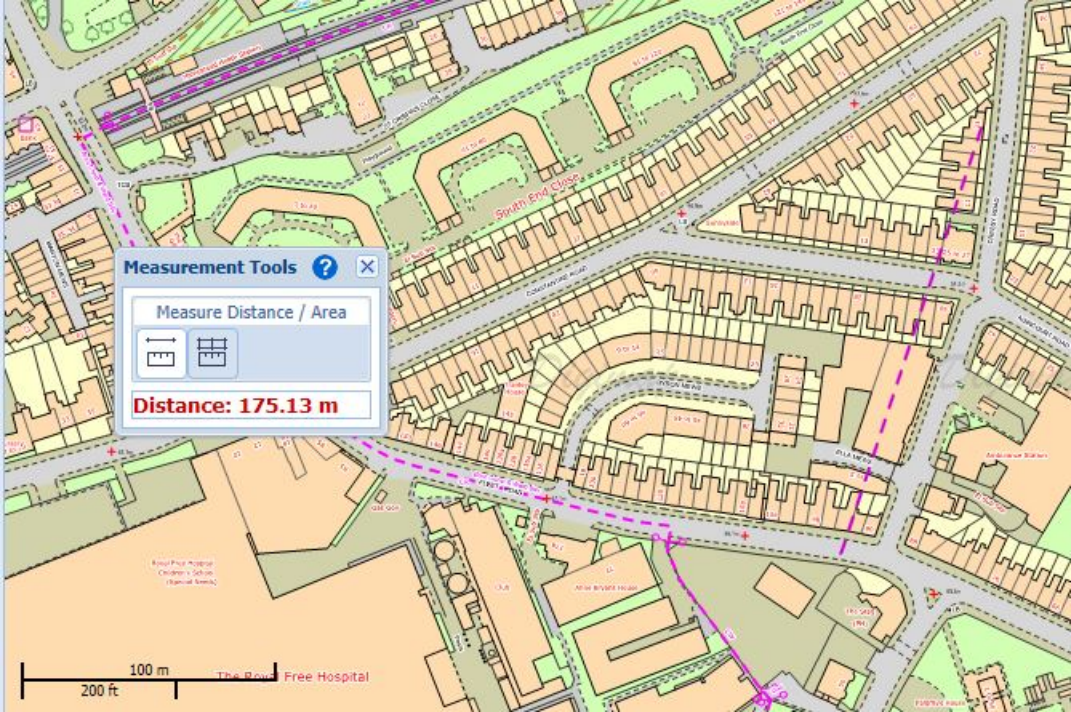
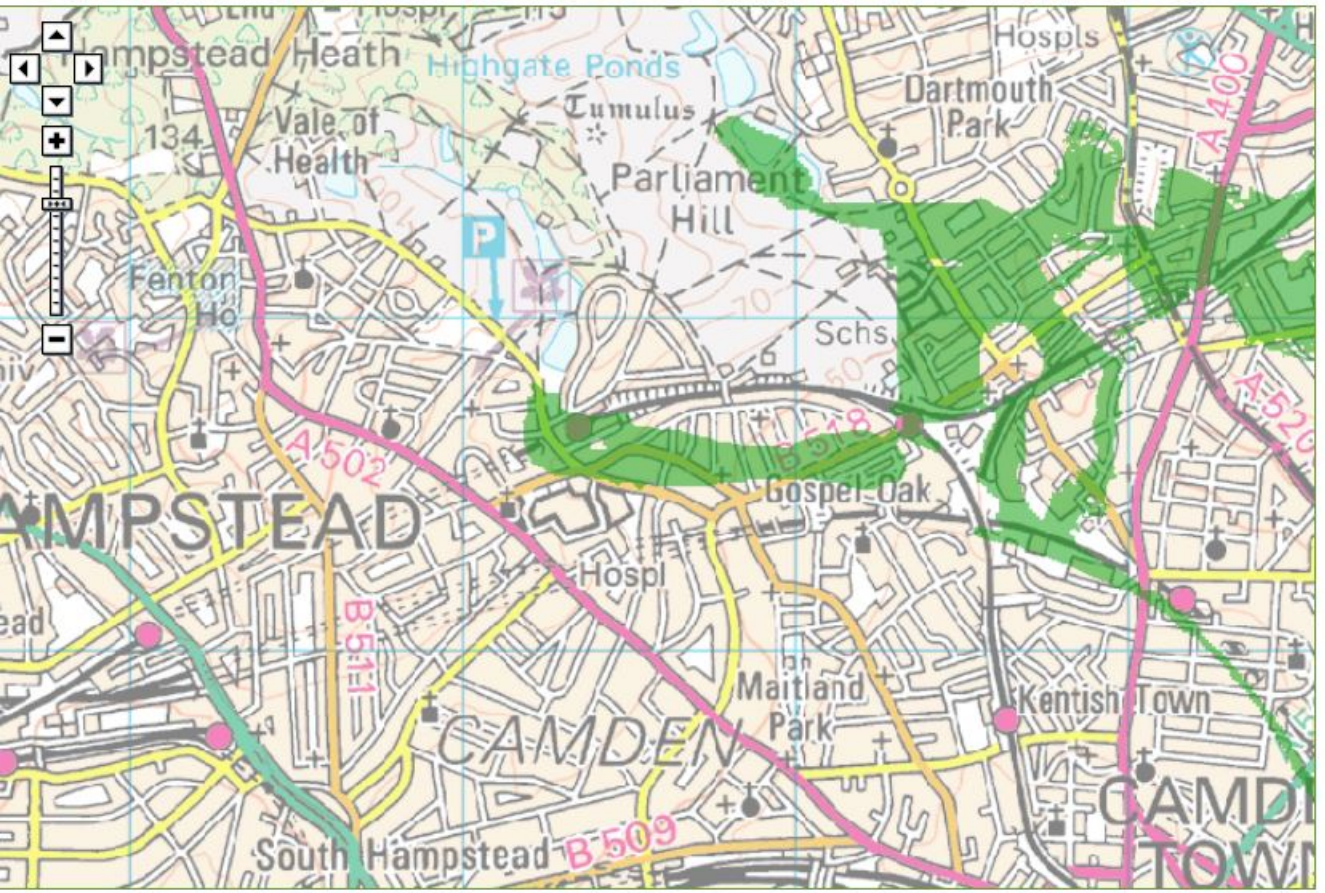

