402350 E 402400 E 402450 E 402500 E 402550 E 402600 E 402650 E 402700 E 402750 E 402800 E 402850 E 402900 E

162400 N 162350 N 162300 N 162250 N 162200 N 162150 N 162100 N 162050 N

LEGEND

DRAINAGE

cv	cover
dc	drainage channel
fd	foul drain
gy	gully
ko	kerb outlet
M.H.	manhole
rwp	rainwater pipe
svp	soil vent pipe

FENCES

ba	barrier
bw	barbed wire
cb	closeboard
ci	corrugated iron
cl	chainlink
cp	concrete post
gt	gate
ll	larch lap
mp	metal post
mr	metal rail
pa	palisade
pr	post & rail
pw	post & wire
wf	wood fence
wp	wood post

WALLS

bk	brick wall
cw	concrete wall
es	edging stones
sw	stone wall
tw	top of wall

ROADS

dk	drop kerbs
ek	edging kerbs
rs	road sign
ts	tactile slabs
we	wood edging
se	setts
sf	flush setts
sr	raised setts

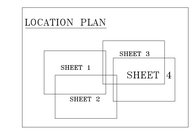
SERVICES

bs	bus shelter
bt	British Telecom
catv	cable tv
ep	electricity pole
fh	fire hydrant
kl	keep left bollard
lp	lamp post
ohc	overhead cable
pk	phone kiosk
sv	stop valve
sy	stay wire
tl	traffic lights
tp	telegraph pole

LEVELS

C.L.	Cover Level
F.L.	Floor Level
I.L.	Invert Level
OSBM	Ordnance Survey Bench Mark
T.L.	Threshold Level
W.L.	Water Level

LOCATION PLAN



NOTE:
GRID AND LEVELS TO ORDNANCE SURVEY.
GRID BASED ON STATION Z007505 (402317.543 E; 162255.942 N). SCALE FACTOR NOT APPLIED.

RUXTON
SURVEYS

The Long Barn
Mitre Farm
Corse Lawn
Gloucestershire
GL19 4NG

Tel. 01684 217217
Mob. 07831 661822

www.ruxtonsurveys.co.uk
enquiries@ruxtonsurveys.com

LOCATION:
CALCOTE FARM
COATE ROAD
DEVIZES
WILTSHIRE

CLIENT:
ROBERT HITCHINS LTD

DRAWING TITLE:
SITE SURVEY
(SHEET 4 OF 5)

SCALE:	DATE:	SHEET SIZE:
1 to 500	JUNE 2020	A0

DRAWING NUMBER:	DRAWN BY:
20075/04	S.T./B.R.

401450 E
401500 E
401550 E
401600 E
401650 E
401700 E
401750 E
401800 E
401850 E
401900 E
401950 E
402000 E

162100 N
162050 N
162000 N
161950 N
161900 N
161850 N
161800 N
161750 N

LEGEND

DRAINAGE

cv	cover
dc	drainage channel
fd	foul drain
gy	gully
ko	kerb outlet
M.H.	manhole
re	rodding eye
rwp	rainwater pipe
sd	storm drain
svp	soil vent pipe

WALLS

bk	brick wall
cw	concrete wall
es	edging stones
sw	stone wall
tw	top of wall

FENCES

ba	barrier
bw	barbed wire
cb	closeboard
ci	corrugated iron
cl	chainlink
cp	concrete post
gt	gate
ll	lucial lap
mp	metal post
pa	picket rail
pl	palisade
pr	post & rail
pw	post & wire
wf	wood fence
wp	wood post

LEVELS

C.L.	Cover Level
F.L.	Floor Level
I.L.	Invert Level
OSBM	Ordnance Survey Benchmark
T.L.	Threshold level
W.L.	Water Level

ROADS

dk	drop kerbs
ek	edging kerbs
fk	flush kerbs
ts	tactile slabs
we	wood edging
se	setts
sf	flush setts
sr	raised setts

SERVICES

bs	bus shelter
bt	British Telecom
catv	cable tv
ep	electricity pole
fh	fire hydrant
kl	keep left bollard
lp	lamp post
ohc	overhead cable
pk	phone kiosk
sv	stop valve
sy	stay wire
tl	traffic lights
tp	telegraph pole

RUXTON
SURVEYS

The Long Barn
Mitre Farm
Corse Lawn
Gloucestershire
GL19 4NG

Tel. 01684 217217
Mob. 07831 861822

www.ruxtonsurveys.co.uk
enquiries@ruxtonsurveys.com

LOCATION:
CALCOTE FARM
COATE ROAD
DEVIZES
WILTSHIRE

CLIENT:
ROBERT HITCHINS LTD

DRAWING TITLE:
SITE SURVEY
(SHEET 5 OF 5)

SCALE:	DATE:	SHEET SIZE:
1 to 500	JUNE 2020	A0

DRAWING NUMBER:	DRAWN BY:
20075/05	S.T./B.R.

N

Coate Bridge

SURFACE RUNOFF FROM LOW POINT IN COATE ROAD

LIDAR LEVEL DATA

Elevations Table	
125.00 - 130.00 mAOD	
130.00 - 135.00 mAOD	
135.00 - 140.00 mAOD	
140.00 - 145.00 mAOD	
145.00 - 150.00 mAOD	
150.00 - 155.00 mAOD	
155.00 - 160.00 mAOD	

0 20 40 60 80 100

Metres (Scale 1:1,000)

Revisions

Project: Land South Of Coate Road
Devizes

Client:

Robert Hitchins
The Complete Development Solution

Drawing: Existing Elevations

Scale: 1:1,000 @ A1

Date: 17/03/2025

Drawn by: P.A.

Drawing No: 639-P102

Rev: -

PHOENIX DESIGN Partnership Ltd.

Unit 9, Westway Business Centre, Marksbury, Bath. BA2 9HN
tel. 01761 479950
email. enquiries@phoenixdp.co.uk

Suite 7, Unit Three, Melin Corrwg Business Parc, Pontypridd, CF37 5BE
tel. 029 2049 0771
www.phoenixdp.co.uk

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Drg.Status: FOR APPROVAL

Slopes Table	
< 1.00% (<1:100)	
1.00% - 2.50% (1:100 - 1:40)	
2.50% - 5.00% (1:40 - 1:20)	
5.00% - 8.00% (1:20 - 1:12.5)	
8.00% - 12.50% (1:12.5 - 1:8)	
> 12.50% (> 1:8)	

0 20 40 60 80 100

Metres (Scale 1:1,000)

Revisions

Project: Land South Of Coate Road
Devizes

Client: Robert Hitchins
The Complete Development Solution

Drawing: Existing Slopes

Scale: 1:1,000 @ A1 | Date: 17/03/2025 | Drawn by: P.A.

Drawing No: 639-P103 | Rev: -

PHOENIX DESIGN Partnership Ltd.
Unit 9, Westway Business Centre, Marksbury, Bath. BA2 9HN
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Suite 7, Unit Three, Melin Cornwg Business Parc, Pontypridd, CF37 5BE
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Drg.Status: FOR APPROVAL

N

Coate Bridge

SURFACE RUNOFF FROM LOW POINT IN COATE ROAD

LIDAR LEVEL DATA

Slope Arrows Table	
< 2.50% (< 1:40)	
2.50% - 8.00% (1:40 - 1:12.5)	
> 8.00% (> 1:12.5)	

0 20 40 60 80 100

Metres (Scale 1:1,000)

Revisions

Project: Land South Of Coate Road
Devizes

Client:

Robert Hitchins
The Complete Development Solution

Drawing: Existing Slopes

Scale: 1:1,000 @ A1 | Date: 17/03/2025 | Drawn by: P.A.

Drawing No: 639-P103 | Rev: -

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email. enquiries@phoenixdp.co.uk www.phoenixdp.co.uk

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Appendix C
Existing Hydrology & Flood Risk

Coate Bridge

CATCHMENT FLOWS
NORTH TO COATE ROAD
AREA = 22.33Ha (223,300m2)

CATCHMENT FLOWS
NORTHWEST TO WINDSOR DRIVE
AREA = 4.24Ha (42,400m2)

LIDAR LEVEL DATA

COATE ROAD

HAREBELL WAY

COWSLIP CLOSE

BARN

Girl Guide HQ

0 20 40 60 80 100
Metres (Scale 1:1,000)

Revisions

Project: Land South Of Coate Road
Devizes

Client: Robert Hitchins
The Complete Development Solution

Drawing: Existing Topography & Hydrology

Scale: 1:1,000 @ A1
Date: 17/03/2025
Drawn by: P.A.

Drawing No: 639-P100
Rev: -

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Unit 9, Westway Business Centre, Marksbury, Bath. BA2 9HN
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tel. 029 2049 0771
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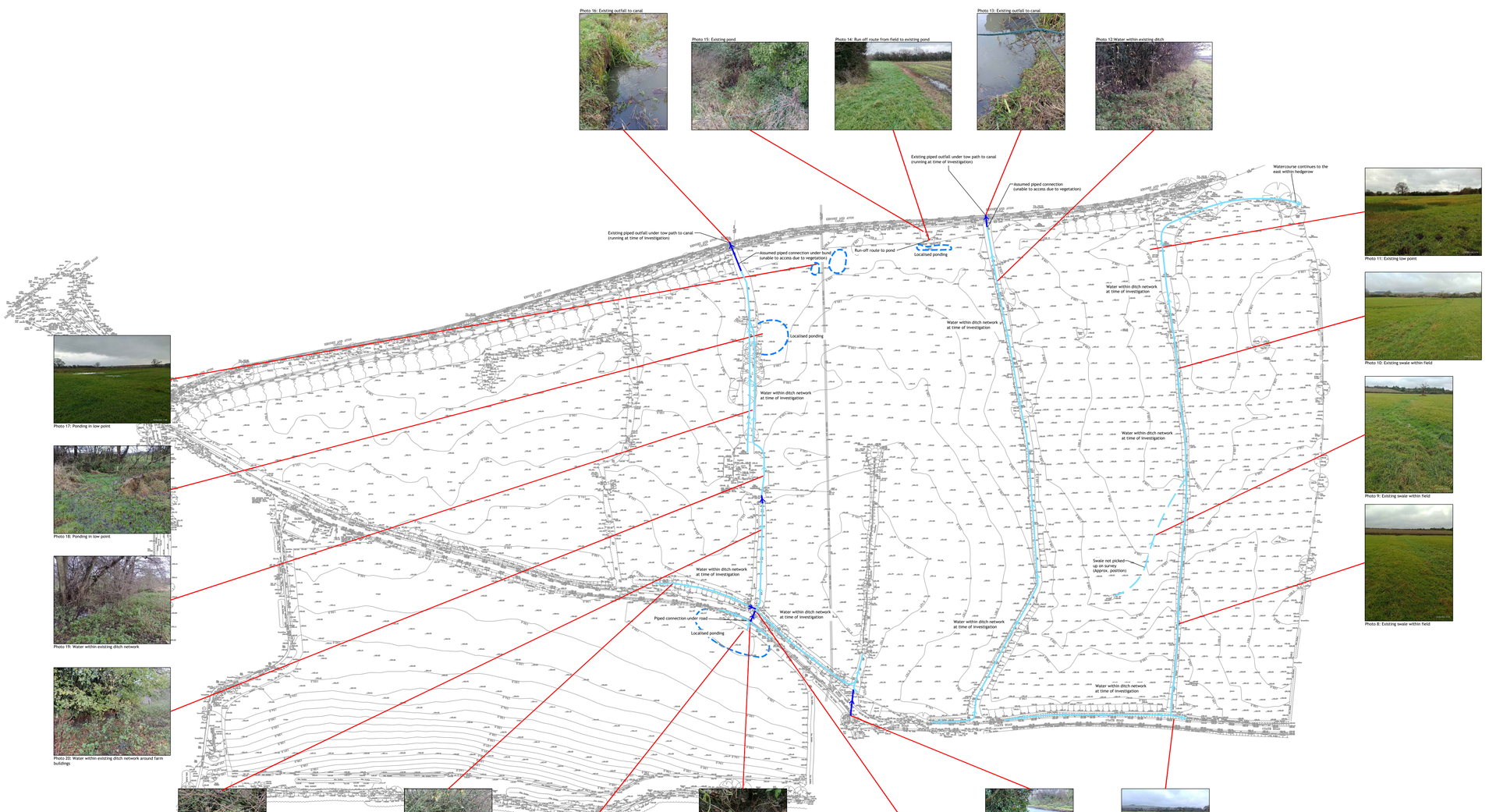


Photo 16: Existing outfall to canal

Photo 15: Existing pond

Photo 14: Run off route from field to existing pond

Photo 13: Existing outfall to canal

Photo 12:Water within existing ditch

Photo 11: Existing low point

Photo 10: Existing swale within field

Photo 9: Existing swale within field

Photo 8: Existing swale within field

Photo 17: Ponding in low point

Photo 18: Ponding in low point

Photo 19: Water within existing ditch network

Photo 20: Water within existing ditch network around farm buildings

Photo 1: Water within existing ditch network

Photo 2: Water within existing ditch network

Photo 3: Existing low point (ponding on ploughed field following prolonged rain)

Photo 4: Existing pipe linking ditches under road

Photo 5: Existing ditch holding water by field access

Photo 6: Headwall in ditch directing over lane

Photo 7: Grip from road draining to highway ditch and outfalling to swale within field

Open watercpourse / ditch

Piped / culverted watercourse

Notes:
1) Based on drainage investigations completed on the 5th December 2023.
2) At the time of the investigations the vast majority of ditches were holding water following a period of heavy prolonged rainfall.
3) Seasonal ponding is recorded indicatively.
4) Only ditches / drainage networks investigated are shown coloured on the plan. Other networks are present and not coloured / highlighted.
5) Ditch / swale colouring and pipe thickness are shown thicker for clarity and do not represent the width of the networks.
6) Information is based on the topographical survey from Ruxton Surveys drawings 20075-01 to 20075-04.

RobertHitchins
The Complete Development Solution

Site Name: Coate Road Devizes

Drawing Title: Drainage Investigation December 2023

Drawing Number: 326.E.12

Revision:

Drawn By: EJA | Checked By: | Date: 08.12.23 | Scale: 1:2000@A1

The Manor, Boddington, Cheltenham, Gloucestershire, GL51 0TJ
Tel: 01242 680694
www.robert-hitchins.co.uk

CAD Ref:

Appendix D
Ground Investigation Extracts

existing building (stone)

derelict barn (metal frame only)

Coate Road

Pond

rising main

agricultural field

sycamore

sycamore

sycamore

ash

ash

pussy willow

hawthorn

hawthorn

hawthorn

elm

hawthorn

hawthorn

hawthorn

oak (15m)

oak (20m)

oak (20m)

hawthorn (7m)

oak (15m)

hawthorn (4m)

oak (15m)

hawthorn hedge (5-6m)

blackthorn

blackthorn

blackthorn

P1

P2

P3

P4

P5

P6

P7

P8

WS1

WS2

TP1

TP2

TP3

TP4

TP5

TP6

TP7

TP8

= Head over Upper Greensand Formation

= West Marlbury Chalk Formation

= Upper Greensand Formation

P1 Number and direction of photograph (Appendix 1)

N

LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

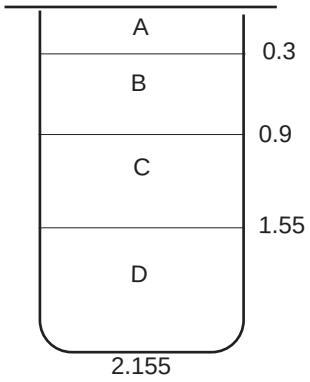
EXISTING SITE LAYOUT (based upon RHL drg. Devizes.UD.12 Rev G, dated February 2025)
SHOWING WALKOVER PHOTOGRAPHS, NOTES AND INVESTIGATION LOCATIONS

Job No.	Drawing No.	Scale:	Date:
5499	5499/2	1:2000@A3	14-01-26

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				TRIAL PIT No.
Job No.	**Date**	**Ground Level (c.m, AOD)**	**Co-Ordinates (c.)**	**TP1**
5499	26-06-25	134m	E 401,895 N 162,151	



DETAILS OF SUBSOIL

A TOPSOIL: probable soft, brown, dry, organic, desiccated, slightly sandy CLAY, with rare fine to coarse gravel of chalk

B SAND: probable loose, light brown, medium grained SAND *(HEAD)*

C SAND: probable loose, greenish-brown, slightly clayey SAND (*HEAD ?*)

D SAND: probable loose to medium dense, greenish-brown, fine
(UPPER GREENSAND FORMATION)

NOTES

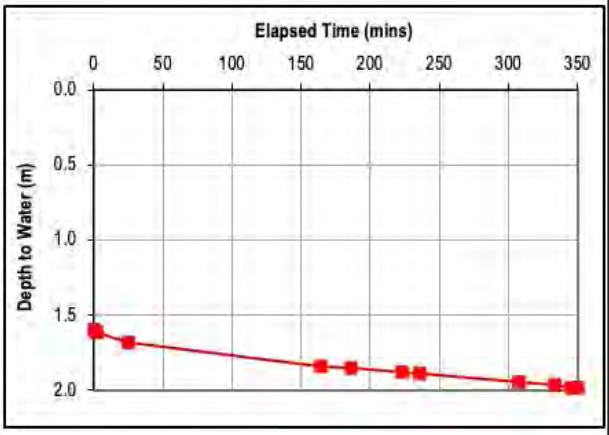
1 Pit logged from surface

2 Pit dry and stable

3 Soil sample taken at 0.0-0.3m depth

4 Falling head testing carried out;
Pit dimensions 1.2 x 0.5 x 2.155 (LxWxD)

Elapsed Time (mins)	Depth to Water (m)
0.00	1.600
2.00	1.615
25.00	1.686
164.25	1.838
186.25	1.852
223.50	1.882
236.25	1.890
307.50	1.948
333.50	1.968
345.50	1.980
350.00	1.983

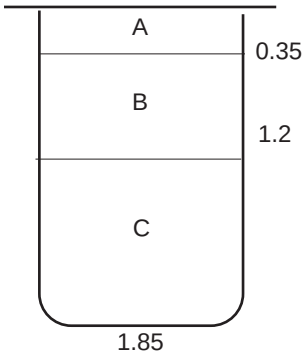


Scale: NTS	Client: Robert Hitchins Limited	Logged By: DB

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				TRIAL PIT No.
Job No.	**Date**	**Ground Level (c.m, AOD)**	**Co-Ordinates (c.)**	**TP2**
5499	27-06-25	134m	E 401,960 N 162,139	



DETAILS OF SUBSOIL

A TOPSOIL: probable soft, brown, dry, organic, desiccated, slightly sandy CLAY, with rare fine to coarse gravel of chalk

B CLAY: probable firm, brown, slightly sandy, slightly gravelly CLAY (gravel is fine to coarse chalk)
(HEAD ?)

