

Drainage Strategy Statement		
Project Name and Number:	Cherry Tree Nursery, Eastergate Lane, Walberton	D2428
Client:	Mr. A Baker	
Prepared by and Date:	Stuart Burnett	16/12/2025



Introduction	
BP Civils has been instructed by Mr. A Baker to prepare a drainage strategy statement to accompany a planning application for a single dwelling development at Cherry Tree Nursery, Eastergate Lane, Walberton.	
Site Information	
Site Address:	Cherry Tree Nursery, Eastergate Lane, Walberton BN18 0BA
National Grid Reference:	SU95776 06178
Eastings / Northings:	495776 / 106178
Site Area:	0.10Ha
Local Authority:	Arun District Council
Lead Local Flood Authority:	West Sussex County Council
Sewerage Authority:	Southern Water
Topography	
Existing Site Use:	The site is currently occupied by a single static caravan/mobile home, associated paving and soft landscaping.
Site Levels:	A site topographic survey has been undertaken by Encompass Surveys, dated November 2025. Site levels are identified in the range of 12.62m AOD and 13.21m AOD. The topographic survey is contained within Appendix A. Drawing PL200 (Topographic Survey with Contours) has been prepared to demonstrate the trends in topography at the site.
Ground Conditions	
Bedrock Geology:	The BGS 'Geology of Britain Viewer' identifies a 'London Clay Formation – Clay, silt and sand' bedrock.
Superficial Deposits:	The BGS 'Geology of Britain Viewer' identifies 'Head – Gravel, sand, silt and clay' superficial deposits.
Bedrock Aquifer:	The site is located within an 'Unproductive' bedrock aquifer.
Superficial Drift Aquifer:	The site is located within a 'Secondary A' superficial drift aquifer.
Groundwater Vulnerability:	The site is located within a 'Low' groundwater vulnerability zone, with a 'Soluble Rock Risk' identified.
Drinking Water Protected Areas, Drinking Water Safeguard Zones and Source Protection Zones:	The site is not located within any drinking water protected areas, drinking water safeguard zones or source protection zones.
Extracts from the BGS Geology of Britain Viewer are contained within Appendix B . Extracts from MAGIC are contained within Appendix C .	
Intrusive Investigation:	Ground Management Ltd has undertaken intrusive investigation on behalf of the client, immediately to the north of the site. 2 No. boreholes were excavated to depths of 3.00m below ground level. Site works were undertaken on 9th November 2023.

	The nearest of the 2 No. boreholes to the site is BH2, located immediately to the north of the northern boundary of the site. BH1 is located further north. Made Ground was encountered at both BH1 and BH2 to depths of 150mm (BH1) and 250mm (BH2) below ground level, underlain by CLAY/SILT up to 1.05m (BH1) and 1.30m (BH2) below ground level. Gravels of varying description were encountered to the completed depths of 3.00m below ground level in both locations. Ground Management Ltd's reporting is contained within Appendix D.
Ground Water Depth:	Groundwater was encountered during excavation of BH1 and BH2. Groundwater was recorded at 1.30m below ground level after 5 minutes and at 0.65m below ground level after 1 hour within BH1 and at 0.5m below ground level after 15 minutes and at 0.47m below ground level after 30 minutes within BH2. Groundwater monitoring was undertaken between 9th November 2023 and 11th January 2024. Groundwater peaked at 0.59m below ground level at BH1 and at 0.430m below ground level at BH2 during the monitoring period. Ground Management Ltd's reporting is contained within Appendix D.
Soil Infiltration Rate:	Infiltration testing has not been undertaken at the site in view of the shallow depths at which groundwater has been encountered.
Existing Drainage	
Existing Drainage Method:	The site is not currently served by any formal surface water drainage infrastructure and drains naturally.
Nearby Watercourses / Rivers:	Aun District Council mapping identifies a culverted ordinary watercourse along the southern edge of Eastergate Lane which flows in an easterly direction. This is understood to terminate at the open ditch adjacent to Japonica Nursery.
Public Sewers:	Public sewer records have been obtained from Southern Water. No public surface water sewers are identified on site, or within the wider vicinity of the site. Southern Water's records are contained within Appendix E.
Highway Drainage:	Eastergate Lane primarily drains 'over the edge' to the adjacent verges. A single gully is located adjacent to the gated entrance to Fairfield (adjacent property) which communicates with the culverted ordinary watercourse located along the southern edge of Eastergate Lane.
Greenfield Run-off Rate:	The following greenfield run-off rates have been established in relation to the site area of 1,000m² (0.1Ha) using HR Wallingford's Greenfield Run-off Rate Estimation Tool: Q_{BAR} – 0.3 l/s 1 Year – 0.2 l/s 2 Year – 0.2 l/s 10 Year – 0.4 l/s 30 Year – 0.6 l/s 100 Year – 0.9 l/s

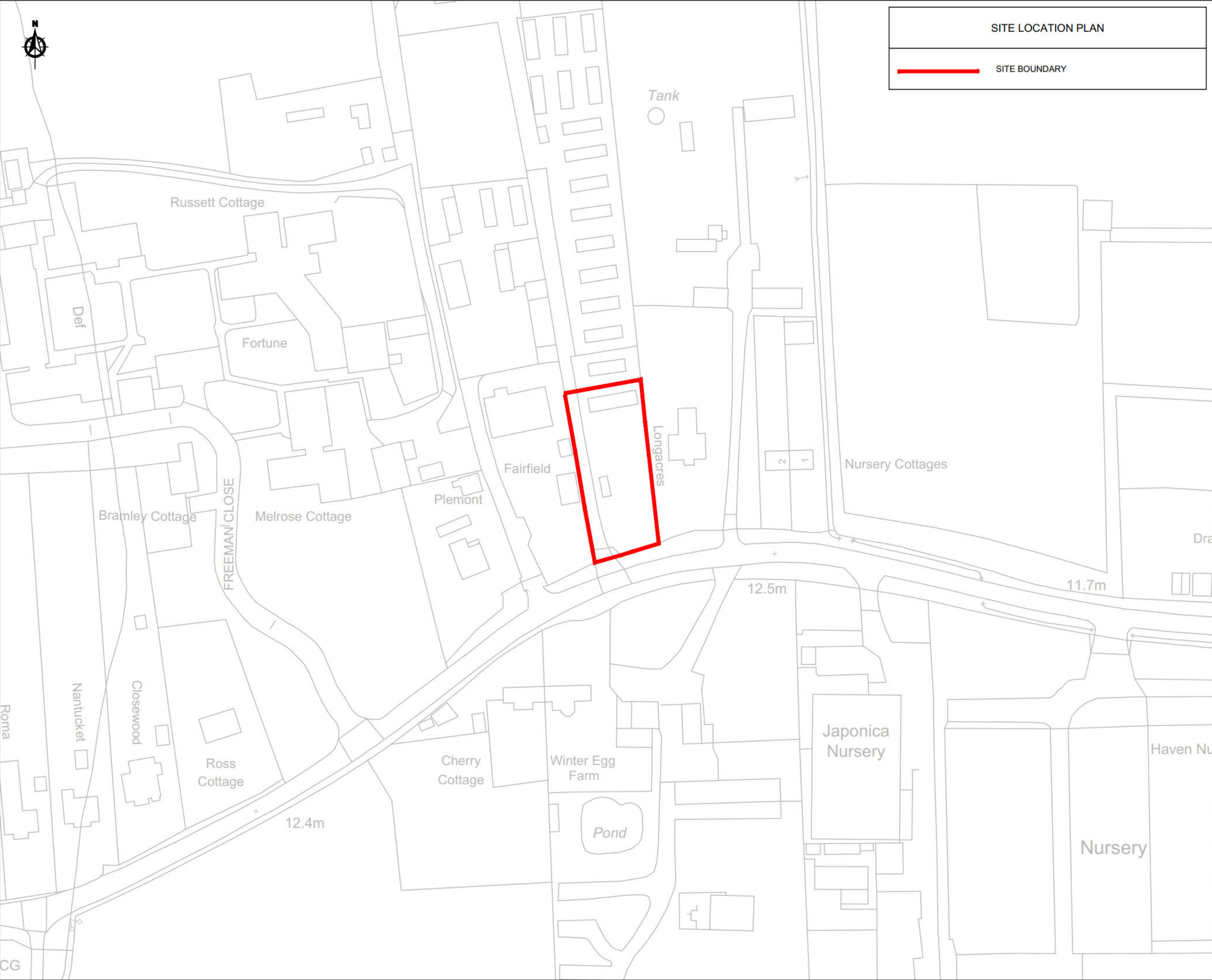
	The HR Wallingford output is contained within Appendix F .
Flood Risk	
Rivers & the Sea:	The site is located in Flood Zone 1, as identified by Flood Map for Planning. The site is identified as being located in Flood Zone 1 in the present day, and in respect of climate change (2070 to 2125).
Surface Water:	The site is identified as being at 'Very Low' risk of surface water flooding (Flood Map for Planning). Flood Map for Planning does not identify any areas of the site as being at risk of surface water flooding in the 1 in 30, 1 in 100 or 1 in 1000 scenarios.
Extracts from Flood Map for Planning are contained within Appendix G .	
Groundwater:	Groundwater has been recorded at depths of 0.43m below ground level within the immediate vicinity of the northern boundary of the site. Groundwater flood risk is considered to be 'Medium to High'.
Reservoirs:	The site is not identified as being at risk of flooding from such sources.
Development Proposals	
Type of Development:	1 No. dwelling. The current development proposal is contained within Appendix H.
National Standards for Sustainable Drainage Systems (SuDS)	
The National Standards for Sustainable Drainage Systems (June 2025) detail principles and standards for the management of surface water run-off for new infrastructure and development. There are two types of standards: - The hierarchy standard (Standard 1) gives criteria for prioritising the choice of final run-off destination - Fixed standards (Standards 2 to 7) state the minimum design criteria that all surface water drainage systems should satisfy and how they should be built, maintained and operated. Both types of standards have accompanying requirements which provide details on how to interpret, deliver and evaluate each standard. The seven standards are complementary, and the delivery of each standard should support delivery of the other standards. A surface water drainage system design that delivers multiple benefits will include a range of features and each of these should contribute to the delivery of several, if not all, of the standards. There may be specific circumstances or constraints, such as the type or size of a development that mean it is not possible to deliver one or more of the standards. In these circumstances the opportunity to meet the standard shall be maximised and justification be developed in consultation with the approving body, who may agree to a departure unless regulatory controls prohibit such a departure. The National Standards for Sustainable Drainage Systems can be viewed at https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds	
1. Run-off Destinations	In accordance with the guidance detailed within the National Standards, given the minor scale of the proposed development, there is not a demand for non-potable water for significant landscape irrigation, whilst rainwater harvesting is considered inappropriate. Rainwater butts are proposed to provide occupants

	with the opportunity to have a supply of available water for gardening activities and other householder activities. Infiltration is not viable given the shallow depths at which groundwater has been identified, following a period of groundwater monitoring (November 2023 to January 2024). Groundwater was identified at depths as shallow as 0.43m below ground level. The National Standards require the base of infiltration drainage features to be at least 1.00m clear of the maximum likely groundwater level. This requirement cannot be achieved. It is proposed that the development will drain to the culverted ordinary watercourse located south of Eastergate Lane.
2. Management of Everyday Run-off (Interception)	Permeable paving is proposed in respect of the proposed parking area to the rear of the property. The National Standards confirm that all permeable surfaces, whether lined or not, shall be assumed to comply provided there is no additional area drained to the permeable pavement. In respect of the proposed roof area, water butts are proposed to provide interception for the roof catchment of 95m².
3. Management of Extreme Rainfall and Flooding	The post-development impermeable area which is to be positively drained totals 125m², consisting of a roof catchment of 95m² and the proposed parking area of 30m². Greenfield run-off rates relative to this positively drained catchment are as follows (HR Wallingford Greenfield Run-off Estimation Tool): Q_{BAR} – 0.03 l/s 1 Year – 0.03 l/s 2 Year – 0.03 l/s 10 Year – 0.1 l/s 30 Year – 0.1 l/s 100 Year – 0.1 l/s The HR Wallingford output is contained within Appendix I. Flows discharging off-site to the culverted ordinary watercourse will be restricted to a rate of 0.5 l/s in acknowledgement of Arun District Council 'minimum discharge rates' commentary, published online. An allowance for the potential impacts of climate change has been provided in respect of the surface water drainage calculations prepared. In view of the 'Peak Rainfall Allowances Map' for the 3.3% annual exceedance rainfall event, an increase of 40% should be applied to peak rainfall in relation to the proposed development. For the 1% annual exceedance rainfall event, an increase of 45% should be applied to peak rainfall in relation to the proposed development. Post-development run-off calculations are contained within Appendix J.
4. Water Quality	In accordance with the SuDS Manual (CIRIA C753) regarding methods for managing pollution risks, the risk posed by surface water run-off to the receiving environment depends on the pollution

	hazard at the site (the source), SuDS treatment techniques (the pathway), and the sensitivity of the environment (the receptor). The simple index approach considers whether SuDS techniques are appropriate for the site. This states that for SuDS components to deliver adequate treatment, the total pollution mitigation index for each contaminant type should equal or exceed the pollution hazard index. The SuDS Manual outlines three categories of pollution hazard identification, which vary depending on proposed land use, which are as follows: • Total Suspended Solids (TSS) • Metals (M) • Hydrocarbons (H) In accordance with C753 Table 26.2, the proposed land uses at the site are categorised as follows: • Residential roofs – Very Low/TSS=0.2/M=0.2/H=0.05 • Individual property driveways - Low/TSS=0.5/M=0.4/H=0.4 In accordance with C753 Table 26.3, the values of SuDS Mitigation indices are provided for the following measures: Permeable Paving – TSS=0.7/M=0.6/H=0.7 As the pollution hazard index does not/will not exceed the pollution mitigation index for any contaminant type, the proposed SuDS methods will provide sufficient treatment for the proposed development.
5. Amenity	Given the minor scale of the proposed development, there is little opportunity for the proposed surface water drainage system to offer amenity benefits.
6. Biodiversity	Given the minor scale of the proposed development, there is little opportunity for the proposed surface water drainage system to offer biodiversity benefits.
7. Design of Drainage for Construction, Operation, Maintenance, Decommissioning and Structural Integrity:	Upon completion of the proposed development, maintenance activities will be the responsibility of the owner/occupier. The proposed surface water drainage system will require little maintenance, however, a full drainage maintenance schedule will be provided at detailed design/discharge of conditions stage.
Proposed Surface Water Drainage Strategy	
Proposed Surface Water Drainage Strategy:	Further to the above sections detailing the National Standards for SuDS, a summary of the proposed surface water drainage strategy is provided as follows: • Post-development run-off will drain to the culverted ordinary watercourse located to the south of Eastergate Lane. Connection is subject a OWC application, and approval from WSCC LLFA. • Run-off will be restricted to a maximum of 0.5 l/s.

	• Attenuated storage will be provided on site in the form of tanked permeable paving in addition to the storage volume provided by the below ground pipework arrangement. • The surface water drainage system has been designed to accommodate a 1 in 100-year storm event, with allowances for both climate change (45%) and urban creep (10%). The proposed drainage arrangement is demonstrated on drawing PL400 – Proposed Drainage Strategy.
Proposed Foul Drainage Strategy	
Proposed Foul Water Drainage Strategy:	It is proposed that the new single dwelling will drain to Southern Water's public foul water sewer, located beneath Eastergate Lane. Peak foul flows are estimated to be 0.046 l/s, based on Design & Construction Guidance (DCG). Connection to the public sewer network is subject to S106 approval from Southern Water.

DRAWINGS



SITE LOCATION PLAN

SITE BOUNDARY

NOTES

A3

1. This drawing is to be read in conjunction with all other BP Civils drawings, and with all relevant Architect's and Engineer's drawings and specification. Any discrepancies found are to be reported immediately to the Engineer.

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3. Do not scale, work to figured dimensions only. All dimensions are in millimeters unless noted otherwise and all levels are in metres from the topographic survey datum.

4. Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not certain. The main contractor is responsible for checking all information on site prior to work commencing and taking due care whilst undertaking the works.

5. All dimensions to be checked on site. All details and dimensions relating to sub-contractors work must be checked and agreed between the sub-contractor or supplier and the general contractor.

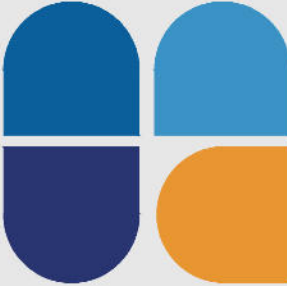
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Rev.DateAmendments



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Drawing Status

PLANNING
NOT FOR CONSTRUCTION

Client

Mr. A Baker

Project

Cherry Tree Nursery,
Eastergate Lane, Walberton

Drawing Title

Site Location Plan

Scale at A3

Date

Dec. '25

Drawn By

SPB

Checked By

MJA

Project No.

D2428

Drawing Code

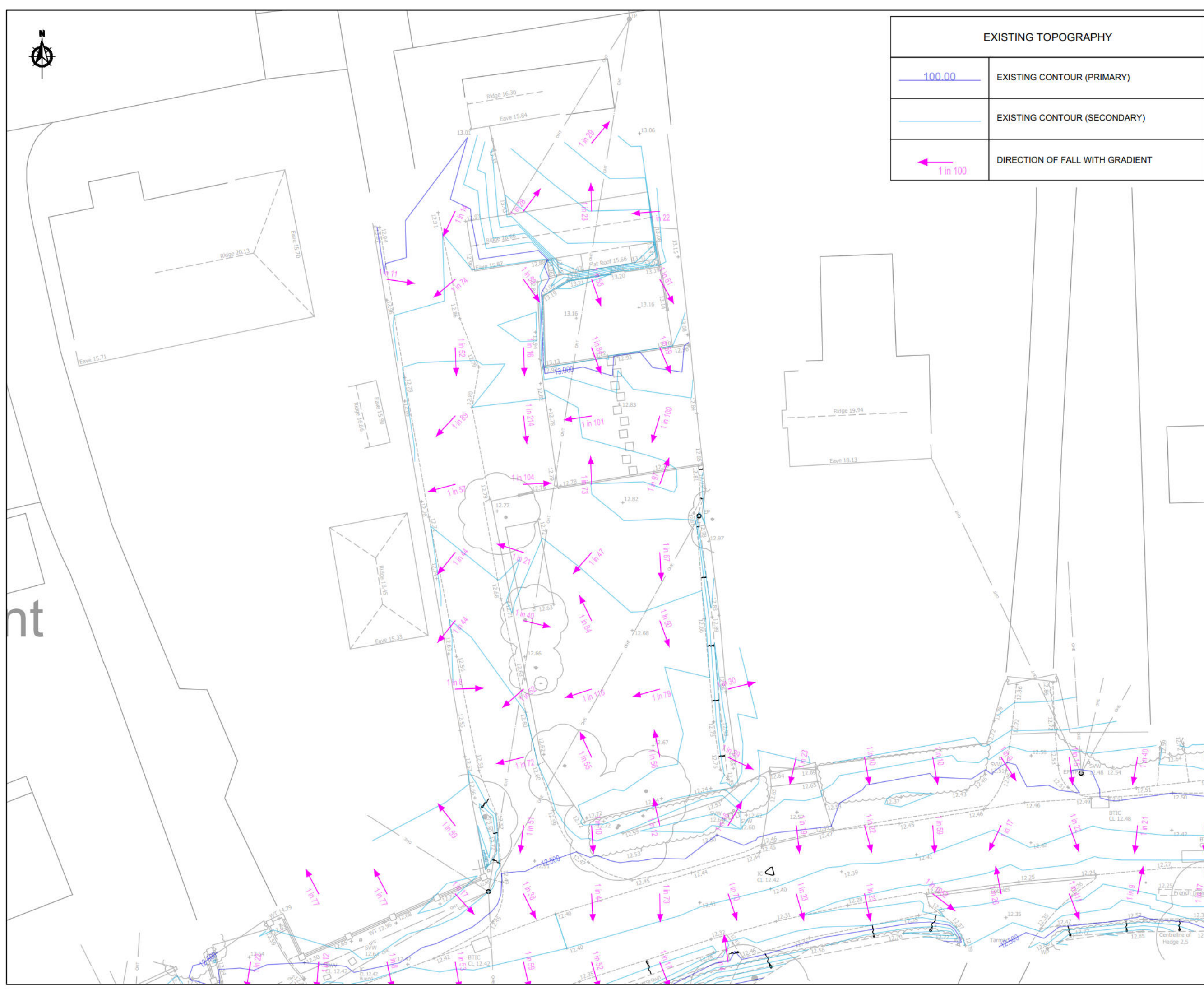
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Drawing No.