Measurement Tools
Measure Distance / Area
Distance: 175.13 m
South End Close
100 m
200 ft
The Royal Free Hospital

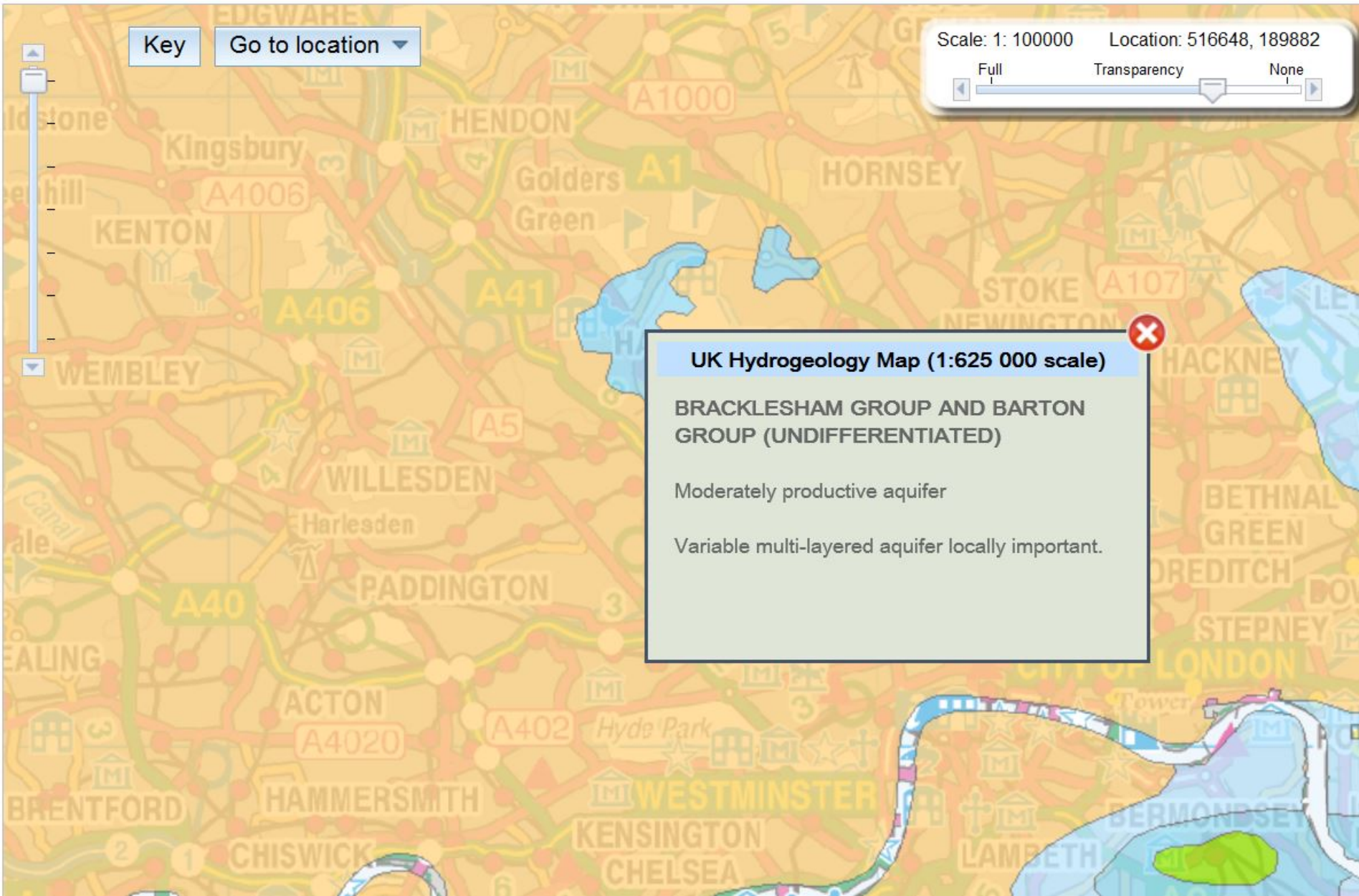

Hampstead Heath
Highgate Ponds
Tumulus
Vale of Health
134
Parliament Hill
Dartmouth Park
Hospls
A400
Fenton Ho
Schs
A502
B518
Gospel Oak
HAMPSTEAD
Hospl
B511
Maitland Park
Kentish Town
CAMDEN
South Hampstead
B509

