# ARCHAEOLOGICAL WATCHING BRIEF REPORT:

# MONITORING OF GEOTECHNICAL TEST PITS AT SPRING MEADOW, BELTON HOUSE, GRANTHAM, LINCOLNSHIRE

Planning Reference: Pre-Planning
NGR: SK 92757 39207
AAA Site Code: BESM 08
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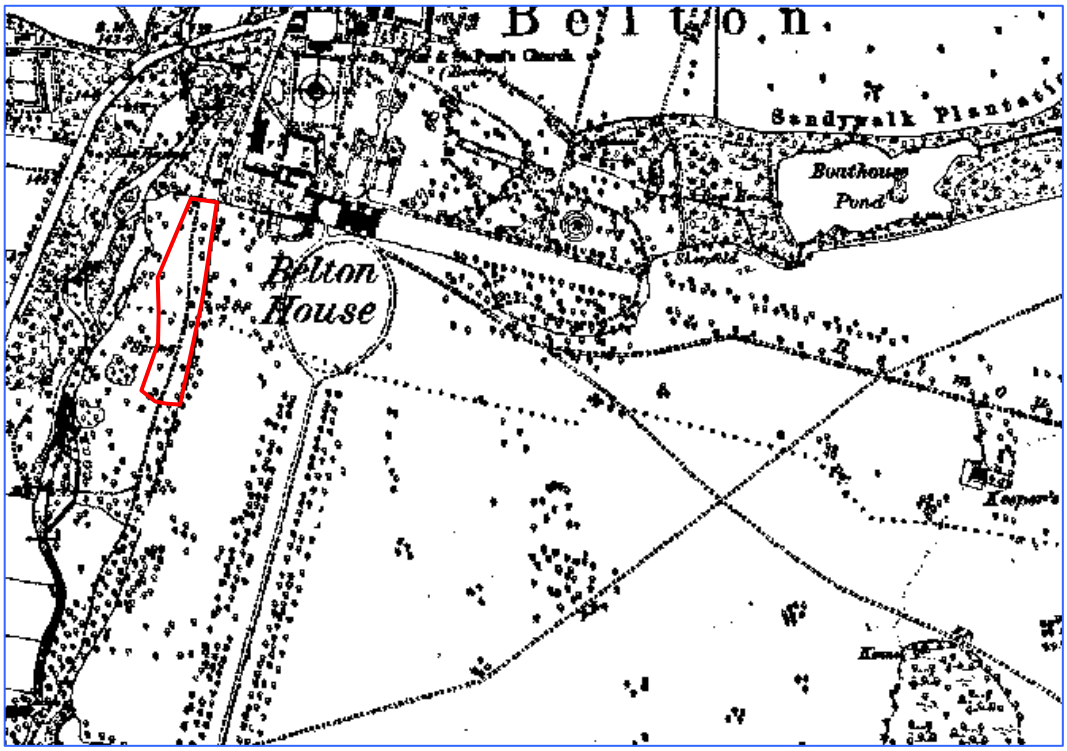


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## Document Control

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Cover image: Site location outlined in red on 1891 Ordnance Survey map of the site (Not to scale)

## Summary

- An archaeological watching brief was undertaken during the excavation of four geotechnical test pits in advance of the construction of a new car park and visitor reception building on Spring Meadow, at Belton House near Grantham in Lincolnshire.

- Artefactual evidence shows activity from the prehistoric to Anglo-Saxon periods in the vicinity of Belton House. The estate itself was constructed between 1684 and 1688.

- Four test pits were excavated in the proposed development area, the locations of which were based on the results of a preceding geophysical survey.

- No archaeological features or deposits of significance were observed during the groundworks, and no finds were recovered.