PL100

Rev.

P1



EXISTING TOPOGRAPHY	
	EXISTING CONTOUR (PRIMARY)
	EXISTING CONTOUR (SECONDARY)
	DIRECTION OF FALL WITH GRADIENT

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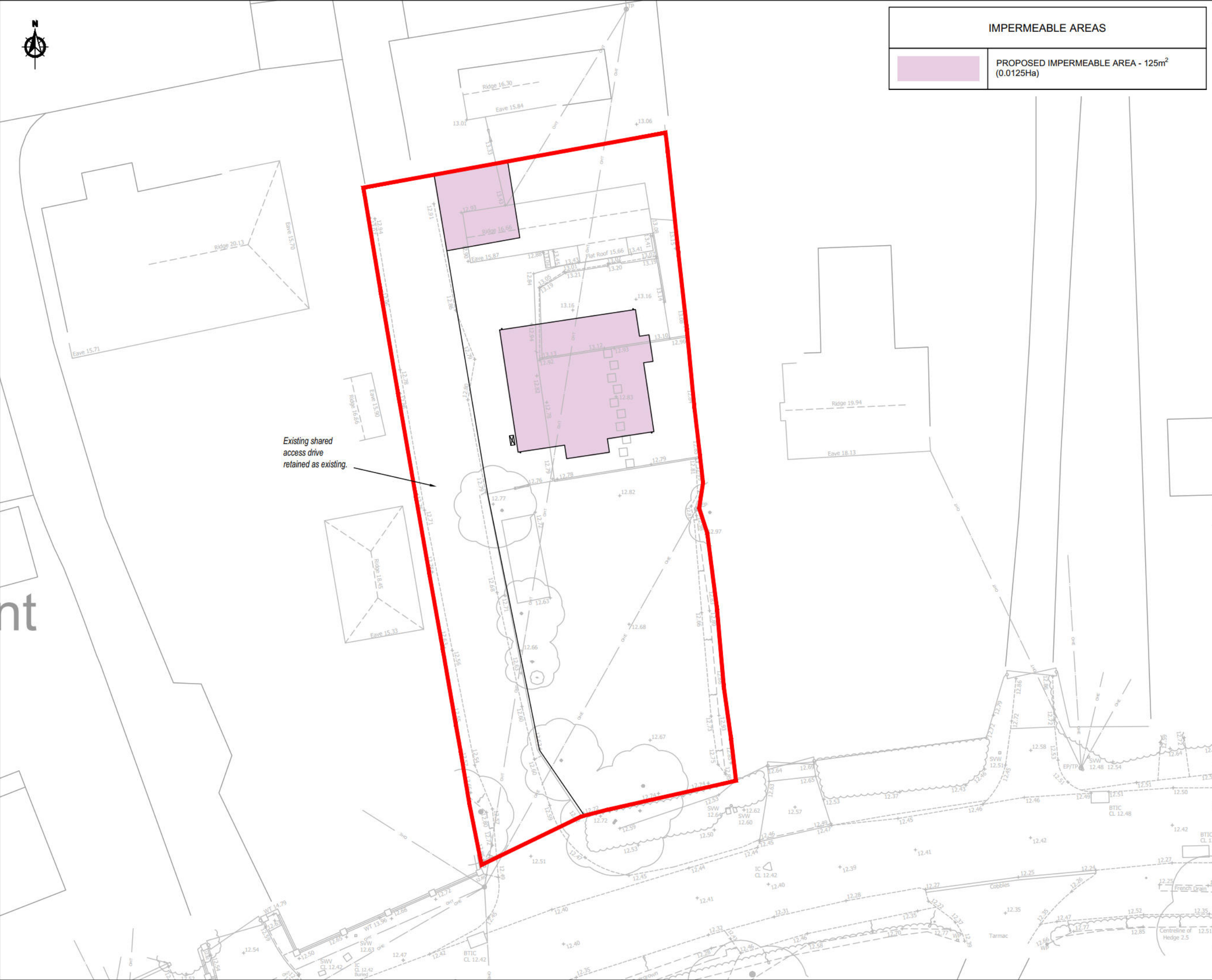
Project

Cherry Tree Nursery,
Eastergate Lane, Walberton

Drawing Title

Topographic Survey with Contours

Scale at A3 1:250	Date Dec. '25	Drawn By SPB	Checked By MJA	Project No. D2428
Drawing Code 000-BPC-WD-ZZ-D-C			Drawing No. PL200	Rev. P1



IMPERMEABLE AREAS

PROPOSED IMPERMEABLE AREA - 125m²
(0.0125Ha)

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Cherry Tree Nursery,
Eastergate Lane, Walberton

Drawing Title

Impermeable Areas

Scale at A3

Date

Drawn By

Checked By

Project No.

1:250

Dec. '25

SPB

MJA

D2428

Drawing Code

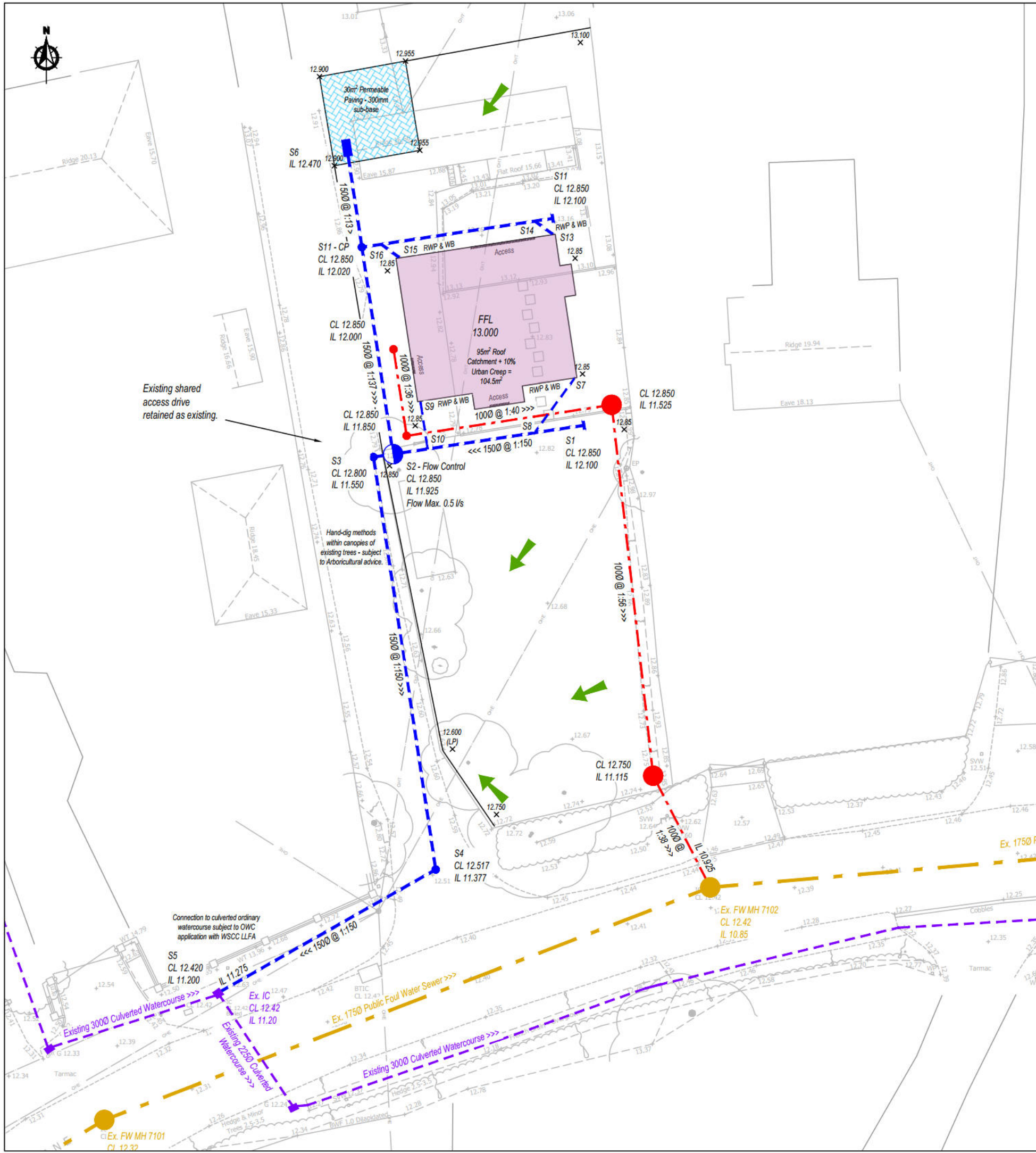
Drawing No.

Rev.

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PL300

P1



DRAINAGE LEGEND	
SURFACE WATER DRAINAGE	
CL### IL###	EXISTING CULVERTED WATERCOURSE ACCESS
---	EXISTING CULVERTED WATERCOURSE
Ø 4.59m 1:	SURFACE WATER DRAIN/SEWER
CL### IL###	450Ø INSPECTION CHAMBER (CP DENOTES CATCHPIT)
RE XXX	RODDING EYE
---	DIFFUSER UNIT
	FLOW CONTROL CHAMBER
	PERMEABLE SURFACING (TANKED WITH CONNECTION TO SURFACE WATER DRAINAGE SYSTEM)
FOUL WATER DRAINAGE	
CL### IL###	PRECAST CONCRETE RING MANHOLE
CL### IL###	INSPECTION CHAMBER (MAX 1.2m DEPTH TO INVERT)
Ø 4.59m 1:	PROPOSED FOUL DRAIN/SEWER
CL### IL###	EXISTING FOUL WATER MANHOLE
---	EXISTING PUBLIC FOUL SEWER
MISC	
+ 100.00	EXISTING SPOT LEVEL
100.00 X	PROPOSED SPOT LEVEL
RWP & WB	PROPOSED RAINWATER PIPE AND WATER BUTT
Access	PROPOSED BUILDING ACCESS
➔	PROPOSED EXCEEDANCE FLOW ROUTE

NOTES

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RESIDUAL HAZARDS

In addition to the hazards/risks normally associated with the type of work detailed on this drawing, note the following:

1. Buried services. Contractor to refer to record drawings and use CAT to locate existing services and undertake necessary precautions and investigation prior to excavating.

2. Working in live traffic. Contractor to ensure traffic management is designed, erected and maintained to protect the workforce and the public. Contractor to undertake necessary precautions and ensure suitable traffic management is in place prior to commencement.

3. Working in live drains/sewers. Contractor to ensure operatives are familiar and competent with the dangers of working in live sewers.

4. Working within the vicinity of existing trees. Advice and working methods in accordance with Arboricultural expert.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved risk assessment and method statement

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Cherry Tree Nursery,
Eastergate Lane, Walberton

Drawing Title

Proposed Drainage Strategy

Scale at A31:250

DateDec. '25

Drawn BySPB

Checked ByMJA

Project No.D2428

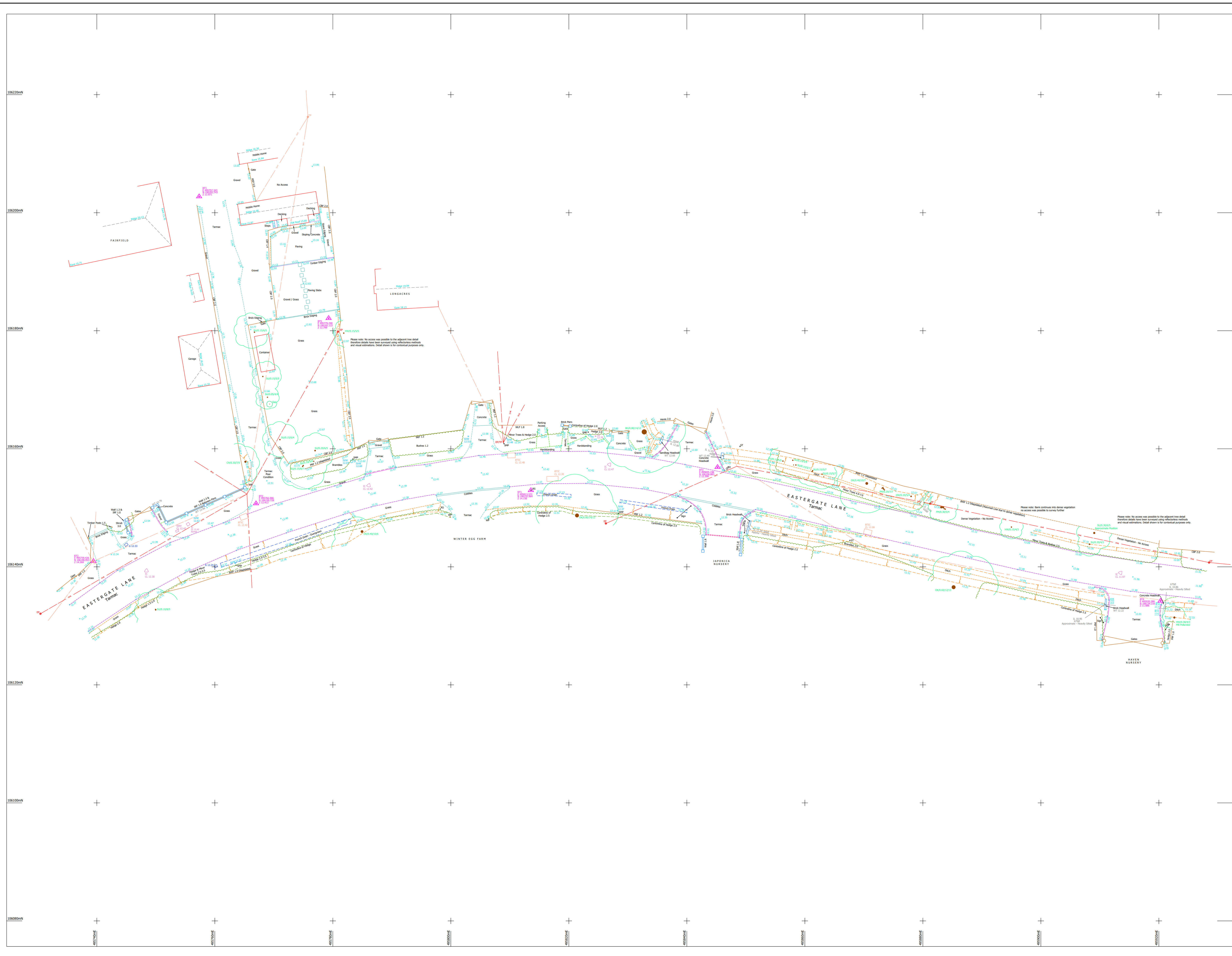
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Drawing No.PL400

Rev.P1

APPENDICES

APPENDIX A



KEY			
AC	Air Conditioning	MW	Monitoring Well
AH	Air Valve	OHE	Overhead Electric
BH	Borehole	OHTE	Overhead Telecoms
B	Bollard	P	Post
BS	Bus Stop	RP	Rending Post
BTIC	Telematics IC	RO	Rodding Eye
BTNT/	Cable Telephony	RPP	Road Name Plate
EL	Electric Box	RSP	Road Sign
EP	Electricity Pole	RWS	Rain Water Pipe
ET	Transformer Pole	S	Service Manter Post
ER	Earth Road	ST	Stop / Strut
EH	Fire Hydrant	SV	Stop Valve
FF	Flag Pole	SW	Stop Valve Gas
G	Gully	SWV	Soil Vent Pipe
GF	Guide Post	SWW	Stop Valve Water
IC	Inspect Cover	T	Telematics Box
IC FW	IC Foul Water	TL	Traffic Light
IC SW	IC Surface Water	TP	Telegraph Pole
KD	Kerbside Drain	UL	Up Lift
L	Lamp Post	WM	Water Meter
LT	Light	WO	Wash Out

TREES (Species/Trunk Diameter/Max. Spread Diameter/Height)			
AB	Ash	OK	Oak
BS	Alder	PN	Pine
CD	Beech	PA	Palm
CD	Cedar	PL	Plane
CH	Cherry	PO	Poplar
CU	Cypress	RW	Redwood
EU	Eucalyptus	RO	Rowan
FR	Fruit (Generic)	SB	Silver Birch
HS	Horse Chestnut	SC	Sweet Chestnut
HW	Hawthorn	SU	Species Unidentified
HY	Holly	SY	Sycamore
HZ	Hazel	WN	Willow
LM	Lime	YW	Yew
MG	Magnolia	MB	Multi Boie
MP	Maple		
MP	Monkey Puzzle		

FENCES		LEVELS	
BWF	Barbed Wire Fence	CL	Cover Level
CBF	Close Board Fence	DF	Damp-proof Course
CBR	Crash Barrier	FL	Floor Level
CLF	Chain Link Fence	IL	Invert Level
CPF	Concrete Post and Rail Fence	OH	Overhead Cable Level
CPF	Chestnut Paling Fence	OL	Outfall Level
CHF	Chicken Wire Fence	SL	Soffit Level
HDRL	Handrail	TH	Threshold Level
IRF	Iron Railling Fence	U/S	Underside Level
MF	Miscellaneous Fence	WL	Water Level
PCF	Post and Chain Fence	WT	Wall Top
PKF	Picket Fence		
PRF	Post and Rail Fence	SURFACES	
PLF	Palisade Fence	CC	Concrete
PWF	Post and Wire Fence	BP	Block Paving
SCF	Security Fence	GR	Gravel
SPF	Steel Post and Rail Fence	G	Ground
SL	Trellis Fence	PS	Paving Slabs
WL	Wood Lapped Fence	RW	Retaining Wall
WF	Wire Fence	SL	Slab
WPF	Wood Post and Rail Fence	Tac	Tactile Paving

SURVEY STATION INFORMATION				
Name	Easting	Northing	Height	Type
BT1	495757.343	106202.743	12.071	NAIL
BT2	495766.886	106160.728	12.411	NAIL
BT3	495946.198	106156.883	12.390	NAIL
BT4	495920.280	106134.216	11.886	NAIL
BT5	495779.290	106182.122	12.799	NAIL
RT1	495813.572	106152.994	14.156	TARGET
RT2	495739.426	106140.953	14.269	TARGET

NOTES

Survey Grid
The survey grid has been related to OS National Grid (OSTN15) using an approximate central site position derived from GNSS and true origin OS Grid, with the remainder of the survey to flat earth grid scale factor 1.

