Consulting Civil Engineers

Foul and Surface Water Drainage Report

Crosswinds, Hampers Lane, Storrington RH20 3HZ

For

Pippin Development Ltd

Rev - **P**

Reference **C3427**

Date **6th June 2025**

Revision	Date of Issue	Comments	Prepared By	Checked By
P	06/06/2025	Initial Issue	LH	CS

Contents

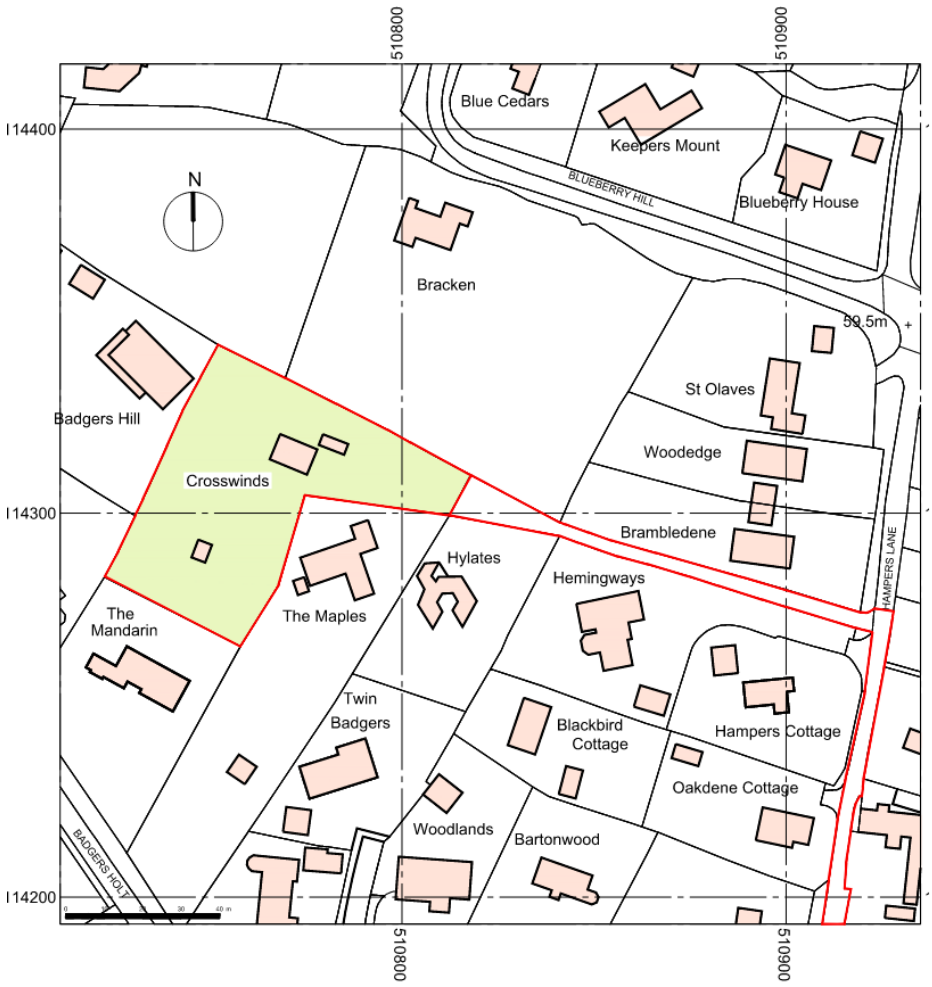
1 Introduction

1.1.1 CGS Civils Ltd has been appointed to undertake a drainage strategy report for a proposed development at Crosswinds, Hampers Lane in Storrington, West Sussex.

1.1.2 The proposed development will consist of the demolition of the existing dwelling and the construction of 2 No. new dwellings with associated detached garages and access. The proposed development is located as OS Grid Reference TQ 10762 14300 and has the post code RH20 3HZ.

1.1.3 The purpose of this drainage strategy is to demonstrate how the development area can be satisfactorily drained without increasing flood risk onsite and elsewhere.

Fig 1. Site Location



2 Executive Summary:

2.1.1 The Surface Water will discharge to ground via infiltration through the use of geocellular soakaways. The soakaways have been designed to the recorded infiltration rate of $1.28x10^{-5}$m/s and to cater for the 1 in 100-year +45% storm.

2.1.2 The Foul water will discharge into the local foul water sewer that is located within adjacent land. Southern Water approval is required for the connection and third-party approval from adjacent landowner is also required.

3 Site Geology

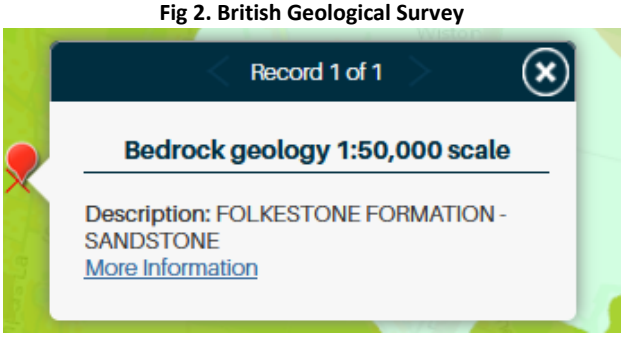
3.1 British Geological Survey information

3.1.1 The British Geological Survey confirms the bedrock geology to be made up of Folkestone Formation, which is comprised of Sandstone. At the time of writing the British Geological Survey website does not have any recorded information of the Superficial deposits on site.

