

Brompton, Northallerton, Romanby Flood Alleviation Scheme, North Yorkshire

geotechnical test-pit excavation: archaeological watching brief

on behalf of

Mouchel Parkman UK Ltd

Report 1329
September 2005

***Archaeological Services
Durham University***
South Road
Durham DH1 3LE
Tel: 0191 334 1121
Fax: 0191 334 1126

archaeological.services@durham.ac.uk
www.durham.ac.uk/archaeologicalservices

Brompton, Northallerton, Romanby Flood Alleviation Scheme, North Yorkshire

geotechnical test-pit excavation: archaeological watching brief

Archaeological Services Report 1329

September 2005

Archaeological Services Durham University

on behalf of

Mouchel Parkman UK Ltd

West Hall, Parvis Road, West Byfleet, Surrey, KT14 6EZ

Contents

1. Summary	1
2. Project background	2
3. Landuse, topography and geology	3
4. The watching brief	3
5. Conclusions	6
6. References	6
Appendix I: Figures	7
Appendix II: Stratigraphy of test pits	14
Appendix III: The project WSI	22

1. Summary

The project

- 1.1 This report presents the results of an archaeological watching brief conducted during geotechnical test-pit excavations near Northallerton. The works formed part of the Brompton, Northallerton, Romanby Flood Alleviation Scheme.
- 1.2 The works were commissioned by Mouchel Parkman UK Ltd, and conducted by Archaeological Services Durham University in accordance with a written scheme of investigation provided by North Yorkshire County Council.

Results

- 1.3 Archaeological monitoring was carried out during the excavation of 68 test-pits. These revealed little in the way of archaeological material; a single small ditch or furrow in test-pit 8A/9. No artefacts were recovered during the works.

Recommendations

- 1.4 No further archaeological work is recommended in connection with these test-pitting works.

2. Project background

Introduction

- 2.1 North Yorkshire County Council (NYCC) is planning to undertake a package of works to alleviate flooding problems in the Northallerton area. Mouchel Parkman, acting for NYCC, previously commissioned Archaeological Services Durham University to undertake two phases of geophysical surveying over five proposed development areas (ASUD Reports 1080 & 1201). The principal aim of the surveys was to determine the extent and nature of any sub-surface features of likely archaeological interest, including cut, built and fired features, which would assist the client and the planning authority in determining appropriate mitigation strategies should archaeological deposits be found to survive within the study area.
- 2.2 A number of archaeological features were identified during the surveys. A need for further archaeological investigation was also identified; it was proposed that the further works would comprise:
- visual inspection of all development areas (completed)
 - archaeological watching brief during Willow Beck straightening works (also completed; ASUD Report 1137)
 - archaeological watching brief during geotechnical test-pitting (this report)
 - additional geophysical survey to target proposed earthwork cut/fill areas
 - trial trench evaluation of targets and blank areas
 - archaeological watching brief during earthwork cut/fill operations

Location (Figures 1-7)

- 2.3 The geotechnical test-pits were located in six areas in and around Brompton, Northallerton and Romanby, in North Yorkshire:
- Area 4 Bullamoor Memorial Park
 - Area 5A Turker Beck
 - Area 5B Sun Beck
 - Area 8A North Beck
 - Area 8B Ing Beck
 - Area 8C Winton Beck

Development proposal

- 2.4 The proposal was to excavate a series of small (approximately 3.0m x 0.5m x 4.0m deep) test-pits in each area, in order to assess the nature of the geological stratigraphy and its suitability for the proposed flood control scheme.

Objective

- 2.5 The objective of the watching brief was to identify, record and sample any surviving archaeological or palaeoenvironmental remains encountered during the geotechnical test-pitting.

Methods statement

- 2.6 The works have been undertaken in accordance with a written scheme of investigation (WSI) provided by North Yorkshire County Council Environmental Services (Appendix III), IFA Standard and Guidance (1991) and a project design prepared by Archaeological Services (ref. DH 04.118rev).

Dates

- 2.7 Fieldwork was undertaken between 20th June and 6th July 2005. This report was prepared between July and September 2005.

Personnel

- 2.8 Fieldwork was conducted by Mark Randerson and Neil Adamson. This report was prepared by Neil Adamson and Duncan Hale, with illustrations by Martin Railton. The Project Manager was Duncan Hale.

Acknowledgements

- 2.9 Archaeological Services is grateful for the assistance of Mouchel Parkman UK Ltd and Soil Mechanics Ltd for facilitating this work.

Archive/OASIS

- 2.10 The site code is NFAS05, for Northallerton Flood Alleviation Scheme 2005. It is anticipated that the archive will be passed to The Yorkshire Museum at the end of archaeological works associated with the Flood Alleviation Scheme. Archaeological Services is registered with the Online Access to the Index of archaeological investigationS project (OASIS). The OASIS ID number for this project is **archaeol3-10182**.

3. Landuse, topography and geology

- 3.1 At the time of the fieldwork the study areas comprised open fields, in use as arable and pasture, with the exception of two test-pits (TP4/1 and TP4/2) which were sited within a recreation ground in the centre of Northallerton.
- 3.2 Overall, the landscape of the area is gently undulating, lying between 40 – 75m AOD.
- 3.3 The local solid geology consists of Triassic mudstones, with Jurassic Great and Inferior Oolite to the east. These are overlain by glacial and alluvial deposits.

4. The watching brief

Introduction

- 4.1 The test-pits were excavated using a JCB wheeled excavator, using the back-acting bucket, under the supervision of staff from Soil Mechanics. In most cases, a 0.55m wide toothless ditching bucket was used, but this was generally exchanged for a toothed bucket to excavate deeper, more compacted strata. The test-pit sequences were assigned to six areas with a variable number of

pits in each sequence: Area 4, with two pits; Area 5A with nine pits; Area 5B with six pits; Area 8A with 28 pits; Area 8B with 18 pits; and Area 8C with six pits (see Figures 1-7 for locations of test-pits).

- 4.2 The stratigraphy of each test-pit is tabulated in Appendix II.

Area 4 Bullamoor Memorial Park

- 4.3 This area was located within the bounds of the Bullamoor Memorial Park in the north-eastern part of Northallerton town itself. Two test-pits (TP 4/1 and TP 4/2) were excavated, each approximately 3m long x 0.55m wide x 4m deep. Both showed similar stratigraphic sequences: a thin layer of turf and topsoil overlying a sequence of sandy clays, down to the point at which excavation was terminated, at 3.9m and 4.1m respectively. No archaeological features or material were found during the excavations.

