

**ARCHAEOLOGICAL WATCHING BRIEF REPORT:**  
**SNETTERTON RENEWABLES ENERGY PLANT EFFLUENT PIPELINE, NORFOLK**

Planning Reference: 3PL/2014/1065/F  
NGR: TM 00549 91047 to TM 99651 92386  
AAL Site Code: SNEP 15  
NHER Event Number: ENF136266  
Norfolk Museum Accession Number: NWHCM2016.280  
OASIS Reference Number: allenarc1-275731



Report prepared for Burmeister & Wain Scandinavian Contractor A/S

By  
Allen Archaeology Limited  
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Allenarchaeology



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*Cover image: General view of the stripped pipeline trench, looking southeast*

## Executive Summary

- Allen Archaeology Limited was commissioned by Burmeister & Wain Scandinavian Contractor A/S to undertake an archaeological watching brief during the groundworks for the construction of an effluent discharge pipe in the parish of Snetterton in Norfolk.
- The pipeline route is in an area of archaeological interest, with evidence for activity of later prehistoric to Anglo-Saxon date recorded in the vicinity, including on the site of the associated new power station. Earthworks of probable medieval to post-medieval date are recorded at the outfall of the proposed pipe.
- The scheme required the monitoring and recording of a 10m wide easement to allow vehicular access along the route, followed by a pipe trench of 0.60m width x 1.10m depth. Further groundworks were monitored within the biomass plant and an access road towards the southwest end of the route. The monitoring revealed two ditches representing probable former field boundaries and one pit. None of these features produced any dating evidence, the only finds being 19<sup>th</sup> century ceramics from the ploughsoil.
- The easement was reduced in width to 5m in the area of extant earthwork in Field 4 at the northwest end of the pipe, and this served to protect these earthworks from any disturbance during the groundworks.

## 1.0 Introduction

- 1.1 Allen Archaeology Limited was commissioned by Burmeister & Wain Scandinavian Contractor A/S to undertake an archaeological watching brief during groundworks, as a condition of planning consent for the construction of an effluent outfall pipeline associated with the Snetterton Biomass Plant, Snetterton, Norfolk.
- 1.2 The excavation, recording and reporting conformed to current national guidelines, as set out in the Chartered Institute for Archaeologists '*Standard and guidance for an archaeological watching brief*' (CIfA 2014), with reference to regionally identified research aims (Medlycott 2011), and in accordance with a specification prepared by this company (AAL 2015).

## 2.0 Site Location and Description

- 2.1 The route is located in the parish of Snetterton in the administrative district of Breckland District Council. It is accessed off Chalk Lane at NGR TM 00549 91047 running north-northwest to approximately NGR TM 00755 91763 before turning to the northwest and running parallel with the existing Hargham Road. The route stays parallel with Hargham Road until ending at Red Bridge (NGR TM 99651 92386) where the pipe discharges into the River Thet (see Figure 1). The route, including compound and power station is approximately 2km long.
- 2.2 The route crosses a number of drift geologies, with the eastern half of the route comprising Croxton Sand and Gravel. Towards the village of Snetterton the drift geology becomes more complex, from Lowestoft Formation Diamicton, Head (Clay, Sand and Gravel), Happisburgh Glacigenic Formation and finally peat adjacent to the River Thet. The underlying bedrock geology throughout the route is Lewes Nodular Chalk at (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).

## 3.0 Planning Background

- 3.1 A planning application has been approved by Breckland Council for the '*installation of an effluent discharge pipe, outfall & infrastructure between station and River Thet*' (3PL/2014/1065/F). The permission included a number of conditions including the archaeological condition '*No Demolition/development shall take place/commence until a Written Scheme of Investigation has been submitted to and approved by the local planning authority in writing*' (Planning Condition 3).
- 3.2 The scheme of works comprised the monitoring of all groundworks for the scheme by a suitably competent archaeologist, and the recording of any archaeological remains exposed, effectively 'preserving the archaeology by record'. This approach is consistent with the guidelines that are set out in the National Planning Policy Framework (NPPF) (Department for Communities and Local Government 2012).