C SAND: probable medium dense, greyish-green, fine to medium SAND with coarse gravel to cobbles of probable extremely weak sandstone
(UPPER GREENSAND FM)

NOTES

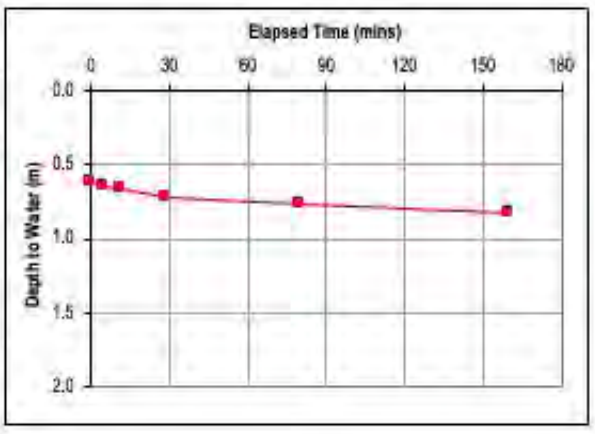
1 Pit logged from surface

2 Pit dry and stable

3 Soil sample taken at 0.75m depth

4 Falling head testing carried out;
Pit dimensions 1.8 x 0.5 x 1.85 (LxWxD)

Elapsed Time (mins)	Depth to Water (m)
0	0.62
5	0.65
11	0.66
28	0.72
80	0.77
160	0.82

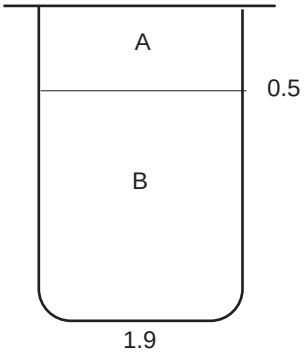


Scale: NTS	Client: Robert Hitchins Limited	Logged By: TC

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				TRIAL PIT No.
Job No.	**Date**	**Ground Level (c.m, AOD)**	**Co-Ordinates (c.)**	**TP3**
5499	27-06-25	133m	E 401,980 N 162,212	



DETAILS OF SUBSOIL

A MADE GROUND: probable loose, grey, very gravelly SAND, with many roots from overlying grass and weeds; occasional cobbles (gravel is medium to coarse brick and concrete; cobbles are whole brick and concrete slab and breeze-block)

B SAND: probable medium dense, dull greyish-green, slightly clayey, fine to medium SAND
(UPPER GREENSAND FM)

NOTES

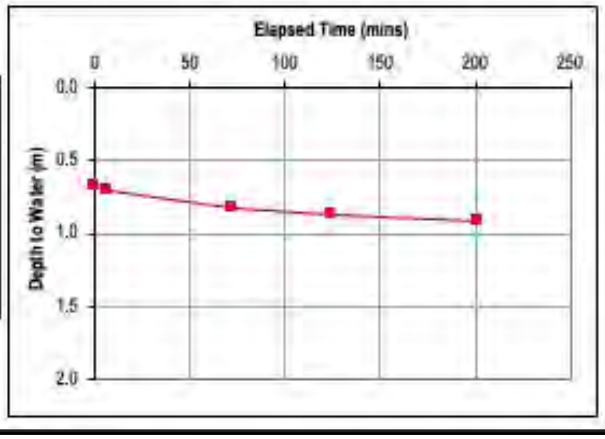
1 Pit logged from surface

2 Pit dry and stable

3 Soil sample taken at 0.0-0.5m depth

4 Falling head testing carried out;
Pit dimensions 2.3 x 0.5 x 1.9 (LxWxD)

Elapsed Time (mins)	Depth to Water (m)
0	0.68
6	0.71
72	0.82
124	0.87
202	0.91

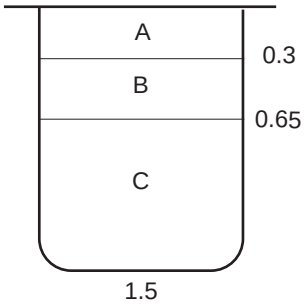


Scale: NTS	Client: Robert Hitchins Limited	Logged By: TC

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				TRIAL PIT No.
Job No.	**Date**	**Ground Level (c.m, AOD)**	**Co-Ordinates (c.)**	**TP4**
5499	27-06-25	133m	E 401,091 N 162,188	



DETAILS OF SUBSOIL

A TOPSOIL: probable soft, brown, organic, sandy CLAY with profuse roots from overlying maize

B CLAY (sub-soil): probable firm, reddish-brown, sandy CLAY /clayey SAND

C SAND: probable medium dense, dull greyish-green, slightly clayey, fine to medium SAND
(UPPER GREENSAND FM)

NOTES

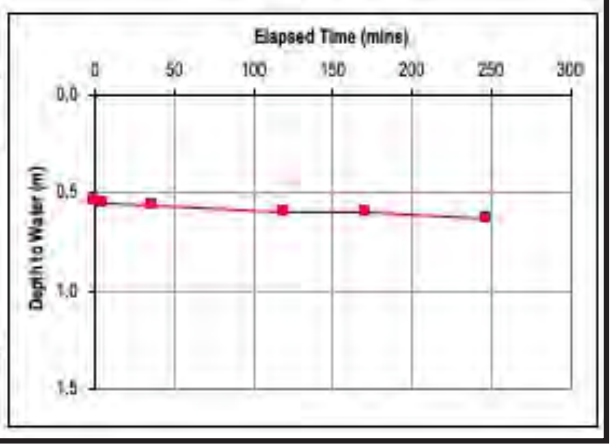
1 Pit logged from surface

2 Pit dry and stable

3 Soil sample taken at 0.0-0.5m depth

4 Falling head testing carried out;
Pit dimensions 2.1 x 0.5 x 1.5m (LxWxD)

Elapsed Time (mins)	Depth to Water (m)
0	0.54
5	0.55
37	0.56
119	0.60
171	0.60
248	0.63

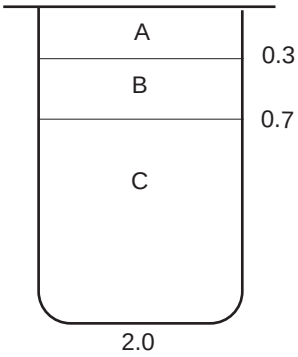


Scale: NTS	Client: Robert Hitchins Limited	Logged By: TC

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE			TRIAL PIT No.
Job No. 5499	**Date** 27-06-25	**Ground Level (c.m, AOD)** 133m	**Co-Ordinates (c.)** E 402,252 N 162,156	**TP5**



DETAILS OF SUBSOIL

A TOPSOIL: probable soft, brown, organic, sandy CLAY with many roots and rare medium gravel of chalk

B CLAY (sub-soil): probable firm, reddish-brown, sandy plastic CLAY

C SAND: probable medium dense, dull greyish-green, slightly clayey, fine to medium SAND, with rare coarse gravel of extremely weak sandstone
(UPPER GREENSAND FM)

NOTES

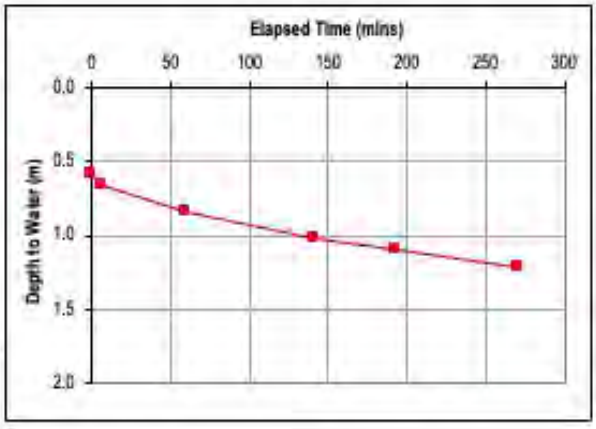
1 Pit logged from surface

2 Pit dry and stable

3 No samples taken

4 Falling head testing carried out;
Pit dimensions 2.0 x 0.5 x 2.0m (LxWxD)

Elapsed Time (mins)	Depth to Water (m)
0	0.59
6	0.66
59	0.84
141	1.02
193	1.10
270	1.22

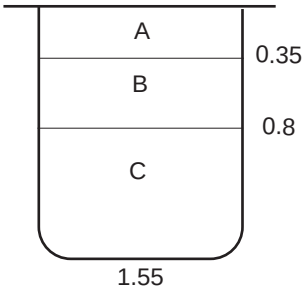


Scale: NTS	Client Robert Hitchins Limited	Logged By: TC

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				TRIAL PIT No.
Job No.	**Date**	**Ground Level (c.m, AOD)**	**Co-Ordinates (c.)**	**TP6**
5499	27-06-25	134m	E 402,385 N 162,067	



DETAILS OF SUBSOIL

A TOPSOIL: probable soft, brown, organic, desiccated CLAY with many roots from overlying maize crop

B CHALK: probable firm, light grey, slightly gravelly, plastic CLAY (gravel is medium to coarse, subangular to angular MUDSTONE /SILTSTONE; roots encountered to 0.4m; low density *(WEST MELBURY CHALK FORMATION)*

C CHALK: probable medium dense to dense, light grey, fine to coarse GRAVEL and COBBLES of subangular to angular CHALK; low density
1.4m ; orange-brown staining below
(WMCK)

NOTES

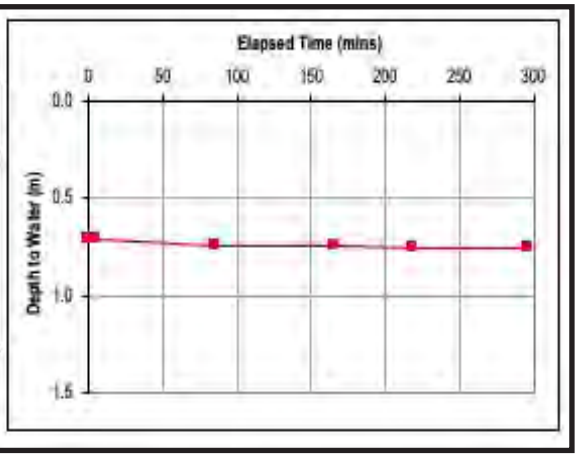
1 Pit logged from surface

2 Pit dry and stable

3 Soil sample taken at 0.1m depth

4 Falling head testing carried out;
Pit dimensions 2.2 x 0.5 x 1.55m (LxWxD)

Elapsed Time (mins)	Depth to Water (m)
0	0.71
5	0.71
85	0.74
166	0.74
219	0.75
296	0.76

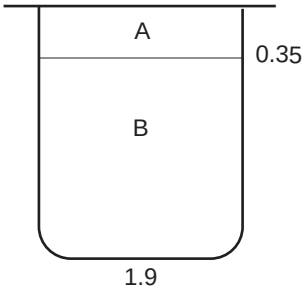


Scale: NTS	Client: Robert Hitchins Limited	Logged By: TC

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				**TRIAL PIT No.** **TP7**
Job No. 5499	**Date** 27-06-25	**Ground Level (c.m, AOD)** 139m	**Co-Ordinates (c.)** E 402,262 N 162,018	



DETAILS OF SUBSOIL

A TOPSOIL: probable soft, brown, organic, dry plastic CLAY

B CHALK: probable soft to firm, pale grey, structureless CHALK
1.4m : becoming coarse CHALK (includes occasional coarse gravel sized, subangular to angular clasts of low density)
(WMCK)

NOTES

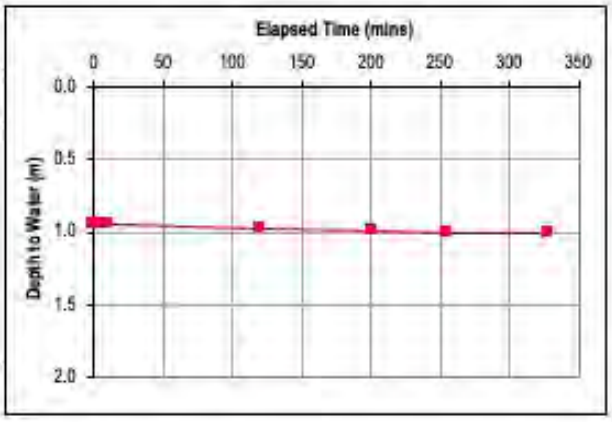
1 Pit logged from surface

2 Pit dry and stable

3 Soil sample taken at 0.25m depth

4 Falling head testing carried out;
Pit dimensions 1.9 x 0.5 x 1.9m (LxWxD)

Elapsed Time (mins)	Depth to Water (m)
0	0.95
5	0.95
11	0.95
121	0.97
202	0.99
255	1.00
329	1.00

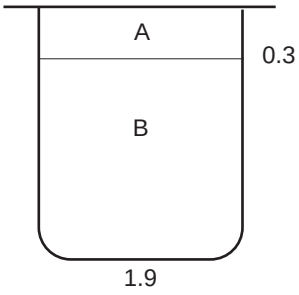


Scale: NTS	**Client** Robert Hitchins Limited	**Logged By:** TC

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

36 Brunswick Road, Gloucester GL1 1JJ
Tel: 01452 422843
Email: info@wilsonac.co.uk

Site: LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				TRIAL PIT No.
Job No.	**Date**	**Ground Level (c.m, AOD)**	**Co-Ordinates (c.)**	**TP8**
5499	27-06-25	139m	E 402,046 N 162,020	



DETAILS OF SUBSOIL

A TOPSOIL: probable soft, brown, organic, dry desiccated CLAY

B CHALK: probable soft to firm, pale grey, structureless CHALK 90% clay/stiff matrix and 10% clasts (clasts are pale grey, fine gravel to cobble sized lumps of low density)
(WMCK)

NOTES

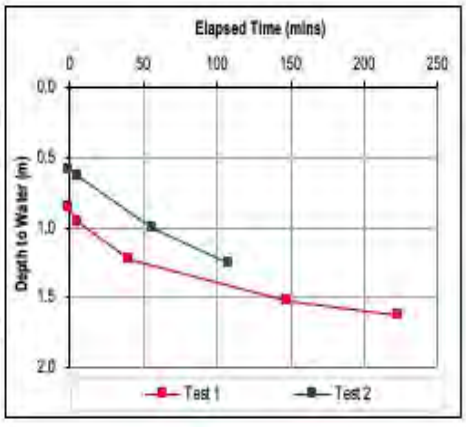
1 Pit logged from surface

2 Pit dry and stable

3 Soil sample taken at 0.1m depth

4 Falling head testing carried out;
Pit dimensions 2.0 x 0.5 x 1.9m (LxWxD)

Elapsed Time (mins)	Depth to Water (m)	Elapsed Time (mins)	Depth to Water (m)
Test 1		Test 2	
0	0.86	0	0.59
5	0.96	5	0.64
40	1.23	56	1
148	1.53	109	1.25
224	1.63		



Scale: NTS	Client: Robert Hitchins Limited	Logged By: TC

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

BOREHOLE LOG

Project				BOREHOLE No
LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				WS1
Job No	Date	Ground Level (c.m,AOD)	Co-Ordinates (c.)	
5499	03-07-25	133.00	E 401,887 N 162,236	
Contractor				Sheet
Cook Ground Investigation Limited				1 of 1

SAMPLES & TESTS			STRATA						
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thick-ness)	DESCRIPTION	Geology	Instrument/ Backfill
0.10-0.60	ES					0.10	TOPSOIL: probable loose dry brown, organic, well sorted fine SAND with rootlets		
0.50	D					(0.73) 0.83	CLAY: probable stiff brown desiccated, very sandy friable CLAY	Hd	
1.00-1.45	SPT C					1.20	SAND: medium dense, olive khaki clayey, fine, well sorted rounded SAND	UGS	
1.00		N12					SAND: medium dense, olive khaki, clayey, fine, well sorted, rounded SAND		
1.50	D								
2.00-2.45	SPT C					(1.80)		UGS	
2.00		N20							
2.50	D					3.00			
3.00	D						Core Recovery: 0.0 - 1.0m: hand-dug starter pit 1.0 - 2.0m: 80% 2.0 - 3.0m: 80% Hand dug starter pit: 0.00-1.00m. Dynamic sampling using 101mm sample barrels: 1.0-3.0m. No casing used. Upon completion borehole backfilled with arisings		
3.00-3.11	SPT C								
3.00		N50/ 40 mm							

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To
03/07/2025	101	3.11								

GENERAL REMARKS

Borehole position scanned using Cable Avoidance Tool (CAT); no services detected

UGS: Upper Greensand
Hd: Head

All dimensions in metres Scale 1:50	Client ROBERT HITCHINS LIMITED	Method/ Plant Used Archway Dart/Window Sampling	Logged By BK

BOREHOLE PHOTOGRAPHS

Project SITE EAST OF WINDSOR DRIVE, DEVIZES SN10	Borehole No. **WS1**
Job No. 5499 Date: 03-07-25	

Starter pit (0.0-1.0m)

Borehole Core (1.0-3.0m)

Client	Method/Plant Used	Logged By
Robert Hitchins Limited	Window Sampling / Archway Competitor Dart	BK

Wilson Associates
Consulting Engineering Geologists & Geo-Environmental Engineers

BOREHOLE LOG

Project				BOREHOLE No
LAND SOUTH OF COATE ROAD, DEVIZES, WILTSHIRE				WS2
Job No	Date	Ground Level (c.m,AOD)	Co-Ordinates (c.)	
5499	03-07-25	135.00	E 401,872 N 162,101	
Contractor				Sheet
Cook Ground Investigation Limited				1 of 1

SAMPLES & TESTS			STRATA						
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thick-ness)	DESCRIPTION	Geology	Instrument/ Backfill
0.17-0.40	ES					0.17 0.40	TOPSOIL: probable medium dense, brown, fine SAND with rootlets and rare medium gravel		
							SAND: probable medium dense to dense, brown, very clayey SAND	HEAD	
						(0.80)	CLAY: very stiff, desiccated very sandy friable CLAY	HEAD	
1.00	D					1.20			
1.00-1.45	SPT C						SAND: medium dense olive khaki, clayey, fine, well sorted rounded SAND		
1.00		N21				(0.80)		UGS	
						2.00			
2.00	D						Core Recovery: 0.0 - 1.0m: hand-dug starter pit 1.0 - 2.0m: 100% Hand dug starter pit: 0.00-1.00m. Dynamic sampling using 101mm sample barrels: 1.0-2.0m. No casing used. Upon completion borehole backfilled with arisings		
2.00-2.44	SPT C								
2.00		N50/ 295 mm							

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To
04/07/2025	101	2								

GENERAL REMARKS

Borehole position scanned using Cable Avoidance Tool (CAT); no services detected

UGS: Upper Greensand
Hd: Head

All dimensions in metres Scale 1:50	Client ROBERT HITCHINS LIMITED	Method/ Plant Used Archway Competitor Dart	Logged By BK

BOREHOLE PHOTOGRAPHS

Project SITE EAST OF WINDSOR DRIVE, DEVIZES SN10	Borehole No. **WS2**
Job No. 5499 Date: 03-07-25	

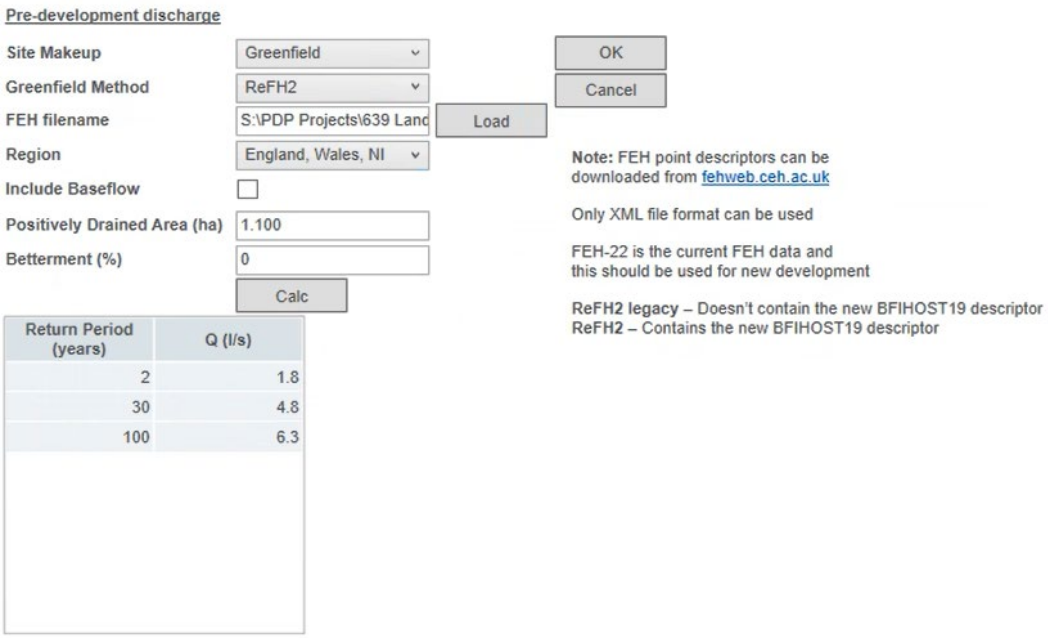
Starter pit (0.0-1.0m)