Area 5A Turker Beck

- 4.4 This area was located to the immediate north and south of Turker Beck, to the east of Northallerton. A sequence of nine pits was excavated: pits 5A/1, 5A/7, 5A/8 and 5A/9 to the north of Turker Beck, on a south-west/north-east alignment; and pits 5A/2, 5A/3, 5A/4, 5A/5 and 5A/6 to the south of Turker Beck, on a north-south alignment. Geophysical survey (ASUD 2004 & 2005) suggested little in the way of archaeological potential in this area. Test pits 5A/7 and 5A/8 showed similar stratigraphic sequences, with topsoil and a light orange-brown subsoil overlying a sequence of clay deposits with few, if any, inclusions. Test pit 5A/9 had similar upper layers of topsoil and subsoil, but beyond a depth of approximately 1.9m below ground level, the deposits became increasingly gravelly and stony. Test pits 5A/1, 5A/2, 5A/3, 5A/4, 5A/5 and 5A/6 appear to be aligned along a ridge of underlying clays, as their stratigraphy shows a sequence of comparatively clean clay layers, with few inclusions, apart from occasional lenses of sand and pea-gravel within the lower strata. No archaeological features were observed, or material recovered from these pits.

Area 5B Sun Beck

- 4.5 This area was located around Sun Beck, to the east of Northallerton, immediately to the south of Scholla Lane. Geophysical survey suggested little of archaeological significance within the area, although some anomalies indicative of medieval ridge and furrow were noted (*ibid.*). A sequence of six pits was excavated, in a north-south alignment. Test pits 5B/1, 5B/2 and 5B/3 showed a similar stratigraphic sequence, with approximately 2.5m of layered clay overlying more gravelly deposits. Test pits 5B/4, 5B/5 and 5B/6, on the other hand, were all situated along a rise in the ground, and showed layering of comparatively clean clays, with increasingly compressed mudstone in the deeper strata. No archaeological materials or features were noted in any of these test pits.

Area 8A North Beck

- 4.6 This area was situated along the course of the North Beck/Brompton Beck, immediately to the west of the village of Brompton on the north side of

Northallerton. A sequence of 28 pits was excavated, pits 8A/18, 8A/19 and pits 8A/21 to 8A/28 located to the west of Brompton Beck, and the remainder roughly following the south-west/north-east course of the beck, with varying distances between the beck and the open countryside beyond. Geophysical survey of the area produced results indicative of medieval ridge and furrow in the area, although some anomalies were interpreted as silted meanders of the old course of the beck (*ibid.*). Most of the pits in this sub-sequence show a similar stratigraphy, with layers of clay topsoil and subsoil overlying comparatively homogeneous mudstone/clay lower strata. Pits 8A/22, 8A/23 and 8A/24, however, appear to show a south-west/north-east aligned ridge of stonier material, which could be either underlying bedrock or glacial material. The remainder of the test-pits (8A/1 to 8A/17 and pit 8A/20) follow the south-west/north-east line of the Brompton Beck and railway line. These pits show a similar stratigraphic sequence to most, with topsoil and subsoil overlying geological deposits of clays and mudstones.

- 4.7 A broad linear feature was observed in section in test-pit 8A/9, where the access road to Highfield Farm crosses Brompton Beck. This feature comprised a north-south orientated cut (context [02]), approximately 2.7m wide and 0.6m deep, with a shallow u-shaped profile. The fill (context [01]) comprised grey-brown clay silt with occasional rounded gravel flecking. No dating evidence was recovered from this feature, which is difficult to interpret in isolation, but is likely to be a former boundary feature, remnant of medieval ridge and furrow, or even a former drain emptying into the beck.

Area 8B Ing Beck

- 4.8 This area was located around Ing Beck, to the north-east of Brompton. A sequence of 18 test-pits was excavated, in a north-south line along the course of the beck. Geophysical survey indicated little of archaeological significance, although some results were interpreted as indicative of medieval ridge and furrow (*ibid.*). All pits showed a similar stratigraphic sequence, with clay topsoil and subsoil overlying more compacted clay and mudstone layers, but with increasing frequency of sand and gravel deposits at depth. Pits 8A/1, 8A/4 and 8A/8 to 8A/12 were all abandoned at a mean depth of approximately 3m, due to soft unstable trench sides caused by excessive water influx. No archaeological features or artefacts were observed or recovered.

Area 8C Winton Beck

- 4.9 This area was located around the Winton Beck, to the north-east of Brompton and east of the sites around Ing Beck. A series of six test-pits was excavated along the north and south banks of Winton Beck, which has an east-west orientation. Geophysical survey indicated little of archaeological significance within the survey area (*ibid.*). The test-pits themselves showed a similar stratigraphic sequence, of silty clays overlying sand and gravel deposits along the course of the beck. No archaeological features or artefacts were observed or recovered.

