

Flood Risk Assessment

**Broadacre Southwater
(Phase 4)**
Horsham

for

Berkeley Homes (Southern) Ltd
12345

June 2024

Flood Risk Assessment
Broadacre Southwater (Phase 4)
for
Berkeley Homes (Southern) Ltd

Revision	Date of issue	Comments	Prepared By	Checked By
1.0	21.06.2024	Initial Issue	AM	DB
2.0	26.06.2024	Appendix C updated and minor amendments	AM	DB
3.0	27.06.2024	SUDS risk assessment added	AM	DB
4.0	28.06.2024	Client's comments added	AM	DB

Should you have any queries relating to this document please contact:

David Brooke
PPCP Limited T/A Patrick Parsons
Satelliet House
2 Nexus Park
Lysons Avenue
Ash Vale
GU12 5QE

T: +44 (0) 1276 700 400

E: david.brooke@patrickparsons.co.uk



Executive Summary

Description	
Patrick Parsons has been instructed by Berkeley Homes (Southern) Ltd, to produce a Flood Risk Assessment under National Planning Policy Framework (NPPF) to support the Planning Application for the site at Broadacre Southwater (Phase 4) , Horsham.	
Flood Risk Assessment	
Coastal:	Zone 1
Fluvial:	Zone 1
Pluvial:	Low
Groundwater:	Low
Other sources:	Low
Flood Resilience Measures	
Set all plot levels to a minimum level above estimated 1 in 100-year storm event (+40% climate change) level.	
Conclusions	
The site is within Flood Zone 1 and has a very low risk of flooding from rivers and surface water flooding. There will be potential for surface water flooding on the route of the existing ditch on the western side at the site during an extreme storm. However, the hazard level across the developed portion of the site is very low. Therefore, the development does not pose a flood risk to occupants.	



Contents

1.0	Introduction.....	1
2.0	Location of site and context	2
3.0	Site Description.....	3
4.0	Proposed Development.....	4
5.0	Flooding Information.....	6
6.0	Flood Risk Classification.....	7
7.0	Climate Change Allowance	9
8.0	Flood Risk Assessment.....	10
9.0	Summary and Conclusions	13

Appendices

Appendix A	Location Plan
Appendix B	Topographical Survey
Appendix C	Borhole Data
Appendix D	Magic Map Geology Information
Appendix E	Site Plan
Appendix F	Drainage Strategy Layout
Appendix G	Causeway Flow Calculation
Appendix H	Environment Agency Flood Map (For Planning)
Appendix J	Horsham District Council Strategic Flood Risk Assessment
Appendix K	Environment Agency Surface Water Flood Map
Appendix L	Hazard Technical Note

1.0 Introduction

- 1.1.1 This report has been prepared in support of a Section 73 Minor Material Amendment application to the approved Reserved Matters application associated to Phases 3.2 and 4 of the development known as Broadacres, Southwater.
- 1.1.2 The proposed changes solely relate to the unbuilt Phase 4 with the aim to deliver an alternative housing mix, amend the number of homes (a reduction of 14 compared to the extant consent) and an improved design. The proposed amendments remain in accordance with the approved outline application parameter plans. and no changes are proposed to Phase 3.2 and the other completed elements of the development.
- 1.1.3 The description of the development is described as a variation of Condition 2 of application reference DC/24/0772 (non-material amendment to previously approved application DC/18/1246) to “The development hereby approved comprises 199 no. residential dwellings including 61 affordable dwellings.” Variation of plans approved under condition 1 of application reference DC/18/1246 as detailed in the covering letter.
- 1.1.4 Patrick Parsons has been instructed by Berkeley Homes (Southern) Ltd, to produce a Flood Risk Assessment to support the above.
- 1.1.5 This report aims to demonstrate that the site is not at risk of any form of flooding.
- 1.1.6 This report follows the same principles of the previously submitted FRA which did not create any concerns from the LPA or LLFA officers.
- 1.1.7 The general limitations of this assessment are that:
- Several data sources have been used in compiling this report. Whilst Patrick Parsons believe them to be trustworthy; it is unable to guarantee the accuracy of the information that has been provided by others.
 - This report is based on information available at the time of preparation. There is potential for further information to become available, which may create a need to modify conclusions drawn in this report.

2.0 Location of site and context

- 2.1.1 The site is located west of Southwater in Broadacres. A location plan is enclosed in **Appendix A**. Broadacres relates to a high-quality residential development built by Berkeley Homes.
- 2.1.2 Outline planning permission was granted for up to 594 dwellings at Southwater in 2015 under application reference DC/14/0590. The proposals were considered to be EIA development and the application was supported by an Environmental Statement. Reserved matters approval has subsequently been granted for phases 1, 2, 3 and 4, totalling 514 units and community facilities. Phases 1, 2 and 3 have now been completed, with the final Phase 4 and 5 remaining.
- 2.1.3 In 2018 Berkeley gained reserved matters approval for 213 homes including 61 affordable homes in Phases 3.2 and 4 of the Southwater development (Ref: DC/18/1246).
- 2.1.4 The Phase 3.2 and Phase 4 reserved matters application has now been implemented in part with Phase 3.2 completed and largely occupied to relate to 56 of the 213 homes (including 6 affordable homes). No work other than an internal access road to base course have been completed within Phase 4.

3.0 Site Description

3.1 Existing Site

- 3.1.1 The site represents a former agricultural hoarded development parcel laid to grass. An internal access road to base course have been completed within Phase 4 and temporary stockpiles from previous development phases are located to the north of the site. A topographic survey can be found in **Appendix B**.
- 3.1.2 The site features varied terrain, with elevations ranging from 60.60m AOD on the north side to 49.0m AOD on the south side.

3.2 Existing Geology

- 3.2.1 The geology of the site has been ascertained by reference to the 1:50,000 British Geological Survey website. The data provided on the website indicates the bedrock geology for the site.
- 3.2.2 The strata of the site (bedrock geology) comprise Weald Clay Formation - Mudstone, described as follows:

"The lower boundary is generally poorly defined and gradational in complete successions, from the siltstones and silty fine-grained sandstones of the underlying Tunbridge Wells Sand Formation up into the mudstones of the Weald Clay Formation. Locally, the basal beds of the Weald Clay are weakly sideritised. Elsewhere, the boundary is erosive and unconformable, with the Weald Clay resting on beds down to the Grinstead Clay Member (e.g. southwestern part of the Maidstone Geological Sheet around Pearsons Green [TQ 694 433])."

3.3 Geological Assessment

- 3.3.1 Boreholes in the local area indicate the area is predominantly clay, as included at **Appendix C**.
- 3.3.2 Based on the desk study information on the geology of the site and the restricted space, infiltration is not suitable for the development. The requirement for a positive surface water discharge has been considered in this report.

3.4 Hydrogeology Setting

- 3.4.1 The Environment Agency (EA) mapping service, as provided by Magic Map, indicates the aquifer designation for the bedrock and superficial drift geology and the groundwater vulnerability in the area. The mapping, as included at **Appendix D**, provide the following information for the site:

Geology Map	Site Description
Aquifer Designation (Bedrock)	Secondary A
Aquifer Designation (Superficial Drift)	-
Groundwater Vulnerability	Unproductive
Groundwater Source Protection Zone	None

3.5 Hydrology

- 3.5.1 There are no strategic watercourses in the local area. A local ditch is located on the west boundary of the site.

4.0 Proposed Development

4.1.1 The proposed site layout is shown in **Appendix E**. The proposed development for the erection of 143 dwellings with associated access, parking and landscaping works.

4.1.2 The proposed site levels will generally mimic the existing site topography with localised changes to enable the construction of site infrastructure and improve the levels of the site where appropriate.

4.2 Surface Water Drainage Proposal

4.2.1 The proposed drainage plan is attached in **Appendix F**.

4.2.2 The proposals follow the same strategy as proposed and accepted in principle by the LLFA. The only exception is that we have used FEH rainfall data in our design.

4.2.3 As can be seen in the design proposals, we have designed a conventional drainage system with a restricted outfall into the Southern Water Sewer and then into the local ditch system. The discharge rate is 65.66 l/s, equivalent to the greenfield run off rate.

4.2.4 The pond has been designed to accommodate a 1 in 100 year plus 40% climate change storm event. Also, a minimum of 300mm freeboard has been allocated for. For biodiversity / ecological benefits the pond will be excavated a further metre down to maintain a wetted area all year round. The pond will be carefully landscaped to provide further water treatment.

4.2.5 The scheme has been modelled and the supporting causeway flow calculations are attached in **Appendix G**. From the results there will be no flooding in the critical storm events.

4.2.6 Throughout the scheme additional SUDS measuring will be introduced. This will include a porous surface for some parking spaces. Where practicable rainwater pipes will either discharge directly onto porous surfacing or via diffuser into clean stone beneath the porous surfacing. In addition, where practicable, private driveways will drain to minor swales located on the low side of any driveway or conveyed to intermediary swales in open spaces.

4.3 Flood Protection

4.3.1 It is impossible to completely guard against flooding since an extreme event is always possible; however, the risk can be minimised by employing flood resilient construction techniques to the proposed building as listed below, it should be noted that these should not be needed for this development:

- The use of concrete floor with waterproof membrane
- Waterproof walls up to a height providing 300mm freeboard to the assumed flood level and sealed service ducts
- Location of electrical and other plant above the floor
- High electrical sockets and Ensuring security of supplies.

- 4.3.2 It is recommended that the developer considers all the mitigation measures and above techniques when discussing and agreeing the precise detail of the development with the Local Authority.

4.4 SUDS Risk Assessment

- 4.4.1 In the design of the surface water attenuation pond at the site, a comprehensive Sustainable Urban Drainage System (SUDS) risk assessment was conducted to ensure operational efficacy and safety. Key considerations include below.
- 4.4.2 **Drainage Capability:** The pond is designed to manage peak runoff effectively, thereby mitigating downstream flood risks.
- 4.4.3 **Water Quality Management:** Incorporation of sediment forebays and vegetated swales facilitates natural filtration, enhancing water quality.
- 4.4.4 **Structural Stability:** The pond banks feature a 1/3 slope to prevent erosion and structural compromise, complemented by a 300mm freeboard to safeguard against overflow.
- 4.4.5 **Safety Measures:** A secure perimeter fence will restrict access to the pond area, and emergency life rings will be strategically placed for safety.
- 4.4.6 **Biodiversity Enhancement:** The pond design supports local flora and fauna, creating a habitat conducive to biodiversity while minimizing ecological disruption.
- 4.4.7 **Maintenance Regimen:** Regular drainage system inspections and upkeep protocols are established to ensure ongoing functionality and risk management.
- 4.4.8 This thorough risk assessment underscores compliance with regulatory standards and affirms the pond's role as a sustainable solution for surface water management at the site.

