

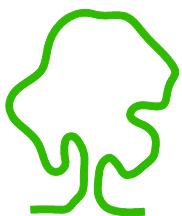
GOULD BAXTER



FIELD SIDE, TOTT LANE, HURSTPIERPOINT
WEST SUSSEX. BN6 9QR

Drainage Strategy

April 2026



eas ltd

Environmental Assessment Services Ltd

REPORT DATA SHEET

Requirement	Data
Report Reference	805/Gould Baxter/Fieldside/DS
Date	April 2026
Client	Gould Baxter
Report type	Drainage Strategy
Purpose	Discharge of planning condition
Revisions	-
Prepared by	Eur Ing Malcolm McKemey BSc (Hons), CEng, CEnv, MICE, MCIWEM, MIEEnvSc  Signed
Approved by	Xanthe Lyford BSc (Hons)  Signed

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Drainage Strategy

April 2026

CONTENTS

1. INTRODUCTION
2. EXISTING SITE AND THE DEVELOPMENT
3. FLOOD RISK ASSESSMENT
4. PROPOSED SURFACE WATER DRAINAGE
5. FOUL SEWERAGE
6. CONCLUSIONS
7. RECOMMENDATIONS

APPENDICES

APPENDIX A: FIGURES

Figure 1: Site Location Plan

Figure 2: Topographic Survey of the developed site

Figure 3: The as-built Drainage

APPENDIX B: SOUTHERN WATER SEWER PLANS

APPENDIX C: UK SUSTAINABLE DRAINAGE CALCULATIONS (GREENFIELD RUNOFF RATE)

APPENDIX D: MASTERDRAIN DRAINAGE ELEMENTS CHECKS

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FIELDSIDE, TOTT LANE, HURSTPIERPOINT, WEST SUSSEX. BN6 9QR

Drainage Strategy

April 2026

1. INTRODUCTION

- 1.1 Environmental Assessment Services (EAS) Limited was instructed to prepare a revised Drainage Strategy to match the existing (as built) drainage works for the new residential development at Fieldside, Tott Lane, Hurstpierpoint, West Sussex.
- 1.2 This report has been prepared for the purpose of discharging the drainage Planning Condition of the approved application relating to the provision of foul and surface water drainage and means of disposal at the development site.

2. THE DEVELOPMENT

- 2.1 The site area is approximately 0.1 ha. The Ordnance Survey (OS) map reference for the site is TQ 28586 16126. The site slopes downhill from a spot height of +60 m OD down to +55 m OD along the southern boundary, immediately adjacent to the tarmac access road, which runs east-west. There are public footpaths along the western boundary of the site, providing access to Hassocks Road approximately 130 m to the north, and along Tott Lane on the southern site boundary. The site has been developed for a single house and garden (Fieldside). See Appendix A, Figure 1: Site Location Plan and Figure 2: Topographic Survey (as built).
- 2.2 According to the British Geological Survey, the site lies on an unspecified superficial layer over bedrock of Lower Greensand Group: Sandstone, Silty. The online Environment Agency (EA) groundwater mapping system identifies the site to lie on a **principal** aquifer. The site does not lie within a Groundwater Source Protection Zone.
- 2.3 The site is located at the end of Tott Lane and accessed from Hassocks Road. There are existing properties to west of the site (Old Tott Farmhouse) and two properties to the southwest (The Barn and The Granary). To the north, on higher ground there are three further properties which are accessed from Hassocks Road. The site is a sloped plot with a public footpath running along the western boundary and trees/hedges marking the other boundaries. The site tapers slightly to the southeast boundary. Due south of the site, on the other side of Tott Lane, is a large pasture field which is slightly elevated on a bank above the level of Tott Lane. The field extends downhill to a ditch/watercourse which runs along the southern boundary of the field.

3. FLOOD RISK ASSESSMENT

- 3.1 According to the EA online Flood Map for Planning, the site lies within Flood Zone 1, an area with a low probability of flooding. The nearest area within Flood Zones 2 and 3 is located approximately 1 km west of the site associated with Culters Brook. See Appendix A, Figure 5: Environment Agency Flood Map.
- 3.2 The EA online Risk of Flooding from Surface Water mapping shows that the site is not at risk of surface water flooding.
- 3.3 There are no watercourses or public sewers immediately adjacent to the site.
- 3.4 As the site is less than 1 ha in area and lies within Flood Zone 1, there is no requirement for a flood risk assessment under the National Planning Policy Framework (NPPF) and associated guidance documents.
- 3.5 In this case, it is required by Mid-Sussex District Council that all runoff for the 1 in 100 year flood event, plus a 45% allowance for climate change, will be managed on site, and that any discharge from the proposed development will be restricted to Greenfield run-off rate.

4. SURFACE WATER DRAINAGE

- 4.1 There was no formal surface water drainage on site prior to the current development. The site originally comprised grassland with no ditching evident along the lower southern site boundary.
- 4.2 As required by Mid Sussex District Council, the flow permitted to leave the developed site should not exceed the Greenfield flow rate. The Greenfield runoff rate for the site has therefore been estimated using the UK Sustainable Drainage (UKSUDS) Greenfield Runoff Estimation Tool. The runoff rates are given for scenarios up to (and including) the 1 in 200 year return period storm event, as summarised in Table 4.1 below and provided in Appendix C.

TABLE 4.1
GREENFIELD RUNOFF RATES

Return period	Runoff Rates (l/s)
1 in 1 year	0.5
1 in 2 year	0.5
1 in 10 year	1.0
1 in 30 year	1.4
1 in 100 year	2.0
1 in 200 year	2.3

- 4.3 The maximum discharge permitted to leave the whole site post development should not exceed 0.5 l/s.

- 4.4 The foul sewage should also be allowed for in the permitted discharge flow rate. The peak foul sewage design flow has been calculated for the proposed site as 0.05 l/s (see Section 6 below) therefore the surface water discharge should not exceed 0.45 l/s. However, as explained above, the practicable flow control limit will be 1 l/s, and this will be the maximum permitted discharge rate.

5. THE DEVELOPMENT DRAINAGE

- 5.1 The residential development has increased the impermeable area of the site compared to its former use, which could increase the peak flow following a rainfall event. Post-development 0.023 ha of the site comprises hardstanding, and the rest (0.077 ha) comprises soft landscaping. The soft landscaping will still discharge informally as Greenfield and only the controlled drainage from the roof and other impermeable areas will be subject to SuDS measures.

