1.988
1.018	3.020	1334.3	466.7	1.325	0.497	3.444	0.0	305	2.764
15.000	1.596	63.5	14.0	1.294	1.355	0.103	0.0	72	1.288
15.001	1.301	51.7	19.1	1.355	1.233	0.141	0.0	94	1.204
15.002	1.518	60.4	20.7	1.233	1.319	0.153	0.0	91	1.381
16.000	1.027	40.8	3.1	1.285	1.552	0.023	0.0	42	0.609
16.002	1.133	45.0	13.0	1.552	1.392	0.096	0.0	83	0.985
16.003	1.841	73.2	15.3	1.392	1.319	0.113	0.0	70	1.466
15.003	2.670	188.7	37.7	1.319	1.542	0.278	0.0	91	2.100
15.004	2.685	189.8	43.5	1.542	1.544	0.321	0.0	97	2.189
15.005	2.172	153.5	51.8	1.544	1.340	0.382	0.0	120	1.967
15.006	2.052	145.1	53.8	1.340	1.273	0.397	0.0	126	1.904
15.007	1.615	178.4	56.1	1.273	1.939	0.414	0.0	144	1.435
15.008	1.497	165.3	56.1	1.939	1.650	0.414	0.0	151	1.359
17.000	1.564	62.2	4.9	1.216	1.285	0.036	0.0	43	0.941
17.001	1.385	55.1	8.5	1.285	1.250	0.063	0.0	59	1.008
17.002	1.141	45.4	13.1	1.250	1.090	0.097	0.0	83	0.993
17.003	1.018	40.5	18.7	1.090	1.100	0.138	0.0	108	0.999
17.004	2.491	99.0	18.7	1.100	1.652	0.138	0.0	66	1.931
14.010	1.403	155.0	85.9	1.650	0.551	0.634	0.0	200	1.438
14.011	3.605	14424.6	85.9	0.626	-0.028	0.634	0.0	146	1.000
14.012	1.908	303.4	85.9	0.522	0.611	0.634	0.0	164	1.642
1.021	2.614	739.2	0.0	0.606	1.105	0.000	0.0	0	0.000
1.022	10.529	60662.5	0.0	0.505	0.500	0.000	0.0	0	0.000
1.023	3.334	942.6	0.0	1.100	1.211	0.000	0.0	0	0.000
1.025	1.698	480.1	0.0	1.250	1.300	0.000	0.0	0	0.000
1.026	7.089	783.0	0.0	1.525	2.227	0.000	0.0	0	0.000

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Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 | 30

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	20	0	0
100	40	0	0
100	40	10	0

Node 260 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	113.500	Product Number	CTL-SHE-0075-2700-1200-2700
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.7	Min Node Diameter (mm)	1200

Node 283 Online Orifice Control

Flap Valve	x	Invert Level (m)	115.583	Discharge Coefficient	1.000
Replaces Downstream Link	x	Diameter (m)	0.600		

Node 118 Online Orifice Control

Flap Valve	x	Invert Level (m)	115.583	Discharge Coefficient	1.000
Replaces Downstream Link	x	Diameter (m)	0.750		

Node 281 Online Orifice Control

Flap Valve	x	Invert Level (m)	118.700	Discharge Coefficient	1.000
Replaces Downstream Link	✓	Diameter (m)	0.450		

Node 251 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.25020	Porosity	1.00	Main Channel Length (m)	22.000
Side Inf Coefficient (m/hr)	0.25020	Invert Level (m)	113.550	Main Channel Slope (1:X)	10000.0
Safety Factor	10.0	Time to half empty (mins)		Main Channel n	0.030

Inlets

250

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	878.0	407.0	0.800	1712.0	1241.0	1.550	2844.0	2373.0
0.750	1437.0	966.0	1.500	2392.0	1921.0			

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Node 119 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.05508	Porosity	1.00	Main Channel Length (m)	17.000
Side Inf Coefficient (m/hr)	0.05508	Invert Level (m)	115.300	Main Channel Slope (1:X)	60.0
Safety Factor	2.0	Time to half empty (mins)	7	Main Channel n	0.030

Inlets

283 | 118

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.0	0.0	0.300	454.0	454.0	0.900	707.0	707.0	1.500	997.0	997.0
0.100	145.0	145.0	0.500	535.0	535.0	1.100	800.0	800.0			
0.200	416.0	416.0	0.700	619.0	619.0	1.300	897.0	897.0			

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	100	9	124.916	0.115	21.1	0.2700	0.0000	OK
15 minute summer	101	9	124.776	0.126	30.8	0.2110	0.0000	OK
15 minute summer	102	9	124.578	0.128	51.9	0.2956	0.0000	OK
15 minute summer	103	9	123.495	0.144	63.6	0.2611	0.0000	OK
15 minute summer	104	9	122.548	0.123	66.0	0.1680	0.0000	OK
15 minute summer	120	9	124.105	0.105	18.4	0.2258	0.0000	OK
15 minute summer	121	9	123.902	0.102	20.0	0.1211	0.0000	OK
15 minute summer	130	9	124.637	0.037	4.4	0.0509	0.0000	OK
15 minute summer	131	9	124.236	0.036	5.4	0.0421	0.0000	OK
15 minute summer	122	9	123.828	0.178	40.0	0.2901	0.0000	OK
15 minute summer	123	9	123.622	0.122	45.2	0.1761	0.0000	OK
15 minute summer	124	9	123.100	0.150	63.4	0.3242	0.0000	OK
15 minute summer	125	10	122.671	0.321	64.8	0.6678	0.0000	SURCHARGED
15 minute summer	126	10	122.390	0.215	63.6	0.3806	0.0000	OK
15 minute summer	127	10	122.137	0.162	67.8	0.3200	0.0000	OK
15 minute summer	105	10	121.765	0.165	132.5	0.3769	0.0000	OK
15 minute summer	106	10	121.065	0.165	156.3	0.5593	0.0000	OK
15 minute summer	107	9	119.520	0.195	168.9	0.5350	0.0000	OK
15 minute summer	108	10	119.314	0.214	172.5	0.4138	0.0000	OK
15 minute summer	140	9	121.053	0.053	11.2	0.0890	0.0000	OK
15 minute summer	141	9	120.353	0.128	38.6	0.2989	0.0000	OK
15 minute summer	150	1	120.850	0.000	0.0	0.0000	0.0000	OK
15 minute summer	151	9	120.760	0.110	26.9	0.2835	0.0000	OK
15 minute summer	152	9	120.487	0.137	47.5	0.2964	0.0000	OK
15 minute summer	142	9	119.967	0.192	102.8	0.4760	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	100	1.000	101	21.2	0.977	0.514	0.5152	
15 minute summer	101	1.001	102	31.0	1.348	0.587	0.4452	
15 minute summer	102	1.002	103	51.5	2.062	0.622	1.0893	
15 minute summer	103	1.003	104	61.6	2.327	0.722	0.8393	
15 minute summer	104	1.004	105	64.6	2.474	0.323	0.6073	
15 minute summer	120	2.000	121	18.5	1.040	0.442	0.5466	
15 minute summer	121	2.001	122	19.7	0.759	0.427	0.4868	
15 minute summer	130	3.000	131	4.4	1.062	0.058	0.0772	
15 minute summer	131	3.001	122	5.4	0.309	0.056	0.2996	
15 minute summer	122	2.002	123	38.2	1.365	0.904	0.6275	
15 minute summer	123	2.003	124	44.0	1.759	0.574	0.6354	
15 minute summer	124	2.004	125	59.2	1.603	0.701	0.7775	
15 minute summer	125	2.005	126	63.6	1.601	1.216	0.3824	
15 minute summer	126	2.006	127	64.8	1.389	0.866	2.0349	
15 minute summer	127	2.007	105	66.1	1.810	0.492	0.7533	
15 minute summer	105	1.005	106	133.7	2.864	0.371	1.0138	
15 minute summer	106	1.006	107	156.9	3.384	0.402	1.8355	
15 minute summer	107	1.007	108	170.4	2.441	0.352	0.7022	
15 minute summer	108	1.008	109	174.6	2.533	0.327	0.7737	
15 minute summer	140	4.000	141	11.2	1.576	0.121	0.1590	
15 minute summer	141	4.001	142	38.6	1.405	0.347	0.8210	
15 minute summer	150	5.000	151	0.0	0.000	0.000	0.1150	
15 minute summer	151	5.001	152	27.0	1.209	0.475	0.5607	
15 minute summer	152	5.002	142	47.5	1.993	0.595	0.4329	
15 minute summer	142	4.002	143	102.7	1.684	0.414	1.4924	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	143	9	119.615	0.215	125.0	0.3797	0.0000	OK
15 minute summer	144	9	119.364	0.264	144.5	0.6746	0.0000	OK
15 minute summer	145	9	119.202	0.252	150.0	0.5395	0.0000	OK
15 minute summer	109	10	119.048	0.373	338.1	1.1206	0.0000	OK
15 minute summer	110	10	118.691	0.316	376.1	0.9714	0.0000	OK
15 minute summer	160	9	120.104	0.079	22.3	0.1851	0.0000	OK
15 minute summer	170	9	122.278	0.053	5.3	0.0743	0.0000	OK
15 minute summer	171	9	122.189	0.089	34.5	0.2498	0.0000	OK
15 minute summer	172	9	120.209	0.109	34.5	0.1234	0.0000	OK
15 minute summer	173	9	119.921	0.146	36.4	0.1761	0.0000	OK
15 minute summer	174	9	119.791	0.166	49.9	0.2510	0.0000	OK
15 minute summer	175	9	119.566	0.141	63.3	0.2230	0.0000	OK
15 minute summer	176	9	119.299	0.199	82.6	0.4751	0.0000	OK
15 minute summer	180	9	121.863	0.063	9.2	0.1027	0.0000	OK
15 minute summer	181	9	121.480	0.080	16.1	0.1197	0.0000	OK
15 minute summer	182	9	120.799	0.049	15.7	0.0549	0.0000	OK
15 minute summer	190	9	120.098	0.098	17.0	0.1956	0.0000	OK
15 minute summer	191	9	119.914	0.114	20.0	0.1406	0.0000	OK
15 minute summer	183	9	119.776	0.151	42.4	0.2052	0.0000	OK
15 minute summer	184	9	119.619	0.144	56.1	0.3187	0.0000	OK
15 minute summer	177	10	119.140	0.240	156.2	0.5831	0.0000	OK
15 minute summer	111	10	118.380	0.405	545.6	0.8611	0.0000	OK
15 minute summer	112	10	117.976	0.451	567.3	1.1878	0.0000	OK
15 minute summer	200	9	120.654	0.054	8.0	0.0863	0.0000	OK
15 minute summer	201	9	120.520	0.070	11.9	0.0947	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	143	4.003	144	124.4	2.060	0.503	0.8909	
15 minute summer	144	4.004	145	141.5	1.508	0.627	2.8720	
15 minute summer	145	4.005	109	143.6	1.725	0.456	1.0960	
15 minute summer	109	1.009	110	352.9	2.107	0.677	8.7241	
15 minute summer	110	1.010	111	385.1	2.186	0.412	3.8329	
15 minute summer	160	6.000	143	22.3	1.866	0.238	0.1757	
15 minute summer	170	7.000	171	5.3	0.494	0.121	0.1911	
15 minute summer	171	7.001	172	34.5	2.091	0.335	0.8646	
15 minute summer	172	7.002	173	34.2	2.064	0.317	0.0975	
15 minute summer	173	7.003	174	36.1	0.974	0.354	0.6605	
15 minute summer	174	7.004	175	48.3	1.353	0.521	1.0399	
15 minute summer	175	7.005	176	60.9	1.934	0.423	0.4714	
15 minute summer	176	7.006	177	80.2	1.237	0.466	1.7480	
15 minute summer	180	8.000	181	9.2	0.844	0.173	0.4182	
15 minute summer	181	8.001	182	15.7	1.680	0.233	0.3670	
15 minute summer	182	8.002	183	15.4	2.053	0.103	0.1203	
15 minute summer	190	9.000	191	17.1	0.934	0.397	0.5330	
15 minute summer	191	9.001	183	19.5	1.016	0.452	0.2783	
15 minute summer	183	8.003	184	41.6	1.235	0.440	0.7127	
15 minute summer	184	8.004	177	53.7	1.541	0.433	1.4036	
15 minute summer	177	6.005	111	152.4	2.198	0.630	2.9717	
15 minute summer	111	1.011	112	550.6	2.307	0.537	8.9848	
15 minute summer	112	1.012	113	564.4	2.257	0.488	3.2916	
15 minute summer	200	10.000	201	8.0	0.895	0.130	0.0957	
15 minute summer	201	10.001	202	11.9	0.916	0.207	0.2133	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	9	120.343	0.093	19.9	0.1475	0.0000	OK
15 minute summer	203	9	120.027	0.077	20.0	0.0865	0.0000	OK
15 minute summer	204	9	119.104	0.104	40.3	0.2087	0.0000	OK
15 minute summer	113	10	117.766	0.441	598.8	0.7790	0.0000	OK
15 minute summer	114	10	117.534	0.334	596.8	0.5900	0.0000	OK
15 minute summer	115	10	117.159	0.284	598.0	0.5610	0.0000	OK
15 minute summer	116	10	116.598	0.398	603.4	0.9251	0.0000	OK
15 minute summer	210	9	120.063	0.063	7.3	0.0980	0.0000	OK
15 minute summer	211	9	119.982	0.082	26.7	0.1635	0.0000	OK
15 minute summer	212	9	119.034	0.134	37.6	0.2354	0.0000	OK
15 minute summer	220	9	119.155	0.105	25.0	0.2706	0.0000	OK
15 minute summer	213	9	118.701	0.126	72.0	0.2062	0.0000	OK
15 minute summer	214	9	117.392	0.192	106.6	0.5275	0.0000	OK
15 minute summer	215	9	116.669	0.219	127.0	0.5857	0.0000	OK
15 minute summer	117	10	116.289	0.514	712.5	1.3070	0.0000	OK
15 minute summer	118	10	116.133	0.550	709.2	0.0000	0.0000	OK
15 minute summer	270	9	123.597	0.097	25.0	0.2423	0.0000	OK
15 minute summer	271	9	123.284	0.134	34.2	0.2165	0.0000	OK
15 minute summer	272	9	122.888	0.138	37.3	0.1786	0.0000	OK
15 minute summer	290	9	123.306	0.056	5.6	0.0802	0.0000	OK
15 minute summer	291	9	123.268	0.118	23.3	0.2302	0.0000	OK
15 minute summer	292	9	123.050	0.100	27.4	0.1344	0.0000	OK
15 minute summer	273	9	122.623	0.148	65.4	0.1891	0.0000	OK
15 minute summer	274	9	122.208	0.133	75.1	0.2126	0.0000	OK
15 minute summer	275	9	121.247	0.172	88.0	0.3080	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	20.0	1.460	0.325	0.2937	
15 minute summer	203	10.003	204	19.5	1.312	0.251	0.6401	
15 minute summer	204	10.004	113	38.3	2.206	0.405	0.6511	
15 minute summer	113	1.014	114	596.8	2.818	0.530	1.8388	
15 minute summer	114	1.015	115	595.1	3.765	0.328	1.3927	
15 minute summer	115	1.016	116	595.8	3.354	0.282	2.4108	
15 minute summer	116	1.017	117	598.0	2.741	0.410	3.3721	
15 minute summer	210	11.000	211	7.3	0.661	0.164	0.1502	
15 minute summer	211	11.001	212	26.7	1.426	0.287	0.5881	
15 minute summer	212	11.002	213	37.6	1.616	0.575	0.3691	
15 minute summer	220	12.000	213	24.9	1.406	0.418	0.5412	
15 minute summer	213	11.003	214	71.8	1.894	0.372	1.7385	
15 minute summer	214	11.004	215	102.4	2.225	0.692	1.7622	
15 minute summer	215	11.005	117	123.9	2.071	0.492	1.1395	
15 minute summer	117	1.018	118	709.2	2.350	0.532	2.5913	
15 minute summer	118	Flow through pond	119	812.1	0.339	0.005	77.9433	
15 minute summer	270	15.000	271	25.0	1.232	0.394	0.4848	
15 minute summer	271	15.001	272	34.4	1.370	0.665	1.0144	
15 minute summer	272	15.002	273	35.6	1.495	0.589	0.3546	
15 minute summer	290	16.000	291	5.6	0.396	0.137	0.2314	
15 minute summer	291	16.002	292	23.3	1.223	0.518	0.5062	
15 minute summer	292	16.003	273	26.9	1.645	0.368	0.3319	
15 minute summer	273	15.003	274	64.7	2.010	0.343	0.4518	
15 minute summer	274	15.004	275	73.2	2.052	0.386	1.2395	
15 minute summer	275	15.005	277	83.8	1.913	0.546	1.2724	

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	277	10	120.719	0.194	86.8	0.2554	0.0000	OK
15 minute summer	278	10	120.344	0.193	92.1	0.3818	0.0000	OK
15 minute summer	279	10	120.006	0.206	94.7	0.3646	0.0000	OK
15 minute summer	300	9	122.257	0.057	8.7	0.0922	0.0000	OK
15 minute summer	301	9	121.829	0.079	15.2	0.1181	0.0000	OK
15 minute summer	302	9	121.542	0.117	23.0	0.1868	0.0000	OK
15 minute summer	303	9	121.429	0.154	32.1	0.2704	0.0000	OK
15 minute summer	304	10	121.210	0.085	30.5	0.0956	0.0000	OK
15 minute summer	280	10	119.801	0.276	132.0	0.7105	0.0000	OK
15 minute summer	281	11	118.935	0.235	126.3	0.0000	0.0000	OK
15 minute summer	282	11	117.655	0.205	126.6	0.0000	0.0000	OK
15 minute summer	283	11	115.820	0.237	128.2	0.0000	0.0000	OK
15 minute winter	119	12	115.731	0.431	791.6	0.0000	0.0000	OK
15 minute winter	240	12	115.193	0.193	668.3	0.0000	0.0000	OK
15 minute winter	241	12	114.363	0.363	670.2	0.0000	0.0000	OK
30 minute winter	250	43	113.956	0.404	541.4	0.0000	0.0000	OK
30 minute winter	251	42	113.956	0.406	353.2	0.0000	0.0000	OK
30 minute winter	260	40	113.957	0.457	20.0	1.5824	0.0000	SURCHARGED
15 minute summer	261	1	112.441	0.000	2.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	277	15.006	278	89.7	2.012	0.618	0.7875	
15 minute summer	278	15.007	279	94.7	1.586	0.531	2.6253	
15 minute summer	279	15.008	280	90.2	1.205	0.545	2.9916	
15 minute summer	300	17.000	301	8.7	0.872	0.140	0.3197	
15 minute summer	301	17.001	302	14.9	0.892	0.270	0.4841	
15 minute summer	302	17.002	303	22.2	0.888	0.489	0.4899	
15 minute summer	303	17.003	304	30.5	1.430	0.754	0.5235	
15 minute summer	304	17.004	280	30.1	2.103	0.304	0.7439	
15 minute summer	280	14.010	281	126.3	1.530	0.815	1.7146	
15 minute summer	281	Orifice	282	126.6				
15 minute summer	282	14.012	283	128.2	1.828	0.423	1.8898	
15 minute summer	283	Flow through pond	119	812.1	0.339	0.005	77.9433	
15 minute winter	119	1.021	240	668.3	4.519	0.904	3.8367	
15 minute winter	119	Infiltration		3.9				
15 minute winter	240	1.022	241	670.2	2.358	0.011	15.8627	
15 minute winter	241	1.023	250	663.2	3.756	0.704	3.7989	
30 minute winter	250	Flow through pond	251	353.2	0.086	0.010	417.3625	
30 minute winter	251	1.025	260	20.0	0.551	0.042	2.2156	
30 minute winter	251	Infiltration		4.8				
30 minute winter	260	Hydro-Brake®	261	2.6				39.1

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	100	10	125.061	0.261	40.0	0.6091	0.0000	SURCHARGED
15 minute summer	101	9	124.970	0.320	53.9	0.5382	0.0000	SURCHARGED
15 minute summer	102	9	124.817	0.367	86.4	0.8502	0.0000	SURCHARGED
15 minute summer	103	9	123.822	0.472	99.5	0.8535	0.0000	SURCHARGED
15 minute summer	104	9	122.586	0.161	103.5	0.2210	0.0000	OK
15 minute summer	120	10	124.358	0.358	35.0	0.7700	0.0000	SURCHARGED
15 minute summer	121	10	124.299	0.499	33.6	0.5930	0.0000	SURCHARGED
15 minute summer	130	9	124.651	0.050	8.3	0.0697	0.0000	OK
15 minute summer	131	9	124.249	0.049	10.1	0.0572	0.0000	OK
15 minute summer	122	10	124.241	0.591	62.1	0.9652	0.0000	SURCHARGED
15 minute summer	123	10	123.983	0.483	60.5	0.6993	0.0000	SURCHARGED
15 minute summer	124	10	123.644	0.694	93.8	1.4990	0.0000	SURCHARGED
15 minute summer	125	10	122.939	0.589	91.2	1.2265	0.0000	SURCHARGED
15 minute summer	126	10	122.506	0.331	88.7	0.5848	0.0000	SURCHARGED
15 minute summer	127	10	122.179	0.204	93.8	0.4027	0.0000	OK
15 minute summer	105	9	121.820	0.220	209.6	0.5026	0.0000	OK
15 minute summer	106	9	121.130	0.230	268.3	0.7787	0.0000	OK
15 minute summer	107	10	119.642	0.317	300.6	0.8687	0.0000	OK
15 minute summer	108	10	119.572	0.472	300.9	0.9145	0.0000	SURCHARGED
15 minute summer	140	9	121.073	0.073	21.2	0.1222	0.0000	OK
15 minute summer	141	9	120.416	0.191	73.1	0.4470	0.0000	OK
15 minute summer	150	10	120.868	0.018	0.2	0.0201	0.0000	OK
15 minute summer	151	9	120.857	0.207	51.0	0.5326	0.0000	OK
15 minute summer	152	9	120.699	0.349	84.1	0.7576	0.0000	SURCHARGED
15 minute summer	142	10	120.133	0.358	185.3	0.8887	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	100	1.000	101	35.5	1.075	0.863	0.9467	
15 minute summer	101	1.001	102	46.9	1.398	0.887	0.7698	
15 minute summer	102	1.002	103	76.6	2.200	0.925	1.7349	
15 minute summer	103	1.003	104	95.2	2.393	1.114	1.2593	
15 minute summer	104	1.004	105	102.9	2.778	0.514	0.8616	
15 minute summer	120	2.000	121	30.8	1.177	0.737	1.2217	
15 minute summer	121	2.001	122	31.2	0.798	0.677	0.7585	
15 minute summer	130	3.000	131	8.3	1.281	0.109	0.1206	
15 minute summer	131	3.001	122	10.1	0.364	0.104	0.3666	
15 minute summer	122	2.002	123	48.6	1.303	1.151	0.8991	
15 minute summer	123	2.003	124	60.8	1.610	0.792	1.0106	
15 minute summer	124	2.004	125	81.9	2.059	0.970	0.9111	
15 minute summer	125	2.005	126	88.7	2.231	1.695	0.3919	
15 minute summer	126	2.006	127	88.1	1.428	1.178	2.6583	
15 minute summer	127	2.007	105	93.3	1.950	0.695	0.9853	
15 minute summer	105	1.005	106	208.1	3.162	0.577	1.4983	
15 minute summer	106	1.006	107	262.4	3.779	0.672	2.7574	
15 minute summer	107	1.007	108	294.0	2.518	0.607	1.3968	
15 minute summer	108	1.008	109	293.4	2.521	0.550	1.6079	
15 minute summer	140	4.000	141	21.2	1.552	0.230	0.3521	
15 minute summer	141	4.001	142	73.4	1.631	0.659	1.3443	
15 minute summer	150	5.000	151	0.9	0.059	0.013	0.2276	
15 minute summer	151	5.001	152	46.7	1.304	0.822	0.9817	
15 minute summer	152	5.002	142	80.1	2.077	1.003	0.7226	
15 minute summer	142	4.002	143	181.8	1.737	0.733	2.6765	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	143	10	119.889	0.489	224.1	0.8642	0.0000	SURCHARGED
15 minute summer	144	10	119.678	0.578	245.2	1.4773	0.0000	SURCHARGED
15 minute summer	145	10	119.530	0.580	237.2	1.2428	0.0000	SURCHARGED
15 minute summer	109	10	119.406	0.731	585.8	2.1965	0.0000	SURCHARGED
15 minute summer	110	10	118.974	0.599	640.8	1.8405	0.0000	OK
15 minute summer	160	8	120.136	0.111	42.3	0.2591	0.0000	OK
15 minute summer	170	9	122.298	0.073	10.1	0.1033	0.0000	OK
15 minute summer	171	9	122.230	0.130	65.7	0.3630	0.0000	OK
15 minute summer	172	9	120.270	0.170	65.7	0.1924	0.0000	OK
15 minute summer	173	10	120.059	0.284	69.7	0.3416	0.0000	OK
15 minute summer	174	10	119.969	0.344	94.9	0.5192	0.0000	SURCHARGED
15 minute summer	175	10	119.780	0.355	119.6	0.5606	0.0000	SURCHARGED
15 minute summer	176	10	119.664	0.564	154.2	1.3461	0.0000	SURCHARGED
15 minute summer	180	9	121.888	0.088	17.5	0.1443	0.0000	OK
15 minute summer	181	9	121.516	0.116	30.8	0.1732	0.0000	OK
15 minute summer	182	9	120.818	0.068	30.5	0.0771	0.0000	OK
15 minute summer	190	9	120.145	0.145	32.2	0.2891	0.0000	OK
15 minute summer	191	9	119.981	0.181	38.0	0.2233	0.0000	OK
15 minute summer	183	10	119.868	0.243	81.6	0.3311	0.0000	OK
15 minute summer	184	10	119.810	0.335	107.2	0.7413	0.0000	SURCHARGED
15 minute summer	177	10	119.523	0.623	253.8	1.5172	0.0000	SURCHARGED
15 minute summer	111	10	118.696	0.721	877.5	1.5305	0.0000	SURCHARGED
15 minute summer	112	10	118.246	0.721	889.1	1.8996	0.0000	SURCHARGED
15 minute summer	200	9	120.677	0.077	15.2	0.1219	0.0000	OK
15 minute summer	201	9	120.553	0.103	22.6	0.1390	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	143	4.003	144	207.1	1.992	0.836	1.6268	
15 minute summer	144	4.004	145	221.1	1.539	0.979	4.8484	
15 minute summer	145	4.005	109	236.4	1.572	0.750	2.0859	
15 minute summer	109	1.009	110	566.3	2.124	1.086	14.6784	
15 minute summer	110	1.010	111	616.5	2.289	0.659	6.1123	
15 minute summer	160	6.000	143	42.3	1.854	0.451	0.4263	
15 minute summer	170	7.000	171	10.1	0.582	0.231	0.3071	
15 minute summer	171	7.001	172	65.7	2.358	0.638	1.4331	
15 minute summer	172	7.002	173	65.6	2.159	0.609	0.1899	
15 minute summer	173	7.003	174	68.7	1.052	0.674	1.2416	
15 minute summer	174	7.004	175	91.1	1.437	0.983	2.0168	
15 minute summer	175	7.005	176	112.8	1.923	0.783	1.0504	
15 minute summer	176	7.006	177	122.9	1.310	0.714	2.9746	
15 minute summer	180	8.000	181	17.5	0.998	0.330	0.6749	
15 minute summer	181	8.001	182	30.5	1.995	0.452	0.5957	
15 minute summer	182	8.002	183	30.2	2.061	0.201	0.2666	
15 minute summer	190	9.000	191	32.5	1.068	0.755	0.8881	
15 minute summer	191	9.001	183	37.1	1.136	0.861	0.4726	
15 minute summer	183	8.003	184	79.7	1.370	0.843	1.3615	
15 minute summer	184	8.004	177	97.3	1.514	0.785	2.8368	
15 minute summer	177	6.005	111	237.6	2.376	0.982	4.7284	
15 minute summer	111	1.011	112	853.2	2.398	0.832	13.4477	
15 minute summer	112	1.012	113	887.4	2.488	0.767	4.6371	
15 minute summer	200	10.000	201	15.2	1.027	0.246	0.1583	
15 minute summer	201	10.001	202	22.6	1.049	0.393	0.3521	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	9	120.387	0.137	37.8	0.2171	0.0000	OK
15 minute summer	203	9	120.060	0.110	38.0	0.1242	0.0000	OK
15 minute summer	204	9	119.161	0.161	77.1	0.3238	0.0000	OK
15 minute summer	113	10	117.957	0.632	949.6	1.1174	0.0000	OK
15 minute summer	114	10	117.671	0.471	954.1	0.8329	0.0000	OK
15 minute summer	115	10	117.339	0.464	965.1	0.9173	0.0000	OK
15 minute summer	116	10	116.978	0.778	986.0	1.8101	0.0000	SURCHARGED
15 minute summer	210	9	120.091	0.091	13.8	0.1417	0.0000	OK
15 minute summer	211	9	120.018	0.117	50.6	0.2341	0.0000	OK
15 minute summer	212	9	119.195	0.295	71.3	0.5180	0.0000	SURCHARGED
15 minute summer	220	9	119.211	0.161	47.3	0.4143	0.0000	OK
15 minute summer	213	9	118.766	0.191	131.2	0.3129	0.0000	OK
15 minute summer	214	10	117.906	0.705	192.4	1.9351	0.0000	SURCHARGED
15 minute summer	215	10	116.916	0.466	213.9	1.2445	0.0000	SURCHARGED
15 minute summer	117	10	116.617	0.842	1182.1	2.1424	0.0000	SURCHARGED
15 minute summer	118	10	116.337	0.754	1180.3	0.0000	0.0000	OK
15 minute summer	270	9	123.653	0.153	47.3	0.3799	0.0000	OK
15 minute summer	271	9	123.503	0.353	61.9	0.5687	0.0000	SURCHARGED
15 minute summer	272	10	123.000	0.250	62.4	0.3242	0.0000	SURCHARGED
15 minute summer	290	9	123.336	0.085	10.6	0.1228	0.0000	OK
15 minute summer	291	9	123.332	0.181	43.7	0.3544	0.0000	OK
15 minute summer	292	9	123.100	0.150	51.3	0.2017	0.0000	OK
15 minute summer	273	9	122.700	0.225	115.3	0.2876	0.0000	OK
15 minute summer	274	10	122.284	0.209	135.3	0.3341	0.0000	OK
15 minute summer	275	10	121.641	0.566	160.4	1.0149	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	38.0	1.703	0.617	0.4776	
15 minute summer	203	10.003	204	37.6	1.555	0.485	1.0673	
15 minute summer	204	10.004	113	74.7	2.474	0.792	1.1331	
15 minute summer	113	1.014	114	954.1	3.054	0.848	2.6688	
15 minute summer	114	1.015	115	959.7	3.898	0.530	2.3094	
15 minute summer	115	1.016	116	971.6	3.372	0.460	4.1318	
15 minute summer	116	1.017	117	983.5	2.755	0.674	5.1887	
15 minute summer	210	11.000	211	13.8	0.766	0.310	0.2441	
15 minute summer	211	11.001	212	50.6	1.627	0.543	0.9523	
15 minute summer	212	11.002	213	66.0	1.715	1.011	0.6184	
15 minute summer	220	12.000	213	47.3	1.615	0.794	0.8942	
15 minute summer	213	11.003	214	126.2	2.058	0.655	2.7029	
15 minute summer	214	11.004	215	167.1	2.373	1.129	2.6912	
15 minute summer	215	11.005	117	204.8	2.154	0.813	2.0915	
15 minute summer	117	1.018	118	1180.3	2.686	0.885	3.6595	
15 minute summer	118	Flow through pond	119	1217.6	0.409	0.007	163.8994	
15 minute summer	270	15.000	271	44.4	1.376	0.699	0.8063	
15 minute summer	271	15.001	272	56.9	1.466	1.100	1.6075	
15 minute summer	272	15.002	273	59.6	1.647	0.987	0.5725	
15 minute summer	290	16.000	291	10.1	0.447	0.247	0.3880	
15 minute summer	291	16.002	292	43.5	1.385	0.966	0.8303	
15 minute summer	292	16.003	273	51.5	1.829	0.703	0.5707	
15 minute summer	273	15.003	274	115.5	2.168	0.612	0.7426	
15 minute summer	274	15.004	275	132.4	2.084	0.697	2.1187	
15 minute summer	275	15.005	277	144.8	2.057	0.943	2.0374	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	277	10	120.984	0.459	148.9	0.6029	0.0000	SURCHARGED
15 minute summer	278	11	120.491	0.340	153.8	0.6717	0.0000	OK
15 minute summer	279	10	120.288	0.488	145.3	0.8619	0.0000	SURCHARGED
15 minute summer	300	9	122.279	0.079	16.6	0.1286	0.0000	OK
15 minute summer	301	9	121.864	0.114	29.0	0.1703	0.0000	OK
15 minute summer	302	10	121.730	0.305	44.3	0.4861	0.0000	SURCHARGED
15 minute summer	303	10	121.599	0.324	54.1	0.5681	0.0000	SURCHARGED
15 minute summer	304	10	121.241	0.115	52.0	0.1306	0.0000	OK
15 minute winter	280	11	120.033	0.508	214.4	1.3088	0.0000	SURCHARGED
15 minute winter	281	11	119.029	0.329	209.0	0.0000	0.0000	OK
15 minute winter	282	11	117.726	0.276	209.1	0.0000	0.0000	OK
15 minute winter	283	12	115.976	0.393	209.9	0.0000	0.0000	OK
15 minute winter	119	13	115.943	0.643	1232.0	0.0000	0.0000	SURCHARGED
30 minute summer	240	20	115.227	0.227	1031.5	0.0000	0.0000	OK
15 minute winter	241	14	114.557	0.557	1017.7	0.0000	0.0000	OK
30 minute winter	250	40	114.258	0.706	911.4	0.0000	0.0000	OK
30 minute winter	251	40	114.259	0.708	633.0	0.0000	0.0000	SURCHARGED
30 minute winter	260	40	114.259	0.759	26.4	2.6276	0.0000	SURCHARGED
15 minute summer	261	1	112.441	0.000	2.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	277	15.006	278	149.2	2.119	1.028	1.2278	
15 minute summer	278	15.007	279	145.3	1.744	0.814	4.7367	
15 minute summer	279	15.008	280	147.3	1.336	0.891	4.4304	
15 minute summer	300	17.000	301	16.6	1.034	0.267	0.5145	
15 minute summer	301	17.001	302	28.7	0.993	0.521	0.8697	
15 minute summer	302	17.002	303	37.3	0.937	0.821	0.7808	
15 minute summer	303	17.003	304	52.0	1.512	1.284	0.7416	
15 minute summer	304	17.004	280	52.3	2.029	0.528	1.2163	
15 minute winter	280	14.010	281	209.0	1.898	1.349	2.2152	
15 minute winter	281	Orifice	282	209.1				
15 minute winter	282	14.012	283	209.9	2.058	0.692	2.7474	
15 minute winter	283	Flow through pond	119	1232.0	0.417	0.007	180.2003	
15 minute winter	119	1.021	240	1019.6	4.989	1.379	4.9289	
15 minute winter	119	Infiltration		4.6				
30 minute summer	240	1.022	241	1030.5	2.322	0.017	28.7771	
15 minute winter	241	1.023	250	1008.3	4.009	1.070	5.9320	
30 minute winter	250	Flow through pond	251	633.0	0.107	0.017	808.1188	
30 minute winter	251	1.025	260	26.4	0.597	0.055	2.8824	
30 minute winter	251	Infiltration		6.5				
30 minute winter	260	Hydro-Brake®	261	2.6				33.5