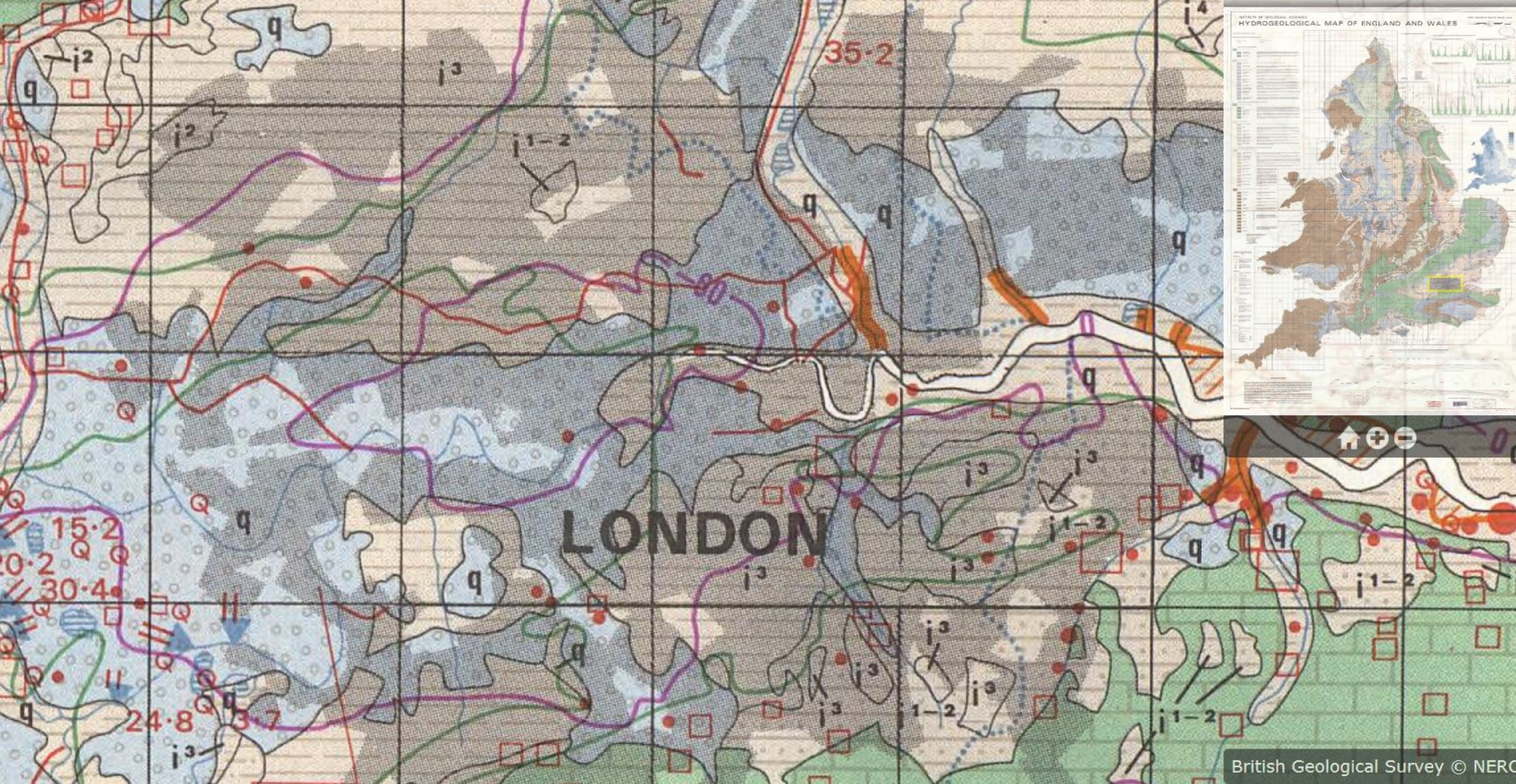


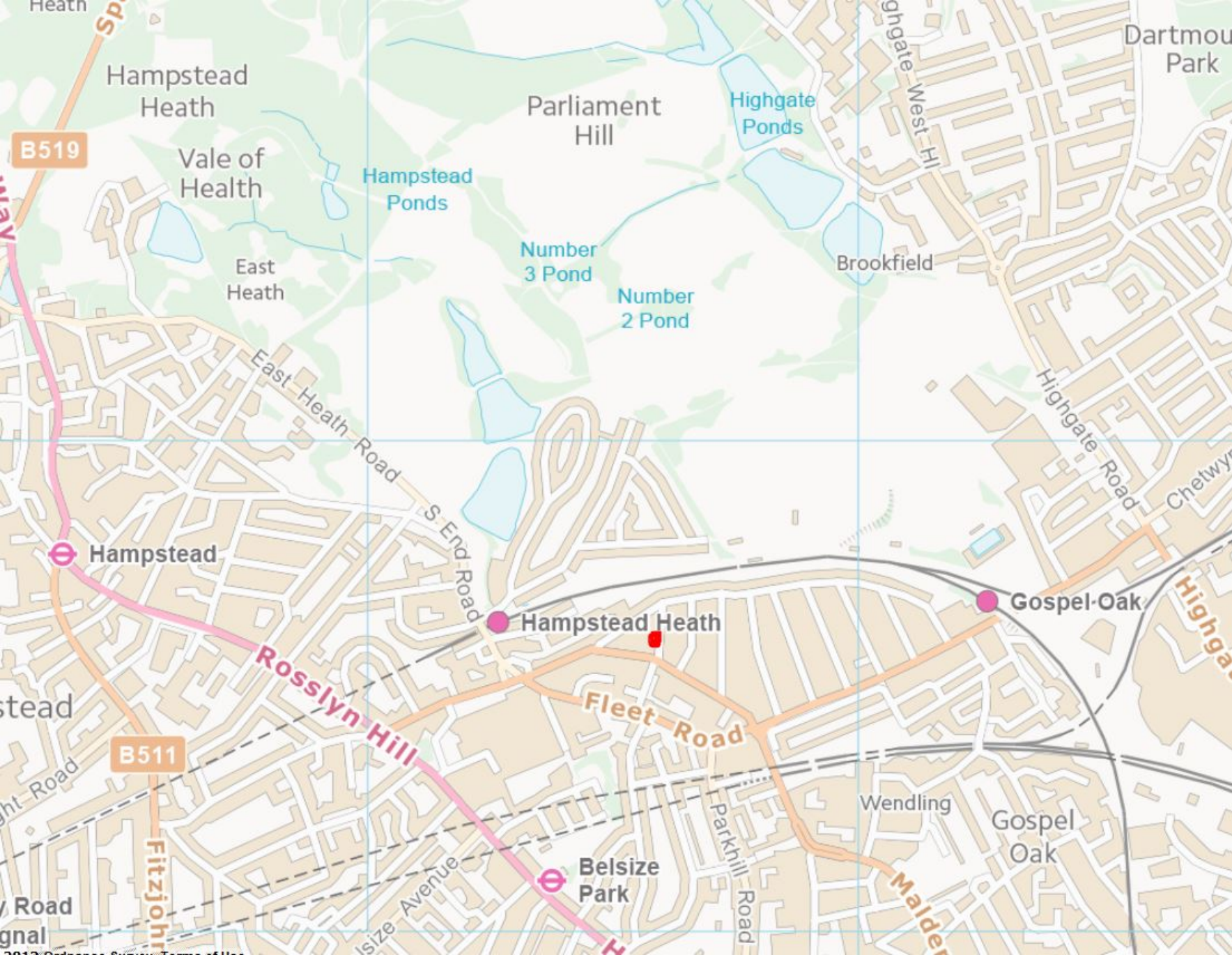
British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