## 4.0 Archaeological and Historical Background

- 4.1 Previous investigations have identified a number of archaeological resources within the route of the pipeline and surrounding area, the most pertinent of which are included below.
- 4.2 Investigations at Grange Farm in advance of gravel extraction, immediately to the east of the start of the route uncovered evidence of prehistoric to post-medieval activity, including Late Neolithic/early Bronze Age pits, gullies and postholes, mid to late Iron Age pits and a possible ring

ditch. In addition, the works encountered an early Saxon settlement, with sunken floor buildings and pits suggestive of metalworking recorded (Robertson and Warsop 2003 and Robertson 2003).

- 4.3 The site access lies adjacent to the footprint of the power station, which was subject to a programme of evaluation trenching and subsequent excavation (Norfolk Historic Environment Record (NHER) Reference 36802 – MNF41028). Following an archaeological desk-based assessment of the power station site in 2011 (Rolfe 2011), further evaluation trenching was undertaken the same year (Gill 2011). The limited programme of trenching revealed possible Roman and medieval linear boundaries, and the footprint of the biomass plant was then subject to strip, map and sample excavation in 2014 (Sims, Gill and Tester 2014), which revealed more of the medieval field system as well as discrete features. Other remains uncovered in the works included a small assemblage of prehistoric pottery and worked flint, Roman tile fragments and lava quern, a possible early Saxon pit, although the majority of the archaeological remains were associated with early medieval field systems. A number of other discrete, but undated features were also investigated. The site access strip could potentially have exposed further evidence of these activities.
- 4.4 Further to the northwest, on the route of the pipeline is the site of a World War Two spigot mortar emplacement (NHER Reference 53398), located at NGR TM 0031 9204. The spigot would have comprised a pit measuring up to 4.6m by 3.4m in plan, with a concrete central feature, and the upcast forming a surrounding bank up to 8m wide at times.
- 4.5 At the outfall of the pipeline at the north-western end of the route, the NHER notes the presence of an earthwork bank and also a hollow way (NHER Reference 9055), with further earthworks noted comprising probable post-medieval banks and drainage systems.

## 5.0 Methodology

- 5.1 The groundworks comprised the excavation of a 10m wide easement to allow vehicular access along the route, followed by a pipe trench which was 0.6m in width and 1m in depth. The only area in which this differed was in Field 4 where the presence of extensive earthworks meant the easement narrowed to a 5m width for one-way traffic only (Figure 2). On account of the archaeological potential of this area and to limit the impact on any possible features, the route was positioned between the hollow way and earthwork bank.
- 5.2 The groundworks monitoring was undertaken by an experienced field archaeologist throughout the course of the pipe line project, which began on the 19<sup>th</sup> February 2015 and continued intermittently until the completion of the groundworks on 7<sup>th</sup> October 2016.
- 5.3 All groundworks were carried out using a mechanical excavator fitted with a toothless bucket, except for where removal of tarmac surfaces or obstructions required the use of a hydraulic breaker or toothed bucket.
- 5.4 All exposed plan and section surfaces were inspected for archaeological features and deposits. A full written record of the archaeological deposits was made on standard AAL context recording sheets with each deposit, layer or cut, allocated a unique three-digit identifier (context number), and accorded a written description. Numbers within square brackets refer to cut features (e.g. field boundary [113]). A summary of these are included in Appendix 2.
- 5.5 A comprehensive record of all drawings was maintained, and the location of each section drawing was plotted on the site master plan and correctly referenced. All excavated sections were then drawn at an appropriate scale (1:20). All archaeological deposits and features were also recorded by full colour photography, with an identification number board, appropriate metric scales and a north

arrow used in all archive shots. General site shots will also be taken to show the location of the groundworks and the stratigraphic sequence.