5. Conclusions

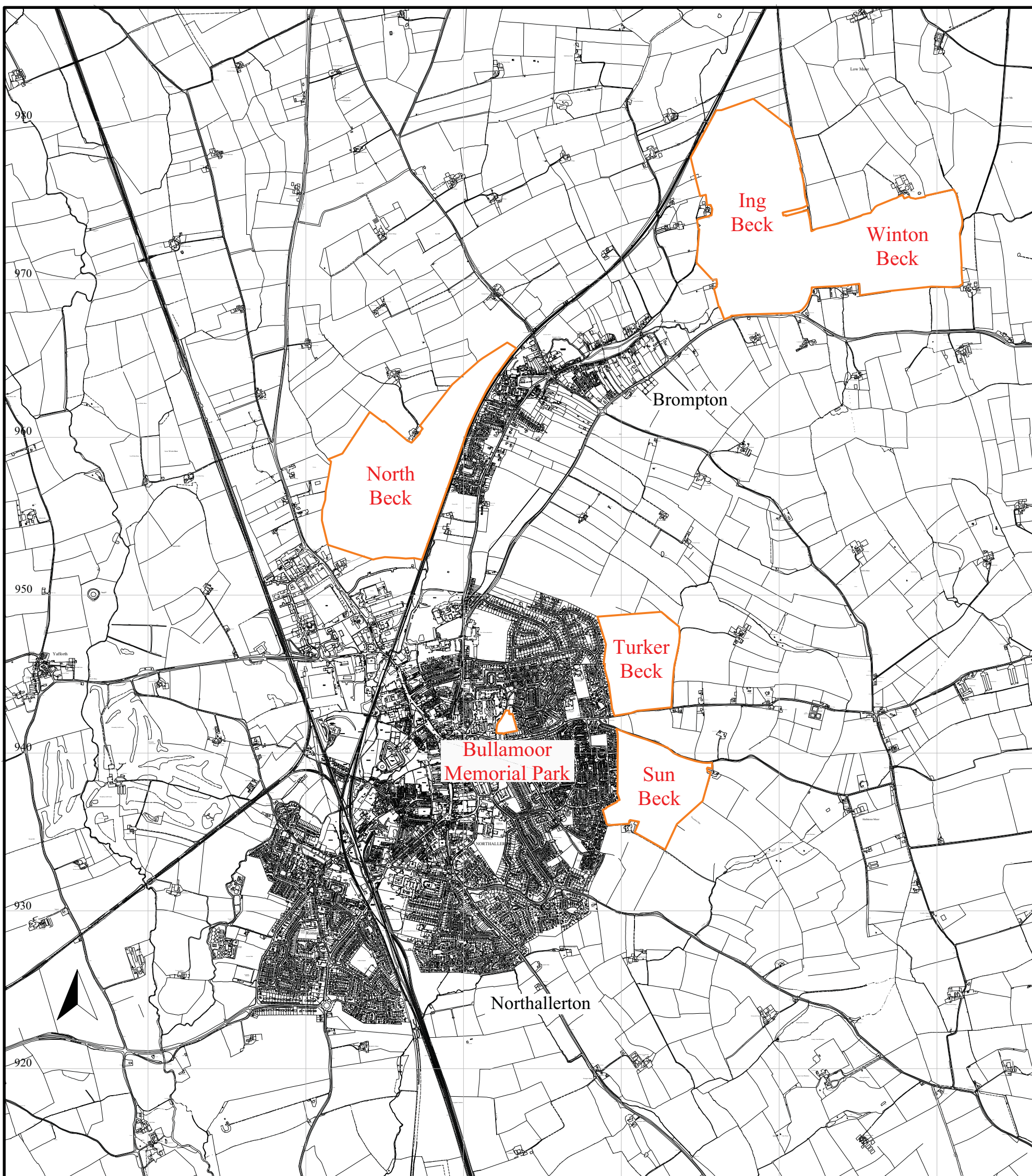
- 5.1 The watching brief enabled the recording of the limited archaeological resource encountered during the geotechnical test-pitting. Only one archaeological feature was encountered during the course of the test-pit excavations, a shallow ditch-like cut visible in the section of test-pit 8A/9, to the immediate west of Brompton Beck, likely to be of medieval or post-medieval origin.
- 5.2 No further archaeological works are recommended in association with the above test-pits.

6. References

- ASUD 2004 *Brompton, Northallerton, Romanby Flood Alleviation Scheme, North Yorkshire: geophysical surveys*. ASUD Report 1080, Archaeological Services University of Durham.
- ASUD 2005 *Brompton, Northallerton, Romanby Flood Alleviation Scheme, North Yorkshire: geophysical surveys (Phase 2) and Updated Project Design*. ASUD Report 1201, Archaeological Services University of Durham.

Appendix I: Figures

Figures 2-7 are not shown to scale



Archaeological Services
University of Durham

**Brompton, Northallerton, Romanby
Flood Alleviation Scheme
geotechnical test-pit excavation:
archaeological watching brief**