- 5.2 It has been required that the drainage design of the developed site should retain onsite flows up to the 1 in 100 year return period event, including an allowance of +45% for climate change.

5.3 Drainage to Soakaway

- 5.3.1 Drainage to soakaway (infiltration) is the preferred Sustainable Urban Drainage System (SUDS) solution. The underlying bedrock of Lower Greensand was considered to have some potential for soakaway drainage. The contractor, who designed the current drainage, carried out percolation tests at the site in accordance with BRE Digest DG 365 and calculated an infiltration coefficient of $f = 2.8 \times 10^{-6}$ m/s and a V_p of 78.4.

5.4 Attenuation Storage

- 5.4.1 The alternative to soakaway drainage is attenuation storage onsite, with discharge limited to the Greenfield flow for the impermeable areas (in this case 1 l/s).
- 5.4.2 Attenuation storage can be provided in the form of ponds, swales, detention basins or underground geocellular/modular systems. However, attenuation storage requires an outlet to a watercourse or sewer, neither of which are available within the site or immediately adjacent to it.

5.5 Development of the Drainage Strategy

- 5.5.1 The original drainage strategy involved installing a soakaway or underground attenuation storage in the field to the south of the site on the south side of Tott Lane. The attenuation storage would discharge to the watercourse on the southern field boundary.
- 5.5.2 Similarly, the sewage effluent would discharge from a package treatment plant to a drainage field under the field to the south, or drain through a pipe laid under the field to the watercourse on the southern boundary.

- 5.5.3 The proposed arrangement relied on the consent of the owner of the field to the south, which was initially granted. However, the consent was withdrawn and it became necessary to handle both surface water and sewage effluent within the site boundary. Both would have to rely on infiltration, although there was inadequate room within the site for a conventional drainage field for the sewage effluent.
- 5.5.4 The drainage scheme submitted with the planning application (DM/19/4439) was based on the discharge of surface water to a drainage blanket soakaway under the driveway and treated sewage effluent discharged to a drainage field/mound along the front of the site. It is understood that planning permission was obtained based on this scheme.
- 5.5.5 Subsequently, the contractor who built the development also redesigned all the drainage and installed the current scheme. See Figure 3.
- 5.5.6 The current scheme comprises a surface water soakaway at the centre/east front of the site and a sewage treatment works with drainage mound at the southwest corner of the site. The system appears to be working satisfactorily
- 5.5.7 This scheme has been checked using the MasterDrain drainage network model and the soakaway size has been found to be adequate. See Appendix D.

5.5 Other Sustainable Urban Drainage System (SUDS) Options

- 5.6.1 Additional SUDS options include the use of permeable paving in the driveway/parking area.
- 5.6.2 Rainwater harvesting can also be practiced. Rainwater can be used for irrigation purposes within the garden, via water butts connected to roof downpipes.
- 5.6.3 Green roofs can be effective for reducing surface water runoff; however green roofs on houses with typical pitched roofs, as at Fieldside, are unlikely to be practicable and have not been included this scheme.

5.7 Extreme event

- 5.7.2 If an extreme storm event overwhelmed the surface water drainage system at the site and/or if the drainage system were to fail, ground levels would indicate that surface water would discharge onto Tott Lane and to the footpath/lane to the south of the site.

6 FOUL SEWERAGE

- 6.1 There was no existing foul sewerage at the site prior to the development of Fieldside. According to the Southern Water sewer records, the nearest accessible public sewer lies approximately 130 m north of the site on Hassocks Road. Connection to this sewer was not considered practicable due to the complexity and elevation of the feasible connection route,

- 6.2 The sewage treatment plant at the site was chosen and installed by the contractor.
- 6.3 The available area within the drainage mound is approximately 80 m². This exceeds the 78.4 m² required as calculated by the MasterDrain (Foul) drainage network model. See Appendix D.

7 CONCLUSIONS

- 7.1 Planning permission has been given for the development of one dwelling on a previously undeveloped plot to the north of Tott Lane, Hurstpierpoint. A Condition of the planning permission required that a foul and surface water drainage and disposal design be completed for the site. It is required that all runoff for the 1 in 100 year flood event, plus a 45% allowance for climate change, will be managed on site, and that discharge from the proposed development will be restricted to the Greenfield run-off rate.
- 7.2 The site lies within Flood Zone 1, at low risk of tidal and fluvial flooding, and is also shown to be at low risk of surface water flooding.
- 7.3 There was no formal surface water drainage on site prior to the present development. Surface water from the site either soaked into the ground or flowed south onto Tott Lane and to the farm track/public footpath south of the site. Similarly, there was no foul sewerage on site prior to the existing development. The nearest foul sewer is some 130 m distant in Hassocks Road and connection to this sewer from the site did not appear practicable.
- 7.4 The early strategy to deal with both surface water and foul sewage under the field to the south of the site could not proceed and a scheme to deal with both surface water and sewage effluent by infiltration within the site boundary was developed. This became part of the approved scheme.
- 7.5 Subsequently, the contractor engaged in the development of Fieldside redesigned the drainage and installed it as per his design. Whilst the drainage scheme is operating satisfactorily, it is not the approved scheme.
- 7.6 The purpose of this revised drainage strategy report is to confirm that the surface water and foul sewage drainage scheme meets the same criteria as the approved scheme. This has been checked by modelling the main elements using the MasterDrain network drainage model and has been found to be satisfactory.
- 7.7 Additional SUDS options incorporated into the development include permeable paving and rainwater harvesting, for garden irrigation purposes.
- 7.8 The foul sewerage should comply with the 'Small Sewage Discharges in England: General Binding Rules' (GBR) under the Environmental Permitting (England and Wales) (Amendment). (England) Regulations 2014.

