APPENDIX G: PLANNING LAYOUT

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Berry Hill Road, Adderbury - Site Plan - Rev E

N

DEN Architectural Design Consultants

APPENDIX H: PFRA/SFRA INFORMATION

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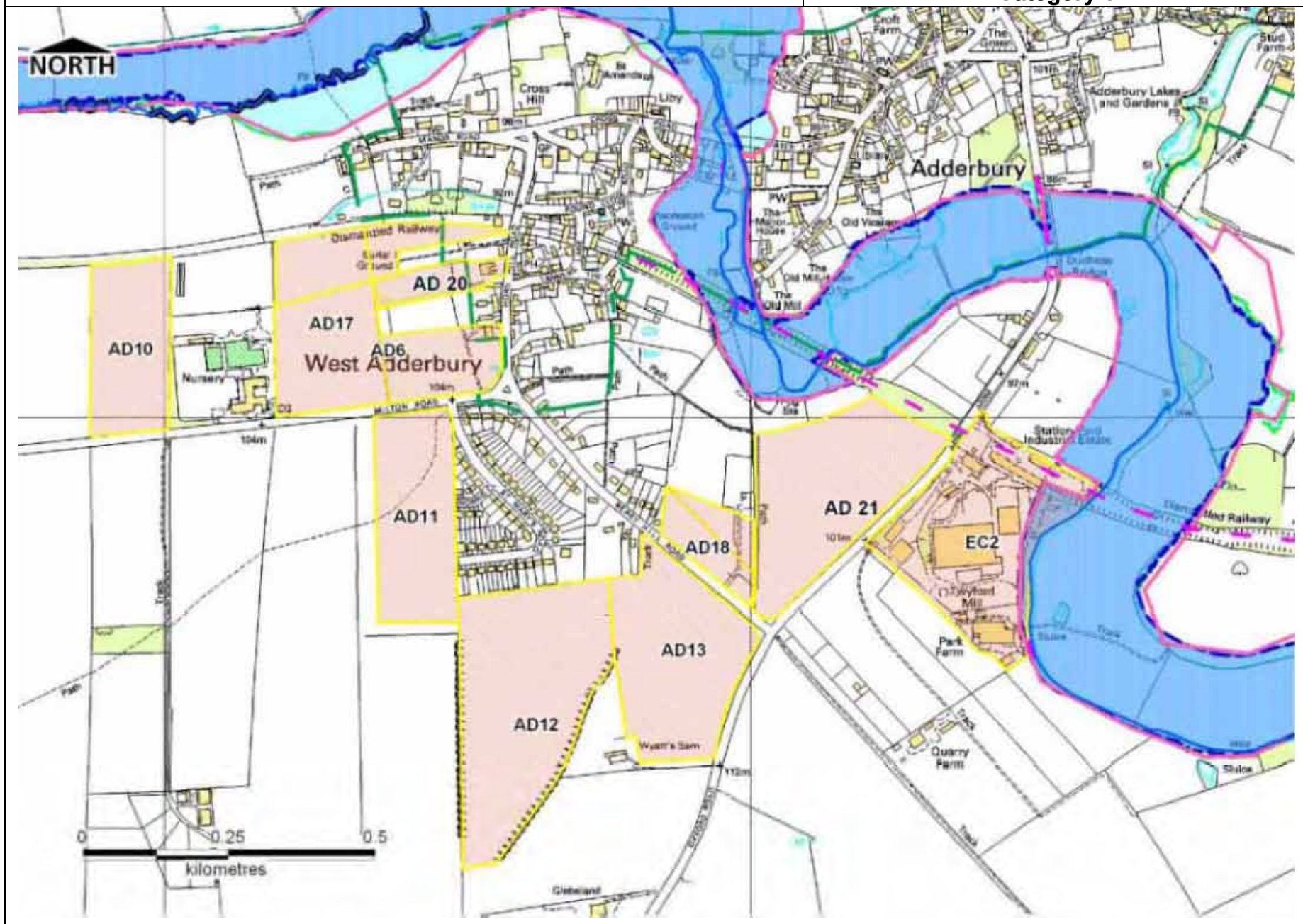
Cherwell District Council: Level 1 SFRA

Adderbury (South) Settlement Hierarchy	Existing NSCLP Categorisation: **Category 1**	Potential LDF Categorisation: **Type A**	Potential LDF Village Cluster: **Adderbury**

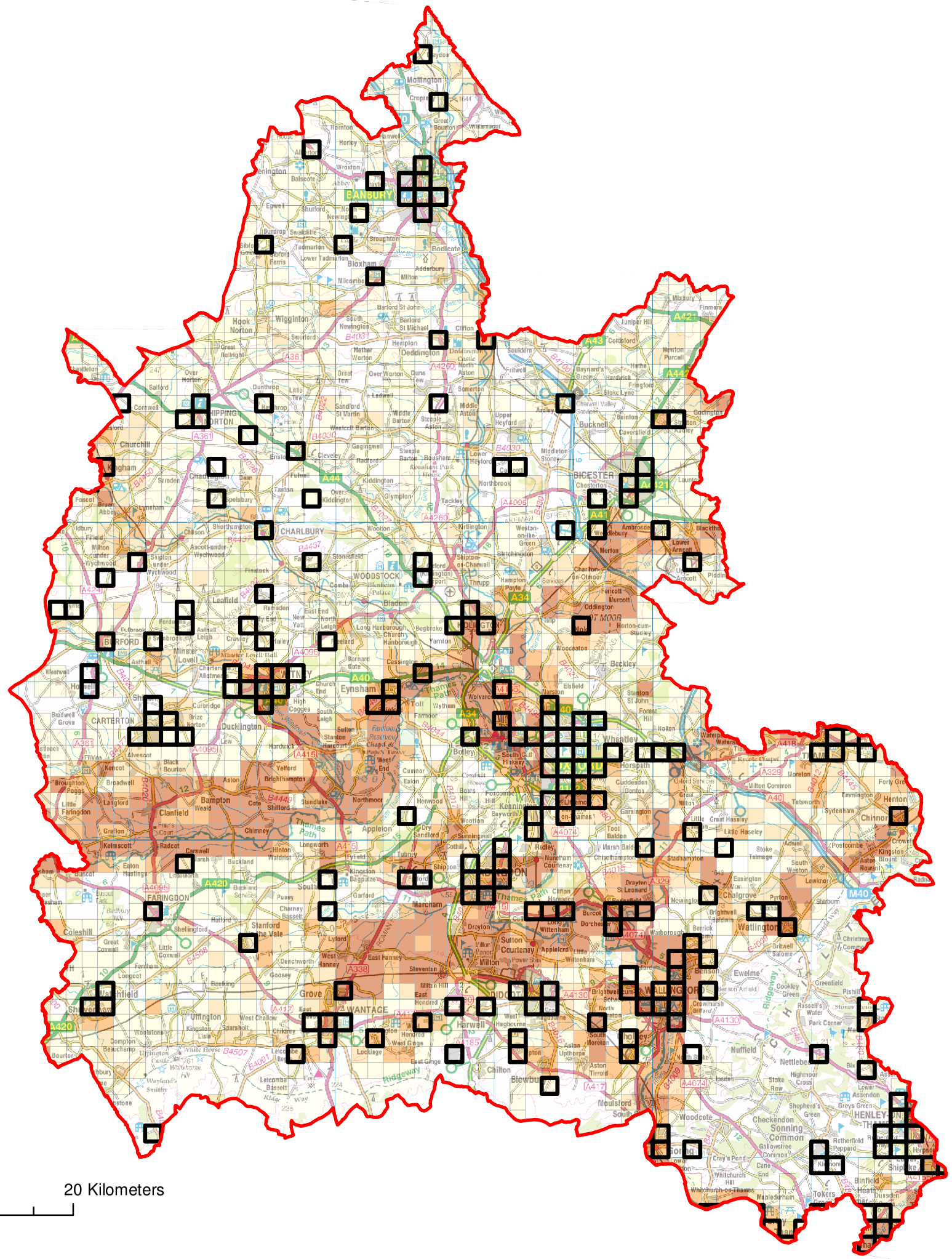


Preliminary Core Strategy Assessment

Flood Zone	**The majority of development sites are located in Flood Zone 1. Development to the east may be affected by Flood Zones 2 and 3 associated with Sor Brook.**
Data Information	The SFRA will inform the preparation of the LDF. The current planning policy framework for the settlement as contained in the Non-Statutory Cherwell Local Plan (NSCLP) 2011 is set out below. The existing policy framework for the settlement, including the potential for housing and employment allocations, is being reviewed through the preparation of the Core Strategy and Delivery DPDs. This review includes the possibility of clustering some settlements in recognition of existing and potential linkages between villages.
Potential Housing Allocation	The NSCLP identifies Adderbury as a Category 1 village. Policy H15 of the NSCLP states that residential development in Category 1 villages is restricted to i) infilling, ii) minor development comprising small groups of dwellings on sites within the built up area of the village and iii) the conversion of non-residential buildings in accordance with Policy H22.
Potential Employment Allocation	The NSCLP identifies Adderbury as a Category 1 village, considered to be one of the more sustainable locations in the rural areas. New site proposals for small scale development generating employment will only be permitted subject to NSCLP Policy EMP3 i.e. the proposal must be carried out without detriment to local environment; it must not give rise to excessive traffic and must either be for small firms or those whose markets make the location necessary.
Main River	Sor Brook flows through the centre of Adderbury in a south easterly direction. Approximately 1.5km to the east of Adderbury, the River Cherwell flows in a southerly direction, forming the eastern parish boundary. The Oxford canal runs parallel to the River Cherwell on its western bank. The River Swere forms the southern boundary of the parish. To the north of West Adderbury, Bloxham Brook converges with Sor Brook.
Flood Record Information	Eleven properties in Adderbury experienced flooding in July 2007. These were located in Dog Close adjacent Sor Brook. The Parish Council are currently researching flood mitigation measures through consultation with the EA.

N.B. Flood Zones at this location are derived from EA National Generalised Hydraulic Modelling.

North



Legend

Surface water hotspots

Areas Susceptible to Groundwater Flooding

- >= 75%
- >= 50% <75%
- >= 25% <50%
- < 25%

Proportion of each 1km square that is susceptible to groundwater emergence

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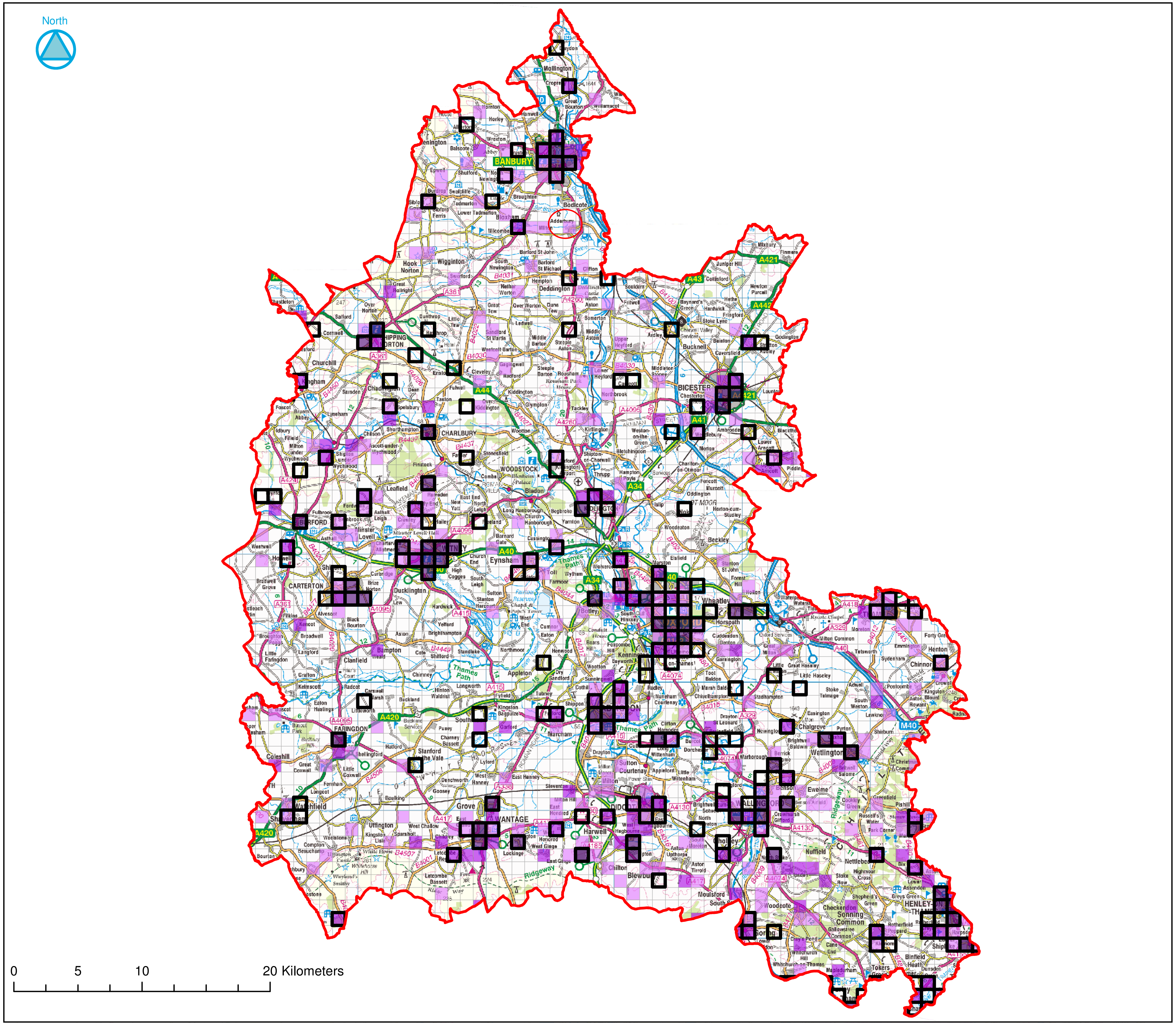
PRELIMINARY FLOOD RISK ASSESSMENT

Map 7: Areas Susceptible to Groundwater Flooding

Drawn by: AB	Scale: Not to scale
Date: 09/06/2011	
Status: FINAL	
File Name: N/A	
Drawing Number: Map 7	

Original @ A3



Explanatory note:

Maps 6a to 6c show the spatial distribution of three receptors (people, critical services and non-residential properties) that may be affected by future surface water flooding in an event with a 1 in 200 chance of occurring in any given year.

This map shows the number of non-residential properties affected, which can be considered an indicator of the consequences of flooding for economic activity. Non-residential properties are defined in the Environment Agency's PFRA and property count guidance, and include all industrial, commercial, retail, public buildings etc.

Calculations for each 1km square were carried out using the Flood Map for Surface Water (1 in 200 >0.3m), Environment Agency's detailed method of counting (based on property outlines) and the National Receptors Database v1.1.

The 1km squares are shaded from light to dark purple as the number of non-residential properties affected in each square increases.

Also overlaid on the map are surface water flooding 'hot spots', or areas where the consequences of a surface water event are likely to be more severe. These have been defined as 1km grid squares where at least one of the three indicators is above the threshold given below (thresholds defined by Defra guidance):

- More than 200 people affected
- One or more critical services affected
- More than 20 non-residential properties affected

The maps show that:

- The main hotpots are in more urban locations due to the concentration of population, industrial and commercial buildings, and critical services.
- Several more rural communities have less people affected but will still experience an adverse impact, particularly those where local critical services are affected.

More detail is given in the main report.

