THURROCK FLEXIBLE GENERATION PLANT

HER-2
DEADLINE 2 – FURTHER INFORMATION

Historic Environment: updated baseline information, additional photomontages and assessment of effects: ExQ1 March 2021

JAC 26701
Thurrock Flexible Generation Plant
DCO Examination Ref: EN010092
March 2021
NGR: 529556 220000
Deadline 2 – Further Information for ExQ1

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Quality Management

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EXECUTIVE SUMMARY

This supplemental report has been prepared in response to the request for additional assessment following a consultation meeting with Historic England and Essex County Council (as archaeological and built heritage advisors to Thurrock Council) held remotely via MS Teams on 10th February 2021.

Section 1 details the additional consultation undertaken since December 2020 and provides responses to representations made by Historic England and Thurrock Council in January 2021 at Procedural Deadline D. Progress has been made in narrowing the issues between the applicant and heritage consultees. An updated Outline Written Scheme of Investigation (WSI) has been prepared with input from Historic England and Essex County Council officers. It has been split into two documents, one for terrestrial archaeology and a separate Outline WSI for marine and intertidal archaeology. Statements of Common Ground with Historic England and with Thurrock Council have been drafted.

Additional assessment and photomontages as requested for three sites (Coalhouse Fort; at St Katherine's Church/The Rectory, and at Bowaters Farm HAA battery) are presented in Section 2. The photomontage for Coalhouse Fort was taken on the seabank wall close to the radar station at the southwest edge of the scheduled area, and the assessment of effect of the proposed scheme is concluded to remain the same as that concluded within the ES and the additional settings assessment submitted at Procedural Deadline C (PDC-013), i.e. minor adverse, and therefore not significant in EIA terms.

The additional verified photos and wirelines at St Katherine's Church/The Rectory in East Tilbury demonstrated no impact from the proposed development to these designated built heritage assets. These assets had been previously scoped out of assessment as they fell outside the ZTV for the Thurrock FGP scheme, and moreover they had not been considered further in the ES because it was also judged that the proposed development site made no meaningful contribution to their setting or significance. This conclusion has been upheld.

A third attempt was made to access Bowaters Farm HAA battery and a photographic record was made of the densely overgrown and inaccessible nature of this scheduled monument. It was not possible to take verified photographs from the monument and therefore no wireline or photomontage was produced. The assessment of effect regarding the impact of the proposed scheme on the setting of the Bowater HAA battery remains unchanged, i.e. there is considered to be a minor adverse effect, which is not significant in EIA terms.

Updated baseline information following a geophysical survey of the available order limits and outcomes of recent archaeological evaluation work in zone D2 by the Lower Thames Crossing (LTC) project is also presented in this report.

Historic England also wished to see a more detailed historic landscape assessment of the significance of Walton Common, following their late objection to its removal and replacement with exchange common land on the north side of the railway line, which connects with Parsonage Common at its south west corner.

This document presents the results of these additional assessments and discusses these in light of recent Historic England and Essex County Council officer comments as parties work towards agreeing Statements of Common Ground.

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1 INTRODUCTION AND SCOPE OF STUDY

Introduction

1.1 Thurrock Power, a subsidiary of Statera Energy, is proposing to develop a flexible electricity generation and storage plant comprising a gas-fired electricity generating station and a battery storage facility on land to the north of Tilbury substation, Thurrock, Essex, located at NGR 566194, 176616.

1.2 This report provides additional information referenced in the applicant's responses to the Examining Authority's (ExA's) first written questions on heritage, section 1.4 in the question numbering.

1.3 In doing so, it also addresses further comments resulting from consultation with stakeholders since the start of examination. Additional visualisations at locations agreed in a consultation meeting with Historic England (HE) and Essex County Council (ECC, as archaeological and built heritage advisors to Thurrock Council (TC)) held remotely via MS Teams on 10th February 2021 are provided. This comprised taking additional verified photographs at Coalhouse Fort; at St Katherine's Church/The Rectory, and attempts at Bowaters Farm HAA battery, the results of which are presented in this report.

1.4 This report updates an earlier ES supplemental information: historic environment updated baseline report submitted in December 2020 at Procedural Deadline C (PINS ref: PDC-014). Since the submission of PDC-014 the full geophysical survey interpretation report for the scheme has been provided to the applicant by Wessex Archaeology on 26th January 2021, which is appended to this document at **Appendix 1** and has also been circulated to HE and ECC. Additional information from the Lower Thames Crossing (LTC) project is also beginning to be shared, and is summarised in this report. Further information from the LTC project is expected after Easter 2021.

1.5 Historic England also wished to see a more detailed historic landscape assessment of the significance of Walton Common, following their late objection to its removal and replacement with exchange common land on the north side of the railway line and to the southwest of Parsonage Common. This assessment is also included in this report.

Scope

1.6 This report should be read in conjunction with Letter PDC-02, updated Historic Environment Settings Assessment PDC-013 and Updated Baseline Report PDC-014.

1.7 **Section 2** gives the applicant's comments on submissions made at Procedural Deadline D by Thurrock Council and Historic England together with a summary of subsequent further consultation undertaken with these parties.

1.8 **Section 3** sets out the results of the additional verified photographs and photomontages, which were also shared and discussed with HE and ECC at a meeting on 10th March 2021.

1.9 **Section 4** summarises the results of the geophysical survey and sets these into the context of the recent archaeological evaluation information shared by the LTC project and discusses their relevance to the proposed Thurrock FGP development.

1.10 **Section 5** of this report presents the results of the recent further field studies and historic landscape assessment regarding the historic significance of Walton Common and impact of the proposed scheme.

1.11 **Section 6** sets out the current progress regarding the Statements of Common Ground with heritage consultees.

2 RESPONSE TO SUBMISSIONS AT PROCEDURAL DEADLINE D AND UPDATED CONSULTATION

2.1 The ExA issued Procedural Decision Letter on 2nd November 2020, and encouraged the Applicant and all IPs to use the extended adjournment to narrow down the remaining issues, attempt to reach agreement on the matters raised by IPs in their Relevant Representations and progress Statements of Common Ground as much as possible.

2.2 A summary of the key points raised during consultation since the submission of the DCO and the progress made on these to date is presented in **Table 1.1**.

2.3 The submissions made at Procedural Deadline D (PDD-04 and PDD-08) and the outcomes of additional consultation are discussed in further detail here.

2.4 Since the receipt of the Procedural Deadline D submissions, there have been two productive round-table meetings with all parties on Wednesday 10 February 2021 and Wednesday 10 March 2021, and the issues raised in both representations have been discussed. The meetings have been constructive and three key actions have been progressed:

- to update the Outline Scheme of Written Investigation (WSI), incorporating comments made by Jess Tipper (HE) and Richard Havis (ECC);
- to provide additional viewpoint photographs and visualisations from agreed locations; and
- to work towards Statements of Common Ground.

2.5 With reference to the comments made by Historic England in PDD-004, it is important to note that much of the commentary is outwith the remit of HE, particularly in relation to buried archaeological remains, which fall to the local authority. This is clearly stated by HE at para 2.5 of PDD-004.

2.6 Issues relating to the WSI are also outwith the remit of HE, with the exception of the marine archaeological remains: it is important to note that in terms of marine archaeology (Section 8 of PDD-004) this wing of HE assessed the baseline characterisation presented in the ES as adequate (PDD-004, para 8.1) and concurred with the proposed mitigation measures as presented in the WSI, which were stated to be robust and fit for purpose (PDD-004, para 8.2).

2.7 However, in order to narrow down issues and make progress, the Outline WSI has nonetheless been revised following several rounds of comments with both HE and ECC. As a result, there are now two separate Outline WSIs: one for terrestrial archaeology, which has been agreed by both HE and ECC; and a separate WSI for marine and intertidal archaeology, which will be conditioned by the Deemed Marine Licence application as the applicant has agreed with the Marine Management Organisation (MMO).

2.8 The finalised Outline WSI for terrestrial archaeology has been submitted to HE and ECC, following several iterations of drafting and constructive comments, and the updated WSI fully addresses their comments made in PDD-04 and PDD-08. This includes an indicative trenching plan, which is an iterative document appended to the Outline terrestrial WSI, and it has been agreed with ECC that this trenching can take place in stages. Thus the comments by HE in their Section 3, Section 7 and Section 9 of PDD-004 are not relevant and are addressed through the finalised Outline terrestrial WSI.

2.9 In terms of cumulative development visualisations, it was explained at the meeting on 10th February 2021 that given the withdrawal of the LTC application, it is not currently possible to produce wireline images of potential cumulative impact for a project that does not have current design drawings in the public domain. HE has misunderstood our cumulative impact assessment: we agree that there are significant cumulative impacts from Tilbury2 and the LTC route, but the contribution of the Thurrock Flexible Generation Plant to these cumulative effects is minor.

Table 1-1: Key points raised during relevant representations and consultation to date

Date	Consultee and type of response	Points raised	How and where addressed
2nd November 2020	PINS – Procedural decision	Further field surveys are required to fully characterise the baseline.	Additional non-intrusive archaeological site investigation work across the whole application area was undertaken, following consultation with Historic England, to further enhance the known archaeological and historic baseline context of the site. The results of this work are summarised in this report and the full geophysical survey report is included at Appendix 1. Newly-released field survey data generated by the LTC project w/c 15th March 2021 has also reviewed and incorporated into this document. Additional information is expected to come through over the course of the next few weeks.
		The baseline should include the setting of heritage assets and below ground archaeological deposits, including their extent and significance, and following this, the assessment of significant effects should be updated to assess against the new baseline conditions.	A separate Settings Assessment was prepared as a supplemental stand-alone report and was submitted at Procedural Deadline C (PINS ref: PDC-013). An updated baseline and assessment of significant effects was produced which incorporated the results of the additional field survey work and the Settings Assessment, as known in December 2020 (PINS ref: PDC-014).
November 2020	PINS – Procedural decision	The Inspector encourages the Applicant and all IPs to use the extended adjournment to narrow down the remaining issues, attempt to reach agreement on the matters raised by IPs in their Relevant Representations and progress Statements of Common Ground as much as possible.	Meetings have been held with HE and ECC on 10th February 2021 and 10th March 2021. Statements of Common Ground (SoCG) have been drafted and continue to be discussed with Historic England and Thurrock Council.
November 2020	PINS – Procedural decision	Provide the ExA with the further information set out above together with details of any consultation undertaken, responses received and how they have been taken into account	This document supplements and updates the previous submissions at Procedural Deadline C (PDC-013 and PDC-014).

EXQ1: HISTORIC ENVIRONMENT FURTHER INFORMATION

Date	Consultee and type of response	Points raised	How and where addressed
18th August 2020	Historic England – letter	The ES does not fully address the impact upon the significance of heritage assets through a development within their setting.	A revised and updated settings assessment was produced (PDC-013)
		No archaeological evaluation work.	Archaeological evaluation work has been undertaken. The reasoning for its scope is set out in Section 1 of PDC-014, and summarised in non-technical letter to the ExA, dated 11th December (PDC-001)
		The geoarchaeological report is good but only assesses Area A	The geoarchaeological investigations were initially concentrated in Zone A as this is the main area of impact within the Proposed Development where deposits at these depths may be impacted. A Holocene deposit model for a series of boreholes within Zone C along the length, and to the south of, the railway line undertaken by LTC is expected Easter 2021. However, it is not expected that geoarchaeological deposits will be impacted by the pipeline in Zone C.
		WSI has not been agreed with Historic England.	The Outline WSIs for both terrestrial and marine archaeology have been revised following extensive discussion with HE and ECC and incorporation of comments from both parties. The revised WSIs are submitted at Deadline 2.

Date	Consultee and type of response	Points raised	How and where addressed
September 2020	Thurrock Council – Relevant Representation	In some instances the assessment is not considered robust enough, as well as lacking in information such as visualisations from key heritage assets. As such, it is considered that the applicant has not fulfilled the requirements of paragraph 189 of the NPPF, as the assessment is not sufficient enough to understand the potential impact of the proposed development on the significance of the identified heritage assets.	These concerns are addressed within PDC-014 and the further Settings Assessment (PDC-013). These assessments are sufficient to understand the potential impact of the Proposed Development as per NPPF para. 189. During a meeting with HE and ECC on 10th February 2021 a walkthrough of all the photomontages and viewpoints was provided, which demonstrated that some of the comments made by the consultees were erroneous and we had indeed provided viewpoints, wirelines and photomontages for the assets mentioned. Additional winter viewpoint photographs and visualisations were agreed and the results of this are included in this report.
		The Council's Historic Environment Advisor for Archaeology has commented that further information is required as the lack of fieldwork has resulted in a lack of evidence as to the impact of the development on the below ground archaeological impacts. At present there is no field assessment of much of the area for the proposed development. These matters will need further consideration.	Reasons for not undertaking intrusive fieldwork at this stage were set out in Section 1 of PDC-014 and also presented in Letter PDC-001. The Outline WSI has been agreed with HE and ECC which specifies the further investigation to be undertaken prior to construction to offset[1] potential impact to below-ground archaeological deposits, which also includes mitigation (avoidance) by design.
9th November 2020	Historic England – by email	Comments on draft Outline Written Scheme of Investigation for Archaeological Mitigation.	The Outline WSI has been revised following comments from HE and ECC and discussion at meetings in February and March 2021. Draft SoCGs referencing progress on agreeing the WSI with Thurrock Council and HE are under discussion and are submitted at Deadline 2.

[1] Roger Thomas (2019) It's Not Mitigation! Policy and Practice in Development-Led Archaeology in England, The Historic Environment: Policy & Practice, 10:3-4, 328-344, DOI: 10.1080/17567505.2019.1662999.

Date	Consultee and type of response	Points raised	How and where addressed
12th November 2020	Historic England – letter	Your letter of 9 November proposes further geophysical survey of the site, to cover the proposed gas pipeline route, access road, habitat creation land and exchange common land. We welcome this additional survey work. However, we believe this additional survey will not, by itself, adequately address our concerns raised in our S56 letter of 18 August, specifically relating to the lack of fully detailed assessment (evaluation), and also concerns about the assessment of the impact on the setting of designated heritage assets.	Evaluation in the form of a non-intrusive geophysical survey across the whole site where any ground-disturbing works would occur, tied into the results already produced for Zone A. Results included in Section 4 of this report and in Appendix 1. Further Settings Assessment report produced (this document).
		We advise that further specialist geoarchaeological assessment should be undertaken across the rest of the site at the pre-consent stage, to establish the significance of these remains across the entire site, and to provide a complete deposit model for the site	Further boreholes within Zone A were recommended by Quest in 2019. A reasonable and proportionate level of extra geoarchaeological information will be agreed at the appropriate stage, as outlined in the WSI, following synthesis of the geophysical survey results and the detailed design for the pipeline route being agreed. A Holocene deposit model for a series of boreholes within Zone C along the length, and to the south of, the railway line undertaken by LTC is expected Easter 2021.
		The ES does not provide a specific section, in terms of visual resources, on the historic environment (either in Vol. 3 Chap. 6 or Chap. 7), to assess the visual impact of the proposed development on the setting of designated heritage assets. We are also disappointed with the key viewpoints, and visual resources, that have been presented and would recommend that further assessment work is carried out to ensure the historic environment baseline is fully characterised.	The visual impact of the proposed development on the settings of designated heritage assets has been further assessed and a revised settings assessment has been produced (see 'Settings Assessment' supplemental report, November 2020: PINS ref: PDC-013). Additional winter photos and photomontages have also been produced at the request of HE, the results of which are shown here.
		The evidence presented in the ES does not enable the cumulative effects to be adequately assessed, and further assessment is required.	We consider that the cumulative effects assessment in the ES is robust and further assessment is unnecessary. CEA visualisations are presented in ES Vol.4, Chapter 16, Figs.1.2-1.11. This is discussed in more detail in this report.

4th December 2020	Historic England – letter	Comments on November 2020 Historic Environment Settings Analysis. No additional visualisations have been provided for Viewpoint Nos. 4, 10, 13, and 31 (and no photomontage for 32). There are no visualisations for the scheduled monument at Bowaters Farm (WWII HAA Battery) located c.250m southwest of Zone D3 (gas connection compound). No winter visualisations have been provided. "We are disappointed with the further field survey relating to the setting of heritage assets, and we believe this information does not enable the effects of the proposed flexible generation plant to be adequately assessed."	Representative viewpoint photographs were taken during the EIA process, after which some viewpoints were scoped out from being taken forward for producing wirelines. Viewpoints 4, 10, 13 and 31 were scoped out as there was little or no intervisibility with the Proposed Development, and therefore no significant effect. Wirelines were then produced for the remainder of the viewpoints. Where these demonstrated low or negligible visibility, these views were then also scoped out, with only the remainder scoped in for the production of photomontages, where a significant effect might be predicted. This is a proportionate and industry standard approach, as per GLVIA3 para.1.17. The HAA Battery at Bowaters Farm is surrounded by woodland. An attempt to take verified photographs to produce wirelines/photomontages was made again in February 2021 and the monument was impenetrable, as was the footpath shown on OS mapping running on the southern edge of the scheduled area. Site visit photos were shown to HE and ECC at a meeting on 10th March 2021 where it was agreed that photomontages from this site were not feasible. The proposed LTC scheme route passes between Zone A and Bowater HAA Battery. Summer and winter photos are provided in ES LVIA Figs. 3.4-3.29 (also in PDC-046), and were signposted and cross-referenced within the Settings Assessment. Following a meeting with HE and ECC on 10th February 2021, a walkthrough of all photos, wirelines and photomontages was presented and this criticism was verbally retracted. The application documents include some 83 viewpoint photographs, wirelines and photomontages (not counting character panoramas or multiple design option wirelines) which provide a comprehensive evidence base of views to the Proposed Development from all directions in the surrounding area. These have been selected as representative for assessment of impacts by experienced professionals qualified in landscape, visual and heritage impact assessment, as set out in the ES. The information provided and the Settings Assessment undertaken has been prepared in accordance with industry standards, guidance, and the application of professional judgement. The information and visualisations are robust and more than sufficient to assess the effect of the Proposed Development.

27th January 2021	Historic England Written Representation (PDD-04)	Concerns about the level of information that has been provided in the ES relating to historic environment settings analysis	A walkthrough of all the photomontages and viewpoints was provided at the meeting on 10 February 2021, which demonstrated that some of the comments made by the consultees were erroneous and we had indeed provided viewpoints, wirelines and photomontages for the assets mentioned. Three additional winter viewpoint photographs and visualisations were agreed and the results are included in this report.
		We believe that the evidence presented in the ES does not enable the cumulative effects to be adequately assessed and we recommend that further assessment is undertaken.	This was discussed at the meeting on 10th February 2021. HE wanted photomontages to include the LTC route which we explained could not be produced because the LTC application had been withdrawn and we not have a model to produce these from. HE have misunderstood how we have assessed cumulative impact: we have assessed that both Tilbury2 and LTC result in significant effects, and our project makes a minor contribution to the overall cumulative effect when compared to LTC and Tilbury2.
		We believe that the significance of Walton Common and associated historic landscape features have not been adequately assessed in the ES and we would recommend that specialist assessment is undertaken.Historic England objects in principle to the proposed removal of Walton Common on heritage grounds	This is a very late objection to the scheme. An additional assessment of the historic landscape and significance of Walton Common is presented in this report.
		We do not believe that the significance of below-ground archaeological remains has been adequately established within the proposed development site.	For the reasons set out in our Procedural Deadline C letter (PDC-02) and additional report (PDC-014) we took a “no harm” approach. This remains a matter not agreed in the draft Statement of Common Ground, despite the DCO application being accepted for examination.
		Historic England has concerns about the draft Development Consent Order. We recommend that DCO Section 12 of Schedule 2 Requirements relating to Archaeology requires amendment before approval.	Comments made by HE on the wording of Requirement 13 (as it was numbered in PDC-009) remain under discussion.