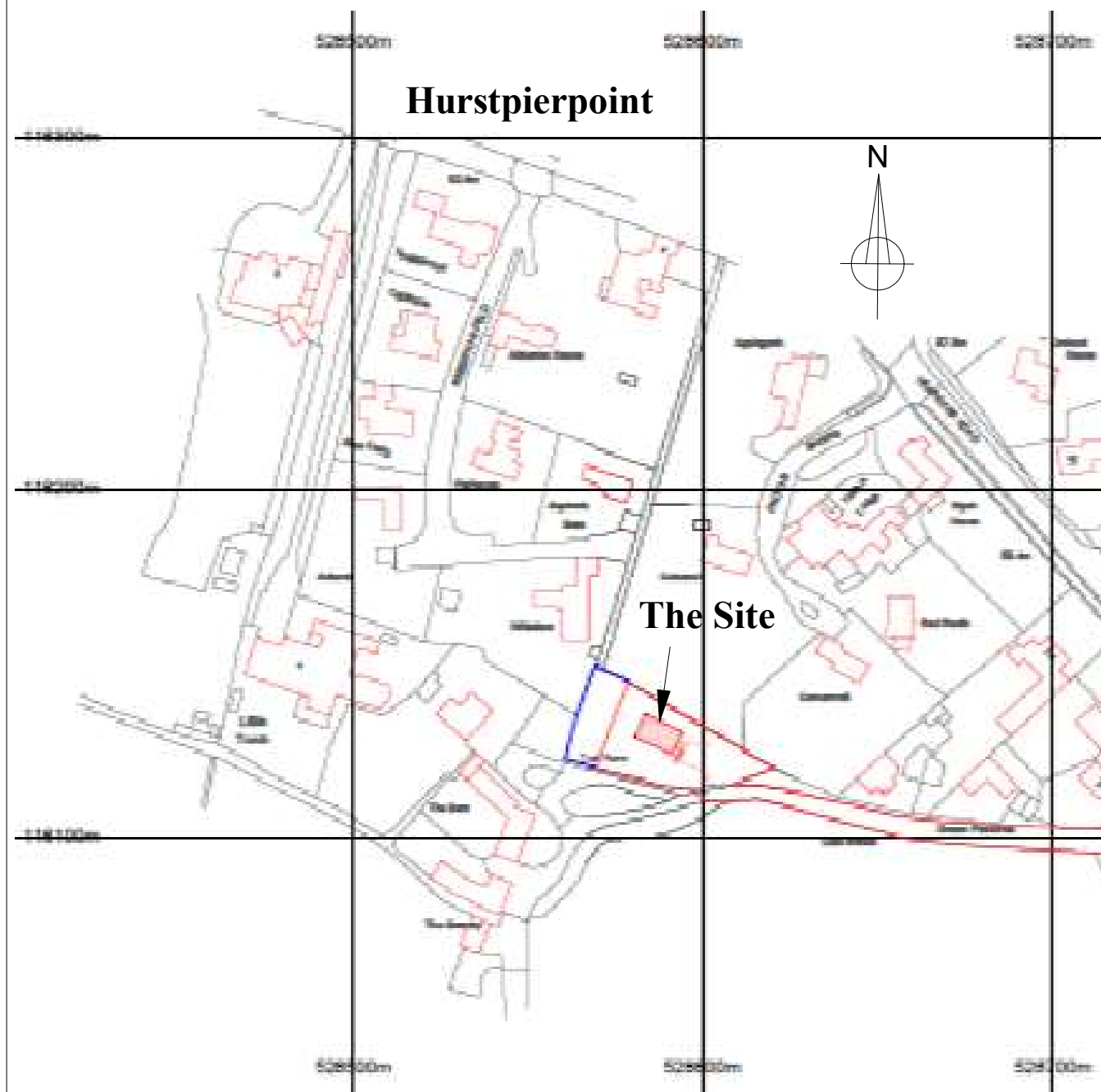


APPENDIX A: FIGURES

Figure 1: Site Location Plan

Figure 2: Topographic Survey of the Site

Figure 3: Drainage as built Scheme



Scale as shown



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FIELD SIDE, TOTT LANE, HURSTPIERPOINT