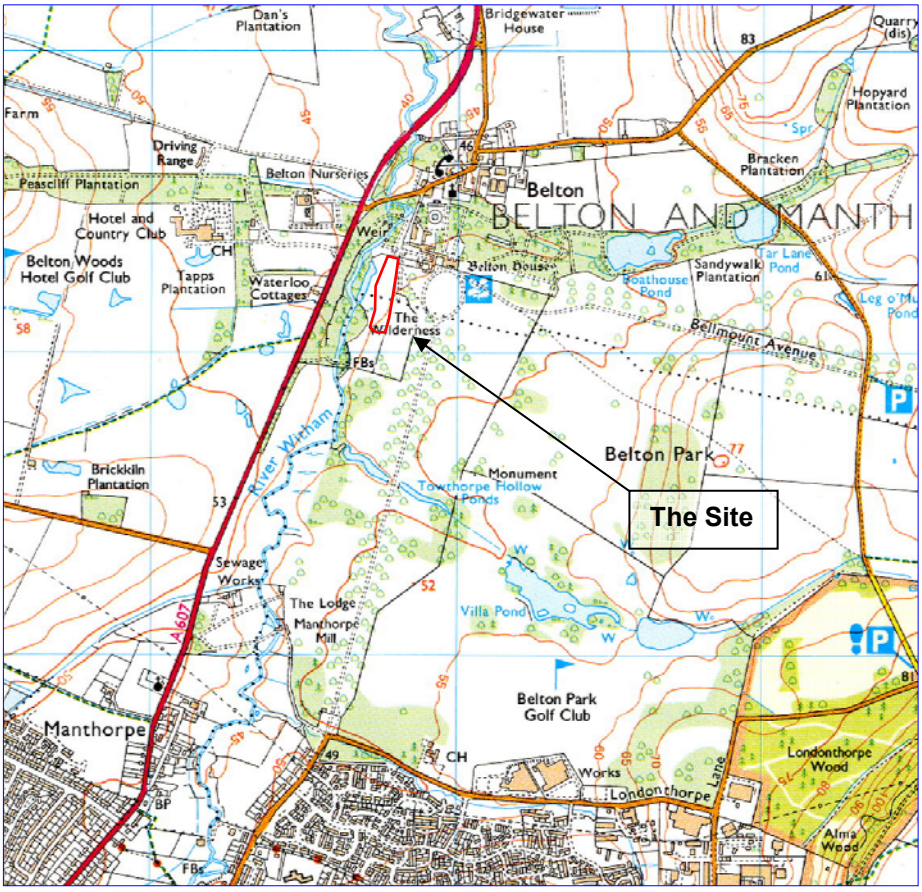




**Figure 1:** Location map with site outlined in red, at scale 1:25,000

## 1.0 Introduction

1.1 Allen Archaeological Associates (hereafter AAA) was commissioned by The National Trust to carry out an archaeological watching brief during the excavation of geotechnical test pits at Belton House near Grantham in Lincolnshire.

1.2 The site monitoring, recording and reporting conforms to current national guidelines, as set out in the Institute for Archaeologists '*Standards and guidance for archaeological watching briefs*' (IfA 1999) and a project brief prepared by the East Midlands Archaeologist for The National Trust (Hall 2008).

1.3 The archive will be submitted to the East Midlands Archaeologist for The National Trust, following completion of the project.

## 2.0 Site location and description

2.1 Belton House lies approximately 3.8km north-east of Grantham town centre, and c.0.6km to the south of the village of Belton. The study area lies immediately south-east of Belton House on the floodplain to the east of River Witham. The parkland area that contains the site, Spring Meadow, lies beyond the formal gardens and to the east of an area known as 'The Wilderness' (Hall 2008; Hibbitt and Allen 2008). The site is centred on NGR SK 92757 39207.

2.2 The underlying geology of the area comprises drift deposits of Belton Sand and Gravel overlying the Middle Jurassic Brant Mudstone Formation (British Geological Survey 1972).

## 3.0 Planning background

3.1 This scheme of work is part of the pre-planning process and will be submitted to support a future planning application. The geotechnical pits were excavated to determine the ground conditions for a proposed car park and a visitor reception building. These were monitored following the guidelines set out in a brief prepared by the East Midlands Archaeologist for The National Trust (Hall 2008).

## 4.0 Archaeological and historical background

4.1 Prehistoric activity has been recorded to the south-south-east of Belton House, in the area around Belton Golf Club, where Mesolithic and Bronze Age flint tools have been recovered (Hall 2008). May (1976) also records Bronze Age pottery from Belton, although its exact provenance is unknown.

4.2 Romano-British activity is limited to a scatter of 2$^{nd}$ to 3$^{rd}$ century AD greyware pottery sherds found c.500m to the north of the site (Lincolnshire Historic Environment Record Reference 30439) (hereafter LHER).

4.3 Iron objects of Anglo-Saxon date have been found in the far north of the estate, in the garden of the Rectory. The finds comprised at least five knives and part of a spearhead, and may suggest a possible cemetery in the area (LHER Reference 30433).