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	100	10	126.242	1.442	62.3	3.3709	0.0000	FLOOD RISK
15 minute summer	101	10	126.106	1.456	65.5	2.4461	0.0622	FLOOD
15 minute summer	102	10	125.875	1.425	109.3	3.2993	0.0000	FLOOD RISK
15 minute summer	103	10	124.373	1.023	122.5	1.8490	0.0000	SURCHARGED
15 minute winter	104	11	122.609	0.184	125.1	0.2516	0.0000	OK
15 minute winter	120	11	125.382	1.382	48.5	2.9727	0.0000	FLOOD RISK
15 minute winter	121	11	125.302	1.502	37.9	1.7854	0.0000	SURCHARGED
15 minute winter	130	11	125.229	0.629	14.5	0.8679	0.0000	SURCHARGED
15 minute winter	131	11	125.229	1.029	17.7	1.2046	0.0000	SURCHARGED
15 minute winter	122	11	125.220	1.570	65.2	2.5651	0.0000	SURCHARGED
15 minute winter	123	11	124.861	1.361	68.5	1.9689	0.0000	SURCHARGED
15 minute winter	124	11	124.384	1.434	108.3	3.0987	0.0000	FLOOD RISK
15 minute winter	125	11	123.406	1.056	111.0	2.1992	0.0000	SURCHARGED
15 minute winter	126	11	122.824	0.649	109.4	1.1473	0.0000	SURCHARGED
15 minute winter	127	11	122.406	0.431	118.6	0.8509	0.0000	SURCHARGED
15 minute winter	105	11	122.139	0.538	259.7	1.2315	0.0000	SURCHARGED
15 minute winter	106	11	121.717	0.817	339.5	2.7646	0.0000	SURCHARGED
15 minute winter	107	11	120.786	1.461	365.7	4.0024	0.0000	FLOOD RISK
15 minute summer	108	10	120.650	1.550	342.1	3.0042	0.0000	FLOOD RISK
15 minute winter	140	11	121.445	0.445	29.3	0.7449	0.0000	SURCHARGED
15 minute winter	141	11	121.411	1.186	100.6	2.7809	0.0000	SURCHARGED
15 minute winter	150	11	122.004	1.154	14.6	1.3052	0.0000	SURCHARGED
15 minute winter	151	11	122.002	1.352	70.8	3.4733	0.0000	FLOOD RISK
15 minute winter	152	11	121.797	1.447	93.9	3.1388	0.0000	FLOOD RISK
15 minute winter	142	11	121.293	1.518	196.5	3.7654	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	100	1.000	101	37.4	1.058	0.909	0.9467	
15 minute summer	101	1.001	102	56.6	1.424	1.072	0.7698	
15 minute summer	102	1.002	103	92.8	2.333	1.121	1.7349	
15 minute summer	103	1.003	104	117.0	2.942	1.370	1.2590	
15 minute winter	104	1.004	105	122.6	2.812	0.612	1.3442	
15 minute winter	120	2.000	121	34.9	1.109	0.835	1.2217	
15 minute winter	121	2.001	122	28.9	0.768	0.629	0.7585	
15 minute winter	130	3.000	131	13.6	1.297	0.178	0.7395	
15 minute winter	131	3.001	122	20.9	0.525	0.215	0.6325	
15 minute winter	122	2.002	123	58.9	1.481	1.394	0.8991	
15 minute winter	123	2.003	124	69.2	1.740	0.902	1.0106	
15 minute winter	124	2.004	125	99.5	2.501	1.178	0.9111	
15 minute winter	125	2.005	126	109.4	2.750	2.090	0.3919	
15 minute winter	126	2.006	127	108.1	1.538	1.445	3.0835	
15 minute winter	127	2.007	105	118.2	2.033	0.880	1.4508	
15 minute winter	105	1.005	106	256.2	3.233	0.711	2.3944	
15 minute winter	106	1.006	107	315.3	3.677	0.807	4.3651	
15 minute winter	107	1.007	108	333.8	2.457	0.689	1.5931	
15 minute summer	108	1.008	109	344.4	2.469	0.645	1.6079	
15 minute winter	140	4.000	141	28.6	1.596	0.310	0.8898	
15 minute winter	141	4.001	142	77.1	1.573	0.692	2.1027	
15 minute winter	150	5.000	151	15.4	0.497	0.228	0.4728	
15 minute winter	151	5.001	152	51.2	1.315	0.902	1.0005	
15 minute winter	152	5.002	142	77.1	2.012	0.966	0.7226	
15 minute winter	142	4.002	143	174.0	1.748	0.701	2.6982	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	143	11	121.015	1.614	222.1	2.8528	0.0000	SURCHARGED
15 minute winter	144	11	120.759	1.659	256.2	4.2426	0.0000	SURCHARGED
15 minute summer	145	10	120.571	1.621	258.3	3.4744	0.0000	FLOOD RISK
15 minute summer	109	10	120.426	1.751	629.8	5.2579	0.0000	FLOOD RISK
15 minute winter	110	10	119.851	1.476	708.6	4.5357	0.0000	SURCHARGED
15 minute winter	160	11	121.110	1.085	58.7	2.5334	0.0000	SURCHARGED
15 minute summer	170	10	122.472	0.247	15.8	0.3492	0.0000	SURCHARGED
15 minute summer	171	10	122.459	0.359	101.1	1.0062	0.0000	SURCHARGED
15 minute winter	172	11	121.523	1.423	86.7	1.6092	0.0000	SURCHARGED
15 minute winter	173	11	121.345	1.570	67.5	1.8885	0.0000	SURCHARGED
15 minute winter	174	11	121.216	1.591	91.4	2.4031	0.0000	SURCHARGED
15 minute summer	175	10	120.965	1.540	141.3	2.4334	0.0000	SURCHARGED
15 minute summer	176	10	120.785	1.685	170.9	4.0215	0.0000	SURCHARGED
15 minute summer	180	9	121.914	0.114	27.2	0.1857	0.0000	OK
15 minute summer	181	9	121.554	0.154	48.1	0.2301	0.0000	OK
15 minute winter	182	11	121.112	0.362	43.3	0.4098	0.0000	SURCHARGED
15 minute winter	190	11	121.187	1.187	44.6	2.3674	0.0000	SURCHARGED
15 minute winter	191	11	121.117	1.317	49.3	1.6224	0.0000	SURCHARGED
15 minute winter	183	11	121.052	1.427	92.7	1.9421	0.0000	SURCHARGED
15 minute winter	184	11	120.935	1.459	100.7	3.2283	0.0000	SURCHARGED
15 minute winter	177	11	120.581	1.681	281.2	4.0909	0.0000	SURCHARGED
15 minute summer	111	10	119.461	1.486	999.2	3.1572	0.0000	SURCHARGED
15 minute summer	112	10	118.829	1.304	1055.7	3.4366	0.0000	SURCHARGED
15 minute summer	200	9	120.701	0.101	23.7	0.1600	0.0000	OK
15 minute summer	201	9	120.587	0.137	35.2	0.1846	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	143	4.003	144	206.5	2.027	0.834	1.6268	
15 minute winter	144	4.004	145	239.7	1.557	1.062	4.8484	
15 minute summer	145	4.005	109	257.7	1.639	0.818	2.0859	
15 minute summer	109	1.009	110	640.8	2.275	1.229	14.6847	
15 minute winter	110	1.010	111	702.4	2.494	0.751	6.1149	
15 minute winter	160	6.000	143	48.1	1.969	0.512	0.5847	
15 minute summer	170	7.000	171	14.6	0.618	0.334	0.7014	
15 minute summer	171	7.001	172	91.8	2.497	0.890	2.0399	
15 minute winter	172	7.002	173	65.6	2.118	0.609	0.2339	
15 minute winter	173	7.003	174	74.2	1.054	0.728	1.2542	
15 minute winter	174	7.004	175	94.3	1.402	1.017	2.0168	
15 minute summer	175	7.005	176	115.4	1.923	0.801	1.0504	
15 minute summer	176	7.006	177	149.6	1.356	0.869	2.9746	
15 minute summer	180	8.000	181	27.3	1.108	0.515	0.9444	
15 minute summer	181	8.001	182	48.8	2.071	0.722	1.1809	
15 minute winter	182	8.002	183	39.1	1.964	0.260	0.5070	
15 minute winter	190	9.000	191	41.6	1.086	0.966	1.1522	
15 minute winter	191	9.001	183	37.5	1.140	0.871	0.5768	
15 minute winter	183	8.003	184	76.0	1.297	0.804	1.4568	
15 minute winter	184	8.004	177	101.7	1.511	0.821	2.8368	
15 minute winter	177	6.005	111	278.7	2.527	1.152	4.7284	
15 minute summer	111	1.011	112	1000.3	2.802	0.975	13.4477	
15 minute summer	112	1.012	113	1051.2	2.945	0.908	4.6993	
15 minute summer	200	10.000	201	23.7	1.115	0.384	0.2267	
15 minute summer	201	10.001	202	35.3	1.122	0.613	0.5065	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	9	120.446	0.196	59.0	0.3097	0.0000	OK
15 minute summer	203	10	120.116	0.166	59.1	0.1879	0.0000	OK
15 minute summer	204	10	119.766	0.766	116.6	1.5425	0.0000	SURCHARGED
15 minute summer	113	10	118.435	1.110	1141.8	1.9618	0.0000	SURCHARGED
15 minute summer	114	10	118.035	0.835	1142.3	1.4761	0.0000	SURCHARGED
15 minute summer	115	10	117.737	0.862	1151.6	1.7050	0.0000	SURCHARGED
15 minute winter	116	11	117.366	1.166	1173.4	2.7138	0.0000	SURCHARGED
15 minute summer	210	10	120.507	0.507	21.5	0.7862	0.0000	SURCHARGED
15 minute summer	211	10	120.497	0.597	77.3	1.1893	0.0000	SURCHARGED
15 minute summer	212	10	120.155	1.254	98.8	2.2029	0.0000	FLOOD RISK
15 minute summer	220	10	120.092	1.042	73.7	2.6749	0.0000	SURCHARGED
15 minute summer	213	10	119.773	1.198	164.4	1.9673	0.0000	SURCHARGED
15 minute summer	214	10	118.924	1.724	245.7	4.7288	0.0000	FLOOD RISK
15 minute winter	215	10	117.366	0.916	266.0	2.4468	0.0000	SURCHARGED
15 minute winter	117	11	116.866	1.091	1431.2	2.7773	0.0000	SURCHARGED
15 minute winter	118	12	116.535	0.952	1430.2	0.0000	0.0000	OK
15 minute summer	270	10	124.580	1.080	73.7	2.6855	0.0000	SURCHARGED
15 minute summer	271	10	124.371	1.221	80.3	1.9686	0.0000	SURCHARGED
15 minute summer	272	10	123.715	0.965	75.0	1.2512	0.0000	SURCHARGED
15 minute summer	290	10	123.783	0.533	16.5	0.7660	0.0000	SURCHARGED
15 minute summer	291	10	123.773	0.623	59.8	1.2173	0.0000	SURCHARGED
15 minute summer	292	10	123.589	0.639	62.0	0.8566	0.0000	SURCHARGED
15 minute winter	273	11	123.379	0.904	132.4	1.1568	0.0000	SURCHARGED
15 minute winter	274	11	123.064	0.989	156.7	1.5810	0.0000	SURCHARGED
15 minute winter	275	10	122.414	1.339	178.6	2.4011	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	59.1	1.803	0.960	0.6984	
15 minute summer	203	10.003	204	55.1	1.500	0.711	1.5320	
15 minute summer	204	10.004	113	90.6	2.541	0.960	1.4926	
15 minute summer	113	1.014	114	1142.3	3.200	1.015	3.1050	
15 minute summer	114	1.015	115	1143.1	3.906	0.631	3.1253	
15 minute summer	115	1.016	116	1152.2	3.282	0.545	4.7703	
15 minute winter	116	1.017	117	1172.0	3.283	0.804	5.1887	
15 minute summer	210	11.000	211	20.1	0.773	0.450	0.5384	
15 minute summer	211	11.001	212	66.5	1.747	0.714	1.2474	
15 minute summer	212	11.002	213	77.0	1.936	1.178	0.6315	
15 minute summer	220	12.000	213	59.5	1.542	0.998	1.2142	
15 minute summer	213	11.003	214	142.7	2.067	0.740	3.2364	
15 minute summer	214	11.004	215	209.6	2.977	1.416	2.6912	
15 minute winter	215	11.005	117	261.0	2.366	1.035	2.0915	
15 minute winter	117	1.018	118	1430.2	3.250	1.072	3.7820	
15 minute winter	118	Flow through pond	119	1703.6	0.441	0.010	303.5440	
15 minute summer	270	15.000	271	53.1	1.373	0.837	0.9367	
15 minute summer	271	15.001	272	66.4	1.671	1.285	1.6075	
15 minute summer	272	15.002	273	67.2	1.691	1.113	0.5912	
15 minute summer	290	16.000	291	14.5	0.445	0.354	0.6411	
15 minute summer	291	16.002	292	49.8	1.322	1.106	1.0563	
15 minute summer	292	16.003	273	59.3	1.829	0.810	0.8064	
15 minute winter	273	15.003	274	129.3	2.106	0.685	0.9829	
15 minute winter	274	15.004	275	139.7	2.128	0.736	2.4292	
15 minute winter	275	15.005	277	159.4	2.264	1.038	2.0374	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	277	11	121.617	1.092	166.9	1.4343	0.0000	SURCHARGED
15 minute winter	278	11	121.018	0.868	173.4	1.7127	0.0000	SURCHARGED
15 minute winter	279	10	120.667	0.867	173.3	1.5318	0.0000	SURCHARGED
15 minute summer	300	9	122.300	0.100	25.8	0.1635	0.0000	OK
15 minute summer	301	10	122.270	0.520	45.2	0.7736	0.0000	SURCHARGED
15 minute summer	302	10	122.142	0.717	59.0	1.1410	0.0000	SURCHARGED
15 minute summer	303	10	121.897	0.622	73.7	1.0912	0.0000	SURCHARGED
15 minute summer	304	10	121.278	0.153	70.8	0.1730	0.0000	OK
15 minute winter	280	10	120.302	0.777	279.5	2.0031	0.0000	SURCHARGED
15 minute winter	281	10	119.098	0.398	278.1	0.0000	0.0000	OK
15 minute winter	282	11	117.789	0.339	278.0	0.0000	0.0000	OK
15 minute winter	283	14	116.167	0.583	276.6	0.0000	0.0000	OK
15 minute winter	119	15	116.156	0.856	1703.6	0.0000	0.0000	SURCHARGED
15 minute winter	240	16	115.237	0.237	1158.8	0.0000	0.0000	OK
30 minute winter	241	28	114.806	0.806	1144.1	0.0000	0.0000	SURCHARGED
30 minute winter	250	42	114.528	0.976	1114.1	0.0000	0.0000	OK
30 minute winter	251	42	114.528	0.978	715.4	0.0000	0.0000	SURCHARGED
30 minute winter	260	40	114.528	1.028	25.8	3.5601	0.0000	SURCHARGED
15 minute summer	261	1	112.441	0.000	2.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	277	15.006	278	165.5	2.351	1.141	1.2447	
15 minute winter	278	15.007	279	173.3	1.709	0.972	4.8494	
15 minute winter	279	15.008	280	174.9	1.586	1.058	4.4304	
15 minute summer	300	17.000	301	25.8	1.149	0.415	0.8963	
15 minute summer	301	17.001	302	34.7	0.963	0.629	1.1525	
15 minute summer	302	17.002	303	50.2	1.263	1.107	0.7808	
15 minute summer	303	17.003	304	70.8	1.894	1.749	0.8428	
15 minute summer	304	17.004	280	70.7	1.946	0.714	1.3822	
15 minute winter	280	14.010	281	278.1	2.522	1.794	2.2693	
15 minute winter	281	Orifice	282	278.0				
15 minute winter	282	14.012	283	276.6	2.161	0.912	3.4478	
15 minute winter	283	Flow through pond	119	1703.6	0.441	0.010	303.5440	
15 minute winter	119	1.021	240	1158.8	5.130	1.568	5.0145	
15 minute winter	119	Infiltration		5.3				
15 minute winter	240	1.022	241	1159.3	2.398	0.019	58.3057	
30 minute winter	241	1.023	250	1114.1	3.956	1.182	6.0287	
30 minute winter	250	Flow through pond	251	715.4	0.128	0.020	1264.7095	
30 minute winter	251	1.025	260	25.8	0.617	0.054	2.8824	
30 minute winter	251	Infiltration		9.8				
30 minute winter	260	Hydro-Brake®	261	2.6				38.5

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	100	9	126.242	1.442	64.7	3.3714	2.4479	FLOOD
15 minute winter	101	9	126.106	1.456	67.5	2.4461	1.7235	FLOOD
15 minute summer	102	9	125.902	1.452	121.9	3.3628	2.1852	FLOOD
15 minute winter	103	10	124.537	1.187	127.5	2.1451	0.0000	FLOOD RISK
15 minute winter	104	10	122.843	0.418	134.0	0.5729	0.0000	SURCHARGED
15 minute winter	120	10	125.490	1.490	56.5	3.2050	2.8514	FLOOD
15 minute winter	121	10	125.494	1.694	43.5	2.0138	0.0000	SURCHARGED
15 minute winter	130	10	125.533	0.933	13.4	1.2881	0.0000	SURCHARGED
15 minute winter	131	10	125.515	1.315	33.3	1.5393	0.0000	SURCHARGED
15 minute winter	122	10	125.487	1.837	77.4	3.0020	0.0000	SURCHARGED
15 minute winter	123	10	125.092	1.592	76.4	2.3033	0.0000	FLOOD RISK
15 minute winter	124	10	124.504	1.554	121.9	3.3582	3.5163	FLOOD
15 minute winter	125	11	123.685	1.335	120.2	2.7817	0.0000	FLOOD RISK
15 minute winter	126	11	123.161	0.986	112.7	1.7415	0.0000	SURCHARGED
15 minute winter	127	11	122.764	0.789	122.8	1.5575	0.0000	SURCHARGED
15 minute winter	105	11	122.491	0.891	255.9	2.0384	0.0000	SURCHARGED
15 minute winter	106	10	122.085	1.185	348.7	4.0068	0.0000	SURCHARGED
15 minute winter	107	10	121.026	1.701	373.6	4.6603	0.0000	FLOOD RISK
15 minute winter	108	10	120.859	1.759	370.5	3.4089	6.7169	FLOOD
15 minute winter	140	10	122.026	1.026	34.2	1.7166	0.0000	SURCHARGED
15 minute winter	141	10	121.961	1.736	117.6	4.0688	0.0000	FLOOD RISK
15 minute winter	150	10	122.235	1.385	17.0	1.5667	0.0000	FLOOD RISK
15 minute winter	151	10	122.194	1.544	82.6	3.9665	1.3797	FLOOD
15 minute winter	152	10	121.988	1.638	103.6	3.5528	3.1184	FLOOD
15 minute winter	142	10	121.712	1.937	203.2	4.8038	0.1211	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	100	1.000	101	37.7	1.048	0.916	0.9467	
15 minute winter	101	1.001	102	55.1	1.387	1.044	0.7698	
15 minute summer	102	1.002	103	90.6	2.278	1.094	1.7349	
15 minute winter	103	1.003	104	120.6	3.033	1.412	1.2597	
15 minute winter	104	1.004	105	128.5	2.788	0.642	1.6375	
15 minute winter	120	2.000	121	39.0	1.150	0.933	1.2217	
15 minute winter	121	2.001	122	34.2	0.861	0.743	0.7585	
15 minute winter	130	3.000	131	13.9	1.356	0.182	0.7395	
15 minute winter	131	3.001	122	21.5	0.561	0.222	0.6325	
15 minute winter	122	2.002	123	59.4	1.495	1.407	0.8991	
15 minute winter	123	2.003	124	75.0	1.887	0.978	1.0106	
15 minute winter	124	2.004	125	103.1	2.593	1.222	0.9111	
15 minute winter	125	2.005	126	112.7	2.833	2.152	0.3919	
15 minute winter	126	2.006	127	108.7	1.553	1.453	3.0835	
15 minute winter	127	2.007	105	122.2	2.049	0.910	1.4508	
15 minute winter	105	1.005	106	260.6	3.232	0.723	2.3944	
15 minute winter	106	1.006	107	312.8	3.750	0.801	4.3651	
15 minute winter	107	1.007	108	361.7	2.453	0.746	1.5931	
15 minute winter	108	1.008	109	345.7	2.403	0.648	1.6079	
15 minute winter	140	4.000	141	33.5	1.525	0.363	0.8898	
15 minute winter	141	4.001	142	86.1	1.627	0.773	2.1027	
15 minute winter	150	5.000	151	-17.0	-0.428	-0.252	0.4728	
15 minute winter	151	5.001	152	45.2	1.277	0.796	1.0005	
15 minute winter	152	5.002	142	81.7	2.061	1.023	0.7226	
15 minute winter	142	4.002	143	188.0	1.722	0.758	2.6982	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	143	10	121.381	1.981	238.7	3.5004	0.0000	FLOOD RISK
15 minute winter	144	10	121.065	1.964	277.8	5.0251	0.0000	FLOOD RISK
15 minute winter	145	10	120.810	1.860	299.7	3.9860	5.0675	FLOOD
15 minute winter	109	10	120.681	2.006	645.8	6.0234	0.0000	FLOOD RISK
15 minute winter	110	10	120.161	1.786	737.0	5.4875	0.0000	SURCHARGED
15 minute winter	160	10	121.553	1.528	68.4	3.5679	0.3629	FLOOD
15 minute summer	170	10	123.078	0.853	18.4	1.2075	0.0000	SURCHARGED
15 minute summer	171	10	123.048	0.948	118.3	2.6548	0.0000	SURCHARGED
15 minute winter	172	11	122.161	2.061	92.9	2.3312	0.0000	FLOOD RISK
15 minute winter	173	11	121.971	2.196	75.2	2.6417	0.0000	SURCHARGED
15 minute winter	174	11	121.831	2.206	102.6	3.3303	0.0000	SURCHARGED
15 minute winter	175	11	121.537	2.112	126.0	3.3375	0.0000	SURCHARGED
15 minute winter	176	10	121.324	2.224	175.4	5.3096	0.0000	SURCHARGED
15 minute summer	180	9	121.926	0.126	31.8	0.2059	0.0000	OK
15 minute winter	181	11	121.728	0.328	49.9	0.4881	0.0000	SURCHARGED
15 minute winter	182	11	121.585	0.835	53.1	0.9442	0.0000	SURCHARGED
15 minute winter	190	10	121.621	1.621	52.1	3.2339	1.3066	FLOOD
15 minute winter	191	11	121.572	1.771	44.5	2.1825	0.0000	SURCHARGED
15 minute winter	183	11	121.524	1.899	86.3	2.5839	0.0000	SURCHARGED
15 minute winter	184	11	121.414	1.939	112.8	4.2898	0.0000	SURCHARGED
15 minute winter	177	10	121.085	2.185	302.9	5.3185	0.0000	SURCHARGED
15 minute winter	111	10	119.776	1.801	1028.2	3.8249	0.0000	SURCHARGED
15 minute winter	112	10	119.109	1.584	1097.5	4.1730	0.0000	SURCHARGED
15 minute summer	200	9	120.713	0.113	27.6	0.1793	0.0000	OK
15 minute summer	201	10	120.698	0.248	41.0	0.3342	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	143	4.003	144	229.2	2.079	0.926	1.6268	
15 minute winter	144	4.004	145	279.2	1.763	1.237	4.8484	
15 minute winter	145	4.005	109	258.8	1.845	0.822	2.0859	
15 minute winter	109	1.009	110	646.2	2.295	1.240	14.6847	
15 minute winter	110	1.010	111	710.8	2.524	0.760	6.1149	
15 minute winter	160	6.000	143	50.7	1.941	0.541	0.5847	
15 minute summer	170	7.000	171	17.1	0.610	0.391	0.7014	
15 minute summer	171	7.001	172	100.5	2.530	0.975	2.0399	
15 minute winter	172	7.002	173	69.9	2.143	0.648	0.2339	
15 minute winter	173	7.003	174	77.9	1.107	0.765	1.2542	
15 minute winter	174	7.004	175	99.8	1.448	1.077	2.0168	
15 minute winter	175	7.005	176	124.8	1.956	0.866	1.0504	
15 minute winter	176	7.006	177	167.7	1.521	0.974	2.9746	
15 minute summer	180	8.000	181	31.9	1.155	0.602	1.0560	
15 minute winter	181	8.001	182	53.1	2.144	0.786	1.5376	
15 minute winter	182	8.002	183	44.6	1.971	0.297	0.5070	
15 minute winter	190	9.000	191	37.5	1.108	0.870	1.1522	
15 minute winter	191	9.001	183	40.6	1.224	0.942	0.5768	
15 minute winter	183	8.003	184	87.1	1.330	0.922	1.4568	
15 minute winter	184	8.004	177	108.1	1.535	0.872	2.8368	
15 minute winter	177	6.005	111	304.7	2.763	1.260	4.7284	
15 minute winter	111	1.011	112	1029.0	2.883	1.003	13.4477	
15 minute winter	112	1.012	113	1098.7	3.078	0.949	4.6993	
15 minute summer	200	10.000	201	27.6	1.119	0.446	0.2960	
15 minute summer	201	10.001	202	37.8	1.133	0.656	0.6501	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	10	120.653	0.403	65.4	0.6367	0.0000	SURCHARGED
15 minute summer	203	10	120.458	0.508	64.0	0.5749	0.0000	SURCHARGED
15 minute summer	204	10	120.100	1.100	122.9	2.2148	0.0000	SURCHARGED
15 minute winter	113	10	118.679	1.354	1191.7	2.3923	0.0000	SURCHARGED
15 minute winter	114	10	118.243	1.043	1192.2	1.8432	0.0000	SURCHARGED
15 minute winter	115	10	117.920	1.045	1204.1	2.0673	0.0000	SURCHARGED
15 minute winter	116	10	117.517	1.317	1234.9	3.0655	0.0000	SURCHARGED
15 minute summer	210	10	120.933	0.933	25.1	1.4466	0.0000	SURCHARGED
15 minute summer	211	10	120.908	1.008	90.0	2.0087	0.0000	SURCHARGED
15 minute winter	212	10	120.341	1.441	94.3	2.5304	1.3772	FLOOD
15 minute winter	220	10	120.486	1.436	76.6	3.6848	0.0151	FLOOD
15 minute winter	213	10	119.990	1.415	149.9	2.3232	0.0000	FLOOD RISK
15 minute summer	214	9	118.987	1.787	260.8	4.9017	4.3132	FLOOD
15 minute summer	215	9	117.509	1.059	289.8	2.8297	0.0000	SURCHARGED
15 minute winter	117	11	116.974	1.199	1498.7	3.0510	0.0000	SURCHARGED
15 minute winter	118	12	116.625	1.042	1495.8	0.0000	0.0000	OK
15 minute winter	270	10	125.019	1.519	76.6	3.7778	0.3506	FLOOD
15 minute winter	271	10	124.730	1.580	81.9	2.5470	1.0515	FLOOD
15 minute winter	272	11	124.156	1.406	76.2	1.8227	0.0000	FLOOD RISK
15 minute winter	290	11	124.295	1.044	17.1	1.4999	0.0000	SURCHARGED
15 minute winter	291	11	124.284	1.134	65.2	2.2140	0.0000	SURCHARGED
15 minute winter	292	11	124.083	1.133	68.5	1.5197	0.0000	SURCHARGED
15 minute winter	273	11	123.840	1.365	128.2	1.7457	0.0000	FLOOD RISK
15 minute winter	274	11	123.505	1.430	145.9	2.2846	0.0000	SURCHARGED
15 minute winter	275	11	122.787	1.712	176.5	3.0697	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	64.0	1.832	1.039	0.8516	
15 minute summer	203	10.003	204	52.8	1.425	0.682	1.7116	
15 minute summer	204	10.004	113	94.3	2.384	1.000	1.4926	
15 minute winter	113	1.014	114	1192.2	3.340	1.060	3.1050	
15 minute winter	114	1.015	115	1192.4	3.907	0.658	3.1253	
15 minute winter	115	1.016	116	1203.8	3.373	0.570	4.7703	
15 minute winter	116	1.017	117	1233.5	3.456	0.846	5.1887	
15 minute summer	210	11.000	211	23.2	0.746	0.519	0.5384	
15 minute summer	211	11.001	212	69.8	1.755	0.749	1.2474	
15 minute winter	212	11.002	213	77.5	1.949	1.186	0.6315	
15 minute winter	220	12.000	213	60.4	1.606	1.014	1.2142	
15 minute winter	213	11.003	214	150.7	2.141	0.782	3.2364	
15 minute summer	214	11.004	215	206.1	2.926	1.392	2.6912	
15 minute summer	215	11.005	117	282.7	2.563	1.122	2.0915	
15 minute winter	117	1.018	118	1495.8	3.399	1.121	3.7820	
15 minute winter	118	Flow through pond	119	1768.1	0.445	0.010	348.8657	
15 minute winter	270	15.000	271	54.8	1.377	0.863	0.9367	
15 minute winter	271	15.001	272	67.3	1.692	1.302	1.6075	
15 minute winter	272	15.002	273	66.6	1.674	1.102	0.5912	
15 minute winter	290	16.000	291	15.0	0.433	0.367	0.6411	
15 minute winter	291	16.002	292	55.9	1.414	1.242	1.0563	
15 minute winter	292	16.003	273	57.9	1.824	0.790	0.8064	
15 minute winter	273	15.003	274	124.7	2.138	0.661	0.9829	
15 minute winter	274	15.004	275	142.1	2.056	0.749	2.4292	
15 minute winter	275	15.005	277	168.5	2.393	1.097	2.0374	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	277	11	121.900	1.375	177.3	1.8071	0.0000	FLOOD RISK
15 minute winter	278	11	121.223	1.073	184.7	2.1164	0.0000	SURCHARGED
15 minute winter	279	10	120.822	1.022	185.1	1.8066	0.0000	SURCHARGED
15 minute summer	300	10	122.520	0.320	30.1	0.5222	0.0000	SURCHARGED
15 minute summer	301	10	122.474	0.724	50.5	1.0783	0.0000	SURCHARGED
15 minute summer	302	10	122.315	0.889	59.7	1.4160	0.0000	SURCHARGED
15 minute summer	303	10	122.021	0.746	86.2	1.3085	0.0000	SURCHARGED
15 minute summer	304	10	121.309	0.184	78.1	0.2078	0.0000	OK
15 minute winter	280	10	120.410	0.885	305.4	2.2812	0.0000	SURCHARGED
15 minute winter	281	10	119.123	0.423	304.6	0.0000	0.0000	OK
15 minute winter	282	10	117.818	0.368	304.5	0.0000	0.0000	OK
30 minute winter	283	24	116.258	0.675	267.3	0.0000	0.0000	OK
30 minute winter	119	24	116.235	0.935	1608.9	0.0000	0.0000	FLOOD RISK
30 minute winter	240	24	115.241	0.241	1210.2	0.0000	0.0000	OK
30 minute winter	241	31	114.959	0.959	1210.2	0.0000	0.0000	SURCHARGED
30 minute winter	250	42	114.637	1.085	1160.4	0.0000	0.0000	OK
30 minute winter	251	42	114.637	1.087	779.3	0.0000	0.0000	SURCHARGED
30 minute winter	260	42	114.637	1.137	32.7	3.9372	0.0000	SURCHARGED
15 minute summer	261	1	112.441	0.000	2.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	277	15.006	278	176.1	2.501	1.214	1.2447	
15 minute winter	278	15.007	279	185.1	1.754	1.038	4.8494	
15 minute winter	279	15.008	280	186.9	1.695	1.131	4.4304	
15 minute summer	300	17.000	301	27.9	1.082	0.448	1.2537	
15 minute summer	301	17.001	302	36.5	1.000	0.662	1.1525	
15 minute summer	302	17.002	303	54.1	1.360	1.192	0.7808	
15 minute summer	303	17.003	304	78.1	2.000	1.929	0.9164	
15 minute summer	304	17.004	280	78.6	2.007	0.794	1.5029	
15 minute winter	280	14.010	281	304.6	2.762	1.965	2.2693	
15 minute winter	281	Orifice	282	304.5				
15 minute winter	282	14.012	283	302.2	2.167	0.996	3.8041	
30 minute winter	283	Flow through pond	119	1608.9	0.414	0.009	356.6801	
30 minute winter	119	1.021	240	1210.2	5.333	1.637	5.0439	
30 minute winter	119	Infiltration		5.5				
30 minute winter	240	1.022	241	1210.2	2.296	0.020	91.2393	
30 minute winter	241	1.023	250	1160.4	4.120	1.231	6.0287	
30 minute winter	250	Flow through pond	251	776.3	0.133	0.021	1475.6096	
30 minute winter	251	1.025	260	32.7	0.681	0.068	2.8824	
30 minute winter	251	Infiltration		10.6				
30 minute winter	260	Hydro-Brake®	261	2.6				40.3

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	100	9	126.242	1.442	71.2	3.5444	3.1328	FLOOD
15 minute winter	101	9	126.106	1.456	70.1	2.5262	2.1722	FLOOD
15 minute winter	102	9	125.902	1.452	120.9	3.5342	3.4476	FLOOD
15 minute winter	103	10	124.699	1.349	127.8	2.5295	0.0000	FLOOD RISK
15 minute winter	104	10	123.013	0.588	138.9	0.8201	0.0000	SURCHARGED
15 minute winter	120	9	125.490	1.490	62.2	3.3570	6.6458	FLOOD
15 minute winter	121	10	125.537	1.737	43.3	2.0744	0.0000	SURCHARGED
15 minute winter	130	10	125.609	1.009	14.7	1.4176	0.0000	SURCHARGED
15 minute winter	131	10	125.592	1.392	21.0	1.6361	0.0000	SURCHARGED
15 minute winter	122	10	125.555	1.905	77.7	3.2105	0.0000	SURCHARGED
15 minute winter	123	10	125.166	1.666	79.0	2.4625	0.0000	FLOOD RISK
15 minute winter	124	9	124.504	1.554	133.6	3.5183	6.1167	FLOOD
15 minute winter	125	11	123.766	1.416	118.1	2.9940	0.0000	FLOOD RISK
15 minute winter	126	11	123.267	1.092	107.4	1.9303	0.0000	SURCHARGED
15 minute winter	127	10	122.889	0.913	115.5	1.8223	0.0000	SURCHARGED
15 minute winter	105	10	122.657	1.057	269.5	2.4713	0.0000	SURCHARGED
15 minute winter	106	10	122.221	1.321	369.2	4.6799	0.0000	SURCHARGED
15 minute winter	107	9	121.031	1.706	385.6	4.8399	1.5559	FLOOD
15 minute winter	108	9	120.859	1.759	375.9	3.4388	15.3988	FLOOD
15 minute winter	140	10	122.173	1.173	37.6	2.0265	0.0000	SURCHARGED
15 minute winter	141	10	122.077	1.852	123.8	4.5642	0.0000	FLOOD RISK
15 minute summer	150	9	122.280	1.430	11.5	1.6174	0.0000	FLOOD RISK
15 minute winter	151	9	122.194	1.544	99.1	4.1889	4.9374	FLOOD
15 minute winter	152	9	121.988	1.638	112.4	3.7232	6.5007	FLOOD
15 minute winter	142	10	121.712	1.937	218.2	4.9413	1.7780	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	100	1.000	101	37.4	1.065	0.910	0.9467	
15 minute winter	101	1.001	102	54.7	1.481	1.036	0.7698	
15 minute winter	102	1.002	103	89.2	2.244	1.078	1.7349	
15 minute winter	103	1.003	104	124.2	3.123	1.454	1.2597	
15 minute winter	104	1.004	105	130.0	2.785	0.649	1.6375	
15 minute winter	120	2.000	121	38.4	1.165	0.919	1.2217	
15 minute winter	121	2.001	122	28.7	0.736	0.622	0.7585	
15 minute winter	130	3.000	131	13.7	1.393	0.179	0.7395	
15 minute winter	131	3.001	122	18.5	0.465	0.190	0.6325	
15 minute winter	122	2.002	123	60.3	1.516	1.427	0.8991	
15 minute winter	123	2.003	124	80.1	2.014	1.044	1.0106	
15 minute winter	124	2.004	125	99.3	2.498	1.177	0.9111	
15 minute winter	125	2.005	126	107.4	2.700	2.052	0.3919	
15 minute winter	126	2.006	127	110.9	1.576	1.483	3.0835	
15 minute winter	127	2.007	105	129.1	2.034	0.962	1.4508	
15 minute winter	105	1.005	106	262.1	3.226	0.727	2.3944	
15 minute winter	106	1.006	107	332.1	3.680	0.850	4.3651	
15 minute winter	107	1.007	108	366.3	2.468	0.756	1.5931	
15 minute winter	108	1.008	109	346.1	2.305	0.649	1.6079	
15 minute winter	140	4.000	141	32.8	1.568	0.356	0.8898	
15 minute winter	141	4.001	142	109.9	1.561	0.987	2.1027	
15 minute summer	150	5.000	151	-11.5	-0.289	-0.170	0.4728	
15 minute winter	151	5.001	152	43.8	1.289	0.771	1.0005	
15 minute winter	152	5.002	142	83.8	2.176	1.050	0.7226	
15 minute winter	142	4.002	143	181.4	1.732	0.731	2.6982	

