

BASEMENT IMPACT ASSESSMENT

97 COPSE WOOD WAY

NORTHWOOD

The logo for parmarbrook URBAN is displayed on a dark blue rectangular background. The word "parmarbrook" is written in a white, lowercase, sans-serif font. Below it, the word "URBAN" is written in a smaller, white, uppercase, sans-serif font, separated by a thin white horizontal line.

MARCH 2021

1.0 INTRODUCTION

- 1.1 This document constitutes the construction approach and methodology for forming the new basement for the proposed development at 97 Copse Wood Way. The document is produced by Parmarbrook Urban Limited, Consulting Structural Engineers, at the request of Seabrook Architects to accompany the Planning application.
- 1.2 This Basement Impact Assessment is based upon drawings produced by Seabrooks Architects submitted for planning approval to the London Borough of Hillingdon reference 22144/APP/2020/2637

2.0 EXISTING SITE

- 2.1 The existing building is currently a single house dwelling.

3.0 PROPOSED DEVELOPMENT

- 3.1 The development involves the demolition of the existing building and the construction of a new 4 storey house, including a basement construction.
- 3.2 The scope of the development is shown on Seabrooks Architects drawings as submitted as part of the planning application noted above.
- 3.3 It is proposed to construct the basement retaining walls and slab using in situ reinforced concrete construction techniques. The excavation of the soil will require temporary earth support, prior to the construction of the slabs and walls. This will be provided by a contiguous piled concrete wall to all 4 sides of the basement.
- 3.4 This proposed method of construction has been employed successfully on subterranean developments in many London Boroughs and it is considered that the proposed works will have no impact on the structural stability of the adjoining buildings.
- 3.5 The subterranean development will be a Grade 3 water-resisting basement to provide a “dry environment” suitable for ventilated usage under BS 8102. The waterproofing details will be to a specialist’s specification, which will provide a 10-year warranty for the waterproofing works. It is understood that a Type A membrane will be provided on the internal face of the reinforced concrete basement. Additionally, a Type C wall and floor cavity waterproofing system with additional vapour barriers will be installed within the basement.

4.0 SITE INVESTIGATION AND GROUND CONDITIONS

The geological strata based on site investigations in the vicinity (See Appendix A) will comprise made ground over Reading Beds. The Reading Beds, strata will consist of a mixture of Clay and Sand and will sit over a Chalk stratum. Typically, this ground at 3.0m depth will provide bearing values in the order of 150kN/m² for the design of the basement raft. The heave at the formation level of approximately 3m below the existing ground level will be nominal.

4.1 A site investigation would be recommended prior to construction and should include the following;

- Recommendations for basement and foundation design, following consultation with the Engineer, including observations on the suitability of various types of temporary propping.
- Estimates of the short- and long-term settlements relevant to the various founding solutions considered.
- Recommendations for retaining wall design, following consultation with the Engineer, including observations on the suitability of various types of retaining wall.
- Recommendations on remediation measures for soil contamination and identification of hazards to be considered for handling and disposal of excavated material in relation to current practice and legislation

5.0 STRUCTURAL DESIGN

5.1 The works will be designed in accordance with current British Standards Codes of Practice, including but not limited to:

BS6399: Loading

BS8004: Foundations

BS8110: Concrete

BS5950: Steelwork

BS5628: Masonry

BS5268: Timber

6.0 ROBUSTNESS AND STABILITY

- 6.1 The Building Regulations Approved Document A requires that buildings are sufficiently robust to sustain a limited extent of damage or failure, without collapse in the event of an accident.
- 6.2 The new development are four storey single occupancy properties (basement, ground, first and second floors) and defined as Building Class 2A.
- 6.3 Compliance with the robustness requirements for Building Class 2A is achieved by providing effective horizontal ties to all supporting floors and walls as described in the British Standards Codes of Practice.
- 6.4 Temporary stability of the basement construction will be provided by the contiguous piled wall, with deflections limited at the top of the wall to comply with BS 8000 Part1: 1989 and any other approved documents.
- 6.5 Permanent stability of the Basement walls will be provided by a propped reinforced concrete cantilevered wall, designed to BS8110

7.0 TEMPORARY WORKS

- 7.1 The contractor is entirely responsible for all the temporary works from possession of the site until practical completion.
- 7.2 The contractor shall design, install and maintain all necessary temporary works.
- 7.3 The contractor shall submit detailed proposals for the temporary works to the Contract Administrator/ Architect and Parmarbrook Urban at least 10 working days before commencing the works. The proposals shall include temporary works supports and a sequence of construction and shall be supported by calculations that have been carried out by a suitable Structural Engineer.
- 7.4 All temporary works to the side of excavations for new foundations shall be designed in accordance with BS 8000 Part 1: 1989 and any other approved documents.
- 7.5 All scaffolding required, whether for access or support, shall be designed for purpose, in accordance with relevant British Standards (e.g., BS 5973), and shall meet all requirements of The Construction (H, S & W) Regulations 1996.
- 7.6 The Contractor shall prepare a detailed method statement and sequence of construction for basement the works, at least ten working days before commencing the works.
- 7.7 Parmarbrook Urban shall review Contractor's temporary works, method statements and sequences of construction of all works on site.

8.0 CONSTRUCTION METHOD STATEMENT (GENERAL)

- 8.1 The subterranean basement development will be constructed by a competent and experienced Contractor.
- 8.2 The property is located within a residential area. The Contractor must employ appropriate methods of construction to minimise noise and nuisance to neighbours as far as reasonably practicable.
- 8.3 Access is only available from Copse Wood Way.
- 8.4 The Contractor shall obtain all necessary licences and approvals in respect of work on site, for example parking bay suspensions, yellow line dispensations and skips, disposal of specified wastes and noise notices.
- 8.5 The Contractor shall ensure that all plant or materials temporarily stored on the Public Highway/footway does not cause an obstruction or hazard to third parties.
- 8.6 The Contractor will be responsible for all matters in respect of loading, unloading, access, etc, and he shall agree all such matters with the Local Authority and Client. The Contractor shall ensure that safe access routes are provided along the public footway during loading/unloading operations if applicable.

9.0 CMS – BASEMENT WORKS (REFER TO APPENDIX B DRAWING NUMBERS 21027 01-09 INC.)

- 9.1 Prior to the construction of the basement work, demolition of the property is to be carried out by a competent and experienced demolition contractor.
- 9.2 It is anticipated that basement excavation will be formed by installing a contiguous concrete piled wall to all 4 sides of the basement footprint, providing temporary support to the soil during the excavation process.
- 9.3 After the installation of the contiguous piled wall, a capping beam will be cast over the top of the piles.
- 9.4 Excavation of the main basement to formation level can then be carried out, wailers, struts and props may be required to temporarily support the piles, depending on the chosen method carried out by the temporary works engineer. Once excavation to formation level is reached the base will be blinded with concrete blinding.
- 9.5 Excavate area to pool area cast slab and kickers to walls.
- 9.6 Cast swimming pool walls up to underside of basement slab.
- 9.5 The basement slab is then cast with kickers to form the concrete loadbearing walls.
- 9.6 The liner and internal walls are then cast to the underside of the proposed ground floor slab.
- 9.7 When the concrete walls reach their required strength, remove props then the ground floor slab can be cast. This slab will act as a horizontal prop to the concrete retaining walls in the permanent case.
- 9.8 The superstructure can then be built in the traditional manner from ground floor level upwards.

10. FLOOD RISK

- 10.1 Referring to the Environment Agency Database the site is in Flood Zone 1. Flood Zone 1 is outside the extent of extreme flooding and the annual risk is less than 1:1000. (See Appendix C for records)
- 10.2 The proposed basements are expected to be constructed entirely within the clay/sand soils and above the ground water table, which will allow the free flow of ground water and therefore the impact of the basement on the groundwater regime at the site will be insignificant.

11. GROUND WATER FLOODING AND DRAINAGE RISKS

- 11.1 Adjacent site investigations carried out (See section 4.0) did not indicate the presence of any ground water to a depth of 20m. A borehole carried out at Youngswood Farm in Ducks Hill Road (500m away) struck water at 40m (See Appendix D). The desk top study highlighted that the site was in flood zone 1, with no flooding risk, therefore the proposed basement will be constructed entirely within the Sand soils and above the ground water level, which will allow the free flow of ground water.

12. SUDS STATEMENT

12.1 There are surface water and foul sewers in the roadway, the depths of these sewers at this stage are unknown. A CCTV test will be carried out to establish the existing invert levels. In order to serve any waste/foul drainage requirement to the proposed Basement area a packaged sewage pumping chamber would be required to discharge the ground floor gravity drainage system.

12.2 Proposed Surface Water Drainage

Following the SuDS Hierarchy, surface water disposal to ground (soakaway) was considered. According to the borehole data gathered in the vicinity, the site is underlain by the Lambeth Group which comprises Clay, Silts and Sands – this is not considered a viable geology for the use of soakaway devices.

The next consideration on the SuDS Hierarchy is to a watercourse, however none are within the vicinity of the site which would offer a suitable outfall location.

It is therefore proposed to collect the surface water from the roof areas and discharge them into permeable paved areas. Infiltration from these areas would discharge directly through the permeable paving into the surface water system. Due to the Lambeth Group of soils noted above, the soils will not provide satisfactory percolation to dispose of the water, it is proposed to line the permeable paving with a visqueen membrane and for the surface water to be collected via a perforated pipe or filter strip and to discharge the water via a vortex control into the adjacent surface water sewer. The permeable paving is required to have a minimum sub-base storage depth of 450mm to provide sufficient storage volumes for the 1 in 100-year rainfall return plus a 40% allowance for climate change. It is proposed that surface water flows from the site are to be restricted to a maximum outfall rate of 2.5 l/s, this flow rate will be agreed and approved with Thames Water.