4.4 In the Domesday Book, Belton appears as *Beltone*, a name deriving from Old English elements *bel-*, meaning 'a piece of dry ground in the fen', and *–tun*, 'a farmstead, village' (Cameron 1998). There are numerous landowners listed for Belton parish: the king had land in Belton that was managed from an estate in Grantham, with further land owned by Guy of Raimbeaucourt,

Guy of Craon, Kolgrimr and Walter of Aincourt. Kolgrimr's estate included two mills (probably water mills on the Witham), whilst Walter of Aincourt controlled three more mills and a church (Morgan and Thorn 1986). The Domesday Book also records a village called Towthorpe, the precise location of which is unknown, although it is believed to be located within the grounds of the Belton Estate, to the south of the proposed development area (HER Reference 30434). The name is Old Norse in origin, derived from a personal name, *Tovi*, and the *–thorpe* suffix meaning an outlying settlement, which perhaps refers to its relationship to Belton (Mills 1993). Kolgrimr and Guy of Craon owned land at Towthorpe, including three mills and a church with a priest (Morgan and Thorn 1986). Areas of ridge and furrow earthworks to the north, north-east and south of the site further attest medieval activity in the area (HER References 36396, 36400 and 36402). Further evidence of ridge and furrow was identified in the preceding geophysical survey of the site, running broadly east – west across the northern portion of the surveyed area (Hibbitt and Allen 2008).

4.5 Belton House was constructed between 1684 and 1688 on the orders of Sir John Brownlow following his inheritance of the land. The house and estate underwent many changes in line with the fashions of the age, including the development of a less formal garden area called 'The Wilderness' in the mid 18th century, immediately to the west of the site (Hall 2008).

## 5.0 Methodology

5.1 The watching brief on the geotechnical pits was the second phase of an archaeological scheme of works at Belton House, following a geophysical survey of the proposed car parking area undertaken in November 2008 (Hibbitt and Allen 2008).

5.2 The watching brief was carried out on December 1st 2008 and was monitored by Owen Batchelor. The National Trust had provided the contractors with information for positioning the test pits on site, after which AAA accurately located each test pit using a Thales MobileMapper CE GPS with sub-metre accuracy (using EGNOS, the European Geostationary Navigation Overlay System). The test pits were located on a site plan and tied in to the National Grid (see Figure 2). The geotechnical test pits measured approximately 2.0m x 2.0m, and were excavated using a tracked 360º excavator fitted with a 0.6m wide toothless dykeing bucket. Augering was carried out in all of the test pits to further determine the stratigraphic sequence below the limit of machine excavation.

5.3 During excavation, all exposed plan and section surfaces were examined in order to determine the stratigraphic sequence and to determine if any archaeological features had been revealed. Each context was recorded on pro-forma AAA context record sheets, accompanied by section drawings at appropriate scales (1:20). A full colour photographic record was maintained, and selected prints have been included as an appendix to this report (see Appendix 1).

## 6.0 Results (Figures 3 - 6)

### 6.1 Test Pit 1 (Figure 3)

6.1.1 Test Pit 1 was located along the line of the proposed car park track, in an area that the geophysical survey showed varied responses indicative of possible modern ferrous detritus in the topsoil, as well as possible ridge and furrow (Hibbitt and Allen 2008). Test Pit 1 was centred on NGR SK 92791 39301.

6.1.2 The uppermost deposit was a 0.2m deep topsoil horizon, 100, comprising dark brown clayey sand, with occasional rounded gravel. It sealed a layer of redeposited natural with frequent limestone fragments, 103, which was approximately 0.15m deep. Below 103 was a c.0.15m

deep layer of reddish brown clayey sand, 101. Both deposits appear to be deliberately dumped deposits, although their precise function is unclear. They may have been dumped to raise and level this part of the field to limit flooding, or represent dumps of material associated with an episode of development of the estate.

6.1.3 At the base of the test pit was naturally-formed light yellowish brown clayey sand, 102 that was 0.24m deep and extended below the limit of excavation. Augering of this deposit showed it to continue for another 0.38m, sealing a 0.44m thick deposit of compact grey clay with occasional small sub-angular gravel, 104. Below this the auger sample revealed another 0.1m thick layer of coarse orange/brown sand, 105, that overlay a further 0.3m of compact grey clay, 106, that extended below the limits of the auger sample. Layers 102, 104, 105 and 106 are all likely to reflect waterborne deposition, with the same layers being deposited by high energy flood events, while the clay layers represent deposition by slow-moving or standing water.

### 6.2 **Test Pit 2** (Figure 4)

6.2.1 Test Pit 2 was located in the proposed staff parking area and was placed in an area where the geophysical survey had not identified any archaeologically significant anomalies (Hibbitt and Allen 2008). Test Pit 2 was centred on NGR SK 92745 39217.

6.2.2 The topsoil 200 that covered this area was a mid brown silty clay with rare inclusions of stone pebbles, measuring 0.30m deep and sealing 201; a moderately compact, mid yellowish brown clayey sand with rare inclusions of fragmented limestone. Augering of this test pit exposed a further 0.1m of layer 201, below which was a 0.3m deep compact grey clay, 202, identical to layer 104 in Test Pit 1. The layers below this remain unidentified as they lay below the water table and were too loose and waterlogged to stay within the auger.