EXQ1: HISTORIC ENVIRONMENT FURTHER INFORMATION

Date	Consultee and type of response	Points raised	How and where addressed
		We recommend the Outline WSI document is revised and further comment sought, before approval, from both the relevant planning authority and Historic England	This has been completed following meetings on 10th February 2021 and 10th March 20201 and the revised WSI is submitted at Deadline 2.

25th January 2021	Thurrock Council Written Representation (PDD-08)	It is pleasing that the documents provided in December 2020 that geophysical surveys had been undertaken…..[as this] provides basic data which can be built on to facilitate an understanding of this historic environment so that the inspector can make an informed decision on the impact of the development. It is disappointing that the applicant does not have the detailed results of the geophysics as the present document [PDC-014] provides little detail of the results.	The full geophysical report by Wessex Archaeology was received on 26th January 2021 the day after Thurrock Council wrote their written reps. The full geophysics report is appended to this report, and was also circulated to HE and ECC (archaeological advisors to Thurrock Council) as part of our meeting on 10th February 2021.
		Although recommendations were made to the applicants in 2018 that intrusive trenching would be required…..no work of tis nature has been undertaken.	For the reasons set out in our Procedural Deadline C letter (PDC-02) and additional report (PDC-014) we took a “no harm” approach. This remains a matter not agreed in the draft Statement of Common Ground, despite the DCO application being accepted for examination.
		It is disappointing that the applicants have not entered into discussions with the local Authority and Historic England….we are still keen to have discussions with the applicant and their consultants….	Discussions have been had with both the local Authority (ECC as archaeological advisors to the LPA) and Historic England by phone and email, and also by way of two meetings on 10th February 20201 and 10th March 2021. Draft Statements of Common Ground are submitted at Deadline 2.
		With regards to the revised settings document [PDC-013] it is considered that in some instances the description and assessment of contribution of setting to importance is not thorough enough. There are still a number of heritage assets from which viewpoints/photomontages/wireline images have not been taken.	This was discussed at the meeting held on 10th February 2021 (see minutes HER-1). It was agreed that these comments were not specific enough to be acted upon. A walkthrough of all the photomontages and viewpoints was provided at the meeting on 10 February 2021, which demonstrated that some of the comments made were erroneous and we had indeed provided viewpoints, wirelines and photomontages for the assets mentioned. Additional winter viewpoint photographs and visualisations were agreed and the results are included in this report.
		Additional plates have been included within the settings assessment however some of these only show the heritage asset itself and do not allow for an assessment of how setting contributes to significance.	The illustrative photographs are not used nor intended to determine the setting of an asset.

Date	Consultee and type of response	Points raised	How and where addressed
		It is also noted that an assessment of the non-designated Shornemead Fort has not been included.	The view from Shornemead Fort was assessed in the APP-049 (ES Volume 3, Chapter 6: Landscape and Visual Resources (Part 1)) paragraphs 3.4.21, 3.4.29, 4.1.23 and 4.2.23. The view from Representative Viewpoint 24, located at Shornemead Fort, is described at paragraph 3.4.67 and assessed at paragraphs 4.1.44 and 4.2.23 of APP-049. Shornemead Fort is non-designated and the effect of the development was not deemed significant following scrutiny of the LVIA assessment and photomontage from viewpoint 24, and hence was scoped out of further assessment. This was also discussed at the meeting on 10th February 2021 where it was confirmed that a wireline had been submitted for Shornemead Fort (see HER-1).
10th February 2021	Meeting with HE and ECC Place Services	Round table discussion of points raised by HE and ECC in their written reps (PDDD-004 and PDD-008)	A walkthrough of all the photomontages and viewpoints was provided at the meeting on 10 February 2021, which demonstrated that some of the comments made were erroneous and we had indeed provided viewpoints, wirelines and photomontages for the assets mentioned. Additional winter viewpoint photographs and visualisations were agreed and these are included in this report. See HER-1 for the agenda and minutes of this meeting.
10th March 2021	Meeting with HE and ECC Place Services	Outline WSI and SoCG	Further progress made on the Outline WSI. WSI split into two separate documents: one for terrestrial archaeology and one for marine & Intertidal archaeology (to be conditioned under the DML, as agreed by the applicant with the MMO). SoCGs are under discussion and drafts are submitted at Deadline 2.

2.10 The issue of the perceived significance of Walton Common had been raised extremely late in the consultation process: whilst HE would wish to see intrusive archaeological work in this area it has been rehearsed several times that this is currently a legal impossibility (see PDC-001 and PDC-014). The production of the agreed robust Outline terrestrial WSI, as submitted and to be made part of any DCO consent, adequately mitigates for this.

2.11 It was agreed to undertake further assessment of the historic landscape significance of Walton Common (set out in **Section 5** of this report), but as an undesignated asset already substantially degraded by the surrounding industrialisation in its immediate vicinity and its separation and bisection from its historic context by the electrified railway line, it is considered that there is adequate mitigation in terms of the proposed common land exchange, which does have a meaningful association with Parsonage Common and West Tilbury. The residual significance of effect of the common land exchange is certainly no greater than minor adverse, which is not significant.

2.12 Thurrock Council submitted comments on 25th January 2021 (PDD-008) which contained advice received by ECC (as archaeological and built heritage advisors to TC). In terms of the comments from ECC in PDD-008 regarding the revised setting document submitted in December 2020 (PDC-013), it was discussed at the meeting on 10th February 2021 that the comments made were in some cases general and unspecific. The case officer who made those comments has since gone on maternity leave and therefore another built heritage colleague attended the 10th February and 10th March meetings in her place.

2.13 In responding to the perceived issues relating to both the settings assessment and the photomontages as raised by both ECC and HE, a walkthrough of all the photomontages and viewpoints was provided at the meeting on 10 February 2021, which demonstrated that some of the comments made were erroneous and we had indeed provided viewpoints, wirelines and photomontages for the assets mentioned. Additional winter viewpoint photographs and visualisations were agreed and presented at a meeting on 10th March 2021, where the results were discussed and approved. The results of these are included in **Section 3** of this report.

3 ADDITIONAL VERIFIED PHOTOGRAPHS AND WIRELINES/PHOTOMONTAGES

Introduction

3.1 At the meeting held with HE and ECC on 10th February 2021, and following a walkthrough of all the photomontages and viewpoints presented (see PDC-046) additional assessment and wirelines/photomontages were requested for three viewpoints:

- at St Katherine's Church/The Rectory at East Tilbury;
- at Viewpoint 31, to be taken from the seabank wall rather than the foreshore; and
- if possible, at Bowaters Farm HAA battery.

3.2 All three sites were visited, assessed and photographs taken on 25th February 2021.

3.3 The resulting wirelines/photomontages are presented in **Appendix 2** as heritage viewpoints 4a, 4b and 5.

St Katherine's Church/The Rectory, East Tilbury

3.4 The Grade I listed Church of St Katherine and the Grade II listed Rectory at East Tilbury had been previously scoped out of assessment within the ES as they fell outside the Zone of Theoretical Visibility (ZTV) for the Thurrock FGP scheme as a result of local topography and existing vegetation. Moreover they had not been considered further in the ES because it was also judged that the proposed Thurrock FGP development site made no meaningful contribution to their setting or significance. This conclusion has been proven and upheld.

3.5 The additional verified photos and wirelines at St Katherine's Church/The Rectory in East Tilbury demonstrated no impact from the proposed development to these designated built heritage assets, as demonstrated in Heritage viewpoint 4a and 4b, as presented in **Appendix 2**. Viewpoint 4a was taken outside the entrance to the church which afforded the glimpsed views to the west towards the main development site at Zone A. Viewpoint 4b was taken within the churchyard at the end of the west aisle.

3.6 The heritage significance of St Katherine's Church and the Rectory is derived from their archaeological, aesthetic and architectural (evidential) value and their importance in heritage terms is indicated by their designation as listed buildings. Their settings comprise their immediate surrounds and group value and association with each other as historic buildings with a legible historical connection. They have an intimate setting focused on the road leading from Coalhouse Fort, Princess Margaret Road, which was originally a historic routeway connecting Essex with Kent at a crossing point across the river Thames dating from at least the Roman period, and most likely even earlier. Both buildings are within the parish of East Tilbury and have no connection or association with the flexible generation plant main development site (Zone A).

3.7 The Rectory faces east onto Princess Margaret Road, and lies immediately northeast of the church. Its main elevation faces south towards the Estuary and is surrounded by dense vegetation and there is no visual relationship with Zone A (see **Plates 1** to **4**).

Coalhouse Fort

3.8 Summer and winter photographs had previously been taken at the edge of the Scheduled area of Coalhouse Fort adjacent to the WWII Radar Station (Viewpoint 31) (see PDC-046 Figure 3.26) and others had been taken from the bund/defensive ditch at Coalhouse Fort to the east of the radar station (Viewpoint 32) (see PDC-046 Figure 3.27).

3.9 HE and ECC requested that a winter photograph was re-taken for Viewpoint 31 from the seabank immediately to the northwest of the radar station, which is currently in partial use as a public footpath.

Verified photographs were taken at the edge of the Scheduled area just before the footpath was temporarily closed to the public for safety reasons, and is presented as Heritage viewpoint 5 in **Appendix 2**.

3.10 The additional verified photographs and photomontage for Coalhouse Fort were taken on the seabank wall close to the radar station at the southwest edge of the Scheduled area, and the assessment of effect of the proposed development is concluded to remain the same as that concluded within the ES and the additional settings assessment submitted at Procedural Deadline C (PDC-013), i.e. minor adverse, and therefore not significant in EIA terms.

Bowaters Farm HAA Battery

3.11 A third attempt was made to access Bowaters Farm HAA battery and a photographic record was made of the densely overgrown and inaccessible nature of this Scheduled Monument (see **Plates 5** to **9**).

3.12 It was not possible to take verified photographs from the monument and therefore no wireline or photomontage was produced.

3.13 The assessment of effect regarding the impact of the proposed scheme on the setting of the Bowater HAA battery remains unchanged, i.e. there is considered to be a minor adverse effect, which does not diminish the significance of the Scheduled Monument, and is not significant in EIA terms.

3.14 We also note that no visualisations (wirelines and photomontages) were produced as part of the LTC LVIA or Cultural Heritage chapters pertaining to heritage assets as seen by the applicant prior to the LTC application being withdrawn: Bowaters Farm HAA battery was scoped out due to the overgrown nature of the site, despite its close proximity to the scheme, which is proposed to run immediately to the west of the HAA battery and to the east of Zone A.

4 UPDATED HISTORIC ENVIRONMENT INFORMATION

Geophysical Survey

4.1 In PDC-014 the preliminary greyscale results were available for submission at Procedural Deadline C with regard to the site-wide geophysical survey undertaken by Wessex Archaeology in November and December 2020.

4.2 A full report was supplied by Wessex Archaeology in January 2021, but not in sufficient time to inform the heritage consultees before Procedural Deadline D. This full report is therefore included here in **Appendix 1**. It was earlier provided to HE and ECC after receipt by the applicant.

4.3 The survey comprised a detailed gradiometer survey over Zones C, D, E, F and part of G, comprising an area of c. 67 hectares, and ties in with the previous survey work within Zone A, comprising c. 17 hectares (Wessex Archaeology 2017). The remaining areas in part of Zone G and Zones H, I and J were excluded because no ground-disturbing development is proposed (e.g. for access routes on existing roads) or because extensive ground disturbance has already occurred from landfilling and past development.

4.4 The results from the suite of geophysical survey works comprise figures plotting the results of the detailed gradiometer survey and interpretation of the results to identify probable and possible archaeological features, as well as what is considered to be natural geology. The interpretation of the datasets highlighted the presence of potential archaeological anomalies, ferrous responses, burnt or fired objects, and magnetic trends.

4.5 As noted in PDC-014, the geophysical survey results demonstrate that the landscape in Zones C, E, F and G is in keeping within the topography and geology within Zone A, and comprises reclaimed land which has been gradually exploited and actively managed since the later prehistoric period. Natural channels are prevalent within the landscape (as seen particularly in Zones E and F), as well as man-made land drains. There are also possible enclosure features as shown in Zone C and Zone D.

4.6 These detailed results of the extensive site-wide geophysical survey were circulated to HE and ECC, and discussed at the meeting on 10th February 2021. It was agreed at that meeting that further archaeological site investigation works, comprising a staged archaeological evaluation of the application site, will be undertaken when access to the land is available and where it also fits in with the ongoing works already scheduled by the Lower Thames Crossing (LTC) project.

4.7 The results of these various investigations will together inform the design of the Thurrock FGP pipeline route, which will be substantially narrowed from the current wide Zone C corridor to a 23m working width for construction: thus the impact of the pipeline will be reduced to its lowest possible level first through design, by preservation in situ where practicable, and preservation by record where impacts to the archaeological resource occur.

4.8 The non-intrusive geophysical survey has provided further useful information as to the extent and likely character of the below-ground archaeological deposits across the Order Limits, adding to existing knowledge but not changing the existing understanding of the baseline environment as was described in the ES.

LTC available information

4.9 As noted in PDC-014, a series of geotechnical boreholes have been drilled as part of the LTC project, and informed a Palaeolithic and Quaternary Deposit Model (PQDM) (LTC Application Document 6.3, Appendix 6.5, as shared with the applicant). Wessex Archaeology (WA) are undertaking the geotechnical analysis of the cores, but their reported information is not currently available. However, following personal communication with the WA team, the additional information the LTC data shows is that in the eastern part of Zone C the Holocene alluvial deposits overlie

Pleistocene deposits likely to correlate with the East Tilbury Marshes terrace (MIS 5e-2; 123-11.7 Ka) of the Thames. They are present from approx. +3m bgl. The East Tilbury Marshes terrace as a whole has broad potential to contain late Middle and early Upper Palaeolithic archaeological material, along with Ipswichian (MIS 5e; 123-110,000 Ka) and/or Devensian deposits (MIS 5d-2; 110-11,700 Ka).

4.10 Further information about existing and in-progress archaeological investigations by the LTC has been received during week commencing 15th March 2021, and more is expected in the next few weeks including a Holocene model for a series of geotechnical boreholes which have been undertaken in a line running to the south of, and parallel with, the railway line along the length of Zone C.

4.11 Where the LTC trial trenches are in the area of, and partly within, Thurrock Flexible Generation Plant Zones D1 and D2 (gas pipeline corridor), there is an area of Roman settlement, largely outwith the Thurrock Flexible Generation Plant Order Limits, as detailed in an archaeological evaluation report by Oxford Archaeology (March 2021). The earliest activity was a middle Neolithic pit, but the main phase of occupation belonged to the late Bronze Age and/or early Iron Age, with further settlement in the late Iron Age and early Roman periods. The later prehistoric activity included widespread evidence of salt-working in the form of both features and briquetage, and the Roman pottery included regional and continental imports, suggesting the site was both Romanised and of reasonable status. The next, and last, significant phase of activity was during the early medieval/Anglo-Saxon period (AD 400-750), consisting of pits, postholes and several large shallow features that may represent the remains of sunken buildings.

4.12 This is not unsurprising given the baseline context already known across the area and the LTC's work has not introduced anything that was not already known about the historic environment in this area and its potential, as expressed in the ES, which predicted that evidence of landscape reclamation, exploitation and management from the later prehistoric period, Roman and medieval periods would be present.

4.13 LTC has further plans to undertake archaeological evaluation across other parts of the landscape, including land within parts of the Thurrock Flexible Generation Plant Order Limits, during this summer, and works towards this are already in motion. Co-operation between Thurrock Power and LTC is ongoing in terms of data-sharing, which is considerably beneficial for all concerned, and increases our knowledge base and deeper understanding of this historic landscape for all parties, and thus our confidence in the robustness of the data provided by the applicant to assess the impact to the historic environment resource from the Thurrock FGP project.

4.14 The non-intrusive geophysical survey has provided further useful information as to the extent and likely character of the below-ground archaeological deposits across the Order Limits, adding to existing knowledge but not changing the existing understanding of the baseline environment as was described in the ES.

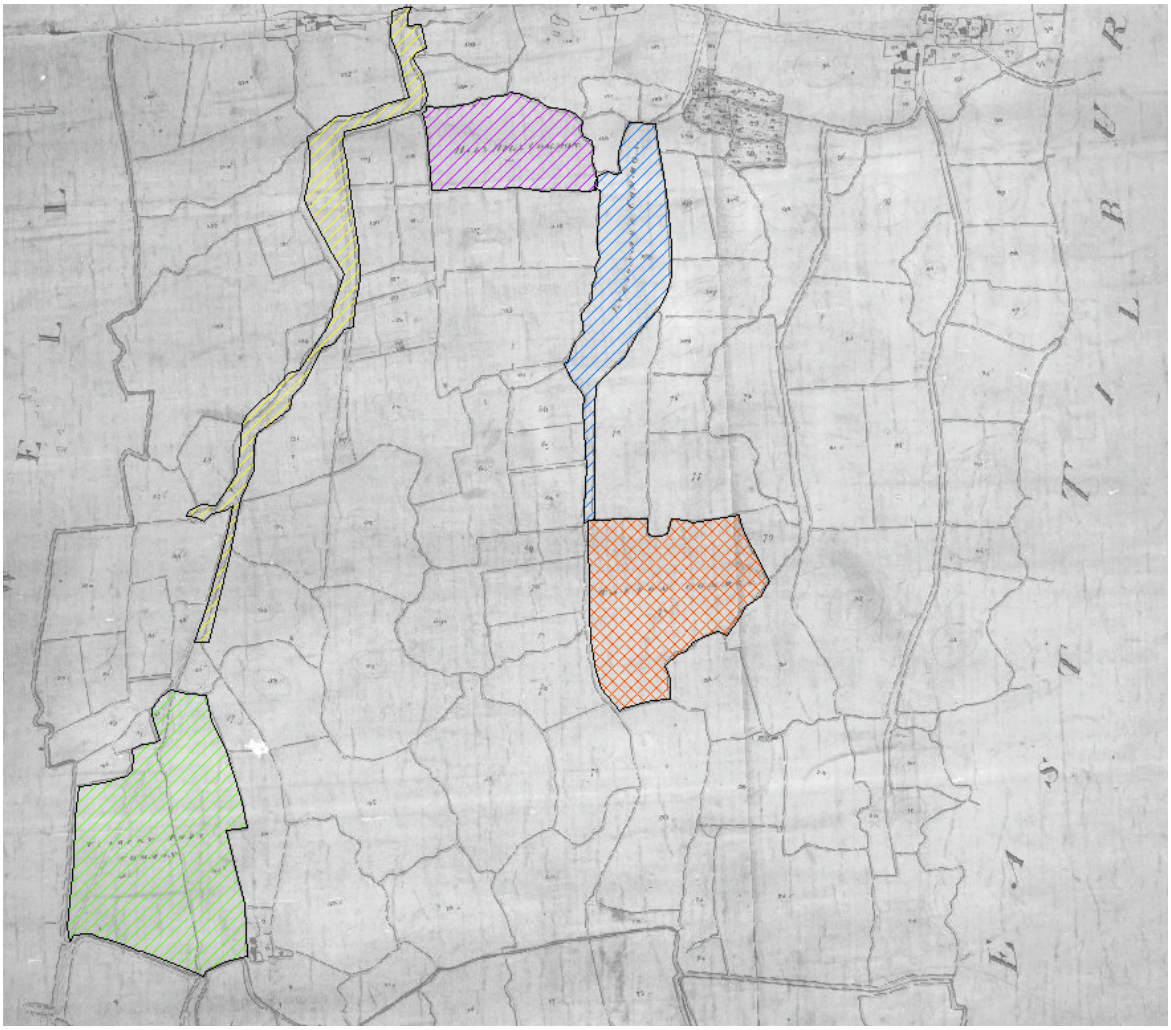
4.15 It is considered that sufficient, proportionate baseline information exists in order to confidently assess and "adequately understand" the significance of effect of the Thurrock FGP scheme on below-ground archaeological deposits at this stage of the DCO Examination, including their nature and extent as indicated by the results of geophysical survey, without recourse to pre-determination extensive and intrusive field evaluation to the degree suggested by Historic England and Thurrock Council.