UK Hydrogeology viewer

Search or **pan** and **zoom** to an area of interest.
Click on the map to show the **hydrogeology**.

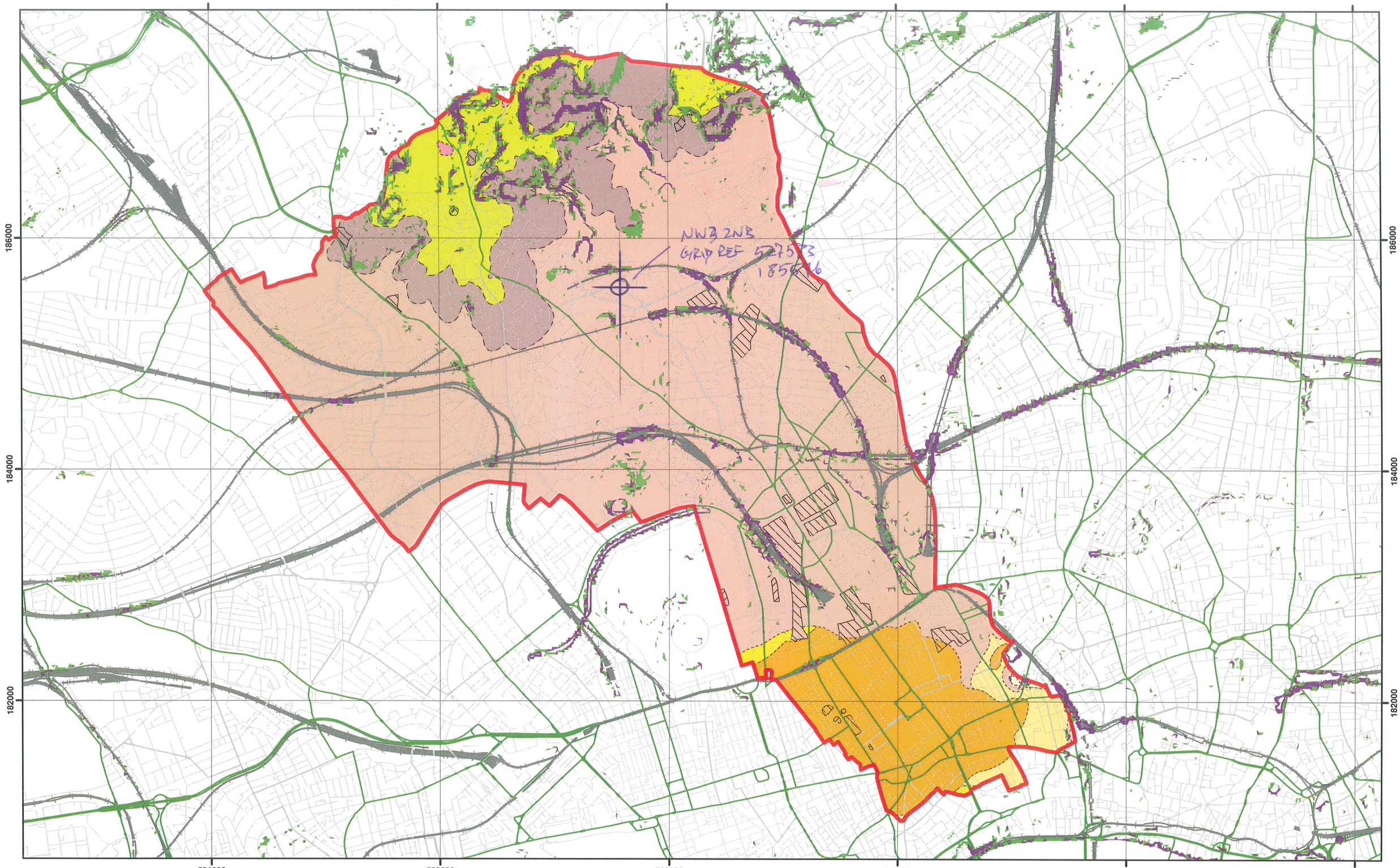





Hampstead Heath
Parliament Hill
Highgate Ponds
Dartmouth Park
B519
Vale of Health
Hampstead Ponds
East Heath
Number 3 Pond
Number 2 Pond
Brookfield
East Heath Road
S End Road
Highgate Road
Hampstead
Hampstead Heath
Gospel Oak
Rosslyn Hill
Fleet Road
B511
Wendling
Gospel Oak
Belsize Park
Parkhill Road