## 6.0 Results

- 6.1 The stratigraphic sequence along the pipeline route was broadly consistent. The natural geology differed slightly across the area, but was predominantly recorded as firm, dark orange sand with frequent flint nodules. Similarly the subsoil, where this was visible, comprised loose, light brown, silty sand with occasional flint inclusions and was at least 0.30m thick. Lastly the topsoil was composed of loose, dark grey, silty sand with moderate flint and sub angular stones and with an average thickness of 0.40m (Figure 3.1).
- 6.2 There were some variations to this sequence recorded however. For example, within the biomass plant compound and, a stretch between Fields 3 and 4, where the pipe trench was excavated along Hargham Road. In the area of the biomass plant a compacted hardcore surface, 600 was recorded, which sealed the remnant of a former topsoil, 601, in turn overlying a subsoil layer, 602 and the natural geology, 603. Along Hargham Road the stratigraphy comprised the tarmac road surface 500, a layer of hardcore 501, above a levelling layer 502.
- 6.3 A small number of archaeological features were recorded along the pipeline route, comprising two ditches and a pit.
- 6.4 Pit [002] was located in a new access road towards the southwest end of the route and was sub-square in plan with two fills, 001 and 003. The lower fill 003, comprised mid grey silty sand with occasional inclusions of flint and charcoal. The upper fill 001, was a dark grey silty sand, also with occasional flint and charcoal inclusions. Neither deposit produced any dating evidence.
- 6.5 One ditch [103] was recorded in Field 1 to the northwest of the biomass plant. This feature was linear in plan, aligned northeast-southwest, with gradually sloping sides and a concave base. It extended to 2.40m in width and was 0.85m deep (Plate 1). It contained a single undated silting deposit, 104.



*Plate 1: Northeast facing section of ditch [103]*

- 6.6 Another ditch was recorded in Field 2. Ditch [206] was east - west oriented, with steep sides and a concave base, and contained two fills, 207 and 208, comprising a primary fill of dark greyish brown sand sealed by a light yellowish brown silty sand. Both fills were devoid of finds.
- 6.7 The only finds recovered were a fragment of pottery and a fragment of roof tile from topsoil 200, both of 19<sup>th</sup> century date.



*Plate 2: West facing section of ditch [206]*

## **7.0 Discussion and Conclusions**

- 7.1 The archaeological monitoring identified few features of archaeological interest, comprising a small undated pit in the access road at the southwest end of the route, and two linear features in Fields 1 and 2 respectively. Evidence for later prehistoric, Roman and Saxon activity has been recorded in this general area, and as such the date and function of the pit is unclear.
- 7.2 Two undated ditches were recorded, one in Field 1 and Field 2, both of which are likely to be former field boundaries. The ditch recorded in Field 1 does not relate to any boundaries shown on historic mapping, whereas that in Field 2 broadly corresponds to a boundary shown on the 1840 Tithe Map of the area. This boundary was no longer present by the time of the 1886 Ordnance Survey maps.

It is noted that no finds or features were observed in Field 4, where extant earthworks are present close to the pipeline route. This suggests that the strategy of reducing the width of the easement in this area from 10m to 5m has served to preserve the archaeological resource in situ.

## **8.0 Effectiveness of Methodology**

- 8.1 The watching brief methodology was appropriate for the nature and scale of these works. It has indicated that the development has had a negligible impact on the archaeological resource of the area.



## 9.0 Acknowledgements

- 9.1 Allen Archaeology Ltd would like to thank Burmeister & Wain Scandinavian Contractor A/S for this commission, and for the cooperation of the groundworkers during the monitoring.

## 10.0 References

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## **Appendix 1: Pottery and Ceramic Building Material**

*By Sue Anderson*

An abraded body sherd (7g) of Pearlware was recovered from context 200. The sherd is decorated with blue transfer-printed foliage (probably willow pattern) internally and is probably of 19<sup>th</sup>-century date.

An edge fragment of roof tile (21g) was also recovered from 200. It is in a fine sandy fabric with occasional mica and ferrous inclusions. The fabric and appearance are typical of pantile in this area. The piece appears to be hand-struck and is likely to be of 18<sup>th</sup> or early 19<sup>th</sup>-century date.

Both finds can be recommended for discard.