Borehole Core (1.0-2.0m)

Client	Method/Plant Used	Logged By
Robert Hitchins Limited	Window Sampling / Archway Competitor Dart	BK

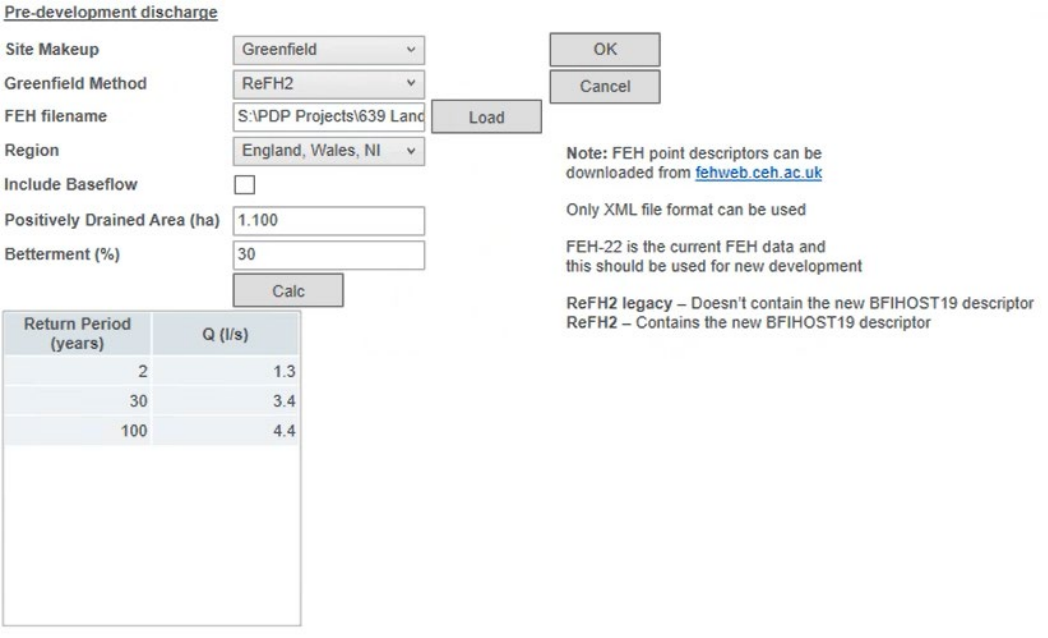
Appendix E
Greenfield Runoff Calculations

WEST GFR 1.1Ha Development Area – 0% Betterment



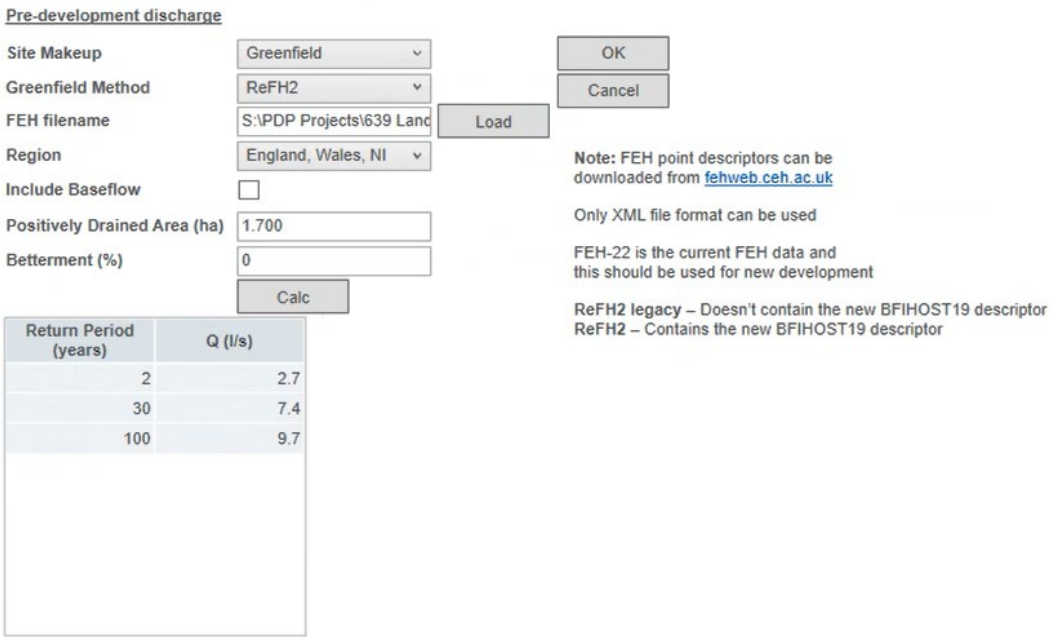
Return Period (years)	Q (l/s)
2	1.8
30	4.8
100	6.3

WEST GFR 1.1Ha Development Area – 30% Betterment



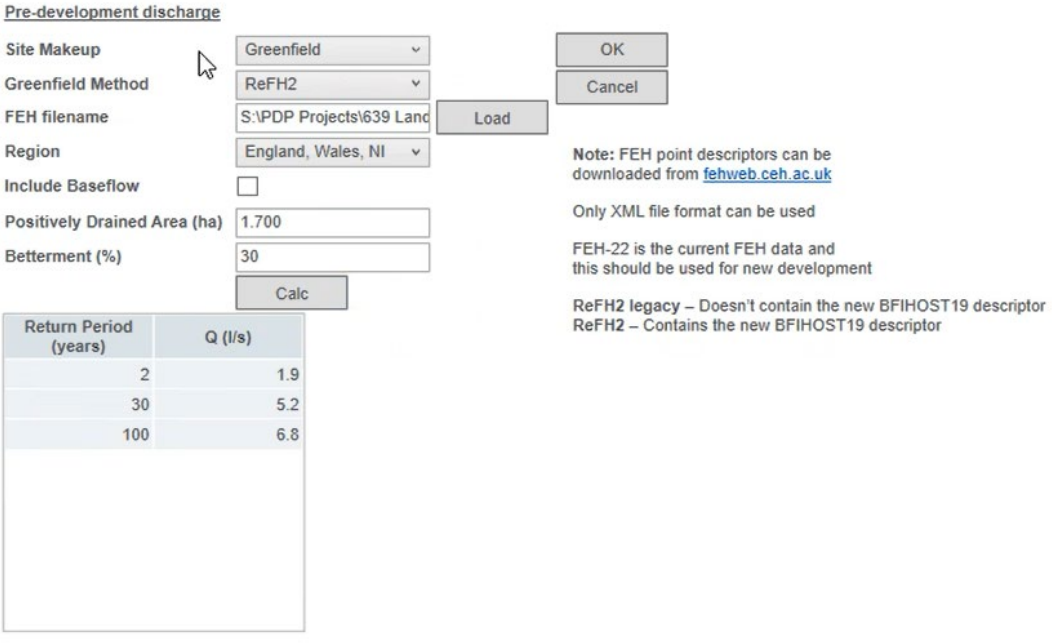
Return Period (years)	Q (l/s)
2	1.3
30	3.4
100	4.4

WEST GFR 1.7Ha Application Catchment Area – 30% Betterment



Return Period (years)	Q (l/s)
2	2.7
30	7.4
100	9.7

WEST GFR 1.7Ha Development Area – 0% Betterment



Return Period (years)	Q (l/s)
2	1.9
30	5.2
100	6.8

EAST GFR 4.54Ha Development Area – 00% Betterment

Pre-development discharge

Site Makeup	Greenfield
Greenfield Method	ReFH2
FEH filename	S:\PDP Projects\639 Land
Region	England, Wales, NI
Include Baseflow	☐
Positively Drained Area (ha)	4.540
Betterment (%)	0

OK | Cancel | Load | Calc

Note: FEH point descriptors can be downloaded from fehweb.ceh.ac.uk

Only XML file format can be used

FEH-22 is the current FEH data and this should be used for new development

ReFH2 legacy – Doesn't contain the new BFIHOST19 descriptor
ReFH2 – Contains the new BFIHOST19 descriptor

Return Period (years)	Q (l/s)
2	7.3
30	19.6
100	25.9

EAST GFR 4.5Ha Application Catchment Area – 30% Betterment

Pre-development discharge

Site Makeup	Greenfield
Greenfield Method	ReFH2
FEH filename	S:\PDP Projects\639 Land
Region	England, Wales, NI
Include Baseflow	☐
Positively Drained Area (ha)	4.540
Betterment (%)	30

OK | Cancel | Load | Calc

Note: FEH point descriptors can be downloaded from fehweb.ceh.ac.uk

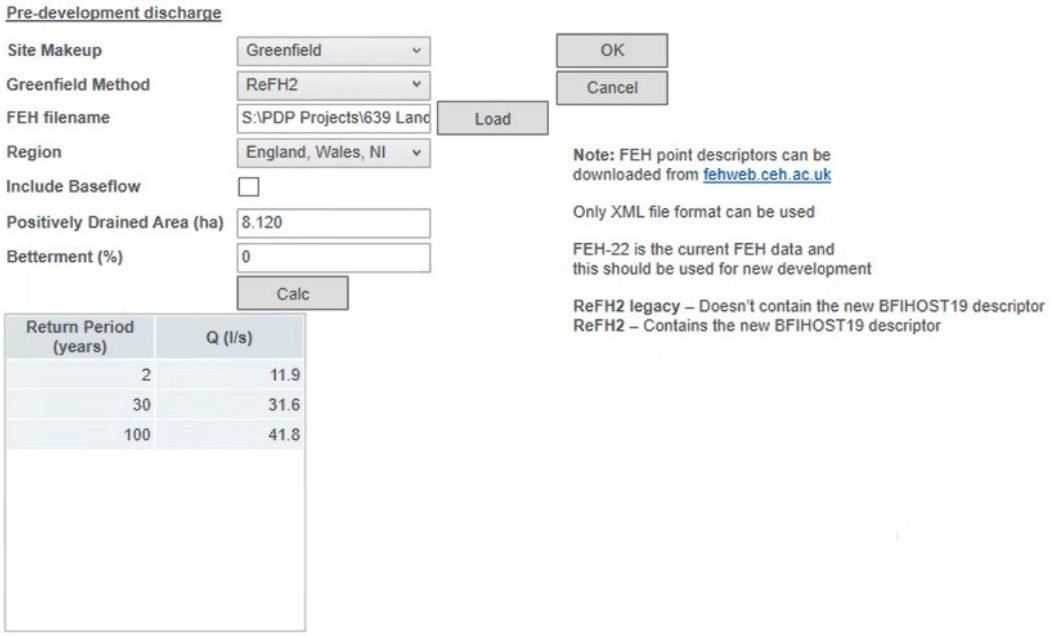
Only XML file format can be used

FEH-22 is the current FEH data and this should be used for new development

ReFH2 legacy – Doesn't contain the new BFIHOST19 descriptor
ReFH2 – Contains the new BFIHOST19 descriptor

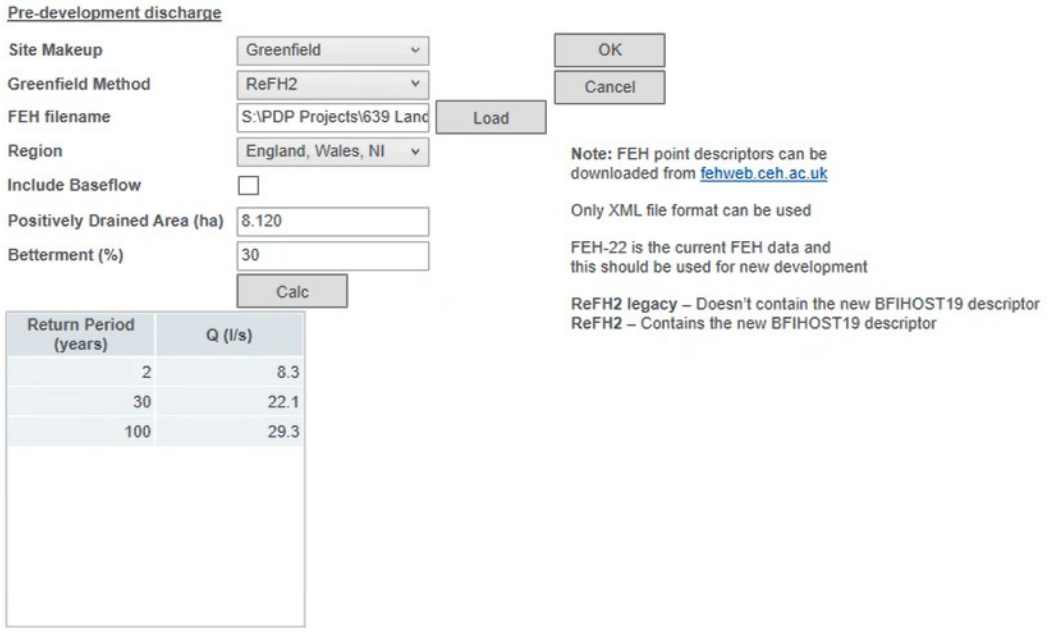
Return Period (years)	Q (l/s)
2	5.1
30	13.7
100	18.1

EAST GFR 8.12Ha Application Catchment Area – 0% Betterment



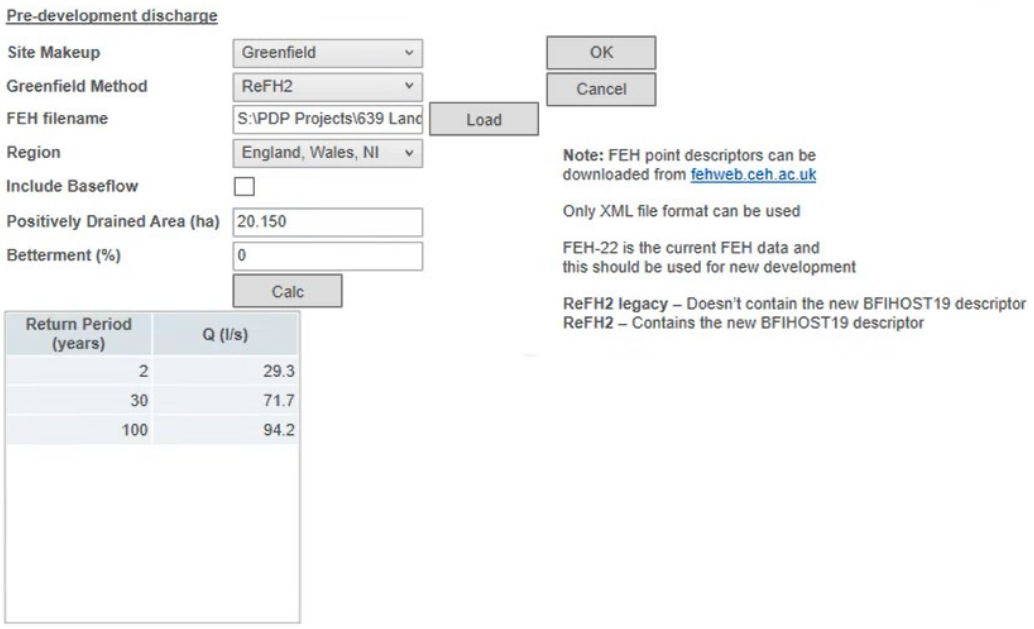
Return Period (years)	Q (l/s)
2	11.9
30	31.6
100	41.8

EAST GFR 8.12Ha Application Catchment Area – 30% Betterment



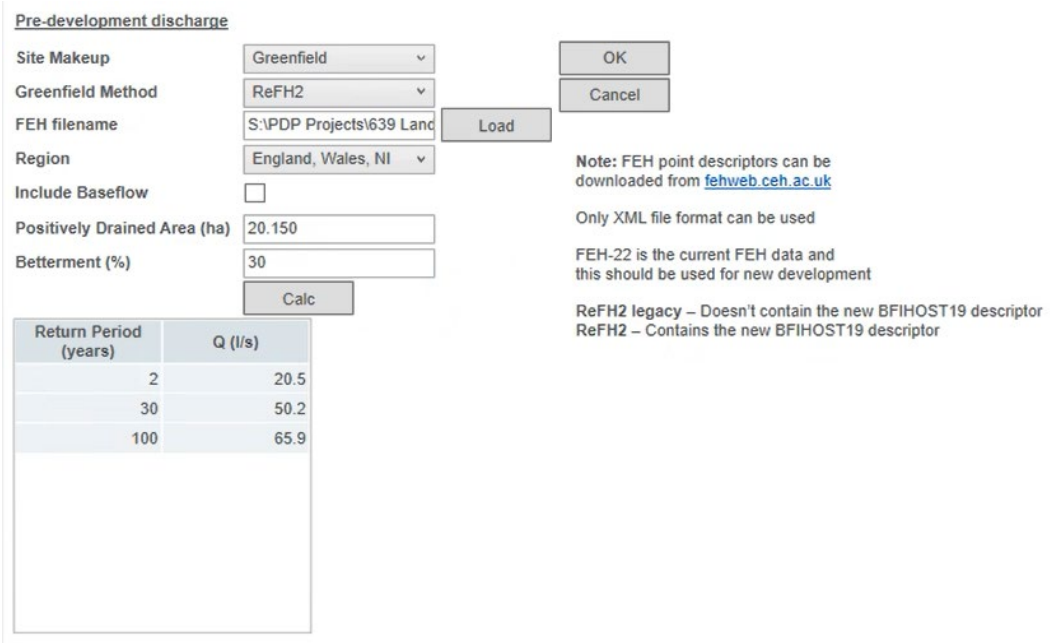
Return Period (years)	Q (l/s)
2	8.3
30	22.1
100	29.3

EAST GFR 20.15Ha Total Catchment Area – 0% Betterment



Return Period (years)	Q (l/s)
2	29.3
30	71.7
100	94.2

EAST GFR 20.15Ha Total Catchment Area – 30% Betterment



Return Period (years)	Q (l/s)
2	20.5
30	50.2
100	65.9

Appendix F
Wessex Water Correspondence & Mapping

Outlook

WWDevRespSU06SW/ 398 Land South of Coate Road Devizes

From Planning Liaison <planning.liaison@wessexwater.co.uk>
Date Thu 4/10/2025 11:42 AM
To Edward Argent <ejargent@robert-hitchins.co.uk>
Cc Alison Kurobasa <Alison.Kurobasa@wessexwater.co.uk>

2 attachments (1 MB)

WWMap Coate Lane Devizes.pdf; WWDevRespSU06SW_398 Land South of Coate Road Devizes .pdf;

Hello Ed

Land South of Coate Road Devizes Wiltshire
175 Dwellings

Our Ref SU06SW/ 398

Thank you for your pre-development enquiry. Please find attached a copy of our response, and extracts from our mapping showing our apparatus in the vicinity of the site.

The response is based on the masterplan you provided.

Note: These comments are based upon known circumstances prevailing at the time of writing. A review of the contents of this email is required where 18 months or more have elapsed since issue or in the light of significant changes likely to impact upon the response (e.g. changes in development numbers or phasing). Please email review requests to planning.liaison@wessexwater.co.uk

Regards

Alison Kurobasa
Planning Liaison

Wessex Water
YTL GROUP

Wessex Water
Operations Centre, Claverton Down, Bath BA2 7WW

Email alison.kurobasa@wessexwater.co.uk

Web ytl.com | wessexwater.co.uk

Disclaimer
This email (and any attachment) is intended solely for the addressee, is confidential and may be legally privileged. If you have received this email in error, please let us know immediately and delete it without reading, copying or disseminating it. We have taken every reasonable precaution to ensure that any attachment to this email has been swept for viruses. We cannot accept liability for any damage sustained as a result of software viruses or any other harmful code. You should ensure that it is virus free before opening it.

This email is being sent to you on behalf of Wessex Water Limited, a company registered in England and Wales with number 02366633. Its registered office is Wessex Water Operations Centre, Claverton Down Road, Claverton Down, Bath, BA2 7WW.