Report 1329

Figure 1

Location of study areas

on behalf of

Mouchel Parkman UK Ltd



outline of study area

0 1km

scale 1:25 000 - for A3 plot

Figure 2. Area 4, Bullamoor Memorial Park

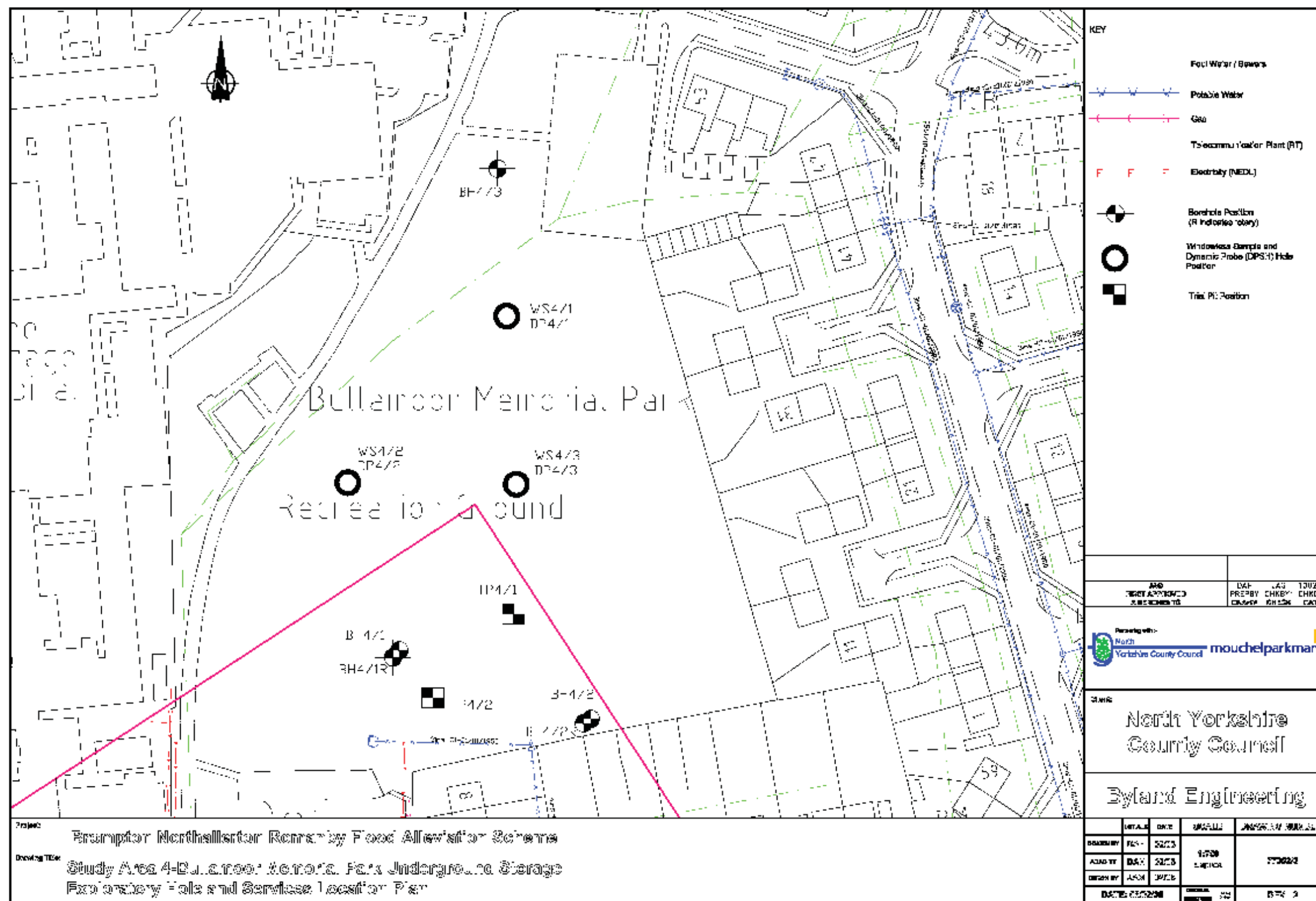


Figure 3. Area 5A, Turker Beck

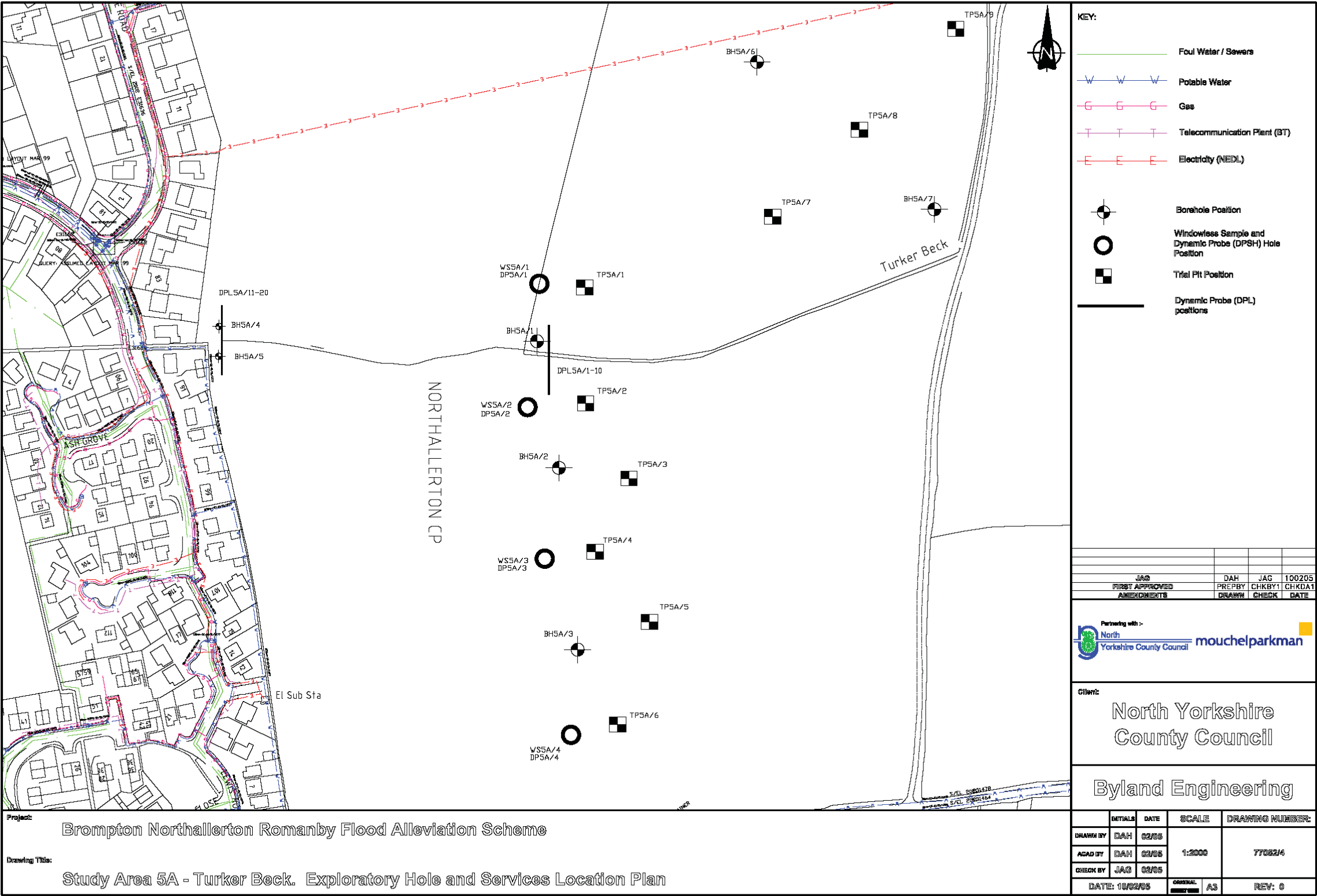
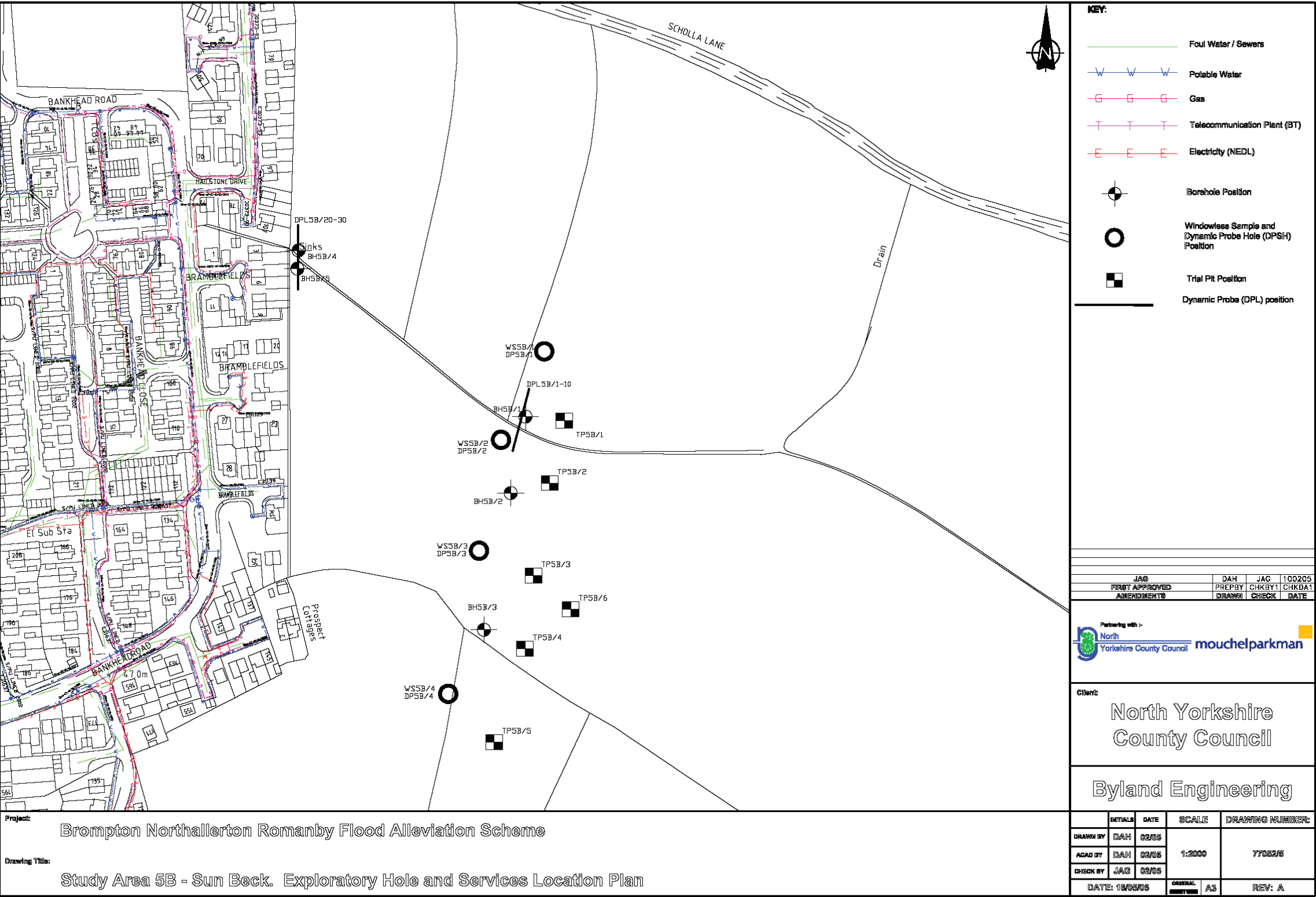