Figure 1: Site Location

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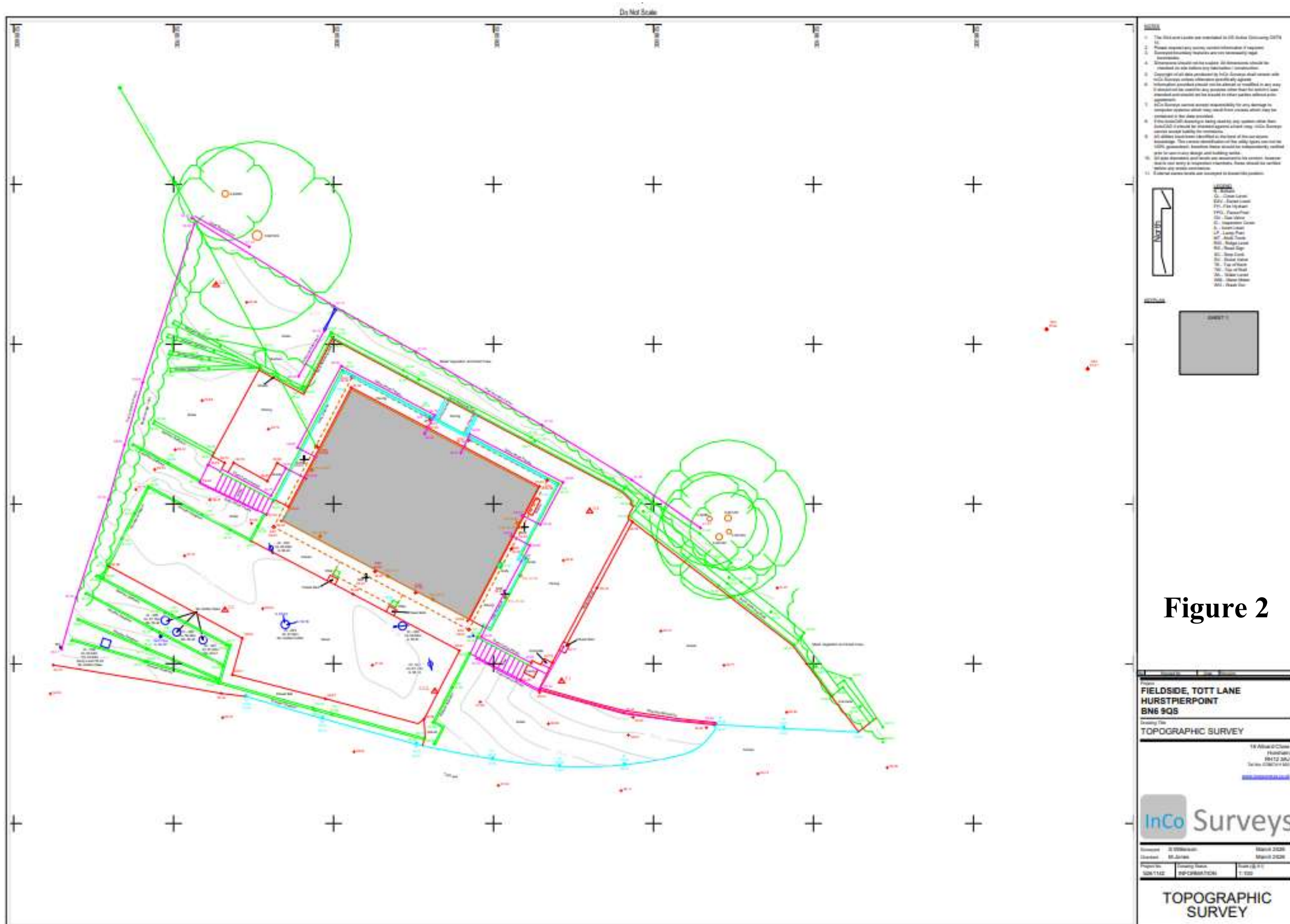
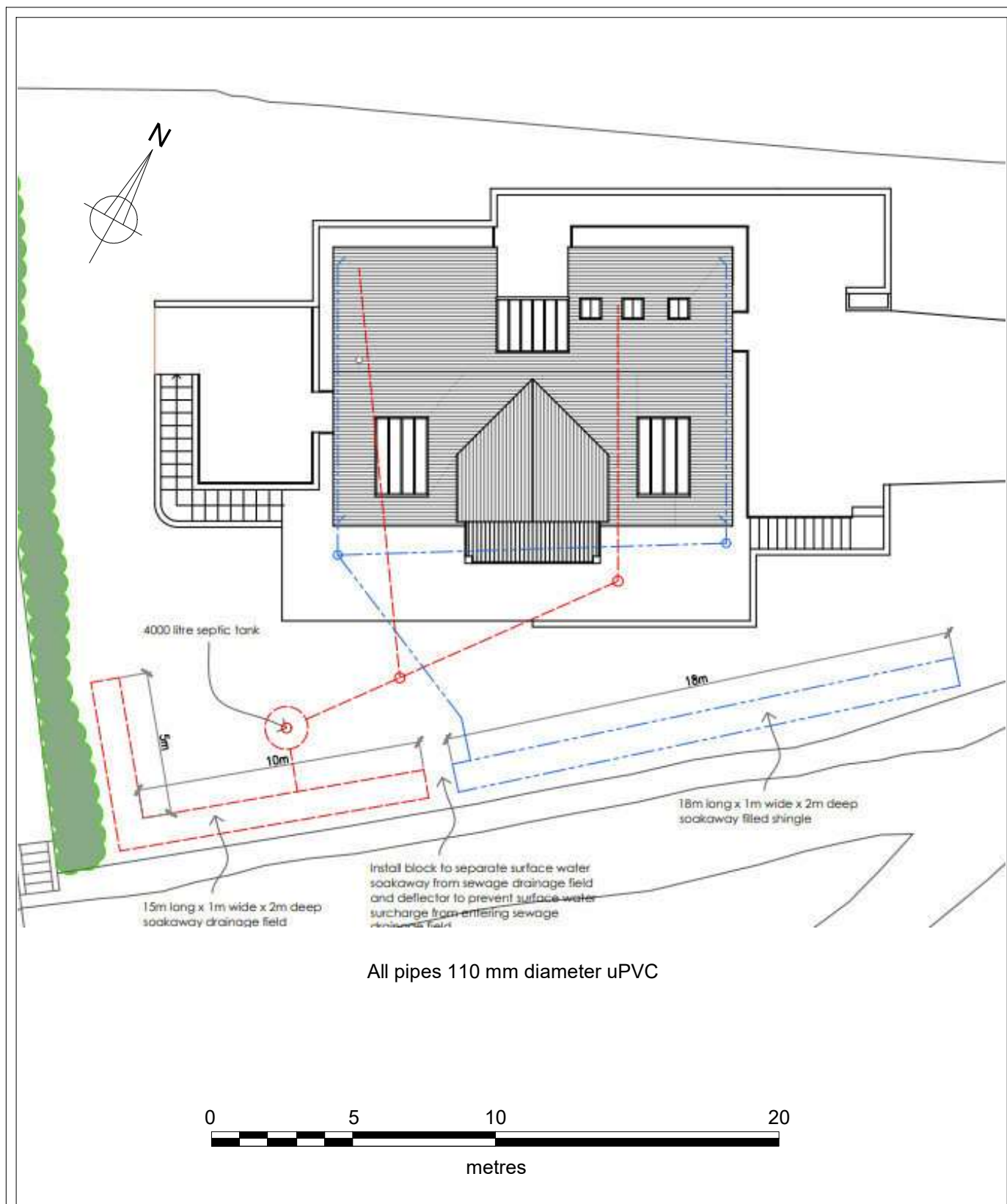


Figure 2



Scale as shown



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FIELD SIDE, TOTT LANE, HURSTPIERPOINT