## Appendix 2: Context Summary List

### Access Road

Context	Type	Description	Interpretation
001	Fill	Dark grey silty sand, 0.06m thick; seals 003	Upper silting of pit [002]
002	Cut	Sub-square in plan, shallow moderately sloped sides, with concave base, 0.80m in length x 0.74m wide x 0.12m deep; contains 001 and 003	Cut of pit
003	Fill	Mid grey silty sand with occasional small flints and occasional charcoal, 0.74m wide x 0.13m thick; sealed by 001	Lower silting of pit [002]

### Field 1

Context	Type	Description	Interpretation
100	Layer	Loose dark brownish grey silty sand with occasional angular flint, 0.37-0.65m thick; seals 101	Topsoil
101	Layer	Loose light brown silty sand with occasional flint, 0.40m thick; sealed by 100, seals 102	Subsoil
102	Layer	Compact light brownish orange sandy clay with occasional flint, 0.63m thick; sealed by 101	Natural geology
103	Cut	Linear shape in plan, NE-SW orientated with steep sides and concave base, 2.40m wide x 0.85m deep; filled by 104, cuts 102	Cut of ditch
104	Fill	Loose light brown silty sand with occasional small, angular flints and roots, 0.85m thick; sealed by 100, fill of 104	Natural silting of ditch [103]

### Field 2

Context	Type	Description	Interpretation
200	Layer	Loose dark brownish grey silty sand with occasional flint and moderate rooting, 0.30-0.60m thick; seals 201	Topsoil
201	Layer	Loose greyish brown silty sand with occasional flint and frequent rooting, 0.40-0.60m thick; sealed by 200, seals 202	Subsoil
202	Layer	Loose light yellow sand with frequent flint, 0.24-0.50m thick; sealed by 202, seals 203	Natural geology
203	Layer	Firm dark orange sand with occasional rooting, frequent flint nodules, occasional ironstone and moderate gravel; sealed by 202	Natural geology
Void	-	-	-
Void	-	-	-

206	Cut	Linear shape in plan, E-W orientated with gradually sloped sides and concave base, 0.98m wide x 0.86m deep, cuts 202, contains 207 and 208	Cut of ditch
207	Fill	Loose dark greyish brown sand with frequent flint, 0.20m thick; seals 206, sealed by 208	Primary silting of ditch [206]
208	Fill	Loose light yellowish brown silty sand with frequent rooting and occasional charcoal, 0.66m thick; sealed by 201, seals 207	Secondary silting of ditch [206]

### Field 3

Context	Type	Description	Interpretation
300	Layer	Loose dark grey silty sand with moderate flint and stones, 0.40m thick; seals 301	Topsoil
301	Layer	Loose mid greyish brown silty sand with occasional flint and stones, 0.47m thick; sealed by 300, seals 302	Subsoil
302	Layer	Firm dark orange sand with frequent flint nodules, occasional rooting and ironstone, 0.44-0.54m (excavated) thick, sealed by 302	Natural geology

### Field 4

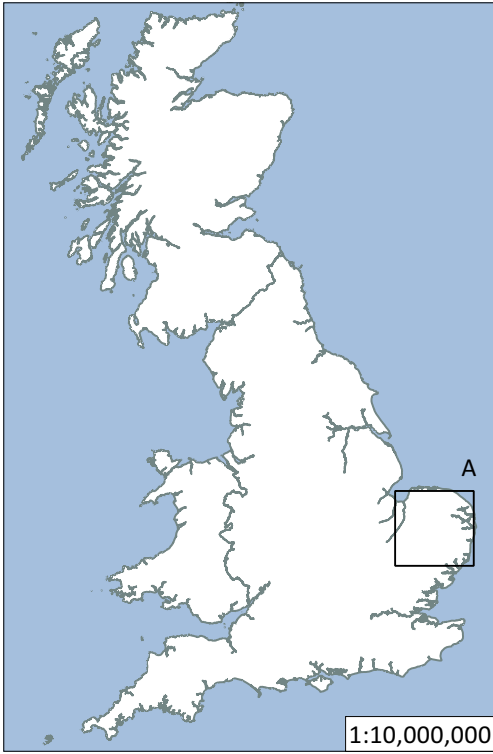
Context	Type	Description	Interpretation
400	Layer	Loose dark grey sandy silty with moderate gravel inclusions, 0.40-0.50m thick; seals 401	Topsoil
401	Layer	Loose light brownish orange sand with frequent gravel, manganese and iron panning, 0.30m thick; sealed by 400, seals 402	Subsoil
402	Layer	Loose light grey sand, 0.70m (excavated) thick; sealed by 401	Natural geology