Figure 4. Area 5B, Sun Beck



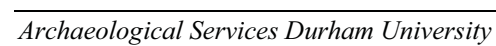
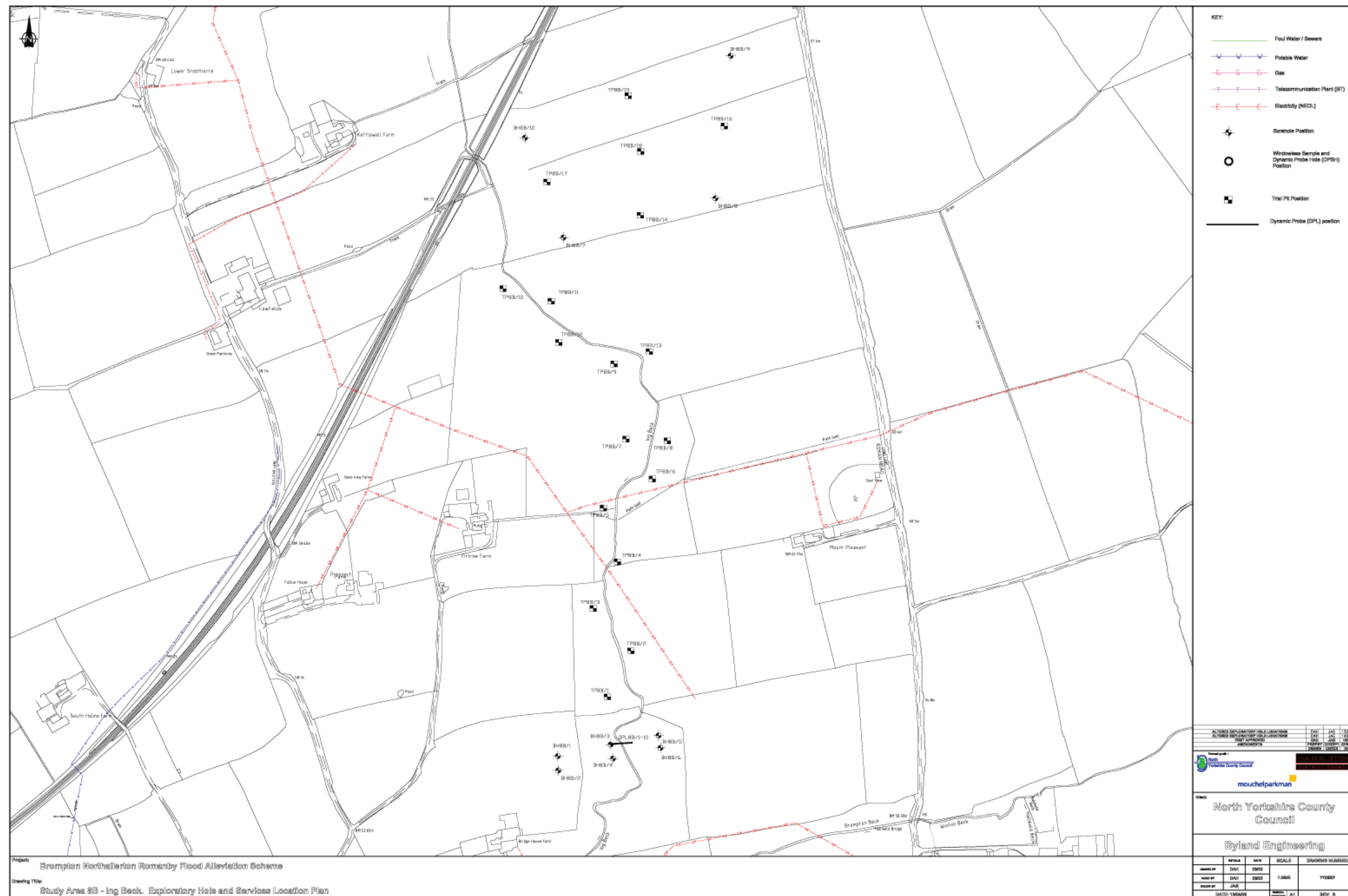