This email (and any attachment) is intended solely for the addressee, is confidential and may be legally privileged. If you have received this email in error, please let us know immediately and delete it without reading, copying or disseminating it. We have taken every reasonable precaution to ensure that any attachment to this email has been swept for viruses. We cannot accept liability for any damage sustained as a result of software viruses or any other harmful code. You should ensure that it is virus free before opening it.

This email is being sent to you on behalf of Wessex Water Services Limited, a company registered in England and Wales with number 02366648. The registered office is Wessex Water Operations Centre, Claverton Down Road, Claverton Down, Bath, BA2 7WW.

Response to: ejargent@robert-hitchins.co.uk			
Planning Ref:		**Email:**	Planning.liaison@wessexwater.co.uk
Proposal:	175 Dwellings	**Our Ref:**	SU06SW/ 398
Location:	**Land South of Coate Road Devizes Wiltshire**	**Date:**	10/04/2025

Existing Apparatus

There is a 200mm foul rising main crossing the site.
A 6 metre easement corridor (3m either side of the rising main) is required for the purposes of access maintenance, repair and protection.

There must be no buildings or structures within the standoff easement, this includes no surface water attenuation features, swales ponds or basins and associated earthworks in the easement strip. No changes in ground levels resulting in additional loading or excavation can lead to instability in the pressurised pipe.

The rising mains must remain within open access easement strips (as stated above) or roads. Wessex Water require unrestricted access to maintain and repair our apparatus.

The applicant will need to agree protection arrangements for the existing Wessex Water Assets which pass through the site. All apparatus must be accurately located on site and marked on deposited drawings. Below are the key points to be included. Working restrictions around, over and under pressurised foul rising mains are the same as for our water mains and apparatus.

Working restrictions around, over and under water main and apparatus (all locations)

- Wessex water will require immediate access in emergency situations at all times.
- No Parallel / adjacent utility apparatus / furniture (including sewers) will be constructed within 3m of the pipe unless agreed with WW Operations team.
- Exception to above would be access chambers which could reduce to 2m offset.
- Crossings with any utility apparatus / services to be perpendicular and a minimum of 500mm above or below.
- Method Statements will need to be provided including plant to be used for any work within 6m of the pipe, with vibration risk assessment being carried out.
- No materials or site arisings or temporary structures to be positions or stored within 6m of the main.
- New Road construction shall not use vibration to compact. Roller type to be utilised.
- Water main position will be clearly identifiable on site at all times.
- No heavy plant access along or across pipe route until road formed above.
- No concrete slabs to be placed or cast above pipe.
- Any excavation above or along pipe route within 600mm vertical of the pipe to be agreed with Wessex Water by means of method statement and agreed working practice.

Foul Drainage

Development will require a minimum 150mm foul sewer connection.
There is a public foul sewer network in the housing estate to the west of Windsor Drive:

- Harebell Way manhole SU01627116; Cover Level 133.020, Invert Level 130.720

The masterplan shows a pumping station which suggests you are not able to reach the public foul sewer network by gravity. The site layout must provide satisfactory arrangements for the pumping station compound to be located a minimum 15 metres from nearest dwelling, and with adequate access directly off adoptable road with turning arrangements for a tanker lorry. Site will require a long length of off-site rising main and you will need to consider septicity control in the rising main.

Wessex Water will accommodate foul only flows in the public foul sewer with connections made on a 'size for size' basis. Developers fund the cost of connecting to the nearest 'size for size' sewer and Wessex Water will manage the network to accommodate the additional foul flows from granted development. We fund any capacity improvements through our Infrastructure Charging arrangements.

We are aware of cumulative development coming forward in this catchment, and as sites progress through the planning process, we need to consider a strategic approach when multiple sites are looking to discharge to the same point on the network. It is also likely that we may require your site to have a telemetry inhibit and additional storage to hold back flows during peak events. Should sites obtain planning and when there is more certainty of development programmes, we will need to undertake further modelling to agree foul discharge arrangements for cumulative sites. Please keep us updated.

The point of connection to the public network is by application and agreement with Wessex Water and subject to satisfactory engineering proposals constructed to current adoptable standards.

Please Note: No surface water runoff or land drainage will be accepted into the public foul sewer either directly or indirectly.

Surface Water Drainage

For development of this site you will be required to follow the SUDS hierarchy and NPPF guidelines with discharge to local land drainage systems.
You should provide a full suite of SuDS components to be considered and included in the proposals for the capture, storage and discharge of surface water runoff at a restricted rate.
Surface water strategy, discharge rates and volumes will need to be agreed and approved by the LLFA.

No groundwater or land drainage will be accepted into the public sewer either directly or indirectly.

Please Note: No groundwater or land drainage will be accepted into the public sewer either directly or indirectly.

Water Infrastructure

Development of this scale requires a minimum 125mm mains connection.
Wessex Water can provide point of connection off the 8 inch water main in Windsor Drive, for new water mains to be laid into the development site, either through a Section 41 agreement or a self-lay arrangement.

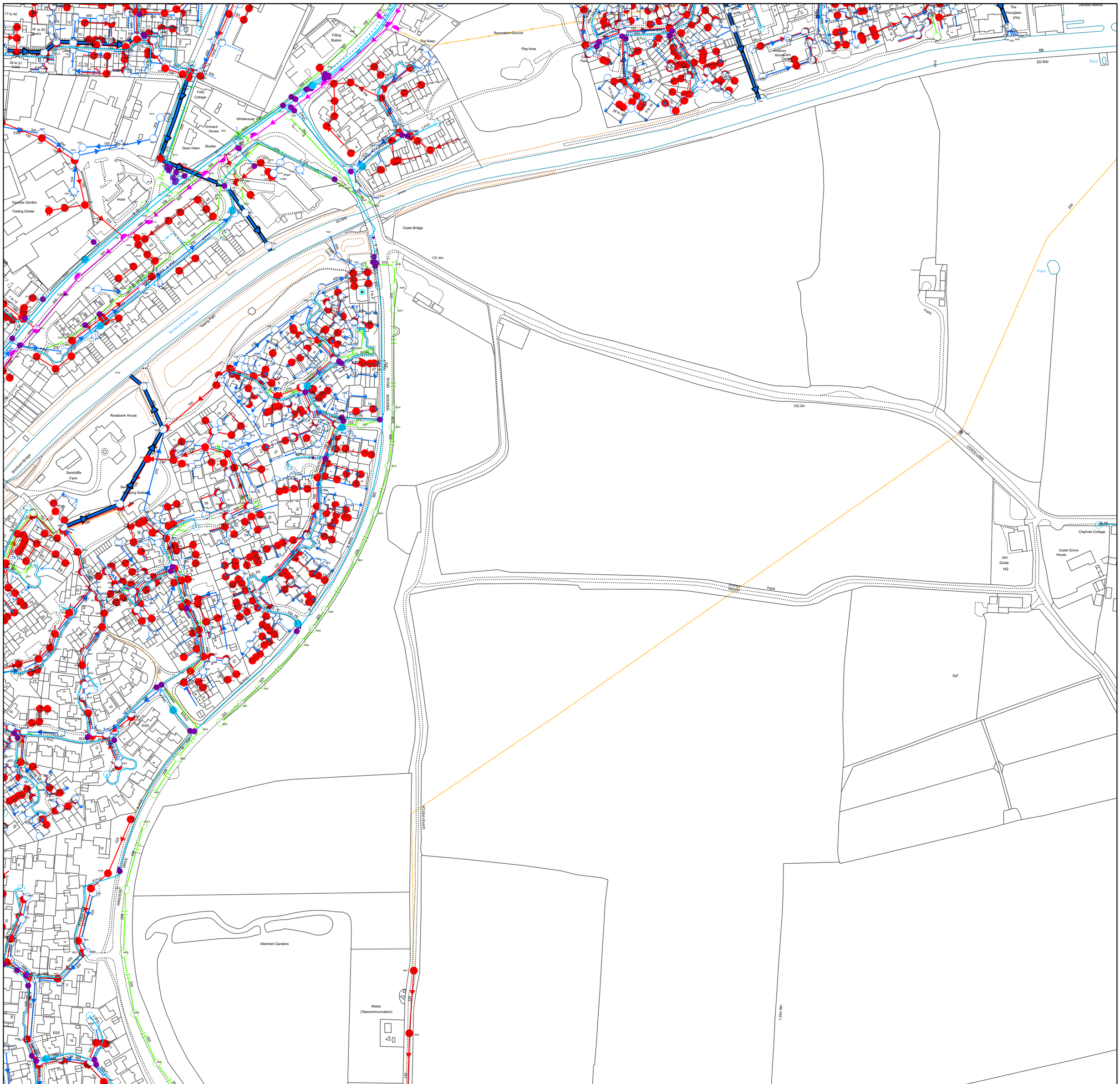
Developers may connect to our water network on a 'size for size' basis at their cost and Wessex Water will undertake any network reinforcement that may be required to accommodate granted development, this is funded through our infrastructure charging arrangements.

New Appointments and Variations (NAVs)

The NAV Market enables developers to choose their water or sewerage undertaker for a specific geographic area. For developers wishing to consider an alternative supplier or seeking further information, a full list of appointees and further guidance can be found on the Developing a new site (wessexwater.co.uk) and Ofwat website.

Note: These comments are based upon known circumstances prevailing at the time of writing. A review of the contents of this email is required where 18 months or more have elapsed since issue or in the light of significant changes likely to impact upon the response (e.g. changes in development numbers or phasing). Please email review requests to planning.liaison@wessexwater.co.uk

Coate Lane Devizes



Reproduced from the Ordnance Survey map with the permission of the Controller of His Majesty's Stationery Office. © Crown copyright and database rights (2025) OS AC0000848304

WATER MAINS

- Distribution
- Washout
- Raw Water
- Abandoned
- Private

FITTINGS

- Hydrant
- Other

SEWERS

	STRATEGIC	PUBLIC	PRIVATE	SECTION 104
Foul				
Surface				
Combined				
Abandoned				

Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow).
Some styles of line and symbol are shown on the key in sample/typical colours.

STRUCTURES

- Manhole - Foul
- Manhole - Surface
- Manhole - Combined
- Inlet
- Outfall
- Lamphole (LH)
- Bifurcation - Foul
- Bifurcation - Surface
- Bifurcation - Combined
- Combined Sewage Overflow (CSO)
- Pumping Station - Surface
- Pumping Stn - Foul/Combined
- Gully (G)
- Vent Column (VC)
- Rodding Eye (RE)
- Catchpit (CP)
- Flushing Chamber (FC)
- Soakaway (SK)
- Non Return Valve
- Air Valve
- Hatch Box (HB)
- Washout

OTHER WESSEX PIPES

- Rising Mains
- Standby Rising Mains
- Effluent Disposal (EDM)
- Overflow
- Syphon (S)

NON-WESSEX / UNKNOWN

- Private Rising Mains
- Culverted Watercourse (CW)
- Highway Drain (H)
- Use Unknown (?)
- Status Unknown (SU)

OTHER STRUCTURES

- Attenuation Tank
- Storage Tank
- Chamber
- Tunnel
- Interceptor

Wessex Water
YTL GROUP

Information in this map is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies. Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown. In carrying out any works, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located. If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. If you are proposing to build over or near Wessex Water's apparatus you should contact the Developer Services Team, tel: 01225 526333 or e-mail: developer.enquiries@wessexwater.co.uk to discuss your proposals. Details of assets within Wessex Water's land ownership are unavailable through this service.

Date: 10/04/2025
Centre: 402000E, 162020N
Scale: 1:2,500
(when printed at A2 size)

N W E S

Appendix G
Drainage Strategy

POND 2
WATER LEVEL 130.00mAOD
MINIMUM BANK LEVEL 131.50mAOD
VOLUME @ 131.20mAOD c.650m3
VOLUME @ 131.50mAOD c.870m3
1:3 SIDE SLOPES
3m BENCH @ 1:20
0.9m PERMANENT POOL DEPTH
PERMANENT POOL VOLUME c.166m3
HYDROBRAKE FLOW CONTROL
2.1l/s DISCHARGE @ 1.24m HEAD (65mmØ)
IL = 129.96mAOD

NEW WET CONVEYANCE SWALE/CHANNEL. EXISTING DITCHES ALONGSIDE COATE ROAD TO BE DEEPENED AND WIDENED WHERE IN CLOSE PROXIMITY. APPROX. 1:1000

NEW WET CONVEYANCE SWALE/CHANNEL. EXISTING DITCHES ALONGSIDE COATE ROAD TO BE DEEPENED AND WIDENED WHERE IN CLOSE PROXIMITY. APPROX. 1:1000

NEW DRAIN UNDER COATE ROAD TO REPLACE EXISTING TO SERVE THE LAND TO THE SOUTH OF COATE ROAD.
300Ø PIPE @ 1:300
DS IL = 130.50mAOD
U/S IL = 130.60mAOD

POND 3
WATER LEVEL 130.60mAOD
MINIMUM BANK LEVEL 132.10mAOD
VOLUME @ 131.80mAOD c.1,310m3
VOLUME @ 132.10mAOD c.1,740m3
1:3 SIDE SLOPES
3m BENCH @ 1:20
0.9m PERMANENT POOL DEPTH
PERMANENT POOL VOLUME c.420m3
HYDROBRAKE FLOW CONTROL
8.3l/s DISCHARGE @ 1.225m HEAD (150mmØ)
IL = 130.575mAOD
OVERFLOW ORIFICE
0.069mØ @ 131.80mAOD

CUTOFF CHANNEL/SWALE/DRAIN TO INTERCEPT RUNOFF FROM HIGHER LAND TO THE SOUTH.

CUTOFF CHANNEL/SWALE/DRAIN TO INTERCEPT RUNOFF FROM HIGHER LAND TO THE SOUTH.

CUTOFF CHANNEL/SWALE/DRAIN TO INTERCEPT RUNOFF FROM HIGHER LAND TO THE SOUTH.

LIDAR LEVEL DATA

LIDAR LEVEL DATA

LIDAR LEVEL DATA

LIDAR LEVEL DATA

0 10 20 30 40 50
Metres (Scale 1:500)

Revisions

Project: Land South of Coate Road
Devizes

Client:

RobertHitchins
The Complete Development Solution

Drawing: Outline Drainage Strategy

Scale: 1:500 @ A0 Date: 06/03/2026 Drawn by: P.A.

Drawing No: 639-P106 Rev: -

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Drg.Status: FOR APPROVAL

Appendix H
Impermeable Area

EXISTING 375mmØ HIGHWAY DRAIN UNDER WINDSOR DRIVE

S35 CONECTION TO EXISTING 375mmØ HIGHWAY DRAIN. ASSUMED IL 129.85 (225mm) TBC

S35

OUTLET 225mmØ @ 1:170

EXISTING 375mmØ HIGHWAY DRAIN

N

1.007 GFR HYDROGRAPH OPEN SPACE 0.60Ha (6000m2) NO URBAN CREEP 0.401/1.06 = 0.57Ha

1.007 CHANNEL IL 129.98 (225mm)

1.007 420m2

1.008 0m2

1.006 0m2

1.005 400m2

2.004 0m2

2.003 0m2

2.002 0m2

1.005

1.004

1.003 170m2

1.004 620m2

2.001

2.000

1.002 320m2

2.000 1050m2

2.001 2050m2

1.001 320m2

1.000

1.000 1250m2

WEST DEVELOPMENT CATCHMENT AREA 1.10Ha (11,000m2) IMPERMEABLE AREA 0.66Ha (6,600m2)

2.008 GFR HYDROGRAPH OPEN SPACE 3.58Ha (35800m2) NO URBAN CREEP 3.58/1.06 = 3.38Ha

2.008 CHANNEL

2.008 0m2

1.007 880m2

1.004 840m2

1.006

2.007 220m2

2.006 220m2

2.005 240m2

2.004 500m2

2.003 300m2

2.002 1190m2

2.001 680m2

2.001 730m2

1.006

1.005 800m2

1.005

1.004 640m2

1.003 400m2

1.002 1380m2

1.001 460m2

1.000 750m2

3.005

3.004 970m3

3.003 620m2

3.002 1010m2

3.001 470m3

3.000 840m2

2.000

4.005

4.004 1200m2

4.003 1200m2

4.002 200m2

5.000 700m2

4.001 690m2

4.000 800m2

1.008 CHANNEL

1.009 880m2

4.004 830m3

1.009 CHANNEL

5.005 750m2

5.004 480m2

5.003 650m2

5.002 600m2

5.001 870m2

5.000

1.010 CHANNEL

5.006 1550m2

1.010 0m2

1.011 0m2

1.013 0m2

1.014 0m2

1.012 910m2

OUTFALL TO EXISTING DITCH ON NORTH SIDE OF COATE ROAD

OUTLET 300mmØ @ 1:300

6.000 GFR HYDROGRAPH 14.66Ha (14660m2) NO URBAN CREEP 14.66/1.06 = 13.26Ha

GROSS CATCHMENT FLOWS NORTH TO COATE ROAD AREA = 1.70Ha (17,000m2)

EAST DEVELOPMENT CATCHMENT AREA 4.54Ha (45,400m2) IMPERMEABLE AREA 2.62Ha (26,200m2)

CUTOFF CHANNEL/SWALE/DRAIN TO INTERCEPT RUNOFF FROM HIGHER LAND TO THE SOUTH. TOTAL CATCHMENT 14.66Ha (146,600m2)

CUTOFF CHANNEL/SWALE/DRAIN TO INTERCEPT RUNOFF FROM HIGHER LAND TO THE SOUTH. TOTAL CATCHMENT 14.66Ha (146,600m2)

CUTOFF CHANNEL/SWALE/DRAIN TO INTERCEPT RUNOFF FROM HIGHER LAND TO THE SOUTH. TOTAL CATCHMENT 14.66Ha (146,600m2)

OPEN SPACE TO SOUTH AREA = 2.63Ha (26,300m2)

HIGHER LAND TO SOUTH AREA = 12.03Ha (120,300m2)

IMPERMEABLE AREAS - LAND SOUTH OF COATE ROAD - WEST (c. 40 DWELLINGS)

DEVELOPMENT AREA CATCHMENT = 11,000m2

HIGHWAYS = 2,490m2 (40%)

ROOFS = 1,760m2 (28%)

DRIVES/PARKING = 1,640m2 (27%)

ATTENUATION POND = 400m2 (5%)

IMPERMEABLE AREA = 6,290m2

DESIGN CONTINGENCY = 310m2 (5%)

TOTAL = 6,600m2 (0.660Ha)

APPLICATION CATCHMENT (EXCL. EX. HWAY.)	=	1.700Ha
DEVELOPMENT AREA CATCHMENT	=	1.100Ha (65%)
OPENSPACE AREA IN APPLICATION AREA	=	0.600Ha (35%)
IMPERMEABLE AREA	=	0.660Ha (60%)
GARDENS & LANDSCAPE IN DEVELOPMENT AREA	=	0.440Ha (40%)
URBAN CREEP = 10% (ROOFS & DRIVES/PARKING)	=	6%
AVON HAMPSHIRE MANAGEMENT CATCHMENT PEAK RAINFALL ALLOWANCES		
CLIMATE CHANGE ALLOWANCE 1:30 EVENT	=	40%
CLIMATE CHANGE ALLOWANCE 1:100 EVENT	=	45%
TOTAL ALLOWANCE 1:30 EVENT	=	48%
TOTAL ALLOWANCE 1:100 EVENT	=	54%

IMPERMEABLE AREAS - LAND SOUTH OF COATE ROAD - EAST (c. 140 DWELLINGS)

DEVELOPMENT AREA CATCHMENT = 45,400m2

HIGHWAYS = 10,270m2 (41%)

ROOFS = 6,950m2 (28%)

DRIVES/PARKING = 6,870m2 (28%)

ATTENUATION POND = 860m2 (3%)

IMPERMEABLE AREA = 24,950m2

DESIGN CONTINGENCY = 1,380m2 (5%)

TOTAL = 26,200m2 (2.620Ha)

APPLICATION CATCHMENT (EXCL. EX. HWAY.)	=	8.12Ha
DEVELOPMENT AREA CATCHMENT	=	4.54Ha (56%)
OPENSPACE AREA IN APPLICATION AREA	=	3.54Ha (44%)
IMPERMEABLE AREA	=	2.62Ha (58%)
GARDENS & LANDSCAPE IN DEVELOPMENT AREA	=	1.92Ha (42%)
HIGHER LAND TO SOUTH	=	14.66Ha
TOTAL CATCHMENT TO COATE ROAD	=	20.15Ha
URBAN CREEP = 10% (ROOFS & DRIVES/PARKING)	=	6%
AVON HAMPSHIRE MANAGEMENT CATCHMENT PEAK RAINFALL ALLOWANCES		
CLIMATE CHANGE ALLOWANCE 1:30 EVENT	=	40%
CLIMATE CHANGE ALLOWANCE 1:100 EVENT	=	45%
TOTAL ALLOWANCE 1:30 EVENT	=	48%
TOTAL ALLOWANCE 1:100 EVENT	=	54%

0 10 20 30 40 50

Metres [Scale 1:500]

Revisions

Project: Land South of Coate Road Devizes

Client: RobertHitchins The Complete Development Solution

Drawing: Impermeable Areas Plan

Scale: 1:500 @ A0 Date: 06/03/2026 Drawn by: P.A.

