



Environmental Statement Volume 4 Addendum - May 2016

Hallam Land Management & Mrs Pelly
Great Wilsey Park, Haverhill
May 2016

Non-Technical Summary

Introduction

Hallam Land Management and Mrs Pelly ("the Applicants") submitted an outline planning application to St Edmundsbury Borough Council ("the Borough Council") on 22 October 2015 for residential development (within use classes C2/3); two primary schools; two local centres including retail, community and employment uses (within use classes A1/2/3/4/5, B1 and D1/2); open space; landscaping; and, associated infrastructure (application reference DC/15/2151/OUT).

Since submission the planning application has been subject to public consultation and ongoing discussions with consultees. In response to this process the planning application is being amended slightly to take account of comments made.

This document is an Addendum to the Environmental Statement (ES) that accompanies the planning application. The Addendum serves three purposes:

- It responds to the amendments made to the planning application so as to ensure that the assessment of potentially significant effects on the environment is still correct.
- Provides clarifications and responds to questions as necessary.
- Provides additional information that has become available since the original submission in October 2015.

Should any interested party wish to make representations on the content of this Addendum, these should be made in writing to St Edmundsbury Borough Council, West Suffolk House, Western Way, Bury St Edmunds, Suffolk IP33 3YU. Alternatively, you can send your comments using the Council's website: <http://www.westsuffolk.gov.uk/planning/>.

Changes to the Description of Development

Only minor amendments are proposed, all of which are to respond to comments made to the planning application. These include:

- Reorganisations of school sites and local centres;
- Realignment of the road to the south of the Great Field Plantation;
- Greater definition on the mitigation for dormice;
- Amendments to the boundary planting on the site's north eastern boundary to Kedington and the inclusion of a woodland trail in this location; and
- Amendments to the site accesses (including Haverhill Road, Chalkstone Way and Coupals Road).

Assessment of Effects

The Addendum provides updates to the original ES chapters as appropriate. The following did not require any updates:

- Society and Economy
- Noise and Vibration

- Agricultural Resources
- Surface Water Drainage and Flood Risk
- Local Air Quality

Transport

The Addendum sets out the reasons for the minor changes to the site access junctions and the results of discussions between the Applicants, Suffolk County Council and Highways England. These have not resulted in any change in the significance of the effects set out in the original ES.

Ecology

Following discussions with the Suffolk Wildlife Trust further mitigation has been proposed for Dormice including limiting breaks in features (such as hedgerows) to 12m where appropriate in order to prevent fragmentation of habitat.

Further information has also been provided on Badgers and Bats for which surveys continued after submission of the planning application. These have not resulted in any change in the significance of the effects set out in the original ES.

Archaeology

Following on from the submission of the planning application, evaluation trial trenching has been undertaken across development areas of the site. Features of prehistoric, Iron Age and Medieval data were identified although none of greater than local significance. These have not resulted in any change in the significance of the effects set out in the original ES.

Cultural Heritage

The Addendum sets out discussions that were had with Historic England with regards to the degree of harm to the setting of the Great Wilsey Farm Scheduled Monument. This has not resulted in any change in the significance of the effects set out in the original ES.

Landscape and Visual Amenity

Only minor clarifications were required to this assessment, including further analysis of distant receptors to confirm that the effects of the proposed development would be negligible. This has not resulted in any change in the significance of the effects set out in the original ES.

Quality Assurance

Site name: Great Wilsey Park

Client name: Hallam Land Management & Mrs Pelly

Type of report: Environmental Statement

Prepared by: Simon Elliott

Signed 

Date 20 May 2016

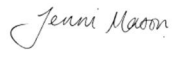




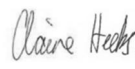

Reviewed by: Neil Waterson

Signed 

Date 20 May 2016



For each of the assessments included within this Environmental Statement, the relevant consultants responsible for their production have confirmed the technical robustness of the assessment process.

Organisation	Assessment	Lead Author	Lead Author's Signature
Beacon	Cultural Heritage	Jenni Mason	
Bidwells	Society and Economy	Simon Elliott	
	Cumulative Effects		
Brookbanks	Transport	Lee Witts	
	Noise and Vibration		
	Surface Water Drainage and Flood Risk		
	Local Air Quality		
CgMS	Archaeology	Rob Bourn	
FCPR	Ecology	David Harper	
	Landscape and Visual Amenity	Claire Heeks	
Land Research Associates	Agricultural Resources	Mike Palmer	

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1. Introduction

None

2. Site Context

2.1 Phase 1 Geo-Environmental Desk Study

3. Legislation and Policy

None

4. Proposed Development

4.1 Revised Assessment Parameter Plans

5. Alternatives

None

6. Society and economy

None

7. Transport

7.1 Statement of Common Ground for Traffic and Transport

7.2 Technical Note on Potential Traffic Impact at the A1307/A11 Junction

8. Noise and vibration

None

9. Ecology

9.1 Revised Phase One Habitat Plan

9.2 Badger Report May 2016

9.3 Breeding Bird Report

9.4 Winter Bird Survey

9.5 SWT & FCPR Comments

9.6 Dormice Method Statement

9.7 Additional Bat Report 2016

10. Agricultural resources

None

11. Surface water drainage and flood risk

None

12. Local Air Quality

None

13. Archaeology

13.1 MOLA Trial Trench Evaluation Report

14. Cultural heritage

None

15. Landscape and visual amenity

15.1 Additional Views – Further Analysis

16. Cumulative effects

None

17. Summary of mitigation, monitoring and residual effects

None

Introduction





1 Introduction

1.1 Purpose of this Addendum to the Environmental Statement

- 1.1.1 Hallam Land Management and Mrs Pelly ("the Applicants") submitted an outline planning application to St Edmundsbury Borough Council ("the Borough Council") on 22 October 2015 for residential development (within use classes C2/3); two primary schools; two local centres including retail, community and employment uses (within use classes A1/2/3/4/5, B1 and D1/2); open space; landscaping; and, associated infrastructure (application reference DC/15/2151/OUT).
- 1.1.2 Since submission the planning application has been subject to public consultation and ongoing discussions with consultees. In response to this process the planning application is being amended slightly to take account of comments made.
- 1.1.3 This document is an Addendum to the Environmental Statement (ES) that accompanies the planning application. The Addendum serves three purposes:
- It responds to the amendments made to the planning application so as to ensure that the assessment of potentially significant effects on the environment is still correct.
 - Provides clarifications and responds to questions as necessary.
 - Provides additional information that has become available since the original submission in October 2015.
- 1.1.4 This Addendum is formally submitted to the Borough Council in accordance with Regulation 22 of the Town and Country Planning (Environment Impact Assessment) Regulations 2011 (as amended). The Addendum should be read in conjunction of with the remainder of the ES, which now comprises:
- Volume 1: the Non-Technical Summary (NTS);
 - Volume 2 comprises the main report;
 - Volume 3 comprises the appendices;
 - Volume 4 (this document) comprises an addendum to the first three volumes.
- 1.1.5 For ease, this Addendum follows the same structure as the first three volumes.
- 1.1.6 Should any interested party wish to make representations on the content of this Addendum, these should be made in writing to St Edmundsbury Borough Council, West Suffolk House, Western Way, Bury St Edmunds, Suffolk IP33 3YU. Alternatively, you can send your comments using the Council's website: <http://www.westsuffolk.gov.uk/planning/>.

Site Context



2 Site Context

2.1 Amendments to the Planning Application

2.1.1 The amendments to the planning application do not affect this chapter.

2.2 Clarifications

2.2.1 Suffolk County Council has requested that a Phase 1 Geo-Environmental Report be submitted. This is included in Appendix 2.1.

2.2.2 The Report shows that there is only a very low risk of contamination on the proposed development site and does not warrant further investigation at this stage.

2.3 Additional Information

2.3.1 There is no additional information relevant to this chapter.

Legislation & Policy



3 Legislation and Policy

3.1 Amendments to the Planning Application

3.1.1 The amendments to the planning application do not affect this chapter.

3.2 Clarifications

3.2.1 There are no clarifications required on this chapter.

3.3 Additional Information

3.3.1 There is no additional information relevant to this chapter.

Proposed Development

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4 Proposed Development

4.1 Amendments to the Planning Application

4.1.1 Only minor amendments are proposed, all of which are to respond to comments made to the planning application. These include:

- Reorganisations of school sites and local centres;
- Realignment of the road to the south of the Great Field Plantation;
- Greater definition on the mitigation for dormice;
- Amendments to the boundary planting on the site's north eastern boundary to Kedington and the inclusion of a woodland trail in this location; and
- Amendments to the site accesses (including Haverhill Road, Chalkstone Way and Coupals Road).

4.1.2 As a result on these amendments the following parameter plans have been amended (see Appendix 4.1)

- Revised Landuse Plan (5055-ES-01);
- Revised Density Plan (5055-ES-02);
- Revised Building Heights Plan (5055-ES-03);
- Revised Road Hierarchy Plan (5055-ES-04);
- Revised Public Rights of Way Plan incorporating proposed upgrades (50555-L-05);
- Revised Indicative Phasing Plan (5055-L-106);
- Revised Hedgerow Removal Plan (50555-L-106);
- Revised Habitat Creation Plan (5055-L-113);
- Revised Development Access Haverhill Road (10173-HL-04);
- Revised Development Access Chalkstone Way (10173-HL-02); and
- Revised .Coupals Road Car Park Access (10173-HL-20).

4.2 Clarifications

4.2.1 There are no clarifications required on this chapter.

4.3 Additional Information

4.3.1 There is no additional information relevant to this chapter.

Alternatives

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5 Alternatives

5.1 Amendments to the Planning Application

5.1.1 As discussed in Chapter 4, the only amendments made are to make improvements to the proposed development following comments made on the planning application. These have not made any difference to the assessment of significant effects on the environment. As such there is no need to consider further alternatives.

5.2 Clarifications

5.2.1 There are no clarifications required on this chapter.

5.3 Additional Information

5.3.1 There is no additional information relevant to this chapter.

Society & Economy



6 Society and Economy

6.1 Amendments to the Planning Application

6.1.1 The amendments to the planning application do not affect this chapter.

6.2 Clarifications

6.2.1 There are no clarifications required on this chapter.

6.3 Additional Information

6.3.1 There is no additional information relevant to this chapter.

Transport



7 Transport

7.1 Amendments to the Planning Application

- 7.1.1 In January 2016, a Stage 1 Road Safety Audit (RSA) was carried out on the two site access points at Chalkstone Way and Haverhill Road. As a consequence of the RSA comments and recommendations, a number of changes were made to the access designs.
- 7.1.2 No physical changes to the junction geometry or overall design have been made to the Chalkstone Way junction. The only change was to amend the inter-visibility splay to updated design standards.
- 7.1.3 In order to facilitate two vehicles negotiating within the circulatory carriageway of the proposed roundabout on Haverhill Road 'side by side', the geometry of the roundabout was altered. Consequently, the inscribed circle diameter of the roundabout was relocated northeast by approximately 6m.

7.2 Clarifications

- 7.2.1 Suffolk County Council provided Brookbanks with a Statement of Common Ground (SoCG), comprising a series of queries and items of clarification pertaining to transport modelling, highway design, public transport provision and Travel Plan. The latest revision of the SoCG is provided in Appendix 7.1. These have had no effect on the transport assessment set out in the original ES.

7.3 Additional Information

- 7.3.1 Highways England provided a response to the planning application, seeking details on any potential traffic impact at the A1307/A11 junction.
- 7.3.2 A Technical Note (see Appendix 7.2), through assessment of trip rates and distributions, demonstrated that the proposed development would only cause a negligible to minor impact on the am peak trips within the junction.
- 7.3.3 On this evidence base, Highways England formally removed their holding objection, confirming that no mitigation is required at the A1307/A11 junction.

Noise & Vibration



8 Noise and Vibration

8.1 Amendments to the Planning Application

8.1.1 The amendments to the planning application do not affect this chapter.

8.2 Clarifications

8.2.1 There are no clarifications required on this chapter.

8.3 Additional Information

8.3.1 There is no additional information relevant to this chapter.

Ecology

9



9 Ecology

9.1 Amendments to the Planning Application

9.1.1 A number of amendments have been made to the planning application to respond to issues raised with regards to ecology. These have resulted in the following plans being revised:

- Revised Public Rights of Way Plan (2055-L-05)
- Revised Hedgerow Removal Plan (5055-L-112)
- Revised Habitat / Public Open Space (5055-L-119)

9.1.2 The reasons for these amendments are set out below. No other amendments made to the planning application have any effect on the conclusions of the original ES Ecology Chapter.

9.2 Clarifications

9.2.1 There were a number of comments made by the Suffolk Wildlife Trust (SWT) on ecological issues including species classification and survey methodologies/assessment. These are addressed below within the sequence they occur within the original ES Ecology Chapter. The comments made by the SWT are addressed in the following sections, only where it is relevant to the assessment of an ecological receptor. The full SWT comments and FPCR responses can be seen in Appendix 9.5 of this Addendum.

Habitats - Woodland

9.2.2 The woodland W1 within Figure 2 Phase One Habitat Plan of the Ecological Appraisal (Appendix 9.1 of the original ES) has been reclassified, whereby it has changed from 'semi-natural broadleaved woodland' to 'mixed broadleaved/conifer woodland' to reflect more accurately the descriptions within the Ecological Appraisal text. This is attached as Appendix 9.1 of this Addendum.

9.2.3 The changes to the classification within the habitat plans will not affect the evaluation of this ecological receptor and the assessment within the original ES Ecology Chapter for woodland remains that previously stated (paragraph 9.4.30).

Breeding and Wintering Birds

9.2.4 In December 2015 the Birds of Conservation Concern 4 (BoCC4) list was published to supersede BoCC3 and the status of a number of bird species were reclassified, including Mistle Thrush which was moved from the Amber to Red list. The Breeding and Wintering Bird Reports have been updated to reflect the changes (Appendix 9.3 and 9.4 attached).

9.2.5 The new BoCC4 listing has not changed the conservation value for breeding birds within the proposed development site which remain 'local' for the 19 notable species and 'site' for the 28 Green BoCC species recorded (paragraphs 9.4.4 and 9.4.46). In taking account of BoCC4, the 'local' conservation value for wintering birds also remains unchanged.

Dormice

9.2.6 The SWT have provided additional information on the dormouse distribution within Suffolk. Approximately five 'clusters' of known dormice populations occur within the County, which have been identified by the

SWT as the most north-easterly populations. Three of these occur within the southern part Suffolk within the Stour Valley with the remaining two records within more central regions. The anecdotal records previously mentioned with paragraph 5.2 of the Hazel Dormice Report (Appendix 9.5 of the original ES) were excluded from the SWTs population assessment. The reassessment of the geographical significance has concluded that the evidence of dormice found within the proposed development site would be of 'regional' value, rather than 'local' as previously stated in the Hazel Dormice Report (paragraph 6.4) and the original ES Ecology Chapter (paragraph 9.4.51).

- 9.2.7 Since the application was submitted there has been a number of changes to the degree of habitat loss within the vicinity of the dormouse nest (Hazel Dormice Report, Appendix 9.5). Breaks in features have been reduced to 12m where appropriate, which will favour dormouse passage along ground level. Research completed between 2007 and 2010 (Paul Chanin *et al.*, 2012¹), has demonstrated that dormice do not travel across roads greater than 12m in width, including the verges. The proposed development has been designed to maximise retention of hedgerows and other habitats within the green infrastructure. This addressed concerns raised by the SWT over isolation and fragmentation of populations, a more detailed response can be seen within the attached Appendix 9.5.
- 9.2.8 Since the submission of the planning application, the proposed mitigation measures have been amended; a Natural England licence will not be required. The survey results used techniques recommended within the most current available guidance², which demonstrated a single dormouse nest is situated within habitats to be retained by the proposals. No further nesting sites or evidence of dormouse nests were identified in nesting tubes within locations affected by the proposed development. From this evidence it has been concluded that the proposed development will not affect a breeding site or resting place, which are afforded strict protection under the Conservation of Habitats and Species Regulation 2010 (as amended), therefore a licence is not required to legitimise the works.
- 9.2.9 In situations where no evidence of dormouse activity has been identified in habitats effected by proposals, but dormice are known locally the Dormice Conservation Handbook confirms a licence can be avoided "*if the proposed activity can be timed, organised and carried out to avoid committing offences*". The guidance also confirms that where impacts can be completely avoided, the Regulations are not offended and a licence is not required. To ensure such circumstances a precautionary Outline Risk Assessment and Method Statement has been written on the basis of the current parameters plan (Appendix 9.6), this specifies habitat removal at appropriate time of the year so avoiding potential offences under the Regulations. If dormice activity is confirmed then works will stop and a licence applied for.
- 9.2.10 The reassessment of the geographical significance has not changed potential effects already documented within the original Ecology Chapter.

Amphibians

- 9.2.11 Details concerning the occurrence of common toad were omitted from the Great Crested Newt Report; however mitigation measures adopted within the proposed development will favour this species in the long term. The inclusion of common toads within the baseline assessment in the original ES Ecology Chapter (paragraph 9.4.52), would evaluation them as being of local conservation value, as they are species of Principle Importance under Section 41 Natural Environment and Rural Communities Act 2006. Construction effects will be negligible/minor adverse as the pond within which they were found (pond P3) will be retained within the proposals and used as attenuation; although development will occur in the wider area.

¹ Chanin P & Gubert L. 2012. *Common dormouse (Muscardinus avellanarius) movement in a landscape fragmented by roads*. Lutra 55 (1): pages 3-15.

² Bright, Morris & Mitchell-Jones. 2006. *The Dormouse Conservation Handbook*. English Nature, Peterborough.

9.2.12 Mitigation works will include the enhancement of existing habitats ensuring more suitable habitats are created which provide linkages to woodlands retaining refuge opportunities within proximity to aquatic features would be the inclusion of new refuge habitats. Method statements will be adopted to include appropriate timing of excavations.

9.3 Additional Information

Revised Badger Report

9.3.1 A badger survey was undertaken in March 2016 to ensure an up to date accurate assessment of the badger activity within the proposed development site and also to address concerns raised by the SWT with regards to clan numbers and sett identification. During this survey only one sett remained active within the southeast of the proposed development site; the sett within Great Field Plantation (W2) is no longer active. A revised Badger Report has been included within this document Appendix 9.2.

9.3.2 There will be no changes to the conservation value within the original ES Ecology Chapter which will remain 'local' (paragraph 9.4.42). Mitigation measures will not be required around Great Field Plantation, and hence the effects from construction and operation phase will remain at 'site' level for the existing sett in the south east (paragraph 9.5.22 and 9.5.60).

Additional Bat Survey Report

9.3.3 The Additional Bat Survey Report consists of the datasets collected during August to September 2015, which were not completed in time for the planning application (Appendix 9.7). This report includes activity transects (September 2015), static survey (August and September 2015) and additional nocturnal surveys on trees.

9.3.4 Throughout the entire survey period common pipistrelle were the most recorded species which occurred 79% of the time, with July 2014 and September 2015 recording the highest level of bat activity; this coincides with the maternity season (July) and period of weight gain before hibernation (September).

9.3.5 Barbastelle bats were recorded regularly across site in low numbers throughout the survey season of 2014 and 2015, from the completed surveys activity was generally low with individual registrations recorded. Peaks in activity were recorded in the spring / autumn 2015 within southern and northern edges of woodland W1, hedgerow H4 and eastern edge of W7. Survey data suggests that the habitats within the proposed development site are unlikely to provide significant routes for the local population.

9.3.6 No new bat roosts were identified during this additional period; however a soprano pipistrelle was confirmed within T49, which only recorded pipistrelle droppings during previous survey work.

9.3.7 This additional report follows on from the Bat Survey Report August 2015, whereby the effects of habitat losses have been reassessed using the updated Habitat/Public Open Space Plan (5055-L-119), this has also lead to the update of the lighting strategy (included in Appendix 9.7) to include additional hop overs to maintain connectivity.

9.3.8 The conclusions made within the original ES Ecology Chapter have not changed as a result of the additional data assessment from August to September 2015. The proposed mitigation, compensation and enhancement measures will ensure habitat connectivity across the site and into surrounding areas; thus ensuring a Favourable Conservation Status for the bat species recorded, particularly barbastelle bats.

Agricultural Resources

10

10 Agricultural Resources

10.1 Amendments to the Planning Application

10.1.1 The amendments to the planning application do not affect this chapter.

10.2 Clarifications

10.2.1 There are no clarifications required on this chapter.

10.3 Additional Information

10.3.1 There is no additional information relevant to this chapter.

Surface Water Drainage & Flood Risk



11 Surface Water Drainage and Flood Risk

11.1 Amendments to the Planning Application

11.1.1 The amendments to the planning application do not affect this chapter.

11.2 Clarifications

11.2.1 There are no clarifications required on this chapter.

11.3 Additional Information

11.3.1 There is no additional information relevant to this chapter.

Local Air Quality

12

12 Local Air Quality

12.1 Amendments to the Planning Application

12.2 The amendments to the planning application do not affect this chapter.

12.3 Clarifications

12.4 There are no clarifications required on this chapter.

12.5 Additional Information

12.6 There is no additional information relevant to this chapter.

Archaeology

13

13 Archaeology

13.1 Amendments to the Planning Application

13.1.1 The amendments to the planning application do not affect this chapter.

13.2 Clarifications

13.2.1 Discussions were undertaken with Suffolk County Council during the summer of 2015 regarding the need and scope of archaeological evaluation trenching. The outcome of these discussions was that the areas of proposed development would be subject to a trenching operation consisting of an initial 2.5% sample with up to a further 2.5% sample to be undertaken subject to the results of the first phase of trenching works.

13.2.2 A Written Scheme of Investigation for the evaluation was submitted to Suffolk County Council in September 2015 and, following some minor revisions, was approved by the County Council on 2 October 2015.

13.2.3 The fieldwork was undertaken by MOLA between October and December 2015. During this time a number of site meetings were held with a Suffolk County Council Senior Archaeology Officer, the purpose of which was to review and discuss the findings of the evaluation and to sign off areas of trenching for backfilling. The final meeting was in December 2015. In light of the results of the evaluation, Suffolk County Council confirmed that no further pre-determination trenching would be required. Further evaluation trenching up to another 2.5% sample will be necessary ahead of mitigation excavation in a number of areas of the proposed development site. However, Suffolk County Council confirmed that such works would be appropriate to be undertaken as a condition of outline planning permission.

13.3 Additional Information

13.3.1 The full report on the archaeological evaluation is included as Appendix 13.1.

13.3.2 In summary, 314 trenches were excavated across the site. This revealed that archaeological remains were concentrated around the central areas of the site, with prehistoric and Iron Age comprising a number of isolated pits in the south and east along with two possible field systems in the central-western and south-eastern areas. An enclosure and a pit containing kiln/hearth debris lay in the western-central area and a possible dwelling and hearth were observed in the central eastern area. No deposits of conclusively Roman date were observed.

13.3.3 Medieval activity of 12th and 13th century date was concentrated in two distinct areas and was probably associated with the surrounding landscape of two nearby moated sites. No later medieval activity was present, and only limited Post-Medieval activity was identified. A large number of trenches contained either no archaeological remains, or only Post-Medieval/modern land boundaries as depicted on the 1881 and 1905 Ordnance Survey Historic maps. The remains that have been recorded are considered to be of local significance/low sensitivity.

13.3.4 The construction of the proposed development will have a direct impact upon areas of archaeological interest identified by the geophysical survey (results of which were incorporated into the original ES chapter) and the trenching. As these remains are considered to be of low sensitivity, the construction phase of the proposed development will have a minor impact upon such remains (as set out in the original ES). There will be a negligible impact from the operational phase of the proposed development on such remains.

13.3.5 The following mitigation measures are proposed to be undertaken as a condition of planning permission:

- A further 2.5% sample evaluation trenching will be undertaken in the areas of archaeological interest identified by the evaluation trenching. The detail of this programme will be discussed and agreed with Suffolk County Council following the granting of planning permission.
- Following completion of this second phase of evaluation trenching, areas of archaeological interest that will be impacted by construction activities will be excavated and recorded in advance of construction commencing with the results being published following completion of the post-excavation analysis.
- Where appropriate and should remains merit it, consideration will be given to design solutions such as the allocation of open space to enable preservation.

13.3.6 The detail of this excavation programme will be discussed and agreed with Suffolk County Council following the granting of planning permission and will be implemented on a phase by phase basis.

Cultural Heritage

14

14 Cultural Heritage

14.1 Amendments to the Planning Application

14.1.1 The amendments to the planning application do not affect this chapter.

14.2 Clarifications

14.2.1 Historic England, in a letter dated 21 December 2015, have commented on the proposed development and although it is broadly supportive, they consider that the proximity of the development to the Scheduled Monument to the southeast and northwest causes a degree of harm (but acknowledged to be less than substantial) to the significance of the heritage asset. They consider further mitigation is necessary, particularly in relation to the housing parcels in proximity to the moated site. This section seeks to address their concerns and is based upon a letter of response prepared by Beacon Planning to St Edmundsbury Borough Council, dated 4 February 2016.

14.2.2 It is acknowledged within the Cultural Heritage Chapter that there will be a degree of harm to the setting of the Scheduled Monument, notably from development parcel A5 which lies between the moated site and the Great Field Plantation. However, this is considered to be less than substantial. Development in the setting of the Scheduled Monument has been significantly reduced from that set out within the Concept Statement (which provided the parameters and framework for the development of this site as defined in Policy HV4 of the Haverhill Vision 2031). The development parcel A5 is proposed to have the lowest category of density proposed for the site (20-25 dph in the submitted and revised parameter plans). Similarly, the outer edge of development parcel A10 (i.e. that closest to the moated site) has also been reduced from the 'higher density' proposed in the Concept Statement diagram to a density of 20-25 dph in the submitted and revised parameter plans. A higher density development parcel to the southwest of the moated site proposed in the Concept Statement has been removed from the submitted and revised parameter plans for the Outline application. It is therefore the case that significant mitigation has already been undertaken to reduce the potential impact on the Scheduled Monument.

14.2.3 The Masterplan for the site (approved September 2015) describes on page 40 that:

"The design and layout of these areas [the lowest density areas] will be landscape-led in order to respect the context of the surrounding countryside and nearby villages."

14.2.4 This design approach to these areas has been developed from paragraph 28 of the Concept Statement which notes that:

"The areas at the extreme margins adjoining the countryside provide an opportunity for buildings within a landscape setting."

14.2.5 There is, therefore, adequate steer from these two adopted documents to ensure that at detailed design stage development in these areas closest the moated site will have an appropriately rural character, avoiding the suburban character that Historic England consider will be inevitable in these areas. The Council have the opportunity to ensure this is not the case without compromising the quantum of development that is necessary to ensure that the development of these parcels remains sustainable. If the housing blocks were narrowed too much, the resulting plot dimensions would result in a substantial amount of single frontage road which would be detrimental for both the design quality and viability of this part of the development.

14.2.6 The incorporation of tree belts is an integral part of the vision for the development of this site. They are shown in the diagram attached to the Concept Statement as noted by Historic England, however, this diagram was indicative only and contained no suggested dimensions for these planting belts. Similarly, although the Masterplan for the site contains no dimensions for these screening belts, their breadth has been considered and are proposed to be approximately 15m, which is considered typically appropriate for this type of structural planting and has been assessed to be adequate to ensure that development will not be visible once the planting is established. The structural planting will take the form of woodland belts and the species and maturity of specimens can be controlled by the Council to ensure rapid establishment and adequate seasonal cover.

14.2.7 It is therefore considered that mitigation of the less than substantial harm arising from the development on the heritage significance of the Scheduled Monument has been carefully considered as part of the design of the masterplan and parameter plans (submitted and revised) for the proposed development. These have been informed by the Concept Statement and diagram adopted by the Council, in addition to numerous background supporting studies undertaken by the client and project team. The Concept Statement and the Haverhill Vision 2031 were both thoroughly consulted upon by numerous stakeholders, including presumably Historic England. The principle of the development has therefore been long established. Additionally, there remains significant scope at the detailed design stages to ensure that development and landscaping is appropriate to and further mitigates any residual harm to the setting of the Scheduled Monument.

14.3 Additional Information

14.3.1 There is no additional information relevant to this chapter.

Landscape & Visual Amenity

15

15 Landscape and Visual Amenity

15.1 Amendments to the Planning Application

15.1.1 The amendments to the planning application do not affect this chapter.

15.2 Clarifications

15.2.1 As requested by St Edmundsbury Borough Council, additional views were included within Appendix 15.2 of the original ES to demonstrate distant and alternative views of the site. The visual receptors associated with these views have now been assessed within an amended Appendix 15.2 (set out in Appendix 15.1 of this Addendum) to determine the visual effects of the development. The following should be read in conjunction with Appendix 15.1.

15.2.2 The majority of the additional visual receptors were located at a distance of over 2km from the site boundary. These include locations near Barnardiston and Brockley Green to the north east of the site, Boyton End to the southeast, Withersfield and Burton End to the northwest, locations along the Stour Valley Path and Puddle Brook Playing Field, Chivers Road and Chimswell Way to the southwest of the site. Whilst partial views of the site are possible from some of these rural locations, the site is generally viewed within the existing context of the urban development of Haverhill and forms a small part of a wider view. For the more urban locations such as those to the southwest of Haverhill, the site is mostly screened by landform, vegetation or existing development.

15.2.3 Visual effects for the distant receptors are considered to be Negligible and not therefore significant.

15.2.4 Other visual receptors are located nearer to the site, such as the public footpath leading to Burton Ley Plantation to the northwest, the Stour Valley Path north of Kedington, Sturmer Hall to the southeast, public open space off Shetland Road to the southwest and the public footpath to the east of Eastcott's Farm. The visibility of the site from these locations is generally restricted by landform or existing mature vegetation.

15.2.5 Visual effects for these receptors are considered to be Negligible once the proposed development has matured and not significant.

15.3 Additional Information

15.3.1 Additional information was requested in the form of notation on the views included within Chapter 15 of the original ES. This has now been provided within Figures 15.10-15.25 provided over page.

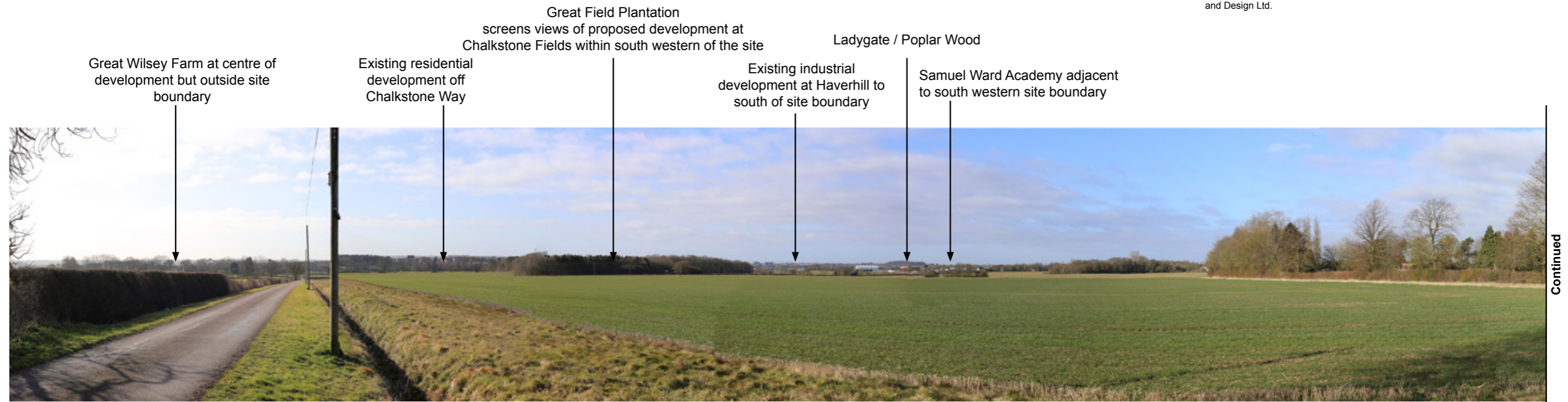


PHOTO VIEWPOINT 1: View south west from public footpath on site boundary.

Continued



PHOTO VIEWPOINT 1: Cont'd

Continued

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Figure 15.10 A

Woodland belt along edge of housing north of Shetland Road limits views to the south

Existing residential development off Shetland Road (Haverhill)

Great Field Plantation screens views of potential development to the west



PHOTO VIEWPOINT 2: View west from public footpath junction adjacent to Great Wilsey Farm.

Continued

Properties off A143

Great Wilsey Farm access track outside of site boundary



PHOTO VIEWPOINT 2: Cont'd

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Figure 15.11 A

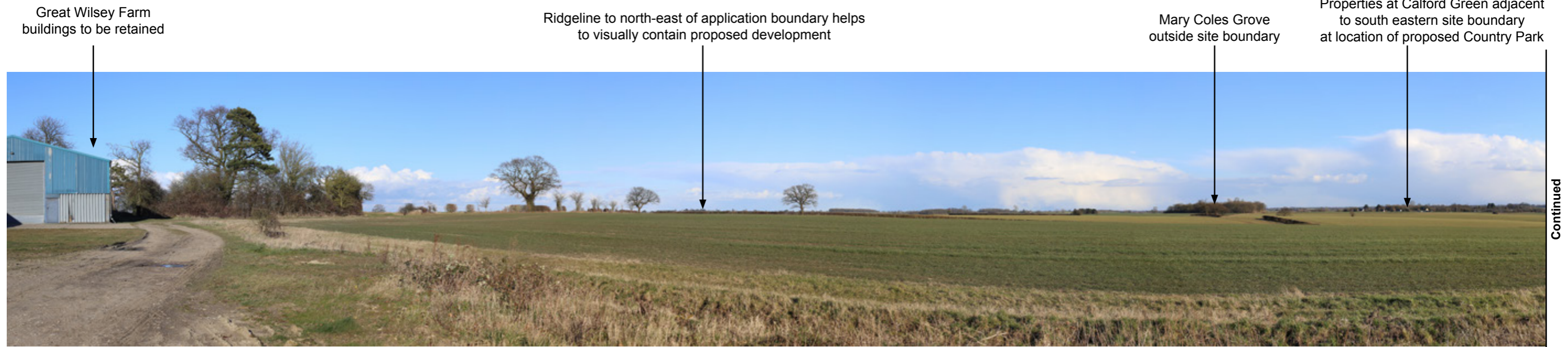


PHOTO VIEWPOINT 3: View south east from public footpath on site boundary by Great Wilsey Farm.

Continued

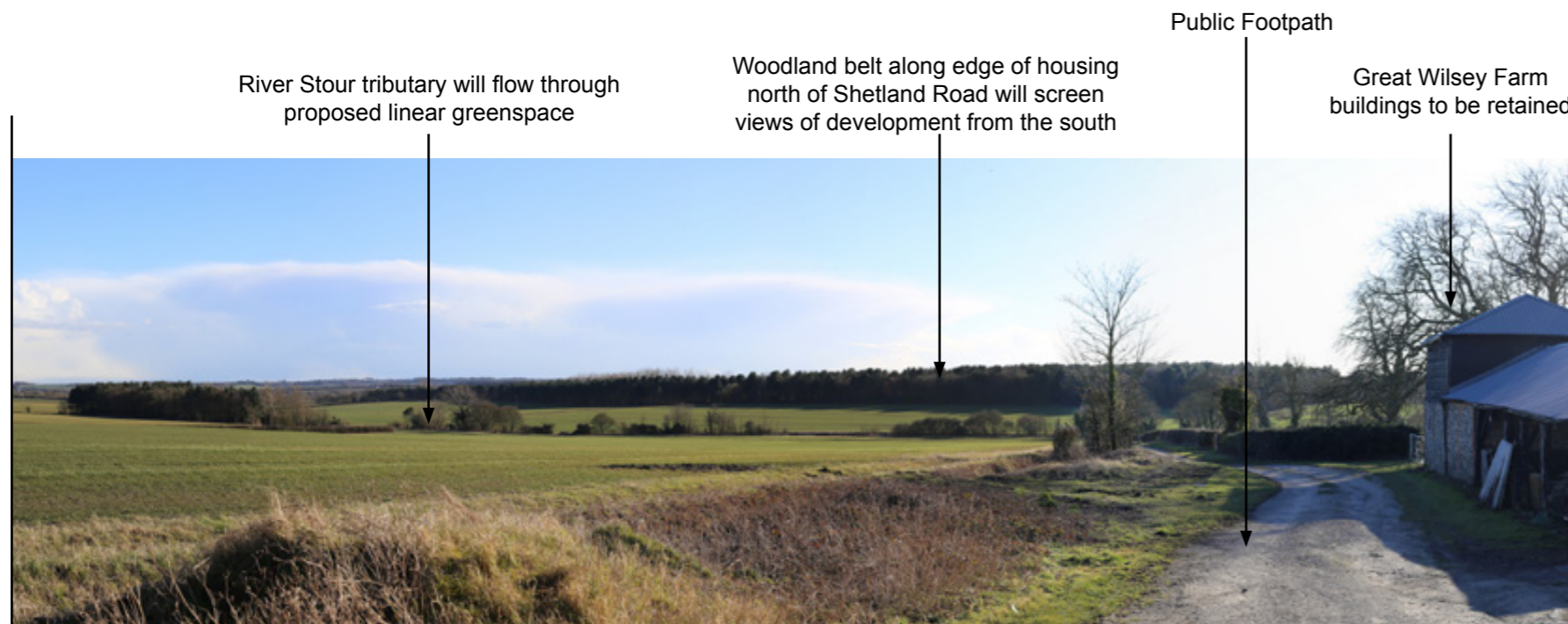


PHOTO VIEWPOINT 3: Cont'd

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Figure 15.12 A

Mary Coles Grove outside of site boundary

Ladygate/Poplar Wood beyond Haverhill to south-west

Woodland belt along edge of housing north of Shetland Road which will provide screening of proposed development from the south

Existing industrial development at Haverhill

Public Footpath to be retained

Great Wilsey Farm at centre of development but outside site boundary

Great Field Plantation will screen proposed development to south and west



PHOTO VIEWPOINT 4: View south west from high point on public footpath leading to Kedington.

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A

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PHOTO VIEWPOINT 5: View south west from high point on public footpath leading to B1061 to the south of Kedington.



PHOTO VIEWPOINT 5: Cont'd

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Figure 15.14 A

Properties on B1061 at Calford Green adjacent to south-east boundary.
A Country Park is proposed to the south of the site adjacent to Calford Green

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PHOTO VIEWPOINT 6: Panoramic view west to north west from public footpath adjacent to Calford Green.

Existing industrial development at Haverhill

Woodland belt along edge of housing north of Shetland Road will screen new development from the south

Tributary of River Stour to be incorporated into linear green space

Great Wilsey Farm at centre of development but outside site boundary



PHOTO VIEWPOINT 6: Cont'd

Mary Coles Grove adjacent to eastern site boundary



PHOTO VIEWPOINT 6: Cont'd

Entrance to Eagles Farm

Edge of site visible through intervening vegetation.
Proposed Country Park to be located within this part of the site



PHOTO VIEWPOINT 7: View west from B1061 (Sturmer Road) on site boundary south of Calford Green.

Continued

B1061 Sturmer Road



PHOTO VIEWPOINT 7: Cont'd

Continued

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Figure 15.16 A

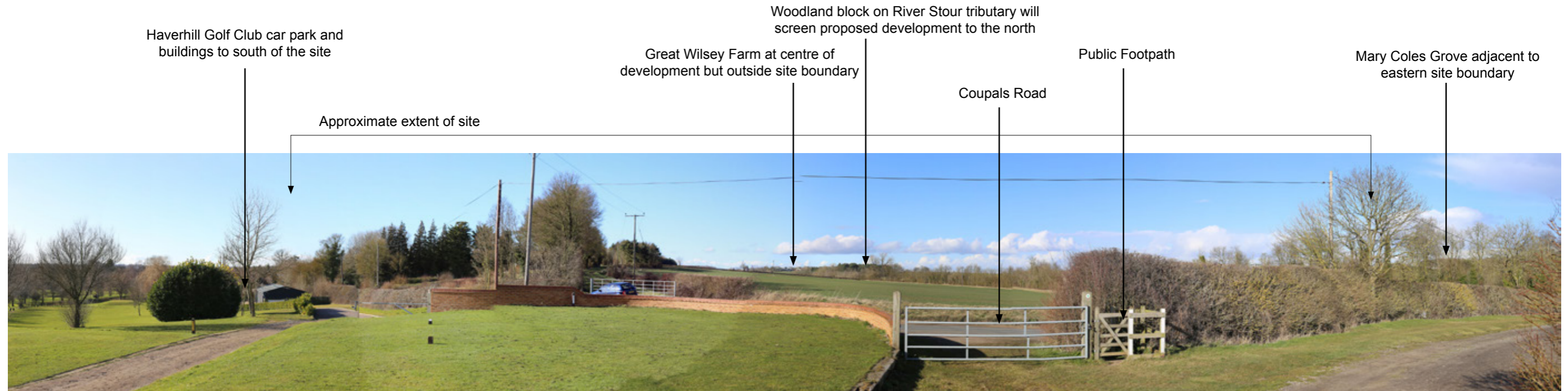


PHOTO VIEWPOINT 8: View north from public footpath junction to Coupals Road adjacent to golf course entrance.

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A

Hill Farm off A143
Haverhill Road

Great Wilsey Farm at centre of
development but outside site
boundary

Tributary of River Stour to be
incorporated into linear green space

Ridgeline north of application boundary will help
to visually contain proposed development



PHOTO VIEWPOINT 9: View north east from public footpath leading from tree belt adjacent to Shetland Road.

Continued

Existing tree belt will provide screening to
proposed development to the north-east

Properties at Calford Green adjacent to
south-east site boundary. The Country Park is
proposed within this area of the site.



PHOTO VIEWPOINT 9: Cont'd

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Figure 15.18 A

Properties on Green Road adjacent to southern site boundary

Samuel Ward Academy adjacent to south-west site boundary

Great Field Plantation will provide a screen to proposed development to the north



Continued

Continued

PHOTO VIEWPOINT 10: View east from public footpath on edge of tree belt, leading towards Great Wilsey Farm.