Levels Datum
The levels datum has been derived from GNSS and true origin OS Datum (OSGM15) on an established control point with the remainder of the survey related to this set datum.

Site Drainage
Inspection covers have been lifted when allowed for within the quotation; all invert information has been obtained through visual inspection only with no entry into the manholes. Because of this complete accuracy cannot be guaranteed. Where drainage information is of critical importance we encourage the use of a drainage specialist. Encompass Geospatial Utilities department is able to provide all advanced underground services needs, including access within confined spaces.

Trees
Every effort has been made to identify and detail all trees within the requested specification. Tree detail is generalised/symbolic from visual inspection only. Where trees of critical importance are used, the user is advised to verify the tree type and detail.

Setting Out
All setting out should be referenced to the permanent control stations shown on this survey. Do not use GNSS/GPS operating on the OS Active Network without first carrying out a site calibration.

Survey Notes
Survey specification is linked to the original purpose of the survey commissioned at source and is to be used for this purpose only (Ref-CO16379).
Survey is accurate within limitations of site conditions at the time of survey. In areas difficult to survey due to restricted access, lines of sight or dense vegetation, critical dimensions and positions should be verified following suitable clearance.
Survey detail obtained and shown is relative to the plotting scale.

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Tel: (+44) 23 8069 2002
Email: info@encompassgeo.co.uk
Website: encompassgeospatial.co.uk

Drawing Title
T... ..

Topographical Survey

Project Reference
5516-G1 - Land at Chown, Tynes, Nuneaton

Client

BP Civils

Site Address _____

Land at Cherry Tree Nursery

Eastergate Lane, Walberton
Arundel, BN18 0BA

Scale	Issue Date
-------	------------

1:200 at A0 November 2025

Surveyor(s)	Drawn by	Checked by
BT	CC/IB	RME

BT	CG/3B	RMF
----	-------	-----

APPENDIX B



MAP LAYERS

☐ Superficial Geology

☒ Bedrock Geology

About this layer:

Bedrock geology is a term used for the main mass of rocks forming the Earth that are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.



Info



Opacity



Legend

☐ London Clay Formation - Clay, silt a...

☒ Lambeth Group - Clay, silt and sand

☐ Combined Geology

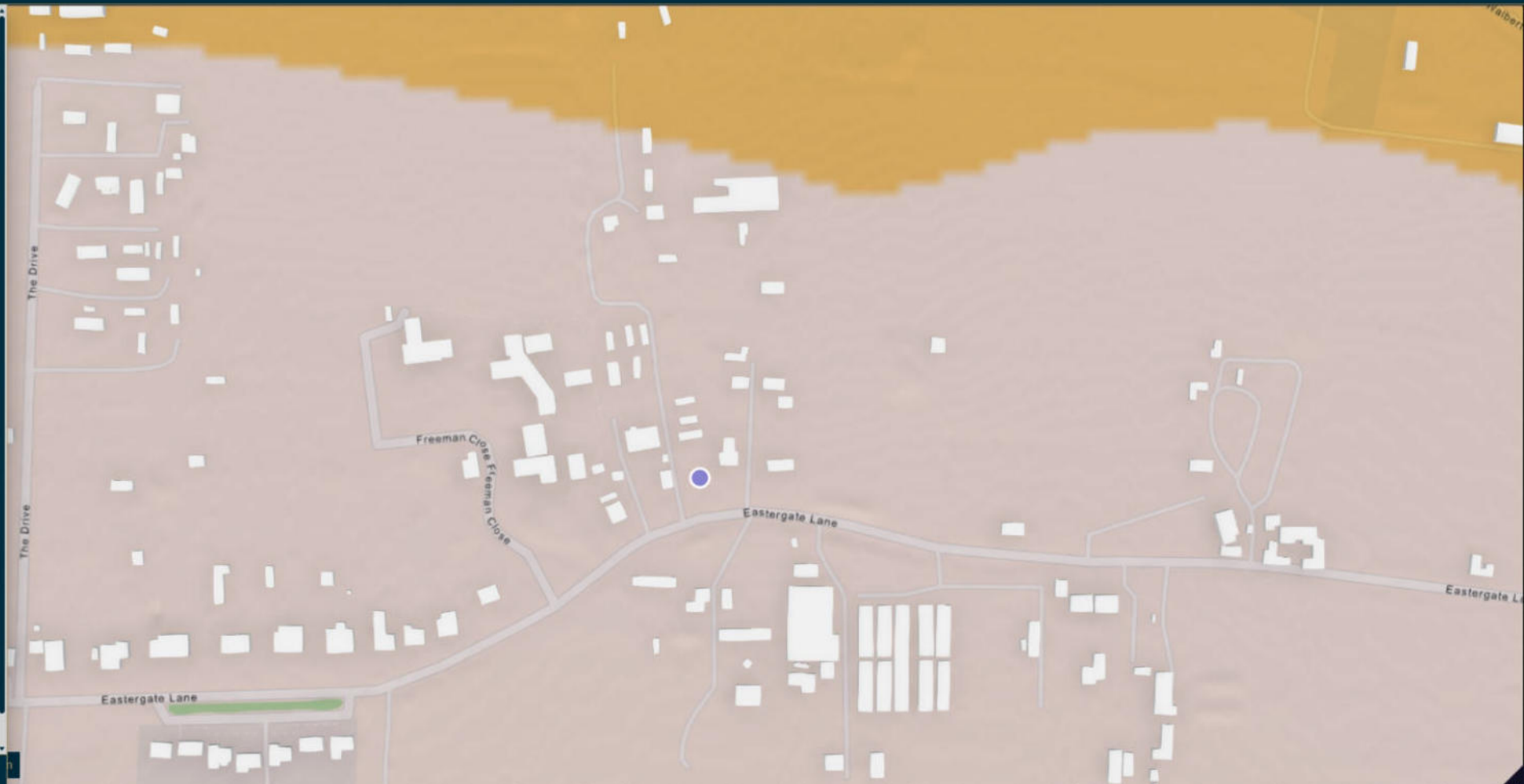
OPTIONS

Select Basemap

Settings

Contact BGS

Map data © OpenStreetMap contributors, Microsoft, Google, and Esri C...





MAP LAYERS



Superficial Geology



About this layer:

Superficial deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 2.6 million years from the present.



Info



Opacity



Legend

- Head - Gravel, sand, silt and clay
- Raised Beach Deposits, 1 - Sand an...
- River Terrace Deposits - Sand, silt an...



Bedrock Geology



Combined Geology



OPTIONS



Select Basemap



Settings



Contact BGS



APPENDIX C

Legend

Only layers selected and visible at this map scale will be shown

Magic

Designations

Land-Based Designations

Non-statutory

Drinking Water Protected Areas (Surface Water) (England)



Drinking Water Safeguard Zones (Surface Water) (England)



Drinking Water Safeguard Zones (Groundwater) (England)



Source Protection Zones merged (England)

Zone I - Inner Protection Zone

Zone I - Subsurface Activity

Zone II - Outer Protection Zone

Zone II - Subsurface Activity

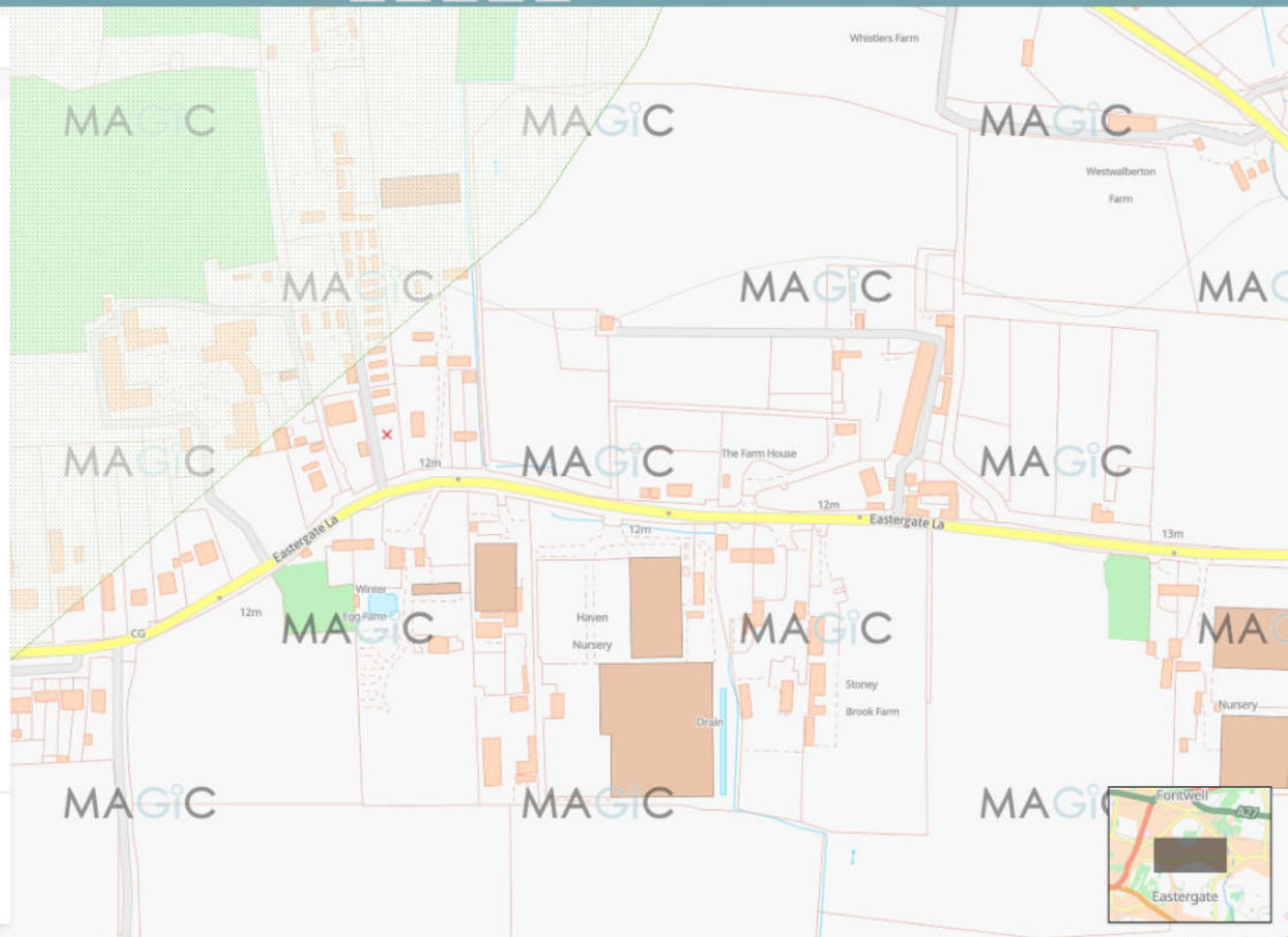
Zone III - Total Catchment

Zone III - Subsurface Activity

Zone of Special Interest

Watermark

Watermark Layer



Legend



Only layers selected and visible at this map scale will be shown

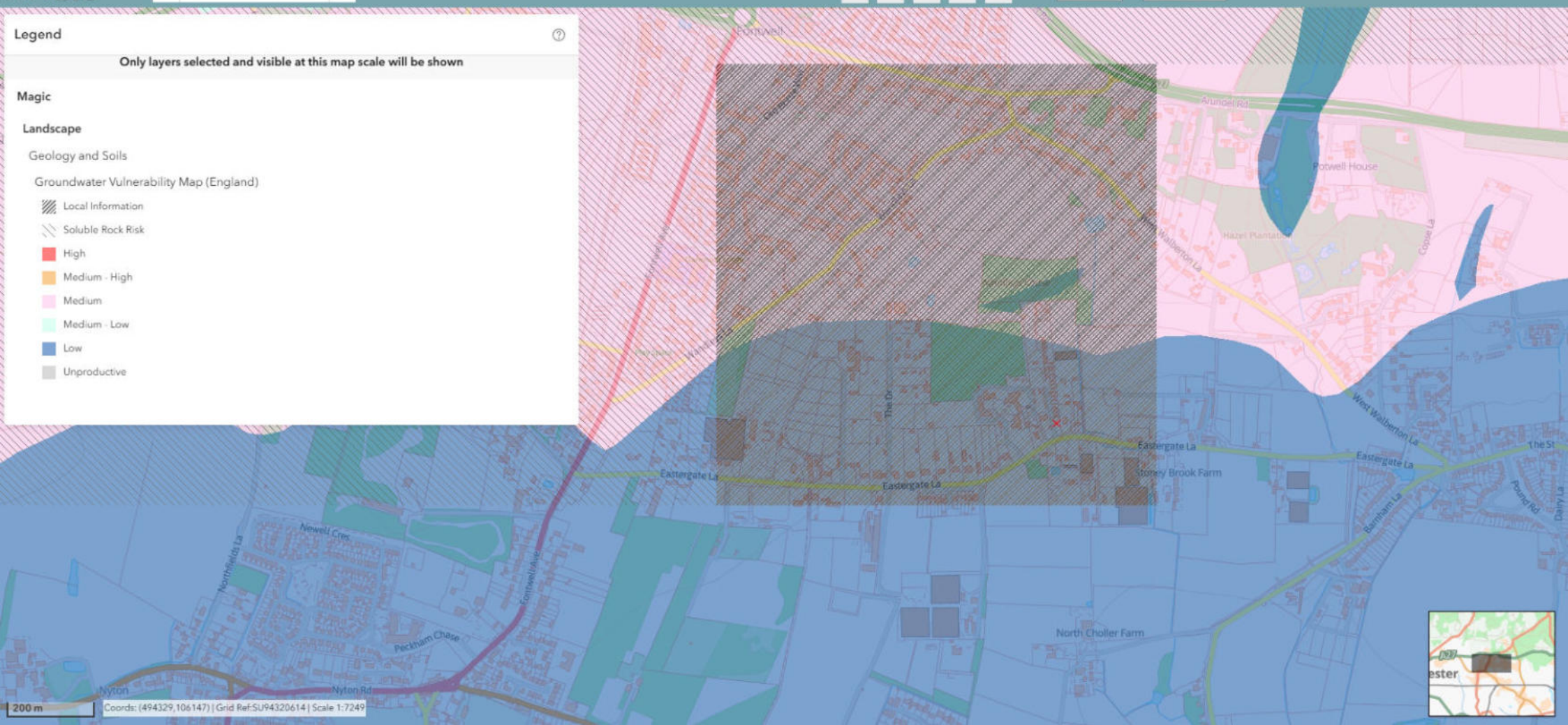
Magic

Landscape

Geology and Soils

Groundwater Vulnerability Map (England)

- Local Information
- Soluble Rock Risk
- High
- Medium - High
- Medium
- Medium - Low
- Low
- Unproductive



Legend

Only layers selected and visible at this map scale will be shown

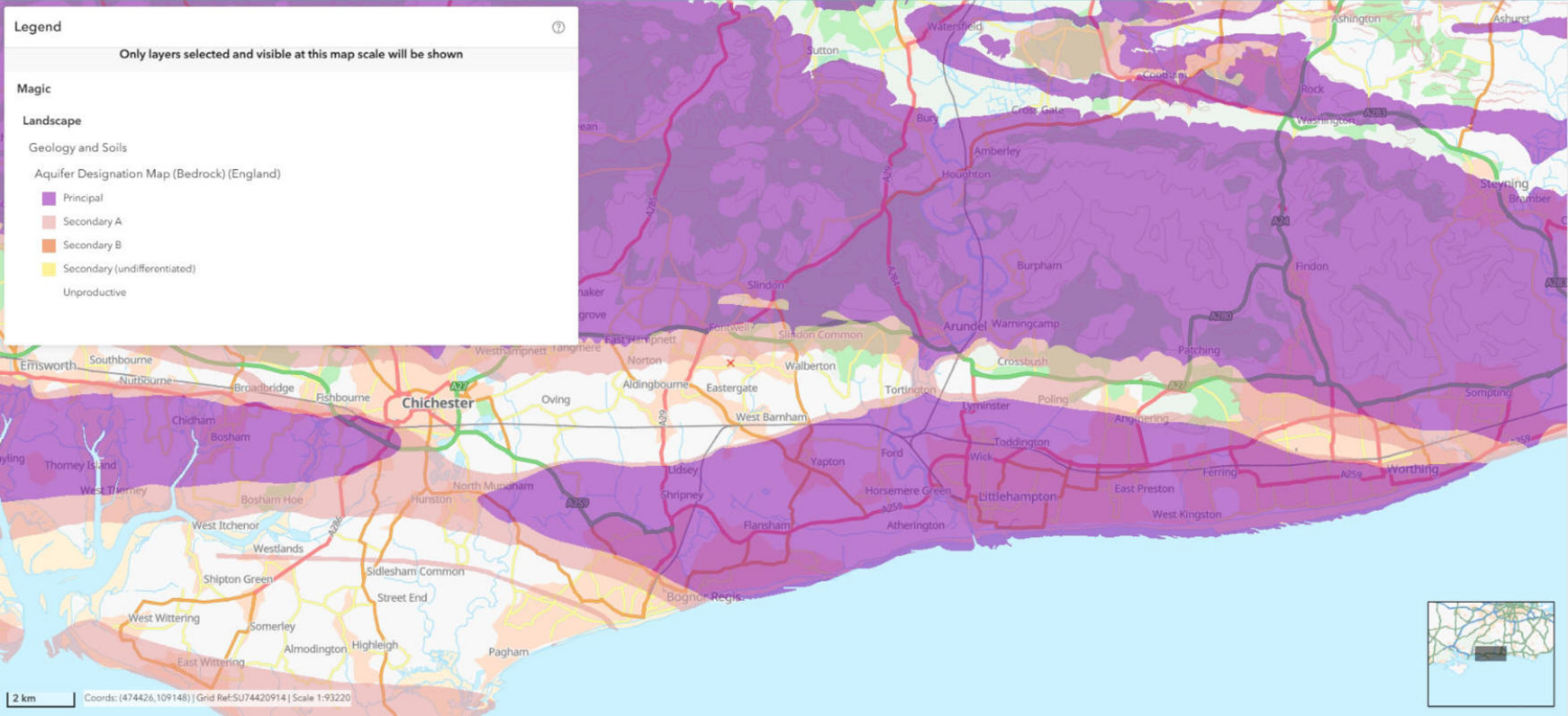
Magic

Landscape

Geology and Soils

Aquifer Designation Map (Bedrock) (England)