5.0 Flooding Information

- 5.1.1 As set out in the National Planning Policy Framework (NPPF), inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. For these purposes:
- “areas at risk of flooding” means land within Flood Zones 2 and 3; or land within Flood Zone 1 which has critical drainage problems, and which has been notified to the local planning authority by the Environment Agency;
 - “flood risk” means risk from all sources of flooding - including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources.
- 5.1.2 Flooding information for Planning from the Environment Agency (EA) has indicated the site is located within Flood Zone 1, as found in the map at **Appendix H**.
- 5.1.3 As part of the data capture, data and mapping from the Horsham Strategic Flood Risk Assessment (SFRA) was sought, as found in the map at **Appendix J**

6.0 Flood Risk Classification

- 6.1.1 The data on the EA's website in their updated mapping, shows the site has a "low" risk of flooding.
- 6.1.2 The EA confirmed that the proposed development site is located in Flood Zone 1 for Planning.
- 6.1.3 According to Table 2 of National Planning Policy Framework (NPPF), the development, being residential, is classed as 'more vulnerable'.
- 6.1.4 According to NPPF Table 3 'Flood Risk Vulnerability and Flood Zone Compatibility', the development should be permitted, with an exception test.

Table 3: Flood risk vulnerability and flood zone 'compatibility'

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	✗	✗	✗

Key: ✓ Development is appropriate.
 ✗ Development should not be permitted.

6.2 Sequential Test

- 6.2.1 Local Planning Authorities (LPA) are encouraged to take a risk-based approach to proposals for development in or affecting flood risk areas through the application of the Sequential Test and the objectives of this test are to steer new development away from high-risk areas towards those at lower risk of flooding.
- 6.2.2 However, in some areas where developable land is in short supply, there can be an overriding need to build in areas that are at risk of flooding. In such circumstances, the application of the Sequential Test is used to ensure that the lower risk sites are developed before the higher risk ones.
- 6.2.3 NPPF (PPG25) states that the Sequential Test should be applied at all stages of the planning process and the starting point is generally the Environment Agency's flood zone maps.
- 6.2.4 These maps and the associated information are intended for guidance and cannot provide details for individual properties. They do not consider other considerations such as existing flood defences, alternative flooding mechanisms and detailed site-based surveys. They do, however, provide high level information on the type and likelihood of flood risk in any area of the country.
- 6.2.5 The site is within Flood Zone 1 and so would not ordinarily require not require a sequential test assessment. In addition, the site represents an allocated development site within Horsham adopted Local Plan and a site with extant reserved matters approval which has been partially implemented by consequence of the development of Phase 3.2 and the access road.
- 6.2.6 The only section of medium and high-risk surface water flooding is within the central landscaped corridor to the west and southern most landscaped of Phase 4. These areas will largely remain landscaped areas, with planting, open space, recreation, and pond attenuation proposed only. Residential development is limited in these locations (Refer to **Appendix E** - Site Layout and **Appendix K** - Surface Water Mapping). It should be noted that the risk of surface water flooding will reduce in this area as overland flows will be intercepted by the development proposals. The surface water flooding adjacent to the site does not require a sequential test assessment.

6.3 Exception Test

- 6.3.1 The Exception Test is an additional test to be applied by decision-makers following application of the Sequential Test. The Exception Test has two elements as shown below, both of which must be satisfied for development in a flood risk area to be considered acceptable.
- 6.3.2 The Exception Test is only appropriate for use when there are large areas in Flood Zones 2 and 3, where the Sequential Test alone cannot deliver acceptable sites, but where some continuing development is needed for wider sustainable development reasons, considering the need to avoid social or economic blight and the need for essential civil infrastructure to remain operational during floods.
- 6.3.3 For the Exception Test to be passed:

- a. It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA; and,
- b. A site-specific FRA must demonstrate that the development will be safe for its lifetime, without increasing flood risk elsewhere and, where possible, reducing flood risk overall.

6.3.4 An exception test is not required, in accordance with NPPF Table 3, as the development is appropriate.

7.0 Climate Change Allowance

7.1.1 Climate change allowances, as set out by the Government guidance, are predictions of anticipated change for peak river flow, peak rainfall intensity, sea level rise and offshore wind speed / extreme wave height.

7.1.2 To increase resilience to flooding and coastal change, allowances for climate change are considered in any flood risk assessment.

7.1.3 The allowances are based on percentiles from UKCP18 climate change prediction data. A percentile is a measure used in statistics. They describe the proportion of possible scenarios that fall below an allowance level. The:

- Central allowance is based on the 50th percentile
- Higher central allowance is based on the 70th percentile
- Extreme allowance is based on the 95th percentile

7.1.4 To manage river flooding in on the site, any flood assessment should use the:

- Central allowance as your design allowance
- Higher central allowance to test the impacts of higher scenarios of climate change and any extra mitigation
- Extreme allowance to test your option under more extreme climate change and exceedance events
- 2080s epoch allowances for changes beyond the 2080s epoch and up to 2115

7.2 Climate Change Allowances

7.2.1 The Environment Agency have prepared a River Catchment map (**Climate change allowances for peak river flow in England (data.gov.uk)**) that identifies the percentage allowances required for a specific postcode.

Baseline	Central	Higher	Upper
2020s	16%	23%	40%
2050s	18%	28%	57%
2080s	37%	55%	107%

8.0 Flood Risk Assessment

8.1 Fluvial Flooding Risk

- 8.1.1 The EA flooding information indicates that the site lies within Flood Zone 1 and is therefore, at a low (0.1% annual probability) risk of flooding from fluvial sources.

8.2 Historic Flood Data

- 8.2.1 The Environment Agency have no information indicating that the site was flooded historically from fluvial sources.

8.3 Surface Water Flooding

- 8.3.1 Overland flow / surface water flooding typically arise because of intense rainfall, often of short duration, that is unable to soak into the ground or enter drainage systems. It can run quickly off land and result in localised flooding.
- 8.3.2 The Environment Agency has produced illustrative mapping (Flood Map for Surface Water) relating to flooding risks from surface water. They are classified as Flood Hazard Maps for the purpose of the Flood Risk Regulations 2009. These maps are the next generation on from the previous “Area Susceptible to Surface Water Flooding” maps, which are contained within the SFRA.
- 8.3.3 The EA maps show high resolution image and indicative flow paths for pluvial events. The maps are based on coarse level data and indicate ridges, valleys and flat spots where water would collect. Typically, the flow paths follow valleys, rivers and watercourses.
- 8.3.4 The surface water maps, and the associated information are intended for guidance only and cannot provide details for individual properties. They do, however, provide high level information and indicate areas in which surface water flooding issues should be investigated further. The risk categories are classified as follows:
- Very low probability of flooding – This zone is assessed as having less than a 1 in 1000 annual probability of surface water flooding.
 - Low probability of flooding – This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of surface water flooding.
 - Medium probability of flooding - This zone comprises land assessed as having between a 1 in 30 and 1 in 100 annual probability of surface water flooding.
 - High probability of flooding – This zone is assessed as having greater than a 1 in 30 annual probability of surface water flooding.
- 8.3.5 A review of the EA mapping, as included at **Appendix K**, indicates there is some risk of surface water flooding to the site. However, this is at the edge of the site where no properties are proposed. The extent of any potential surface water flooding will reduce due to the development proposals as overland surface water run-off from the fields will be captured

before it enters the water course. This same surface water will find its way back to the existing ditch system.

- 8.3.6 The route of the existing surface flooding will not be impacted by the changes to the topography of the land and plots have been positioned away from it to allow it to naturally disperse along its natural route.
- 8.3.7 An assessment of the "medium" risk scenario (up to 1 in 100-year event), indicates that there would be some flood water on the site. The water appears to be highly localised and shallow.
- 8.3.8 The worst-case hazard rating (up to 1 in 100-year event) for the site can be refined and calculated using the formulae in the guidance document in **Appendix L**. The hazard can be obtained from the maximum possible water depth of 300mm and assumed velocity of 0.25 m/s (although it is expected to be much lower).
- 8.3.9 The flood Hazard Rating (HR) is based primarily on consideration to the direct risks of people exposed to floodwaters and is expressed below.

$$HR = d (v + n) + DF$$

$$HR = 0.300 \times (0.25 + 0.5) + 0.5$$

$$HR = 0.725$$

d = Depth of water (m)

v = Velocity of water (m/s)

n = constant taken as 0.5

DF=debris factor

(=0,1,2dependingonprobabilitythat debris will lead to a significantly greater hazard)

- 8.3.10 The guidance document provides details of the potential risk to occupants of the site as per the table below:

Thresholds for Flood Hazard Rating $H = d \times (v + 0.5) + DF$		Degree of Flood Hazard	Description
FD2321	FD2320		
<0.75	<0.75	Low	Caution - "Flood zone with shallow flowing water or deep standing water"
0.75 - 1.25	0.75 - 1.25	Moderate	Dangerous for some (i.e. children) - "Danger: Flood zone with deep or fast flowing water"
1.25 - 2.5	1.25 - 2.0	Significant	Dangerous for most people - "Danger: flood zone with deep fast flowing water"
>2.5	>2.0	Extreme	Dangerous for all - "Extreme danger: flood zone with deep fast flowing water"

- 8.3.11 The worst possible flood hazard from surface water based on this calculation is "Low". This indicates that there is a hazard level of "Caution", from potential shallow water, which should not prevent any occupants from escaping.

- 8.3.12 The proposed drainage strategy should carefully consider these localised low points and sources of surface water flooding. Mitigation measures should be included as appropriate to remove any risk to occupants.

8.4 Groundwater

- 8.4.1 Groundwater flooding is caused by the emergence of water originating from sub-surface permeable strata. A ground water flood event results from a rise in ground water level, sufficient for the water table to intersect the ground surface and inundate low lying land. Groundwater floods may emerge from either a single point or diffuse locations.
- 8.4.2 The underlying strata throughout the area and investigations into the SFRA geology data suggest that there is a low risk of groundwater emergence which is likely to relate to the geology of the area.
- 8.4.3 The Environment Agency have information indicating that groundwater flooding in the site is unlikely in this area.

8.5 Flooding from Sewers

- 8.5.1 Flooding from sewers can occur because of different reasons; if sewers are blocked during the heavy rainfalls, or if a sewer cannot provide adequate capacity, then flooding can cause a large amount of damage.
- 8.5.2 The Horsham SFRA has no records indicating the site has been flooded by sewers historically.