5 WALTON COMMON – HISTORIC LANDSCAPE ASSESSMENT

5.1 As discussed at the meeting with HE and ECC on 10th February 2021, HE wished to see a more detailed historic landscape assessment of the significance of Walton Common, following their late objection to its removal and replacement with exchange common land on the north side of the railway line to the southwest of Parsonage Common.

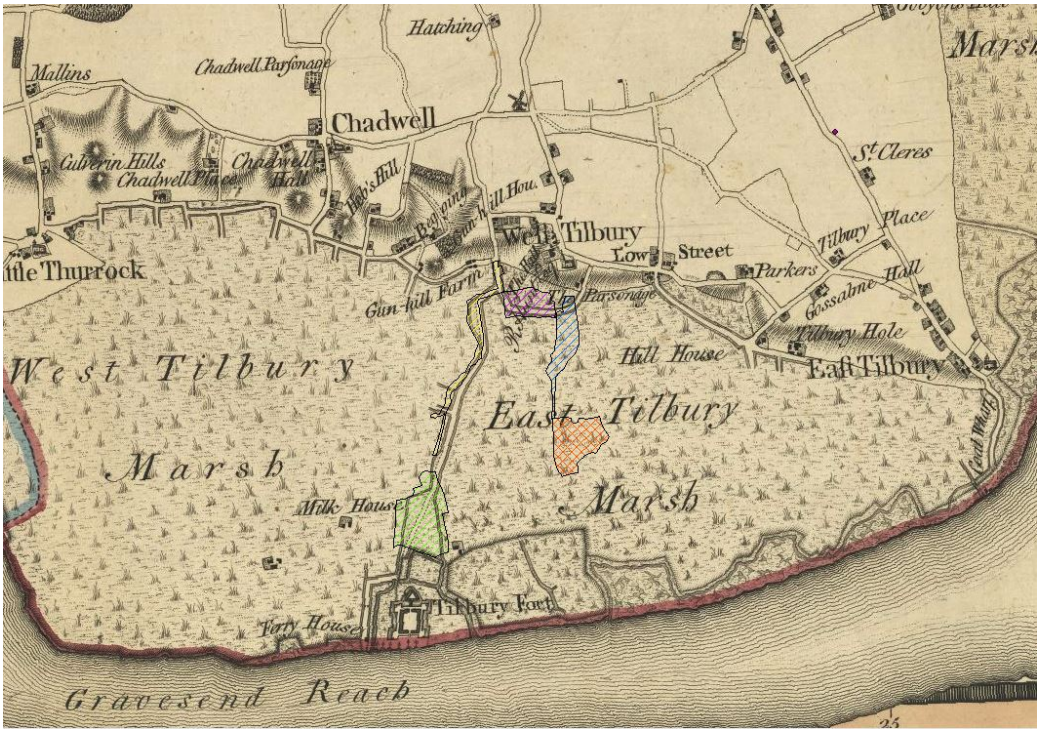
5.2 Section 6 of PDD-004 sets out the argument put forward by HE regarding Walton Common. At paragraph 6.1 they state that proposed development zone A is within a previously undeveloped area of West Tilbury Marshes, and yet Zone A (Walton Common) is presently characterised by a series of pylons and overhead powerlines marching across it. Electricity pylons first crossed Walton Common during the 1950s and have therefore been an established feature in the landscape since the immediate post-war period.

5.3 An analysis of historic mapping illustrates the historic extents of the five commons mentioned by HE – Walton Common, Parsonage Common, Hall Hill Common, Fort Road Common and Tilbury Fort Common – which are first depicted as named Commons on the 1840 West Tilbury Tithe Map (see **Picture 1**), with the exception of Fort Road Common which is not named cartographically until later 19th century OS mapping. The Tithe records various land parcels surrounding the commons (which were owned by the Crown), and were variously recorded as owned and tenanted pasture or arable fields.

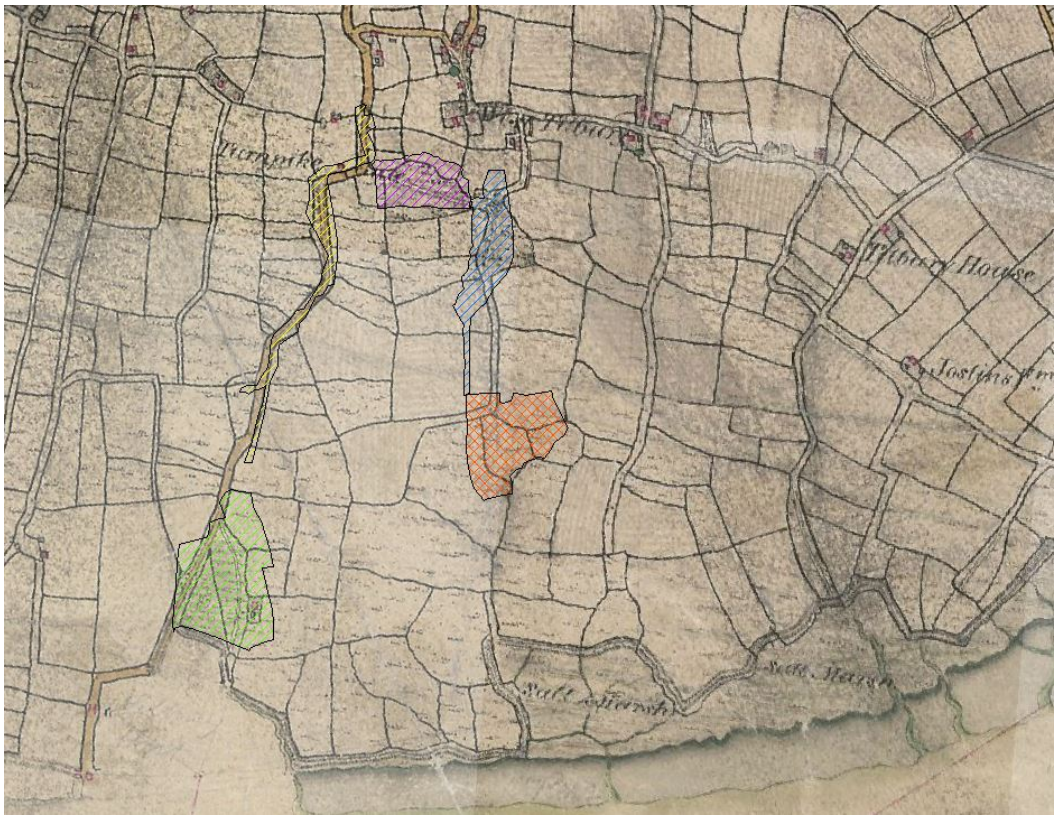


Picture 1 Extract from 1840 West Tilbury Tithe map

5.4 On earlier historic mapping, e.g. 1777 Chapman and Andre map (**Picture 2**) and 1805 OSD map (**Picture 3**) the commons are not depicted as such, nor correspond to any particular land divisions.

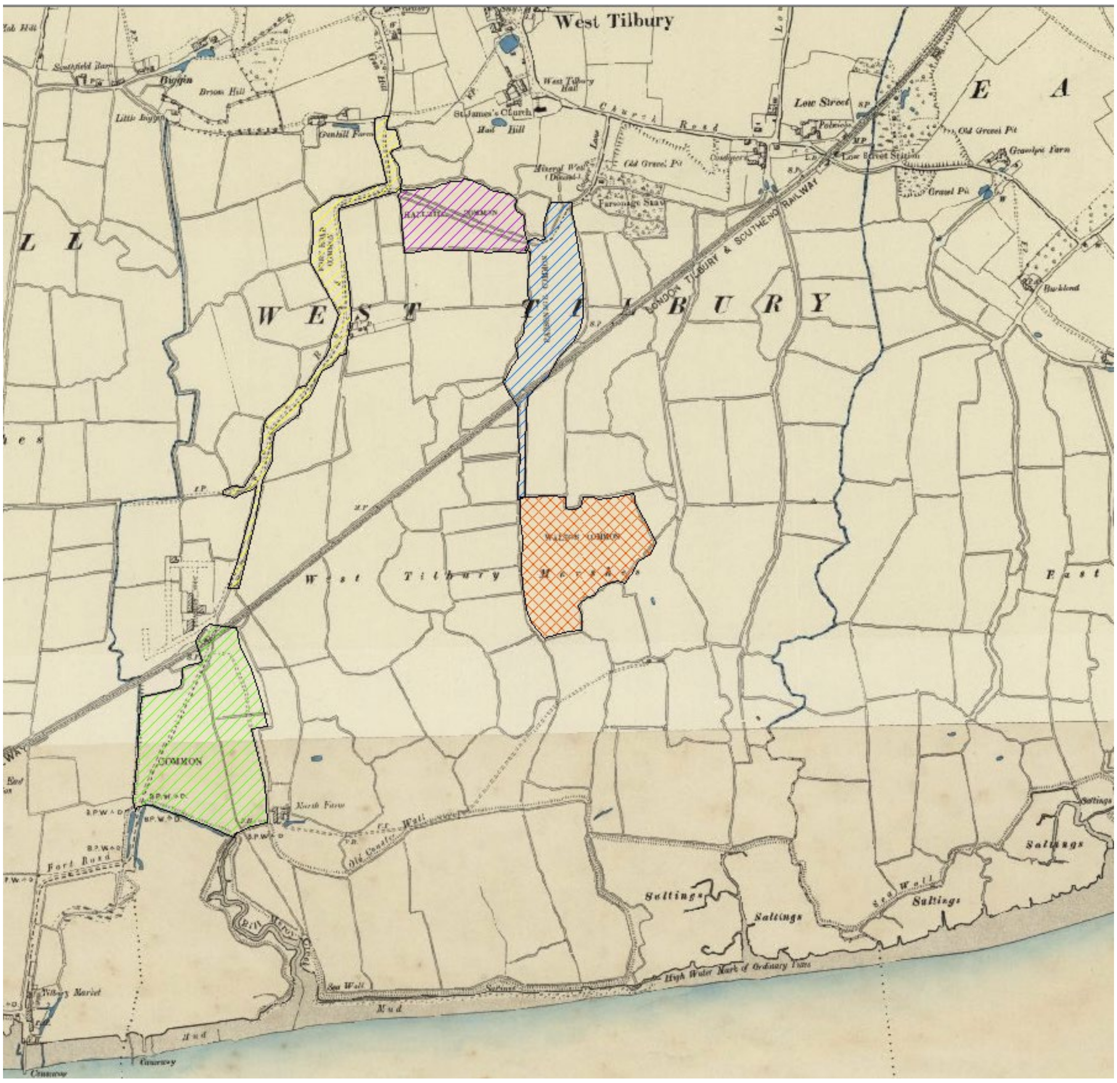


Picture 2 Extract from 1777 Chapman and Andre map



Picture 3 Extract from 1805 OSD map

5.5 HE states that the commons are interlinked, but by the time of the later 19th century OS six inch mapping (see **Picture 4**), Walton Common and Parsonage Common had been severed from each other by the London, Tilbury and Southend Railway, which had also severed the connection between Fort Road Common and Tilbury Fort Common.

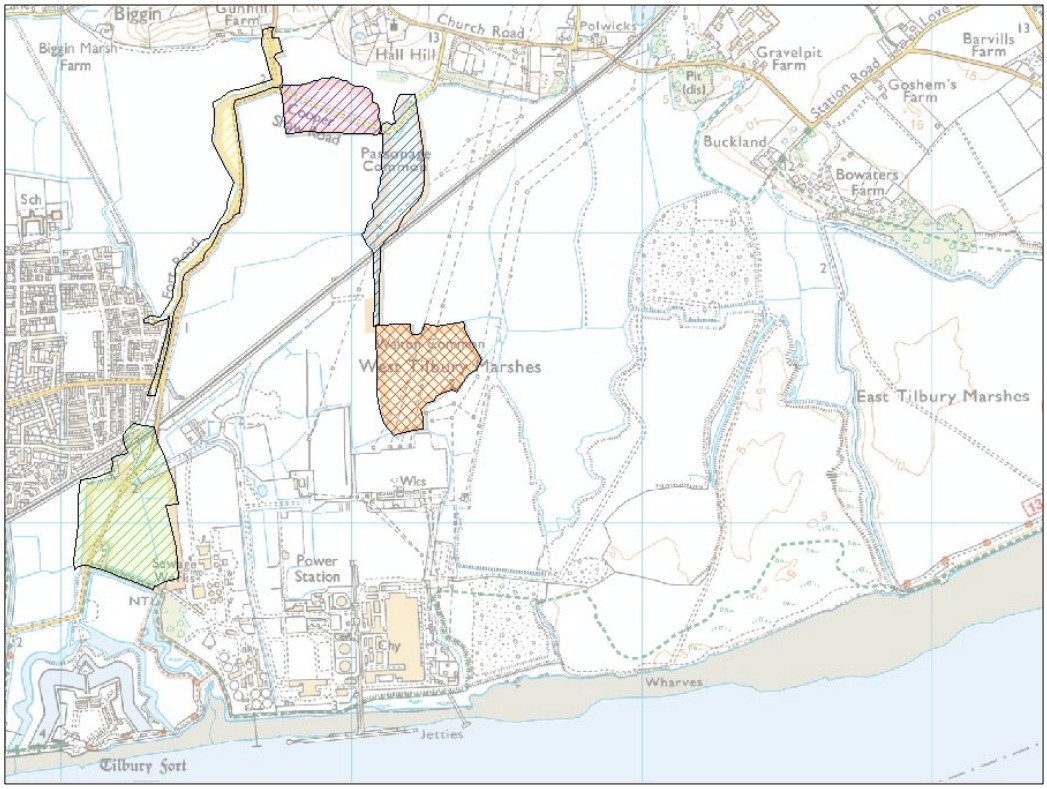


Picture 4 Commons as depicted on the OS 1895 6” map

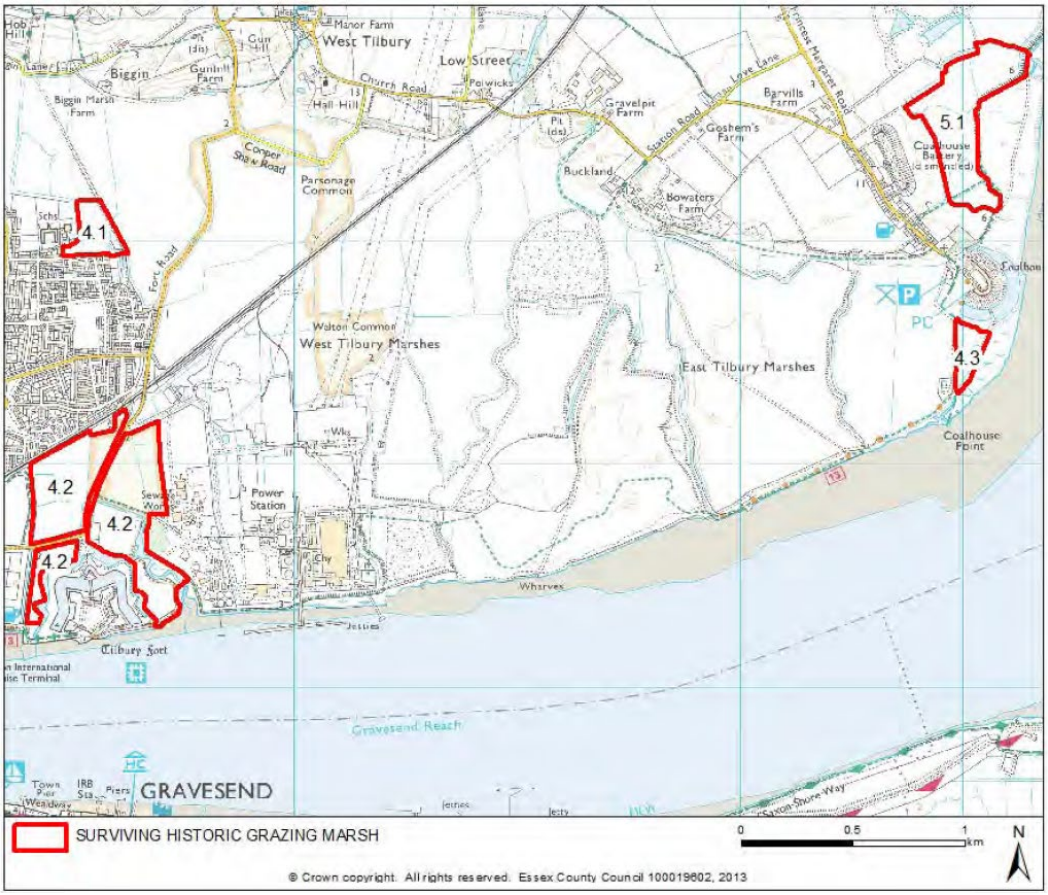
5.6 The area has become increasingly industrialised since the mid-20th century. In the present landscape, Parsonage Common and Hall Hill Common remain intact and interconnected (see **Picture 5**). The exchange common land proposed to mitigate and offset the loss of Walton Common extends and strengthens Parsonage Common and reintroduces a more extensive area of common into the area north of the railway and makes a positive contribution to the setting of the West Tilbury Conservation Area.

5.7 This historic landscape assessment has referenced the Essex Historic Grazing Marsh Project (Gascoyne & Medlycott, 2014), in particular Marsh 4: Tilbury. In this assessment surviving historic grazing marsh is illustrated in Section 3.1.2, Figure 27, page 72 but does not include the Thurrock FGP application site or the various commons within this remit (see **Picture 6**).