Appendix 4

Slope angle map



Slope Angles calculated from Digital Terrain Model Provided By Camden Bourough Council

N

Scale at A3: 1:30,000

1:10,000 BGS Mapping
Coordinate System:
British National Grid
GCS_OSGB_1936

0 0.5 1 2 3

Legend

Slope
- 0° - 7°
- 7° - 10°
- > 10°

- London Borough of Camden
- Railway Lines
- A Roads

BGS 1:10K Artificial Ground
- MADE GROUND
- WORKED GROUND

BGS 1:10K Drift Geology
- ALLUVIUM
- HACKNEY GRAVEL FORMATION
- LANGLEY SILT FORMATION
- LYNCH HILL GRAVEL FORMATION
- STANMORE GRAVEL FORMATION

BGS 1:10K Solid Geology
- BAGSHOT FORMATION
- CLAYGATE MEMBER
- LAMBETH GROUP
- LONDON CLAY FORMATION

Camden Geological, Hydrogeological and Hydrological Study

Slope Angle Map

213923

FIGURE 16

Appendix 5

Structural Method Statement

1. Structural Proposals

1.1 The proposed structural works consist of the following

a) New single storey basement under the main footprint of the house except for approximately 2.0m from the left hand party wall.

b) The basement extends to the front boundary on the right hand side to create a lightwell.

1.2 The proposed basement's perimeter retaining walls are generally to be formed by extending the existing foundations under the front, rear and right hand flank wall of the existing building down to the new basement level via reinforced concrete underpins. The front and rear retaining walls will be formed in a similar manner. The underplns are to be 'L - shaped' and installed in a consecutive sequence as the excavation proceeds through the building. The overall widths of the underpins are to match the width of the existing footings in order to maintain the bearing of the existing foundations. All the underpins are to be linked by dowel bar reinforcement.

1.3 The new basement floor will be formed in a 250 mm reinforced concrete ground bearing slab onto concrete blinding. In terms of potential ground heave the slab is to span onto and connect to the perimeter underpins. The existing ground floor slab and walls above will be supported by steel beams that span into the party walls and steel columns as necessary depending on the applied loading. Precast concrete lintels will be installed inbetween the steel beams to ensure the ground slab is adequately supported.

1.4 Solutions for waterproofing of the basement slabs and retaining walls will take the form of proprietary drained cavities with a sump and pump within the basement area.

1.5 Existing and new drainage may be collected beneath the basement slab and run via gravity to the front boundary where it may be pumped from a sump chamber to a high level. A new manhole may be required. Where possible all above ground drainage eg the existing drainage from the main house will be taken out by gravity, diverted above the basement level to run out Into the new or existing manhole at the rear.

2. Assumed Sequence of Construction

2.1 *Site set up:*

2.1.1 Deliveries. removals and access for operatives will most likely take place from Cornwall Gardens and through the main front entrance. This entrance will be manned throughout operational hours by a banksman to ensure construction deliveries do not pose a potential risk to pedestrians.

2.1.2 Construct site hoarding, entrance gates and possibly temporary pavement tunnel on pavement boundaries (subject to space requirements) to provide protection to passers-by from site activities. It is assumed site accommodation and welfare facilities will be provided within the main house building throughout the duration of construction. Materials may be removed or delivered over the temporary pavement tunnel.

2.1.3 Terminate/protect services, temporarily divert all active drainage.

2.2 *Underpinning and excavation*

2.2.1 The site investigation comprising two boreholes slab has revealed approximately 1.10m of made ground overlying London clay. Roots were noted to 1.00m and no groundwater was encountered.

2.2.2 For underpinning excavate holes in agreed sequencing, a maximum of 1.2m wide x 2m off wall face to proposed depth of basement (approximately 3.5m overall depth). Use proprietary side shutters to provide protection to operatives working at depth and to retain sides of excavations. Excavations to extend up to the edge of existing foundation on the neighbouring side of the party wall.

2.2.3 Push reinforcing bars into the side and base of the excavation to form dowels to tie the pins together at 200mm vertical centres. Install reinforcement for the 300 mm thick toe and the vertical section of the underpins. Install formwork and pour concrete to form the underpins.

2.2.4 Dry-pack tight between pin and underside of existing wall at least 24 hours after casting pin and back fill hole to top of underpin level, ensuring this is properly compacted. Remove projecting existing footing corbel as necessary - this could be carried out at a later date when the underpinning and subsequent excavation is complete.

2.2.5 All pins cast in sequence such that no two adjacent pins are constructed consecutively within 48 hours of completing and starting an adjacent pin. Leave a central bund of soil as high as possible to allow propping off as required. As

the excavation progresses steel beams shall be installed to support the ground floor where specified on the engineer's drawings.

2.2.6 Once the underpinning is complete install temporary propping 1.0m above new base level in sequence as the bulk excavation progresses from right to left across the site.

2.2.7 Spoil may be removed through the front elevation of the property with mini-excavators working from the excavated level and loading a conveyor which transports spoil over the pavement and into waiting skip lorries. The L-shaped under pins are to be designed such that no internal lateral temporary propping to the face of the pins would be required in the long term. In the short term props will be necessary at low level before the base slab is cast.

2.2.8 Lay down concrete blinding upon completion of the excavation to protect bearing ground.

2.2.9 Install below-ground drainage where necessary. Including any manholes and sumps

2.2.10 Install any necessary below-slab insulation, tanking/damp proof membranes as required.

2.2.11 Fix reinforcement and cast slab throughout with steps and wall & column starter bars where required.

2.3 ***Install New Steel Beams Beneath Existing Main House Walls:***

2.3.1 Provide temporary propping & needling to existing internal and external walls. as necessary. Temporary concrete footings will likely be required beneath props or support off new basement structure.