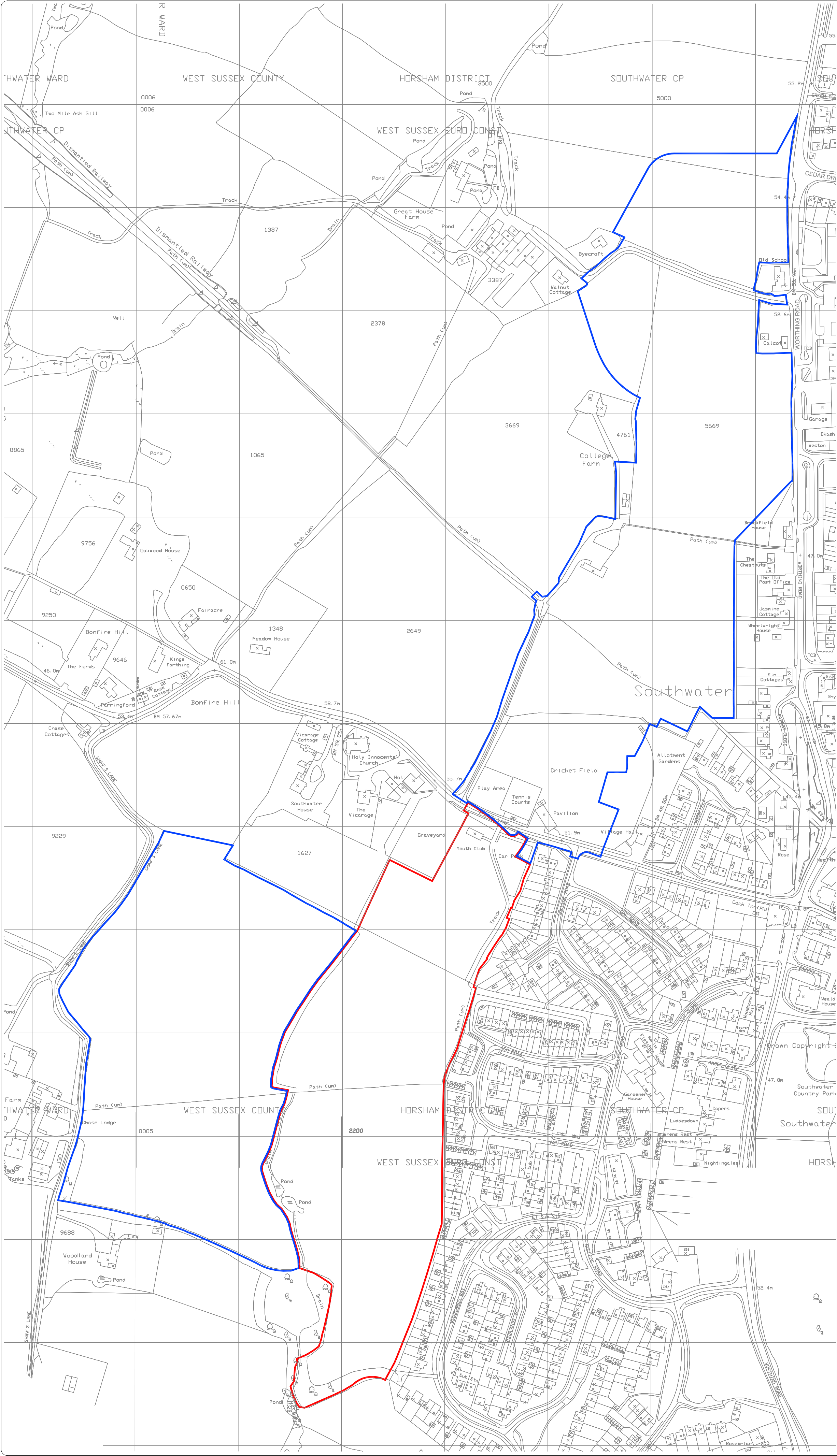
8.6 Flooding from Reservoirs

- 8.6.1 Reservoir flooding is extremely unlikely to happen. There has been no loss of life in the UK from reservoir flooding since 1925. All large reservoirs must be inspected and supervised by reservoir panel engineers. As the enforcement authority for the Reservoirs Act 1975 in England, the Environment Agency ensures that reservoirs are inspected regularly, and essential safety work is carried out.
- 8.6.2 However, in the unlikely event that a reservoir dam failed, a large volume of water would escape at once and flooding could happen with little or no warning. If the site is within a risk area, plans should be made for safe evacuation and escape. Residents may need to evacuate immediately, know the safest route to safety, and be ready to follow the advice of emergency services.
- 8.6.3 Data from the EA's website indicates that the site is at no risk from reservoir flooding.

9.0 Summary and Conclusions

- 9.1.1 Patrick Parsons has been instructed by Berkeley Homes (Southern) Ltd, to produce a Flood Risk Assessment under National Planning Policy Framework (NPPF) to support the Planning Application.
- 9.1.2 The Environment Agency mapping indicates that the site is within Flood Zone 1 and has a very low risk of flooding from rivers, the sea and surface water flooding.
- 9.1.3 There will be potential surface water flooding to the west of the site out of the developable area. The route of the potential surfacing water flooding will not be impacted by the development proposal. This was accepted in principle in the previous application for the site.
- 9.1.4 All other sources of flooding for the site have been investigated and shown to be of minimal or no risk.
- 9.1.5 The proposed development is appropriate and sustainable in the terms as set out in NPPF.

Appendix A Location Plan



APPLICATION
BOUNDARY

LAND OWNED/
CONTROLLED BY
APPLICANT

A 21.03.18 APPLICATION BOUNDARY ADJUSTED.

REF	DATE	REVISION
DEVELOPMENT LAND WEST OF WORTHING ROAD SOUTHWATER WEST SUSSEX		

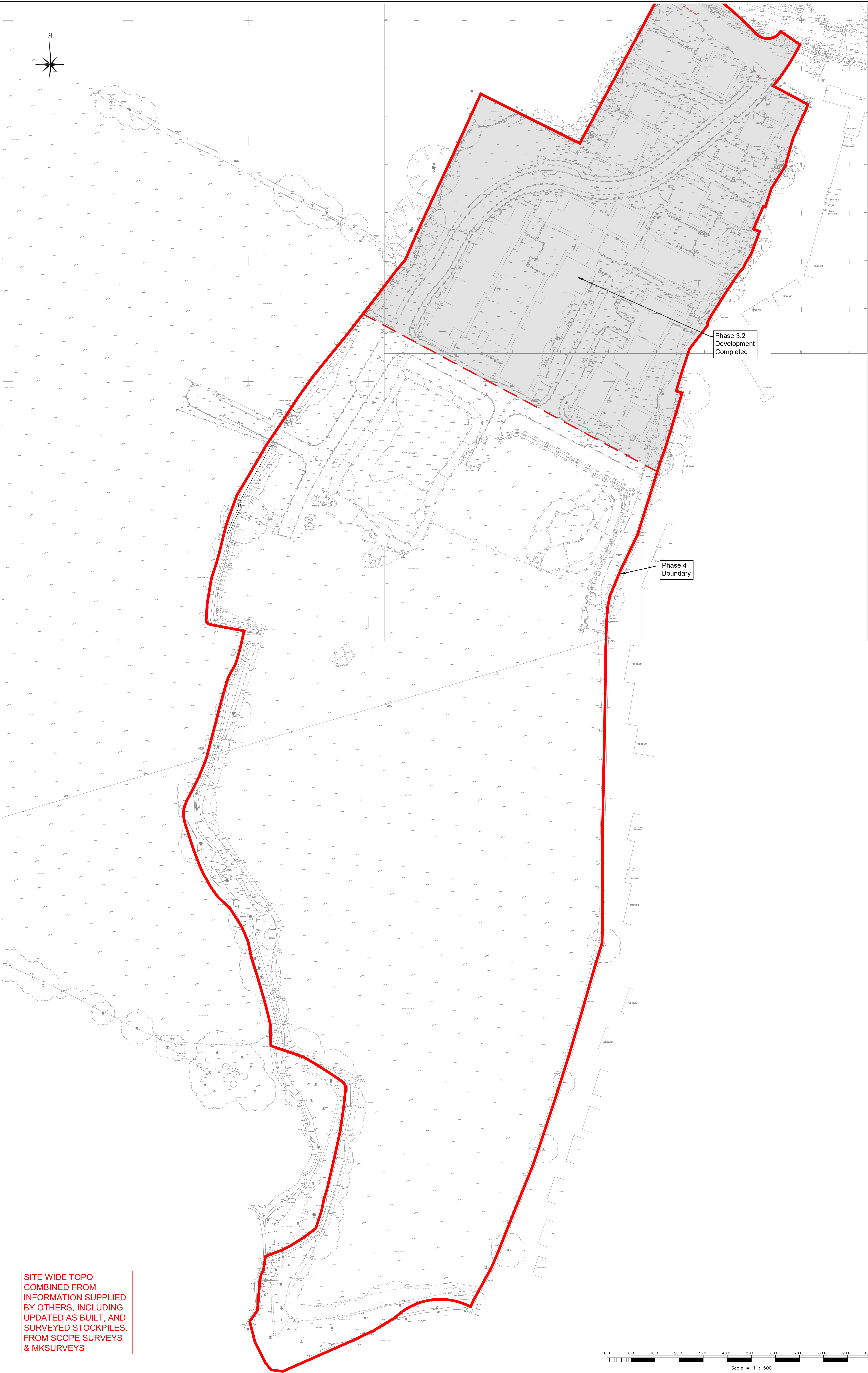
DRAWING TITLE
SITE LOCATION PLAN
PHASE 3.2 & 4

Designed for life
Berkeley Homes (Southern) Limited
Berkeley House, Bay Tree Avenue
Leatherhead
Surrey, KT22 7UE
Tel: (01372) 370400

DRAWN NAM	CHECKED
DATE 27.10.2017	SCALE 1:2500@A2
DRG NO. S8320/SLP/Ph3.2 & 4	REV. A

Appendix B

Topographical Survey



SITE WIDE TOPO
COMBINED FROM
INFORMATION SUPPLIED
BY OTHERS, INCLUDING
UPDATED AS BUILT, AND
SURVEYED STOCKPILES.
FROM SCOPE SURVEYS
& MKSURVEYS

GENERAL NOTES

- 1.1. THIS DRAWING IS COPYRIGHT AND SHOULD NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF PPCE GROUP LTD.
- 1.2. ALL DIMENSIONS TO BE CHECKED ON SITE AND CO-ORDINATE WITH RELEVANT ARCHITECT'S DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.
- 1.3. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- 1.4. ALL LEVELS IN METRES.
- 1.5. SIZES HEREON SHALL NOT BE MODIFIED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- 1.6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS DRAWINGS & SPECIFICATIONS.

LEVELS RELATED TO:
ORDNANCE SURVEY LEVEL DATUM OSGM15GB
VIA GNSS SMARTNET AT A SINGLE CONTROL STN

GRID RELATED TO:
OSGB36(15) NATIONAL GRID VIA GNSS SMARTNET
AT A SINGLE CONTROL STN ORIENTATED TO
GRID NORTH WITH A SCALE FACTOR OF 1.000

P2	MINOR AMENDMENTS					
	AM	26/06/24	DB	26/06/24	DB	26/06/24
P1	INITIAL ISSUE					
	JH	18/06/24	DB	18/06/24	DB	18/06/24
REVISION NOTE/COMMENT						
REV	DRAWN BY	DATE	CHK BY	DATE	APP BY	DATE



Satellite house, 2 Nexus Park
Lyons Avenue, Ash Vale
Guildford
GU12 5GE
United Kingdom
T: +44 01276 700 400
E: info@patrickparsons.co.uk
W: www.patrickparsons.co.uk

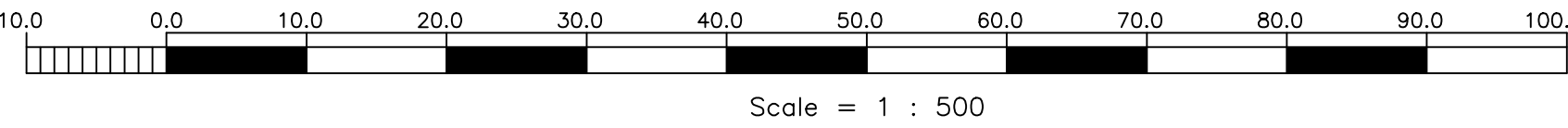
Client
Berkeley Homes (Southern) Ltd

Project
Southwater, Phase 4 & 5

Drawing
PHASE 4
TOPOGRAPHICAL SURVEY

Drawn
JH
Date
JUNE 2024
Patrick Parsons Project No.
12345
Scale @ A0
1:500

Status Description
INFORMATION
Drawing No. (insert original volume/revision number)
SOU-PPC-00-XX-DR-C-0122
Revision
P2