Great Wilsey Farm at centre of development but outside site boundary

Edge of tree belt to north of properties on Shetland Road



Continued

PHOTO VIEWPOINT 10: Cont'd

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Figure 15.19 A

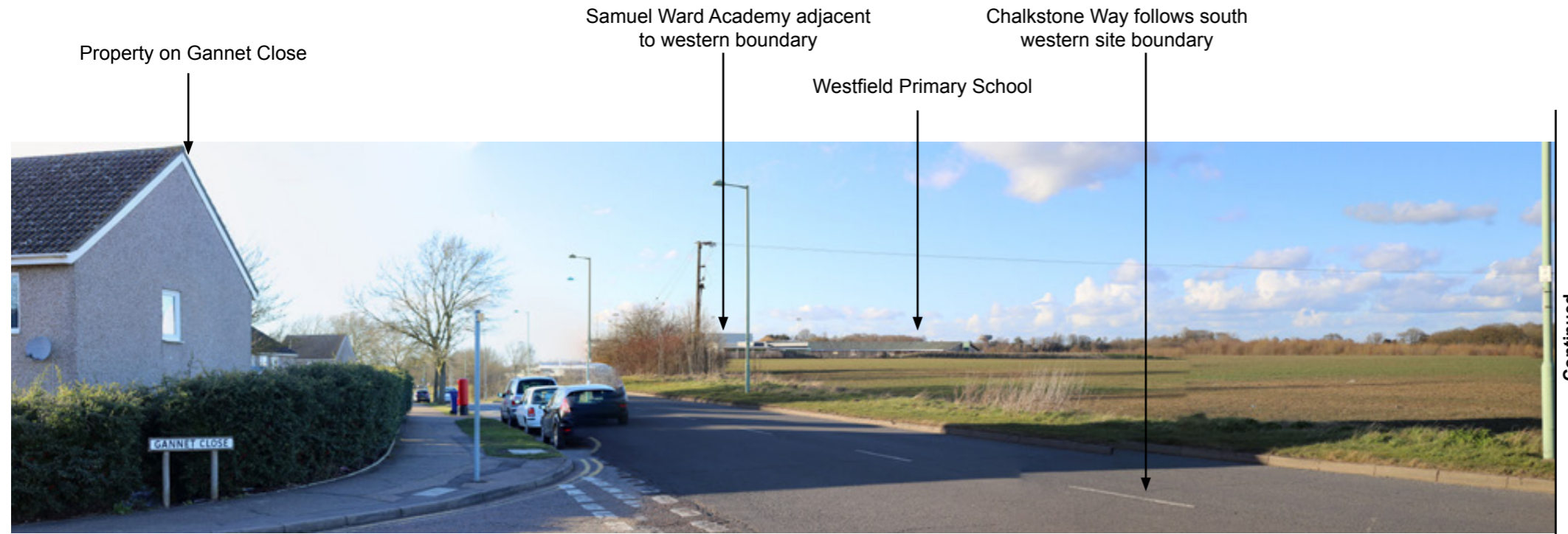


PHOTO VIEWPOINT 11: View north east from site boundary on Chalkstone Way.

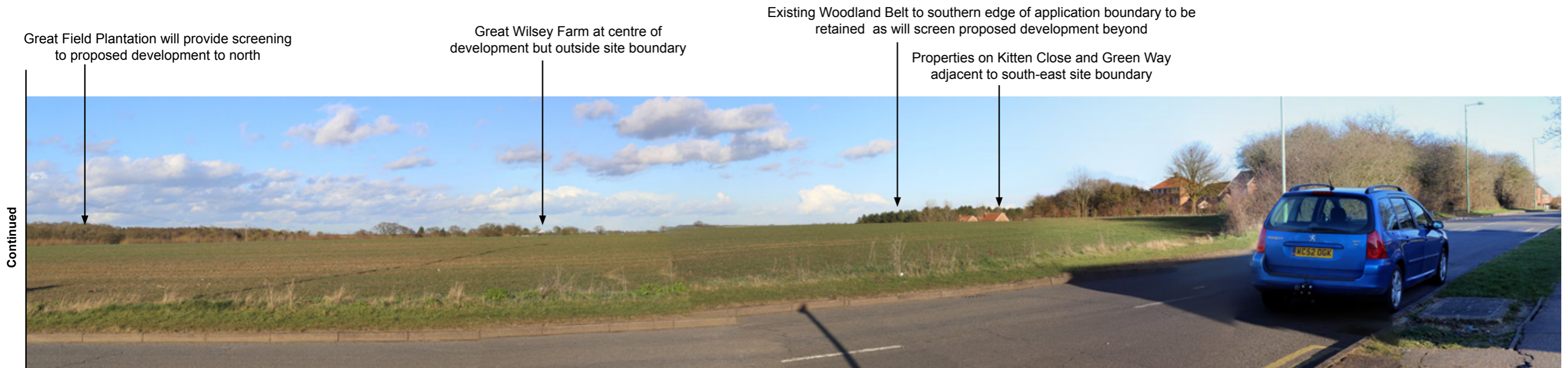


PHOTO VIEWPOINT 11: Cont'd

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Figure 15.20 A



PHOTO VIEWPOINT 12: View north to east from junction of footpaths on boundary adjacent to Samuel Ward Academy.

Continued

Public footpath route along hedgerow field boundary to be retained and incorporated into linear green space



PHOTO VIEWPOINT 12: Cont'd

Continued

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Figure 15.21 A

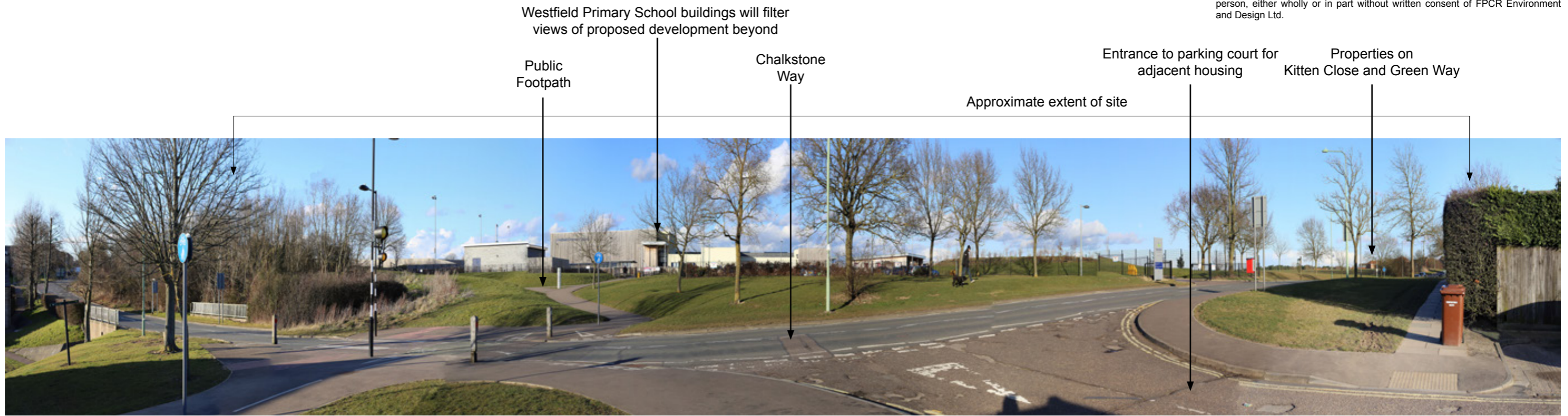


PHOTO VIEWPOINT 13: View north-east from public footpath on Chalkstone Way looking towards Westfield Primary School.

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Figure 15.22 **A**



PHOTO VIEWPOINT 14: View south-west from A143.

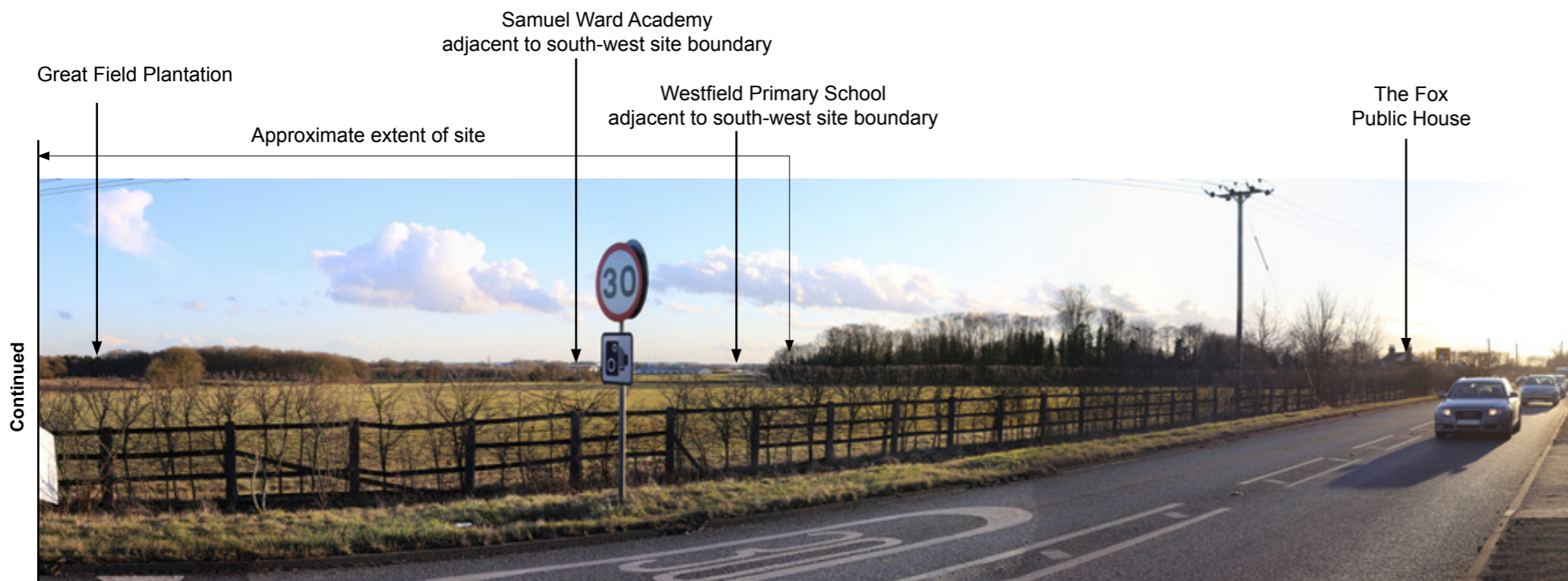


PHOTO VIEWPOINT 14: Cont'd

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Figure 15.23 A

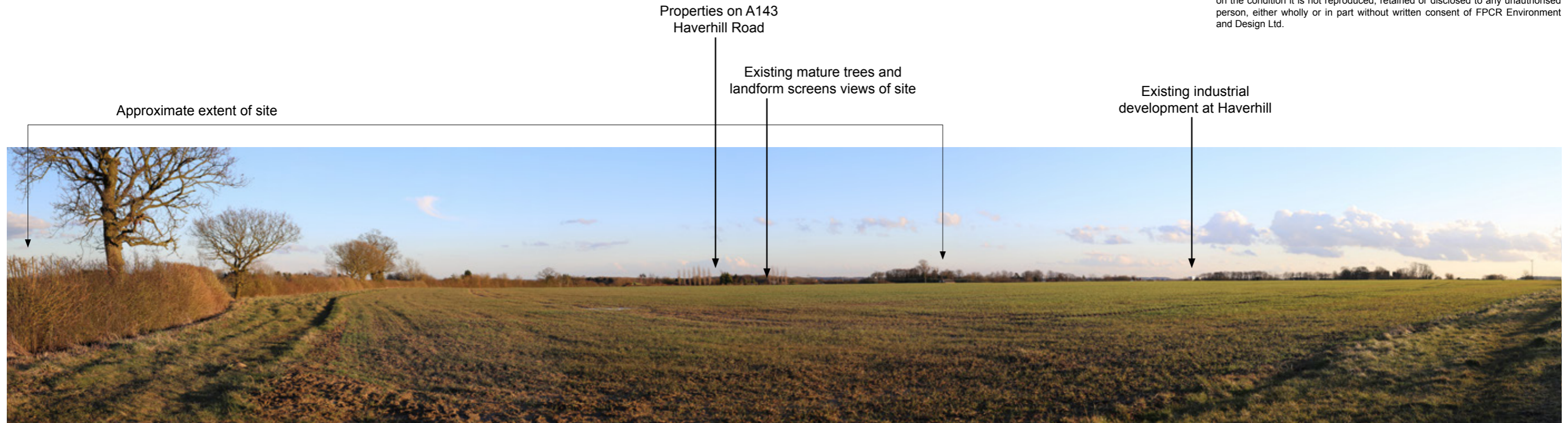


PHOTO VIEWPOINT 15: View south-east from public footpath leading towards Burton Ley Plantation.

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Figure 15.24 A

Woodland belt north of residential development on Shetland Road will screen proposed development from the south

Public Footpath to be retained

Existing residential development at Haverhill to south of site



Continued

PHOTO VIEWPOINT 16: View south-west from public footpath on site boundary, south of Great Wilsey Farm.

Public Footpath to be retained and incorporated into linear green space



Continued

PHOTO VIEWPOINT 16: Cont'd

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Figure 15.25 A

Cumulative Effects

16

16 Cumulative Effects

16.1 Amendments to the Planning Application

16.1.1 The amendments to the planning application do not affect this chapter.

16.2 Clarifications

16.2.1 There are no clarifications required on this chapter.

16.3 Additional Information

16.3.1 There is no additional information relevant to this chapter.

Mitigation, Monitoring & Residual Effects

17

17 Mitigation, Monitoring and Residual Effects

- 17.1.1 The amendments set out in this addendum to the ES do not alter the assessment of potentially significant effects on the environment. Therefore Chapter 17 of the original ES is still relevant.



Appendices

**Appendix 2.1
Phase 1 Geo
Environmental Desk
Study**

**Land at Haverhill
Suffolk**

**Geo-Environmental
Phase 1 Desk Study**



Mrs Pelly

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Document Control Sheet

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Document Ref: 10173/DS/01
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Project Number: 10173
Client: Hallam Land Management Ltd & Mrs Pelly

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Appendix

Historical map index – Ordnance Survey

Historical site mapping – Ordnance Survey

Borehole Logs – British Geological Survey

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1 Introduction

- 1.1 Brookbanks Consulting Ltd is appointed by Hallam Land Management and Mrs Pelly to complete a Phase 1 Geo-Environmental Desk Study for a proposed development on land to the north-east of Haverhill, Suffolk.
- 1.2 The objective of the study is to research the likely geotechnical and chemical characteristics of the soil and ground water environment.

2 Background Information

Location & Details

- 2.1 The proposed development site covers approximately 168.34ha and lies to the north east of Haverhill urban area nearby Great Wilsey Farm. The site is bounded by the urban edge of Haverhill to the south, the north of the site is bounded by Haverhill Road (A143), with Coupals road to the south and lies within the County of Suffolk.
- 2.2 The land is currently undeveloped and is not thought to have been historically subject to build development. The site location and boundary is shown indicatively on Figure 2a, below:

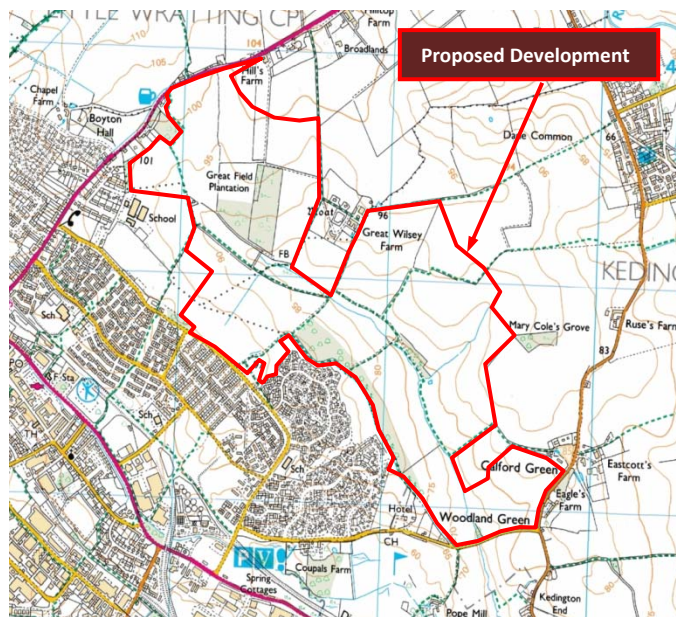


Figure 2a: Site Location

Development Criteria

- 2.3 It is proposed to develop up to 2500 dwellings, two schools, employment land, a care home and two local centres within the circa 168.34ha site.

Sources of Information

- 2.4 The following body was consulted during the study:

- Environmental Matters - Environment Agency

- 2.5 The following information has been gathered during the study:

- Environmental Search - Landmark Envirocheck Report, September 2014
- Published Geology - British Geological Survey

3 Historical Site Uses

- 3.1 In appraising the Site history, published Ordnance Survey maps have been reviewed dating from the late 19th Century up to the present day. A selection of large scale maps used in this report are contained within the Appendix.
- 3.2 Inspection of the Ordnance Survey maps has revealed that since 1885, the Site has remained undeveloped, with only a Great Field Plantation (wooded vegetation), in the north of the Site since 1918 and in the furthestmost north small vegetation, since 1967. The only records identifying any major built development within the Site boundary is Great Wilsey, particularly in 1885 and the 1970's.
- 3.3 The surrounding area includes the following potentially significant contaminative land uses:
- Since 1906, Haverhill Road bounds the north of the Site. Chalkstone Way bounds the south-west of the Site since 2006.
 - The Great Eastern Railway (Cambridge, Haverhill and Sudbury Branch) operated approximately 550m south of the Site since 1880. The track was in operation until the early 1970's, after which it became dismantled. By 1981, a small settlement and non-conifer trees are shown to have established and over the dismantled Great Eastern Railway. Approximately 500m west of the Site, the Colne Valley and Halstead Railway (Cambridge Haverhill Branch and the Colne Valley Branch) operated since 1888. The track was in operation until the early 1970's, where it too became dismantled. Since the early 1990's, both have been converted into paths.
 - A pit is shown between 1885 and the 1970's. It becomes a Refuse / Slag Heap by the 1970's approximately 400m south-west of the Site. It is no longer shown on maps since 1981.
 - Haverhill, Sturmer and Kedington have developed considerably over the years. The town of Haverhill is present since the 1880's maps, however substantial development began in the 1960's to the present day. Developments include; factories (approximately 950m west of the Site), residential development (on the boundary of the Site). Sturmer expands between the 1980's and the present day initially 1,000m south-west of the Site. The village of Kedington is present since 1885, and showed major developments since the 1960's, approximately 850m east of the site. Samuel Ward Academy Secondary School is shown approximately 50m north of the Site since 1981.
 - Approximately 650m south-west of the Site a Sewage Farm is shown since 1898. By 1905, sewage tanks of the Haverhill U.D.C. are shown within the area. It is still present today but is larger in size. Another sewage works is shown 950m north-east of the Site in 1981, which coincided with the development of Kedington.
 - A Factory and Depot are shown 550m south-west of the Site in 1981. By 1991, these have been converted into a Works and are still present today.
 - A Coal Yard is shown in 1970 700m west of the Site, by 1980 it is no longer present.
 - A Brick Works is shown approximately 1,000m south-west of the Site. By 1928, it has become an old Brick Works and is no longer present by the 1970's. A further three Works are shown between 900 and 1,000m south-west of the Site since 1967. However, only one of them remains from the 1970's. All three have been converted into factories since 1991, and are still present today.
 - A Goods Station is shown between 1960 and the 1970's approximately 1,000m south-west of the Site.
- 3.4 Having reviewed the historical mapping there are no potentially significant contaminative land uses identified within the Site boundary, with the exception of agriculture.

3.5 Potentially significant contaminative land uses identified within the surrounding area include: Agriculture, former Great Eastern Railway and Clon Valley and Halstead Railway, Sewage Works, works and a former coal yard.

4 Recent & Current Site Usage

4.1 With the exception of the Great Field Plantation, the Site is currently undeveloped. The historical map search suggests that the land has previously been assigned as agricultural land.

5 Ground Conditions

Geology

5.1 With reference to the British Geological Survey map, the Site is shown to be underlain by chalk bedrock geology belonging to the following formations: Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation and Culver Chalk Formation.

5.2 Superficial deposits identified across the Site comprise diamicton belonging to the Lowestoft Formation and Head deposits shown along the watercourse running through the Site. These are lithologically described by the BGS below as;

- **Lowestoft Formation (Diamicton)** - An extensive sheet of chalky till, together with outwash sands and gravels, silts and clays. The till is characterised by its chalk and flint content. There is a 30% carbonate content.
- **Head Deposits** - A polymict deposit: comprises of gravel, sand and clay depending on upslope source and distance from the source. They are poorly sorted and stratified deposits. Essentially comprises of sand and gravel with local lenses of silt, clay or peat and organic material.

5.3 The published geology of the Site, as described above is shown on Figure 5a, below:

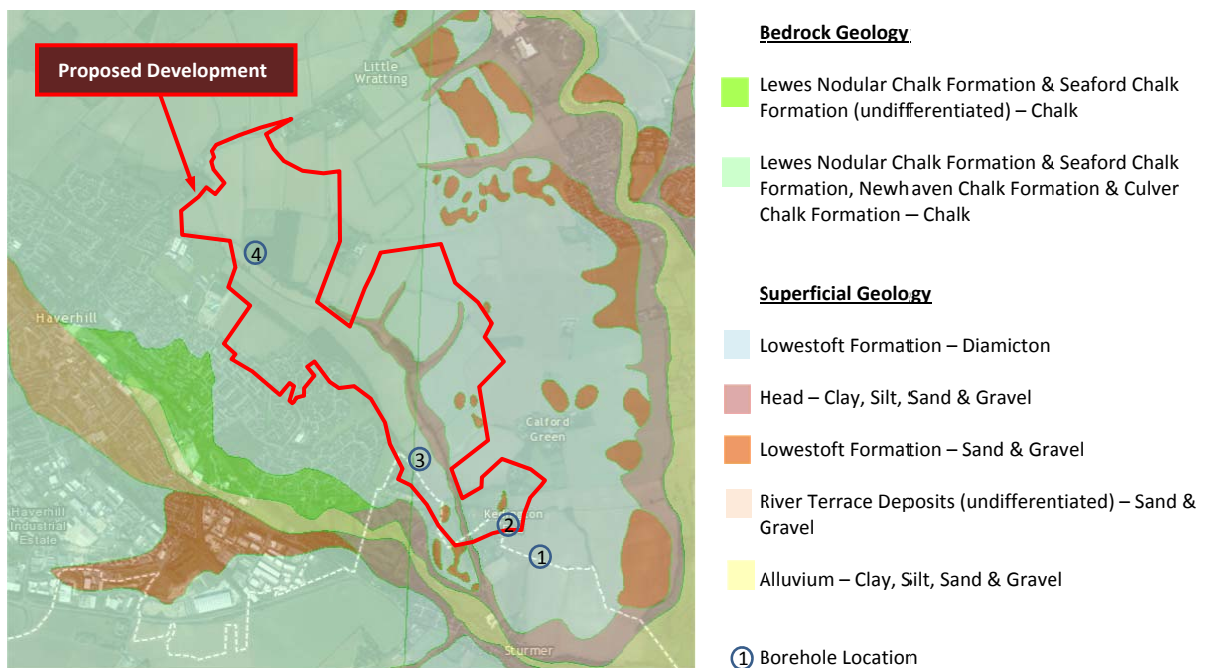


Figure 5a: BGS Published Geology

5.4 BGS Borehole logs show the nature of the geology and provide an indication of the depths at which geological formations are seen. However, further detailed analysis on Site would reconfirm the existing geology. Below are the results from four BGS borehole logs, located on or within close proximity of the Site boundary (the approximate positions of which are shown on Figure 5a and the logs included within the Appendix).

- **Borehole 1 (TL74SW28)** – Soil was recorded up to a depth of 0.2m. Clay which is brown becoming grey with chalk and flint pebbles with a thickness of 7.7m. Soft chalk is shown with a thickness of 2m plus.
- **Borehole 2 (TL64SE19)** – Topsoil is recorded with a thickness of 0.5m. The Boulder Clay (Diamicton) changes from a firm grey boulder clay (0.7m thickness), to a firm yellow clayey sand with gravel fragments (1.9m thickness), to a stiff grey boulder clay with chalk and flint fragments (9.4m thickness). Chalks with flints are shown underlying with a thickness of 37.5m.
- **Borehole 3 (TL64SE18)** – Clay with varying degrees of chalk and flint is shown to a thickness of 13m. Underlying this is Chalk with varying quantities of flint with a thickness of 37m.
- **Borehole 4 (TL64NE42)** – Boulder Clay (Diamicton) is shown to vary from a fill (1m thick), to a stiff brown boulder clay (4.1m thick), to a very stiff grey boulder clay with occasional silt (1.9m thick), to a very stiff grey boulder clay (31.5m thick), to finally a dense yellow brown silty sand (1m thick). The Chalk with flints is shown to be 40.5m thick.

5.5 BGS records include the following ground stability hazards on and within 250m of the Site:

- Collapsible ground stability Very Low*
- Compressible ground: No Hazard*/ Very Low*
- Ground dissolution: No Hazard* Very Low*/ Low*
- Landslide: No Hazard* /Very Low*/ Low*
- Running sand: No Hazard*/ Very Low*
- Shrinking & Swelling: No Hazard*/ Very Low*/ Low*
- Shallow mining No Hazard*

(* Indicates hazard on site or within 250m of the boundary)

Radon

5.6 The Site is shown to be situated within a low probability area affected by radon, where less than 1% of homes are estimated to be above the action level.

5.7 It is reported that no radon protection measures are necessary for the construction of new developments within the Site.

Mining

5.8 The Site is not reported to be in an area affected by coal mining.

Minerals

5.9 Four former **BGS Recorded Mineral Sites** have been recorded. Haverhill Brick Works included three sites located approximately 592m and 686m to the west and 994m to the south-west of the Site boundary. The fourth is Kedington Brick Works which is shown to have operated approximately 792m south-east of the Site. All sites are reported to have extracted common clay and shale from the underlying Lowestoft Formation and Alluvium deposits, however these have all ceased operation.

6 Hydrology

Flooding

- 6.1 The Environment Agency's (EA) National Generalised Modelling (NGM) Flood Zones Plan indicates predicted flood envelopes of Main Rivers across the UK. In many circumstances, the NGM is based on basic catchment characteristic data and modelling techniques. Where appropriate, more accurate Section 105 / SFRM models are produced using more robust analysis techniques.
- 6.2 An unknown watercourse and tributary of the River Stour runs through the Site and flows southwards. The following watercourses are located within the proximity of the Site: The Stour Brook is 579m to the south-west and the River Stour is situated approximately 782m south. The Flood Zone mapping identifies flooding along the River Stour and the Stour Brook, with flows seen to come out of bank during the 1 in 100 (1% AEP) and 1 in 1,000 year (0.1% AEP) events.
- 6.3 The mapping shows that the entire Site lies within Flood Zone 1; being an area of Low Probability of flooding, outside both the 1 in 100 (1% AEP) and 1 in 1,000 (0.1% AEP) year flood events. The EA Flood Zone plan reprinted as Figure 6a below, shows the unknown watercourse having no risk of fluvial flooding.

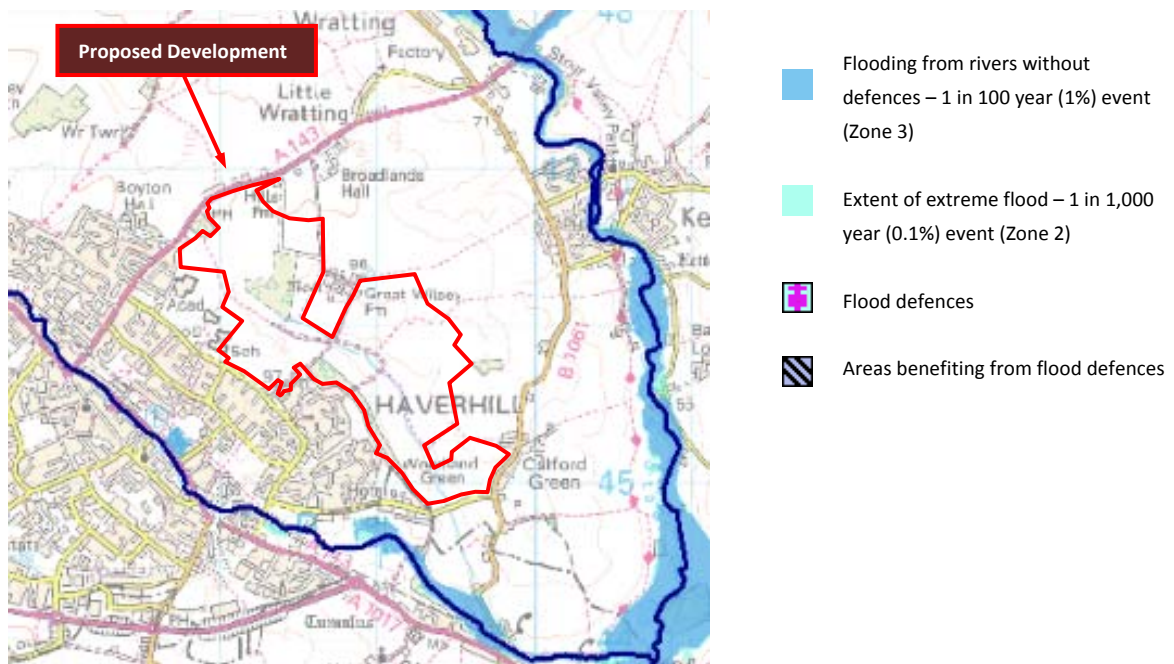


Figure 6a: EA Flood Zone Plan showing 1 in 100 & 1 in 1,000 year floodplain

- 6.4 The risk of surface water flooding has been mapped by the EA and is based on available data from Suffolk County Council, the Lead Local Flood Authority. Figure 6b illustrates areas with a low to high risk of surface water flooding on Site.

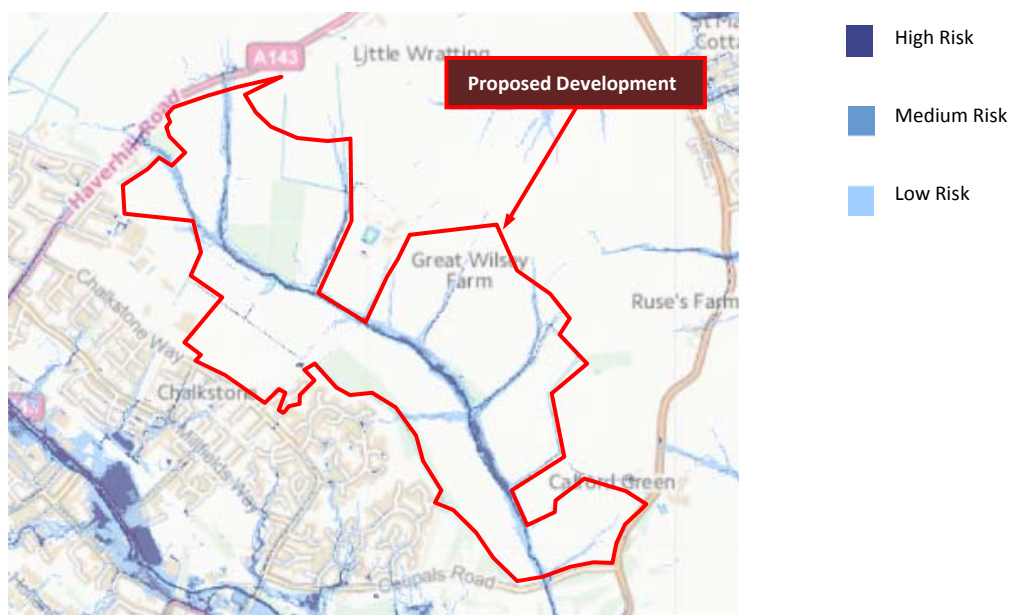


Figure 6b: EA Map: Risk of Flooding from Surfacewater

Discharge Consents

6.5 There are eighty-one Discharge Consents have been identified from the Landmark Search, sixty-six of which are shown as revoked licenses. The remaining fifteen consents are detailed further in Figure 6b:

Property Type	Status	Effective Date	Receiving Water	Discharge Type	Distance (m)	Direction
Domestic Property (Single)	Post National Rivers Authority Legislation*	August 1997	Freshwater Stream/ River	Sewage Discharges – Final/ Treated effluent – Not Water Company	0	South
Sewage Network – Pumping Station – Water Company	Pre National Rivers Authority Legislation **	June 1983	Freshwater Stream/ River	Public Sewage – Storm Sewage Outflow	46	North East
Sewage Disposal Works - other	New Consent ***	August 2007	Freshwater Stream/ River	Sewage Discharges – Final/ Treated effluent – Not Water Company	74	North
Sewage Disposal Works – other	Post National Rivers Authority Legislation*	December 1995	Freshwater Stream/ River	Sewage Discharges – Final/ Treated effluent – Not Water Company	168	North East
Sewage Disposal Works - other	New Consent ***	September 2007	Freshwater Stream/ River	Sewage Discharges – Final/ Treated effluent – Not Water Company	260	South
Sewage Disposal Works - other	New Consent ***	September 2007	Freshwater Stream/ River	Sewage Discharges – Final/ Treated effluent – Not Water Company	260	South

Figure 6b: New and Existing Discharge Consents

* Where issue date > 31/08/1989

** Where issue date <01/09/1989

*** Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995

**** Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995

Property Type	Status	Effective Date	Receiving Water	Discharge Type	Distance (m)	Direction
Arable Farming	Deemed Groundwater Regulations Authorisation	May 2000	Groundwater	Trade Discharge – Agricultural and Surface	479	North
Domestic Property (Multiple)	Pre National Rivers Authority Legislation **	September 1969	Freshwater Stream/ River	Discharge of other matter – Surface Water	732	West
Sewage Disposal Works – Water Company	Modified ****	October 2011	Freshwater Stream/ River	Sewage Discharges – Final/ Treated effluent – Water Company	779	South
Sewage Disposal Works – Water Company	Modified ****	October 2011	Freshwater Stream/ River	Sewage Discharges – Stw Storm Overflow/ Storm Tank – Water Company	779	South
Sewage Disposal Works – Water Company	Modified ****	October 2011	Freshwater Stream/ River	Storm / Emergency Overflow	779	South
Undefined or Other	Post National Rivers Authority Legislation*	January 1993	Freshwater Stream/ River	Trade Discharge – Process Water	799	South
Sewerage Network – Sewers – Water Company	Pre National Rivers Authority Legislation **	September 1967	Freshwater Stream/ River	Discharge of other matter – Surface Water	818	South East
Undefined or Other	Pre National Rivers Authority Legislation **	October 1985	Freshwater Stream/ River	Discharge of other matter – Surface Water	840	South West
Sewage Network – Pumping Station – Water Company	Pre National Rivers Authority Legislation **	October 1968	Freshwater Stream/ River	Storm / Emergency Overflow	887	South

Figure 6b Continued: New and Existing Discharge Consents

* Where issue date > 31/08/1989

** Where issue date <01/09/1989

*** Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995

**** Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995

Water Quality

- 6.6 The Environment Agency currently monitor 40,000km of rivers across England. To help protect these areas each stretch of river is monitored and given a river quality grade. This is based upon the chemical quality of the water. The rivers are then graded from A to E with A representing a river with very good water quality and E, a river with very poor water quality.
- 6.7 To improve the quality of water bodies, European legislation known as the Water Framework Directive (WFD) has been introduced to promote an approach to water management through river basin planning. One aim of the Water Framework Directive is to improve the ecological health of inland and coastal waters and to prevent further deterioration. A requirement has been placed on nearly all inland and coastal waters to achieve 'Good' status by 2015.

6.8 The predicted water quality for 2015, for the following watercourses within proximity of the Site are provided below and within figure 6c:

- River Stour (east of the Site) - ecological quality as 'Moderate' (Grade D); however at the time of the assessment the chemical quality was not required.
- Stour Brook (west of the Site) - ecological quality as 'Moderate' (Grade D); however at the time of the assessment the chemical quality was not required.
- Bumpstead Brook (south of the Site) - ecological quality of 'Poor'; however at the time of the assessment the chemical quality was required.

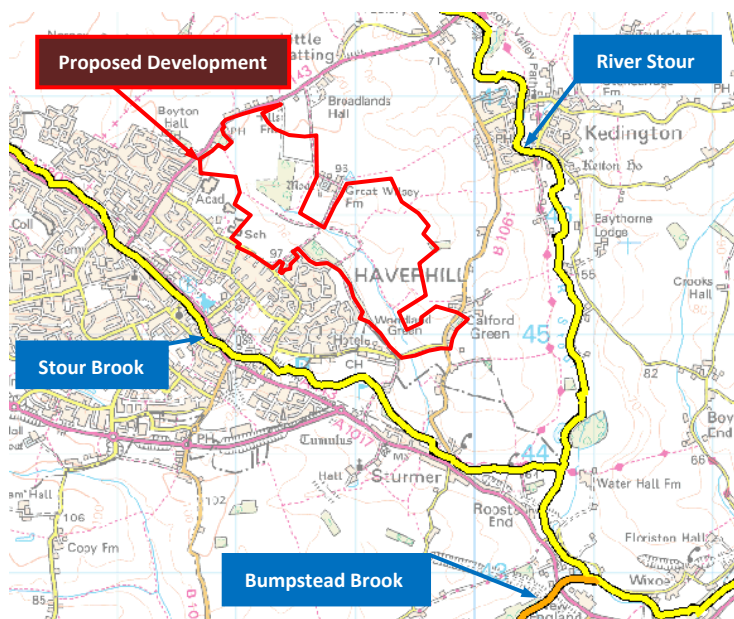


Figure 6c: EA Map: 2015 Predicted Water Quality

6.9 There is one **River Quality Biology Sampling Point** located approximately 839m south of the Site Boundary, which received a River Quality Biology GQA Grade C – Fairly Good in 2009.

6.10 There is one **River Quality Chemistry Sampling Point** located approximately 920m south of the Site Boundary, which received a River Quality Chemistry GQA Grade C – Fairly Good in 2009.

Surfacewater Abstractions

6.11 There are six **Surfacewater Abstractions** recorded and are further outlined below in Figure 6d:

Operator – Location	Abstraction	Permit Start Date	Permit End Date	Distance (m)	Direction
R.A. Vestey 1940 Settlement	Impounding	Not Supplied	Not Supplied	956	South west
C. G. Hawkins	Spray Irrigation	Not Supplied	Not Supplied	1164	East
L Ford & Sons	General Farming and Domestic	March 1984	Not Supplied	1399	North East

Figure 6d: Surface Water Abstractions

Operator – Location	Abstraction	Permit Start Date	Permit End Date	Distance (m)	Direction
L. G. Miller	Aquaculture; Make-Up or Top Up Water	December	May 2007	1580	North
L. G. Miller	Aquaculture; Make-Up or Top Up Water	December	May 2007	1580	North
L. G. Miller	Aquaculture; Make-Up or Top Up Water	December	May 2007	1580	North

Figure 6d (Continued): Surface Water Abstractions

7 Hydrogeology

Groundwater Vulnerability

- 7.1 The chalk underlying the Site belongs to the Lewes Nodular Chalk Formation & Seaford Chalk Formation, Newhaven Chalk Formation & Culver Chalk Formation forms a Major Aquifer. The groundwater vulnerability on Site is shown on Figure 7a.

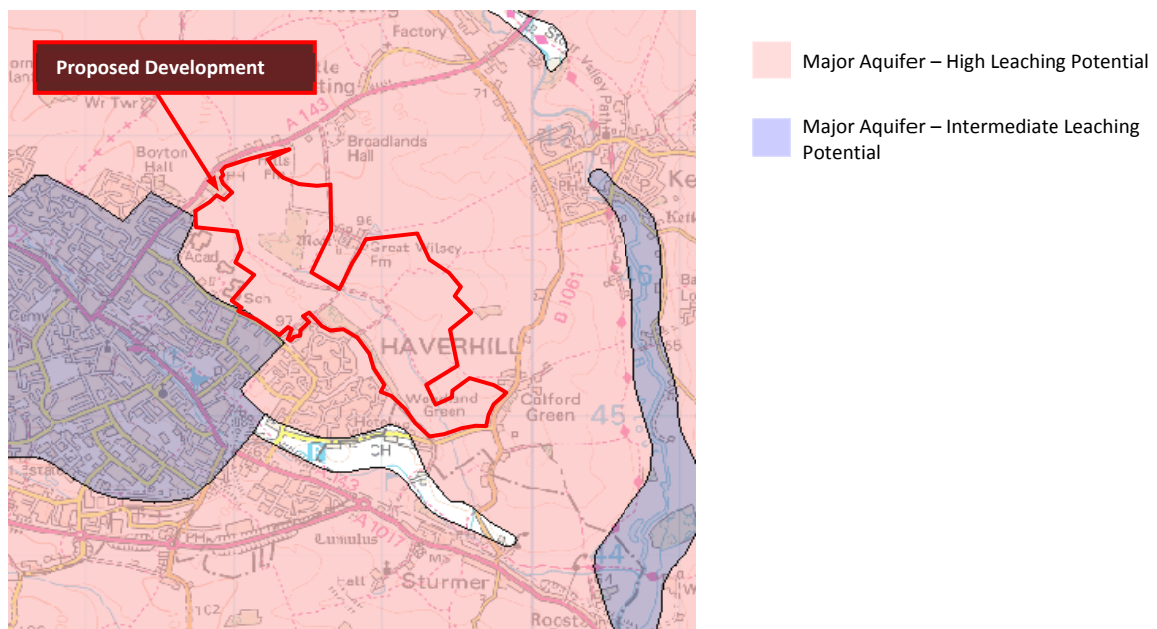


Figure 7a: Groundwater Vulnerability (Bedrock)

- 7.2 Major Aquifers are fractured or potentially fractured rocks which have a high permeability and potential for groundwater storage. They are important as they may provide local water supplies at a strategic level and base flows to rivers.
- 7.1 The overlying superficial geology of the Site is shown by Environment Agency Mapping to comprise a Secondary (Undifferentiated) Aquifer and is shown on Figure 7b.