5.8 In that 2014 assessment Walton Common and its surrounding landscape is already considered to have been ‘lost’ and is depicted as part of an extensive area of former grazing marsh rather than a surviving one (as shown on Fig.26, p.60 of ECC 2014): as such, the proposed development of the Thurrock FGP on Walton Common does not signify any additional loss and the provision of exchange common land offsets this change of use. The conclusion drawn in the ES is therefore unchanged.



Picture 5 Mid-19th century commons overlain on modern mapping



Picture 6 Figure 27 from ECC 2014 showing surviving historic grazing marsh

6 STATEMENTS OF COMMON GROUND

6.1 Progress has been made towards narrowing down the issues that remain under discussion or not agreed with the historic environment consultees. Other matters that were formerly contentious have now been agreed.

6.2 Current drafts of the SoCG discussed with HE and ECC are submitted as part of the documents for Deadline 2.

7 SOURCES CONSULTED

General

British Library

Historic Environment Record (provided by Essex and Kent County Councils)

The National Archive

Internet

Historic England: The National Heritage List for England – http://www.historicengland.org.uk/listing/the-list/

Bibliographic

Chartered Institute for Archaeologists Standard & Guidance for historic environment desk-based assessment 2014, revised 2017, updated October 2020

Department of Communities and Local Government *National Planning Policy Framework* 2012 (revised February 2019)

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English Heritage (2008) Conservation Principles, Policies and Guidance for the sustainable management of the historic environment.

Essex County Council (2007) Essex Thames Gateway HLC

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Highways England. Withdrawn DCO Application Documentation: Cultural Heritage

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RPS May 2020 LVIA Thurrock FGP

Thurrock Council. 2007. West Tilbury Conservation Area Character Appraisal

Thurrock Council. 2007. East Tilbury Conservation Area Character Appraisal

Thurrock Power Ltd. Oct 2019 Project Changes Report

Thurrock Power Ltd September 2018 PEIR

Wessex Archaeology. 2017. Geophysical Survey, Tilbury Substation

Wessex Archaeology. 2021. Geopysical Survey Full Report, Thurrock FGP

Wessex Archaeology 2020-2021 (in preparation): Geoarchaeological assessment, LTC

8 APPENDIX 1 GEOPHYSICAL SURVEY FULL REPORT (JANUARY 2021)

Tilbury, Essex

Detailed Gradiometer Survey Report

Ref: 242210.03
January 2021

wessexarchaeology

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Document Information

Document title	Tilbury, Essex
Document subtitle	Detailed Gradiometer Survey Report
Document reference	242210.03
Client name	RPS Consulting Services
Address	20 Western Avenue Milton Park Abingdon Oxfordshire OX14 4SH
On behalf of	Stratera Energy Ltd
Address	3rd Floor 239 High Street Kensington London W8 6SA
Site location	Tilbury
County	Essex
National grid reference	566385 177095 (TQ 66385 77095)
Statutory designations	None
WA project code	242210
Date of fieldwork	16/11/2020 - 08/12/2020
Fieldwork directed by	Chris Hirst
Project management by	Tom Richardson
Document compiled by	Alexander Schmidt
Graphics by	Alexander Schmidt

Quality Assurance

Issue and date	Status	Author	Approved by
1	Draft for client comment	AJS	[redacted] TR

Contents

List of Figures

Summary

A detailed gradiometer survey was conducted over land at Tilbury, Essex (centred on NGR 566385 177095). The project was commissioned by RPS Consulting Services, on behalf of Statera Energy Limited, with the aim of establishing the presence, or otherwise, and nature of detectable archaeological features in support of a planning application for the development of the site.

The site comprises several fields located near Tilbury in Essex, covering an area of 68.2 ha. The geophysical survey was undertaken between 16 November and 8 December 2020 and has demonstrated the presence of a number of anomalies of potential archaeological interest.

Two parallel ditches have been identified in the east of the site. While these are considered archaeological in origin, the limited survey area in this are portion of the site makes a more confident interpretation of the features less possible. These could indicate wider Romano-British activity surrounding the Roman road to the east of the survey area. Previous excavation has been carried out over these features, but the results are not available at the time of writing.

Additional linear anomalies have been identified that are more tentatively interpreted as archaeological. These are located further east and could indicate ditch features. However, it is equally possible these could evidence land drains due to the weaker magnitude of the anomalies.

The majority of the western portion of the site is dominated by an increased and variable background magnetic response. This is interpreted as evidence of variations in the geological deposits. While this enhanced response has likely limited the ability to identify small and weakly magnetised anomalies, more substantial features have been identified. These include a large, negative rectilinear enclosure and a smaller possible enclosure in the north-west.

Numerous pit-like anomalies have been identified across the entire survey area. These are interpreted as possible evidence of archaeological activity and could be evidence of wider settlement activity such as extraction or refuse pits. While it is not possible to confidently interpret these anomalies, an archaeological origin cannot be ruled out.

The remaining anomalies are more recent in origin and include evidence of farm tracks, underlying services, and land drains.

Acknowledgements

Wessex Archaeology would like to thank RPS Consulting Services for commissioning the geophysical survey on behalf of Stratera Energy Ltd. The assistance of Nikki Cook and Andrew Troup is gratefully acknowledged in this regard.

The fieldwork was undertaken by Chris Hirst, Amy Dunn, Rok Plesnicar and Scott Chaussee. Alexander Schmidt processed and interpreted the geophysical data, wrote the report and prepared the illustrations. The geophysical work was quality controlled by Tom Richardson, who managed on behalf of Wessex Archaeology.

Thurrock Flexible Generation Plant, Tilbury, Essex

Detailed Gradiometer Survey Report

1 INTRODUCTION

1.1 Project background

1.1.1 Wessex Archaeology was commissioned by RPS Consulting Services, on behalf of Statera Energy Limited, to carry out a geophysical survey at Tilbury, Essex (centred on NGR 566385 177095) (**Figure 1**). The survey forms part of an ongoing programme of archaeological works being undertaken in support of a planning application for Thurrock Flexible Generation Plant.

1.2 Scope of document

1.2.1 This report presents a brief description of the methodology followed by the detailed survey results and the archaeological interpretation of the geophysical data.

1.3 The site

1.3.1 The site is located north-east of Tilbury and 8 km south-east of South Ockenden, in the county of Essex.

1.3.2 The survey comprises 68.2 ha of agricultural land, currently utilised for a mixture of arable and pasture. The site is bounded by Fort Road and Copper Shaw Road to the north, Station Road to the east, and mixed used land to the south-west. Further open agricultural land is noted to the south and south-east. The site is bisected north-east to south-west by a railway line.

1.3.3 The site is flat, lying low in the landscape at 1 m above Ordnance Datum (aOD).

1.3.4 Several sets of overhead cables are noted traversing the site to the north and south parallel to the railway line (London Tilbury and Southend Railway).

1.3.5 The solid geology comprises Chalk of the Lewes Nodular, Seaford, and Newhaven Formations with overlying superficial geological deposits of alluvium (clay, silt, sand, and peat) (BGS 2020).

1.3.6 The soils underlying the site are likely to consist of pelo-alluvial gley soils of the 813f (Wallasea 1) association (SSEW SE Sheet 6 1983). Soils derived from such geological parent material have been shown to produce magnetic contrasts acceptable for the detection of archaeological remains through magnetometer survey.

2 ARCHAEOLOGICAL BACKGROUND

2.1 Introduction

2.1.1 An historic environment desk-based assessment (DBA) was prepared by RPS for the site which examined the potential for the survival of buried archaeological remains within the development area and a 1 km study area (RPS 2018). The following background is not exhaustive but is summarised from aspects that are considered relevant to the interpretation of the geophysical survey data.

2.2 Summary of the archaeological resource

2.2.1 Five scheduled monuments are located within 1 km of the survey area. These are earthworks near-west Tilbury of unknown date (NHLE 1002199), a Second World War anti-aircraft battery at Bowater's Farm (NHLE 1012185), East Tilbury Battery (NHLE 1013880), Coalhouse Fort battery and artillery defences (NHLE 1013943) and Tilbury Fort (NHLE 1021092).

2.2.2 There are five listed buildings located within the same study area. Of these, the Church of St James (NHLE 1111541) is listed at Grade II* and the remainder are Grade II.

2.2.3 The geology of the proposal site and surrounding area is of deep clayey soils overlain by lighter river alluvium, while the local settlements occupy a raised gravel spur that tapers to a point towards the riverside. An ancient ridgeway running between Chelmsford and Horndon on the Hill in Essex and Higham in Kent is presumed to have crossed the Thames at East Tilbury, to the east of the survey area.

2.2.4 An isolated piece of worked flint of possible Palaeolithic date was found during the early 20th century at Tilbury Dock, some 2 km west of the survey area. A hand-axe was found within the built development of Tilbury 800 m west of the site.

2.2.5 A Neolithic flint axe was found in West Tilbury Marsh 200 m north of the site. A possible Neolithic burial was found at East Tilbury in 1982 according to the HER and an early Neolithic, small chipped flint axe or chisel, was dredged from the Thames off Tilbury. A perforated whetstone probably of Bronze Age date is recorded in the HER as being found at East Tilbury, 1.2 km north-east of the survey area.

2.2.6 The line of a Roman road, presumably a successor of the ridgeway is recorded by the HER as running inland along the line of Princess Margaret Road to the north-west from the ford or ferry at East Tilbury. The projected route of this continues and passes some 130 m from the eastern extent of the site.

2.2.7 The HER records one or more 'red hills' – remains of salt making activity of prehistoric and/ or Roman date - at East Tilbury. Geophysical survey revealed the locations of two possible salterns on the margins of Mucking Marsh, although the interpretation is tentative.

2.2.8 A substantial Roman building would appear to have existed in the area of St Katherine's Church, East Tilbury where the walls reportedly contain some Roman and later bricks. The HER notes that it was reported in the 18th century that gravel-digging near the church often uncovered tessellated pavement.

2.2.9 Roman burials with associated grave goods were found in West Tilbury, although their precise location is unknown. It seems likely that these were found on the gravel terraces further north of the recorded point.

2.2.10 The remains of a Roman settlement have been recorded some 700 m east of the south-east of the site. The settlement comprised a number of hut circles, a trackway, an oven, and large quantities of pottery sherds including Samian ware. The site may represent a landing place for traffic from Kent or elsewhere. Further east, a salt extraction site was identified based on evidence of waste briquetage and Roman pottery. Roman remains have also been recorded at Tilbury Fort.

2.2.11 The wider area contains an extensive Anglo Saxon settlement, excavated at Mucking, during the mid-1960s to late 1970s. The evidence indicates that the site was settled from the first half of the 5th century until the beginning of the 8th.

2.2.12 A number of early Saxon 'sceattas' (silver coins) have been found through metal detecting in field located on the west side of Princess Margaret Road, immediately west of St Katherine's Church, East Tilbury. The HER notes that the finds may represent an early Saxon settlement and / or religious site as it lies on the ancient highway from the East Tilbury.

2.2.13 To the south of the river the place-name 'Gravesend' is first recorded in the Domesday Book of 1086 and is derived from the Old English meaning 'at the groves end'. Northfleet is first mentioned in 975 AD and is from the Old English meaning the 'north creek.

2.2.14 Medieval Gravesend was an important and wealthy town, derived from its position on the Thames. There was a landing place form the river at Gravesend by the time of the Domesday Book. During the medieval period the settlement at East Tilbury appears to have been modestly prosperous, apparently through both the river crossing and marshland grazing.

2.2.15 The wider area was significant in the defence of the River Thames from at least the reign of Henry VIII onwards. Tilbury Fort is located on low lying ground on the north bank of the River Thames, south east of the modern outskirts of Tilbury.

2.2.16 The fort was partly modernised, with a number of new buildings, during the early 18th century and the officers barracks, a terrace of approximately 22 officers' houses within the fort, now seven houses and museum, were constructed in 1772, by the Board of Ordnance and altered during the early 19th century. The officers' barracks are listed at Grade II* (NHLE 1375568) and the fort is a scheduled monument (NHLE 1021092).

3 METHODOLOGY

3.1 Introduction

3.1.1 The geophysical survey was undertaken by Wessex Archaeology's in-house geophysics team between 16 November and 8 December 2020. Field conditions were adequate throughout the period of survey. An overall coverage of 48.5 ha was achieved. Portions of the site were unsuitable for survey due to their periphery to the overhead power line. In addition, several hedgerow boundaries were noted as encroaching.

3.1.2 The methods and standards employed throughout the geophysical survey conform to current best practice, and guidance outlined by the Chartered Institute for Archaeologists' (CIfA 2014) and European Archaeologiae Consilium (Schmidt *et al.* 2015).

3.2 Aims and objectives

3.2.1 The aims of the survey comprise the following:

- To determine, as far as is reasonably possible, the nature of the detectable archaeological resource within a specified area using appropriate methods and practices; and

- To inform either the scope and nature of any further archaeological work that may be required; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.

3.2.2 In order to achieve the above aims, the objectives of the geophysical survey are:

- To conduct a geophysical survey covering as much of the specified area as possible, allowing for on-site obstructions;
- To clarify the presence/absence of anomalies of archaeological potential; and
- Where possible, to determine the general nature of any anomalies of archaeological potential.

3.3 Fieldwork methodology

3.3.1 The cart-based gradiometer system used a Leica Captivate RTK GNSS instrument, which receives corrections from a network of reference stations operated by the Ordnance Survey (OS) and Leica Geosystems. Such instruments allow positions to be determined with a precision of 0.02 m in real-time and therefore exceeds European Archaeologiae Consilium recommendations (Schmidt *et al.* 2015).

3.3.2 The detailed gradiometer survey was undertaken using four Bartington Grad-01-1000L gradiometers spaced at 1 m intervals and mounted on a non-magnetic cart. Data were collected with an effective sensitivity of 0.03 nT at a rate of 10 Hz, producing intervals of 0.15 m along transects spaced 4 m apart.

3.4 Data processing

3.4.1 Data from the survey were subjected to minimal correction processes. These comprise a 'DeStripe' function (±5 nT thresholds), applied to correct for any variation between the sensors, and an interpolation used to grid the data and discard overlaps where transects have been collected too close together.

3.4.2 Further details of the geophysical and survey equipment, methods and processing are described in **Appendix 1**.

4 GEOPHYSICAL SURVEY RESULTS AND INTERPRETATION

4.1 Introduction

4.1.1 The detailed gradiometer survey has identified magnetic anomalies across the site. Results are presented as a series of greyscale plots and archaeological interpretations at a scale of 1:2,000 (**Figures 2** to **21**). The data are displayed at -2 nT (white) to +3 nT (black) for the greyscale image.

4.1.2 The interpretation of the datasets highlights the presence of potential archaeological anomalies, ferrous responses, burnt or fired objects, and magnetic trends (**Figure 3**, **5**, **7**, **9**, **11**, **13**, **15**, **17**, **19**, and **21**). Full definitions of the interpretation terms used in this report are provided in **Appendix 2**.

4.1.3 Numerous ferrous anomalies are visible throughout the dataset. These are presumed to be modern in provenance and are not referred to, unless considered relevant to the archaeological interpretation.

4.1.4 It should be noted that small, weakly magnetised features may produce responses that are below the detection threshold of magnetometers. It may therefore be the case that more archaeological features may be present than have been identified through geophysical survey.

4.1.5 Gradiometer survey may not detect all services present on site. This report and accompanying illustrations should not be used as the sole source for service locations and

appropriate equipment (e.g. CAT and Genny) should be used to confirm the location of buried services before any trenches are opened on site.

4.2 Gradiometer survey results and interpretation

4.2.1 A strong, positive linear anomaly is noted in the central-eastern portion of the survey area at **4000** (**Figure 15**). This protrudes to the south-east from the northern boundary of the survey area and continues for 120 m. The anomaly is 2 m wide. A parallel positive linear anomaly is noted to the west at **4001**. A second, parallel positive linear anomaly is noted 25 m to the east at **4002**. This is 54 m long by 1 m wide and is weaker and more fragmented than the anomalies at **4000** and **4001**. These anomalies are interpreted as archaeological in origin and indicate ditch-features. It is likely these relate to former boundary features, possibly forming a drove way or track way. While it is not possible to comment on the age of these features, evidence of former archaeological trenching is apparent in this area in the form of regular (2 x 30 m) weakly negative anomalies. At least one of these crosses the anomaly at **4000** but results of the excavation are not available at the time writing.

4.2.2 Several positive, pit-like anomalies are noted surrounding these anomalies at **4003** to the west and **4004** to the east. These vary in size (5 – 13 m breadth) but indicate wider settlement activity such as extraction or refuse pits. Given their proximity to the anomalies at **4000** – **4002**, it is considered likely these anomalies are archaeological in origin. However, a natural origin cannot be ruled out.

4.2.3 At the eastern-most extent of the survey area, a weak positive linear anomaly is noted on a north-west to south-east alignment at **4005** (**Figure 17**). This is 73 m long and 1 m wide. This indicates a ditch and could be evidence of an archaeological boundary feature. However, it could equally be associated with modern agricultural activity or a recent field drain.

4.2.4 To the south of **4005**, a weakly positive curvi-linear response is noted (**4006** – **Figure 17**). This protrudes from the south-eastern boundary of the field on an east-south-east to west-north-west alignment and continues for 60 m before turning to the south-south-west for a further 104 m at **4007**. The response is truncated by the modern service at **4030**.This is interpreted as evidence of a possible ditch and may indicate an archaeological boundary feature.

4.2.5 Several further ditch-like anomalies have been identified in the eastern portion of the site that are interpreted as possible archaeology (**4008** – **4011**). At **4008**, three broadly aligned curvi-linear anomalies are noted measuring between 13 and 32 m in length. A further curvi-linear is noted 28 m to the east at **4009** and several isolated, shorter linear anomalies are noted to the south at **4010**. At **4011**, several positive anomalies are also noted and fall within what could be a larger enclosure at **4006** and **4007**. While an archaeological origin cannot be ruled out for these anomalies, these responses broadly correspond to the modern ploughing regime noted in aerial imagery and could equally be more recent in provenance.

4.2.6 The majority of the site is dominated by an increased and variable background magnetic response. This is most prominent across the west of the site and is interpreted as evidence of variations in the geological deposits. There are numerous positive and negative curvilinear anomalies within this response that indicate former watercourses. While this enhanced response may limit the ability to identify small and weakly magnetised anomalies, more substantial features would still be detected. This is supported by the presence of several anomalies that cannot be confidently interpreted as natural.

4.2.7 In the north of the survey area, a positive, curving recti-linear anomaly has been identified at **4012** (**Figure 11**). The anomaly measures 30 m north-west to south-east and is 1 – 2 m wide. This indicates a ditch-feature and is interpreted as a possible enclosure. However, it is equally possible this anomaly is natural in origin.