Appendix C

Borhole Data

Project Title: Phase III & IV
Location : Church Lane, Southwater, West Sussex
Project No. : GE16302
Client : Berkeley Homes (Southern) Ltd

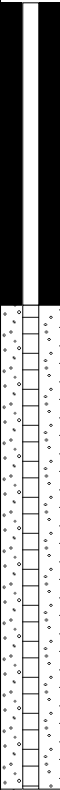
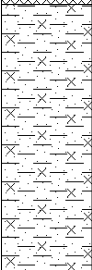
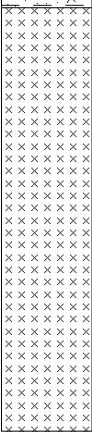
Title : Figure 3 - Exploratory Hole Location Plan
Scale: 1:4500
Engineer: GE



Legend Key
◆ Locations By Type - WLS



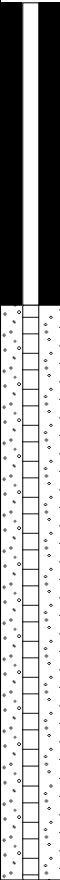
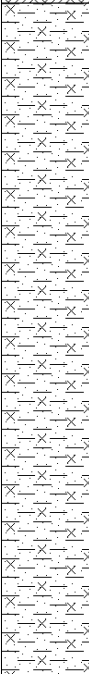
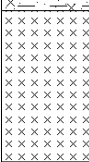
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS1 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515407E - 126489N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30		 Dark grey brown friable sandy clay with occasional brick and sandstone fragments and ash. (Made Ground) MADE GROUND	1	
		0.50 0.50	D PP	340.0kg/cm2			 Stiff to very stiff orange brown light grey mottled slightly fine sandy silty CLAY with occasional sandy partings and fine Fe siltstone fragments. (Weald Clay)		
		1.00 1.00	D PP	240.0kg/cm2	1.20		 Orange brown grey mottled weakly cemented Fe SILTSTONE, with shaley horizons and sub-ordinate bands of silty clay. (Weald Clay) WEALD CLAY	2	
		1.50 1.50	D PP	500.0kg/cm2					
		2.00	D						
		2.50	D						
				2.60		End of Borehole at 2.60m	3		
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.6m bgl

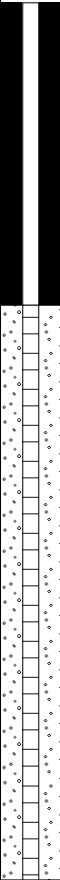
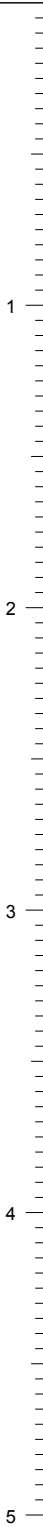
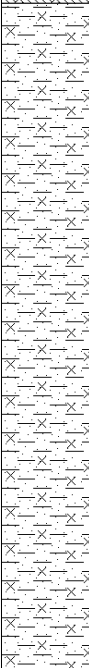


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS2 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515435E - 126474N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15		 Topsoil TOPSOIL		
	0.50 0.50	D PP	240.0kg/cm2			 Stiff to very stiff orange brown light grey mottled slightly fine sandy very silty CLAY with occasional sandy partings and fine Fe siltstone fragments. (Weald Clay)			
	1.00 1.00	D PP	420.0kg/cm2						
	1.40	D							
	2.00	D							
					2.40		 Orange brown grey mottled weakly cemented Fe SILTSTONE with subordinate bands of silty clay , (Weald Clay)		
					2.90		End of Borehole at 2.90m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Refusal at 2.9m bgl	

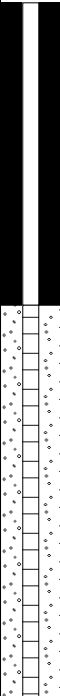
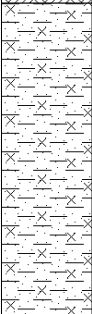
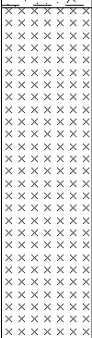
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS3 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515492E - 126441N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.20		Topsoil TOPSOIL		
		0.50 0.50	D PP	200.0kg/cm2					Stiff to very stiff orange brown light blue grey mottled slightly fine sandy very silty CLAY with occasional sandy partings and fine shaley Fe siltstone horizons. (Weald Clay)
		1.00 1.00	D PP	300.0kg/cm2					
		1.50	D						
		2.00 2.00	D PP	500.0kg/cm2					
		2.50	D						
					2.40		Orange brown grey mottled weakly cemented Fe SILTSTONE (Weald Clay), with subordinate bands of silty clay		
					2.90		End of Borehole at 2.90m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		

Refusal at 2.9m bgl

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS4 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515454E - 126421N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15		 Topsoil TOPSOIL	1	
		0.50 0.50	D PP	340.0kg/cm2			 Stiff to hard orange brown light blue grey mottled slightly fine sandy very silty CLAY with occasional sandy partings and fine Fe siltstone fragments. (Weald Clay)		
		1.00 1.00	D PP	250.0kg/cm2	1.20		 Orange brown grey mottled weakly cemented Fe SILTSTONE, with subordinate bands of silty clay . (Weald Clay)	2	
		1.50	D						
		2.00	D		2.30				
							End of Borehole at 2.30m	3	
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.3m bgl





www.gesl.net

Borehole Log

Borehole No.

WS5

Sheet 1 of 1

Project Name: Phase III & IV

Project No.
GE16302

Co-ords: 515340E - 126337N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Church Lane, Southwater, West Sussex

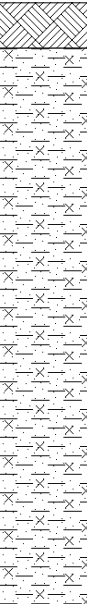
Level:

Scale
1:25

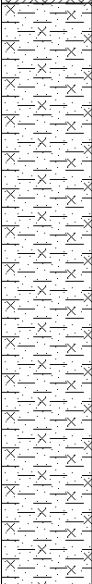
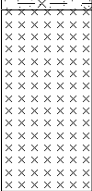
Client: Berkeley Homes (Southern) Ltd

Dates:

Logged By

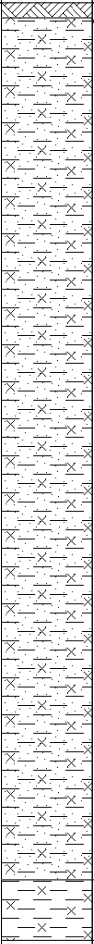
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES	200.0kg/cm2	0.15			Topsoil with occasional brick fragments. MADE GROUND	1
		0.50	D						
		1.00 1.00	D PP						
		1.50 1.50	D PP						
		2.00 2.00	D PP						
				400.0kg/cm2	2.00			End of Borehole at 2.00m	2
									3
									4
									5
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 2.0m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS6 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515490E - 126387N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15			Topsoil TOPSOIL	
								Stiff to very stiff, becoming hard orange brown light blue grey mottled slightly fine sandy very silty CLAY (Weald Clay)	
		0.50 0.50 0.50	D ES PP	300.0kg/cm2					
		1.00 1.00	D PP	250.0kg/cm2					
		1.50 1.50	D PP	500.0kg/cm2					
		2.00	D						
		2.10							
		2.50	D						
		2.70							
									
							End of Borehole at 2.70m		

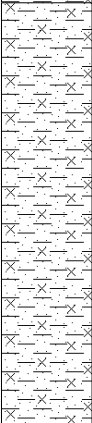
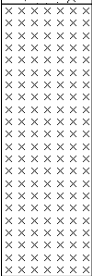
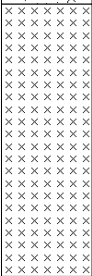
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		

Refusal at 2.7m bgl

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS7 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515484E - 126344N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.05			Topsoil TOPSOIL Stiff to very stiff, becoming hard orange brown light blue grey mottled slightly fine sandy very silty CLAY (Weald Clay)	
		0.50 0.50	D PP	240.0kg/cm2					
		1.00 1.00	D PP	280.0kg/cm2					1
		1.50 1.50	D PP	240.0kg/cm2					
		2.00 2.00	D PP	350.0kg/cm2					2
		2.50 2.50	D PP	400.0kg/cm2					
		3.00 3.00	D PP	500.0kg/cm2	2.90 3.10		Very stiff red and orange brown grey mottled silty CLAY, becomes very hard from 3.0m. (Weald Clay)	3	
							End of Borehole at 3.10m		
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 3.1m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				



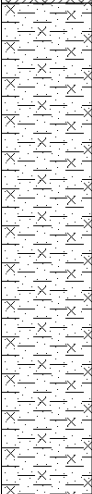
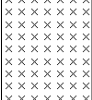
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS8 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515427E - 126300N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.20			Topsoil TOPSOIL	
					0.40			Brown sandy silty CLAY (Weald Clay)	
		0.50 0.50	D PP	350.0kg/cm2				Stiff to very stiff, becoming hard orange brown light blue grey mottled slightly fine sandy silty CLAY (Weald Clay)	
		1.00 1.00	D PP	400.0kg/cm2					
		1.50 1.50	D PP	500.0kg/cm2	1.80			Orange brown grey mottled weakly cemented Fe SILTSTONE (Weald Clay)	
		2.00	D						
		2.50	D		2.70				
								End of Borehole at 2.70m	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.7m bgl



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS9 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515418E - 126370N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15			0.15			Topsoil TOPSOIL	
		0.50 0.50	D PP	300.0kg/cm2				Stiff to very stiff, becoming hard orange brown light blue grey mottled slightly fine sandy silty CLAY (Weald Clay)	
		1.00 1.00	D PP	350.0kg/cm2					
		1.50 1.50	D PP	500.0kg/cm2					
		1.80			1.80			Orange brown grey mottled weakly cemented Fe SILTSTONE , (with subordinate bands of silty clay Weald Clay)	2
		2.40			2.40		End of Borehole at 2.40m		3
									4
									5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.4m bgl

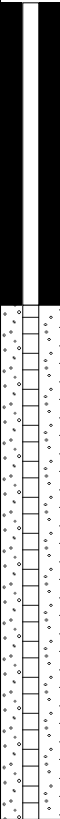
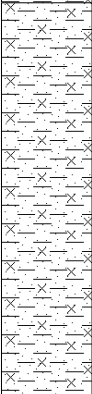
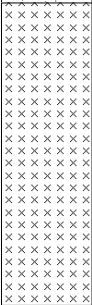


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS10 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515375E - 126284N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.40		Crushd concrete and flint gravel MADE GROUND		
		0.50 0.50	D PP	350.0kg/cm2			Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY (Weald Clay)		
		1.00 1.00	D PP	250.0kg/cm2					
		1.50 1.50	D PP	320.0kg/cm2					
		2.00 2.00	D PP	350.0kg/cm2	2.20				
		2.50 2.50	D PP	500.0kg/cm2		Orange brown grey mottled weakly cemented Fe SILTSTONE, with subordinate bands of silty clay (Weald Clay)			
		3.00 3.00	D PP	500.0kg/cm2	3.00	End of Borehole at 3.00m			
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 3.0m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				