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	143	10	121.384	1.984	228.4	3.5062	0.0000	FLOOD RISK
15 minute winter	144	9	121.092	1.992	282.3	5.2526	0.0000	FLOOD RISK
15 minute winter	145	9	120.810	1.860	305.9	4.0567	12.1640	FLOOD
15 minute summer	109	9	120.714	2.039	631.1	6.3760	0.2372	FLOOD
15 minute winter	110	10	120.235	1.860	734.8	5.9566	0.0000	SURCHARGED
15 minute winter	160	10	121.553	1.528	75.3	3.7528	0.6817	FLOOD
15 minute winter	170	11	123.491	1.266	24.0	1.8264	0.0000	FLOOD RISK
15 minute winter	171	11	123.484	1.384	109.2	4.1054	0.0000	FLOOD RISK
15 minute winter	172	11	122.423	2.323	84.5	2.6273	0.4403	FLOOD
15 minute winter	173	11	122.243	2.468	80.8	2.9862	0.0000	FLOOD RISK
15 minute winter	174	10	122.112	2.487	105.9	3.8505	0.0000	SURCHARGED
15 minute winter	175	10	121.858	2.433	136.2	3.9529	0.0000	SURCHARGED
15 minute winter	176	10	121.638	2.538	183.3	6.2140	0.0000	SURCHARGED
15 minute winter	180	11	121.961	0.161	31.1	0.2717	0.0000	OK
15 minute summer	181	10	121.894	0.494	61.8	0.7544	0.0000	SURCHARGED
15 minute winter	182	10	121.747	0.997	49.3	1.1273	0.0000	SURCHARGED
15 minute winter	190	10	121.621	1.621	57.3	3.3733	5.1995	FLOOD
15 minute winter	191	10	121.668	1.868	48.7	2.3202	0.0000	SURCHARGED
15 minute winter	183	10	121.692	2.067	95.1	2.8603	0.0000	SURCHARGED
15 minute winter	184	10	121.639	2.164	123.2	4.8842	0.0000	SURCHARGED
15 minute winter	177	10	121.354	2.454	319.3	6.1338	0.0000	SURCHARGED
15 minute winter	111	10	119.874	1.899	1048.4	4.1021	0.0000	SURCHARGED
15 minute winter	112	10	119.208	1.682	1131.0	4.5797	0.0000	SURCHARGED
15 minute summer	200	10	120.919	0.319	30.4	0.5197	0.0000	SURCHARGED
15 minute summer	201	10	120.905	0.455	43.4	0.6237	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	143	4.003	144	231.2	2.096	0.934	1.6268	
15 minute winter	144	4.004	145	283.4	1.789	1.255	4.8484	
15 minute winter	145	4.005	109	256.9	1.687	0.816	2.0859	
15 minute summer	109	1.009	110	641.7	2.278	1.231	14.6847	
15 minute winter	110	1.010	111	722.6	2.566	0.772	6.1149	
15 minute winter	160	6.000	143	52.6	1.866	0.561	0.5847	
15 minute winter	170	7.000	171	18.6	0.639	0.425	0.7014	
15 minute winter	171	7.001	172	84.5	2.483	0.819	2.0399	
15 minute winter	172	7.002	173	75.0	2.160	0.696	0.2339	
15 minute winter	173	7.003	174	82.8	1.176	0.812	1.2542	
15 minute winter	174	7.004	175	107.2	1.523	1.157	2.0168	
15 minute winter	175	7.005	176	133.6	1.947	0.927	1.0504	
15 minute winter	176	7.006	177	182.5	1.655	1.060	2.9746	
15 minute winter	180	8.000	181	31.2	1.140	0.588	1.3495	
15 minute summer	181	8.001	182	55.7	2.172	0.825	1.5376	
15 minute winter	182	8.002	183	41.3	1.897	0.275	0.5070	
15 minute winter	190	9.000	191	41.0	1.114	0.951	1.1522	
15 minute winter	191	9.001	183	41.4	1.114	0.960	0.5768	
15 minute winter	183	8.003	184	84.8	1.316	0.897	1.4568	
15 minute winter	184	8.004	177	108.2	1.536	0.873	2.8368	
15 minute winter	177	6.005	111	317.3	2.877	1.312	4.7284	
15 minute winter	111	1.011	112	1035.3	2.900	1.010	13.4477	
15 minute winter	112	1.012	113	1113.4	3.119	0.962	4.6993	
15 minute summer	200	10.000	201	28.8	1.139	0.466	0.4241	
15 minute summer	201	10.001	202	40.3	1.149	0.701	0.6501	

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	202	10	120.854	0.604	70.7	0.9821	0.0000	SURCHARGED
15 minute summer	203	10	120.664	0.714	61.1	0.8079	0.0000	SURCHARGED
15 minute summer	204	10	120.314	1.314	134.0	2.7618	0.0000	SURCHARGED
15 minute winter	113	10	118.773	1.448	1207.1	2.5583	0.0000	SURCHARGED
15 minute winter	114	10	118.329	1.129	1203.7	1.9953	0.0000	SURCHARGED
15 minute winter	115	10	118.000	1.125	1216.6	2.2493	0.0000	SURCHARGED
15 minute winter	116	10	117.588	1.388	1250.7	3.3076	0.0000	SURCHARGED
15 minute summer	210	10	121.112	1.112	27.6	1.7712	0.0000	SURCHARGED
15 minute summer	211	10	121.075	1.175	86.7	2.4431	0.0000	SURCHARGED
15 minute winter	212	9	120.341	1.441	100.5	2.6197	4.5166	FLOOD
15 minute summer	220	9	120.486	1.436	94.7	3.8901	2.1972	FLOOD
15 minute summer	213	9	120.040	1.465	160.7	2.4804	0.0000	FLOOD RISK
15 minute winter	214	9	118.987	1.787	269.2	5.1894	6.9990	FLOOD
15 minute summer	215	9	117.581	1.131	293.1	3.1631	0.0000	SURCHARGED
30 minute winter	117	20	117.025	1.250	1422.6	3.1810	0.0000	SURCHARGED
30 minute winter	118	21	116.704	1.121	1420.0	0.0000	0.0000	OK
15 minute winter	270	10	125.019	1.519	84.3	3.9843	2.4056	FLOOD
15 minute winter	271	10	124.730	1.580	86.6	2.6228	3.0592	FLOOD
15 minute winter	272	10	124.208	1.458	78.7	1.9129	0.8058	FLOOD
15 minute winter	290	11	124.575	1.325	18.8	1.9426	0.0000	FLOOD RISK
15 minute winter	291	11	124.561	1.410	69.3	2.8703	0.0000	SURCHARGED
15 minute winter	292	11	124.291	1.341	66.5	1.8261	0.0000	FLOOD RISK
15 minute winter	273	10	123.976	1.501	125.8	1.9421	0.0000	FLOOD RISK
15 minute winter	274	10	123.667	1.592	149.4	2.6193	0.0000	FLOOD RISK
15 minute winter	275	10	122.919	1.844	183.1	3.4280	0.8338	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	202	10.002	203	61.1	1.808	0.993	0.8516	
15 minute summer	203	10.003	204	57.7	1.508	0.745	1.7116	
15 minute summer	204	10.004	113	98.5	2.478	1.044	1.4926	
15 minute winter	113	1.014	114	1203.7	3.372	1.070	3.1050	
15 minute winter	114	1.015	115	1203.7	3.787	0.664	3.1253	
15 minute winter	115	1.016	116	1216.5	3.408	0.576	4.7703	
15 minute winter	116	1.017	117	1250.8	3.504	0.858	5.1887	
15 minute summer	210	11.000	211	21.2	0.759	0.476	0.5384	
15 minute summer	211	11.001	212	72.2	1.815	0.775	1.2474	
15 minute winter	212	11.002	213	76.7	1.928	1.173	0.6315	
15 minute summer	220	12.000	213	60.4	1.562	1.015	1.2142	
15 minute summer	213	11.003	214	151.9	2.157	0.787	3.2364	
15 minute winter	214	11.004	215	203.8	2.895	1.377	2.6912	
15 minute summer	215	11.005	117	286.5	2.598	1.137	2.0915	
30 minute winter	117	1.018	118	1420.0	3.227	1.064	3.7820	
30 minute winter	118	Flow through pond	119	1545.7	0.419	0.009	401.8011	
15 minute winter	270	15.000	271	55.5	1.395	0.874	0.9367	
15 minute winter	271	15.001	272	68.9	1.733	1.333	1.6075	
15 minute winter	272	15.002	273	65.9	1.656	1.091	0.5912	
15 minute winter	290	16.000	291	13.7	0.453	0.337	0.6411	
15 minute winter	291	16.002	292	52.7	1.340	1.169	1.0563	
15 minute winter	292	16.003	273	58.4	1.832	0.798	0.8064	
15 minute winter	273	15.003	274	126.1	2.117	0.668	0.9829	
15 minute winter	274	15.004	275	144.1	2.084	0.759	2.4292	
15 minute winter	275	15.005	277	171.0	2.428	1.113	2.0374	

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	277	10	122.028	1.503	180.3	2.0016	0.0000	FLOOD RISK
15 minute winter	278	10	121.333	1.183	189.3	2.3580	0.0000	SURCHARGED
15 minute winter	279	10	120.906	1.106	189.2	1.9539	0.0000	SURCHARGED
15 minute summer	300	10	122.719	0.519	33.1	0.8730	0.0000	SURCHARGED
15 minute summer	301	10	122.659	0.909	55.4	1.3857	0.0000	SURCHARGED
15 minute summer	302	10	122.500	1.075	60.3	1.7603	0.0000	SURCHARGED
15 minute summer	303	10	122.190	0.915	91.2	1.6618	0.0000	SURCHARGED
15 minute winter	304	11	121.479	0.354	79.4	0.4004	0.0000	SURCHARGED
15 minute winter	280	10	120.460	0.935	316.8	2.4856	0.0000	SURCHARGED
15 minute winter	281	10	119.134	0.434	316.0	0.0000	0.0000	OK
15 minute winter	282	10	117.840	0.390	316.0	0.0000	0.0000	OK
30 minute winter	283	24	116.324	0.741	282.7	0.0000	0.0000	OK
30 minute winter	119	25	116.301	1.001	1545.7	0.0000	0.0000	FLOOD RISK
30 minute winter	240	25	115.244	0.244	1251.0	0.0000	0.0000	OK
30 minute winter	241	31	115.059	1.059	1251.1	0.0000	0.0000	SURCHARGED
30 minute winter	250	44	114.708	1.156	1167.2	0.0000	0.0000	OK
30 minute winter	251	44	114.708	1.158	766.8	0.0000	0.0000	SURCHARGED
30 minute winter	260	44	114.708	1.208	28.9	4.1830	0.0000	SURCHARGED
15 minute summer	261	1	112.441	0.000	2.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	277	15.006	278	179.0	2.542	1.234	1.2447	
15 minute winter	278	15.007	279	189.2	1.724	1.061	4.8494	
15 minute winter	279	15.008	280	190.8	1.730	1.154	4.4304	
15 minute summer	300	17.000	301	30.6	1.081	0.492	1.2537	
15 minute summer	301	17.001	302	39.0	1.024	0.708	1.1525	
15 minute summer	302	17.002	303	56.7	1.425	1.249	0.7808	
15 minute summer	303	17.003	304	80.2	2.081	1.981	0.9785	
15 minute winter	304	17.004	280	78.3	2.040	0.791	1.6049	
15 minute winter	280	14.010	281	316.0	2.866	2.039	2.2693	
15 minute winter	281	Orifice	282	316.0				
15 minute winter	282	14.012	283	314.7	2.160	1.037	3.9252	
30 minute winter	283	Flow through pond	119	1545.7	0.419	0.009	401.8011	
30 minute winter	119	1.021	240	1251.0	5.494	1.692	5.0671	
30 minute winter	119	Infiltration		5.8				
30 minute winter	240	1.022	241	1251.1	2.311	0.021	110.4113	
30 minute winter	241	1.023	250	1167.2	4.144	1.238	6.0287	
30 minute winter	250	Flow through pond	251	766.8	0.132	0.021	1619.1987	
30 minute winter	251	1.025	260	28.9	0.709	0.060	2.8824	
30 minute winter	251	Infiltration		11.0				
30 minute winter	260	Hydro-Brake®	261	2.7				41.4

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Summary of Results for 1 year Return Period

Half Drain Time : 10 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	125.328	0.028	2.3	1.8	O K
30 min Summer	125.330	0.030	2.5	1.9	O K
60 min Summer	125.328	0.028	2.3	1.8	O K
120 min Summer	125.324	0.024	2.0	1.5	O K
180 min Summer	125.321	0.021	1.7	1.3	O K
240 min Summer	125.318	0.018	1.5	1.1	O K
360 min Summer	125.315	0.015	1.2	0.9	O K
480 min Summer	125.313	0.013	1.0	0.8	O K
600 min Summer	125.311	0.011	0.9	0.7	O K
720 min Summer	125.310	0.010	0.8	0.6	O K
960 min Summer	125.309	0.009	0.7	0.5	O K
1440 min Summer	125.307	0.007	0.5	0.4	O K
2160 min Summer	125.305	0.005	0.4	0.3	O K
2880 min Summer	125.304	0.004	0.3	0.2	O K
4320 min Summer	125.303	0.003	0.2	0.2	O K
5760 min Summer	125.303	0.003	0.2	0.2	O K
7200 min Summer	125.302	0.002	0.2	0.1	O K
8640 min Summer	125.302	0.002	0.2	0.1	O K
10080 min Summer	125.302	0.002	0.1	0.1	O K
15 min Winter	125.331	0.031	2.6	2.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	13
30 min Summer	19.953	0.0	21
60 min Summer	12.584	0.0	38
120 min Summer	7.775	0.0	68
180 min Summer	5.837	0.0	100
240 min Summer	4.758	0.0	130
360 min Summer	3.551	0.0	190
480 min Summer	2.874	0.0	252
600 min Summer	2.438	0.0	312
720 min Summer	2.132	0.0	370
960 min Summer	1.725	0.0	492
1440 min Summer	1.280	0.0	734
2160 min Summer	0.951	0.0	1104
2880 min Summer	0.770	0.0	1468
4320 min Summer	0.571	0.0	2184
5760 min Summer	0.462	0.0	2856
7200 min Summer	0.392	0.0	3544
8640 min Summer	0.343	0.0	4408
10080 min Summer	0.307	0.0	5080
15 min Winter	30.708	0.0	13

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	125.332	0.032	2.7	2.0	O K
60 min Winter	125.329	0.029	2.4	1.8	O K
120 min Winter	125.322	0.022	1.8	1.4	O K
180 min Winter	125.318	0.018	1.5	1.1	O K
240 min Winter	125.316	0.016	1.2	1.0	O K
360 min Winter	125.312	0.012	1.0	0.8	O K
480 min Winter	125.310	0.010	0.8	0.6	O K
600 min Winter	125.309	0.009	0.7	0.5	O K
720 min Winter	125.308	0.008	0.6	0.5	O K
960 min Winter	125.306	0.006	0.5	0.4	O K
1440 min Winter	125.305	0.005	0.4	0.3	O K
2160 min Winter	125.304	0.004	0.3	0.2	O K
2880 min Winter	125.303	0.003	0.2	0.2	O K
4320 min Winter	125.302	0.002	0.2	0.1	O K
5760 min Winter	125.302	0.002	0.1	0.1	O K
7200 min Winter	125.302	0.002	0.1	0.1	O K
8640 min Winter	125.302	0.002	0.1	0.1	O K
10080 min Winter	125.301	0.001	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	22
60 min Winter	12.584	0.0	38
120 min Winter	7.775	0.0	72
180 min Winter	5.837	0.0	102
240 min Winter	4.758	0.0	132
360 min Winter	3.551	0.0	194
480 min Winter	2.874	0.0	254
600 min Winter	2.438	0.0	316
720 min Winter	2.132	0.0	376
960 min Winter	1.725	0.0	502
1440 min Winter	1.280	0.0	738
2160 min Winter	0.951	0.0	1092
2880 min Winter	0.770	0.0	1516
4320 min Winter	0.571	0.0	2140
5760 min Winter	0.462	0.0	3024
7200 min Winter	0.392	0.0	3856
8640 min Winter	0.343	0.0	4456
10080 min Winter	0.307	0.0	5088

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Summary of Results for 30 year Return Period

Half Drain Time : 11 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	125.367	0.067	4.9	4.4	O K
30 min Summer	125.372	0.072	5.0	4.8	O K
60 min Summer	125.367	0.067	4.9	4.5	O K
120 min Summer	125.353	0.053	4.5	3.5	O K
180 min Summer	125.345	0.045	3.9	2.9	O K
240 min Summer	125.339	0.039	3.4	2.5	O K
360 min Summer	125.332	0.032	2.7	2.0	O K
480 min Summer	125.327	0.027	2.2	1.7	O K
600 min Summer	125.324	0.024	1.9	1.5	O K
720 min Summer	125.321	0.021	1.7	1.3	O K
960 min Summer	125.317	0.017	1.4	1.1	O K
1440 min Summer	125.313	0.013	1.0	0.8	O K
2160 min Summer	125.310	0.010	0.8	0.6	O K
2880 min Summer	125.308	0.008	0.6	0.5	O K
4320 min Summer	125.306	0.006	0.4	0.3	O K
5760 min Summer	125.305	0.005	0.4	0.3	O K
7200 min Summer	125.304	0.004	0.3	0.2	O K
8640 min Summer	125.304	0.004	0.3	0.2	O K
10080 min Summer	125.303	0.003	0.2	0.2	O K
15 min Winter	125.375	0.075	5.1	5.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	75.330	0.0	13
30 min Summer	48.890	0.0	22
60 min Summer	30.340	0.0	38
120 min Summer	18.282	0.0	68
180 min Summer	13.454	0.0	98
240 min Summer	10.779	0.0	130
360 min Summer	7.859	0.0	190
480 min Summer	6.280	0.0	250
600 min Summer	5.274	0.0	310
720 min Summer	4.572	0.0	370
960 min Summer	3.646	0.0	492
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1100
2880 min Summer	1.529	0.0	1468
4320 min Summer	1.108	0.0	2160
5760 min Summer	0.880	0.0	2928
7200 min Summer	0.737	0.0	3656
8640 min Summer	0.637	0.0	4360
10080 min Summer	0.563	0.0	5096
15 min Winter	75.330	0.0	14

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	125.378	0.078	5.2	5.3	O K
60 min Winter	125.368	0.068	4.9	4.5	O K
120 min Winter	125.349	0.049	4.3	3.2	O K
180 min Winter	125.340	0.040	3.4	2.5	O K
240 min Winter	125.334	0.034	2.8	2.1	O K
360 min Winter	125.326	0.026	2.2	1.6	O K
480 min Winter	125.322	0.022	1.8	1.3	O K
600 min Winter	125.319	0.019	1.5	1.1	O K
720 min Winter	125.316	0.016	1.3	1.0	O K
960 min Winter	125.313	0.013	1.0	0.8	O K
1440 min Winter	125.310	0.010	0.8	0.6	O K
2160 min Winter	125.307	0.007	0.6	0.4	O K
2880 min Winter	125.306	0.006	0.4	0.3	O K
4320 min Winter	125.304	0.004	0.3	0.2	O K
5760 min Winter	125.304	0.004	0.3	0.2	O K
7200 min Winter	125.303	0.003	0.2	0.2	O K
8640 min Winter	125.303	0.003	0.2	0.2	O K
10080 min Winter	125.302	0.002	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	23
60 min Winter	30.340	0.0	40
120 min Winter	18.282	0.0	70
180 min Winter	13.454	0.0	102
240 min Winter	10.779	0.0	132
360 min Winter	7.859	0.0	192
480 min Winter	6.280	0.0	252
600 min Winter	5.274	0.0	314
720 min Winter	4.572	0.0	370
960 min Winter	3.646	0.0	480
1440 min Winter	2.649	0.0	718
2160 min Winter	1.922	0.0	1076
2880 min Winter	1.529	0.0	1452
4320 min Winter	1.108	0.0	2120
5760 min Winter	0.880	0.0	2888
7200 min Winter	0.737	0.0	3664
8640 min Winter	0.637	0.0	4416
10080 min Winter	0.563	0.0	5096

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 17 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	125.422	0.122	6.3	8.8	O K
30 min Summer	125.434	0.134	6.6	9.8	O K
60 min Summer	125.431	0.131	6.6	9.6	O K
120 min Summer	125.412	0.112	6.0	7.9	O K
180 min Summer	125.393	0.093	5.6	6.4	O K
240 min Summer	125.377	0.077	5.1	5.2	O K
360 min Summer	125.356	0.056	4.6	3.6	O K
480 min Summer	125.346	0.046	4.1	3.0	O K
600 min Summer	125.340	0.040	3.5	2.6	O K
720 min Summer	125.336	0.036	3.0	2.3	O K
960 min Summer	125.330	0.030	2.5	1.9	O K
1440 min Summer	125.323	0.023	1.8	1.4	O K
2160 min Summer	125.317	0.017	1.3	1.0	O K
2880 min Summer	125.314	0.014	1.1	0.8	O K
4320 min Summer	125.310	0.010	0.8	0.6	O K
5760 min Summer	125.308	0.008	0.6	0.5	O K
7200 min Summer	125.307	0.007	0.5	0.4	O K
8640 min Summer	125.306	0.006	0.4	0.3	O K
10080 min Summer	125.305	0.005	0.4	0.3	O K
15 min Winter	125.436	0.136	6.7	10.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	14
30 min Summer	89.559	0.0	23
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	72
180 min Summer	24.691	0.0	104
240 min Summer	19.711	0.0	134
360 min Summer	14.285	0.0	192
480 min Summer	11.371	0.0	250
600 min Summer	9.521	0.0	310
720 min Summer	8.231	0.0	370
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	734
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2204
5760 min Summer	1.528	0.0	2928
7200 min Summer	1.272	0.0	3608
8640 min Summer	1.095	0.0	4280
10080 min Summer	0.964	0.0	5136
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	125.447	0.147	7.0	11.0	O K
60 min Winter	125.439	0.139	6.8	10.3	O K
120 min Winter	125.410	0.110	6.0	7.8	O K
180 min Winter	125.383	0.083	5.3	5.7	O K
240 min Winter	125.363	0.063	4.8	4.2	O K
360 min Winter	125.345	0.045	3.9	2.9	O K
480 min Winter	125.337	0.037	3.1	2.3	O K
600 min Winter	125.332	0.032	2.7	2.0	O K
720 min Winter	125.328	0.028	2.3	1.8	O K
960 min Winter	125.323	0.023	1.8	1.4	O K
1440 min Winter	125.317	0.017	1.3	1.0	O K
2160 min Winter	125.312	0.012	1.0	0.8	O K
2880 min Winter	125.310	0.010	0.8	0.6	O K
4320 min Winter	125.307	0.007	0.6	0.4	O K
5760 min Winter	125.306	0.006	0.4	0.3	O K
7200 min Winter	125.305	0.005	0.4	0.3	O K
8640 min Winter	125.304	0.004	0.3	0.3	O K
10080 min Winter	125.304	0.004	0.3	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	24
60 min Winter	55.837	0.0	42
120 min Winter	33.645	0.0	76
180 min Winter	24.691	0.0	108
240 min Winter	19.711	0.0	138
360 min Winter	14.285	0.0	190
480 min Winter	11.371	0.0	254
600 min Winter	9.521	0.0	312
720 min Winter	8.231	0.0	376
960 min Winter	6.537	0.0	492
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1108
2880 min Winter	2.690	0.0	1480
4320 min Winter	1.933	0.0	2204
5760 min Winter	1.528	0.0	2840
7200 min Winter	1.272	0.0	3672
8640 min Winter	1.095	0.0	4296
10080 min Winter	0.964	0.0	5048

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.048

Time (mins) From:	To:	Area (ha)
0	4	0.048

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Model Details

Storage is Online Cover Level (m) 125.900

Infiltration Basin Structure

Invert Level (m) 125.300 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.57600 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.57600

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	60.0	0.600	224.0

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Summary of Results for 1 year Return Period

Half Drain Time : 8 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.571	0.071	1.8	1.0	O K
30 min Summer	124.573	0.073	1.8	1.1	O K
60 min Summer	124.566	0.066	1.7	0.9	O K
120 min Summer	124.552	0.052	1.5	0.7	O K
180 min Summer	124.545	0.045	1.2	0.6	O K
240 min Summer	124.540	0.040	1.0	0.5	O K
360 min Summer	124.534	0.034	0.8	0.4	O K
480 min Summer	124.529	0.029	0.7	0.4	O K
600 min Summer	124.526	0.026	0.6	0.3	O K
720 min Summer	124.524	0.024	0.5	0.3	O K
960 min Summer	124.520	0.020	0.4	0.2	O K
1440 min Summer	124.516	0.016	0.3	0.2	O K
2160 min Summer	124.512	0.012	0.2	0.1	O K
2880 min Summer	124.510	0.010	0.2	0.1	O K
4320 min Summer	124.508	0.008	0.1	0.1	O K
5760 min Summer	124.507	0.007	0.1	0.1	O K
7200 min Summer	124.506	0.006	0.1	0.1	O K
8640 min Summer	124.505	0.005	0.1	0.1	O K
10080 min Summer	124.505	0.005	0.1	0.1	O K
15 min Winter	124.577	0.077	1.9	1.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	13
30 min Summer	19.953	0.0	21
60 min Summer	12.584	0.0	36
120 min Summer	7.775	0.0	66
180 min Summer	5.837	0.0	96
240 min Summer	4.758	0.0	126
360 min Summer	3.551	0.0	188
480 min Summer	2.874	0.0	248
600 min Summer	2.438	0.0	308
720 min Summer	2.132	0.0	368
960 min Summer	1.725	0.0	488
1440 min Summer	1.280	0.0	734
2160 min Summer	0.951	0.0	1072
2880 min Summer	0.770	0.0	1460
4320 min Summer	0.571	0.0	2200
5760 min Summer	0.462	0.0	2896
7200 min Summer	0.392	0.0	3632
8640 min Summer	0.343	0.0	4400
10080 min Summer	0.307	0.0	4992
15 min Winter	30.708	0.0	13

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.576	0.076	1.8	1.1	O K
60 min Winter	124.564	0.064	1.6	0.9	O K
120 min Winter	124.547	0.047	1.3	0.6	O K
180 min Winter	124.539	0.039	1.0	0.5	O K
240 min Winter	124.534	0.034	0.8	0.4	O K
360 min Winter	124.528	0.028	0.6	0.3	O K
480 min Winter	124.523	0.023	0.5	0.3	O K
600 min Winter	124.521	0.021	0.4	0.3	O K
720 min Winter	124.518	0.018	0.4	0.2	O K
960 min Winter	124.516	0.016	0.3	0.2	O K
1440 min Winter	124.512	0.012	0.2	0.1	O K
2160 min Winter	124.509	0.009	0.2	0.1	O K
2880 min Winter	124.508	0.008	0.1	0.1	O K
4320 min Winter	124.506	0.006	0.1	0.1	O K
5760 min Winter	124.505	0.005	0.1	0.1	O K
7200 min Winter	124.504	0.004	0.1	0.0	O K
8640 min Winter	124.504	0.004	0.1	0.0	O K
10080 min Winter	124.503	0.003	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	22
60 min Winter	12.584	0.0	38
120 min Winter	7.775	0.0	68
180 min Winter	5.837	0.0	98
240 min Winter	4.758	0.0	128
360 min Winter	3.551	0.0	188
480 min Winter	2.874	0.0	250
600 min Winter	2.438	0.0	308
720 min Winter	2.132	0.0	374
960 min Winter	1.725	0.0	490
1440 min Winter	1.280	0.0	748
2160 min Winter	0.951	0.0	1080
2880 min Winter	0.770	0.0	1428
4320 min Winter	0.571	0.0	2128
5760 min Winter	0.462	0.0	2920
7200 min Winter	0.392	0.0	3632
8640 min Winter	0.343	0.0	4392
10080 min Winter	0.307	0.0	4968

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Summary of Results for 30 year Return Period

Half Drain Time : 11 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.650	0.150	3.1	2.8	O K
30 min Summer	124.657	0.157	3.3	3.0	O K
60 min Summer	124.648	0.148	3.1	2.8	O K
120 min Summer	124.624	0.124	2.7	2.2	O K
180 min Summer	124.604	0.104	2.3	1.7	O K
240 min Summer	124.589	0.089	2.1	1.4	O K
360 min Summer	124.567	0.067	1.7	1.0	O K
480 min Summer	124.554	0.054	1.5	0.7	O K
600 min Summer	124.547	0.047	1.3	0.6	O K
720 min Summer	124.542	0.042	1.1	0.6	O K
960 min Summer	124.536	0.036	0.9	0.5	O K
1440 min Summer	124.529	0.029	0.7	0.4	O K
2160 min Summer	124.522	0.022	0.5	0.3	O K
2880 min Summer	124.519	0.019	0.4	0.2	O K
4320 min Summer	124.514	0.014	0.3	0.2	O K
5760 min Summer	124.512	0.012	0.2	0.1	O K
7200 min Summer	124.510	0.010	0.2	0.1	O K
8640 min Summer	124.509	0.009	0.2	0.1	O K
10080 min Summer	124.508	0.008	0.1	0.1	O K
15 min Winter	124.663	0.163	3.4	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	75.330	0.0	13
30 min Summer	48.890	0.0	22
60 min Summer	30.340	0.0	38
120 min Summer	18.282	0.0	70
180 min Summer	13.454	0.0	100
240 min Summer	10.779	0.0	130
360 min Summer	7.859	0.0	190
480 min Summer	6.280	0.0	248
600 min Summer	5.274	0.0	308
720 min Summer	4.572	0.0	368
960 min Summer	3.646	0.0	490
1440 min Summer	2.649	0.0	730
2160 min Summer	1.922	0.0	1084
2880 min Summer	1.529	0.0	1468
4320 min Summer	1.108	0.0	2184
5760 min Summer	0.880	0.0	2880
7200 min Summer	0.737	0.0	3672
8640 min Summer	0.637	0.0	4400
10080 min Summer	0.563	0.0	5048
15 min Winter	75.330	0.0	14

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.667	0.167	3.4	3.3	O K
60 min Winter	124.651	0.151	3.2	2.8	O K
120 min Winter	124.617	0.117	2.5	2.0	O K
180 min Winter	124.591	0.091	2.1	1.4	O K
240 min Winter	124.573	0.073	1.8	1.1	O K
360 min Winter	124.550	0.050	1.4	0.7	O K
480 min Winter	124.543	0.043	1.1	0.6	O K
600 min Winter	124.538	0.038	1.0	0.5	O K
720 min Winter	124.534	0.034	0.8	0.4	O K
960 min Winter	124.529	0.029	0.7	0.4	O K
1440 min Winter	124.522	0.022	0.5	0.3	O K
2160 min Winter	124.517	0.017	0.4	0.2	O K
2880 min Winter	124.514	0.014	0.3	0.2	O K
4320 min Winter	124.511	0.011	0.2	0.1	O K
5760 min Winter	124.509	0.009	0.2	0.1	O K
7200 min Winter	124.507	0.007	0.1	0.1	O K
8640 min Winter	124.507	0.007	0.1	0.1	O K
10080 min Winter	124.506	0.006	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	23
60 min Winter	30.340	0.0	40
120 min Winter	18.282	0.0	72
180 min Winter	13.454	0.0	104
240 min Winter	10.779	0.0	134
360 min Winter	7.859	0.0	190
480 min Winter	6.280	0.0	248
600 min Winter	5.274	0.0	306
720 min Winter	4.572	0.0	370
960 min Winter	3.646	0.0	490
1440 min Winter	2.649	0.0	732
2160 min Winter	1.922	0.0	1096
2880 min Winter	1.529	0.0	1448
4320 min Winter	1.108	0.0	2164
5760 min Winter	0.880	0.0	2872
7200 min Winter	0.737	0.0	3672
8640 min Winter	0.637	0.0	4464
10080 min Winter	0.563	0.0	4952

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 15 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	124.731	0.231	4.7	5.5	O K
30 min Summer	124.745	0.245	4.9	6.0	O K
60 min Summer	124.738	0.238	4.8	5.8	O K
120 min Summer	124.711	0.211	4.3	4.7	O K
180 min Summer	124.686	0.186	3.8	3.9	O K
240 min Summer	124.665	0.165	3.4	3.3	O K
360 min Summer	124.633	0.133	2.8	2.4	O K
480 min Summer	124.610	0.110	2.4	1.8	O K
600 min Summer	124.593	0.093	2.1	1.5	O K
720 min Summer	124.579	0.079	1.9	1.2	O K
960 min Summer	124.560	0.060	1.6	0.8	O K
1440 min Summer	124.544	0.044	1.2	0.6	O K
2160 min Summer	124.535	0.035	0.9	0.4	O K
2880 min Summer	124.529	0.029	0.7	0.4	O K
4320 min Summer	124.522	0.022	0.5	0.3	O K
5760 min Summer	124.519	0.019	0.4	0.2	O K
7200 min Summer	124.516	0.016	0.3	0.2	O K
8640 min Summer	124.514	0.014	0.3	0.2	O K
10080 min Summer	124.513	0.013	0.3	0.2	O K
15 min Winter	124.749	0.249	5.0	6.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	136.827	0.0	14
30 min Summer	89.559	0.0	22
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	72
180 min Summer	24.691	0.0	102
240 min Summer	19.711	0.0	134
360 min Summer	14.285	0.0	194
480 min Summer	11.371	0.0	254
600 min Summer	9.521	0.0	314
720 min Summer	8.231	0.0	374
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	726
2160 min Summer	3.398	0.0	1088
2880 min Summer	2.690	0.0	1440
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2888
7200 min Summer	1.272	0.0	3552
8640 min Summer	1.095	0.0	4320
10080 min Summer	0.964	0.0	5048
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.761	0.261	5.2	6.7	O K
60 min Winter	124.748	0.248	5.0	6.1	O K
120 min Winter	124.708	0.208	4.2	4.6	O K
180 min Winter	124.674	0.174	3.6	3.5	O K
240 min Winter	124.647	0.147	3.1	2.7	O K
360 min Winter	124.609	0.109	2.4	1.8	O K
480 min Winter	124.584	0.084	2.0	1.3	O K
600 min Winter	124.567	0.067	1.7	1.0	O K
720 min Winter	124.554	0.054	1.5	0.7	O K
960 min Winter	124.544	0.044	1.2	0.6	O K
1440 min Winter	124.535	0.035	0.9	0.4	O K
2160 min Winter	124.527	0.027	0.6	0.3	O K
2880 min Winter	124.523	0.023	0.5	0.3	O K
4320 min Winter	124.517	0.017	0.4	0.2	O K
5760 min Winter	124.514	0.014	0.3	0.2	O K
7200 min Winter	124.512	0.012	0.2	0.1	O K
8640 min Winter	124.511	0.011	0.2	0.1	O K
10080 min Winter	124.510	0.010	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	24
60 min Winter	55.837	0.0	42
120 min Winter	33.645	0.0	76
180 min Winter	24.691	0.0	106
240 min Winter	19.711	0.0	138
360 min Winter	14.285	0.0	198
480 min Winter	11.371	0.0	256
600 min Winter	9.521	0.0	316
720 min Winter	8.231	0.0	372
960 min Winter	6.537	0.0	490
1440 min Winter	4.717	0.0	734
2160 min Winter	3.398	0.0	1080
2880 min Winter	2.690	0.0	1444
4320 min Winter	1.933	0.0	2152
5760 min Winter	1.528	0.0	2888
7200 min Winter	1.272	0.0	3624
8640 min Winter	1.095	0.0	4432
10080 min Winter	0.964	0.0	5056

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.031

Time (mins) From:	To:	Area (ha)
0	4	0.031

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Model Details

Storage is Online Cover Level (m) 125.300

Infiltration Basin Structure

Invert Level (m) 124.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.58320 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.58320

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	11.4	0.800	175.0

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Summary of Results for 1 year Return Period

Half Drain Time : 30 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.049	0.049	1.2	2.4	O K
30 min Summer	123.056	0.056	1.2	2.8	O K
60 min Summer	123.059	0.059	1.2	3.0	O K
120 min Summer	123.057	0.057	1.2	2.9	O K
180 min Summer	123.053	0.053	1.2	2.6	O K
240 min Summer	123.049	0.049	1.2	2.4	O K
360 min Summer	123.043	0.043	1.0	2.1	O K
480 min Summer	123.038	0.038	0.9	1.9	O K
600 min Summer	123.035	0.035	0.8	1.7	O K
720 min Summer	123.032	0.032	0.7	1.6	O K
960 min Summer	123.027	0.027	0.6	1.3	O K
1440 min Summer	123.022	0.022	0.5	1.1	O K
2160 min Summer	123.017	0.017	0.4	0.8	O K
2880 min Summer	123.014	0.014	0.3	0.7	O K
4320 min Summer	123.011	0.011	0.2	0.5	O K
5760 min Summer	123.009	0.009	0.2	0.4	O K
7200 min Summer	123.008	0.008	0.2	0.4	O K
8640 min Summer	123.007	0.007	0.1	0.3	O K
10080 min Summer	123.006	0.006	0.1	0.3	O K
15 min Winter	123.055	0.055	1.2	2.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	15
30 min Summer	19.953	0.0	24
60 min Summer	12.584	0.0	42
120 min Summer	7.775	0.0	76
180 min Summer	5.837	0.0	108
240 min Summer	4.758	0.0	138
360 min Summer	3.551	0.0	200
480 min Summer	2.874	0.0	262
600 min Summer	2.438	0.0	322
720 min Summer	2.132	0.0	384
960 min Summer	1.725	0.0	504
1440 min Summer	1.280	0.0	750
2160 min Summer	0.951	0.0	1104
2880 min Summer	0.770	0.0	1468
4320 min Summer	0.571	0.0	2204
5760 min Summer	0.462	0.0	2936
7200 min Summer	0.392	0.0	3672
8640 min Summer	0.343	0.0	4312
10080 min Summer	0.307	0.0	5144
15 min Winter	30.708	0.0	16