APPENDIX A: SITE INVESTIGATION DATA

GROUND INVESTIGATION for replacement house at

No 6, LINKS WAY, NORTHWOOD, HA6 2XB

4.0 Ground Conditions

The soil sequence is :

- Topsoil – approximately 200mm thick, fill in local areas
- stiff red brown Clay - partially dried by tree roots
- at 4m, fine Sand – in a very dense condition
- black pebbles with some sand
- at around 10m, Chalk with flints – sound chalk with some hard layers

Groundwater was not encountered. An observation pipe was installed in one borehole to a depth of 9.5m. Readings taken the next day, and seven days later showed that water was not present.

5.0 Foundation Design

An excavation depth of about 4m below ground level is likely to be required to form the Basement. A further 1.7m deep excavation will be made for the Pool.

A Piled wall could be used to provide support to the sides of the excavation. A CFA concrete-injected type of pile is suitable.

Alternatively, a conventional mass excavation could be considered. The adjacent houses are over 10m distant and the nearest site boundary is 5m distant from the wall of the new basement. Hence there is sufficient space for excavations to be made with the sides graded to a batter. The Clays may be cut to a sub-vertical gradient and are expected to remain stable provided that the surface is protected from rain water. The main basement level is at approximately 3.8m below ground level and at or just below the interface of the Clay and the Sand. The Sand when confined is in a very dense condition, but when exposed the surface can be easily disturbed. A blinding layer of concrete should be cast as soon as the formation level has been attained. The short height of Sand exposed on the sides of the excavation should be immediately protected, for example, with plywood sheets.

Once the perimeter basement walls have been built and the main part of the basement floor slab constructed, the locally deeper excavation for the Pool can

GROUND INVESTIGATION for replacement house at

No 6, LINKS WAY, NORTHWOOD, HA6 2XB

be carried out. This excavation will then extend further into Sand. Lateral support will be required and it may be necessary to drive in steel sheets.

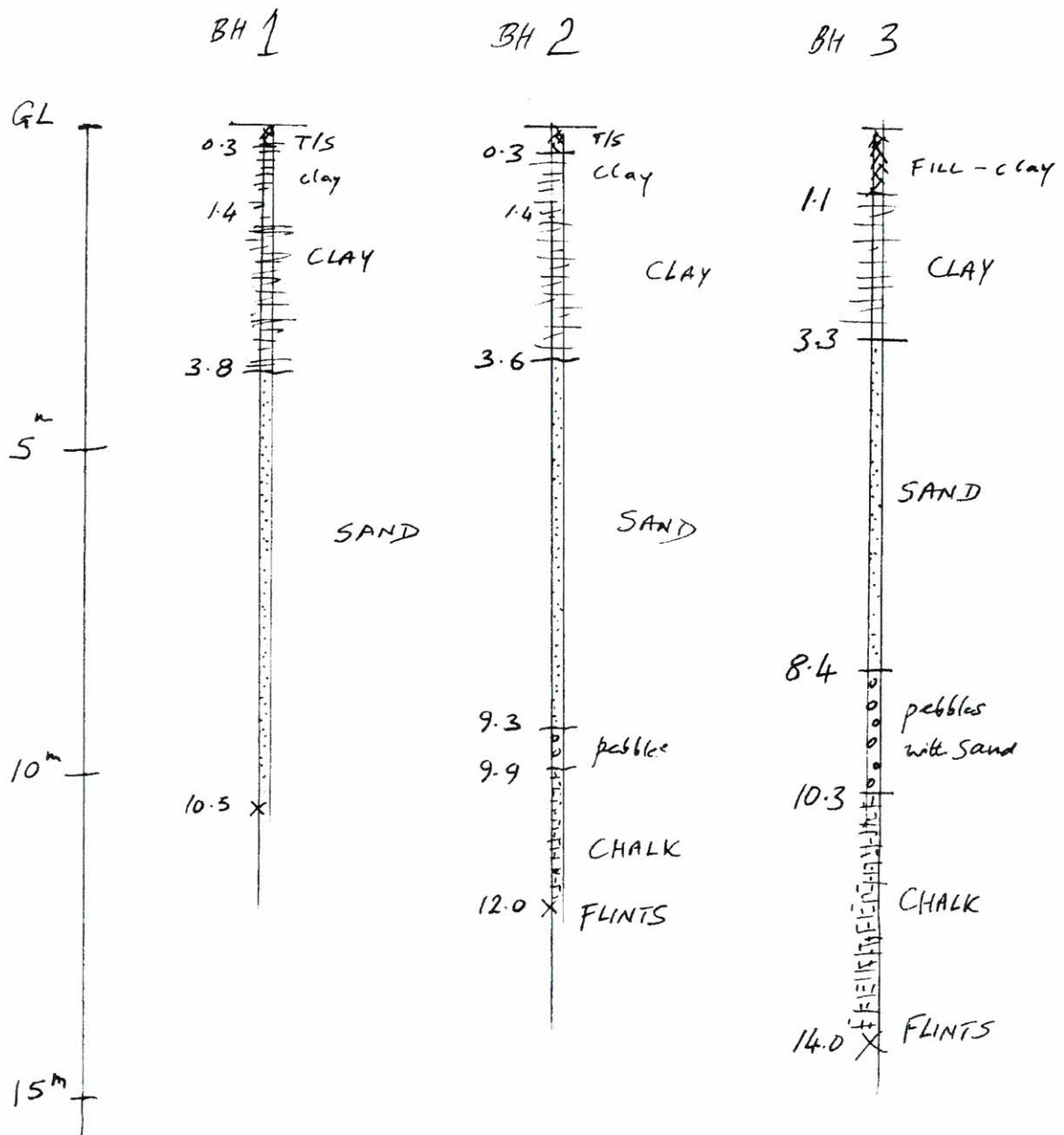
Deep excavations into stiff clay soils often experience heave of the base due to the reduction in overburden pressure. However, at this site, the soil at and below basement level is Sand. Consequently, heave will not occur.

A Garage is to be built abutting the south side of the new house and an Orangery will be constructed on the west side. These two structures will extend beyond the Basement and will therefore require independent foundations. These foundations should be at the same level as the main basement floor. A pad & beam foundation could be used, or short piles. There will also be a Porch on the front of the house. It may be feasible to support the Porch structure on a ground level cantilever slab.

GROUND INVESTIGATION for replacement house at

No 6, LINKS WAY, NORTHWOOD, HA6 2XB

ILLUSTRATIVE SOIL SEQUENCE



Client Mr & Mrs Patel		Project 6, LINKS WAY, NORTHWOOD, HA6 2XB		Borehole No. 1	
Engineer Farmarbrook Urban				Elevation 1	
Borehole Type Cable percussive				Date 29-Oct-18	

Legend	Depth (m)	Description	Samples/ Tests			
	0.30	grass over topsoil				
		firm to stiff tan brown clay with some pale grey mottling	J	0.8		
		fine roots and occasional pebble in upper zone	J	1.2		mc=41
	1.40		U	1.5	Cu = 94	mc=21
					LL=59, PL=19, PI=40	
		stiff red brown clay with pale grey mottling	J	2.0		mc=24
			J	2.5		mc=23
			J/SPT	3.0	2,3, 4,4,5,6 casing at 3.0	N=19 mc=21
	3.80		J	3.9		
		off-white fine grain-sized Sand	J/SPT	4.0	3,14, 21,29... casing at 4.0	N=100+
	5.30		J/SPT	5.5	6,9, 13,16,23,31 casing at 5.5	N=83
		pale grey-green fine to medium grain-sized Sand	J/SPT	7.0	6,12, 22,29.... casing at 7.0	N=100+
			J/SPT	8.5	14, 22, 34 ... casing at 8.5	N=150+
			J/SPT	10.0	12,17, 26,42,.... casing at 10.0	N=150+
	10.50	...end of borehole. Further penetration not feasible				
Foreman : Michael Ray						

Remarks Borehole located on western side of house Water was necessarily added to assist boring from 4.0 to 10.0 Groundwater was not encountered, upon completion borehole was dry

Client Mr & Mrs Patel	Project 6, LINKS WAY, NORTHWOOD, HA6 2XB	Borehole No. 2
Engineer Parmarbrook Urban		Elevation
Borehole Type Cable percussive		Date 30-Oct-18

Legend	Depth (m)	Description	Samples/ Tests	
	0.30	grass over topsoil		
		firm to stiff tan brown clay with some pale grey mottling	J 0.6	
		fine roots and occasional pebble in upper zone	J 1.1	mc=27
	1.40		U 1.5	Cu = 60 mc=27 LL=56, PL=19, PI=37
		stiff red brown clay with pale grey mottling	J 2.0	mc=22
		...some white calcareous nodules	J 2.2	mc=22
			J 2.7	mc=24
			J/SPT 3.0	2,3, 3,4,5,6 casing at 3.0 N=18 mc=20
	3.60			
		off-white fine grain-sized Sand	J/SPT 4.0	3,5, 5,6,8,16 casing at 4.0 N=35
	5.30			
		pale grey-green fine to medium grain-sized Sand	J/SPT 5.5	5,7, 9,14,19,26 casing at 5.5 N=68
			J/SPT 7.0	9,22, 34 casing at 7.0 N=100+
	9.30		J/SPT 8.5	14, 22, 34 casing at 8.5 N=150+
		dense black pebbles with brown sand	J 9.4	
	9.90			
		Chalk - off-white chalk with some hard bands	J/SPT 10.0	13, 5, 9,11,10,10 casing at 10.0 N=40
		..many flints	J/SPT 11.5	9,30 casing at 10.2 N=50+
	12.00	...end of borehole. Boring tool jammed on flints		
Foreman : Michael Ray				