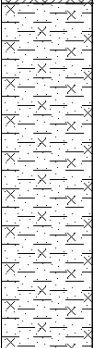
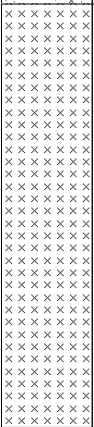
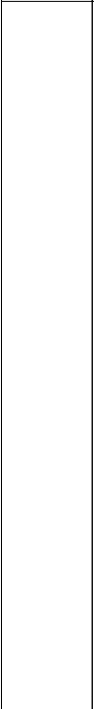


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS11 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515313E - 126266N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

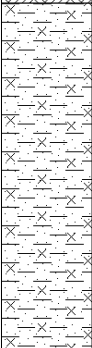
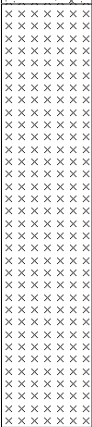
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20		 Turf over topsoil TOPSOIL	1	
					0.40		 Dark brown silty sandy CLAY (Weald Clay)		
	0.50 0.50	D PP	270.0kg/cm2				 Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY (Weald Clay)		
	1.00 1.00	D PP	320.0kg/cm2						
	1.50 1.50	D PP	400.0kg/cm2	1.70					
	2.00 2.00	D PP	500.0kg/cm2						
	2.50 2.50	D PP	500.0kg/cm2	2.70					
								 Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)	2
End of Borehole at 2.70m								3	
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.7m bgl



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS12 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515256E - 126252N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15		 Topsoil TOPSOIL	Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY (Weald Clay)	
		0.50 0.50	D PP	200.0kg/cm2					
		1.00 1.00	D PP	250.0kg/cm2					
		1.50 1.50	D PP	500.0kg/cm2					
		2.00	D						
		2.50	D						
					2.70		End of Borehole at 2.70m		
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
						Refusal at 2.7m bgl			

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS13 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515344E - 126221N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.15		 Topsoil TOPSOIL	1	
		0.50 0.50	D PP	180.0kg/cm2		 Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY (Weald Clay)			
		1.00 1.00	D PP	250.0kg/cm2	1.30	 Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)	2		
		1.50 1.50	D PP	500.0kg/cm2					
		2.00	D						
		2.50	D						
				2.70		End of Borehole at 2.70m	3		
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		

Refusal at 2.7m bgl

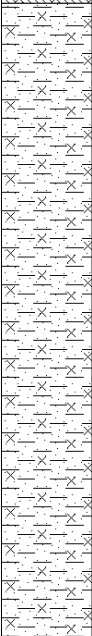
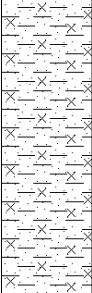
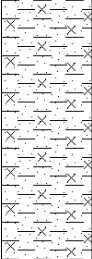
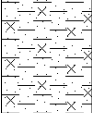
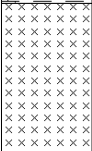
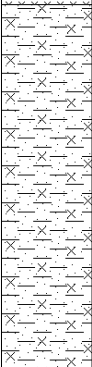
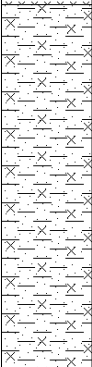
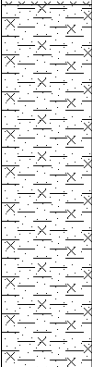
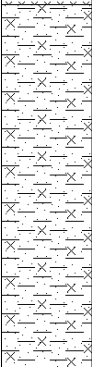
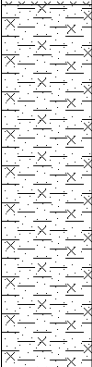
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS14 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515319E - 126165N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.20			Topsoil TOPSOIL	
					0.40			Stiff dark grey silty CLAY. (Weald Clay)	
		0.50 0.50	D PP	120.0kg/cm2				Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY with occasional selenite crystals (Weald Clay)	
		1.00 1.00	D PP	180.0kg/cm2					
		1.50 1.50	D PP	320.0kg/cm2					
		2.00 2.00	D PP	500.0kg/cm2					
		2.50 2.50	D PP	500.0kg/cm2					
		3.00	D						
					3.20				
					3.40			Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)	
End of Borehole at 3.40m									

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 3.4m bgl

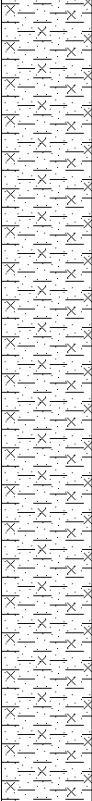


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS15 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515301E - 126217N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

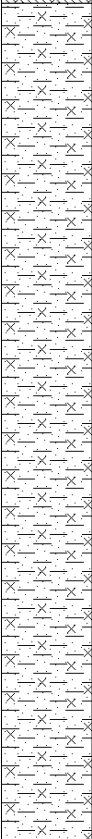
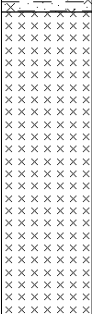
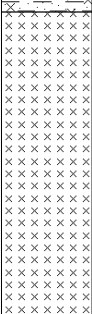
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.20		 Topsoil TOPSOIL		
		0.50 0.50	D PP	150.0kg/cm2			 Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY (Weald Clay)		
		1.00 1.00	D PP	200.0kg/cm2					
		1.50 1.50	D PP	250.0kg/cm2					
		2.00 2.00	D PP	300.0kg/cm2					
		2.30				 Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)			
		2.50 2.50	D PP	500.0kg/cm2					
		2.80							
		3.00 3.00	D PP	380.0kg/cm2					
		3.50 3.50	D PP	410.0kg/cm2					
	4.00 4.00	D PP	500.0kg/cm2	4.00			End of Borehole at 4.00m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS16 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515236E - 126206N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10			Topsoil	
		0.50 0.50	D PP	150.0kg/cm2				TOPSOIL Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY with occasional selenite crystals (Weald Clay)	
		1.00 1.00	D PP	175.0kg/cm2					
		1.50 1.50	D PP	200.0kg/cm2					
		2.00 2.00	D PP	250.0kg/cm2					
		2.50 2.50	D PP	250.0kg/cm2					
		3.00 3.00	D PP	500.0kg/cm2	2.80 3.10			Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay and selenite crystals. (Weald Clay)	
		End of Borehole at 3.10m							
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 3.1m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
									

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS17 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515272E - 126171N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.20			Topsoil TOPSOIL	
		0.50 0.50	D PP	125.0kg/cm2				Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		1.00 1.00	D PP	175.0kg/cm2					
		1.50 1.50	D PP	200.0kg/cm2					
		2.00 2.00	D PP	225.0kg/cm2					
		2.50 2.50	D PP	250.0kg/cm2					
		3.00 3.00	D PP	400.0kg/cm2	3.00		Orange brown grey mottled weakly cemented Fe SILTONE with partings of very stiff silty clay . (Weald Clay)		
		3.50 3.50	D PP	500.0kg/cm2					
		4.00	D		4.00			End of Borehole at 4.00m	4
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	





www.gesl.net

Borehole Log

Borehole No.

WS18

Sheet 1 of 1

Project Name: Phase III & IV

Project No.
GE16302

Co-ords: 515182E - 126129N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Church Lane, Southwater, West Sussex

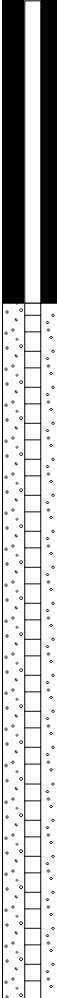
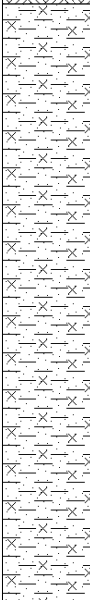
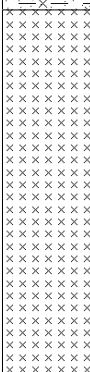
Level:

Scale
1:25

Client: Berkeley Homes (Southern) Ltd

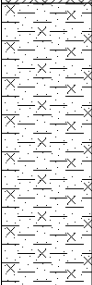
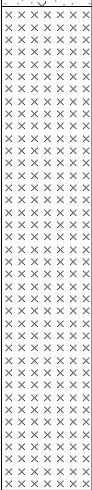
Dates:

Logged By

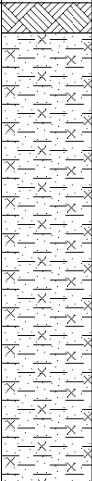
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10			Topsoil TOPSOIL	
		0.50 0.50	D PP	150.0kg/cm2				Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		1.00 1.00	D PP	200.0kg/cm2					1
		1.50 1.50	D PP	250.0kg/cm2					
		2.00 2.00	D PP	320.0kg/cm2	2.10				2
		2.50 2.50	D PP	500.0kg/cm2					
		3.00	D		3.30				3
								Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)	
								End of Borehole at 3.30m	
									4
									5
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 3.3m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				



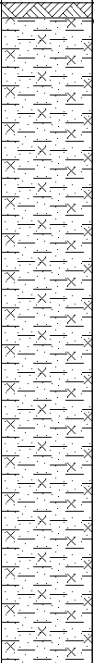
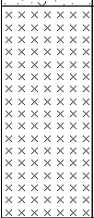
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS19 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515230E - 126108N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

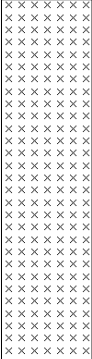
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15		 Topsoil TOPSOIL	1	
		0.50 0.50	D PP	125.0kg/cm2		 Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)			
		1.00 1.00	D PP	180.0kg/cm2	1.10	 Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay . (Weald Clay)	2		
		1.50 1.50	D PP	350.0kg/cm2					
		2.00 2.00	D PP	500.0kg/cm2					
		2.50	D						
				2.70		 End of Borehole at 2.70m	3		
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 2.7m bgl	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		

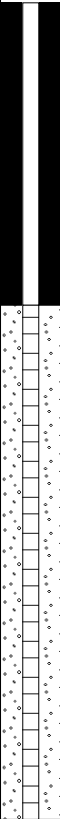
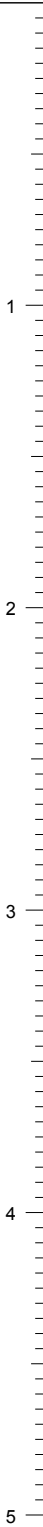
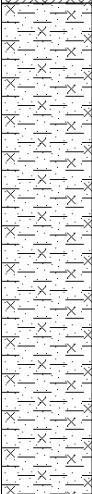
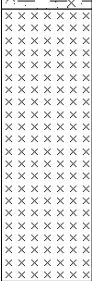
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS20 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515293E - 126081N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10			Topsoil TOPSOIL Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		0.50 0.50	D PP	125.0kg/cm2					
		1.00 1.00	D PP	210.0kg/cm2					
		1.50 1.50	D PP	250.0kg/cm2	1.60				
					1.80			Orange brown grey mottled weakly cemented Fe SILTSTONE., with subordinate bands of silty clay (Weald Clay)	
End of Borehole at 1.80m									
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 1.8m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS21 Sheet 1 of 1		
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515162E - 126050N		Hole Type WLS		
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25		
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10	ES		0.05			Topsoil TOPSOIL Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)		
		0.50 0.50	D PP	200.0kg/cm2						
		1.00 1.00	D PP	180.0kg/cm2						
		1.50 1.50	D PP	250.0kg/cm2						
		2.00 2.00	D PP	360.0kg/cm2	2.20					
		2.50	D		2.90		Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay . (Weald Clay)			
		End of Borehole at 2.90m								
Casing Water Strikes (mbgl) Chiselling (mbgl) Diameter Depth (m) Depth Strike Rose to Depth from Depth to Remarks										
Refusal at 2.9m bgl										