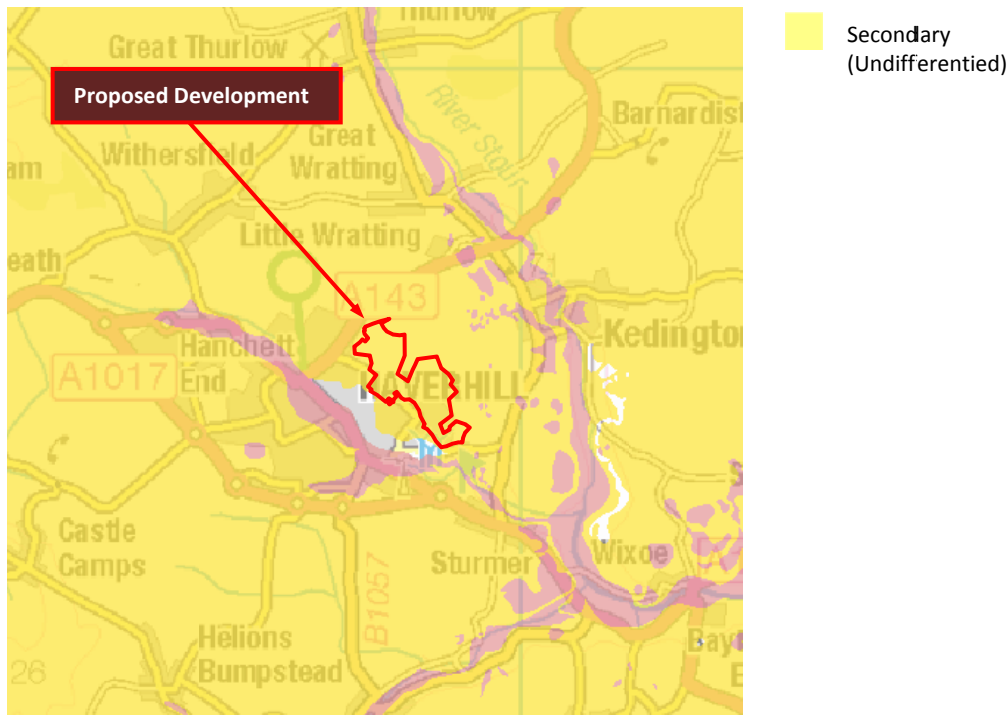


Figure 7b: Groundwater Vulnerability (Superficial) – From Environment Agency

7.2 Secondary Undifferentiated Aquifers are defined by the Environment Agency as “cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type”

Groundwater Abstractions

7.3 There are fifty-nine **Groundwater Abstractions** recorded. Three of these are from Borehole/Well abstractions located approximately 1148m north-east (Private Water Supply), 1375m south-west (unspecified reasons) and 1492m north (Public Supply) of the Site boundary. The remaining fifty-six abstractions are groundwater, ranging from 884m to 1667m from the Site boundary. Reasons for abstraction includes; Chemicals (Process water, Evaporative Cooling, Non-Evaporative Cooling, Boiler Feed), Other (Boiler Feed, Evaporative Cooling, Non-Evaporative Cooling, Process Water), Mineral Products (Conveying minerals, process water), general use, farming and domestic, public water supply and Environmental Agency.

Source Protection Zones

7.4 There are a reported four **Source Protection Zones**, details of which are provided below in Figure 7b:

Name	Type	Distance (m)	Direction
Wixoe	Zone II*	On-site	South East
Various	Zone II*	On-site	North
Various	Zone III**	On-site	South East
Various	Zone I***	411	North/ North East

Figure 7b: Source Protection Zones

* (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.
 ** (Total Catchment): The total area needed to support the discharge from the protected groundwater source.
 *** (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.

8 Potential Contaminative Uses & Statutory Registers

8.1 Sixteen **Pollution Incidents to Controlled Waters** are detailed below in Figure 8a:

Property Type	Incident Date	Receiving Water	Pollutant	Severity	Distance (m)	Direction
Nursing Home/Residential	October 1998	Stour Brook	Crude Sewage	Category 3 - Minor	131	North East
Not Given	May 1992	Stour Brook	Unknown	Category 3 - Minor	144	South West
Not Given	March 1992	Stour Brook	Unknown	Category 2 – Significant Incident	155	West
Nursing Home/Residential	July 1997	Stour Brook	Sewage- Treated Effluent	Category 3 - Minor	172	North East
Nursing Home/Residential	July 1997	Stour Brook	Sewage- Treated Effluent	Category 3 - Minor	175	North East
Not Given	April 1992	Stour Brook	Unknown	Category 2 – Significant Incident	209	East

Figure 8a: Pollution Incidents to Controlled Waters

Property Type	Incident Date	Receiving Water	Pollutant	Severity	Distance (m)	Direction
Other General Premises	January 1996	Stour Brook	Miscellaneous – Fire Water/Foam	Category 3 - Minor	238	South West
Nursing Home/Residential	May 1997	Stour Brook	Sewage – Treated Effluent	Category 3 - Minor	255	North East
Nursing Home/Residential	May 1997	Stour Brook	Sewage – Treated Effluent	Category 3 - Minor	257	North East
Nursing Home/Residential	February 1997	Stour Brook	Sewage – Treated Effluent	Category 3 - Minor	312	North East
Nursing Home/Residential	February 1997	Stour Brook	Sewage – Treated Effluent	Category 3 - Minor	315	North East
Not Given	February 1993	Stour Brook	Unknown	Category 3 – Minor	402	West
Not Given	March 1997	Stour Brook	Unknown Sewage	Category 3 - Minor	479	North West
Not Given	March 1997	Stour Brook	Unknown Sewage	Category 3 - Minor	483	North West
Not Given	March 1997	Stour Brook	Oils – Waste Oil	Category 3 – Minor	484	North West
Not Given	March 1997	Stour Brook	Oils – Waste Oil	Category 3 – Minor	487	North West

Figure 8a Continued: Pollution Incidents to Controlled Waters

8.2 An additional further forty-five **Pollution Incidents to Controlled Waters** have been reported. One of these incidents is a Category 1 – Major incident (Chemicals – Other Inorganic), nine of these incidents are Category 2 – Significant Incident (Unknown x4, Crude Sewage, Sewage-Treated Effluent, Oils-Diesel (Including Agriculture) x2, and Oils-Other Oils) and the remaining thirty-five of these incidents are Category 3-Minor Incident (Unknown x5, Miscellaneous-Unknown x4, Chemicals-Unknown x2, Oils-Waste Oils, Organic Wastes: Other, Oils-Diesel x2, Sewage Debris/Litter, Crude Sewage x3, Rubble/Litter Or Solids, Oils-Kerosene Fuel Oil x3, Chemicals-Other Organic x2, Oils-Diesel (including Agricultural) x2, Miscellaneous- Inert Suspended Solids, Chlorinated Water, Oils –Gas Oil x3, Oils-Other Oil x2 and Organic Wastes: Horse Manure (solid) x2).

8.3 There are ten **Local Authority Pollution Prevention and Controls** recorded with five of which have since been revoked. Details of the remaining five are provided below in Figure 8b:

Process Type	Name	Description	Status
Local Authority Pollution Prevention and Control	North Street Garages	Petrol Filling Station	Permitted
Local Authority Pollution Prevention and Control	Magic Touch	Dry Cleaning	Permitted
Local Authority Air Pollution Control	Project Office Furniture Plc	Waste derived Fuel Combustion processes less than 3MW	Authorised
Local Authority Pollution Prevention and Control	Murco Service Station	Petrol Filling Station	Permitted
Local Authority Pollution Prevention and Control	Hanson Quarry Products Europe Ltd	Blending, Packing, Loading and Use of Bulk Cement	Permitted

Figure 8b: Local Authority Pollution Prevention and controls

8.4 There is one **Substantiated Pollution Incident Register** identified. This was for the pollutant Oils – Diesel (Including Agricultural), which caused a Category 2 - Significant Incident for both Air and Water Impacts, and a Category 3 – Minor Incident for Land Impact, approximately 774m south of the Site.

8.5 None of the following have been recorded:

- Contaminated Land Register Entries and Notices
- Enforcement and Prohibition Notices
- Integrated Pollution Controls
- Integrated Pollution Prevention and Control
- Local Authority Integrated Pollution Prevention And Control
- Prosecutions Relating to Authorised Processes
- Prosecutions Relating to Controlled Waters
- Registered Radioactive Substances
- Water Industry Act Referrals

Hazardous Substances

8.6 There are no records of the following on or in close proximity of the Site boundary:

- Control of Major Accident Hazards Sites (COMAH)
- Explosive Sites
- Notification of Installations Handling Hazardous Substances (NIHHS)
- Planning Hazardous Substance Consents
- Planning Hazardous Substance Enforcements

8.7 Due to there being two industrial estates nearby, there are eighty four entries **Contemporary Trade Directory Entries** (twenty two of which are active) recorded and detailed below are the first nine entries are shown below in Figure 8c:

Trade Entry	Status	Distance (m)	Direction
Cleaning Services - Domestic	Inactive	75	North
Printers (x3)	Inactive	148	West
Domestic Appliances – Servicing, repairs & Parts	Inactive	250	North East
Car Dealers	Active	404	North West
Garage Services	Inactive	425	North West
Thermometers and Thermostats	Active	449	South West
Metal Workers	Inactive	490	South West

Figure 8c: Contemporary Trade Directory Entries

8.8 There are three **Fuel Station Entries** recorded and are detailed below in Figure 8d:

Fuel Station Name	Location	Type	Status	Distance (m)	Direction
Jet – North Street Garage	Manor Road, Haverhill CB9 0EP	Petrol Station	Open	669	West
Murco – Haverhill Service Station	Sturmer Road, Haverhill CB9 7UU	Petrol Station	Open	891	South
S. W. Woods Garage	A604, Sturmer Haverhill CB9 7XR	N/A	Obsolete	970	South

Figure 8d: Fuel Station Entries

Waste

8.9 There are two **BGS Recorded Landfill Sites** licences issued. Both are located at Junction Hole, Relief Road, Haverhill. The two sites are located 347m south-east, and 500m south west of the Site boundary.

8.10 There is one recorded **Licensed Waste Management Facility (Location)**. The licence was issued in May 1994 to F C C Recycling (UK) Limited for Household, Commercial and Industrial Transfer Stations, approximately 734m south of the Site.

8.11 There are six **Historic Landfill Sites** licences issued, details of which are provided below in Figure 8e:

Licence Holder	Location	First Input Date	Specified Waste	Distance (m)	Direction
Not Supplied	Relief Road, Haverhill	Not Supplied	Not Supplied	290	South East
Not Supplied	Millfields Way, Haverhill	Not Supplied	Deposited Waste including Household Waste	348	South East
Not Supplied	Relief Road, Haverhill	January 1972	Deposited Waste including Commercial and Household Waste	503	South West
Not Supplied	Rowley Hill, Haverhill	Not Supplied	Not Supplied	544	South East
Not Supplied	Rowley Hill, Haverhill	Not Supplied	Not Supplied	544	South West
Not Supplied	Off Chalkstone Way, Haverhill	Not Supplied	Not Supplied	551	South

Figure 8e: Fuel Station Entries

8.12 There are six **Local Authority Recorded Landfill Sites** detailed below in Figure 8f:

Location	Last Reported Status	Types of Waste	Distance (m)	Direction
Chalkstone Way, Haverhill	Closed	Domestic	318	South East
Railway Cutting, Junction Hole, Haverhill	Closed	Not Supplied	503	South West
Rowley Hill, Haverhill	Closed	Not Supplied	538	South East
Rowley Hill, Haverhill	Closed	Not Supplied	538	South
Land by Sewage Treatment Works, Off Chalkstone Way	Closed	Not Supplied	559	South
Haverhill Pulverizer	Closed	Not Supplied	726	South

Figure 8f: Fuel Station Entries

8.13 There are two **Registered Waste Transfer Sites**. One of these is provided to Suffolk Waste Disposal Co Ltd for Household Waste (As S75 EPA '90) on May 1994, 734m south-east of the Site. The other is provided for Suffolk C.C. for Civic Amenity/ Refuse Amenity Waste on July 1982, 734m south-east of the Site.

8.14 There are no provided reports of the following:

- Integrated Pollution Control Registered Waste Sites
- Licensed Waste Management Facilities (Boundaries)
- Registered Landfill Sites
- Registered Waste Treatment or Disposal Sites

9 Environmental Setting

9.1 The Site is identified to lie within a surface water and groundwater **Nitrate Vulnerable Zone** and is illustrated in Figure 9a:

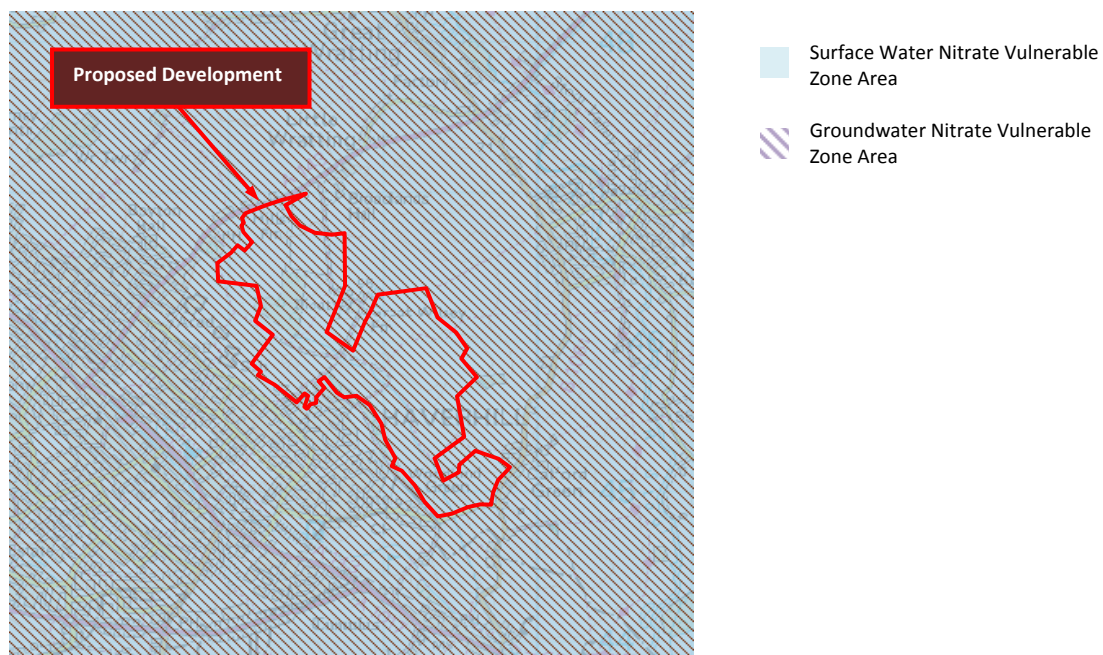


Figure 9a: Sensitive Land Uses

9.2 The **Local Nature Reserve** of Haverhill Railway Walks, composing of the 5km disused railway line, which is located 341m south-west of the Site, and was designated a Local Nature Reserve in March 2012.

9.3 None of the following are reported:

- Areas of Unadopted Green Belt
- Areas of Outstanding Natural Beauty
- Environmentally Sensitive Areas
- Forest Parks
- Marine Nature Reserves
- National Nature Reserves
- National Parks
- Nitrate Sensitive Areas
- Ramsar Sites
- Sites of Special Scientific Interest
- Special Areas of Conservation
- Special Protection Area

10 Site Conceptual Model

10.1 Guidance has been published by the Department of the Environment, Transport and the Regions (DETR Circular 02/2000) 'Environmental Protection Act 1990: Part 11A – Contaminated Land (20th March 2000) which promotes the 'suitable for use approach'. This has since been replaced by the DEFRA: Contaminated Land Statutory Guidance (April 2012). The DEFRA note 'The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore need to be assessed on a site-by-site basis.

10.2 The "suitable for use" approach consists of three elements:

- Ensuring that land is suitable for its current use - in other words, identifying land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise ("remediating" the land): the new contaminated land regime provides general machinery to achieve same.
- Ensuring that land is made suitable for any new use, as planning permission is given for that new use - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before official permission is given) for the development and, where necessary to avoid unacceptable risk to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes.
- Limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought - in other words, recognising that the risks from contaminated land can be satisfactorily assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby risking distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

10.3 Also addressed within the DEFRA guidance is the issue of 'contaminated land'. 'Before the **Local Authority** can make the judgement that any land appears to be **Contaminated Land** on the basis that **Significant Harm** is being caused, or that there is a **Significant Possibility** of such harm being caused, the authority must therefore identify a **Significant Pollutant Linkage**.

10.4 This means that each of the following has been identified:

- A Contaminant Source
- A Pathway
- A Receptor

and that:

- The **Contaminant** is causing **Significant Harm** to **that Receptor**.

Or

- There is a **Significant Possibility** of such harm being caused by the **Contaminant to the Receptor**.

10.5 Where any of the three elements of the Source-Pathway-Receptor (SPR) are not present, there is no risk and therefore land cannot be classified as statutory 'contaminated land'.

10.6 In terms of controlled waters, DEFRA: Contaminated Land Statutory Guidance (April 2012) notes the following:

A.35 Section 78A (9) defines the pollution of controlled waters as: 'The entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter'.

A.36 Before determining that pollution of controlled waters is being, or is likely to be, caused, the local authority should be satisfied that a substance is continuing to enter controlled waters or is likely to enter controlled waters. For this purpose, the local authority should regard something as being "likely" when they judge it more likely than not to occur.

A.37 Land should not be designated as contaminated land where:

- (a) A substance is already present in controlled waters;*
- (b) Entry into controlled waters of that substance from land has ceased; and*
- (c) It is not likely that further entry will take place.*

A.38 Substances should be regarded as having entered controlled waters where:

- (a) They are dissolved or suspended in those waters; or*
- (b) If they are immiscible with water they have direct contact with those waters on or beneath the surface of the water.*

A.39 The term "continuing to enter" should be taken to mean any entry additional to any which has already occurred."

10.7 In 2004 the Environment Agency published the 'Model Procedures for the Management of Land Contamination', CLR11, which provides the technical framework for applying a risk management process, based on the 'suitable for use' approach, when dealing with land affected by contamination.

10.8 In 2008, to enable the practical application of good practice of the EA’s Model Procedures CLR11, R&D Publication 66 ‘Guidance for the Safe Development of Housing on Land Affected by Contamination’ was published by the National House Builders Council (NHBC), the EA and the Chartered Institute of Environmental Health. Whilst written to be relevant to housing development it is also applicable to other forms of development where sites are land affected by contamination. The guidance describes in detail the process and activities involved for the identification and assessment of hazards for a Phase 1 assessment.

10.9 At Phase 1 stage, it is necessary to develop an initial conceptual site model to understand the possible relationships between contaminants, pathways and receptors. If a hazardous source, via an exposure pathway to a potential receptor can be established then there is a ‘pollutant linkage’, which is preliminarily risk assessed using parameters summarised in Table 10a, below. At this stage, the conceptual model is prepared without site specific soils, groundwater or gas testing and as such, the findings should be treated only as first and general indications of possible SPR linkages.

10.10 The primary potential sources of contamination at the Site are indicated below:

Onsite

Agricultural Use - Soil and Water Contamination

Offsite

Agricultural Use - Soil and Water Contamination

Former Railway Lines - Soil and Water Contamination

Former Sewage Works/ Works - Soil and Water Contamination

Former Coal Yard - Soil and Water Contamination

10.11 The potential receptors at the Site are:

- End users / site occupiers
- Adjacent users / occupiers
- Controlled waters
- Flora and fauna
- Buildings & construction materials

10.12 The potential pathways at the Site are primarily:

- Direct ingestion of soil / water / fruit or vegetable
- Inhalation of dust / vapours
- Direct skin contact with the ground / water
- Regression of plant growth due to phytotoxic contamination
- Vertical and lateral migration of contamination

10.13 After reviewing the information, the only potential source of contamination at the Site indicated is Agricultural uses. The other land uses identified in paragraph 10.10 are not considered as a potential source of contamination due to:

- **Former Railway Line** - From around 1880, The Great Eastern Railway (Cambridge, Haverhill and Sudbury Branch) line and The Colne Valley and Halstead Railway (Cambridge Haverhill Branch and the Colne Valley Branch) are shown 550m south to the Site’s southern boundary. Potential contaminants include: degreasing solvents, PCBs from engines and electrical equipment, heavy metals, oils and fuels. However, development of a residential nature (which includes Cricket fields, other leisure activities and schools) either side of the railway line, the relatively large distance from the Site, and the deep chalk geology which restricts any likely lateral contaminant migration results in no likely pathway for the potential contamination source. Therefore there is no SPR linkage

- Sewage Works** - Two Sewage Works situated 650m west and 950m east of the Site boundary are identified. Potential contaminants associated with the use of the area may include: heavy metals, inorganic/organic compounds, acids/alkalis, asbestos, pathogenic micro-organisms, methane, carbon dioxide and hydrogen sulphide. The Sewage work located 650m west of the Site is situated on the opposite side of Milfords Way and is separated by the Haverhill Estate and the Haverhill Walks. The Sewage work located 950m east of the Site is situated on the opposite of Sturmer Road and this would form a physical barrier. Due to the distance the potential source is to the proposed Site, potential barriers which separate the source with the proposed development, the deep lying Chalk geology which would restrict likely lateral contaminant migration results in no likely pathway for the potential contamination source. Therefore there is no SPR linkage.
- Former Coal Yard** – From 1970 to 1981 a Coal Yard is shown approximately 700m west of the Site. Potential contaminants associated with the former coal yard may include: Leachate containing iron, aluminium, chlorides and sulphates. Due to the distance from the Site and the deep lying geology, this would restrict any likely contaminant migration as a potential pathway for the potential contamination. Therefore there is no SPR linkage.

10.14 While limited information is available at this stage the methodology has been developed to help identify the potential contamination risk and linkages. The severity of damaging effects and the likelihood of any linkage have been considered.

10.15 Given the potential consequence and likelihood, a risk rating is given, based on the following matrix:

		Consequence			
		Severe	Moderate	Mild	Minor
Probability (Likelihood)	Highly Likely	Very High	High	Medium	Low
	Likely	High	Medium	Medium/Low	Low
	Possible	Medium	Medium/Low	Low	Very Low
	Unlikely	Medium/Low	Low	Very Low	Very Low

Table 10a: Risk ratings

10.16 The risk ratings are described as follows:

Very High: There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without appropriate remediation action.

High: Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remediation action.

Medium: It is possible that without appropriate remediation action harm could arise to a designated receptor. It is relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild.

Low: It is possible that harm could arise to a designated receptor from an identified hazard. It is likely that, at worst if any harm was realised any effects would be mild.

Very Low: The presence of an identified hazard does not give rise to the potential to cause harm to a designated receptor.

Source	Pathway	Receptor	Comment	Risk Rating	Potential Mitigation
Contaminated soils On-Site: <ul style="list-style-type: none"> Agricultural Off-Site: None	Direct Ingestion & contact	Site workers & occupiers	Historically undeveloped site, except for the 'Great Field' plantation. Minor potential contamination threats within close proximity of the Site include agricultural use which may have included the use of pesticides and fertilizers. An assessment of the soils will be required at the detailed design stage.	Low	-
	Inhalation of dust		Historically undeveloped site, except for the 'Great Field' plantation. On-site land uses do not suggest a significant potential for contamination.	Low	-
	Direct skin contact		Historically undeveloped site, except for the 'Great Field' plantation. Minor potential contamination threats within close proximity of the Site include agricultural use which may have included the use of pesticides and fertilizers. An assessment of the soils will be required at the detailed design stage.	Low	-
	Vertical & lateral migration	Controlled waters	Site is situated on a Major Aquifer and is historically shown to be undeveloped, except for the 'Great Field' plantation. The unnamed brook, which runs south into the Stour Brook, is found within the Site boundary.	Low	-
	Direct uptake	Flora	Historically undeveloped site, except for the 'Great Field' plantation. On-site use encourages plant growth.	Very Low	-
	Direct contact	Building materials	Historically undeveloped site, except for the 'Great Field' plantation. Agricultural land uses are not considered to have a detrimental impact on building materials.	Very Low	-
Contaminated Groundwater On-Site: <ul style="list-style-type: none"> Agricultural Off-Site: None	Direct Ingestion & contact	Site workers & occupiers	Site is situated on a Major Aquifer; groundwater flow into site is likely however none of the surrounding off-site sources have the potential to detrimentally impact the proposed site.	Low	-
	Direct skin contact		Site is situated on a Major Aquifer; groundwater flow into site is likely however none of the surrounding off-site sources have the potential to detrimentally impact the proposed site.	Low	-
	Vertical & lateral migration	Controlled waters	Site is situated on a Major Aquifer; groundwater flow into site is likely however none of the surrounding off-site sources have the potential to detrimentally impact the proposed site.	Low	-
	Direct uptake	Flora	Site is situated on a Major Aquifer; groundwater flow into site is likely however none of the surrounding off-site sources have the potential to detrimentally impact the proposed site.	Low	-
	Direct contact	Building materials	Site is situated on a Major Aquifer; groundwater flow into site is likely however none of the surrounding off-site sources have the potential to detrimentally impact the proposed site.	Low	-
Elevated gas On-Site: Natural Gas Off-Site: None	Vertical & lateral migration	Site workers & occupiers	Historically undeveloped site, except for the 'Great Field' plantation that is situated on a Major Aquifer. The works are a potential source of gassing and an assessment of gas levels on Site will be required at the detailed design stage. Site is situated on a Major Aquifer; groundwater flow into site is likely however none of the surrounding off-site sources have the potential to detrimentally impact the proposed site.	Low	-
		Adjacent occupiers	Historically undeveloped site, except for the 'Great Field' plantation that is situated on a Major Aquifer. The works are a potential source of gassing and an assessment of gas levels on Site will be required at the detailed design stage. Site is situated on a Major Aquifer; groundwater flow into site is likely however none of the surrounding off-site sources have the potential to detrimentally impact the proposed site.	Low	-

Table 10b – Site SPR summary

11 Discussion & Summary

- 11.1 A review of readily available Site environmental data, including historical mapping and statutory registers has identified the following:

Agricultural land on Site and within the surrounding areas, may include typical contaminants such as: nitrogen, potassium and phosphorous contained within fertilisers, chemicals from pesticides and herbicides, coliform and non-coliform bacteria from livestock waste and manure application and hydrocarbons (oil and fuel leakages from machinery). Further assessment of the Site's soils may be required at the detailed design stage to establish baseline conditions. This feature generally provides a *low* rating for risk, but may vary depending on the persistence of the chemicals used.

From around 1880, **The Great Eastern Railway (Cambridge, Haverhill and Sudbury Branch) line** is shown approximately 550m south to the Site's southern boundary. Further assessment of the Site's soils may be required at the detailed design stage to establish baseline conditions. However, development of a residential nature is shown (which includes Cricket fields, other leisure activities and schools) either side of the railway line, it is therefore considered that there is no SPR linkage.

Also since 1880, **The Colne Valley and Halstead Railway (Cambridge Haverhill Branch and the Colne Valley Branch) line** is shown approximately 550m west to the Site's southern boundary. Further assessment of the Site's soils may be required at the detailed design stage to establish baseline conditions. However, development of a residential nature is shown either side of the railway line and the paths have been converted into the Haverhill Railway Walks Local Nature Reserve, therefore it is considered that there is no SPR linkage.

Two **Sewage Works** are situated within 1000m of the Site. The first is approximately 650m west of the Site's boundary, situated on the opposite side of Millfords Way and is separated by Haverhill estate and the Haverhill Railway Walks, which form a physical barrier between the Site and any potential contaminants. The second is situated approximately 950m east of the Site Boundary, on the opposite side of Sturmer Road. Due to the distance between the sewage works and the Site, it is considered that there are no SPR linkages.

From 1970 to 1981 a **Coal Yard** is shown approximately 700m west of the Site, due to the distance from the Site and there being a school adjacent to the former coal yard, it is considered that there is no direct SPR linkage.

- 11.2 There are no former land uses identified on or within close proximity of the Site, apart from those mentioned above, that are potentially contaminative or likely to be prohibitive to the Proposed Development. The **overall contaminative risk** at the Site is considered to be **low**. However, further assessment of the ground conditions on Site may be required at the detailed design stage to establish baseline conditions

12 Limitations

- 12.1 The benefits of this report are provided solely to Hallam Land Management Ltd and Mrs Pelly. The conclusions and recommendations contained herein are limited to those given the general availability of background information and the planned usage of the site. Brookbanks Consulting Ltd do not confer any third party rights for the information contained in the report.
- 12.2 All distances referred to in this report are measured from the boundary of the planned development site unless otherwise advised.
- 12.3 Third party information has been used in the preparation of this report, which Brookbanks Consulting Ltd, by necessity assume is correct at the time of writing.

Appendix

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

- Gravel Pit
- Sand Pit
- Other Pits
- Quarry
- Shingle
- Orchard
- Osiers
- Reeds
- Marsh
- Mixed Wood
- Deciduous
- Brushwood
- Fir
- Furze
- Rough Pasture
- Arrow denotes flow of water
- Trigonometrical Station
- Site of Antiquities
- Bench Mark
- Pump, Guide Post, Signal Post
- Well, Spring, Boundary Post
- 285** Surface Level
- Sketched Contour
- Instrumental Contour
- Main Roads
- Minor Roads
- Sunken Road
- Raised Road
- Road over Railway
- Railway over River
- Railway over Road
- Level Crossing
- Road over River or Canal
- Road over Stream
- Road over Stream
- County Boundary (Geographical)
- County & Civil Parish Boundary
- Administrative County & Civil Parish Boundary
- County Borough Boundary (England)
- County Burgh Boundary (Scotland)
- Rural District Boundary
- Civil Parish Boundary

Ordnance Survey Plan 1:10,000

- Chalk Pit, Clay Pit or Quarry
- Gravel Pit
- Sand Pit
- Disused Pit or Quarry
- Refuse or Slag Heap
- Lake, Loch or Pond
- Dunes
- Boulders
- Coniferous Trees
- Non-Coniferous Trees
- Orchard
- Scrub
- Coppice
- Bracken
- Heath
- Rough Grassland
- Marsh
- Reeds
- Saltings
- Building
- Glasshouse
- Sloping Masonry
- Pylon
- Electricity Transmission Line
- Pole
- Cutting
- Embankment
- Standard Gauge Multiple Track
- Standard Gauge Single Track
- Siding, Tramway or Mineral Line
- Narrow Gauge
- Geographical County
- Administrative County, County Borough or County of City
- Municipal Borough, Urban or Rural District, Burgh or District Council
- Borough, Burgh or County Constituency
- Civil Parish
- BP, BS** Boundary Post or Stone
- Ch** Church
- CH** Club House
- F E Sta** Fire Engine Station
- FB** Foot Bridge
- Fn** Fountain
- GP** Guide Post
- MP** Mile Post
- MS** Mile Stone
- Pol Sta** Police Station
- PO** Post Office
- PC** Public Convenience
- PH** Public House
- SB** Signal Box
- Spr** Spring
- TCB** Telephone Call Box
- TCP** Telephone Call Post
- W** Well

1:10,000 Raster Mapping

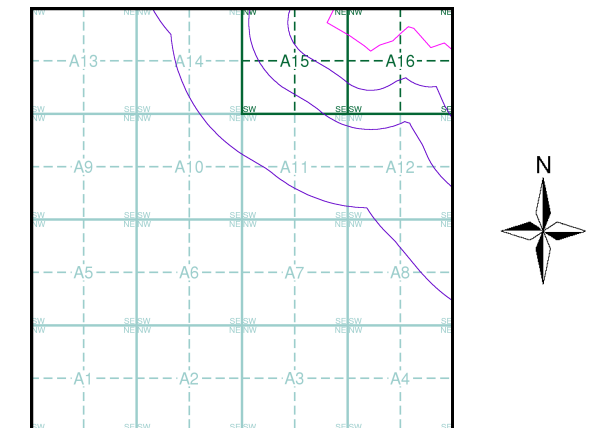
- Gravel Pit
- Rock
- Boulders
- Shingle
- Sand
- Slopes
- Refuse tip or slag heap
- Rock (scattered)
- Boulders (scattered)
- Mud
- Sand Pit
- Top of cliff
- General detail
- Overhead detail
- Multi-track railway
- Single track railway
- County boundary (England only)
- District, Unitary, Metropolitan, London Borough boundary
- Civil, parish or community boundary
- Constituency boundary
- Area of wooded vegetation
- Non-coniferous trees
- Coniferous trees
- Positioned tree
- Orchard
- Rough Grassland
- Scrub
- Water feature
- Mean high water (springs)
- Telephone line (where shown)
- Bench mark (where shown)
- Point feature (e.g. Guide Post or Mile Stone)
- Site of (antiquity)
- General Building
- Non-coniferous trees
- Coniferous trees
- Coppice or Osiers
- Heath
- Marsh, Salt Marsh or Reeds
- Flow arrows
- Mean low water (springs)
- Electricity transmission line (with poles)
- Triangulation station
- Pylon, flare stack or lighting tower
- Glasshouse
- Important Building

Brookbanks Consulting

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:10,560	1880	2
Cambridgeshire & Isle Of Ely	1:10,560	1885	3
Suffolk	1:10,560	1885 - 1887	4
Essex	1:10,560	1898 - 1899	5
Cambridgeshire & Isle Of Ely	1:10,560	1903 - 1904	6
Essex	1:10,560	1905	7
Essex	1:10,560	1924	8
Cambridgeshire & Isle Of Ely	1:10,560	1927 - 1928	9
Cambridgeshire & Isle Of Ely	1:10,560	1927 - 1928	10
Suffolk	1:10,560	1928	11
Suffolk	1:10,560	1938 - 1951	12
Suffolk	1:10,560	1949	13
Cambridgeshire & Isle Of Ely	1:10,560	1950	14
Essex	1:10,560	1951	15
Ordnance Survey Plan	1:10,000	1960	16
Ordnance Survey Plan	1:10,000	1967	17
Ordnance Survey Plan	1:10,000	1970 - 1972	18
Ordnance Survey Plan	1:10,000	1981 - 1982	19
Ordnance Survey Plan	1:10,000	1991	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2014	22

Historical Map - Slice A



Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

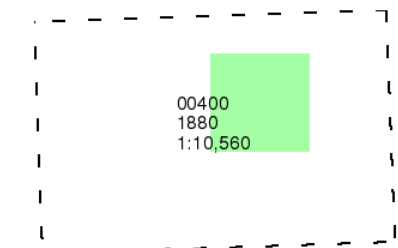
Essex

Published 1880

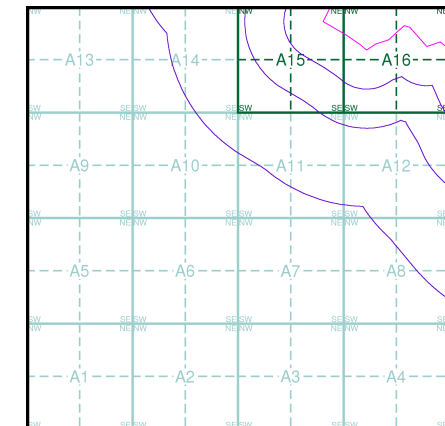
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

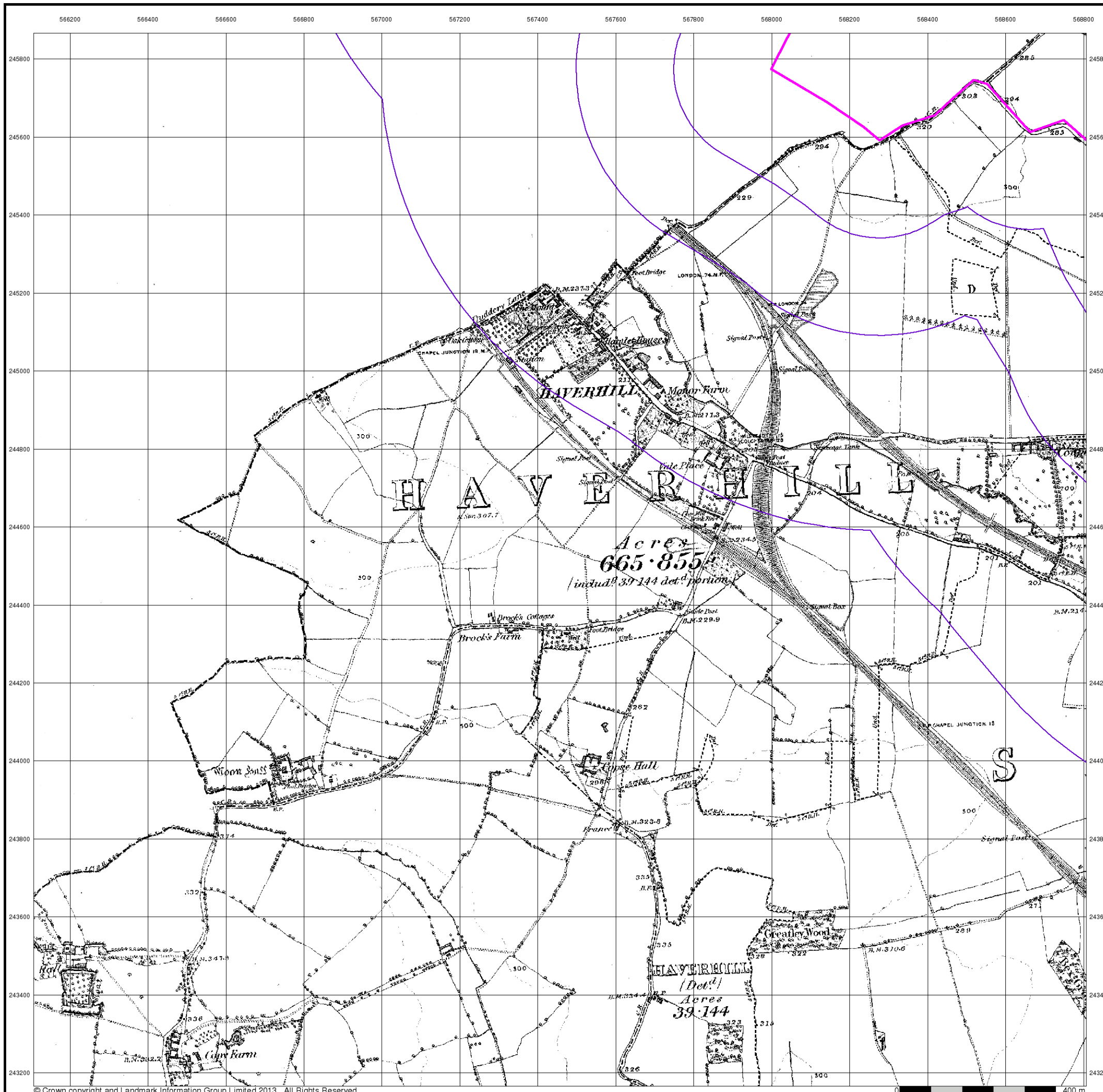


Order Details

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 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Suffolk

Published 1885 - 1887

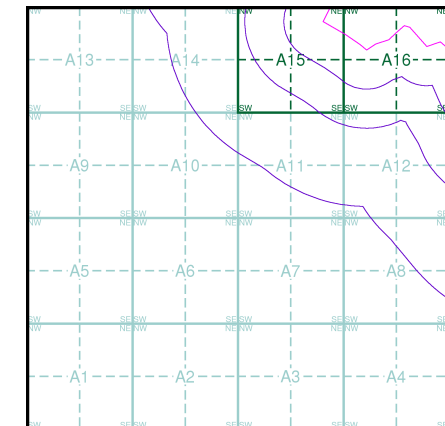
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

070NE 1885 1:10,560	070SE 1885 1:10,560
070SW 1887 1:10,560	

Historical Map - Slice A



Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Essex

Published 1898 - 1899

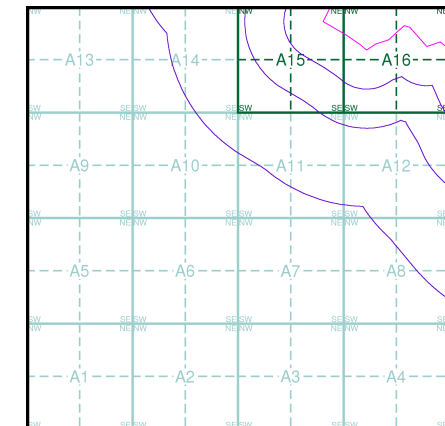
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

004NW 1899 1:10,560	004NE 1899 1:10,560
004SW 1898 1:10,560	004SE 1898 1:10,560

Historical Map - Slice A

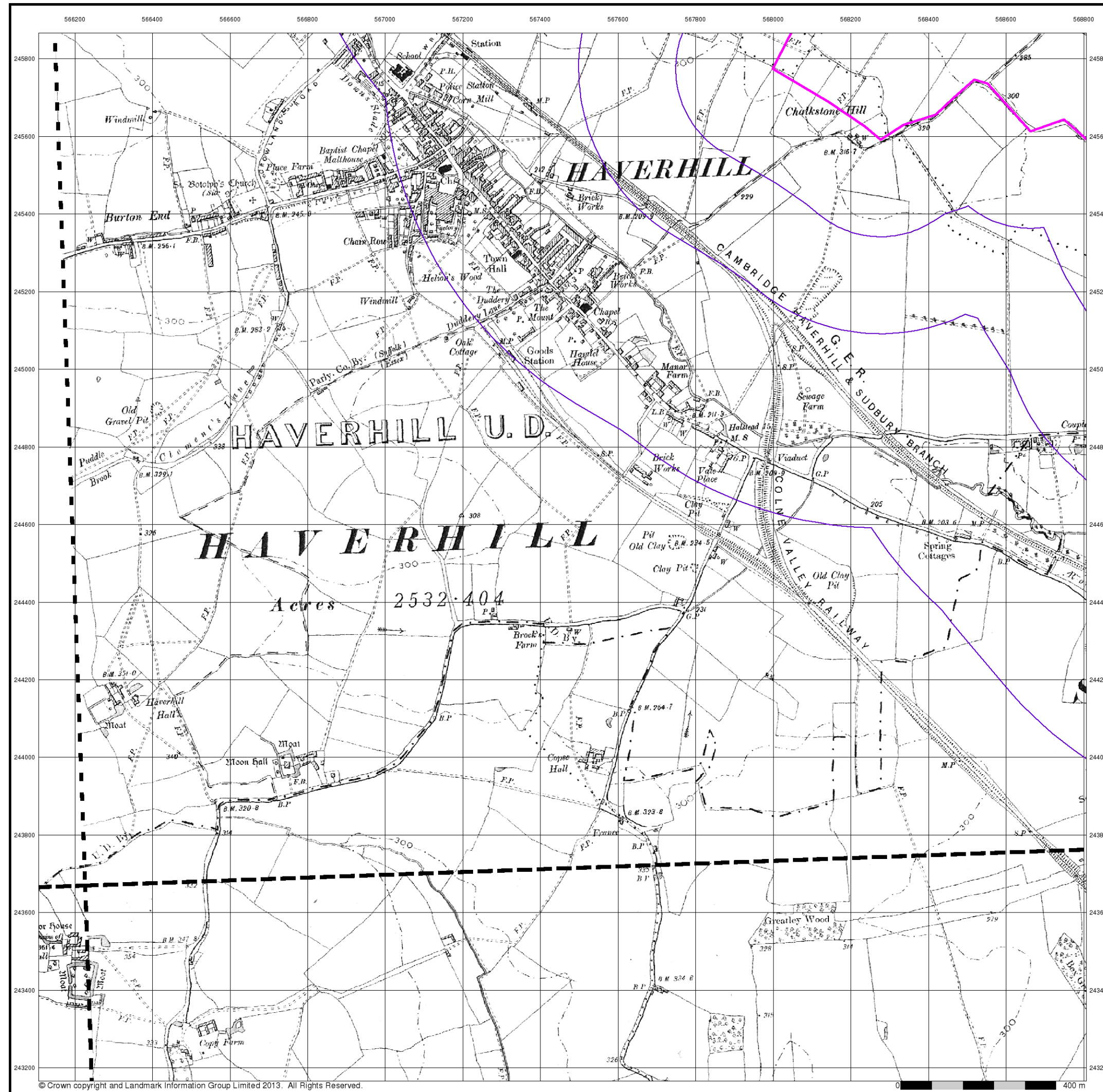


Order Details

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 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Brookbanks Consulting