4.2.8 In the central portion of the survey area, a large, negative curving recti-linear anomaly has been identified at **4013** (**Figure 11**). This measures 171 m north-east to south-west and is 5 m wide. This indicates a bank feature and could relate to the boundary of a large enclosure. As such, it is interpreted as possibly archaeological in origin. A smaller, negative, curvi-linear anomaly is noted to the south-west of the anomaly at **4013** (**4014**). It is possible this indicates a further ditch-feature adjacent to the possible enclosure. It is not possible to determine whether any internal features are present within the possible enclosure due to the increased background response caused by the geological deposits.

4.2.9 To the south-west of the possible enclosure at **4013**, two large positive anomalies have been identified at **4015** (**Figure 9**). These indicate pit-features that may be associated with extraction activity and are interpreted as possible archaeology. However, a more recent origin cannot be ruled out. Several further positive pit-like anomalies have been identified to the north-east of the possible enclosure (**4016** – **4022**) (**Figure 11** and **13**). These are also possible evidence of extraction activity, the origin of which cannot be determined from the results of the geophysical survey alone.

4.2.10 Numerous 1 – 2 m diameter, discrete, positive anomalies have been identified throughout the survey area. Examples of these anomalies are most prominent towards the east of the survey data and are noted at **4023** (**Figure 15**). These indicate pit-features. It is possible these evidence wider settlement activity such as extraction or refuse pits. However, it is equally possible these anomalies are natural in origin and pertain to localised variations in the magnetic susceptibility of the topsoil or underlying geological deposits.

4.2.11 In the east of the survey area, a linear alignment of increased magnetic response is noted at **4024** (**Figure 17**). This corresponds with the modern field boundary. A similar anomaly is noted traversing the field boundary in the central portion of the survey area at **4025** (**Figure 13**). This relates to the trackway adjacent to the boundary of the field.

4.2.12 An area of increased magnetic response is noted towards the east of the survey area at **4026** (**Figure 17**). This measures 40 m east – west and 18 m north – south from the edge of the survey area. The anomaly does not correspond to any features present on historical OS mapping but is not thought to be archaeological in origin. It likely relates to an area of made ground or a surface deposit associated with the entrance to the field immediately north of the anomaly.

4.2.13 Weakly dipolar, broadly spaced (12 – 15 m) linear anomalies have been identified throughout much of the site. This type of response is indicative of material that has been burnt or fired, such as ceramic. As such, these anomalies are interpreted as evidence of field drains. Examples of these anomalies are noted at **4027** (**Figure 3**).

4.2.14 A number of highly magnetic dipolar linear anomalies have been identified. These indicate modern services and are noted at **4028** (**Figure 5** and **11**), **4029** (**Figure 11**), and **4030** (**Figure 17**).

5 DISCUSSION

5.1.1 The detailed gradiometer survey has been successful in detecting anomalies thought to be archaeological in origin to the east of the survey area. Two parallel ditches have been identified. While these are considered to be archaeological, the limited survey area in this portion of the site makes a more confident interpretation of the features less possible. It is possible these anomalies indicate activity surrounding the route of the Roman road traversing close to the eastern extent of the site. However, it is not possible to more confidently determine the age of these features. Evidence of archaeological trenching is apparent in this area with at least one trench crossing a detected anomaly. Unfortunately, the results of the excavation are not available at the time writing.

5.1.2 Additional linear anomalies have been identified that are more tentatively interpreted as archaeological. These are located in the far eastern extent of the survey area and could indicate further ditch features. However, it is equally possible these could evidence land drains due to the weaker magnitude of the anomalies.

5.1.3 The majority of the western portion of the site is dominated by an increased and variable background magnetic response. This is interpreted as evidence of variations in the geological deposits. While this enhanced response has likely limited the ability to identify small and weakly magnetised anomalies, more substantial features have been identified.

5.1.4 A large, negative recti-linear enclosure has been identified. However, it is uncertain whether this anomaly is natural or anthropogenic in origin and further investigation may be required. In addition, to the north-west of the survey area, a smaller possible enclosure has been identified. Although it is equally possible the anomaly could be natural in origin.

5.1.5 Numerous pit-like anomalies have been identified across the entire survey area. These are interpreted as possible evidence of archaeological activity and could be evidence of wider settlement activity such as extraction or refuse pits. While it is not possible to confidently interpret these anomalies, an archaeological origin cannot be ruled out.

5.1.6 The remaining anomalies are more recent in origin and include evidence of farm tracks, underlying services, and land drains.

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Magic Maps (accessed December 2020) https://magic.defra.gov.uk/MagicMap.aspx

National Library of Scotland (accessed December 2020) https://maps.nls.uk/geo/explore

Old Maps (accessed December 2020) https://www.old-maps.co.uk

APPENDICES

Appendix 1: Survey Equipment and Data Processing

Survey methods and equipment

The magnetic data for this project were acquired using a non-magnetic cart fitted with 4x Bartington Grad-01-1000L magnetic gradiometers. The instrument has four sensor assemblies fixed horizontally 1 m apart allowing four traverses to be recorded simultaneously. Each sensor contains two fluxgate magnetometers arranged vertically with a 1m separation and measures the difference between the vertical components of the total magnetic field within each sensor array. This arrangement of magnetometers suppresses any diurnal or low frequency effects.

The gradiometers have an effective resolution of 0.03 nT over a ±100 nT range, and measurements from each sensor are logged at intervals of 0.25 m. All of the data are then relayed to a Leica Viva CS35 tablet, running the MLgrad601 program, which is used to record the survey data from the array of Grad601 probes at a rate of 10 Hz. The program also receives measurements from a GPS system, which is fixed to the cart at a measured distance from the sensors, providing real time locational data for each data point.

The cart-based system relies upon accurate GPS location data which is collected using a Leica Viva system with rover and base station. This receives corrections from a network of reference stations operated by the Ordnance Survey and Leica Geosystems, allowing positions to be determined with a precision of 0.02m in real-time and therefore exceed the level of accuracy recommended by European Archaeologiae Consilium recommendations (Schmidt *et al.* 2015) for geophysical surveys.

Data may be collected with a higher sample density where complex archaeological anomalies are encountered, to aid the detection and characterisation of small and ephemeral features. Data may be collected at up to 0.125 m intervals along traverses spaced up to 0.25m apart.

Post-processing

The magnetic data collected during the detail survey are downloaded from the Bartington cart system for processing and analysis using both commercial and in-house software. This software allows for both the data and the images to be processed in order to enhance the results for analysis; however, it should be noted that minimal data processing is conducted so as not to distort the anomalies.

The cart-based system generally requires a lesser amount of post-processing than the handheld Bartington Grad 601-2 fluxgate gradiometer instrument. This is largely because mounting the gradiometers on the cart reduces the occurrence of operator error; caused by inconsistent walking speeds and deviation in traverse position due to varying ground cover and topography.

Typical data and image processing steps may include:

- GPS Destripe – Determines the median of each transect and then subtracts that value from each datapoint in the transect. May be used to remove the striping effect seen within a survey caused by directional effects, drift, etc.
- GPS Base Interpolation – Sets the X & Y interval of the interpolated data and the track radius (area around each datapoint that is included in the interpolated result).
- Discard Overlaps - Intended to eliminate a track(s) that have been collected too close to one another. Without this, the results of the interpolation process can be distorted as it tries to accommodate very close points with potentially differing values.

Typical displays of the data used during processing and analysis:

- XY Plot – Presents the data as a trace or graph line for each traverse. Each traverse is displaced down the image to produce a stacked profile effect. This type of image is useful as it shows the full range of individual anomalies. XY trace plots are available upon request.
- Greyscale – Presents the data in plan using a greyscale to indicate the relative strength of the signal at each measurement point. These plots can be produced in colour to highlight certain features but generally greyscale plots are used during analysis of the data.

Appendix 2: Geophysical Interpretation

The interpretation methodology used by Wessex Archaeology separates the anomalies into four main categories: archaeological, modern, agricultural, and uncertain origin/geological.

The archaeological category is used for features when the form, nature and pattern of the anomaly are indicative of archaeological material. Further sources of information such as aerial photographs may also have been incorporated in providing the final interpretation. This category is further sub-divided into three groups, implying a decreasing level of confidence:

- Archaeology – used when there is a clear geophysical response and anthropogenic pattern.
- Possible archaeology – used for features which give a response, but which form no discernible pattern or trend.

The modern category is used for anomalies that are presumed to be relatively modern in date:

- Ferrous – used for responses caused by ferrous material. These anomalies are likely to be of modern origin.
- Modern service – used for responses considered relating to cables and pipes; most are composed of ferrous/ceramic material although services made from non-magnetic material can sometimes be observed.

The agricultural category is used for the following:

- Former field boundaries – used for ditch sections that correspond to the position of boundaries marked on earlier mapping.
- Ridge and furrow – used for broad and diffuse linear anomalies that are considered to indicate areas of former ridge and furrow.
- Ploughing – used for well-defined narrow linear responses, usually aligned parallel to existing field boundaries.
- Drainage – used to define the course of ceramic field drains that are visible in the data as a series of repeating bipolar (black and white) responses.

The uncertain origin/geological category is used for features when the form, nature and pattern of the anomaly are not sufficient to warrant a classification as an archaeological feature. This category is further sub-divided into:

- Increased magnetic response – used for areas dominated by indistinct anomalies which may have some archaeological potential.
- Trend – used for low amplitude or indistinct linear anomalies.
- Superficial geology – used for diffuse edged spreads considered to relate to shallow geological deposits. They can be distinguished as areas of positive, negative, or broad bipolar (positive and negative) anomalies.

Appendix 3: OASIS form

Project Details:

Project name		Thurrock Flex ble Generation Plant, Ti bury, Essex			
Type of project		Detailed gradiometer survey (Field evaluation)			
Project description		The site comprises several fields located near Tilbury in Essex, covering an area of 68.2 ha. The geophysical survey was undertaken between 16 November and 8 December 2020 and has demonstrated the presence of a number of anomalies of potential archaeological interest. Two parallel ditches have been identified. While these are considered archaeological in origin, the limited survey area in this are portion of the site makes a more confident interpretation of the features less possible. These could indicate wider Romano-British activity surrounding the Roman road to the east of the survey area. Additional linear anomalies have been identified that are more tentatively interpreted as archaeological. These are located to the eastern extent of the survey area and could indicate further ditch features. However, it is equally possible these could evidence land drains due to the weaker magnitude of the anomalies. To the north-west of the survey area, a small possible enclosure has been identified. A large, negative recti-linear enclosure has been identified. However, it is uncertain whether this anomaly is natural or anthropogenic in origin and further investigation may be required. Numerous pit-like anomalies have been identified. These are interpreted as possible evidence of archaeological activity and could be evidence of wider settlement activity such as extraction or refuse pits. While it is not poss ble to confidently interpret these anomalies, an archaeological origin cannot be ruled out.			
Project dates		**Start:** 16-11-2020		**End:** 08-12-2020	
Previous work		Yes			
Future work		Not known			
Project Code:	242210	**HER event no.**	N/A	**OASIS form ID:**	*wessexar1-412465*
		NMR no.	N/A		
		SM no.	N/A		
Planning Application Ref.					
Site Status		None			
Land use		Cultivated Land 3 – Operations to a depth of more than 0.25 m			
Monument type			**Period**		

Project Location:

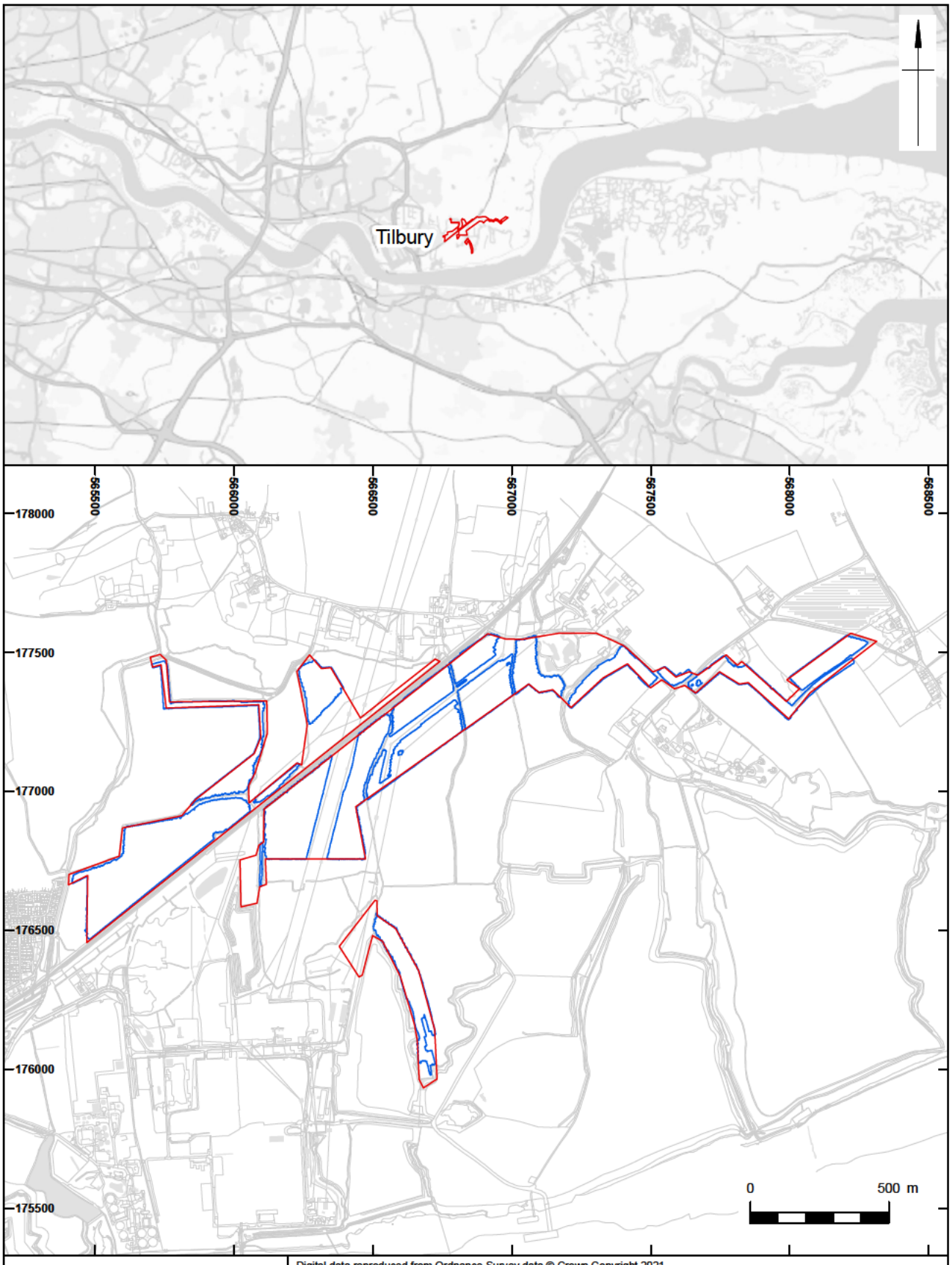
Site Address	Land east of Ti bury			**Postcode**	RM18 8UB
County	Essex	**District**	Thurrock	**Parish**	East Tilbury
Study Area	68.2 ha	**Height OD**	1 m aOD	**NGR**	566385 177095

Project Creators:

Name of Organisation	Wessex Archaeology		
Project brief originator	RPS Consulting Services	**Project design originator**	Wessex Archaeology
Project Manager	Tom Richardson	**Project Supervisor**	Chris Hirst
Sponsor or funding body	RPS Consulting Services	**Type of Sponsor**	Client

Project Archive and Bibliography:

Physical archive	N/A	**Digital Archive**	Geophysical survey and report	**Paper Archive**	N/A
Report title	Thurrock Flexible Generation Plant, Tilbury, Essex Detailed Gradiometer Survey Report			**Date**	2020
Author	Wessex Archaeology	**Description**	Unpublished report	**Report ref.**	242210.03



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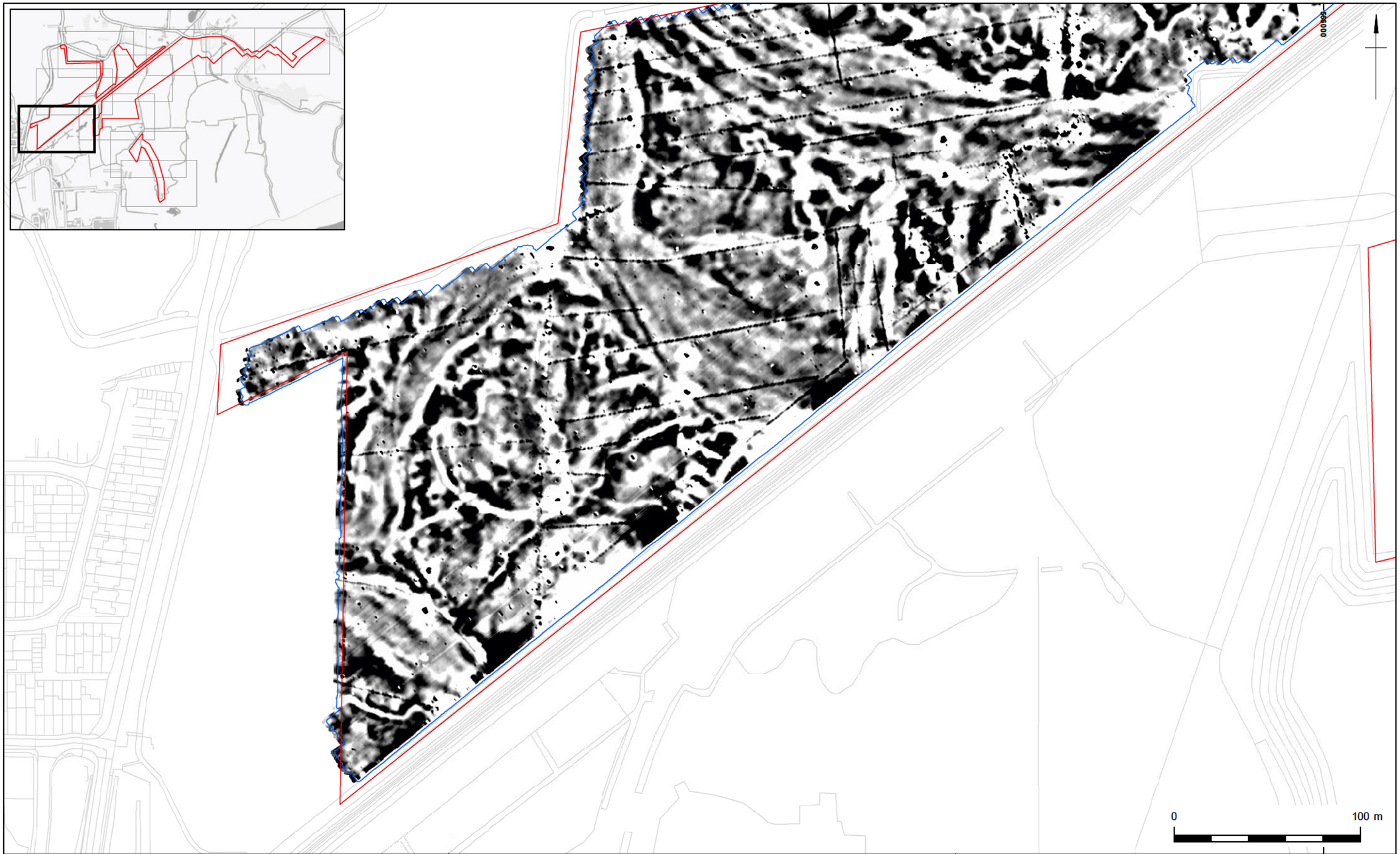
Site location and survey extents