3.1.2 The British Geological survey also holds records of historical boreholes near the site which give some insight into the ground geology.

- Borehole TQ11SW7 (Located approx. 157m South east of the site) – Sand and Sandstone

Fig 2. British Geological Survey



3.2 Geological Assessment

3.2.1 An infiltration test to BRE365 was conducted by CGS Civils Ltd in May 2025. The excavation of a trial pit confirmed the geology on site to be sandy soils with a worst-case infiltration rate of $1.28x10^{-5}$m/s. See **Appendix E** for results.

3.2.2 Alongside the infiltration test to BRE365, a separate test to BS6297 for a foul drainage field was carried out which confirmed a percolation rate of 8 which is considered too fast for drainage field usage without the provision of an additional drainage layer.

Fig 3. Infiltration test photos

4 Existing Drainage

4.1.1 A CCTV Drainage Survey was undertaken by Eyes on Drainage Ltd on behalf of CGS Civils Ltd which confirmed that the existing dwelling discharges all foul water into a large concrete septic tank on site. It was not confirmed how the existing site discharges surface water runoff as the existing downpipes are either inaccessible or blocked, however, it is believed that these discharge to ground via infiltration.

4.1.2 A southern water sewer is located within the neighbouring property to the Southwest adjacent to the boundary. A copy of the sewer records can be found in **Appendix F.**

5 Proposed Drainage Strategy

5.1 SuDS Hierarchy

5.1.1 All options for the destination of run-off generated on site have been assessed in line with the SuDS hierarchy as set out in Building Regulations Part H document and DEFRA's Draft National Standards for SuDS.

Table 1. SuDS Hierarchy

Discharge Destination	
Rainwater Harvesting	Yes – Rainwater harvesting tank included within the design.
Discharge to Ground	Yes – Surface water to discharge to ground via infiltration, designed based off recorded infiltration rate of $1.28x10^{-5}$m/s.
Discharge to Watercourse	N/A due to above
Discharge to Surface Water Sewer	N/A due to above
Discharge to Other Sewer	N/A due to above

5.2 Proposed Hydraulic Calculation Specifications:

Table 2. SuDS Hierarchy

Hydraulic Calculations Settings:	
Rainfall Methodology	**FEH-22**
Volumetric Run-off Coefficient Cv	**1**
CV Winter and Summer	**1**
Additional Storage (m^3 / ha)	**0.0**
Maximum Rainfall (mm/hr)	**75**
Soakaway Design	Base Coefficient (m/hr): **0.04608**
	Side Coefficient (m/hr): **0.04608**
	Factor of Safety: **2**
	Porosity: **95%**
	Time to Half Empty (mins): **742**

5.3 Surface Water Drainage

5.3.1 Based upon the results of the onsite soakage testing to BRE365, which yielded an infiltration rate of $1.28x10^{-5}$m/s, it is proposed that the site will discharge all surface water to ground via infiltration. The surface water runoff from each plot is to be collected into a positive drainage network before discharging into a geocellular soakaway. Each plot will utilise a rainwater harvesting tank to allow re-use within the dwelling.

5.3.2 The hard paved areas are to be constructed from a permeable surface to allow runoff to freely drain to ground via infiltration. All SuDS features have been designed to cater for the recorded infiltration rate of $1.28x10^{-5}$m/s and to cater for the 1 in 100-year +45% storm.

5.3.3 Hydraulic calculations have been carried out which can be found at **Appendix C**.

5.4 Foul water drainage

5.4.1 The foul water is to discharge into an existing foul water sewer located within an adjacent property in the southwest. The proposed connection will require approval from Southern Water and third-party approval from the adjacent land owner to carry out the works.

5.4.2 Should a connection into the existing sewer not be possible due to third-party ownership, then an alternative means of disposal for foul water should be sought. The percolation rate of soils can be reduced through the installation of a 700mm thick sand bed beneath the drainage field. It should be noted that due to root protection areas, the proposed drainage field will be located within 10m of a dwelling and Building Control approval will be required to relax this easement.

6 Summary and Conclusions

6.1.1 CGS Civils has been instructed to produce a Drainage statement under National Planning Policy Framework (NPPF) to support the Planning Application for the demolition of the existing dwelling and garage prior to the construction of 2 No. new dwellings with associated detached garages and access

6.1.2 The Surface Water will discharge to ground via infiltration through the use of geocellular soakaways. The soakaways have been designed to the recorded infiltration rate of $1.28x10^{-5}$m/s and to cater for the 1 in 100-year +45% storm.

6.1.3 The Foul water will discharge into the local foul water sewer that is located within adjacent land. Southern Water approval is required for the connection and third-party approval from adjacent landowner is also required.

6.1.4 The report has demonstrated that the proposed drainage measures ensure that suitable means of surface water and foul drainage can be achieved for the proposed development.