Figure 6. Area 8B, Ing Beck



Appendix II: Stratigraphy of test pits

	TP4/1	TP4/2	TP5A/1	TP5A/2	TP5A/3
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Subsoil, sandy clay	Subsoil, sandy clay	Orange-brown subsoil	Orange-brown silt clay	Orange-brown clay
.60m – 1m	Sandy clay	Sandy clay	Silty clay	Orange-brown clay	Orange-brown silt clay
1m – 2m	Grey silt clay	Gravel clay	Red silt clay	Grey-brown clay	Red-brown gravel clay
2m – 3m	Grey sandy clay	Gravel clay, wet sandy clay	Gravel clay	Grey gravel clay	Grey clay
3m – 4m	Grey mudstone	Grey clay	Red-brown gravel clay	Red-brown clay	Red-brown clay
Base	Mudstone	Mudstone	Gravel clay	Clay	Gravel clay

	TP5A/4	TP5A/5	TP5A/6	TP5A/7	TP5A/8
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil, silty subsoil
.30m - .60m	Orange-brown clay subsoil	Orange-brown clay subsoil	Yellow-brown silt subsoil	Red-brown clay subsoil	Orange-brown silty clay
.60m – 1m	Yellow sandy clay	Yellow-brown gravel clay	Pink-brown clay	Red-brown clay	Orange-brown silt clay
1m – 2m	Yellow – brown sandy clay	Red-brown gravel clay	Pink-brown gritty clay	Red-brown clay	Red-brown clay
2m – 3m	Pink-brown clay	Red-brown clay	Pink-brown gritty clay	Grey clay/ mudstone	Grey mudstone/ clay
3m – 4m	Red-brown gritty mudstone	Red-brown mudstone	Pink-brown gritty clay	Grey clay/ mudstone	Compacted grey clay mudstone
Base	Mudstone	Mudstone	Clay	Mudstone	Mudstone

	TP5A/9	TP5/B1	TP5B/2	TP5B/3	TP5B/4
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Orange-brown subsoil	Grey-brown subsoil	Red-brown silty subsoil	Silty clay subsoil	Orange-brown gravel clay
.60m – 1m	Grey-brown clay, gravel	Red-brown clay	Yellow-brown clay	Grey-brown clay	Yellow-brown sandy clay
1m – 2m	Grey-brown clay, gravel	Red-brown clay	Grey-brown gravel clay	Red-brown gravel clay	Dark orange-brown clay
2m – 3m	Orange-brown clay	Red-brown stony clay	Orange-brown gravel clay	Yellow-brown gravel clay	Dark red-brown clay
3m – 4m	Orange-brown gravel clay	Red-brown clay	Orange-brown gravel clay	Red-brown gravel clay	Dark red-brown clay
Base	Gravelly clay	Clay	Gravelly clay	Gravelly clay	Clay

	TP5B/5	TP5B/6	TP8A/1	TP8A/2	TP8A/3
0 - .30m	Topsoil	Topsoil	Topsoil, grey silt subsoil	Topsoil, orange-brown silt subsoil	Topsoil, orange-brown silt subsoil
.30m - .60m	Red-brown clay	Orange-brown subsoil	Orange-brown silt clay	Orange-brown silt subsoil	Orange-brown silt subsoil
.60m – 1m	Red-brown clay	Yellow-brown sandy clay	Orange-brown clay	Red-brown gritty clay	Yellow-brown gravelly clay
1m – 2m	Red-brown clay, grey clay lenses	Pink-brown gravelly clay	Red-brown gritty clay	Pink-brown clay	Red-brown clay
2m – 3m	Red-brown clay, grey clay lenses	Pink-brown gravelly clay	Red-brown gritty clay	Pink-brown clay	Red-brown clay
3m – 4m	Red-brown clay, grey clay lenses	Red-brown mudstone clay	Red-brown gritty clay	Grey sandy clay	Red-brown sandy clay
Base	Clay/ mudstone	Clay/ mudstone	Clay/ mudstone	Clay	Clay

	TP8A/4	TP8A/5	TP8A/6	TP8A/7	TP8A/8
0 -.30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m -.60m	Orange-brown silt subsoil	Mid grey-brown silt clay subsoil	Orange-brown silt subsoil	Grey silt clay subsoil	Grey-brown silt subsoil
.60m – 1m	Pink-brown clay	Dark grey sand silt clay	Yellow-brown sandy clay	Brown silty clay	Dark blue-black clay sand
1m – 2m	Pink-brown clay, sand lenses at base	Dark grey gravelly sand clay	Mid-brown soft sandy clay	Dark grey clay	Orange-brown clay sand
2m – 3m	Pink-brown clay	Pit abandoned due to water influx	Grey-brown silty clay	Grey-brown silty clay	Dark purple-brown stiff silty clay
3m – 4m	Dark grey silty clay, sand and gravel lenses		Pit abandoned due to water influx	Grey-brown silty clay	Dark purple-brown stiff silty clay
Base	Gravelly clay	Gravelly sand clay	Sandy clay	Silty clay	Silty clay

	TP8A/9	TP8A/10	TP8A/11	TP8A/12	TP8A/13
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Grey silt clay subsoil	Grey-brown silty subsoil	Orange-brown silt clay subsoil	Yellow-brown silty subsoil	Grey-brown sandy silt clay
.60m – 1m	Orange-brown silt clay. Feature [02]	Orange-brown silty clay	Grey-brown sandy clay	Dark grey-brown gravel clay, occ. large stones	Red-brown gravel clay
1m – 2m	Orange-brown silt clay	Grey-brown sandy clay	Grey-brown sandy clay	Red-brown gravel clay, large boulders	Orange-brown sandy clay
2m – 3m	Yellow-brown sandy clay	Blue-grey gravel clay	Orange-brown sandy clay	Red-brown gravel clay, large boulders	Orange-brown sandy clay
3m – 4m	Pink-brown sandy gravel clay	Dark purple-brown clay	Pink-brown stiff clay	Red-brown gravel clay, large boulders	Orange-brown sandy clay
Base	Gravelly clay	Clay	Clay	Clay	Clay