Figure 1



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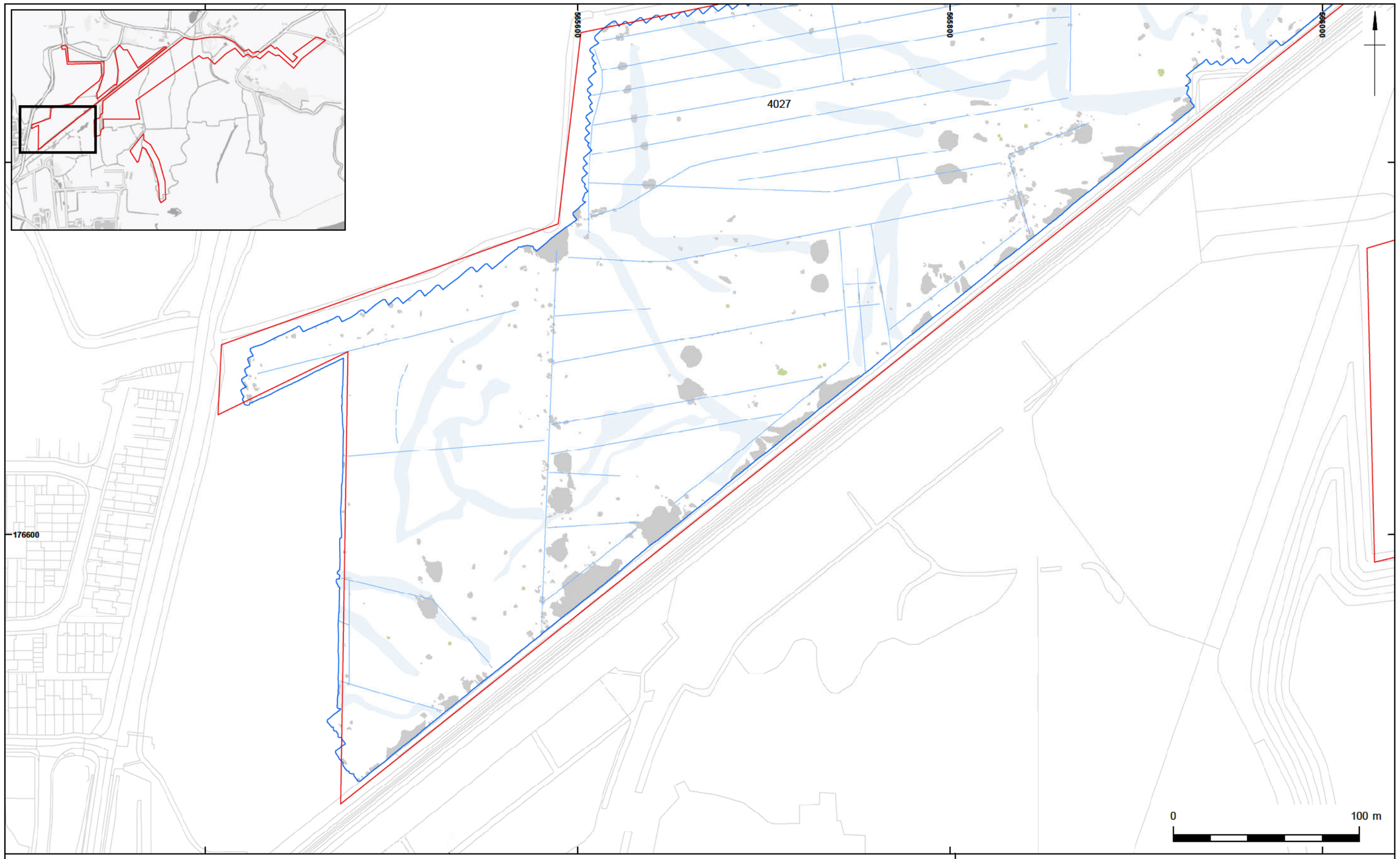
Detailed gradiometer survey results: greyscale plot

Figure 2



Site boundary
Detailed survey extent
Archaeology
Possible archaeology
Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

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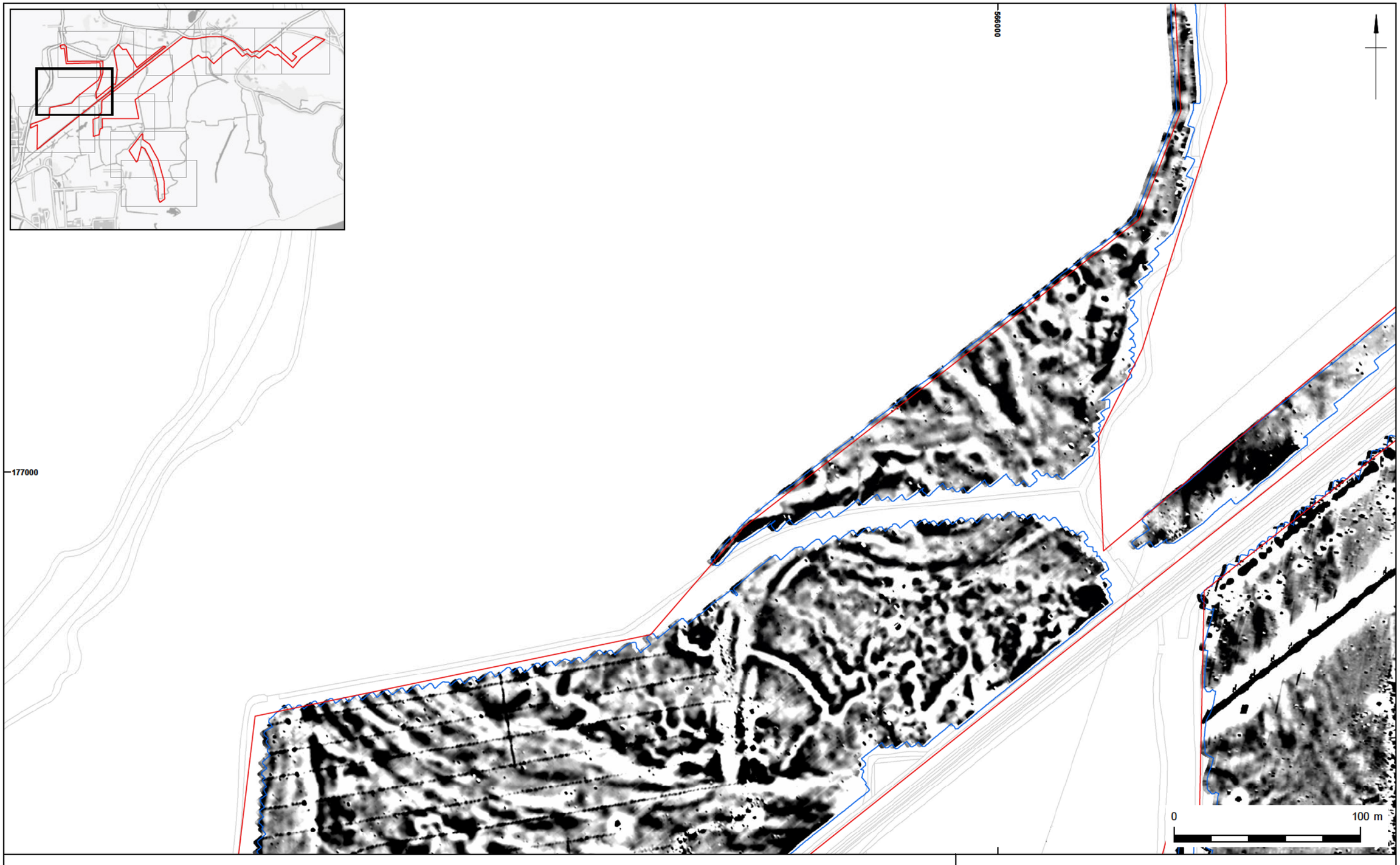
Detailed gradiometer survey results: interpretation

Figure 3



Site boundary

Detailed survey extent

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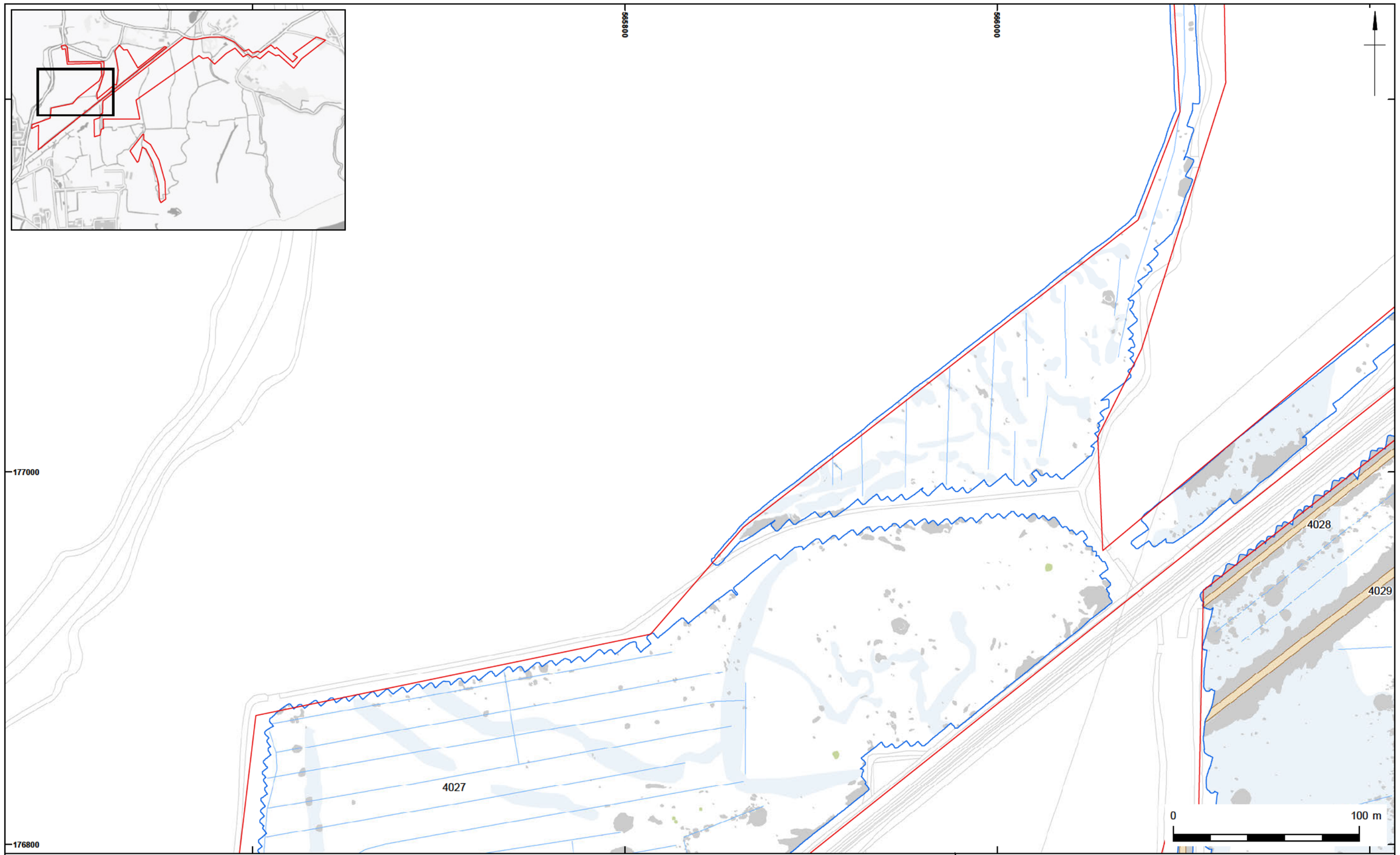
Detailed gradiometer survey results: greyscale plot

Figure 4



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Possible archaeology
Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

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Detailed gradiometer survey results: interpretation

Figure 5

Site boundary

Detailed survey extent

-2 nT +3 nT

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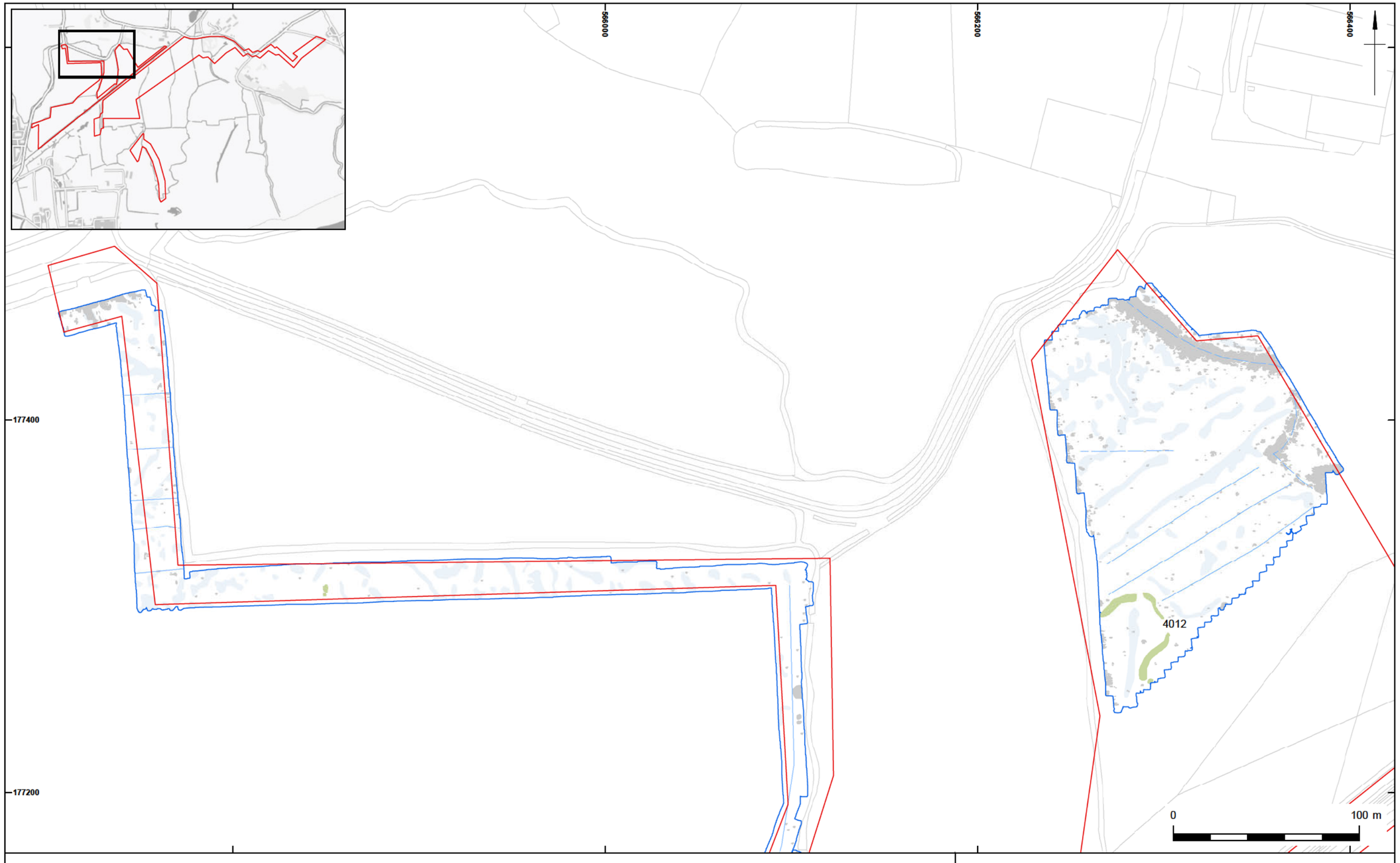
Detailed gradiometer survey results: greyscale plot

Figure 6



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Possible archaeology
Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

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Detailed gradiometer survey results: interpretation

Figure 7

Site boundary

Detailed survey extent

-2 nT +3 nT

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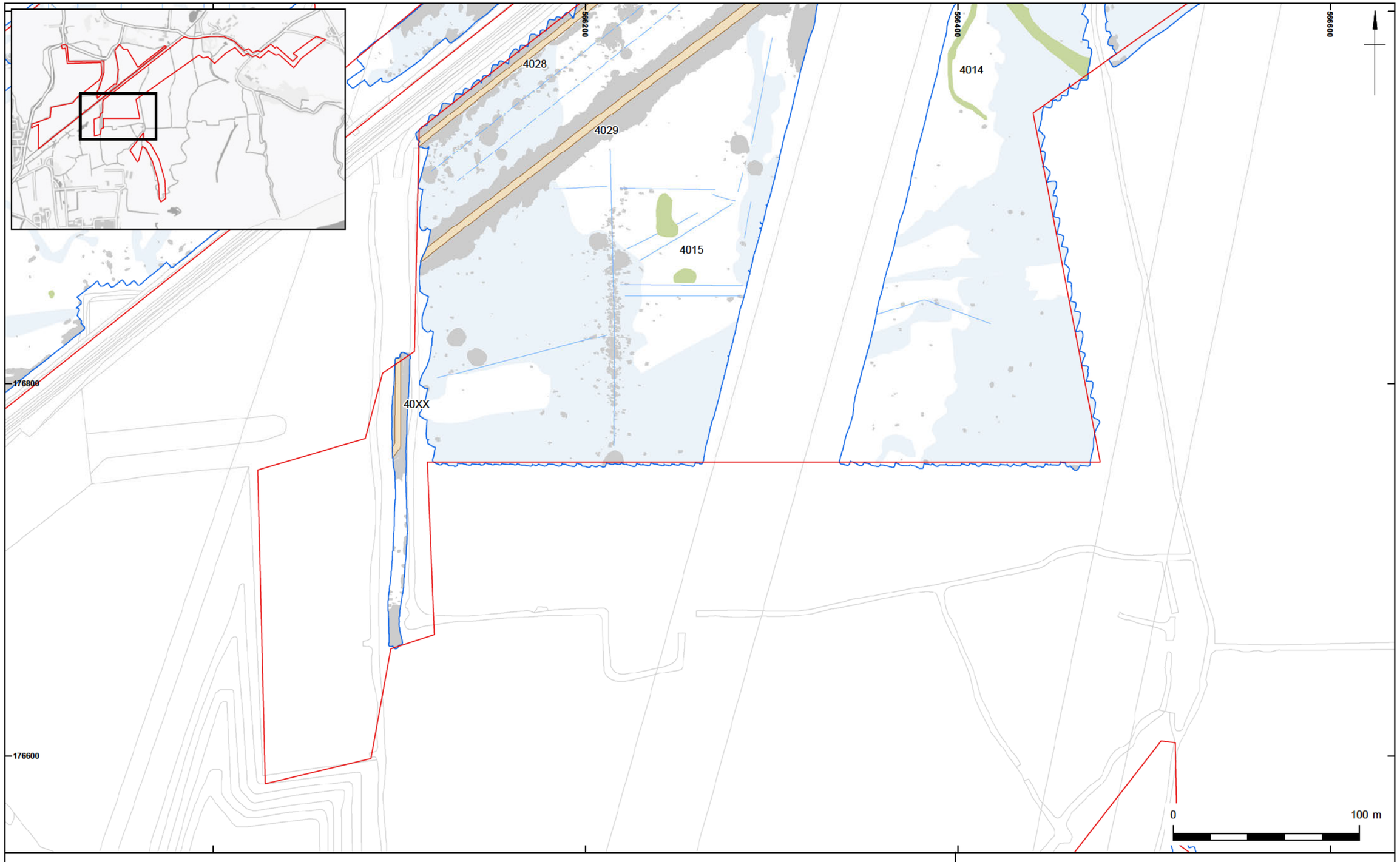
Detailed gradiometer survey results: greyscale plot