Essex

Published 1905

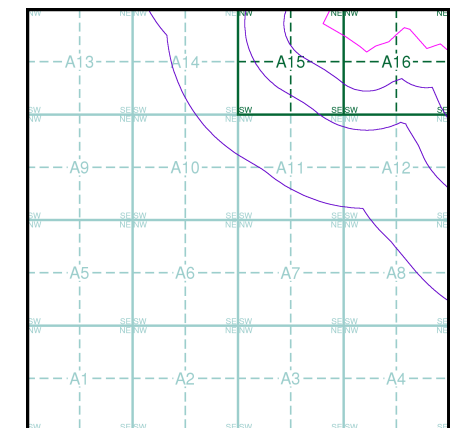
Source map scale - 1:10,560

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Map Name(s) and Date(s)

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004SE	1905	1:10,560

Historical Map - Slice A



Order Details

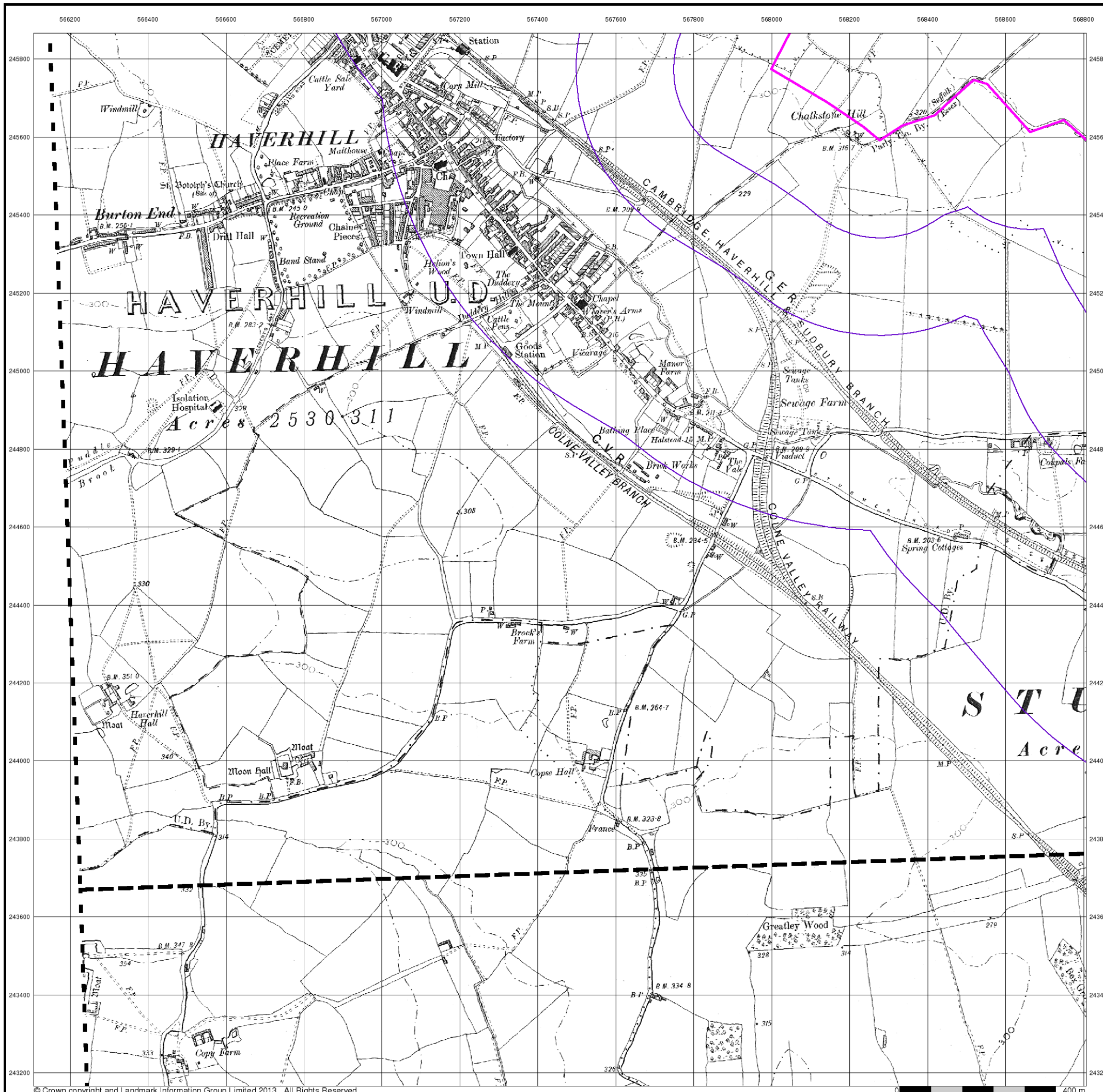
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 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



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 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



Essex

Published 1924

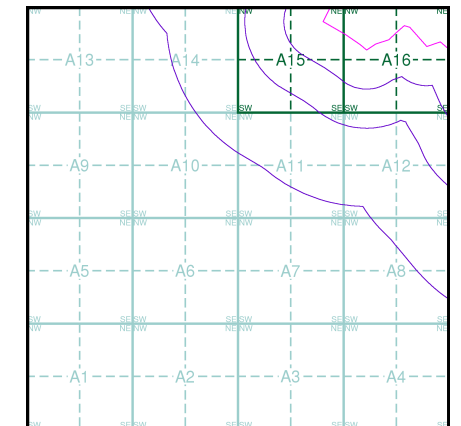
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Map Name(s) and Date(s)

00300	1924	1:10,560
00900	1924	1:10,560

Historical Map - Slice A

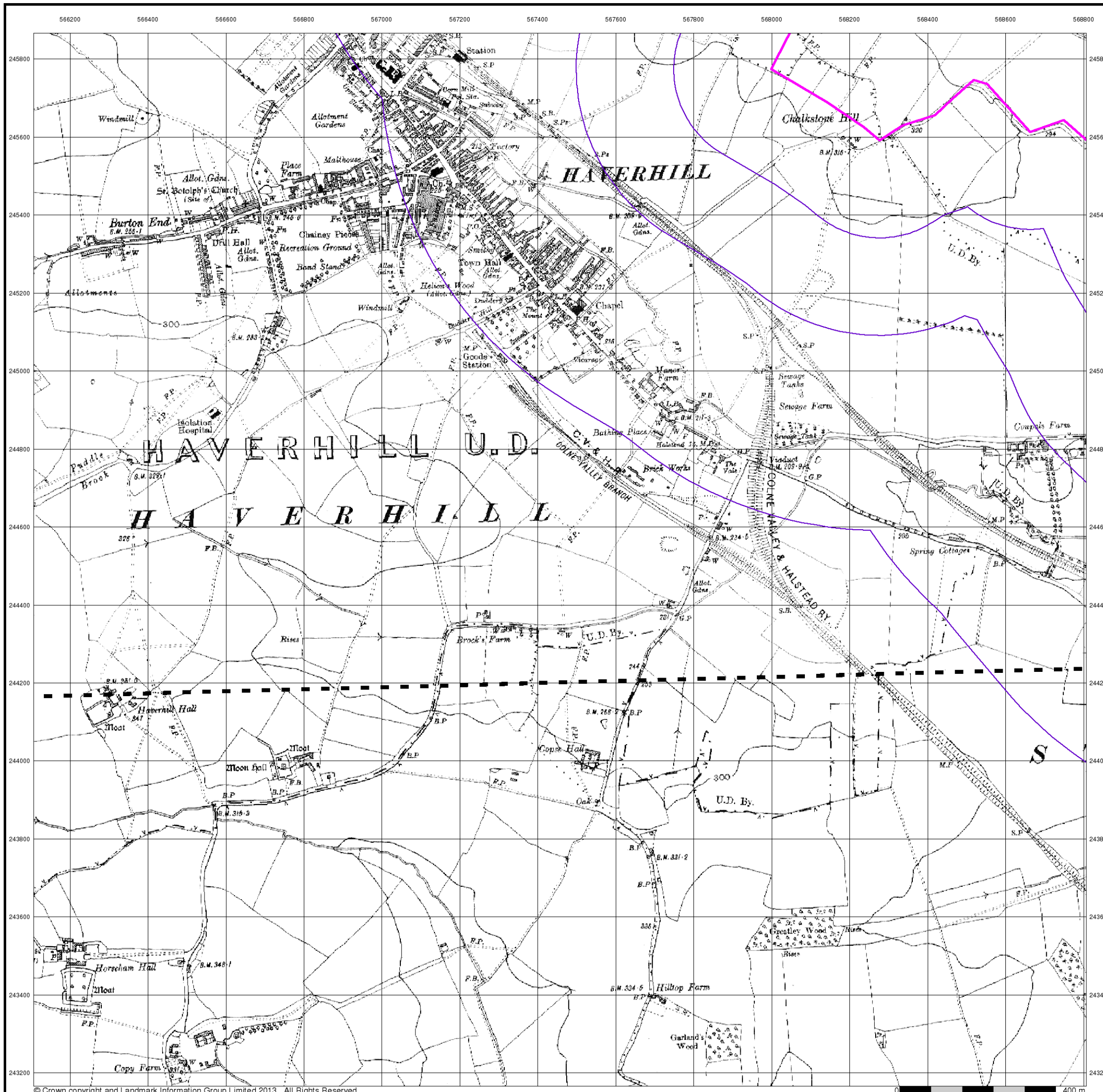


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Suffolk

Published 1928

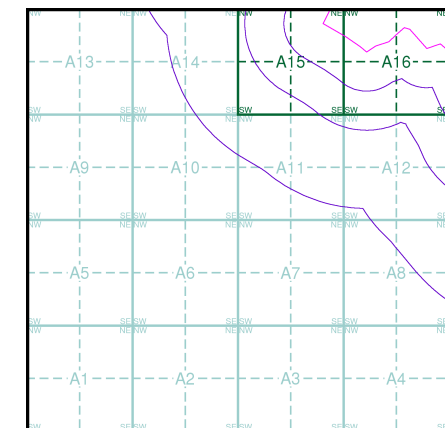
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Map Name(s) and Date(s)

070NE	1928	1:10,560
070SE	1928	1:10,560

Historical Map - Slice A

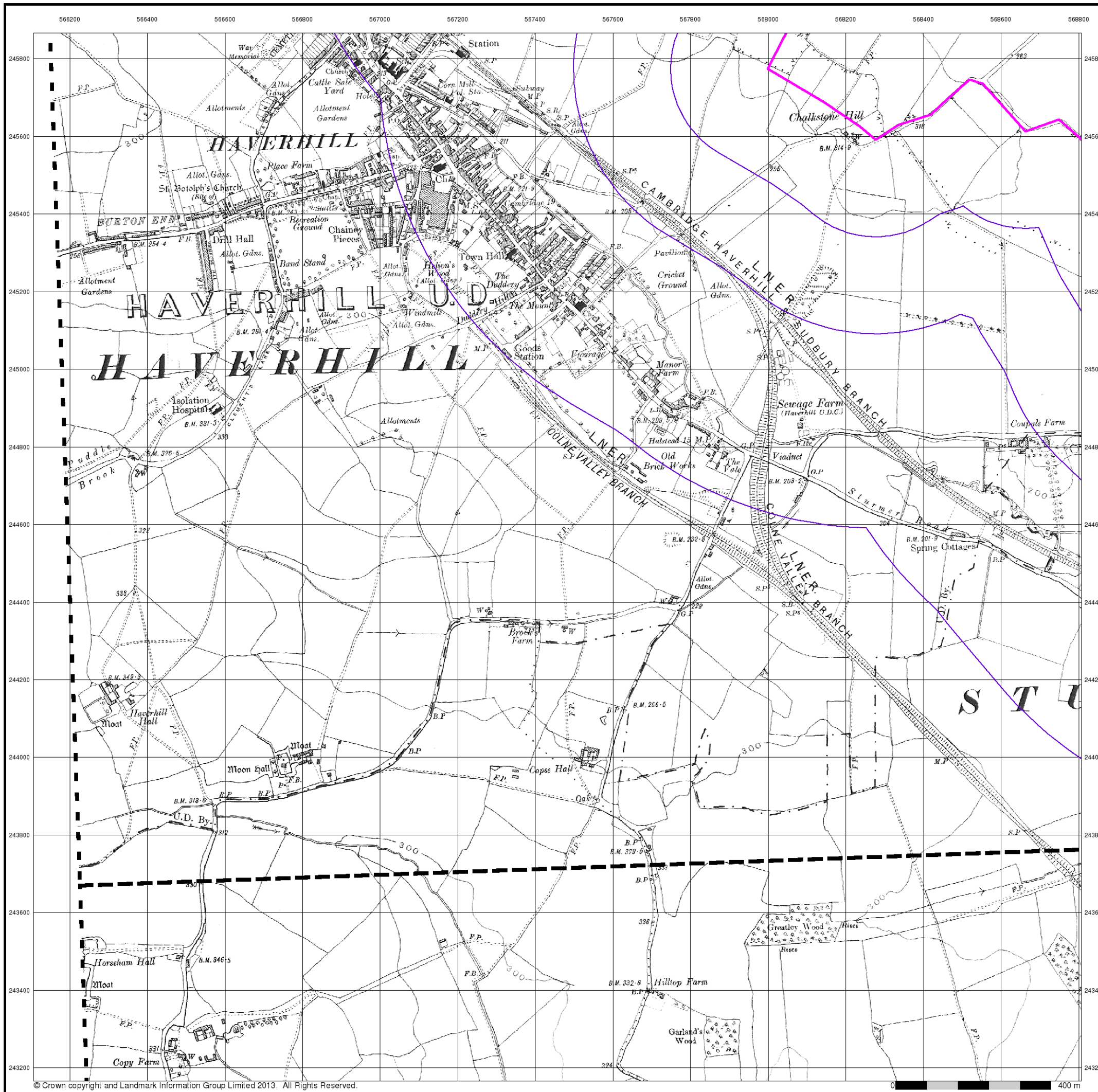


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Suffolk

Published 1938 - 1951

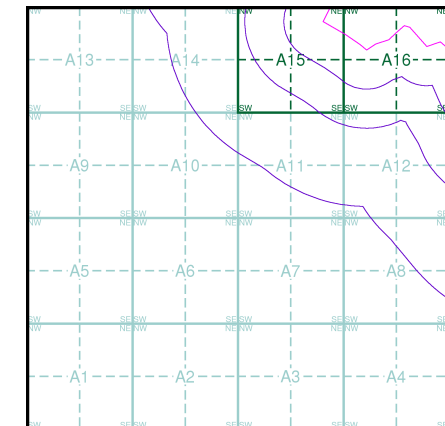
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

070NE	1938	1:10,560
070SE	1951	1:10,560

Historical Map - Slice A

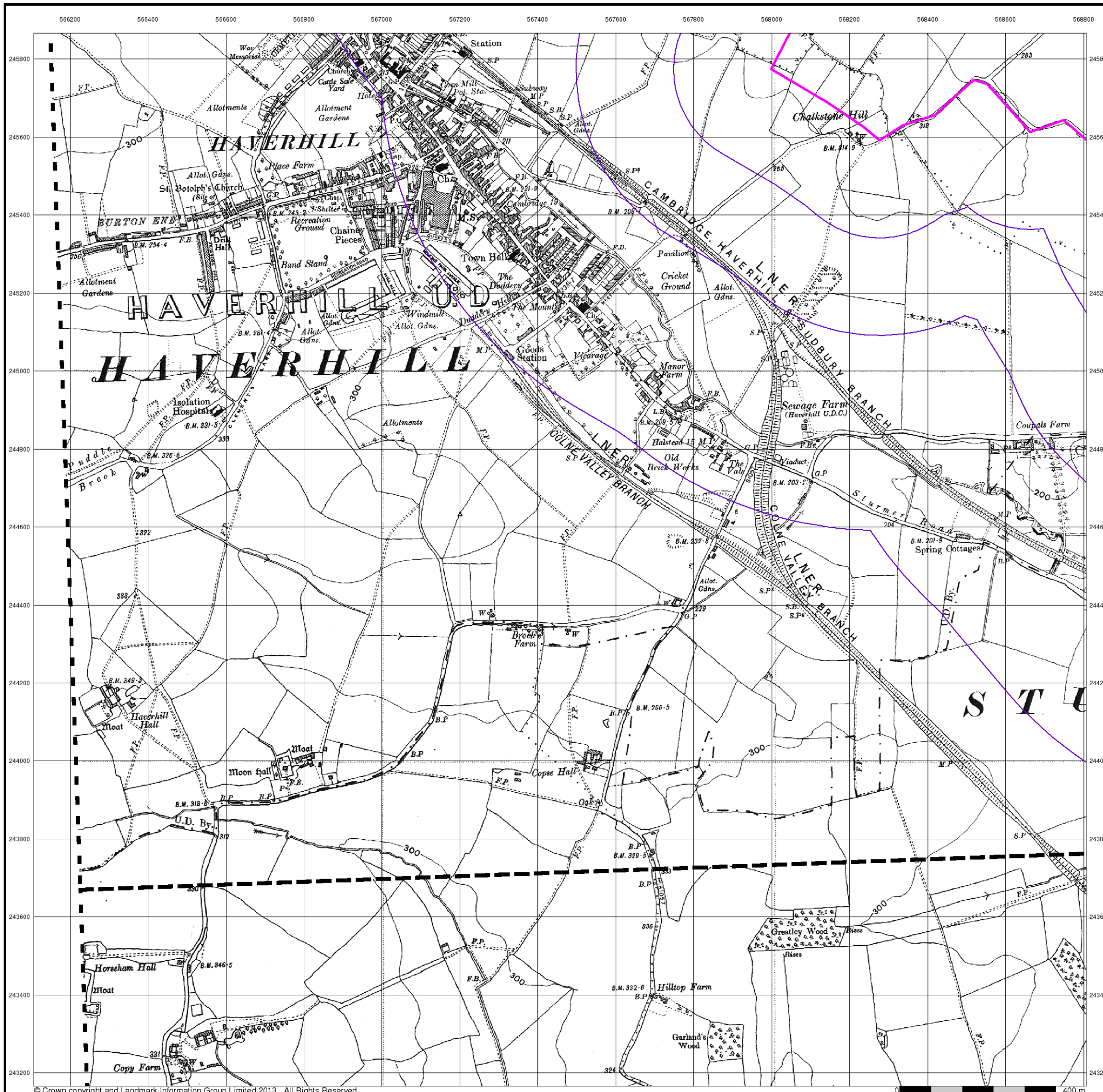


Order Details

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 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



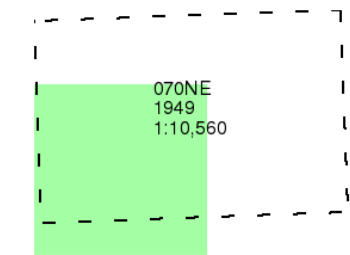
Suffolk

Published 1949

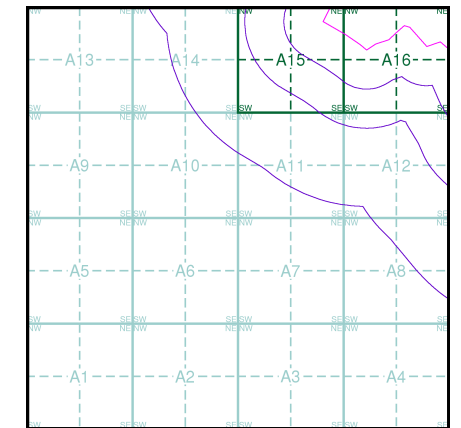
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A

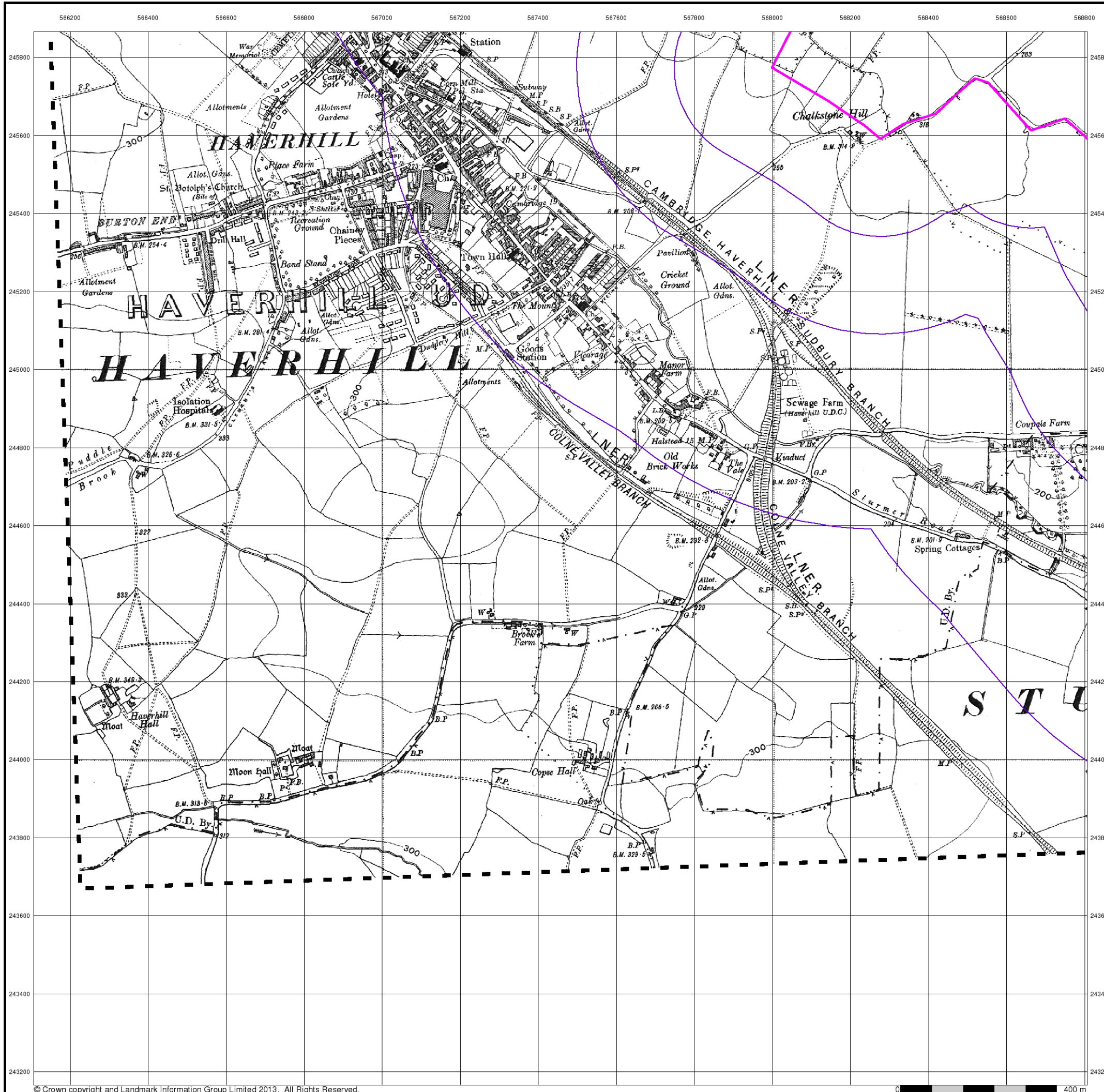


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Essex

Published 1951

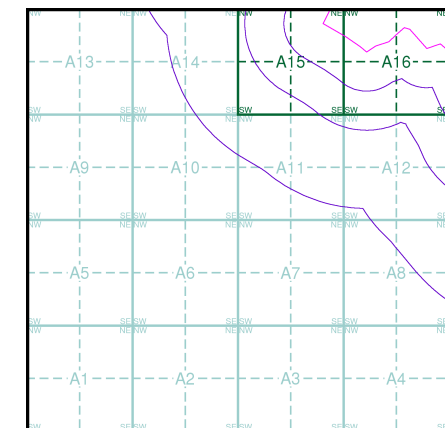
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

00300	1951	1:10,560
00900	1951	1:10,560

Historical Map - Slice A

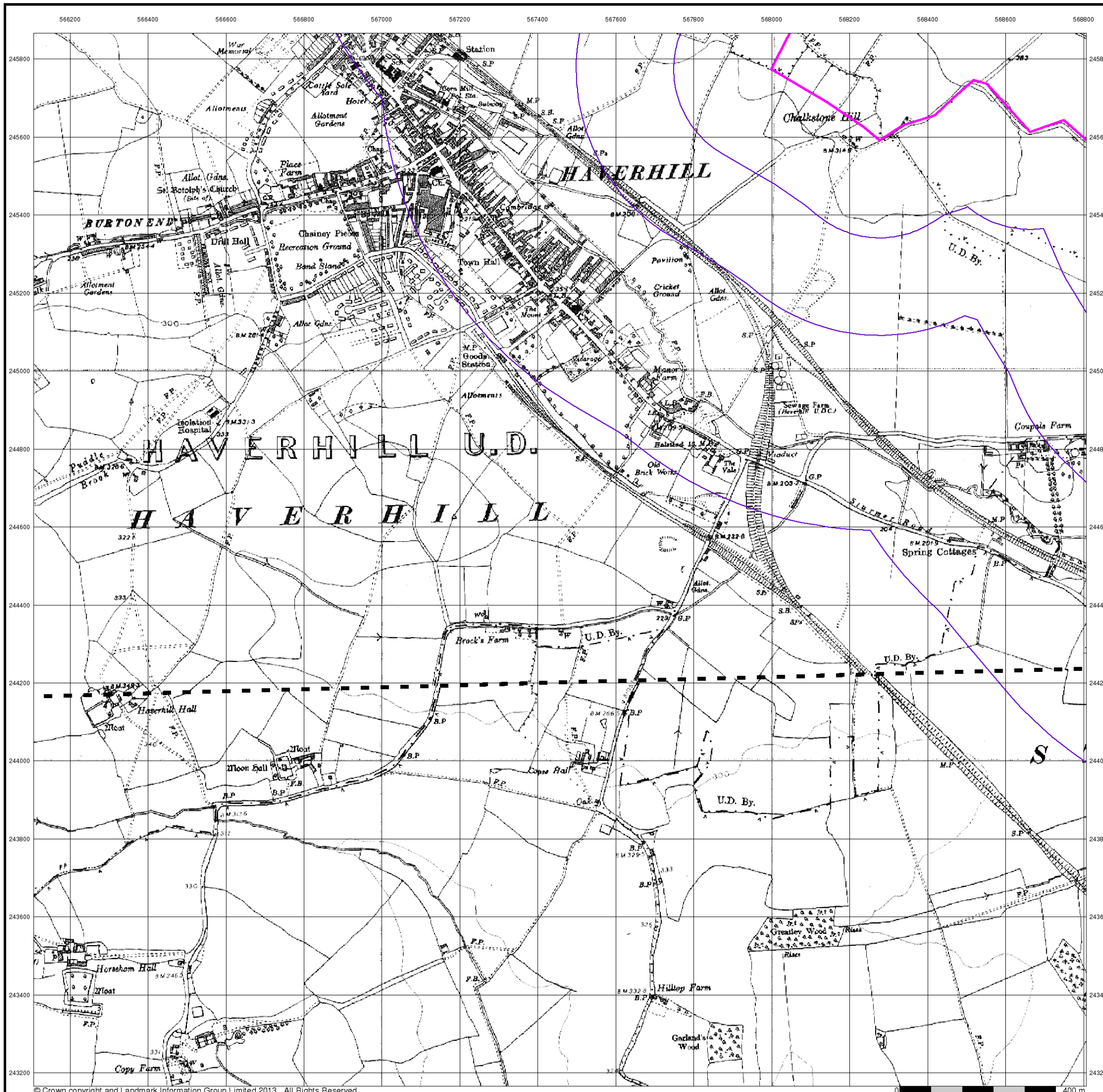


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1960

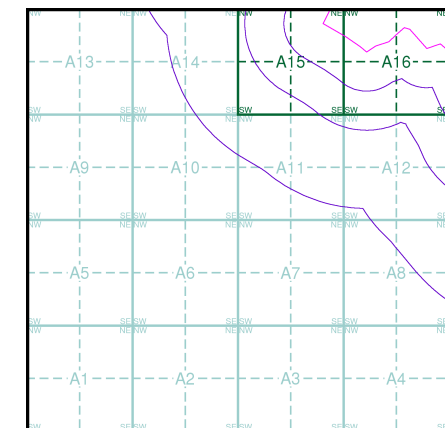
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE	1960	1:10,560
TL64SE	1960	1:10,560

Historical Map - Slice A

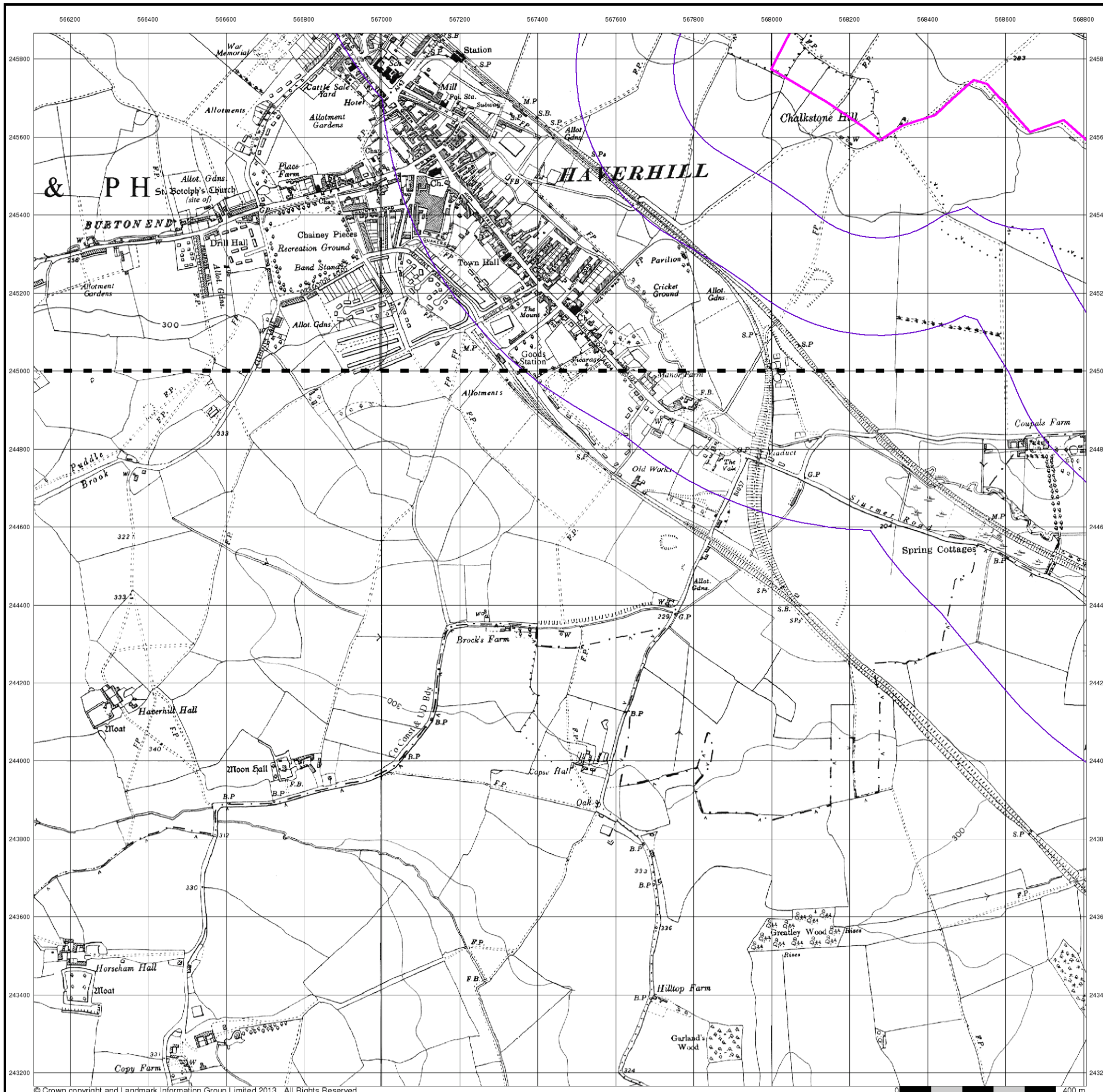


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



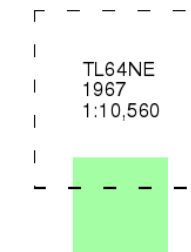
Ordnance Survey Plan

Published 1967

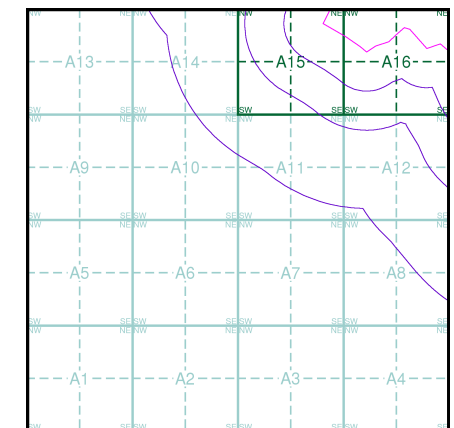
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

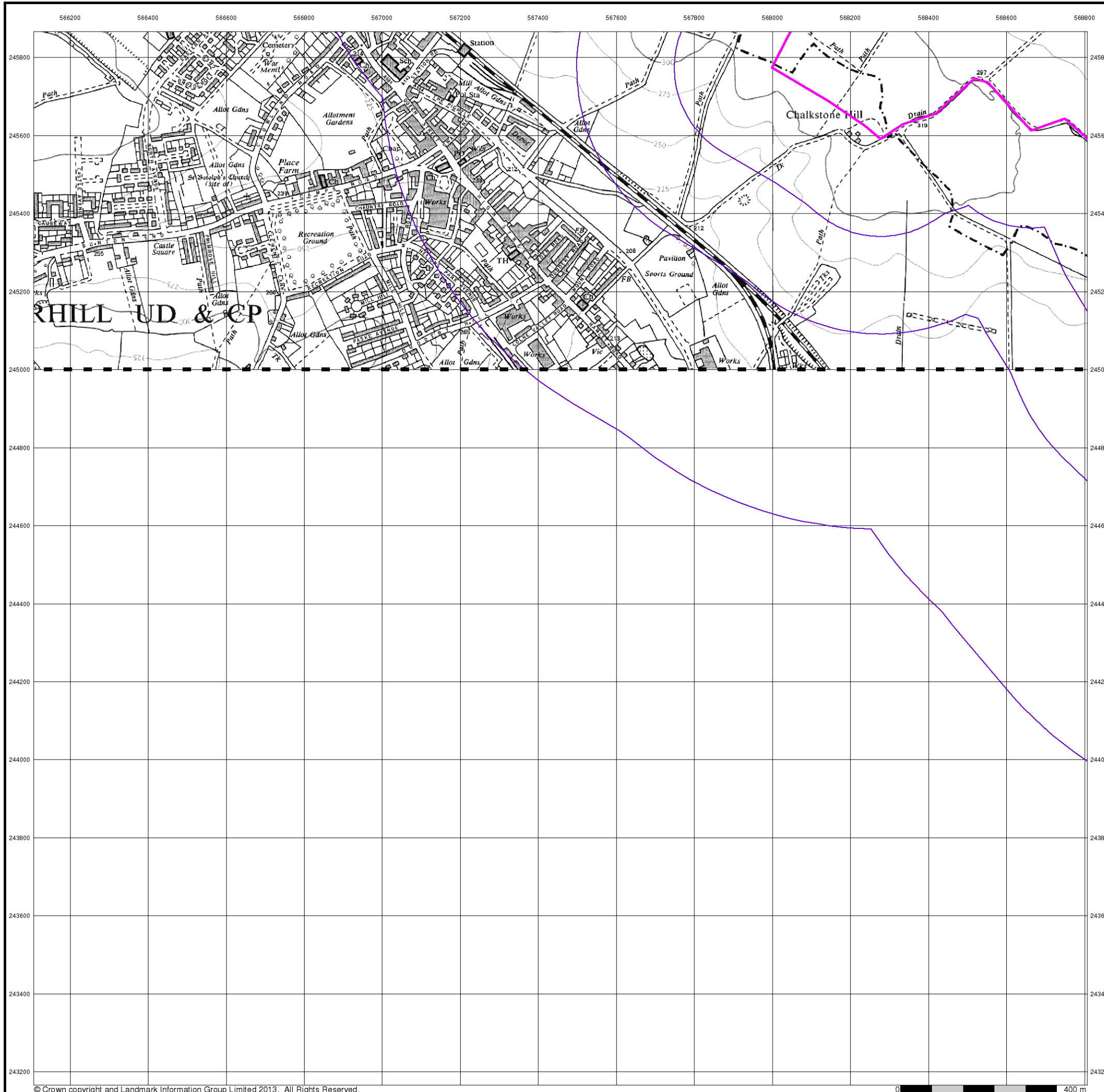


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1970 - 1972

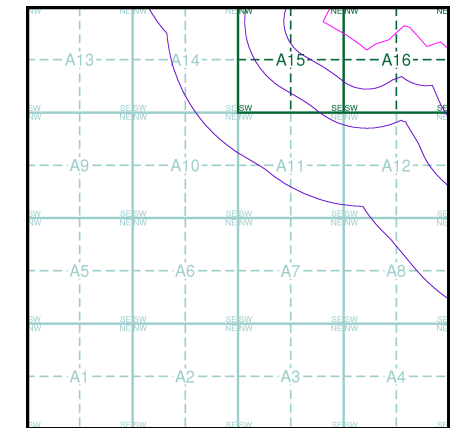
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE	1972	1:10,000
TL64SE	1970	1:10,560

Historical Map - Slice A

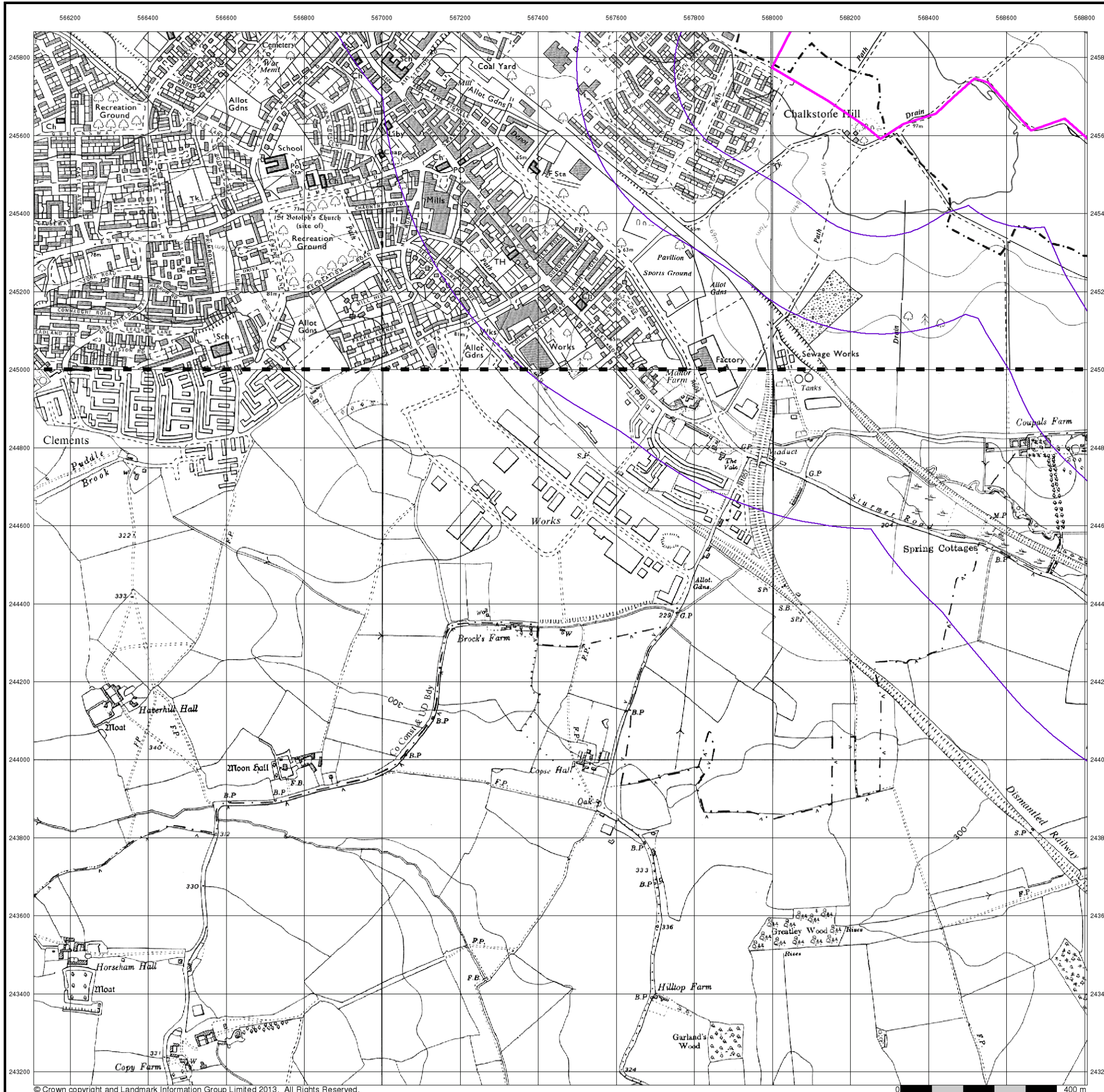


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
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Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1981 - 1982