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.062	0.062	1.2	3.1	O K
60 min Winter	123.065	0.065	1.3	3.3	O K
120 min Winter	123.059	0.059	1.2	3.0	O K
180 min Winter	123.052	0.052	1.2	2.6	O K
240 min Winter	123.047	0.047	1.1	2.3	O K
360 min Winter	123.039	0.039	0.9	1.9	O K
480 min Winter	123.034	0.034	0.8	1.7	O K
600 min Winter	123.030	0.030	0.7	1.5	O K
720 min Winter	123.027	0.027	0.6	1.3	O K
960 min Winter	123.022	0.022	0.5	1.1	O K
1440 min Winter	123.017	0.017	0.4	0.8	O K
2160 min Winter	123.013	0.013	0.3	0.6	O K
2880 min Winter	123.011	0.011	0.2	0.5	O K
4320 min Winter	123.008	0.008	0.2	0.4	O K
5760 min Winter	123.007	0.007	0.1	0.3	O K
7200 min Winter	123.006	0.006	0.1	0.3	O K
8640 min Winter	123.005	0.005	0.1	0.2	O K
10080 min Winter	123.005	0.005	0.1	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	26
60 min Winter	12.584	0.0	46
120 min Winter	7.775	0.0	80
180 min Winter	5.837	0.0	112
240 min Winter	4.758	0.0	144
360 min Winter	3.551	0.0	206
480 min Winter	2.874	0.0	268
600 min Winter	2.438	0.0	332
720 min Winter	2.132	0.0	390
960 min Winter	1.725	0.0	512
1440 min Winter	1.280	0.0	750
2160 min Winter	0.951	0.0	1108
2880 min Winter	0.770	0.0	1428
4320 min Winter	0.571	0.0	2180
5760 min Winter	0.462	0.0	2936
7200 min Winter	0.392	0.0	3576
8640 min Winter	0.343	0.0	4440
10080 min Winter	0.307	0.0	5136

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Summary of Results for 30 year Return Period

Half Drain Time : 52 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.121	0.121	1.5	6.4	O K
30 min Summer	123.142	0.142	1.6	7.6	O K
60 min Summer	123.151	0.151	1.6	8.2	O K
120 min Summer	123.150	0.150	1.6	8.1	O K
180 min Summer	123.142	0.142	1.6	7.7	O K
240 min Summer	123.133	0.133	1.5	7.1	O K
360 min Summer	123.115	0.115	1.5	6.0	O K
480 min Summer	123.099	0.099	1.4	5.1	O K
600 min Summer	123.086	0.086	1.3	4.4	O K
720 min Summer	123.075	0.075	1.3	3.8	O K
960 min Summer	123.058	0.058	1.2	2.9	O K
1440 min Summer	123.044	0.044	1.0	2.1	O K
2160 min Summer	123.034	0.034	0.8	1.6	O K
2880 min Summer	123.028	0.028	0.6	1.3	O K
4320 min Summer	123.021	0.021	0.5	1.0	O K
5760 min Summer	123.017	0.017	0.4	0.8	O K
7200 min Summer	123.014	0.014	0.3	0.7	O K
8640 min Summer	123.012	0.012	0.3	0.6	O K
10080 min Summer	123.011	0.011	0.2	0.5	O K
15 min Winter	123.135	0.135	1.6	7.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	75.330	0.0	17
30 min Summer	48.890	0.0	31
60 min Summer	30.340	0.0	48
120 min Summer	18.282	0.0	82
180 min Summer	13.454	0.0	116
240 min Summer	10.779	0.0	150
360 min Summer	7.859	0.0	216
480 min Summer	6.280	0.0	278
600 min Summer	5.274	0.0	338
720 min Summer	4.572	0.0	398
960 min Summer	3.646	0.0	512
1440 min Summer	2.649	0.0	742
2160 min Summer	1.922	0.0	1104
2880 min Summer	1.529	0.0	1468
4320 min Summer	1.108	0.0	2204
5760 min Summer	0.880	0.0	2936
7200 min Summer	0.737	0.0	3664
8640 min Summer	0.637	0.0	4400
10080 min Summer	0.563	0.0	5120
15 min Winter	75.330	0.0	17

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.159	0.159	1.7	8.7	O K
60 min Winter	123.169	0.169	1.7	9.3	O K
120 min Winter	123.165	0.165	1.7	9.1	O K
180 min Winter	123.153	0.153	1.6	8.3	O K
240 min Winter	123.139	0.139	1.6	7.5	O K
360 min Winter	123.113	0.113	1.5	5.9	O K
480 min Winter	123.091	0.091	1.4	4.7	O K
600 min Winter	123.072	0.072	1.3	3.7	O K
720 min Winter	123.058	0.058	1.2	2.9	O K
960 min Winter	123.045	0.045	1.1	2.2	O K
1440 min Winter	123.034	0.034	0.8	1.7	O K
2160 min Winter	123.026	0.026	0.6	1.2	O K
2880 min Winter	123.021	0.021	0.5	1.0	O K
4320 min Winter	123.015	0.015	0.3	0.7	O K
5760 min Winter	123.012	0.012	0.3	0.6	O K
7200 min Winter	123.010	0.010	0.2	0.5	O K
8640 min Winter	123.009	0.009	0.2	0.4	O K
10080 min Winter	123.008	0.008	0.2	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	31
60 min Winter	30.340	0.0	52
120 min Winter	18.282	0.0	88
180 min Winter	13.454	0.0	126
240 min Winter	10.779	0.0	162
360 min Winter	7.859	0.0	228
480 min Winter	6.280	0.0	292
600 min Winter	5.274	0.0	350
720 min Winter	4.572	0.0	404
960 min Winter	3.646	0.0	512
1440 min Winter	2.649	0.0	752
2160 min Winter	1.922	0.0	1104
2880 min Winter	1.529	0.0	1472
4320 min Winter	1.108	0.0	2204
5760 min Winter	0.880	0.0	2976
7200 min Winter	0.737	0.0	3672
8640 min Winter	0.637	0.0	4488
10080 min Winter	0.563	0.0	5192

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 81 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.211	0.211	1.9	12.1	O K
30 min Summer	123.252	0.252	2.1	14.9	O K
60 min Summer	123.274	0.274	2.2	16.5	O K
120 min Summer	123.278	0.278	2.2	16.8	O K
180 min Summer	123.270	0.270	2.2	16.2	O K
240 min Summer	123.260	0.260	2.1	15.5	O K
360 min Summer	123.237	0.237	2.0	13.8	O K
480 min Summer	123.217	0.217	1.9	12.4	O K
600 min Summer	123.198	0.198	1.8	11.2	O K
720 min Summer	123.181	0.181	1.8	10.1	O K
960 min Summer	123.151	0.151	1.6	8.2	O K
1440 min Summer	123.106	0.106	1.4	5.5	O K
2160 min Summer	123.063	0.063	1.2	3.2	O K
2880 min Summer	123.047	0.047	1.1	2.3	O K
4320 min Summer	123.035	0.035	0.8	1.7	O K
5760 min Summer	123.028	0.028	0.6	1.4	O K
7200 min Summer	123.024	0.024	0.5	1.2	O K
8640 min Summer	123.021	0.021	0.5	1.0	O K
10080 min Summer	123.018	0.018	0.4	0.9	O K
15 min Winter	123.233	0.233	2.0	13.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	18
30 min Summer	89.559	0.0	31
60 min Summer	55.837	0.0	58
120 min Summer	33.645	0.0	88
180 min Summer	24.691	0.0	122
240 min Summer	19.711	0.0	158
360 min Summer	14.285	0.0	226
480 min Summer	11.371	0.0	292
600 min Summer	9.521	0.0	356
720 min Summer	8.231	0.0	420
960 min Summer	6.537	0.0	542
1440 min Summer	4.717	0.0	780
2160 min Summer	3.398	0.0	1128
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4328
10080 min Summer	0.964	0.0	5136
15 min Winter	136.827	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.279	0.279	2.2	16.9	O K
60 min Winter	123.305	0.305	2.3	18.9	O K
120 min Winter	123.308	0.308	2.3	19.1	O K
180 min Winter	123.297	0.297	2.3	18.2	O K
240 min Winter	123.282	0.282	2.2	17.1	O K
360 min Winter	123.250	0.250	2.1	14.8	O K
480 min Winter	123.221	0.221	1.9	12.7	O K
600 min Winter	123.194	0.194	1.8	10.9	O K
720 min Winter	123.171	0.171	1.7	9.4	O K
960 min Winter	123.131	0.131	1.5	7.0	O K
1440 min Winter	123.074	0.074	1.3	3.7	O K
2160 min Winter	123.044	0.044	1.0	2.2	O K
2880 min Winter	123.036	0.036	0.8	1.7	O K
4320 min Winter	123.026	0.026	0.6	1.3	O K
5760 min Winter	123.021	0.021	0.5	1.0	O K
7200 min Winter	123.018	0.018	0.4	0.8	O K
8640 min Winter	123.015	0.015	0.3	0.7	O K
10080 min Winter	123.014	0.014	0.3	0.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	31
60 min Winter	55.837	0.0	58
120 min Winter	33.645	0.0	94
180 min Winter	24.691	0.0	132
240 min Winter	19.711	0.0	170
360 min Winter	14.285	0.0	242
480 min Winter	11.371	0.0	310
600 min Winter	9.521	0.0	378
720 min Winter	8.231	0.0	442
960 min Winter	6.537	0.0	568
1440 min Winter	4.717	0.0	796
2160 min Winter	3.398	0.0	1108
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2196
5760 min Winter	1.528	0.0	2944
7200 min Winter	1.272	0.0	3696
8640 min Winter	1.095	0.0	4272
10080 min Winter	0.964	0.0	5072

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.052

Time (mins) From:	To:	Area (ha)
0	4	0.052

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Model Details

Storage is Online Cover Level (m) 123.600

Infiltration Basin Structure

Invert Level (m) 123.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.22356 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.22356

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	47.4	0.600	113.6

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Summary of Results for 1 year Return Period

Half Drain Time : 25 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.470	0.070	1.1	2.1	O K
30 min Summer	122.479	0.079	1.1	2.4	O K
60 min Summer	122.483	0.083	1.1	2.5	O K
120 min Summer	122.478	0.078	1.1	2.3	O K
180 min Summer	122.471	0.071	1.1	2.1	O K
240 min Summer	122.464	0.064	1.0	1.9	O K
360 min Summer	122.454	0.054	0.9	1.5	O K
480 min Summer	122.447	0.047	0.9	1.3	O K
600 min Summer	122.443	0.043	0.8	1.2	O K
720 min Summer	122.439	0.039	0.7	1.1	O K
960 min Summer	122.434	0.034	0.6	0.9	O K
1440 min Summer	122.427	0.027	0.4	0.7	O K
2160 min Summer	122.421	0.021	0.3	0.6	O K
2880 min Summer	122.418	0.018	0.3	0.5	O K
4320 min Summer	122.414	0.014	0.2	0.4	O K
5760 min Summer	122.411	0.011	0.2	0.3	O K
7200 min Summer	122.410	0.010	0.2	0.3	O K
8640 min Summer	122.409	0.009	0.1	0.2	O K
10080 min Summer	122.408	0.008	0.1	0.2	O K
15 min Winter	122.479	0.079	1.1	2.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	15
30 min Summer	19.953	0.0	24
60 min Summer	12.584	0.0	42
120 min Summer	7.775	0.0	74
180 min Summer	5.837	0.0	108
240 min Summer	4.758	0.0	138
360 min Summer	3.551	0.0	198
480 min Summer	2.874	0.0	256
600 min Summer	2.438	0.0	316
720 min Summer	2.132	0.0	378
960 min Summer	1.725	0.0	500
1440 min Summer	1.280	0.0	738
2160 min Summer	0.951	0.0	1104
2880 min Summer	0.770	0.0	1468
4320 min Summer	0.571	0.0	2188
5760 min Summer	0.462	0.0	2928
7200 min Summer	0.392	0.0	3672
8640 min Summer	0.343	0.0	4392
10080 min Summer	0.307	0.0	5136
15 min Winter	30.708	0.0	16

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.488	0.088	1.2	2.7	O K
60 min Winter	122.490	0.090	1.2	2.7	O K
120 min Winter	122.480	0.080	1.1	2.4	O K
180 min Winter	122.469	0.069	1.0	2.0	O K
240 min Winter	122.459	0.059	1.0	1.7	O K
360 min Winter	122.447	0.047	0.9	1.3	O K
480 min Winter	122.441	0.041	0.7	1.1	O K
600 min Winter	122.436	0.036	0.6	1.0	O K
720 min Winter	122.432	0.032	0.6	0.9	O K
960 min Winter	122.427	0.027	0.5	0.7	O K
1440 min Winter	122.421	0.021	0.3	0.6	O K
2160 min Winter	122.416	0.016	0.3	0.4	O K
2880 min Winter	122.413	0.013	0.2	0.3	O K
4320 min Winter	122.410	0.010	0.2	0.3	O K
5760 min Winter	122.408	0.008	0.1	0.2	O K
7200 min Winter	122.407	0.007	0.1	0.2	O K
8640 min Winter	122.406	0.006	0.1	0.2	O K
10080 min Winter	122.406	0.006	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	26
60 min Winter	12.584	0.0	44
120 min Winter	7.775	0.0	80
180 min Winter	5.837	0.0	112
240 min Winter	4.758	0.0	144
360 min Winter	3.551	0.0	200
480 min Winter	2.874	0.0	262
600 min Winter	2.438	0.0	324
720 min Winter	2.132	0.0	384
960 min Winter	1.725	0.0	500
1440 min Winter	1.280	0.0	742
2160 min Winter	0.951	0.0	1092
2880 min Winter	0.770	0.0	1476
4320 min Winter	0.571	0.0	2208
5760 min Winter	0.462	0.0	2896
7200 min Winter	0.392	0.0	3632
8640 min Winter	0.343	0.0	4384
10080 min Winter	0.307	0.0	5168

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Summary of Results for 30 year Return Period

Half Drain Time : 47 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.559	0.159	1.6	5.5	O K
30 min Summer	122.580	0.180	1.8	6.4	O K
60 min Summer	122.588	0.188	1.8	6.8	O K
120 min Summer	122.583	0.183	1.8	6.6	O K
180 min Summer	122.572	0.172	1.7	6.1	O K
240 min Summer	122.561	0.161	1.6	5.6	O K
360 min Summer	122.540	0.140	1.5	4.7	O K
480 min Summer	122.522	0.122	1.4	4.0	O K
600 min Summer	122.507	0.107	1.3	3.4	O K
720 min Summer	122.495	0.095	1.2	2.9	O K
960 min Summer	122.475	0.075	1.1	2.2	O K
1440 min Summer	122.451	0.051	0.9	1.5	O K
2160 min Summer	122.440	0.040	0.7	1.1	O K
2880 min Summer	122.433	0.033	0.6	0.9	O K
4320 min Summer	122.425	0.025	0.4	0.7	O K
5760 min Summer	122.420	0.020	0.3	0.5	O K
7200 min Summer	122.417	0.017	0.3	0.5	O K
8640 min Summer	122.415	0.015	0.2	0.4	O K
10080 min Summer	122.414	0.014	0.2	0.4	O K
15 min Winter	122.575	0.175	1.7	6.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	75.330	0.0	17
30 min Summer	48.890	0.0	29
60 min Summer	30.340	0.0	44
120 min Summer	18.282	0.0	80
180 min Summer	13.454	0.0	114
240 min Summer	10.779	0.0	146
360 min Summer	7.859	0.0	210
480 min Summer	6.280	0.0	272
600 min Summer	5.274	0.0	334
720 min Summer	4.572	0.0	394
960 min Summer	3.646	0.0	512
1440 min Summer	2.649	0.0	738
2160 min Summer	1.922	0.0	1100
2880 min Summer	1.529	0.0	1468
4320 min Summer	1.108	0.0	2204
5760 min Summer	0.880	0.0	2936
7200 min Summer	0.737	0.0	3656
8640 min Summer	0.637	0.0	4344
10080 min Summer	0.563	0.0	5072
15 min Winter	75.330	0.0	17

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.599	0.199	1.9	7.3	O K
60 min Winter	122.606	0.206	1.9	7.7	O K
120 min Winter	122.597	0.197	1.9	7.2	O K
180 min Winter	122.580	0.180	1.8	6.4	O K
240 min Winter	122.564	0.164	1.7	5.7	O K
360 min Winter	122.534	0.134	1.5	4.4	O K
480 min Winter	122.510	0.110	1.3	3.5	O K
600 min Winter	122.491	0.091	1.2	2.8	O K
720 min Winter	122.475	0.075	1.1	2.2	O K
960 min Winter	122.453	0.053	0.9	1.5	O K
1440 min Winter	122.440	0.040	0.7	1.1	O K
2160 min Winter	122.430	0.030	0.5	0.8	O K
2880 min Winter	122.425	0.025	0.4	0.7	O K
4320 min Winter	122.419	0.019	0.3	0.5	O K
5760 min Winter	122.415	0.015	0.2	0.4	O K
7200 min Winter	122.413	0.013	0.2	0.3	O K
8640 min Winter	122.411	0.011	0.2	0.3	O K
10080 min Winter	122.410	0.010	0.2	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	30
60 min Winter	30.340	0.0	48
120 min Winter	18.282	0.0	86
180 min Winter	13.454	0.0	122
240 min Winter	10.779	0.0	156
360 min Winter	7.859	0.0	222
480 min Winter	6.280	0.0	284
600 min Winter	5.274	0.0	344
720 min Winter	4.572	0.0	404
960 min Winter	3.646	0.0	512
1440 min Winter	2.649	0.0	746
2160 min Winter	1.922	0.0	1108
2880 min Winter	1.529	0.0	1472
4320 min Winter	1.108	0.0	2196
5760 min Winter	0.880	0.0	2888
7200 min Winter	0.737	0.0	3576
8640 min Winter	0.637	0.0	4280
10080 min Winter	0.563	0.0	5080

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 54 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.656	0.256	2.3	10.4	O K
30 min Summer	122.692	0.292	2.6	12.5	O K
60 min Summer	122.708	0.308	2.7	13.5	O K
120 min Summer	122.708	0.308	2.7	13.5	O K
180 min Summer	122.696	0.296	2.6	12.7	O K
240 min Summer	122.683	0.283	2.5	11.9	O K
360 min Summer	122.657	0.257	2.3	10.4	O K
480 min Summer	122.634	0.234	2.1	9.1	O K
600 min Summer	122.614	0.214	2.0	8.1	O K
720 min Summer	122.597	0.197	1.9	7.2	O K
960 min Summer	122.567	0.167	1.7	5.8	O K
1440 min Summer	122.523	0.123	1.4	4.0	O K
2160 min Summer	122.481	0.081	1.1	2.4	O K
2880 min Summer	122.456	0.056	1.0	1.6	O K
4320 min Summer	122.441	0.041	0.7	1.1	O K
5760 min Summer	122.433	0.033	0.6	0.9	O K
7200 min Summer	122.428	0.028	0.5	0.8	O K
8640 min Summer	122.425	0.025	0.4	0.7	O K
10080 min Summer	122.422	0.022	0.4	0.6	O K
15 min Winter	122.679	0.279	2.5	11.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	17
30 min Summer	89.559	0.0	31
60 min Summer	55.837	0.0	48
120 min Summer	33.645	0.0	82
180 min Summer	24.691	0.0	116
240 min Summer	19.711	0.0	150
360 min Summer	14.285	0.0	216
480 min Summer	11.371	0.0	280
600 min Summer	9.521	0.0	344
720 min Summer	8.231	0.0	406
960 min Summer	6.537	0.0	528
1440 min Summer	4.717	0.0	766
2160 min Summer	3.398	0.0	1124
2880 min Summer	2.690	0.0	1472
4320 min Summer	1.933	0.0	2184
5760 min Summer	1.528	0.0	2888
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4368
10080 min Summer	0.964	0.0	5120
15 min Winter	136.827	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.718	0.318	2.7	14.2	O K
60 min Winter	122.735	0.335	2.9	15.3	O K
120 min Winter	122.731	0.331	2.8	15.0	O K
180 min Winter	122.715	0.315	2.7	13.9	O K
240 min Winter	122.695	0.295	2.6	12.7	O K
360 min Winter	122.659	0.259	2.3	10.5	O K
480 min Winter	122.628	0.228	2.1	8.8	O K
600 min Winter	122.602	0.202	1.9	7.5	O K
720 min Winter	122.579	0.179	1.8	6.4	O K
960 min Winter	122.542	0.142	1.5	4.8	O K
1440 min Winter	122.491	0.091	1.2	2.8	O K
2160 min Winter	122.450	0.050	0.9	1.4	O K
2880 min Winter	122.441	0.041	0.7	1.1	O K
4320 min Winter	122.431	0.031	0.5	0.8	O K
5760 min Winter	122.425	0.025	0.4	0.7	O K
7200 min Winter	122.421	0.021	0.3	0.6	O K
8640 min Winter	122.419	0.019	0.3	0.5	O K
10080 min Winter	122.417	0.017	0.3	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	30
60 min Winter	55.837	0.0	50
120 min Winter	33.645	0.0	88
180 min Winter	24.691	0.0	126
240 min Winter	19.711	0.0	162
360 min Winter	14.285	0.0	230
480 min Winter	11.371	0.0	296
600 min Winter	9.521	0.0	360
720 min Winter	8.231	0.0	420
960 min Winter	6.537	0.0	542
1440 min Winter	4.717	0.0	780
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2168
5760 min Winter	1.528	0.0	2944
7200 min Winter	1.272	0.0	3576
8640 min Winter	1.095	0.0	4368
10080 min Winter	0.964	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.046

Time (mins) From:	To:	Area (ha)
0	4	0.046

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Model Details

Storage is Online Cover Level (m) 123.000

Infiltration Basin Structure

Invert Level (m) 122.400 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.25812 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.25812

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	26.0	0.600	116.8

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Summary of Results for 1 year Return Period

Half Drain Time : 4 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.822	0.022	3.7	0.9	O K
30 min Summer	122.821	0.021	3.5	0.9	O K
60 min Summer	122.817	0.017	2.9	0.7	O K
120 min Summer	122.813	0.013	2.1	0.5	O K
180 min Summer	122.810	0.010	1.7	0.4	O K
240 min Summer	122.809	0.009	1.4	0.4	O K
360 min Summer	122.807	0.007	1.1	0.3	O K
480 min Summer	122.806	0.006	0.9	0.2	O K
600 min Summer	122.805	0.005	0.8	0.2	O K
720 min Summer	122.804	0.004	0.7	0.2	O K
960 min Summer	122.804	0.004	0.6	0.1	O K
1440 min Summer	122.803	0.003	0.4	0.1	O K
2160 min Summer	122.802	0.002	0.4	0.1	O K
2880 min Summer	122.802	0.002	0.3	0.1	O K
4320 min Summer	122.801	0.001	0.2	0.0	O K
5760 min Summer	122.801	0.001	0.2	0.0	O K
7200 min Summer	122.801	0.001	0.2	0.0	O K
8640 min Summer	122.801	0.001	0.1	0.0	O K
10080 min Summer	122.801	0.001	0.1	0.0	O K
15 min Winter	122.823	0.023	4.0	0.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	12
30 min Summer	19.953	0.0	19
60 min Summer	12.584	0.0	34
120 min Summer	7.775	0.0	64
180 min Summer	5.837	0.0	94
240 min Summer	4.758	0.0	124
360 min Summer	3.551	0.0	186
480 min Summer	2.874	0.0	244
600 min Summer	2.438	0.0	308
720 min Summer	2.132	0.0	366
960 min Summer	1.725	0.0	484
1440 min Summer	1.280	0.0	712
2160 min Summer	0.951	0.0	1096
2880 min Summer	0.770	0.0	1456
4320 min Summer	0.571	0.0	2196
5760 min Summer	0.462	0.0	2984
7200 min Summer	0.392	0.0	3608
8640 min Summer	0.343	0.0	4320
10080 min Summer	0.307	0.0	4952
15 min Winter	30.708	0.0	12

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.820	0.020	3.5	0.8	O K
60 min Winter	122.816	0.016	2.6	0.6	O K
120 min Winter	122.810	0.010	1.7	0.4	O K
180 min Winter	122.808	0.008	1.3	0.3	O K
240 min Winter	122.807	0.007	1.1	0.3	O K
360 min Winter	122.805	0.005	0.8	0.2	O K
480 min Winter	122.804	0.004	0.7	0.2	O K
600 min Winter	122.804	0.004	0.6	0.1	O K
720 min Winter	122.803	0.003	0.5	0.1	O K
960 min Winter	122.803	0.003	0.4	0.1	O K
1440 min Winter	122.802	0.002	0.4	0.1	O K
2160 min Winter	122.802	0.002	0.3	0.1	O K
2880 min Winter	122.801	0.001	0.2	0.0	O K
4320 min Winter	122.801	0.001	0.2	0.0	O K
5760 min Winter	122.801	0.001	0.1	0.0	O K
7200 min Winter	122.801	0.001	0.1	0.0	O K
8640 min Winter	122.801	0.001	0.1	0.0	O K
10080 min Winter	122.801	0.001	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	20
60 min Winter	12.584	0.0	34
120 min Winter	7.775	0.0	66
180 min Winter	5.837	0.0	96
240 min Winter	4.758	0.0	124
360 min Winter	3.551	0.0	186
480 min Winter	2.874	0.0	242
600 min Winter	2.438	0.0	302
720 min Winter	2.132	0.0	364
960 min Winter	1.725	0.0	510
1440 min Winter	1.280	0.0	718
2160 min Winter	0.951	0.0	1020
2880 min Winter	0.770	0.0	1468
4320 min Winter	0.571	0.0	2124
5760 min Winter	0.462	0.0	2824
7200 min Winter	0.392	0.0	3592
8640 min Winter	0.343	0.0	3832
10080 min Winter	0.307	0.0	4336

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Summary of Results for 30 year Return Period

Half Drain Time : 4 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	122.849	0.049	9.4	2.1	O K
30 min Summer	122.847	0.047	8.9	2.0	O K
60 min Summer	122.839	0.039	7.1	1.6	O K
120 min Summer	122.828	0.028	5.0	1.2	O K
180 min Summer	122.823	0.023	3.9	0.9	O K
240 min Summer	122.819	0.019	3.2	0.8	O K
360 min Summer	122.815	0.015	2.5	0.6	O K
480 min Summer	122.812	0.012	1.9	0.5	O K
600 min Summer	122.810	0.010	1.7	0.4	O K
720 min Summer	122.809	0.009	1.4	0.4	O K
960 min Summer	122.807	0.007	1.2	0.3	O K
1440 min Summer	122.805	0.005	0.8	0.2	O K
2160 min Summer	122.804	0.004	0.7	0.2	O K
2880 min Summer	122.803	0.003	0.5	0.1	O K
4320 min Summer	122.802	0.002	0.4	0.1	O K
5760 min Summer	122.802	0.002	0.4	0.1	O K
7200 min Summer	122.802	0.002	0.3	0.1	O K
8640 min Summer	122.802	0.002	0.3	0.1	O K
10080 min Summer	122.801	0.001	0.2	0.1	O K
15 min Winter	122.853	0.053	9.7	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	75.330	0.0	11
30 min Summer	48.890	0.0	19
60 min Summer	30.340	0.0	34
120 min Summer	18.282	0.0	64
180 min Summer	13.454	0.0	94
240 min Summer	10.779	0.0	126
360 min Summer	7.859	0.0	186
480 min Summer	6.280	0.0	246
600 min Summer	5.274	0.0	306
720 min Summer	4.572	0.0	368
960 min Summer	3.646	0.0	486
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1096
2880 min Summer	1.529	0.0	1452
4320 min Summer	1.108	0.0	2124
5760 min Summer	0.880	0.0	2848
7200 min Summer	0.737	0.0	3744
8640 min Summer	0.637	0.0	4312
10080 min Summer	0.563	0.0	5112
15 min Winter	75.330	0.0	12

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.846	0.046	8.6	2.0	O K
60 min Winter	122.835	0.035	6.3	1.4	O K
120 min Winter	122.823	0.023	4.0	1.0	O K
180 min Winter	122.818	0.018	3.1	0.7	O K
240 min Winter	122.815	0.015	2.5	0.6	O K
360 min Winter	122.811	0.011	1.8	0.4	O K
480 min Winter	122.809	0.009	1.4	0.4	O K
600 min Winter	122.808	0.008	1.3	0.3	O K
720 min Winter	122.807	0.007	1.1	0.3	O K
960 min Winter	122.805	0.005	0.8	0.2	O K
1440 min Winter	122.804	0.004	0.7	0.2	O K
2160 min Winter	122.803	0.003	0.5	0.1	O K
2880 min Winter	122.802	0.002	0.4	0.1	O K
4320 min Winter	122.802	0.002	0.3	0.1	O K
5760 min Winter	122.802	0.002	0.3	0.1	O K
7200 min Winter	122.801	0.001	0.2	0.1	O K
8640 min Winter	122.801	0.001	0.2	0.0	O K
10080 min Winter	122.801	0.001	0.2	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	20
60 min Winter	30.340	0.0	36
120 min Winter	18.282	0.0	66
180 min Winter	13.454	0.0	94
240 min Winter	10.779	0.0	124
360 min Winter	7.859	0.0	186
480 min Winter	6.280	0.0	250
600 min Winter	5.274	0.0	318
720 min Winter	4.572	0.0	370
960 min Winter	3.646	0.0	472
1440 min Winter	2.649	0.0	724
2160 min Winter	1.922	0.0	1100
2880 min Winter	1.529	0.0	1476
4320 min Winter	1.108	0.0	2140
5760 min Winter	0.880	0.0	2920
7200 min Winter	0.737	0.0	3656
8640 min Winter	0.637	0.0	4744
10080 min Winter	0.563	0.0	5528

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 4 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.898	0.098	12.4	4.5	O K
30 min Summer	122.895	0.095	12.3	4.4	O K
60 min Summer	122.875	0.075	11.1	3.4	O K
120 min Summer	122.849	0.049	9.3	2.1	O K
180 min Summer	122.839	0.039	7.2	1.6	O K
240 min Summer	122.833	0.033	5.9	1.4	O K
360 min Summer	122.825	0.025	4.4	1.1	O K
480 min Summer	122.821	0.021	3.5	0.8	O K
600 min Summer	122.818	0.018	3.0	0.7	O K
720 min Summer	122.816	0.016	2.6	0.6	O K
960 min Summer	122.813	0.013	2.1	0.5	O K
1440 min Summer	122.809	0.009	1.5	0.4	O K
2160 min Summer	122.807	0.007	1.1	0.3	O K
2880 min Summer	122.806	0.006	0.9	0.2	O K
4320 min Summer	122.804	0.004	0.7	0.2	O K
5760 min Summer	122.803	0.003	0.5	0.1	O K
7200 min Summer	122.803	0.003	0.4	0.1	O K
8640 min Summer	122.802	0.002	0.4	0.1	O K
10080 min Summer	122.802	0.002	0.4	0.1	O K
15 min Winter	122.906	0.106	12.9	4.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	12
30 min Summer	89.559	0.0	20
60 min Summer	55.837	0.0	36
120 min Summer	33.645	0.0	64
180 min Summer	24.691	0.0	94
240 min Summer	19.711	0.0	124
360 min Summer	14.285	0.0	186
480 min Summer	11.371	0.0	246
600 min Summer	9.521	0.0	306
720 min Summer	8.231	0.0	364
960 min Summer	6.537	0.0	488
1440 min Summer	4.717	0.0	720
2160 min Summer	3.398	0.0	1092
2880 min Summer	2.690	0.0	1448
4320 min Summer	1.933	0.0	2136
5760 min Summer	1.528	0.0	2920
7200 min Summer	1.272	0.0	3544
8640 min Summer	1.095	0.0	4400
10080 min Summer	0.964	0.0	5112
15 min Winter	136.827	0.0	13

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.897	0.097	12.4	4.5	O K
60 min Winter	122.865	0.065	10.5	2.9	O K
120 min Winter	122.840	0.040	7.4	1.7	O K
180 min Winter	122.831	0.031	5.6	1.3	O K
240 min Winter	122.826	0.026	4.5	1.1	O K
360 min Winter	122.819	0.019	3.3	0.8	O K
480 min Winter	122.816	0.016	2.6	0.6	O K
600 min Winter	122.813	0.013	2.2	0.5	O K
720 min Winter	122.812	0.012	1.9	0.5	O K
960 min Winter	122.809	0.009	1.5	0.4	O K
1440 min Winter	122.807	0.007	1.1	0.3	O K
2160 min Winter	122.805	0.005	0.8	0.2	O K
2880 min Winter	122.804	0.004	0.7	0.2	O K
4320 min Winter	122.803	0.003	0.5	0.1	O K
5760 min Winter	122.802	0.002	0.4	0.1	O K
7200 min Winter	122.802	0.002	0.4	0.1	O K
8640 min Winter	122.802	0.002	0.3	0.1	O K
10080 min Winter	122.802	0.002	0.3	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	21
60 min Winter	55.837	0.0	36
120 min Winter	33.645	0.0	66
180 min Winter	24.691	0.0	96
240 min Winter	19.711	0.0	124
360 min Winter	14.285	0.0	186
480 min Winter	11.371	0.0	242
600 min Winter	9.521	0.0	314
720 min Winter	8.231	0.0	362
960 min Winter	6.537	0.0	476
1440 min Winter	4.717	0.0	742
2160 min Winter	3.398	0.0	1128
2880 min Winter	2.690	0.0	1496
4320 min Winter	1.933	0.0	2136
5760 min Winter	1.528	0.0	2832
7200 min Winter	1.272	0.0	3568
8640 min Winter	1.095	0.0	4352
10080 min Winter	0.964	0.0	5448

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.039

Time (mins) From:	To:	Area (ha)
0	4	0.039

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Model Details

Storage is Online Cover Level (m) 123.400

Infiltration Basin Structure

Invert Level (m) 122.800 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 1.82880 Porosity 1.00
Infiltration Coefficient Side (m/hr) 1.82880

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	39.4	0.600	159.8

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Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	2.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
IB 7	0.106	2.00	123.000	38.907	80.167	0.400
IB 8	0.047	2.00	122.300	49.450	58.873	0.650

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	IB 7	IB 8	23.761	0.600	122.600	121.650	0.950	25.0	150	2.20	50.0

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2880	7200
30	120	240	480	720	1440	5760	10080

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Node IB 7 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.87120	Safety Factor	3.0	Invert Level (m)	122.500
Side Inf Coefficient (m/hr)	0.87120	Porosity	1.00	Time to half empty (mins)	6

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	7.4	7.1	0.500	121.9	121.9

Node IB 8 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.12096	Safety Factor	3.0	Invert Level (m)	121.400
Side Inf Coefficient (m/hr)	0.12096	Porosity	1.00	Time to half empty (mins)	478

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	64.0	64.0	0.800	321.0	321.0

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Results for 1 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	IB 7	11	122.647	0.047	17.7	3.8132	0.0000	OK
60 minute winter	IB 8	53	121.495	-0.155	8.1	7.5705	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	IB 7	1.000	IB 8	7.6	1.611	0.213	0.1120
15 minute winter	IB 7	Infiltration		2.6			
60 minute winter	IB 8	Infiltration		0.9			

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	IB 7	10	122.702	0.102	43.3	6.7210	0.0000	OK
120 minute winter	IB 8	100	121.655	0.005	13.8	26.7734	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	IB 7	1.000	IB 8	28.8	2.254	0.805	0.3032
15 minute winter	IB 7	Infiltration		3.7			
120 minute winter	IB 8	Infiltration		1.5			

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	IB 7	11	122.791	0.191	78.7	12.8935	0.0000	FLOOD RISK
120 minute winter	IB 8	116	121.842	0.192	27.2	59.9657	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	IB 7	1.000	IB 8	37.4	2.263	1.047	0.4183
15 minute winter	IB 7	Infiltration		5.5			
120 minute winter	IB 8	Infiltration		2.2			

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Cascade Summary of Results for IB9 July 20 dc.SRCX