7 Appendices

7.1 Appendix A – Site Plan

EXISTING BLOCK PLAN

PROPOSED BLOCK PLAN

0m 5m 12.5m 25m
Scale 1:500

SCHEDULE OF EXISTING ACCOMMODATION:

SITE AREA: 0.33 Hectares

1 x detached dwelling (3B/4P) - GIA 102m² (GEA 118m²)
1 x detached garage - GIA 19m² (GEA 21m²)

SCHEDULE OF PROPOSED ACCOMMODATION:
2 x detached dwellings (4B/8P) - GIA 225m² each (GEA 260m² each)
8 x parking spaces (EV charging in each garage)
4 x cycle spaces (2 secure stands in each garage)
2 x 120L refuse bins (one each to side of garage)
2 x 240L recycling bins (one each to side of garage)
2 x 240L garden waste bins (one each to side of garage)

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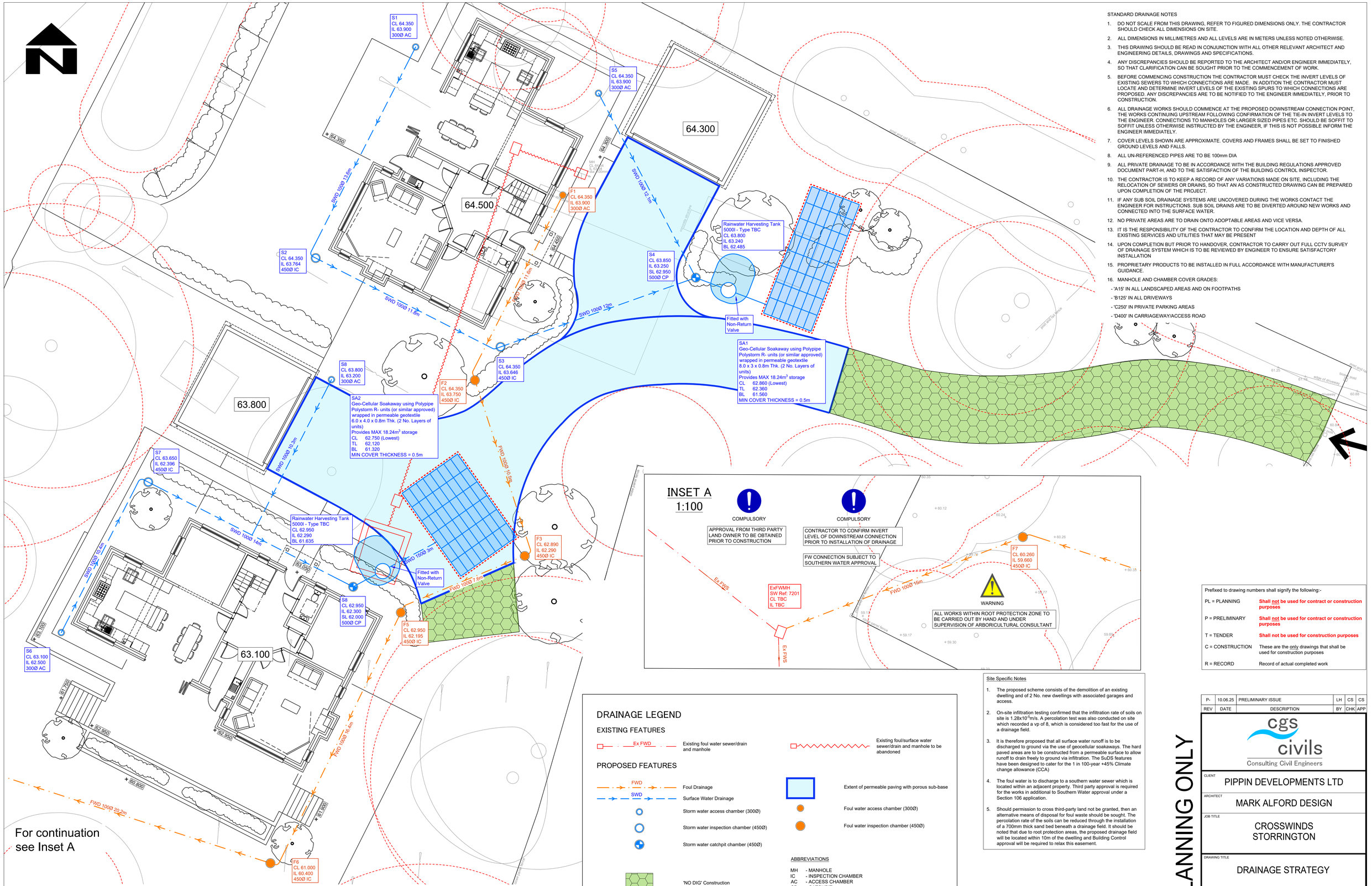
client: PIPPIN DEVELOPMENTS LIMITED
project title: CROSSWINDS, STORRINGTON
PROPOSED NEW HOMES
drawing title: EXISTING AND PROPOSED BLOCK PLANS

drawn by: MSA date: JUL '25 scale: 1:500 @ A3
issue status: FOR PLANNING CONSENT
drawing number: **24553 / P101** revision:

This drawing may not be used or reproduced without written consent. Copyright reserved
No dimensions to be scaled from this drawing except for Planning purposes.