	TP8A/14	TP8A/15	TP8A/16	TP8A/17	TP8A/18
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Orange-brown silt clay subsoil	Orange-brown sandy clay subsoil	Grey-brown silt clay subsoil	Red-brown sand clay subsoil	Orange-brown sandy clay subsoil
.60m – 1m	Dark grey-brown clay	Orange-brown sandy clay	Orange-brown silt clay	Grey-brown sandy silt clay	Grey-brown silty clay
1m – 2m	Dark grey-brown clay	Red-brown sandy clay, frequent cobbles	Dark grey silt clay	Yellow-brown silt clay, freq. cobbles	Grey-brown silty clay
2m – 3m	Grey-brown sandy clay, occ. cobbles	Dark red-brown clay	Orange-brown sandy clay	Red-brown silty clay	Grey-brown silty clay
3m – 4m	Dark grey-brown gravel clay	Dark grey-brown clay/mudstone	Soft red-brown clay	Blue-grey clay silt, stone frags	
Base	Gravelly clay	Clay /mudstone	Clay	Stony	Stony

	TP8A/19	TP8A/20	TP8A/21	TP8A/22	TP8A/23
0 - .30m	Topsoil	Topsoil & orange-brown silty subsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Grey-brown silt clay subsoil	Orange-brown silty clay	Orange-brown silt clay subsoil	Yellow-brown silt clay subsoil	Yellow-brown silt clay subsoil
.60m – 1m	Yellow-brown clay	Yellow-brown sandy clay	Dark purple-brown clay, blue-grey clay mottling	Dark purple-brown silt clay, blue-grey clay veins	Purple-brown silt clay, blue-grey clay veins
1m – 2m	Yellow-brown clay	Grey silty clay	Dark purple-brown clay, blue-grey clay veining	Dark purple-brown clay, blue-grey clay veining, occ. cobbles	Purple-brown silt clay, blue-grey clay veins
2m – 3m	Orange-brown coarse sandy gravel	Grey silty clay	Dark purple-brown clay, blue-grey clay veining	Dark purple-brown clay, blue-grey clay veining, occ. large cobbles	Purple-brown clay, blue-grey clay veins, large stones
3m – 4m	Orange-brown clay	Grey sticky clay	Dark purple-brown clay, blue-grey clay	Dark purple-brown clay, blue-grey clay	Purple-brown clay, blue-grey clay

			blue-grey clay veining	blue-grey clay veins, large sandstone block and boulders	blue-grey clay veins, occ. large stones
Base	Clay	Clay	Clay	Clay with stone	Clay with stones

	TP8A/24	TP8A/25	TP8A/26	TP8A/27	TP8A/28
0 - .30m	Topsoil and light yellow- brown silt clay subsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Purple- brown silt clay, blue- grey clay veins	Orange- brown silt clay subsoil	Orange- brown sandy clay subsoil	Yellow- brown silty clay subsoil	Orange- brown silt clay subsoil
.60m – 1m	Purple- brown clay, blue-grey clay veins	Dark orange- brown silt clay	Orange- brown silty clay, occ. stone fragments	Purple- brown silt clay, blue- grey clay veins	Orange- brown silt clay
1m – 2m	Purple- brown clay, blue-grey clay veins	Dark orange- brown clay, grey-blue clay mottling	Orange- brown silt clay	Purple- brown clay, blue-grey clay veins	Grey-brown silt clay
2m – 3m	Purple- brown clay, blue-grey clay veins, occ. large sandstone cobbles	Dark grey- brown gravelly clay	Grey-brown gravelly, sandy clay, occ. cobbles	Purple- brown clay, blue-grey clay veins	Grey-brown silt clay
3m- 4m	Purple- brown clay, blue-grey clay veins, occ. large sandstone cobbles	Dark orange- brown clay	Dark orange- brown clay, occ. cobbles	Purple- brown gravel clay, blue- grey clay veins	Dark grey clay/ mudstone
Base	Clay with cobbles	Clay	Clay with cobbles	Clay	Clay/ mudstone

	TP8B/1	TP8B/2	TP8B/3	TP8B/4	TP8B/5
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Orange-brown silt clay subsoil	Yellow-brown sandy clay subsoil	Orange-brown sandy clay subsoil	Grey-brown silt clay subsoil	Orange-brown sandy clay subsoil
.60m – 1m	Grey-brown silt clay	Grey-brown silt clay	Grey-brown silt clay	Yellow-brown sandy clay	Grey-yellow silt clay
1m – 2m	Orange-brown sandy silt clay	Grey-brown silt clay	Yellow-brown sandy clay	Grey-brown silt clay	Yellow-brown sandy clay, occ. gravel
2m – 3m	Grey sandy gravel clay	Grey-brown sandy clay	Grey-brown silt clay	Purple-brown clay, blue-grey clay veins	Purple-brown silty clay, blue-grey clay veins
3m – 4m	Pit abandoned at 2.4m	Red-brown silt clay, occ. gravel lenses	Grey-brown silt clay, occ. stone & gravel	Pit abandoned at 3m	Purple-brown silt clay, occ. cobbles
Base	Gravelly clay	Gravelly clay	Clay	Clay	Clay & cobbles

	TP8B/6	TP8B/7	TP8B/8	TP8B/9	TP8B/10
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Orange-grey silt subsoil	Orange-brown silt subsoil	Grey silt clay subsoil	Orange-brown clay subsoil	Orange-grey silt subsoil
.60m – 1m	Blue-grey clay silt	Grey-brown sandy clay	Blue-grey sandy clay	Mottled grey-brown silt clay	Yellow-brown sandy silt
1m – 2m	Yellow-brown sand clay	Orange-brown sandy clay	Blue-grey sandy clay	Red-brown coarse sandy clay	Yellow-grey sandy gravel
2m – 3m	Red-brown sandy gravel	Grey-brown sandy gravel	Red-brown sandy clay	Pit abandoned at 2.2m	Pit abandoned at 1.7m
3m – 4m	Purple-brown silty clay	Red-brown silty clay, boulders	Pit abandoned at 3m		
Base	Clay	Stony clay	Sandy clay	Coarse sandy clay	Coarse sandy gravel

	TP8B/11	TP8B/12	TP8B/13	TP8B/14	TP8B/15
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Orange-brown clay	Orange-brown silt clay	Grey-brown silty clay	Yellow-brown clay silt	Orange-brown clay silt
.60m – 1m	Grey-brown silt clay	Grey-brown silt clay.	Orange-brown clay silt	Grey-brown silty clay	Grey-brown silty clay
1m – 2m	Grey-brown coarse sandy clay. Pit abandoned at 2.1m	Grey loose sand and gravel	Orange-brown sandy clay	Grey-brown silty clay	Grey-brown silty clay, occ. stones
2m – 3m		Pit abandoned at 2.4m	Yellow-brown gravelly silt	Dark grey sandy clay	Grey-brown silty clay, occ. stones
3m – 4m			Red-brown sandy gravel	Dark grey sandy clay	Grey-brown silty clay, occ. stones
Base	Sandy clay	Sandy gravel	Red-brown sandy gravel	Sandy clay	Stony silty clay