Upstream Structures	Outflow To	Overflow To
(None)	(None)	IB20 July 20.SRCX

Half Drain Time : 40 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	121.952	0.452	5.5	7.3	12.8	19.6	Flood Risk
30 min Summer	121.977	0.477	6.0	10.0	16.0	22.0	Flood Risk
60 min Summer	121.982	0.482	6.0	10.6	16.6	22.4	Flood Risk
120 min Summer	121.966	0.466	5.8	8.8	14.6	20.9	Flood Risk
180 min Summer	121.948	0.448	5.5	6.9	12.4	19.3	Flood Risk
240 min Summer	121.932	0.432	5.2	5.7	10.9	17.9	Flood Risk
360 min Summer	121.910	0.410	4.9	3.8	8.6	16.1	Flood Risk
480 min Summer	121.894	0.394	4.6	2.3	6.9	14.9	Flood Risk
600 min Summer	121.880	0.380	4.4	1.5	5.9	13.8	Flood Risk
720 min Summer	121.868	0.368	4.2	0.8	5.1	12.9	Flood Risk
960 min Summer	121.843	0.343	3.9	0.1	4.0	11.3	Flood Risk
1440 min Summer	121.789	0.289	3.1	0.0	3.1	8.1	Flood Risk
2160 min Summer	121.734	0.234	2.5	0.0	2.5	5.5	Flood Risk
2880 min Summer	121.697	0.197	2.0	0.0	2.0	4.1	O K
4320 min Summer	121.650	0.150	1.5	0.0	1.5	2.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	5.4	14
30 min Summer	89.559	0.0	9.8	22
60 min Summer	55.837	0.0	13.4	38
120 min Summer	33.645	0.0	14.1	70
180 min Summer	24.691	0.0	12.9	102
240 min Summer	19.711	0.0	11.5	134
360 min Summer	14.285	0.0	8.5	196
480 min Summer	11.371	0.0	5.9	258
600 min Summer	9.521	0.0	3.8	322
720 min Summer	8.231	0.0	2.2	386
960 min Summer	6.537	0.0	0.2	518
1440 min Summer	4.717	0.0	0.0	762
2160 min Summer	3.398	0.0	0.0	1124
2880 min Summer	2.690	0.0	0.0	1472
4320 min Summer	1.933	0.0	0.0	2204

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Cascade Summary of Results for IB9 July 20 dc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
5760 min Summer	121.620	0.120	1.2	0.0	1.2	1.8	O K
7200 min Summer	121.600	0.100	1.0	0.0	1.0	1.4	O K
8640 min Summer	121.582	0.082	0.9	0.0	0.9	1.1	O K
10080 min Summer	121.569	0.069	0.8	0.0	0.8	0.8	O K
15 min Winter	121.975	0.475	5.9	9.7	15.7	21.7	Flood Risk
30 min Winter	121.997	0.497	6.3	12.2	18.5	23.9	Flood Risk
60 min Winter	121.993	0.493	6.2	11.7	18.0	23.5	Flood Risk
120 min Winter	121.965	0.465	5.8	8.7	14.4	20.8	Flood Risk
180 min Winter	121.941	0.441	5.4	6.3	11.7	18.6	Flood Risk
240 min Winter	121.922	0.422	5.1	4.9	10.0	17.1	Flood Risk
360 min Winter	121.900	0.400	4.7	2.7	7.4	15.3	Flood Risk
480 min Winter	121.881	0.381	4.4	1.5	6.0	13.9	Flood Risk
600 min Winter	121.865	0.365	4.2	0.7	4.9	12.8	Flood Risk
720 min Winter	121.849	0.349	4.0	0.2	4.2	11.7	Flood Risk
960 min Winter	121.808	0.308	3.4	0.0	3.4	9.2	Flood Risk
1440 min Winter	121.745	0.245	2.6	0.0	2.6	6.0	Flood Risk
2160 min Winter	121.688	0.188	1.9	0.0	1.9	3.8	O K
2880 min Winter	121.652	0.152	1.5	0.0	1.5	2.6	O K
4320 min Winter	121.610	0.110	1.1	0.0	1.1	1.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
5760 min Summer	1.528	0.0	0.0	2936
7200 min Summer	1.272	0.0	0.0	3672
8640 min Summer	1.095	0.0	0.0	4384
10080 min Summer	0.964	0.0	0.0	5136
15 min Winter	136.827	0.0	7.4	15
30 min Winter	89.559	0.0	12.6	23
60 min Winter	55.837	0.0	16.9	40
120 min Winter	33.645	0.0	17.9	74
180 min Winter	24.691	0.0	16.1	106
240 min Winter	19.711	0.0	13.9	136
360 min Winter	14.285	0.0	9.3	200
480 min Winter	11.371	0.0	5.5	266
600 min Winter	9.521	0.0	2.6	332
720 min Winter	8.231	0.0	0.7	404
960 min Winter	6.537	0.0	0.0	530
1440 min Winter	4.717	0.0	0.0	766
2160 min Winter	3.398	0.0	0.0	1124
2880 min Winter	2.690	0.0	0.0	1472
4320 min Winter	1.933	0.0	0.0	2200

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Cascade Summary of Results for IB9 July 20 dc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
5760 min Winter	121.583	0.083	0.9	0.0	0.9	1.1	O K
7200 min Winter	121.564	0.064	0.7	0.0	0.7	0.8	O K
8640 min Winter	121.550	0.050	0.6	0.0	0.6	0.6	O K
10080 min Winter	121.546	0.046	0.6	0.0	0.6	0.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
5760 min Winter	1.528	0.0	0.0	2928
7200 min Winter	1.272	0.0	0.0	3632
8640 min Winter	1.095	0.0	0.0	4376
10080 min Winter	0.964	0.0	0.0	5128

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Cascade Rainfall Details for IB9 July 20 dc.SRCX

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.098

Time (mins) From:	To:	Area (ha)
0	4	0.098

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Cascade Model Details for IB9 July 20 dc.SRCX

Storage is Online Cover Level (m) 122.000

Infiltration Basin Structure

Invert Level (m) 121.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.34992 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.34992

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	8.9	0.200	36.2	0.400	77.0
0.100	20.1	0.300	55.0	0.500	102.0

Pipe Overflow Control

Diameter (m) 0.150 Entry Loss Coefficient 0.500
Slope (1:X) 80.0 Coefficient of Contraction 0.600
Length (m) 5.000 Upstream Invert Level (m) 121.830
Roughness k (mm) 0.600

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Cascade Summary of Results for IB20 July 20.SRCX

Upstream Structures	Outflow To	Overflow To
IB9 July 20 dc.SRCX	(None)	(None)

Half Drain Time : 28 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	121.179	0.179	5.2	9.7	Flood Risk
30 min Summer	121.219	0.219	6.3	13.6	Flood Risk
60 min Summer	121.235	0.235	6.8	15.3	Flood Risk
120 min Summer	121.229	0.229	6.6	14.6	Flood Risk
180 min Summer	121.213	0.213	6.2	12.9	Flood Risk
240 min Summer	121.194	0.194	5.6	11.1	Flood Risk
360 min Summer	121.156	0.156	4.6	7.8	Flood Risk
480 min Summer	121.124	0.124	3.7	5.5	Flood Risk
600 min Summer	121.097	0.097	3.1	3.9	Flood Risk
720 min Summer	121.074	0.074	2.5	2.7	Flood Risk
960 min Summer	121.049	0.049	1.9	1.6	Flood Risk
1440 min Summer	121.039	0.039	1.4	1.2	Flood Risk
2160 min Summer	121.030	0.030	1.0	0.9	Flood Risk
2880 min Summer	121.025	0.025	0.8	0.7	Flood Risk
4320 min Summer	121.019	0.019	0.6	0.5	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	136.827	0.0	20
30 min Summer	89.559	0.0	33
60 min Summer	55.837	0.0	54
120 min Summer	33.645	0.0	86
180 min Summer	24.691	0.0	118
240 min Summer	19.711	0.0	150
360 min Summer	14.285	0.0	212
480 min Summer	11.371	0.0	274
600 min Summer	9.521	0.0	334
720 min Summer	8.231	0.0	394
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	734
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2164

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Cascade Summary of Results for IB20 July 20.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
5760 min Summer	121.016	0.016	0.5	0.4	Flood Risk
7200 min Summer	121.014	0.014	0.4	0.4	Flood Risk
8640 min Summer	121.012	0.012	0.3	0.3	Flood Risk
10080 min Summer	121.011	0.011	0.3	0.3	Flood Risk
15 min Winter	121.201	0.201	5.8	11.7	Flood Risk
30 min Winter	121.245	0.245	7.1	16.4	Flood Risk
60 min Winter	121.262	0.262	7.6	18.6	Flood Risk
120 min Winter	121.249	0.249	7.2	16.9	Flood Risk
180 min Winter	121.224	0.224	6.5	14.1	Flood Risk
240 min Winter	121.196	0.196	5.7	11.3	Flood Risk
360 min Winter	121.143	0.143	4.2	6.8	Flood Risk
480 min Winter	121.103	0.103	3.2	4.2	Flood Risk
600 min Winter	121.070	0.070	2.4	2.5	Flood Risk
720 min Winter	121.048	0.048	1.9	1.6	Flood Risk
960 min Winter	121.039	0.039	1.4	1.2	Flood Risk
1440 min Winter	121.031	0.031	1.0	0.9	Flood Risk
2160 min Winter	121.024	0.024	0.8	0.7	Flood Risk
2880 min Winter	121.019	0.019	0.6	0.6	Flood Risk
4320 min Winter	121.015	0.015	0.4	0.4	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
5760 min Summer	1.528	0.0	2880
7200 min Summer	1.272	0.0	3616
8640 min Summer	1.095	0.0	4384
10080 min Summer	0.964	0.0	5056
15 min Winter	136.827	0.0	21
30 min Winter	89.559	0.0	33
60 min Winter	55.837	0.0	56
120 min Winter	33.645	0.0	90
180 min Winter	24.691	0.0	124
240 min Winter	19.711	0.0	156
360 min Winter	14.285	0.0	222
480 min Winter	11.371	0.0	282
600 min Winter	9.521	0.0	344
720 min Winter	8.231	0.0	398
960 min Winter	6.537	0.0	492
1440 min Winter	4.717	0.0	734
2160 min Winter	3.398	0.0	1092
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2184

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Cascade Summary of Results for IB20 July 20.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
5760 min Winter	121.012	0.012	0.3	0.3	Flood Risk
7200 min Winter	121.010	0.010	0.3	0.3	Flood Risk
8640 min Winter	121.009	0.009	0.2	0.2	Flood Risk
10080 min Winter	121.008	0.008	0.2	0.2	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
5760 min Winter	1.528	0.0	2936
7200 min Winter	1.272	0.0	3576
8640 min Winter	1.095	0.0	4312
10080 min Winter	0.964	0.0	5224

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Cascade Rainfall Details for IB20 July 20.SRCX

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.037

Time (mins) From:	To:	Area (ha)
0	4	0.037

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Cascade Model Details for IB20 July 20.SRCX

Storage is Online Cover Level (m) 121.300

Infiltration Basin Structure

Invert Level (m) 121.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.34992 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.34992

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	26.4	0.300	148.8

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Summary of Results for 1 year Return Period

Half Drain Time : 7 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.533	0.033	2.2	1.2	O K
30 min Summer	121.534	0.034	2.3	1.2	O K
60 min Summer	121.531	0.031	2.1	1.1	O K
120 min Summer	121.525	0.025	1.6	0.9	O K
180 min Summer	121.522	0.022	1.4	0.8	O K
240 min Summer	121.519	0.019	1.2	0.7	O K
360 min Summer	121.515	0.015	0.9	0.5	O K
480 min Summer	121.513	0.013	0.8	0.5	O K
600 min Summer	121.511	0.011	0.7	0.4	O K
720 min Summer	121.510	0.010	0.6	0.3	O K
960 min Summer	121.508	0.008	0.5	0.3	O K
1440 min Summer	121.506	0.006	0.4	0.2	O K
2160 min Summer	121.505	0.005	0.3	0.2	O K
2880 min Summer	121.504	0.004	0.2	0.1	O K
4320 min Summer	121.503	0.003	0.2	0.1	O K
5760 min Summer	121.503	0.003	0.2	0.1	O K
7200 min Summer	121.502	0.002	0.1	0.1	O K
8640 min Summer	121.502	0.002	0.1	0.1	O K
10080 min Summer	121.502	0.002	0.1	0.1	O K
15 min Winter	121.536	0.036	2.5	1.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	12
30 min Summer	19.953	0.0	20
60 min Summer	12.584	0.0	36
120 min Summer	7.775	0.0	68
180 min Summer	5.837	0.0	98
240 min Summer	4.758	0.0	128
360 min Summer	3.551	0.0	188
480 min Summer	2.874	0.0	250
600 min Summer	2.438	0.0	308
720 min Summer	2.132	0.0	368
960 min Summer	1.725	0.0	492
1440 min Summer	1.280	0.0	736
2160 min Summer	0.951	0.0	1100
2880 min Summer	0.770	0.0	1464
4320 min Summer	0.571	0.0	2208
5760 min Summer	0.462	0.0	2864
7200 min Summer	0.392	0.0	3608
8640 min Summer	0.343	0.0	4408
10080 min Summer	0.307	0.0	4952
15 min Winter	30.708	0.0	13

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.535	0.035	2.4	1.3	O K
60 min Winter	121.530	0.030	2.0	1.1	O K
120 min Winter	121.523	0.023	1.5	0.8	O K
180 min Winter	121.518	0.018	1.1	0.6	O K
240 min Winter	121.516	0.016	1.0	0.5	O K
360 min Winter	121.512	0.012	0.7	0.4	O K
480 min Winter	121.510	0.010	0.6	0.3	O K
600 min Winter	121.509	0.009	0.5	0.3	O K
720 min Winter	121.508	0.008	0.5	0.3	O K
960 min Winter	121.506	0.006	0.4	0.2	O K
1440 min Winter	121.505	0.005	0.3	0.2	O K
2160 min Winter	121.504	0.004	0.2	0.1	O K
2880 min Winter	121.503	0.003	0.2	0.1	O K
4320 min Winter	121.502	0.002	0.1	0.1	O K
5760 min Winter	121.502	0.002	0.1	0.1	O K
7200 min Winter	121.502	0.002	0.1	0.1	O K
8640 min Winter	121.502	0.002	0.1	0.1	O K
10080 min Winter	121.501	0.001	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	21
60 min Winter	12.584	0.0	38
120 min Winter	7.775	0.0	68
180 min Winter	5.837	0.0	100
240 min Winter	4.758	0.0	128
360 min Winter	3.551	0.0	188
480 min Winter	2.874	0.0	246
600 min Winter	2.438	0.0	310
720 min Winter	2.132	0.0	364
960 min Winter	1.725	0.0	490
1440 min Winter	1.280	0.0	732
2160 min Winter	0.951	0.0	1052
2880 min Winter	0.770	0.0	1468
4320 min Winter	0.571	0.0	2244
5760 min Winter	0.462	0.0	2816
7200 min Winter	0.392	0.0	3960
8640 min Winter	0.343	0.0	4344
10080 min Winter	0.307	0.0	5120

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Summary of Results for 30 year Return Period

Half Drain Time : 9 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	121.576	0.076	4.4	3.1	O K
30 min Summer	121.579	0.079	4.5	3.2	O K
60 min Summer	121.571	0.071	4.3	2.8	O K
120 min Summer	121.554	0.054	3.8	2.1	O K
180 min Summer	121.545	0.045	3.2	1.7	O K
240 min Summer	121.539	0.039	2.7	1.4	O K
360 min Summer	121.531	0.031	2.1	1.1	O K
480 min Summer	121.526	0.026	1.7	0.9	O K
600 min Summer	121.523	0.023	1.5	0.8	O K
720 min Summer	121.520	0.020	1.3	0.7	O K
960 min Summer	121.517	0.017	1.0	0.6	O K
1440 min Summer	121.513	0.013	0.8	0.4	O K
2160 min Summer	121.510	0.010	0.6	0.3	O K
2880 min Summer	121.508	0.008	0.5	0.3	O K
4320 min Summer	121.506	0.006	0.3	0.2	O K
5760 min Summer	121.505	0.005	0.3	0.2	O K
7200 min Summer	121.504	0.004	0.2	0.1	O K
8640 min Summer	121.503	0.003	0.2	0.1	O K
10080 min Summer	121.503	0.003	0.2	0.1	O K
15 min Winter	121.583	0.083	4.7	3.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	75.330	0.0	13
30 min Summer	48.890	0.0	21
60 min Summer	30.340	0.0	38
120 min Summer	18.282	0.0	68
180 min Summer	13.454	0.0	98
240 min Summer	10.779	0.0	128
360 min Summer	7.859	0.0	188
480 min Summer	6.280	0.0	248
600 min Summer	5.274	0.0	308
720 min Summer	4.572	0.0	370
960 min Summer	3.646	0.0	490
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1088
2880 min Summer	1.529	0.0	1456
4320 min Summer	1.108	0.0	2192
5760 min Summer	0.880	0.0	2848
7200 min Summer	0.737	0.0	3672
8640 min Summer	0.637	0.0	4400
10080 min Summer	0.563	0.0	4992
15 min Winter	75.330	0.0	13

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.584	0.084	4.7	3.4	O K
60 min Winter	121.569	0.069	4.2	2.7	O K
120 min Winter	121.548	0.048	3.5	1.8	O K
180 min Winter	121.539	0.039	2.7	1.4	O K
240 min Winter	121.532	0.032	2.2	1.2	O K
360 min Winter	121.525	0.025	1.6	0.9	O K
480 min Winter	121.521	0.021	1.3	0.7	O K
600 min Winter	121.518	0.018	1.1	0.6	O K
720 min Winter	121.516	0.016	1.0	0.5	O K
960 min Winter	121.513	0.013	0.8	0.4	O K
1440 min Winter	121.510	0.010	0.6	0.3	O K
2160 min Winter	121.507	0.007	0.4	0.2	O K
2880 min Winter	121.506	0.006	0.3	0.2	O K
4320 min Winter	121.504	0.004	0.2	0.1	O K
5760 min Winter	121.503	0.003	0.2	0.1	O K
7200 min Winter	121.503	0.003	0.2	0.1	O K
8640 min Winter	121.503	0.003	0.2	0.1	O K
10080 min Winter	121.502	0.002	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	22
60 min Winter	30.340	0.0	40
120 min Winter	18.282	0.0	68
180 min Winter	13.454	0.0	98
240 min Winter	10.779	0.0	130
360 min Winter	7.859	0.0	188
480 min Winter	6.280	0.0	248
600 min Winter	5.274	0.0	310
720 min Winter	4.572	0.0	362
960 min Winter	3.646	0.0	488
1440 min Winter	2.649	0.0	746
2160 min Winter	1.922	0.0	1068
2880 min Winter	1.529	0.0	1424
4320 min Winter	1.108	0.0	2168
5760 min Winter	0.880	0.0	2936
7200 min Winter	0.737	0.0	3600
8640 min Winter	0.637	0.0	4240
10080 min Winter	0.563	0.0	4968

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 12 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.632	0.132	6.1	6.0	O K
30 min Summer	121.641	0.141	6.4	6.6	O K
60 min Summer	121.633	0.133	6.2	6.1	O K
120 min Summer	121.609	0.109	5.4	4.7	O K
180 min Summer	121.589	0.089	4.8	3.7	O K
240 min Summer	121.573	0.073	4.4	2.9	O K
360 min Summer	121.552	0.052	3.7	2.0	O K
480 min Summer	121.544	0.044	3.2	1.6	O K
600 min Summer	121.539	0.039	2.7	1.4	O K
720 min Summer	121.534	0.034	2.3	1.3	O K
960 min Summer	121.529	0.029	1.9	1.0	O K
1440 min Summer	121.522	0.022	1.4	0.8	O K
2160 min Summer	121.516	0.016	1.0	0.6	O K
2880 min Summer	121.513	0.013	0.8	0.5	O K
4320 min Summer	121.510	0.010	0.6	0.3	O K
5760 min Summer	121.508	0.008	0.5	0.3	O K
7200 min Summer	121.507	0.007	0.4	0.2	O K
8640 min Summer	121.506	0.006	0.3	0.2	O K
10080 min Summer	121.505	0.005	0.3	0.2	O K
15 min Winter	121.645	0.145	6.6	6.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	13
30 min Summer	89.559	0.0	22
60 min Summer	55.837	0.0	38
120 min Summer	33.645	0.0	70
180 min Summer	24.691	0.0	102
240 min Summer	19.711	0.0	132
360 min Summer	14.285	0.0	188
480 min Summer	11.371	0.0	248
600 min Summer	9.521	0.0	308
720 min Summer	8.231	0.0	368
960 min Summer	6.537	0.0	490
1440 min Summer	4.717	0.0	726
2160 min Summer	3.398	0.0	1092
2880 min Summer	2.690	0.0	1440
4320 min Summer	1.933	0.0	2176
5760 min Summer	1.528	0.0	2896
7200 min Summer	1.272	0.0	3616
8640 min Summer	1.095	0.0	4392
10080 min Summer	0.964	0.0	5000
15 min Winter	136.827	0.0	14

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.652	0.152	6.8	7.2	O K
60 min Winter	121.637	0.137	6.3	6.3	O K
120 min Winter	121.602	0.102	5.2	4.4	O K
180 min Winter	121.576	0.076	4.4	3.0	O K
240 min Winter	121.556	0.056	3.9	2.2	O K
360 min Winter	121.542	0.042	3.0	1.6	O K
480 min Winter	121.535	0.035	2.4	1.3	O K
600 min Winter	121.530	0.030	2.0	1.1	O K
720 min Winter	121.527	0.027	1.8	1.0	O K
960 min Winter	121.522	0.022	1.4	0.8	O K
1440 min Winter	121.516	0.016	1.0	0.6	O K
2160 min Winter	121.512	0.012	0.7	0.4	O K
2880 min Winter	121.510	0.010	0.6	0.3	O K
4320 min Winter	121.507	0.007	0.4	0.2	O K
5760 min Winter	121.506	0.006	0.3	0.2	O K
7200 min Winter	121.505	0.005	0.3	0.2	O K
8640 min Winter	121.504	0.004	0.2	0.1	O K
10080 min Winter	121.504	0.004	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	23
60 min Winter	55.837	0.0	42
120 min Winter	33.645	0.0	74
180 min Winter	24.691	0.0	104
240 min Winter	19.711	0.0	132
360 min Winter	14.285	0.0	188
480 min Winter	11.371	0.0	250
600 min Winter	9.521	0.0	306
720 min Winter	8.231	0.0	366
960 min Winter	6.537	0.0	488
1440 min Winter	4.717	0.0	734
2160 min Winter	3.398	0.0	1120
2880 min Winter	2.690	0.0	1508
4320 min Winter	1.933	0.0	2260
5760 min Winter	1.528	0.0	2904
7200 min Winter	1.272	0.0	3568
8640 min Winter	1.095	0.0	4312
10080 min Winter	0.964	0.0	5040

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.036

Time (mins) From:	To:	Area (ha)
0	4	0.036

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Model Details

Storage is Online Cover Level (m) 121.900

Infiltration Basin Structure

Invert Level (m) 121.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.72720 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.72720

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	33.6	0.400	131.2

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Summary of Results for 1 year Return Period

Half Drain Time : 12 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.044	0.044	1.7	1.4	O K
30 min Summer	121.047	0.047	1.8	1.5	O K
60 min Summer	121.046	0.046	1.7	1.5	O K
120 min Summer	121.040	0.040	1.5	1.3	O K
180 min Summer	121.036	0.036	1.3	1.1	O K
240 min Summer	121.032	0.032	1.1	1.0	O K
360 min Summer	121.028	0.028	0.9	0.8	O K
480 min Summer	121.024	0.024	0.8	0.7	O K
600 min Summer	121.022	0.022	0.7	0.6	O K
720 min Summer	121.020	0.020	0.6	0.6	O K
960 min Summer	121.017	0.017	0.5	0.5	O K
1440 min Summer	121.013	0.013	0.4	0.4	O K
2160 min Summer	121.010	0.010	0.3	0.3	O K
2880 min Summer	121.009	0.009	0.2	0.2	O K
4320 min Summer	121.007	0.007	0.2	0.2	O K
5760 min Summer	121.005	0.005	0.1	0.1	O K
7200 min Summer	121.005	0.005	0.1	0.1	O K
8640 min Summer	121.004	0.004	0.1	0.1	O K
10080 min Summer	121.004	0.004	0.1	0.1	O K
15 min Winter	121.048	0.048	1.9	1.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	13
30 min Summer	19.953	0.0	21
60 min Summer	12.584	0.0	38
120 min Summer	7.775	0.0	68
180 min Summer	5.837	0.0	100
240 min Summer	4.758	0.0	130
360 min Summer	3.551	0.0	190
480 min Summer	2.874	0.0	250
600 min Summer	2.438	0.0	310
720 min Summer	2.132	0.0	370
960 min Summer	1.725	0.0	492
1440 min Summer	1.280	0.0	734
2160 min Summer	0.951	0.0	1100
2880 min Summer	0.770	0.0	1452
4320 min Summer	0.571	0.0	2204
5760 min Summer	0.462	0.0	2936
7200 min Summer	0.392	0.0	3616
8640 min Summer	0.343	0.0	4376
10080 min Summer	0.307	0.0	5128
15 min Winter	30.708	0.0	14

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.050	0.050	2.0	1.6	O K
60 min Winter	121.046	0.046	1.8	1.5	O K
120 min Winter	121.038	0.038	1.4	1.2	O K
180 min Winter	121.033	0.033	1.1	1.0	O K
240 min Winter	121.029	0.029	1.0	0.9	O K
360 min Winter	121.023	0.023	0.7	0.7	O K
480 min Winter	121.020	0.020	0.6	0.6	O K
600 min Winter	121.017	0.017	0.5	0.5	O K
720 min Winter	121.016	0.016	0.5	0.4	O K
960 min Winter	121.013	0.013	0.4	0.4	O K
1440 min Winter	121.010	0.010	0.3	0.3	O K
2160 min Winter	121.008	0.008	0.2	0.2	O K
2880 min Winter	121.006	0.006	0.2	0.2	O K
4320 min Winter	121.005	0.005	0.1	0.1	O K
5760 min Winter	121.004	0.004	0.1	0.1	O K
7200 min Winter	121.003	0.003	0.1	0.1	O K
8640 min Winter	121.003	0.003	0.1	0.1	O K
10080 min Winter	121.003	0.003	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	22
60 min Winter	12.584	0.0	40
120 min Winter	7.775	0.0	72
180 min Winter	5.837	0.0	102
240 min Winter	4.758	0.0	132
360 min Winter	3.551	0.0	194
480 min Winter	2.874	0.0	256
600 min Winter	2.438	0.0	318
720 min Winter	2.132	0.0	368
960 min Winter	1.725	0.0	490
1440 min Winter	1.280	0.0	742
2160 min Winter	0.951	0.0	1092
2880 min Winter	0.770	0.0	1472
4320 min Winter	0.571	0.0	2088
5760 min Winter	0.462	0.0	2952
7200 min Winter	0.392	0.0	3744
8640 min Winter	0.343	0.0	4392
10080 min Winter	0.307	0.0	4968

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Summary of Results for 30 year Return Period

Half Drain Time : 15 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	121.094	0.094	3.0	3.7	O K
30 min Summer	121.101	0.101	3.2	4.1	O K
60 min Summer	121.098	0.098	3.1	3.9	O K
120 min Summer	121.086	0.086	2.8	3.3	O K
180 min Summer	121.074	0.074	2.5	2.7	O K
240 min Summer	121.065	0.065	2.3	2.3	O K
360 min Summer	121.052	0.052	2.0	1.7	O K
480 min Summer	121.045	0.045	1.7	1.5	O K
600 min Summer	121.040	0.040	1.5	1.3	O K
720 min Summer	121.036	0.036	1.3	1.1	O K
960 min Summer	121.031	0.031	1.1	0.9	O K
1440 min Summer	121.025	0.025	0.8	0.7	O K
2160 min Summer	121.019	0.019	0.6	0.5	O K
2880 min Summer	121.016	0.016	0.5	0.4	O K
4320 min Summer	121.012	0.012	0.3	0.3	O K
5760 min Summer	121.010	0.010	0.3	0.3	O K
7200 min Summer	121.008	0.008	0.2	0.2	O K
8640 min Summer	121.007	0.007	0.2	0.2	O K
10080 min Summer	121.007	0.007	0.2	0.2	O K
15 min Winter	121.102	0.102	3.2	4.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	75.330	0.0	14
30 min Summer	48.890	0.0	22
60 min Summer	30.340	0.0	40
120 min Summer	18.282	0.0	72
180 min Summer	13.454	0.0	102
240 min Summer	10.779	0.0	132
360 min Summer	7.859	0.0	190
480 min Summer	6.280	0.0	250
600 min Summer	5.274	0.0	310
720 min Summer	4.572	0.0	372
960 min Summer	3.646	0.0	492
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1096
2880 min Summer	1.529	0.0	1448
4320 min Summer	1.108	0.0	2200
5760 min Summer	0.880	0.0	2904
7200 min Summer	0.737	0.0	3584
8640 min Summer	0.637	0.0	4368
10080 min Summer	0.563	0.0	5096
15 min Winter	75.330	0.0	15

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.108	0.108	3.3	4.5	O K
60 min Winter	121.102	0.102	3.2	4.2	O K
120 min Winter	121.083	0.083	2.7	3.1	O K
180 min Winter	121.068	0.068	2.4	2.4	O K
240 min Winter	121.056	0.056	2.1	1.9	O K
360 min Winter	121.044	0.044	1.6	1.4	O K
480 min Winter	121.038	0.038	1.3	1.2	O K
600 min Winter	121.033	0.033	1.1	1.0	O K
720 min Winter	121.030	0.030	1.0	0.9	O K
960 min Winter	121.025	0.025	0.8	0.7	O K
1440 min Winter	121.019	0.019	0.6	0.5	O K
2160 min Winter	121.015	0.015	0.4	0.4	O K
2880 min Winter	121.012	0.012	0.3	0.3	O K
4320 min Winter	121.009	0.009	0.2	0.2	O K
5760 min Winter	121.007	0.007	0.2	0.2	O K
7200 min Winter	121.006	0.006	0.2	0.2	O K
8640 min Winter	121.005	0.005	0.1	0.1	O K
10080 min Winter	121.005	0.005	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	24
60 min Winter	30.340	0.0	42
120 min Winter	18.282	0.0	76
180 min Winter	13.454	0.0	106
240 min Winter	10.779	0.0	136
360 min Winter	7.859	0.0	194
480 min Winter	6.280	0.0	252
600 min Winter	5.274	0.0	314
720 min Winter	4.572	0.0	372
960 min Winter	3.646	0.0	492
1440 min Winter	2.649	0.0	736
2160 min Winter	1.922	0.0	1116
2880 min Winter	1.529	0.0	1468
4320 min Winter	1.108	0.0	2204
5760 min Winter	0.880	0.0	2792
7200 min Winter	0.737	0.0	3640
8640 min Winter	0.637	0.0	4224
10080 min Winter	0.563	0.0	4960

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Summary of Results for 1 year Return Period

Half Drain Time : 11 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.844	0.444	1.9	1.7	O K
30 min Summer	124.859	0.459	2.0	1.8	O K
60 min Summer	124.846	0.446	1.9	1.7	O K
120 min Summer	124.805	0.405	1.7	1.4	O K
180 min Summer	124.770	0.370	1.5	1.2	O K
240 min Summer	124.742	0.342	1.3	1.0	O K
360 min Summer	124.698	0.298	1.1	0.8	O K
480 min Summer	124.666	0.266	0.9	0.6	O K
600 min Summer	124.641	0.241	0.8	0.5	O K
720 min Summer	124.621	0.221	0.7	0.4	O K
960 min Summer	124.592	0.192	0.6	0.3	O K
1440 min Summer	124.554	0.154	0.5	0.2	O K
2160 min Summer	124.521	0.121	0.4	0.1	O K
2880 min Summer	124.501	0.101	0.3	0.1	O K
4320 min Summer	124.477	0.077	0.2	0.1	O K
5760 min Summer	124.464	0.064	0.2	0.0	O K
7200 min Summer	124.455	0.055	0.1	0.0	O K
8640 min Summer	124.449	0.049	0.1	0.0	O K
10080 min Summer	124.447	0.047	0.1	0.0	O K
15 min Winter	124.871	0.471	2.1	1.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	13
30 min Summer	19.953	0.0	22
60 min Summer	12.584	0.0	38
120 min Summer	7.775	0.0	70
180 min Summer	5.837	0.0	102
240 min Summer	4.758	0.0	132
360 min Summer	3.551	0.0	192
480 min Summer	2.874	0.0	252
600 min Summer	2.438	0.0	312
720 min Summer	2.132	0.0	370
960 min Summer	1.725	0.0	492
1440 min Summer	1.280	0.0	734
2160 min Summer	0.951	0.0	1100
2880 min Summer	0.770	0.0	1464
4320 min Summer	0.571	0.0	2180
5760 min Summer	0.462	0.0	2848
7200 min Summer	0.392	0.0	3656
8640 min Summer	0.343	0.0	4272
10080 min Summer	0.307	0.0	4960
15 min Winter	30.708	0.0	14

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.881	0.481	2.1	2.0	O K
60 min Winter	124.854	0.454	2.0	1.8	O K
120 min Winter	124.792	0.392	1.6	1.3	O K
180 min Winter	124.746	0.346	1.3	1.0	O K
240 min Winter	124.710	0.310	1.2	0.8	O K
360 min Winter	124.659	0.259	0.9	0.6	O K
480 min Winter	124.624	0.224	0.8	0.4	O K
600 min Winter	124.598	0.198	0.6	0.3	O K
720 min Winter	124.579	0.179	0.6	0.3	O K
960 min Winter	124.551	0.151	0.5	0.2	O K
1440 min Winter	124.518	0.118	0.3	0.1	O K
2160 min Winter	124.491	0.091	0.3	0.1	O K
2880 min Winter	124.476	0.076	0.2	0.0	O K
4320 min Winter	124.458	0.058	0.2	0.0	O K
5760 min Winter	124.449	0.049	0.1	0.0	O K
7200 min Winter	124.445	0.045	0.1	0.0	O K
8640 min Winter	124.442	0.042	0.1	0.0	O K
10080 min Winter	124.440	0.040	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	23
60 min Winter	12.584	0.0	40
120 min Winter	7.775	0.0	74
180 min Winter	5.837	0.0	104
240 min Winter	4.758	0.0	134
360 min Winter	3.551	0.0	194
480 min Winter	2.874	0.0	254
600 min Winter	2.438	0.0	314
720 min Winter	2.132	0.0	374
960 min Winter	1.725	0.0	492
1440 min Winter	1.280	0.0	734
2160 min Winter	0.951	0.0	1088
2880 min Winter	0.770	0.0	1460
4320 min Winter	0.571	0.0	2188
5760 min Winter	0.462	0.0	2848
7200 min Winter	0.392	0.0	3632
8640 min Winter	0.343	0.0	4416
10080 min Winter	0.307	0.0	5200

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Summary of Results for 30 year Return Period

Half Drain Time : 16 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	125.167	0.767	3.5	4.6	O K
30 min Summer	125.217	0.817	3.7	5.1	O K
60 min Summer	125.202	0.802	3.6	4.9	O K
120 min Summer	125.118	0.718	3.3	4.2	O K
180 min Summer	125.043	0.643	2.9	3.5	O K
240 min Summer	124.985	0.585	2.7	2.9	O K
360 min Summer	124.908	0.508	2.3	2.2	O K
480 min Summer	124.856	0.456	2.0	1.8	O K
600 min Summer	124.816	0.416	1.7	1.5	O K
720 min Summer	124.784	0.384	1.5	1.3	O K
960 min Summer	124.735	0.335	1.3	1.0	O K
1440 min Summer	124.672	0.272	1.0	0.6	O K
2160 min Summer	124.615	0.215	0.7	0.4	O K
2880 min Summer	124.580	0.180	0.6	0.3	O K
4320 min Summer	124.538	0.138	0.4	0.2	O K
5760 min Summer	124.513	0.113	0.3	0.1	O K
7200 min Summer	124.497	0.097	0.3	0.1	O K
8640 min Summer	124.485	0.085	0.2	0.1	O K
10080 min Summer	124.476	0.076	0.2	0.1	O K
15 min Winter	125.234	0.834	3.8	5.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	75.330	0.0	14
30 min Summer	48.890	0.0	23
60 min Summer	30.340	0.0	40
120 min Summer	18.282	0.0	72
180 min Summer	13.454	0.0	104
240 min Summer	10.779	0.0	134
360 min Summer	7.859	0.0	194
480 min Summer	6.280	0.0	254
600 min Summer	5.274	0.0	314
720 min Summer	4.572	0.0	374
960 min Summer	3.646	0.0	492
1440 min Summer	2.649	0.0	736
2160 min Summer	1.922	0.0	1100
2880 min Summer	1.529	0.0	1468
4320 min Summer	1.108	0.0	2188
5760 min Summer	0.880	0.0	2920
7200 min Summer	0.737	0.0	3584
8640 min Summer	0.637	0.0	4376
10080 min Summer	0.563	0.0	4984
15 min Winter	75.330	0.0	15