Figure 8



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Possible archaeology
Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

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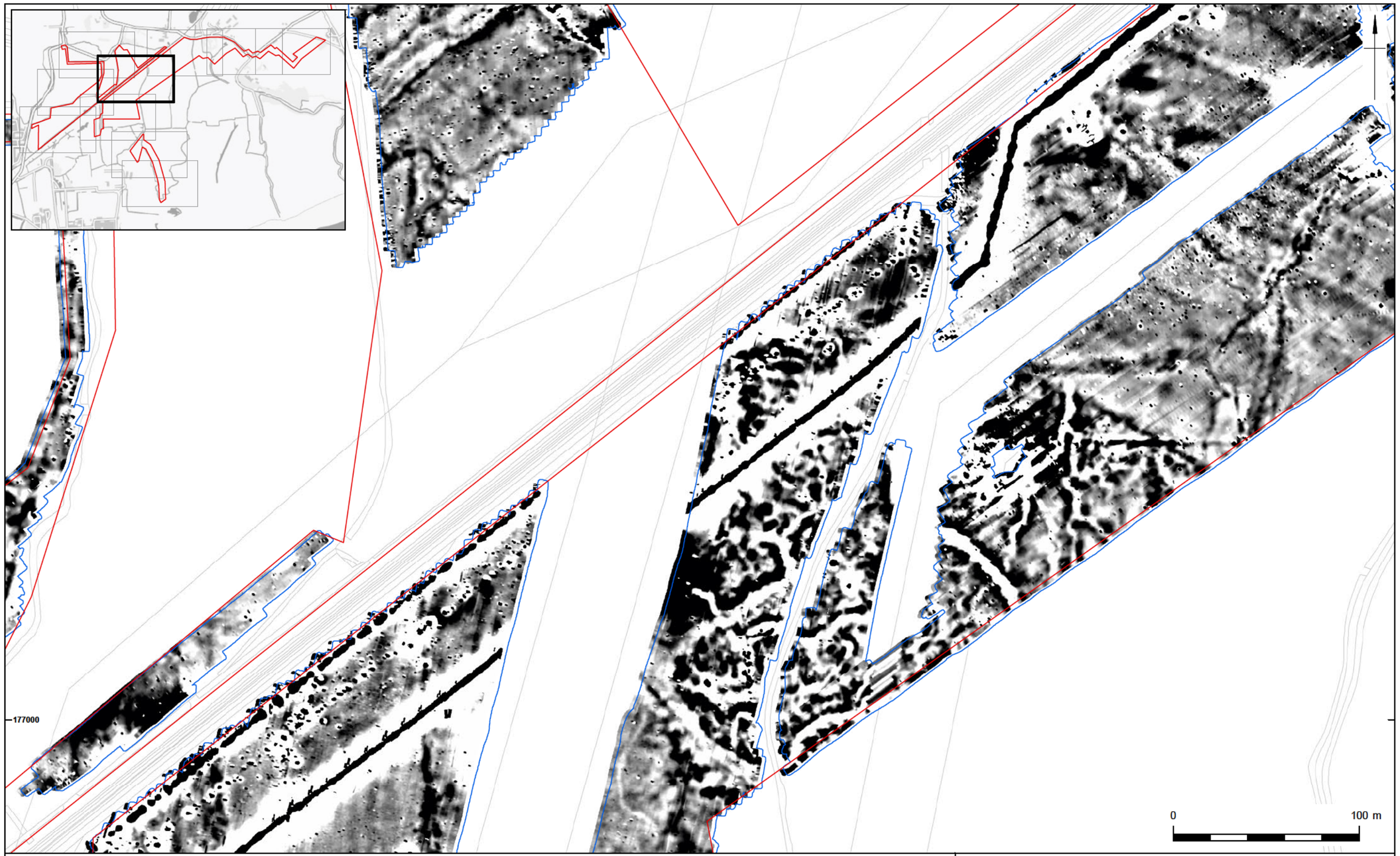
Detailed gradiometer survey results: interpretation

Figure 9



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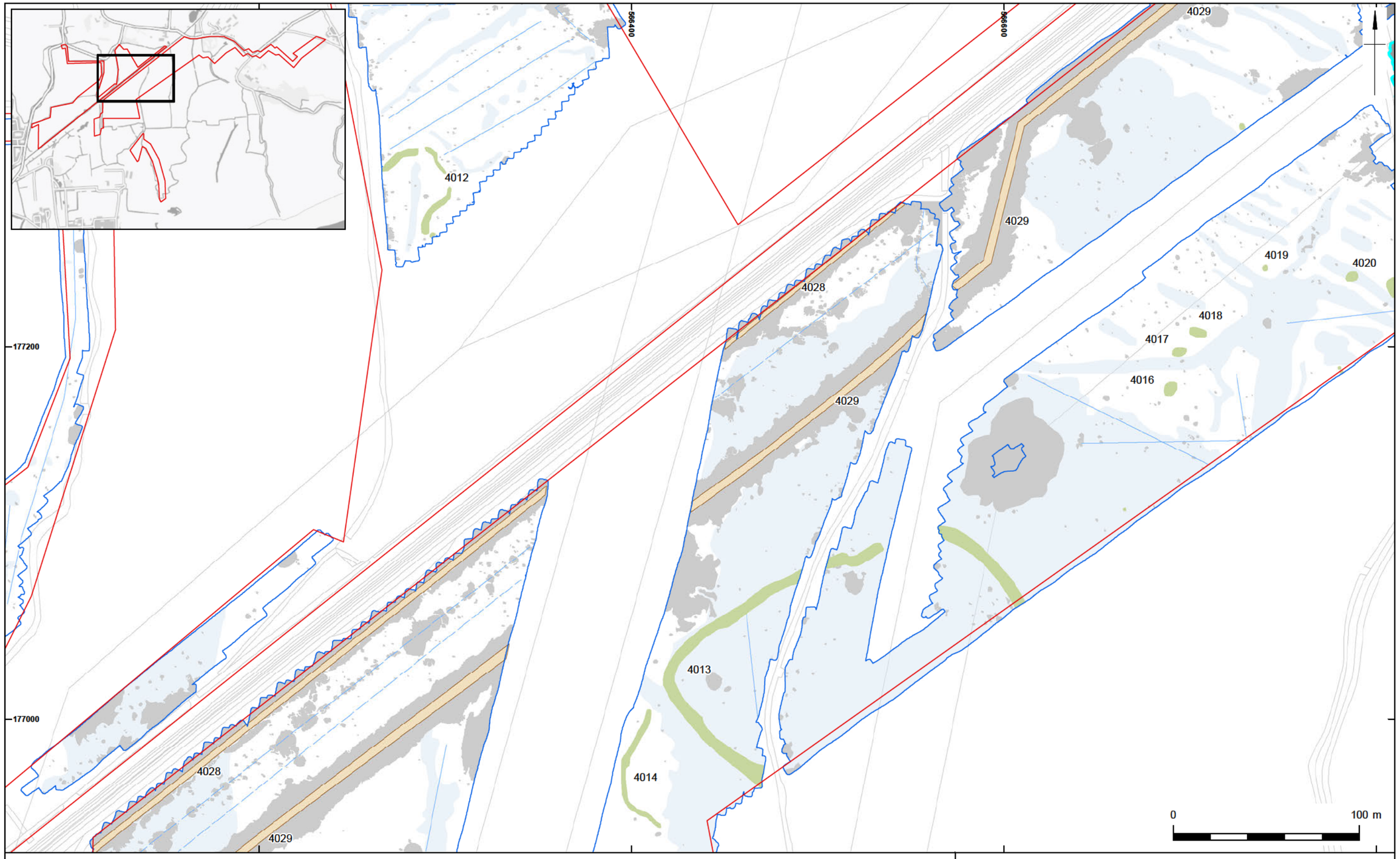
Detailed gradiometer survey results: greyscale plot

Figure 10



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Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

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Detailed gradiometer survey results: interpretation

Figure 11

Site boundary

Detailed survey extent

-2 nT +3 nT

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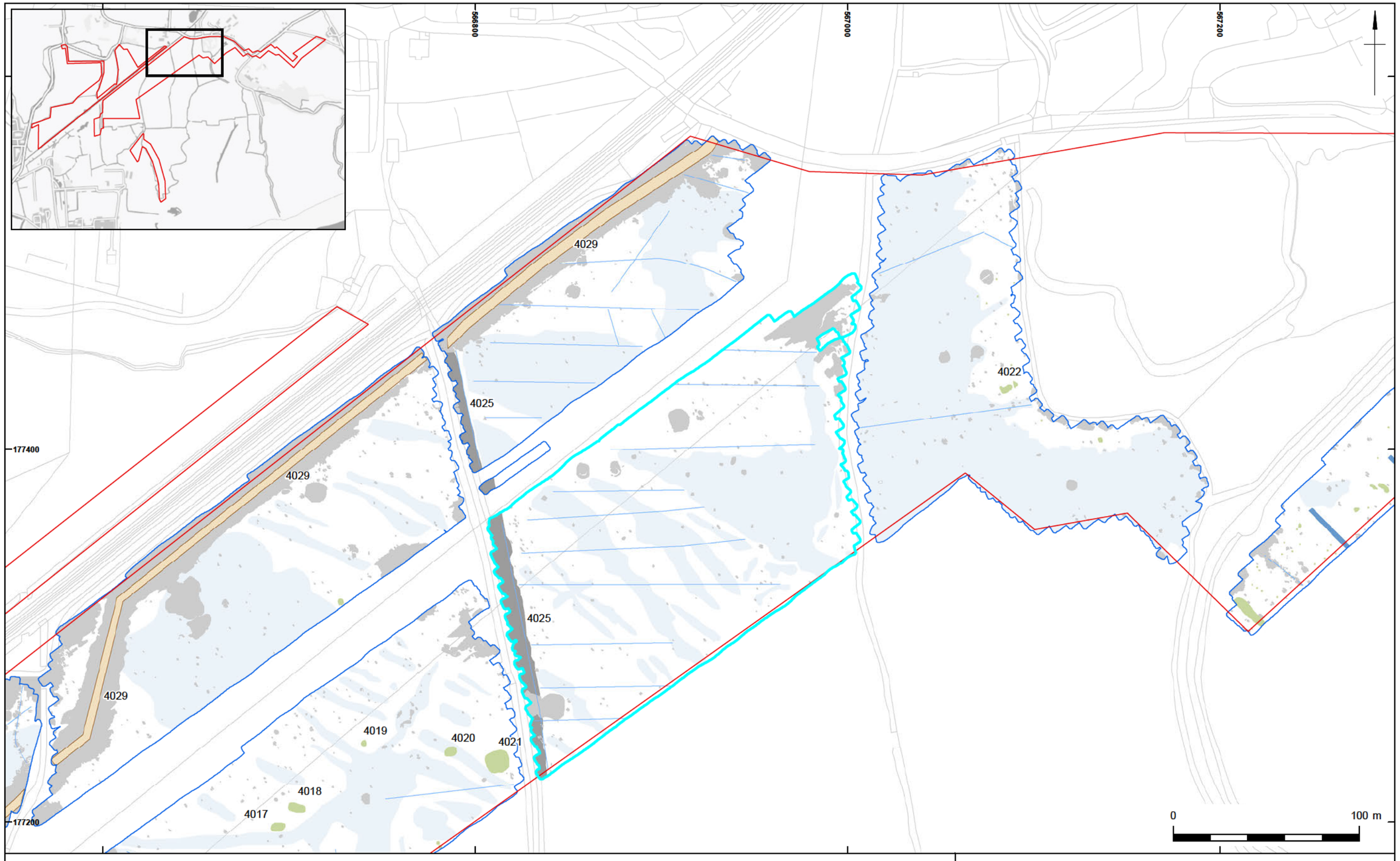
Detailed gradiometer survey results: greyscale plot

Figure 12



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Detailed survey extent
Archaeology
Possible archaeology
Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

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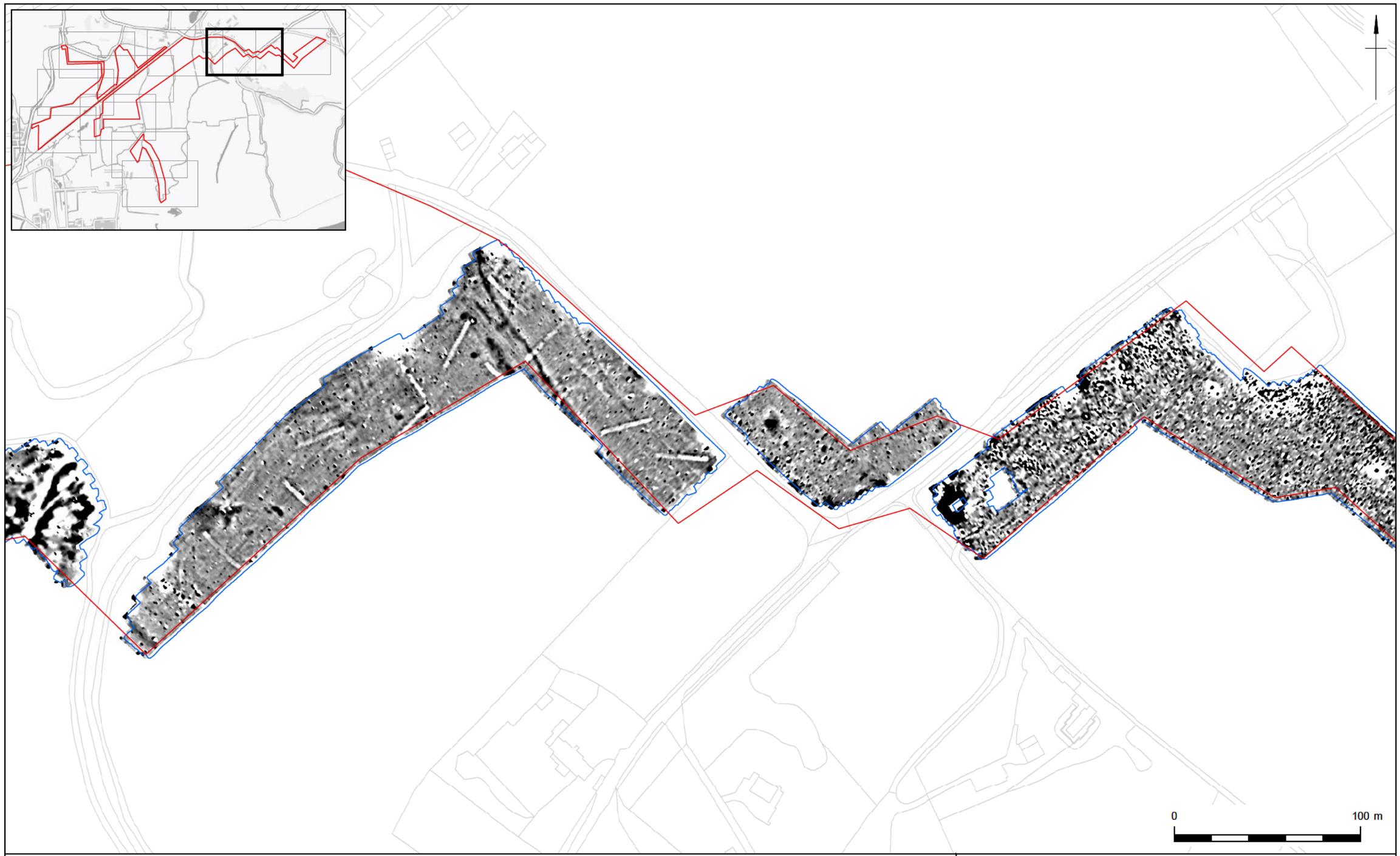
Detailed gradiometer survey results: interpretation

Figure 13



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Detailed survey extent

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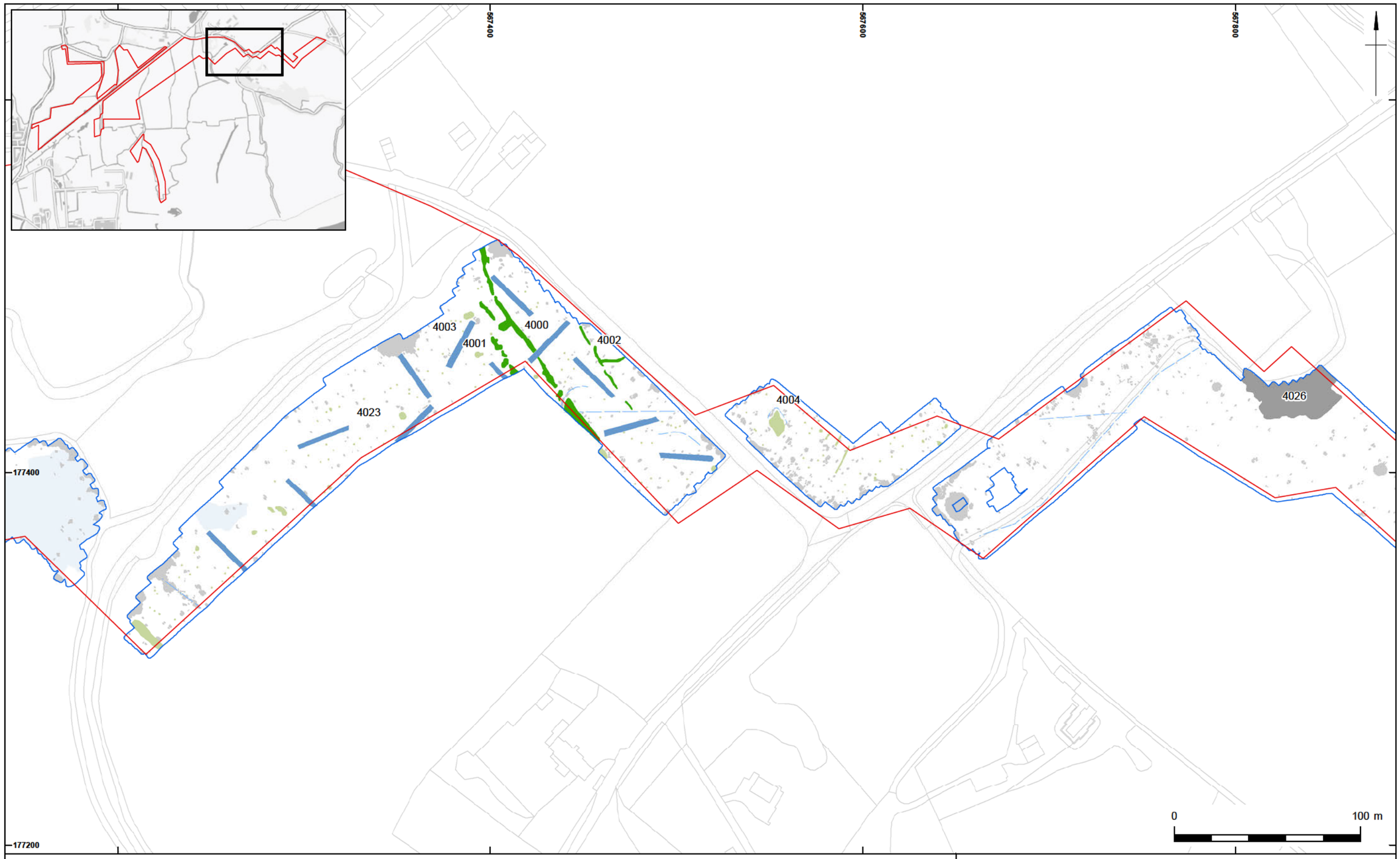
Detailed gradiometer survey results: greyscale plot