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unproductive



Legend



Only layers selected and visible at this map scale will be shown

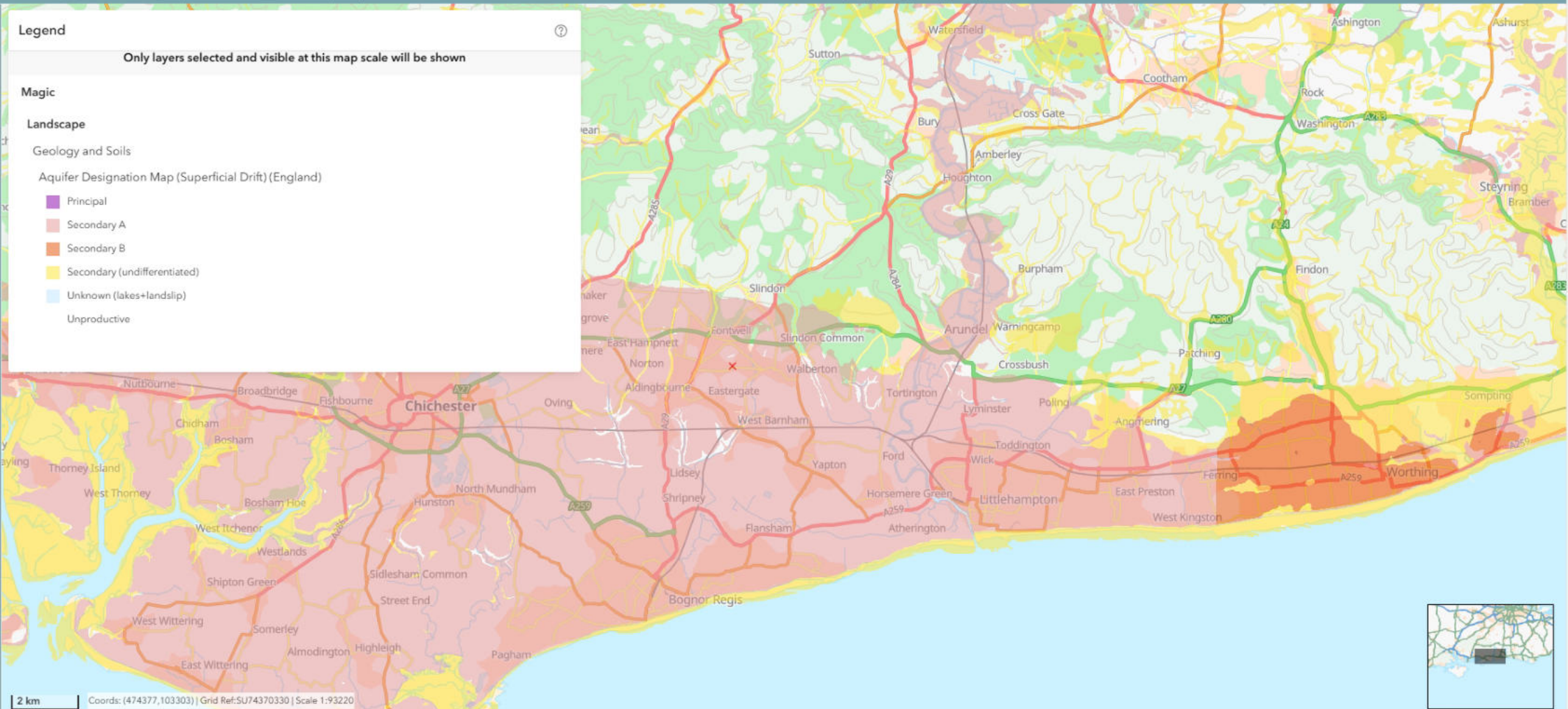
Magic

Landscape

Geology and Soils

Aquifer Designation Map (Superficial Drift) (England)

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unknown (lakes+landslip)
- Unproductive



Legend

Only layers selected and visible at this map scale will be shown

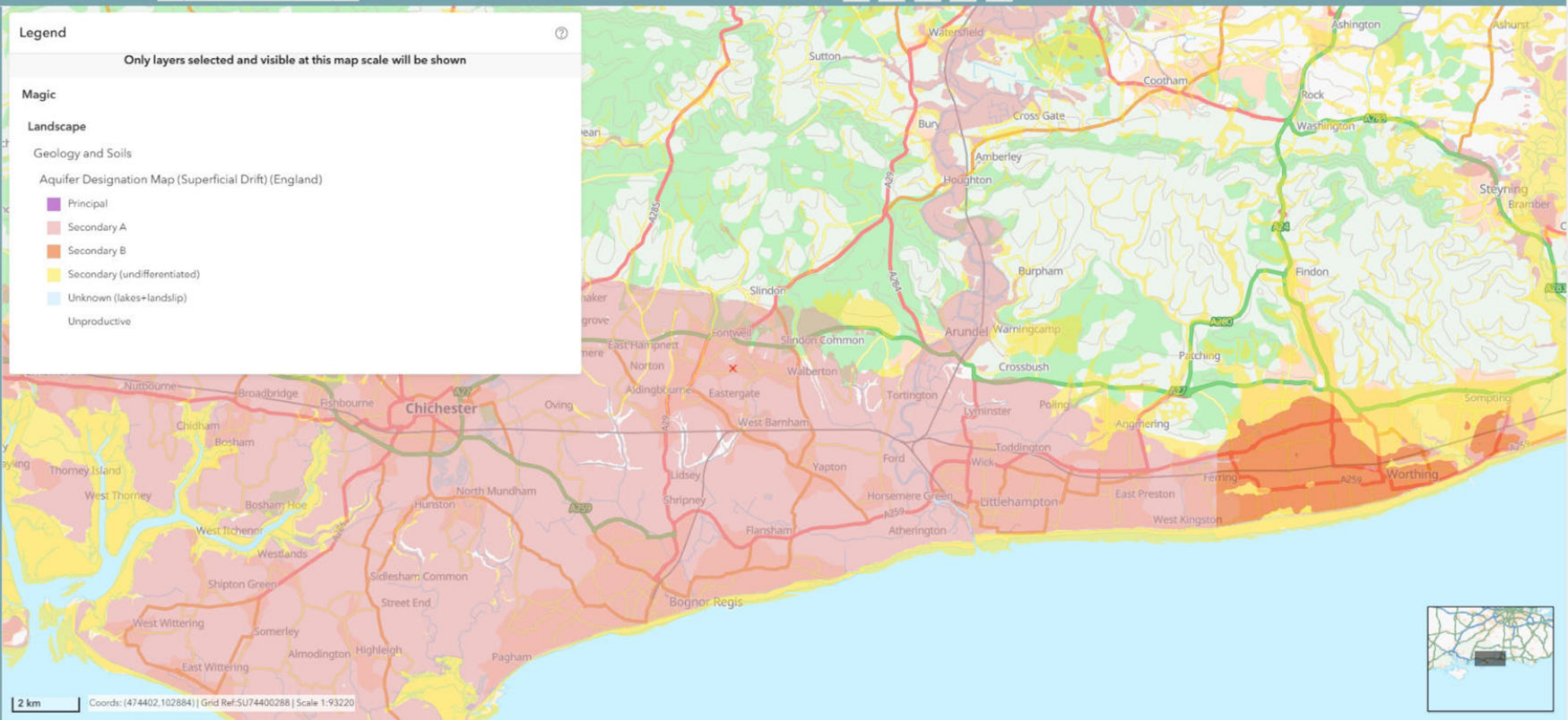
Magic

Landscape

Geology and Soils

Aquifer Designation Map (Superficial Drift) (England)

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unknown (lakes+landslip)
- Unproductive

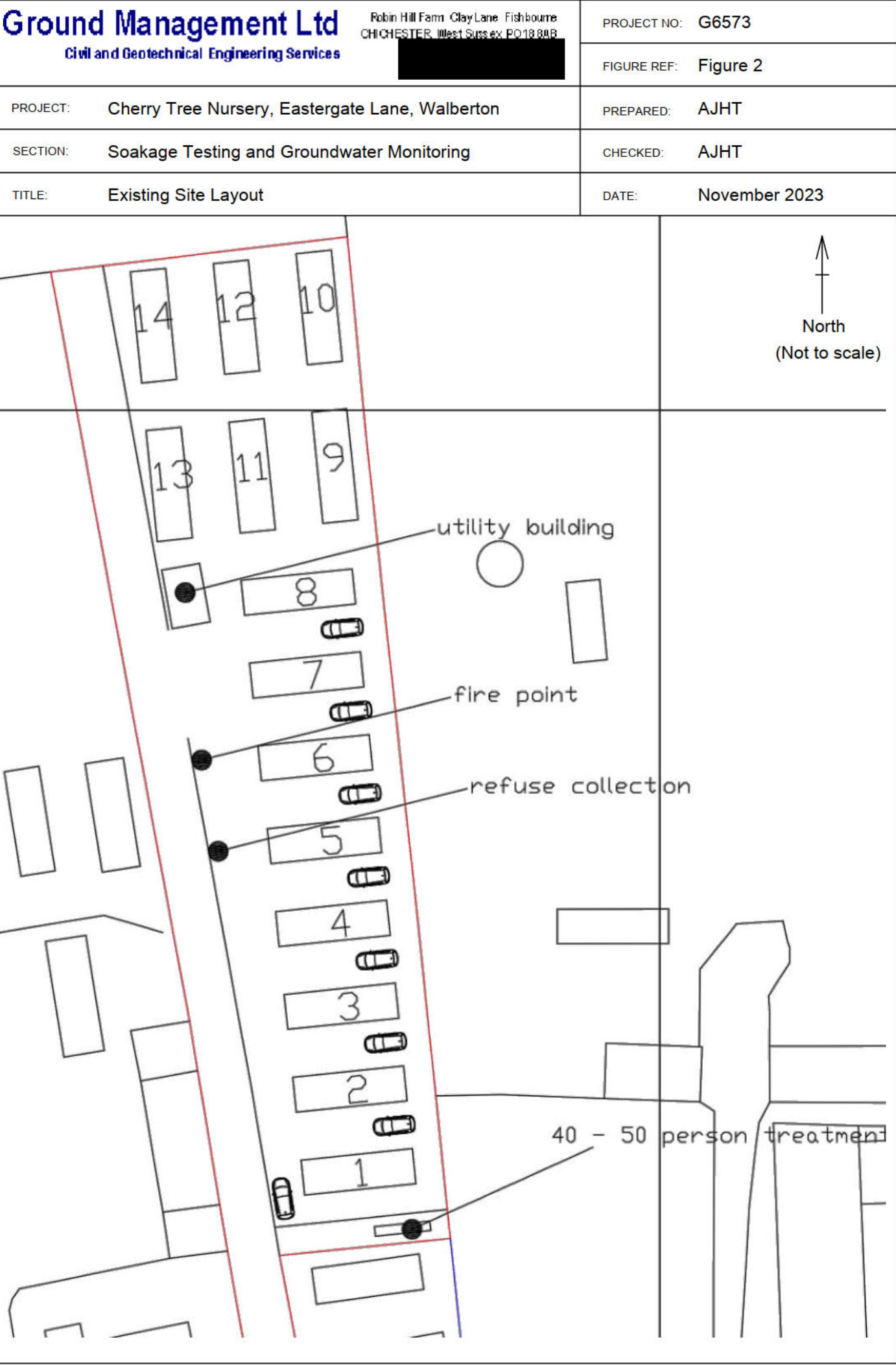


APPENDIX D

Ground Management Ltd Civil and Geotechnical Engineering Services	Robin Hill Farm, Clay Lane, Fishbourne	PROJECT NO: G6573
		FIGURE REF: Figure 1
PROJECT: Cherry Tree Nursery, Eastergate Lane, Walberton		PREPARED: AJHT
SECTION: Soakage Testing and Groundwater Monitoring		CHECKED: AJHT
TITLE: Site Location Plan		DATE: November 2023

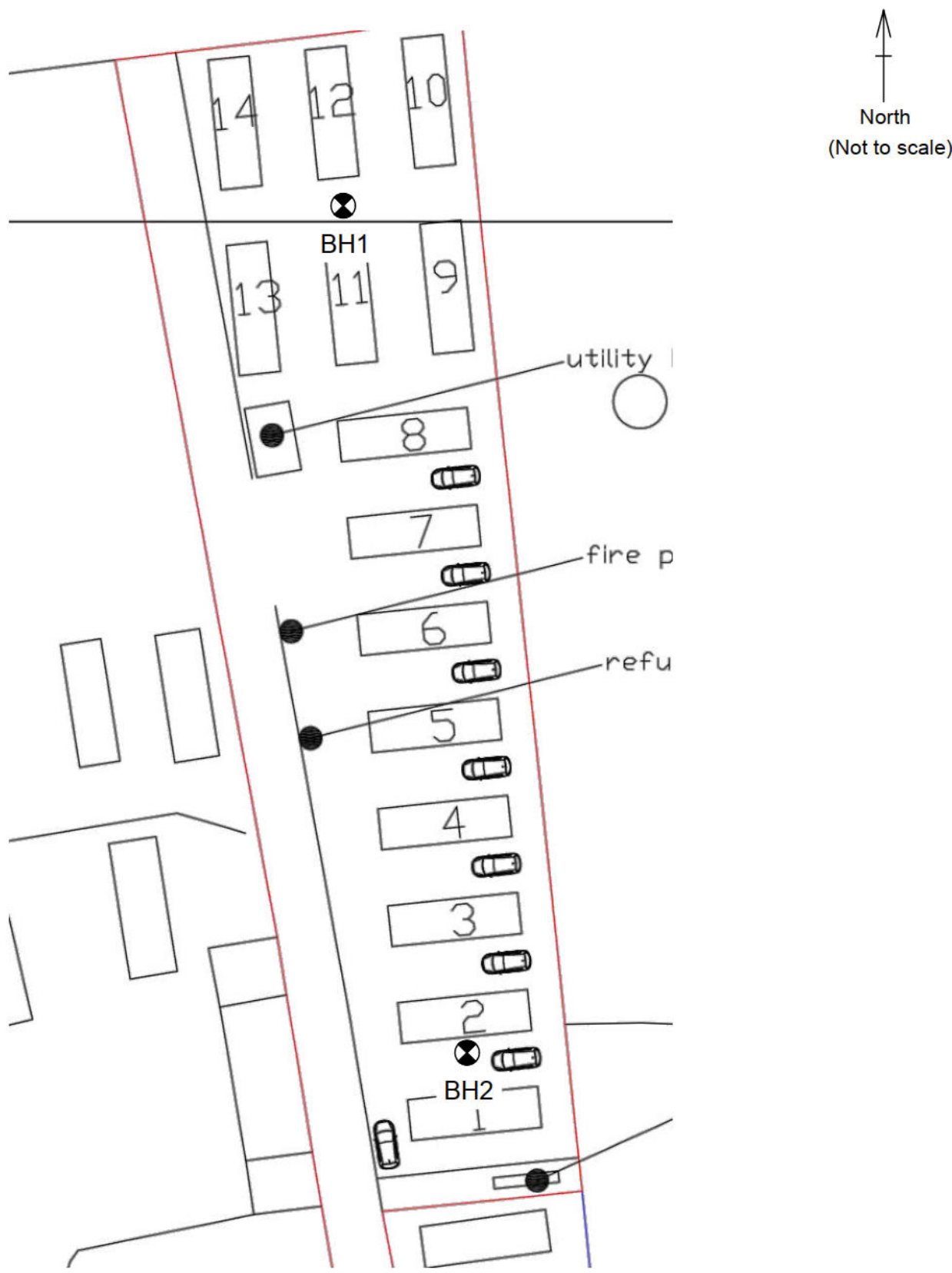
Site Location





Ground Management Ltd Civil and Geotechnical Engineering Services	Robin Hill Farm, Clay Lane, Fishbourne CHICHESTER [REDACTED]	PROJECT NO: G6573
		FIGURE REF: Figure 3
PROJECT: Cherry Tree Nursery, Eastergate Lane, Walberton		PREPARED: AJHT
SECTION: Soakage Testing and Groundwater Monitoring		CHECKED: AJHT
TITLE: Exploratory Hole Location Plan		DATE: November 2023

HOLE LOCATIONS ARE INDICATIVE ONLY UNLESS DIMENSIONED



Ground Management Ltd

Civil and Geotechnical Engineering Services

Robin Hill Farm, Clay Lane, Fishbourne
CHICHESTER, West Sussex PO18 8AB
Phone/Fax: 01243 575073

Site

Cherry Tree Nursery, Eastergate Lane

Number
BH1

Excavation Method		Dimensions		Ground Level (mOD)		Client		Job Number	
Handheld window sampling		80mm to 1.10m 60mm to 2.00m 50mm to 3.00m				Alex Baker		G6573	
Location		Dates		Engineer		Sheet			
See Location Plan		09/11/2023		BP Civils		1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.05-0.15	D1				(0.15) 0.15 (0.35)	MADE GROUND of 25 to 50 mm thickness of medium (10mm) rounded to subrounded flint gravel on compact dark grey brown slightly silty sandy gravel of coarse medium and fine road planings (?) and some flint			
0.50-1.05	D2				0.50 (0.55)	Firm grey brown slightly sandy (fine) CLAY / SILT with a little medium and fine subangular flint gravel			
1.05-2.00	d3				1.05 (0.95)	Firm orange brown silty CLAY with occasional subangular medium and fine flint gravel			
2.00-3.00	D4				2.00 (1.00) 3.00	Brown coarse medium and fine angular flint GRAVEL with some / much sandy silty clay			
						Wet brown and orange brown well graded coarse medium and fine angular to subangular flint GRAVEL with a little silty sand.			
						... locally clayey gravel from 2.8m to 2.9m			
						Complete at 3.00m			

Remarks

Borehole remained stable and open during excavation
Some seepage after removal of sample from 1.1m
19mm dia standpipe installed on completion, 2m slotted with geosoc and gravel surround and 1m plain with bentonite pellet seal
Water level 1.3m bgl after 5mins and 0.65m bgl after 1hr

Scale (approx)

1:25

Logged By

AT

Figure No.