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	125.281	0.881	4.0	5.6	O K
60 min Winter	125.241	0.841	3.8	5.3	O K
120 min Winter	125.112	0.712	3.2	4.1	O K
180 min Winter	125.011	0.611	2.8	3.2	O K
240 min Winter	124.939	0.539	2.5	2.5	O K
360 min Winter	124.855	0.455	2.0	1.8	O K
480 min Winter	124.797	0.397	1.6	1.4	O K
600 min Winter	124.754	0.354	1.4	1.1	O K
720 min Winter	124.721	0.321	1.2	0.9	O K
960 min Winter	124.673	0.273	1.0	0.6	O K
1440 min Winter	124.615	0.215	0.7	0.4	O K
2160 min Winter	124.566	0.166	0.5	0.2	O K
2880 min Winter	124.537	0.137	0.4	0.2	O K
4320 min Winter	124.504	0.104	0.3	0.1	O K
5760 min Winter	124.485	0.085	0.2	0.1	O K
7200 min Winter	124.473	0.073	0.2	0.0	O K
8640 min Winter	124.464	0.064	0.2	0.0	O K
10080 min Winter	124.457	0.057	0.2	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	24
60 min Winter	30.340	0.0	42
120 min Winter	18.282	0.0	76
180 min Winter	13.454	0.0	108
240 min Winter	10.779	0.0	138
360 min Winter	7.859	0.0	198
480 min Winter	6.280	0.0	258
600 min Winter	5.274	0.0	318
720 min Winter	4.572	0.0	376
960 min Winter	3.646	0.0	494
1440 min Winter	2.649	0.0	736
2160 min Winter	1.922	0.0	1096
2880 min Winter	1.529	0.0	1468
4320 min Winter	1.108	0.0	2160
5760 min Winter	0.880	0.0	2920
7200 min Winter	0.737	0.0	3544
8640 min Winter	0.637	0.0	4384
10080 min Winter	0.563	0.0	5080

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 21 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	125.624	1.224	5.5	8.8	O K
30 min Summer	125.743	1.343	6.0	9.9	O K
60 min Summer	125.748	1.348	6.0	9.9	O K
120 min Summer	125.619	1.219	5.5	8.7	O K
180 min Summer	125.490	1.090	4.9	7.6	O K
240 min Summer	125.383	0.983	4.4	6.6	O K
360 min Summer	125.225	0.825	3.7	5.1	O K
480 min Summer	125.116	0.716	3.3	4.1	O K
600 min Summer	125.036	0.636	2.9	3.4	O K
720 min Summer	124.976	0.576	2.7	2.9	O K
960 min Summer	124.901	0.501	2.3	2.2	O K
1440 min Summer	124.812	0.412	1.7	1.5	O K
2160 min Summer	124.731	0.331	1.3	0.9	O K
2880 min Summer	124.680	0.280	1.0	0.7	O K
4320 min Summer	124.617	0.217	0.7	0.4	O K
5760 min Summer	124.580	0.180	0.6	0.3	O K
7200 min Summer	124.555	0.155	0.5	0.2	O K
8640 min Summer	124.536	0.136	0.4	0.2	O K
10080 min Summer	124.523	0.123	0.4	0.1	O K
15 min Winter	125.750	1.350	6.0	10.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	15
30 min Summer	89.559	0.0	23
60 min Summer	55.837	0.0	40
120 min Summer	33.645	0.0	74
180 min Summer	24.691	0.0	106
240 min Summer	19.711	0.0	136
360 min Summer	14.285	0.0	198
480 min Summer	11.371	0.0	258
600 min Summer	9.521	0.0	320
720 min Summer	8.231	0.0	378
960 min Summer	6.537	0.0	494
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2200
5760 min Summer	1.528	0.0	2928
7200 min Summer	1.272	0.0	3624
8640 min Summer	1.095	0.0	4400
10080 min Summer	0.964	0.0	5096
15 min Winter	136.827	0.0	15

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	125.870	1.470	6.6	11.1	O K
60 min Winter	125.837	1.437	6.4	10.8	O K
120 min Winter	125.636	1.236	5.5	8.9	O K
180 min Winter	125.460	1.060	4.8	7.3	O K
240 min Winter	125.323	0.923	4.2	6.0	O K
360 min Winter	125.134	0.734	3.3	4.3	O K
480 min Winter	125.013	0.613	2.8	3.2	O K
600 min Winter	124.933	0.533	2.5	2.5	O K
720 min Winter	124.887	0.487	2.2	2.0	O K
960 min Winter	124.818	0.418	1.7	1.5	O K
1440 min Winter	124.733	0.333	1.3	1.0	O K
2160 min Winter	124.661	0.261	0.9	0.6	O K
2880 min Winter	124.618	0.218	0.7	0.4	O K
4320 min Winter	124.567	0.167	0.5	0.2	O K
5760 min Winter	124.537	0.137	0.4	0.2	O K
7200 min Winter	124.518	0.118	0.3	0.1	O K
8640 min Winter	124.503	0.103	0.3	0.1	O K
10080 min Winter	124.492	0.092	0.3	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	24
60 min Winter	55.837	0.0	42
120 min Winter	33.645	0.0	78
180 min Winter	24.691	0.0	110
240 min Winter	19.711	0.0	142
360 min Winter	14.285	0.0	204
480 min Winter	11.371	0.0	264
600 min Winter	9.521	0.0	320
720 min Winter	8.231	0.0	380
960 min Winter	6.537	0.0	500
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2196
5760 min Winter	1.528	0.0	2856
7200 min Winter	1.272	0.0	3576
8640 min Winter	1.095	0.0	4400
10080 min Winter	0.964	0.0	5056

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.046

Time (mins) From:	To:	Area (ha)
0	4	0.046

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Model Details

Storage is Online Cover Level (m) 126.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.45720	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	0.45720	Trench Length (m)	51.0
Safety Factor	3.0	Slope (1:X)	96.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	124.400	Cap Infiltration Depth (m)	0.000

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Summary of Results for 1 year Return Period

Half Drain Time : 5 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.375	0.375	3.0	1.1	O K
30 min Summer	0.368	0.368	3.0	1.1	O K
60 min Summer	0.329	0.329	2.7	0.9	O K
120 min Summer	0.274	0.274	2.1	0.6	O K
180 min Summer	0.236	0.236	1.8	0.5	O K
240 min Summer	0.209	0.209	1.5	0.4	O K
360 min Summer	0.172	0.172	1.2	0.2	O K
480 min Summer	0.147	0.147	1.0	0.2	O K
600 min Summer	0.130	0.130	0.8	0.1	O K
720 min Summer	0.116	0.116	0.7	0.1	O K
960 min Summer	0.097	0.097	0.6	0.1	O K
1440 min Summer	0.075	0.075	0.5	0.0	O K
2160 min Summer	0.057	0.057	0.3	0.0	O K
2880 min Summer	0.049	0.049	0.3	0.0	O K
4320 min Summer	0.042	0.042	0.2	0.0	O K
5760 min Summer	0.038	0.038	0.2	0.0	O K
7200 min Summer	0.035	0.035	0.1	0.0	O K
8640 min Summer	0.032	0.032	0.1	0.0	O K
10080 min Summer	0.031	0.031	0.1	0.0	O K
15 min Winter	0.396	0.396	3.2	1.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	12
30 min Summer	19.953	0.0	20
60 min Summer	12.584	0.0	36
120 min Summer	7.775	0.0	66
180 min Summer	5.837	0.0	96
240 min Summer	4.758	0.0	126
360 min Summer	3.551	0.0	186
480 min Summer	2.874	0.0	246
600 min Summer	2.438	0.0	306
720 min Summer	2.132	0.0	366
960 min Summer	1.725	0.0	488
1440 min Summer	1.280	0.0	734
2160 min Summer	0.951	0.0	1092
2880 min Summer	0.770	0.0	1456
4320 min Summer	0.571	0.0	2124
5760 min Summer	0.462	0.0	2872
7200 min Summer	0.392	0.0	3560
8640 min Summer	0.343	0.0	4384
10080 min Summer	0.307	0.0	5128
15 min Winter	30.708	0.0	13

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.374	0.374	3.0	1.1	O K
60 min Winter	0.313	0.313	2.6	0.8	O K
120 min Winter	0.242	0.242	1.8	0.5	O K
180 min Winter	0.199	0.199	1.4	0.3	O K
240 min Winter	0.171	0.171	1.2	0.2	O K
360 min Winter	0.136	0.136	0.9	0.1	O K
480 min Winter	0.114	0.114	0.7	0.1	O K
600 min Winter	0.099	0.099	0.6	0.1	O K
720 min Winter	0.088	0.088	0.5	0.1	O K
960 min Winter	0.073	0.073	0.4	0.0	O K
1440 min Winter	0.056	0.056	0.3	0.0	O K
2160 min Winter	0.046	0.046	0.2	0.0	O K
2880 min Winter	0.041	0.041	0.2	0.0	O K
4320 min Winter	0.036	0.036	0.1	0.0	O K
5760 min Winter	0.032	0.032	0.1	0.0	O K
7200 min Winter	0.030	0.030	0.1	0.0	O K
8640 min Winter	0.028	0.028	0.1	0.0	O K
10080 min Winter	0.026	0.026	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	21
60 min Winter	12.584	0.0	36
120 min Winter	7.775	0.0	68
180 min Winter	5.837	0.0	96
240 min Winter	4.758	0.0	126
360 min Winter	3.551	0.0	186
480 min Winter	2.874	0.0	246
600 min Winter	2.438	0.0	306
720 min Winter	2.132	0.0	368
960 min Winter	1.725	0.0	488
1440 min Winter	1.280	0.0	724
2160 min Winter	0.951	0.0	1076
2880 min Winter	0.770	0.0	1420
4320 min Winter	0.571	0.0	2136
5760 min Winter	0.462	0.0	2912
7200 min Winter	0.392	0.0	3592
8640 min Winter	0.343	0.0	4480
10080 min Winter	0.307	0.0	5024

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Summary of Results for 30 year Return Period

Half Drain Time : 8 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.794	0.794	5.6	3.4	O K
30 min Summer	0.808	0.808	5.6	3.5	O K
60 min Summer	0.720	0.720	5.1	3.0	O K
120 min Summer	0.568	0.568	4.2	2.2	O K
180 min Summer	0.463	0.463	3.6	1.6	O K
240 min Summer	0.391	0.391	3.1	1.2	O K
360 min Summer	0.313	0.313	2.5	0.8	O K
480 min Summer	0.270	0.270	2.1	0.6	O K
600 min Summer	0.240	0.240	1.8	0.5	O K
720 min Summer	0.217	0.217	1.6	0.4	O K
960 min Summer	0.182	0.182	1.3	0.3	O K
1440 min Summer	0.140	0.140	0.9	0.2	O K
2160 min Summer	0.107	0.107	0.7	0.1	O K
2880 min Summer	0.088	0.088	0.5	0.1	O K
4320 min Summer	0.066	0.066	0.4	0.0	O K
5760 min Summer	0.053	0.053	0.3	0.0	O K
7200 min Summer	0.048	0.048	0.3	0.0	O K
8640 min Summer	0.044	0.044	0.2	0.0	O K
10080 min Summer	0.042	0.042	0.2	0.0	O K
15 min Winter	0.867	0.867	6.0	3.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	75.330	0.0	13
30 min Summer	48.890	0.0	21
60 min Summer	30.340	0.0	38
120 min Summer	18.282	0.0	68
180 min Summer	13.454	0.0	98
240 min Summer	10.779	0.0	128
360 min Summer	7.859	0.0	188
480 min Summer	6.280	0.0	248
600 min Summer	5.274	0.0	308
720 min Summer	4.572	0.0	368
960 min Summer	3.646	0.0	490
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1100
2880 min Summer	1.529	0.0	1440
4320 min Summer	1.108	0.0	2180
5760 min Summer	0.880	0.0	2840
7200 min Summer	0.737	0.0	3640
8640 min Summer	0.637	0.0	4368
10080 min Summer	0.563	0.0	5008
15 min Winter	75.330	0.0	13

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.856	0.856	5.9	3.7	O K
60 min Winter	0.714	0.714	5.1	3.0	O K
120 min Winter	0.509	0.509	3.8	1.8	O K
180 min Winter	0.387	0.387	3.1	1.2	O K
240 min Winter	0.321	0.321	2.6	0.8	O K
360 min Winter	0.257	0.257	2.0	0.5	O K
480 min Winter	0.217	0.217	1.6	0.4	O K
600 min Winter	0.189	0.189	1.3	0.3	O K
720 min Winter	0.168	0.168	1.2	0.2	O K
960 min Winter	0.140	0.140	0.9	0.2	O K
1440 min Winter	0.107	0.107	0.7	0.1	O K
2160 min Winter	0.080	0.080	0.5	0.1	O K
2880 min Winter	0.065	0.065	0.4	0.0	O K
4320 min Winter	0.049	0.049	0.3	0.0	O K
5760 min Winter	0.044	0.044	0.2	0.0	O K
7200 min Winter	0.040	0.040	0.2	0.0	O K
8640 min Winter	0.038	0.038	0.2	0.0	O K
10080 min Winter	0.035	0.035	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	22
60 min Winter	30.340	0.0	38
120 min Winter	18.282	0.0	70
180 min Winter	13.454	0.0	100
240 min Winter	10.779	0.0	128
360 min Winter	7.859	0.0	188
480 min Winter	6.280	0.0	248
600 min Winter	5.274	0.0	306
720 min Winter	4.572	0.0	368
960 min Winter	3.646	0.0	490
1440 min Winter	2.649	0.0	730
2160 min Winter	1.922	0.0	1096
2880 min Winter	1.529	0.0	1420
4320 min Winter	1.108	0.0	2168
5760 min Winter	0.880	0.0	2832
7200 min Winter	0.737	0.0	3544
8640 min Winter	0.637	0.0	4304
10080 min Winter	0.563	0.0	4848

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 8 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	1.399	1.399	9.2	6.7	O K
30 min Summer	1.465	1.465	9.6	7.0	O K
60 min Summer	1.343	1.343	8.9	6.4	O K
120 min Summer	1.080	1.080	7.3	4.9	O K
180 min Summer	0.894	0.894	6.2	3.9	O K
240 min Summer	0.757	0.757	5.3	3.2	O K
360 min Summer	0.576	0.576	4.2	2.2	O K
480 min Summer	0.463	0.463	3.6	1.6	O K
600 min Summer	0.387	0.387	3.1	1.2	O K
720 min Summer	0.337	0.337	2.8	0.9	O K
960 min Summer	0.287	0.287	2.3	0.7	O K
1440 min Summer	0.225	0.225	1.7	0.4	O K
2160 min Summer	0.173	0.173	1.2	0.2	O K
2880 min Summer	0.143	0.143	0.9	0.2	O K
4320 min Summer	0.108	0.108	0.7	0.1	O K
5760 min Summer	0.087	0.087	0.5	0.1	O K
7200 min Summer	0.075	0.075	0.5	0.0	O K
8640 min Summer	0.065	0.065	0.4	0.0	O K
10080 min Summer	0.058	0.058	0.3	0.0	O K
15 min Winter	1.538	1.538	10.0	7.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	13
30 min Summer	89.559	0.0	21
60 min Summer	55.837	0.0	38
120 min Summer	33.645	0.0	70
180 min Summer	24.691	0.0	100
240 min Summer	19.711	0.0	130
360 min Summer	14.285	0.0	190
480 min Summer	11.371	0.0	250
600 min Summer	9.521	0.0	310
720 min Summer	8.231	0.0	368
960 min Summer	6.537	0.0	490
1440 min Summer	4.717	0.0	734
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1456
4320 min Summer	1.933	0.0	2164
5760 min Summer	1.528	0.0	2840
7200 min Summer	1.272	0.0	3544
8640 min Summer	1.095	0.0	4336
10080 min Summer	0.964	0.0	4960
15 min Winter	136.827	0.0	13

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	1.569	1.569	10.2	7.6	O K
60 min Winter	1.358	1.358	8.9	6.4	O K
120 min Winter	1.002	1.002	6.8	4.5	O K
180 min Winter	0.778	0.778	5.5	3.3	O K
240 min Winter	0.629	0.629	4.6	2.5	O K
360 min Winter	0.445	0.445	3.5	1.5	O K
480 min Winter	0.342	0.342	2.8	0.9	O K
600 min Winter	0.299	0.299	2.4	0.7	O K
720 min Winter	0.268	0.268	2.1	0.6	O K
960 min Winter	0.225	0.225	1.7	0.4	O K
1440 min Winter	0.173	0.173	1.2	0.2	O K
2160 min Winter	0.132	0.132	0.9	0.1	O K
2880 min Winter	0.108	0.108	0.7	0.1	O K
4320 min Winter	0.081	0.081	0.5	0.1	O K
5760 min Winter	0.065	0.065	0.4	0.0	O K
7200 min Winter	0.055	0.055	0.3	0.0	O K
8640 min Winter	0.049	0.049	0.3	0.0	O K
10080 min Winter	0.046	0.046	0.2	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	22
60 min Winter	55.837	0.0	40
120 min Winter	33.645	0.0	72
180 min Winter	24.691	0.0	102
240 min Winter	19.711	0.0	134
360 min Winter	14.285	0.0	194
480 min Winter	11.371	0.0	250
600 min Winter	9.521	0.0	308
720 min Winter	8.231	0.0	368
960 min Winter	6.537	0.0	490
1440 min Winter	4.717	0.0	732
2160 min Winter	3.398	0.0	1096
2880 min Winter	2.690	0.0	1464
4320 min Winter	1.933	0.0	2144
5760 min Winter	1.528	0.0	2888
7200 min Winter	1.272	0.0	3552
8640 min Winter	1.095	0.0	4384
10080 min Winter	0.964	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.043

Time (mins) From:	To:	Area (ha)
0	4	0.043

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Model Details

Storage is Online Cover Level (m) 1.600

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	1.06320	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	1.06320	Trench Length (m)	30.0
Safety Factor	3.0	Slope (1:X)	90.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	0.000	Cap Infiltration Depth (m)	0.000

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Summary of Results for 1 year Return Period

Half Drain Time : 4 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	0.646	0.646	6.7	2.3	O K
30 min Summer	0.636	0.636	6.5	2.2	O K
60 min Summer	0.576	0.576	5.6	1.8	O K
120 min Summer	0.484	0.484	4.4	1.3	O K
180 min Summer	0.422	0.422	3.6	1.0	O K
240 min Summer	0.377	0.377	3.1	0.8	O K
360 min Summer	0.315	0.315	2.4	0.5	O K
480 min Summer	0.273	0.273	2.0	0.4	O K
600 min Summer	0.243	0.243	1.7	0.3	O K
720 min Summer	0.220	0.220	1.5	0.3	O K
960 min Summer	0.187	0.187	1.2	0.2	O K
1440 min Summer	0.146	0.146	0.9	0.1	O K
2160 min Summer	0.114	0.114	0.7	0.1	O K
2880 min Summer	0.095	0.095	0.5	0.0	O K
4320 min Summer	0.073	0.073	0.4	0.0	O K
5760 min Summer	0.060	0.060	0.3	0.0	O K
7200 min Summer	0.052	0.052	0.3	0.0	O K
8640 min Summer	0.048	0.048	0.3	0.0	O K
10080 min Summer	0.045	0.045	0.2	0.0	O K
15 min Winter	0.672	0.672	7.1	2.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	12
30 min Summer	19.953	0.0	20
60 min Summer	12.584	0.0	36
120 min Summer	7.775	0.0	66
180 min Summer	5.837	0.0	96
240 min Summer	4.758	0.0	126
360 min Summer	3.551	0.0	186
480 min Summer	2.874	0.0	246
600 min Summer	2.438	0.0	306
720 min Summer	2.132	0.0	368
960 min Summer	1.725	0.0	488
1440 min Summer	1.280	0.0	734
2160 min Summer	0.951	0.0	1072
2880 min Summer	0.770	0.0	1424
4320 min Summer	0.571	0.0	2128
5760 min Summer	0.462	0.0	2920
7200 min Summer	0.392	0.0	3576
8640 min Summer	0.343	0.0	4280
10080 min Summer	0.307	0.0	5136
15 min Winter	30.708	0.0	12

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.640	0.640	6.6	2.2	O K
60 min Winter	0.550	0.550	5.2	1.6	O K
120 min Winter	0.431	0.431	3.7	1.0	O K
180 min Winter	0.361	0.361	2.9	0.7	O K
240 min Winter	0.314	0.314	2.4	0.5	O K
360 min Winter	0.254	0.254	1.8	0.3	O K
480 min Winter	0.216	0.216	1.5	0.3	O K
600 min Winter	0.190	0.190	1.3	0.2	O K
720 min Winter	0.171	0.171	1.1	0.2	O K
960 min Winter	0.143	0.143	0.9	0.1	O K
1440 min Winter	0.111	0.111	0.7	0.1	O K
2160 min Winter	0.086	0.086	0.5	0.0	O K
2880 min Winter	0.071	0.071	0.4	0.0	O K
4320 min Winter	0.054	0.054	0.3	0.0	O K
5760 min Winter	0.047	0.047	0.2	0.0	O K
7200 min Winter	0.043	0.043	0.2	0.0	O K
8640 min Winter	0.041	0.041	0.2	0.0	O K
10080 min Winter	0.038	0.038	0.2	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	21
60 min Winter	12.584	0.0	36
120 min Winter	7.775	0.0	66
180 min Winter	5.837	0.0	96
240 min Winter	4.758	0.0	126
360 min Winter	3.551	0.0	186
480 min Winter	2.874	0.0	246
600 min Winter	2.438	0.0	306
720 min Winter	2.132	0.0	366
960 min Winter	1.725	0.0	484
1440 min Winter	1.280	0.0	730
2160 min Winter	0.951	0.0	1072
2880 min Winter	0.770	0.0	1444
4320 min Winter	0.571	0.0	2160
5760 min Winter	0.462	0.0	2896
7200 min Winter	0.392	0.0	3584
8640 min Winter	0.343	0.0	4312
10080 min Winter	0.307	0.0	5048

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Summary of Results for 30 year Return Period

Half Drain Time : 5 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	1.068	1.068	14.7	6.2	O K
30 min Summer	1.065	1.065	14.7	6.1	O K
60 min Summer	0.975	0.975	12.7	5.1	O K
120 min Summer	0.827	0.827	9.8	3.7	O K
180 min Summer	0.724	0.724	7.9	2.8	O K
240 min Summer	0.649	0.649	6.7	2.3	O K
360 min Summer	0.546	0.546	5.2	1.6	O K
480 min Summer	0.477	0.477	4.3	1.2	O K
600 min Summer	0.428	0.428	3.6	1.0	O K
720 min Summer	0.389	0.389	3.2	0.8	O K
960 min Summer	0.332	0.332	2.6	0.6	O K
1440 min Summer	0.262	0.262	1.9	0.4	O K
2160 min Summer	0.204	0.204	1.4	0.2	O K
2880 min Summer	0.170	0.170	1.1	0.2	O K
4320 min Summer	0.130	0.130	0.8	0.1	O K
5760 min Summer	0.106	0.106	0.6	0.1	O K
7200 min Summer	0.091	0.091	0.5	0.0	O K
8640 min Summer	0.080	0.080	0.5	0.0	O K
10080 min Summer	0.072	0.072	0.4	0.0	O K
15 min Winter	1.114	1.114	15.8	6.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	75.330	0.0	12
30 min Summer	48.890	0.0	20
60 min Summer	30.340	0.0	36
120 min Summer	18.282	0.0	66
180 min Summer	13.454	0.0	96
240 min Summer	10.779	0.0	126
360 min Summer	7.859	0.0	186
480 min Summer	6.280	0.0	246
600 min Summer	5.274	0.0	308
720 min Summer	4.572	0.0	368
960 min Summer	3.646	0.0	490
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1100
2880 min Summer	1.529	0.0	1440
4320 min Summer	1.108	0.0	2148
5760 min Summer	0.880	0.0	2840
7200 min Summer	0.737	0.0	3656
8640 min Summer	0.637	0.0	4256
10080 min Summer	0.563	0.0	5008
15 min Winter	75.330	0.0	13

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	1.081	1.081	15.0	6.3	O K
60 min Winter	0.944	0.944	12.1	4.8	O K
120 min Winter	0.755	0.755	8.5	3.1	O K
180 min Winter	0.638	0.638	6.5	2.2	O K
240 min Winter	0.558	0.558	5.4	1.7	O K
360 min Winter	0.454	0.454	4.0	1.1	O K
480 min Winter	0.389	0.389	3.2	0.8	O K
600 min Winter	0.344	0.344	2.7	0.6	O K
720 min Winter	0.310	0.310	2.3	0.5	O K
960 min Winter	0.261	0.261	1.9	0.4	O K
1440 min Winter	0.203	0.203	1.4	0.2	O K
2160 min Winter	0.157	0.157	1.0	0.1	O K
2880 min Winter	0.129	0.129	0.8	0.1	O K
4320 min Winter	0.098	0.098	0.6	0.1	O K
5760 min Winter	0.080	0.080	0.5	0.0	O K
7200 min Winter	0.068	0.068	0.4	0.0	O K
8640 min Winter	0.060	0.060	0.3	0.0	O K
10080 min Winter	0.054	0.054	0.3	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	21
60 min Winter	30.340	0.0	38
120 min Winter	18.282	0.0	68
180 min Winter	13.454	0.0	98
240 min Winter	10.779	0.0	128
360 min Winter	7.859	0.0	188
480 min Winter	6.280	0.0	248
600 min Winter	5.274	0.0	308
720 min Winter	4.572	0.0	368
960 min Winter	3.646	0.0	488
1440 min Winter	2.649	0.0	734
2160 min Winter	1.922	0.0	1088
2880 min Winter	1.529	0.0	1436
4320 min Winter	1.108	0.0	2124
5760 min Winter	0.880	0.0	2920
7200 min Winter	0.737	0.0	3544
8640 min Winter	0.637	0.0	4368
10080 min Winter	0.563	0.0	5088

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 6 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	1.475	1.475	25.3	11.8	O K
30 min Summer	1.487	1.487	25.6	11.9	O K
60 min Summer	1.380	1.380	22.6	10.3	O K
120 min Summer	1.184	1.184	17.5	7.6	O K
180 min Summer	1.047	1.047	14.3	5.9	O K
240 min Summer	0.945	0.945	12.1	4.8	O K
360 min Summer	0.802	0.802	9.3	3.5	O K
480 min Summer	0.707	0.707	7.6	2.7	O K
600 min Summer	0.638	0.638	6.5	2.2	O K
720 min Summer	0.583	0.583	5.7	1.8	O K
960 min Summer	0.503	0.503	4.6	1.4	O K
1440 min Summer	0.402	0.402	3.3	0.9	O K
2160 min Summer	0.317	0.317	2.4	0.5	O K
2880 min Summer	0.266	0.266	1.9	0.4	O K
4320 min Summer	0.205	0.205	1.4	0.2	O K
5760 min Summer	0.170	0.170	1.1	0.2	O K
7200 min Summer	0.146	0.146	0.9	0.1	O K
8640 min Summer	0.128	0.128	0.8	0.1	O K
10080 min Summer	0.115	0.115	0.7	0.1	O K
15 min Winter	1.545	1.545	27.1	12.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	12
30 min Summer	89.559	0.0	20
60 min Summer	55.837	0.0	36
120 min Summer	33.645	0.0	66
180 min Summer	24.691	0.0	98
240 min Summer	19.711	0.0	128
360 min Summer	14.285	0.0	188
480 min Summer	11.371	0.0	248
600 min Summer	9.521	0.0	308
720 min Summer	8.231	0.0	368
960 min Summer	6.537	0.0	490
1440 min Summer	4.717	0.0	734
2160 min Summer	3.398	0.0	1096
2880 min Summer	2.690	0.0	1448
4320 min Summer	1.933	0.0	2188
5760 min Summer	1.528	0.0	2872
7200 min Summer	1.272	0.0	3544
8640 min Summer	1.095	0.0	4368
10080 min Summer	0.964	0.0	5088
15 min Winter	136.827	0.0	13

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	1.517	1.517	26.4	12.4	O K
60 min Winter	1.347	1.347	21.7	9.8	O K
120 min Winter	1.096	1.096	15.4	6.5	O K
180 min Winter	0.936	0.936	11.9	4.7	O K
240 min Winter	0.825	0.825	9.7	3.7	O K
360 min Winter	0.679	0.679	7.2	2.5	O K
480 min Winter	0.587	0.587	5.8	1.9	O K
600 min Winter	0.522	0.522	4.9	1.5	O K
720 min Winter	0.473	0.473	4.2	1.2	O K
960 min Winter	0.403	0.403	3.4	0.9	O K
1440 min Winter	0.318	0.318	2.4	0.5	O K
2160 min Winter	0.248	0.248	1.7	0.3	O K
2880 min Winter	0.206	0.206	1.4	0.2	O K
4320 min Winter	0.158	0.158	1.0	0.1	O K
5760 min Winter	0.129	0.129	0.8	0.1	O K
7200 min Winter	0.111	0.111	0.7	0.1	O K
8640 min Winter	0.097	0.097	0.6	0.1	O K
10080 min Winter	0.087	0.087	0.5	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	21
60 min Winter	55.837	0.0	38
120 min Winter	33.645	0.0	68
180 min Winter	24.691	0.0	98
240 min Winter	19.711	0.0	128
360 min Winter	14.285	0.0	188
480 min Winter	11.371	0.0	248
600 min Winter	9.521	0.0	308
720 min Winter	8.231	0.0	368
960 min Winter	6.537	0.0	490
1440 min Winter	4.717	0.0	728
2160 min Winter	3.398	0.0	1092
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2936
7200 min Winter	1.272	0.0	3632
8640 min Winter	1.095	0.0	4336
10080 min Winter	0.964	0.0	5112

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.087

Time (mins) From:	To:	Area (ha)
0	4	0.087

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Model Details

Storage is Online Cover Level (m) 1.600

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	1.47960	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	1.47960	Trench Length (m)	90.0
Safety Factor	3.0	Slope (1:X)	60.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	0.000	Cap Infiltration Depth (m)	0.000

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Summary of Results for 1 year Return Period

Half Drain Time : 1 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	120.682	0.082	0.8	0.1	O K
30 min Summer	120.674	0.074	0.7	0.0	O K
60 min Summer	120.658	0.058	0.5	0.0	O K
120 min Summer	120.645	0.045	0.4	0.0	O K
180 min Summer	120.640	0.040	0.3	0.0	O K
240 min Summer	120.636	0.036	0.2	0.0	O K
360 min Summer	120.632	0.032	0.2	0.0	O K
480 min Summer	120.628	0.028	0.1	0.0	O K
600 min Summer	120.626	0.026	0.1	0.0	O K
720 min Summer	120.624	0.024	0.1	0.0	O K
960 min Summer	120.622	0.022	0.1	0.0	O K
1440 min Summer	120.619	0.019	0.1	0.0	O K
2160 min Summer	120.617	0.017	0.1	0.0	O K
2880 min Summer	120.615	0.015	0.0	0.0	O K
4320 min Summer	120.613	0.013	0.0	0.0	O K
5760 min Summer	120.612	0.012	0.0	0.0	O K
7200 min Summer	120.611	0.011	0.0	0.0	O K
8640 min Summer	120.610	0.010	0.0	0.0	O K
10080 min Summer	120.609	0.009	0.0	0.0	O K
15 min Winter	120.683	0.083	0.8	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	11
30 min Summer	19.953	0.0	18
60 min Summer	12.584	0.0	34
120 min Summer	7.775	0.0	62
180 min Summer	5.837	0.0	92
240 min Summer	4.758	0.0	124
360 min Summer	3.551	0.0	182
480 min Summer	2.874	0.0	240
600 min Summer	2.438	0.0	302
720 min Summer	2.132	0.0	366
960 min Summer	1.725	0.0	490
1440 min Summer	1.280	0.0	710
2160 min Summer	0.951	0.0	1084
2880 min Summer	0.770	0.0	1420
4320 min Summer	0.571	0.0	2144
5760 min Summer	0.462	0.0	2832
7200 min Summer	0.392	0.0	3632
8640 min Summer	0.343	0.0	4320
10080 min Summer	0.307	0.0	4960
15 min Winter	30.708	0.0	11

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	120.668	0.068	0.6	0.0	O K
60 min Winter	120.650	0.050	0.4	0.0	O K
120 min Winter	120.639	0.039	0.3	0.0	O K
180 min Winter	120.634	0.034	0.2	0.0	O K
240 min Winter	120.631	0.031	0.2	0.0	O K
360 min Winter	120.627	0.027	0.1	0.0	O K
480 min Winter	120.624	0.024	0.1	0.0	O K
600 min Winter	120.622	0.022	0.1	0.0	O K
720 min Winter	120.621	0.021	0.1	0.0	O K
960 min Winter	120.619	0.019	0.1	0.0	O K
1440 min Winter	120.616	0.016	0.0	0.0	O K
2160 min Winter	120.614	0.014	0.0	0.0	O K
2880 min Winter	120.613	0.013	0.0	0.0	O K
4320 min Winter	120.611	0.011	0.0	0.0	O K
5760 min Winter	120.610	0.010	0.0	0.0	O K
7200 min Winter	120.609	0.009	0.0	0.0	O K
8640 min Winter	120.609	0.009	0.0	0.0	O K
10080 min Winter	120.608	0.008	0.0	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	18
60 min Winter	12.584	0.0	32
120 min Winter	7.775	0.0	64
180 min Winter	5.837	0.0	94
240 min Winter	4.758	0.0	120
360 min Winter	3.551	0.0	184
480 min Winter	2.874	0.0	246
600 min Winter	2.438	0.0	310
720 min Winter	2.132	0.0	362
960 min Winter	1.725	0.0	480
1440 min Winter	1.280	0.0	726
2160 min Winter	0.951	0.0	1112
2880 min Winter	0.770	0.0	1448
4320 min Winter	0.571	0.0	2144
5760 min Winter	0.462	0.0	3000
7200 min Winter	0.392	0.0	3536
8640 min Winter	0.343	0.0	4656
10080 min Winter	0.307	0.0	4920

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Summary of Results for 30 year Return Period

Half Drain Time : 3 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	120.823	0.223	1.2	0.3	O K
30 min Summer	120.805	0.205	1.1	0.3	O K
60 min Summer	120.747	0.147	1.0	0.2	O K
120 min Summer	120.688	0.088	0.8	0.1	O K
180 min Summer	120.670	0.070	0.6	0.0	O K
240 min Summer	120.658	0.058	0.5	0.0	O K
360 min Summer	120.647	0.047	0.4	0.0	O K
480 min Summer	120.642	0.042	0.3	0.0	O K
600 min Summer	120.638	0.038	0.3	0.0	O K
720 min Summer	120.636	0.036	0.2	0.0	O K
960 min Summer	120.632	0.032	0.2	0.0	O K
1440 min Summer	120.627	0.027	0.1	0.0	O K
2160 min Summer	120.623	0.023	0.1	0.0	O K
2880 min Summer	120.621	0.021	0.1	0.0	O K
4320 min Summer	120.618	0.018	0.1	0.0	O K
5760 min Summer	120.616	0.016	0.0	0.0	O K
7200 min Summer	120.615	0.015	0.0	0.0	O K
8640 min Summer	120.614	0.014	0.0	0.0	O K
10080 min Summer	120.613	0.013	0.0	0.0	O K
15 min Winter	120.841	0.241	1.2	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	75.330	0.0	12
30 min Summer	48.890	0.0	20
60 min Summer	30.340	0.0	36
120 min Summer	18.282	0.0	64
180 min Summer	13.454	0.0	94
240 min Summer	10.779	0.0	124
360 min Summer	7.859	0.0	182
480 min Summer	6.280	0.0	242
600 min Summer	5.274	0.0	306
720 min Summer	4.572	0.0	360
960 min Summer	3.646	0.0	484
1440 min Summer	2.649	0.0	724
2160 min Summer	1.922	0.0	1096
2880 min Summer	1.529	0.0	1468
4320 min Summer	1.108	0.0	2196
5760 min Summer	0.880	0.0	2936
7200 min Summer	0.737	0.0	3624
8640 min Summer	0.637	0.0	4312
10080 min Summer	0.563	0.0	5104
15 min Winter	75.330	0.0	12