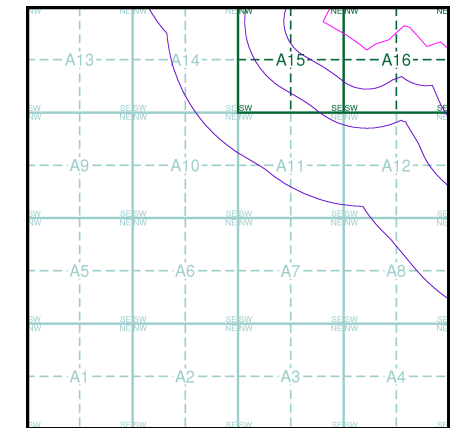
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE	1981	1:10,000
TL64SE	1982	1:10,000

Historical Map - Slice A

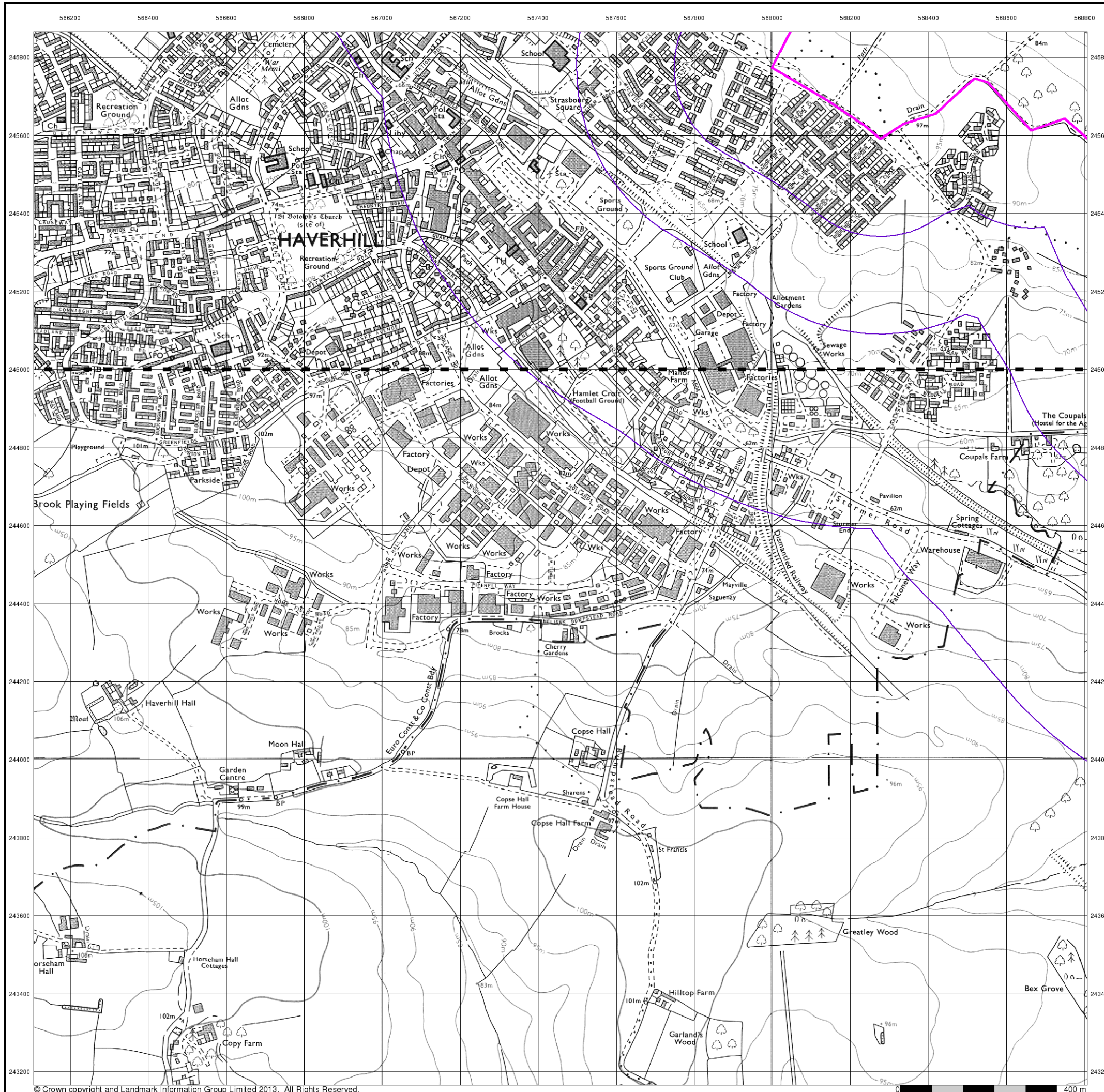


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
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 Site Area (Ha): 169.33
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Site Details

Site at 568850, 245800



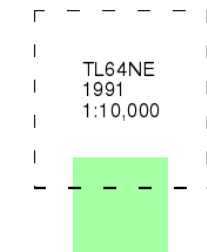
Ordnance Survey Plan

Published 1991

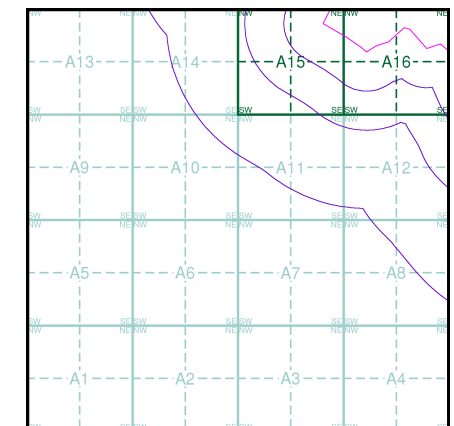
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

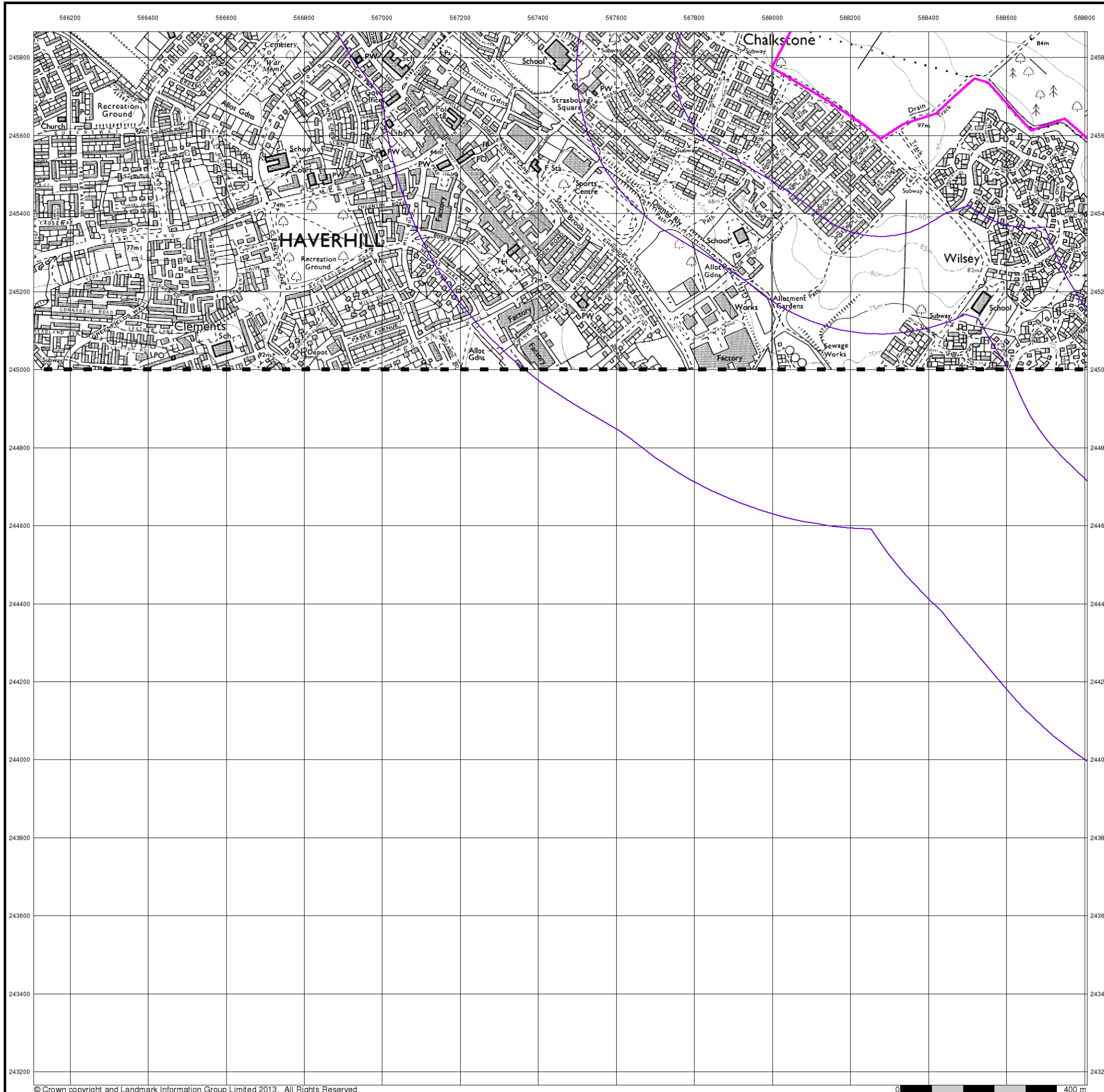


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Brookbanks Consulting

10k Raster Mapping

Published 2006

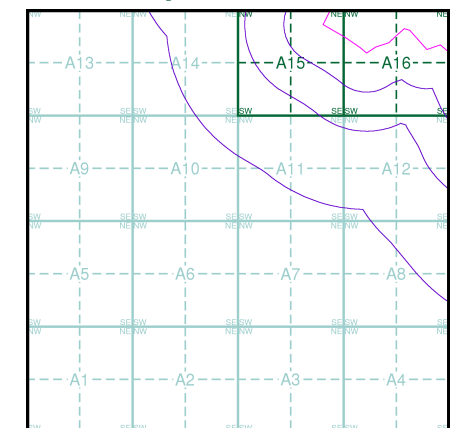
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

TL64NE	2006	1:10,000
TL64SE	2006	1:10,000

Historical Map - Slice A



Order Details

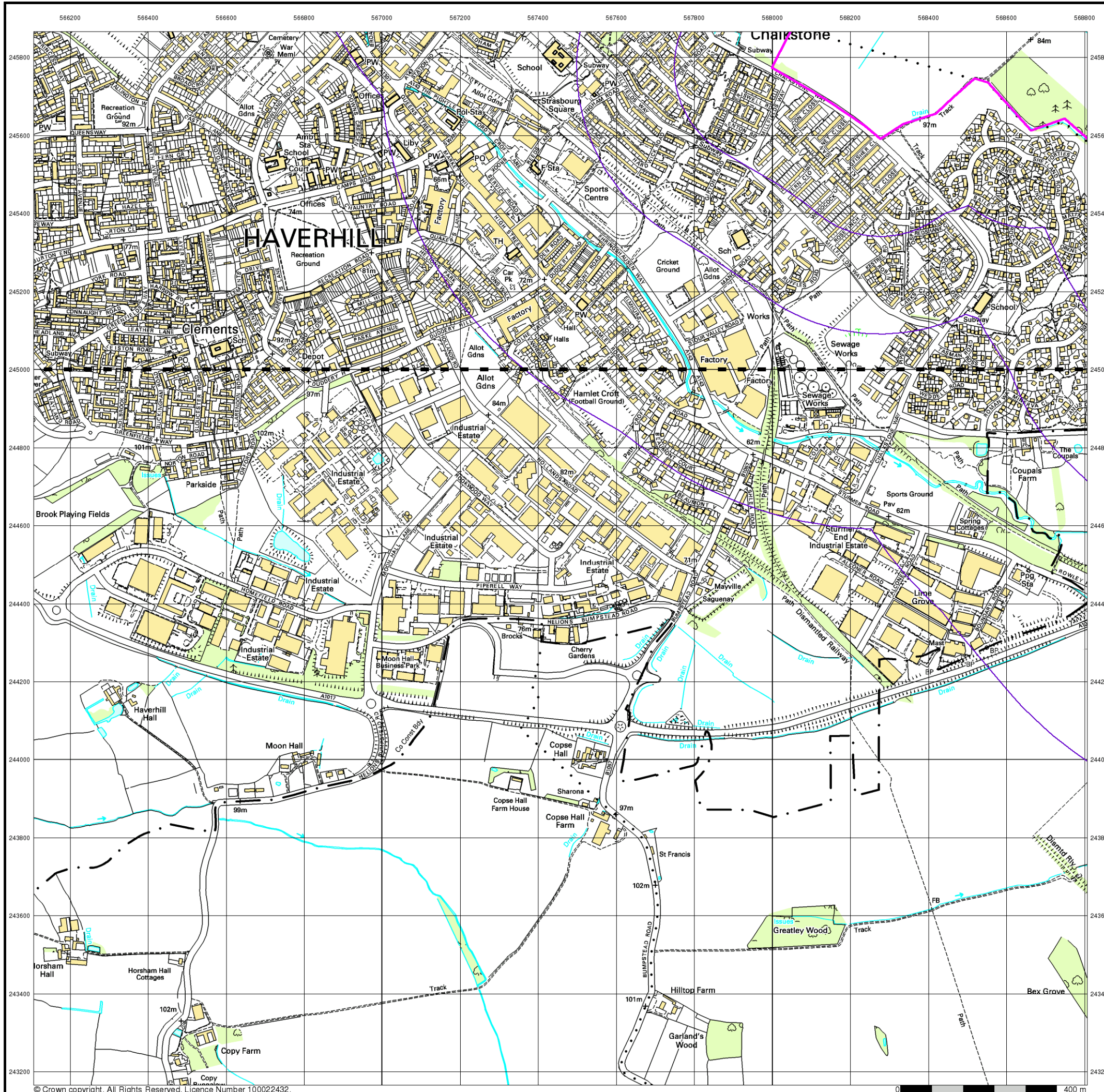
Order Number:	60434700_1_1
Customer Ref:	10173 Haverhill
National Grid Reference:	568060, 245220
Slice:	A
Site Area (Ha):	169.33
Search Buffer (m):	1000

Site Details

Site at 568850, 245800



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Brookbanks Consulting

VectorMap Local

Published 2014

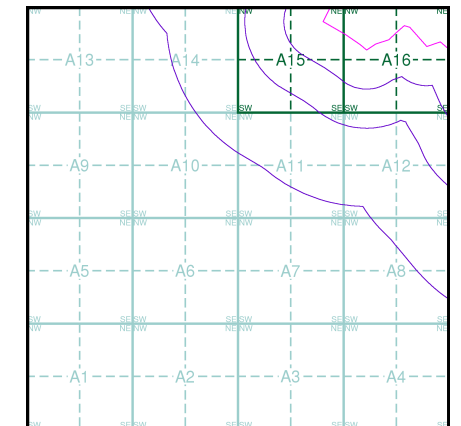
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

- TL64NE | 2014 | Variable
- TL64SE | 2014 | Variable

Historical Map - Slice A



Order Details

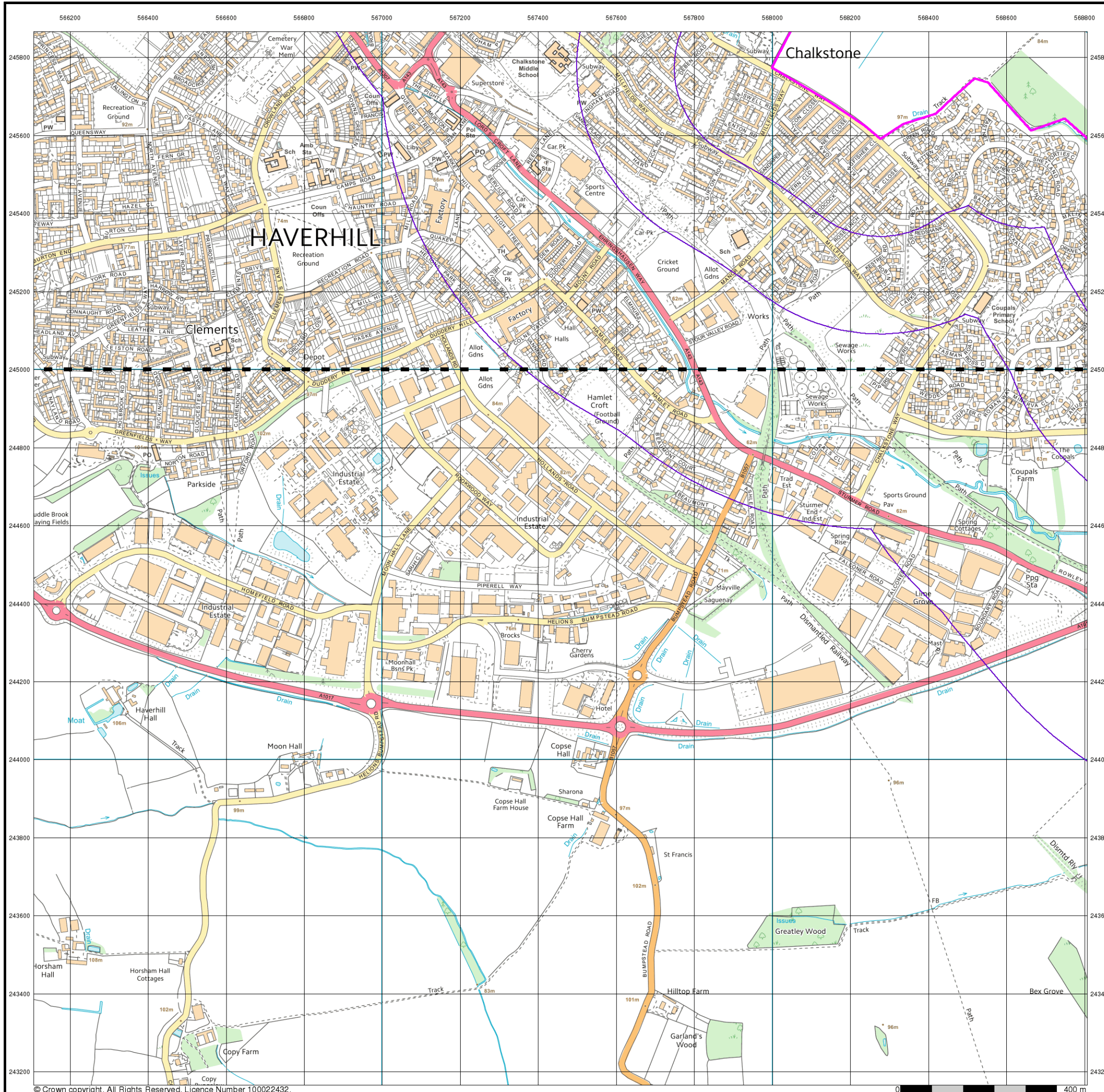
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 Customer Ref: 10173 Haverhill
 National Grid Reference: 568060, 245220
 Slice: A
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	-285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		Bracken
	Heath		Rough Grassland
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

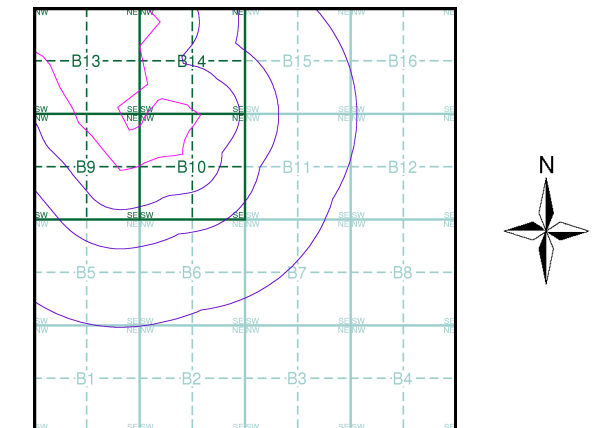
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	MHW(S) Mean high water (springs)		MLW(S) Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

Brookbanks Consulting

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:10,560	1880	2
Suffolk	1:10,560	1885	3
Essex	1:10,560	1898 - 1899	4
Essex	1:10,560	1905	5
Essex	1:10,560	1924	6
Suffolk	1:10,560	1928	7
Suffolk	1:10,560	1938 - 1951	8
Suffolk	1:10,560	1949	9
Essex	1:10,560	1951	10
Ordnance Survey Plan	1:10,000	1958	11
Ordnance Survey Plan	1:10,000	1960 - 1967	12
Ordnance Survey Plan	1:10,000	1967	13
Ordnance Survey Plan	1:10,000	1970 - 1972	14
Ordnance Survey Plan	1:10,000	1981 - 1985	15
Ordnance Survey Plan	1:10,000	1991	16
10K Raster Mapping	1:10,000	2006	17
VectorMap Local	1:10,000	2014	18

Historical Map - Slice B



Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

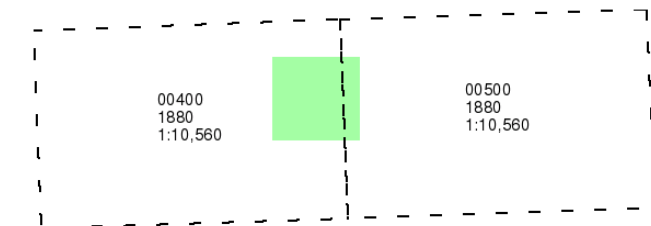
Essex

Published 1880

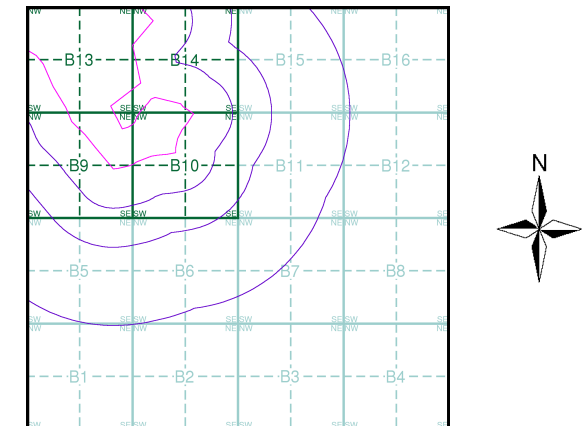
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice B

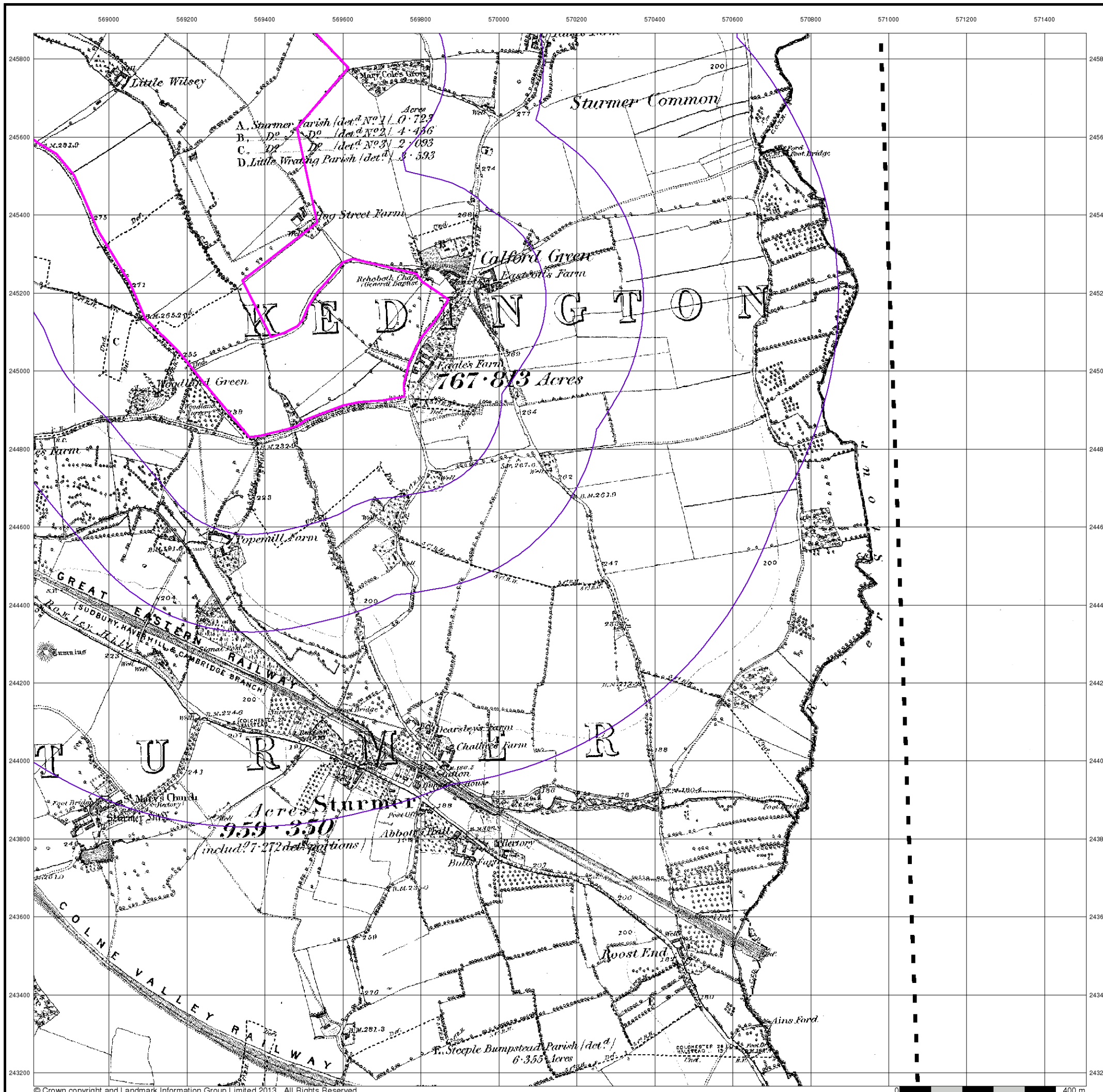


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Essex

Published 1898 - 1899

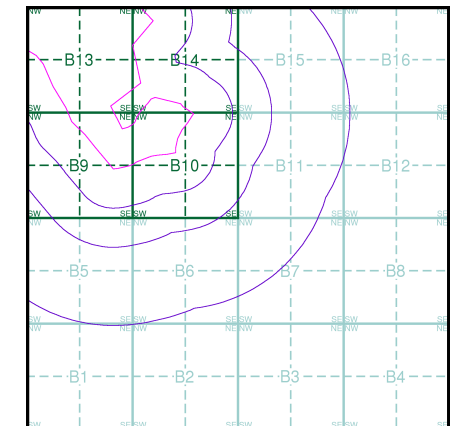
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

004NE 1899 1:10,560	005NW 1898 1:10,560
004SE 1898 1:10,560	005SW 1898 1:10,560

Historical Map - Slice B



Order Details

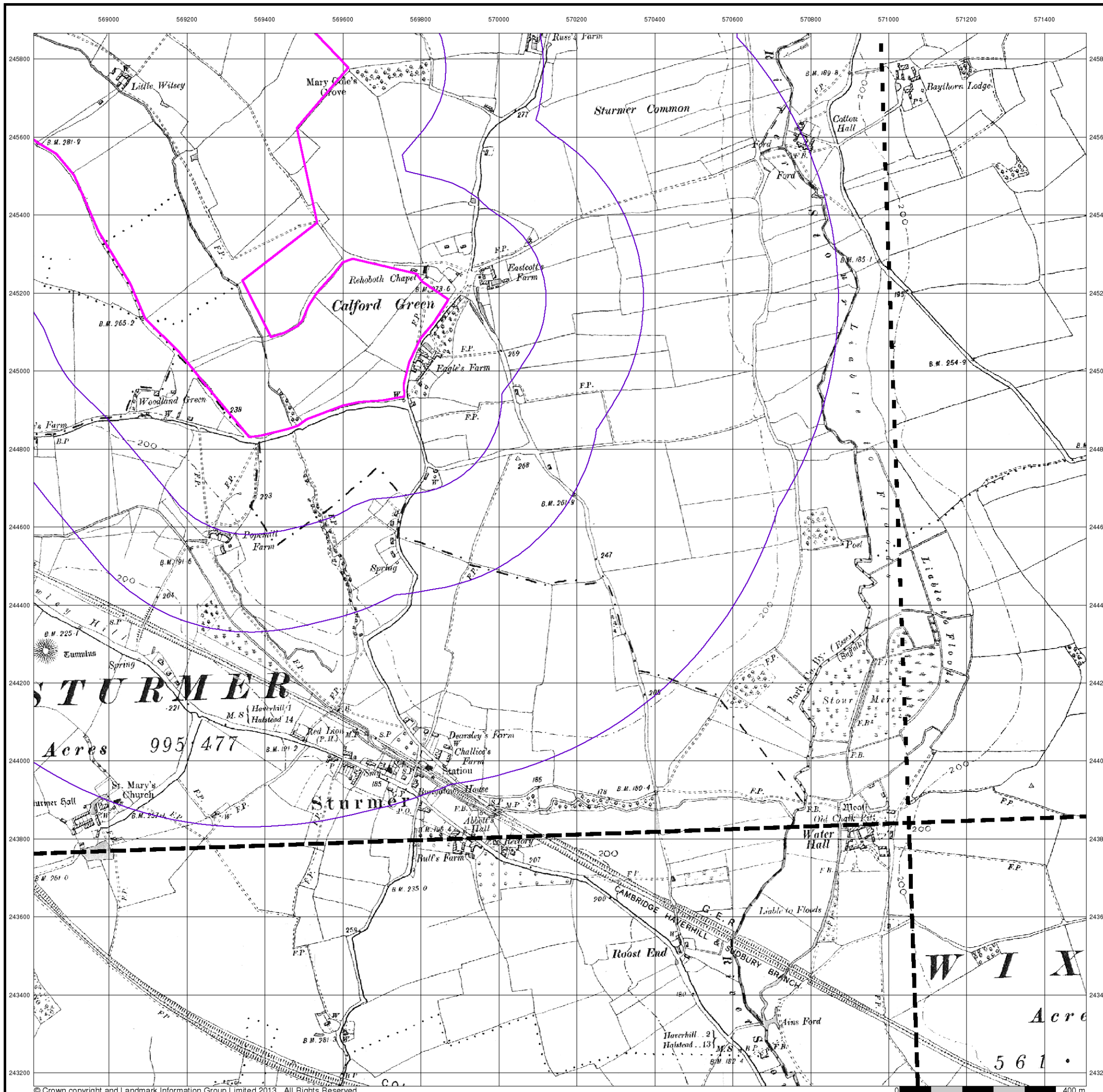
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 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



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Essex

Published 1905

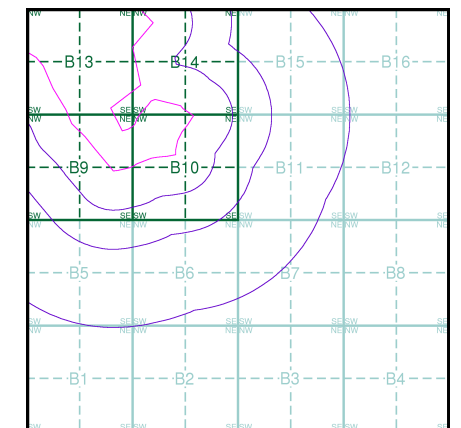
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

004NE 1905 1:10,560	005NW 1905 1:10,560
004SE 1905 1:10,560	005SW 1905 1:10,560

Historical Map - Slice B

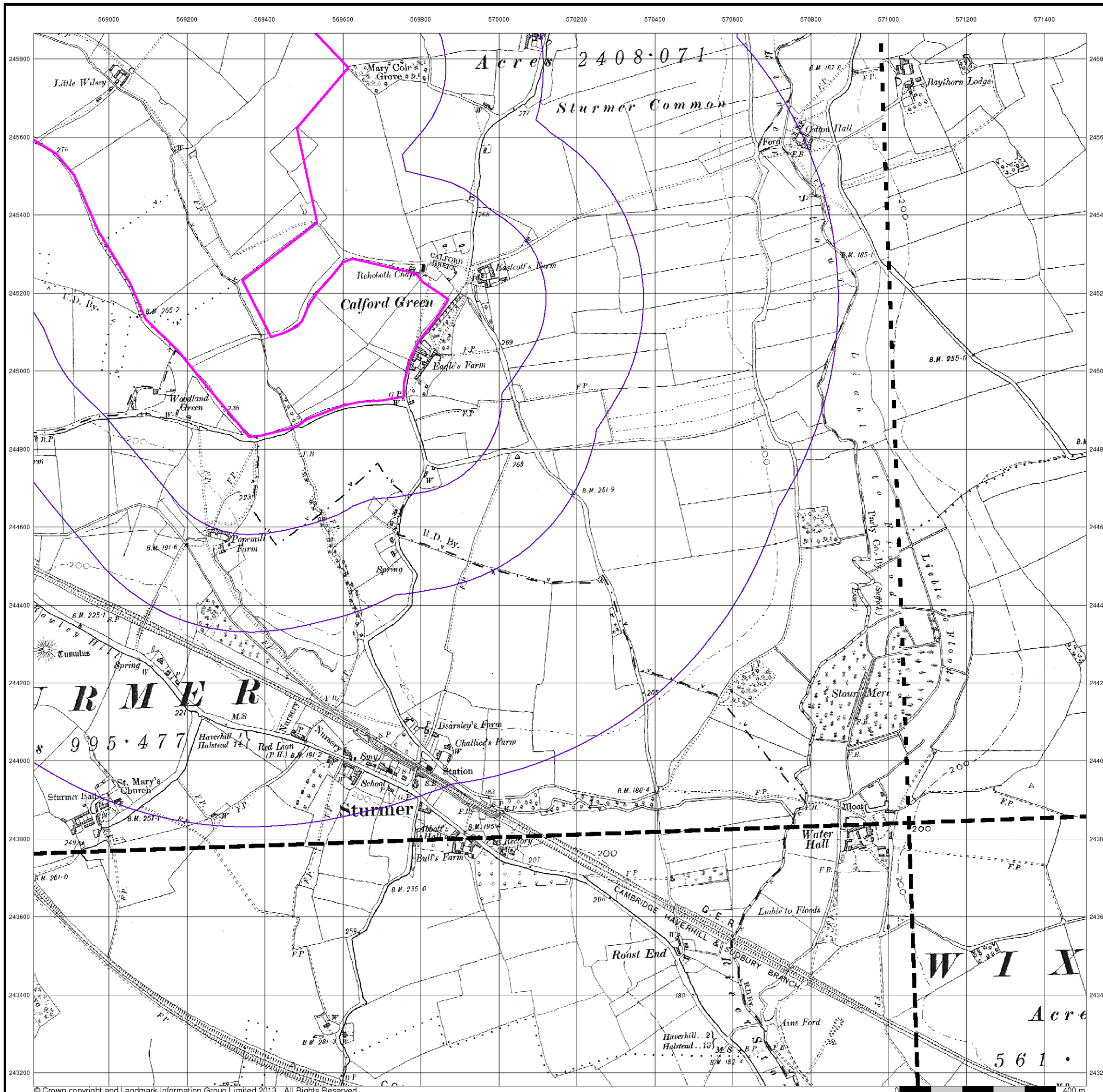


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Essex

Published 1924

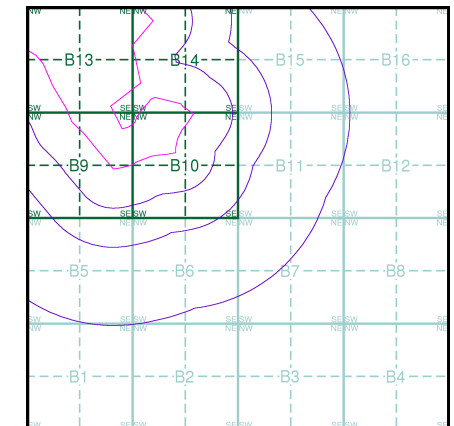
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

00300	1924	1:10,560
00900	1924	1:10,560

Historical Map - Slice B

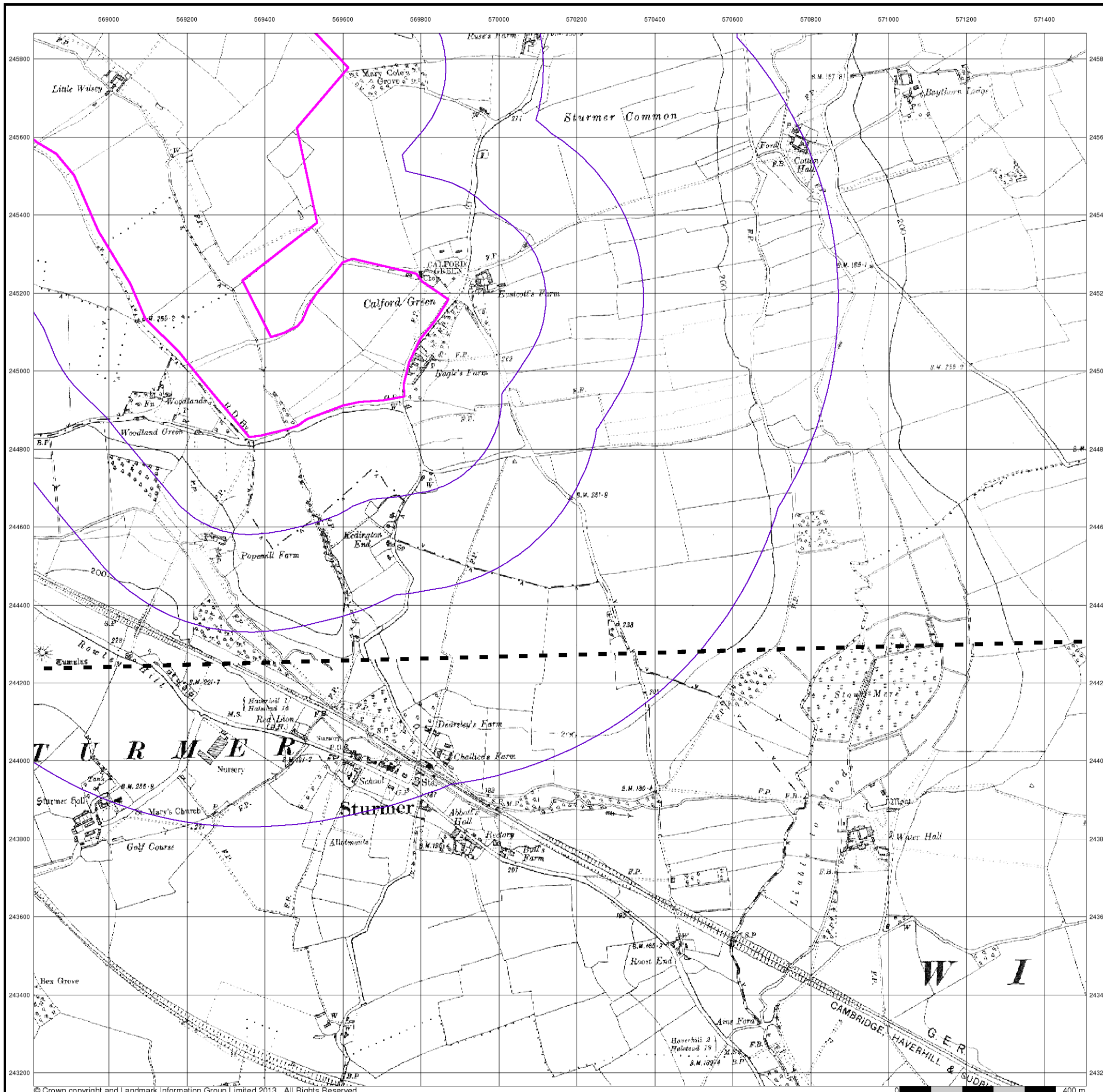


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
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 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Suffolk

Published 1928

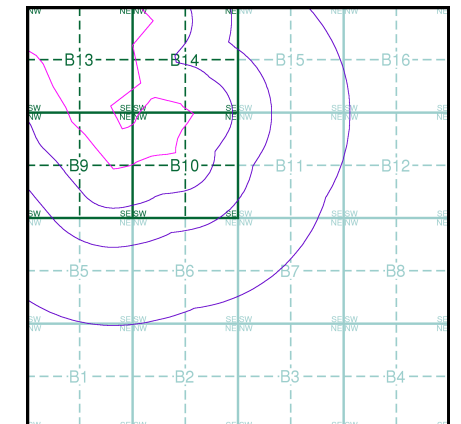
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

070NE	1928	1:10,560
070SE	1928	1:10,560

Historical Map - Slice B

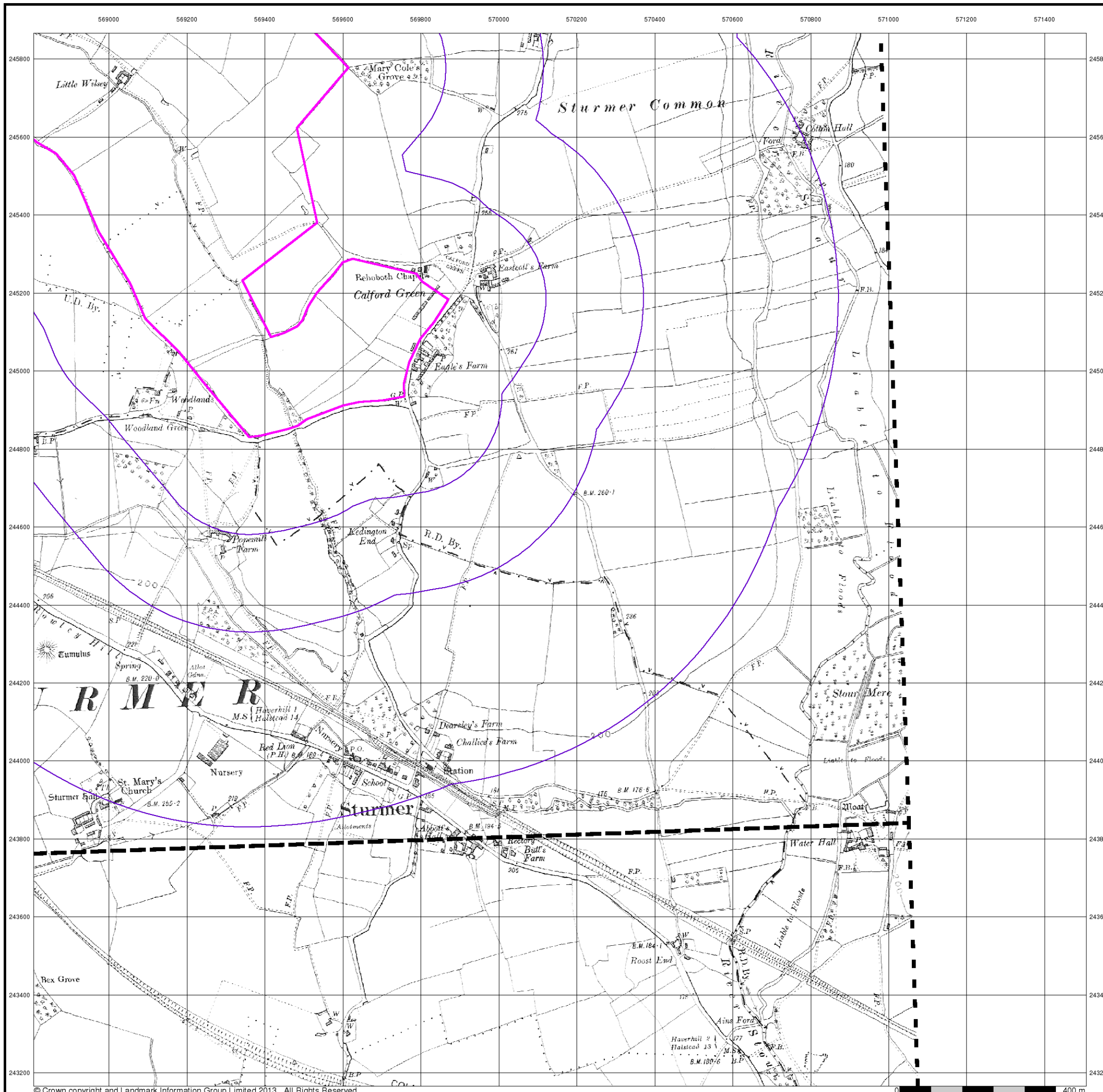


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Suffolk

Published 1938 - 1951

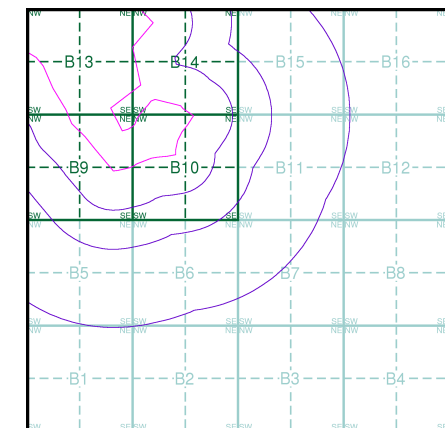
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