Figure 3: As Built Drainage

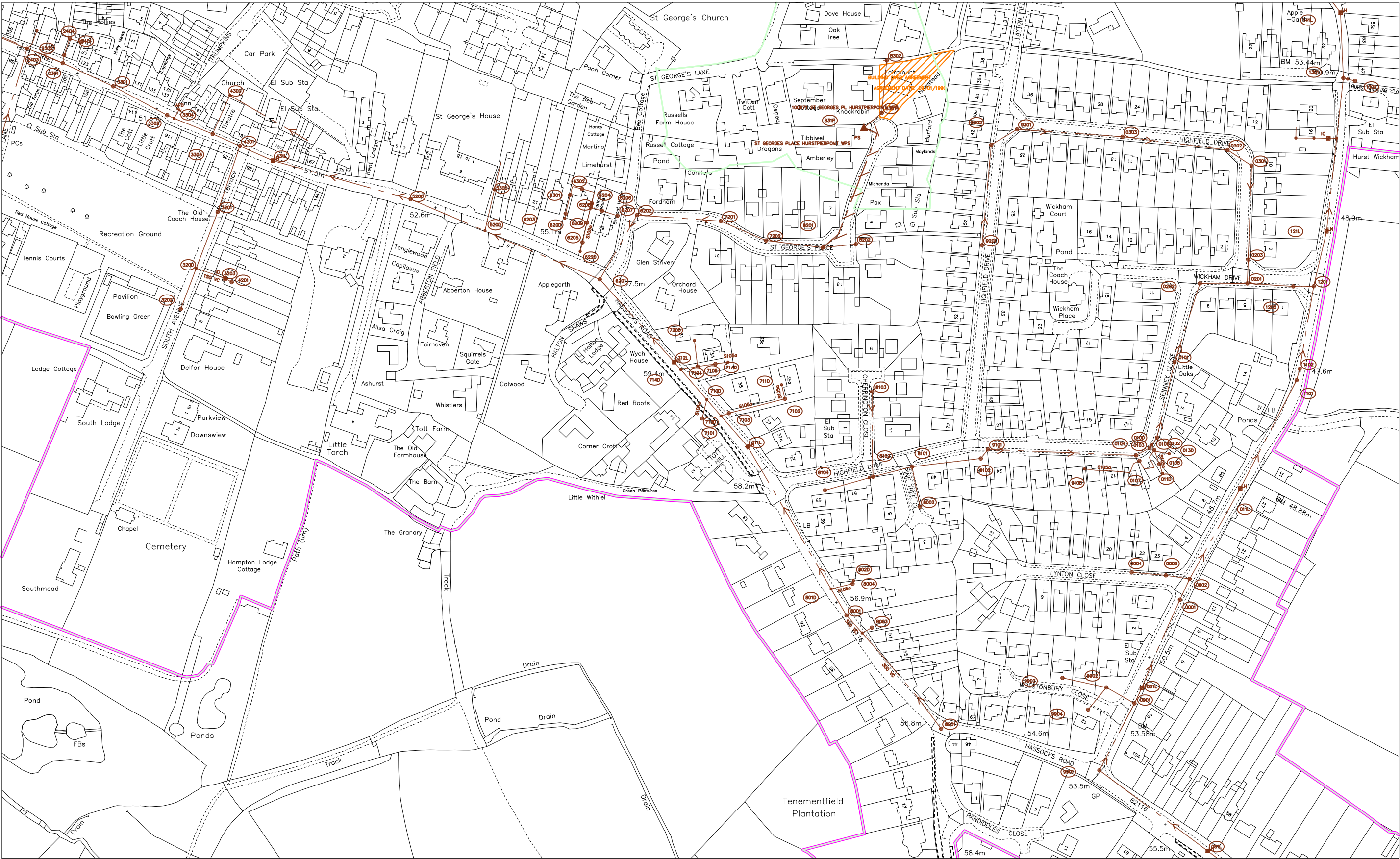
April 2026

APPENDIX B

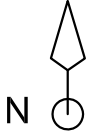
Southern Water Sewer Plans

SEWER RECORDS PAGE 1 OF 2

116433



115855

O.S. REF. TQ2816SE	Drawn by: rogersc	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. WARNING: BAC pipes are constructed of Bonded Asbestos Cement WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement	 N	
	Scale: 1:2500			
Title: 299336 - Land at Tott Farm	Date: 02/07/2018	Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530.		

528247

529190

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
0001X	49.91	46.77	225	VC	CIRC	6208X			UNK	UNK	CIRC												
0002X	49.65	46.63	225	VC	CIRC	6209X			UNK	UNK	CIRC												
0003X	50.21	48.13	150	VC	CIRC	620DX			UNK	UNK	CIRC												
0004X	50.97	49.3	150	VC	CIRC	6301X			UNK	UNK	CIRC												
0101X	52.03	48.57	150	VC	CIRC	6302X			UNK	UNK	CIRC												
0102X	50.99	49.18	150	VC	CIRC	7101X			UNK	UNK	CIRC												
0103X	51.19	49.34	150	VC	CIRC	7102X			UNK	UNK	CIRC												
0104X	51.31	49.74	150	VC	CIRC	7103X			UNK	UNK	CIRC												
0105X			UNK	UNK	CIRC	7104X			UNK	UNK	CIRC												
0106X			UNK	UNK	CIRC	7105X			UNK	UNK	CIRC												
0107X			UNK	UNK	CIRC	710DX			300	VC	CIRC												
010DX			150	VC	CIRC	711DX			UNK	UNK	CIRC												
011DX			UNK	UNK	CIRC	711LX	53.7	53.7	300	VC	CIRC												
011LX	48.58	46.04	225	VC	CIRC	712LX	59.38	53.36	300	VC	CIRC												
013DX			UNK	UNK	CIRC	713DX			300	VC	CIRC												
0201X	50.82	47.55	150	VC	CIRC	71ADX			UNK	UNK	CIRC												
0202X	52.95	48.1	150	VC	CIRC	7201X	59.17	53.82	150	VC	CIRC												
0203X	51.24	49.26	150	VC	CIRC	7202X	58.52	54.29	150	VC	CIRC												
0301X	52.94	50.49	150	VC	CIRC	720DX			UNK	UNK	CIRC												
0302X	53.65	50.89	150	VC	CIRC	8001X	56.99	54.3	300	VC	CIRC												
0303X	56.5	51.69	150	VC	CIRC	8002X	55.43	53.97	150	PF	CIRC												
081LX			225	VC	CIRC	8003X			UNK	UNK	CIRC												
0901X	51.37	48.52	225	VC	CIRC	8004X			UNK	UNK	CIRC												
091LX	51.13	48.34	225	VC	CIRC	800DX			300	VC	CIRC												
1101X	47.78	45.31	300	VC	CIRC	801DX			300	VC	CIRC												
1102X	47.79	45.26	300	VC	CIRC	802DX			UNK	UNK	CIRC												
1201X	48.35	45.11	300	VC	CIRC	8101X	55.82	53.58	150	PF	CIRC												
1202X	48.89	46.9	150	VC	CIRC	8102X	56.59	53.85	150	PF	CIRC												
121LY	49.03	45.05	300	VC	CIRC	8103X	56.64	54.75	150	PF	CIRC												
1301X	51.03	44.81	300	VC	CIRC	8104X	57.97	56.04	150	PF	CIRC												
1302X	51.19	50.12	150	VC	CIRC	8201X	56.71	54.64	150	VC	CIRC												
1303X			150	VC	CIRC	8202X	56.11	54.77	150	VC	CIRC												
131DX			150	VC	CIRC	8301X	53.94	52.24	150	VC	CIRC												
132DX			300	VC	CIRC	8302X	52.84	52.44	150	VC	CIRC												
133DX			150	VC	CIRC	831PX			75	PVC	UNK												
141LX	51.29	44.72	300	VC	CIRC	8901X	56.65		300	VC	CIRC												
2301X	53.8	47.72	300	VC	CIRC	9101X	55.12	52.83	150	PF	CIRC												
2301Y	53.8	51.43	225	VC	CIRC	9102X	55.17	52.99	150	PF	CIRC												
2302X			150	VC	CIRC	9201X	55.77	53.88	150	VC	CIRC												
2403X	54.47	50.98	225	VC	CIRC	9301X	55.26	52.61	150	VC	CIRC												
2404X			150	VC	CIRC	9302X	55.04	52.87	150	VC	CIRC												
241DX			225	VC	CIRC	9901X	53.5	49.86	225	VC	CIRC												
3201X	52.85	48.66	225	VC	CIRC	9902X	52.35	50.82	150	PF	CIRC												
3202X	53.26	49.17	225	VC	CIRC	9903X	53.44	51.78	150	PF	CIRC												
3203X			150	VC	CIRC	9904X	53.13	51.64	150	PF	CIRC												
320DX			225	VC	CIRC																		
3301X	52.58	48.02	300	VC	CIRC																		
3302X	51.38	48.05	300	VC	CIRC																		
3303X	51.09		300	VC	CIRC																		
3304X			UNK	UNK	CIRC																		
330DX			300	VC	CIRC																		
3401X			UNK	UNK	CIRC																		
4201X			150	VC	CIRC																		
4301X	51.14	48.19	300	VC	CIRC																		
430DX			300	UNK	CIRC																		
431LX	51.21	48.33	300	VC	CIRC																		
5200X	52.28	48.69	300	VC	CIRC																		
530DX			OTHER	UNK	CIRC																		
6201X	57.02	52.92	300	VC	CIRC																		
6202X	58.88	53.32	150	VC	CIRC																		
6203X			UNK	UNK	CIRC																		
6204X			UNK	UNK	CIRC																		
6205X			UNK	UNK	CIRC																		
6206X			UNK	UNK	CIRC																		
6207X			UNK	UNK	CIRC																		

