BASEMENT IMPACT ASSESSMENT

25 LINKSWAY

NORTHWOOD

APRIL 2021

1.0 INTRODUCTION

1.1 This document constitutes the construction approach and methodology for forming the new basement for the proposed development at 25 Linksway. 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.

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, with a squash court at basement level and a swimming pool at ground floor level.

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 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. Sections have been provided through the adjacent properties, see Apependix A Drawing 21024/05

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

4.1 The geological strata based on site investigations carried out at 6 and 20 Linksway (see Appendix B) and can be summarised as follows;

- Made Ground
- Overlying
- Reading Beds, comprising stiff red brown Clay 0.3m - 4.0m
- Overlying
- Reading Beds, comprising very dense fine Sand 4.0m – 10.0m
- Overlying Chalk with flints – sound chalk with some hard layers.

4.2 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 STABILTY

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 Part 1: 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 available from The Broadwalk and 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 APPEXDIX C DRAWING NUMBERS 21024 01-04 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 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 carried out, wailers, struts and props maybe 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 Cut off piles to the squash court level and excavate area to the squash court, cast slab and kickers to walls.

9.6 Cast squash court 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 D for records)

10.2 The proposed basements are expected to be constructed entirely within the 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 As the site investigations carried out at 6 and 20 Linksway did not indicate the presence of any ground water at 20m (bottom of boreholes) and that the desk top study highlighted that the site was in flood zone 1, with no flooding risk, the proposed basements therefore, will be constructed entirely within the Sand soils and above the ground water table, which will allow the free flow of ground water. It is considered therefore the impact of the basement on the groundwater regime at this site will be insignificant.

12. SUDS STATEMENT

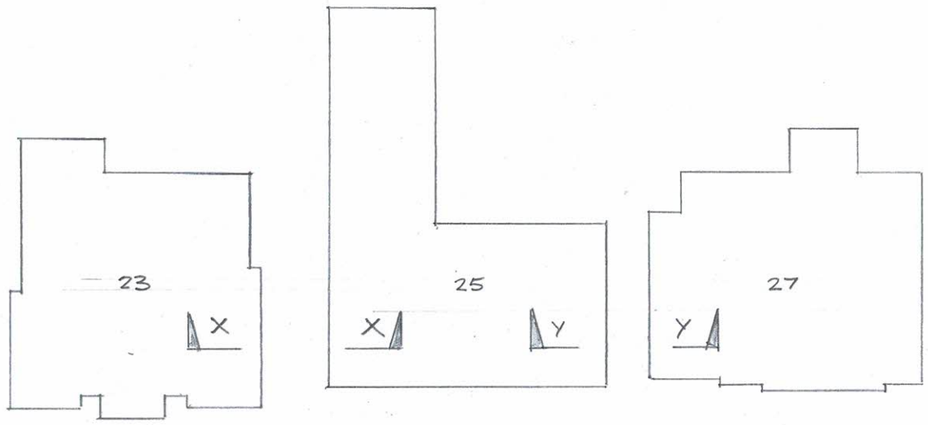
12.1 There are surface water and foul sewers in the roadway, the depths of these sewers are noted in Appendix E together with the Thames Water sewer mapping plan.

Proposed Surface Water Drainage Following the SuDS Hierarchy, surface water disposal to ground (soakaway) was considered. According to the borehole data gathered from 6 and 20 Linksway, the site is underlain by the Lambeth Group which comprises Clay, Silts and Sands – this is not considered a viable geology for the use soakaway devices.

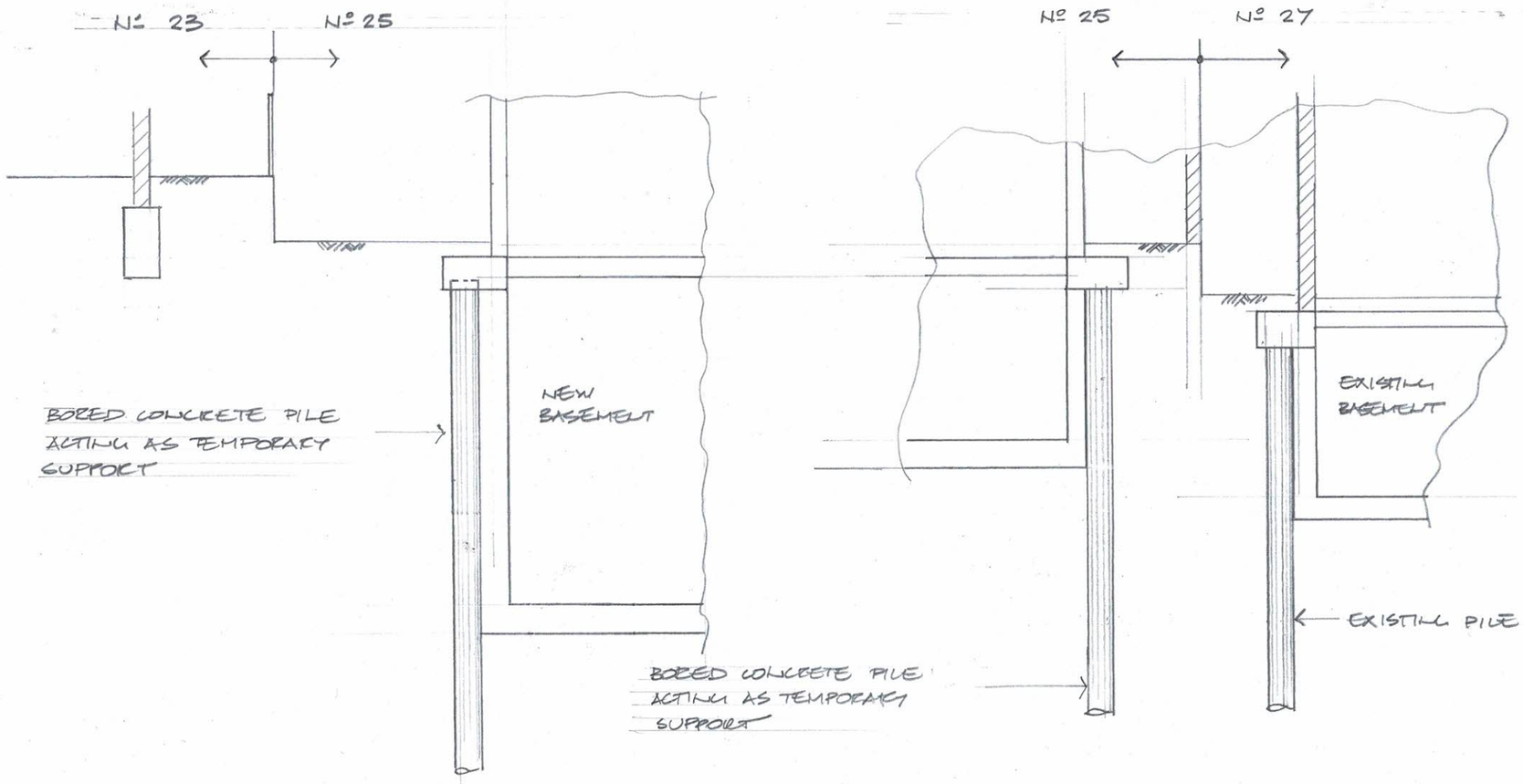
The next consideration on the SuDS Hierarchy is to a watercourse, however none are within the vicinity of the site which would offer a suitable outfall location.