070NE 1938 1:10,560	071NW 1951 1:10,560
070SE 1951 1:10,560	071SW 1951 1:10,560

Historical Map - Slice B

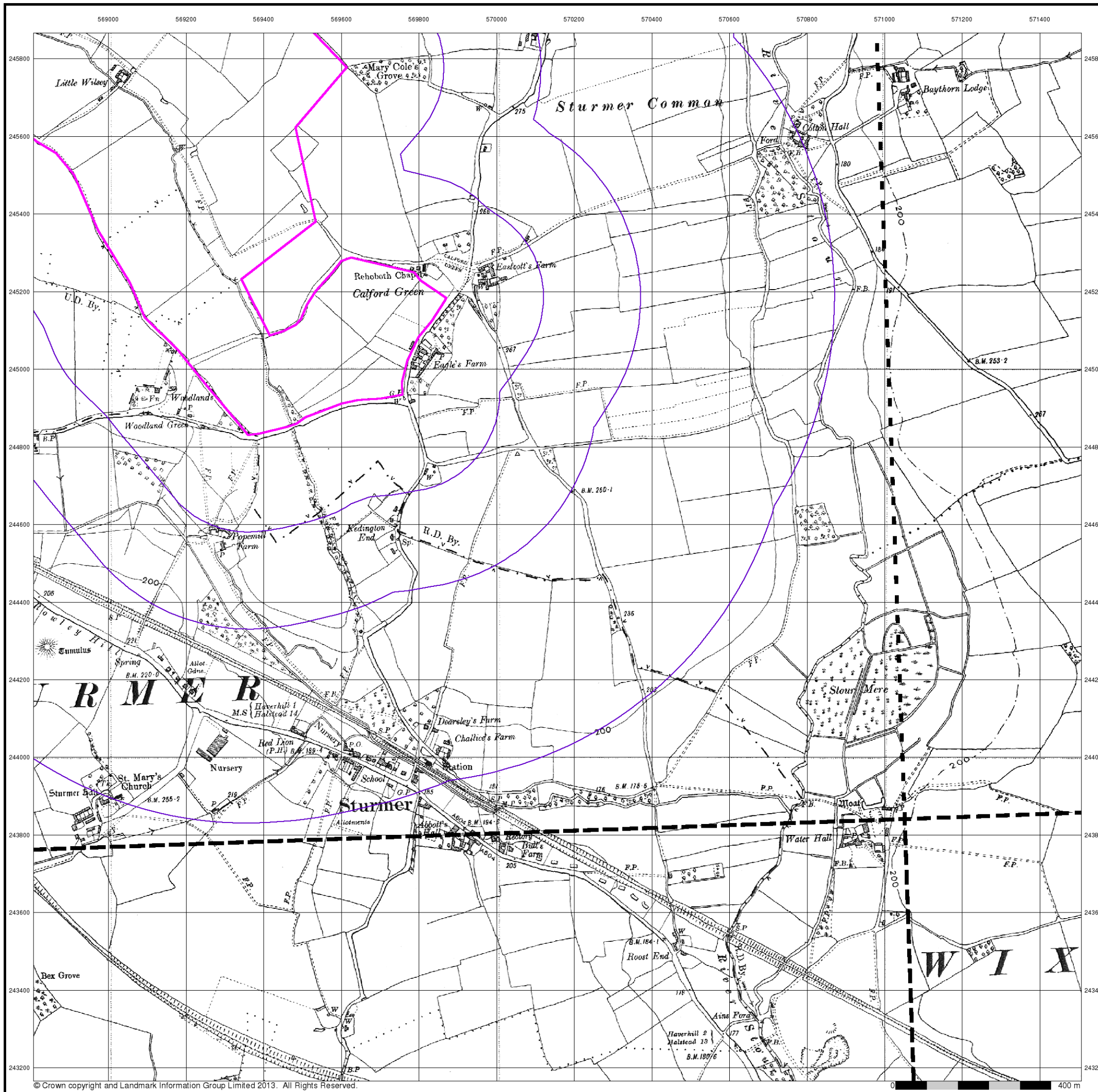


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



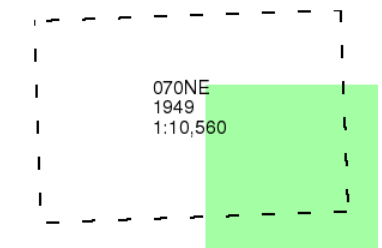
Suffolk

Published 1949

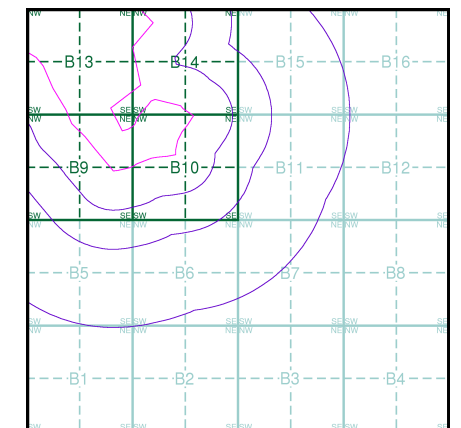
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice B

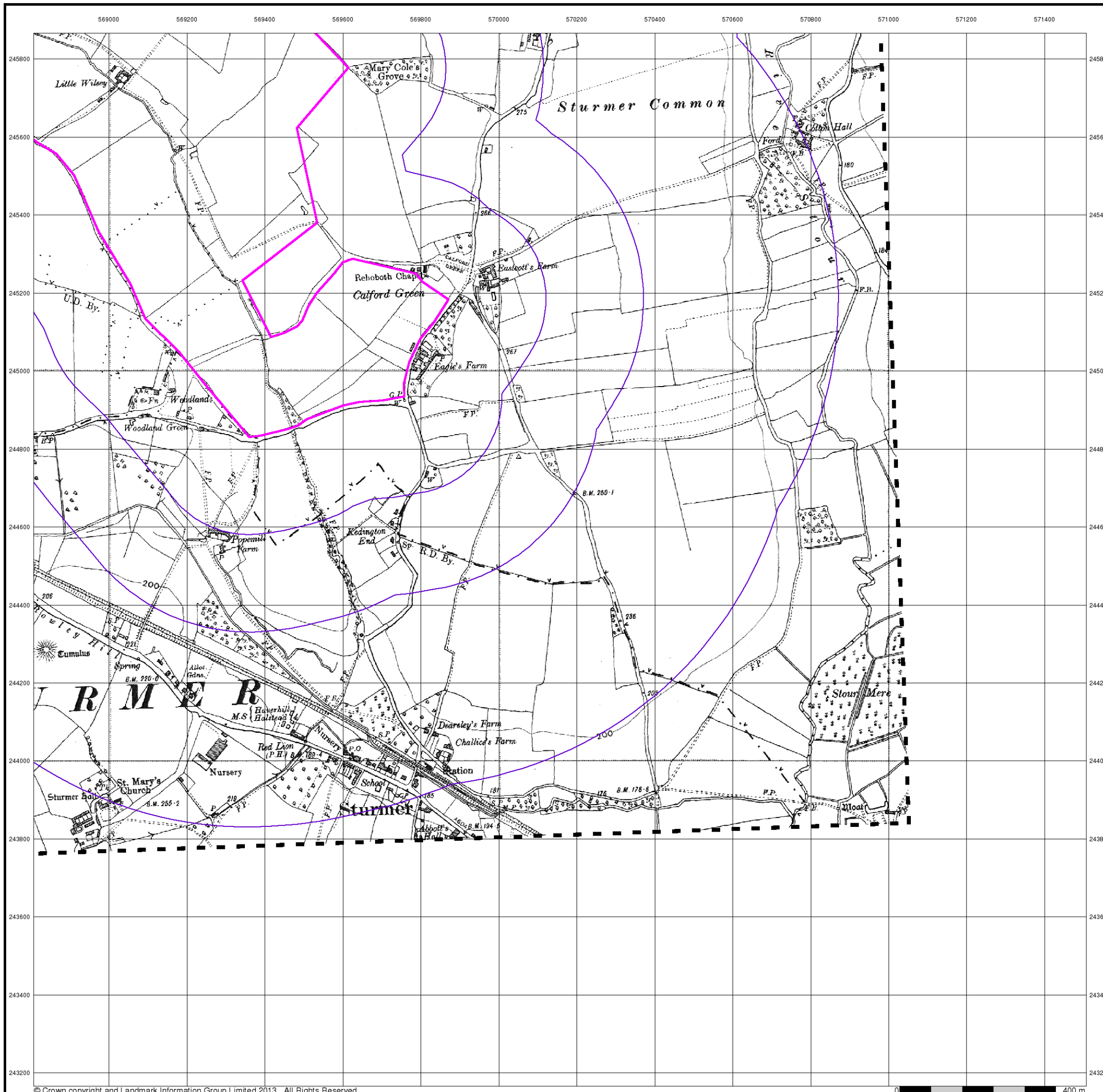


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Essex

Published 1951

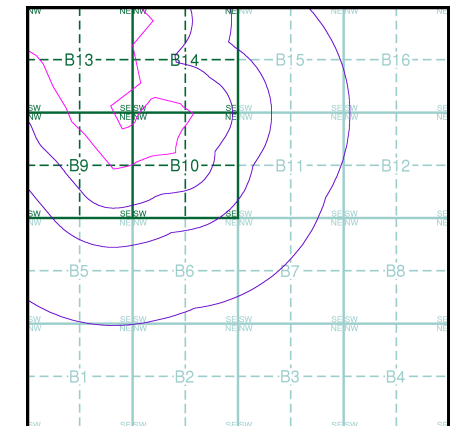
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

00300	1951	1:10,560
00900	1951	1:10,560

Historical Map - Slice B

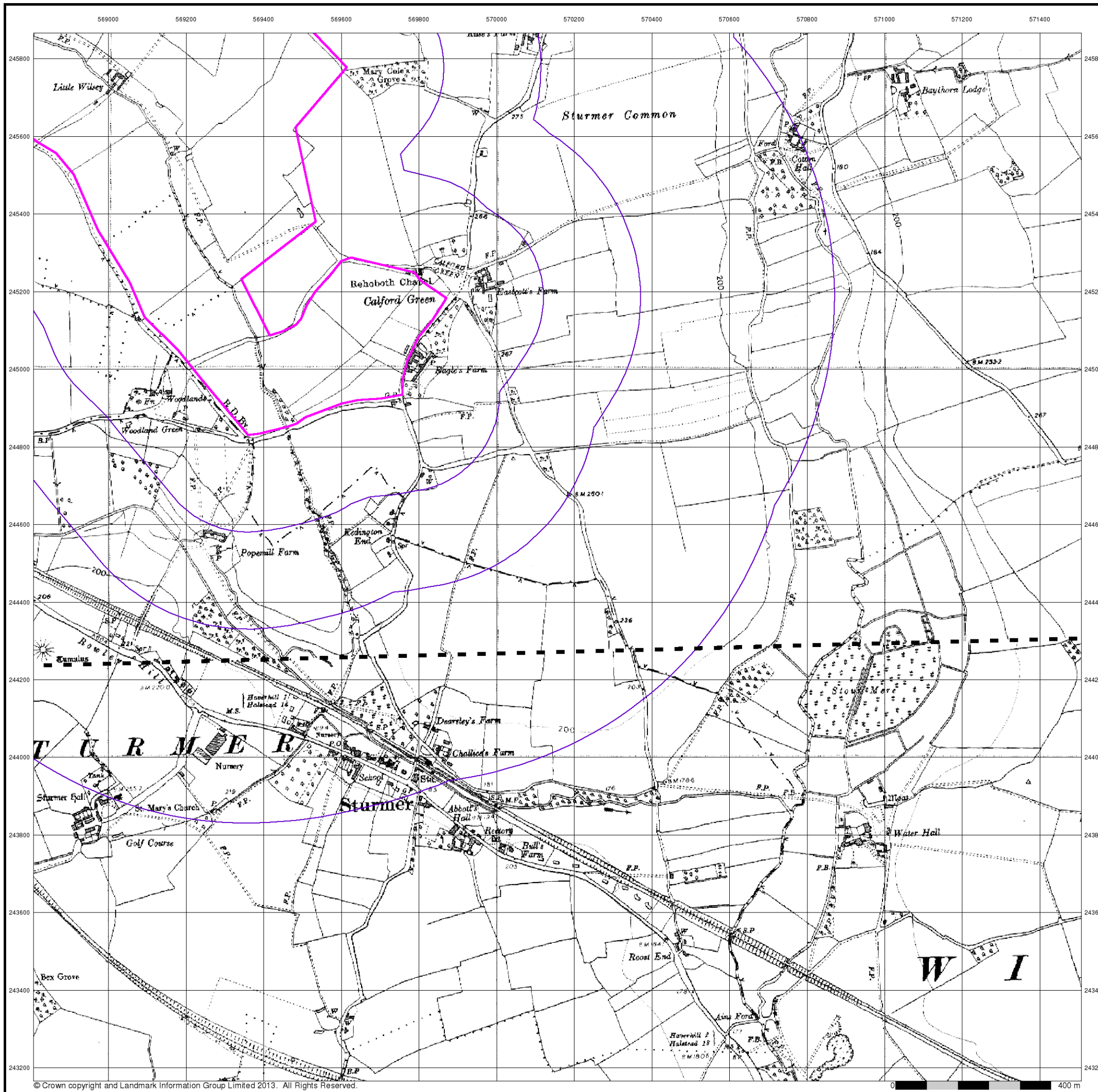


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
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 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1958

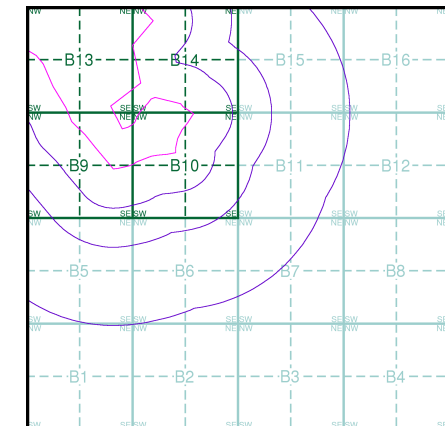
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL74NW	1958	1:10,560
TL74SW	1958	1:10,560

Historical Map - Slice B

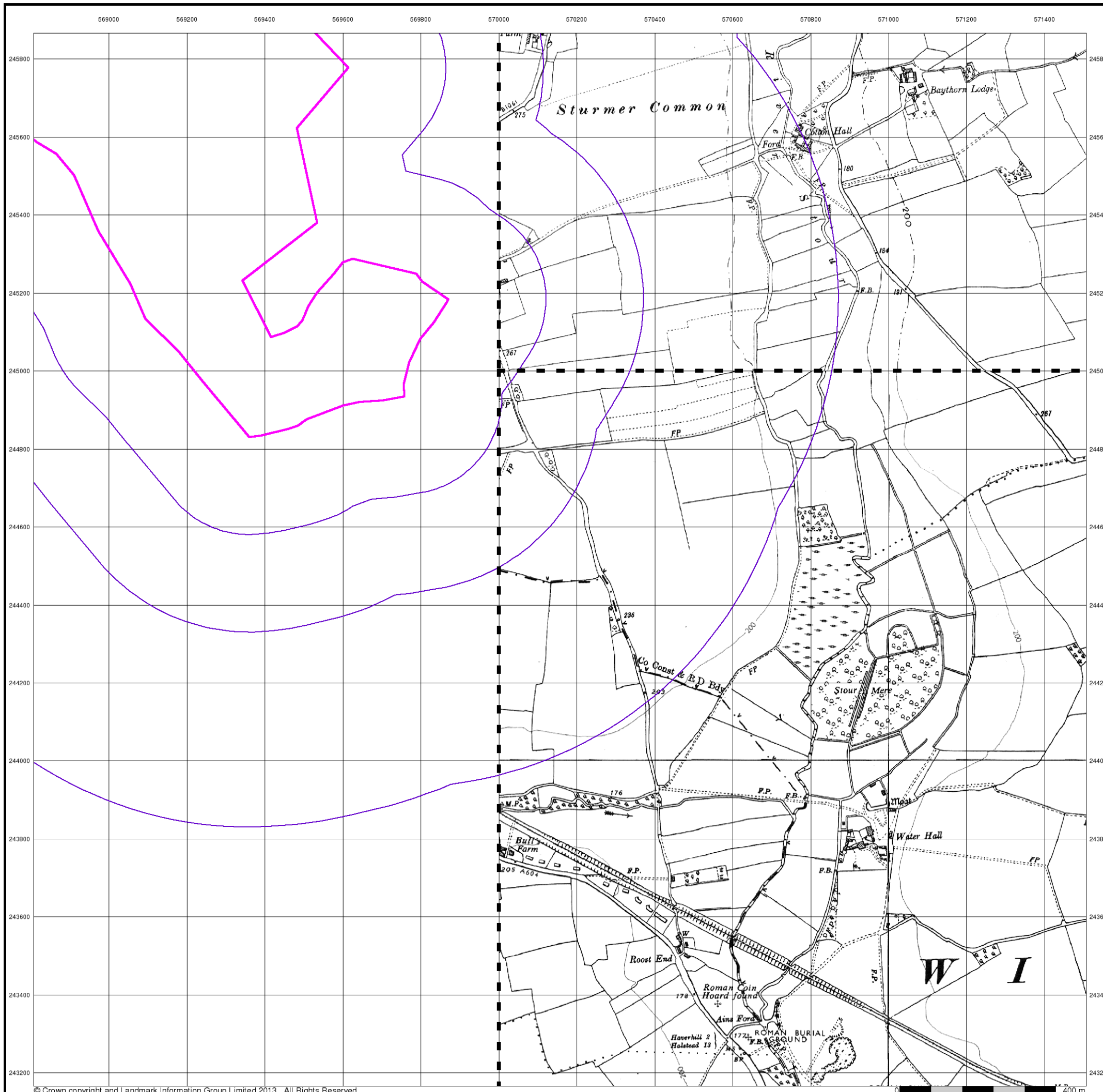


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1960 - 1967

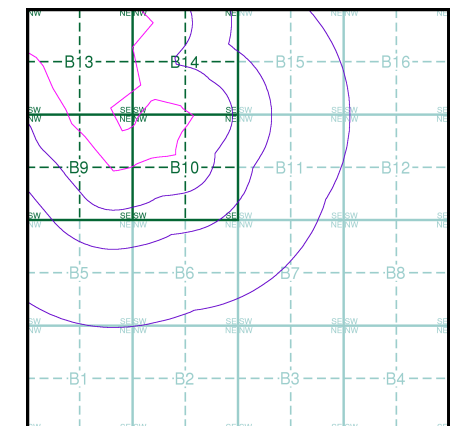
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE	1960	1:10,560	TL74NW	1967	1:10,560
TL64SE	1960	1:10,560	TL74SW	1967	1:10,560

Historical Map - Slice B

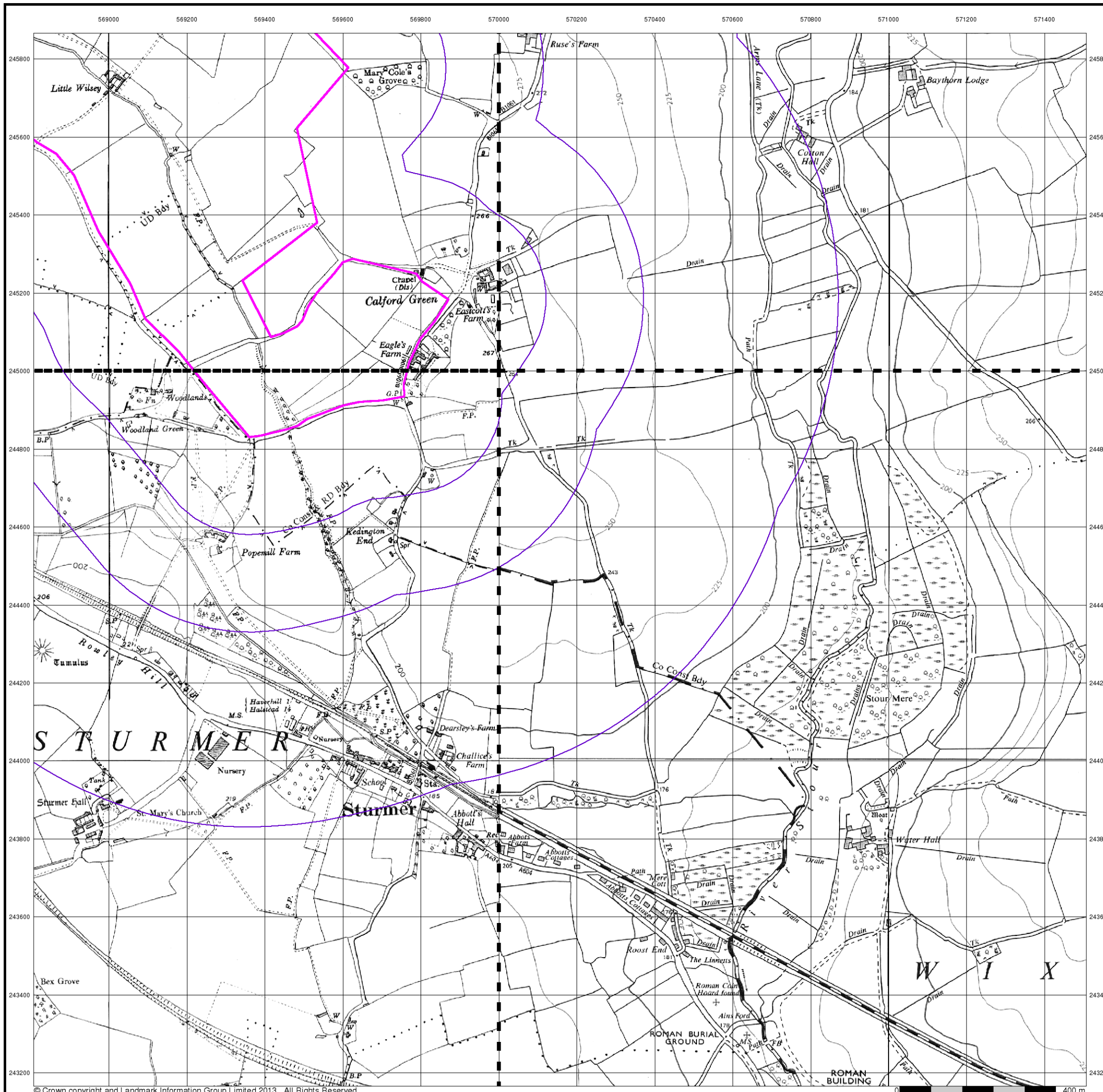


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1970 - 1972

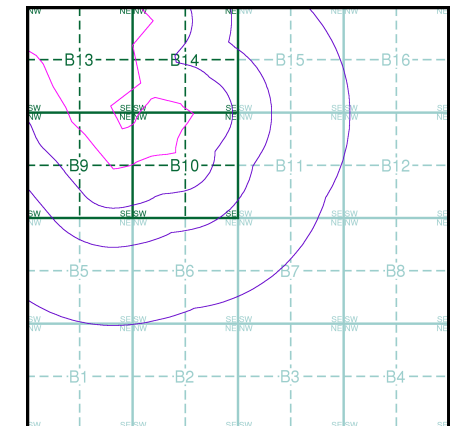
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE	1972	1:10,000
TL64SE	1970	1:10,560

Historical Map - Slice B

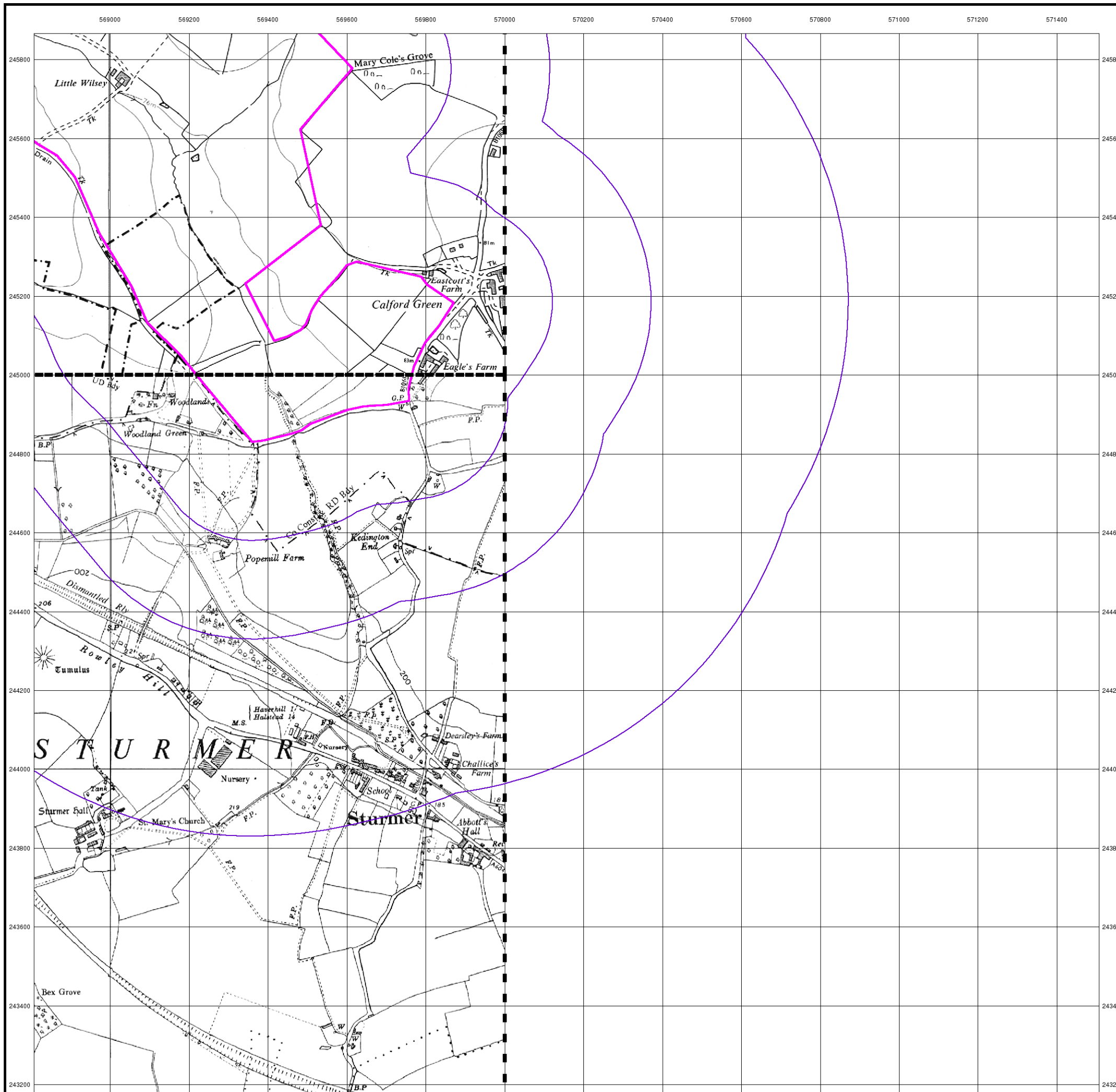


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1981 - 1985

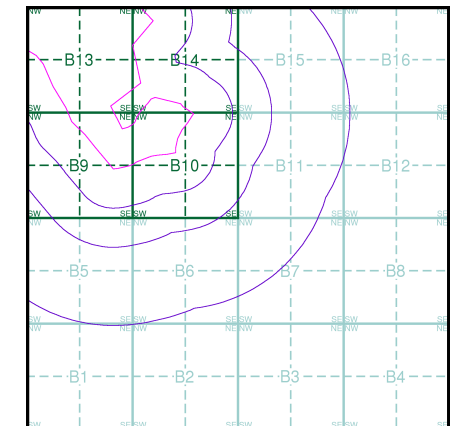
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE	TL74NW
1981	1985
1:10,000	1:10,000
TL64SE	TL74SW
1982	1985
1:10,000	1:10,000

Historical Map - Slice B

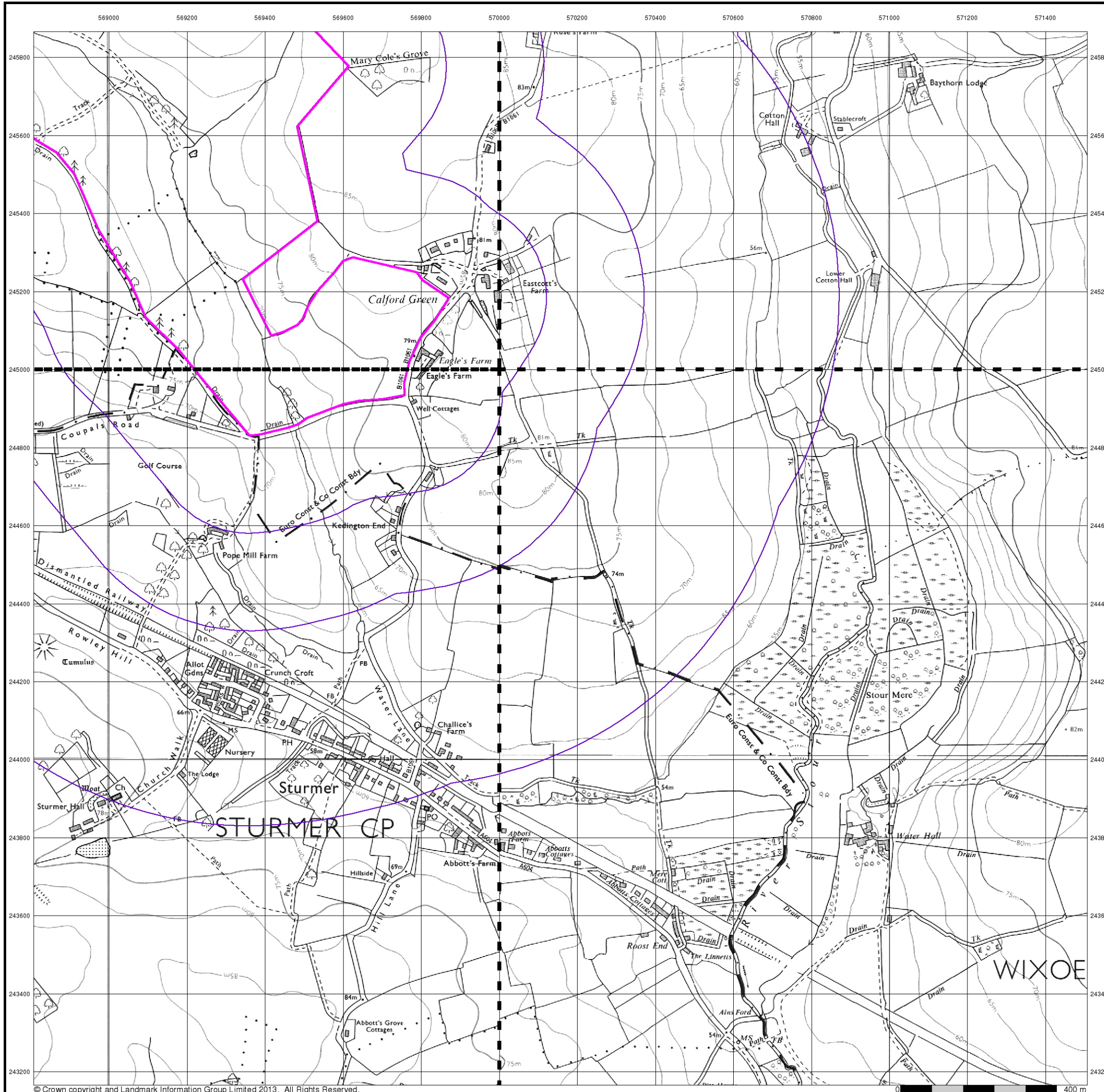


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Brookbanks Consulting

10k Raster Mapping

Published 2006

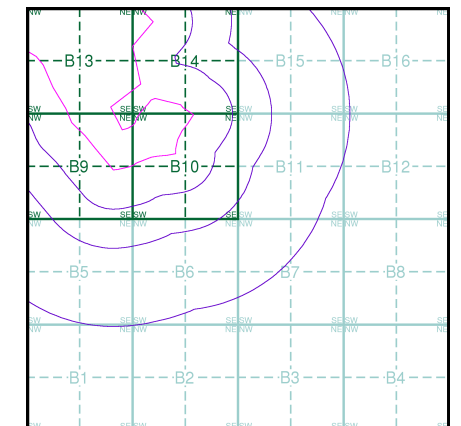
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

TL64NE 2006 1:10,000	TL74NW 2006 1:10,000
TL64SE 2006 1:10,000	TL74SW 2006 1:10,000

Historical Map - Slice B



Order Details

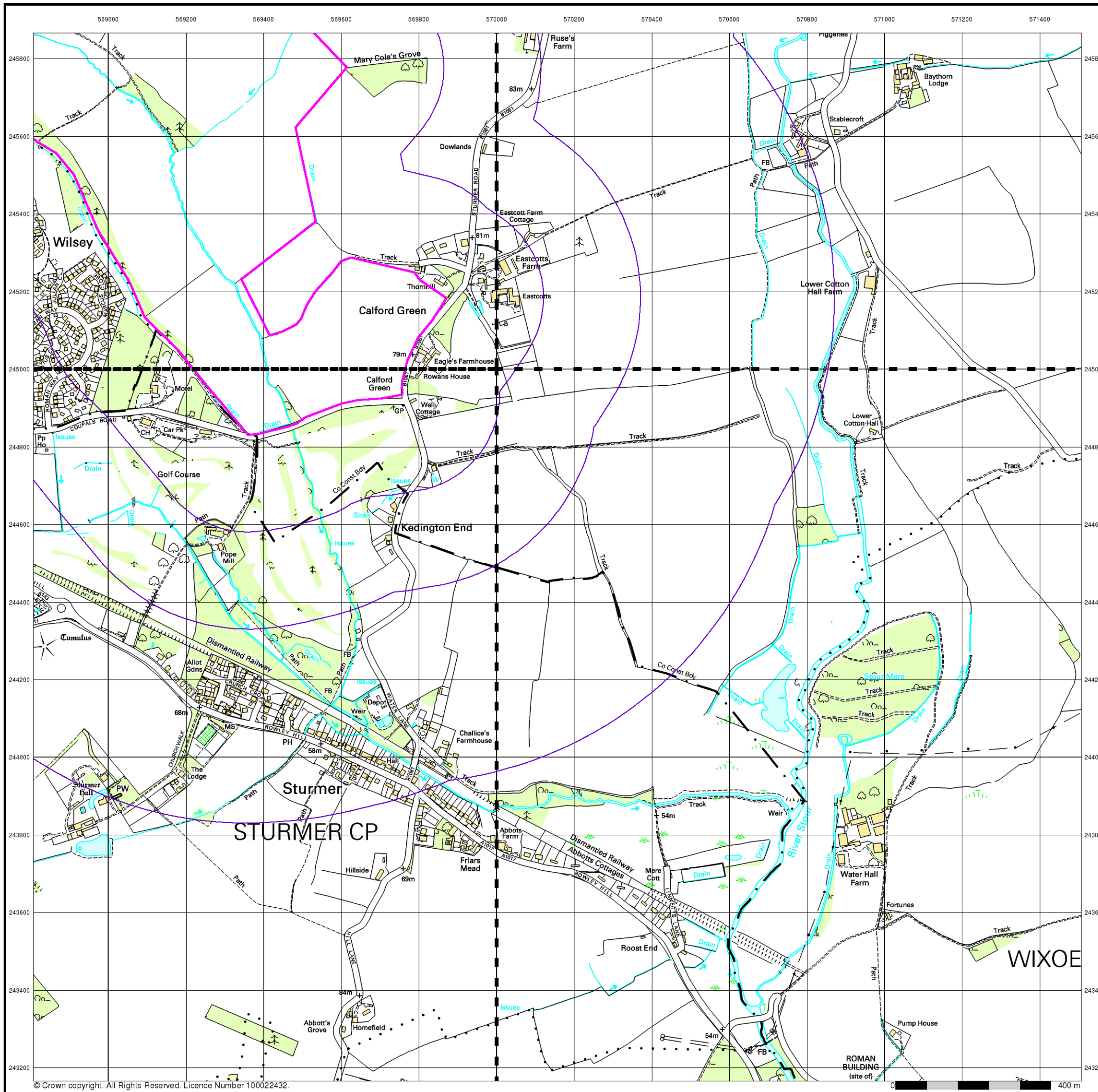
Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



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VectorMap Local

Published 2014

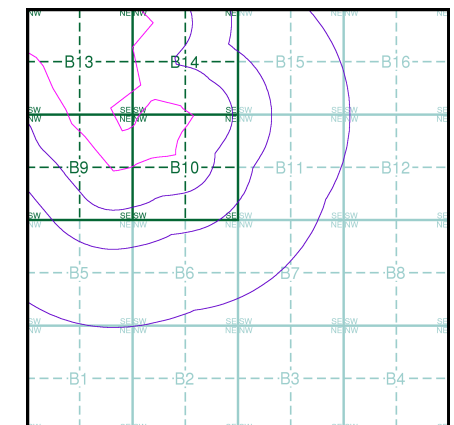
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

TL64NE 2014 Variable	TL74NW 2014 Variable
TL64SE 2014 Variable	TL74SW 2014 Variable

Historical Map - Slice B

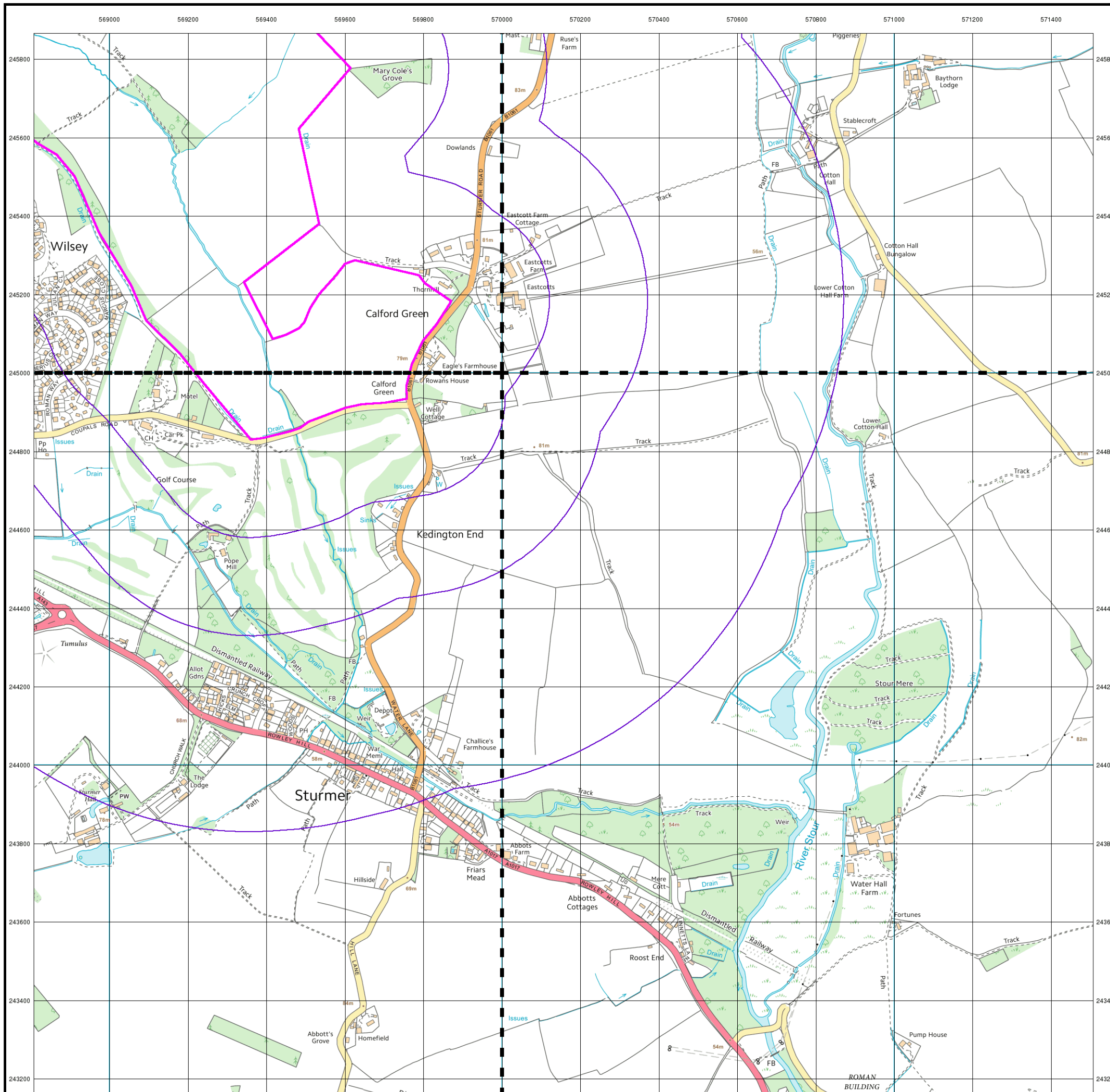


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569750, 244930
 Slice: B
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	-285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		
	Bracken		Heath
	Rough Grassland		
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		
	Standard Gauge Single Track		
	Siding, Tramway or Mineral Line		
	Narrow Gauge		
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