LINE STYLES / COLOURS

Brown

Red

Orange

Dark Blue

Purple

Light Blue

Yellow

Green

Foul

Foul Syphon Sewer

Foul Vacuum Main

Foul Rising Main

Combined

Combined Syphon Sewer

Combined Rising Main

Lateral Drain

Building Over Agreement Area

Treated Effluent

Sludge

Sewer Catchment

Section 104 Area

Surface Water

Surface Water Rising Main

Private

Access Shaft

Decommissioned

MATERIALS

AK

BAC

BRC

BRE

CC

CI

CO

CP

CSB

CSU

DI

GRC

GRP

MAR

PE

PF

PP

PVC

RPM

SI

ST

VC

XXX

ZZZ

Alkathene

Bonded Asbestos Cement

Brick (Common)

Brick (Engineering)

Concrete Box Culvert

Cast Iron

Concrete (In-Situ)

Concrete (Pre-Cast)

Concrete Segments (bolted)

Concrete Segments (unbolted)

Ductile Iron

Glass Reinforced Concrete

Glass Reinforced Plastic

Masonry in regular Courses

Masonry in random Courses

Polyethylene

Pitch Fibre

Polypropylene

Polyvinyl Chloride

Reinforced Plastic Matrix

Spun Iron

Steel

Unfilled Clay

Other

Unknown

LEGEND - SEWERS

Manhole (SW)

Manhole (F&C)

Lamp hole (SW)

Lamp hole (F&C)

Pumping Station (SW)

Pumping Station (F&C)

Side entry manhole (SW)

Side entry manhole (F&C)

Blind shaft (SW)

Blind shaft (F&C)

Ejector station (SW)

Ejector station (F&C)

Watertight door (SW)

Watertight door (F&C)

Flushing ch. Min-e (SW)

Flushing ch. Min-e (F&C)

Flushing ch. No-e (SW)

Flushing ch. No-e (F&C)

Demarcation Chamber

Washout (SW)

Washout (F&C)

Rodding Eye (SW)

Rodding Eye (F&C)

Gauging point (SW)

Gauging point (F&C)

Intercept chamber (SW)

Intercept chamber (F&C)

Storm Tank (SW)

Storm Tank (F&C)

Vortex chamber (SW)

Vortex chamber (F&C)

Label ellipse

Dummy/S24 manhole

Outfall

Penstock chamber

Damboards

Storm Overflow

Backdrop manhole

Other (s)

Other

Change in sewer (s)

Change in sewer

Reflex valve

Flap valve

Cascade

Anode

Valve

Closed Valve

Air Valve

Hatch box (SW)

Hatch box (F&C)

Direction arrow

Emptying valve

Catchpit

Soakaway

Inlet

Balancing Pond

Wastewater treatment works

Marine treatment works

Outfall headworks

Vent

Vent column

Tidal storage tank

Blank end

Head of Public Sewer

Micro Pumping Station

SHAPES (S)

A

B

C

E

H

Arched

Barrel

Circular

Egg

Horseshoe

R

S

T

U

X

Rectangular

Square

Trapezoidal

U Shape

Other

NODE REFERENCING SYSTEM

1st digit:

2nd digit:

3rd digit:

4th digit:

hundred metre easting identifier

hundred metre northing identifier

sewer type identifier

next sequential node

Drawn by: rogersc

Title: 299336 - Land at Tott Farm

Date: 02/07/2018



APPENDIX C

UK Sustainable Drainage (UKSUDS) Calculations (Greenfield Runoff Rates)



Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (<https://www.uksuds.com/>)