G6573.BH1

11-Jan-24

		BH1	BH2			
Upstand (m)		0.400	0.350			
Ground Level (mAOD)						
Cover level (mAOD)		0.400	0.350			
Base dip (m)		3.460	3.410			

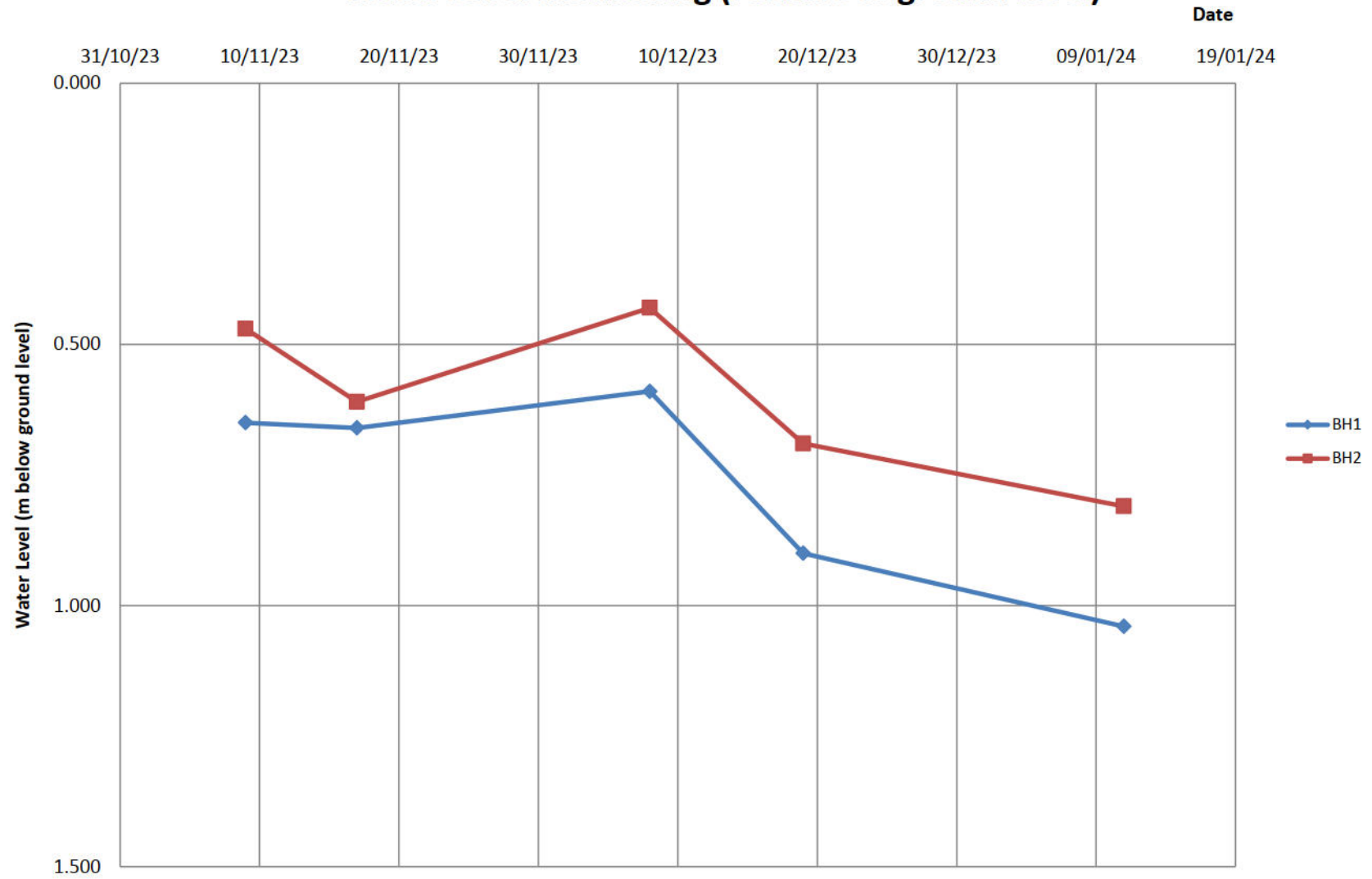
mAOD: metres Above Ordnance Datum

Ground levels estimated by reference to

[illegible]

G6573 Cherry Tree Nursery, Eastergate Lane, Walberton

Water Level Monitoring (relative to ground level)



APPENDIX E



(c) Crown copyright and database rights 2024 Ordnance Survey 100031673 Date: 08/01/24 Scale: 1:1250 Map Centre: 495769,106224 Data updated: 21/11/23 Our Ref: 1360843 - 1 Wastewater Plan A3

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2023 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

searches@bpcivils.co.uk
D2221 Eastergate Ln



APPENDIX F

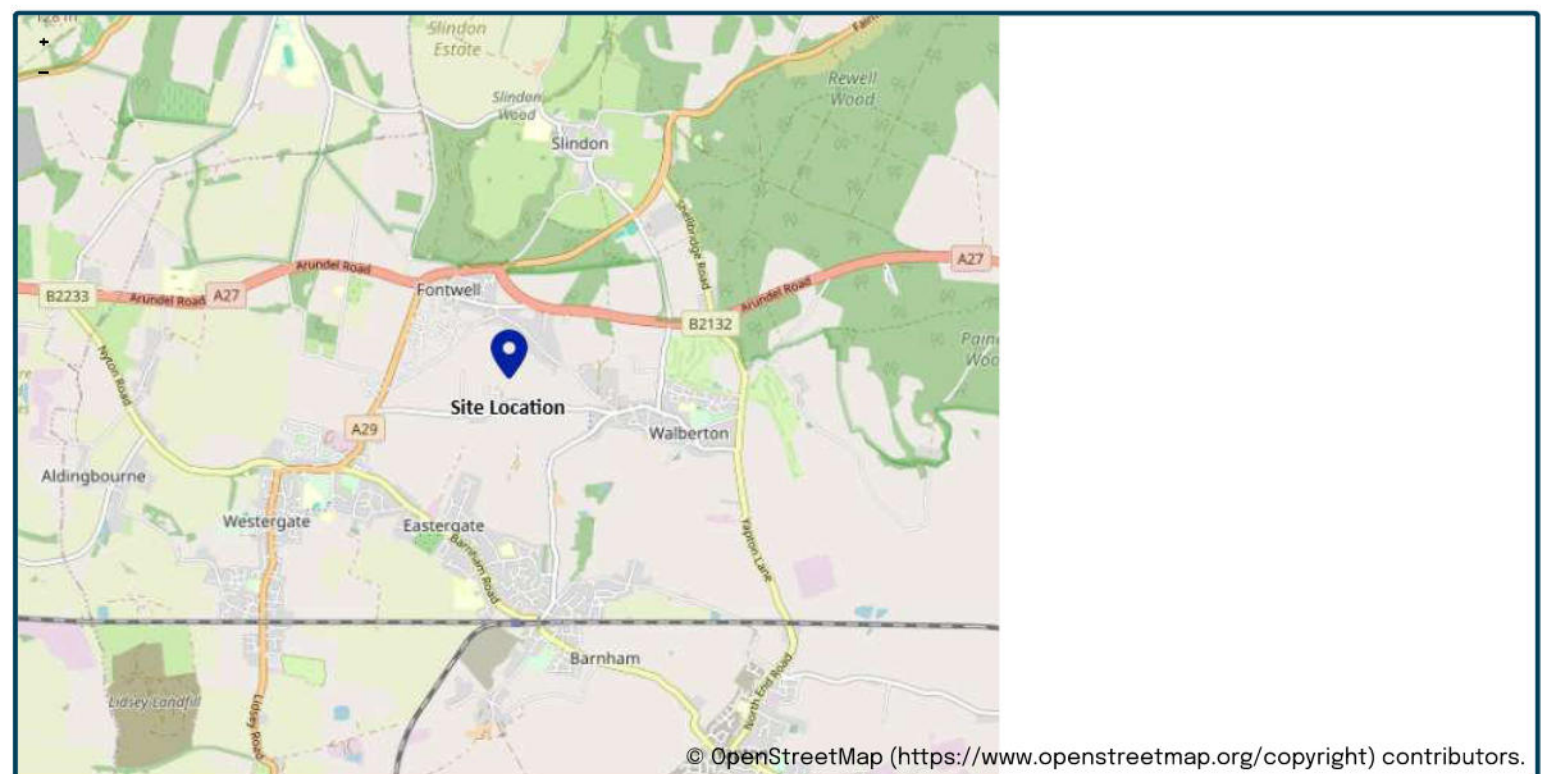
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015).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

Project details

Date	15/12/2025
Calculated by	BP Cvlils
Reference	D2428 Cherry Tree Nursery
Model version	2.2.2

Location

Site name	D2428 Cherry Tree Nursery
Site location	Eastergate Lane, Walberton



Site easting (British National Grid)	495775
Site northing (British National Grid)	106168

Site details

Total site area (ha)	0.1	ha
----------------------	----------------------------------	----

Greenfield runoff

Method

Method	FEH statistical (2025)
--------	------------------------

FEH statistical (2025)

	<u>My value</u>	<u>Map value</u>
SAAR9120 (mm)	824	mm
BFIHOST19scaled	0.63	
QMed-QBar conversion	1.136	1.136
QMed (l/s)	0.2	l/s
QBar (FEH statistical 2025) (l/s)	0.3	l/s

Growth curve factors

	<u>My value</u>	<u>Map value</u>
Hydrological region	7	7
1 year growth factor	0.85	
2 year growth factor	0.88	
10 year growth factor	1.62	
30 year growth factor	2.3	
100 year growth factor	3.19	
200 year growth factor	3.74	

Results

Method	FEH statistical (2025)	
Flow rate 1 year (l/s)	0.2	l/s
Flow rate 2 year (l/s)	0.2	l/s
Flow rate 10 years (l/s)	0.4	l/s
Flow rate 30 years (l/s)	0.6	l/s
Flow rate 100 years (l/s)	0.9	l/s
Flow rate 200 years (l/s)	1.0	l/s

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

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.2) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

APPENDIX G

Get a boundary report

Edit

Delete

Datasets

☒ Flood zones 2 and 3

☐ Surface water

☐ None

Climate change

☒ Present day

☐ 2070 to 2125

Map features

☒ Water storage

☒ Flood defence

☒ Main Rivers

Search

Key



Flood zone 2



Flood zone 3



Water storage



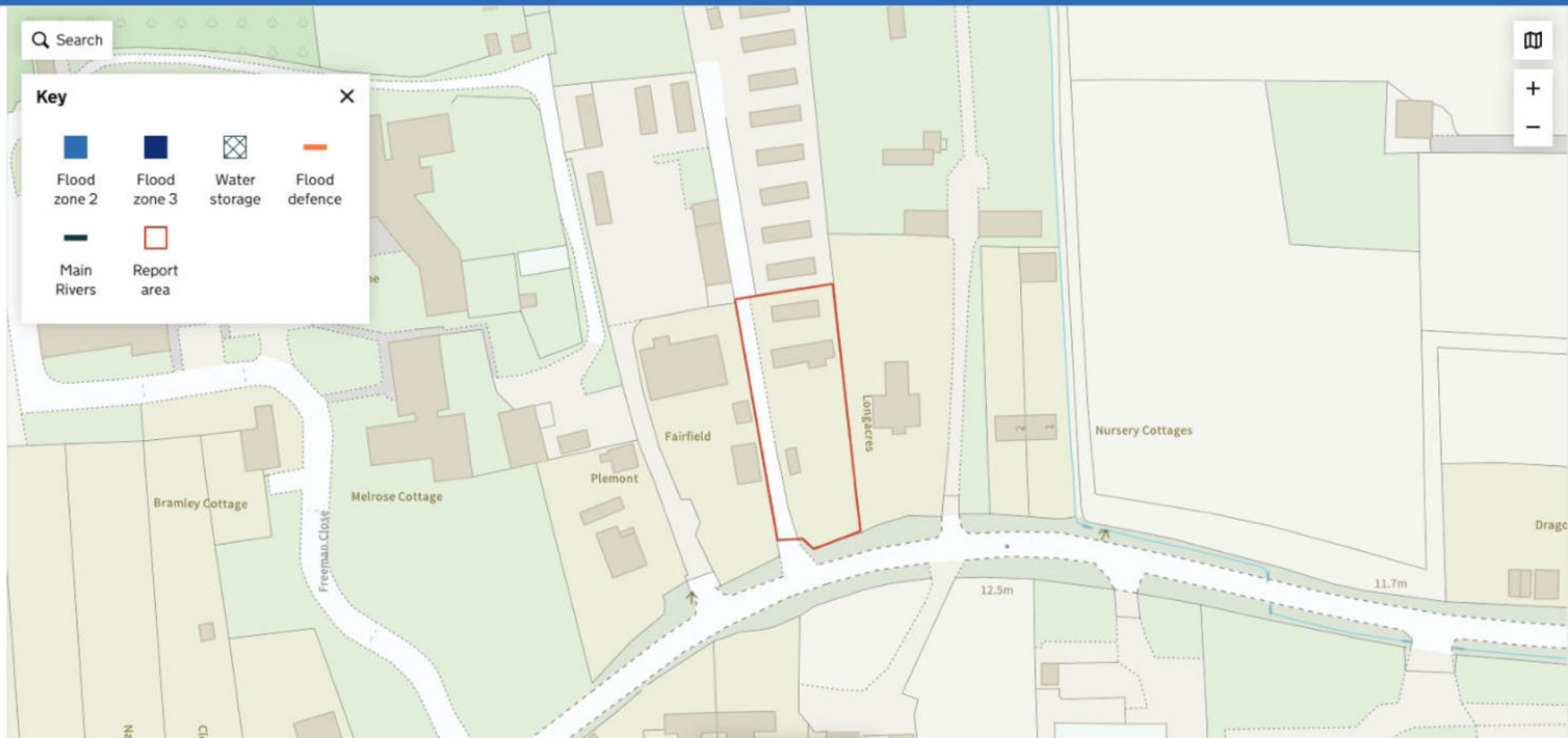
Flood defence



Main Rivers



Report area



Get a boundary report

Edit

Delete

Datasets

☒ Flood zones 2 and 3

☐ Surface water

☐ None

Climate change

☐ Present day

☒ 2070 to 2125

Map features

☒ Water storage

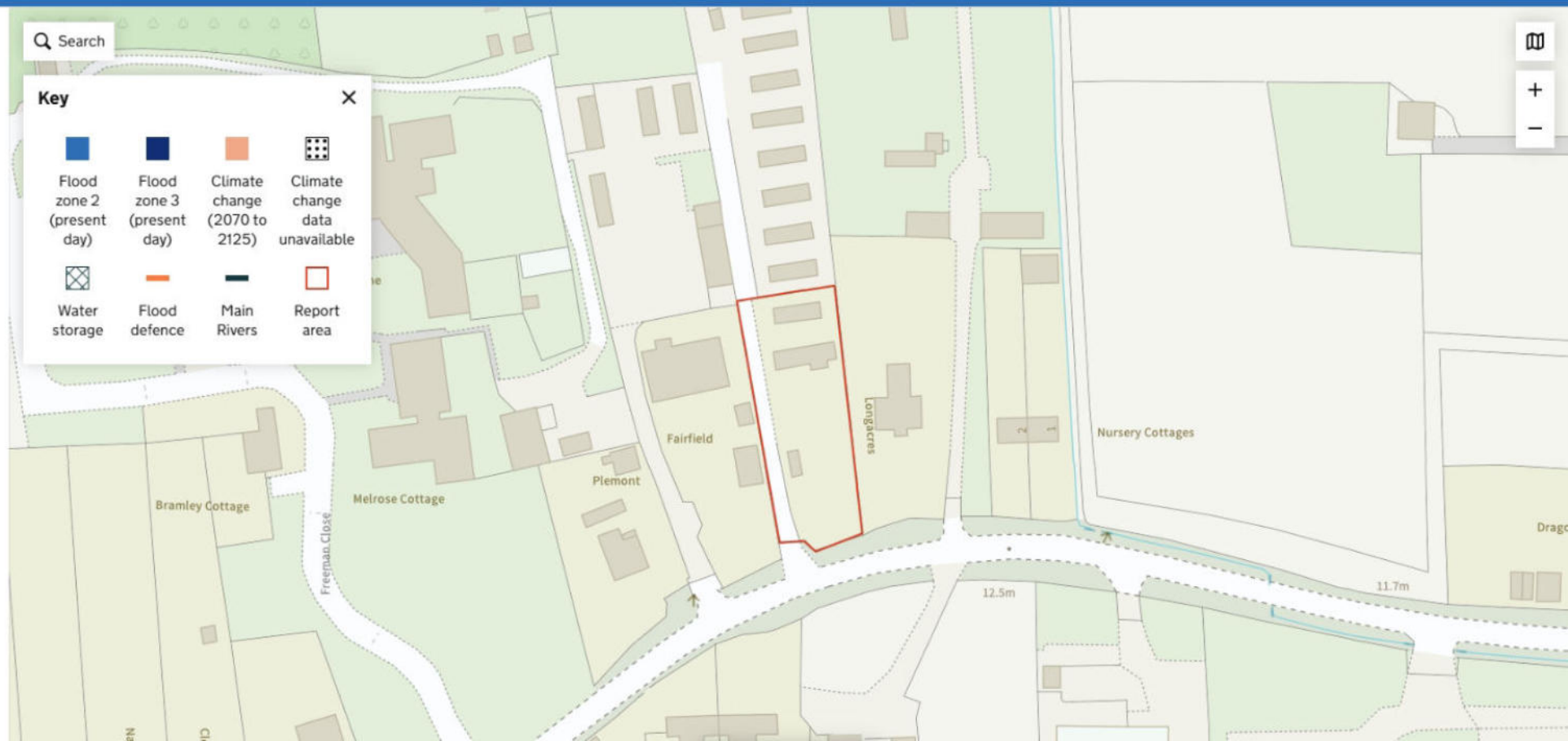
☒ Flood defence

☒ Main Rivers

Search

Key

			
Flood zone 2 (present day)	Flood zone 3 (present day)	Climate change (2070 to 2125)	Climate change data unavailable
			
Water storage	Flood defence	Main Rivers	Report area



Map

+

-

Get a boundary report

[Edit](#)[Delete](#)