Drawing No: 639-P105 Rev: -

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Drg Status: FOR APPROVAL

Appendix I
Flow SW Drainage Calculations

NETWORK 2 - WEST AREA (POND 2)
SURFACE WATER SIMULATION CALCULATIONS

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S21	0.125	5.00	133.401	1350	401935.393	162137.296	1.401
S22	0.032	5.00	132.929	1350	401934.890	162178.305	1.479
S23	0.032	5.00	132.739	1350	401917.616	162193.162	1.539
S24	0.017	5.00	132.325	1350	401917.601	162228.111	1.525
S25	0.062	5.00	131.700	1350	401883.931	162228.093	1.460
S26	0.040	5.00	131.500	1350	401878.801	162242.933	1.325
S27			131.500	1350	401877.144	162247.494	1.350
S28	0.105	5.00	132.555	1350	401896.813	162192.538	1.455
S29	0.205	5.00	132.273	1350	401868.846	162189.658	1.548
S30			132.054	1350	401853.613	162193.611	1.529
S31			131.500	1350	401853.989	162239.223	1.250
S32			131.500	1500	401868.335	162250.102	1.350
S33	0.042	5.00	131.500	1500	401867.410	162270.288	1.500
S34			131.500	2700	401862.465	162274.960	1.540
S35			131.405	1350	401848.936	162287.748	1.555

Links

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	S21	S22	41.012	0.600	132.000	131.450	0.550	74.6	225	5.45	49.9
1.001	S22	S23	22.784	0.600	131.450	131.275	0.175	130.2	225	5.78	48.7
1.002	S23	S24	34.949	0.600	131.200	130.800	0.400	87.4	300	6.13	47.4
1.003	S24	S25	33.670	0.600	130.800	130.240	0.560	60.1	300	6.41	46.4
1.004	S25	S26	15.702	0.600	130.240	130.175	0.065	241.6	300	6.67	45.6
1.005	S26	S27	4.852	0.600	130.175	130.150	0.025	194.1	300	6.74	45.3
1.006	S27	S33	18.880	0.600	130.150	130.000	0.150	125.9	600	6.88	44.8
2.000	S28	S29	28.115	0.600	131.100	130.800	0.300	93.7	225	5.35	50.0
2.001	S29	S30	15.738	0.600	130.725	130.525	0.200	78.7	300	5.49	49.7
2.002	S30	S31	45.613	0.600	130.525	130.250	0.275	165.9	300	6.12	47.4
2.003	S31	S32	18.005	0.600	130.250	130.150	0.100	180.1	300	6.38	46.6
2.004	S32	S33	24.157	0.600	130.150	130.000	0.150	161.0	600	6.59	45.8

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	1.516	60.3	22.5	1.176	1.254	0.125	0.0	95	1.410
1.001	1.144	45.5	27.6	1.254	1.239	0.157	0.0	127	1.199
1.002	1.683	118.9	32.4	1.239	1.225	0.189	0.0	106	1.437
1.003	2.031	143.6	34.6	1.225	1.160	0.206	0.0	100	1.681
1.004	1.007	71.2	44.1	1.160	1.025	0.268	0.0	171	1.059
1.005	1.125	79.5	50.4	1.025	1.050	0.308	0.0	174	1.189
1.006	2.169	613.3	49.9	0.750	0.900	0.308	0.0	114	1.328
2.000	1.351	53.7	19.0	1.230	1.248	0.105	0.0	92	1.234
2.001	1.774	125.4	55.7	1.248	1.229	0.310	0.0	140	1.722
2.002	1.218	86.1	53.1	1.229	0.950	0.310	0.0	171	1.279
2.003	1.168	82.6	52.2	0.950	1.050	0.310	0.0	173	1.233
2.004	1.916	541.7	51.3	0.750	0.900	0.310	0.0	123	1.227

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Links

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)
1.007	S33	S34	6.803	0.600	130.000	129.960	0.040	170.1	225	7.00	44.4
1.008	S34	S35	14.669	0.600	129.960	129.850	0.110	133.4	225	7.21	43.8

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)
1.007	0.999	39.7	106.0	1.275	1.315	0.660	0.0	225	1.018
1.008	1.130	44.9	104.4	1.315	1.330	0.660	0.0	225	1.151

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	41.012	74.6	225	Circular	133.401	132.000	1.176	132.929	131.450	1.254
1.001	22.784	130.2	225	Circular	132.929	131.450	1.254	132.739	131.275	1.239
1.002	34.949	87.4	300	Circular	132.739	131.200	1.239	132.325	130.800	1.225
1.003	33.670	60.1	300	Circular	132.325	130.800	1.225	131.700	130.240	1.160
1.004	15.702	241.6	300	Circular	131.700	130.240	1.160	131.500	130.175	1.025
1.005	4.852	194.1	300	Circular	131.500	130.175	1.025	131.500	130.150	1.050
1.006	18.880	125.9	600	Circular	131.500	130.150	0.750	131.500	130.000	0.900
2.000	28.115	93.7	225	Circular	132.555	131.100	1.230	132.273	130.800	1.248
2.001	15.738	78.7	300	Circular	132.273	130.725	1.248	132.054	130.525	1.229
2.002	45.613	165.9	300	Circular	132.054	130.525	1.229	131.500	130.250	0.950
2.003	18.005	180.1	300	Circular	131.500	130.250	0.950	131.500	130.150	1.050
2.004	24.157	161.0	600	Circular	131.500	130.150	0.750	131.500	130.000	0.900
1.007	6.803	170.1	225	Circular	131.500	130.000	1.275	131.500	129.960	1.315
1.008	14.669	133.4	225	Circular	131.500	129.960	1.315	131.405	129.850	1.330

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S21	1350	Manhole	Adoptable	S22	1350	Manhole	Adoptable
1.001	S22	1350	Manhole	Adoptable	S23	1350	Manhole	Adoptable
1.002	S23	1350	Manhole	Adoptable	S24	1350	Manhole	Adoptable
1.003	S24	1350	Manhole	Adoptable	S25	1350	Manhole	Adoptable
1.004	S25	1350	Manhole	Adoptable	S26	1350	Manhole	Adoptable
1.005	S26	1350	Manhole	Adoptable	S27	1350	Manhole	Adoptable
1.006	S27	1350	Manhole	Adoptable	S33	1500	Manhole	Adoptable
2.000	S28	1350	Manhole	Adoptable	S29	1350	Manhole	Adoptable
2.001	S29	1350	Manhole	Adoptable	S30	1350	Manhole	Adoptable
2.002	S30	1350	Manhole	Adoptable	S31	1350	Manhole	Adoptable
2.003	S31	1350	Manhole	Adoptable	S32	1500	Manhole	Adoptable
2.004	S32	1500	Manhole	Adoptable	S33	1500	Manhole	Adoptable
1.007	S33	1500	Manhole	Adoptable	S34	2700	Manhole	Adoptable
1.008	S34	2700	Manhole	Adoptable	S35	1350	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S21	401935.393	162137.296	133.401	1.401	1350				
						0	1.000	132.000	225
S22	401934.890	162178.305	132.929	1.479	1350	1	1.000	131.450	225
						0	1.001	131.450	225

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Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S23	401917.616	162193.162	132.739	1.539	1350	1	1.001	131.275	225
						0	1.002	131.200	300
S24	401917.601	162228.111	132.325	1.525	1350	1	1.002	130.800	300
						0	1.003	130.800	300
S25	401883.931	162228.093	131.700	1.460	1350	1	1.003	130.240	300
						0	1.004	130.240	300
S26	401878.801	162242.933	131.500	1.325	1350	1	1.004	130.175	300
						0	1.005	130.175	300
S27	401877.144	162247.494	131.500	1.350	1350	1	1.005	130.150	300
						0	1.006	130.150	600
S28	401896.813	162192.538	132.555	1.455	1350				
						0	2.000	131.100	225
S29	401868.846	162189.658	132.273	1.548	1350	1	2.000	130.800	225
						0	2.001	130.725	300
S30	401853.613	162193.611	132.054	1.529	1350	1	2.001	130.525	300
						0	2.002	130.525	300
S31	401853.989	162239.223	131.500	1.250	1350	1	2.002	130.250	300
						0	2.003	130.250	300
S32	401868.335	162250.102	131.500	1.350	1500	1	2.003	130.150	300
						0	2.004	130.150	600
S33	401867.410	162270.288	131.500	1.500	1500	1	2.004	130.000	600
						2	1.006	130.000	600
						0	1.007	130.000	225
S34	401862.465	162274.960	131.500	1.540	2700	1	1.007	129.960	225
						0	1.008	129.960	225
S35	401848.936	162287.748	131.405	1.555	1350	1	1.008	129.850	225

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	5760	Check Discharge Volume	x

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Storm Durations

60	120	180	240	360	480	600	720	960	1440	2160	2880

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	45	6	0
30	40	6	0				

Node S33 ReFH2 Dynamic Hydrograph

Overrides Design Area	x	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Area (ha)	0.570
Depression Storage Area (m²)	0	Region	England, Wales, NI
Depression Storage Depth (mm)	0	Include Baseflow	x

Applies to All storms

Node S34 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	129.960	Product Number	CTL-SHE-0065-2100-1240-2100
Design Depth (m)	1.240	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.1	Min Node Diameter (mm)	1200

Node S33 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	130.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	4230

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	397.5	0.0	0.400	489.2	0.0	0.800	590.5	0.0	1.200	700.7	0.0
0.100	419.3	0.0	0.500	513.7	0.0	0.900	617.2	0.0	1.300	729.7	0.0
0.200	442.0	0.0	0.600	538.7	0.0	1.000	644.4	0.0	1.400	759.2	0.0
0.300	465.3	0.0	0.700	564.3	0.0	1.100	672.3	0.0	1.500	789.3	0.0

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 60 minute summer	43.138	11.400	2 year 1440 minute summer	5.581	1.496
2 year 60 minute winter	28.660	11.400	2 year 1440 minute winter	3.751	1.496
2 year 120 minute summer	30.650	8.100	2 year 2160 minute summer	3.993	1.104
2 year 120 minute winter	20.363	8.100	2 year 2160 minute winter	2.752	1.104
2 year 180 minute summer	25.002	6.434	2 year 2880 minute summer	3.343	0.896
2 year 180 minute winter	16.252	6.434	2 year 2880 minute winter	2.246	0.896
2 year 240 minute summer	20.434	5.400	30 year +40% CC +6% A 60 minute summer	165.585	43.759
2 year 240 minute winter	13.576	5.400	30 year +40% CC +6% A 60 minute winter	110.011	43.759
2 year 360 minute summer	16.127	4.150	30 year +40% CC +6% A 120 minute summer	101.267	26.762
2 year 360 minute winter	10.483	4.150	30 year +40% CC +6% A 120 minute winter	67.279	26.762
2 year 480 minute summer	12.844	3.394	30 year +40% CC +6% A 180 minute summer	77.485	19.939
2 year 480 minute winter	8.533	3.394	30 year +40% CC +6% A 180 minute winter	50.367	19.939
2 year 600 minute summer	10.561	2.889	30 year +40% CC +6% A 240 minute summer	61.051	16.134
2 year 600 minute winter	7.216	2.889	30 year +40% CC +6% A 240 minute winter	40.561	16.134
2 year 720 minute summer	9.421	2.525	30 year +40% CC +6% A 360 minute summer	46.303	11.915
2 year 720 minute winter	6.332	2.525	30 year +40% CC +6% A 360 minute winter	30.098	11.915
2 year 960 minute summer	7.728	2.035	30 year +40% CC +6% A 480 minute summer	36.156	9.555
2 year 960 minute winter	5.119	2.035	30 year +40% CC +6% A 480 minute winter	24.021	9.555

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year +40% CC +6% A 600 minute summer	29.355	8.029	100 year +45% CC +6% A 240 minute summer	79.696	21.061
30 year +40% CC +6% A 600 minute winter	20.057	8.029	100 year +45% CC +6% A 240 minute winter	52.948	21.061
30 year +40% CC +6% A 720 minute summer	25.949	6.954	100 year +45% CC +6% A 360 minute summer	60.479	15.563
30 year +40% CC +6% A 720 minute winter	17.439	6.954	100 year +45% CC +6% A 360 minute winter	39.313	15.563
30 year +40% CC +6% A 960 minute summer	21.003	5.531	100 year +45% CC +6% A 480 minute summer	47.440	12.537
30 year +40% CC +6% A 960 minute winter	13.913	5.531	100 year +45% CC +6% A 480 minute winter	31.518	12.537
30 year +40% CC +6% A 1440 minute summer	14.834	3.976	100 year +45% CC +6% A 600 minute summer	38.680	10.580
30 year +40% CC +6% A 1440 minute winter	9.969	3.976	100 year +45% CC +6% A 600 minute winter	26.428	10.580
30 year +40% CC +6% A 2160 minute summer	10.318	2.851	100 year +45% CC +6% A 720 minute summer	34.310	9.195
30 year +40% CC +6% A 2160 minute winter	7.109	2.851	100 year +45% CC +6% A 720 minute winter	23.058	9.195
30 year +40% CC +6% A 2880 minute summer	8.426	2.258	100 year +45% CC +6% A 960 minute summer	27.878	7.341
30 year +40% CC +6% A 2880 minute winter	5.663	2.258	100 year +45% CC +6% A 960 minute winter	18.467	7.341
100 year +45% CC +6% A 60 minute summer	222.215	58.725	100 year +45% CC +6% A 1440 minute summer	19.792	5.305
100 year +45% CC +6% A 60 minute winter	147.635	58.725	100 year +45% CC +6% A 1440 minute winter	13.302	5.305
100 year +45% CC +6% A 120 minute summer	133.055	35.162	100 year +45% CC +6% A 2160 minute summer	13.674	3.779
100 year +45% CC +6% A 120 minute winter	88.399	35.163	100 year +45% CC +6% A 2160 minute winter	9.422	3.779
100 year +45% CC +6% A 180 minute summer	101.277	26.062	100 year +45% CC +6% A 2880 minute summer	11.046	2.960
100 year +45% CC +6% A 180 minute winter	65.832	26.062	100 year +45% CC +6% A 2880 minute winter	7.424	2.960

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.86%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S21	33	132.072	0.072	13.4	0.1026	0.0000	OK
60 minute summer	S22	33	131.548	0.098	16.8	0.1402	0.0000	OK
60 minute summer	S23	33	131.286	0.086	20.1	0.1227	0.0000	OK
60 minute summer	S24	34	130.878	0.078	21.8	0.1121	0.0000	OK
60 minute summer	S25	34	130.381	0.141	28.3	0.2021	0.0000	OK
720 minute winter	S26	690	130.335	0.160	5.5	0.2287	0.0000	OK
720 minute winter	S27	690	130.335	0.185	5.5	0.2645	0.0000	OK
60 minute summer	S28	33	131.172	0.072	11.3	0.1025	0.0000	OK
60 minute summer	S29	33	130.837	0.112	33.3	0.1608	0.0000	OK
60 minute summer	S30	33	130.657	0.132	33.3	0.1891	0.0000	OK
60 minute summer	S31	33	130.387	0.137	33.3	0.1965	0.0000	OK
720 minute winter	S32	690	130.335	0.185	5.4	0.3265	0.0000	OK
720 minute winter	S33	690	130.335	0.335	12.0	146.2038	0.0000	SURCHARGED
720 minute winter	S34	690	130.335	0.375	1.9	2.1453	0.0000	SURCHARGED
240 minute summer	S35	208	129.881	0.031	1.8	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S21	1.000	S22	13.4	0.986	0.222	0.5627	
60 minute summer	S22	1.001	S23	16.7	1.038	0.366	0.3663	
60 minute summer	S23	1.002	S24	20.0	1.286	0.168	0.5439	
60 minute summer	S24	1.003	S25	21.8	0.933	0.152	0.7946	
60 minute summer	S25	1.004	S26	28.2	0.889	0.397	0.4989	
60 minute summer	S26	1.005	S27	32.4	1.278	0.408	0.1235	
60 minute summer	S27	1.006	S33	32.5	1.324	0.053	0.6305	
60 minute summer	S28	2.000	S29	11.3	1.061	0.210	0.2992	
60 minute summer	S29	2.001	S30	33.3	1.235	0.266	0.4245	
60 minute summer	S30	2.002	S31	33.3	1.085	0.386	1.3982	
60 minute summer	S31	2.003	S32	33.1	1.247	0.401	0.4796	
60 minute summer	S32	2.004	S33	33.4	1.287	0.062	0.8139	
60 minute summer	S33	1.007	S34	3.1	0.389	0.077	0.2347	
240 minute summer	S34	1.008	S35	1.8	0.555	0.041	0.0488	151.5

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Results for 30 year +40% CC +6% A Critical Storm Duration. Lowest mass balance: 99.86%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S21	34	132.412	0.412	54.7	0.5891	0.0000	SURCHARGED
60 minute summer	S22	34	131.924	0.474	66.8	0.6782	0.0000	SURCHARGED
60 minute summer	S23	34	131.390	0.190	79.9	0.2721	0.0000	OK
1440 minute summer	S24	1440	131.060	0.260	9.0	0.3716	0.0000	OK
1440 minute summer	S25	1440	131.060	0.820	11.7	1.1729	0.0000	SURCHARGED
1440 minute summer	S26	1440	131.059	0.884	13.2	1.2656	0.0000	SURCHARGED
1440 minute summer	S27	1440	131.060	0.910	13.1	1.3019	0.0000	SURCHARGED
60 minute summer	S28	34	132.034	0.934	45.9	1.3360	0.0000	SURCHARGED
60 minute summer	S29	34	131.789	1.064	132.6	1.5226	0.0000	SURCHARGED
60 minute summer	S30	34	131.479	0.954	130.1	1.3650	0.0000	SURCHARGED
1440 minute winter	S31	1410	131.058	0.808	9.1	1.1567	0.0000	SURCHARGED
1440 minute winter	S32	1410	131.058	0.908	8.9	1.6050	0.0000	SURCHARGED
1440 minute winter	S33	1410	131.058	1.058	19.8	556.0289	0.0000	SURCHARGED
1440 minute winter	S34	1410	131.058	1.098	2.0	6.2879	0.0000	SURCHARGED
1440 minute winter	S35	1410	129.882	0.032	2.0	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S21	1.000	S22	52.9	1.330	0.877	1.6311	
60 minute summer	S22	1.001	S23	66.6	1.675	1.464	0.8882	
60 minute summer	S23	1.002	S24	80.2	1.775	0.674	1.6711	
60 minute summer	S24	1.003	S25	86.3	1.325	0.601	2.0027	
60 minute summer	S25	1.004	S26	111.7	1.586	1.569	1.1057	
60 minute summer	S26	1.005	S27	128.2	1.907	1.612	0.3417	
60 minute summer	S27	1.006	S33	127.8	1.468	0.208	4.8511	
60 minute summer	S28	2.000	S29	44.2	1.249	0.823	1.1182	
60 minute summer	S29	2.001	S30	130.1	1.848	1.038	1.1083	
60 minute summer	S30	2.002	S31	130.2	1.849	1.512	3.2120	
60 minute summer	S31	2.003	S32	130.2	1.914	1.576	1.2679	
60 minute summer	S32	2.004	S33	129.7	1.403	0.239	6.2067	
60 minute summer	S33	1.007	S34	5.0	0.555	0.126	0.2706	
1440 minute winter	S34	1.008	S35	2.0	0.565	0.044	0.0510	724.3