7.2 Appendix B – Drainage Layout



STANDARD DRAINAGE NOTES

1. DO NOT SCALE FROM THIS DRAWING, REFER TO FIGURED DIMENSIONS ONLY. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
2. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
3. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.
5. BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
6. ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT, THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY.
7. COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
8. ALL UN-REFERENCED PIPES ARE TO BE 100mm DIA
9. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
10. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
11. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. SUB SOIL DRAINS ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER.
12. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES AND UTILITIES THAT MAY BE PRESENT
14. UPON COMPLETION BUT PRIOR TO HANDOVER, CONTRACTOR TO CARRY OUT FULL CCTV SURVEY OF DRAINAGE SYSTEM WHICH IS TO BE REVIEWED BY ENGINEER TO ENSURE SATISFACTORY INSTALLATION
15. PROPRIETARY PRODUCTS TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S GUIDANCE.
16. MANHOLE AND CHAMBER COVER GRADES:
    - 'A15' IN ALL LANDSCAPED AREAS AND ON FOOTPATHS
    - 'B125' IN ALL DRIVEWAYS
    - 'C250' IN PRIVATE PARKING AREAS
    - 'D400' IN CARRIAGEWAY/ACCESS ROAD

DESIGN SUBJECT TO THE CONFIRMATION OF:
EXTERNAL LEVELS DESIGN
GROUNDWATER DEPTH
LOCATION AND DEPTH OF EXISTING UTILITIES

DESIGN SUBJECT TO THE APPROVAL OF:
PLANNING AUTHORITY
BUILDING CONTROL
WATER AUTHORITY
THIRD PARTY APPROVAL

DRAINAGE LEGEND

EXISTING FEATURES

- Ex FWD — Existing foul water sewer/drain and manhole
- Existing foul/surface water sewer/drain and manhole to be abandoned

PROPOSED FEATURES

- FWD — Foul Drainage
- SWD — Surface Water Drainage
- Storm water access chamber (300Ø)
- Storm water inspection chamber (450Ø)
- Storm water catchpit chamber (450Ø)
- 'NO DIG' Construction
- 00.000 — Finished floor level
- 100Ø 4.5m 1:100 Z BED — Pipe info - diameter, length, gradient, bedding type
- Extent of permeable paving with porous sub-base
- Foul water access chamber (300Ø)
- Foul water inspection chamber (450Ø)

ABBREVIATIONS

MH	- MANHOLE
IC	- INSPECTION CHAMBER
AC	- ACCESS CHAMBER
CP	- CATCHPIT
BC	- BRAKE CHAMBER
RE	- RODDING EYE
IL	- INVERT LEVEL
SL	- SUMP LEVEL
RA	- RESTRICTED ACCESS COVER
CL	- COVER LEVEL
TL	- TOP OF CELLULAR SA
BL	- BASE OF CELLULAR SA
FL	- FORMATION LEVEL

Site Specific Notes

1. The proposed scheme consists of the demolition of an existing dwelling and of 2 No. new dwellings with associated garages and access.
2. On-site infiltration testing confirmed that the infiltration rate of soils on site is 1.28×10^{-5}m/s. A percolation test was also conducted on site which recorded a vp of 8, which is considered too fast for the use of a drainage field.
3. It is therefore proposed that all surface water runoff is to be discharged to ground via the use of geocellular soakaways. The hard paved areas are to be constructed from a permeable surface to allow runoff to drain freely to ground via infiltration. The SuDS features have been designed to cater for the 1 in 100-year +45% Climate change allowance (CCA)
4. The foul water is to discharge to a southern water sewer which is located within an adjacent property. Third party approval is required for the works in additional to Southern Water approval under a Section 106 application.
5. Should permission to cross third-party land not be granted, then an alternative means of disposal for foul waste should be sought. The percolation rate of the soils can be reduced through the installation of a 700mm thick sand bed beneath a drainage field. It should be noted that due to root protection areas, the proposed drainage field will be located within 10m of the dwelling and Building Control approval will be required to relax this easement.

Prefixed to drawing numbers shall signify the following:-

PL = PLANNING	**Shall not be used for contract or construction purposes**
P = PRELIMINARY	**Shall not be used for contract or construction purposes**
T = TENDER	**Shall not be used for construction purposes**
C = CONSTRUCTION	These are the only drawings that shall be used for construction purposes
R = RECORD	Record of actual completed work

REV	DATE	DESCRIPTION	BY	CHK	APP
P-	10.06.25	PRELIMINARY ISSUE	LH	CS	CS

cgs civils
Consulting Civil Engineers

CLIENT: PIPPIN DEVELOPMENTS LTD

ARCHITECT: MARK ALFORD DESIGN

JOB TITLE: CROSSWINDS STORRINGTON

DRAWING TITLE: DRAINAGE STRATEGY

DRAWN	ENGINEER	CHECKED	APPROVED
LH	C SLADE	CS	CS

DATE: JUNE 2025 — SCALE @ A1: 1:100

JOB No.	STATUS	DRAWING No.	REV.
C3427	PL	101	PL-

FOR PLANNING ONLY

Prefixed to drawing numbers shall signify the following:-

PL = PLANNING	**Shall not be used for contract or construction purposes**
P = PRELIMINARY	**Shall not be used for contract or construction purposes**
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FOR PLANNING ONLY