Remarks

Borehole located on southeast side of house
Water was necessarily added to assist boring from 4.0 to 10.0
Groundwater was not encountered, upon completion borehole was dry
Observation pipe installed to 9.5m. The following day, the borehole was dry

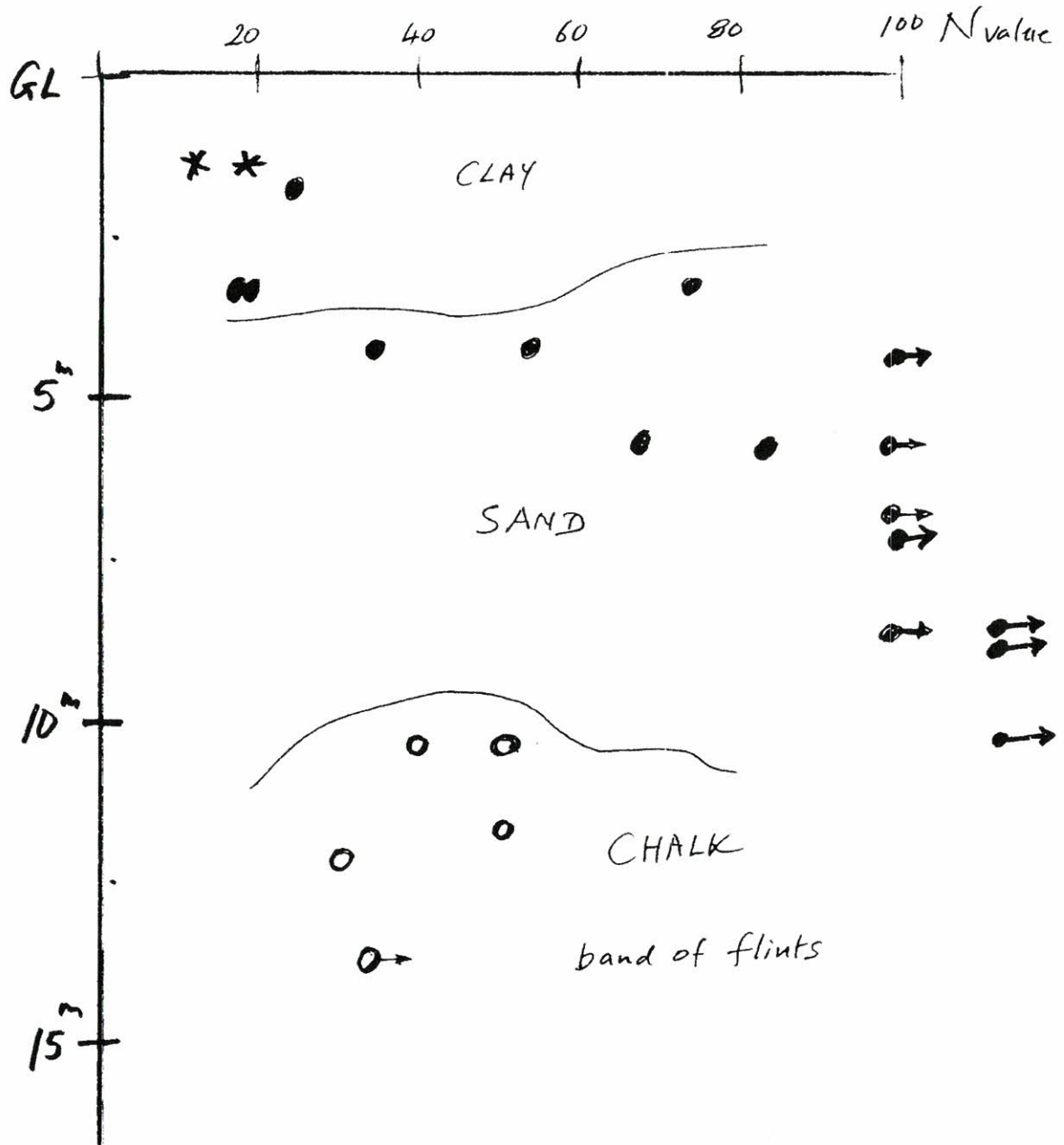
Client Mr & Mrs Patel Engineer Parmarbrook Urban Borehole Type Cable percussive		Project 6, LINKS WAY, NORTHWOOD, HA6 2XB		Borehole No. 3 Elevation 3 Date 06-Nov-18	
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Legend	Depth (m)	Description	Samples/ Tests			
	1.10	Fill - thin tarmac surfacing over gravel in a loose matrix of grey-brown clay	J	0.5		
			J	1.0		
	2.00	firm tan brown clay with much pale grey mottling and roots	J/SPT	1.3		mc=33
		stiff red brown clay with pale grey mottling	J/SPT	1.5	4,4, 5,6,6,7 casing at 1.5	N=24 mc=33
			J	2.2		mc=23
			J	2.8		mc=22
	3.30		J/SPT	3.0	3,5, 10,16 21,28 casing at 3.0	N=75 mc=19
		pale orange brown fine grain-sized Sand	J/SPT	4.0	5,9, 10,11 11,12 casing at 4.0	N=54
	5.40		J/SPT	5.5	8,12, 18,25... casing at 5.5	N=100+
		pale grey-green fine to medium grain-sized Sand	J/SPT	7.0	7,1, 12,18 29... casing at 7.0	N=100+
	8.40		B/CPT	8.5	6,10, 15,24,32... casing at 8.5	N=100+
		dense black pebbles with green grey sand	B/CPT	10.0	7,11, 14,15,10,10 casing at 10.0	N=49
	10.30	Chalk - off white chalk with some hard bands	J/SPT	11.5	6,7, 6,7 8,8 casing at 10.5	N=29
		some scattered flints	J/SPT	13.5	5,7, 9,24... casing at 10.5	N=30+
	14.00	end of borehole further boring not feasible				
Foreman : Michael Ray						

Remarks Borehole located on driveway near north east corner of house Water was necessarily added to assist boring from 3.3m to 10.3m Groundwater was not encountered, upon completion borehole was dry

GROUND INVESTIGATION for replacement house at
No 6, LINKS WAY, NORTHWOOD, HA6 2XB

GRAPH showing STRENGTH of SOILS in Relation to DEPTH



							Site 20 Links Way, Northwood, Middlesex HA6 2XB	Borehole Number BH1	
							Client	Job Number	
							Engineer	Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.50-10.88 10.50	SPT 80/225 D11	10.50	10.00	9,9/21,26,33					
12.00-12.45 12.00	SPT N=53 D12	12.00	11.30	7,10/12,12,14,15		12.20 (1.10)	Very dense bluish green mottled brown fine to medium SAND with black rounded pebbles		
13.50-13.95 13.50	SPT N=29 D13	13.50	DRY	8,8/7,7,7,8		13.30	CHALK; recovered as strong medium to high density white with black specks CHALK with occasional flints and orange-brown staining		
15.00-15.45 15.00	SPT N=41 D14	13.50	DRY	5,5/7,12,12,10					
16.50-16.95 16.50	SPT N=41 D15	13.50	DRY	6,7/10,10,11,10		(6.70)			
18.00-18.30 18.00	SPT 65/150 D16	13.50	DRY	7,29/30,35			Cobble sized flint at 18.2 m		
19.50-19.95 19.50	SPT N=46 D17	13.50	DRY	6,7/10,12,11,13					
							20.00		
Remarks								Scale (approx)	Logged By
								1:50	ML
								Figure No. J13109.BH1	

						Site		Borehole Number	
						20 Links Way, Northwood, Middlesex HA6 2XB		BH1	
						Client		Job Number	
						Engineer		Sheet	
								1/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	D1					(0.15) 0.15 (0.25) 0.40	Tarmac Made Ground (crushed roadstone and brick sub-base) Soft becoming firm and stiff brown mottled bluish grey, reddish brown and greenish blue silty CLAY		
1.20-1.65 1.20	SPT(C) N=3 B1	1.20	DRY	1,0/1,0,1,1					
1.80	D2					(2.80)			
2.00-2.45	U1								
2.40	D3								
2.70	D4								
3.00-3.45 3.00	SPT N=55 D5	3.00	DRY	3,5/7,11,17,20		3.20	Very dense orange-brown fine to medium SAND		
4.00-4.45 4.00	SPT N=63 D6	4.00	3.70	5,7/10,13,18,22		(2.90)			
5.00-5.30 5.00	SPT 41/150 D7	5.00	4.80	6,10/13,28					
6.00-6.30 6.00	SPT 58/150 D8	6.00	5.40	6,20/20,38		6.10	Very dense greenish brown fine glauconitic SAND		
7.50-7.65 7.50	SPT 11*/75 49/75 D9	7.50	6.90	11/49					
9.00-9.23 9.00	SPT 10*/75 78/150 D10	9.00	8.20	10/38,40		(6.10)			
Remarks Excavating services inspection pit from GL to 1.2 m for 30 mins. Groundwater not encountered. Water added to aid drilling through the sand from 3.2 m to 13.3 m. Groundwater monitoring standpipe installed to 6.00 m. 1 hr spent collecting water.								Scale (approx) 1:50	Logged By ML
								Figure No. J13109.BH1	