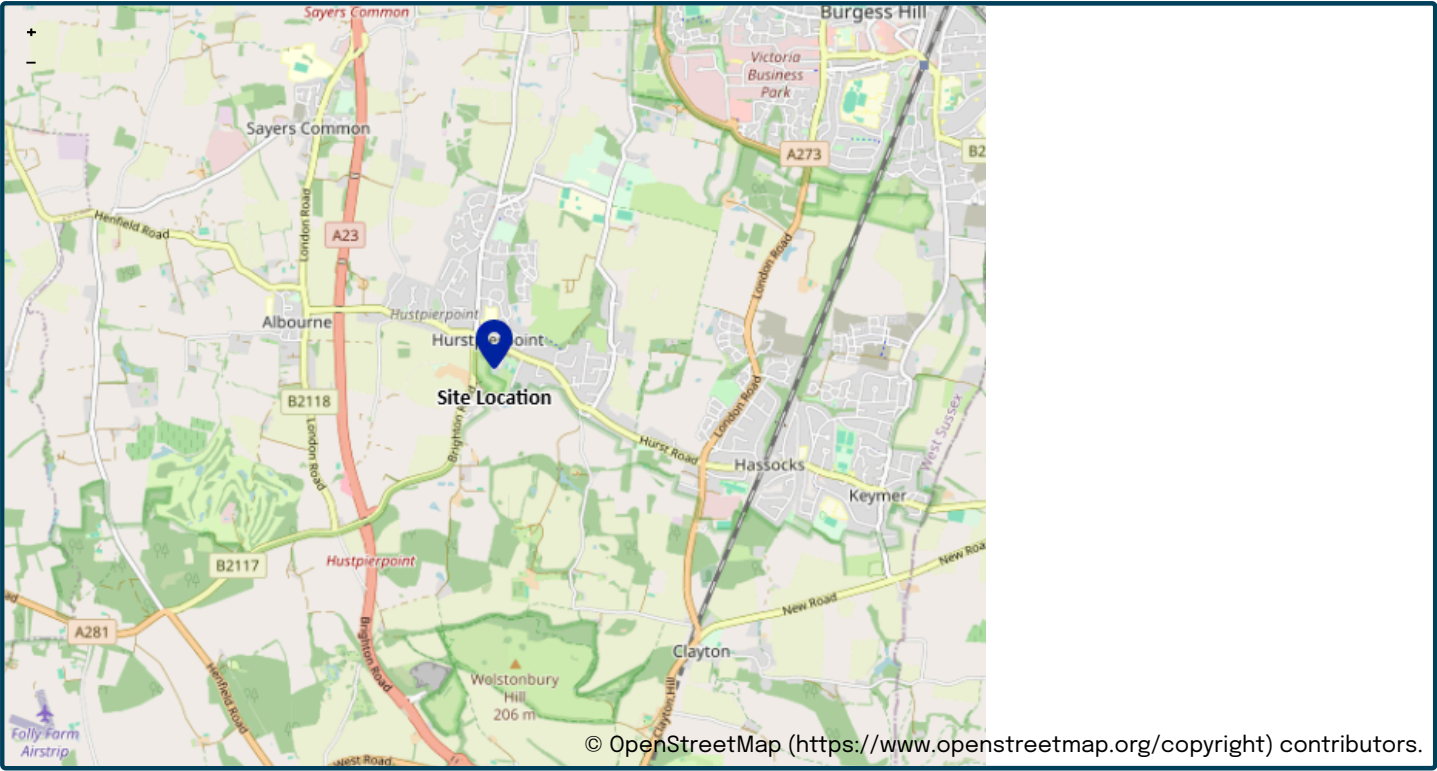
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	02/04/2026
Calculated by	Malcolm McKemey
Reference	Fieldside
Model version	2.2.3

Location

Site name	Fieldside
Site location	Tott Lane, Hurstpierpoint



Site easting (British National Grid)	528181
Site northing (British National Grid)	116054

Site details

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

Greenfield runoff

Method

Method	IH124
--------	-------

IH124

SAAR (mm)	My value 864 mm	Map value 864
How should SPR be derived?	WRAP soil type	
WRAP soil type	4	4
SPR	0.47	
QBar (IH124) (l/s)	0.6 l/s	

Growth curve factors

Hydrological region	My value 7	Map value 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	IH124	
Flow rate 1 year (l/s)	0.5	l/s
Flow rate 2 year (l/s)	0.5	l/s
Flow rate 10 years (l/s)	1.0	l/s
Flow rate 30 years (l/s)	1.4	l/s
Flow rate 100 years (l/s)	2.0	l/s
Flow rate 200 years (l/s)	2.3	l/s

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

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). 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 D

Output from the MasterDrain network drainage model



MasterDrain
SW 16.56

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Job No. 805	
Sheet no. 1	
Date 07/04/26	
By MDM	Checked Reviewed

Project Fieldside, Tott Lane, Hurstpierpoint	
Title Trench soakaway calculations for HURSTPIERPOINT	

Data:-

Location hydrological data (FSR):-

Location	= HURSTPIERPOINT	Grid reference	= TQ2816
M5-60 (mm)	= 20.0	r	= 0.36
Soil index	= 0.45	SAAR (mm/yr)	= 860
WRAP	= 4	Area	= England and Wales

Soil classification for WRAP type 4
Clayey, or loamy over clayey soils with an impermeable layer at shallow depth.

Design data:-

Safety factor = 1.5 - No damage or inconvenience (SF=1.5)
Fill porosity = 0.45 - Clean stone (porosity = 0.4 - 0.5)

Equivalent porosity (n1) = 0.45

Area drained = 140 m²

Infiltration coefficient = 0.01008 m/hr
Effective inf.coeff (q) = 0.00672

Return period = 100 yrs

Climate change factor = 45%

Calculations :-

Perimeter of pit = (2 x Excavation Width)+(2 x Excavation Length)
Area of base = Excavation Width x Excavation Length
Infiltration area = (Area of base)+(Perimeter of pit x Hmax)
Temporary constant 'a'
= (Area of base / perimeter)-((AreaDrained x Rainfall depth /1000)/((Perimeter/Inf. coeff))
Temporary constant 'b' = (Perimeter/Inf. coeff) / (Area of base x porosity)
Hmax = a*((EXP(-1 x b x Duration of storm))-1)

Note: The Hmax calculation is iterated to a maximum value of Hmax.

Note: Duration of storm in hours, Rainfall depth in mm/hr x Climate Change factor.