Figure 14



Site boundary
Detailed survey extent
Archaeology
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Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

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Detailed gradiometer survey results: interpretation

Figure 15

569000

0 100 m

-2 nT +3 nT

Site boundary

Detailed survey extent

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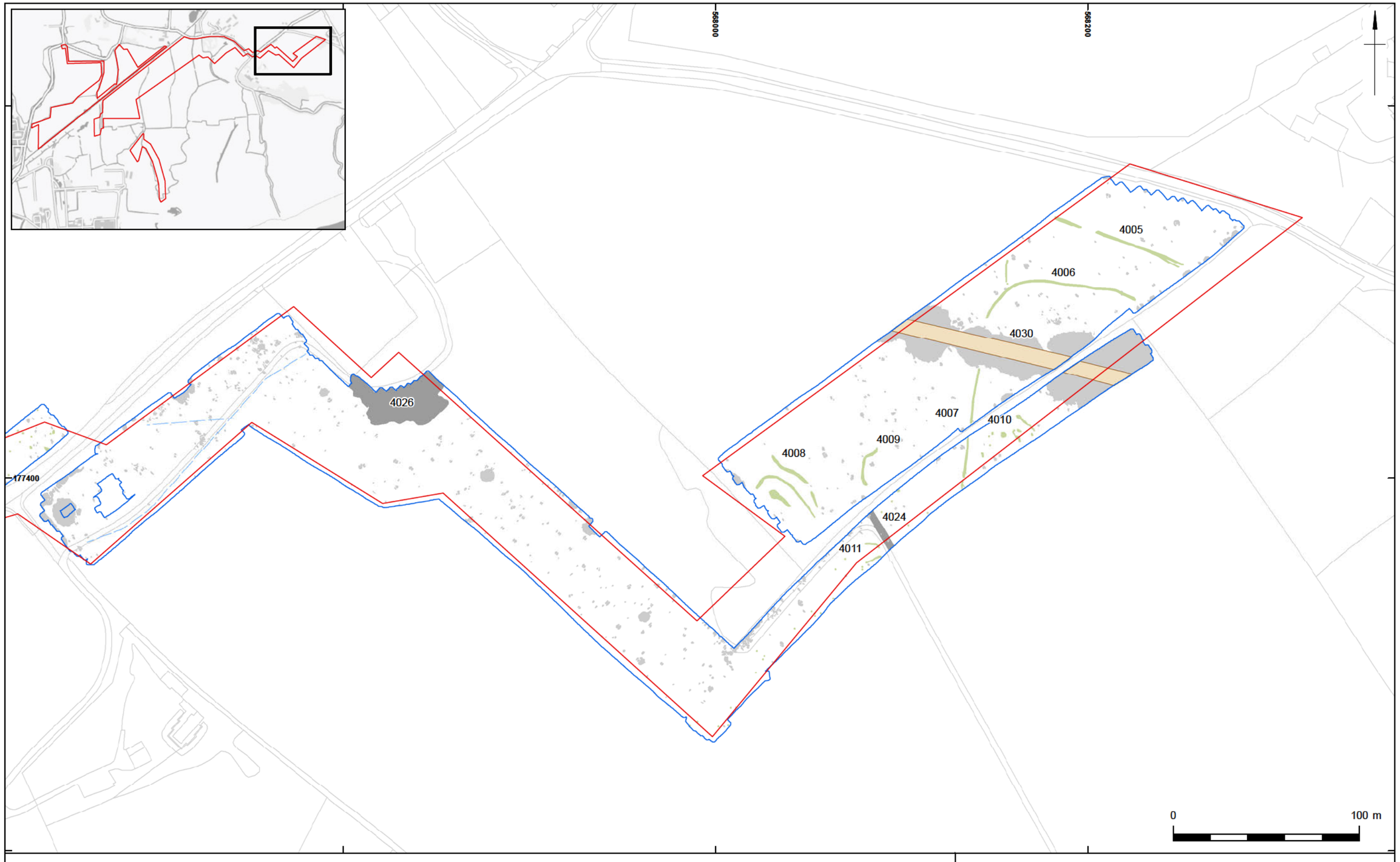
Detailed gradiometer survey results: greyscale plot

Figure 16



Site boundary
Detailed survey extent
Archaeology
Possible archaeology
Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

Date:	14/01/2021	Revision Number:	0
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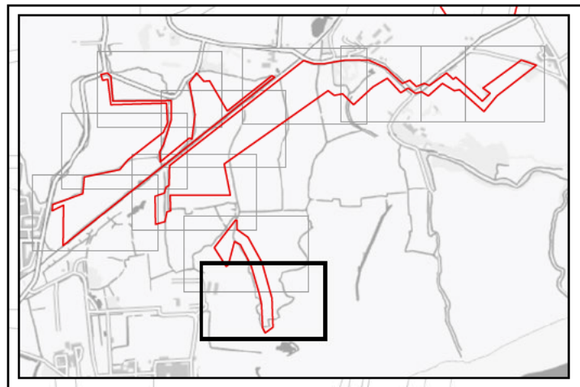
Detailed gradiometer survey results: interpretation

Figure 17



557000

176000

0 100 m

-2 nT +3 nT

Site boundary

Detailed survey extent

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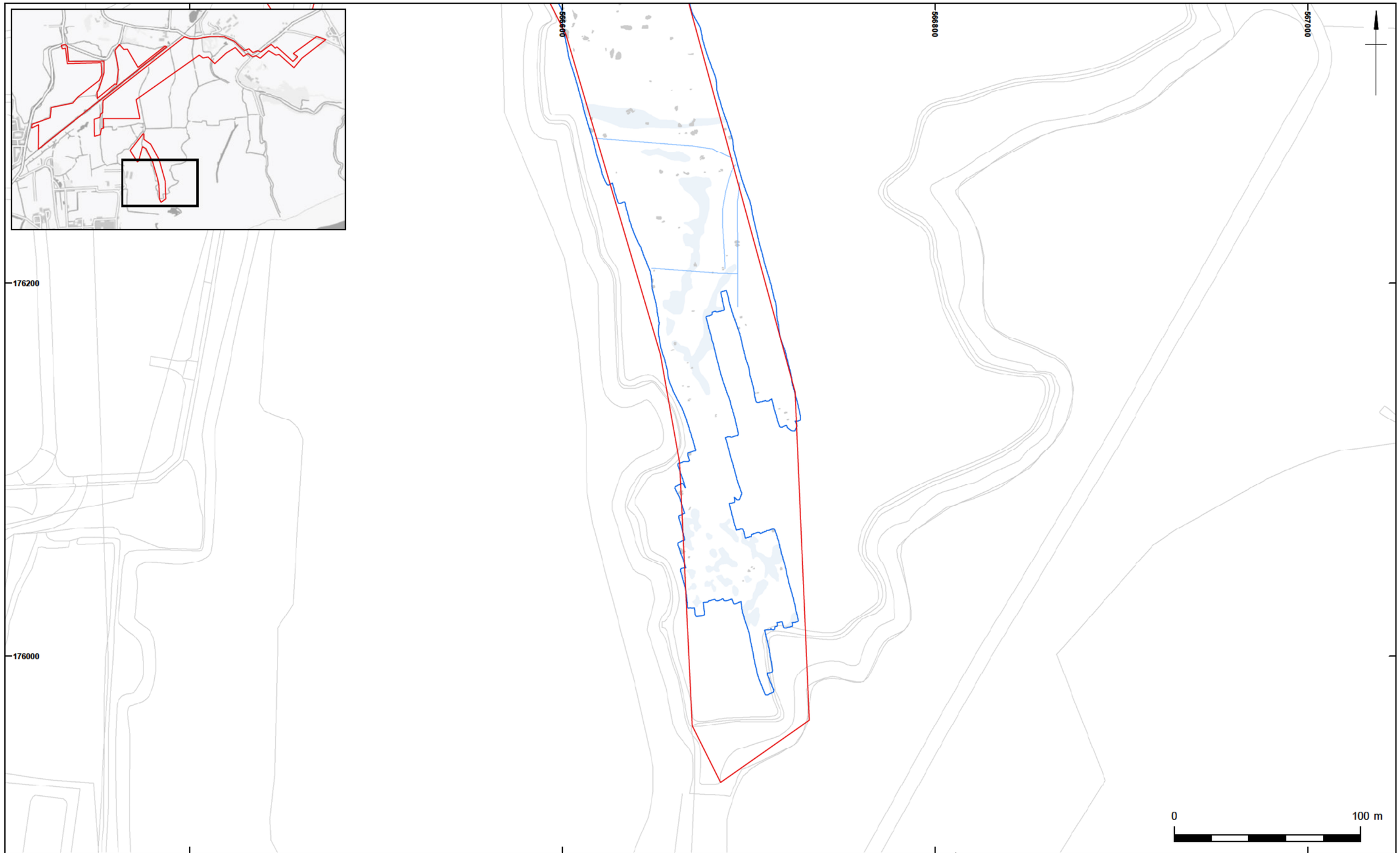
Detailed gradiometer survey results: greyscale plot

Figure 18



Site boundary
Detailed survey extent
Archaeology
Possible archaeology
Previous trenching
Uncertain trend
Land drain
Modern service
Ferrous
Increased magnetic response
Former field boundary
Geology

Date:	14/01/2021	Revision Number:	0
Scale:	1:2,000 at A3	Illustrator:	RP
Path:	X:\PROJECTS\242210\GIS\FigsMXD\Preliminary		

Detailed gradiometer survey results: interpretation

Figure 19

Site boundary

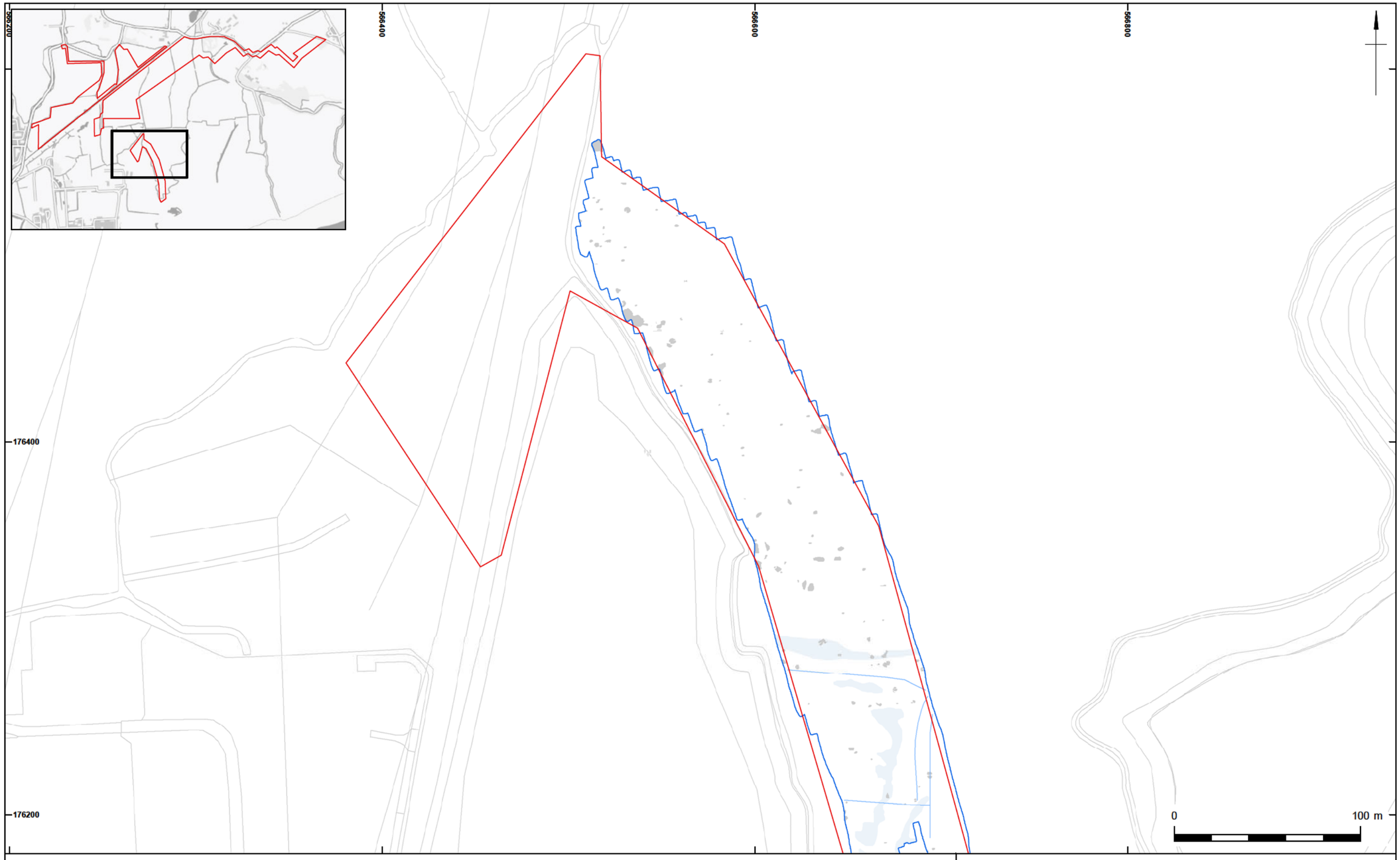
Detailed survey extent

-2 nT +3 nT

Date:	05/01/2021	Revision Number:	0
Scale:	1:2,000 at A3	Illustrator:	AJS
Path:	X:\PROJECTS\242210\GIS\FigsMXD\Preliminary		

Detailed gradiometer survey results: greyscale plot

Figure 20



Site boundary
Detailed survey extent
Archaeology
Possible archaeology
Previous trenching
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Date:	14/01/2021	Revision Number:	0
Scale:	1:2,000 at A3	Illustrator:	RP
Path:	X:\PROJECTS\242210\GIS\FigsMXD\Preliminary		

Detailed gradiometer survey results: interpretation

Figure 21

wessex archaeology

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9 APPENDIX 2 HERITAGE VIEWPOINTS 4A, 4B AND 5

Existing view

Proposed wireline view

Ref: 10872-0302-01

rps MAKING COMPLEX EASY · THURROCK POWER	Date of Photo:25/02/2021 Lens Type: 50mm	Distance to site: 2.4km OS reference: 568903, 176951	Direction to site: west Viewpoint height: 8 5m AOD	Horizontal field of view: Approx. 75º Viewing distance: 300mm @ A3	**Stacks in groups of 4**	**St Katherines Church : Heritage Viewpoint 4a** **10872-HER-04a**

Proposed wireline view

Ref: 10872-0302-01

Date of Photo:25/02/2021 Lens Type: 50mm	Distance to site: 2.4km OS reference: 568903, 176951	Direction to site: west Viewpoint height: 8 5m AOD	Horizontal field of view: Approx. 75º Viewing distance: 300mm @ A3	**Stacks in groups of 4**	**St Katherines Church : Heritage Viewpoint 4a** **10872-HER-04b**

Existing view

Development site

Proposed wireline view

Ref: 10872-0302-01

Date of Photo:25/02/2021 Lens Type: 50mm	Distance to site: 2.4km OS reference: 568901, 176974	Direction to site: west Viewpoint height: 9.1m AOD	Horizontal field of view: Approx. 75º Viewing distance: 300mm @ A3	**Stacks in groups of 4**	**St Katherines Church : Heritage Viewpoint 4b** **10872-HER-04c**

Proposed wireline view

Ref: 10872-0302-01

Date of Photo:25/02/2021 Lens Type: 50mm	Distance to site: 2.4km OS reference: 568901, 176974	Direction to site: west Viewpoint height: 9.1m AOD	Horizontal field of view: Approx. 75º Viewing distance: 300mm @ A3	**Stacks in groups of 4**	**St Katherines Church : Heritage Viewpoint 4b** **10872-HER-04d**

Existing view

Proposed illustrative view

Ref: 10872-0302-01

RPS MAKING COMPLEX EASY | THURROCK POWER

Date of Photo:25/02/2021 Lens Type: 50mm	Distance to site: 2.5km OS reference: 568880, 176228	Direction to site: west Viewpoint height: 5.6m AOD	Horizontal field of view: Approx. 75º Viewing distance: 300mm @ A3	**Stacks in groups of 4**	**Coalhouse Point from the footpath: Heritage Viewpoint 5** **10872-HER-05a**

Proposed illustrative view

Ref: 10872-0302-01

Date of Photo:25/02/2021 Lens Type: 50mm	Distance to site: 2.5km OS reference: 568880, 176228	Direction to site: west Viewpoint height: 5.6m AOD	Horizontal field of view: Approx. 75º Viewing distance: 300mm @ A3	**Stacks in groups of 4**	**Coalhouse Point from the footpath: Heritage Viewpoint 5** **10872-HER-05b**

10 PLATES

Plate 1 Front (east) elevation of The Rectory

Plate 2 View southeast from gate to The Rectory towards the Church

Plate 3 Principal (south) elevation of The Rectory, with views towards the river. The mature vegetation surrounding the property has been cut back here to afford views out: this is not the case for the remainder of the house which is secluded

Plate 4 View east/east-northeast looking towards the rear of The Rectory (west elevation) and the Church, showing mature vegetation which obscures views of the Site

Plate 5 View of southern perimeter of the scheduled area of Bowater HAA battery

Plate 6 View of the track downslope and to the south of the Bowater HAA battery. The footpath mapped around the southern edge of the scheduled monument on modern OS mapping is impenetrable and it is not possible to access the footpath nor the monument.

Plate 7 Eastern corner of the Bowater HAA Battery scheduled area. The monument is densely overgrown, illegible and impenetrable

Plate 8 View along the east/northeast edge of the Bowater HAA battery showing the overgrown nature of the site

Plate 9 View from the north corner of the Scheduled area at Bowater HAA battery looking west towards Thurrock FGP Zone A. There is no view and the monument is densely overgrown, illegible and impenetrable.

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