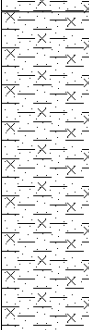
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS22 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515225E - 126027N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES	110.0kg/cm2	0.15			Topsoil TOPSOIL	1 2 3 4 5
		0.50 0.50	D PP					Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		1.00 1.00	D PP					180.0kg/cm2	
		1.50 1.50	D PP					350.0kg/cm2	
		2.00	D					350.0kg/cm2	
2.50	D								
					2.80			Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay . (Weald Clay)	
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
						Refusal at 2.8m bgl			

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS23 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515289E - 125992N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15		Topsoil TOPSOIL		
		0.50 0.50	D PP	260.0kg/cm2					Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)
		1.00 1.00	D PP	290.0kg/cm2					
		1.50 1.50	D PP	350.0kg/cm2					
		2.00	D						
	2.50	D							
					2.70		End of Borehole at 2.70m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Refusal at 2.7m bgl	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS24 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515158E - 125962N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15		 Topsoil TOPSOIL	1	
							 Dark brown silty sandy CLAY		
		0.50 0.50	D PP	250.0kg/cm2	0.40		 Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)		
		1.00 1.00	D PP	300.0kg/cm2					
		1.50 1.50	D PP	350.0kg/cm2	1.50		 Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay . (Weald Clay)	2	
		2.00 2.00	D PP	500.0kg/cm2					
		2.50	D		2.60		 Hard dark grey fissured silty CLAY		
		2.90	D		2.90		 End of Borehole at 2.90m	3	
									4
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.9m bgl

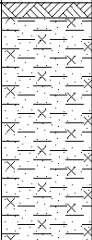
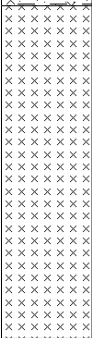


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS25 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515214E - 125981N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level: 0.00		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates: 24/03/2017		Logged By PC	

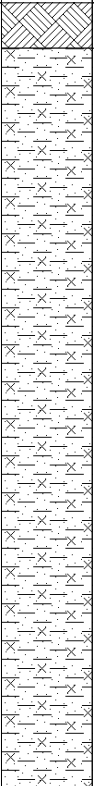
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15	-0.15		Topsoil	
					0.30	-0.30		TOPSOIL	
								Dark brown organic silty clay with abundant rootlets and occasional carbonaceous deposits.	
								TOPSOIL	
								Dark grey silty sandy CLAY (Weald Clay)	
		0.50	D						
		0.50	D						
		0.50	PP	1.5kg/cm2	0.70	-0.70			
		0.50	PP	225.0kg/cm2	0.70	-0.70		Soft to firm orangish brown and grey silty CLAY with carbonaceous nodules.	
								Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		1.00	D						
		1.00	D						
		1.00	PP	2.0kg/cm2	1.20	-1.20			
		1.00	PP	280.0kg/cm2				Grey and orangish brown SILT, with clayey partings. Becomes cemented with depth.	
		1.50	D						
	1.50	D							
	1.50	PP	300.0kg/cm2						
									
	2.00	D							
	2.00	D							
	2.00	PP	500.0kg/cm2						
									
	2.50	D							
	2.50	D							
				2.70	-2.70				
	2.75	D					End of Borehole at 2.70m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.7m bgl



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS26 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515282E - 125896N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.05			Topsoil TOPSOIL Stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		0.50 0.50	D PP	200.0kg/cm2	0.80				
		1.00 1.00	D PP	500.0kg/cm2				Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)	
		1.50	D		1.90				
								End of Borehole at 1.90m	
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 1.9m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
									

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS27 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515205E - 125915N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15		Topsoil TOPSOIL		
		0.50 0.50	D PP	200.0kg/cm2			Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. Occasional partings of silty fine sand. Shaley Fe sandstone bands from 1.5m. becomes very silty from 2.2m (Weald Clay)		
		1.00 1.00	D PP	220.0kg/cm2					
		1.50 1.50	D PP	250.0kg/cm2					
		2.00 2.00	D PP	250.0kg/cm2					
		2.50 2.50	D PP	500.0kg/cm2					
					2.60		Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay . (Weald Clay)		
					2.90		End of Borehole at 2.90m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 2.9m bgl





www.gesl.net

Borehole Log

Borehole No.

WS28

Sheet 1 of 1

Project Name: Phase III & IV

Project No.
GE16302

Co-ords: 515259E - 125956N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Church Lane, Southwater, West Sussex

Level:	0.00
--------	------

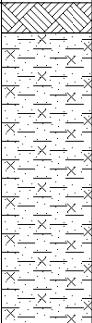
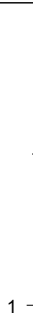
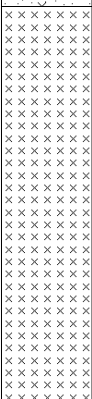
Scale
1:25

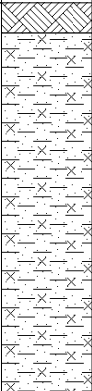
Client: Berkeley Homes (Southern) Ltd

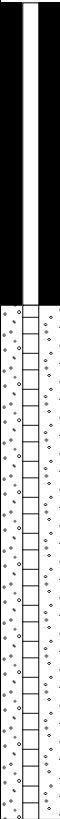
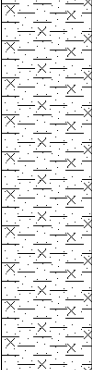
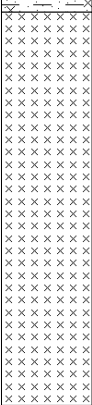
Dates: 24/03/2017

Logged By
PC

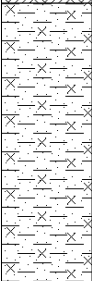
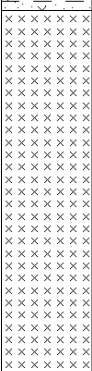
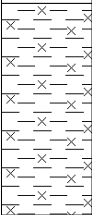
[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS29 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515270E - 125848N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10			Topsoil TOPSOIL Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		0.50 0.50	D PP	220.0kg/cm2					
		1.00 1.00	D PP	280.0kg/cm2	1.10			Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)	
		1.50 1.50	D PP	350.0kg/cm2					
		2.00 2.00	D PP	500.0kg/cm2					
	2.50	D		2.40			End of Borehole at 2.40m		
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 2.4m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
									

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS30 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515250E - 125814N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10			Topsoil TOPSOIL Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		0.50 0.50	D PP	300.0kg/cm2					
		1.00 1.00	D PP	420.0kg/cm2					
		1.50	D						
					1.30			Orange brown grey mottled weakly cemented Fe SILTONE with partings of very stiff silty clay. (Weald Clay)	
					1.50			End of Borehole at 1.50m	
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 1.5m bgl			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
									

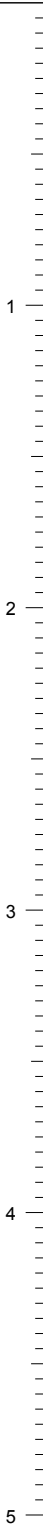
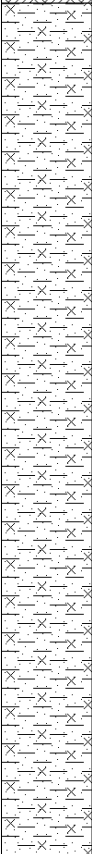
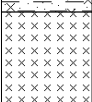
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS31 Sheet 1 of 1	
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515208E - 125807N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10		 Topsoil TOPSOIL Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	1	
		0.50 0.50	D PP	300.0kg/cm2					
		1.00 1.00	D PP	440.0kg/cm2			2		
		1.50	D		1.40				
		2.00	D						
	2.50	D		2.70		Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay . (Weald Clay) End of Borehole at 2.70m	3		
								4	
								5	
Casing Diameter Depth (m)		Water Strikes (mbgl) Depth Strike Rose to		Chiselling (mbgl) Depth from Depth to		Remarks Refusal at 2.7m bgl			

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS32 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515239E - 125879N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level: 0.00		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates: 24/03/2017		Logged By PC	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10	ES		0.15	-0.15		Dark brown organic clay with abundant rootlets. TOPSOIL	1	
		0.50	D					Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay) WEALD CLAY		
		0.50	PP	2.2kg/cm2						
		0.50	PP	300.0kg/cm2						
		1.00	D		1.10	-1.10		Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay. (Weald Clay)		2
		1.00	PP	3.5kg/cm2						
		1.00	PP	400.0kg/cm2						
		1.50	D							
		1.50	PP	450.0kg/cm2						
		2.00	D		2.30	-2.30		Very stiff to hard dark grey silty CLAY with Fe siltstone partings		3
	2.00	PP	500.0kg/cm2							
	2.50	D								
		3.00	D		3.00	-3.00		End of Borehole at 3.00m	4	
	3.00	PP	5.0kg/cm2							

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Refusal at 3.0m bgl



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS33 Sheet 1 of 1		
Project Name: Phase III & IV				Project No. GE16302		Co-ords: 515381E - 126418N		Hole Type WLS		
Location: Church Lane, Southwater, West Sussex						Level:		Scale 1:25		
Client: Berkeley Homes (Southern) Ltd						Dates:		Logged By		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10	ES		0.15			Topsoil TOPSOIL		
		0.50 0.50	D PP	480.0kg/cm2						Very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)
		1.00 1.00	D PP	400.0kg/cm2						
		1.50 1.50	D PP	380.0kg/cm2						
		2.00 2.00	D PP	440.0kg/cm2						
		2.50 2.50	D PP	440.0kg/cm2						
		3.00 3.00	D PP	500.0kg/cm2						
					3.30			Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay, becomes shaley with depth. (Weald Clay)		
End of Borehole at 3.30m										
Casing Water Strikes (mbgl) Chiselling (mbgl) Remarks										
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to					
						Refusal at 3.3m bgl				
										



www.gesl.net

Borehole Log

Borehole No.