E C S						Site 20 Links Way, Northwood, Middlesex HA6 2XB		Number BH2	
						Client		Job Number	
						Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.20	D1				(0.30) 0.30	Made Ground (brown silty slightly sandy clay with gravel, rootlets, brick and coal fragments)			
0.50	D2					Soft orange-brown mottled grey silty CLAY with decayed roots and pockets of calcareous excretions			
1.00-1.45	SPT N=8	DRY	0,1/2,2,2,2		(1.20)				
1.50	D3				1.50	Firm rapidly becoming stiff reddish brown mottled grey and dark orange-brown silty CLAY with abundant calcareous nodules and occasional pyrite			
2.00-2.45	SPT N=19	DRY	2,3/3,4,5,7		(1.00)				
2.50	D4				2.50 (0.30)	Hard orange-brown mottled greenish grey slightly cemented silty CLAY with calcareous nodules			
3.00-3.45	SPT N=42	DRY	3,5/6,8,11,17		2.80 (0.50)	Very stiff fissured reddish brown mottled greenish grey and yellowish brown silty glauconitic CLAY			
3.30	D5				3.30	Very dense dark orange-brown mottled pale orange-brown and reddish brown fine to medium, locally cemented, SAND with occasional pyrite nodules			
3.50	D6								
4.00-4.31	SPT 25*/145 50/160	DRY	9,16/21,24,5		(2.05)				
4.50	D7								
4.90-5.17	SPT 25*/145 50/125	DRY	10,15/30,20		5.35	Terminated at 5.35m			
Remarks Groundwater not encountered. Groundwater monitoring standpipe installed in borehole to a depth of 5.00 m. Borehole terminated due to the density of the sand.							Scale (approx) 1:50	Logged By ML	
							Figure No. J13109.BH2		

					Site 20 Links Way, Northwood, Middlesex HA6 2XB		Number BH3	
					Client		Job Number	
					Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	D1				(0.20)	Topsoil (dark brown clayey silt with abundant roots, organic content and fine gravel)		
0.40	D2				0.20	Soft orange-brown mottled grey silty CLAY with rootlets to 0.6 m and abundant calcareous excretions		
					(1.80)			
1.50	D3							
					2.00	Stiff becoming very stiff dark orange-brown becoming reddish brown mottled greenish grey and yellowish brown silty CLAY with occasional calcareous nodules		
2.50	D4				(1.50)			
					3.50	Hard greenish grey mottled reddish brown and orange-brown cemented glauconitic silty CLAY with calcareous nodules		
3.60	D5				(0.50)			
					4.00	Very stiff reddish brown mottled orange-brown and grey silty slightly sandy CLAY with occasional black specks		
4.40	D6				(0.50)			
4.60	D7				4.50	Very dense dark orange-brown fine to medium, locally cemented, SAND with occasional pyrite		
					(0.50)			
					5.00	Terminated at 5.00m		
Remarks Groundwater not encountered. Borehole terminated due to the density of the sand.							Scale (approx) 1:50	Logged By ML
							Figure No. J13109.BH3	

						Site 20 Links Way, Northwood, Middlesex HA6 2XB	Number BH4	
						Client	Job Number	
						Engineer	Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	D1				(0.30)	Made Ground (brown silty slightly sandy clay with gravel, rootlets, brick and coal fragments)		
0.50	D2				0.30	Soft orange-brown mottled grey silty CLAY with decayed roots and pockets of calcareous excretions		
1.00-1.45	SPT N=10	DRY	1,1/2,3,2,3		(1.20)			
1.50	D3				1.50	Firm rapidly becoming stiff reddish brown mottled grey and dark orange-brown silty CLAY with abundant calcareous nodules and occasional pyrite		
2.00-2.45	SPT N=16	DRY	2,2/3,3,5,5		(1.20)			
2.50	D4				2.70	Hard orange-brown mottled greenish grey slightly cemented silty CLAY with calcareous nodules		
2.80	D5				(0.50)			
3.00-3.45	SPT N=37	DRY	3,5/7,8,9,13		3.20 (0.20)	Very stiff fissured reddish brown mottled greenish grey and yellowish brown silty glauconitic CLAY		
3.50	D6				3.40	Very dense dark orange-brown mottled pale orange-brown fine to medium, locally cemented, SAND with occasional pyrite nodules		
4.00-4.34	SPT 50/190	DRY	6,13/17,21,12		(1.95)			
4.50	D7							
4.90-5.22	SPT 25*/145 50/170	DRY	10,15/20,22,8		5.35	Terminated at 5.35m		
Remarks Groundwater not encountered. Groundwater monitoring standpipe installed in borehole to a depth of 5.0 m. Borehole terminated due to the density of the sand.						Scale (approx) 1:50	Logged By ML	
						Figure No. J13109.BH4		

APPENDIX B : CONSTRUCTION SEQUENCE

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URBAN

43A Ninfeld Road, Bexhill on Sea, East Sussex. TN39 5AT

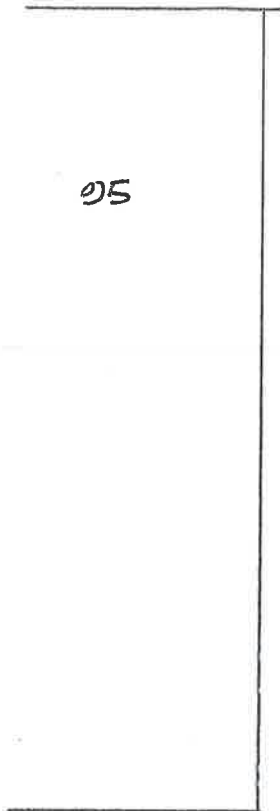
Tel: 01424 215572
M: 07946 150256
E-mail: lony@parmarbrook.com

05

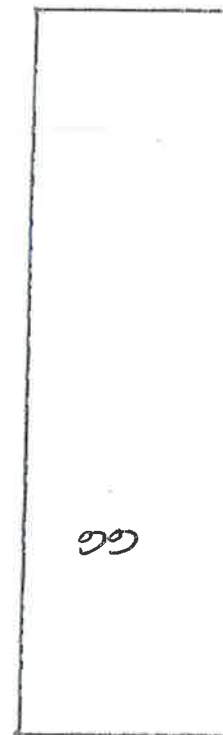
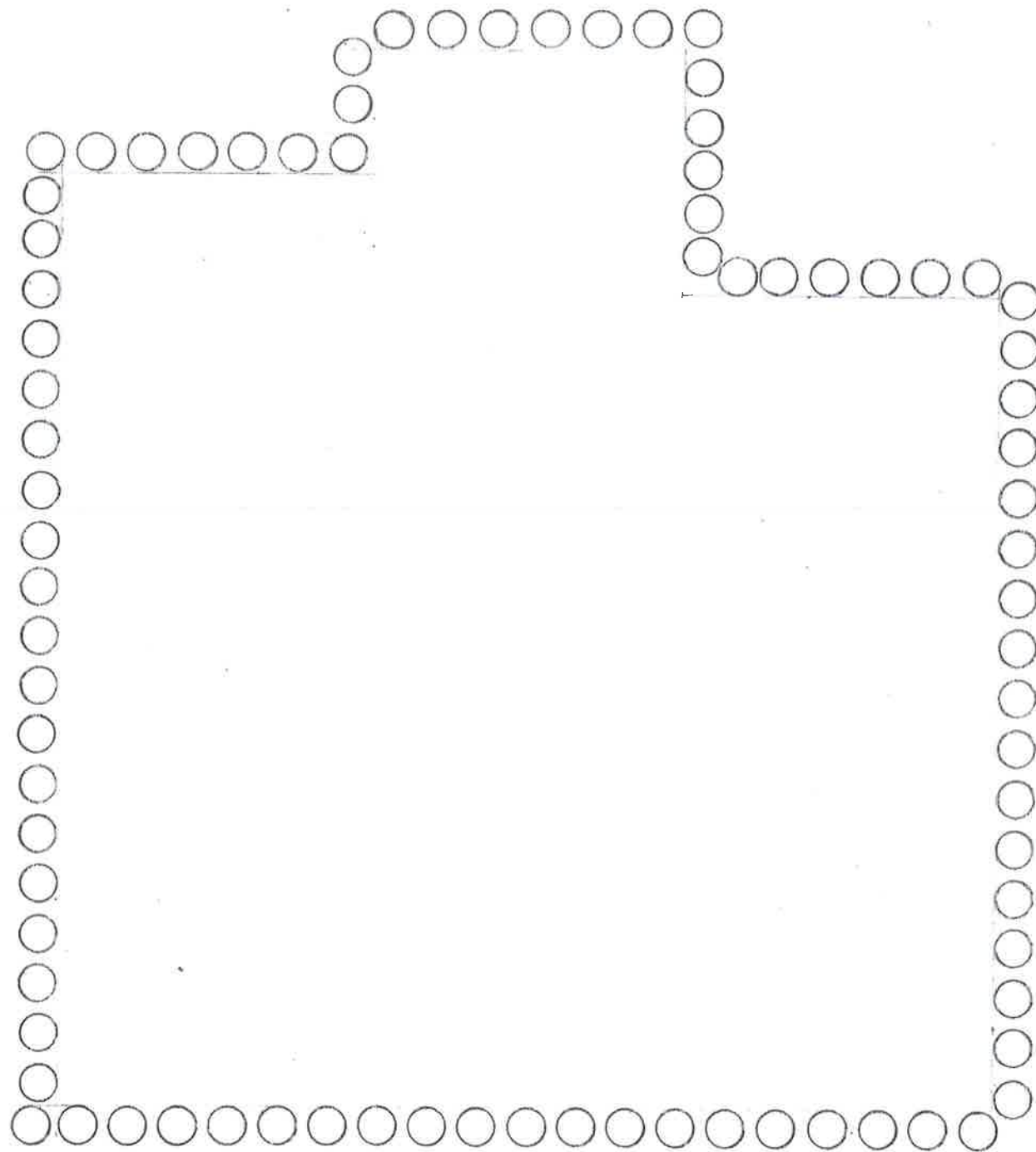
09

DEMOLISH EXISTING HOUSE
AND GARDEN WALLS

REV	DATE	DESCRIPTION	BY
AMENDMENTS			
Project: 07 CORSE WOOD WAY			
Title: CONSTRUCTION SEQUENCE STAGE 1			
Client:			
Architect:			
Designed: AH			
Drawn: AH			
Checked: DB			
Date: MAR 21			
Project No: 21027			
Scale @ A3: 1:100			
Drawing No: 601			
Revision:			