Legend

Hotspots

Non-residential properties

Number of non-residential properties affected per 1km grid square

- < 5
- 5 - 10
- 10 - 20
- > 20

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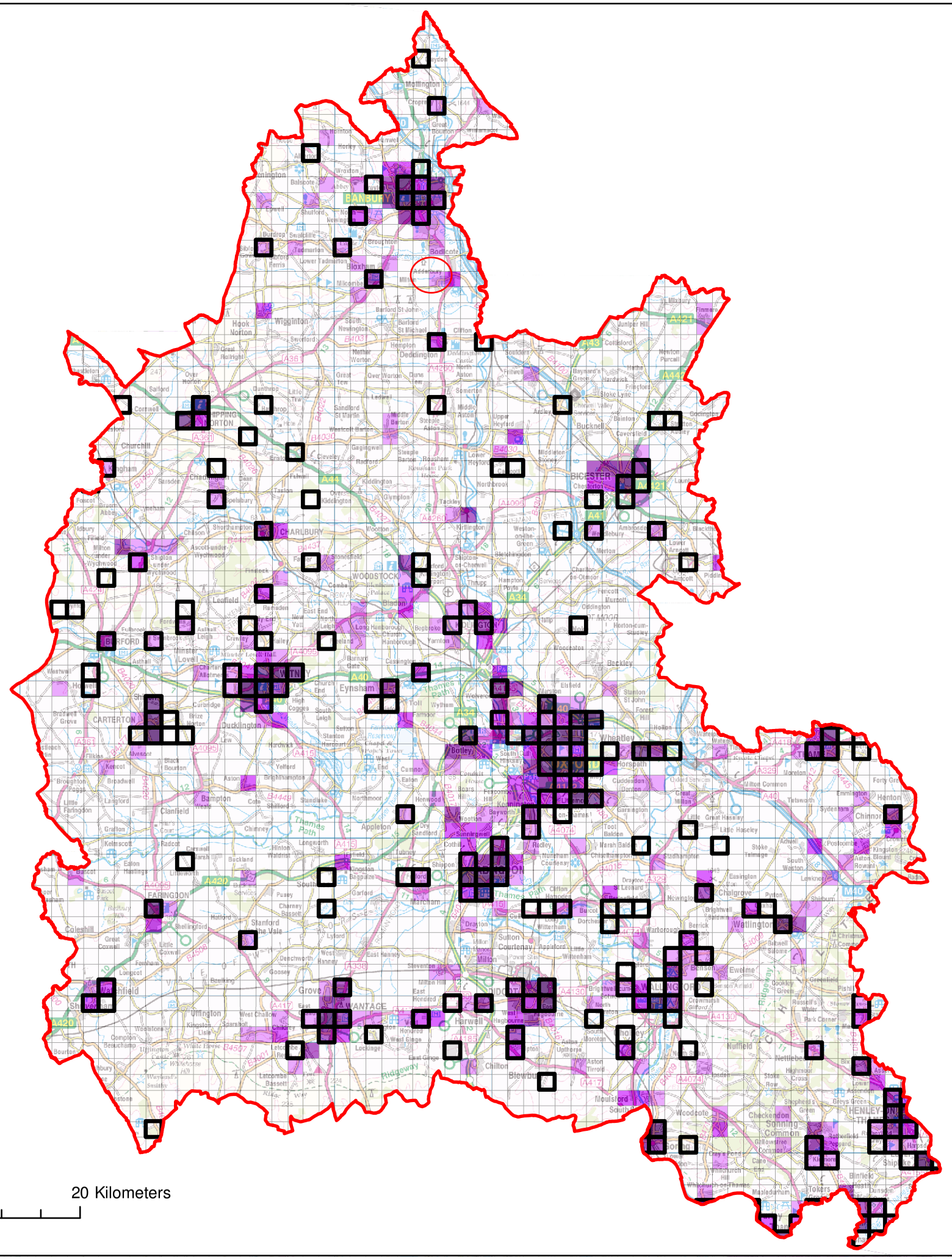
PRELIMINARY FLOOD RISK ASSESSMENT

Map 6c: Non-residential properties affected by flooding in a rainfall event with a 1 in 200 chance of occurring in any given year

Drawn by: AC
Date: 09/06/2011
Status: FINAL
File Name: N/A
Drawing Number: Map 6c
Scale: Not to scale

Original @ A3

North



Explanatory note:
Maps 6a to 6c show the spatial distribution of three receptors (people, critical services and non-residential properties) that may be affected by future surface water flooding in an event with a 1 in 200 chance of occurring in any given year.
This map shows the number of people affected, which can be considered an indicator of the consequences of flooding for human health. The number of people is defined by the Environment Agency guidance as the number of residential (housing) properties multiplied by 2.34.
Calculations for each 1km square were carried out using the Flood Map for Surface Water (1 in 200 >0.3m), Environment Agency's detailed method of counting (based on property outlines) and the National Receptors Database v1.1.
The 1km squares are shaded from light to dark purple as the number of people affected in each square increases.
Also overlaid on the map are surface water flooding 'hot spots', or areas where the consequences of a surface water event are likely to be more severe. These have been defined as 1km grid squares where at least one of the three indicators is above the threshold given below (thresholds defined by Defra guidance):
•More than 200 people affected
•One or more critical services affected
•More than 20 non-residential properties affected
The maps show that:
•The main hotpots are in more urban locations due to the concentration of population, industrial and commercial buildings, and critical services.
•Several more rural communities have less people affected but will still experience an adverse impact, particularly those where local critical services are affected. More detail is given in the main report.

Legend

Hotspots

Number of people

Number of people affected per 1km grid square

- < 20
- 20 - 50
- 50 - 100
- 100 - 200
- > 200

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PRELIMINARY FLOOD RISK ASSESSMENT

Map 6a: People affected by flooding in a rainfall event with a 1 in 200 chance of occurring in any given year

Drawn by: AC	Scale: Not to scale
Date: 09/06/2011	
Status: FINAL	
File Name: N/A	
Drawing Number: Map 6a	

Original @ A3

North

0 5 10 20 Kilometers

Legend

- Breach location
- Overtopping location
- Oxford Canal

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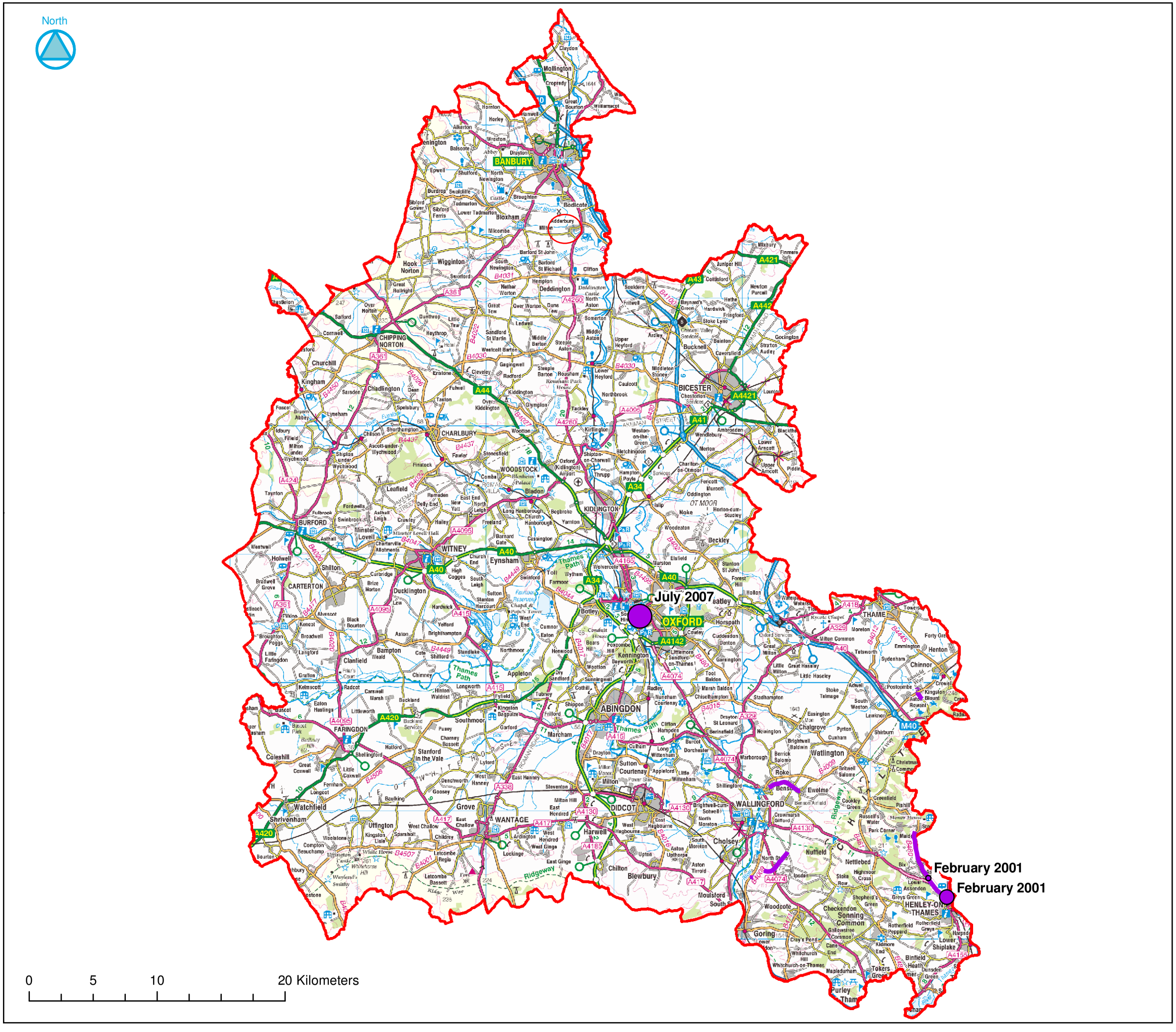
PRELIMINARY FLOOD RISK ASSESSMENT

Map 4: Past flooding - Canal flooding in July 2007

Drawn by: AB	Scale: Not to scale
Date: 09/06/2011	
Status: FINAL	
File Name: N/A	
Drawing Number: Map 4	

Original @ A3



Legend

Past flooding from groundwater

Number of properties

- 0 to 10
- 11 to 20
- 21 to 200

Groundwater flooding locations (2001)

Note: Points are an indication of the approximate location of the settlement affected, NOT the location of individual properties flooded.

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PRELIMINARY FLOOD RISK ASSESSMENT

Map 3: Past flooding - Ground water

Drawn by: AB	Scale: Not to scale
Date: 09/06/2011	
Status: FINAL	
File Name: N/A	
Drawing Number: Map 3	

Original @ A3

North

January 2007

October 2006

0 5 10 20 Kilometers

Legend

June 2008

Number of properties flooded by parish

- Less than 2
- 2 to 5
- 5 to 10
- 10 to 15
- 15 to 20

Number of properties flooded by other events

- 20
- 25

Note: Points are an indication of the approximate location of the settlement affected, NOT the location of individual properties flooded.

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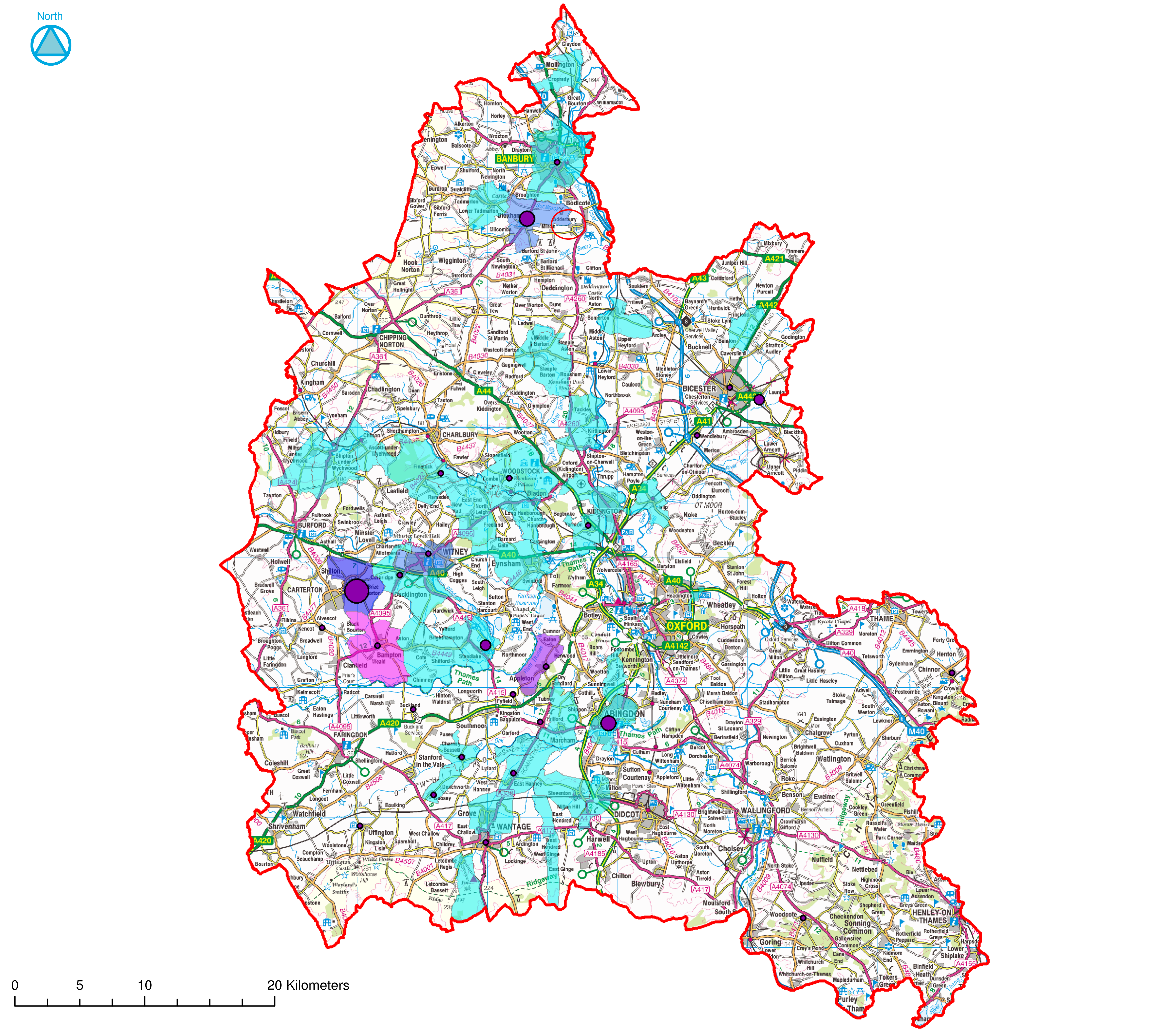
PRELIMINARY FLOOD RISK ASSESSMENT

Map 2: Past flooding - Surface water in other events

Drawn by: AB	Scale: Not to scale
Date: 09/06/2011	
Status: FINAL	
File Name: N/A	
Drawing Number: Map 2	

Original @ A3



Legend

July 2007 (Environment Agency)

- **1 - 5**
- **6 - 10**
- **11 - 15**
- **16 - 20**
- **21 - 24**

Number of properties flooded internally by 'surface water' (by settlement). Note: Points are an indication of the approximate location of the settlement affected, NOT the location of individual properties flooded.