REV	DATE	DESCRIPTION	BY	CHK	APP
P-	10.06.25	PRELIMINARY ISSUE	LH	CS	CS

cgs civils
Consulting Civil Engineers

CLIENT
PIPPIN DEVELOPMENTS LTD

ARCHITECT
MARK ALFORD DESIGN

JOB TITLE
CROSSWINDS
STORRINGTON

DRAWING TITLE
IMPERMEABLE AREAS
& OVERLAND FLOW ROUTE PLAN

DRAWN	ENGINEER	CHECKED	APPROVED
LH	C SLADE	CS	CS

DATE	SCALE @ A1
JUNE 2025	1:100

JOB No.	STATUS	DRAWING No.	REV.
C3427	PL	101	PL-

7.3 Appendix C – Surface Water Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	0.350
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)	75.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Manhole Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S4	0.018	5.00	63.850	Manhole	Adoptable	500	521.723	128.675	0.600
SA1			62.850	Manhole	Adoptable	150	525.593	128.577	0.750
S8	0.018	5.00	62.950	Manhole	Adoptable	500	504.822	110.136	0.650
SA2			62.620	Manhole	Adoptable	150	508.991	113.106	0.421

Links (Input)

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	S4	SA1	3.871	63.250	62.100	1.150	3.4	150
2.000	S8	SA2	5.119	62.300	62.199	0.101	50.7	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	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

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

Node SA1 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.04608	Invert Level (m)	61.560	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.04608	Time to half empty (mins)	724	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	8.000	Number Required	1
Porosity	0.95	Pit Length (m)	3.000		

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Node SA2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.04608	Invert Level (m)	61.320	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.04608	Time to half empty (mins)	742	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	6.000	Number Required	1
Porosity	0.95	Pit Length (m)	4.000		

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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 summer	S4	10	63.270	0.020	3.5	0.0040	0.0000	OK
360 minute summer	SA1	264	61.711	-0.389	1.0	3.4392	0.0000	OK
15 minute summer	S8	10	62.340	0.040	3.5	0.0079	0.0000	OK
360 minute summer	SA2	264	61.471	-0.728	1.0	3.4511	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	S4	1.000	SA1	3.5	2.545	0.036	0.0053
360 minute summer	SA1	Infiltration		0.2			
15 minute summer	S8	2.000	SA2	3.5	0.955	0.139	0.0187
360 minute summer	SA2	Infiltration		0.2			

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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 summer	S4	10	63.279	0.029	7.1	0.0058	0.0000	OK
240 minute winter	SA1	232	61.834	-0.266	1.4	6.2518	0.0000	OK
15 minute summer	S8	10	62.360	0.060	7.1	0.0118	0.0000	OK
240 minute winter	SA2	232	61.595	-0.604	1.4	6.2760	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	S4	1.000	SA1	7.1	3.086	0.072	0.0089
240 minute winter	SA1	Infiltration		0.2			
15 minute summer	S8	2.000	SA2	7.1	1.143	0.282	0.0316
240 minute winter	SA2	Infiltration		0.2			

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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
15 minute summer	S4	10	63.284	0.034	9.3	0.0067	0.0000	OK
240 minute summer	SA1	232	61.914	-0.186	2.7	8.0780	0.0000	OK
15 minute summer	S8	10	62.371	0.071	9.3	0.0138	0.0000	OK
240 minute summer	SA2	240	61.676	-0.523	2.7	8.1092	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	S4	1.000	SA1	9.3	3.316	0.095	0.0108
240 minute summer	SA1	Infiltration		0.2			
15 minute summer	S8	2.000	SA2	9.2	1.219	0.369	0.0388
240 minute summer	SA2	Infiltration		0.2			

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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
15 minute summer	S4	10	63.297	0.047	16.9	0.0093	0.0000	OK
360 minute winter	SA1	352	62.253	0.153	2.3	15.8036	0.0000	OK
15 minute summer	S8	10	62.405	0.105	16.9	0.0206	0.0000	OK
360 minute winter	SA2	352	62.018	-0.181	2.3	15.9251	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	S4	1.000	SA1	16.9	3.849	0.173	0.0170
360 minute winter	SA1	Infiltration		0.3			
15 minute summer	S8	2.000	SA2	16.8	1.387	0.671	0.0619
360 minute winter	SA2	Infiltration		0.2			

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7.4 Appendix D – Borehole Logs

British Geological Survey

BGS ID: 578121 : BGS Reference: TQ11SW7
British National Grid (27700) : 510860,114170

Survey No. 476
TQ11SW 7
1086. 1417

318/151 Barton Spinney House, Hamper's Lane, Storrington. (Disused)

Surface +180. 5486 Shaft 42 x 3½; rest bore. Lining tubes: 25¾ x 3 in from 38¾ down (perforated 54½ to 64½). Water struck at +138. R.W.L. +138. P.W.L. +136½. Yield 240 g.p.h. (test). Hardness: total 57. Anal. *Dando, Apr. 1934.*

F 64½ 64½

Folkestone Beds.
- Dug well in Sand.
- Sand
- Sandstone
- Sand

Σ 8. ?