### 6.3 **Test Pit 3** (Figure 5)

6.3.1 Test Pit 3 was positioned in the area of the proposed visitor reception building and where the geophysical survey had identified some magnetic disturbance, most likely caused by nearby obstacles in the field such as trees, vegetation and fencing (Hibbitt and Allen 2008). Test Pit 3 was centred on NGR SK 92781 39179.

6.3.2 Topsoil 300 was a c.0.3m deep friable, dark brown clayey sand with rare inclusions of stone pebbles. It sealed 301, dark brown clay sand with frequent roots and rare sandstone pebbles, which overlay a thin lens of dark brown sand with frequent small sub-angular stone rubble, 302. Beneath 302 was 303, a c.0.25m deep layer that was identical in composition to 301 above. It is possible that layers 301 and 302 represent dumps of material associated with the laying out of roads and other nearby park land features, sealing a former undated soil that is represented by 303.

6.3.3 Following machine excavation, it was unclear whether deposit 303 was a layer or the fill of an archaeological feature, so a slot was hand excavated against the west edge of the test pit to ascertain this and to determine the stratigraphic sequence. The slot identified 303 as a layer that extended a further 0.25m below the machine-excavated trench. This sealed a probable natural alluvial sequence, comprising a 0.26m deep layer of coarse brown/grey sand 304, over an orange/brown sand 305 that extended below the limit of the hand dug slot. Augering at the base of the slot suggested that deposit 303 continued for some depth, but the material was too wet and loose to stay in the auger.

### 6.4 **Test Pit 4** (Figure 6)

6.4.1 Test Pit 4 was located in the area of the proposed car park block 2, over a north-north-east to south-south-west aligned ditch-like linear anomaly that may pre-date the existing boundaries (Hibbitt and Allen 2008). Test Pit 4 was centred on NGR SK 92756 39123.

6.4.2 Topsoil 400, with a depth of 0.30m, consisted of a friable, dark brown clayey sand with rare stone pebbles. It sealed a naturally formed alluvial deposit, 401, a moderately compact, light yellowish brown clayey sand with rare inclusions of sandstone fragments. Augering of this deposit suggested that it continued for at least further 0.5m, although the augered material was very wet and loose and fell out of the auger as soon as it was pulled from the ground.

## 7.0 Discussion and conclusion

7.1 Few features or deposits of archaeological significance were recorded in the four test pits, which accords well with the previous geophysical survey (Hibbitt and Allen 2008).

7.2 Test Pits 1 and 3 contained undated layers suggestive of dumping, perhaps associated with ground raising due to the close proximity of the River Witham, or evidence of one of the many phases of redevelopment of the estate parkland from the late 17$^{th}$ century onwards. The geophysical survey shows that both test pits are positioned in areas with varying magnetic signatures, and it is suggested that the spreads of material are most likely the cause of this.

7.3 Test Pits 2 and 4 revealed similar stratigraphic profiles, comprising topsoil over a sequence of natural alluvial deposits. The alluvial sequence that was identified is likely to represent periods of flooding and standing water in the River Witham floodplain, rather than elements of a former course of the river, as this would very likely have been identified in the previous geophysical survey. Test Pit 4 was positioned on the eastern edge of a track shown on the 1891 Ordnance Survey map of the site (Figure 7). There was no indication of this feature in the test pit, suggesting that it may have been little more than a dirt track without any form of metalling or gravel surface.

7.4 Test Pit 4 also correlates with the position of a linear anomaly recorded in the geophysical survey, which was interpreted as a feature pre-dating emparkment of the estate (Hibbitt and Allen 2008). There was no indication of this feature in the test pit, and therefore the origin of the geophysical anomaly remains unexplained.

## 8.0 Effectiveness of methodology

8.1 The watching brief methodology was appropriate to the scale and nature of the current phase of works. It demonstrated that the excavation of the geotechnical pits has had a negligible impact on the archaeological resource, and has confirmed the interpretation of elements of the geophysical survey. It should be noted however that the test pits only represent only a very small proportion of the proposed development area.

## 9.0 Acknowledgements

9.1 Allen Archaeological Associates would like to thank The National Trust for this commission. Thanks also go to Alec Gordon, the Property Manager for allowing access to the site, and to Tasker's Builders for their co-operation during the watching brief.