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Results for 100 year +45% CC +6% A Critical Storm Duration. Lowest mass balance: 99.86%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S21	34	133.381	1.381	73.4	1.9765	0.0000	FLOOD RISK
60 minute summer	S22	34	132.569	1.119	86.8	1.6008	0.0000	SURCHARGED
60 minute summer	S23	34	131.828	0.628	103.0	0.8982	0.0000	SURCHARGED
60 minute summer	S24	34	131.475	0.675	110.1	0.9656	0.0000	SURCHARGED
1440 minute summer	S25	1440	131.394	1.154	15.7	1.6508	0.0000	SURCHARGED
1440 minute summer	S26	1470	131.394	1.219	17.8	1.7442	0.0000	FLOOD RISK
1440 minute summer	S27	1440	131.394	1.244	17.6	1.7796	0.0000	FLOOD RISK
60 minute summer	S28	32	132.555	1.455	61.7	2.0821	2.6623	FLOOD
60 minute summer	S29	32	132.273	1.548	167.9	2.2152	2.7953	FLOOD
60 minute summer	S30	35	131.866	1.341	151.2	1.9183	0.0000	FLOOD RISK
1440 minute summer	S31	1470	131.393	1.143	17.5	1.6357	0.0000	FLOOD RISK
1440 minute summer	S32	1470	131.393	1.243	17.6	2.1965	0.0000	FLOOD RISK
1440 minute summer	S33	1470	131.393	1.393	40.9	793.7931	0.0000	FLOOD RISK
1440 minute summer	S34	1470	131.393	1.433	2.2	8.2047	0.0000	FLOOD RISK
1440 minute summer	S35	1470	129.884	0.034	2.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S21	1.000	S22	68.1	1.714	1.131	1.6311	
60 minute summer	S22	1.001	S23	84.2	2.118	1.852	0.9061	
60 minute summer	S23	1.002	S24	101.2	1.768	0.851	2.4611	
60 minute summer	S24	1.003	S25	110.5	1.570	0.770	2.3710	
60 minute summer	S25	1.004	S26	143.1	2.033	2.011	1.1057	
60 minute summer	S26	1.005	S27	165.4	2.349	2.080	0.3417	
60 minute summer	S27	1.006	S33	162.0	1.591	0.264	5.3181	
60 minute summer	S28	2.000	S29	49.8	1.251	0.927	1.1182	
60 minute summer	S29	2.001	S30	151.2	2.148	1.206	1.1083	
60 minute summer	S30	2.002	S31	150.6	2.139	1.750	3.2120	
60 minute summer	S31	2.003	S32	150.7	2.163	1.824	1.2679	
60 minute summer	S32	2.004	S33	150.5	1.530	0.278	6.8045	
60 minute summer	S33	1.007	S34	5.5	0.599	0.139	0.2706	
1440 minute summer	S34	1.008	S35	2.2	0.586	0.049	0.0556	792.1

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NETWORK 3 - EAST AREA (POND 3)
SURFACE WATER SIMULATION CALCULATIONS

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S36	0.075	5.00	135.301	1350	402069.481	162057.529	1.501
S37	0.046	5.00	134.625	1350	402019.947	162058.998	1.475
S38	0.138	5.00	134.093	1350	402021.576	162092.569	1.493
S39	0.040	5.00	133.506	1350	402015.994	162126.155	1.546
S40	0.064	5.00	133.601	1350	402029.516	162128.403	1.701
S41	0.080	5.00	133.178	1350	402026.593	162167.452	2.078
S42	0.084	5.00	132.938	1350	402024.800	162191.411	2.018
S43	0.073	5.00	134.889	1350	401963.001	162066.593	1.489
S44	0.068	5.00	133.980	1350	401959.411	162103.871	1.480
S45	0.119	5.00	133.156	1350	401976.729	162130.193	1.556
S46	0.030	5.00	132.964	1350	401967.293	162145.358	1.564
S47	0.050	5.00	132.741	1350	401964.569	162169.276	1.541
S48	0.024	5.00	132.494	1350	401976.786	162186.435	1.384
S49	0.022	5.00	132.297	1350	401992.928	162197.414	1.287
S50	0.022	5.00	132.151	1350	401998.752	162208.720	1.201
S51			132.390	1500	402012.233	162205.755	1.500
S52			132.373	2400	402027.907	162200.239	1.500
S53	0.084	5.00	134.961	1350	402075.998	162079.302	1.461
S54	0.047	5.00	134.648	1350	402076.941	162097.214	1.448
S55	0.101	5.00	134.164	1350	402085.355	162122.527	1.554
S56	0.062	5.00	134.071	1350	402072.755	162126.421	1.521
S57	0.083	5.00	132.359	1350	402088.047	162175.894	1.509
S58			132.308	2400	402090.746	162183.283	1.500
S59	0.080	5.00	135.244	1350	402160.029	162052.210	1.494
S60	0.069	5.00	134.929	1350	402162.790	162063.470	1.479
S61	0.020	5.00	134.072	1350	402161.916	162095.776	1.547
S62	0.120	5.00	134.184	1350	402148.223	162098.657	1.734
S63	0.120	5.00	133.156	1350	402157.104	162140.867	1.556
S64	0.083	5.00	132.753	1350	402158.295	162156.527	1.553
S65			132.237	2400	402158.284	162162.420	1.500
S66	0.070	5.00	133.783	1350	402180.740	162098.339	1.483
S67	0.087	5.00	133.556	1350	402199.251	162098.155	1.456
S68	0.160	5.00	133.161	1350	402230.144	162086.252	1.611
S69	0.065	5.00	133.021	1350	402237.671	162106.403	1.621
S70	0.048	5.00	132.816	1350	402234.381	162132.718	1.616
S71	0.075	5.00	132.570	1350	402238.175	162150.208	1.620
S72	0.135	5.00	132.216	1350	402271.137	162144.670	1.566
S73			132.121	2400	402273.057	162151.404	1.500
S74			132.100	2400	402288.944	162143.199	1.500
S75	0.091	5.00	132.100	1500	402317.202	162132.842	1.500
S76			132.100	2700	402323.036	162137.473	1.525
S79		5.00	132.100	1350	402341.177	162119.790	0.750
S77			132.100	1350	402328.870	162142.104	1.550
S78			132.170	1200	402340.538	162151.221	1.670

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Links

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	S36	S37	49.556	0.600	133.800	133.150	0.650	76.2	225	5.55	49.5
1.001	S37	S38	33.611	0.600	133.150	132.600	0.550	61.1	225	5.89	48.3
1.002	S38	S39	34.047	0.600	132.600	132.035	0.565	60.3	225	6.22	47.1
1.003	S39	S40	13.708	0.600	131.960	131.900	0.060	228.5	300	6.44	46.3
1.004	S40	S41	39.159	0.600	131.900	131.100	0.800	48.9	300	6.73	45.3
1.005	S41	S42	24.025	0.600	131.100	130.995	0.105	228.8	300	7.12	44.1
1.006	S42	S52	9.359	0.600	130.920	130.873	0.047	199.1	375	7.24	43.7
2.000	S43	S44	37.450	0.600	133.400	132.500	0.900	41.6	225	5.31	50.0
2.001	S44	S45	31.508	0.600	132.500	131.675	0.825	38.2	225	5.55	49.5
2.002	S45	S46	17.861	0.600	131.600	131.400	0.200	89.3	300	5.73	48.8
2.003	S46	S47	24.072	0.600	131.400	131.200	0.200	120.4	300	6.01	47.8
2.004	S47	S48	21.064	0.600	131.200	131.110	0.090	234.0	300	6.36	46.6
2.005	S48	S49	19.522	0.600	131.110	131.020	0.090	216.9	300	6.66	45.6
2.006	S49	S50	12.718	0.600	131.010	130.950	0.060	212.0	300	6.86	44.9
2.007	S50	S51	13.803	0.035	130.950	130.890	0.060	230.1	1200	7.00	44.4
2.008	S51	S52	16.617	0.035	130.890	130.873	0.017	977.5	1200	7.35	43.4
1.007	S52	S58	65.087	0.035	130.873	130.808	0.065	1001.3	1200	8.75	39.5
3.000	S53	S54	17.938	0.600	133.500	133.200	0.300	59.8	225	5.18	50.0
3.001	S54	S55	26.674	0.600	133.200	132.685	0.515	51.8	225	5.42	50.0
3.002	S55	S56	13.188	0.600	132.610	132.550	0.060	219.8	300	5.63	49.2
3.003	S56	S57	51.782	0.600	132.550	130.850	1.700	30.5	300	5.93	48.1
3.004	S57	S58	7.867	0.600	130.850	130.808	0.042	187.3	300	6.05	47.7
1.008	S58	S65	70.687	0.035	130.808	130.737	0.071	995.6	1200	10.27	36.1
4.000	S59	S60	11.594	0.600	133.750	133.450	0.300	38.6	225	5.09	50.0
4.001	S60	S61	32.318	0.600	133.450	132.600	0.850	38.0	225	5.34	50.0
4.002	S61	S62	13.993	0.600	132.525	132.450	0.075	186.6	300	5.55	49.5
4.003	S62	S63	43.134	0.600	132.450	131.600	0.850	50.7	300	5.87	48.3
4.004	S63	S64	15.706	0.600	131.600	131.200	0.400	39.3	300	5.98	47.9

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	1.499	59.6	13.4	1.276	1.250	0.075	0.0	73	1.217
1.001	1.676	66.6	21.1	1.250	1.268	0.121	0.0	87	1.489
1.002	1.688	67.1	44.1	1.268	1.246	0.259	0.0	133	1.797
1.003	1.036	73.2	50.1	1.246	1.401	0.299	0.0	183	1.112
1.004	2.252	159.2	59.5	1.401	1.778	0.363	0.0	127	2.094
1.005	1.035	73.2	70.5	1.778	1.643	0.443	0.0	238	1.173
1.006	1.280	141.4	83.2	1.643	1.125	0.527	0.0	207	1.329
2.000	2.033	80.8	13.2	1.264	1.255	0.073	0.0	61	1.506
2.001	2.123	84.4	25.2	1.255	1.256	0.141	0.0	84	1.858
2.002	1.664	117.6	45.9	1.256	1.264	0.260	0.0	130	1.564
2.003	1.432	101.2	50.1	1.264	1.241	0.290	0.0	149	1.428
2.004	1.023	72.3	57.3	1.241	1.084	0.340	0.0	202	1.130
2.005	1.063	75.2	59.9	1.084	0.977	0.364	0.0	203	1.176
2.006	1.076	76.0	62.6	0.987	0.901	0.386	0.0	208	1.197
2.007	1.619	10198.5	65.5	-0.299	0.000	0.408	0.0	115	0.395
2.008	0.785	4947.6	63.9	0.000	0.000	0.408	0.0	172	0.241
1.007	0.776	4888.3	133.5	0.000	0.000	0.935	0.0	260	0.298
3.000	1.694	67.4	15.2	1.236	1.223	0.084	0.0	73	1.376
3.001	1.821	72.4	23.7	1.223	1.254	0.131	0.0	88	1.634
3.002	1.056	74.7	41.3	1.254	1.221	0.232	0.0	160	1.083
3.003	2.859	202.1	51.1	1.221	1.209	0.294	0.0	102	2.395
3.004	1.145	80.9	65.0	1.209	1.200	0.377	0.0	204	1.268
1.008	0.778	4902.4	171.3	0.000	0.000	1.312	0.0	298	0.321
4.000	2.110	83.9	14.5	1.269	1.254	0.080	0.0	63	1.588
4.001	2.128	84.6	26.9	1.254	1.247	0.149	0.0	87	1.900
4.002	1.147	81.1	30.3	1.247	1.434	0.169	0.0	127	1.067
4.003	2.212	156.3	50.5	1.434	1.256	0.289	0.0	117	1.979
4.004	2.516	177.9	70.8	1.256	1.253	0.409	0.0	132	2.379

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Links

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)
4.005	S64	S65	5.892	0.600	131.200	130.737	0.463	12.7	300	6.00	47.8
1.009	S65	S73	115.301	0.035	130.737	130.621	0.116	994.0	1200	12.73	31.8
5.000	S66	S67	18.511	0.600	132.300	132.100	0.200	92.6	225	5.23	50.0
5.001	S67	S68	33.107	0.600	132.100	131.700	0.400	82.8	225	5.61	49.3
5.002	S68	S69	21.510	0.600	131.550	131.400	0.150	143.4	375	5.85	48.4
5.003	S69	S70	26.520	0.600	131.400	131.200	0.200	132.6	375	6.13	47.4
5.004	S70	S71	17.896	0.600	131.200	130.950	0.250	71.6	375	6.27	46.9
5.005	S71	S72	33.424	0.600	130.950	130.650	0.300	111.4	375	6.59	45.8
5.006	S72	S73	7.002	0.600	130.650	130.621	0.029	241.4	375	6.69	45.5
1.010	S73	S74	17.880	0.035	130.621	130.600	0.021	851.4	1200	13.09	31.3
1.011	S74	S75	30.096	0.035	130.600	130.600	0.000	0.0	1200	13.59	30.6
1.012	S75	S76	7.449	0.035	130.600	130.575	0.025	298.0	300	14.01	30.0
1.013	S76	S77	7.449	0.035	130.575	130.550	0.025	298.0	300	14.43	29.5
6.000	S79	S77	25.483	0.600	131.350	130.550	0.800	31.9	300	5.15	50.0
1.014	S77	S78	14.808	0.035	130.550	130.500	0.050	296.2	300	15.27	28.5

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)
4.005	4.430	313.1	85.1	1.253	1.200	0.492	0.0	106	3.787
1.009	0.779	4906.4	207.6	0.000	0.000	1.804	0.0	329	0.339
5.000	1.359	54.0	12.6	1.258	1.231	0.070	0.0	74	1.117
5.001	1.438	57.2	28.0	1.231	1.236	0.157	0.0	111	1.431
5.002	1.511	166.9	55.5	1.236	1.246	0.317	0.0	148	1.362
5.003	1.572	173.6	65.4	1.246	1.241	0.382	0.0	159	1.465
5.004	2.143	236.7	72.9	1.241	1.245	0.430	0.0	142	1.896
5.005	1.716	189.5	83.6	1.245	1.191	0.505	0.0	174	1.663
5.006	1.161	128.3	105.1	1.191	1.125	0.640	0.0	260	1.290
1.010	0.841	5301.2	276.5	0.000	0.000	2.444	0.0	367	0.389
1.011	1.000	6300.0	270.4	0.000	0.000	2.444	0.0	0	∞
1.012	0.294	20.8	275.1	1.200	1.225	2.535	0.0	300	0.298
1.013	0.294	20.8	270.3	1.225	1.250	2.535	0.0	300	0.298
6.000	2.795	197.6	0.0	0.450	1.250	0.000	0.0	0	0.000
1.014	0.295	20.9	261.1	1.250	1.370	2.535	0.0	300	0.299

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	49.556	76.2	225	Circular	135.301	133.800	1.276	134.625	133.150	1.250
1.001	33.611	61.1	225	Circular	134.625	133.150	1.250	134.093	132.600	1.268
1.002	34.047	60.3	225	Circular	134.093	132.600	1.268	133.506	132.035	1.246
1.003	13.708	228.5	300	Circular	133.506	131.960	1.246	133.601	131.900	1.401
1.004	39.159	48.9	300	Circular	133.601	131.900	1.401	133.178	131.100	1.778
1.005	24.025	228.8	300	Circular	133.178	131.100	1.778	132.938	130.995	1.643
1.006	9.359	199.1	375	Circular	132.938	130.920	1.643	132.373	130.873	1.125
2.000	37.450	41.6	225	Circular	134.889	133.400	1.264	133.980	132.500	1.255
2.001	31.508	38.2	225	Circular	133.980	132.500	1.255	133.156	131.675	1.256

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S36	1350	Manhole	Adoptable	S37	1350	Manhole	Adoptable
1.001	S37	1350	Manhole	Adoptable	S38	1350	Manhole	Adoptable
1.002	S38	1350	Manhole	Adoptable	S39	1350	Manhole	Adoptable
1.003	S39	1350	Manhole	Adoptable	S40	1350	Manhole	Adoptable
1.004	S40	1350	Manhole	Adoptable	S41	1350	Manhole	Adoptable
1.005	S41	1350	Manhole	Adoptable	S42	1350	Manhole	Adoptable
1.006	S42	1350	Manhole	Adoptable	S52	2400	Manhole	Adoptable
2.000	S43	1350	Manhole	Adoptable	S44	1350	Manhole	Adoptable
2.001	S44	1350	Manhole	Adoptable	S45	1350	Manhole	Adoptable

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Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.002	17.861	89.3	300	Circular	133.156	131.600	1.256	132.964	131.400	1.264
2.003	24.072	120.4	300	Circular	132.964	131.400	1.264	132.741	131.200	1.241
2.004	21.064	234.0	300	Circular	132.741	131.200	1.241	132.494	131.110	1.084
2.005	19.522	216.9	300	Circular	132.494	131.110	1.084	132.297	131.020	0.977
2.006	12.718	212.0	300	Circular	132.297	131.010	0.987	132.151	130.950	0.901
2.007	13.803	230.1	1200	Swales	132.151	130.950	-0.299	132.390	130.890	0.000
2.008	16.617	977.5	1200	Swales	132.390	130.890	0.000	132.373	130.873	0.000
1.007	65.087	1001.3	1200	Swales	132.373	130.873	0.000	132.308	130.808	0.000
3.000	17.938	59.8	225	Circular	134.961	133.500	1.236	134.648	133.200	1.223
3.001	26.674	51.8	225	Circular	134.648	133.200	1.223	134.164	132.685	1.254
3.002	13.188	219.8	300	Circular	134.164	132.610	1.254	134.071	132.550	1.221
3.003	51.782	30.5	300	Circular	134.071	132.550	1.221	132.359	130.850	1.209
3.004	7.867	187.3	300	Circular	132.359	130.850	1.209	132.308	130.808	1.200
1.008	70.687	995.6	1200	Swales	132.308	130.808	0.000	132.237	130.737	0.000
4.000	11.594	38.6	225	Circular	135.244	133.750	1.269	134.929	133.450	1.254
4.001	32.318	38.0	225	Circular	134.929	133.450	1.254	134.072	132.600	1.247
4.002	13.993	186.6	300	Circular	134.072	132.525	1.247	134.184	132.450	1.434
4.003	43.134	50.7	300	Circular	134.184	132.450	1.434	133.156	131.600	1.256
4.004	15.706	39.3	300	Circular	133.156	131.600	1.256	132.753	131.200	1.253
4.005	5.892	12.7	300	Circular	132.753	131.200	1.253	132.237	130.737	1.200
1.009	115.301	994.0	1200	Swales	132.237	130.737	0.000	132.121	130.621	0.000
5.000	18.511	92.6	225	Circular	133.783	132.300	1.258	133.556	132.100	1.231
5.001	33.107	82.8	225	Circular	133.556	132.100	1.231	133.161	131.700	1.236
5.002	21.510	143.4	375	Circular	133.161	131.550	1.236	133.021	131.400	1.246
5.003	26.520	132.6	375	Circular	133.021	131.400	1.246	132.816	131.200	1.241
5.004	17.896	71.6	375	Circular	132.816	131.200	1.241	132.570	130.950	1.245
5.005	33.424	111.4	375	Circular	132.570	130.950	1.245	132.216	130.650	1.191
5.006	7.002	241.4	375	Circular	132.216	130.650	1.191	132.121	130.621	1.125