05



09

• INSTALL CONTIGUOUS
PILES

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43A Ninfeld Road, Bexhill on Sea, East Sussex TN39 5AE

Tel: 01424 215572

M: 07946 150256

E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			

Project:
07 LOPSE WOOD
WAY

Title:
CONSTRUCTION
SEQUENCE
STAGE 2

Client:

Architect:

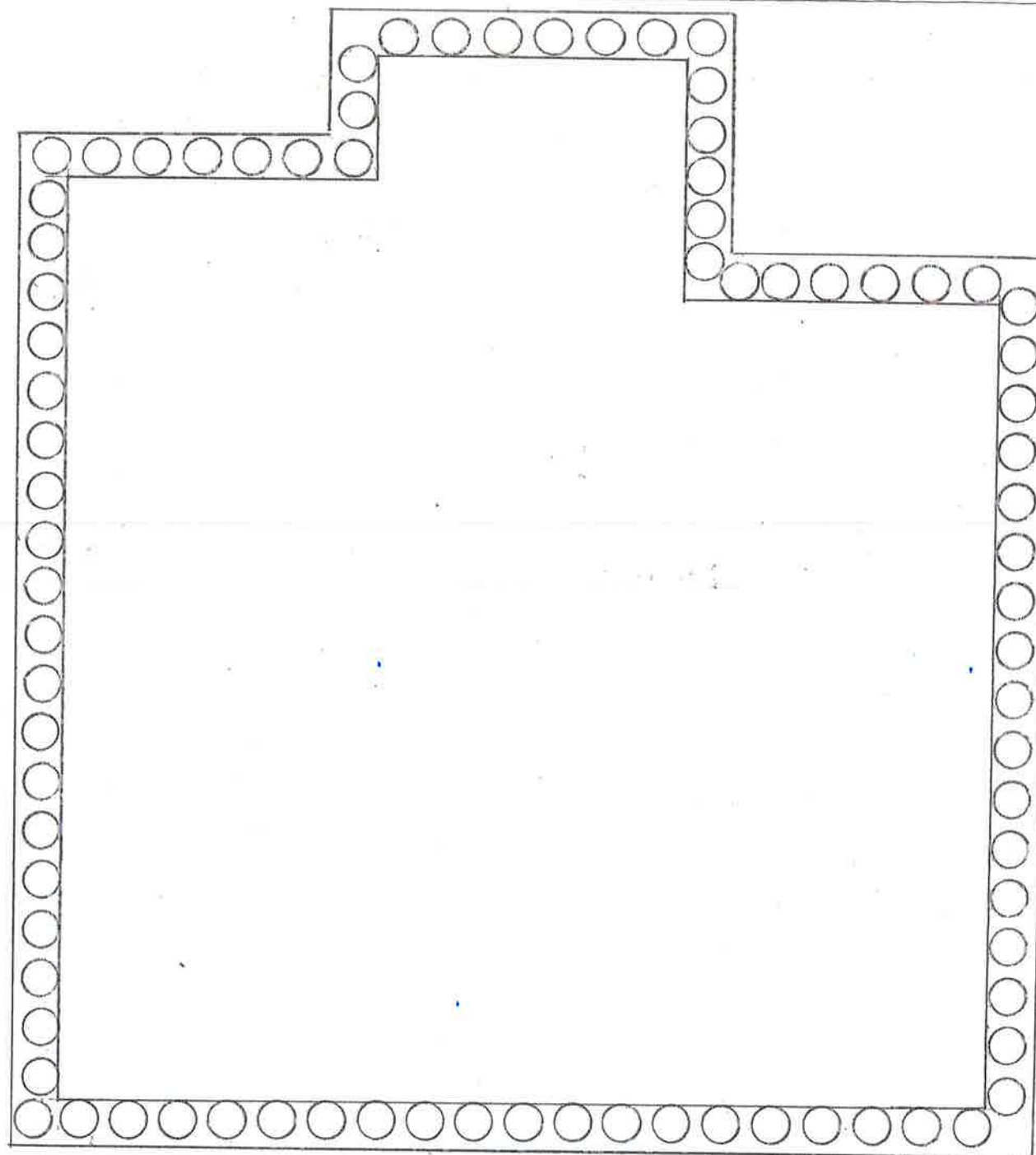
Designed: AH Drawn: AH

Checked: DB Date: MAR 21

Project No: 21027 Scale
@ A3:

Drawing No: 102 Revision:

05



09

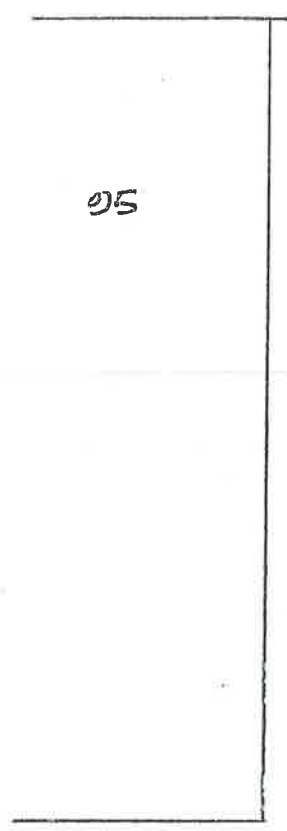
WEST CARPILLY BEAM

parmarbrook
URBAN

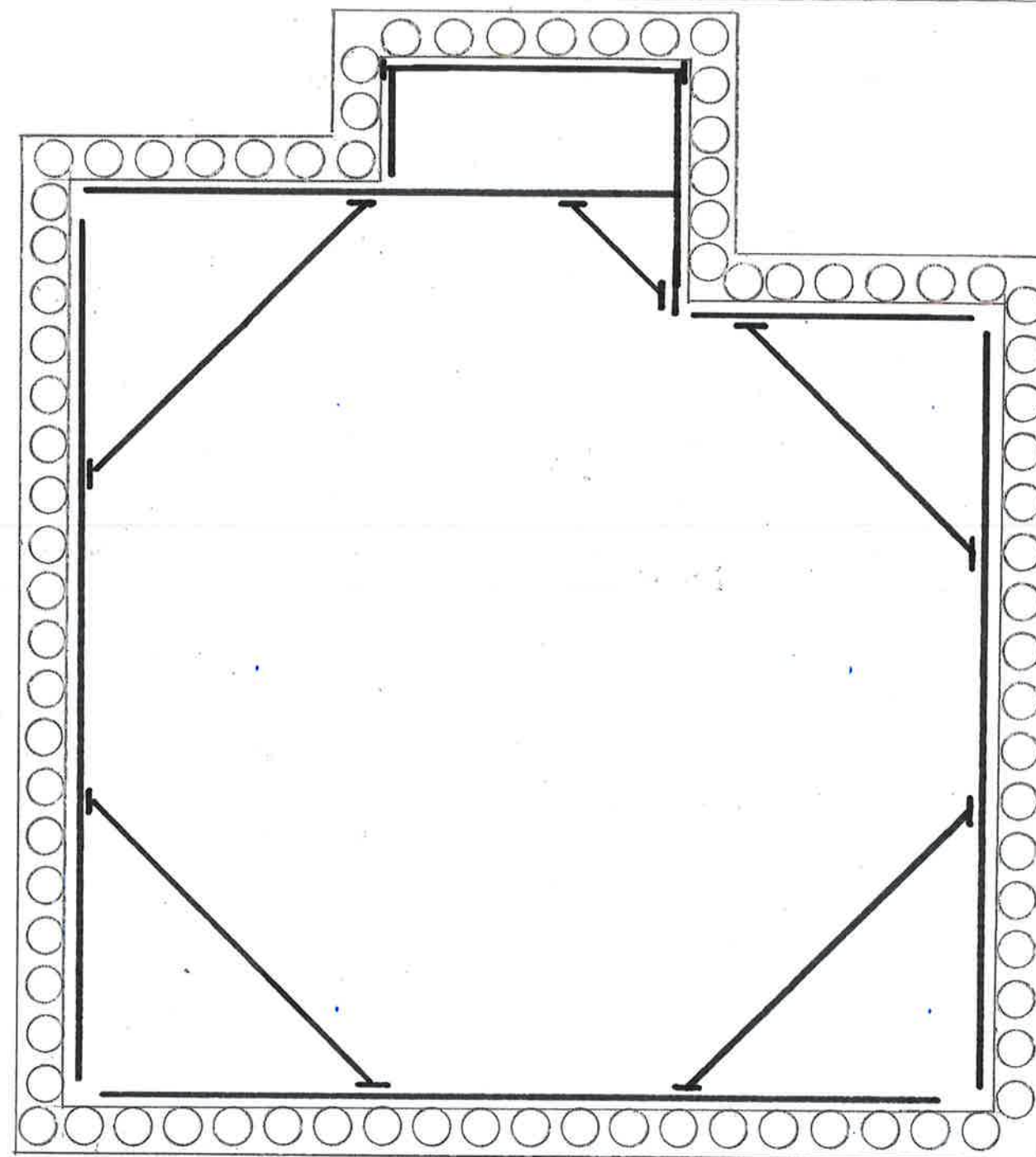
43A Ninfield Road, Bexhill on Sea, East Sussex TN39 6AE

Tel: 01424 215572
M: 07946 150256
E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			
Project: 07 LOPSE WOOD WAY			
Title: CONSTRUCTION SEQUENCE STAGE 3			
Client:			
Architect:			
Designed: AH			
Drawn: AH			
Checked: JS			
Date: MAR 21			
Project No: 21027			
Scale @ A3: 1:100			
Drawing No: 203			
Revision:			