2.3.2 Install new pad footings, strip footings and ground slabs where specified and removing existing foundations that coincides with these.

2.3.3 Install steel beams, steel columns as required. supported on new basement structure or new foundations. Install padstones where required.

2.3.4 Dry pack tight between new beams and existing walls.

2.3.5 Repair and make good existing structure as required.

2.4 ***Follow on Trades***

2.4.1 The structural works are now complete and the work can concentrate on making the building weathertight. The finishing trades can then commence through to completion.

2.5 ***Structural Integrity of Surrounding Structures, Pavements and Utlities***

2.5.1 On the basis that the proposed method of construction is hand excavated in a systematic manner with temporary propping as the work progresses we do not anticipate significant disturbance to the adjacent ground.

2.5.2 We understand that there are no statutory utilities, tunnels or infrastructure within the area of influence of the proposed basement works. The existing drainage and services for the house will be adapted to accommodate the proposed works. We confirm these works will not detrimentally affect the surrounding structures.

2.5.3 The proposed basement is to be constructed on the boundary line and close to the foundations to 19 Cressy Road. The reinforced walls are designed to resist the lateral earth pressures including any surcharge loading from the neighbouring property. The existing building does not show signs of differential movement and these works will not create any significant differential settlement or have a detrimental effect on the structural stability of the adjoining or adjacent buildings provided they are constructed in a safe and workmanlike manner, maintaining stability at all times.

2.6 ***Impact on Drainage and Surface Water***

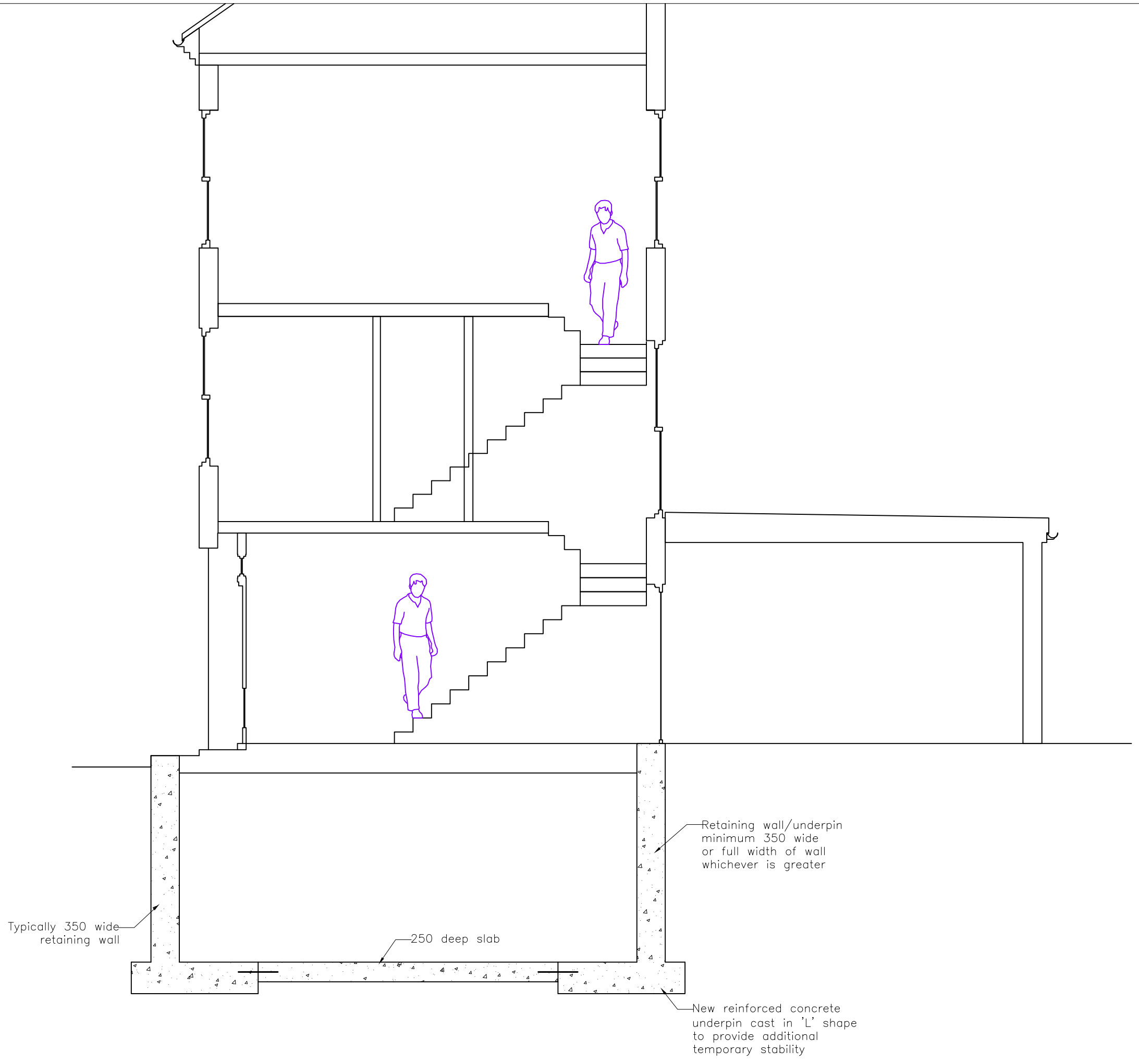
2.6.1 We understand that there is no statutory drainage within the area of influence of the proposed basement works. With regards to surface water the majority of the proposed basement is below the existing extension and concrete paving. We do not foresee significant impact on the surface water courses. However a flood risk assessment will be addressed in a separate report by others.