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.002	S45	1350	Manhole	Adoptable	S46	1350	Manhole	Adoptable
2.003	S46	1350	Manhole	Adoptable	S47	1350	Manhole	Adoptable
2.004	S47	1350	Manhole	Adoptable	S48	1350	Manhole	Adoptable
2.005	S48	1350	Manhole	Adoptable	S49	1350	Manhole	Adoptable
2.006	S49	1350	Manhole	Adoptable	S50	1350	Manhole	Adoptable
2.007	S50	1350	Manhole	Adoptable	S51	1500	Manhole	Adoptable
2.008	S51	1500	Manhole	Adoptable	S52	2400	Manhole	Adoptable
1.007	S52	2400	Manhole	Adoptable	S58	2400	Manhole	Adoptable
3.000	S53	1350	Manhole	Adoptable	S54	1350	Manhole	Adoptable
3.001	S54	1350	Manhole	Adoptable	S55	1350	Manhole	Adoptable
3.002	S55	1350	Manhole	Adoptable	S56	1350	Manhole	Adoptable
3.003	S56	1350	Manhole	Adoptable	S57	1350	Manhole	Adoptable
3.004	S57	1350	Manhole	Adoptable	S58	2400	Manhole	Adoptable
1.008	S58	2400	Manhole	Adoptable	S65	2400	Manhole	Adoptable
4.000	S59	1350	Manhole	Adoptable	S60	1350	Manhole	Adoptable
4.001	S60	1350	Manhole	Adoptable	S61	1350	Manhole	Adoptable
4.002	S61	1350	Manhole	Adoptable	S62	1350	Manhole	Adoptable
4.003	S62	1350	Manhole	Adoptable	S63	1350	Manhole	Adoptable
4.004	S63	1350	Manhole	Adoptable	S64	1350	Manhole	Adoptable
4.005	S64	1350	Manhole	Adoptable	S65	2400	Manhole	Adoptable
1.009	S65	2400	Manhole	Adoptable	S73	2400	Manhole	Adoptable
5.000	S66	1350	Manhole	Adoptable	S67	1350	Manhole	Adoptable
5.001	S67	1350	Manhole	Adoptable	S68	1350	Manhole	Adoptable
5.002	S68	1350	Manhole	Adoptable	S69	1350	Manhole	Adoptable
5.003	S69	1350	Manhole	Adoptable	S70	1350	Manhole	Adoptable
5.004	S70	1350	Manhole	Adoptable	S71	1350	Manhole	Adoptable
5.005	S71	1350	Manhole	Adoptable	S72	1350	Manhole	Adoptable
5.006	S72	1350	Manhole	Adoptable	S73	2400	Manhole	Adoptable

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Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.010	17.880	851.4	1200	Swales	132.121	130.621	0.000	132.100	130.600	0.000
1.011	30.096	0.0	1200	Swales	132.100	130.600	0.000	132.100	130.600	0.000
1.012	7.449	298.0	300	Circular	132.100	130.600	1.200	132.100	130.575	1.225
1.013	7.449	298.0	300	Circular	132.100	130.575	1.225	132.100	130.550	1.250
6.000	25.483	31.9	300	Circular	132.100	131.350	0.450	132.100	130.550	1.250
1.014	14.808	296.2	300	Circular	132.100	130.550	1.250	132.170	130.500	1.370

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.010	S73	2400	Manhole	Adoptable	S74	2400	Manhole	Adoptable
1.011	S74	2400	Manhole	Adoptable	S75	1500	Manhole	Adoptable
1.012	S75	1500	Manhole	Adoptable	S76	2700	Manhole	Adoptable
1.013	S76	2700	Manhole	Adoptable	S77	1350	Manhole	Adoptable
6.000	S79	1350	Manhole	Adoptable	S77	1350	Manhole	Adoptable
1.014	S77	1350	Manhole	Adoptable	S78	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S36	402069.481	162057.529	135.301	1.501	1350		0	1.000	133.800	225
S37	402019.947	162058.998	134.625	1.475	1350		1 0	1.000 1.001	133.150 133.150	225 225
S38	402021.576	162092.569	134.093	1.493	1350		1 0	1.001 1.002	132.600 132.600	225 225
S39	402015.994	162126.155	133.506	1.546	1350		1 0	1.002 1.003	132.035 131.960	225 300
S40	402029.516	162128.403	133.601	1.701	1350		1 0	1.003 1.004	131.900 131.900	300 300
S41	402026.593	162167.452	133.178	2.078	1350		1 0	1.004 1.005	131.100 131.100	300 300
S42	402024.800	162191.411	132.938	2.018	1350		1 0	1.005 1.006	130.995 130.920	300 375
S43	401963.001	162066.593	134.889	1.489	1350		0	2.000	133.400	225
S44	401959.411	162103.871	133.980	1.480	1350		1 0	2.000 2.001	132.500 132.500	225 225
S45	401976.729	162130.193	133.156	1.556	1350		1 0	2.001 2.002	131.675 131.600	225 300

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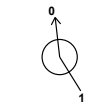
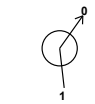
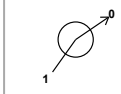
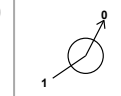
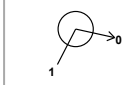
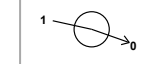
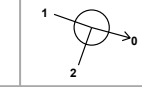
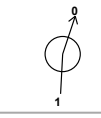
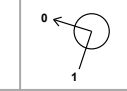
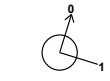
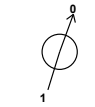
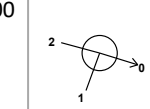
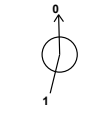
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S46	401967.293	162145.358	132.964	1.564	1350		1	2.002	131.400	300
							0	2.003	131.400	300
S47	401964.569	162169.276	132.741	1.541	1350		1	2.003	131.200	300
							0	2.004	131.200	300
S48	401976.786	162186.435	132.494	1.384	1350		1	2.004	131.110	300
							0	2.005	131.110	300
S49	401992.928	162197.414	132.297	1.287	1350		1	2.005	131.020	300
							0	2.006	131.010	300
S50	401998.752	162208.720	132.151	1.201	1350		1	2.006	130.950	300
							0	2.007	130.950	1200
S51	402012.233	162205.755	132.390	1.500	1500		1	2.007	130.890	1200
							0	2.008	130.890	1200
S52	402027.907	162200.239	132.373	1.500	2400		1	2.008	130.873	1200
							2	1.006	130.873	375
							0	1.007	130.873	1200
S53	402075.998	162079.302	134.961	1.461	1350					
							0	3.000	133.500	225
S54	402076.941	162097.214	134.648	1.448	1350		1	3.000	133.200	225
							0	3.001	133.200	225
S55	402085.355	162122.527	134.164	1.554	1350		1	3.001	132.685	225
							0	3.002	132.610	300
S56	402072.755	162126.421	134.071	1.521	1350		1	3.002	132.550	300
							0	3.003	132.550	300
S57	402088.047	162175.894	132.359	1.509	1350		1	3.003	130.850	300
							0	3.004	130.850	300
S58	402090.746	162183.283	132.308	1.500	2400		1	3.004	130.808	300
							2	1.007	130.808	1200
							0	1.008	130.808	1200
S59	402160.029	162052.210	135.244	1.494	1350					
							0	4.000	133.750	225
S60	402162.790	162063.470	134.929	1.479	1350		1	4.000	133.450	225
							0	4.001	133.450	225

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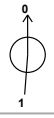
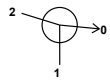
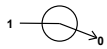
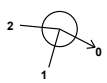
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S61	402161.916	162095.776	134.072	1.547	1350		1	4.001	132.600	225
							0	4.002	132.525	300
S62	402148.223	162098.657	134.184	1.734	1350		1	4.002	132.450	300
							0	4.003	132.450	300
S63	402157.104	162140.867	133.156	1.556	1350		1	4.003	131.600	300
							0	4.004	131.600	300
S64	402158.295	162156.527	132.753	1.553	1350		1	4.004	131.200	300
							0	4.005	131.200	300
S65	402158.284	162162.420	132.237	1.500	2400		1	4.005	130.737	300
							2	1.008	130.737	1200
							0	1.009	130.737	1200
S66	402180.740	162098.339	133.783	1.483	1350		0	5.000	132.300	225
S67	402199.251	162098.155	133.556	1.456	1350		1	5.000	132.100	225
							0	5.001	132.100	225
S68	402230.144	162086.252	133.161	1.611	1350		1	5.001	131.700	225
							0	5.002	131.550	375
S69	402237.671	162106.403	133.021	1.621	1350		1	5.002	131.400	375
							0	5.003	131.400	375
S70	402234.381	162132.718	132.816	1.616	1350		1	5.003	131.200	375
							0	5.004	131.200	375
S71	402238.175	162150.208	132.570	1.620	1350		1	5.004	130.950	375
							0	5.005	130.950	375
S72	402271.137	162144.670	132.216	1.566	1350		1	5.005	130.650	375
							0	5.006	130.650	375
S73	402273.057	162151.404	132.121	1.500	2400		1	5.006	130.621	375
							2	1.009	130.621	1200
							0	1.010	130.621	1200
S74	402288.944	162143.199	132.100	1.500	2400		1	1.010	130.600	1200
							0	1.011	130.600	1200
S75	402317.202	162132.842	132.100	1.500	1500		1	1.011	130.600	1200
							0	1.012	130.600	300

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Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S76	402323.036	162137.473	132.100	1.525	2700	1	1.012	130.575	300
						0	1.013	130.575	300
S79	402341.177	162119.790	132.100	0.750	1350				
						0	6.000	131.350	300
S77	402328.870	162142.104	132.100	1.550	1350	1	6.000	130.550	300
						2	1.013	130.550	300
						0	1.014	130.550	300
S78	402340.538	162151.221	132.170	1.670	1200	1	1.014	130.500	300

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	5760	Check Discharge Volume	x

Storm Durations

60	120	180	240	360	480	600	720	960	1440	2160	2880

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	60	6	0
30	40	6	0				

Node S51 ReFH2 Dynamic Hydrograph

Overrides Design Area	x	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Area (ha)	3.380
Depression Storage Area (m²)	0	Region	England, Wales, NI
Depression Storage Depth (mm)	0	Include Baseflow	x

Applies to All storms

Node S79 ReFH2 Dynamic Hydrograph

Overrides Design Area	x	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Area (ha)	13.260
Depression Storage Area (m²)	0	Region	England, Wales, NI
Depression Storage Depth (mm)	0	Include Baseflow	x

Applies to All storms

Node S76 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	130.575	Product Number	CTL-SHE-0130-8300-1225-8300
Design Depth (m)	1.225	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	8.3	Min Node Diameter (mm)	1200

Node S76 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.300	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	5.2		
Invert Level (m)	131.800	Diameter (m)	0.069		

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Node S75 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	130.600
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	5085

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	863.2	0.0	0.400	1013.0	0.0	0.800	1172.6	0.0	1.200	1341.3	0.0
0.100	899.2	0.0	0.500	1052.1	0.0	0.900	1213.9	0.0	1.300	1384.9	0.0
0.200	936.6	0.0	0.600	1091.7	0.0	1.000	1255.8	0.0	1.400	1429.0	0.0
0.300	974.5	0.0	0.700	1131.9	0.0	1.100	1298.3	0.0	1.500	1473.7	0.0

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 60 minute summer	43.138	11.400	30 year +40% CC +6% A 600 minute summer	29.355	8.029
2 year 60 minute winter	28.660	11.400	30 year +40% CC +6% A 600 minute winter	20.057	8.029
2 year 120 minute summer	30.650	8.100	30 year +40% CC +6% A 720 minute summer	25.949	6.954
2 year 120 minute winter	20.363	8.100	30 year +40% CC +6% A 720 minute winter	17.439	6.954
2 year 180 minute summer	25.002	6.434	30 year +40% CC +6% A 960 minute summer	21.003	5.531
2 year 180 minute winter	16.252	6.434	30 year +40% CC +6% A 960 minute winter	13.913	5.531
2 year 240 minute summer	20.434	5.400	30 year +40% CC +6% A 1440 minute summer	14.834	3.976
2 year 240 minute winter	13.576	5.400	30 year +40% CC +6% A 1440 minute winter	9.969	3.976
2 year 360 minute summer	16.127	4.150	30 year +40% CC +6% A 2160 minute summer	10.318	2.851
2 year 360 minute winter	10.483	4.150	30 year +40% CC +6% A 2160 minute winter	7.109	2.851
2 year 480 minute summer	12.844	3.394	30 year +40% CC +6% A 2880 minute summer	8.426	2.258
2 year 480 minute winter	8.533	3.394	30 year +40% CC +6% A 2880 minute winter	5.663	2.258
2 year 600 minute summer	10.561	2.889	100 year +60% CC +6% A 60 minute summer	245.203	64.800
2 year 600 minute winter	7.216	2.889	100 year +60% CC +6% A 60 minute winter	162.907	64.800
2 year 720 minute summer	9.421	2.525	100 year +60% CC +6% A 120 minute summer	146.819	38.800
2 year 720 minute winter	6.332	2.525	100 year +60% CC +6% A 120 minute winter	97.543	38.800
2 year 960 minute summer	7.728	2.035	100 year +60% CC +6% A 180 minute summer	111.754	28.758
2 year 960 minute winter	5.119	2.035	100 year +60% CC +6% A 180 minute winter	72.643	28.758
2 year 1440 minute summer	5.581	1.496	100 year +60% CC +6% A 240 minute summer	87.940	23.240
2 year 1440 minute winter	3.751	1.496	100 year +60% CC +6% A 240 minute winter	58.425	23.240
2 year 2160 minute summer	3.993	1.104	100 year +60% CC +6% A 360 minute summer	66.736	17.173
2 year 2160 minute winter	2.752	1.104	100 year +60% CC +6% A 360 minute winter	43.380	17.173
2 year 2880 minute summer	3.343	0.896	100 year +60% CC +6% A 480 minute summer	52.348	13.834
2 year 2880 minute winter	2.246	0.896	100 year +60% CC +6% A 480 minute winter	34.779	13.834
30 year +40% CC +6% A 60 minute summer	165.585	43.759	100 year +60% CC +6% A 600 minute summer	42.681	11.674
30 year +40% CC +6% A 60 minute winter	110.011	43.759	100 year +60% CC +6% A 600 minute winter	29.162	11.674
30 year +40% CC +6% A 120 minute summer	101.267	26.762	100 year +60% CC +6% A 720 minute summer	37.859	10.147
30 year +40% CC +6% A 120 minute winter	67.279	26.762	100 year +60% CC +6% A 720 minute winter	25.444	10.147
30 year +40% CC +6% A 180 minute summer	77.485	19.939	100 year +60% CC +6% A 960 minute summer	30.761	8.100
30 year +40% CC +6% A 180 minute winter	50.367	19.939	100 year +60% CC +6% A 960 minute winter	20.377	8.100
30 year +40% CC +6% A 240 minute summer	61.051	16.134	100 year +60% CC +6% A 1440 minute summer	21.840	5.853
30 year +40% CC +6% A 240 minute winter	40.561	16.134	100 year +60% CC +6% A 1440 minute winter	14.678	5.853
30 year +40% CC +6% A 360 minute summer	46.303	11.915	100 year +60% CC +6% A 2160 minute summer	15.088	4.170
30 year +40% CC +6% A 360 minute winter	30.098	11.915	100 year +60% CC +6% A 2160 minute winter	10.396	4.170
30 year +40% CC +6% A 480 minute summer	36.156	9.555	100 year +60% CC +6% A 2880 minute summer	12.189	3.267
30 year +40% CC +6% A 480 minute winter	24.021	9.555	100 year +60% CC +6% A 2880 minute winter	8.191	3.267

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Results for 2 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
60 minute summer	S36	33	133.856	0.056	8.1	0.0797	0.0000	OK
60 minute summer	S37	33	133.217	0.067	13.0	0.0956	0.0000	OK
60 minute summer	S38	33	132.704	0.104	27.7	0.1483	0.0000	OK
60 minute summer	S39	33	132.100	0.140	31.8	0.1999	0.0000	OK
60 minute summer	S40	33	132.000	0.100	38.7	0.1426	0.0000	OK
60 minute summer	S41	34	131.284	0.184	47.1	0.2639	0.0000	OK
60 minute summer	S42	34	131.115	0.195	55.5	0.2785	0.0000	OK
60 minute summer	S43	33	133.447	0.047	7.9	0.0677	0.0000	OK
60 minute summer	S44	33	132.566	0.066	15.2	0.0942	0.0000	OK
60 minute summer	S45	33	131.704	0.104	27.9	0.1494	0.0000	OK
60 minute summer	S46	33	131.518	0.118	31.1	0.1683	0.0000	OK
60 minute summer	S47	33	131.362	0.161	36.5	0.2311	0.0000	OK
60 minute summer	S48	34	131.273	0.162	38.8	0.2325	0.0000	OK
60 minute summer	S49	34	131.172	0.162	41.0	0.2314	0.0000	OK
60 minute summer	S50	36	131.089	0.139	43.1	0.1994	0.0000	OK
60 minute summer	S51	36	131.084	0.194	41.4	0.3435	0.0000	OK
60 minute summer	S52	37	131.081	0.208	91.5	0.9421	0.0000	OK
60 minute summer	S53	33	133.555	0.055	9.0	0.0791	0.0000	OK
60 minute summer	S54	33	133.269	0.069	14.1	0.0987	0.0000	OK
60 minute summer	S55	33	132.731	0.121	25.0	0.1734	0.0000	OK
60 minute summer	S56	33	132.630	0.080	31.7	0.1140	0.0000	OK
960 minute winter	S57	810	131.068	0.218	5.4	0.3119	0.0000	OK
960 minute winter	S58	810	131.068	0.260	21.4	1.1760	0.0000	OK
60 minute summer	S59	33	133.799	0.048	8.6	0.0693	0.0000	OK
60 minute summer	S60	33	133.518	0.068	16.0	0.0968	0.0000	OK
60 minute summer	S61	33	132.626	0.101	18.2	0.1447	0.0000	OK
60 minute summer	S62	33	132.540	0.090	31.1	0.1286	0.0000	OK
60 minute summer	S63	33	131.711	0.111	43.9	0.1591	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S36	1.000	S37	8.1	0.927	0.136	0.4334	
60 minute summer	S37	1.001	S38	12.9	0.939	0.194	0.4656	
60 minute summer	S38	1.002	S39	27.5	1.582	0.410	0.5927	
60 minute summer	S39	1.003	S40	31.8	1.213	0.434	0.3602	
60 minute summer	S40	1.004	S41	38.5	1.179	0.242	1.2872	
60 minute summer	S41	1.005	S42	46.9	1.091	0.641	1.0319	
60 minute summer	S42	1.006	S52	55.3	1.032	0.391	0.5556	
60 minute summer	S43	2.000	S44	7.9	1.014	0.098	0.2942	
60 minute summer	S44	2.001	S45	15.1	1.596	0.179	0.2991	
60 minute summer	S45	2.002	S46	27.9	1.180	0.237	0.4231	
60 minute summer	S46	2.003	S47	31.1	0.969	0.307	0.7733	
60 minute summer	S47	2.004	S48	36.2	0.937	0.500	0.8154	
60 minute summer	S48	2.005	S49	38.8	1.039	0.516	0.7288	
60 minute summer	S49	2.006	S50	40.9	1.289	0.538	0.4419	
60 minute summer	S50	2.007	S51	40.9	0.189	0.004	3.5538	
60 minute summer	S51	2.008	S52	37.7	0.122	0.008	5.3637	
60 minute summer	S52	1.007	S58	82.8	0.241	0.017	23.2402	
60 minute summer	S53	3.000	S54	9.0	1.013	0.134	0.1601	
60 minute summer	S54	3.001	S55	14.1	1.396	0.195	0.2691	
60 minute summer	S55	3.002	S56	25.0	1.210	0.335	0.2744	
60 minute summer	S56	3.003	S57	31.6	1.102	0.157	1.5762	
60 minute summer	S57	3.004	S58	39.3	1.094	0.485	0.4161	
60 minute summer	S58	1.008	S65	99.8	0.259	0.020	28.3532	
60 minute summer	S59	4.000	S60	8.6	1.066	0.102	0.0944	
60 minute summer	S60	4.001	S61	16.0	1.623	0.189	0.3185	
60 minute summer	S61	4.002	S62	18.2	0.943	0.224	0.2699	
60 minute summer	S62	4.003	S63	31.0	1.501	0.199	0.8940	
60 minute summer	S63	4.004	S64	43.8	2.148	0.247	0.3214	