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 : BASEMENT SECTIONS



PLAN 1:500



SECTION X-X
1:100

SECTION Y-Y
1:100

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: 25 LINKSWAY	
Title: BASEMENT SECTIONS	
Client:	
Architect:	
Designed: AH	Drawn: AH
Checked: SB	Date: APRIL 21
Project No: 21024	Scale @ A3:
Drawing No: 05	Revision:

APPENDIX B: SITE INVESTIGATION DATA

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

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.

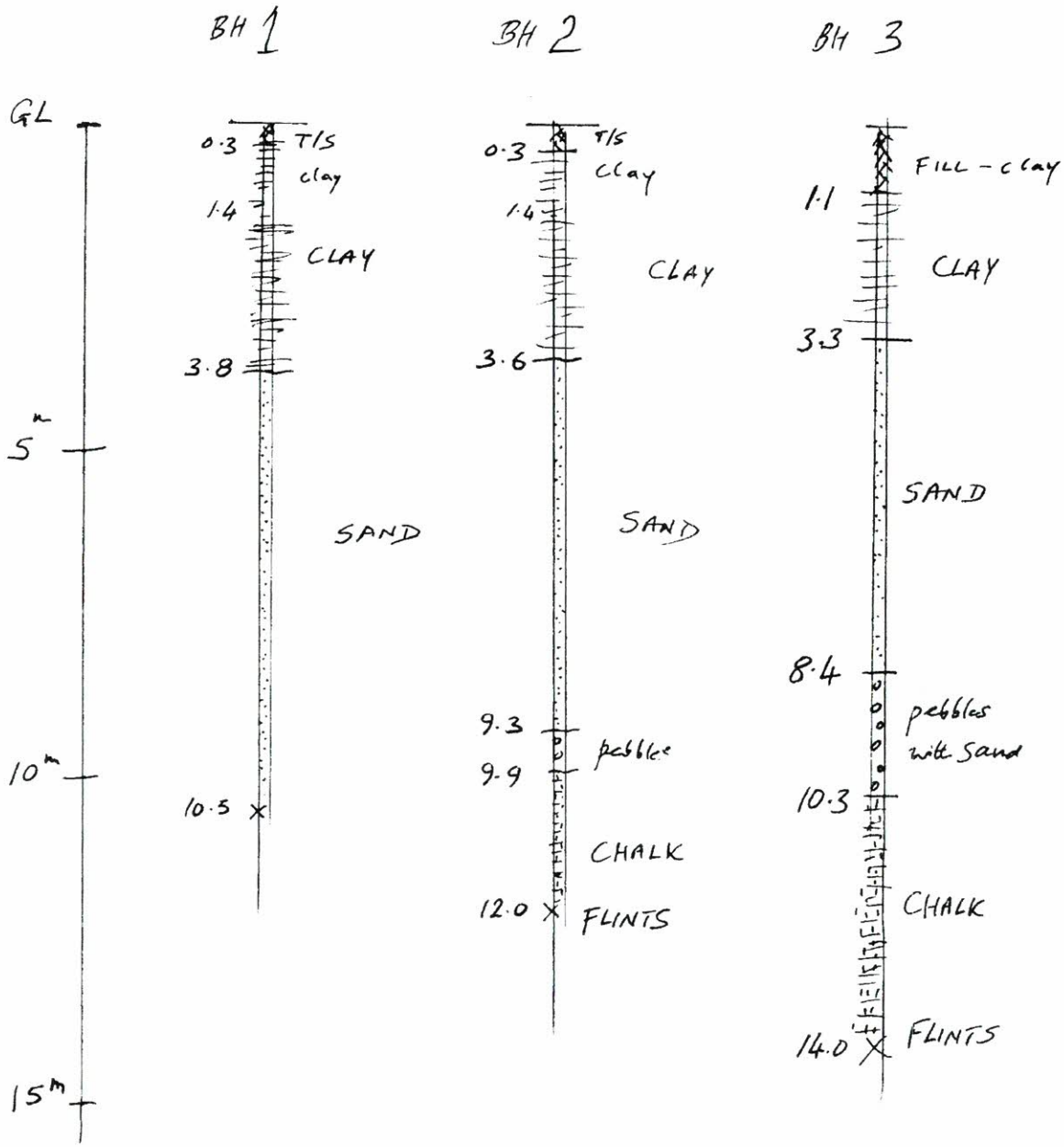
Deep excavations into stiff clay soils often experience heave of the base due to the reduction in overburden pressure. However, at this site, the soil at and below basement level is Sand. Consequently, heave will not occur.