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	120.801	0.201	1.1	0.3	O K
60 min Winter	120.720	0.120	0.9	0.1	O K
120 min Winter	120.670	0.070	0.6	0.0	O K
180 min Winter	120.653	0.053	0.5	0.0	O K
240 min Winter	120.647	0.047	0.4	0.0	O K
360 min Winter	120.640	0.040	0.3	0.0	O K
480 min Winter	120.636	0.036	0.2	0.0	O K
600 min Winter	120.633	0.033	0.2	0.0	O K
720 min Winter	120.630	0.030	0.2	0.0	O K
960 min Winter	120.627	0.027	0.1	0.0	O K
1440 min Winter	120.623	0.023	0.1	0.0	O K
2160 min Winter	120.620	0.020	0.1	0.0	O K
2880 min Winter	120.618	0.018	0.1	0.0	O K
4320 min Winter	120.615	0.015	0.0	0.0	O K
5760 min Winter	120.614	0.014	0.0	0.0	O K
7200 min Winter	120.613	0.013	0.0	0.0	O K
8640 min Winter	120.612	0.012	0.0	0.0	O K
10080 min Winter	120.611	0.011	0.0	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	21
60 min Winter	30.340	0.0	36
120 min Winter	18.282	0.0	64
180 min Winter	13.454	0.0	94
240 min Winter	10.779	0.0	126
360 min Winter	7.859	0.0	186
480 min Winter	6.280	0.0	240
600 min Winter	5.274	0.0	306
720 min Winter	4.572	0.0	366
960 min Winter	3.646	0.0	490
1440 min Winter	2.649	0.0	716
2160 min Winter	1.922	0.0	1084
2880 min Winter	1.529	0.0	1420
4320 min Winter	1.108	0.0	2152
5760 min Winter	0.880	0.0	2984
7200 min Winter	0.737	0.0	3608
8640 min Winter	0.637	0.0	4264
10080 min Winter	0.563	0.0	4904

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 5 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.061	0.461	1.8	0.7	O K
30 min Summer	121.050	0.450	1.8	0.7	O K
60 min Summer	120.965	0.365	1.5	0.5	O K
120 min Summer	120.835	0.235	1.2	0.3	O K
180 min Summer	120.755	0.155	1.0	0.2	O K
240 min Summer	120.707	0.107	0.9	0.1	O K
360 min Summer	120.676	0.076	0.7	0.1	O K
480 min Summer	120.662	0.062	0.6	0.0	O K
600 min Summer	120.653	0.053	0.5	0.0	O K
720 min Summer	120.648	0.048	0.4	0.0	O K
960 min Summer	120.643	0.043	0.3	0.0	O K
1440 min Summer	120.636	0.036	0.2	0.0	O K
2160 min Summer	120.631	0.031	0.2	0.0	O K
2880 min Summer	120.628	0.028	0.1	0.0	O K
4320 min Summer	120.623	0.023	0.1	0.0	O K
5760 min Summer	120.621	0.021	0.1	0.0	O K
7200 min Summer	120.619	0.019	0.1	0.0	O K
8640 min Summer	120.618	0.018	0.1	0.0	O K
10080 min Summer	120.617	0.017	0.1	0.0	O K
15 min Winter	121.108	0.508	1.9	0.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	12
30 min Summer	89.559	0.0	20
60 min Summer	55.837	0.0	36
120 min Summer	33.645	0.0	66
180 min Summer	24.691	0.0	96
240 min Summer	19.711	0.0	126
360 min Summer	14.285	0.0	184
480 min Summer	11.371	0.0	244
600 min Summer	9.521	0.0	306
720 min Summer	8.231	0.0	364
960 min Summer	6.537	0.0	480
1440 min Summer	4.717	0.0	730
2160 min Summer	3.398	0.0	1084
2880 min Summer	2.690	0.0	1424
4320 min Summer	1.933	0.0	2196
5760 min Summer	1.528	0.0	2944
7200 min Summer	1.272	0.0	3600
8640 min Summer	1.095	0.0	4248
10080 min Summer	0.964	0.0	4952
15 min Winter	136.827	0.0	13

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.068	0.468	1.8	0.7	O K
60 min Winter	120.939	0.339	1.5	0.5	O K
120 min Winter	120.777	0.177	1.1	0.2	O K
180 min Winter	120.694	0.094	0.9	0.1	O K
240 min Winter	120.676	0.076	0.7	0.1	O K
360 min Winter	120.657	0.057	0.5	0.0	O K
480 min Winter	120.648	0.048	0.4	0.0	O K
600 min Winter	120.644	0.044	0.3	0.0	O K
720 min Winter	120.641	0.041	0.3	0.0	O K
960 min Winter	120.636	0.036	0.2	0.0	O K
1440 min Winter	120.631	0.031	0.2	0.0	O K
2160 min Winter	120.626	0.026	0.1	0.0	O K
2880 min Winter	120.624	0.024	0.1	0.0	O K
4320 min Winter	120.620	0.020	0.1	0.0	O K
5760 min Winter	120.618	0.018	0.1	0.0	O K
7200 min Winter	120.616	0.016	0.0	0.0	O K
8640 min Winter	120.615	0.015	0.0	0.0	O K
10080 min Winter	120.614	0.014	0.0	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	21
60 min Winter	55.837	0.0	38
120 min Winter	33.645	0.0	68
180 min Winter	24.691	0.0	96
240 min Winter	19.711	0.0	124
360 min Winter	14.285	0.0	182
480 min Winter	11.371	0.0	246
600 min Winter	9.521	0.0	310
720 min Winter	8.231	0.0	358
960 min Winter	6.537	0.0	488
1440 min Winter	4.717	0.0	728
2160 min Winter	3.398	0.0	1052
2880 min Winter	2.690	0.0	1472
4320 min Winter	1.933	0.0	2140
5760 min Winter	1.528	0.0	2944
7200 min Winter	1.272	0.0	3552
8640 min Winter	1.095	0.0	4320
10080 min Winter	0.964	0.0	4848

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.006

Time (mins) From:	To:	Area (ha)
0	4	0.006

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Model Details

Storage is Online Cover Level (m) 121.600

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	1.44720	Trench Width (m)	0.6
Infiltration Coefficient Side (m/hr)	1.44720	Trench Length (m)	9.0
Safety Factor	3.0	Slope (1:X)	100.0
Porosity	0.30	Cap Volume Depth (m)	0.000
Invert Level (m)	120.600	Cap Infiltration Depth (m)	0.000

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Summary of Results for 1 year Return Period

Half Drain Time : 11 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.552	0.052	11.9	10.8	O K
30 min Summer	121.557	0.057	12.0	11.8	O K
60 min Summer	121.555	0.055	12.0	11.3	O K
120 min Summer	121.546	0.046	10.9	9.6	O K
180 min Summer	121.540	0.040	9.4	8.3	O K
240 min Summer	121.536	0.036	8.3	7.4	O K
360 min Summer	121.530	0.030	6.8	6.1	O K
480 min Summer	121.525	0.025	5.7	5.2	O K
600 min Summer	121.522	0.022	5.0	4.6	O K
720 min Summer	121.520	0.020	4.6	4.1	O K
960 min Summer	121.517	0.017	3.7	3.4	O K
1440 min Summer	121.513	0.013	2.8	2.6	O K
2160 min Summer	121.510	0.010	2.2	2.0	O K
2880 min Summer	121.508	0.008	1.8	1.6	O K
4320 min Summer	121.506	0.006	1.4	1.2	O K
5760 min Summer	121.505	0.005	1.2	1.0	O K
7200 min Summer	121.504	0.004	0.9	0.8	O K
8640 min Summer	121.504	0.004	0.8	0.7	O K
10080 min Summer	121.503	0.003	0.7	0.6	O K
15 min Winter	121.558	0.058	12.1	12.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	30.708	0.0	13
30 min Summer	19.953	0.0	22
60 min Summer	12.584	0.0	38
120 min Summer	7.775	0.0	70
180 min Summer	5.837	0.0	100
240 min Summer	4.758	0.0	130
360 min Summer	3.551	0.0	192
480 min Summer	2.874	0.0	252
600 min Summer	2.438	0.0	312
720 min Summer	2.132	0.0	370
960 min Summer	1.725	0.0	492
1440 min Summer	1.280	0.0	736
2160 min Summer	0.951	0.0	1100
2880 min Summer	0.770	0.0	1452
4320 min Summer	0.571	0.0	2164
5760 min Summer	0.462	0.0	2904
7200 min Summer	0.392	0.0	3608
8640 min Summer	0.343	0.0	4392
10080 min Summer	0.307	0.0	5000
15 min Winter	30.708	0.0	14

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.562	0.062	12.2	12.9	O K
60 min Winter	121.556	0.056	12.0	11.6	O K
120 min Winter	121.544	0.044	10.2	9.0	O K
180 min Winter	121.536	0.036	8.4	7.4	O K
240 min Winter	121.531	0.031	7.2	6.4	O K
360 min Winter	121.525	0.025	5.6	5.0	O K
480 min Winter	121.520	0.020	4.6	4.1	O K
600 min Winter	121.518	0.018	4.0	3.5	O K
720 min Winter	121.516	0.016	3.5	3.1	O K
960 min Winter	121.513	0.013	2.8	2.5	O K
1440 min Winter	121.510	0.010	2.2	1.9	O K
2160 min Winter	121.507	0.007	1.6	1.4	O K
2880 min Winter	121.506	0.006	1.3	1.1	O K
4320 min Winter	121.504	0.004	0.9	0.9	O K
5760 min Winter	121.504	0.004	0.8	0.7	O K
7200 min Winter	121.503	0.003	0.7	0.6	O K
8640 min Winter	121.503	0.003	0.6	0.5	O K
10080 min Winter	121.503	0.003	0.6	0.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	23
60 min Winter	12.584	0.0	40
120 min Winter	7.775	0.0	72
180 min Winter	5.837	0.0	102
240 min Winter	4.758	0.0	134
360 min Winter	3.551	0.0	194
480 min Winter	2.874	0.0	256
600 min Winter	2.438	0.0	310
720 min Winter	2.132	0.0	372
960 min Winter	1.725	0.0	492
1440 min Winter	1.280	0.0	726
2160 min Winter	0.951	0.0	1076
2880 min Winter	0.770	0.0	1472
4320 min Winter	0.571	0.0	2244
5760 min Winter	0.462	0.0	2896
7200 min Winter	0.392	0.0	3632
8640 min Winter	0.343	0.0	4264
10080 min Winter	0.307	0.0	5120

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Summary of Results for 30 year Return Period

Half Drain Time : 22 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.638	0.138	14.8	30.3	O K
30 min Summer	121.654	0.154	15.4	34.3	O K
60 min Summer	121.655	0.155	15.5	34.6	O K
120 min Summer	121.638	0.138	14.8	30.3	O K
180 min Summer	121.618	0.118	14.1	25.6	O K
240 min Summer	121.600	0.100	13.5	21.4	O K
360 min Summer	121.573	0.073	12.6	15.3	O K
480 min Summer	121.555	0.055	12.0	11.4	O K
600 min Summer	121.547	0.047	11.0	9.6	O K
720 min Summer	121.542	0.042	9.7	8.6	O K
960 min Summer	121.535	0.035	8.0	7.1	O K
1440 min Summer	121.526	0.026	6.0	5.3	O K
2160 min Summer	121.519	0.019	4.3	4.0	O K
2880 min Summer	121.516	0.016	3.5	3.1	O K
4320 min Summer	121.512	0.012	2.6	2.3	O K
5760 min Summer	121.509	0.009	2.0	1.8	O K
7200 min Summer	121.508	0.008	1.7	1.5	O K
8640 min Summer	121.507	0.007	1.5	1.3	O K
10080 min Summer	121.506	0.006	1.4	1.2	O K
15 min Winter	121.655	0.155	15.5	34.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	75.330	0.0	16
30 min Summer	48.890	0.0	25
60 min Summer	30.340	0.0	42
120 min Summer	18.282	0.0	76
180 min Summer	13.454	0.0	108
240 min Summer	10.779	0.0	140
360 min Summer	7.859	0.0	198
480 min Summer	6.280	0.0	254
600 min Summer	5.274	0.0	312
720 min Summer	4.572	0.0	370
960 min Summer	3.646	0.0	492
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1100
2880 min Summer	1.529	0.0	1452
4320 min Summer	1.108	0.0	2196
5760 min Summer	0.880	0.0	2856
7200 min Summer	0.737	0.0	3608
8640 min Summer	0.637	0.0	4392
10080 min Summer	0.563	0.0	5064
15 min Winter	75.330	0.0	16

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.672	0.172	16.1	38.9	O K
60 min Winter	121.671	0.171	16.0	38.4	O K
120 min Winter	121.643	0.143	15.0	31.5	O K
180 min Winter	121.613	0.113	14.0	24.5	O K
240 min Winter	121.588	0.088	13.1	18.7	O K
360 min Winter	121.553	0.053	11.9	11.1	O K
480 min Winter	121.543	0.043	10.0	8.9	O K
600 min Winter	121.537	0.037	8.5	7.6	O K
720 min Winter	121.532	0.032	7.4	6.6	O K
960 min Winter	121.526	0.026	6.0	5.3	O K
1440 min Winter	121.519	0.019	4.3	3.9	O K
2160 min Winter	121.514	0.014	3.2	2.8	O K
2880 min Winter	121.512	0.012	2.6	2.3	O K
4320 min Winter	121.508	0.008	1.8	1.7	O K
5760 min Winter	121.507	0.007	1.5	1.3	O K
7200 min Winter	121.506	0.006	1.3	1.1	O K
8640 min Winter	121.505	0.005	1.2	1.0	O K
10080 min Winter	121.504	0.004	0.9	0.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	26
60 min Winter	30.340	0.0	46
120 min Winter	18.282	0.0	82
180 min Winter	13.454	0.0	114
240 min Winter	10.779	0.0	146
360 min Winter	7.859	0.0	198
480 min Winter	6.280	0.0	256
600 min Winter	5.274	0.0	314
720 min Winter	4.572	0.0	376
960 min Winter	3.646	0.0	492
1440 min Winter	2.649	0.0	738
2160 min Winter	1.922	0.0	1100
2880 min Winter	1.529	0.0	1460
4320 min Winter	1.108	0.0	2204
5760 min Winter	0.880	0.0	2840
7200 min Winter	0.737	0.0	3672
8640 min Winter	0.637	0.0	4368
10080 min Winter	0.563	0.0	5184

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 37 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.749	0.249	18.8	59.3	O K
30 min Summer	121.784	0.284	20.1	69.3	O K
60 min Summer	121.796	0.296	20.5	72.6	O K
120 min Summer	121.781	0.281	20.0	68.4	O K
180 min Summer	121.758	0.258	19.1	61.7	O K
240 min Summer	121.735	0.235	18.3	55.2	O K
360 min Summer	121.692	0.192	16.8	43.9	O K
480 min Summer	121.658	0.158	15.6	35.2	O K
600 min Summer	121.629	0.129	14.6	28.3	O K
720 min Summer	121.606	0.106	13.7	22.8	O K
960 min Summer	121.571	0.071	12.5	15.0	O K
1440 min Summer	121.545	0.045	10.6	9.3	O K
2160 min Summer	121.534	0.034	7.8	6.9	O K
2880 min Summer	121.527	0.027	6.2	5.5	O K
4320 min Summer	121.520	0.020	4.4	4.0	O K
5760 min Summer	121.516	0.016	3.5	3.2	O K
7200 min Summer	121.513	0.013	2.9	2.6	O K
8640 min Summer	121.511	0.011	2.5	2.3	O K
10080 min Summer	121.510	0.010	2.3	2.0	O K
15 min Winter	121.778	0.278	19.9	67.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	28
60 min Summer	55.837	0.0	44
120 min Summer	33.645	0.0	80
180 min Summer	24.691	0.0	114
240 min Summer	19.711	0.0	146
360 min Summer	14.285	0.0	210
480 min Summer	11.371	0.0	272
600 min Summer	9.521	0.0	332
720 min Summer	8.231	0.0	390
960 min Summer	6.537	0.0	504
1440 min Summer	4.717	0.0	734
2160 min Summer	3.398	0.0	1100
2880 min Summer	2.690	0.0	1464
4320 min Summer	1.933	0.0	2196
5760 min Summer	1.528	0.0	2936
7200 min Summer	1.272	0.0	3608
8640 min Summer	1.095	0.0	4400
10080 min Summer	0.964	0.0	5024
15 min Winter	136.827	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.819	0.319	21.4	79.4	O K
60 min Winter	121.829	0.329	21.8	82.6	O K
120 min Winter	121.806	0.306	20.9	75.5	O K
180 min Winter	121.771	0.271	19.6	65.5	O K
240 min Winter	121.737	0.237	18.4	56.0	O K
360 min Winter	121.679	0.179	16.3	40.4	O K
480 min Winter	121.632	0.132	14.7	29.0	O K
600 min Winter	121.596	0.096	13.4	20.4	O K
720 min Winter	121.568	0.068	12.4	14.2	O K
960 min Winter	121.546	0.046	10.7	9.4	O K
1440 min Winter	121.534	0.034	7.8	6.9	O K
2160 min Winter	121.525	0.025	5.6	5.0	O K
2880 min Winter	121.520	0.020	4.4	4.0	O K
4320 min Winter	121.515	0.015	3.3	2.9	O K
5760 min Winter	121.512	0.012	2.6	2.3	O K
7200 min Winter	121.510	0.010	2.2	1.9	O K
8640 min Winter	121.508	0.008	1.8	1.6	O K
10080 min Winter	121.507	0.007	1.6	1.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	30
60 min Winter	55.837	0.0	48
120 min Winter	33.645	0.0	86
180 min Winter	24.691	0.0	122
240 min Winter	19.711	0.0	156
360 min Winter	14.285	0.0	220
480 min Winter	11.371	0.0	282
600 min Winter	9.521	0.0	342
720 min Winter	8.231	0.0	396
960 min Winter	6.537	0.0	492
1440 min Winter	4.717	0.0	736
2160 min Winter	3.398	0.0	1100
2880 min Winter	2.690	0.0	1468
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2952
7200 min Winter	1.272	0.0	3576
8640 min Winter	1.095	0.0	4248
10080 min Winter	0.964	0.0	4856

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.280

Time (mins) From:	To:	Area (ha)
0	4	0.280

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Model Details

Storage is Offline Dividing Weir Level (m) 121.500
Cover Level (m) 122.300

Infiltration Basin Structure

Invert Level (m) 121.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.54720 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.54720

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	199.7	0.800	496.7

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Summary of Results for 1 year Return Period

Half Drain Time : 12 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m^3)	Status
15 min Summer	121.548	0.048	5.9	4.7	O K
30 min Summer	121.551	0.051	6.2	5.0	O K
60 min Summer	121.549	0.049	6.0	4.8	O K
120 min Summer	121.541	0.041	5.0	4.1	O K
180 min Summer	121.536	0.036	4.3	3.5	O K
240 min Summer	121.532	0.032	3.8	3.1	O K
360 min Summer	121.527	0.027	3.1	2.6	O K
480 min Summer	121.523	0.023	2.6	2.2	O K
600 min Summer	121.520	0.020	2.3	1.9	O K
720 min Summer	121.518	0.018	2.1	1.7	O K
960 min Summer	121.515	0.015	1.7	1.4	O K
1440 min Summer	121.512	0.012	1.3	1.1	O K
2160 min Summer	121.509	0.009	1.0	0.8	O K
2880 min Summer	121.507	0.007	0.8	0.7	O K
4320 min Summer	121.506	0.006	0.6	0.5	O K
5760 min Summer	121.505	0.005	0.5	0.4	O K
7200 min Summer	121.504	0.004	0.4	0.3	O K
8640 min Summer	121.503	0.003	0.3	0.3	O K
10080 min Summer	121.503	0.003	0.3	0.3	O K
15 min Winter	121.553	0.053	6.3	5.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m^3)	Time-Peak (mins)
15 min Summer	30.708	0.0	13
30 min Summer	19.953	0.0	21
60 min Summer	12.584	0.0	38
120 min Summer	7.775	0.0	68
180 min Summer	5.837	0.0	100
240 min Summer	4.758	0.0	130
360 min Summer	3.551	0.0	190
480 min Summer	2.874	0.0	250
600 min Summer	2.438	0.0	310
720 min Summer	2.132	0.0	370
960 min Summer	1.725	0.0	492
1440 min Summer	1.280	0.0	734
2160 min Summer	0.951	0.0	1100
2880 min Summer	0.770	0.0	1468
4320 min Summer	0.571	0.0	2180
5760 min Summer	0.462	0.0	2888
7200 min Summer	0.392	0.0	3656
8640 min Summer	0.343	0.0	4400
10080 min Summer	0.307	0.0	4984
15 min Winter	30.708	0.0	14

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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.555	0.055	6.3	5.4	O K
60 min Winter	121.549	0.049	6.0	4.8	O K
120 min Winter	121.539	0.039	4.7	3.8	O K
180 min Winter	121.532	0.032	3.8	3.1	O K
240 min Winter	121.528	0.028	3.2	2.7	O K
360 min Winter	121.522	0.022	2.5	2.1	O K
480 min Winter	121.518	0.018	2.1	1.7	O K
600 min Winter	121.516	0.016	1.8	1.5	O K
720 min Winter	121.514	0.014	1.5	1.3	O K
960 min Winter	121.512	0.012	1.3	1.1	O K
1440 min Winter	121.509	0.009	1.0	0.8	O K
2160 min Winter	121.507	0.007	0.7	0.6	O K
2880 min Winter	121.505	0.005	0.6	0.5	O K
4320 min Winter	121.504	0.004	0.5	0.4	O K
5760 min Winter	121.503	0.003	0.3	0.3	O K
7200 min Winter	121.503	0.003	0.3	0.2	O K
8640 min Winter	121.503	0.003	0.3	0.2	O K
10080 min Winter	121.502	0.002	0.2	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	19.953	0.0	22
60 min Winter	12.584	0.0	40
120 min Winter	7.775	0.0	72
180 min Winter	5.837	0.0	102
240 min Winter	4.758	0.0	132
360 min Winter	3.551	0.0	194
480 min Winter	2.874	0.0	254
600 min Winter	2.438	0.0	314
720 min Winter	2.132	0.0	378
960 min Winter	1.725	0.0	494
1440 min Winter	1.280	0.0	722
2160 min Winter	0.951	0.0	1108
2880 min Winter	0.770	0.0	1404
4320 min Winter	0.571	0.0	2280
5760 min Winter	0.462	0.0	2872
7200 min Winter	0.392	0.0	3680
8640 min Winter	0.343	0.0	4528
10080 min Winter	0.307	0.0	5080

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 30 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.710	0.210	11.2	25.2	O K
30 min Summer	121.733	0.233	12.0	28.7	O K
60 min Summer	121.738	0.238	12.2	29.5	O K
120 min Summer	121.720	0.220	11.6	26.7	O K
180 min Summer	121.697	0.197	10.8	23.3	O K
240 min Summer	121.676	0.176	10.1	20.2	O K
360 min Summer	121.640	0.140	9.0	15.4	O K
480 min Summer	121.612	0.112	8.1	12.0	O K
600 min Summer	121.591	0.091	7.4	9.5	O K
720 min Summer	121.574	0.074	6.9	7.5	O K
960 min Summer	121.552	0.052	6.3	5.2	O K
1440 min Summer	121.539	0.039	4.7	3.8	O K
2160 min Summer	121.530	0.030	3.5	2.8	O K
2880 min Summer	121.524	0.024	2.7	2.3	O K
4320 min Summer	121.518	0.018	2.0	1.7	O K
5760 min Summer	121.514	0.014	1.6	1.3	O K
7200 min Summer	121.512	0.012	1.3	1.1	O K
8640 min Summer	121.510	0.010	1.1	1.0	O K
10080 min Summer	121.509	0.009	1.0	0.9	O K
15 min Winter	121.732	0.232	12.0	28.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	136.827	0.0	16
30 min Summer	89.559	0.0	25
60 min Summer	55.837	0.0	42
120 min Summer	33.645	0.0	76
180 min Summer	24.691	0.0	110
240 min Summer	19.711	0.0	142
360 min Summer	14.285	0.0	204
480 min Summer	11.371	0.0	264
600 min Summer	9.521	0.0	322
720 min Summer	8.231	0.0	382
960 min Summer	6.537	0.0	492
1440 min Summer	4.717	0.0	736
2160 min Summer	3.398	0.0	1096
2880 min Summer	2.690	0.0	1468
4320 min Summer	1.933	0.0	2180
5760 min Summer	1.528	0.0	2872
7200 min Summer	1.272	0.0	3672
8640 min Summer	1.095	0.0	4312
10080 min Summer	0.964	0.0	5088
15 min Winter	136.827	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.757	0.257	12.8	32.6	O K
60 min Winter	121.759	0.259	12.9	33.0	O K
120 min Winter	121.731	0.231	11.9	28.3	O K
180 min Winter	121.698	0.198	10.8	23.4	O K
240 min Winter	121.668	0.168	9.9	19.2	O K
360 min Winter	121.621	0.121	8.4	13.0	O K
480 min Winter	121.586	0.086	7.3	8.9	O K
600 min Winter	121.561	0.061	6.5	6.2	O K
720 min Winter	121.549	0.049	6.0	4.8	O K
960 min Winter	121.540	0.040	4.8	3.9	O K
1440 min Winter	121.530	0.030	3.5	2.8	O K
2160 min Winter	121.522	0.022	2.5	2.1	O K
2880 min Winter	121.518	0.018	2.0	1.7	O K
4320 min Winter	121.513	0.013	1.5	1.2	O K
5760 min Winter	121.510	0.010	1.1	1.0	O K
7200 min Winter	121.509	0.009	1.0	0.8	O K
8640 min Winter	121.508	0.008	0.8	0.7	O K
10080 min Winter	121.507	0.007	0.7	0.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.559	0.0	26
60 min Winter	55.837	0.0	46
120 min Winter	33.645	0.0	82
180 min Winter	24.691	0.0	116
240 min Winter	19.711	0.0	148
360 min Winter	14.285	0.0	212
480 min Winter	11.371	0.0	270
600 min Winter	9.521	0.0	326
720 min Winter	8.231	0.0	376
960 min Winter	6.537	0.0	492
1440 min Winter	4.717	0.0	734
2160 min Winter	3.398	0.0	1088
2880 min Winter	2.690	0.0	1464
4320 min Winter	1.933	0.0	2200
5760 min Winter	1.528	0.0	2984
7200 min Winter	1.272	0.0	3664
8640 min Winter	1.095	0.0	4440
10080 min Winter	0.964	0.0	4960

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.408	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.125

Time (mins) From:	To:	Area (ha)
0	4	0.125

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Model Details

Storage is Offline Dividing Weir Level (m) 121.500
Cover Level (m) 122.200

Infiltration Basin Structure

Invert Level (m) 121.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.54720 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.54720

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	92.9	0.700	333.0

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Summary of Results for 30 year Return Period

Half Drain Time : 19 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.620	0.120	8.4	12.9	O K
30 min Summer	121.631	0.131	8.7	14.3	O K
60 min Summer	121.629	0.129	8.7	14.1	O K
120 min Summer	121.611	0.111	8.1	11.8	O K
180 min Summer	121.593	0.093	7.5	9.7	O K
240 min Summer	121.578	0.078	7.1	8.0	O K
360 min Summer	121.557	0.057	6.4	5.7	O K
480 min Summer	121.547	0.047	5.7	4.6	O K
600 min Summer	121.541	0.041	4.9	4.0	O K
720 min Summer	121.537	0.037	4.4	3.6	O K
960 min Summer	121.531	0.031	3.6	3.0	O K
1440 min Summer	121.523	0.023	2.7	2.2	O K
2160 min Summer	121.517	0.017	1.9	1.6	O K
2880 min Summer	121.514	0.014	1.6	1.3	O K
4320 min Summer	121.510	0.010	1.1	1.0	O K
5760 min Summer	121.508	0.008	0.9	0.8	O K
7200 min Summer	121.507	0.007	0.8	0.7	O K
8640 min Summer	121.506	0.006	0.7	0.6	O K
10080 min Summer	121.506	0.006	0.6	0.5	O K
15 min Winter	121.634	0.134	8.8	14.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	75.330	0.0	15
30 min Summer	48.890	0.0	23
60 min Summer	30.340	0.0	40
120 min Summer	18.282	0.0	74
180 min Summer	13.454	0.0	104
240 min Summer	10.779	0.0	134
360 min Summer	7.859	0.0	192
480 min Summer	6.280	0.0	250
600 min Summer	5.274	0.0	310
720 min Summer	4.572	0.0	370
960 min Summer	3.646	0.0	492
1440 min Summer	2.649	0.0	734
2160 min Summer	1.922	0.0	1100
2880 min Summer	1.529	0.0	1468
4320 min Summer	1.108	0.0	2200
5760 min Summer	0.880	0.0	2848
7200 min Summer	0.737	0.0	3576
8640 min Summer	0.637	0.0	4264
10080 min Summer	0.563	0.0	5048
15 min Winter	75.330	0.0	15

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.645	0.145	9.1	16.1	O K
60 min Winter	121.639	0.139	9.0	15.3	O K
120 min Winter	121.610	0.110	8.1	11.8	O K
180 min Winter	121.585	0.085	7.3	8.8	O K
240 min Winter	121.565	0.065	6.7	6.5	O K
360 min Winter	121.545	0.045	5.5	4.5	O K
480 min Winter	121.538	0.038	4.5	3.7	O K
600 min Winter	121.532	0.032	3.8	3.1	O K
720 min Winter	121.529	0.029	3.3	2.8	O K
960 min Winter	121.523	0.023	2.7	2.2	O K
1440 min Winter	121.517	0.017	1.9	1.6	O K
2160 min Winter	121.513	0.013	1.4	1.2	O K
2880 min Winter	121.510	0.010	1.1	1.0	O K
4320 min Winter	121.508	0.008	0.8	0.7	O K
5760 min Winter	121.506	0.006	0.7	0.6	O K
7200 min Winter	121.505	0.005	0.6	0.5	O K
8640 min Winter	121.505	0.005	0.5	0.4	O K
10080 min Winter	121.504	0.004	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	48.890	0.0	25
60 min Winter	30.340	0.0	44
120 min Winter	18.282	0.0	78
180 min Winter	13.454	0.0	110
240 min Winter	10.779	0.0	138
360 min Winter	7.859	0.0	192
480 min Winter	6.280	0.0	252
600 min Winter	5.274	0.0	314
720 min Winter	4.572	0.0	370
960 min Winter	3.646	0.0	492
1440 min Winter	2.649	0.0	736
2160 min Winter	1.922	0.0	1100
2880 min Winter	1.529	0.0	1468
4320 min Winter	1.108	0.0	2212
5760 min Winter	0.880	0.0	3016
7200 min Winter	0.737	0.0	3616
8640 min Winter	0.637	0.0	4464
10080 min Winter	0.563	0.0	4984

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 6 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	122.873	0.323	25.5	13.8	O K
30 min Summer	122.868	0.318	25.5	13.6	O K
60 min Summer	122.786	0.236	24.8	10.1	O K
120 min Summer	122.650	0.100	23.6	4.3	O K
180 min Summer	122.598	0.048	22.4	2.1	O K
240 min Summer	122.589	0.039	18.2	1.7	O K
360 min Summer	122.579	0.029	13.3	1.2	O K
480 min Summer	122.573	0.023	10.8	1.0	O K
600 min Summer	122.569	0.019	8.9	0.8	O K
720 min Summer	122.567	0.017	7.8	0.7	O K
960 min Summer	122.563	0.013	6.1	0.6	O K
1440 min Summer	122.560	0.010	4.5	0.4	O K
2160 min Summer	122.557	0.007	3.4	0.3	O K
2880 min Summer	122.556	0.006	2.7	0.2	O K
4320 min Summer	122.554	0.004	2.0	0.2	O K
5760 min Summer	122.553	0.003	1.5	0.2	O K
7200 min Summer	122.553	0.003	1.3	0.1	O K
8640 min Summer	122.553	0.003	1.3	0.1	O K
10080 min Summer	122.552	0.002	1.0	0.1	O K
15 min Winter	122.922	0.372	26.0	15.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	13
30 min Summer	89.929	0.0	21
60 min Summer	56.129	0.0	38
120 min Summer	33.850	0.0	66
180 min Summer	24.849	0.0	94
240 min Summer	19.839	0.0	124
360 min Summer	14.389	0.0	182
480 min Summer	11.459	0.0	242
600 min Summer	9.597	0.0	306
720 min Summer	8.298	0.0	366
960 min Summer	6.593	0.0	478
1440 min Summer	4.760	0.0	718
2160 min Summer	3.431	0.0	1088
2880 min Summer	2.717	0.0	1464
4320 min Summer	1.953	0.0	2196
5760 min Summer	1.544	0.0	2840
7200 min Summer	1.286	0.0	3560
8640 min Summer	1.107	0.0	4408
10080 min Summer	0.975	0.0	5176
15 min Winter	137.234	0.0	14

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	122.894	0.344	25.7	14.7	O K
60 min Winter	122.759	0.209	24.6	8.9	O K
120 min Winter	122.598	0.048	22.4	2.1	O K
180 min Winter	122.586	0.036	16.6	1.5	O K
240 min Winter	122.579	0.029	13.3	1.2	O K
360 min Winter	122.571	0.021	9.6	0.9	O K
480 min Winter	122.567	0.017	7.8	0.7	O K
600 min Winter	122.564	0.014	6.6	0.6	O K
720 min Winter	122.562	0.012	5.7	0.5	O K
960 min Winter	122.560	0.010	4.5	0.4	O K
1440 min Winter	122.557	0.007	3.4	0.3	O K
2160 min Winter	122.555	0.005	2.4	0.2	O K
2880 min Winter	122.554	0.004	2.0	0.2	O K
4320 min Winter	122.553	0.003	1.5	0.1	O K
5760 min Winter	122.553	0.003	1.3	0.1	O K
7200 min Winter	122.552	0.002	1.0	0.1	O K
8640 min Winter	122.552	0.002	0.8	0.1	O K
10080 min Winter	122.552	0.002	0.8	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	23
60 min Winter	56.129	0.0	40
120 min Winter	33.850	0.0	64
180 min Winter	24.849	0.0	94
240 min Winter	19.839	0.0	122
360 min Winter	14.389	0.0	186
480 min Winter	11.459	0.0	244
600 min Winter	9.597	0.0	300
720 min Winter	8.298	0.0	358
960 min Winter	6.593	0.0	490
1440 min Winter	4.760	0.0	722
2160 min Winter	3.431	0.0	1128
2880 min Winter	2.717	0.0	1436
4320 min Winter	1.953	0.0	2144
5760 min Winter	1.544	0.0	3112
7200 min Winter	1.286	0.0	3704
8640 min Winter	1.107	0.0	4280
10080 min Winter	0.975	0.0	5776

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.114

Time (mins) From:	To:	Area (ha)
0	4	0.114

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Model Details

Storage is Online Cover Level (m) 125.400

Cellular Storage Structure

Invert Level (m) 122.550 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 2.10240 Porosity 0.95
Infiltration Coefficient Side (m/hr) 2.10240