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Results for 2 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
60 minute summer	S64	33	131.288	0.088	52.7	0.1259	0.0000	OK
960 minute winter	S65	810	131.068	0.331	26.6	1.4969	0.0000	OK
60 minute summer	S66	33	132.356	0.056	7.5	0.0806	0.0000	OK
60 minute summer	S67	33	132.186	0.086	16.9	0.1227	0.0000	OK
60 minute summer	S68	33	131.671	0.121	34.0	0.1730	0.0000	OK
60 minute summer	S69	33	131.530	0.129	41.0	0.1853	0.0000	OK
60 minute summer	S70	33	131.318	0.118	46.2	0.1692	0.0000	OK
60 minute summer	S71	33	131.085	0.135	54.1	0.1929	0.0000	OK
960 minute winter	S72	810	131.068	0.418	9.1	0.5979	0.0000	SURCHARGED
960 minute winter	S73	810	131.068	0.447	31.9	2.0214	0.0000	OK
960 minute winter	S74	810	131.068	0.468	28.7	2.1164	0.0000	OK
960 minute winter	S75	810	131.068	0.468	28.6	445.2552	0.0000	SURCHARGED
960 minute winter	S76	810	131.063	0.488	8.3	2.7950	0.0000	SURCHARGED
360 minute winter	S79	280	131.419	0.069	23.0	0.0982	0.0000	OK
360 minute winter	S77	280	130.831	0.281	30.6	0.4019	0.0000	OK
360 minute winter	S78	280	130.634	0.134	30.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S64	4.005	S65	52.7	2.382	0.168	0.2140	
60 minute summer	S65	1.009	S73	118.5	0.260	0.024	52.5119	
60 minute summer	S66	5.000	S67	7.5	0.702	0.139	0.2002	
60 minute summer	S67	5.001	S68	16.8	1.240	0.295	0.4500	
60 minute summer	S68	5.002	S69	34.0	1.058	0.204	0.6923	
60 minute summer	S69	5.003	S70	41.0	1.292	0.236	0.8410	
60 minute summer	S70	5.004	S71	46.0	1.411	0.194	0.5845	
60 minute summer	S71	5.005	S72	53.8	1.014	0.284	1.8523	
60 minute summer	S72	5.006	S73	66.6	1.163	0.519	0.5842	
60 minute summer	S73	1.010	S74	152.6	0.317	0.029	8.7292	
60 minute summer	S74	1.011	S75	155.5	0.536	0.025	12.2473	
960 minute winter	S75	1.012	S76	8.3	0.117	0.397	0.5246	
960 minute winter	S76	1.013	S77	8.3	0.250	0.398	0.4393	
60 minute summer	S76	Orifice	S77	0.0				
360 minute winter	S79	6.000	S77	23.0	0.541	0.116	1.0279	
360 minute winter	S77	1.014	S78	30.6	0.589	1.466	0.7332	998.4

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Results for 30 year +40% CC +6% A 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
60 minute summer	S36	35	134.581	0.780	32.8	1.1169	0.0000	SURCHARGED
60 minute summer	S37	35	134.409	1.259	49.4	1.8018	0.0000	FLOOD RISK
60 minute summer	S38	34	134.093	1.493	99.7	2.1365	1.3391	FLOOD
60 minute summer	S39	34	132.963	1.003	104.0	1.4359	0.0000	SURCHARGED
60 minute summer	S40	34	132.786	0.886	129.5	1.2682	0.0000	SURCHARGED
60 minute summer	S41	34	132.153	1.053	161.7	1.5068	0.0000	SURCHARGED
1440 minute summer	S42	1440	131.768	0.848	22.6	1.2138	0.0000	SURCHARGED
60 minute summer	S43	35	133.514	0.114	31.9	0.1631	0.0000	OK
60 minute summer	S44	35	133.406	0.906	61.7	1.2962	0.0000	SURCHARGED
60 minute summer	S45	35	133.004	1.404	101.7	2.0090	0.0000	FLOOD RISK
60 minute summer	S46	35	132.807	1.407	112.3	2.0130	0.0000	FLOOD RISK
60 minute summer	S47	35	132.495	1.294	131.4	1.8524	0.0000	FLOOD RISK
60 minute summer	S48	35	132.108	0.998	139.9	1.4277	0.0000	SURCHARGED
1440 minute summer	S49	1440	131.768	0.758	16.4	1.0851	0.0000	SURCHARGED
1440 minute summer	S50	1440	131.768	0.818	17.2	1.1709	0.0000	OK
1440 minute summer	S51	1440	131.768	0.878	28.3	1.5518	0.0000	OK
1440 minute summer	S52	1440	131.768	0.895	47.4	4.0500	0.0000	OK
60 minute summer	S53	33	133.626	0.126	36.8	0.1799	0.0000	OK
60 minute summer	S54	33	133.359	0.159	57.4	0.2270	0.0000	OK
60 minute summer	S55	33	132.924	0.314	101.7	0.4488	0.0000	SURCHARGED
60 minute summer	S56	33	132.731	0.181	128.2	0.2588	0.0000	OK
1440 minute summer	S57	1440	131.768	0.918	16.5	1.3140	0.0000	SURCHARGED
1440 minute summer	S58	1440	131.768	0.960	57.5	4.3441	0.0000	OK
60 minute summer	S59	33	133.859	0.108	35.0	0.1552	0.0000	OK
60 minute summer	S60	32	133.603	0.153	65.2	0.2188	0.0000	OK
60 minute summer	S61	34	132.792	0.267	74.1	0.3820	0.0000	OK
60 minute summer	S62	34	132.713	0.263	125.8	0.3765	0.0000	OK
60 minute summer	S63	34	132.205	0.605	175.0	0.8657	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S36	1.000	S37	30.3	1.242	0.508	1.9709	
60 minute summer	S37	1.001	S38	48.4	1.216	0.726	1.3367	
60 minute summer	S38	1.002	S39	89.8	2.257	1.338	1.3541	
60 minute summer	S39	1.003	S40	104.5	1.504	1.427	0.9653	
60 minute summer	S40	1.004	S41	128.5	1.825	0.807	2.7576	
60 minute summer	S41	1.005	S42	160.8	2.284	2.198	1.6918	
60 minute summer	S42	1.006	S52	195.2	1.770	1.381	1.0323	
60 minute summer	S43	2.000	S44	31.9	1.404	0.395	1.1225	
60 minute summer	S44	2.001	S45	55.1	1.948	0.652	1.2531	
60 minute summer	S45	2.002	S46	99.8	1.417	0.848	1.2578	
60 minute summer	S46	2.003	S47	110.8	1.574	1.095	1.6951	
60 minute summer	S47	2.004	S48	130.0	1.847	1.798	1.4833	
60 minute summer	S48	2.005	S49	139.2	1.977	1.852	1.3747	
60 minute summer	S49	2.006	S50	147.4	2.093	1.938	0.8956	
60 minute summer	S50	2.007	S51	150.8	0.249	0.015	12.6349	
60 minute summer	S51	2.008	S52	143.7	0.148	0.029	17.0180	
60 minute summer	S52	1.007	S58	307.4	0.293	0.063	71.9368	
60 minute summer	S53	3.000	S54	36.8	1.394	0.546	0.4729	
60 minute summer	S54	3.001	S55	57.6	1.657	0.795	0.9295	
60 minute summer	S55	3.002	S56	101.1	1.714	1.354	0.7570	
60 minute summer	S56	3.003	S57	127.0	1.987	0.629	2.9724	
60 minute summer	S57	3.004	S58	160.8	2.284	1.987	0.5540	
60 minute summer	S58	1.008	S65	406.1	0.342	0.083	91.6742	
60 minute summer	S59	4.000	S60	35.0	1.475	0.417	0.2762	
60 minute summer	S60	4.001	S61	65.3	2.177	0.772	1.0305	
60 minute summer	S61	4.002	S62	73.3	1.259	0.904	0.9215	
60 minute summer	S62	4.003	S63	122.5	1.923	0.784	2.9312	
60 minute summer	S63	4.004	S64	171.4	2.435	0.964	1.1060	

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Results for 30 year +40% CC +6% A 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
1440 minute summer	S64	1440	131.768	0.568	21.4	0.8132	0.0000	SURCHARGED
1440 minute summer	S65	1440	131.768	1.031	81.8	4.6653	0.0000	OK
60 minute summer	S66	34	133.026	0.726	30.6	1.0382	0.0000	SURCHARGED
60 minute summer	S67	34	132.957	0.857	64.8	1.2263	0.0000	SURCHARGED
60 minute summer	S68	34	132.389	0.839	128.9	1.2006	0.0000	SURCHARGED
60 minute summer	S69	34	132.263	0.863	155.5	1.2356	0.0000	SURCHARGED
60 minute summer	S70	34	132.050	0.850	175.1	1.2157	0.0000	SURCHARGED
60 minute summer	S71	34	131.846	0.896	205.8	1.2818	0.0000	SURCHARGED
1440 minute summer	S72	1440	131.768	1.118	27.5	1.6002	0.0000	SURCHARGED
1440 minute summer	S73	1440	131.768	1.147	78.2	5.1900	0.0000	OK
1440 minute summer	S74	1440	131.768	1.168	66.2	5.2850	0.0000	OK
1440 minute summer	S75	1440	131.768	1.168	66.8	1273.8420	0.0000	SURCHARGED
1440 minute summer	S76	1440	131.764	1.189	8.6	6.8098	0.0000	SURCHARGED
240 minute summer	S79	220	131.827	0.476	90.9	0.6818	0.0000	FLOOD RISK
240 minute summer	S77	224	131.607	1.057	90.9	1.5131	0.0000	SURCHARGED
240 minute summer	S78	224	130.731	0.231	87.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S64	4.005	S65	206.5	3.112	0.659	0.4149	
60 minute summer	S65	1.009	S73	544.6	0.430	0.111	189.0201	
60 minute summer	S66	5.000	S67	28.7	0.921	0.532	0.7362	
60 minute summer	S67	5.001	S68	63.8	1.641	1.115	1.3167	
60 minute summer	S68	5.002	S69	128.5	1.326	0.770	2.3725	
60 minute summer	S69	5.003	S70	155.2	1.536	0.894	2.9251	
60 minute summer	S70	5.004	S71	174.7	1.631	0.738	1.9739	
60 minute summer	S71	5.005	S72	205.5	1.863	1.084	3.6866	
60 minute summer	S72	5.006	S73	261.1	2.367	2.035	0.7723	
60 minute summer	S73	1.010	S74	730.4	0.597	0.138	34.0294	
60 minute summer	S74	1.011	S75	721.1	0.807	0.114	58.5684	
60 minute summer	S75	1.012	S76	12.0	0.252	0.578	0.5246	
120 minute summer	S76	1.013	S77	8.4	0.251	0.405	0.5246	
60 minute summer	S76	Orifice	S77	0.0				
240 minute summer	S79	6.000	S77	90.9	1.290	0.460	1.7945	
240 minute summer	S77	1.014	S78	87.7	1.280	4.200	0.9520	2891.8

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Results for 100 year +60% CC +6% A 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
60 minute summer	S36	33	135.116	1.316	48.6	1.8838	0.0000	FLOOD RISK
60 minute summer	S37	31	134.625	1.475	78.3	2.1107	3.8580	FLOOD
60 minute summer	S38	31	134.093	1.493	149.6	2.1365	27.9434	FLOOD
60 minute summer	S39	33	133.384	1.424	108.2	2.0376	0.0000	FLOOD RISK
60 minute summer	S40	33	133.234	1.334	137.1	1.9094	0.0000	SURCHARGED
60 minute summer	S41	33	132.531	1.431	187.4	2.0482	0.0000	SURCHARGED
960 minute summer	S42	870	132.100	1.180	47.3	1.6892	0.0000	SURCHARGED
60 minute summer	S43	33	134.342	0.942	47.3	1.3475	0.0000	SURCHARGED
60 minute summer	S44	32	133.980	1.480	91.4	2.1179	2.1603	FLOOD
60 minute summer	S45	31	133.156	1.556	154.3	2.2266	17.9216	FLOOD
60 minute summer	S46	31	132.964	1.564	119.7	2.2381	3.8566	FLOOD
60 minute summer	S47	33	132.702	1.502	137.8	2.1489	0.0000	FLOOD RISK
60 minute summer	S48	34	132.292	1.182	151.5	1.6910	0.0000	FLOOD RISK
960 minute summer	S49	870	132.101	1.091	34.1	1.5605	0.0000	FLOOD RISK
960 minute summer	S50	870	132.100	1.150	35.9	1.6461	0.0000	OK
960 minute summer	S51	870	132.100	1.210	54.1	2.1387	0.0000	OK
960 minute summer	S52	870	132.100	1.227	94.4	5.5524	0.0000	OK
60 minute summer	S53	34	134.628	1.128	54.4	1.6142	0.0000	SURCHARGED
60 minute summer	S54	34	134.422	1.222	78.1	1.7483	0.0000	FLOOD RISK
60 minute summer	S55	34	133.738	1.128	137.5	1.6143	0.0000	SURCHARGED
60 minute summer	S56	34	133.436	0.886	174.2	1.2672	0.0000	SURCHARGED
960 minute summer	S57	870	132.100	1.250	34.1	1.7893	0.0000	FLOOD RISK
960 minute summer	S58	870	132.100	1.292	113.7	5.8463	0.0000	OK
60 minute summer	S59	33	135.102	1.352	51.8	1.9348	0.0000	FLOOD RISK
60 minute summer	S60	33	134.929	1.479	95.6	2.1164	2.1976	FLOOD
60 minute summer	S61	33	134.072	1.547	90.8	2.2138	2.1065	FLOOD
60 minute summer	S62	33	133.983	1.533	153.3	2.1941	0.0000	FLOOD RISK
60 minute summer	S63	33	133.052	1.452	228.3	2.0776	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S36	1.000	S37	48.5	1.262	0.815	1.9709	
60 minute summer	S37	1.001	S38	60.3	1.516	0.905	1.3367	
120 minute summer	S38	1.002	S39	89.0	2.238	1.327	1.3541	
120 minute summer	S39	1.003	S40	103.2	1.502	1.409	0.9653	
60 minute summer	S40	1.004	S41	135.6	1.926	0.852	2.7576	
60 minute summer	S41	1.005	S42	186.8	2.653	2.553	1.6918	
60 minute summer	S42	1.006	S52	240.6	2.182	1.702	1.0323	
60 minute summer	S43	2.000	S44	47.4	1.407	0.586	1.4894	
60 minute summer	S44	2.001	S45	77.2	1.941	0.914	1.2531	
60 minute summer	S45	2.002	S46	103.2	1.465	0.877	1.2578	
60 minute winter	S46	2.003	S47	113.7	1.615	1.124	1.6951	
60 minute summer	S47	2.004	S48	136.7	1.941	1.890	1.4833	
60 minute summer	S48	2.005	S49	150.6	2.138	2.003	1.3747	
60 minute summer	S49	2.006	S50	163.7	2.325	2.153	0.8956	
60 minute summer	S50	2.007	S51	169.7	0.285	0.017	22.8113	
60 minute summer	S51	2.008	S52	161.4	0.152	0.033	29.9323	
60 minute summer	S52	1.007	S58	354.7	0.299	0.073	128.2156	
60 minute summer	S53	3.000	S54	49.0	1.400	0.727	0.7134	
60 minute summer	S54	3.001	S55	77.3	1.945	1.068	1.0609	
60 minute summer	S55	3.002	S56	136.1	1.933	1.823	0.9287	
60 minute summer	S56	3.003	S57	173.0	2.458	0.856	3.6465	
60 minute summer	S57	3.004	S58	223.6	3.175	2.762	0.5540	
60 minute summer	S58	1.008	S65	525.6	0.356	0.107	159.8496	
60 minute summer	S59	4.000	S60	50.9	1.467	0.606	0.4611	
60 minute summer	S60	4.001	S61	78.8	2.167	0.932	1.2853	
60 minute summer	S61	4.002	S62	93.1	1.322	1.148	0.9854	
60 minute summer	S62	4.003	S63	153.8	2.185	0.984	3.0375	
60 minute summer	S63	4.004	S64	227.2	3.226	1.277	1.1060	

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Results for 100 year +60% CC +6% A 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
60 minute summer	S64	34	132.103	0.903	280.9	1.2926	0.0000	SURCHARGED
960 minute summer	S65	870	132.100	1.363	133.0	6.1671	0.0000	OK
60 minute summer	S66	33	133.737	1.437	45.4	2.0565	0.0000	FLOOD RISK
60 minute summer	S67	31	133.556	1.456	101.8	2.0835	12.6148	FLOOD
60 minute summer	S68	32	133.161	1.611	162.4	2.3053	1.8400	FLOOD
60 minute summer	S69	33	133.009	1.609	193.6	2.3030	0.0000	FLOOD RISK
60 minute summer	S70	33	132.711	1.511	218.5	2.1624	0.0000	FLOOD RISK
60 minute summer	S71	33	132.405	1.455	265.6	2.0821	0.0000	FLOOD RISK
960 minute summer	S72	870	132.100	1.450	56.7	2.0752	0.0000	FLOOD RISK
960 minute summer	S73	885	132.100	1.479	153.0	6.6912	0.0000	OK
1440 minute summer	S74	1110	132.100	1.500	92.1	6.7860	216.6676	FLOOD
960 minute summer	S75	840	132.100	1.500	122.6	1738.9680	32.3984	FLOOD
1440 minute summer	S76	1110	132.089	1.514	13.4	8.6716	0.0000	FLOOD RISK
480 minute summer	S79	296	132.100	0.750	150.3	1.0733	342.2285	FLOOD
960 minute summer	S77	705	131.885	1.335	101.1	1.9108	0.0000	FLOOD RISK
960 minute summer	S78	705	130.745	0.245	100.3	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S64	4.005	S65	279.6	3.971	0.893	0.4149	
60 minute summer	S65	1.009	S73	728.3	0.459	0.148	310.8133	
60 minute summer	S66	5.000	S67	45.4	1.142	0.840	0.7362	
60 minute summer	S67	5.001	S68	71.1	1.789	1.244	1.3167	
60 minute summer	S68	5.002	S69	153.7	1.393	0.921	2.3725	
60 minute summer	S69	5.003	S70	187.4	1.699	1.080	2.9251	
60 minute summer	S70	5.004	S71	217.1	1.968	0.917	1.9739	
60 minute summer	S71	5.005	S72	263.6	2.390	1.391	3.6866	
60 minute summer	S72	5.006	S73	349.7	3.171	2.726	0.7723	
60 minute summer	S73	1.010	S74	959.6	0.646	0.181	54.1180	
60 minute summer	S74	1.011	S75	927.1	0.817	0.147	92.6945	
2160 minute winter	S75	1.012	S76	13.5	0.192	0.649	0.5246	
60 minute summer	S76	1.013	S77	-8.6	0.251	-0.414	0.5246	
1440 minute summer	S76	Orifice	S77	5.0				
60 minute summer	S79	6.000	S77	105.5	1.498	0.534	1.7945	
960 minute summer	S77	1.014	S78	100.3	1.444	4.804	0.9782	5836.3

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