Results :-

Emptying time to 50% volume = 14:60 (hr:min)

hMax (Depth) = 1.45 metres

Time to maximum = 0:10 hr:min

Rainfall at maximum = 10.27mm/hr

Width (m) = 1.0

Length (m) = 18.0

Total Infiltration area = 73.0m² (base area + sidewall area).

Total available volume = 11.72m³

N.B. The rainfall rates are calculated using the location specific
values above in accordance with the Wallingford procedure.
Formulae and methods from CIRIA 156.



MasterDrain
SW 16.56

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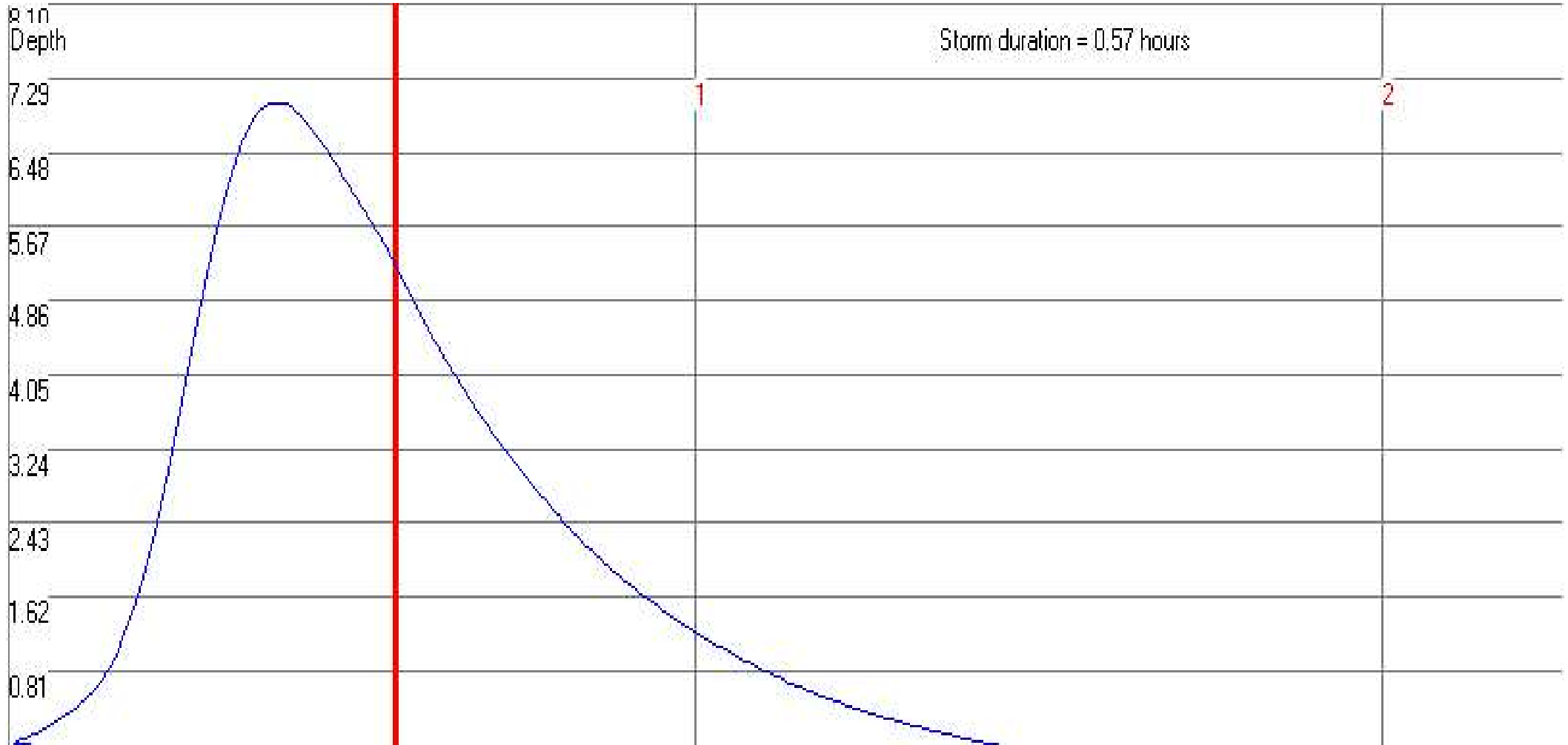
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Job No. 805		
Sheet no. 2		
Date 07/04/26		
By MDM	Checked	Reviewed

Project
Fieldside, Tott Lane, Hurstpierpoint

Title
Worst case soakaway times to empty.





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Job No. 805		
Sheet no. 1		
Date 07/04/26		
By MDM	Checked	Reviewed

MasterDrain
Foul 11.5

Project **Fieldside, Tott Lane, Hurstpierpoint**

Title **Septic tank calculations**

Percolation Test Data

Trial holes excavated 300mm square as stipulated in Approved Documents Part H
Holes filled to top, and allowed to drain.

Holes refilled and water allowed to drain. Time taken to drain between 75%
and 25% full noted as per Regulation requirements

Trial hole	No.1	No.2	No.3
Initial depth (mm) 75%	225	225	225
Final depth (mm) 25%	75	75	75
Initial time (sec)	0	0	0
Final time (sec)	11580	11820	11880
Ave. time (sec) for 1mm fall	77	79	79
Percolation value	77	79	79
Average Percolation value (Vp) =	78.4		

Occupancy of building based on 4 persons for 12 months of the year.

Area of drainage required:-

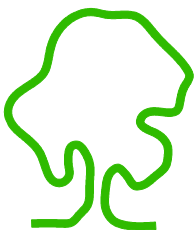
$$\begin{aligned} \text{Area} &= \text{Occupancy} \times V_p \times 0.25 \\ \text{Area} &= 4 \times 78.4 \times 0.25 \\ \text{Area} &= 78.4\text{m}^2 \end{aligned}$$

$$\begin{aligned} \text{Septic tank size} &= (180 \times \text{occupancy}) + 2000 \\ &= 180 \times 4 + 2000 \\ &= 2720 \text{ litres} \end{aligned}$$

$$\text{Linear soakaway dimensions} = 78.4 \quad (\text{width}=1.00)$$

Comments/Departures from Specified Procedures:

Approved Document H (2001) states that the percolation value should be between 12 and 100



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