### Hargham Road

Context	Type	Description	Interpretation
500	Layer	Compact dark grey tarmac, 0.14m thick; seals 501	Road surface
501	Layer	Loose mid grey gravel, 0.26m thick; sealed by 500, seals 502	Hardcore levelling
502	Layer	Loose light brown silty sand with frequent stones and flint, 0.20m thick; sealed by 501, seals 503	Subsoil
503	Layer	Loose light grey brown clayey sand with occasional stone and flint, 0.64m thick; sealed by 502	Natural geology

*Biomass Plant*

<b>Context</b>	<b>Type</b>	<b>Description</b>	<b>Interpretation</b>
600	Layer	Compact light grey limestone fragments, 0.17m thick; seals 601	Hardcore
601	Layer	Loose dark brown silty sand with occasional flint, 0.17m thick; sealed by 604, seals 602	Buried topsoil
602	Layer	Loose light brown silty sand with occasional flint, 0.21m thick; sealed by 601, seals 603	Subsoil
603	Layer	Loose light brownish orange sand with no inclusions, 0.45m thick; sealed by 602	Natural geology



**Figure 1:** Site location outlined in red

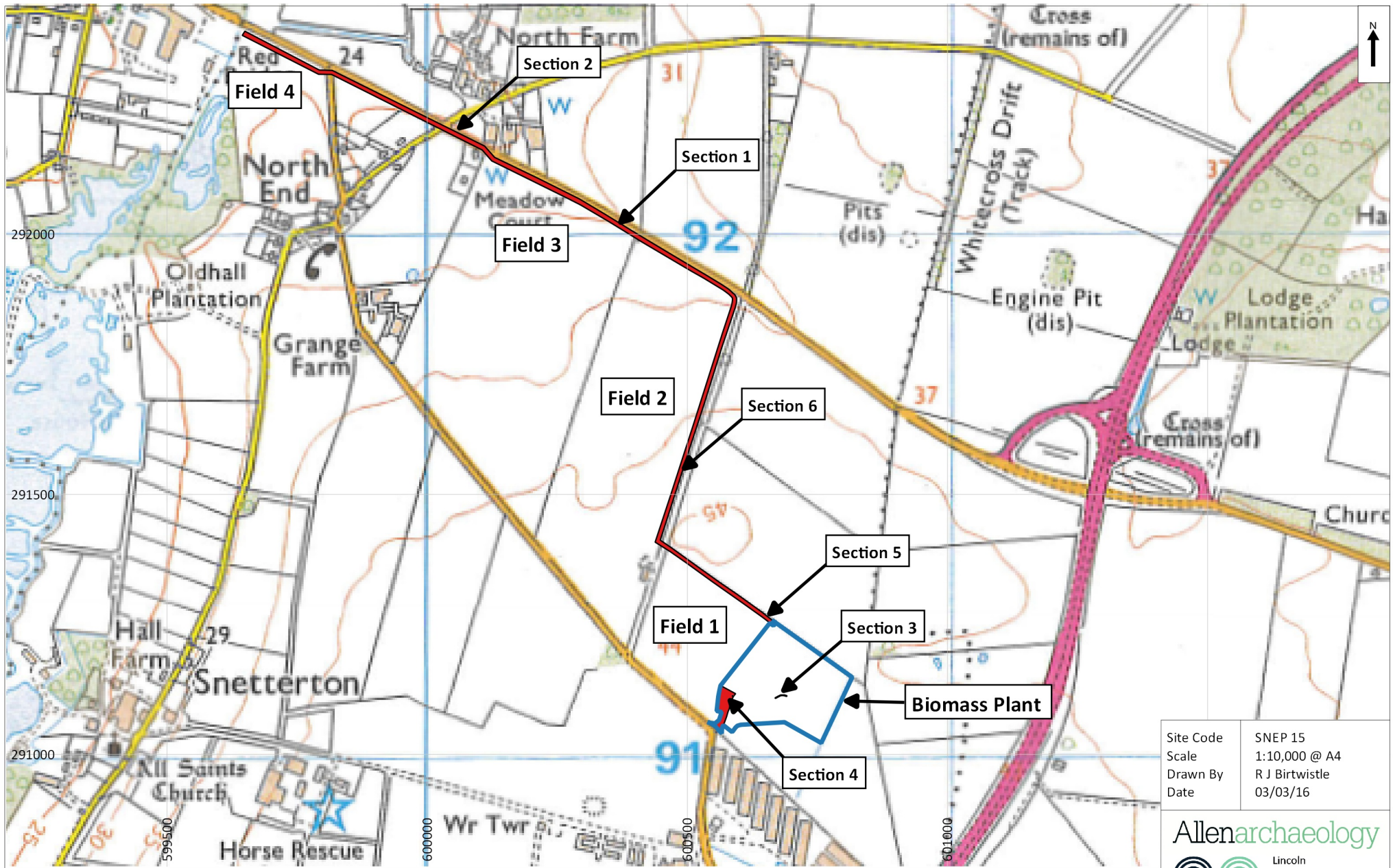
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Site Code	SNEP 15
Scale	1:10,000,000 1:1,000,000 1:25,000 @ A4
Drawn by	R J Birtwistle
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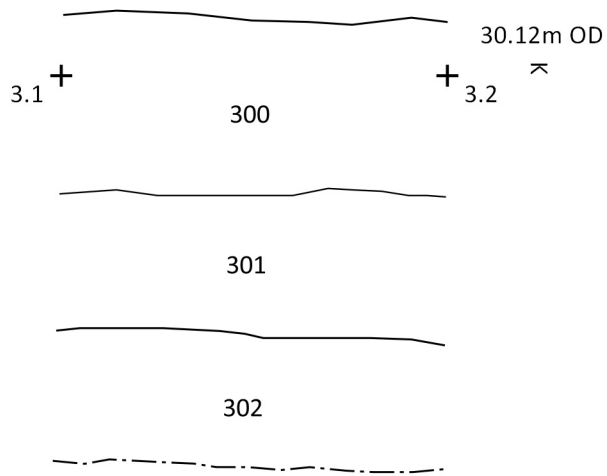
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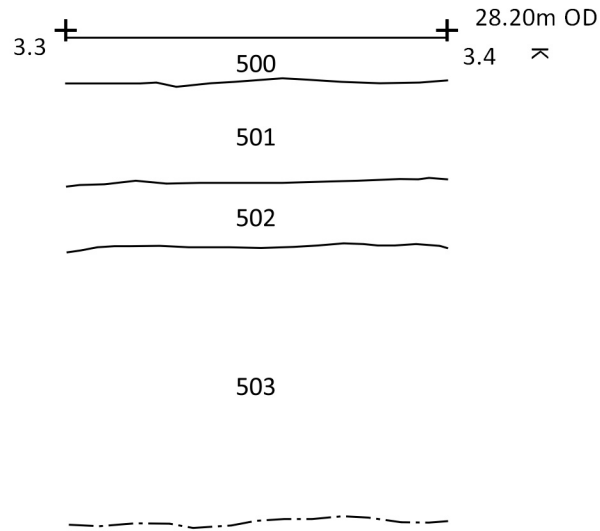
**Figure 2:** Pipe Trench and other monitored groundworks in red showing section locations