## 10.0 References

British Geological Survey, 1972. *Grantham. England and Wales Sheet 127. Solid and Drift Geology. 1:50000 Provisional Series.* Keyworth, Nottingham: British Geological Survey

Hall, R., 2008. *Project brief for archaeological monitoring of geotechnical pits at Spring Meadow, Belton House, Grantham, Lincolnshire (Car-park and Visitor Reception Project)*, The National Trust

Hibbitt, D and Allen, M., 2008. *Archaeological Evaluation Report: Fluxgate Gradiometer Survey at Belton House, Grantham, Lincolnshire.* 2008/063. Allen Archaeological Associates and Grid Nine Geophysics

I.f.A., 1999, *Standards and guidance for archaeological watching briefs*. Reading, Institute of Field Archaeologists

May, J., 1976, *Prehistoric Lincolnshire,* History of Lincolnshire I, History of Lincolnshire Committee, Lincoln.

Mills A.D., 1993, *A Dictionary of English Place Names*, Oxford University Press, Oxford

Morgan, P., & Thorn C., (eds.), 1986, *Domesday Book: vol.31: Lincolnshire*, Phillimore & Co. Ltd, Chichester

Whitwell, J.B, 1992, *Roman Lincolnshire,* History of Lincolnshire Committee, Lincoln

## 11.0 Site archive

11.1 The documentary archive is currently in the possession of Allen Archaeological Associates. It will be submitted to the East Midlands Archaeologist for The National Trust, following completion of the project.

## Appendix 1: Colour Plates

**Plate 1:** General working shot during excavation of Test Pit 1, looking north-west


**Plate 2:** Test Pit 1, east facing section, looking west


**Plate 3:** Test Pit 3, east facing section, looking west

## Appendix 2: List of archaeological contexts

### Test Pit 1

| Context No. | Type | Description | Interpretation |
|---|---|---|---|
| 100 | Layer | Friable, dark brown clayey sand rare small rounded gravel<br>Seals 103 | Modern topsoil |
| 101 | Fill | Medium compact, mid reddish brown clayey sand rare small rounded gravel<br>Seals 102<br>Sealed by 103 | Dump of material possibly to raise/level area and reduce flooding |
| 102 | Layer | Compact, light yellowish brown clayey sand with moderate inclusions of fragmented lime/sandstone<br>Sealed by 101 | Naturally formed alluvial deposit – high energy flood event/events |
| 103 | Layer | Fairly compact, light yellowish brown clayey sand moderate fragmented limestone<br>Seals 101<br>Sealed by 100 | Re-deposited natural – possible ground raising/levelling deposit |
| 104 | Layer | Compact grey clay with occasional small sub-angular gravel<br>Seals 105<br>Sealed by 102 | Naturally formed alluvial deposit formed by very slow-moving or standing water |
| 105 | Layer | Coarse orange/brown sand<br>Seals 106<br>Sealed by 104 | Naturally formed alluvial deposit – high energy flood event/events |
| 106 | Layer | Compact grey clay<br>Sealed by 105 | Naturally formed alluvial deposit formed by very slow-moving or standing water |

### Test Pit 2

| Context No. | Type | Description | Interpretation |
|---|---|---|---|
| 200 | Layer | Friable, dark brown clayey sand with rare inclusions of stone pebbles<br>Seals: 201 | Topsoil |
| 201 | Layer | Moderately compact, mid yellowish brown clayey sand with rare inclusions of fragmented limestone<br>Sealed by: 200 | Naturally formed alluvial deposit – high energy flood event/events |
| 202 | Layer | Compact grey clay with occasional small sub-angular gravel<br>Seals 105<br>Sealed by 102 | Alluvial deposit formed by very slow-moving or standing water |

## Test Pit 3

| Context No. | Type | Description | Interpretation |
|---|---|---|---|
| 300 | Layer | Friable, dark brown, clayey sand with rare stone pebbles<br>Seals: 301 | Topsoil |
| 301 | Layer | Loose, friable, light brown , clayey sand, frequent roots and rare sub-rounded small pebbles<br>Sealed by: 300<br>Seals 302 | Subsoil or possibly fill of a wide shallow linear feature |
| 302 | Layer | Pale brown/grey coarse sand, occasional small sub-rounded gravel<br>Sealed by 301<br>Seals 303 | Naturally formed alluvial deposit – high energy flood event/events |
| 303 | Layer | Orange/brown coarse sand, occasional small sub-rounded gravel<br>Sealed by 302 | Naturally formed alluvial deposit – high energy flood event/events |

## Test Pit 4

| Context No. | Type | Description | Interpretation |
|---|---|---|---|
| 400 | Layer | Friable, dark brown, clayey sand with rare stone pebbles<br>Seals: 301 | Topsoil |
| 401 | Layer | Orange/brown coarse sand, occasional small sub-rounded gravel<br>Sealed by 302 | Naturally formed alluvial deposit – high energy flood event/events |