2.7 ***Geological & Hydrological Concerns***

2.7.1 The borehole records confirm London Clay below the base level of the basement down to at least 7m below ground level and no water was found to be present. The hydrological report accompanies this application.

2.8 ***Temporary Works***

2.8.1 Please refer to the Preliminary Drawing P1768/01 attached for assumed details of the temporary works. These works have been designed on a preliminary basis in accordance with the current British Standards. When the contractor is appointed he will be fully responsible for the temporary works including the design and erection.



Date	Rev	Detail
-	-	-
-	-	-
-	-	-

Glencross & Hudson
Structural Engineers & Building Surveyors

25 Claremont Avenue, Lower Sunbury
Middlesex TW16 5LX
Tel: 020 8914 8214
email: info@glencrossandhudson.co.uk

Project

21–23 Cressy Road
Hampstead
NW3 2NB

Drawing Title

PRELIMINARY
Long Section

Scale

1:50 @A3

Date

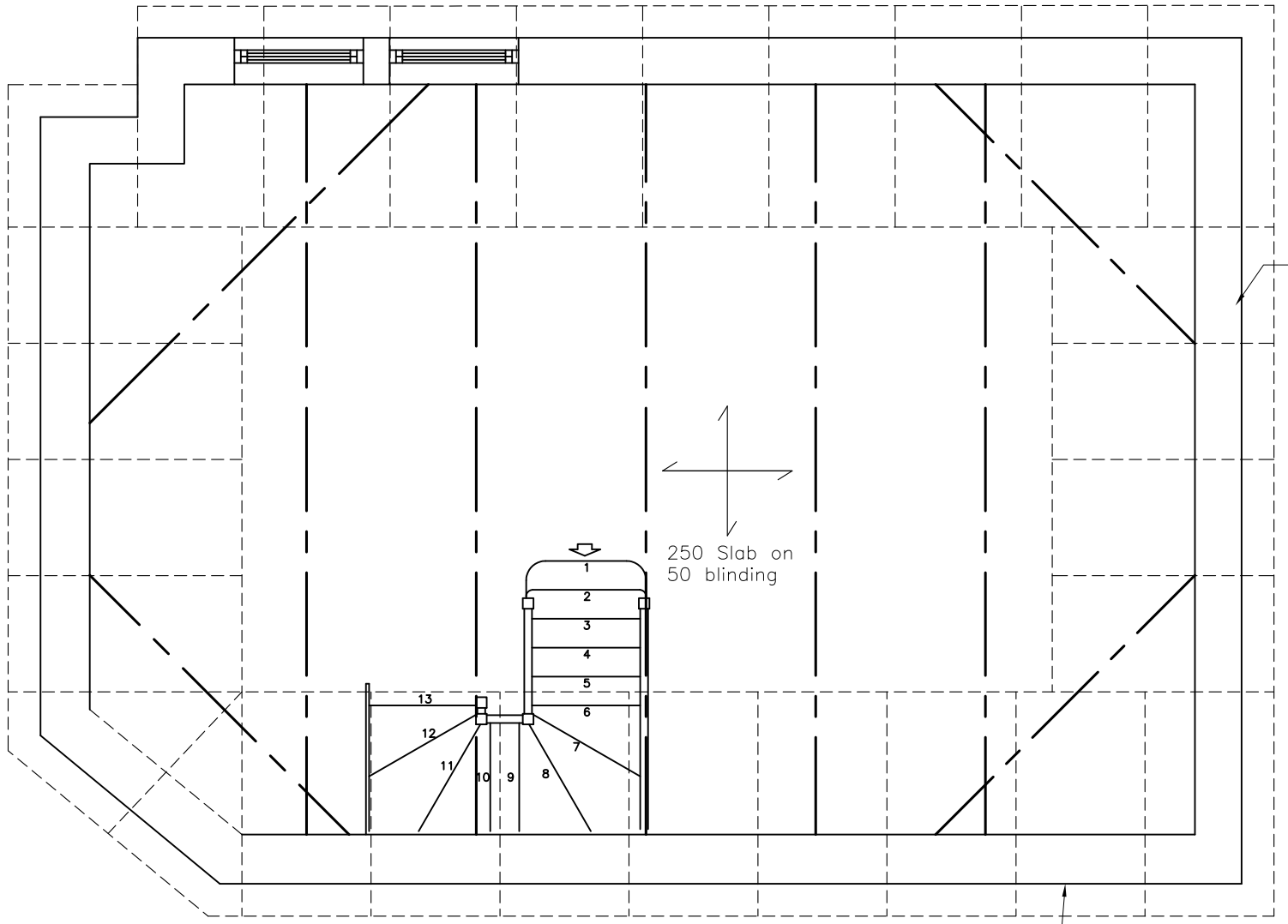
4/11/2013

Drawn

Drawing No.