July 2007 (Fire and Rescue Service)

- **1-5**
- **6-10**
- **11-20**
- **21-50**
- **51-125**

Number of properties flooded internally by 'drainage' and 'ordinary watercourse' (by parish)

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PRELIMINARY FLOOD RISK ASSESSMENT

Map 1: Past flooding - Surface water in July 2007

Drawn by: AB	Scale: Not to scale
Date: 09/06/2011	
Status: FINAL	
File Name: N/A	
Drawing Number: Map 1	

Original @ A3

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APPENDIX I: SURFACE WATER RUN-OFF CALCULATIONS

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SURFACE WATER RUN-OFF CALCULATION SHEET

Development	Berry Hill Road. Adderbury
Project No.	HYD250

Revision	A	**Completed by**	PT
Date	27.06.17	**Checked by**	KW

BETTS HYDRO
CONSULTING ENGINEERS

Areas			**Catchment Charateristics**		
Total Site	4.000	ha	SAAR	655	mm
Development Area (for SW Strategy)	1.970	ha	SPR	10	%
Existing Impermeable	0.110	ha	i_1	14.1	mm/hr
Existing Impermeable (for SW Strategy)	0.000	ha	i_{30}	31.1	mm/hr
Existing Pervious	3.890	ha	i_{100}	40.4	mm/hr
Existing Pervious (for SW Strategy)	1.970	ha			
Proposed Impermeable (total)	0.886	ha			
Proposed Impermeable (domestic only)		ha			

Run-off Rates

Pre-development

Impermeable	1yr	0.0	l/s
	30yr	0.0	l/s
	100yr	0.0	l/s
	50mm/hr	0.0	l/s
Pervious	1yr	0.6	l/s
	30yr	1.7	l/s
	100yr	2.4	l/s
	QBar	0.7	l/s
Total	1yr	0.6	l/s
	30yr	1.7	l/s
	100yr	2.4	l/s

Post-development

Impermeable (total)	1yr	34.7	l/s
	30yr	76.6	l/s
	100yr+CC	129.3	l/s
Impermeable (domestic only)	1yr		l/s
	30yr		l/s
	100yr+CC		l/s

Volumes

Pre-development

Impermeable	1yr	0.0	cu.m
	100yr	0.0	cu.m
Pervious	1yr	12.6	cu.m
	100yr	83.6	cu.m
Total	1yr	12.6	cu.m
	100yr	83.6	cu.m

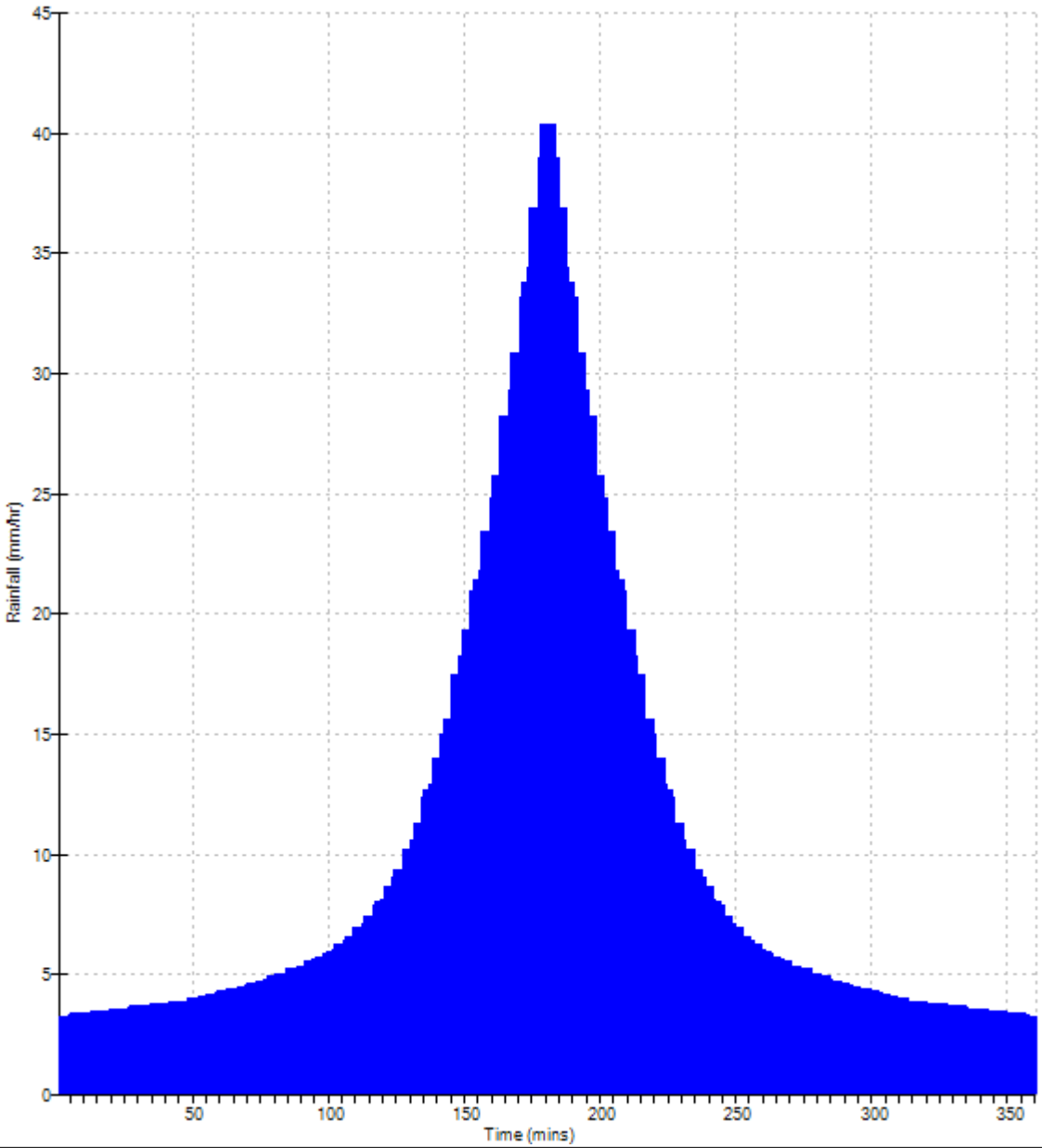
Quick storage Estimates

		low	high	mean	Imp. Area (ha)	Max. Discharge (l/s)	Rainfall	CC
Return Period	1yr	82	131	106.5	0.886	5.0	FEH	0
Return Period	30yr	253	353	303	0.886	5.0	FEH	0
Return Period	100yr+CC	445	599	522	0.886	5.0	FEH	20%
Return Period	100yr+CC	541	724	632.5	0.886	5.0	FEH	40%

Rainfall profile

Storm duration (mins) 360

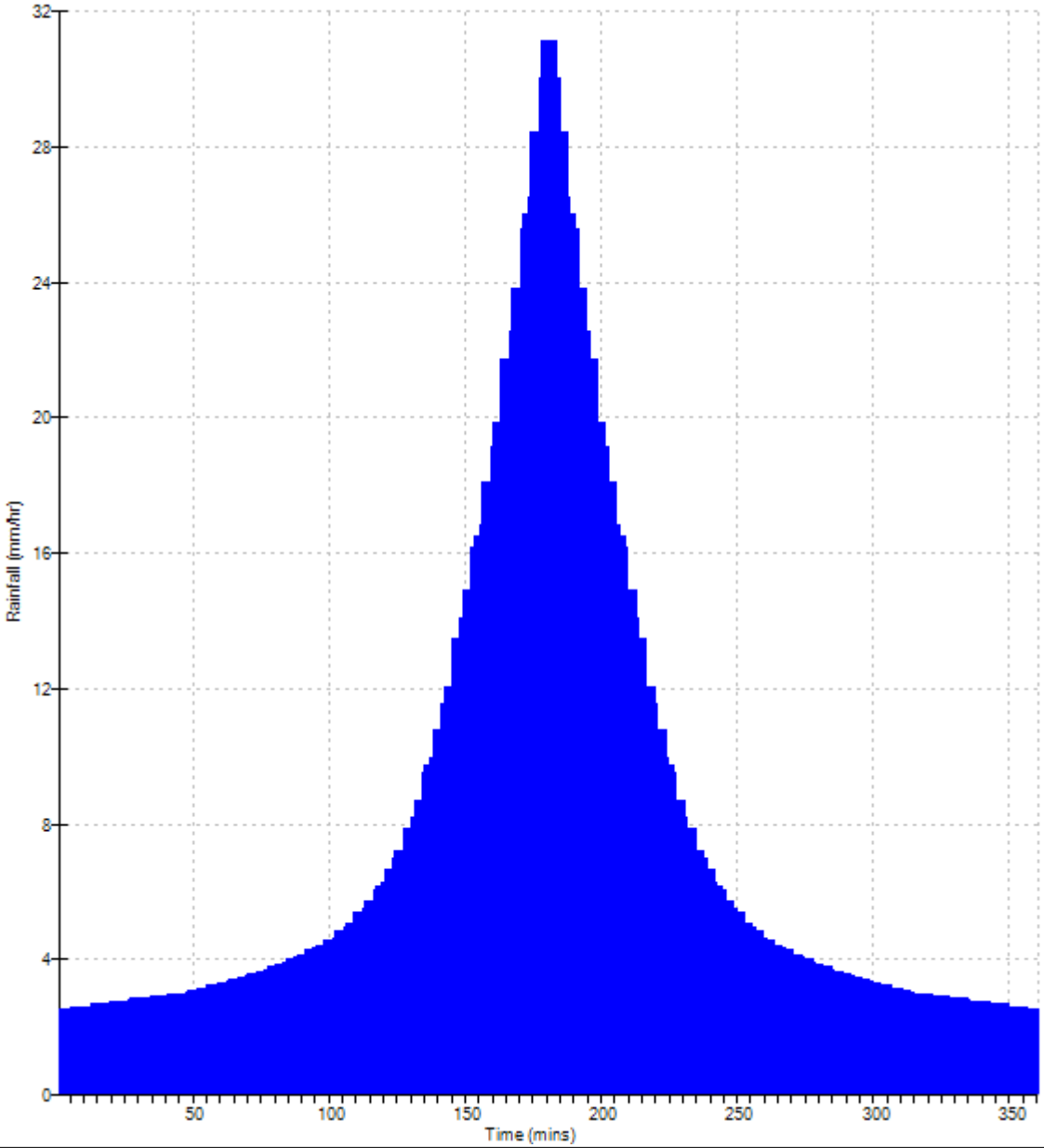
FSR Data	
Region	England and Wales
M5-60 (mm)	20.000
Ratio R	0.411
Peak Intensity (mm/hr)	40.405
Ave. Intensity (mm/hr)	10.307
Return Period (years)	100



Rainfall profile

Storm duration (mins) 360

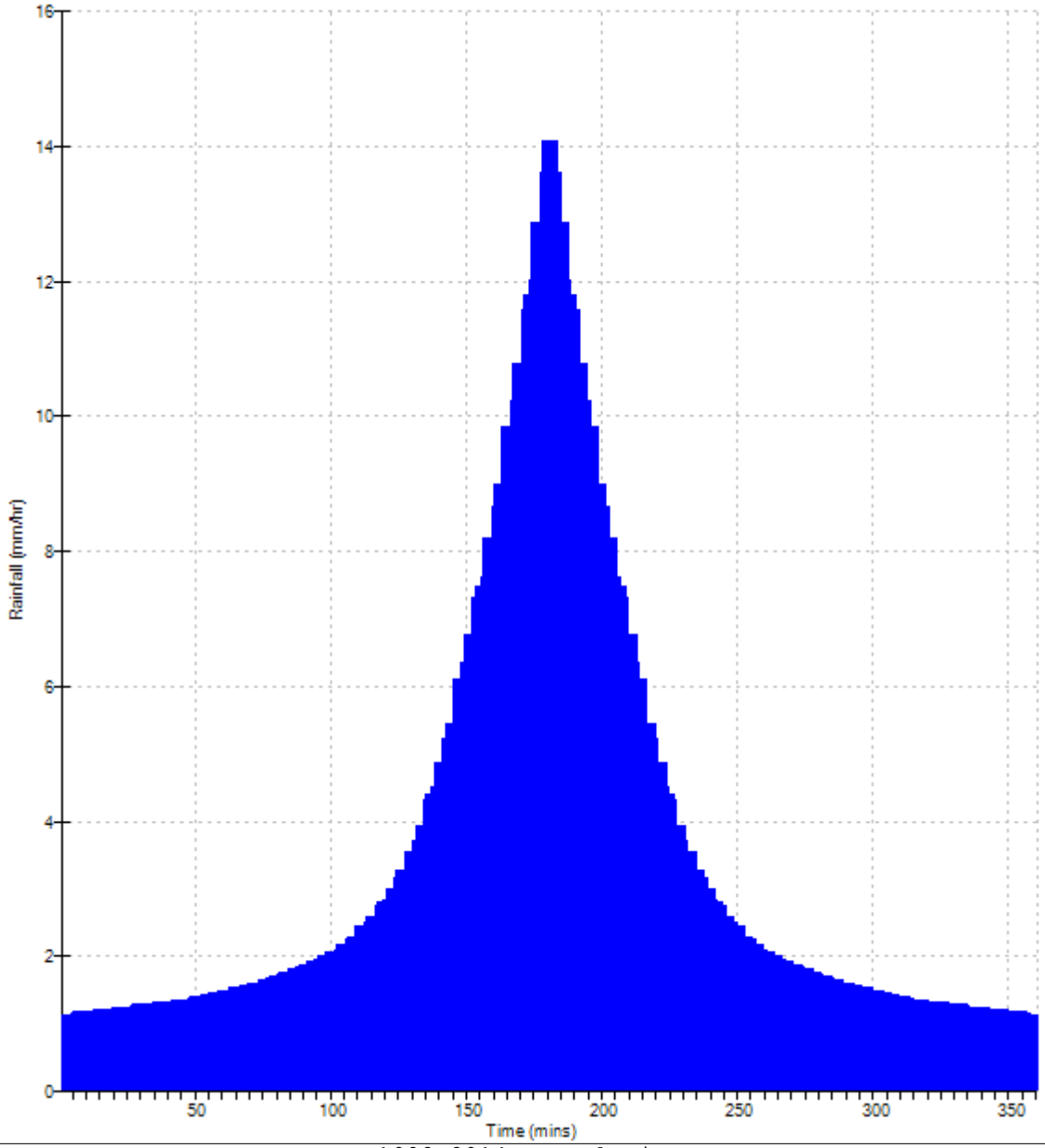
FSR Data	
Region	England and Wales
M5-60 (mm)	20.000
Ratio R	0.411
Peak Intensity (mm/hr)	31.140
Ave. Intensity (mm/hr)	7.944
Return Period (years)	30



Rainfall profile

Storm duration (mins) 360

FSR Data	
Region	England and Wales
M5-60 (mm)	20.000
Ratio R	0.411
Peak Intensity (mm/hr)	14.100
Ave. Intensity (mm/hr)	3.597
Return Period (years)	1



ICP SUDS Mean Annual Flood

Input

Return Period (years)	1	Soil	0.150
Area (ha)	1.970	Urban	0.000
SAAR (mm)	655	Region Number	Region 6

Results l/s

QBAR Rural	0.7
QBAR Urban	0.7
Q1 year	0.6
Q1 year	0.6
Q30 years	1.7
Q100 years	2.4

Greenfield Runoff Volume

FSR Data

Return Period (years)	100
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	20.000
Ratio R	0.412
Areal Reduction Factor	1.00
Area (ha)	1.970
SAAR (mm)	655
CWI	96.900
Urban	0.000
SPR	10.000

Results

Percentage Runoff (%)	6.86
Greenfield Runoff Volume (m^3)	83.557

Greenfield Runoff Volume

FSR Data

Return Period (years)	1
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	20.000
Ratio R	0.412
Areal Reduction Factor	1.00
Area (ha)	1.970
SAAR (mm)	655
CWI	96.900
Urban	0.000
SPR	10.000