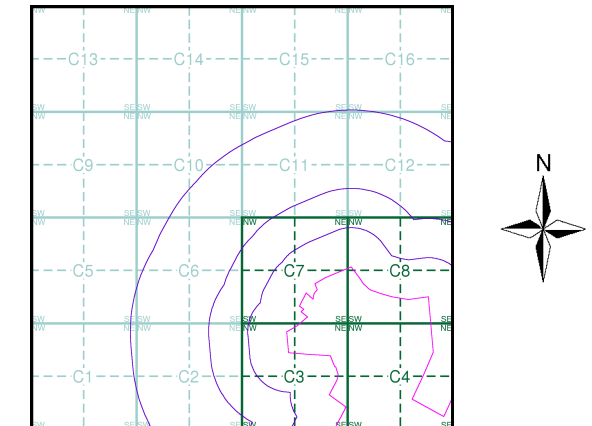
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	MHW(S) Mean high water (springs)		MLW(S) Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

Brookbanks Consulting

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:10,560	1880	2
Cambridgeshire & Isle Of Ely	1:10,560	1885	3
Suffolk	1:10,560	1885	4
Essex	1:10,560	1899	5
Cambridgeshire & Isle Of Ely	1:10,560	1903	6
Suffolk	1:10,560	1905	7
Essex	1:10,560	1905	8
Essex	1:10,560	1924	9
Suffolk	1:10,560	1927 - 1928	10
Cambridgeshire & Isle Of Ely	1:10,560	1927	11
Cambridgeshire & Isle Of Ely	1:10,560	1927	12
Suffolk	1:10,560	1938 - 1950	13
Suffolk	1:10,560	1949	14
Cambridgeshire & Isle Of Ely	1:10,560	1950	15
Essex	1:10,560	1951	16
Ordnance Survey Plan	1:10,000	1960	17
Ordnance Survey Plan	1:10,000	1967	18
Ordnance Survey Plan	1:10,000	1972	19
Ordnance Survey Plan	1:10,000	1981	20
Ordnance Survey Plan	1:10,000	1991	21
10K Raster Mapping	1:10,000	2006	22
VectorMap Local	1:10,000	2014	23

Historical Map - Slice C



Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 567860, 246790
 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Suffolk

Published 1885

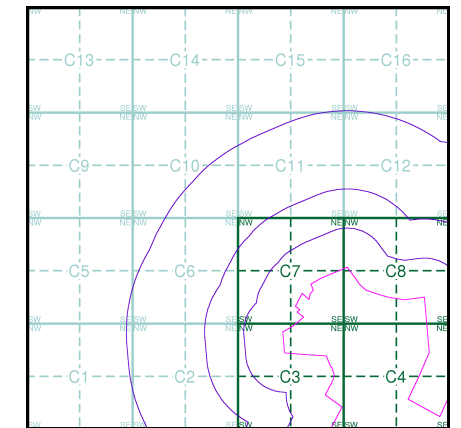
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

061SE	1885	1:10,560
070NE	1885	1:10,560

Historical Map - Slice C

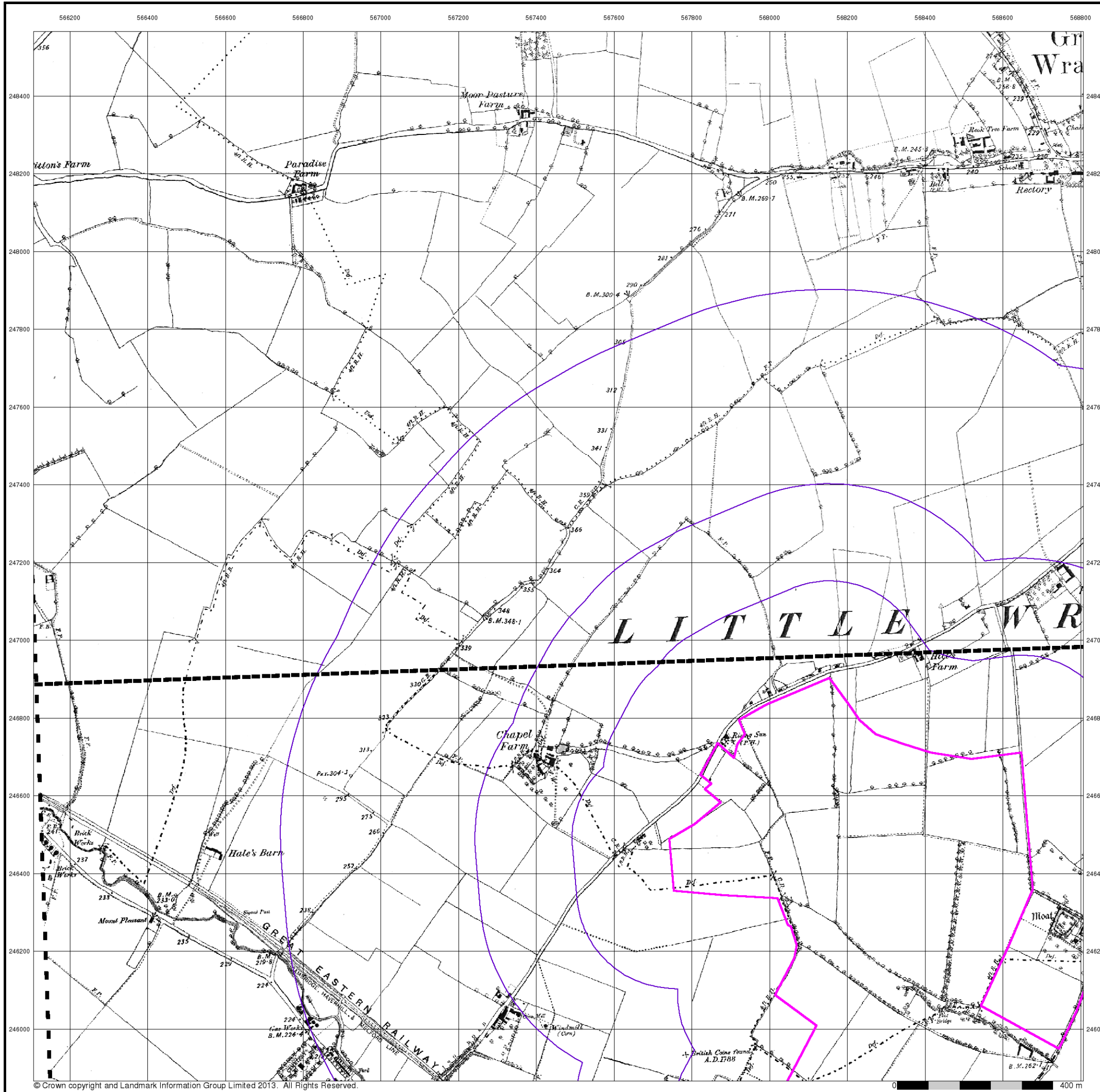


Order Details

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 Slice: C
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 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



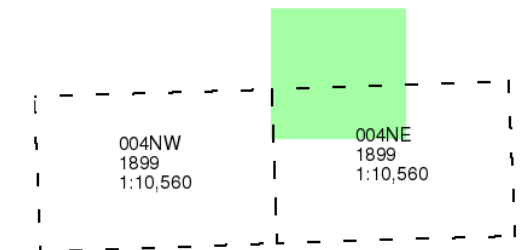
Essex

Published 1899

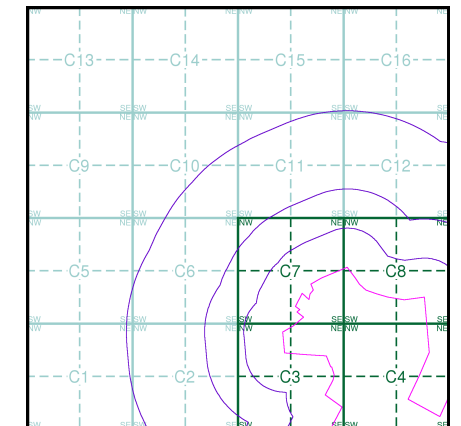
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice C

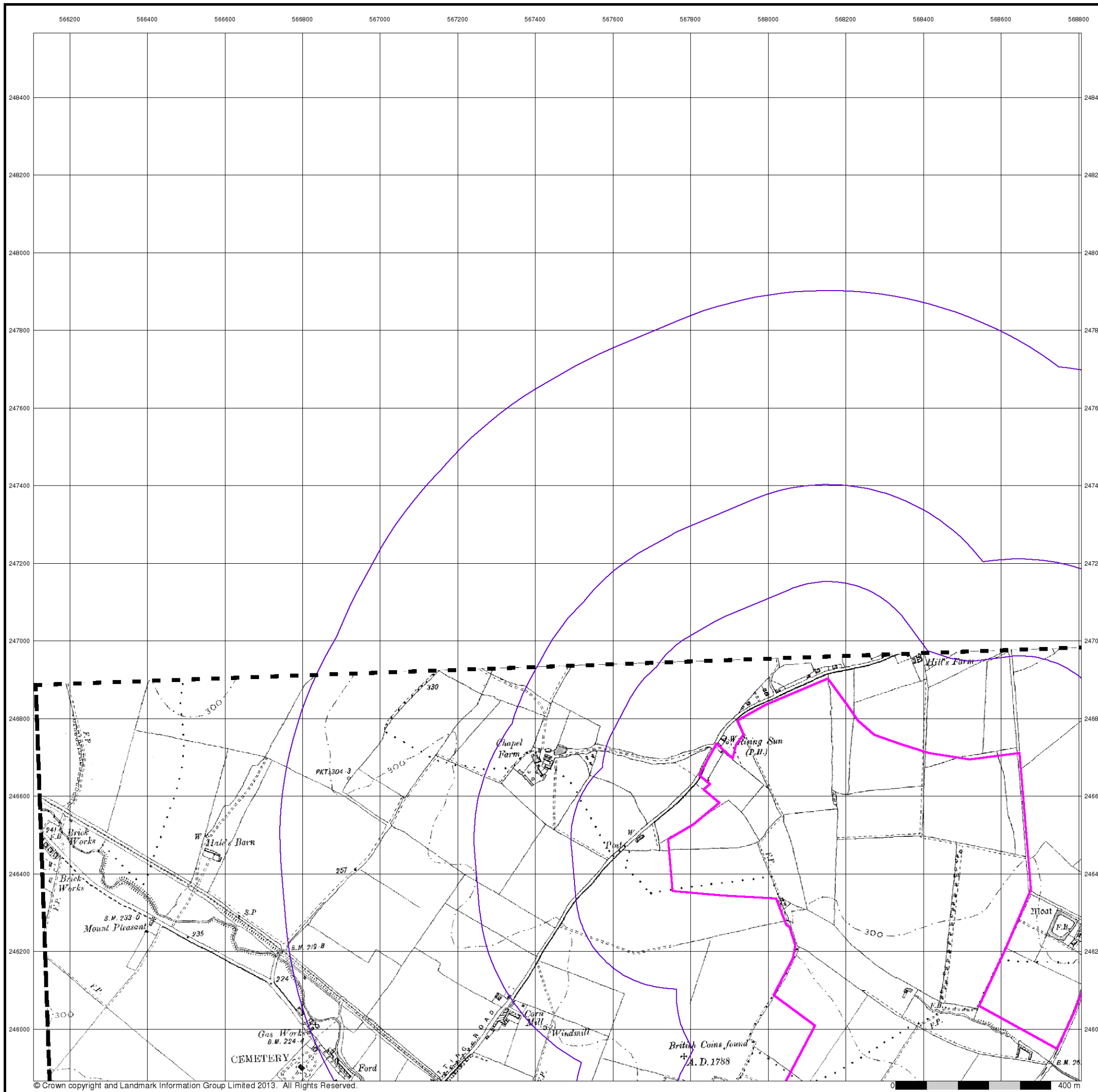


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 Slice: C
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Site Details

Site at 568850, 245800



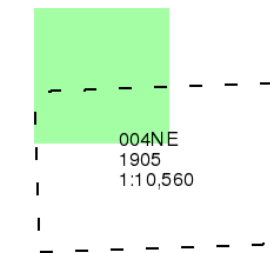
Essex

Published 1905

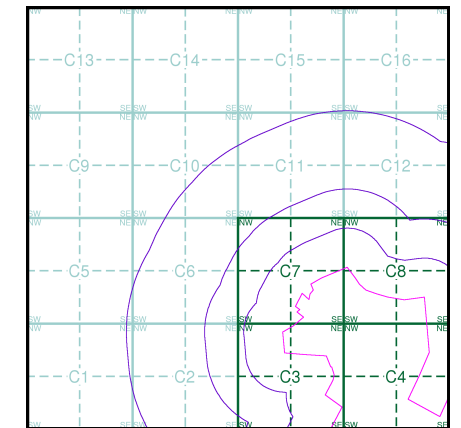
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice C

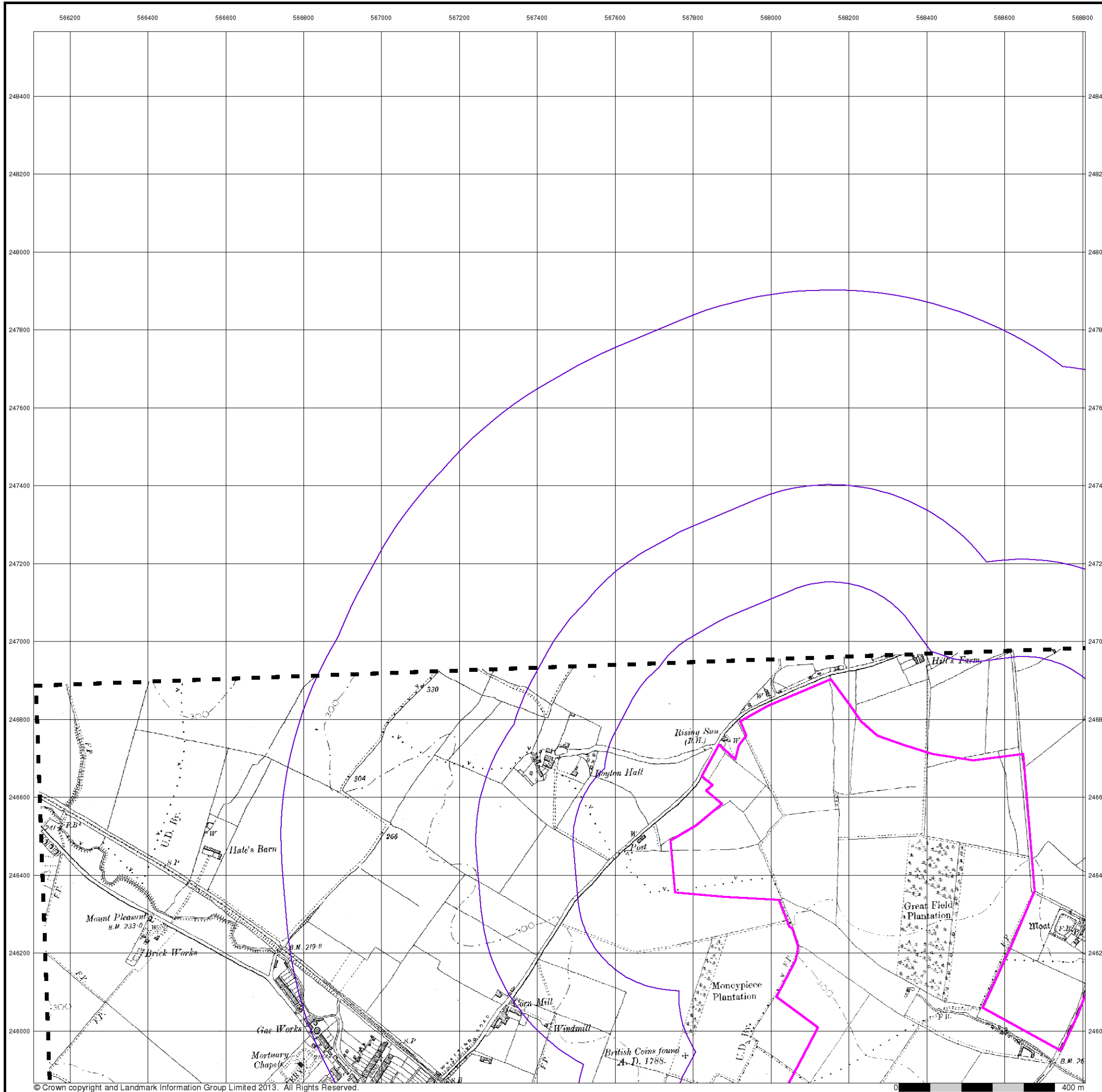


Order Details

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 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



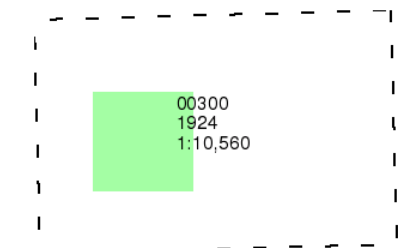
Essex

Published 1924

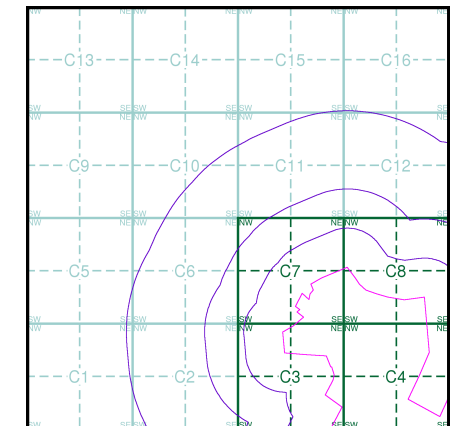
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice C

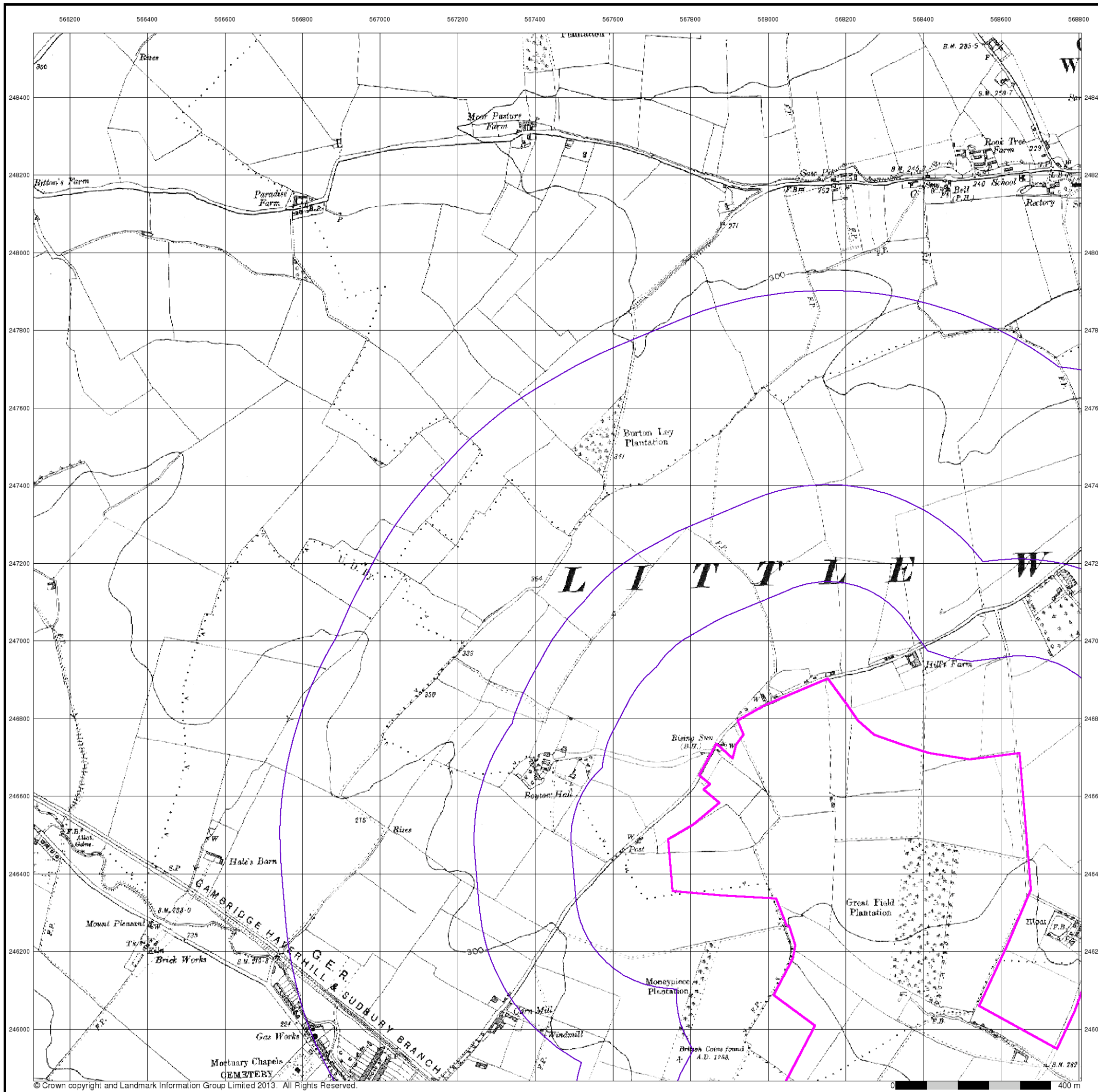


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 567860, 246790
 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Suffolk

Published 1927 - 1928

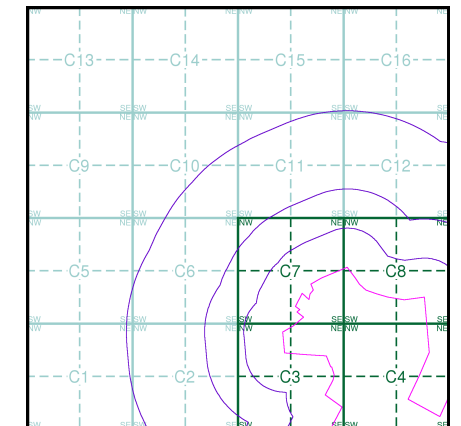
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

061SE	1927
1:10,560	
070NE	1928
1:10,560	

Historical Map - Slice C

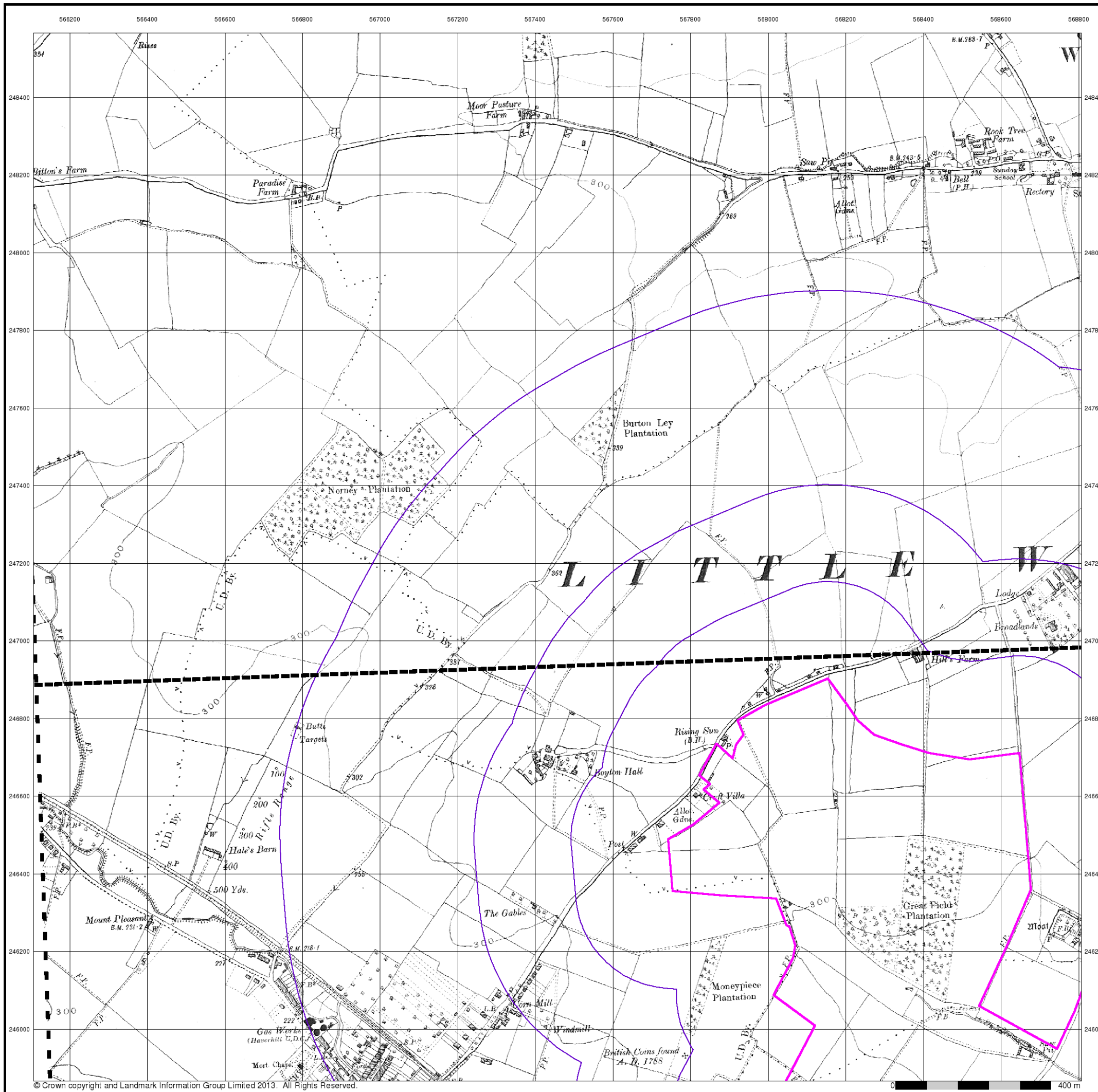


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 567860, 246790
 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Suffolk

Published 1938 - 1950

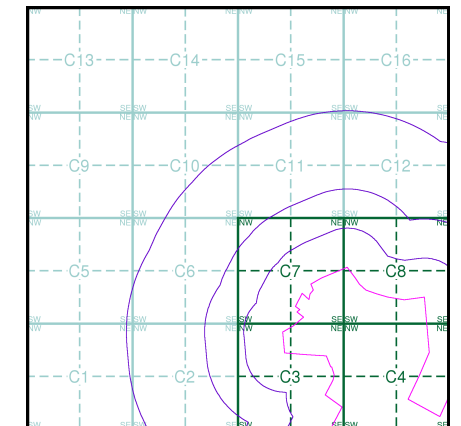
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

061SE	1950	1:10,560
070NE	1938	1:10,560

Historical Map - Slice C

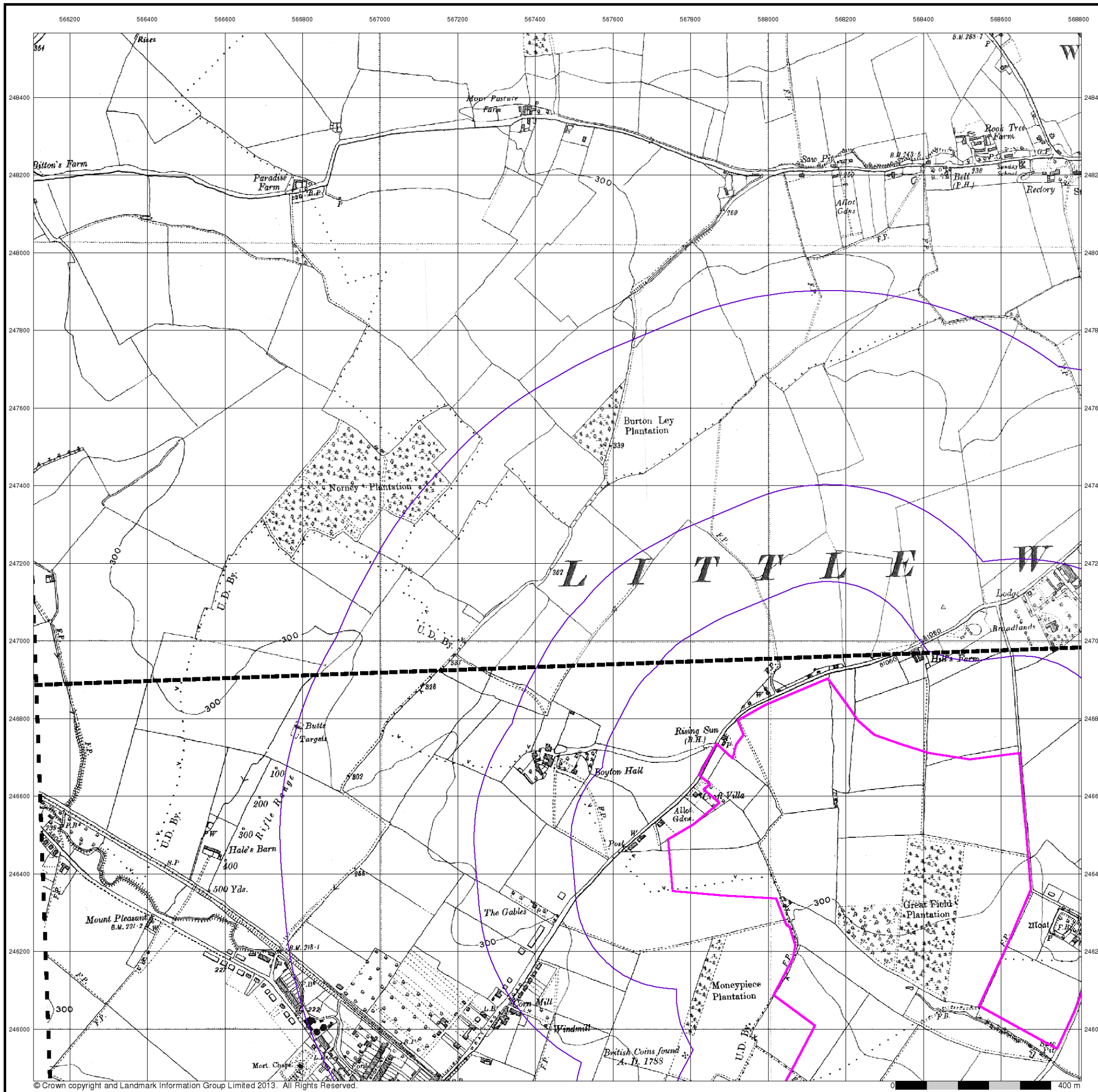


Order Details

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 National Grid Reference: 567860, 246790
 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



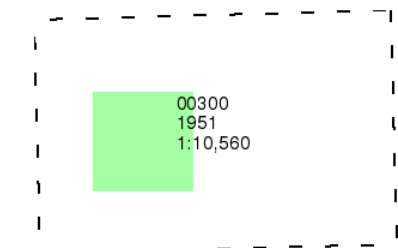
Essex

Published 1951

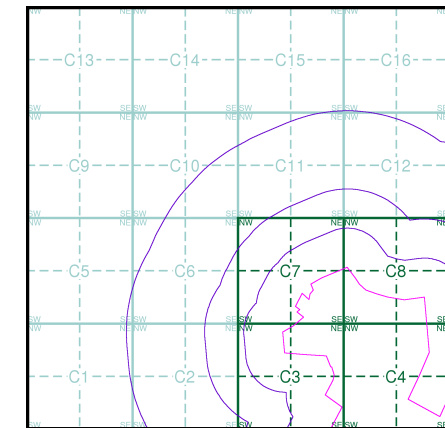
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice C

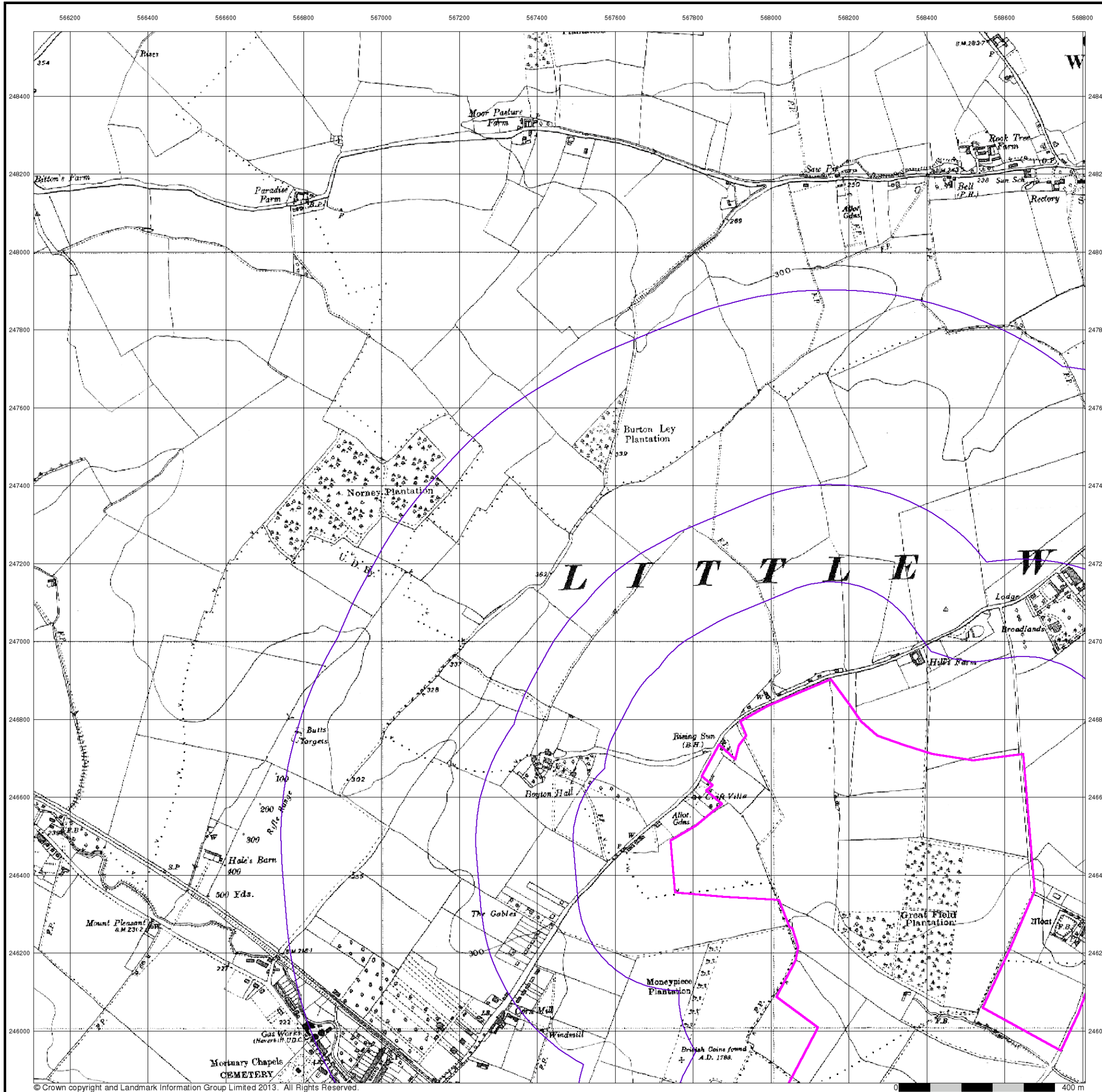


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 567860, 246790
 Slice: C
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 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1960

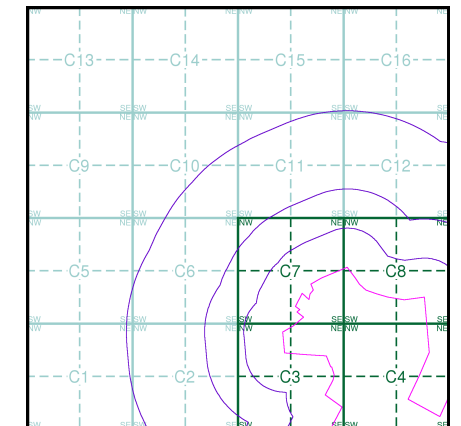
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE
1960
1:10,560

Historical Map - Slice C

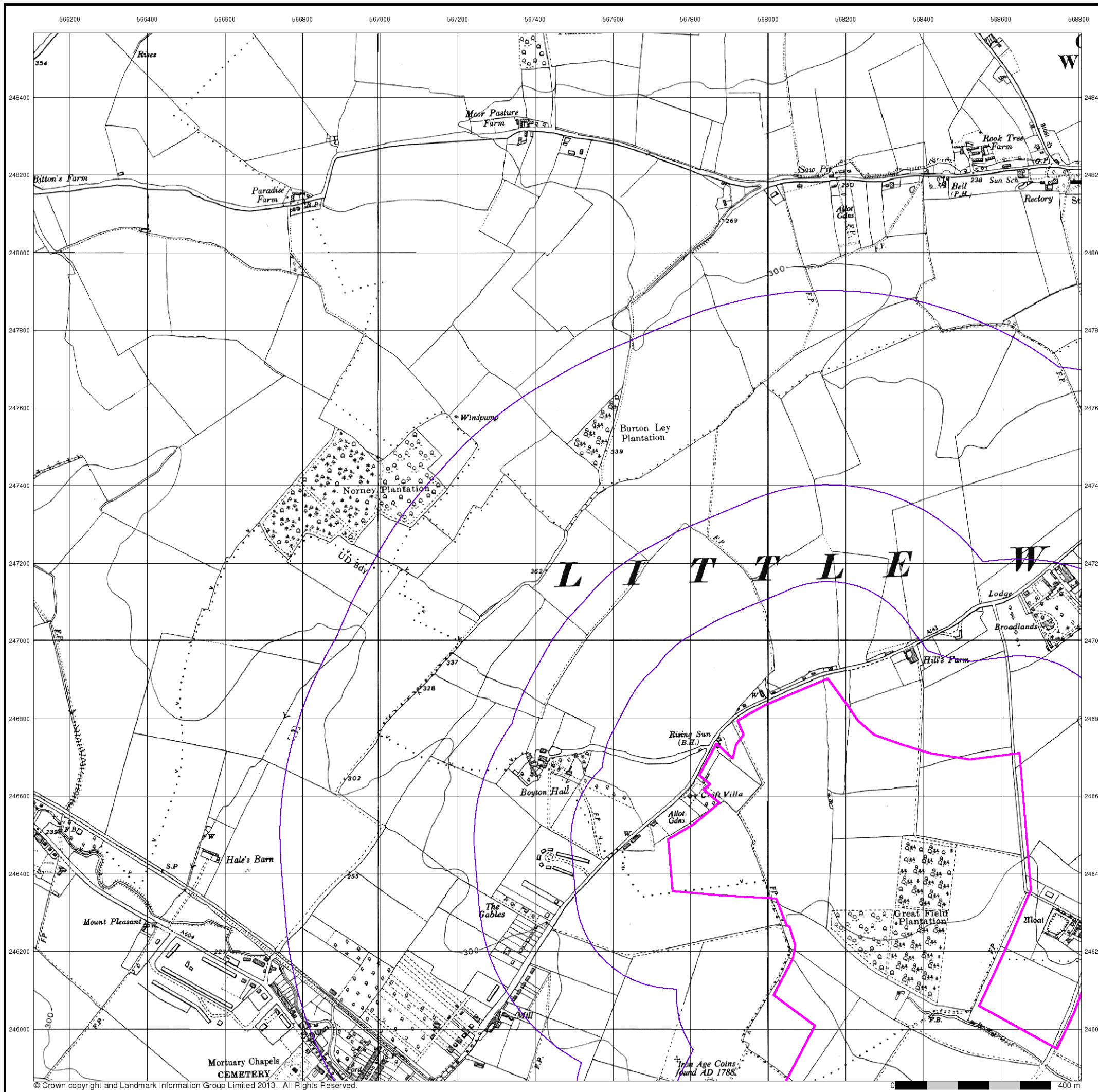


Order Details

Order Number: 60434700_1_1
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 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1967

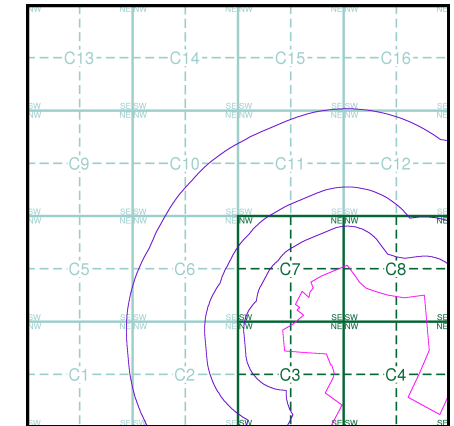
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE
1967
1:10,560