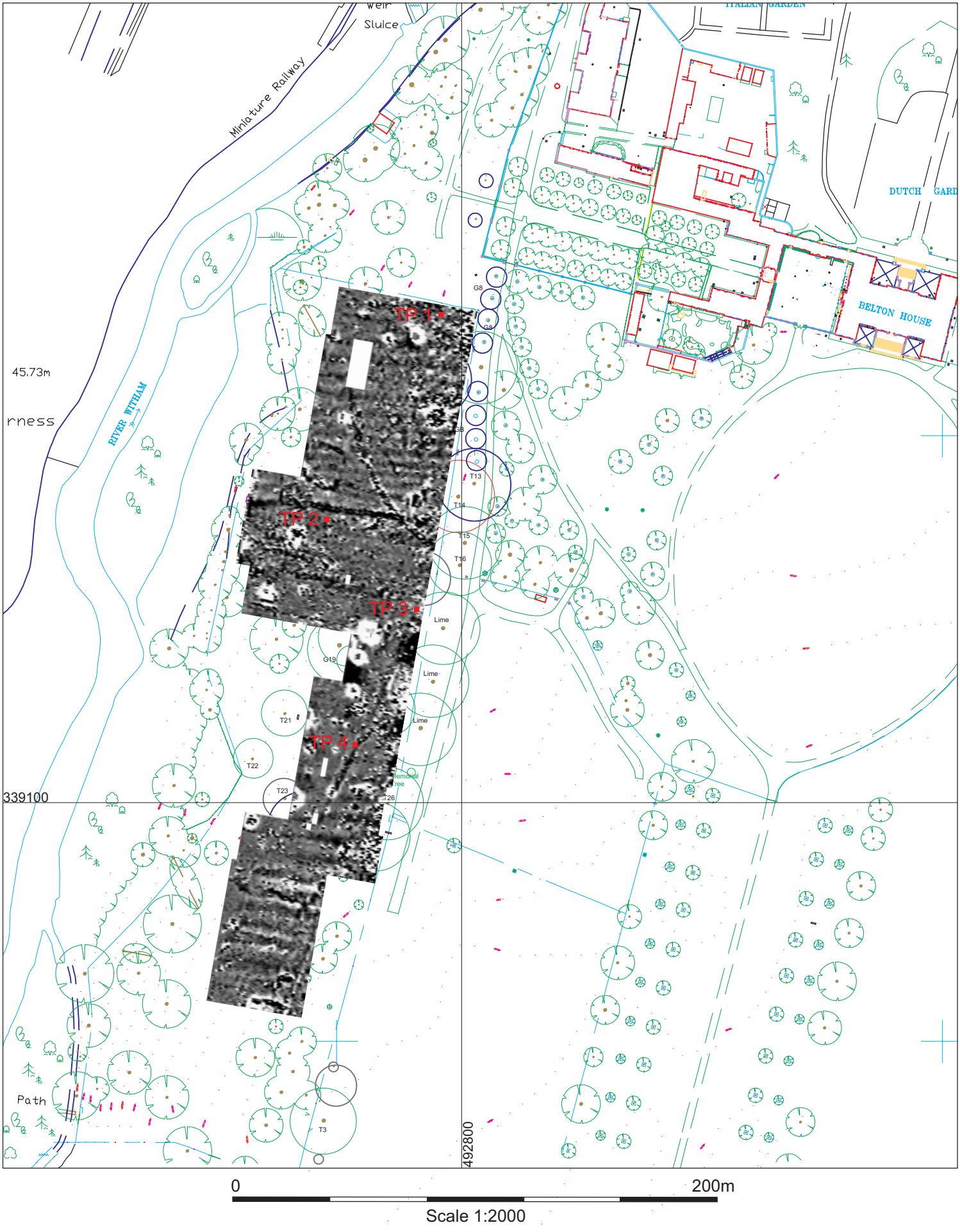



**Figure 2:** Site location plan at scale 1:2000 showing Test Pits 1-4 marked in red, superimposed on a processed greyscale plot of the geophysical survey results