WS34

Sheet 1 of 1

Project Name: Phase III & IV

Project No.
GE16302

Co-ords: 515368E - 126384N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Church Lane, Southwater, West Sussex

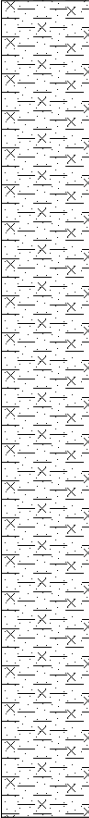
Level:

Scale
1:25

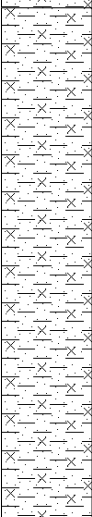
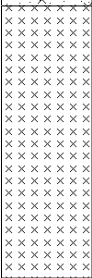
Client: Berkeley Homes (Southern) Ltd

Dates:

Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES	220.0kg/cm2	0.15			Topsoil TOPSOIL
								Dark brown sandy silty CLAY
		0.50 0.50	D PP					Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)
		1.00 1.00	D PP	280.0kg/cm2				
		1.50 1.50	D PP	380.0kg/cm2				
		2.00 2.00	D PP	400.0kg/cm2				
		2.50 2.50	D PP	480.0kg/cm2				
		3.00	PP	500.0kg/cm2	3.10			Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay, becomes shaley with depth. (Weald Clay)
					3.30			End of Borehole at 3.30m
		Casing		Water Strikes (mbgl)			Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to			
							Refusal at 3.3m bgl	
								

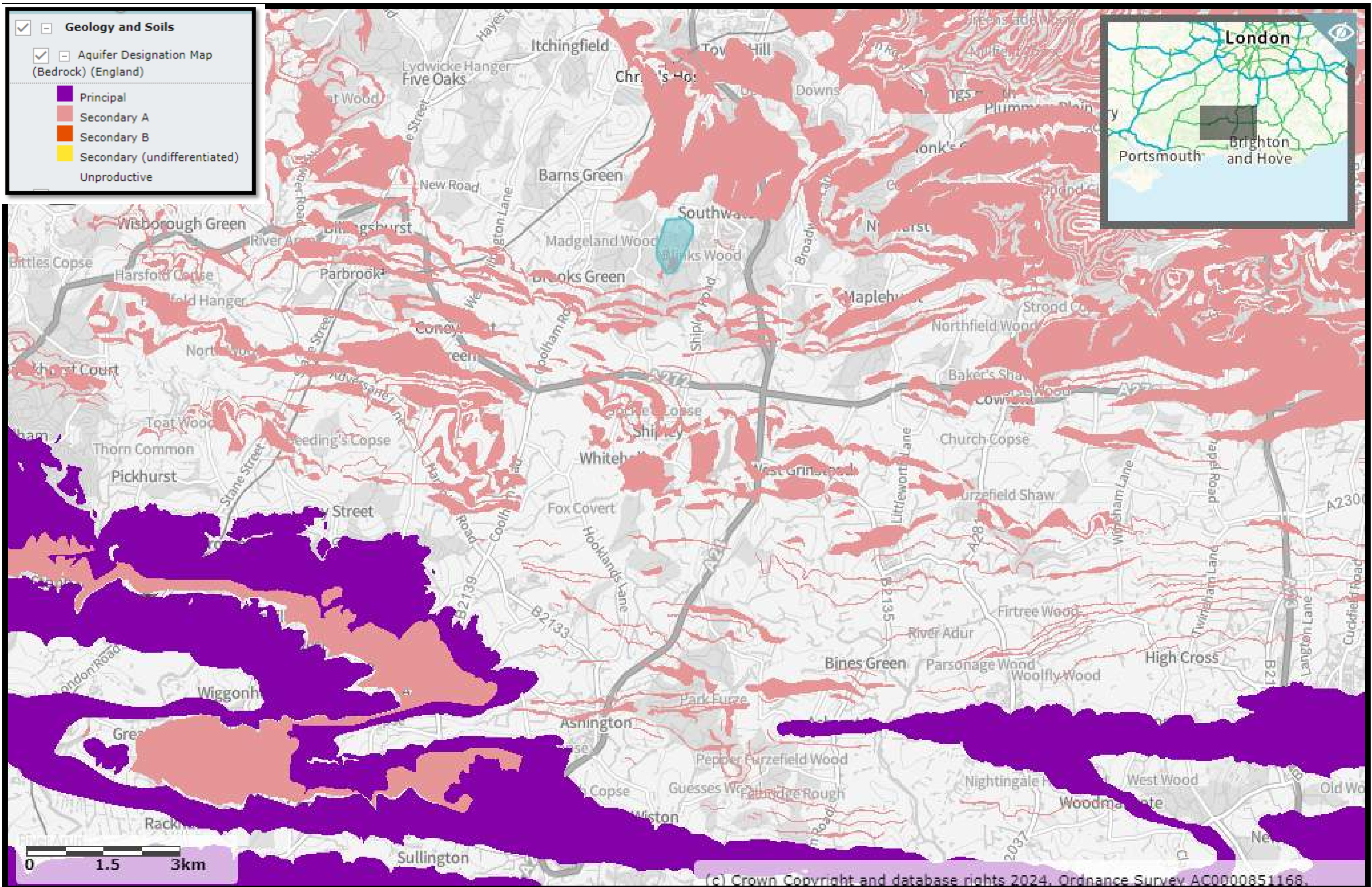
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS35 Sheet 1 of 1	
Project Name: Phase III & IV		Project No. GE16302		Co-ords: 515472E - 126289N		Hole Type WLS	
Location: Church Lane, Southwater, West Sussex				Level:		Scale 1:25	
Client: Berkeley Homes (Southern) Ltd				Dates:		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15			Topsoil TOPSOIL	
					0.40			Dark brown sandy silty CLAY	
		0.50 0.50	D PP	350.0kg/cm2				Stiff to very stiff, orange brown light blue grey mottled slightly fine sandy silty CLAY. (Weald Clay)	
		1.00 1.00	D PP	250.0kg/cm2					
		1.50 1.50	D PP	300.0kg/cm2					
		2.00 2.00	D PP	430.0kg/cm2	2.10				
		2.50 2.50	D PP	480.0kg/cm2				Orange brown grey mottled weakly cemented Fe SILTSTONE with partings of very stiff silty clay, becomes shaley with depth. (Weald Clay)	
		3.00 3.00	D PP	500.0kg/cm2	3.00				
								End of Borehole at 3.00m	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Refusal at 3.0m bgl	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		

Appendix D

Magic Map Geology Information



☒ ☐
Aquifer Designation Map
(Superficial Drift) (England)

Principal

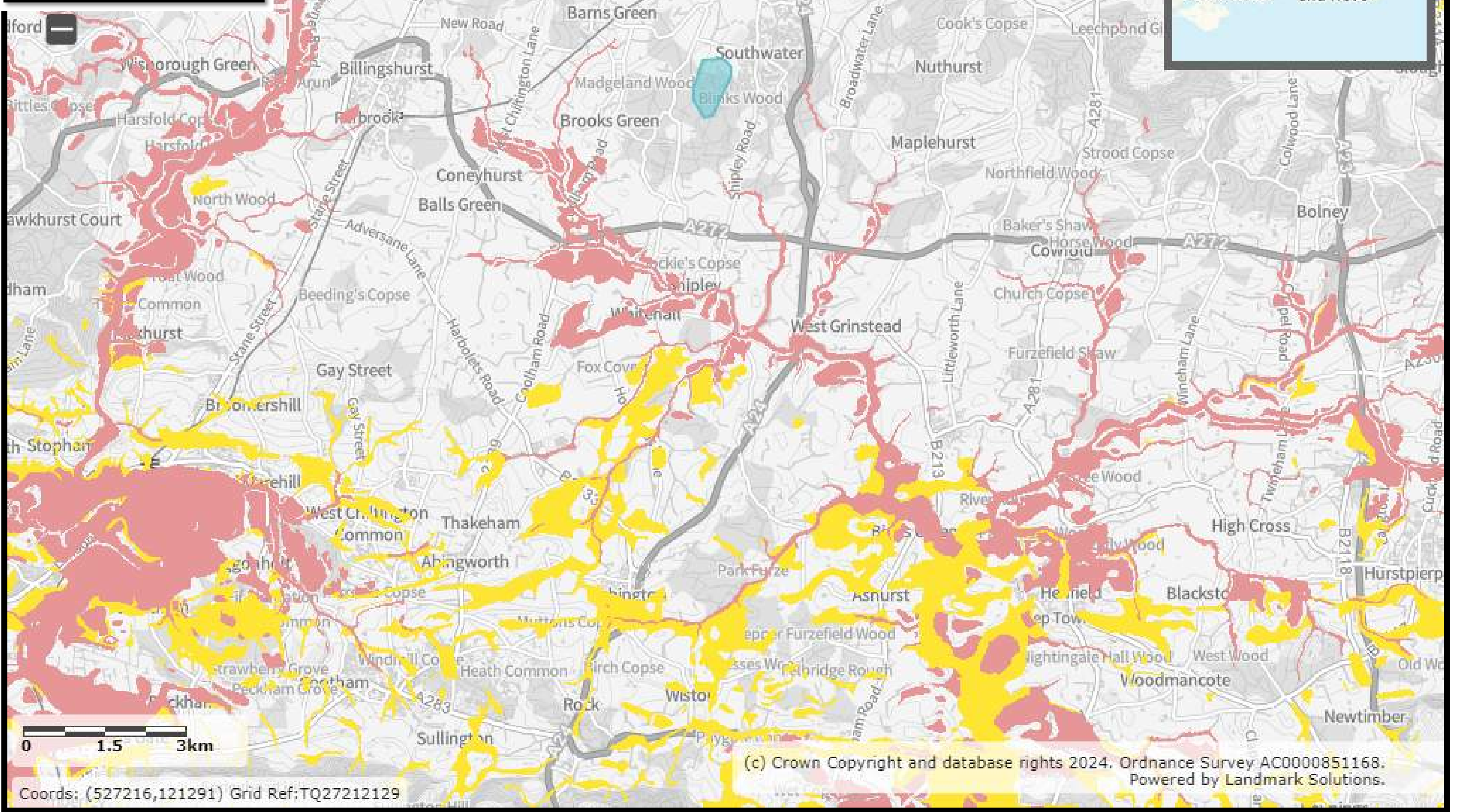
Secondary A

Secondary B

Secondary (undifferentiated)

Unknown (lakes+landslip)

Unproductive



☒ ☐ Groundwater Vulnerability Map (England)