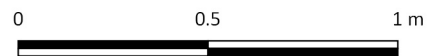
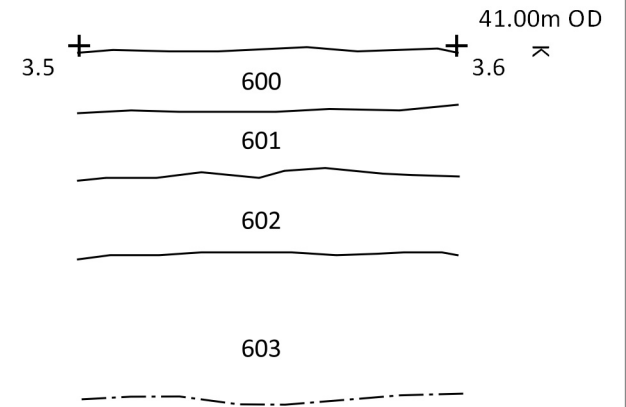
Section 1: Southwest facing section



Section 2: Southwest facing section



Section 3: Northeast facing section



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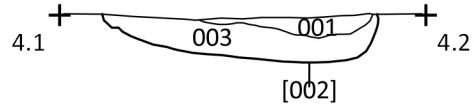
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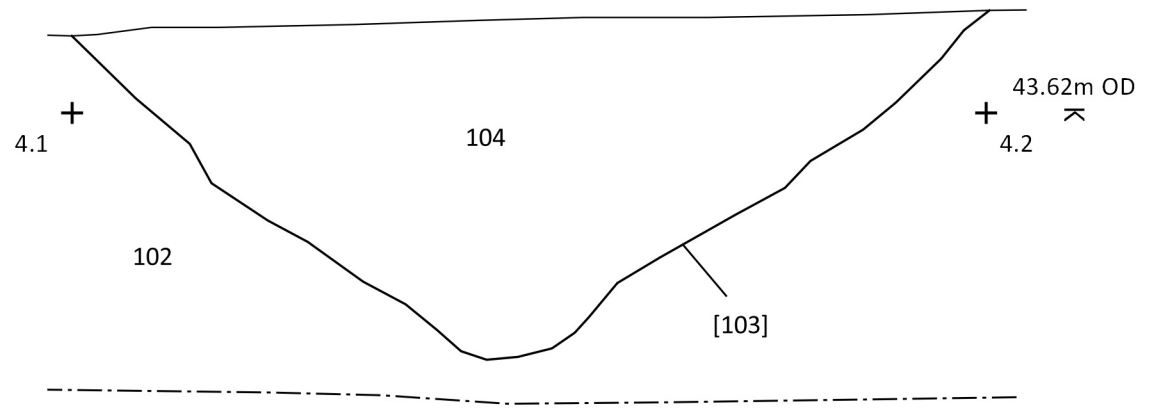
**Figure 3:** Selected sections, located on Figure 2



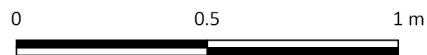
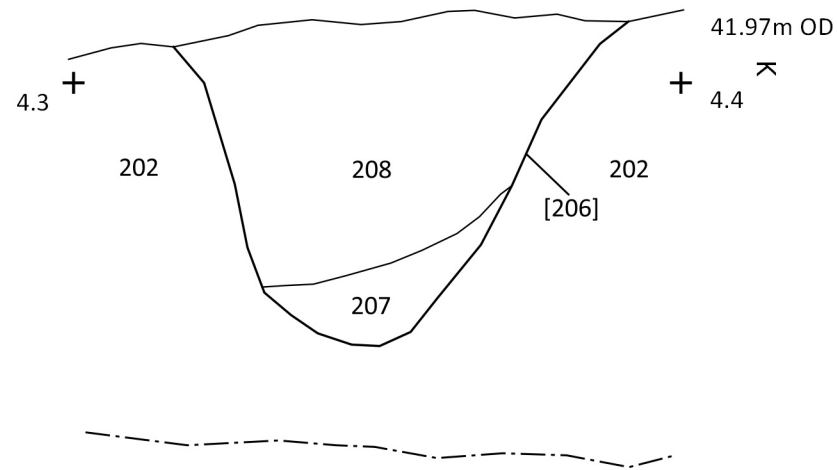
Section 4: South facing section



Section 5: Northeast facing section



Section 6: Northwest facing section



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Figure 4: Selected sections, located on Figure 2