42. 42 12.80
15 57 17.37
0.3 57.3 17.45 3
5.9 63 19.20 6
1.6 64.6 1966

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 578121 : BGS Reference: TQ11SW7
British National Grid (27700) : 510860,114170

RECORD of WELL or BORING

TQ 11 SW 4
Survey No. 4/1
1" N.S. 318
1" O.S.

(house or farm) Barton Spinney House
Town, Village, &c. Washington County Sussex Six-inch map 51 NW.
Exact site (unless a tracing from a map is supplied, give distance and direction from parish church, cross-roads, or other object shown on maps). In Harpers Lane 100 yds SE of Harpers Barn
Popular Edition Sheet No. or one-inch map. Square

Surface level of ground 180 ft. above Ordnance Datum. Well or Bore commenced at ft. below surface level of ground.
Sunk 42 ft., diameter 35 ft. Bored 64½ ft.; diameter of boring: at top 3 in., at bottom 3 in.
Details of lining tubes (internal diameters preferred) 3 in. tubes from 38'10" to 64'6" Bottom 10 ft. perforated & gauze covered
Water struck at depths of (feet) 42 ft. downwards
Rest-level of water below above top of well or bore 42 ft. Pumping level 43½ ft. Time of recovery hours.
Suction at ft. depth. Yield: (i) on test 240 galls. per hour, (ii) normal galls. per
Quality (attach copy of analysis if available) See below
Made by Duke & Ockenden, Ltd for Mr. Bird Date of boring April, 1934
Information from do. Littlehampton & London

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(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA. (and any additional remarks)	THICKNESS. Feet.	THICKNESS. Inches.	DEPTH. Feet.	DEPTH. Inches.
	Dug well in sand	42	.	42	.
Folkestone Beds	Sand	15	.	57	.
	Sandstone	.	3	57	3
	Sand	5	9	63	.
SB.	?	1	6	64	6

Analysis:
Total solids 8·0 grs per gall 24.1.11
Chlorine 1·9
N as Nitrates 0·05
Total hardness 4°.

Parish of Storrington.
100 yds SW. Harpers Barn
6" 51 NW. W Desired
Visited S/Buchan
7.5.40.

DATA Bank

Geological Survey and Museum, South Kensington, London, S.W.7.

For Survey use only.

Date received.	G.S.M.	M. of H. notified.	Site marked on 1" map.
5/6/34	6299		AT.

(11969B) Wt 10256/0175 2,500 9/32 H, J, R & L, Ld Gp 616

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 578121 : BGS Reference: TQ11SW7
British National Grid (27700) : 510860,114170

TQ 1085 1418

TQ 11/16

318/151 Barton Spinney House, Hamper's Lane, Storrington. (Disused)

Surface +180. Shaft 42 x 3½; rest bore. Lining tubes: 25¾ x 3 in from 38¾ down (perforated 54½ to 64½). Water struck at +138. R.W.L. +138. P.W.L. +136½. Yield 240 g.p.h. (test). Hardness: total 57. Anal. *Dando, Apr. 1934.*

F	...	...	64½	64½

Folkestone Beds.	Dug well in Sand	42	42
	Sand	15	57
	Sandstone	0·3	57·3
	Sand	5·9	63
Σ B.	?	1·6	64·6

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 578121 : BGS Reference: TQ11SW7
British National Grid (27700) : 510860,114170

TQ11/16

RECORD of WELL or BORING

Survey No. 479
1" N.S. 318
1" O.S.

at (house or farm) Barton Spinney House
Town, Village, &c. Washington County Sussex Six-inch map 51 NW.
Exact site (unless a tracing from a map is supplied, give distance and direction from parish church, cross-roads, or other object shown on maps). In Harper's Lane 100 yds SE of Harper's Barn
Popular Edition Sheet of one-inch map. (Square 318)

Surface level of ground 180 ft. above Ordnance Datum. Well or Bore commenced at ft. below surface level of ground.
Sunk 47 ft., diameter 3½ ft. Bored 64½ ft.; diameter of boring: at top 3 in., at bottom 3 in.
Details of lining tubes (internal diameters preferred) 3 in. tubes from 38'10" to 64'6" Bottom 10 ft. perforated & gauze covered 151
Water struck at depths of (feet) 43 ft. downwards
Rest-level of water ~~below~~ above top of well or bore 43 ft. Pumping level 43½ ft. Time of recovery hours.
Suction at ft. depth. Yield: (i) on test 240 galls. per hour, (ii) normal galls. per
Quality (attach copy of analysis if available) See below
Made by Duke & Ockenden, Ltd for Mr. J. Bird Littlehampton & London Date of boring April, 1934
Information from do.