Datasets

☐ Flood zones 2 and 3☒ Surface water☐ None

Annual likelihood of flooding

☒ 1 in 30☐ 1 in 100☐ 1 in 1000

Map features

☒ Water storage☒ Flood defence☒ Main Rivers

Key



Flood extent



Water storage



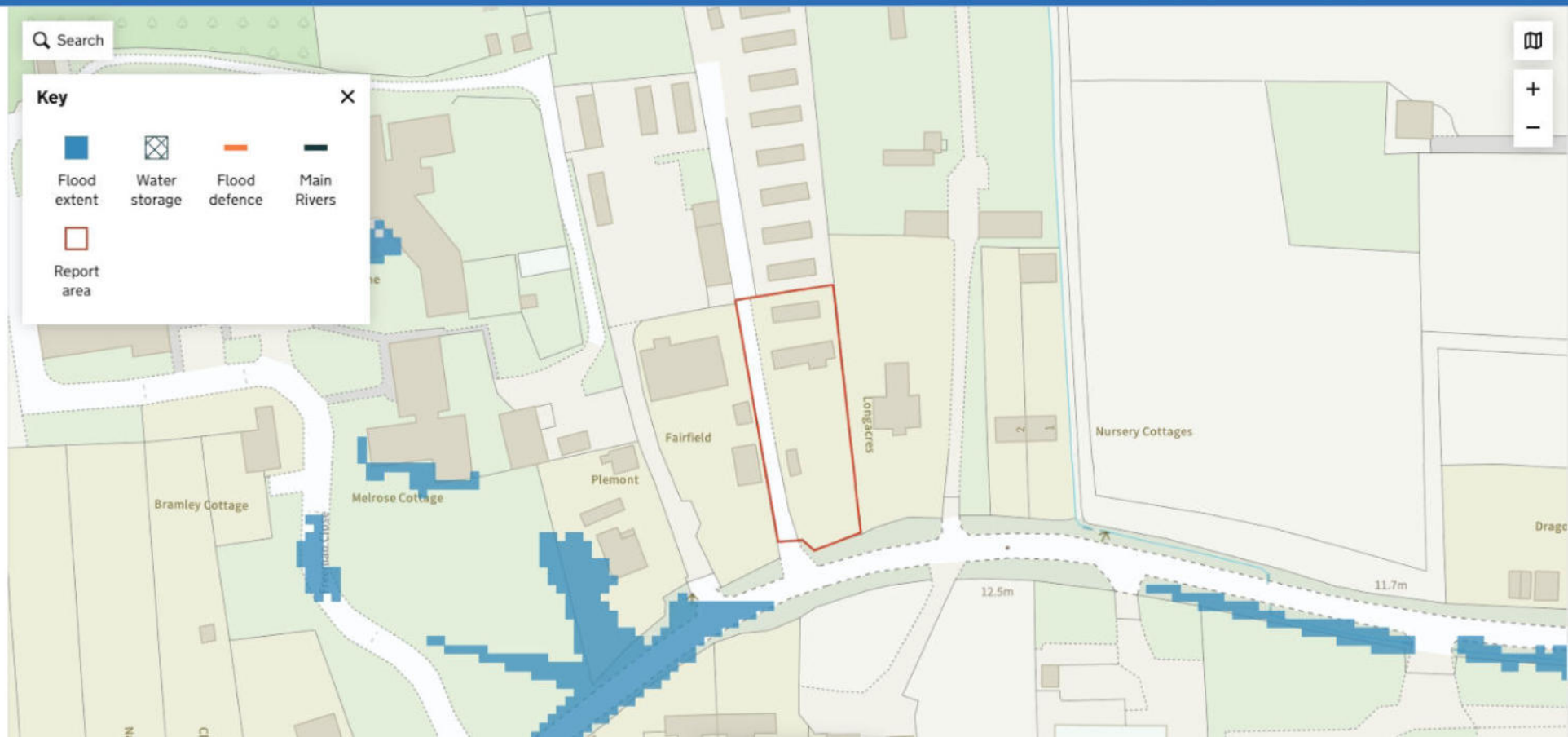
Flood defence



Main Rivers



Report area



Get a boundary report

 Edit

 Delete

Datasets

☐ Flood zones 2 and 3

☒ Surface water

☐ None

Annual likelihood of flooding

☐ 1 in 30

☒ 1 in 100

☐ 1 in 1000

Map features

☒ Water storage

☒ Flood defence

☒ Main Rivers

Q Search

Key



Flood extent



Water storage



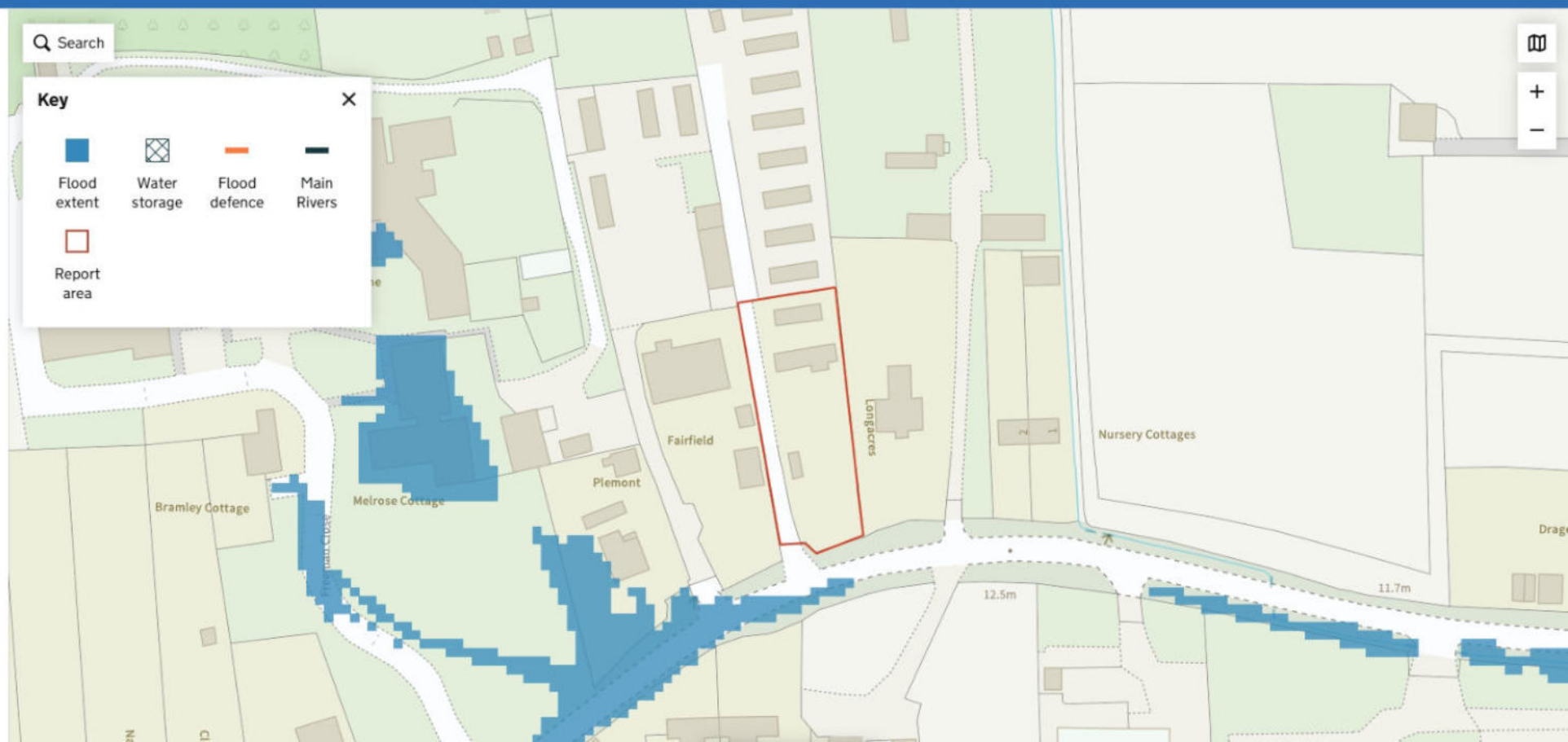
Flood defence



Main Rivers



Report area



Get a boundary report

Edit

Delete

Datasets

☐ Flood zones 2 and 3

☒ Surface water

☐ None

Annual likelihood of flooding

☐ 1 in 30

☐ 1 in 100

☒ 1 in 1000

Map features

☒ Water storage

☒ Flood defence

☒ Main Rivers

Search

Key



Flood extent



Water storage



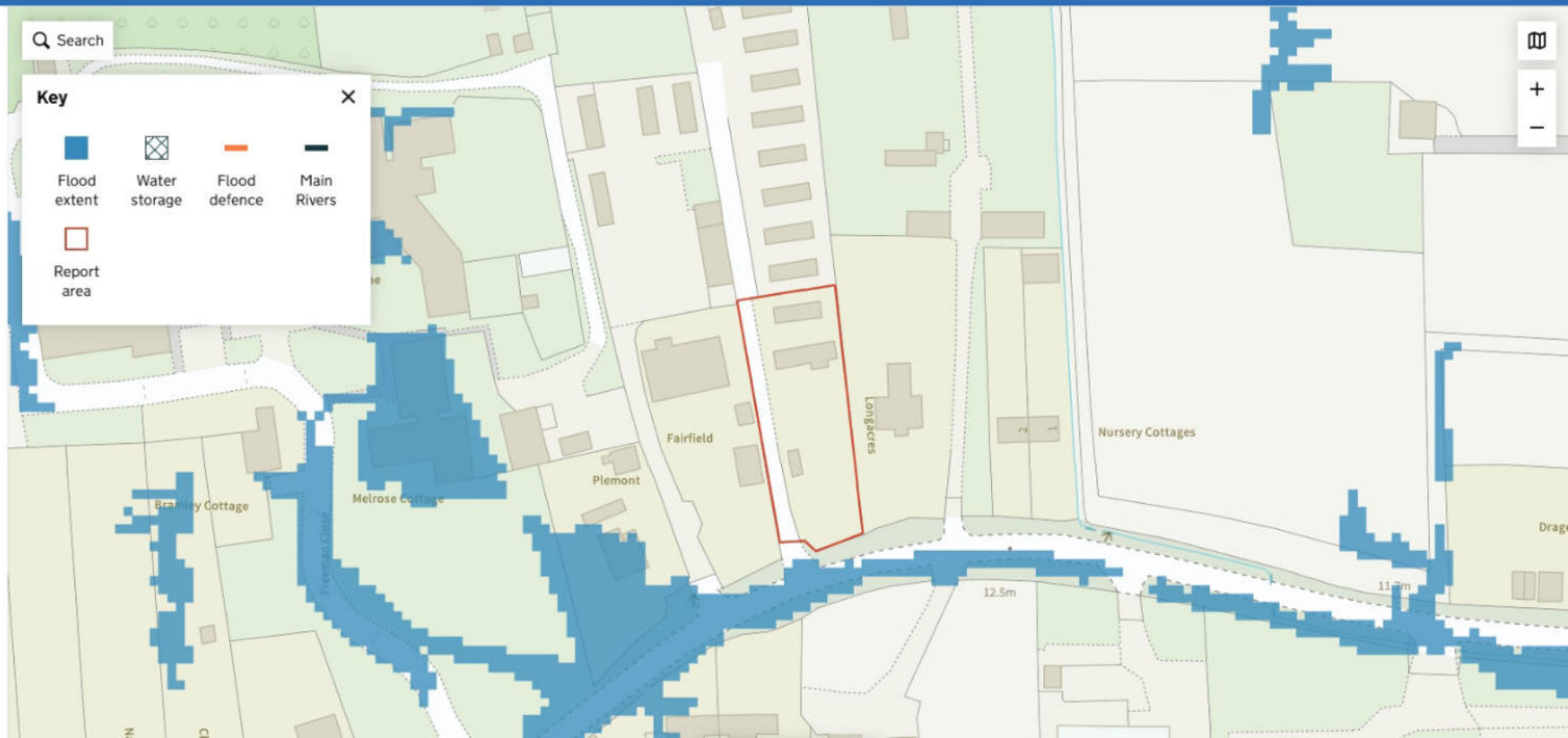
Flood defence



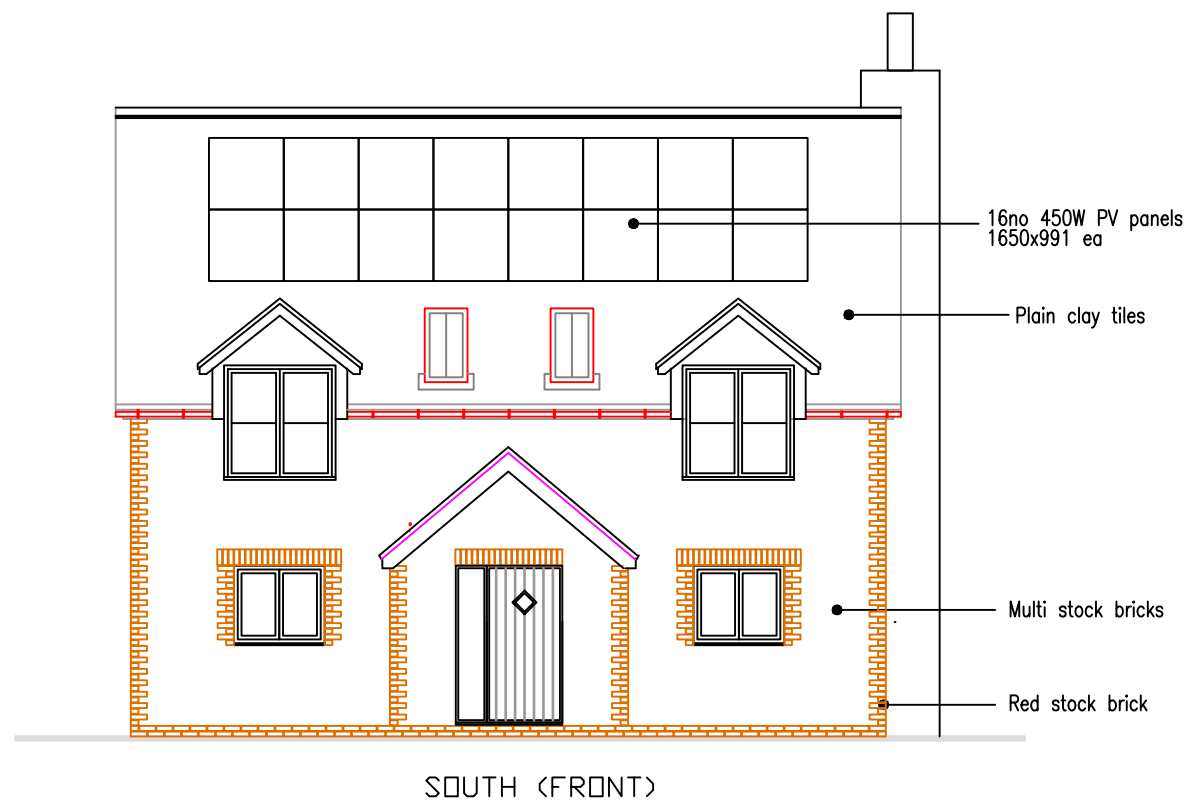
Main Rivers



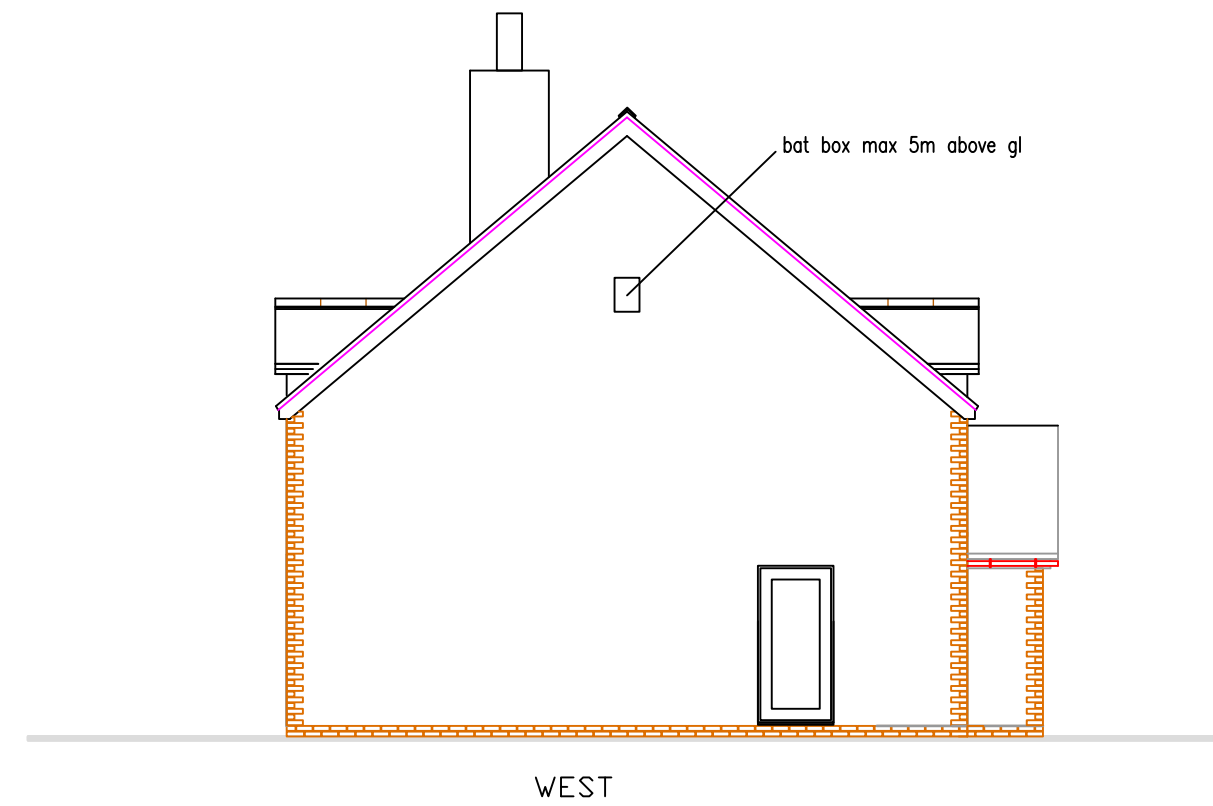
Report area



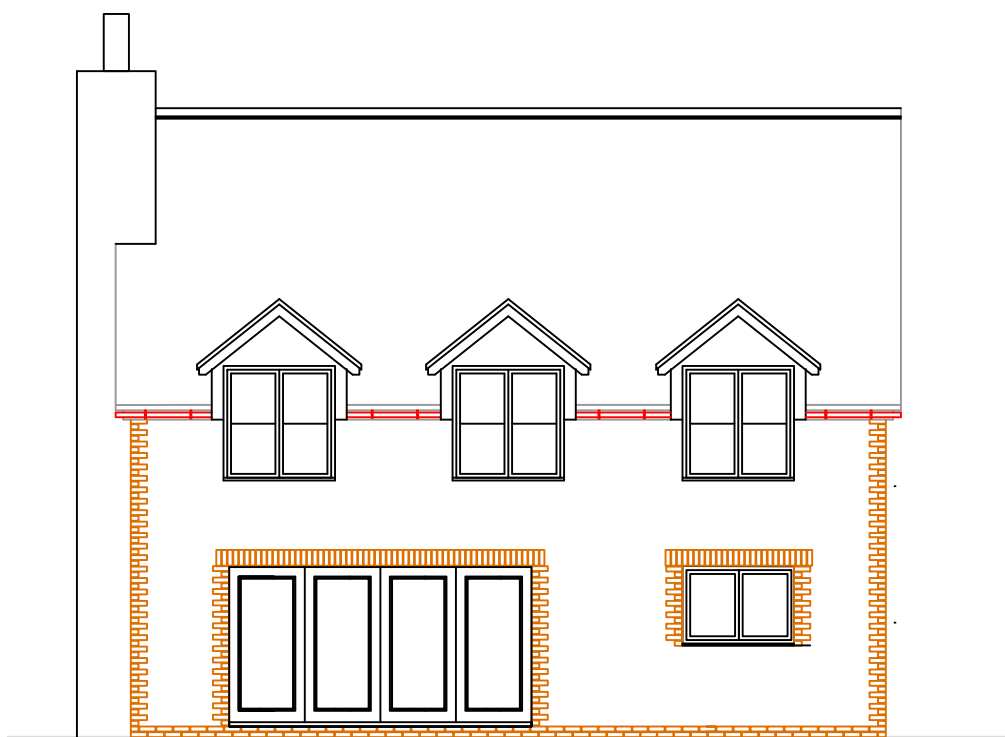
APPENDIX H



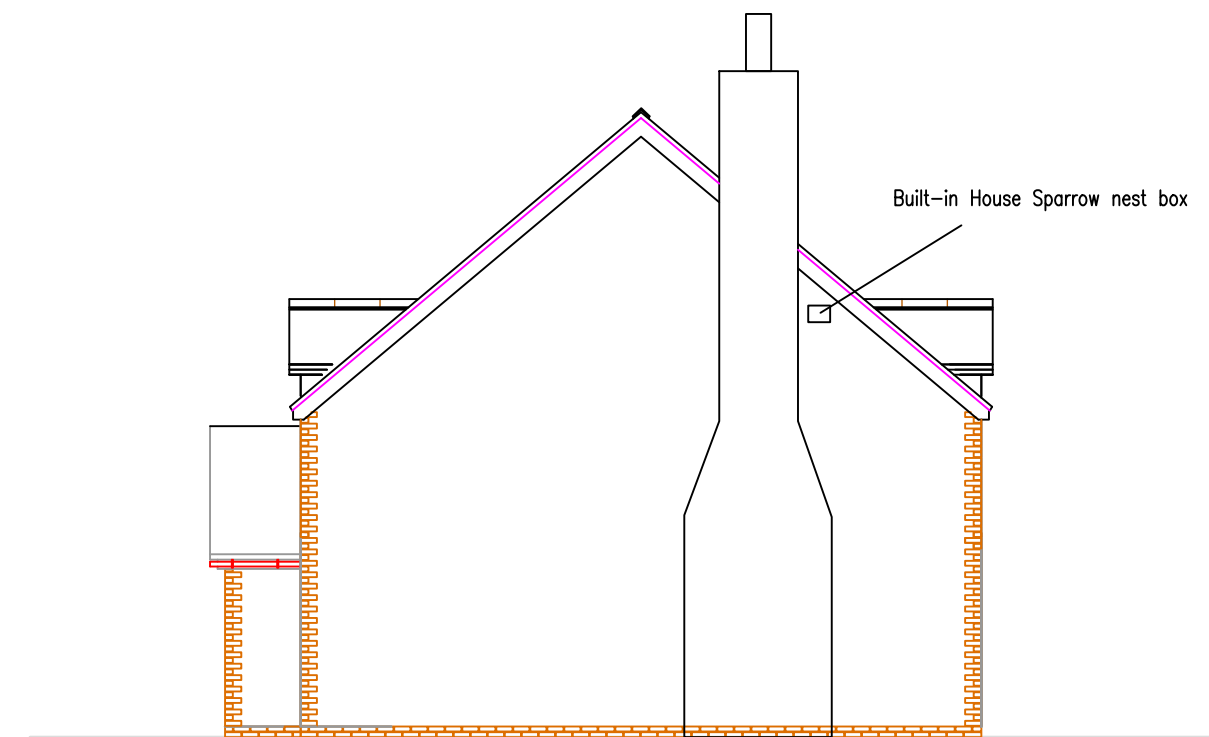
SOUTH (FRONT)