05



09

• REDUCE LEVELS
• INSTALL WALLERS
AND PROPS

parmarbrook
URBAN

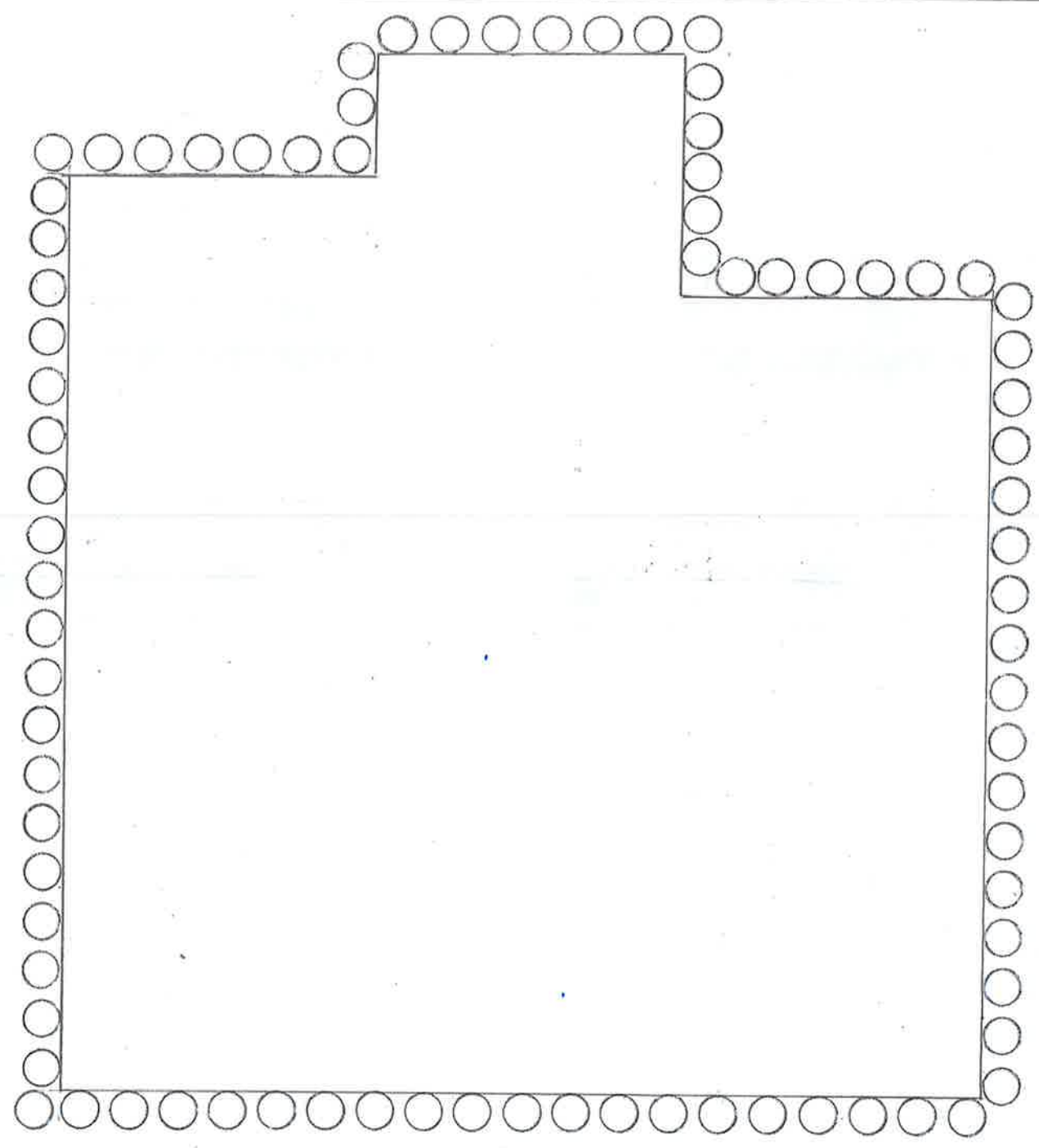
43A Ninfield Road, Bexhill on Sea, East Sussex TN39 5AE

Tel: 01424 215572
M: 07946 150256
E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			
Project: 07 COPSE WOOD WAY			
Title: CONSTRUCTION SEQUENCE STAGE 4			
Client:			
Architect:			
Designed: AH Drawn: AH			
Checked: DB Date: MAR 21			
Project No: 21027 Scale: 1:100 @ A3:			
Drawing No: 604 Revision:			



05



09

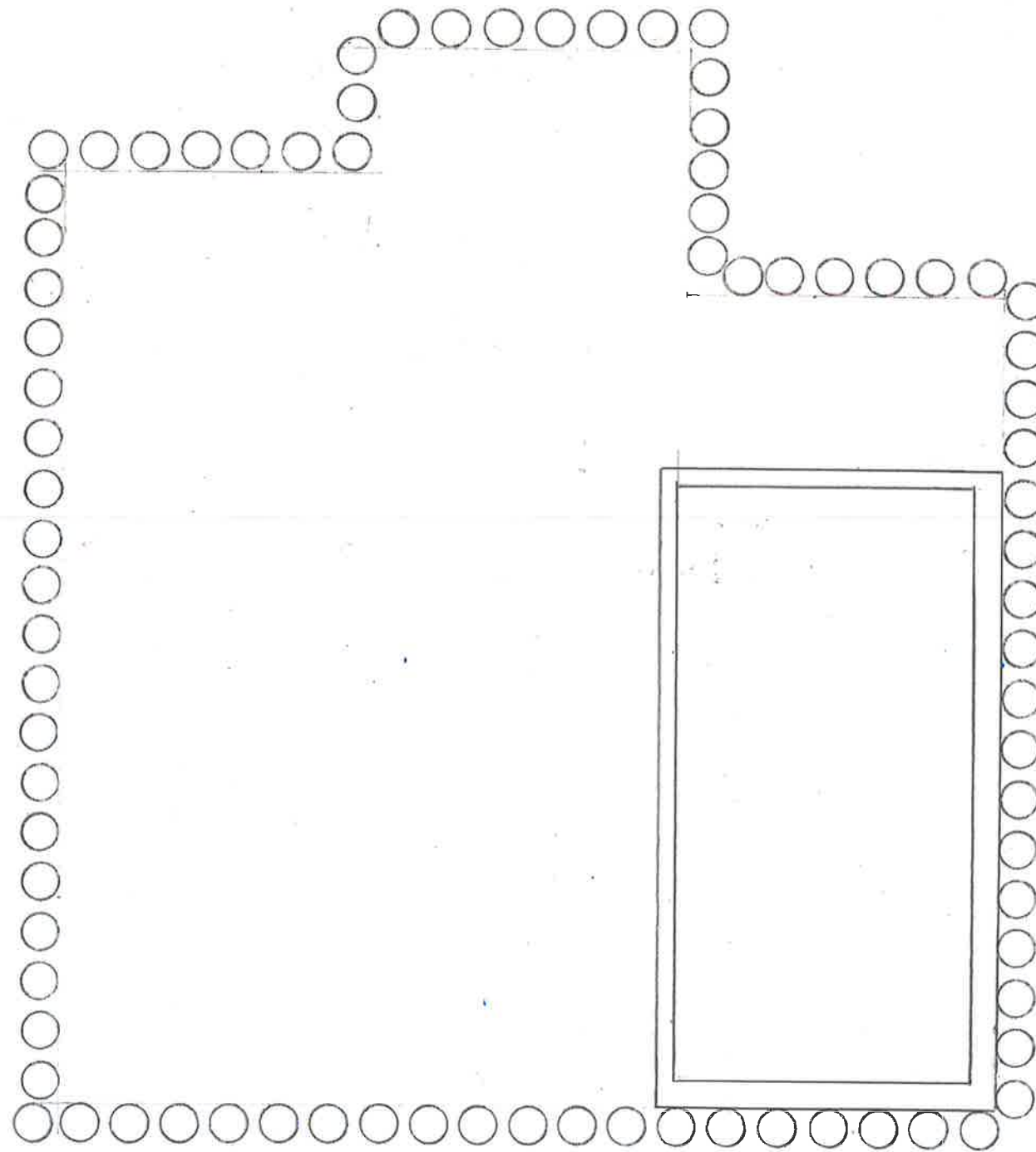
• EXCAVATE TO BASEMENT FORMATION LEVEL

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Tel: 01424 215572
M: 07946 150256
E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			
Project: 07 LOPSE WOOD WAY			
Title: CONSTRUCTION SEQUENCE STAGE 5			
Client:			
Architect:			
Designed: AH			
Checked: DB			
Project No: 21027			
Drawing No: 005			
Drawn: AH			
Date: MAR 21			
Scale: 1:100 @ A3			
Revision:			