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA. (and any additional remarks)	THICKNESS. Feet.	THICKNESS. Inches.	DEPTH. Feet.	DEPTH. Inches.
	Drug well in sand	43	.	43	.
Folkestone Beds	Sand	15	.	58	.
	Sandstone	.	3	58	3
	Sand	5	9	63	.
SB.	?	1	6	64	6

Analysis:
Total solids 8·0 grs per gall
Chlorine 1·9
N. as Nitrates 0·05
Total hardness 4°.

Parish of Storrington.
100 yds SW. Harpers Barn
6" 51 NW. W Desired
Visited S/Buchan
7·5 40.

DATA Bank

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.

For Survey use only.

Date received.	G.S.M.	M. of H. notified.	Site marked on 1" map.
5/10/34	6299		AT.

(11969B) Wt 10256/0175 2,500 9/32 H, J, R & L, Ld Gp 616

Contact BGS: ngdc@bgs.ac.uk

7.5 Appendix E – Soakage Test Results

cgs civils Consulting Civil Engineers

Job: Crosswinds, Storrington - Test 1

Infiltration Calculator

$$f = \frac{Vp75\text{-}25}{ap50 \times tp75\text{-}25}$$

Vp 75-25	=	Effective storage volume between 75% and 25% effective depth
ap50	=	Internal surface area of the trial pit up to 50% effective depth and including the base area
tp75-25	=	The time for the water level to fall from 75% to 25% effective depth
f	=	Infilitration rate

Trial pit width	=	0.3
Trial pit depth	=	0.9
Trial pit length	=	1
ap50	=	1.47 m/squared
tp75-25	=	7040 seconds
Vp 75-25	=	0.135 m/cubed
F	=	1.3E-05

cgs civils Consulting Civil Engineers

Job: Crosswinds, Storrington - Test 2

Infiltration Calculator

$$f = \frac{Vp75\text{-}25}{ap50 \times tp75\text{-}25}$$

Vp 75-25	=	Effective storage volume between 75% and 25% effective depth
ap50	=	Internal surface area of the trial pit up to 50% effective depth and including the base area
tp75-25	=	The time for the water level to fall from 75% to 25% effective depth
f	=	Infilitration rate

Trial pit width	=	0.3
Trial pit depth	=	0.9
Trial pit length	=	1
ap50	=	1.47 m/squared
tp75-25	=	7120 seconds
Vp 75-25	=	0.135 m/cubed
F	=	1.29E-05

cgs civils Consulting Civil Engineers

Job: Crosswinds, Storrington - Test 3

Infiltration Calculator

$$f = \frac{Vp75\text{-}25}{ap50 \times tp75\text{-}25}$$

Vp 75-25	=	Effective storage volume between 75% and 25% effective depth
ap50	=	Internal surface area of the trial pit up to 50% effective depth and including the base area
tp75-25	=	The time for the water level to fall from 75% to 25% effective depth
f	=	Infilitration rate

Trial pit width	=	0.3
Trial pit depth	=	0.9
Trial pit length	=	1
ap50	=	1.47 m/squared
tp75-25	=	7200 seconds
Vp 75-25	=	0.135 m/cubed
F	=	1.28E-05

7.6 Appendix F – Southern Water Sewer Records

Southern Water

Directorate of Planning
Horsham District Council
Parkside
Chart Way
Horsham
West Sussex
RH12 1RL

Planning Received
7 SEP 2016
Name:
Ref:

Developer Services
Southern Water
Sparrowgrove House
Sparrowgrove
Otterbourne
Hampshire
SO21 2SW

Tel: 0330 303 0119
Email: developerservices@southernwater.co.uk

Your Ref
DC/16/1664
Our Ref
PLAN-015218
Date
29/08/2016

Dear Sirs,

Proposal: Outline application with all matters reserved for the demolition of existing dwelling and construction of two detached 5 bedroom dwellings and associated garaging.
Site: Crosswinds, Hampers Lane, Storrington, Pulborough, West Sussex, RH20 3HZ.
DC/16/1664

Thank you for your letter of 16/08/2016.

Please find attached a plan of the Southern Water records showing the approximate position of water mains and foul sewer with in the access of the site. The exact position of the water mains and foul sewer must be determined on site by the applicant before the layout of the proposed development is finalised.

- No development or new tree planting should be located within 4 metres either side of the centreline of the water mains

- No development or new tree planting should be located within 3 metres either side of the centreline of the foul sewer.

- No new soakaways should be located within 5 metres of a water mains and foul sewer.

- All existing infrastructure, including protective coatings and cathodic protection, should be protected during the course of construction works

Any works within highway / access road will need to be agreed and approved by SW under NRSWA enquiry in order to protect public apparatus.

Southern Water Services Ltd Registered Office: Southern House Yeoman Road Worthing BN13 3NX Registered in England No.2366670

Southern Water

Due to changes in legislation that came in to force on 1st October 2011 regarding the future ownership of sewers it is possible that a sewer now deemed to be public could be crossing the above property. Therefore, should any sewer be found during construction works, an investigation of the sewer will be required to ascertain its condition, the number of properties served, and potential means of access before any further works commence on site. The applicant is advised to discuss the matter further with Southern Water, Sparrowgrove House, Sparrowgrove, Otterbourne, Hampshire SO21 2SW (Tel: 0330 303 0119) or www.southernwater.co.uk".