P1768/02

Revision



Date	Rev	Detail
-	-	-
-	-	-
-	-	-

Glencross & Hudson
Structural Engineers & Building Surveyors

25 Claremont Avenue, Lower Sunbury
Middlesex TW16 5LX
Tel: 020 8914 8214
email: info@glencrossandhudson.co.uk

Project

21–23 Cressy Road
Hampstead
NW3 2NB

Drawing Title

PRELIMINARY
Basement Layout

Scale

1:50 @A3

Date

4/11/2013

Drawn

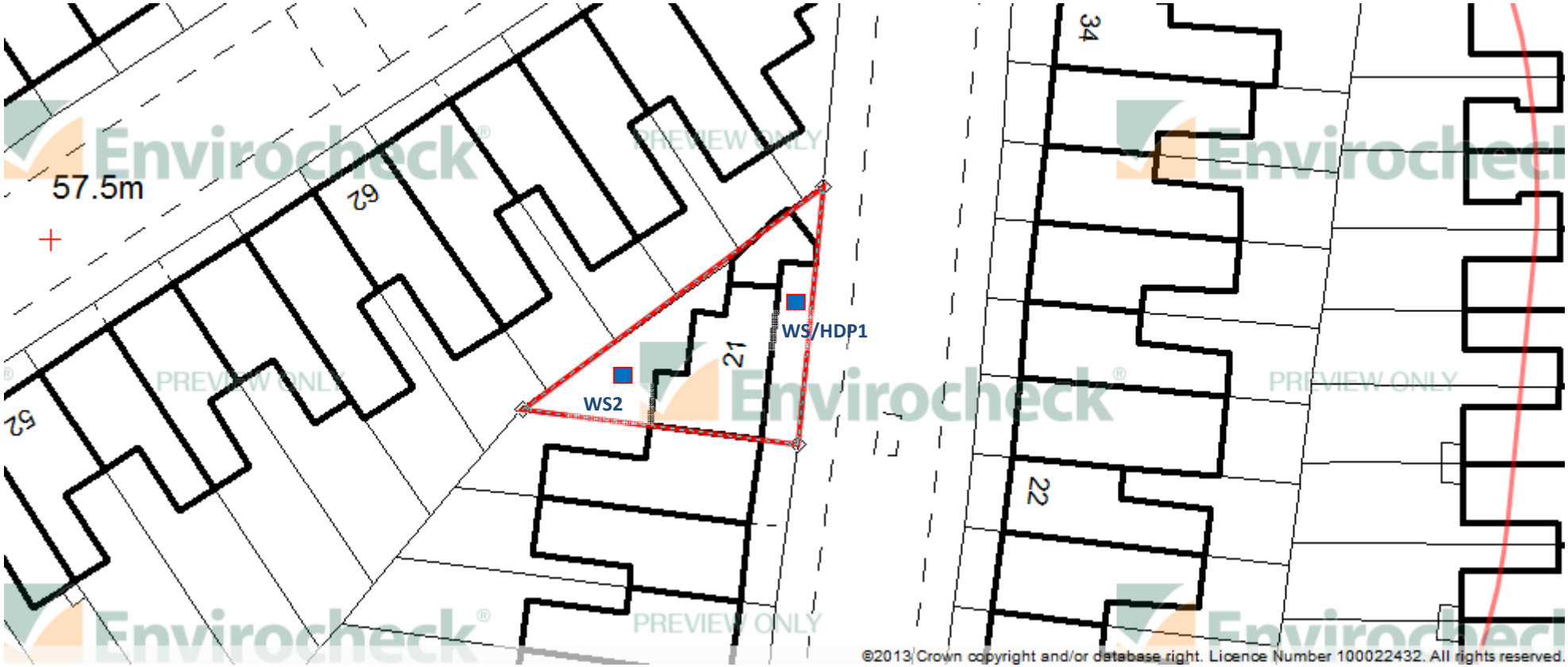
Drawing No.

P1768/01

Revision

Appendix 6

Borehole records



Project: 21 & 23 Cressy Road, Camden, London NW3 2NB		**Figure 1**
Client: CRL Asset Finanace Limited	**Date:** October 2013	ground&water
Trial Hole Location Plan	**Ref:** GWPR755	

Ground and Water Ltd
Tel: 0333 600 1221
email: enquiries@groundandwater.co.uk
www.groundandwater.co.uk

Borehole No
WS1
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
21-23 Cressy Road Camden	GWPR755		WS
Location: London NW3 2NB		Level: -	Scale 1:50
Client: CRL Asset Finance Limited		Dates: 17/10/2013	Logged By MG

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
		0.20	D					MADE GROUND: Dark brown to dark grey gravelly sandy clay. Sand is fine. Gravel is rare, fine to coarse, sub-angulsr to sub-rounded brick, carbonaceous material (ash/clinker) and flint.
		0.50	D					
		0.80	D					
		1.00	D		1.10			LONDON CLAY FORMATION: Drak brown and grey mottled silty CLAY with fine selenite crystals.
		1.50	D					
		2.00	D					
		2.50	D					
		3.00	D					
		3.50	D					
		4.00	D					
		4.50	D					
		5.00	D					
		5.50	D					
		6.00	D					
		6.50	D					
		7.00	D		7.00			End of Borehole at 7.00 m
			Type	Results				

Remarks: Root encountered to a depth of 1.0m dgl.
No groundwater encountered.

AGS

ground &water
geotechnical and environmental consultants

Ground and Water Ltd
Tel: 0333 600 1221
email: enquiries@groundandwater.co.uk
www.groundandwater.co.uk

Borehole No
WS2
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
21-23 Cressy Road Camden	GWPR755		WS
Location: London NW3 2NB		Level: -	Scale 1:50
Client: CRL Asset Finance Limited		Dates: 17/10/2013	Logged By MG

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
		0.25	D		0.15			MADE GROUND: Brick Paving
		0.50	D		0.55			MADE GROUND: Dark brown to black brown gravelly sandy clay. Sand is fine. Gravel is rare, fine to course, sub-angluar to sub-rounded brick, carbonaceous material (ash/clinker) and flint.
		0.80	D					
		1.00	D					LONDON CLAY FORMATION: Dark brown to light grey silty CLAY with rare fine selenite crystals
					1.20			
		1.50	D					LONDON CLAY FORMATION: Dark brown silty CLAY with rare fine selenite crystals
		2.00	D					
		2.50	D					
		3.00	D					
		3.50	D					
		4.00	D					
		4.50	D					
		5.00	D					
		5.50	D					
		6.00	D					
		6.50	D					
		7.00	D		7.00			End of Borehole at 7.00 m
			Type	Results				

Remarks: No groundwater encountered.
No roots encountered.

AGS