Results

Percentage Runoff (%)	2.98
Greenfield Runoff Volume (m^3)	12.634

APPENDIX J: OVERLAND FLOOD FLOW PLANS

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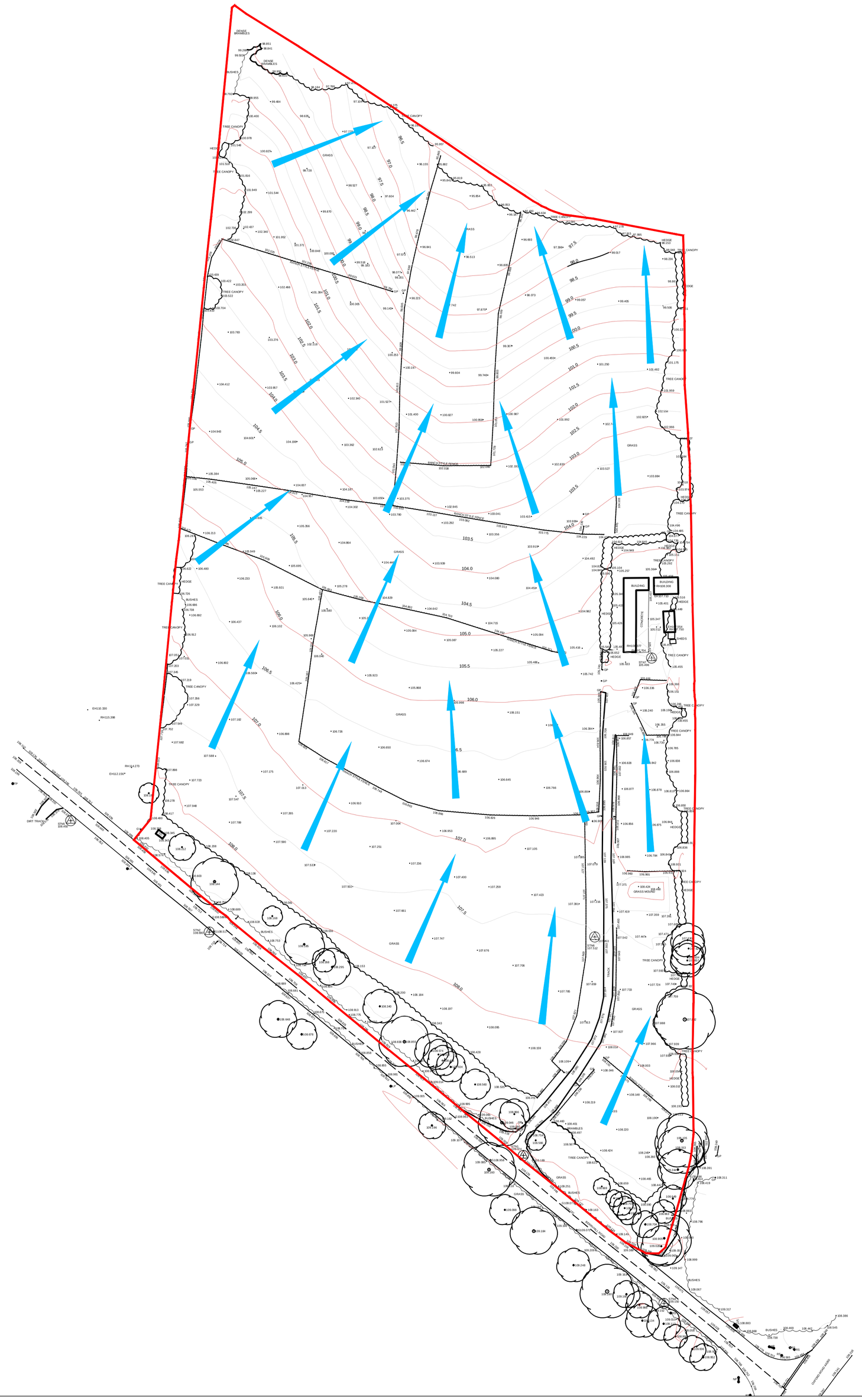
DO NOT SCALE

LEGEND

OVERLAND FLOOD FLOWS



REV	DATE	BY	DESCRIPTION	CHK
A	06.07.17	CP	PRELIMINARY ISSUE FOR REVIEW	KW

DRAWING STATUS:

BETTS HYDRO
CONSULTING ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

PROJECT:

BERRY HILL ROAD
ADDERBURY

TITLE:

PRE-DEVELOPMENT
OVERLAND FLOOD FLOW PLAN

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
JULY 2017	1:750 @ A1	CP	KW

PROJECT No:	DRAWING No:	REV:
HYD250	102	A

APPENDIX K: EXISTING AND PRELIMINARY DRAINAGE PLAN

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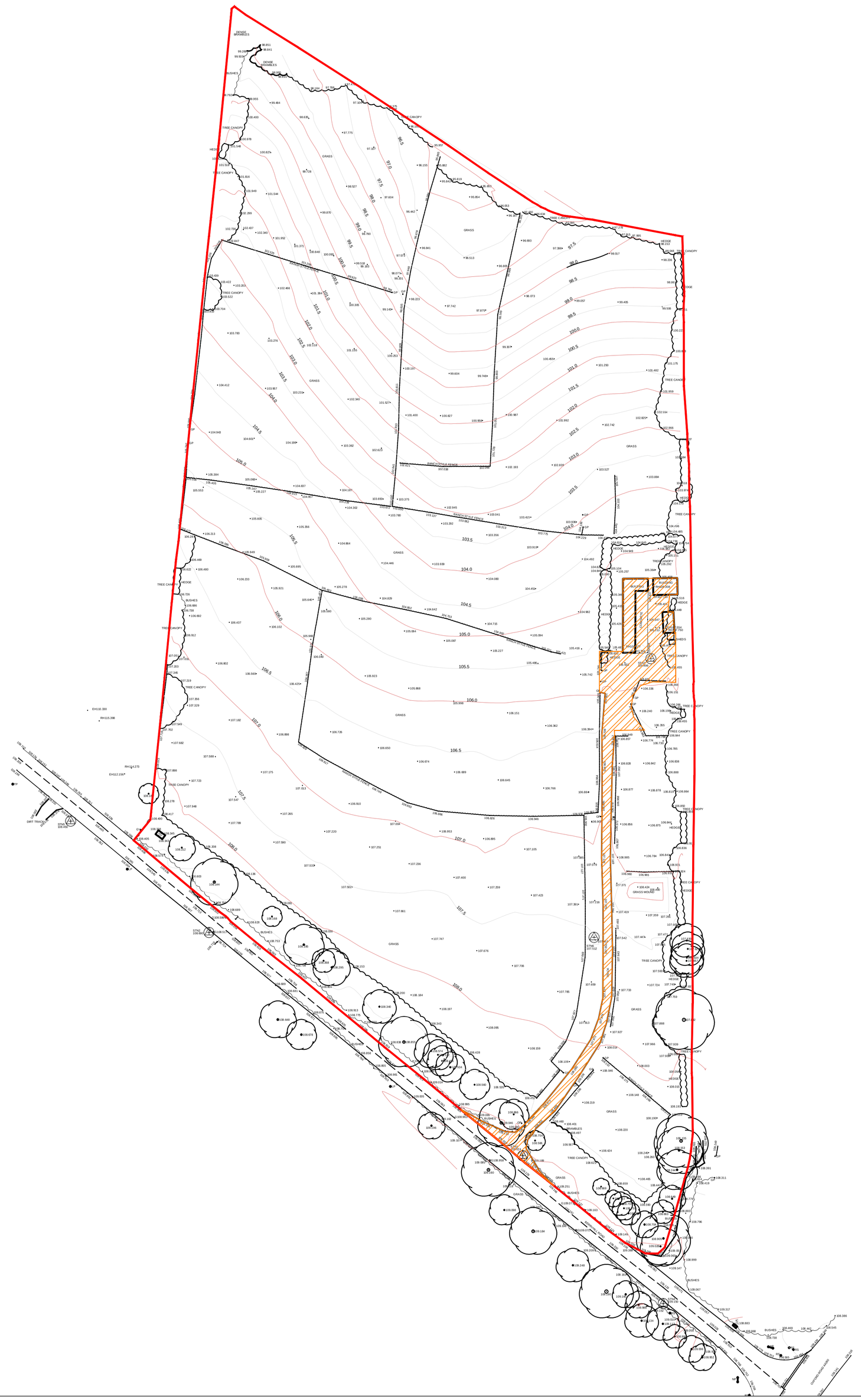
DO NOT SCALE

NOTES

PRE-DEVELOPMENT PERVIOUS AREAS - 4.004ha

PRE-DEVELOPMENT IMPERMEABLE AREAS - 0.110ha

TOTAL SITE AREA - 4.114ha



REV	DATE	BY	DESCRIPTION	CHK
A	06.06.17	CP	PRELIMINARY ISSUE FOR REVIEW	KW

DRAWING STATUS:

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CONSULTING ENGINEERS
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Tel: 01244 288178 enquiries@betts-associates.co.uk

PROJECT:

BERRY HILL ROAD
ADDERBURY

TITLE:

PRE-DEVELOPMENT
IMPERMEABLE AREAS PLAN

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
JULY 2017	1:750 @ A1	CP	KW

PROJECT No:	DRAWING No:	REV:
HYD250	101	A

BERRY HILL ROAD, ADDERBURY

EXISTING DRAINAGE SITUATION PLAN

OUR REF. HYD250

LEGEND

Site Extents

EXISTING DRAINAGE SEWER INFRASTRUCTURE

Foul Water Sewer

Foul Water Rising Main

Pumping Station

EXISTING DRAINAGE FEATURES

Main River

Notes:

THIS DRAWING IS NOT A DRAINAGE 'DESIGN' IT IS A PRELIMINARY DRAINAGE STRATEGY SHOWING EXISTING SEWER LOCATIONS.

NO HYDRAULIC SIMULATION OR ASSESSMENT OF THESE PROPOSALS HAS BEEN UNDERTAKEN.

PROPOSED POINTS OF CONNECTION TO THE EXISTING WATERCOURSE AND SEWER REQUIRE INVERT LEVELS TO BE ACCURATELY ESTABLISHED. REFER TO PROPOSED DRAINAGE PLAN.

SURCHARGING OF THE PROPOSED OUTFALL WILL REQUIRE MODELLING TO SATISFY THE REQUIREMENTS OF UNITED UTILITIES ALONG WITH FULL HYDRAULIC ANALYSIS.

BETTS HYDRO
CONSULTING ENGINEERS

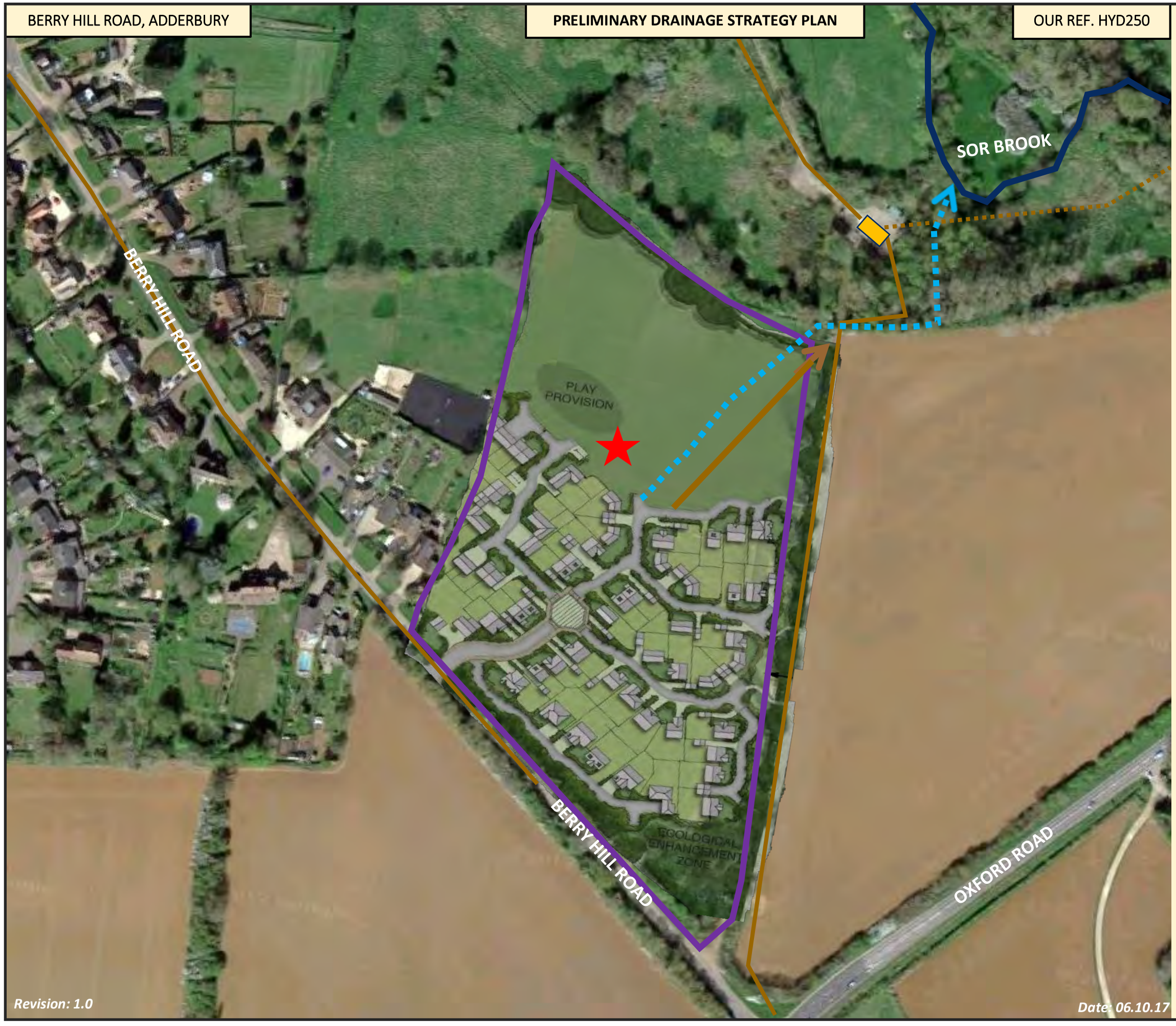
Revision: 0

Date: 29.06.17

BERRY HILL ROAD, ADDERBURY

PRELIMINARY DRAINAGE STRATEGY PLAN

OUR REF. HYD250



LEGEND

Site Extents

EXISTING DRAINAGE SEWER INFRASTRUCTURE

- Foul Water Sewer
- Foul Water Rising Main
- Pumping Station

EXISTING DRAINAGE FEATURES

- Main River

PROPOSED DRAINAGE CONNECTIONS

- Primary SW Option: INFILTRATION
- Alternative SW Option WATERCOURSE
- Foul Water Connection

Notes:

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CONSULTING ENGINEERS

Revision: 1.0

Date: 06.10.17

APPENDIX L: STORMWATER STORAGE ESTIMATES

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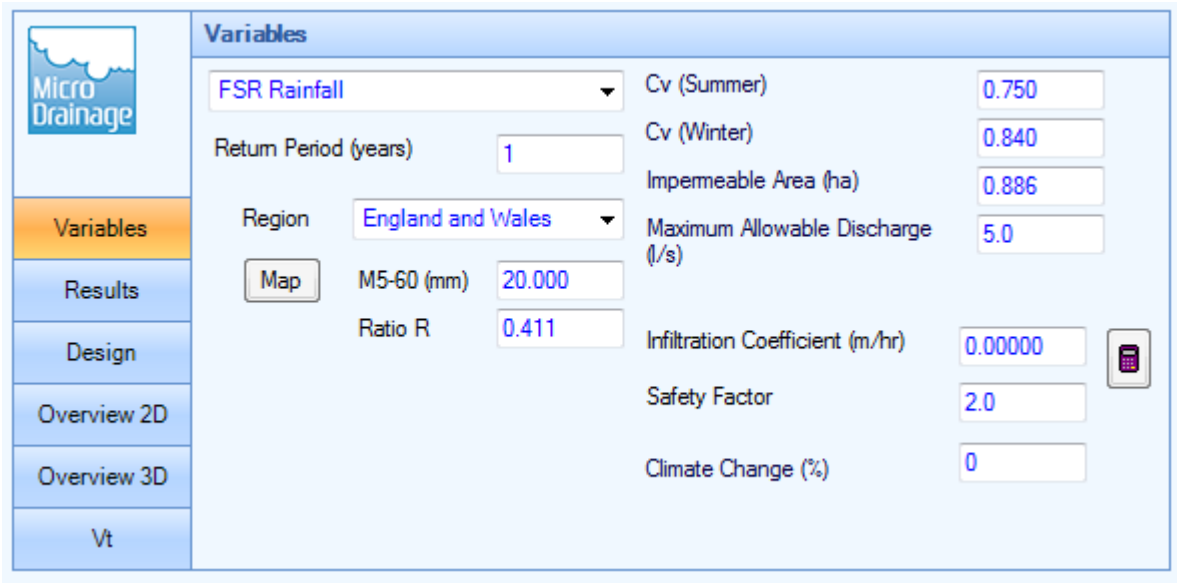
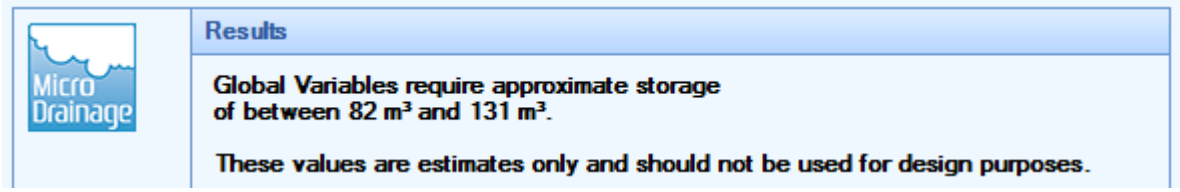
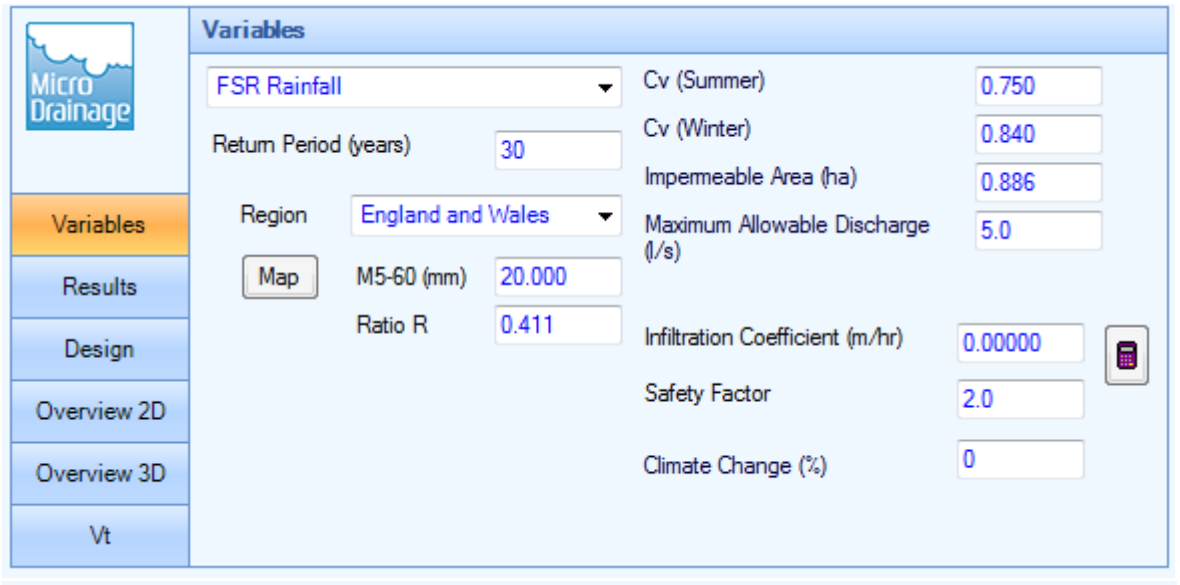
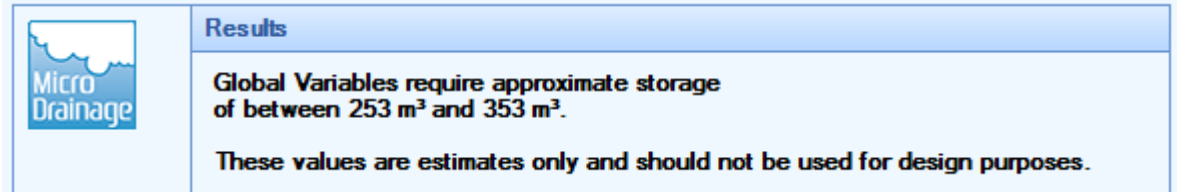
1 YEAR RETURN PERIOD STORM EVENT



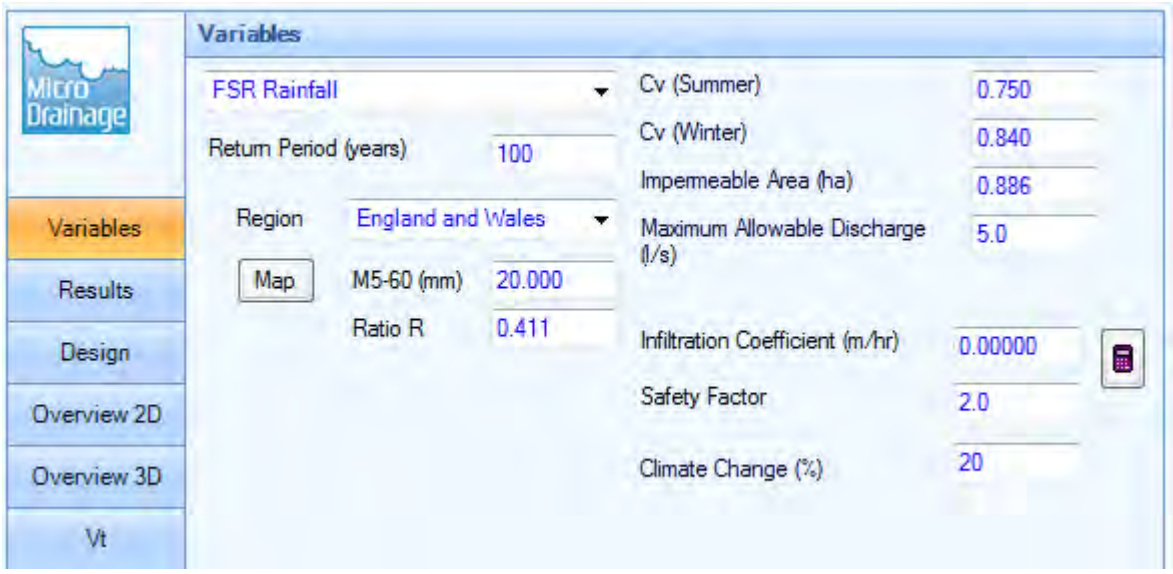


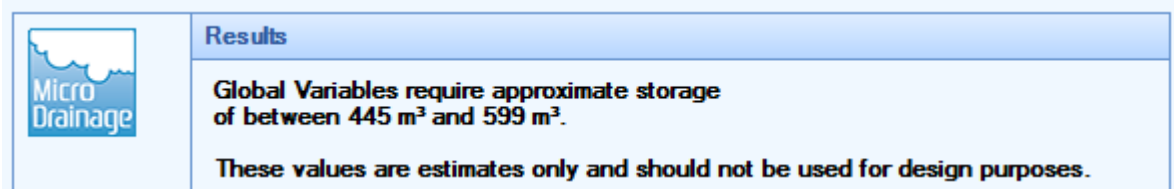
30 YEAR RETURN PERIOD STORM EVENT





100 YEAR RETURN PERIOD STORM EVENT + 20% CLIMATE CHANGE





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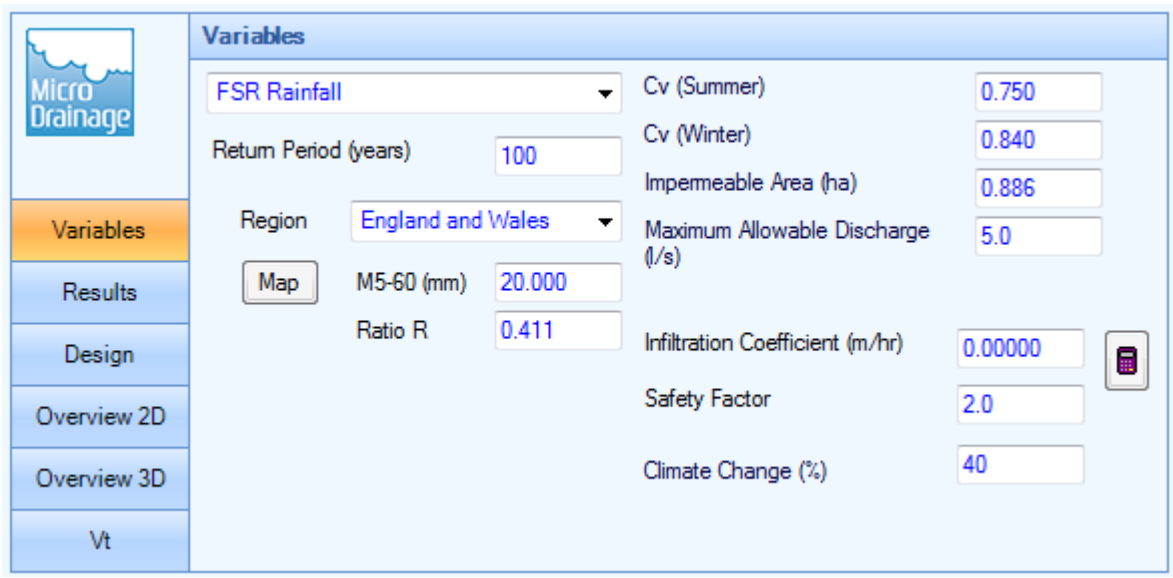

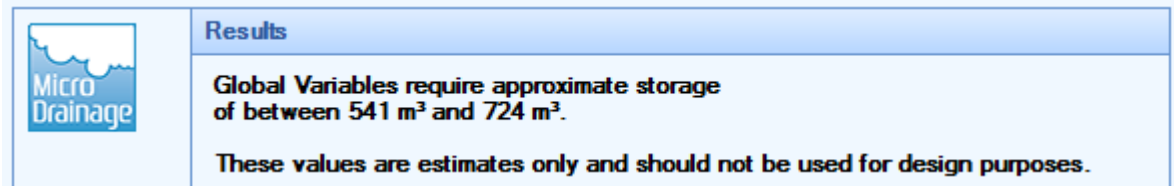

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APPENDIX M: TYPICAL SUDS DETAILS

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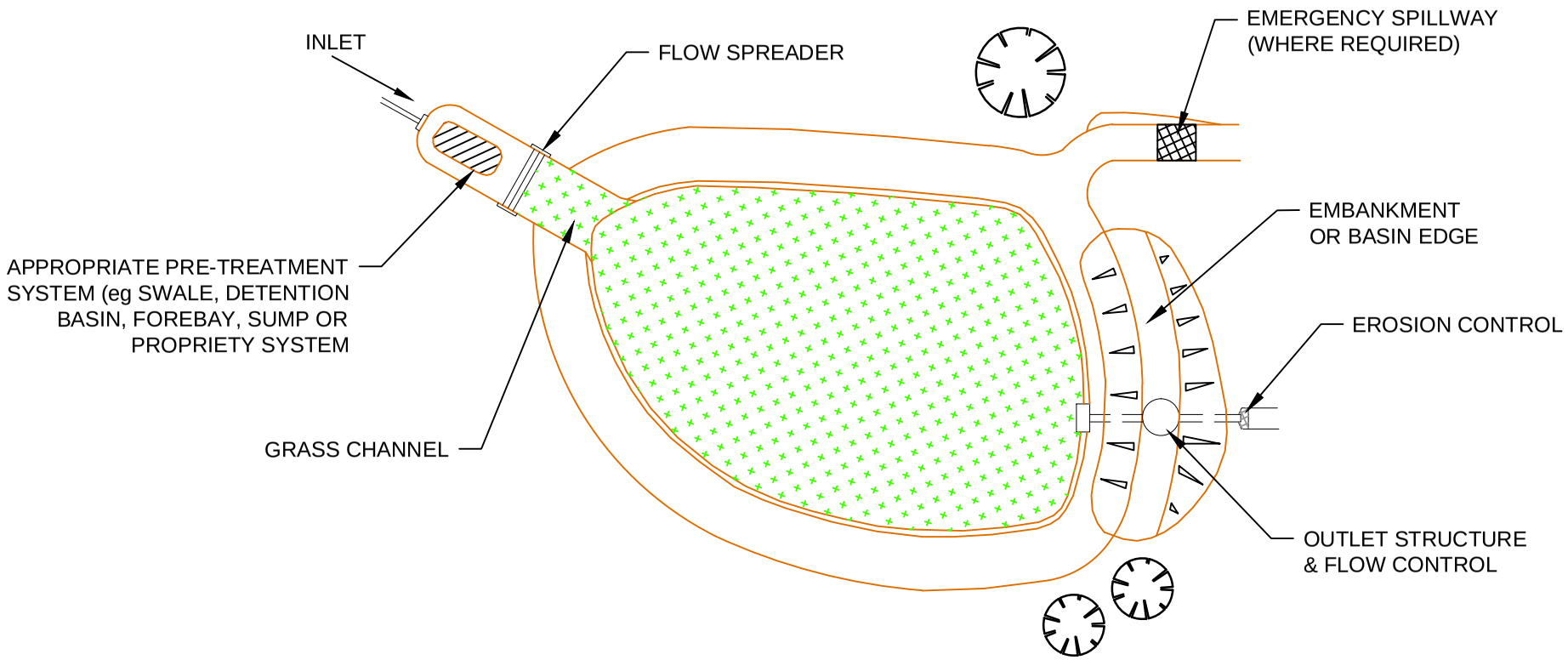
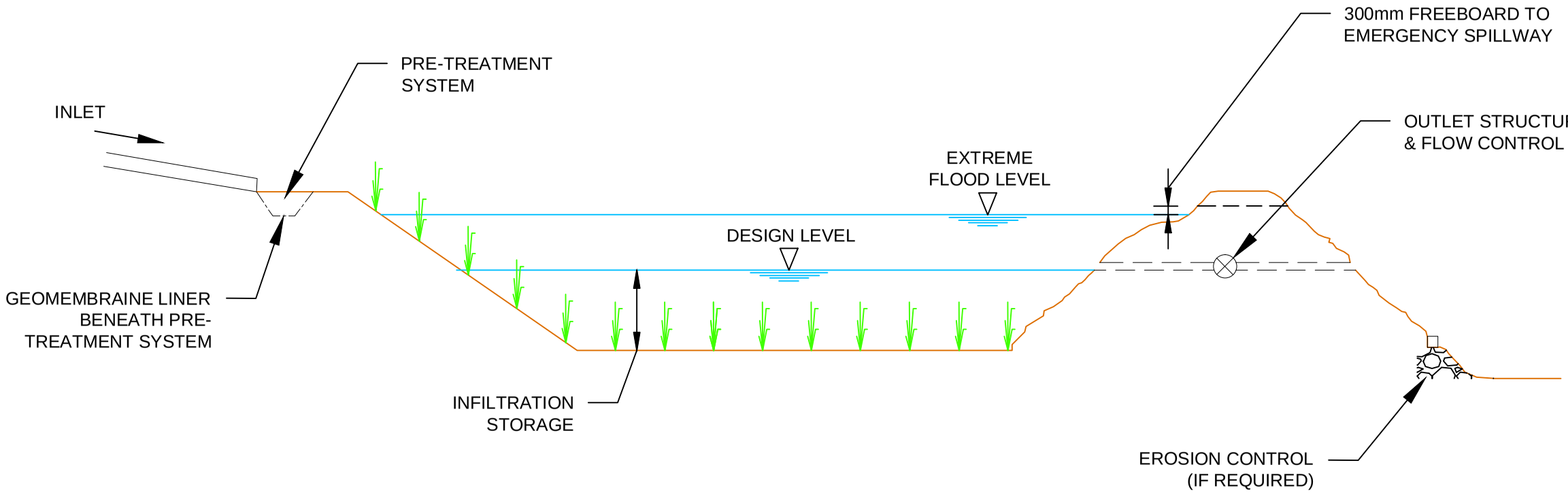
DO NOT SCALE