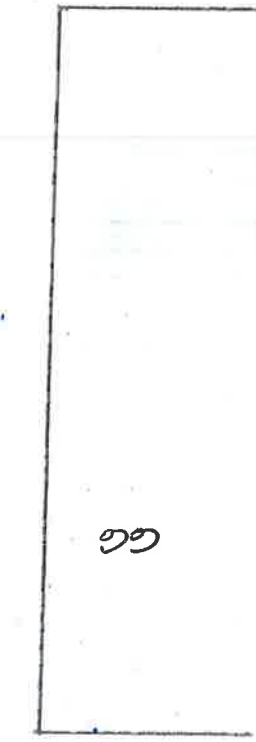
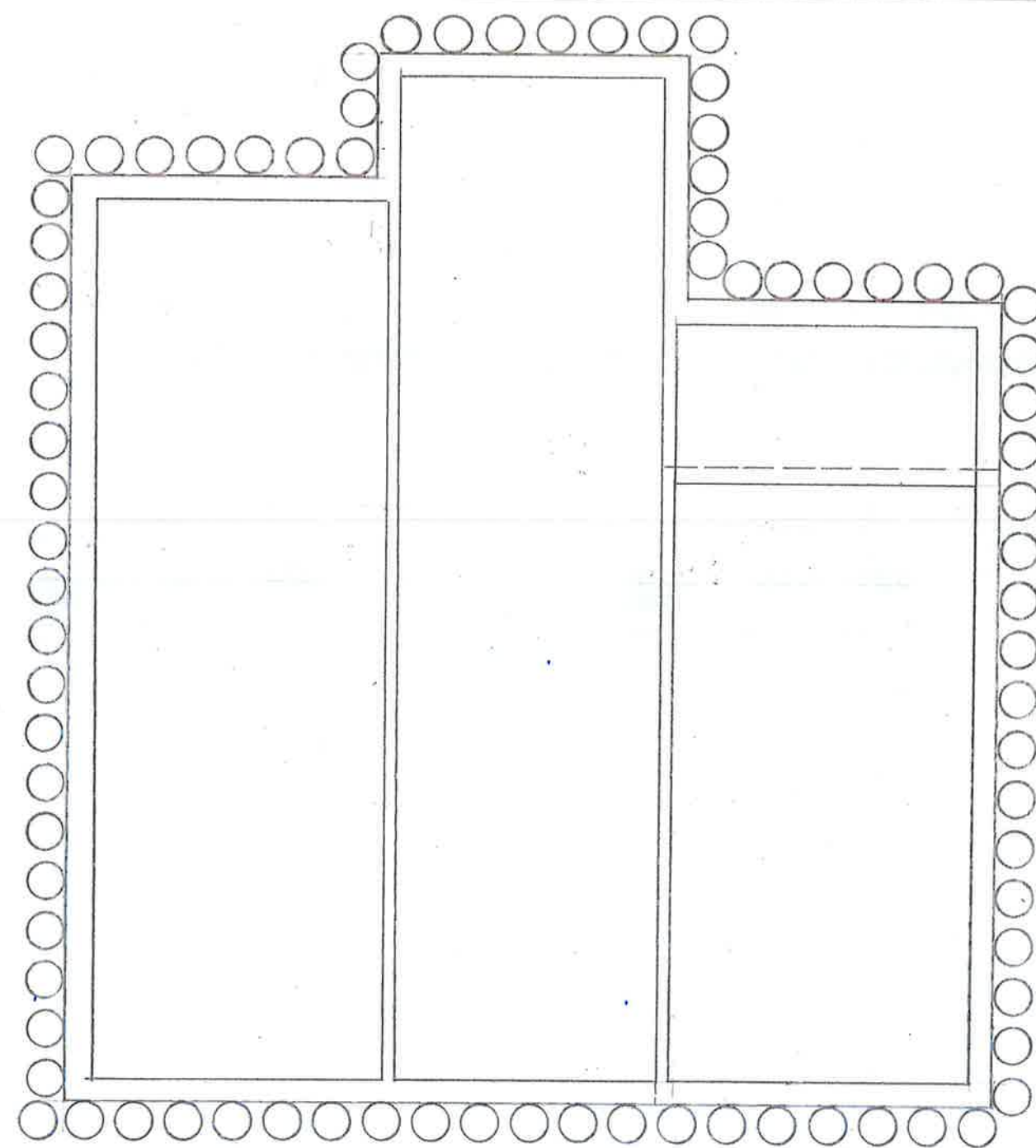
- EXCAVATE TO POOL AND UNDERCROFT FORMATION LEVEL
- CAST SWIMMING POOL SLAB AND KICKERS TO WALLS

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43A Ninfield Road, Bexhill on Sea, East Sussex TN39 5AE

Tel: 01424 215572
M: 07946 190256
E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			
Project:			
07 COPSE WOOD WAY			
Title:			
CONSTRUCTION SEQUENCE STAGE 6			
Client:			
Architect:			
Designed: AH			
Drawn: AH			
Checked: DB			
Date: MAR 21			
Project No: 21027			
Scale @ A3: 1:100			
Drawing No: 006			
Revision:			



- CAST SWIMMING POOL WALLS TO UNDERSIDE OF BASEMENT SLAB
- CAST BASEMENT SLAB AND KICKERS TO WALLS

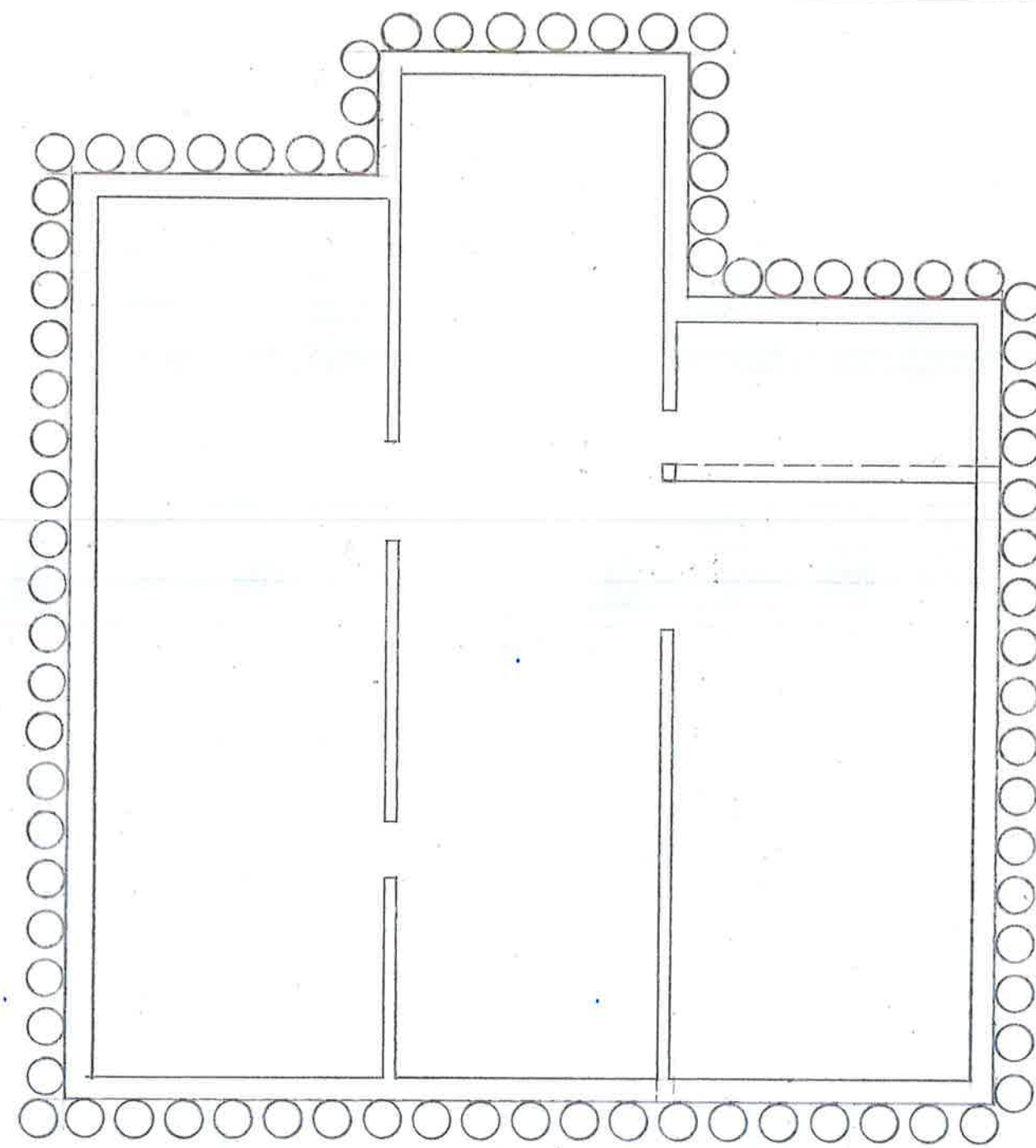
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Tel: 01424 215572
M: 07946 150256
E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			
Project: 07 COPSE WOOD WAY			
Title: CONSTRUCTION SEQUENCE SCALE 1			
Client:			
Architect:			
Designed: AH Drawn: AH			
Checked: DB Date: MAR 21			
Project No: 21027 Scale: 1:100 @ A3			
Drawing No: 607 Revision:			