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

Legend	Depth (m)	Description	Samples/ Tests			
		grass over topsoil				
	0.30	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** LL=59,PL=19, PI=40	mc=21
		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	pale grey-green fine to medium grain-sized Sand	J/SPT	5.5	6,9, 13,16,23,31 casing at 5.5	**N=83**
			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	Project	Borehole No.
Mr & Mrs Patel	6, LINKS WAY, NORTHWOOD, HA6 2XB	2
Engineer		Elevation
Parmarbrook Urban		
Borehole Type		Date
Cable percussive		30-Oct-18

Legend	Depth (m)	Description	Samples/ Tests			
		grass over topsoil				
	0.30	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** LL=56,PL=19, PI=37	mc=27
		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	Project	Borehole No.
Mr & Mrs Patel	6, LINKS WAY, NORTHWOOD, HA6 2XB	3
Engineer		Elevation 3
Parmarbrook Urban		
Borehole Type		Date
Cable percussive		06-Nov-18

Legend	Depth (m)	Description	Samples/ Tests			
		Fill - thin tarmac surfacing over gravel in a loose matrix of grey-brown clay	J	0.5		
			J	1.0		
	1.10	firm tan brown clay with much pale grey mottling and roots	J/SPT	1.3		mc=33
			J/SPT	1.5	4,4, 5,6,6,7	**N=24**
	2.00				casing at 1.5	mc=33
		stiff red brown clay with pale grey mottling	J	2.2		mc=23
			J	2.8		mc=22
			J/SPT	3.0	3,5, 10,16 21,28	**N=75**
	3.30				casing at 3.0	mc=19
		pale orange brown fine grain-sized Sand	J/SPT	4.0	5,9, 10,11 11,12	**N=54**
					casing at 4.0	
	5.40					
		pale grey-green fine to medium grain-sized Sand	J/SPT	5.5	8,12, 18,25...	**N=100+**
					casing at 5.5	
			J/SPT	7.0	7,1, 12,18,29...	**N=100+**
					casing at 7.0	
	8.40		B/CPT	8.5	6,10, 15,24,32...	**N=100+**
		dense blackpebbles with green grey sand			casing at 8.5	
			B/CPT	10.0	7,11, 14,15,10,10	**N=49**
	10.30				casing at 10.0	
		Chalk - off white chalk with some hard bands				
		some scattered flints	J/SPT	11.5	6,7, 6,7,8,8	**N=29**
					casing at 10.5	
			J/SPT	13.5	5,7, 9,24..	**N=30+**
	14.00	...end of borehole **..many flints**			casing at 10.5	
		further boring not feasible				
		Foreman : Michael Ray				

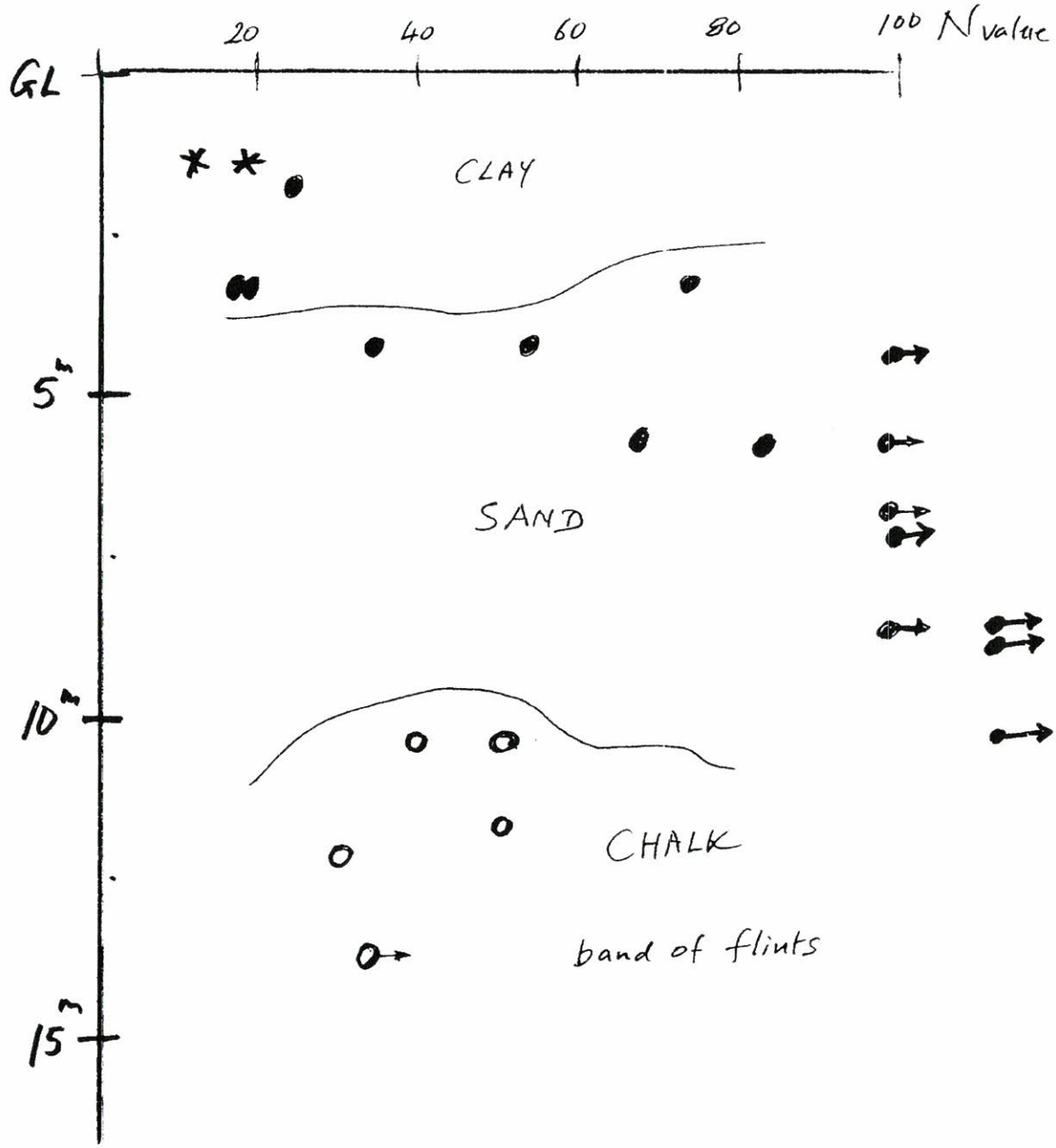
Remarks

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



B C	Site 20 Links Way, Northwood, Middlesex HA6 2XS		Borehole Number 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
						(0.15) 0.15	Tarmac		
						(0.25) 0.40	Made Ground (crushed roadstone and brick sub-base)		
0.70	D1						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	4.60	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 8.00 m.
1 hr spent collecting water