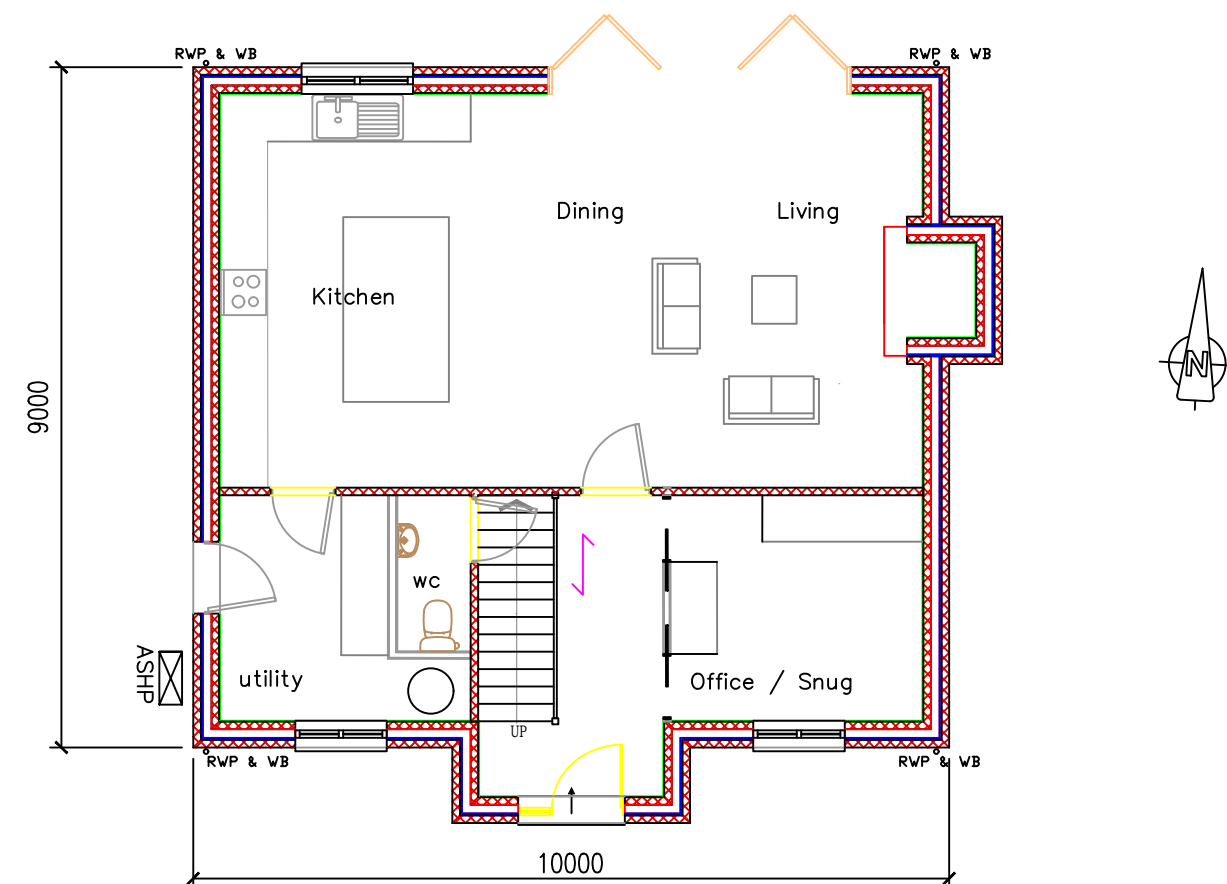
WEST



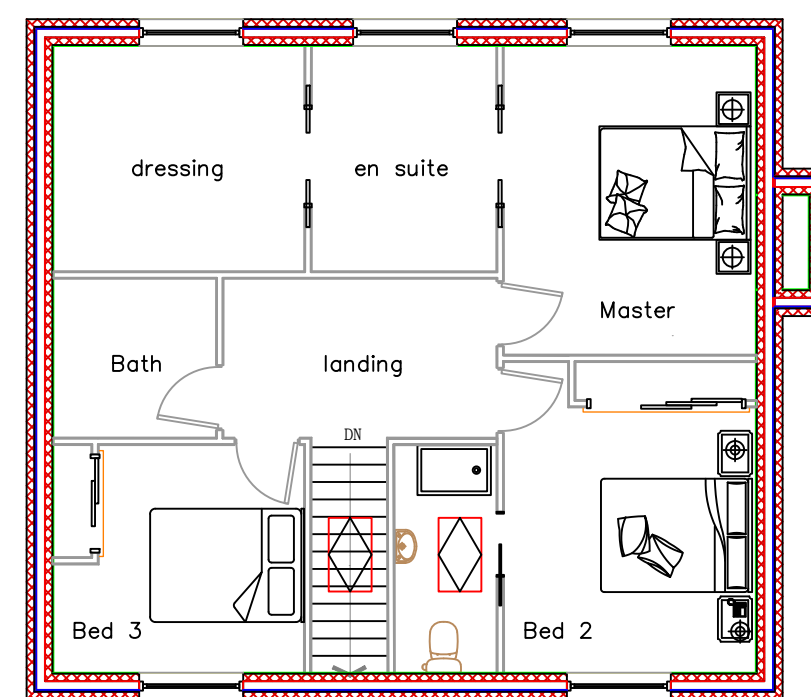
NORTH (REAR)



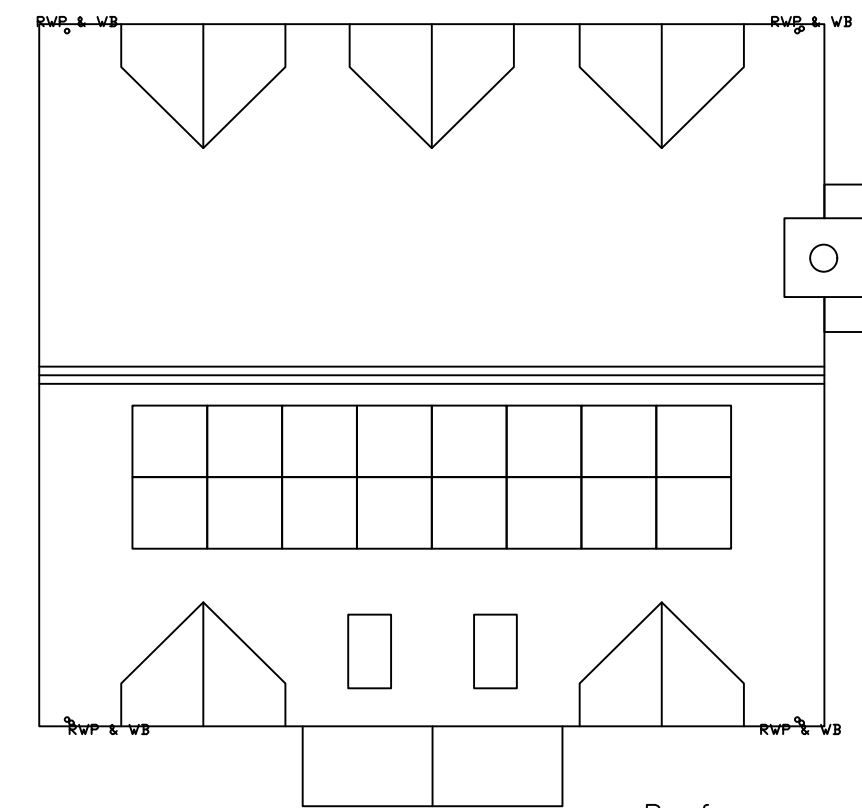
EAST



Ground Floor

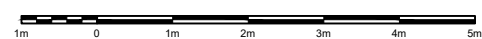


First Floor



Roof

Floor GIA:
GF = 79.5 sq m
FF = 72.5 sq m
Total = 152 sq m



CLIENT	PROJECT	TITLE	STATUS	DRAWN BY	REVIEWED BY
JAMES COLE	CHERRY TREE NURSERY EASTERGATE LANE WALBERTON	PROPOSED FLOOR PLANS AND ELEVATIONS	PLANNING	SJ	SJ
DATE	SCALE	DRAWING NUMBER			
05.08.2025	1:100@A2	4			

STEPHEN JUPP MRTPI
CHARTERED TOWN PLANNER
PO BOX 839, CHICHESTER
West Sussex PO19 9XQ
Tel 07777 618886
Email: steve@planning-solutions.co.uk
www.planning-solutions.co.uk

APPENDIX I

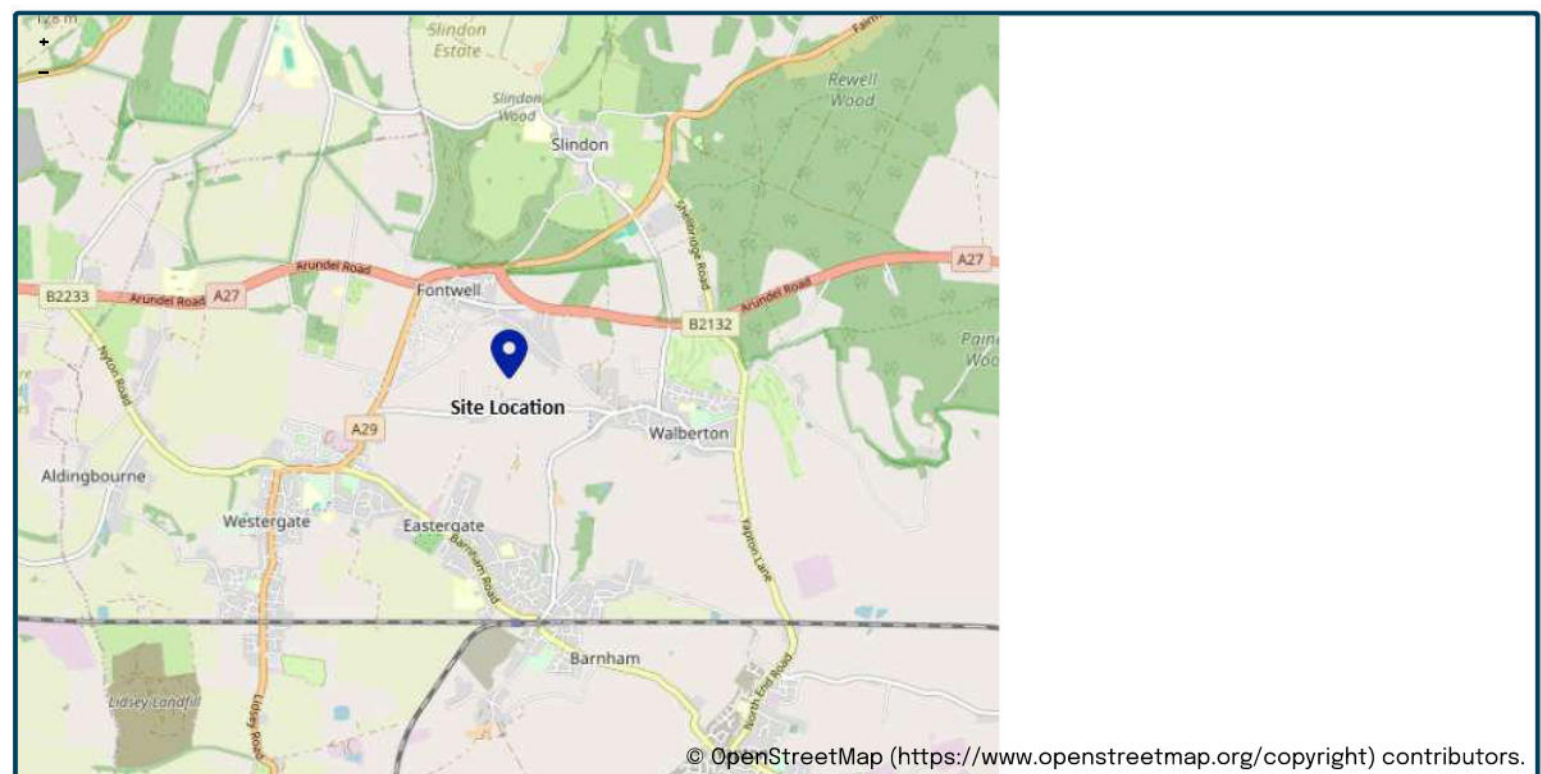
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015).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

Project details

Date	16/12/2025
Calculated by	
Reference	
Model version	2.2.2

Location

Site name	D2428Cherry Tree Nursery
Site location	Eastergate Lane



Site easting (British National Grid)	495774
Site northing (British National Grid)	106170

Site details

Total site area (ha)	0.0125	ha
----------------------	-------------------------------------	----

Greenfield runoff

Method

Method	FEH statistical (2025)
--------	------------------------

FEH statistical (2025)

	<u>My value</u>	<u>Map value</u>
SAAR9120 (mm)	824	mm
BFIHOST19scaled	0.63	
QMed-QBar conversion	1.136	☒ 1.136
QMed (l/s)	0.03	l/s
QBar (FEH statistical 2025) (l/s)	0.03	l/s

Growth curve factors

	<u>My value</u>	<u>Map value</u>
Hydrological region	7	☒ 7
1 year growth factor	0.85	
2 year growth factor	0.88	
10 year growth factor	1.62	
30 year growth factor	2.3	
100 year growth factor	3.19	
200 year growth factor	3.74	

Results

Method	FEH statistical (2025)	
Flow rate 1 year (l/s)	0.03	l/s
Flow rate 2 year (l/s)	0.03	l/s
Flow rate 10 years (l/s)	0.1	l/s
Flow rate 30 years (l/s)	0.1	l/s
Flow rate 100 years (l/s)	0.1	l/s
Flow rate 200 years (l/s)	0.1	l/s

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

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APPENDIX J

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)	1.000
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	✓
Maximum Rainfall (mm/hr)	250.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)
S13	0.003	5.00	12.850			495776.256	106194.415	0.500
S11		5.00	12.850	450		495776.281	106195.380	0.750
S14			12.850			495775.173	106195.213	0.757
S15	0.003	5.00	12.850			495766.704	106192.972	0.500
S16			12.850			495765.621	106193.770	0.822
S6	0.003	5.00	12.900	708	354	495763.558	106199.269	0.430
S12			12.850	450		495764.416	106193.588	0.830
S7	0.003	5.00	12.850			495777.616	106185.409	0.500
S1		5.00	12.850	450		495778.224	106182.521	0.750
S8			12.803			495775.143	106182.056	0.748
S9	0.003	5.00	12.850			495768.064	106183.966	0.500
S10			12.753			495768.504	106181.053	0.796
S2			12.850	1200		495766.358	106180.729	0.925
S3			12.800	450		495765.138	106180.545	1.250
S4			12.517	1200		495769.009	106154.917	1.140
S5			12.571	1200		495755.667	106147.360	1.296

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	S13	S14	1.345	0.600	12.350	12.143	0.207	6.5	100	5.01	56.4
2.000	S11	S14	1.121	0.600	12.100	12.093	0.007	160.1	150	5.02	56.3
1.001	S14	S16	9.660	0.600	12.093	12.028	0.065	148.6	150	5.22	55.5
3.000	S15	S16	1.345	0.600	12.350	12.078	0.272	4.9	100	5.01	56.4
1.002	S16	S12	1.219	0.600	12.028	12.020	0.008	152.4	150	5.24	55.4
4.000	S6	S12	5.745	0.600	12.470	12.020	0.450	12.8	150	5.03	56.3
1.003	S12	S2	13.005	0.600	12.020	11.925	0.095	136.9	150	5.50	54.3
5.000	S7	S8	4.166	0.600	12.350	12.105	0.245	17.0	100	5.04	56.2

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	3.052	24.0	0.6	0.400	0.607	0.003	0.0
2.000	0.791	14.0	0.0	0.600	0.607	0.000	0.0
1.001	0.822	14.5	0.6	0.607	0.672	0.003	0.0
3.000	3.501	27.5	0.6	0.400	0.672	0.003	0.0
1.002	0.812	14.3	1.2	0.672	0.680	0.006	0.0
4.000	2.834	50.1	0.6	0.280	0.680	0.003	0.0
1.003	0.857	15.1	1.8	0.680	0.775	0.009	0.0
5.000	1.882	14.8	0.6	0.400	0.598	0.003	0.0

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)
6.000	S1	S8	3.116	0.600	12.100	12.055	0.045	69.2	150	5.04	56.2
5.001	S8	S10	6.714	0.600	12.055	11.957	0.098	68.5	150	5.13	55.8
7.000	S9	S10	2.946	0.600	12.350	12.007	0.343	8.6	100	5.02	56.3
5.002	S10	S2	2.170	0.600	11.957	11.925	0.032	67.8	150	5.16	55.7
1.004	S2	S3	1.235	0.600	11.925	11.915	0.010	123.5	150	5.52	54.2
1.005	S3	S4	25.919	0.600	11.550	11.377	0.173	149.8	150	6.05	52.0
1.006	S4	S5	15.333	0.600	11.377	11.275	0.102	150.3	150	6.36	50.9

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
6.000	1.210	21.4	0.0	0.600	0.598	0.000	0.0
5.001	1.216	21.5	0.6	0.598	0.646	0.003	0.0
7.000	2.653	20.8	0.6	0.400	0.646	0.003	0.0
5.002	1.223	21.6	1.2	0.646	0.775	0.006	0.0
1.004	0.903	16.0	2.9	0.775	0.735	0.015	0.0
1.005	0.818	14.5	2.8	1.100	0.990	0.015	0.0
1.006	0.817	14.4	2.8	0.990	1.146	0.015	0.0

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	1.345	6.5	100	Circular	12.850	12.350	0.400	12.850	12.143	0.607
2.000	1.121	160.1	150	Circular	12.850	12.100	0.600	12.850	12.093	0.607
1.001	9.660	148.6	150	Circular	12.850	12.093	0.607	12.850	12.028	0.672
3.000	1.345	4.9	100	Circular	12.850	12.350	0.400	12.850	12.078	0.672
1.002	1.219	152.4	150	Circular	12.850	12.028	0.672	12.850	12.020	0.680
4.000	5.745	12.8	150	Circular	12.900	12.470	0.280	12.850	12.020	0.680
1.003	13.005	136.9	150	Circular	12.850	12.020	0.680	12.850	11.925	0.775
5.000	4.166	17.0	100	Circular	12.850	12.350	0.400	12.803	12.105	0.598
6.000	3.116	69.2	150	Circular	12.850	12.100	0.600	12.803	12.055	0.598
5.001	6.714	68.5	150	Circular	12.803	12.055	0.598	12.753	11.957	0.646
7.000	2.946	8.6	100	Circular	12.850	12.350	0.400	12.753	12.007	0.646
5.002	2.170	67.8	150	Circular	12.753	11.957	0.646	12.850	11.925	0.775
1.004	1.235	123.5	150	Circular	12.850	11.925	0.775	12.800	11.915	0.735

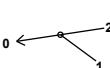
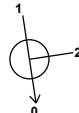
Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S13			Junction		S14		Junction	
2.000	S11	450		Manhole	Adoptable	S14		Junction	
1.001	S14			Junction		S16		Junction	
3.000	S15			Junction		S16		Junction	
1.002	S16			Junction		S12	450	Manhole	Adoptable
4.000	S6	708	354	Manhole	Adoptable	S12	450	Manhole	Adoptable
1.003	S12	450		Manhole	Adoptable	S2	1200	Manhole	Adoptable
5.000	S7			Junction		S8		Junction	
6.000	S1	450		Manhole	Adoptable	S8		Junction	
5.001	S8			Junction		S10		Junction	
7.000	S9			Junction		S10		Junction	
5.002	S10			Junction		S2	1200	Manhole	Adoptable
1.004	S2	1200		Manhole	Adoptable	S3	450	Manhole	Adoptable