	TP8B/16	TP8B/17	TP8B/18	TP8C/1	TP8C/2
0 - .30m	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
.30m - .60m	Yellow-brown clay silt	Yellow-brown clay silt	Yellow-brown clay silt	Grey-brown silt subsoil	Grey-brown silt clay subsoil
.60m – 1m	Grey-brown silty gravel clay	Grey-brown gravelly clay	Red-brown silty clay	Grey-brown sandy clay	Yellow-brown sandy clay
1m – 2m	Grey-brown silty gravel clay	Grey-brown gravelly clay	Red-brown silty clay	Yellow-brown sticky clay	Red-brown clay, occ. gravel
2m – 3m	Grey-brown silty gravel clay	Grey-brown gravelly clay	Grey-brown gravelly clay	Dark red-brown boulder clay	Red-brown clay, occ. gravel
3m – 4m	Grey-brown stony clay	Grey-brown gravelly clay	Grey-brown gravelly clay	Grey-brown gravelly clay	Grey clay/mudstone
Base	Clay with cobbles	Grey-brown gravelly clay	Grey-brown gravelly clay	Grey-brown gravelly clay	Grey clay/mudstone

	TP8C/3	TP8C/4	TP8C/5	TP8C/6	
0 .30m	Topsoil	Topsoil	Topsoil	Topsoil	
.30m - .60m	Yellow-brown sandy clay subsoil	Yellow-brown sandy clay	Pink-brown silty clay	Orange-brown sandy clay	
.60m – 1m	Grey-brown gravel clay	Pink-brown boulder clay	Pink-brown silty clay	Grey-brown silty clay	
1m – 2m	Grey-brown gravel clay	Pink-brown boulder clay	Dark grey compacted clay	Grey-brown silty clay	
2m – 3m	Dark grey clay/ mudstone	Pink-brown boulder clay	Grey-brown compacted clay	Grey-brown silty clay. Occ. cobbles	
3m – 4m	Dark grey clay/ mudstone	Pink-brown boulder clay	Grey-brown compacted clay	Grey-brown silty clay. Occ. cobbles	
Base	Clay/ mudstone	Pink-brown boulder clay	Grey-brown compacted clay	Grey-brown silty clay. Occ. cobbles	

Appendix III: The project WSI



Yorkshire County Council Environmental Services

STANDARD
WRITTEN SCHEME OF INVESTIGATION (WSI)
FOR LIMITED ARCHAEOLOGICAL RECORDING ("WATCHING BRIEF")
FOR WORKS BY
FLOOD DEFENCE OPERATING AUTHORITIES

- 1 This WSI sets out the general archaeological operations required to mitigate the impact of works by flood defence operating authorities on sites of archaeological or historical interest in accordance with the guidance given in the Code of Practice on Environmental Procedures for Flood Defence Operating Authorities (1996), the Code of Practice on Conservation, Access and Recreation (2000) under the Environment Act 1995 and Water Industry Act 1991, and PPG16. It does **not** comprise a full specification, and the County Council makes no warranty that the archaeological works are fully or exactly described for specific site circumstances. The details of implementation must be specified in the contract between the operating authority, their agent or construction contractor and the archaeological contractor.
- 2 The purpose of archaeological work is to enable the recording and recovery of archaeological remains affected incidentally and contingently by flood defence and drainage works of narrow and linear extent. The archaeological work should not require the overall programme of defence or drainage works to be held up while recording takes place, although some operating authorities may give such a facility.
- 3 All ground excavation, including topsoil stripping, of 300mm or more below existing surface level, should be supervised by the Archaeologist contracted to carry out the WSI. The Archaeologist should be informed of the correct timing and schedule of excavation works. The machine excavation of any soil or fill materials should be undertaken by a back-acting excavator fitted with a toothless, ditching or grading bucket. Where surface materials are exceptionally difficult to lift, they should be broken up first, and a toothed bucket used temporarily to open up the materials for lifting, before reverting to a toothless bucket.
- 4 Where health and safety conditions allow, metal detection of arisings and spoil may be carried out subject to archaeological supervision and recording so that metal finds are properly located, identified, and conserved. All metal detection should be carried out following the Treasure Act 1996 Code of Practice.
- 5 Where structures, waterlogged wood, soil deposits and features, or finds of archaeological interest are uncovered or disturbed by ground excavations, the Archaeologist should be provided with the opportunity to observe, clean, assess, and where appropriate, hand excavate, sample and record these features and finds. If construction plant operators observe archaeological remains during the course of works, they should immediately notify the Archaeologist.

- 6 Where waterlogged remains of archaeological or palaeo-environmental interest are encountered, opportunity should be provided for the inspection, sampling and recording by an appropriate specialist on these kinds of remains. The Archaeologist should make all necessary arrangements to ensure that specialist advice and analysis are available as appropriate to meet the WSI. The County Archaeologist should be notified immediately of the discovery of any significant archaeological remains, or variations to work arising from such discovery.
- 7 Heavy plant or excavators should not be operated in the near vicinity of archaeological remains until the remains have been appropriately investigated and the Archaeologist on site has allowed operations to recommence at that location. Sterile parent materials below archaeological deposits can be removed without archaeological supervision.
- 8 Upon completion of archaeological field recording work, samples should be processed and all finds identified, assessed, spot-dated, and properly stored. A field archive should be compiled consisting of all primary written documents, plans, sections, and photographs. Arrangements should be made for the transfer of the archive to a museum or records office.
- 9 A summary report shall be produced following NYCC guidelines on reporting. The report should contain planning or administrative details of the project, a summary of works carried out, a description and interpretation of the findings, an assessment of the importance of the archaeology including its historical context where appropriate, and a catalogue of finds, features, and primary records. All excavated areas should be accurately mapped with respect to nearby buildings and roads. All significant features should be illustrated with conventionally scaled plans, sections or photographs. Where few or no finds are made, it may be acceptable to provide the report in the form of a letter with plans attached.
- 10 Copies of the summary report should be provided to the flood defence operating authority, the Environment Agency, the local IDB where appropriate, the County Heritage Unit (SMR), to the museum accepting the archive, and if the works were carried out on or adjacent to a Scheduled Ancient Monument, to English Heritage.