PLAN VIEW



ELEVATION

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

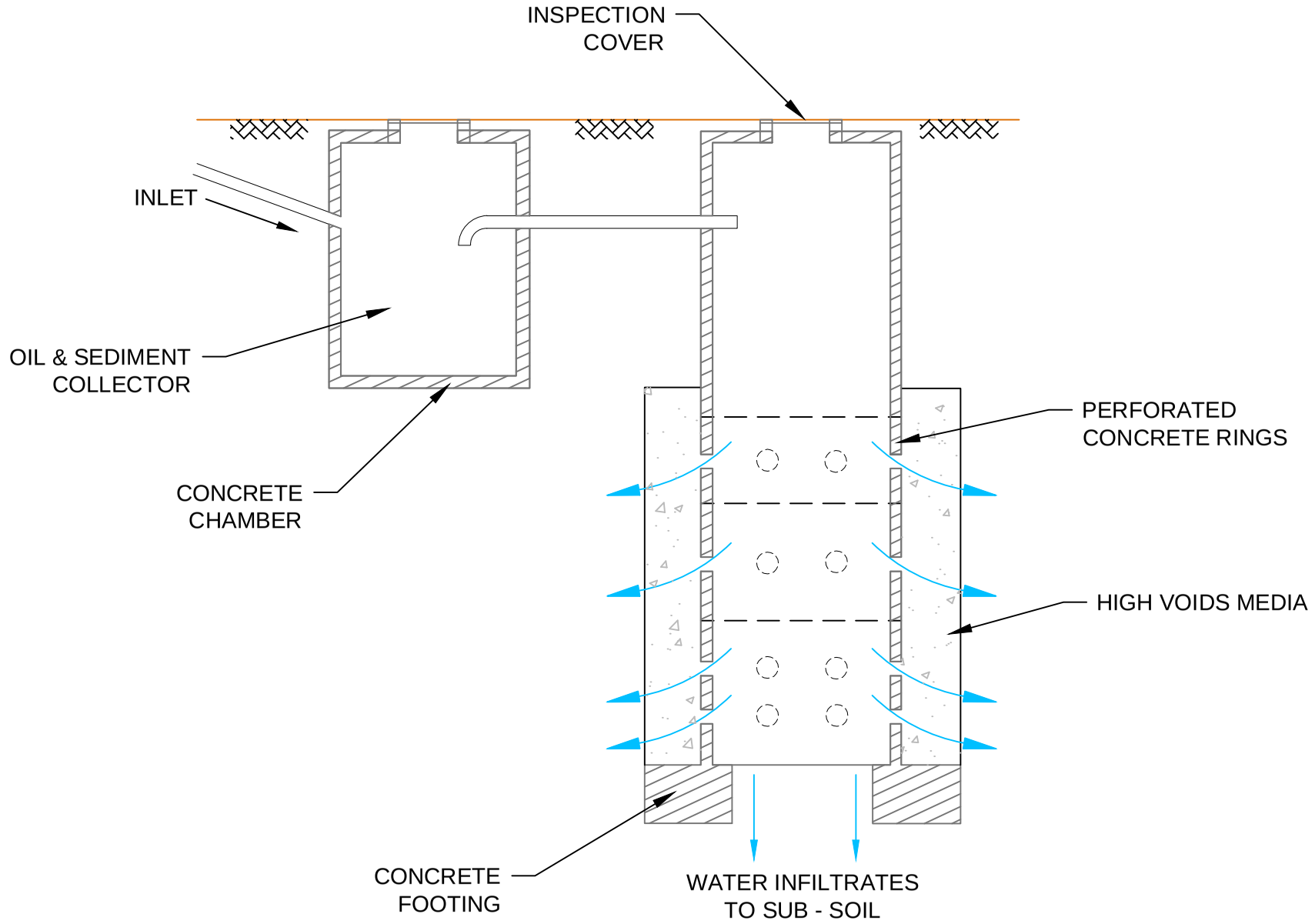
PROJECT: TYPICAL SUDS DETAIL

TITLE: INFILTRATION BASINS

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	109	A

DO NOT SCALE



SOAKAWAY DETAILS (INCLUDING PRE-TREATMENT DEVICE)

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

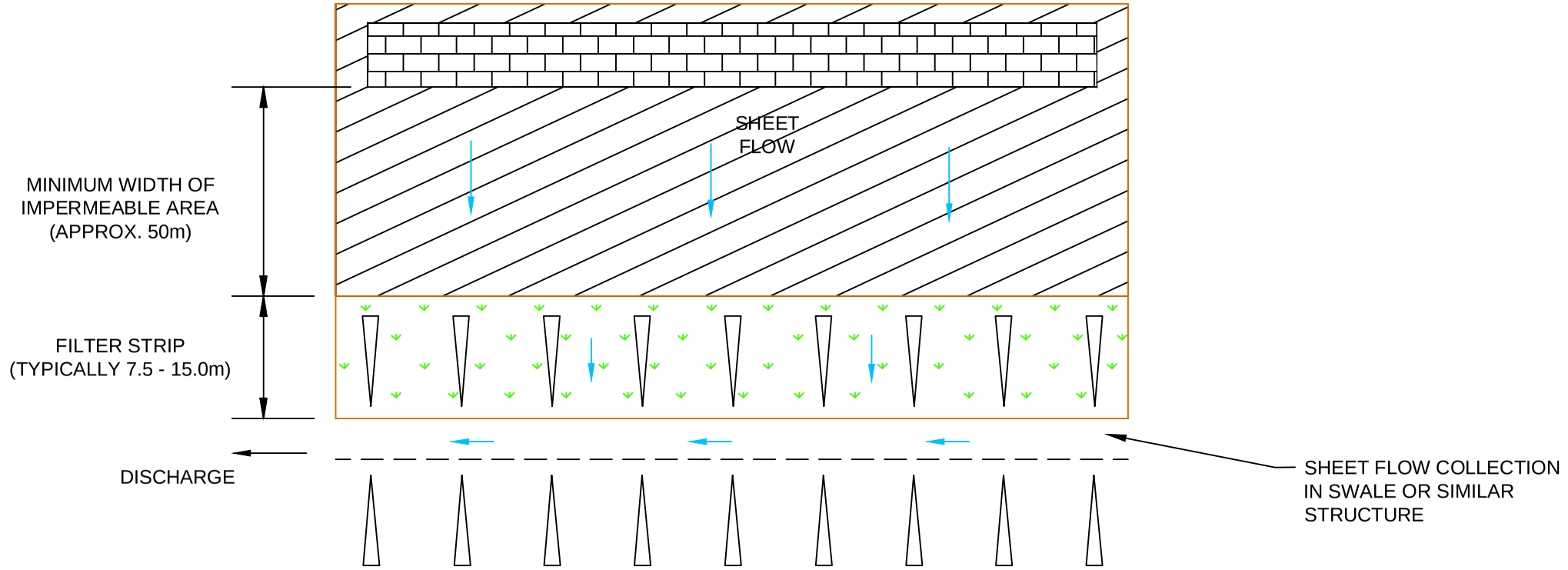
PROJECT: TYPICAL SUDS DETAIL

TITLE: SOAKAWAYS

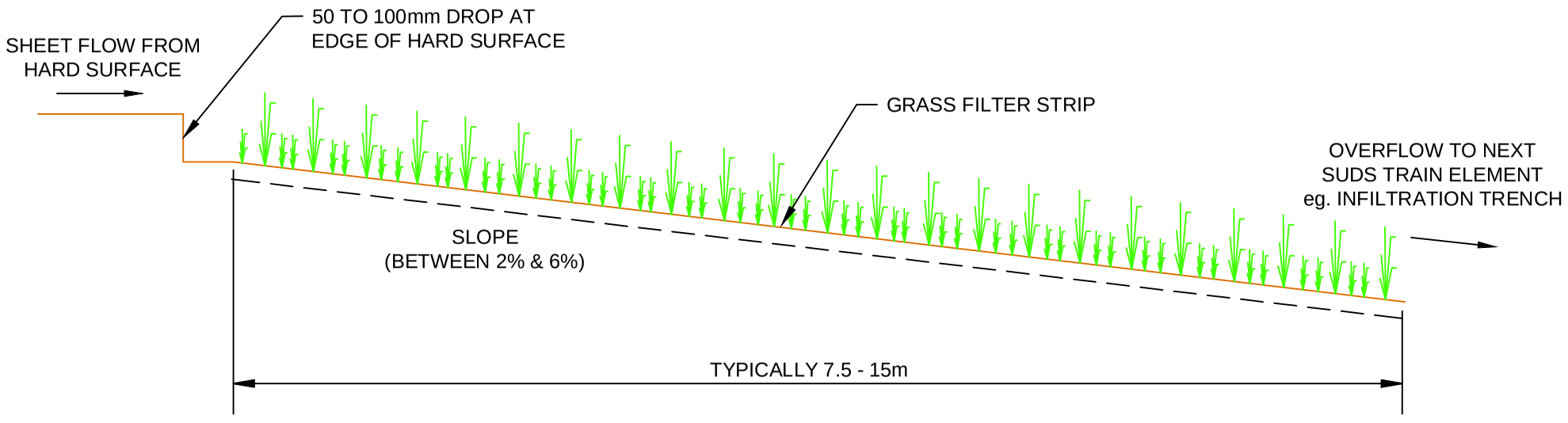
DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	108	A

DO NOT SCALE



PLAN



ELEVATION

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

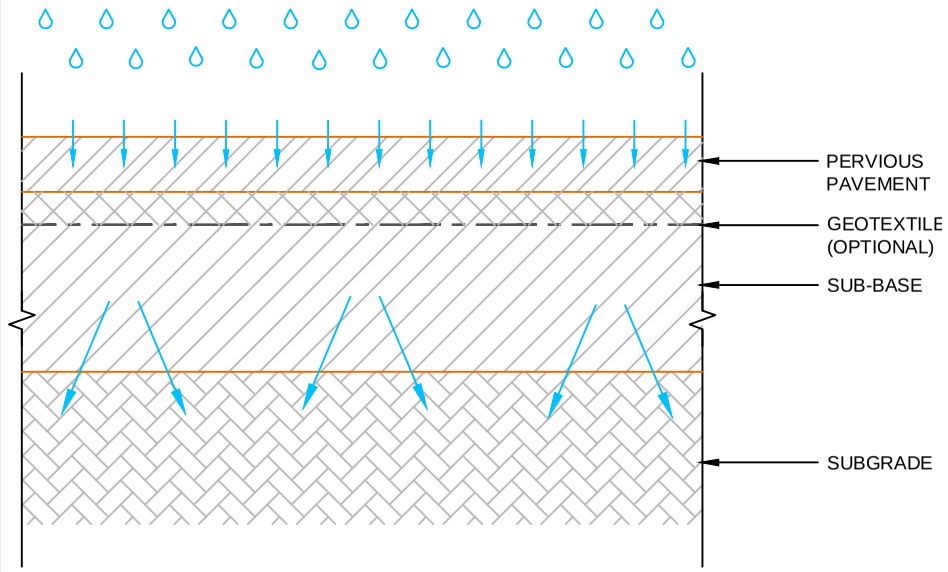
PROJECT: TYPICAL SUDS DETAIL

TITLE: FILTER STRIPS

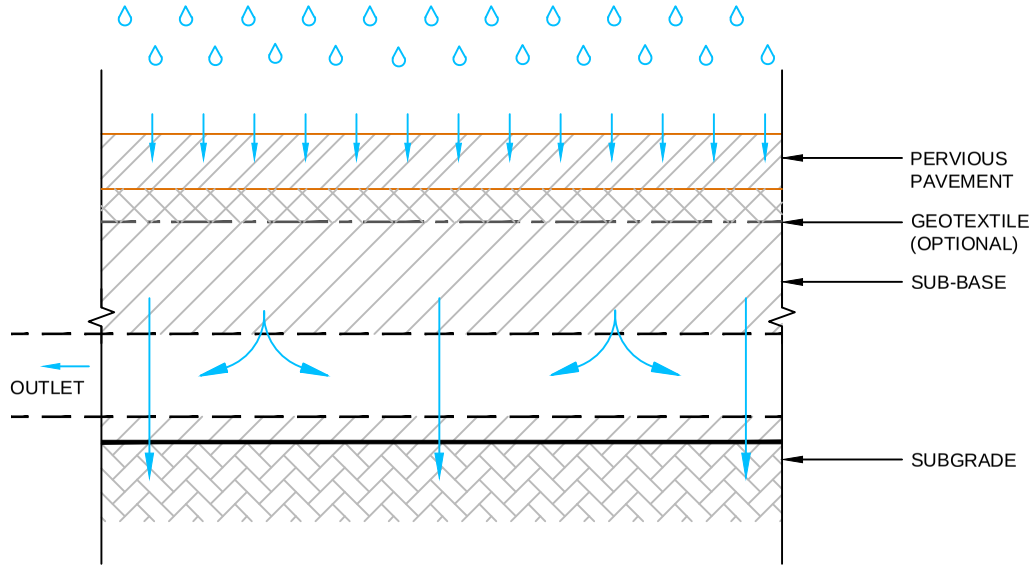
DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	107	A