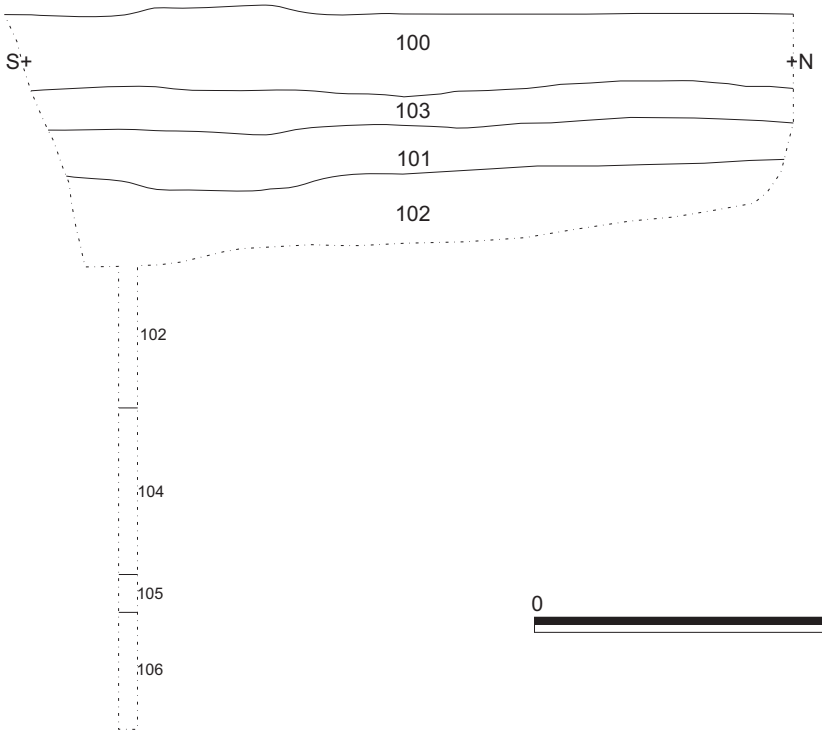



**Figure 3:** East facing section of Test Pit 1 at scale 1:20

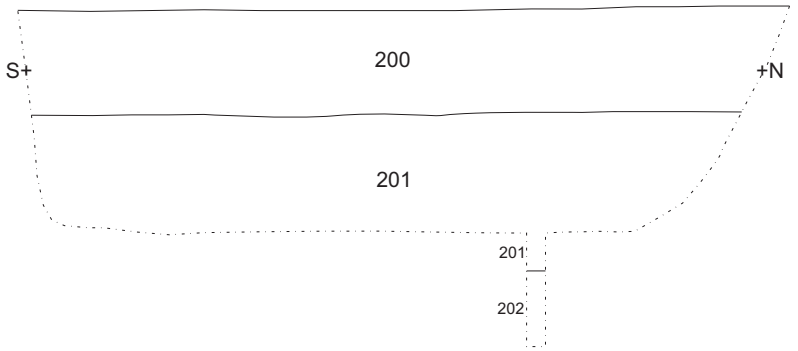
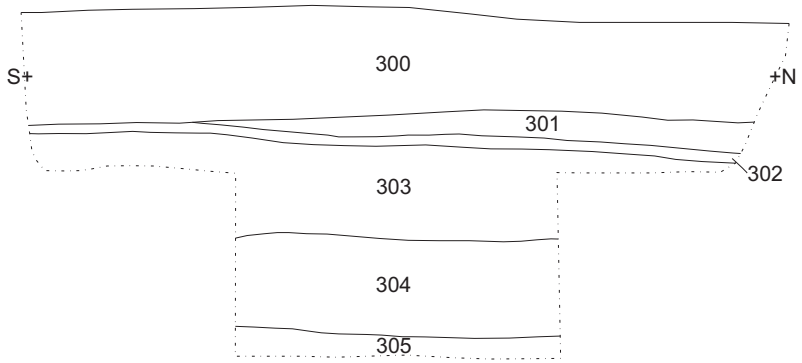
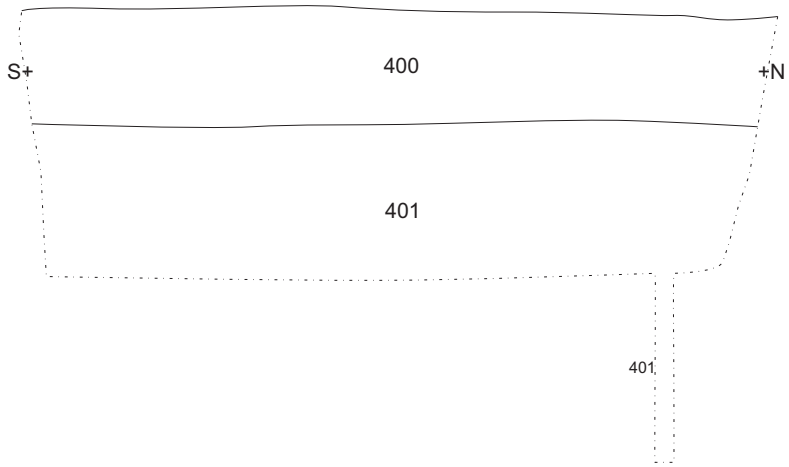