05



09

- CAST RC WALLS UP TO UNDERSIDE OF GROUND FLOOR SLAB
- REMOVE PROPS

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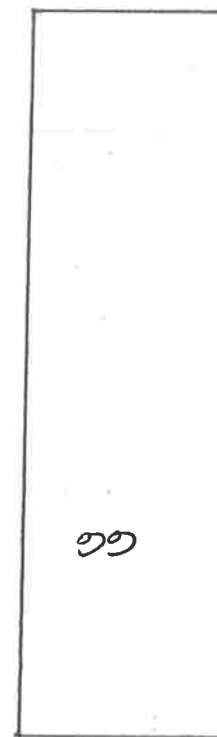
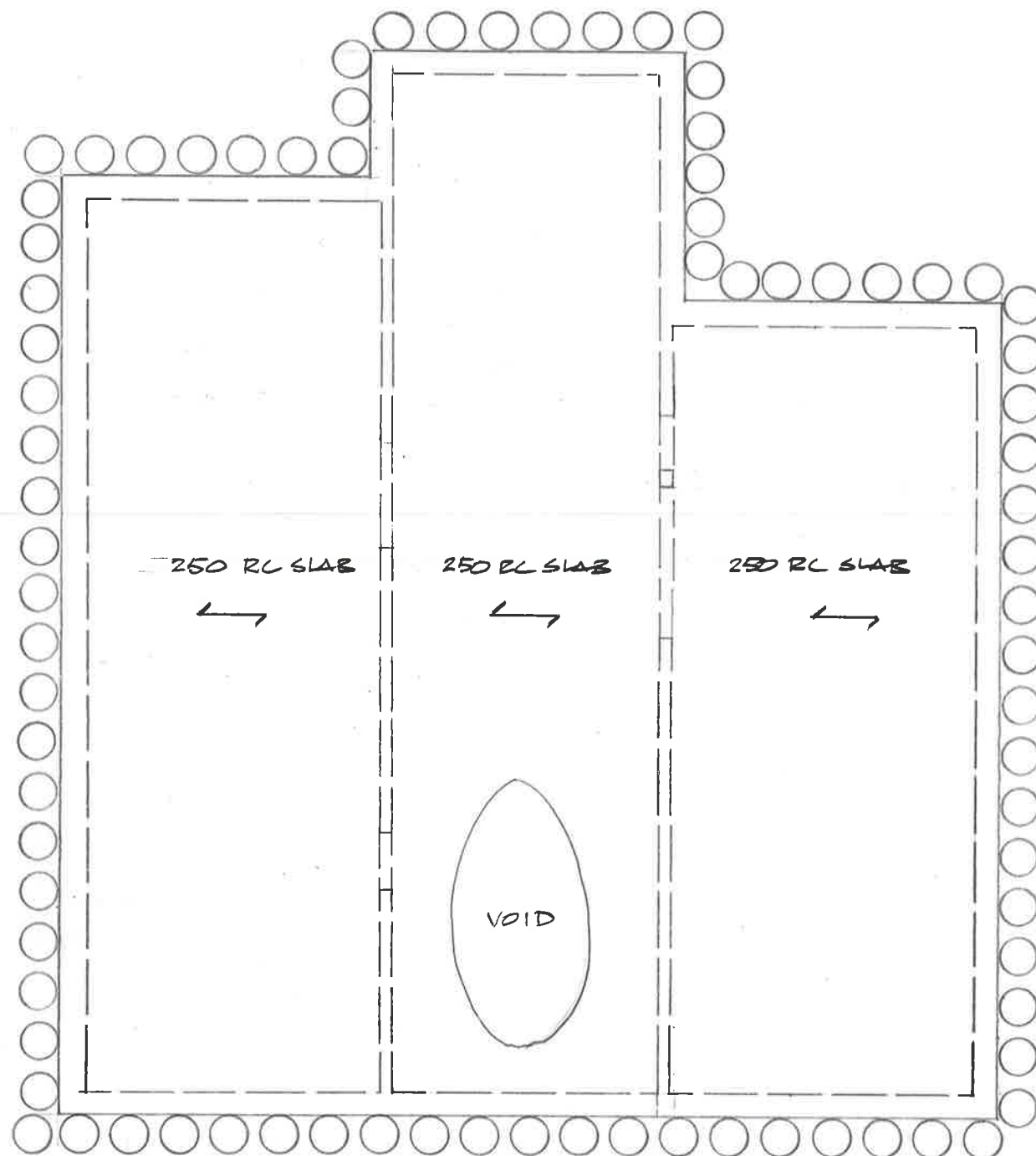
43A Ninfield Road, Bezhil on Sea, East Sussex TN39 3AE

Tel: 01424 215572
M: 07946 150256
E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			
Project: 07 LORSE WOOD WAY			
Title: CONSTRUCTION SEQUENCE STAGE 3			
Client:			
Architect:			
Designed: AH Drawn: AH			
Checked: DB Date: MAR 21			
Project No: 21027 Scale: 1:100 @ A3			
Drawing No: 009 Revision:			



05



09

LAST GROUND
FLOOR SLAB

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43A Nolfeld Road, Bexhill on Sea, East Sussex. TN39 5AL

Tel: 01424 215572
M: 07946 150256
E-mail: tony@parmarbrook.com

REV	DATE	DESCRIPTION	BY
AMENDMENTS			

Project:
07 LOPSE WOOD
WAY

Title:
CONSTRUCTION
SEQUENCE
STAGE 0

Client:

Architect:

Designed: AH	Drawn: AH
Checked: DB	Date: MAR 21
Project No: 21027	Scale: 1:100 @ A3:
Drawing No: 609	Revision:

APPENDIX C: FLOOD RISK DESK TOP STUDY

Flood map for planning

Your reference
HA6 2TU

Location (easting/northing)
508117/190469

Created
11 Apr 2021 17:17

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

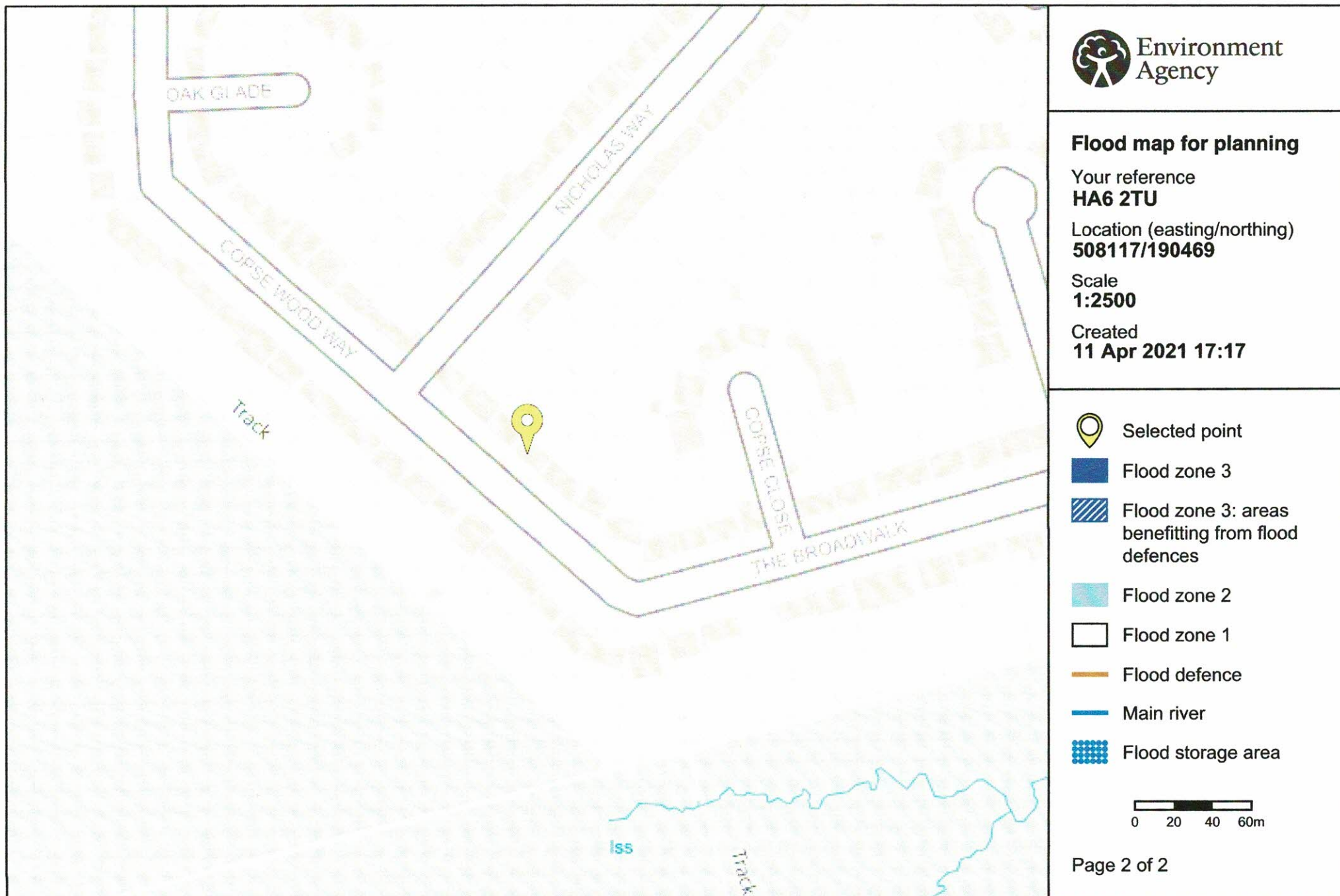
- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.
<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>



APPENDIX D: DEEP BOREHOLE YOUNGWOOD FARM

RECORD OF WELL (SHAFT OR BORE)

250/330

TQ08/96
For Survey use only
N.

250/330

British Geological Survey

Licence No.

At Youngswood Farm
Ducks Hill Road
Town or Village RUISLIP

County Middlesex Six-inch quarter sheet 9 NE/E
For TQ0782 8979 State whether owner, tenant, builder,
contractor, consultant, etc.:—

Address (if different from above).....
Level of ground surface above sea-level (O.D.) 27.3 ft. If well-top is not at ground level, state how far { above: .. below; .. ft.
SHAFT 130 ft.; diameter ft.; Full details of headings (dimensions and directions)

BORE ft.; diameter of bore: at top ins.; at bottom ins.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.).....

Water struck at depths of ft. below well-top.

Rest level of water 130 ft. ^{above} below well-top. Suction at ft. Yield on hours' test
pumping at galls. per with depression to ft. below well-top.
Recovery to rest-level in mins. Capacity of pump g.p.h. Date of measurements 1910

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type Motive power
Capacity gallons per hour. Suction at ft.
Amount pumped galls. per day. Estimated consumption galls. per week.
Well made by Date of well
Information from Field visit & Field sketch

ADDITIONAL NOTES

ANALYSIS (please attach copy if available)

Note on Field Sketch "130' to water"

shaft, disused and covered over with sheet of corrugated iron and rubble. Could be opened but at present inaccessible for measurement. Small boy who recently discovered the well said there was no water in it when he threw stones down. O.D. 27.3.

Visited & noted on Middlesex 9 NE/E Sheet 2-9-59.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.	Section 6.	Date Received	1" O.S. Map No.	Site marked on 1" Map	(use symbol on 6" Map)
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