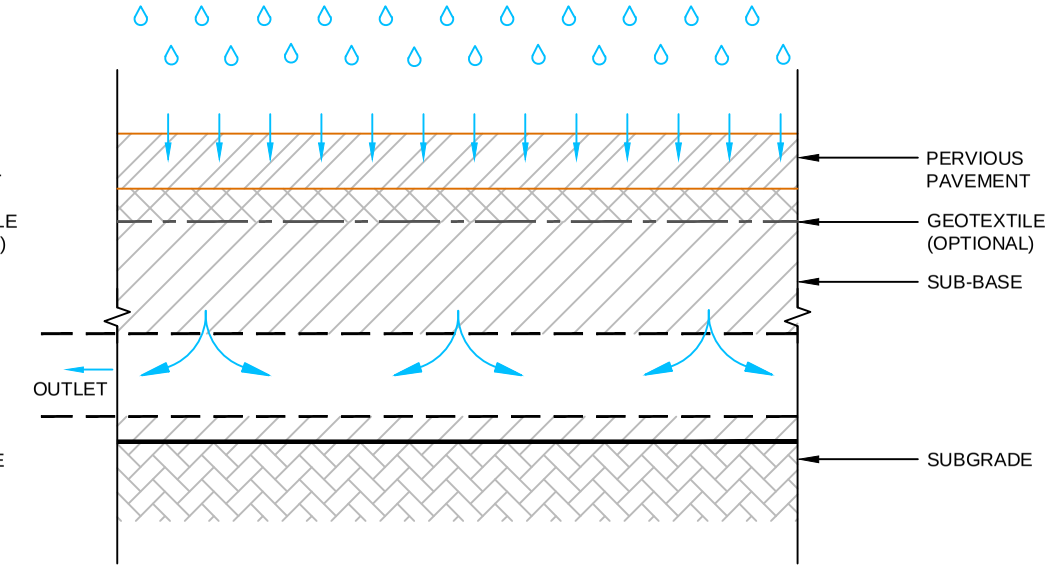
DO NOT SCALE



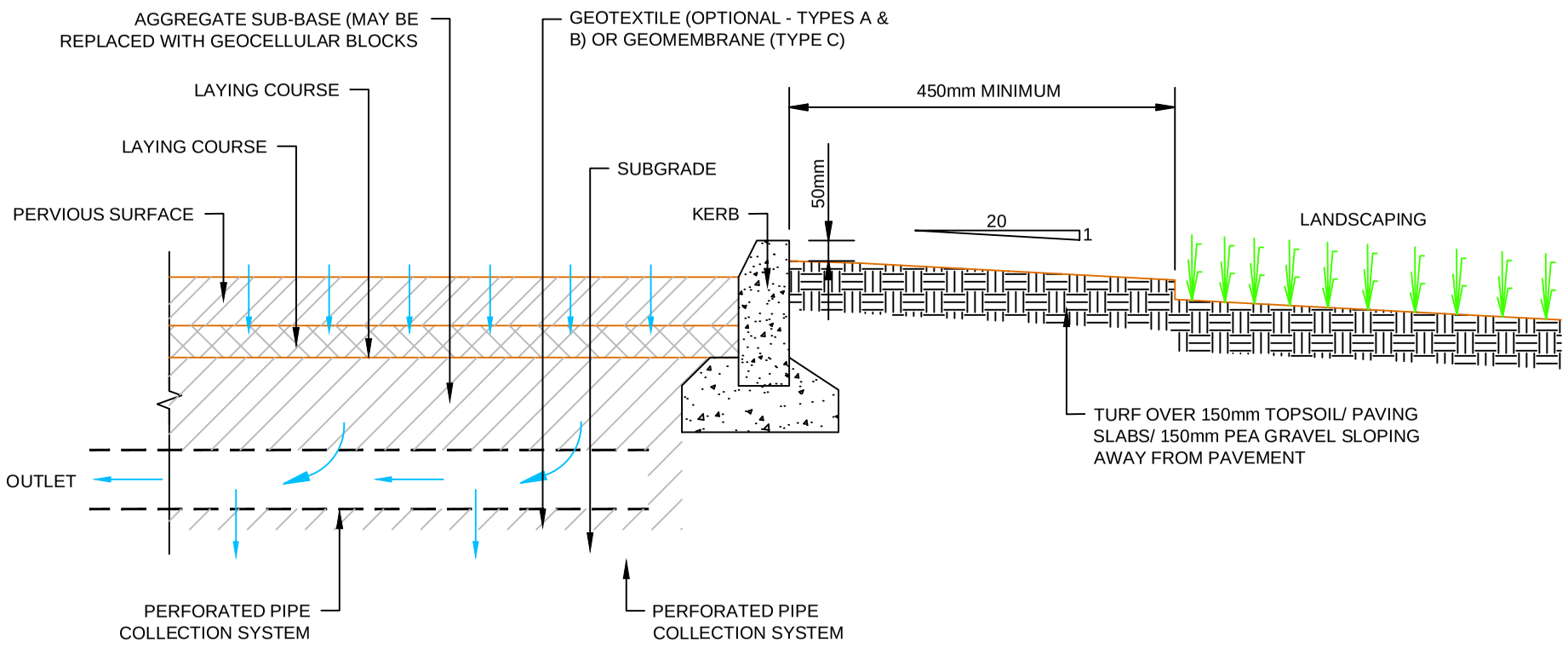
TYPE A: TOTAL INFILTRATIPN



TYPE B: PARTIAL INFILTRATION



TYPE C: NO INFILTRATION



LANDSCAPING DETAIL

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

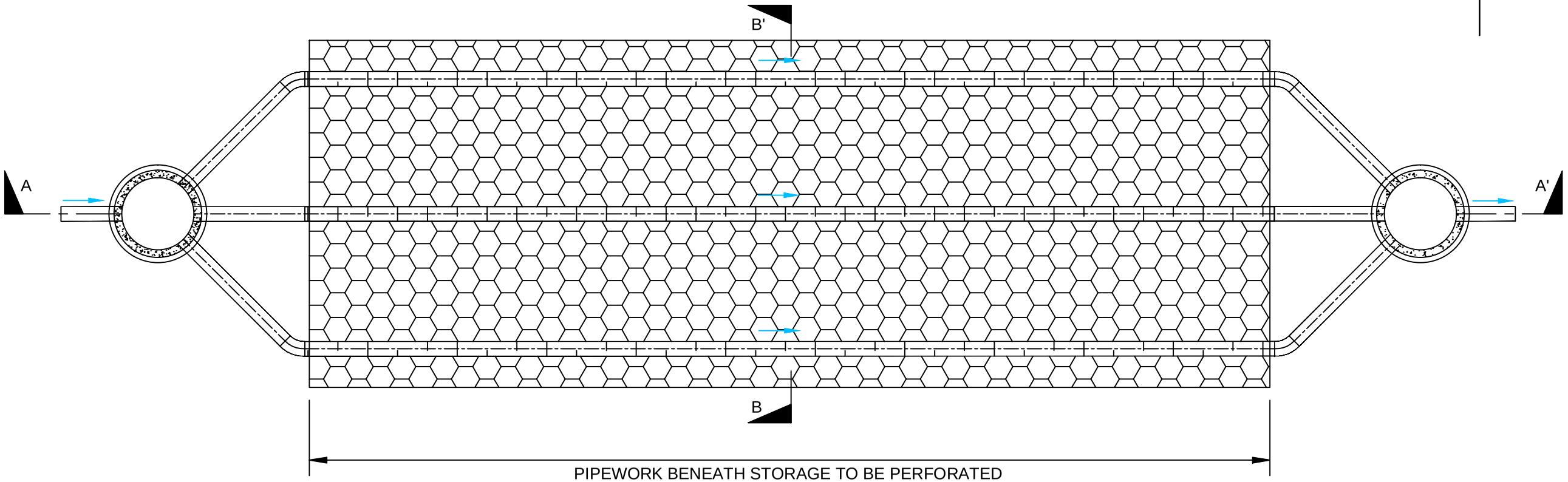
PROJECT: TYPICAL SUDS DETAIL

TITLE: PERVIOUS PAVEMENTS

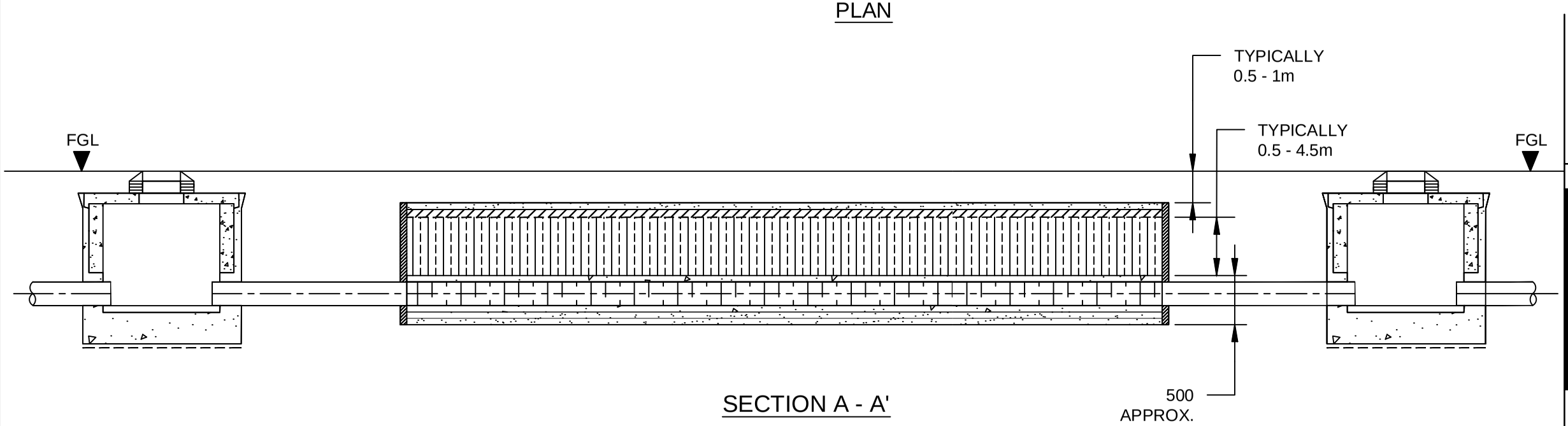
DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	105	A

DO NOT SCALE

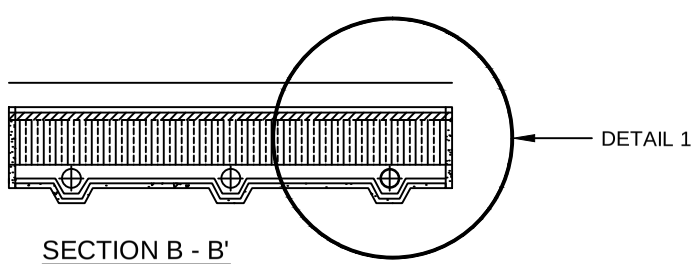


PLAN

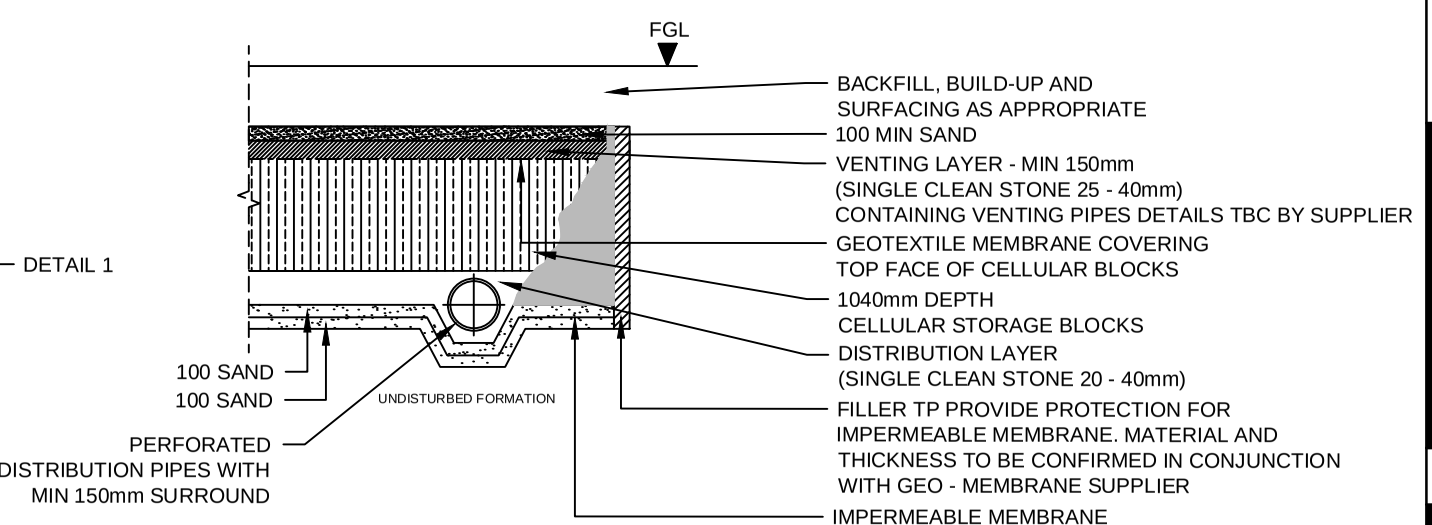


SECTION A - A'

ALL DIMENSIONS AND DEPTHS DEPENDENT ON REQUIRED VOLUME AND LOCAL GROUND CONDITIONS



SECTION B - B'



DETAIL 1

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

PROJECT: TYPICAL SUDS DETAIL

TITLE: CELLULAR STORAGE

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	113	A

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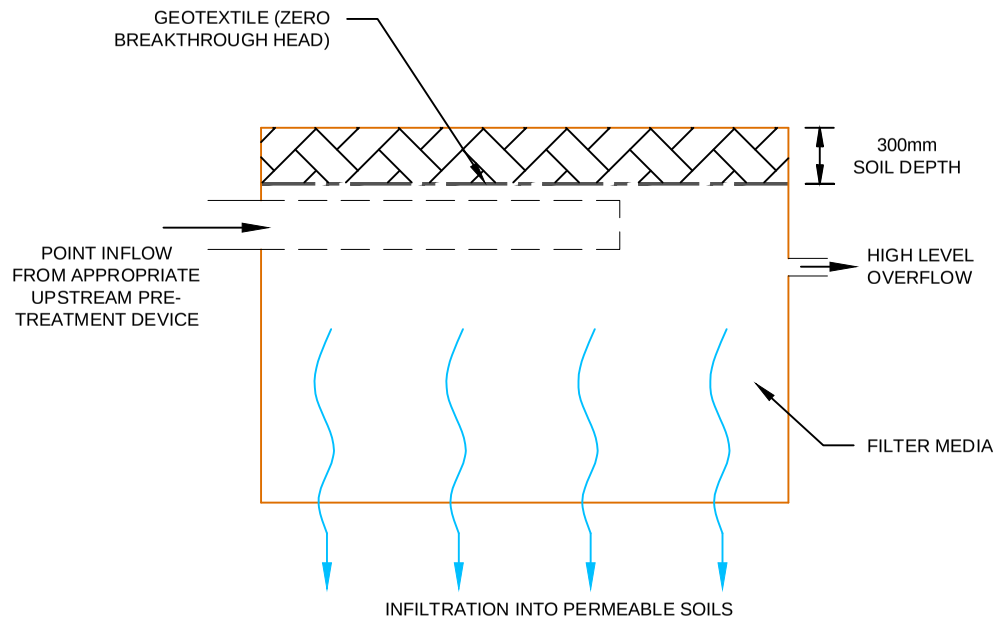
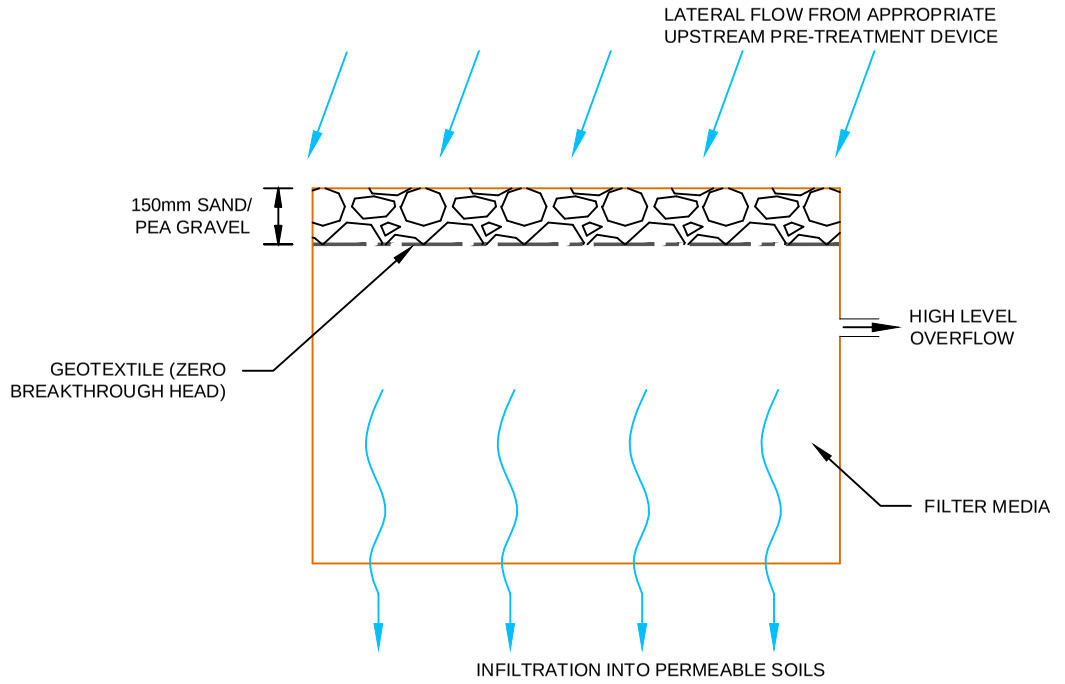
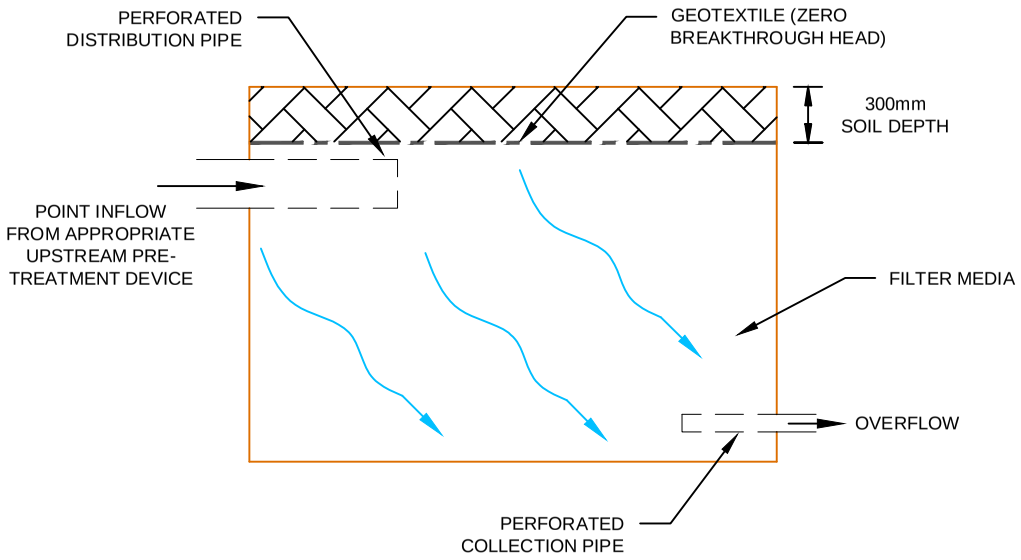
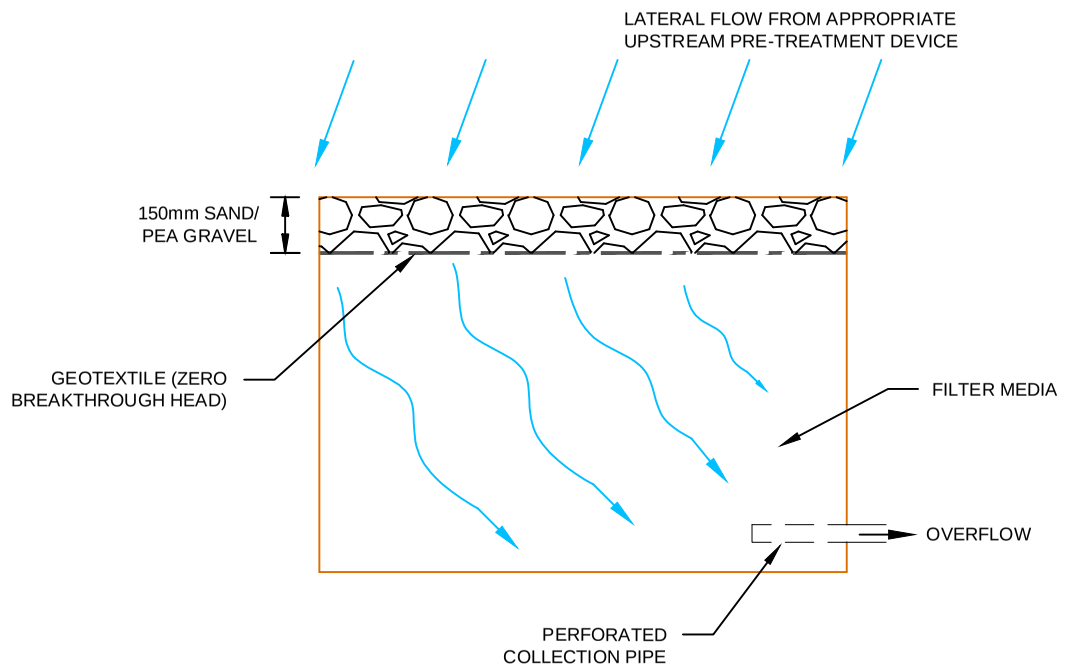