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
	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 50/225 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	Very dense bluish green mottled brown fine to medium SAND with black rounded pebbles		
						(1.10)			
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	7,20/30,35			Cobble sized flint at 18.2 m		
19.50-19.95 19.50	SPT N=48 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	Number
	20 Links Way, Northwood, Middlesex HA6 2XB	BH2
E C	Client	Job Number
	Engineer	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Made Ground (brown silty slightly sandy clay with gravel, rootlets, brick and coal fragments)		
0.20	D1				0.30	Soft orange-brown mottled grey silty CLAY with decayed roots and pockets of calcareous excretions		
0.50	D2							
					(1.20)			
1.00-1.45	SPT N=8	DRY	0,1/2,2,2,2					
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		
					(1.00)			
2.00-2.45	SPT N=19	DRY	2,3/3,4,5,7					
2.50	D4				2.50			
					(0.30)	Hard orange-brown mottled greenish grey slightly cemented silty CLAY with calcareous nodules		
					2.80			
3.00-3.45	SPT N=42	DRY	3,5/6,8,11,17		(0.50)	Very stiff fissured reddish brown mottled greenish grey and yellowish brown silty glauconitic CLAY		
3.30	D5				3.30			
3.50	D6					Very dense dark orange-brown mottled pale orange-brown and reddish brown fine to medium, locally cemented, SAND with occasional pyrite nodules		
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)	Logged By
1:50	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) 0.20	Topsoil (dark brown clayey silt with abundant roots, organic content and fine gravel)		
0.20	D1					Soft orange-brown mottled grey silty CLAY with rootlets to 0.6 m and abundant calcareous excretions		
0.40	D2							
					(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)	Logged By
1:50	ML

Figure No.
J13109.BH3

Site	Number
20 Links Way, Northwood, Middlesex HA6 2XB	BH4
Client	**Job Number**
Engineer	**Sheet** 1/1

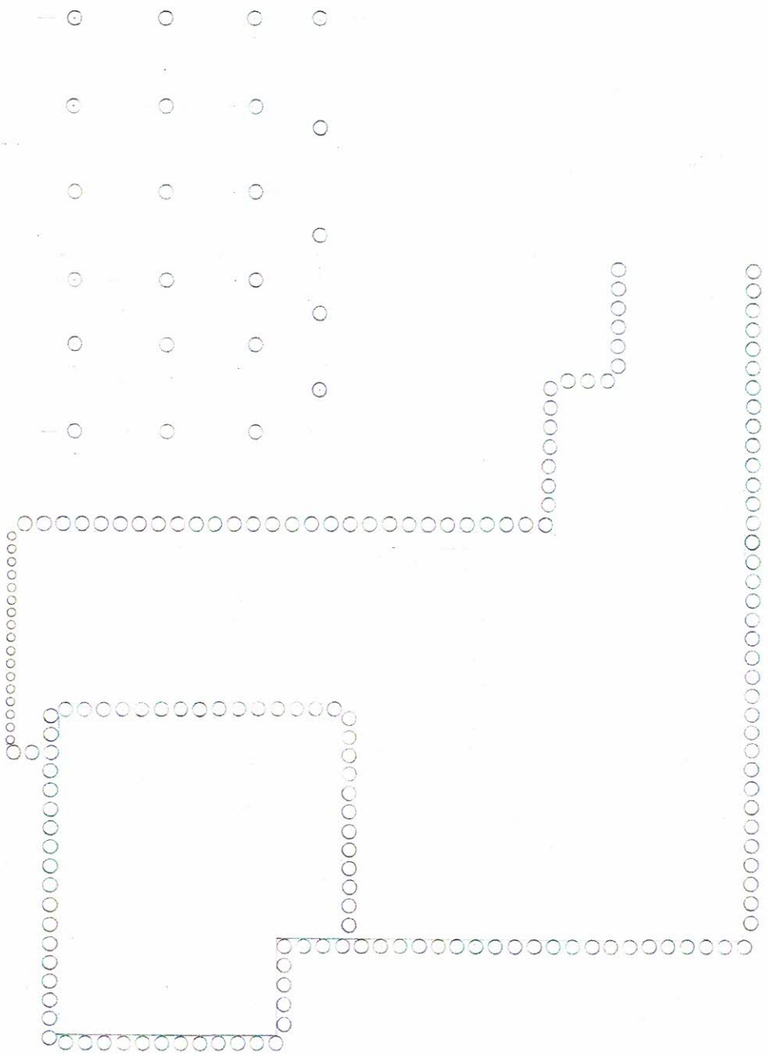
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Made Ground (brown silty slightly sandy clay with gravel, rootlets, brick and coal fragments)		
0.20	D1				0.30			
0.50	D2					Soft orange-brown mottled grey silty CLAY with decayed 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			
2.80	D5				(0.50)	Hard orange-brown mottled greenish grey slightly cemented silty CLAY with calcareous nodules		
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			
4.00-4.34	SPT 50/190	DRY	6,13/17,21,12			Very dense dark orange-brown mottled pale orange-brown fine to medium, locally cemented, SAND with occasional pyrite nodules		
4.50	D7				(1.95)			
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.