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	45.0	117.0	0.900	0.0	152.2
0.800	45.0	152.2			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 33 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.432	0.282	2.3	6.4	O K
30 min Summer	124.476	0.326	2.4	7.4	O K
60 min Summer	124.488	0.338	2.5	7.7	O K
120 min Summer	124.461	0.311	2.4	7.1	O K
180 min Summer	124.425	0.275	2.3	6.3	O K
240 min Summer	124.391	0.241	2.2	5.5	O K
360 min Summer	124.333	0.183	2.0	4.2	O K
480 min Summer	124.289	0.139	1.9	3.2	O K
600 min Summer	124.255	0.105	1.8	2.4	O K
720 min Summer	124.230	0.080	1.7	1.8	O K
960 min Summer	124.201	0.051	1.6	1.2	O K
1440 min Summer	124.187	0.037	1.2	0.9	O K
2160 min Summer	124.177	0.027	0.9	0.6	O K
2880 min Summer	124.172	0.022	0.7	0.5	O K
4320 min Summer	124.166	0.016	0.5	0.4	O K
5760 min Summer	124.162	0.012	0.4	0.3	O K
7200 min Summer	124.160	0.010	0.3	0.2	O K
8640 min Summer	124.159	0.009	0.3	0.2	O K
10080 min Summer	124.158	0.008	0.2	0.2	O K
15 min Winter	124.471	0.321	2.4	7.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	16
30 min Summer	89.929	0.0	27
60 min Summer	56.129	0.0	44
120 min Summer	33.850	0.0	78
180 min Summer	24.849	0.0	112
240 min Summer	19.839	0.0	144
360 min Summer	14.389	0.0	208
480 min Summer	11.459	0.0	268
600 min Summer	9.597	0.0	326
720 min Summer	8.298	0.0	384
960 min Summer	6.593	0.0	492
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1460
4320 min Summer	1.953	0.0	2188
5760 min Summer	1.544	0.0	2936
7200 min Summer	1.286	0.0	3552
8640 min Summer	1.107	0.0	4352
10080 min Summer	0.975	0.0	5136
15 min Winter	137.234	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.524	0.374	2.6	8.5	O K
60 min Winter	124.534	0.384	2.6	8.8	O K
120 min Winter	124.491	0.341	2.5	7.8	O K
180 min Winter	124.437	0.287	2.3	6.5	O K
240 min Winter	124.387	0.237	2.2	5.4	O K
360 min Winter	124.307	0.157	1.9	3.6	O K
480 min Winter	124.250	0.100	1.7	2.3	O K
600 min Winter	124.211	0.061	1.6	1.4	O K
720 min Winter	124.197	0.047	1.5	1.1	O K
960 min Winter	124.188	0.038	1.2	0.9	O K
1440 min Winter	124.177	0.027	0.9	0.6	O K
2160 min Winter	124.170	0.020	0.6	0.4	O K
2880 min Winter	124.166	0.016	0.5	0.4	O K
4320 min Winter	124.161	0.011	0.4	0.3	O K
5760 min Winter	124.159	0.009	0.3	0.2	O K
7200 min Winter	124.158	0.008	0.2	0.2	O K
8640 min Winter	124.157	0.007	0.2	0.1	O K
10080 min Winter	124.156	0.006	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	29
60 min Winter	56.129	0.0	48
120 min Winter	33.850	0.0	84
180 min Winter	24.849	0.0	120
240 min Winter	19.839	0.0	154
360 min Winter	14.389	0.0	218
480 min Winter	11.459	0.0	276
600 min Winter	9.597	0.0	326
720 min Winter	8.298	0.0	370
960 min Winter	6.593	0.0	490
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1068
2880 min Winter	2.717	0.0	1428
4320 min Winter	1.953	0.0	2160
5760 min Winter	1.544	0.0	2880
7200 min Winter	1.286	0.0	3544
8640 min Winter	1.107	0.0	4368
10080 min Winter	0.975	0.0	5080

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.031

Time (mins) From:	To:	Area (ha)
0	4	0.031

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Model Details

Storage is Online Cover Level (m) 125.400

Cellular Storage Structure

Invert Level (m) 124.150 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.77760 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.77760

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	24.0	20.0	0.500	0.0	36.8
0.400	24.0	36.8			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 6 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.116	0.316	13.8	7.8	O K
30 min Summer	124.113	0.313	13.8	7.7	O K
60 min Summer	124.038	0.238	13.4	5.9	O K
120 min Summer	123.907	0.107	12.7	2.6	O K
180 min Summer	123.850	0.050	12.3	1.2	O K
240 min Summer	123.840	0.040	10.0	1.0	O K
360 min Summer	123.830	0.030	7.4	0.7	O K
480 min Summer	123.824	0.024	5.9	0.6	O K
600 min Summer	123.820	0.020	5.0	0.5	O K
720 min Summer	123.817	0.017	4.3	0.4	O K
960 min Summer	123.814	0.014	3.4	0.3	O K
1440 min Summer	123.810	0.010	2.5	0.3	O K
2160 min Summer	123.807	0.007	1.8	0.2	O K
2880 min Summer	123.806	0.006	1.4	0.2	O K
4320 min Summer	123.804	0.004	1.1	0.1	O K
5760 min Summer	123.804	0.004	0.9	0.1	O K
7200 min Summer	123.803	0.003	0.8	0.1	O K
8640 min Summer	123.803	0.003	0.7	0.1	O K
10080 min Summer	123.802	0.002	0.6	0.1	O K
15 min Winter	124.165	0.365	14.1	9.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	13
30 min Summer	89.929	0.0	21
60 min Summer	56.129	0.0	38
120 min Summer	33.850	0.0	66
180 min Summer	24.849	0.0	94
240 min Summer	19.839	0.0	124
360 min Summer	14.389	0.0	184
480 min Summer	11.459	0.0	244
600 min Summer	9.597	0.0	306
720 min Summer	8.298	0.0	366
960 min Summer	6.593	0.0	482
1440 min Summer	4.760	0.0	718
2160 min Summer	3.431	0.0	1068
2880 min Summer	2.717	0.0	1428
4320 min Summer	1.953	0.0	2176
5760 min Summer	1.544	0.0	2832
7200 min Summer	1.286	0.0	3656
8640 min Summer	1.107	0.0	4320
10080 min Summer	0.975	0.0	5000
15 min Winter	137.234	0.0	14

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.141	0.341	14.0	8.4	O K
60 min Winter	124.016	0.216	13.3	5.3	O K
120 min Winter	123.850	0.050	12.4	1.2	O K
180 min Winter	123.837	0.037	9.2	0.9	O K
240 min Winter	123.830	0.030	7.4	0.7	O K
360 min Winter	123.822	0.022	5.4	0.5	O K
480 min Winter	123.817	0.017	4.3	0.4	O K
600 min Winter	123.815	0.015	3.6	0.4	O K
720 min Winter	123.813	0.013	3.2	0.3	O K
960 min Winter	123.810	0.010	2.5	0.2	O K
1440 min Winter	123.807	0.007	1.8	0.2	O K
2160 min Winter	123.805	0.005	1.3	0.1	O K
2880 min Winter	123.804	0.004	1.1	0.1	O K
4320 min Winter	123.803	0.003	0.8	0.1	O K
5760 min Winter	123.803	0.003	0.7	0.1	O K
7200 min Winter	123.802	0.002	0.6	0.1	O K
8640 min Winter	123.802	0.002	0.6	0.1	O K
10080 min Winter	123.802	0.002	0.4	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	23
60 min Winter	56.129	0.0	40
120 min Winter	33.850	0.0	64
180 min Winter	24.849	0.0	94
240 min Winter	19.839	0.0	124
360 min Winter	14.389	0.0	184
480 min Winter	11.459	0.0	248
600 min Winter	9.597	0.0	304
720 min Winter	8.298	0.0	354
960 min Winter	6.593	0.0	500
1440 min Winter	4.760	0.0	728
2160 min Winter	3.431	0.0	1076
2880 min Winter	2.717	0.0	1464
4320 min Winter	1.953	0.0	2160
5760 min Winter	1.544	0.0	2832
7200 min Winter	1.286	0.0	3464
8640 min Winter	1.107	0.0	4256
10080 min Winter	0.975	0.0	4512

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.063

Time (mins) From:	To:	Area (ha)
0	4	0.063

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Model Details

Storage is Online Cover Level (m) 125.400

Cellular Storage Structure

Invert Level (m) 123.800 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 1.71720 Porosity 0.95
Infiltration Coefficient Side (m/hr) 1.71720

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	26.0	76.0	0.500	0.0	90.0
0.400	26.0	90.0			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 5 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.291	0.291	13.4	4.7	O K
30 min Summer	123.273	0.273	13.2	4.4	O K
60 min Summer	123.186	0.186	12.2	3.0	O K
120 min Summer	123.066	0.066	10.9	1.1	O K
180 min Summer	123.042	0.042	8.9	0.7	O K
240 min Summer	123.034	0.034	7.3	0.6	O K
360 min Summer	123.025	0.025	5.4	0.4	O K
480 min Summer	123.020	0.020	4.3	0.3	O K
600 min Summer	123.017	0.017	3.6	0.3	O K
720 min Summer	123.015	0.015	3.2	0.2	O K
960 min Summer	123.012	0.012	2.5	0.2	O K
1440 min Summer	123.009	0.009	1.9	0.1	O K
2160 min Summer	123.006	0.006	1.3	0.1	O K
2880 min Summer	123.005	0.005	1.1	0.1	O K
4320 min Summer	123.004	0.004	0.8	0.1	O K
5760 min Summer	123.003	0.003	0.7	0.1	O K
7200 min Summer	123.002	0.002	0.5	0.1	O K
8640 min Summer	123.002	0.002	0.5	0.0	O K
10080 min Summer	123.002	0.002	0.5	0.0	O K
15 min Winter	123.329	0.329	13.9	5.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	12
30 min Summer	89.929	0.0	20
60 min Summer	56.129	0.0	36
120 min Summer	33.850	0.0	64
180 min Summer	24.849	0.0	94
240 min Summer	19.839	0.0	124
360 min Summer	14.389	0.0	184
480 min Summer	11.459	0.0	244
600 min Summer	9.597	0.0	306
720 min Summer	8.298	0.0	362
960 min Summer	6.593	0.0	482
1440 min Summer	4.760	0.0	714
2160 min Summer	3.431	0.0	1096
2880 min Summer	2.717	0.0	1436
4320 min Summer	1.953	0.0	2152
5760 min Summer	1.544	0.0	2904
7200 min Summer	1.286	0.0	3416
8640 min Summer	1.107	0.0	4488
10080 min Summer	0.975	0.0	4912
15 min Winter	137.234	0.0	13

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.281	0.281	13.3	4.5	O K
60 min Winter	123.143	0.143	11.8	2.3	O K
120 min Winter	123.042	0.042	9.1	0.7	O K
180 min Winter	123.031	0.031	6.7	0.5	O K
240 min Winter	123.025	0.025	5.4	0.4	O K
360 min Winter	123.018	0.018	3.9	0.3	O K
480 min Winter	123.015	0.015	3.2	0.2	O K
600 min Winter	123.012	0.012	2.6	0.2	O K
720 min Winter	123.011	0.011	2.3	0.2	O K
960 min Winter	123.009	0.009	1.9	0.1	O K
1440 min Winter	123.006	0.006	1.3	0.1	O K
2160 min Winter	123.005	0.005	1.0	0.1	O K
2880 min Winter	123.004	0.004	0.8	0.1	O K
4320 min Winter	123.003	0.003	0.6	0.0	O K
5760 min Winter	123.002	0.002	0.5	0.1	O K
7200 min Winter	123.002	0.002	0.4	0.0	O K
8640 min Winter	123.002	0.002	0.4	0.0	O K
10080 min Winter	123.002	0.002	0.4	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	21
60 min Winter	56.129	0.0	38
120 min Winter	33.850	0.0	64
180 min Winter	24.849	0.0	94
240 min Winter	19.839	0.0	122
360 min Winter	14.389	0.0	176
480 min Winter	11.459	0.0	244
600 min Winter	9.597	0.0	304
720 min Winter	8.298	0.0	366
960 min Winter	6.593	0.0	476
1440 min Winter	4.760	0.0	724
2160 min Winter	3.431	0.0	1044
2880 min Winter	2.717	0.0	1404
4320 min Winter	1.953	0.0	2084
5760 min Winter	1.544	0.0	3056
7200 min Winter	1.286	0.0	3728
8640 min Winter	1.107	0.0	4304
10080 min Winter	0.975	0.0	4464

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.046

Time (mins) From:	To:	Area (ha)
0	4	0.046

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Model Details

Storage is Online Cover Level (m) 124.700

Cellular Storage Structure

Invert Level (m) 123.000 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 2.96280 Porosity 0.95
Infiltration Coefficient Side (m/hr) 2.96280

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	17.0	37.0	0.500	0.0	53.4
0.400	17.0	53.4			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 32 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	124.021	0.271	5.4	14.4	O K
30 min Summer	124.061	0.311	5.6	16.5	O K
60 min Summer	124.067	0.317	5.6	16.9	O K
120 min Summer	124.035	0.285	5.5	15.2	O K
180 min Summer	123.995	0.245	5.3	13.0	O K
240 min Summer	123.956	0.206	5.2	10.9	O K
360 min Summer	123.891	0.141	4.9	7.5	O K
480 min Summer	123.846	0.096	4.8	5.1	O K
600 min Summer	123.816	0.066	4.7	3.5	O K
720 min Summer	123.800	0.050	4.6	2.7	O K
960 min Summer	123.791	0.041	3.7	2.2	O K
1440 min Summer	123.780	0.030	2.7	1.6	O K
2160 min Summer	123.772	0.022	2.0	1.1	O K
2880 min Summer	123.767	0.017	1.6	0.9	O K
4320 min Summer	123.762	0.012	1.1	0.7	O K
5760 min Summer	123.760	0.010	0.9	0.5	O K
7200 min Summer	123.758	0.008	0.8	0.4	O K
8640 min Summer	123.757	0.007	0.7	0.4	O K
10080 min Summer	123.756	0.006	0.6	0.3	O K
15 min Winter	124.059	0.309	5.6	16.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	16
30 min Summer	89.929	0.0	27
60 min Summer	56.129	0.0	44
120 min Summer	33.850	0.0	78
180 min Summer	24.849	0.0	112
240 min Summer	19.839	0.0	144
360 min Summer	14.389	0.0	204
480 min Summer	11.459	0.0	262
600 min Summer	9.597	0.0	316
720 min Summer	8.298	0.0	370
960 min Summer	6.593	0.0	490
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1092
2880 min Summer	2.717	0.0	1440
4320 min Summer	1.953	0.0	2200
5760 min Summer	1.544	0.0	2848
7200 min Summer	1.286	0.0	3648
8640 min Summer	1.107	0.0	4312
10080 min Summer	0.975	0.0	5112
15 min Winter	137.234	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	124.109	0.359	5.7	19.1	O K
60 min Winter	124.113	0.363	5.8	19.3	O K
120 min Winter	124.061	0.311	5.6	16.6	O K
180 min Winter	123.999	0.249	5.3	13.3	O K
240 min Winter	123.942	0.192	5.1	10.2	O K
360 min Winter	123.853	0.103	4.8	5.5	O K
480 min Winter	123.802	0.052	4.6	2.8	O K
600 min Winter	123.793	0.043	4.0	2.3	O K
720 min Winter	123.788	0.038	3.5	2.0	O K
960 min Winter	123.780	0.030	2.7	1.6	O K
1440 min Winter	123.772	0.022	2.0	1.1	O K
2160 min Winter	123.766	0.016	1.4	0.8	O K
2880 min Winter	123.763	0.013	1.2	0.7	O K
4320 min Winter	123.759	0.009	0.9	0.5	O K
5760 min Winter	123.757	0.007	0.7	0.4	O K
7200 min Winter	123.756	0.006	0.6	0.3	O K
8640 min Winter	123.755	0.005	0.5	0.3	O K
10080 min Winter	123.755	0.005	0.4	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	29
60 min Winter	56.129	0.0	48
120 min Winter	33.850	0.0	84
180 min Winter	24.849	0.0	120
240 min Winter	19.839	0.0	152
360 min Winter	14.389	0.0	212
480 min Winter	11.459	0.0	256
600 min Winter	9.597	0.0	310
720 min Winter	8.298	0.0	370
960 min Winter	6.593	0.0	492
1440 min Winter	4.760	0.0	734
2160 min Winter	3.431	0.0	1072
2880 min Winter	2.717	0.0	1452
4320 min Winter	1.953	0.0	2240
5760 min Winter	1.544	0.0	2840
7200 min Winter	1.286	0.0	3688
8640 min Winter	1.107	0.0	4400
10080 min Winter	0.975	0.0	5320

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.071

Time (mins) From:	To:	Area (ha)
0	4	0.071

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Model Details

Storage is Online Cover Level (m) 125.350

Cellular Storage Structure

Invert Level (m) 123.750 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 1.98720 Porosity 0.95
Infiltration Coefficient Side (m/hr) 1.98720

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	56.0	24.0	0.500	0.0	32.0
0.400	56.0	32.0			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 4 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	123.354	0.304	28.9	8.7	O K
30 min Summer	123.331	0.281	28.3	8.0	O K
60 min Summer	123.235	0.185	25.6	5.3	O K
120 min Summer	123.113	0.063	22.1	1.8	O K
180 min Summer	123.091	0.041	18.0	1.2	O K
240 min Summer	123.084	0.034	14.7	0.9	O K
360 min Summer	123.075	0.025	10.8	0.7	O K
480 min Summer	123.070	0.020	8.6	0.6	O K
600 min Summer	123.067	0.017	7.3	0.5	O K
720 min Summer	123.064	0.014	6.2	0.4	O K
960 min Summer	123.061	0.011	4.9	0.3	O K
1440 min Summer	123.058	0.008	3.6	0.2	O K
2160 min Summer	123.056	0.006	2.7	0.2	O K
2880 min Summer	123.055	0.005	2.1	0.2	O K
4320 min Summer	123.054	0.004	1.6	0.1	O K
5760 min Summer	123.053	0.003	1.4	0.1	O K
7200 min Summer	123.053	0.003	1.2	0.1	O K
8640 min Summer	123.052	0.002	1.0	0.1	O K
10080 min Summer	123.052	0.002	1.0	0.1	O K
15 min Winter	123.390	0.340	29.9	9.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	12
30 min Summer	89.929	0.0	20
60 min Summer	56.129	0.0	36
120 min Summer	33.850	0.0	64
180 min Summer	24.849	0.0	94
240 min Summer	19.839	0.0	124
360 min Summer	14.389	0.0	182
480 min Summer	11.459	0.0	246
600 min Summer	9.597	0.0	304
720 min Summer	8.298	0.0	366
960 min Summer	6.593	0.0	488
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1456
4320 min Summer	1.953	0.0	2120
5760 min Summer	1.544	0.0	2864
7200 min Summer	1.286	0.0	3592
8640 min Summer	1.107	0.0	4376
10080 min Summer	0.975	0.0	4808
15 min Winter	137.234	0.0	13

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	123.334	0.284	28.4	8.1	O K
60 min Winter	123.187	0.137	24.2	3.9	O K
120 min Winter	123.091	0.041	18.0	1.2	O K
180 min Winter	123.081	0.031	13.4	0.9	O K
240 min Winter	123.074	0.024	10.6	0.7	O K
360 min Winter	123.068	0.018	7.7	0.5	O K
480 min Winter	123.064	0.014	6.2	0.4	O K
600 min Winter	123.062	0.012	5.3	0.3	O K
720 min Winter	123.060	0.010	4.5	0.3	O K
960 min Winter	123.058	0.008	3.6	0.2	O K
1440 min Winter	123.056	0.006	2.7	0.2	O K
2160 min Winter	123.055	0.005	2.1	0.1	O K
2880 min Winter	123.054	0.004	1.6	0.1	O K
4320 min Winter	123.053	0.003	1.2	0.1	O K
5760 min Winter	123.053	0.003	1.2	0.1	O K
7200 min Winter	123.052	0.002	0.8	0.1	O K
8640 min Winter	123.052	0.002	0.8	0.1	O K
10080 min Winter	123.052	0.002	0.8	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	21
60 min Winter	56.129	0.0	36
120 min Winter	33.850	0.0	62
180 min Winter	24.849	0.0	92
240 min Winter	19.839	0.0	124
360 min Winter	14.389	0.0	178
480 min Winter	11.459	0.0	244
600 min Winter	9.597	0.0	300
720 min Winter	8.298	0.0	354
960 min Winter	6.593	0.0	490
1440 min Winter	4.760	0.0	740
2160 min Winter	3.431	0.0	1132
2880 min Winter	2.717	0.0	1476
4320 min Winter	1.953	0.0	2176
5760 min Winter	1.544	0.0	3000
7200 min Winter	1.286	0.0	3744
8640 min Winter	1.107	0.0	4320
10080 min Winter	0.975	0.0	4728

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.091

Time (mins) From:	To:	Area (ha)
0	4	0.091

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Model Details

Storage is Online Cover Level (m) 124.100

Cellular Storage Structure

Invert Level (m) 123.050 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 3.96000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 3.96000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	30.0	55.5	0.500	0.0	86.3
0.400	30.0	86.3			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 60 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	120.756	0.256	1.6	7.3	O K
30 min Summer	120.810	0.310	1.7	8.8	O K
60 min Summer	120.831	0.331	1.7	9.4	O K
120 min Summer	120.822	0.322	1.7	9.2	O K
180 min Summer	120.798	0.298	1.7	8.5	O K
240 min Summer	120.772	0.272	1.6	7.8	O K
360 min Summer	120.724	0.224	1.6	6.4	O K
480 min Summer	120.682	0.182	1.5	5.2	O K
600 min Summer	120.647	0.147	1.5	4.2	O K
720 min Summer	120.618	0.118	1.4	3.4	O K
960 min Summer	120.576	0.076	1.4	2.2	O K
1440 min Summer	120.546	0.046	1.2	1.3	O K
2160 min Summer	120.533	0.033	0.9	1.0	O K
2880 min Summer	120.527	0.027	0.7	0.8	O K
4320 min Summer	120.519	0.019	0.5	0.5	O K
5760 min Summer	120.515	0.015	0.4	0.4	O K
7200 min Summer	120.513	0.013	0.3	0.4	O K
8640 min Summer	120.511	0.011	0.3	0.3	O K
10080 min Summer	120.510	0.010	0.3	0.3	O K
15 min Winter	120.791	0.291	1.6	8.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	17
30 min Summer	89.929	0.0	31
60 min Summer	56.129	0.0	52
120 min Summer	33.850	0.0	84
180 min Summer	24.849	0.0	118
240 min Summer	19.839	0.0	152
360 min Summer	14.389	0.0	218
480 min Summer	11.459	0.0	282
600 min Summer	9.597	0.0	342
720 min Summer	8.298	0.0	400
960 min Summer	6.593	0.0	512
1440 min Summer	4.760	0.0	736
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2200
5760 min Summer	1.544	0.0	2936
7200 min Summer	1.286	0.0	3600
8640 min Summer	1.107	0.0	4392
10080 min Summer	0.975	0.0	4992
15 min Winter	137.234	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	120.855	0.355	1.7	10.1	O K
60 min Winter	120.883	0.383	1.8	10.9	O K
120 min Winter	120.867	0.367	1.7	10.5	O K
180 min Winter	120.831	0.331	1.7	9.4	O K
240 min Winter	120.792	0.292	1.7	8.3	O K
360 min Winter	120.720	0.220	1.6	6.3	O K
480 min Winter	120.661	0.161	1.5	4.6	O K
600 min Winter	120.612	0.112	1.4	3.2	O K
720 min Winter	120.576	0.076	1.4	2.2	O K
960 min Winter	120.546	0.046	1.3	1.3	O K
1440 min Winter	120.534	0.034	0.9	1.0	O K
2160 min Winter	120.525	0.025	0.7	0.7	O K
2880 min Winter	120.519	0.019	0.5	0.6	O K
4320 min Winter	120.514	0.014	0.4	0.4	O K
5760 min Winter	120.511	0.011	0.3	0.3	O K
7200 min Winter	120.509	0.009	0.3	0.3	O K
8640 min Winter	120.508	0.008	0.2	0.2	O K
10080 min Winter	120.507	0.007	0.2	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	31
60 min Winter	56.129	0.0	58
120 min Winter	33.850	0.0	92
180 min Winter	24.849	0.0	128
240 min Winter	19.839	0.0	166
360 min Winter	14.389	0.0	234
480 min Winter	11.459	0.0	296
600 min Winter	9.597	0.0	356
720 min Winter	8.298	0.0	406
960 min Winter	6.593	0.0	500
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1096
2880 min Winter	2.717	0.0	1472
4320 min Winter	1.953	0.0	2200
5760 min Winter	1.544	0.0	2856
7200 min Winter	1.286	0.0	3656
8640 min Winter	1.107	0.0	4496
10080 min Winter	0.975	0.0	5016

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.033

Time (mins) From:	To:	Area (ha)
0	4	0.033

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Model Details

Storage is Online Cover Level (m) 121.600

Cellular Storage Structure

Invert Level (m) 120.500 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.70560 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.70560

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	30.0	20.0	0.900	0.0	34.4
0.800	30.0	34.4			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 10 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	120.921	0.321	5.0	4.9	O K
30 min Summer	120.938	0.338	5.1	5.1	O K
60 min Summer	120.902	0.302	4.9	4.6	O K
120 min Summer	120.813	0.213	4.5	3.2	O K
180 min Summer	120.741	0.141	4.2	2.1	O K
240 min Summer	120.690	0.090	3.9	1.4	O K
360 min Summer	120.647	0.047	3.5	0.7	O K
480 min Summer	120.638	0.038	2.9	0.6	O K
600 min Summer	120.632	0.032	2.4	0.5	O K
720 min Summer	120.628	0.028	2.1	0.4	O K
960 min Summer	120.622	0.022	1.7	0.3	O K
1440 min Summer	120.616	0.016	1.2	0.2	O K
2160 min Summer	120.612	0.012	0.9	0.2	O K
2880 min Summer	120.609	0.009	0.7	0.1	O K
4320 min Summer	120.607	0.007	0.5	0.1	O K
5760 min Summer	120.605	0.005	0.4	0.1	O K
7200 min Summer	120.605	0.005	0.4	0.1	O K
8640 min Summer	120.604	0.004	0.3	0.1	O K
10080 min Summer	120.604	0.004	0.3	0.1	O K
15 min Winter	120.968	0.368	5.2	5.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	14
30 min Summer	89.929	0.0	22
60 min Summer	56.129	0.0	40
120 min Summer	33.850	0.0	72
180 min Summer	24.849	0.0	102
240 min Summer	19.839	0.0	130
360 min Summer	14.389	0.0	184
480 min Summer	11.459	0.0	246
600 min Summer	9.597	0.0	306
720 min Summer	8.298	0.0	366
960 min Summer	6.593	0.0	488
1440 min Summer	4.760	0.0	720
2160 min Summer	3.431	0.0	1080
2880 min Summer	2.717	0.0	1464
4320 min Summer	1.953	0.0	2188
5760 min Summer	1.544	0.0	2912
7200 min Summer	1.286	0.0	3584
8640 min Summer	1.107	0.0	4376
10080 min Summer	0.975	0.0	4968
15 min Winter	137.234	0.0	14

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	120.982	0.382	5.3	5.8	O K
60 min Winter	120.920	0.320	5.0	4.9	O K
120 min Winter	120.785	0.185	4.4	2.8	O K
180 min Winter	120.689	0.089	3.9	1.3	O K
240 min Winter	120.648	0.048	3.6	0.7	O K
360 min Winter	120.635	0.035	2.6	0.5	O K
480 min Winter	120.628	0.028	2.1	0.4	O K
600 min Winter	120.623	0.023	1.7	0.4	O K
720 min Winter	120.620	0.020	1.5	0.3	O K
960 min Winter	120.616	0.016	1.2	0.2	O K
1440 min Winter	120.612	0.012	0.9	0.2	O K
2160 min Winter	120.609	0.009	0.7	0.1	O K
2880 min Winter	120.607	0.007	0.5	0.1	O K
4320 min Winter	120.605	0.005	0.4	0.1	O K
5760 min Winter	120.604	0.004	0.3	0.1	O K
7200 min Winter	120.603	0.003	0.2	0.1	O K
8640 min Winter	120.603	0.003	0.2	0.0	O K
10080 min Winter	120.603	0.003	0.2	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	24
60 min Winter	56.129	0.0	42
120 min Winter	33.850	0.0	74
180 min Winter	24.849	0.0	104
240 min Winter	19.839	0.0	126
360 min Winter	14.389	0.0	186
480 min Winter	11.459	0.0	246
600 min Winter	9.597	0.0	308
720 min Winter	8.298	0.0	368
960 min Winter	6.593	0.0	482
1440 min Winter	4.760	0.0	728
2160 min Winter	3.431	0.0	1120
2880 min Winter	2.717	0.0	1468
4320 min Winter	1.953	0.0	2172
5760 min Winter	1.544	0.0	2856
7200 min Winter	1.286	0.0	3616
8640 min Winter	1.107	0.0	4304
10080 min Winter	0.975	0.0	4816

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.031

Time (mins) From:	To:	Area (ha)
0	4	0.031

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Model Details

Storage is Online Cover Level (m) 121.800

Cellular Storage Structure

Invert Level (m) 120.600 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 2.71800 Porosity 0.95
Infiltration Coefficient Side (m/hr) 2.71800

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	16.0	14.0	0.900	0.0	28.4
0.800	16.0	28.4			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 22 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	121.842	0.292	5.8	11.1	O K
30 min Summer	121.876	0.326	6.0	12.4	O K
60 min Summer	121.870	0.320	5.9	12.2	O K
120 min Summer	121.818	0.268	5.7	10.2	O K
180 min Summer	121.763	0.213	5.5	8.1	O K
240 min Summer	121.715	0.165	5.4	6.3	O K
360 min Summer	121.645	0.095	5.1	3.6	O K
480 min Summer	121.607	0.057	5.0	2.2	O K
600 min Summer	121.596	0.046	4.5	1.7	O K
720 min Summer	121.590	0.040	3.9	1.5	O K
960 min Summer	121.582	0.032	3.2	1.2	O K
1440 min Summer	121.573	0.023	2.3	0.9	O K
2160 min Summer	121.567	0.017	1.6	0.6	O K
2880 min Summer	121.563	0.013	1.3	0.5	O K
4320 min Summer	121.560	0.010	1.0	0.4	O K
5760 min Summer	121.558	0.008	0.8	0.3	O K
7200 min Summer	121.557	0.007	0.7	0.3	O K
8640 min Summer	121.556	0.006	0.6	0.2	O K
10080 min Summer	121.555	0.005	0.5	0.2	O K
15 min Winter	121.886	0.336	6.0	12.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	137.234	0.0	15
30 min Summer	89.929	0.0	25
60 min Summer	56.129	0.0	42
120 min Summer	33.850	0.0	76
180 min Summer	24.849	0.0	108
240 min Summer	19.839	0.0	138
360 min Summer	14.389	0.0	196
480 min Summer	11.459	0.0	250
600 min Summer	9.597	0.0	308
720 min Summer	8.298	0.0	368
960 min Summer	6.593	0.0	490
1440 min Summer	4.760	0.0	734
2160 min Summer	3.431	0.0	1100
2880 min Summer	2.717	0.0	1468
4320 min Summer	1.953	0.0	2184
5760 min Summer	1.544	0.0	2928
7200 min Summer	1.286	0.0	3632
8640 min Summer	1.107	0.0	4248
10080 min Summer	0.975	0.0	5056
15 min Winter	137.234	0.0	16

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	121.925	0.375	6.1	14.3	O K
60 min Winter	121.911	0.361	6.1	13.7	O K
120 min Winter	121.828	0.278	5.8	10.5	O K
180 min Winter	121.746	0.196	5.5	7.4	O K
240 min Winter	121.678	0.128	5.2	4.9	O K
360 min Winter	121.600	0.050	4.9	1.9	O K
480 min Winter	121.590	0.040	4.0	1.5	O K
600 min Winter	121.584	0.034	3.3	1.3	O K
720 min Winter	121.579	0.029	2.9	1.1	O K
960 min Winter	121.573	0.023	2.3	0.9	O K
1440 min Winter	121.567	0.017	1.6	0.6	O K
2160 min Winter	121.562	0.012	1.2	0.5	O K
2880 min Winter	121.560	0.010	1.0	0.4	O K
4320 min Winter	121.557	0.007	0.7	0.3	O K
5760 min Winter	121.556	0.006	0.6	0.2	O K
7200 min Winter	121.555	0.005	0.5	0.2	O K
8640 min Winter	121.554	0.004	0.4	0.2	O K
10080 min Winter	121.554	0.004	0.4	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	89.929	0.0	26
60 min Winter	56.129	0.0	46
120 min Winter	33.850	0.0	82
180 min Winter	24.849	0.0	114
240 min Winter	19.839	0.0	144
360 min Winter	14.389	0.0	188
480 min Winter	11.459	0.0	246
600 min Winter	9.597	0.0	308
720 min Winter	8.298	0.0	368
960 min Winter	6.593	0.0	490
1440 min Winter	4.760	0.0	736
2160 min Winter	3.431	0.0	1100
2880 min Winter	2.717	0.0	1424
4320 min Winter	1.953	0.0	2180
5760 min Winter	1.544	0.0	2784
7200 min Winter	1.286	0.0	3544
8640 min Winter	1.107	0.0	4536
10080 min Winter	0.975	0.0	5336

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.405	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.059

Time (mins) From:	To:	Area (ha)
0	4	0.059

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Model Details

Storage is Online Cover Level (m) 123.500

Cellular Storage Structure

Invert Level (m) 121.550 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 1.06560 Porosity 0.95
Infiltration Coefficient Side (m/hr) 1.06560

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	40.0	48.0	0.500	0.0	63.2
0.400	40.0	63.2			

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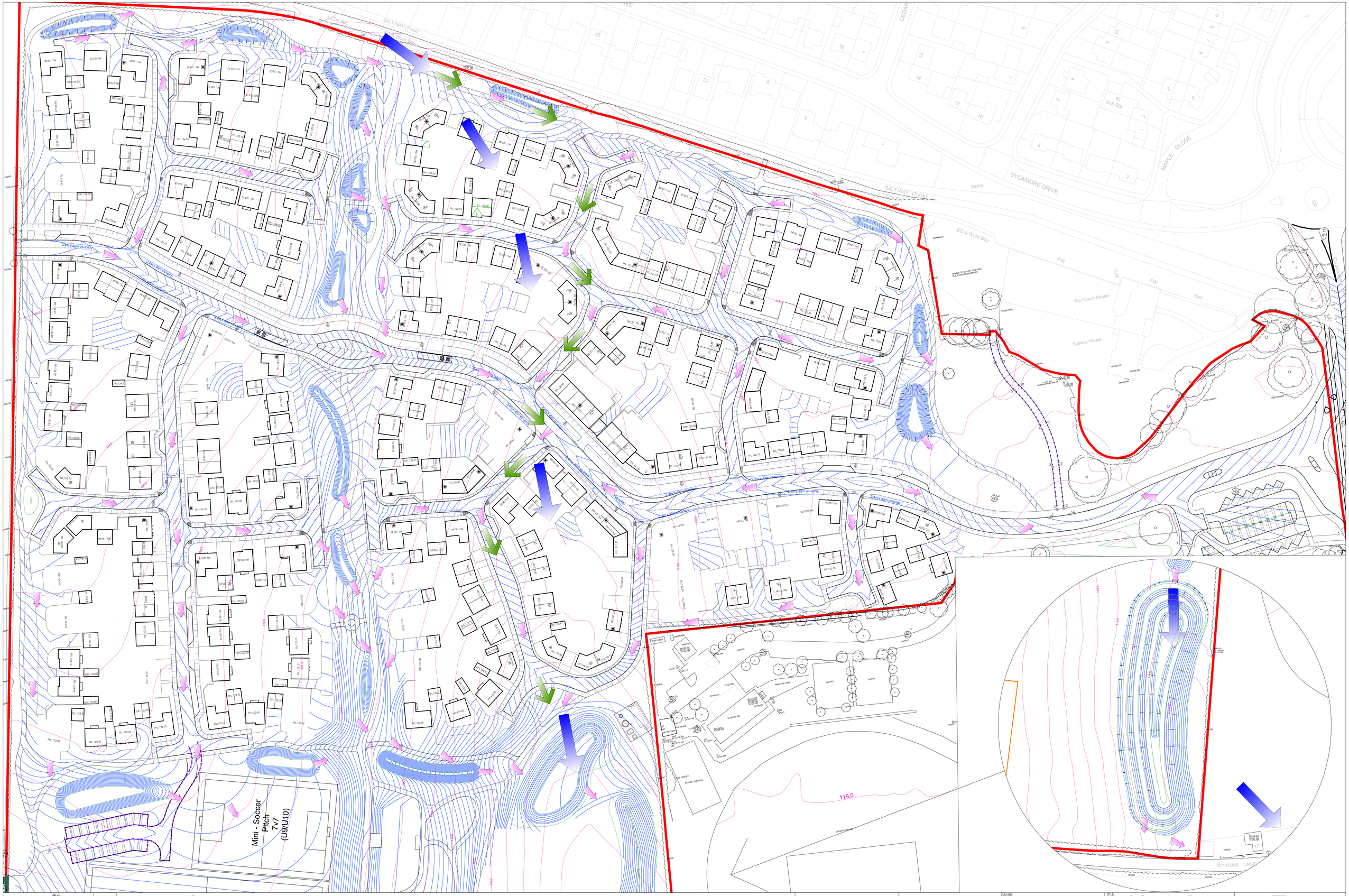

DAVID WILSON HOMES

David Wilson Mercia
Remus 2
2 Cranbrook Way
Solihull Business Park
Solihull, B90 4GT

Existing Contours

Proposed Contours

Routing of Existing Surface water flood risk: water depth in a low risk scenario

Proposed Routing within road corridor for low risk scenario Surface water flood risk.

Exceedance Flow Conveyance Direction

REV	DESCRIPTION	REV	DESCRIPTION	DATE

STATUS: PRELIMINARY

SCALE: 1:500 @ A0
DATE: August 2020
DRAWN: IDL

TITLE: Surface Water Flow Management Plan

PROJECT: White Post Road, Bodicote

DRG. No: 957-00-101

iD LTD
INFRASTRUCTURE DESIGN LIMITED
33 The Point
Market Harborough
Leicestershire LE16 7QU
Tel: 01858 411570 Fax: 01858 411571