INFILTRATION TRENCH SCHEMATICS





FILTER TRENCH SCHEMATICS

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

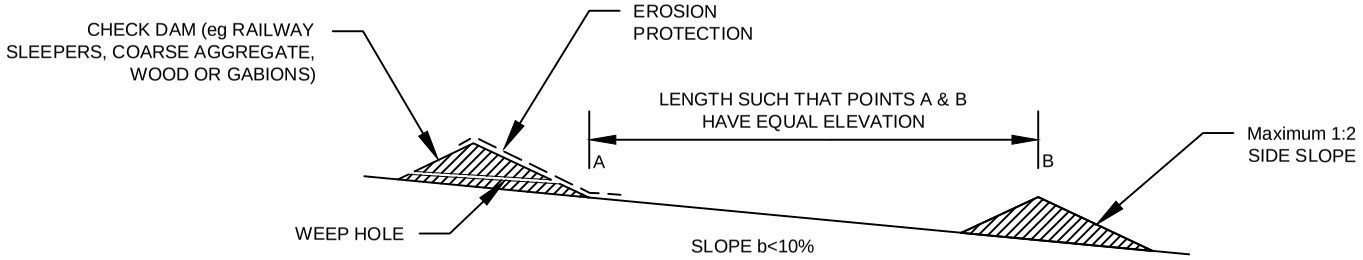
PROJECT: TYPICAL SUDS DETAIL

TITLE: TRENCHES

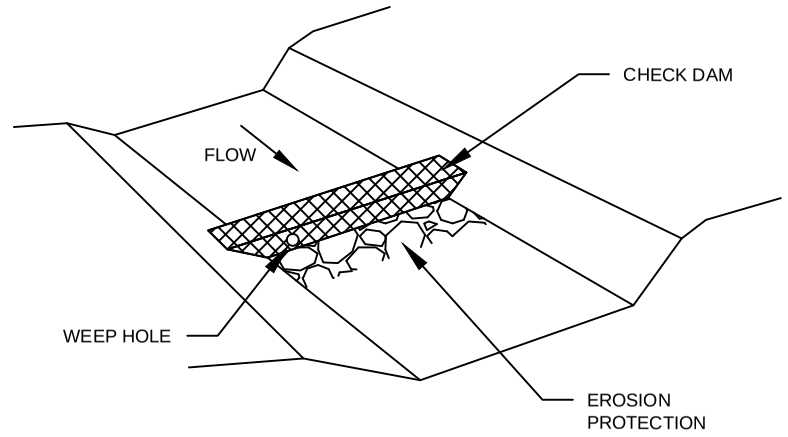
DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	105	A

DO NOT SCALE

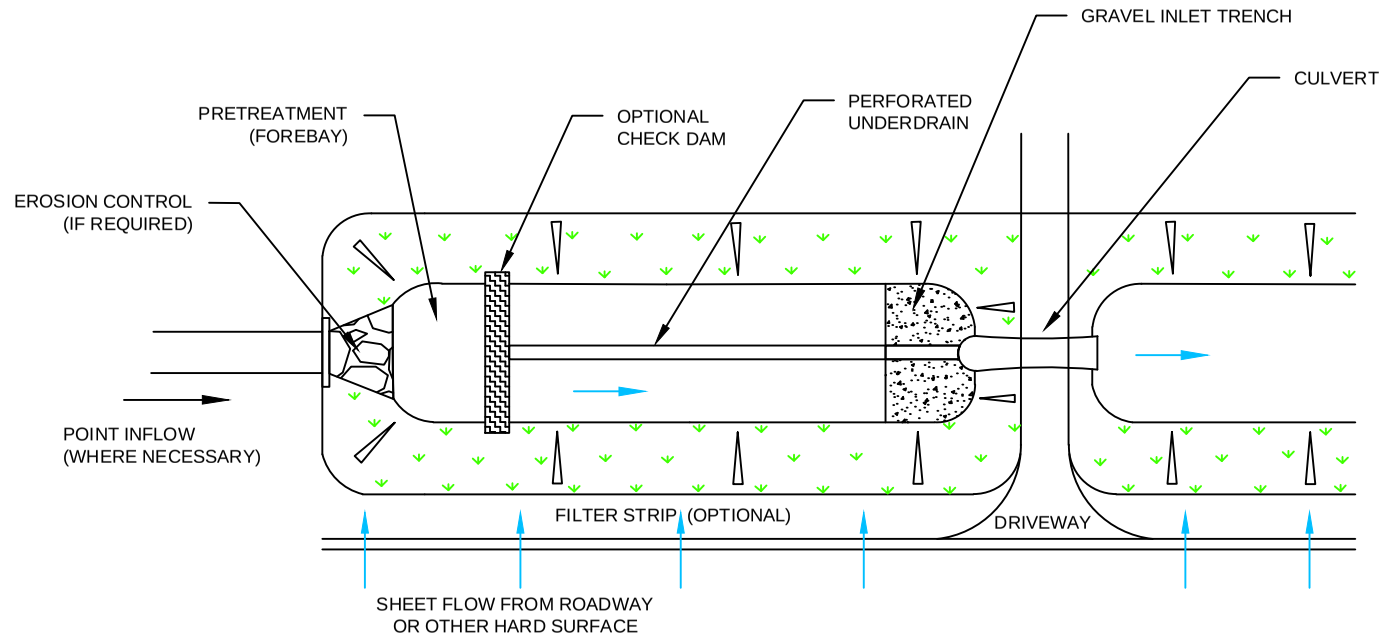


ELEVATION



SCHEMATIC

CHECK DAM



ENHANCED DRY SWALE

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

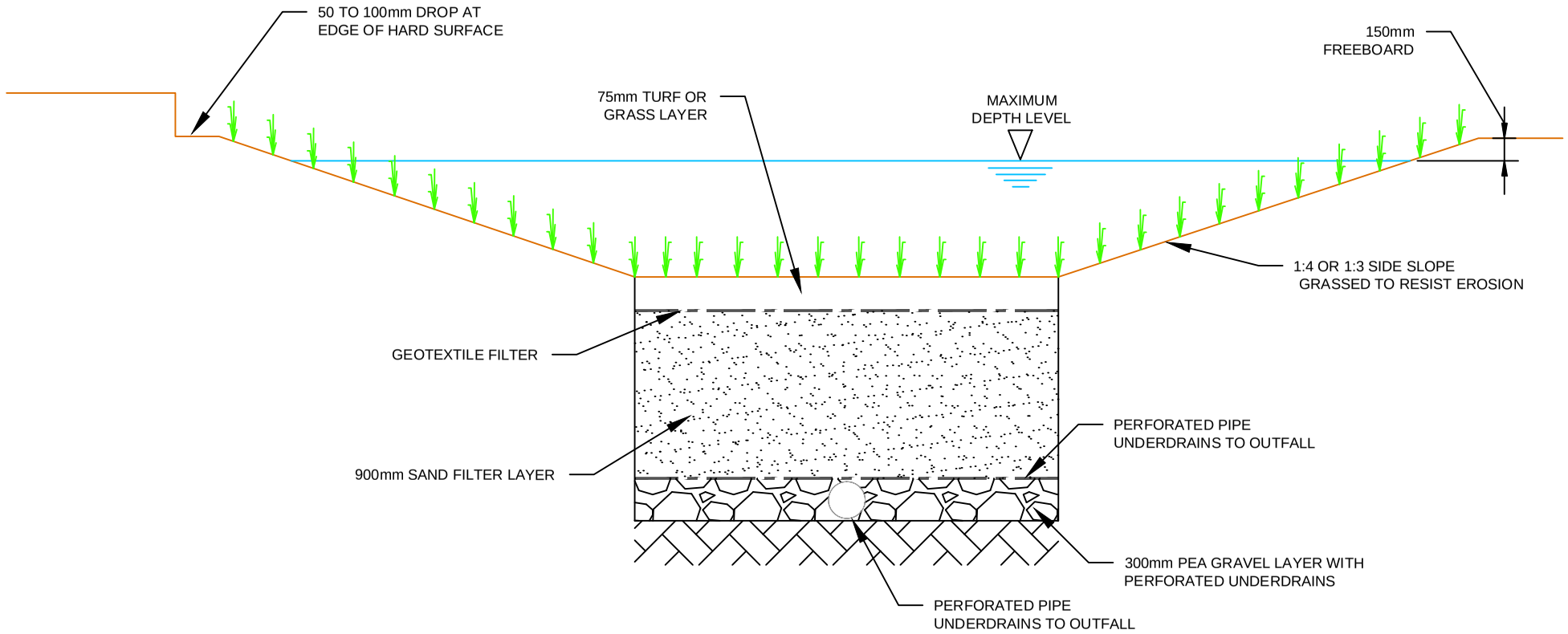
PROJECT: TYPICAL SUDS DETAIL

TITLE: SWALES (2 of 2)

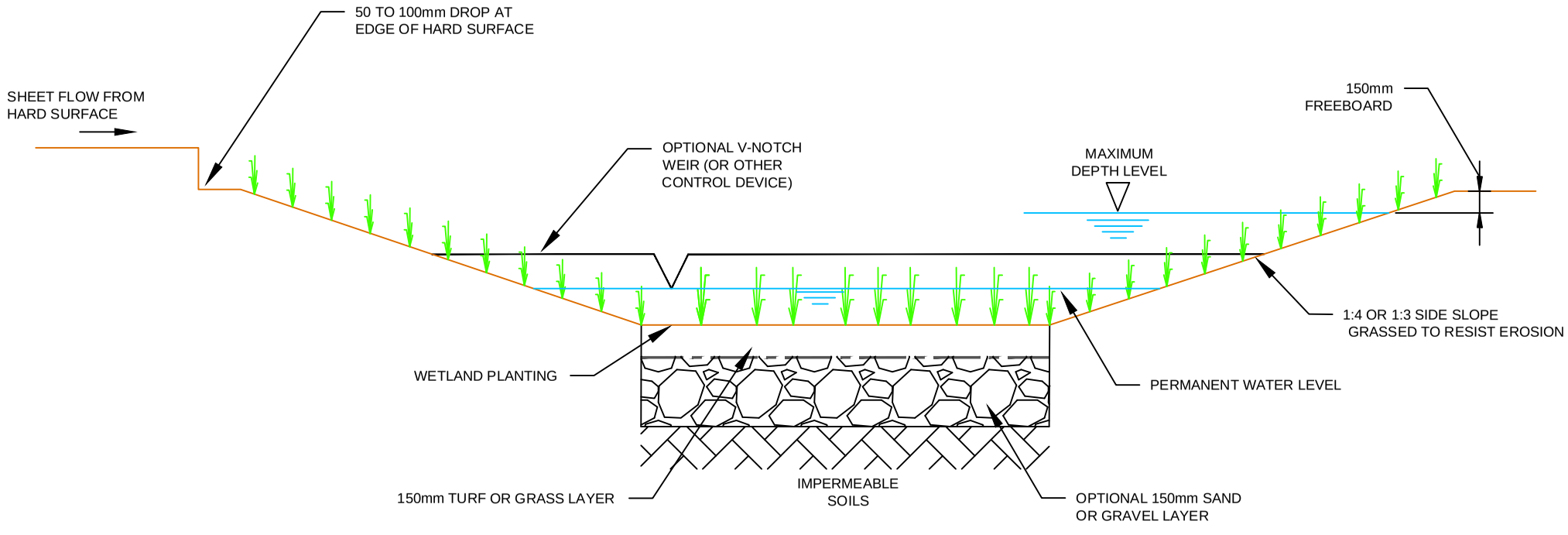
DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	104	A

DO NOT SCALE



DRY SWALE



WET SWALE

REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY

BETTS ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

PROJECT: TYPICAL SUDS DETAIL

TITLE: SWALES (1 of 2)

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
SEP 2014	@ A3	CP	RDN

PROJECT No:	DRAWING No:	REV:
BETTS	103	A

APPENDIX N: NOTES OF LIMITATIONS

The data essentially comprised a study of available documented information from various sources together with discussions with relevant authorities and other interested parties. There may also be circumstances at the site that are not documented. The information reviewed is not exhaustive and has been accepted in good faith as providing representative and true data pertaining to site conditions. If additional information becomes available which might impact our l conclusions, we request the opportunity to review the information, reassess the potential concerns and modify our opinion if warranted.

It should be noted that any risks identified in this report are perceived risks based on the available information.

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This document has been prepared for the titled project only and should any third party wish to use or rely upon the contents of the report, written approval from Betts Hydro Ltd must be sought.

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