Pipeline Schedule

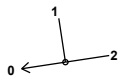
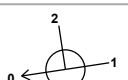
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.005	25.919	149.8	150	Circular	12.800	11.550	1.100	12.517	11.377	0.990
1.006	15.333	150.3	150	Circular	12.517	11.377	0.990	12.571	11.275	1.146

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.005	S3	450		Manhole	Adoptable	S4	1200	Manhole	Adoptable
1.006	S4	1200		Manhole	Adoptable	S5	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)	
S13	495776.256	106194.415	12.850	0.500				0	1.000	12.350	100
S11	495776.281	106195.380	12.850	0.750	450			0	2.000	12.100	150
S14	495775.173	106195.213	12.850	0.757				1 2	2.000 1.000	12.093 12.143	150 100
S15	495766.704	106192.972	12.850	0.500				0	1.001	12.093	150
S16	495765.621	106193.770	12.850	0.822				1 2	3.000 1.001	12.078 12.028	100 150
S6	495763.558	106199.269	12.900	0.430	708	354		0	4.000	12.470	150
S12	495764.416	106193.588	12.850	0.830	450			1 2 0	4.000 1.002 1.003	12.020 12.020 12.020	150 150 150
S7	495777.616	106185.409	12.850	0.500				0	5.000	12.350	100
S1	495778.224	106182.521	12.850	0.750	450			0	6.000	12.100	150
S8	495775.143	106182.056	12.803	0.748				1 2	6.000 5.000	12.055 12.105	150 100
								0	5.001	12.055	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)	
S9	495768.064	106183.966	12.850	0.500				0	7.000	12.350	100
S10	495768.504	106181.053	12.753	0.796				1 2 0	7.000 5.001 5.002	12.007 11.957 11.957	100 150 150
S2	495766.358	106180.729	12.850	0.925	1200			1 2 0	5.002 1.003 1.004	11.925 11.925 11.925	150 150 150
S3	495765.138	106180.545	12.800	1.250	450			1 0	1.004 1.005	11.915 11.550	150 150
S4	495769.009	106154.917	12.517	1.140	1200			1 0	1.005 1.006	11.377 11.377	150 150
S5	495755.667	106147.360	12.571	1.296	1200			1	1.006	11.275	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	0.0		

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
10	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node S2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	11.925	Product Number	CTL-SHE-0033-5000-0925-5000
Design Depth (m)	0.925	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.5	Min Node Diameter (mm)	1200

Node S6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	12.470	Slope (1:X)	100.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	28	Depth (m)	0.300
Safety Factor	2.0	Width (m)	5.500	Inf Depth (m)	
Porosity	0.30	Length (m)	5.500		

Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S13	11	12.359	0.009	0.4	0.0000	0.0000	OK
15 minute winter	S11	11	12.110	0.010	0.0	0.0015	0.0000	OK
15 minute winter	S14	11	12.110	0.017	0.4	0.0000	0.0000	OK
15 minute winter	S15	11	12.359	0.009	0.4	0.0000	0.0000	OK
120 minute winter	S16	90	12.100	0.072	0.4	0.0000	0.0000	OK
15 minute summer	S6	11	12.480	0.010	0.4	0.0110	0.0000	OK
120 minute winter	S12	90	12.100	0.080	0.6	0.0127	0.0000	OK
15 minute winter	S7	11	12.361	0.011	0.4	0.0000	0.0000	OK
120 minute winter	S1	92	12.101	0.001	0.0	0.0001	0.0000	OK
120 minute winter	S8	92	12.100	0.045	0.2	0.0000	0.0000	OK
15 minute summer	S9	10	12.360	0.010	0.4	0.0000	0.0000	OK
120 minute winter	S10	92	12.100	0.143	0.6	0.0000	0.0000	OK
120 minute winter	S2	92	12.100	0.175	0.9	0.1980	0.0000	SURCHARGED
15 minute summer	S3	12	11.567	0.017	0.4	0.0027	0.0000	OK
180 minute winter	S4	132	11.394	0.017	0.4	0.0187	0.0000	OK
180 minute winter	S5	132	11.291	0.016	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S13	1.000	S14	0.4	1.142	0.017	0.0005	
15 minute winter	S11	2.000	S14	0.0	-0.099	-0.003	0.0009	
15 minute winter	S14	1.001	S16	0.4	0.246	0.026	0.0283	
15 minute winter	S15	3.000	S16	0.4	1.257	0.015	0.0004	
120 minute winter	S16	1.002	S12	0.4	0.296	0.026	0.0109	
15 minute summer	S6	4.000	S12	0.4	0.693	0.008	0.0133	
120 minute winter	S12	1.003	S2	0.5	0.295	0.036	0.1765	
15 minute winter	S7	5.000	S8	0.4	0.814	0.027	0.0020	
120 minute winter	S1	6.000	S8	0.0	0.001	0.000	0.0069	
120 minute winter	S8	5.001	S10	0.2	0.238	0.009	0.0730	
15 minute summer	S9	7.000	S10	0.4	1.034	0.019	0.0072	
120 minute winter	S10	5.002	S2	0.6	0.402	0.029	0.0379	
120 minute winter	S2	Hydro-Brake®	S3	0.4				
15 minute summer	S3	1.005	S4	0.4	0.434	0.026	0.0271	
180 minute winter	S4	1.006	S5	0.4	0.347	0.025	0.0160	2.2

Results for 10 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S13	10	12.363	0.013	0.9	0.0000	0.0000	OK
120 minute winter	S11	114	12.257	0.157	0.1	0.0249	0.0000	SURCHARGED
120 minute winter	S14	112	12.257	0.164	0.3	0.0000	0.0000	SURCHARGED
15 minute winter	S15	10	12.362	0.012	0.9	0.0000	0.0000	OK
120 minute winter	S16	114	12.258	0.230	0.6	0.0000	0.0000	SURCHARGED
15 minute winter	S6	10	12.484	0.014	0.9	0.0204	0.0000	OK
120 minute winter	S12	114	12.254	0.234	0.7	0.0372	0.0000	SURCHARGED
15 minute winter	S7	10	12.367	0.017	0.9	0.0000	0.0000	OK
120 minute winter	S1	114	12.256	0.156	0.2	0.0247	0.0000	SURCHARGED
120 minute winter	S8	114	12.256	0.201	0.4	0.0000	0.0000	SURCHARGED
15 minute winter	S9	10	12.364	0.014	0.9	0.0000	0.0000	OK
120 minute winter	S10	114	12.255	0.298	0.6	0.0000	0.0000	SURCHARGED
120 minute winter	S2	114	12.256	0.331	0.9	0.3742	0.0000	SURCHARGED
15 minute winter	S3	9	11.567	0.017	0.4	0.0027	0.0000	OK
60 minute winter	S4	144	11.394	0.017	0.4	0.0187	0.0000	OK
60 minute winter	S5	144	11.291	0.016	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S13	1.000	S14	0.9	1.453	0.037	0.0009	
120 minute winter	S11	2.000	S14	0.2	-0.113	0.011	0.0197	
120 minute winter	S14	1.001	S16	0.3	0.195	0.020	0.1701	
15 minute winter	S15	3.000	S16	0.9	1.599	0.032	0.0048	
120 minute winter	S16	1.002	S12	0.4	0.275	0.030	0.0215	
15 minute winter	S6	4.000	S12	0.9	0.694	0.017	0.0500	
120 minute winter	S12	1.003	S2	0.5	0.295	0.030	0.2290	
15 minute winter	S7	5.000	S8	0.9	1.031	0.060	0.0101	
120 minute winter	S1	6.000	S8	-0.2	-0.041	-0.007	0.0549	
120 minute winter	S8	5.001	S10	0.2	0.238	0.009	0.1182	
15 minute winter	S9	7.000	S10	0.9	1.204	0.043	0.0125	
120 minute winter	S10	5.002	S2	0.6	0.402	0.029	0.0382	
120 minute winter	S2	Hydro-Brake®	S3	0.4				
15 minute winter	S3	1.005	S4	0.4	0.431	0.026	0.0271	
60 minute winter	S4	1.006	S5	0.4	0.347	0.025	0.0160	3.4

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S13	118	12.366	0.016	0.4	0.0000	0.0000	OK
120 minute winter	S11	122	12.371	0.271	0.3	0.0431	0.0000	SURCHARGED
120 minute winter	S14	112	12.364	0.271	0.5	0.0000	0.0000	SURCHARGED
15 minute winter	S15	10	12.364	0.014	1.1	0.0000	0.0000	OK
120 minute winter	S16	116	12.367	0.339	0.6	0.0000	0.0000	SURCHARGED
15 minute winter	S6	11	12.485	0.015	1.1	0.0249	0.0000	OK
120 minute winter	S12	116	12.360	0.340	0.7	0.0541	0.0000	SURCHARGED
15 minute winter	S7	10	12.369	0.019	1.1	0.0000	0.0000	OK
120 minute winter	S1	116	12.362	0.262	0.2	0.0417	0.0000	SURCHARGED
120 minute winter	S8	116	12.363	0.308	0.4	0.0000	0.0000	SURCHARGED
15 minute winter	S9	10	12.366	0.016	1.1	0.0000	0.0000	OK
120 minute winter	S10	116	12.363	0.406	0.6	0.0000	0.0000	SURCHARGED
120 minute winter	S2	116	12.362	0.437	0.9	0.4946	0.0000	SURCHARGED
15 minute winter	S3	9	11.567	0.017	0.4	0.0027	0.0000	OK
120 minute winter	S4	118	11.394	0.017	0.4	0.0188	0.0000	OK
120 minute winter	S5	118	11.291	0.016	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S13	1.000	S14	0.4	1.142	0.017	0.0058	
120 minute winter	S11	2.000	S14	0.5	-0.106	0.035	0.0197	
120 minute winter	S14	1.001	S16	0.3	0.195	0.021	0.1701	
15 minute winter	S15	3.000	S16	1.1	1.695	0.040	0.0056	
120 minute winter	S16	1.002	S12	0.4	0.275	0.031	0.0215	
15 minute winter	S6	4.000	S12	1.1	0.694	0.022	0.0526	
120 minute winter	S12	1.003	S2	0.5	0.295	0.035	0.2290	
15 minute winter	S7	5.000	S8	1.1	1.102	0.074	0.0171	
120 minute winter	S1	6.000	S8	-0.2	-0.068	-0.010	0.0549	
120 minute winter	S8	5.001	S10	0.2	0.238	0.011	0.1182	
15 minute winter	S9	7.000	S10	1.1	1.144	0.053	0.0127	
120 minute winter	S10	5.002	S2	0.6	0.402	0.029	0.0382	
120 minute winter	S2	Hydro-Brake®	S3	0.4				
15 minute winter	S3	1.005	S4	0.4	0.434	0.026	0.0271	
120 minute winter	S4	1.006	S5	0.4	0.348	0.025	0.0161	5.8

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S13	114	12.493	0.143	0.5	0.0000	0.0000	SURCHARGED
120 minute winter	S11	114	12.494	0.394	3.7	0.0626	0.0000	SURCHARGED
120 minute winter	S14	118	12.494	0.401	4.3	0.0000	0.0000	SURCHARGED
120 minute winter	S15	116	12.491	0.141	0.5	0.0000	0.0000	SURCHARGED
120 minute winter	S16	114	12.496	0.468	1.3	0.0000	0.0000	SURCHARGED
15 minute winter	S6	10	12.488	0.018	1.6	0.0336	0.0000	OK
120 minute winter	S12	118	12.488	0.468	3.8	0.0744	0.0000	SURCHARGED
180 minute winter	S7	172	12.486	0.136	0.4	0.0000	0.0000	SURCHARGED
180 minute winter	S1	172	12.486	0.386	0.3	0.0614	0.0000	SURCHARGED
180 minute winter	S8	172	12.486	0.431	0.7	0.0000	0.0000	SURCHARGED
180 minute winter	S9	168	12.486	0.136	0.4	0.0000	0.0000	SURCHARGED
180 minute winter	S10	172	12.487	0.530	1.0	0.0000	0.0000	FLOOD RISK
120 minute winter	S2	118	12.486	0.561	1.3	0.6347	0.0000	SURCHARGED
120 minute winter	S3	120	11.567	0.017	0.4	0.0028	0.0000	OK
120 minute winter	S4	120	11.394	0.017	0.4	0.0197	0.0000	OK
120 minute winter	S5	120	11.292	0.017	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S13	1.000	S14	1.0	1.142	0.043	0.0105	
120 minute winter	S11	2.000	S14	-3.5	-0.201	-0.253	0.0197	
120 minute winter	S14	1.001	S16	0.7	0.204	0.049	0.1701	
120 minute winter	S15	3.000	S16	1.3	1.138	0.049	0.0105	
120 minute winter	S16	1.002	S12	3.5	0.278	0.243	0.0215	
15 minute winter	S6	4.000	S12	1.6	0.792	0.031	0.0540	
120 minute winter	S12	1.003	S2	1.3	0.295	0.086	0.2290	
180 minute winter	S7	5.000	S8	0.4	0.660	0.028	0.0326	
180 minute winter	S1	6.000	S8	-0.3	-0.037	-0.012	0.0549	
180 minute winter	S8	5.001	S10	-0.7	0.238	-0.033	0.1182	
180 minute winter	S9	7.000	S10	0.4	0.676	0.019	0.0231	
180 minute winter	S10	5.002	S2	-0.9	0.385	-0.042	0.0382	
120 minute winter	S2	Hydro-Brake®	S3	0.4				
120 minute winter	S3	1.005	S4	0.4	0.389	0.028	0.0294	
120 minute winter	S4	1.006	S5	0.4	0.359	0.028	0.0173	7.6

Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S13	118	12.450	0.100	0.6	0.0000	0.0000	SURCHARGED
120 minute winter	S11	120	12.452	0.352	3.0	0.0560	0.0000	SURCHARGED
120 minute winter	S14	108	12.444	0.351	3.6	0.0000	0.0000	SURCHARGED
120 minute winter	S15	118	12.445	0.095	0.5	0.0000	0.0000	OK
120 minute winter	S16	118	12.452	0.424	0.9	0.0000	0.0000	SURCHARGED
15 minute winter	S6	10	12.487	0.017	1.4	0.0300	0.0000	OK
120 minute winter	S12	116	12.438	0.418	0.9	0.0665	0.0000	SURCHARGED
120 minute winter	S7	112	12.443	0.093	0.5	0.0000	0.0000	OK
120 minute winter	S1	114	12.442	0.342	0.3	0.0543	0.0000	SURCHARGED
120 minute winter	S8	112	12.442	0.387	0.7	0.0000	0.0000	SURCHARGED
120 minute winter	S9	116	12.441	0.091	0.5	0.0000	0.0000	OK
120 minute winter	S10	118	12.441	0.484	0.6	0.0000	0.0000	SURCHARGED
120 minute winter	S2	112	12.442	0.517	0.9	0.5850	0.0000	SURCHARGED
15 minute summer	S3	9	11.567	0.017	0.4	0.0027	0.0000	OK
120 minute winter	S4	120	11.394	0.017	0.4	0.0194	0.0000	OK
120 minute winter	S5	120	11.292	0.017	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S13	1.000	S14	1.1	1.142	0.048	0.0105	
120 minute winter	S11	2.000	S14	-2.8	-0.156	-0.197	0.0197	
120 minute winter	S14	1.001	S16	0.9	0.201	0.061	0.1701	
120 minute winter	S15	3.000	S16	0.6	1.138	0.023	0.0104	
120 minute winter	S16	1.002	S12	0.9	0.277	0.062	0.0215	
15 minute winter	S6	4.000	S12	1.4	0.792	0.027	0.0537	
120 minute winter	S12	1.003	S2	0.9	0.295	0.058	0.2290	
120 minute winter	S7	5.000	S8	0.7	0.746	0.045	0.0321	
120 minute winter	S1	6.000	S8	-0.3	-0.051	-0.014	0.0549	
120 minute winter	S8	5.001	S10	0.4	0.238	0.021	0.1182	
120 minute winter	S9	7.000	S10	0.5	0.676	0.024	0.0226	
120 minute winter	S10	5.002	S2	0.8	0.402	0.037	0.0382	
120 minute winter	S2	Hydro-Brake®	S3	0.4				
15 minute summer	S3	1.005	S4	0.4	0.434	0.026	0.0271	
120 minute winter	S4	1.006	S5	0.4	0.355	0.027	0.0169	7.0

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S13	232	12.582	0.232	0.5	0.0000	0.0000	FLOOD RISK
240 minute winter	S11	232	12.584	0.484	2.1	0.0770	0.0000	FLOOD RISK
120 minute winter	S14	120	12.584	0.491	5.8	0.0000	0.0000	FLOOD RISK
120 minute winter	S15	120	12.578	0.228	1.2	0.0000	0.0000	FLOOD RISK
240 minute winter	S16	224	12.593	0.565	6.6	0.0000	0.0000	FLOOD RISK
120 minute winter	S6	120	12.577	0.107	0.8	0.7473	0.0000	OK
120 minute winter	S12	120	12.581	0.561	6.0	0.0892	0.0000	FLOOD RISK
180 minute winter	S7	172	12.578	0.228	0.5	0.0000	0.0000	FLOOD RISK
120 minute winter	S1	116	12.578	0.478	0.6	0.0760	0.0000	FLOOD RISK
120 minute winter	S8	116	12.578	0.523	1.1	0.0000	0.0000	FLOOD RISK
120 minute winter	S9	116	12.578	0.228	1.1	0.0000	0.0000	FLOOD RISK
120 minute winter	S10	116	12.577	0.620	1.3	0.0000	0.0000	FLOOD RISK
180 minute winter	S2	172	12.578	0.653	1.2	0.7382	0.0000	FLOOD RISK
120 minute winter	S3	122	11.568	0.018	0.4	0.0028	0.0000	OK
180 minute winter	S4	176	11.395	0.018	0.4	0.0203	0.0000	OK
180 minute winter	S5	176	11.293	0.018	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	S13	1.000	S14	1.3	1.039	0.056	0.0105	
240 minute winter	S11	2.000	S14	3.7	0.208	0.261	0.0197	
120 minute winter	S14	1.001	S16	1.5	0.204	0.100	0.1701	
120 minute winter	S15	3.000	S16	-1.2	1.138	-0.043	0.0105	
240 minute winter	S16	1.002	S12	5.3	0.304	0.373	0.0215	
120 minute winter	S6	4.000	S12	1.3	0.317	0.026	0.0890	
120 minute winter	S12	1.003	S2	1.4	0.295	0.090	0.2290	
180 minute winter	S7	5.000	S8	0.6	0.741	0.039	0.0326	
120 minute winter	S1	6.000	S8	-0.6	-0.040	-0.027	0.0549	
120 minute winter	S8	5.001	S10	-0.8	0.238	-0.037	0.1182	
120 minute winter	S9	7.000	S10	0.7	0.676	0.034	0.0231	
120 minute winter	S10	5.002	S2	-1.3	0.402	-0.059	0.0382	
180 minute winter	S2	Hydro-Brake®	S3	0.4				
120 minute winter	S3	1.005	S4	0.4	0.389	0.030	0.0307	
180 minute winter	S4	1.006	S5	0.4	0.365	0.030	0.0181	10.8