Southern Water requires a formal application for a connection to the public foul sewer to be made by the applicant or developer.

We request that should this application receive planning approval, the following informative is attached to the consent:
"A formal application for connection to the public sewerage system is required in order to service this development, Please contact Southern Water, Sparrowgrove House, Sparrowgrove, Otterbourne, Hampshire SO21 2SW (Tel: 0330 303 0119) or www.southernwater.co.uk".

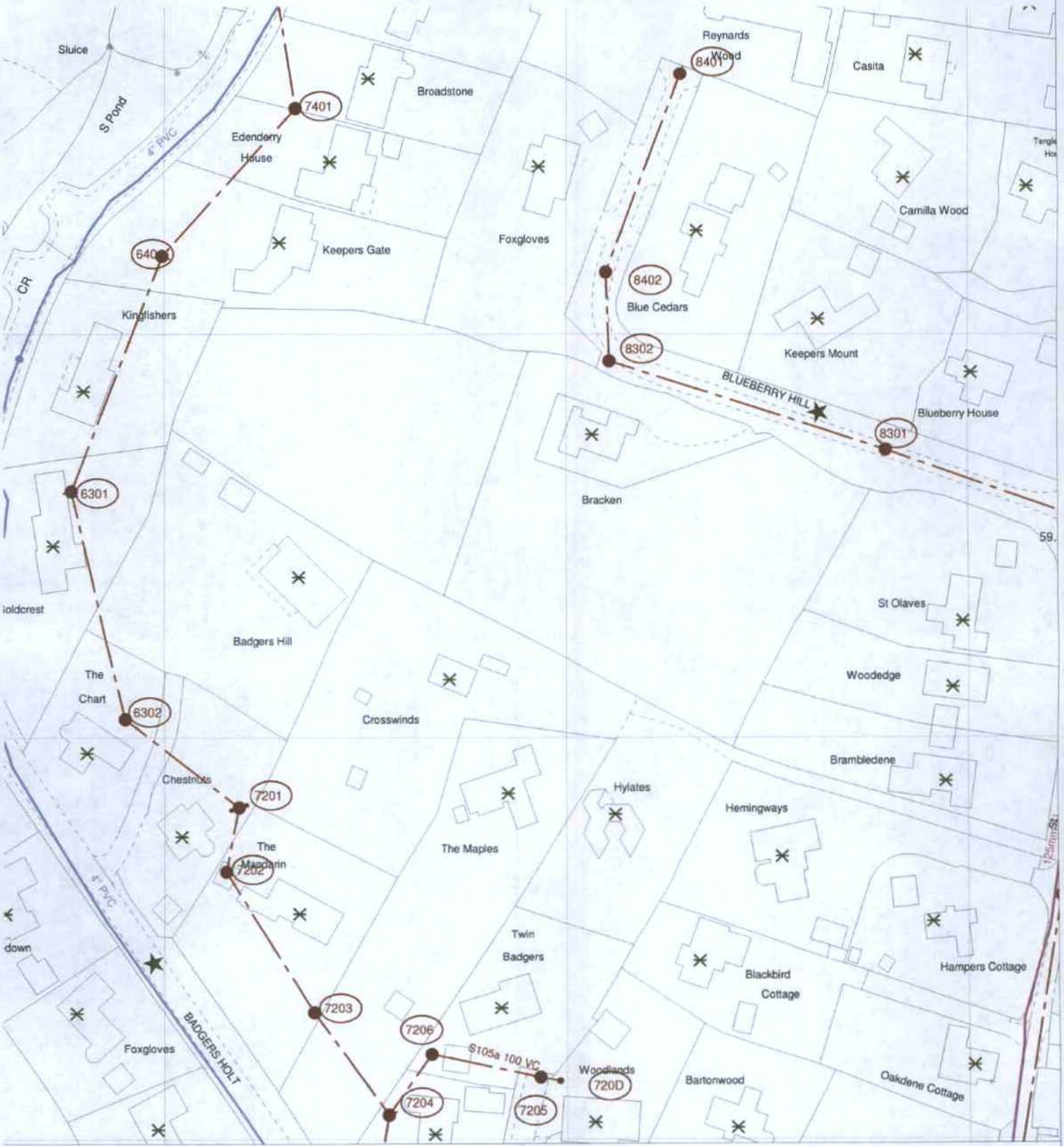
Our initial investigations indicate that there are no public surface water sewers in the area to serve this development. Alternative means of draining surface water from this development are required. This should not involve disposal to a public foul sewer.

The Council's Building Control officers or technical staff should be asked to comment on the adequacy of soakaways to dispose of surface water from the proposed development.

Yours sincerely

Developer Services

SOUTHERN WATER



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.

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Southern Water

O.S. REF: TQ1014SE	Scale: 1:1250	Printed By: jayarar	Date: 26-8-2016
Screen Print		Southern Water MapGuide Browser	
WARNING: BAC pipes are constructed of Bonded Asbestos Cement		Requested By:	
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement			

N