**Figure 4:** East facing section of Test Pit 2 at scale 1:20



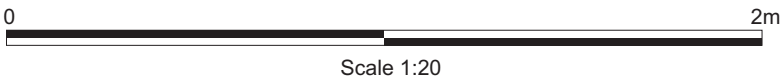




**Figure 5:** East facing section of Test Pit 3 at scale 1:20

**Figure 6:** East facing section of Test Pit 4 at scale 1:20

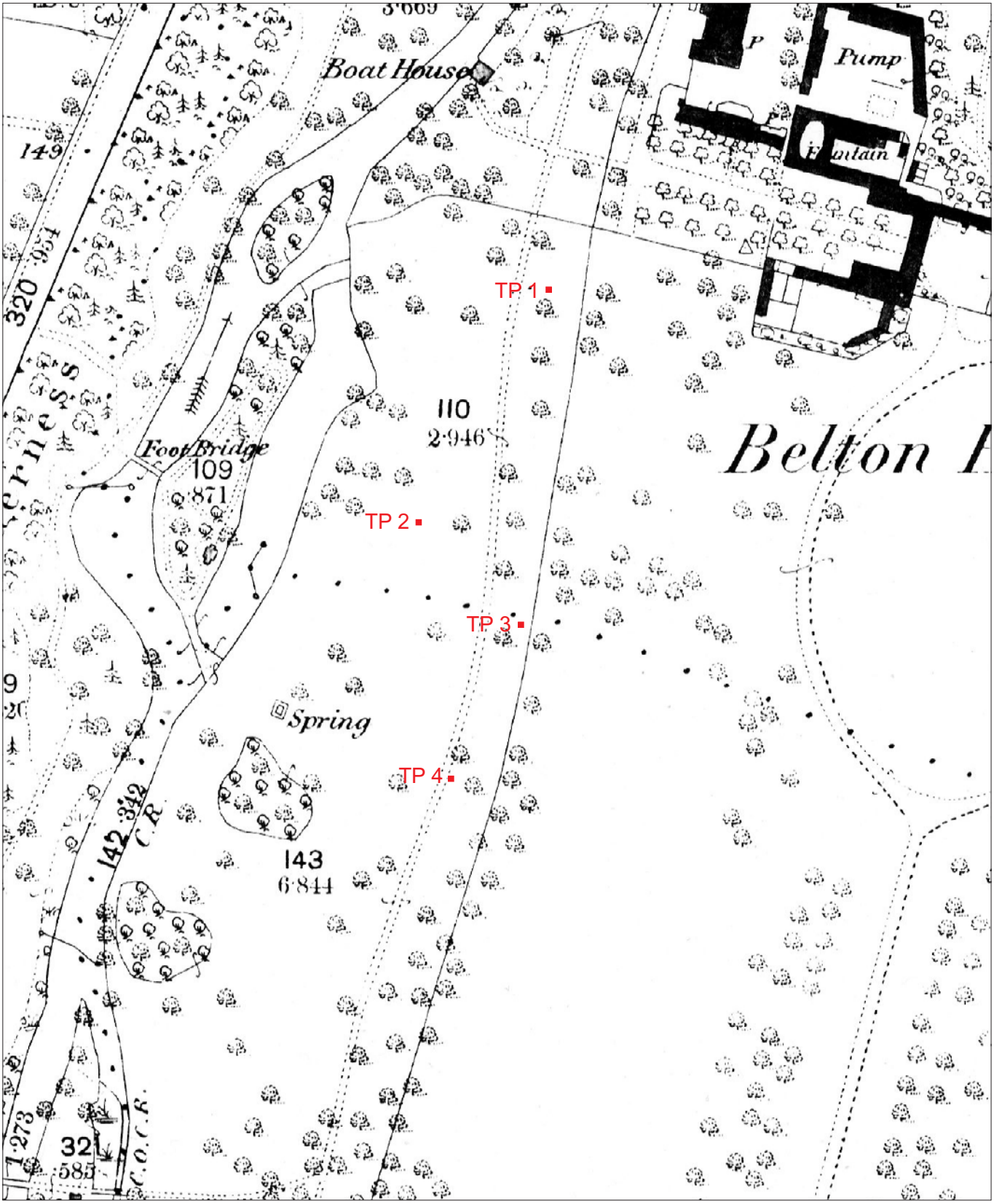



**Figure 7:** 1891 First Edition Ordnance Survey Map of the development area, with the test pits shown in red at scale 1:2000