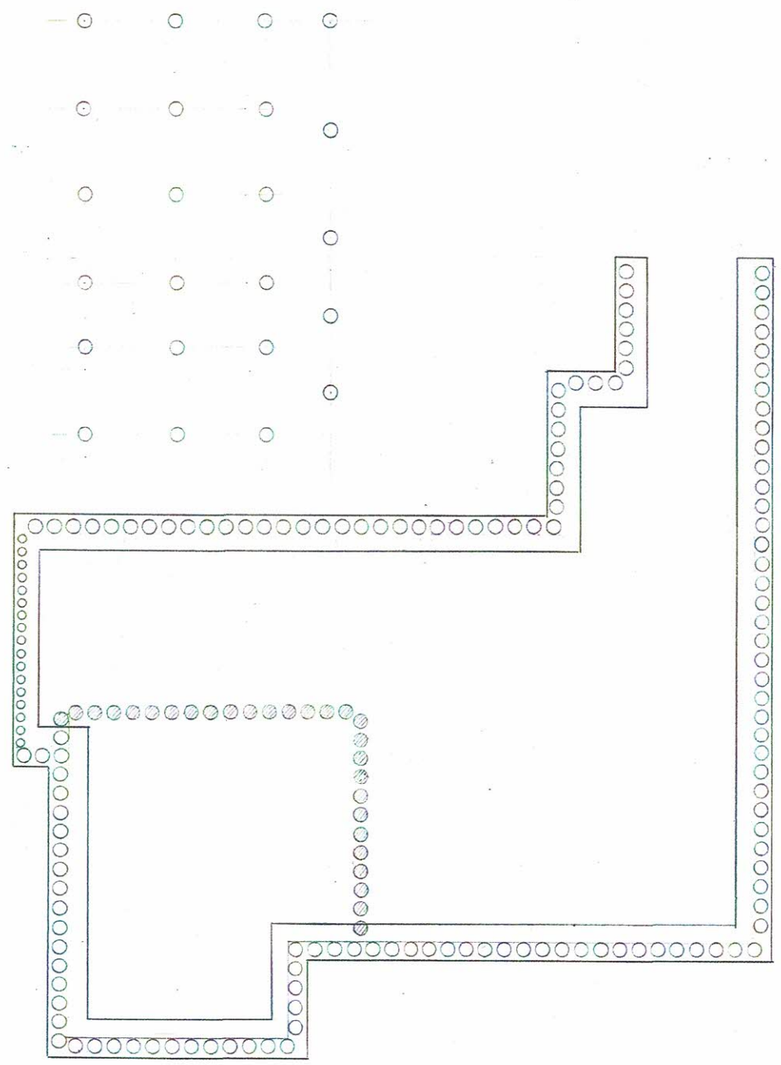
Scale (approx)	Logged By
1:50	ML

Figure No.
J13109.BH4

APPENDIX C : CONSTRUCTION SEQUENCE



- INSTALL CONTIGUOUS PILED WALL AND PILES TO GROUND FLOOR SLAB
- BREAK DOWN PILES TO 75mm ABOVE CAPPING BEAM SOFFIT LEVEL



- CUT DOWN PILES TO SQUASH COURT
- CONSTRUCT R.C. CAPPING BEAM

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			

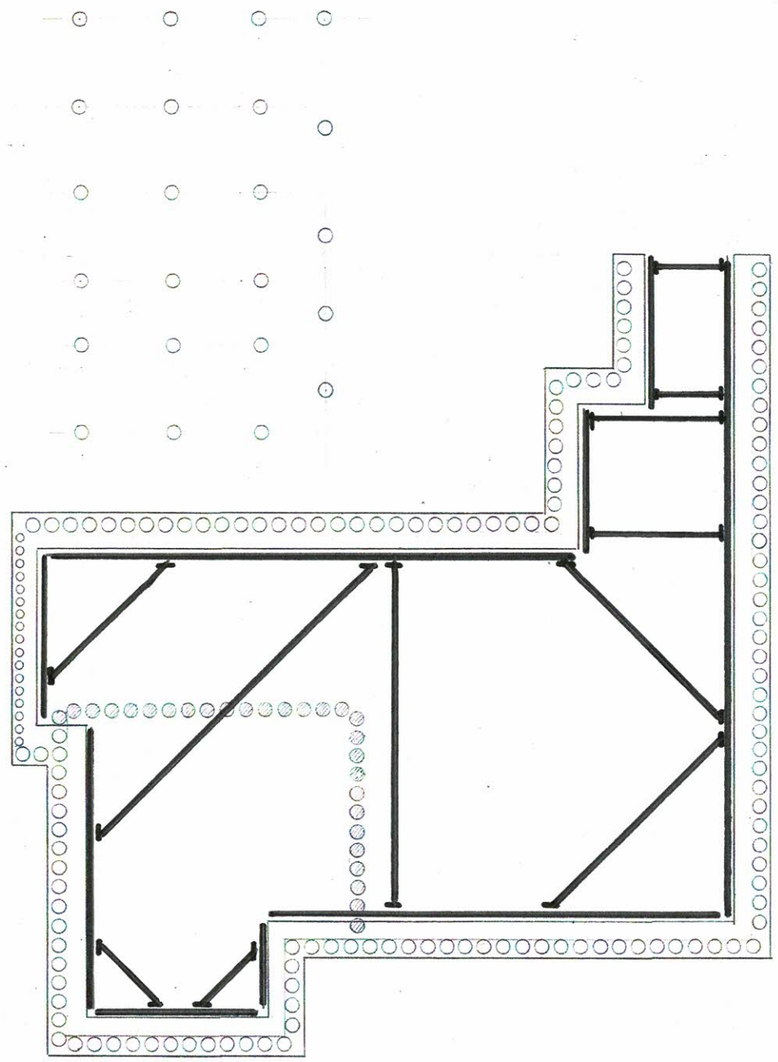
Project:
25 LINKSWAY

Title:
CONSTRUCTION SEQUENCE SHEET 1

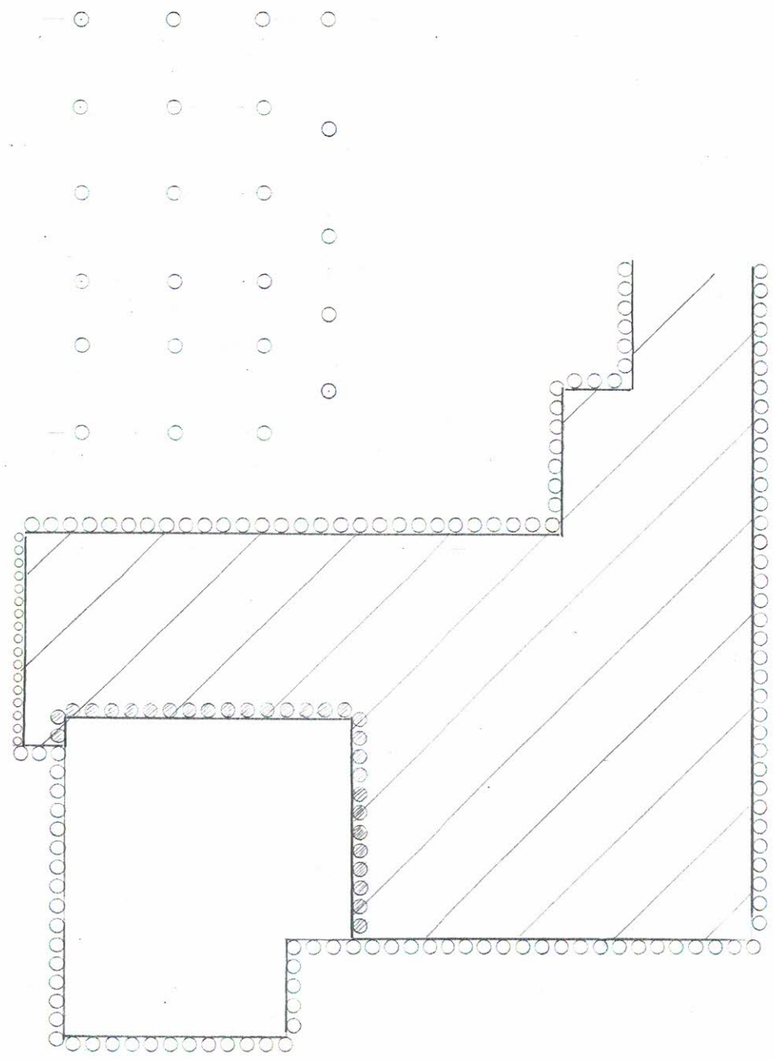
Client:

Architect:

Designed: AH	Drawn: AH
Checked: DB	Date: APRIL 21
Project No: 21024	Scale @ A3: 1:200
Drawing No: 01	Revision:



- INSTALL TEMPORARY PROPS AT CAPPING BEAM LEVEL



- EXCAVATE TO BASEMENT FORMATION LVL
- CUT DOWN PILES TO SQUASH COURT TO 75mm ABOVE BASEMENT FORMATION LVL

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			

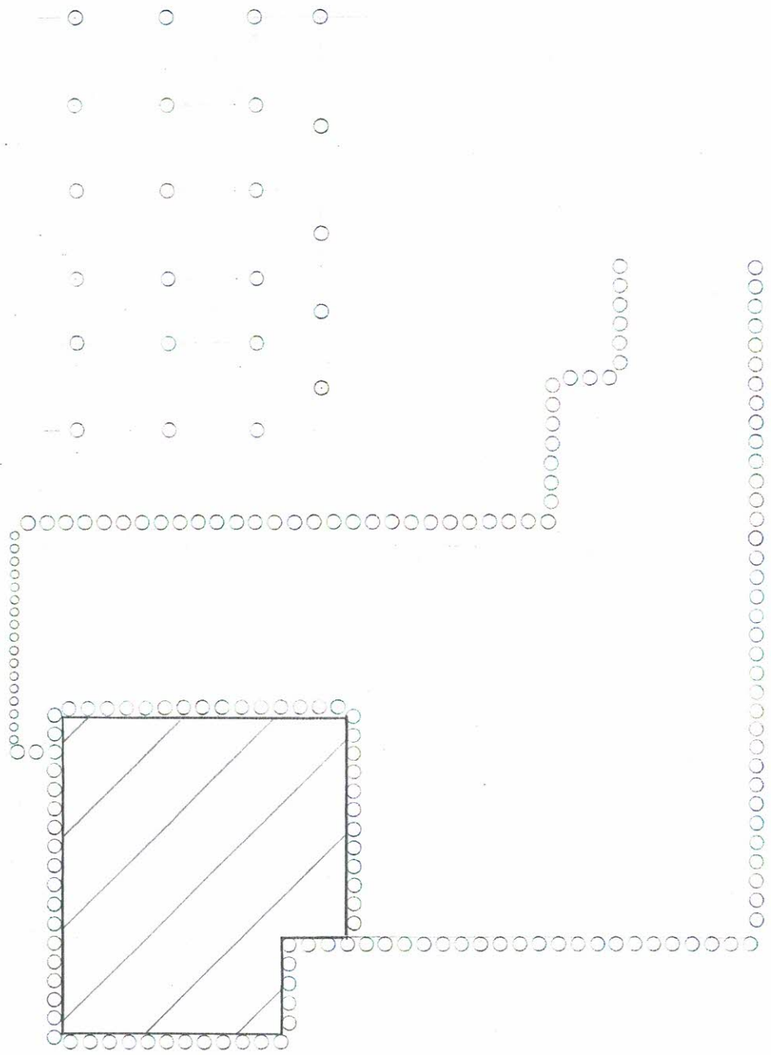
Project:
25 LINKSWAY

Title:
CONSTRUCTION SEQUENCE SHEET 2

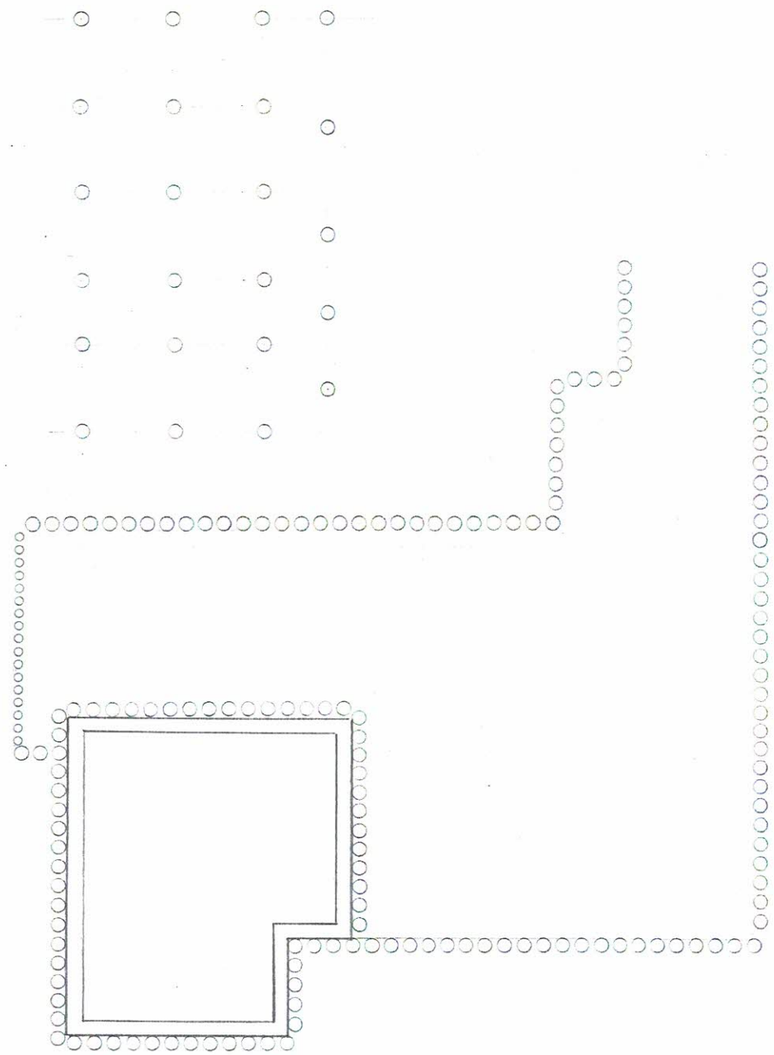
Client:

Architect:

Designed: AH	Drawn: AH
Checked: DB	Date: APRIL 20
Project No: 21024	Scale @ A3: 1:200
Drawing No: 02	Revision:



- EXCAVATE DOWN TO SQUASH COURT SLAB LVL



- CAST SLAB AND WALLS TO UNDERSIDE OF BASEMENT SLAB

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			

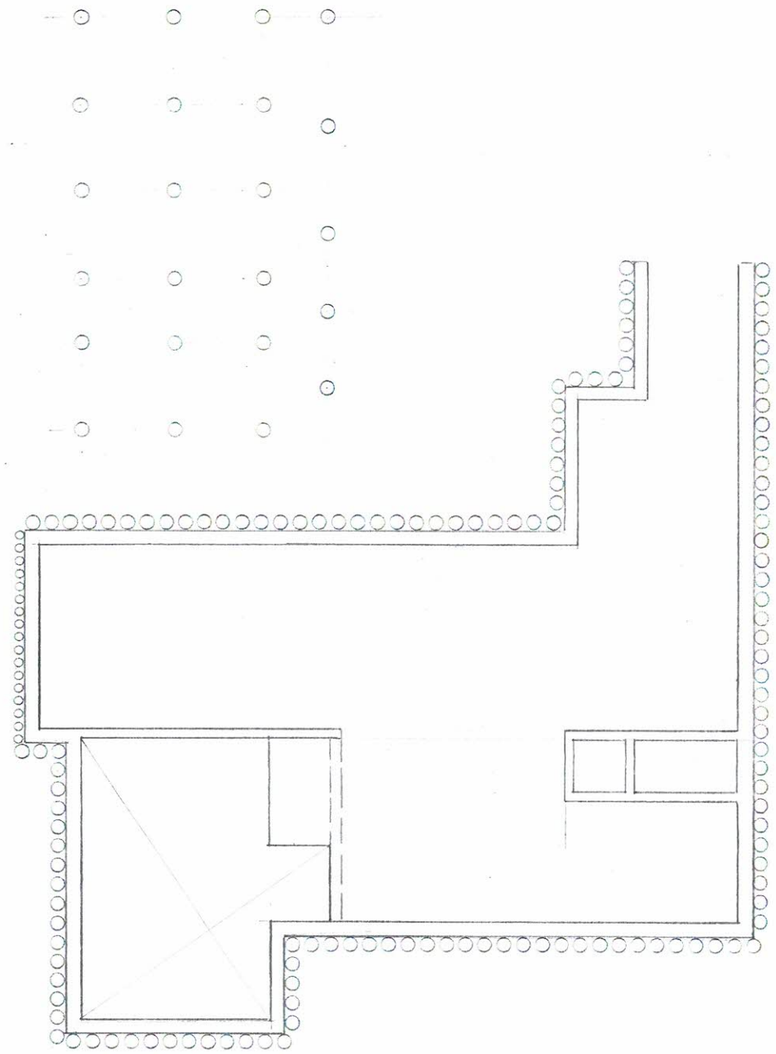
Project:
25 LINKSWAY

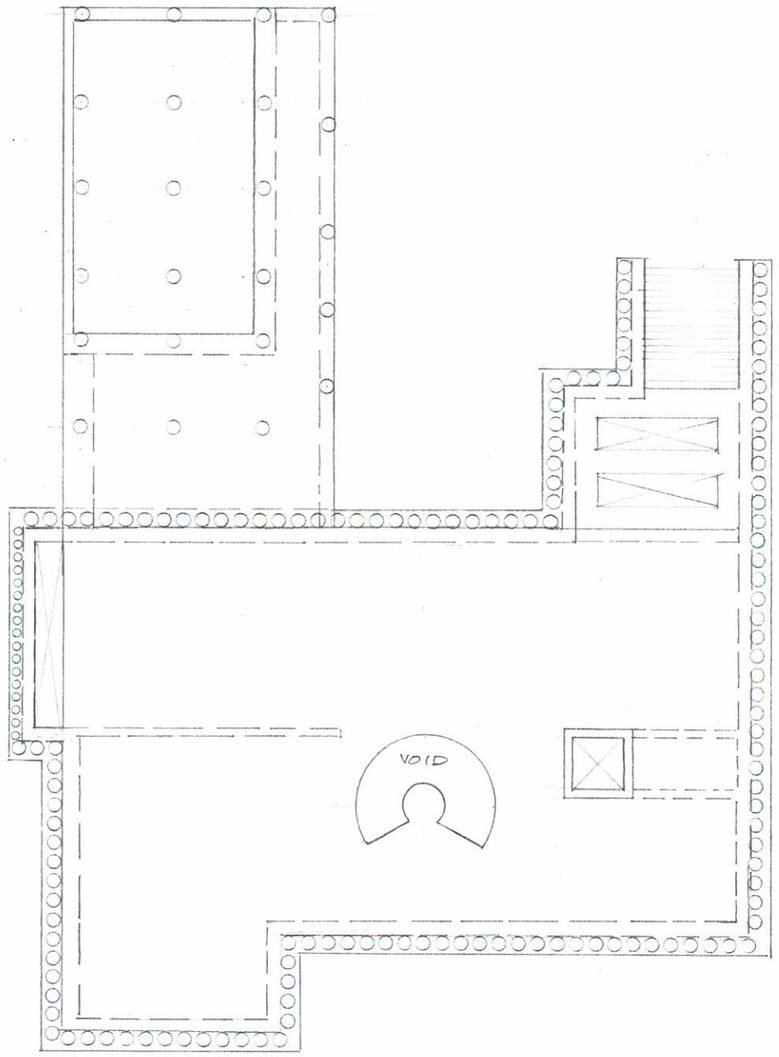
Title:
CONSTRUCTION SEQUENCE SHEET 3

Client:

Architect:

Designed: AH	Drawn: AH
Checked: DB	Date: APRIL 21
Project No: 21024	Scale @ A3: 1:200
Drawing No: 03	Revision:





- CAST BASEMENT SLAB
- CAST WALLS UPTO UNDERSIDE OF GROUND FLOOR SLAB

- REMOVE TEMPORARY PROPS
- CAST GROUND FLOOR STRUCTURE

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:
25 LINKSWAY

Title:
CONSTRUCTION SEQUENCE SHEET 4

Client:

Architect:

Designed: AH	Drawn: AH
Checked: DB	Date: APRIL 21
Project No: 21024	Scale @ A3: 1:200
Drawing No: 04	Revision:

APPENDIX D: FLOOD RISK DESK TOP STUDY

Environment Agency

Flood map for planning

Your reference	Location (easting/northing)	Created
HA6 2XA	**508559/190585**	**10 Mar 2021 10:29**

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

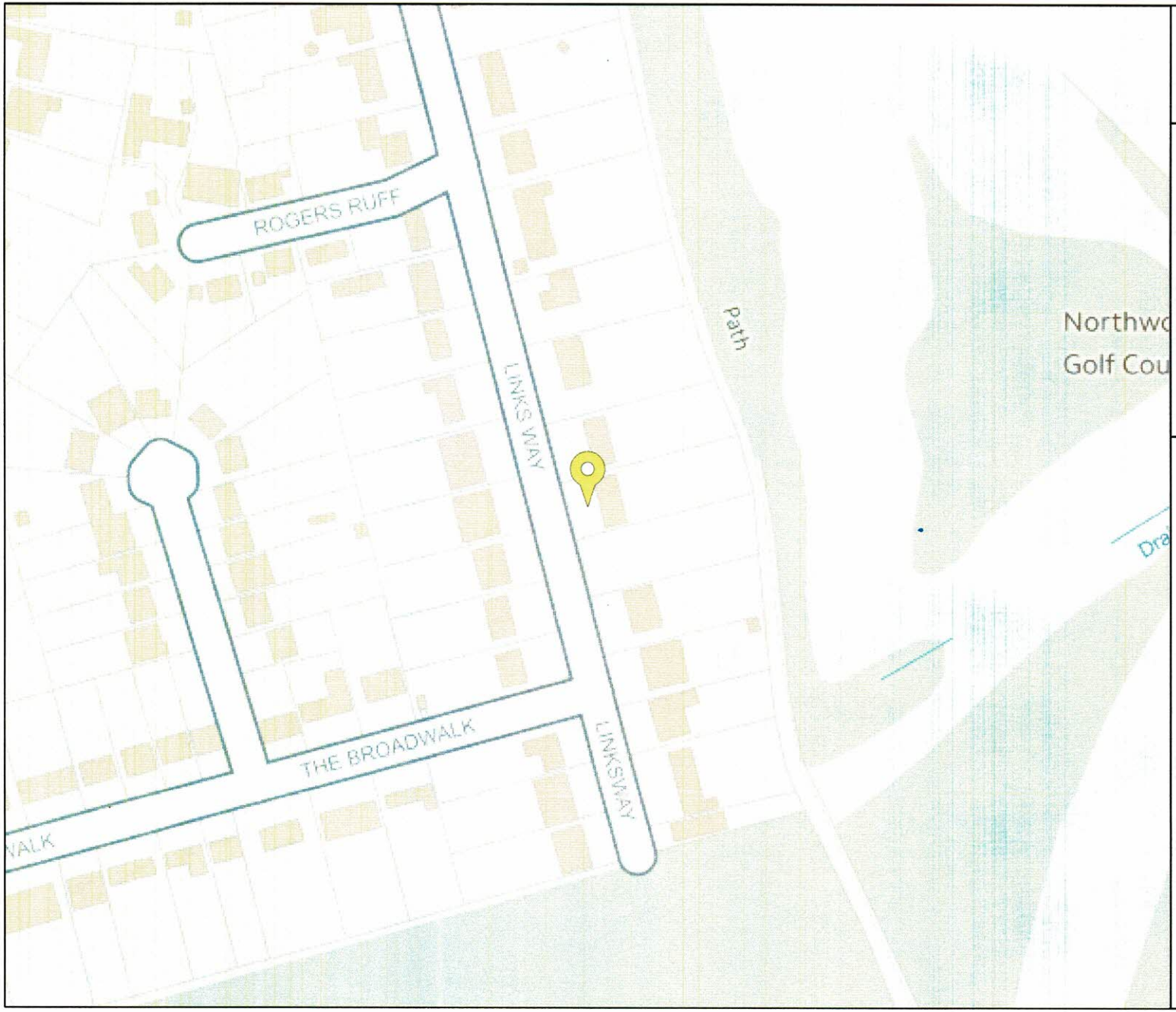
This means:

- 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.



Environment Agency

Flood map for planning

Your reference
HA6 2XA

Location (easting/northing)
508559/190585

Scale
1:2500

Created
10 Mar 2021 10:29

- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 20 40 60m

APPENDIX E: THAMES WATER MAPPING

Asset Location Search Sewer Map - ALS/ALS Standard/2019_3950050

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey

Manhole Reference	Manhole Cover Level	Manhole In
5403	n/a	n/a
3402	63.56	61.91
3401	63.57	61.64
4404	61.48	59.96
441B	n/a	n/a
4401	61.24	59.39
4403	52.55	51.19
4402	n/a	n/a
5401	56.6	53.99
5503	56.66	54.88
5502	56.74	54.12
5501	57.4	54.51
5504	58.04	56.43
5601	60.51	57.21
3701	68.73	67.94
3702	68.83	67.16
4701	66.98	65.33
4702	67	65.68
5701	63.29	61.42
4703	63.34	60.5
5702	63.27	61.37
471A	n/a	n/a
471B	n/a	n/a
471C	n/a	n/a
4803	64.26	62.52
5302	56.63	53.03
5301	56.7	53.08

ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

- Trunk Surface Water
- Trunk Foul
- Storm Relief
- Trunk Combined
- Vent Pipe
- Bio-solids (Sludge)
- Proposed Thames Surface Water Sewer
- Proposed Thames Water Foul Sewer
- Gallery
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Sludge Rising Main
- Proposed Thames Water Rising Main
- Vacuum

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

- Air Valve
- Dam Chase
- Fitting
- Meter
- Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

- Control Valve
- Drop Pipe
- Ancillary
- Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

- Outfall
- Undefined End
- Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

- Public/Private Pumping Station
- Change of characteristic indicator (C.O.C.I.)
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Operational Site
- Chamber
- Tunnel
- Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

- Foul Sewer
- Surface Water Sewer
- Combined Sewer
- Gulley
- Culverted Watercourse
- Proposed
- Abandoned Sewer

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plans are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
5) 'na' or '0' on a manhole level indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in milimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9148.