 Local Information

 Soluble Rock Risk

 High

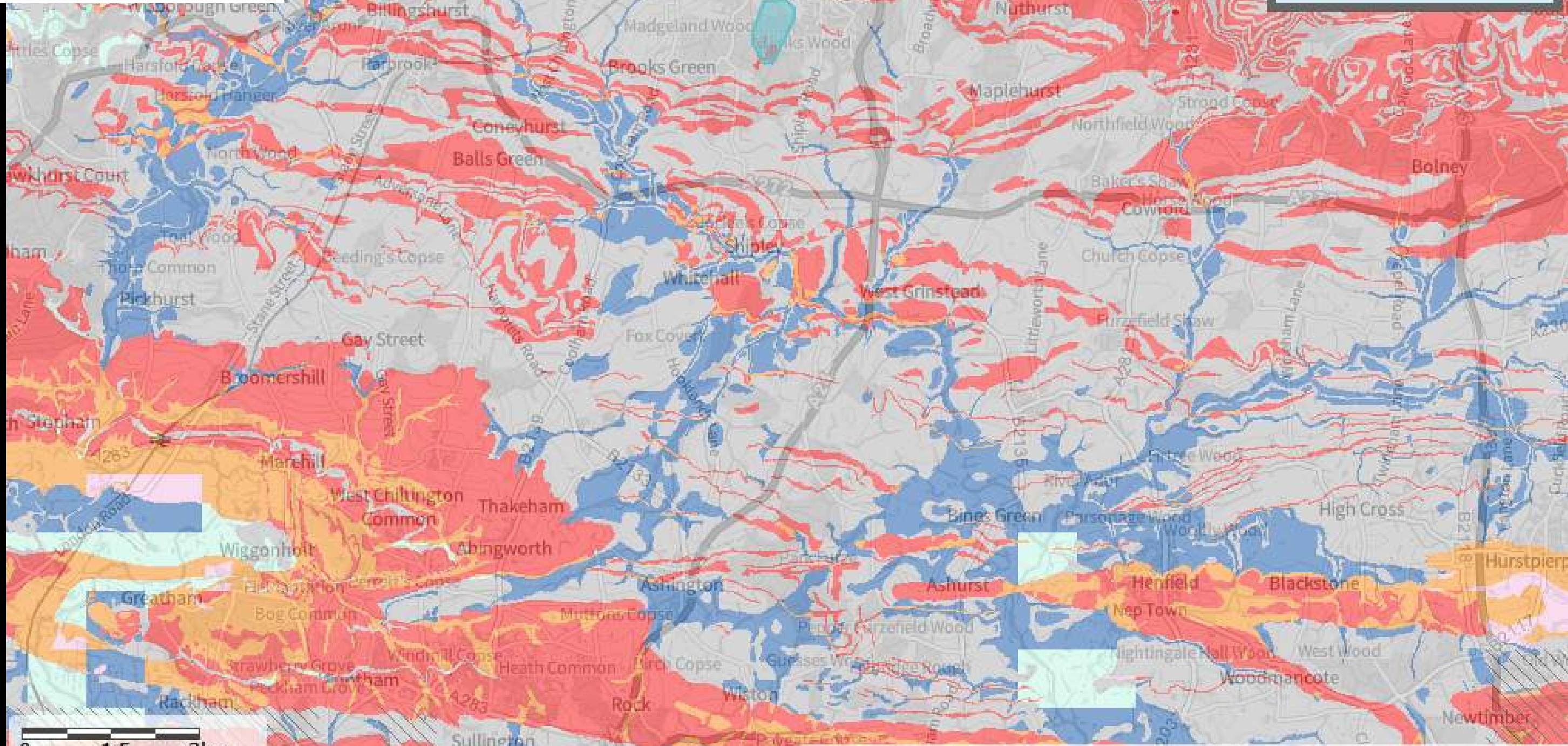
 Medium - High

 Medium

 Medium - Low

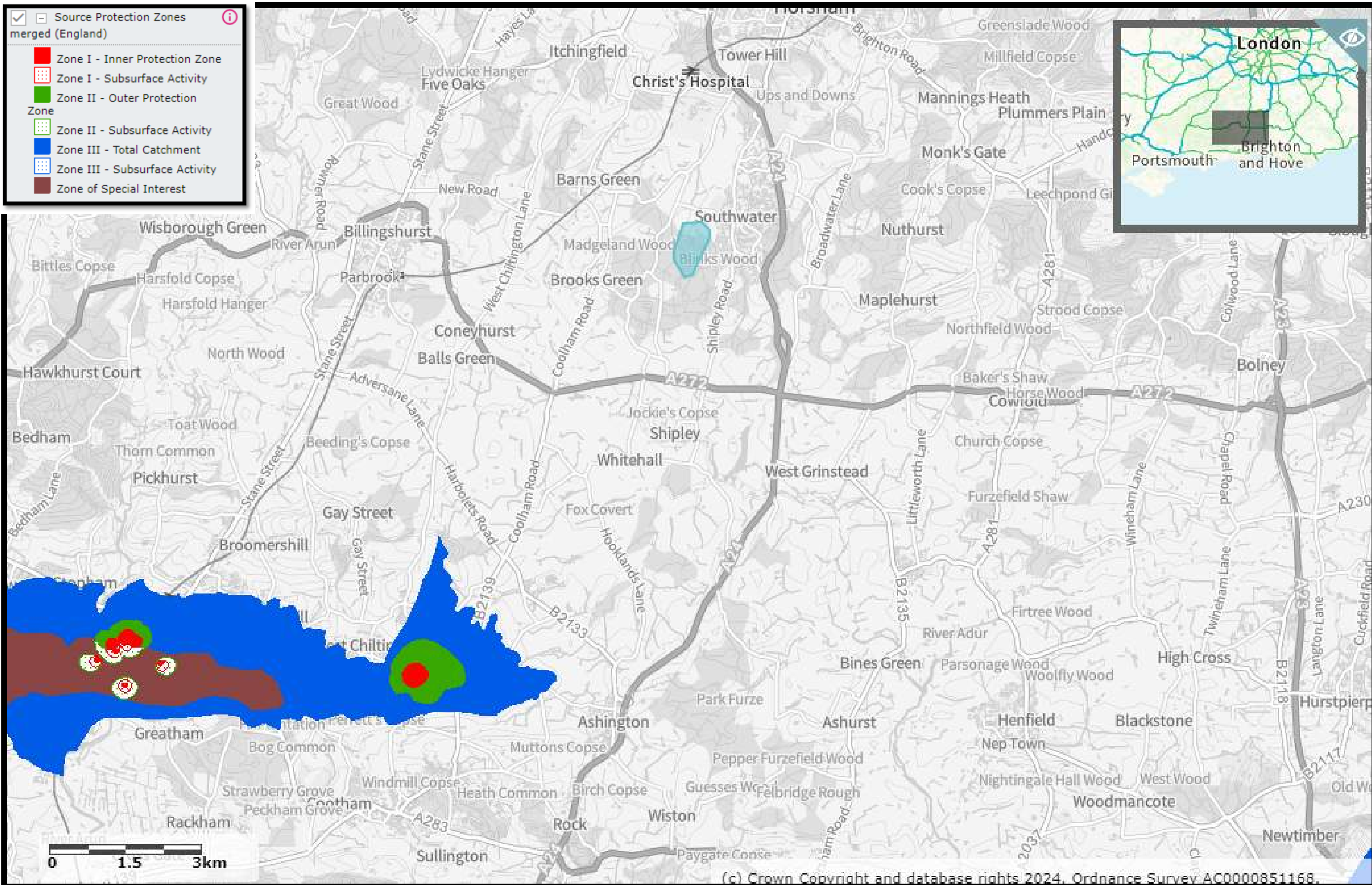
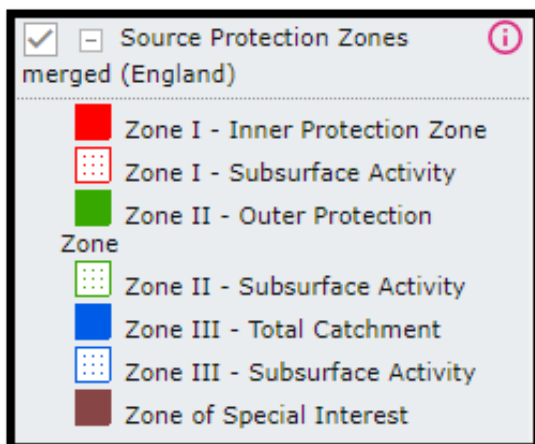
 Low

 Unproductive



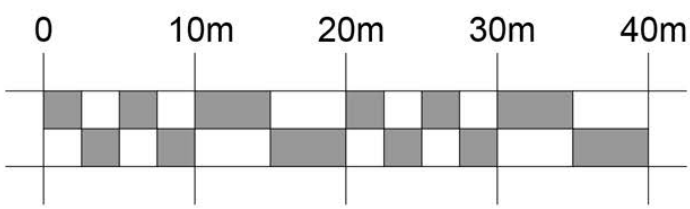
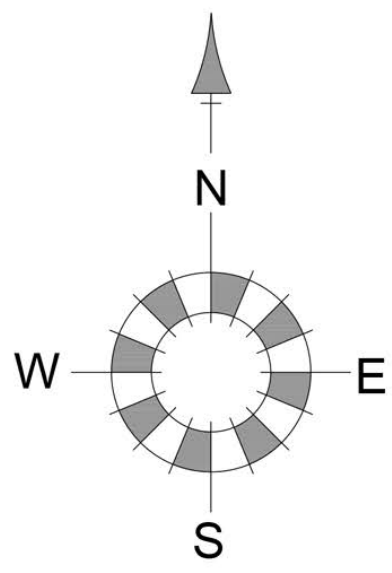
Coords: (528724,123990) Grid Ref:TQ28722399

(c) Crown Copyright and database rights 2024. Ordnance Survey AC0000851168.
Powered by Landmark Solutions.



Appendix E

Site Plan



ater
e
The
Vicarage

Graveyard

Phase 3.2 As
approved under
application
18/1246 and
subsequent NMA's

KENSETT AVENUE

- X 28.06.24 Layout updated with new mix for planning
- W 20.03.23 Parking numbering updated and electric charging points removed from adoptable roads
- V 13.05.21 Plot 313 amended in line with L.P.A. comments. Red line & Landscaping amended accordingly.
- U 03.03.21 Landscaping updated.
- T 26.02.21 Plots 308 - 309 adjusted. House type to Plots 316 & 318 changed. Garage to Plot 346 pushed back.
- S 10.02.21 Roof amended to plots 306-307 to suit revised floor plans. Paths & wall amended to suit.
- R 25.01.21 Roof amended to plots 306-307 to suit revised floor plans.
- Q 15.01.21 Revisions to Footprints on Plots 302-351 Various amendments to suite revised plots.
- P 29.10.18 Revisions to Footprints on Plots 358-362, 369-386, 392-395, 403, 404-420 & 447.
- N 18.09.18 Updated following Highways comments.
- M 26.07.18 Updated following LPA comments. Sub Station added adjacent Plot 368.
- L 17.05.18 Updated following IDL comments on highways. Alignment of Public Footpath adjacent Plots 421-447 revised following LPA comments.
- K 25.04.18 Updated following LPA comments.
- J 28.02.18 Various revisions from Plots 369-516.
- H 19.02.18 Road widths adjusted.
- G 06.02.18 Red line boundary adjusted. LAP's/LEAP added to drawing.
- F 22.01.17 House type on Plots 401 & 442 revised. Roof icons updated to accord with latest plans.
- E 24.11.17 Further revisions following LPA comments.
- D 12.10.17 Updated following LPA comments.
- C 17.07.17 Updated tree survey information added to layout.
- B 07.04.17 Plots 259 & 260 revised.
- A 03.04.17 Site Layout revised.

REF	DATE	REVISION
-----	------	----------

DEVELOPMENT
PHASES 3.2 & 4
SOUTHWATER
WEST SUSSEX

DRAWING TITLE
SITE LAYOUT - SHEET 1 of 2

Berkeley
Designed for life

Berkeley Homes (Southern) Limited
Berkeley House, Bay Tree Avenue
Leatherhead
Surrey, KT22 7UE
Tel: (01372) 370400

DRAWN
RJW
DATE
DECEMBER 2015

CHECKED
SCALE
1:500@A1

DRG No.
S832-3-100

REV.
X