Historical Map - Slice C

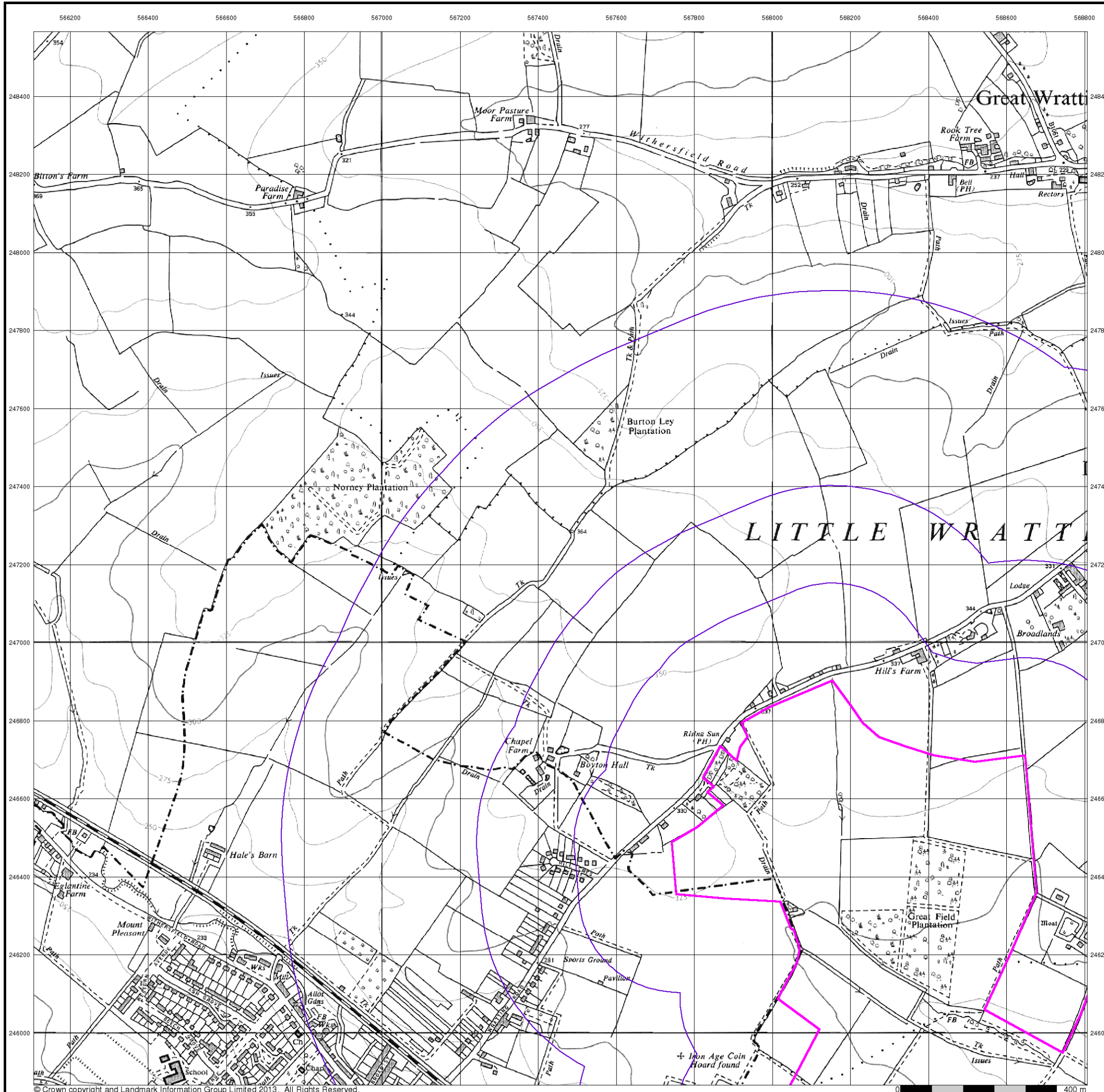


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 567860, 246790
 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1972

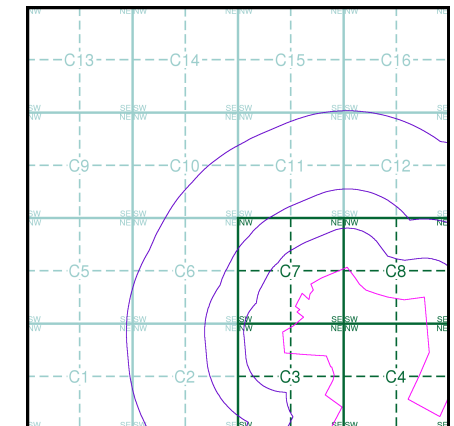
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE
1972
1:10,000

Historical Map - Slice C

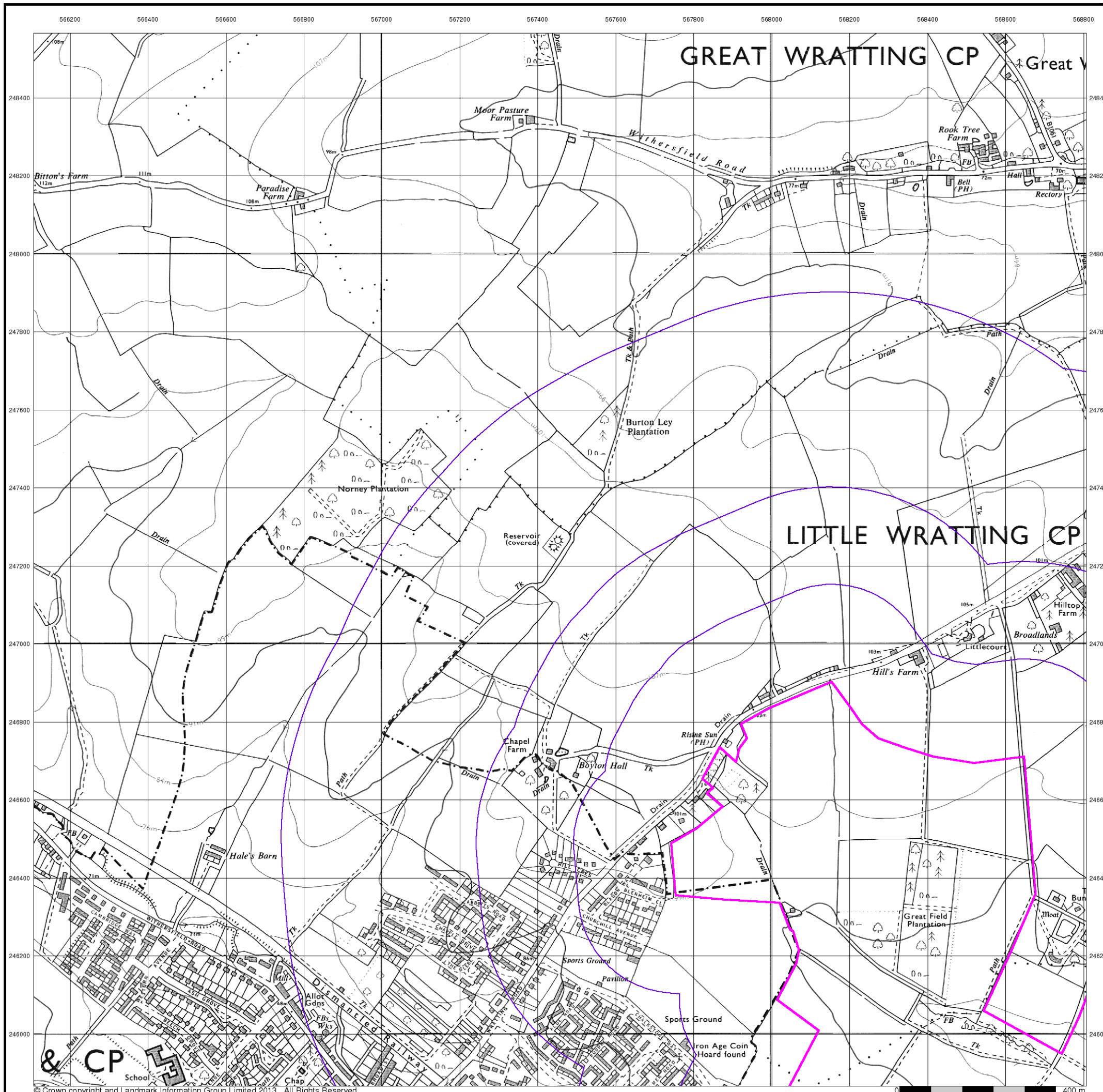


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
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 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Ordnance Survey Plan

Published 1981

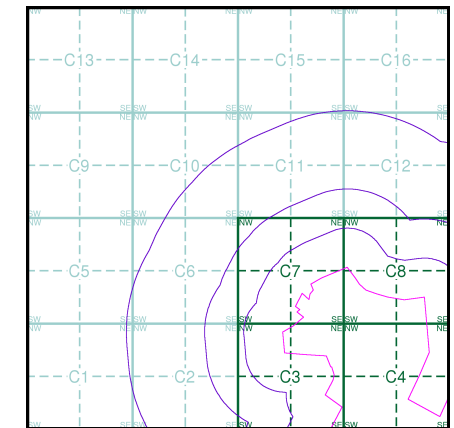
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL64NE
1981
1:10,000

Historical Map - Slice C

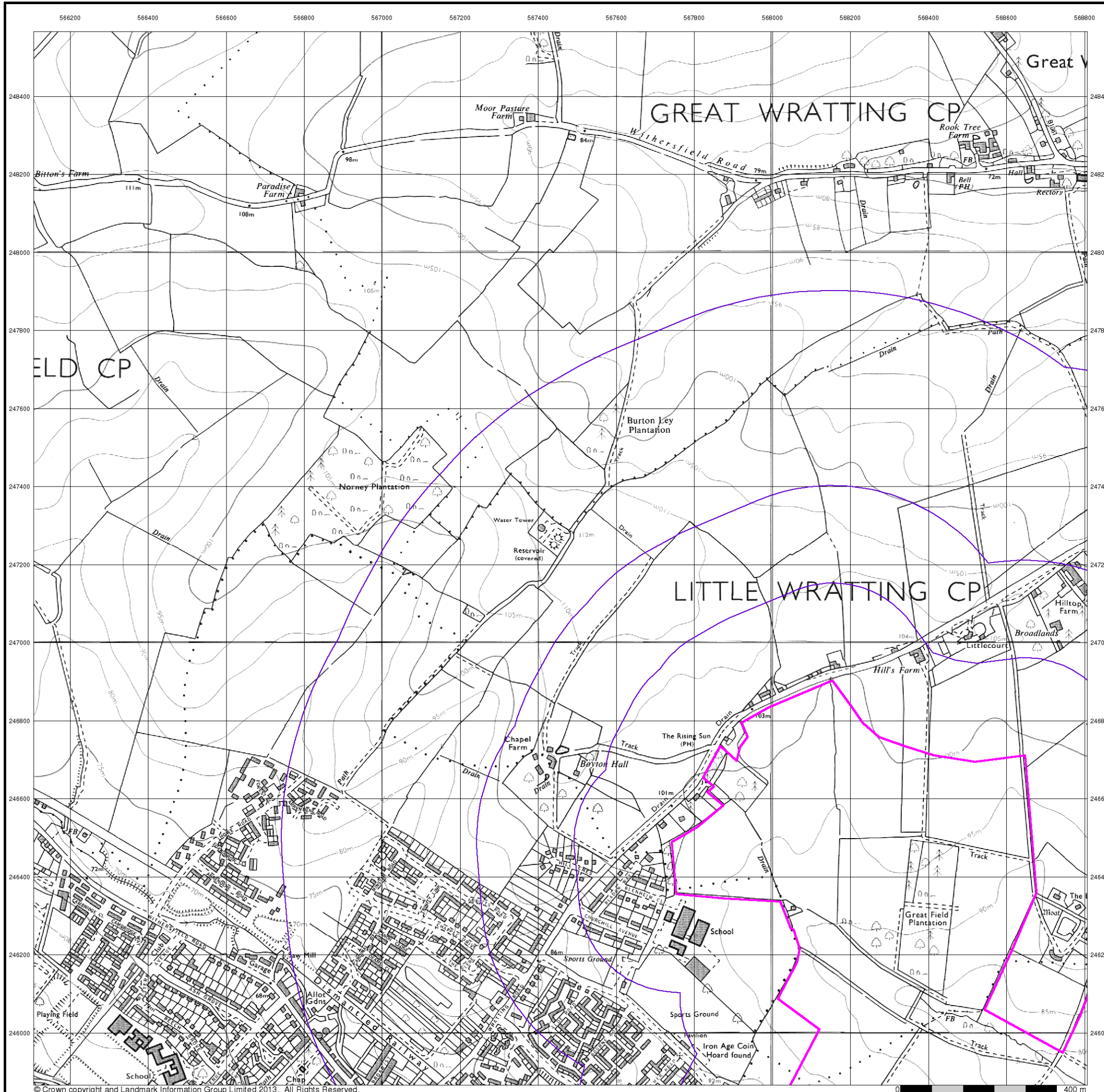


Order Details

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Site Details

Site at 568850, 245800



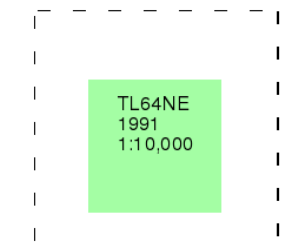
Ordnance Survey Plan

Published 1991

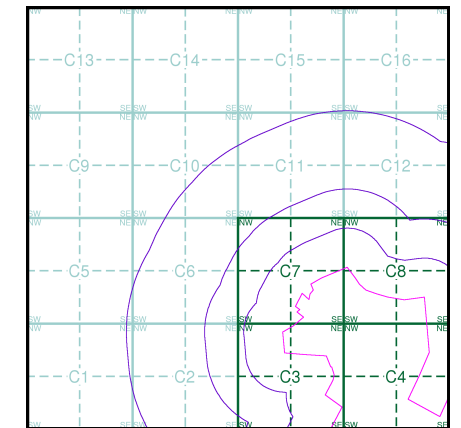
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice C

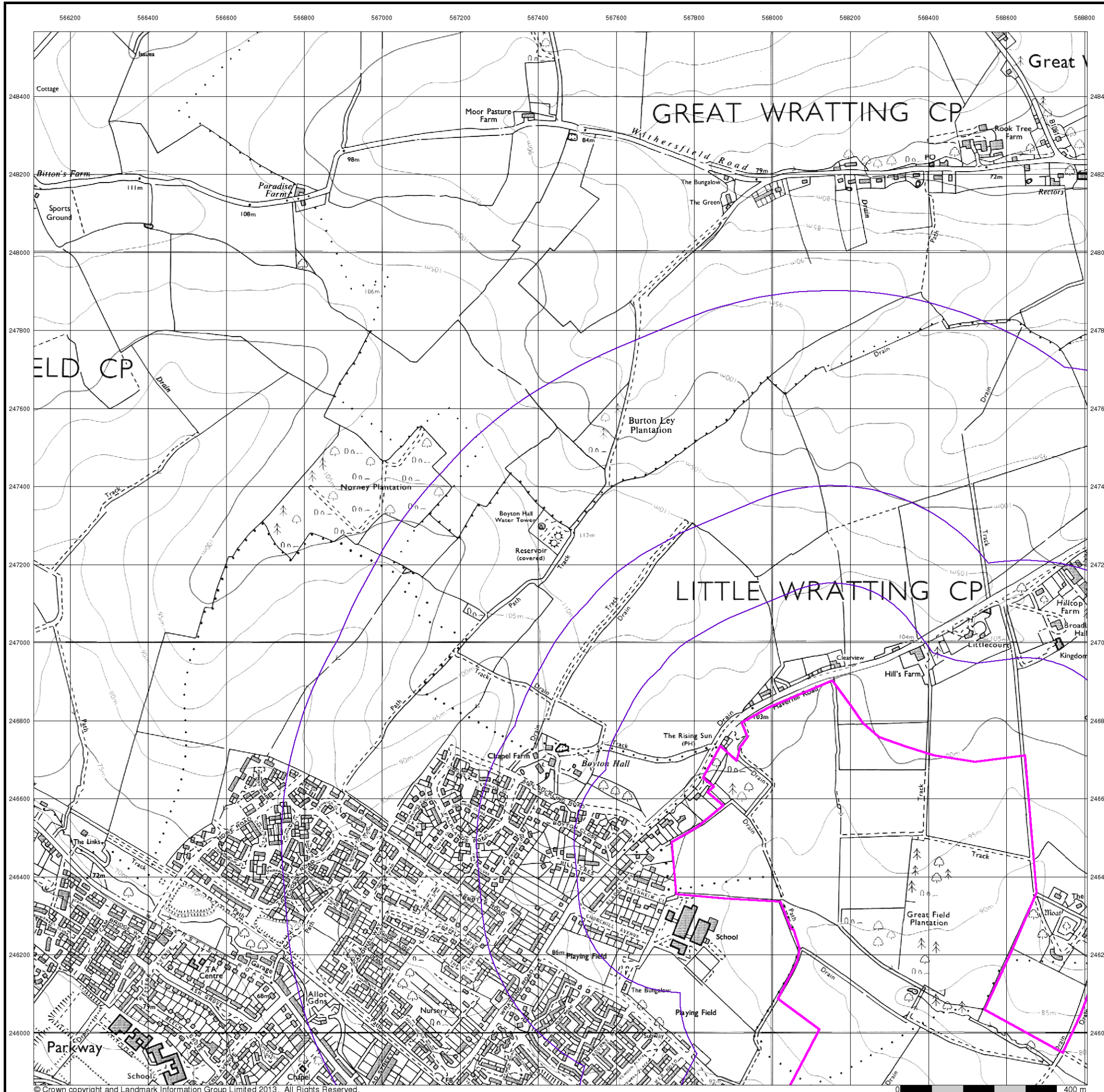


Order Details

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Site Details

Site at 568850, 245800



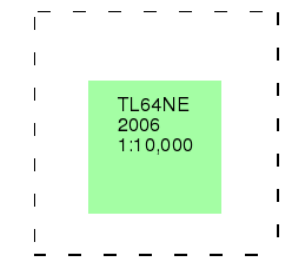
10k Raster Mapping

Published 2006

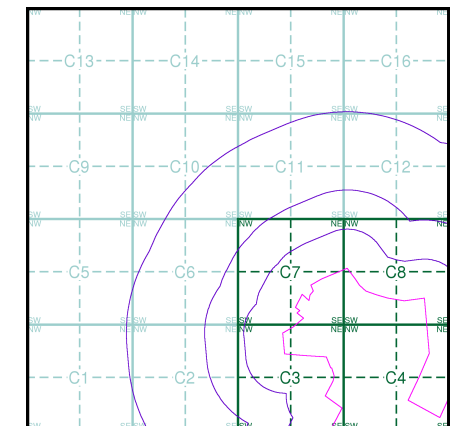
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice C

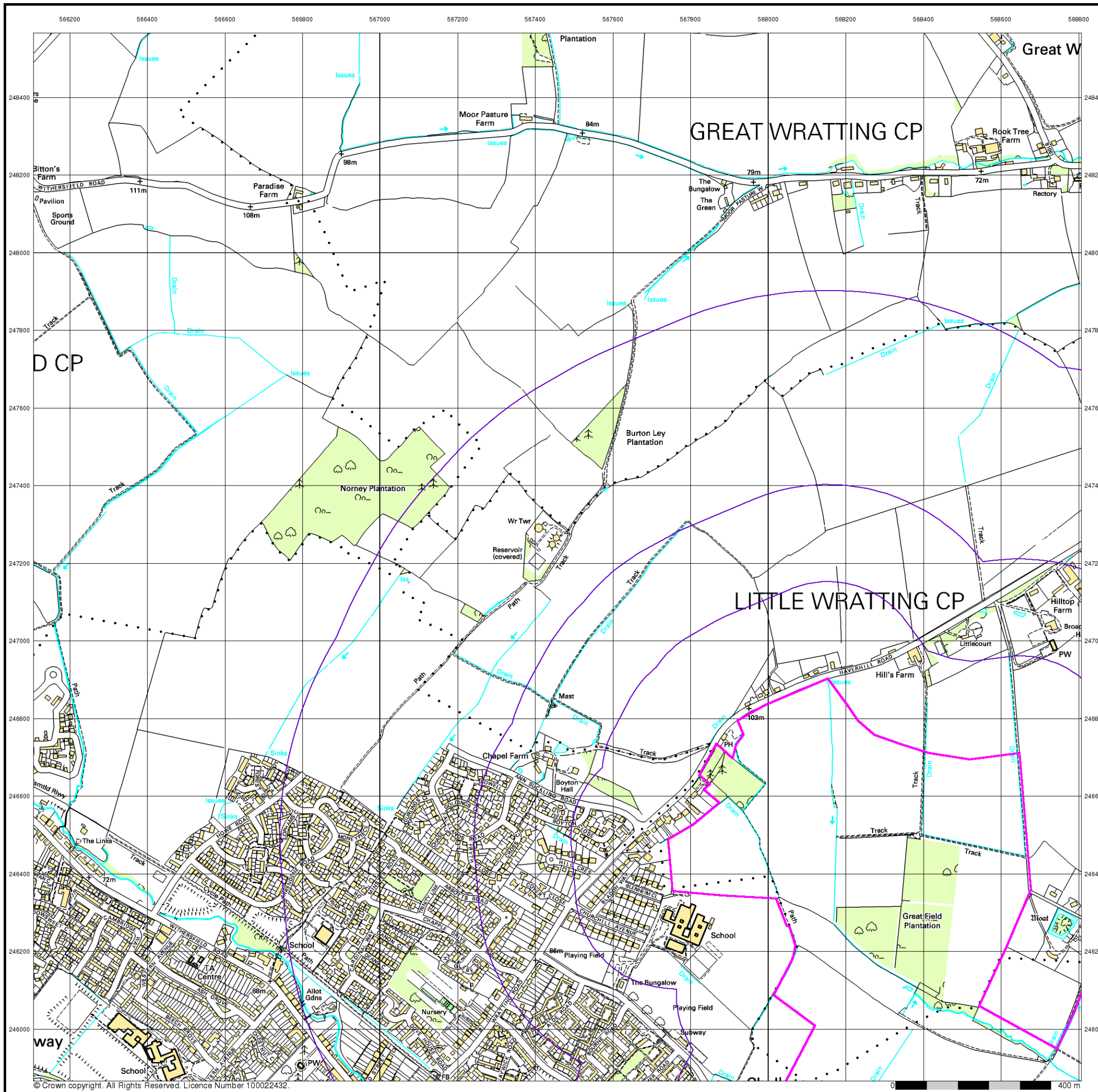


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 567860, 246790
 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



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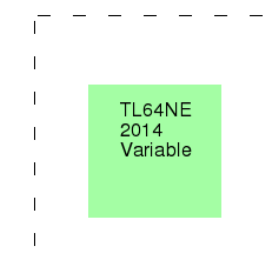
VectorMap Local

Published 2014

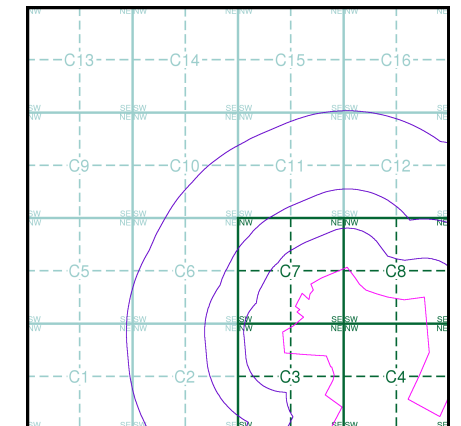
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice C

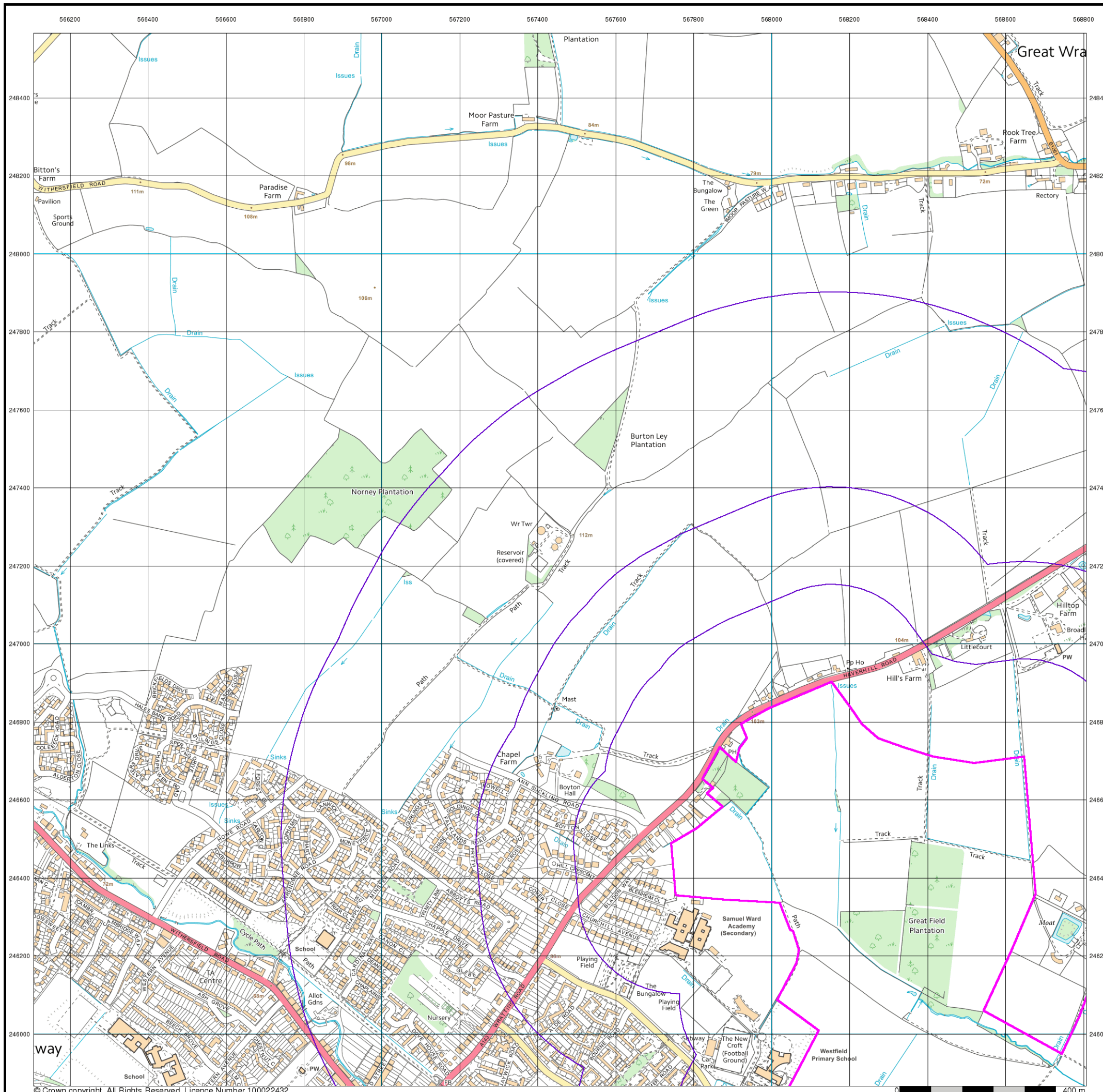


Order Details

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 Customer Ref: 10173 Haverhill
 National Grid Reference: 567860, 246790
 Slice: C
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

- Gravel Pit
- Sand Pit
- Other Pits
- Quarry
- Shingle
- Orchard
- Osiers
- Reeds
- Marsh
- Mixed Wood
- Deciduous
- Brushwood
- Fir
- Furze
- Rough Pasture
- Arrow denotes flow of water
- Trigonometrical Station
- Site of Antiquities
- Bench Mark
- Pump, Guide Post, Signal Post
- Well, Spring, Boundary Post
- 285** Surface Level
- Sketched Contour
- Instrumental Contour
- Main Roads
- Minor Roads
- Sunken Road
- Raised Road
- Road over Railway
- Railway over River
- Railway over Road
- Level Crossing
- Road over River or Canal
- Road over Stream
- Road over Stream
- County Boundary (Geographical)
- County & Civil Parish Boundary
- Administrative County & Civil Parish Boundary
- Co. Boro. Bdy. County Borough Boundary (England)
- Co. Burgh Bdy. County Burgh Boundary (Scotland)
- R.D. Bdy. Rural District Boundary
- Civil Parish Boundary

Ordnance Survey Plan 1:10,000

- Chalk Pit, Clay Pit or Quarry
- Gravel Pit
- Sand Pit
- Disused Pit or Quarry
- Refuse or Slag Heap
- Lake, Loch or Pond
- Dunes
- Boulders
- Coniferous Trees
- Non-Coniferous Trees
- Orchard
- Scrub
- Coppice
- Bracken
- Heath
- Rough Grassland
- Marsh
- Reeds
- Saltings
- Building
- Glasshouse
- Sloping Masonry
- Pylon
- Electricity Transmission Line
- Pole
- Cutting
- Embankment
- Standard Gauge Multiple Track
- Standard Gauge Single Track
- Siding, Tramway or Mineral Line
- Narrow Gauge
- Geographical County
- Administrative County, County Borough or County of City
- Municipal Borough, Urban or Rural District, Burgh or District Council
- Borough, Burgh or County Constituency
- Civil Parish
- BP, BS Boundary Post or Stone
- Ch Church
- CH Club House
- F E Sta Fire Engine Station
- FB Foot Bridge
- Fn Fountain
- GP Guide Post
- MP Mile Post
- MS Mile Stone
- Pol Sta Police Station
- PO Post Office
- PC Public Convenience
- PH Public House
- SB Signal Box
- Spr Spring
- TCB Telephone Call Box
- TCP Telephone Call Post
- W Well

1:10,000 Raster Mapping

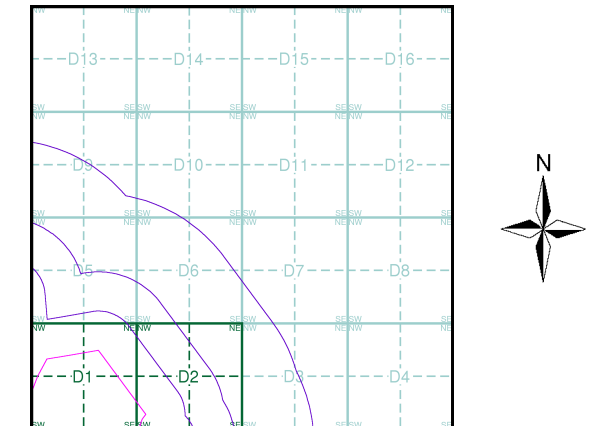
- Gravel Pit
- Rock
- Boulders
- Shingle
- Sand
- Slopes
- General detail
- Overhead detail
- Multi-track railway
- County boundary (England only)
- District, Unitary, Metropolitan, London Borough boundary
- Area of wooded vegetation
- Non-coniferous trees (scattered)
- Coniferous trees (scattered)
- Orchard
- Rough Grassland
- Scrub
- Water feature
- MHW(S) Mean high water (springs)
- Telephone line (where shown)
- Bench mark (where shown)
- Point feature (e.g. Guide Post or Mile Stone)
- Site of (antiquity)
- General Building
- Refuse tip or slag heap
- Rock (scattered)
- Boulders (scattered)
- Mud
- Sand Pit
- Top of cliff
- Underground detail
- Narrow gauge railway
- Single track railway
- Civil, parish or community boundary
- Constituency boundary
- Non-coniferous trees
- Coniferous trees
- Positioned tree
- Coppice or Osiers
- Heath
- Marsh, Salt Marsh or Reeds
- Flow arrows
- MLW(S) Mean low water (springs)
- Electricity transmission line (with poles)
- Triangulation station
- Pylon, flare stack or lighting tower
- Glasshouse
- Important Building

Brookbanks Consulting

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:10,560	1880	2
Suffolk	1:10,560	1885	3
Essex	1:10,560	1898 - 1899	4
Suffolk	1:10,560	1905	5
Essex	1:10,560	1905	6
Essex	1:10,560	1924	7
Suffolk	1:10,560	1927 - 1928	8
Suffolk	1:10,560	1938 - 1951	9
Suffolk	1:10,560	1949	10
Essex	1:10,560	1951	11
Ordnance Survey Plan	1:10,000	1958	12
Ordnance Survey Plan	1:10,000	1960 - 1967	13
Ordnance Survey Plan	1:10,000	1967	14
Ordnance Survey Plan	1:10,000	1972	15
Ordnance Survey Plan	1:10,000	1981 - 1985	16
Ordnance Survey Plan	1:10,000	1991	17
10K Raster Mapping	1:10,000	2006	18
VectorMap Local	1:10,000	2014	19

Historical Map - Slice D



Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Suffolk

Published 1885

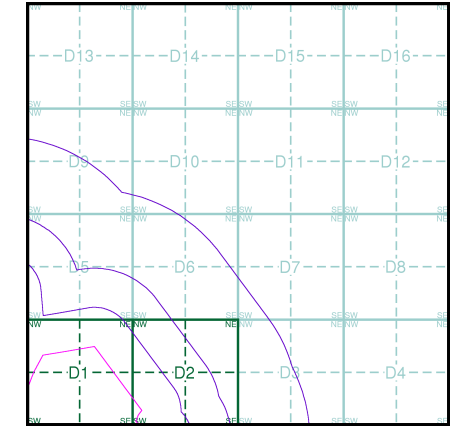
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

061SE 1885 1:10,560	062SW 1885 1:10,560
070NE 1885 1:10,560	071NW 1885 1:10,560

Historical Map - Slice D



Order Details

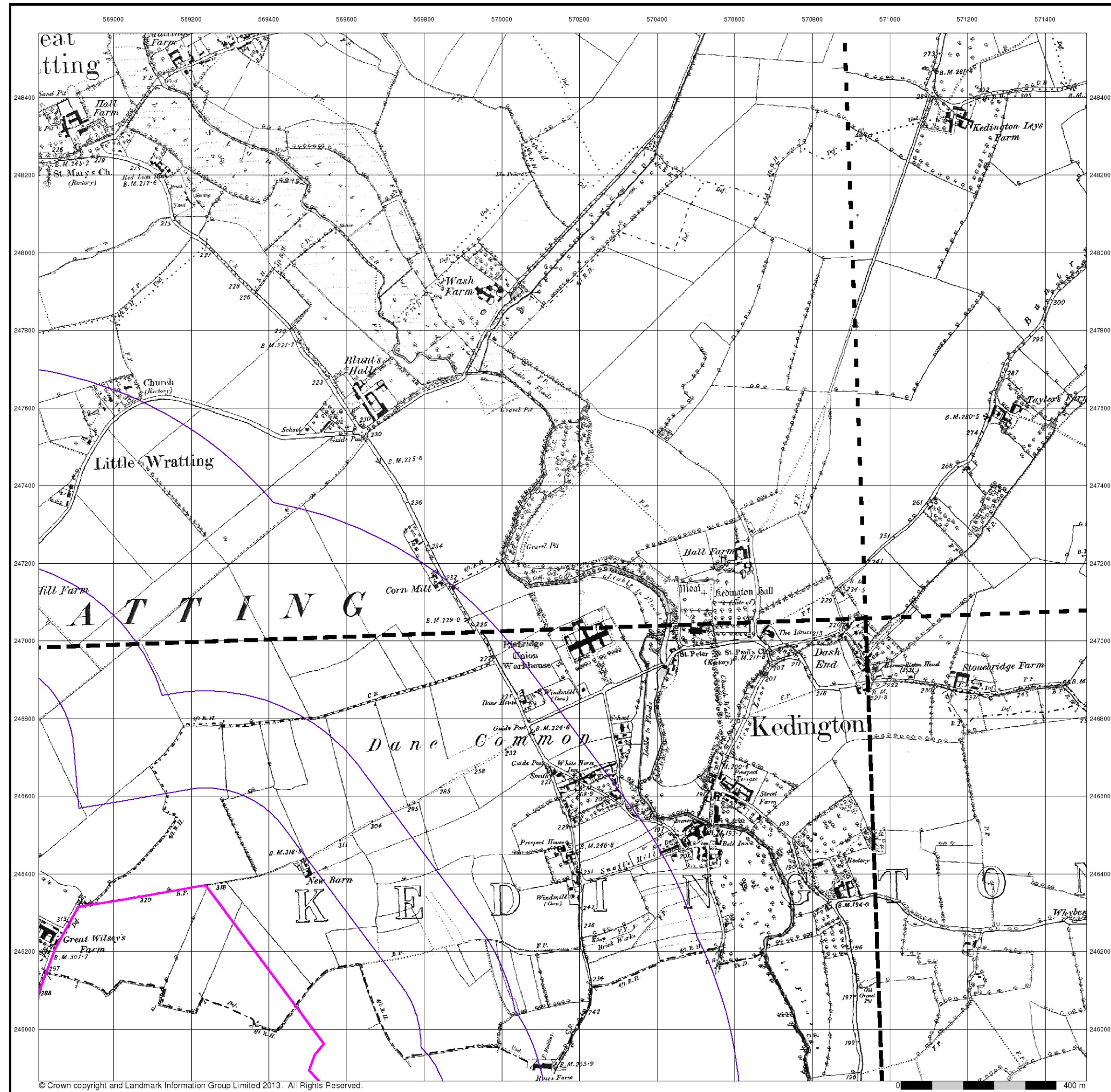
Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



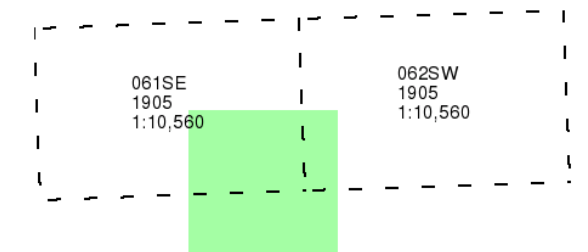
Suffolk

Published 1905

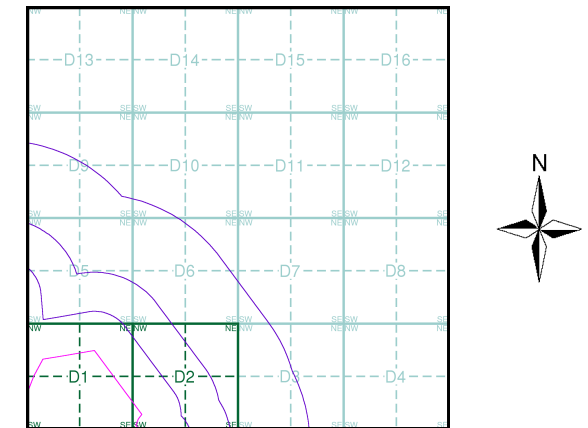
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D

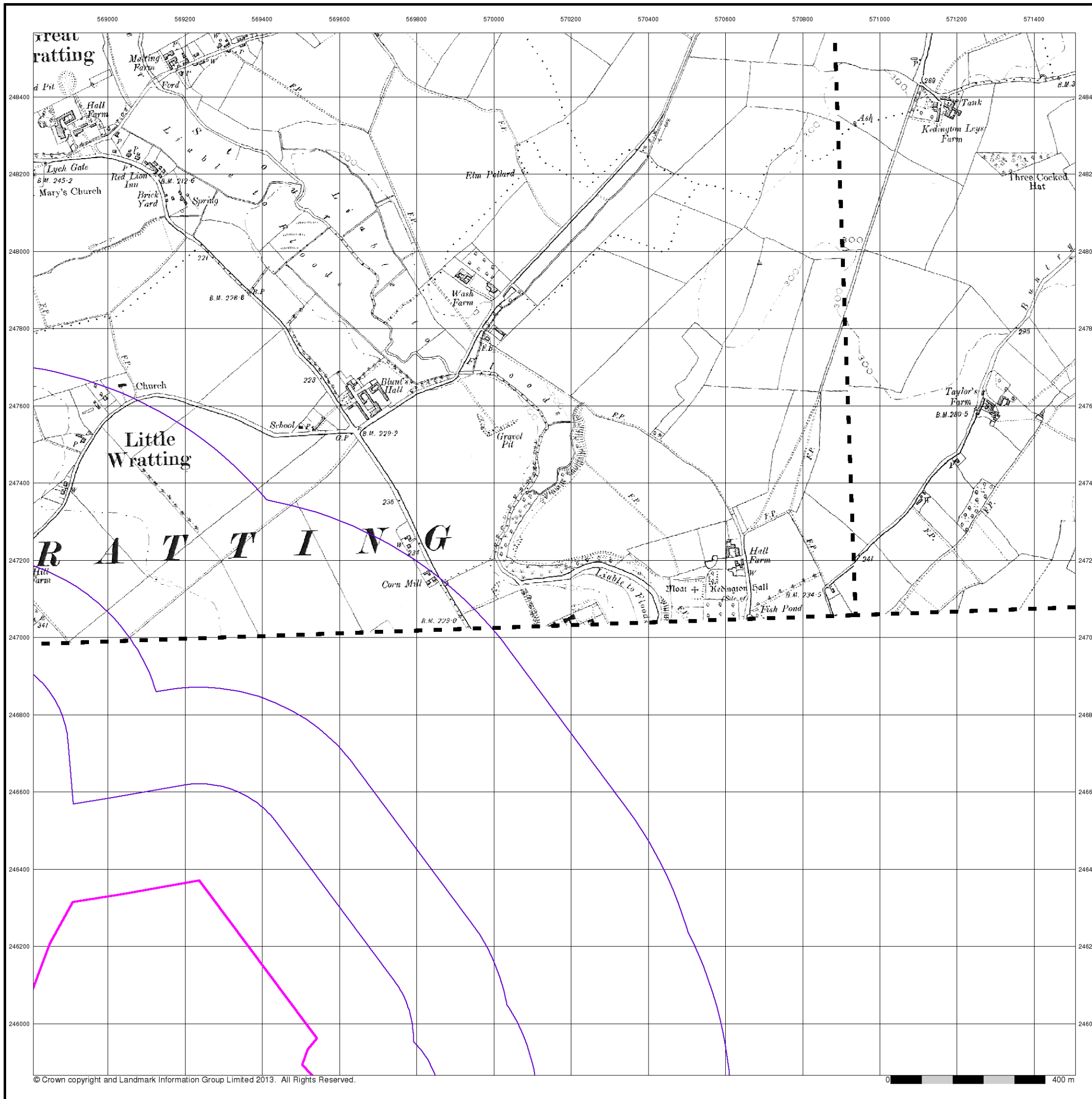


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



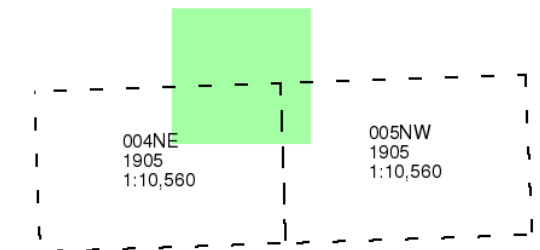
Essex

Published 1905

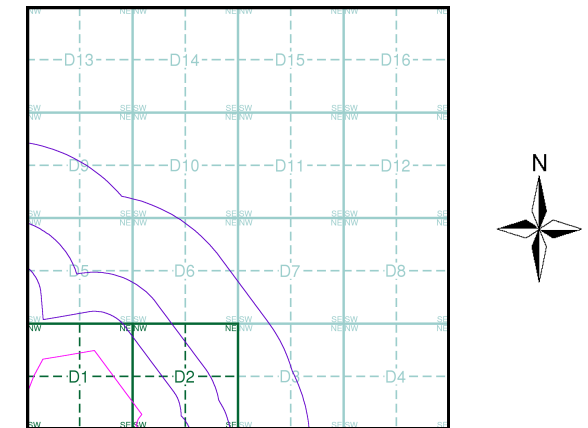
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D

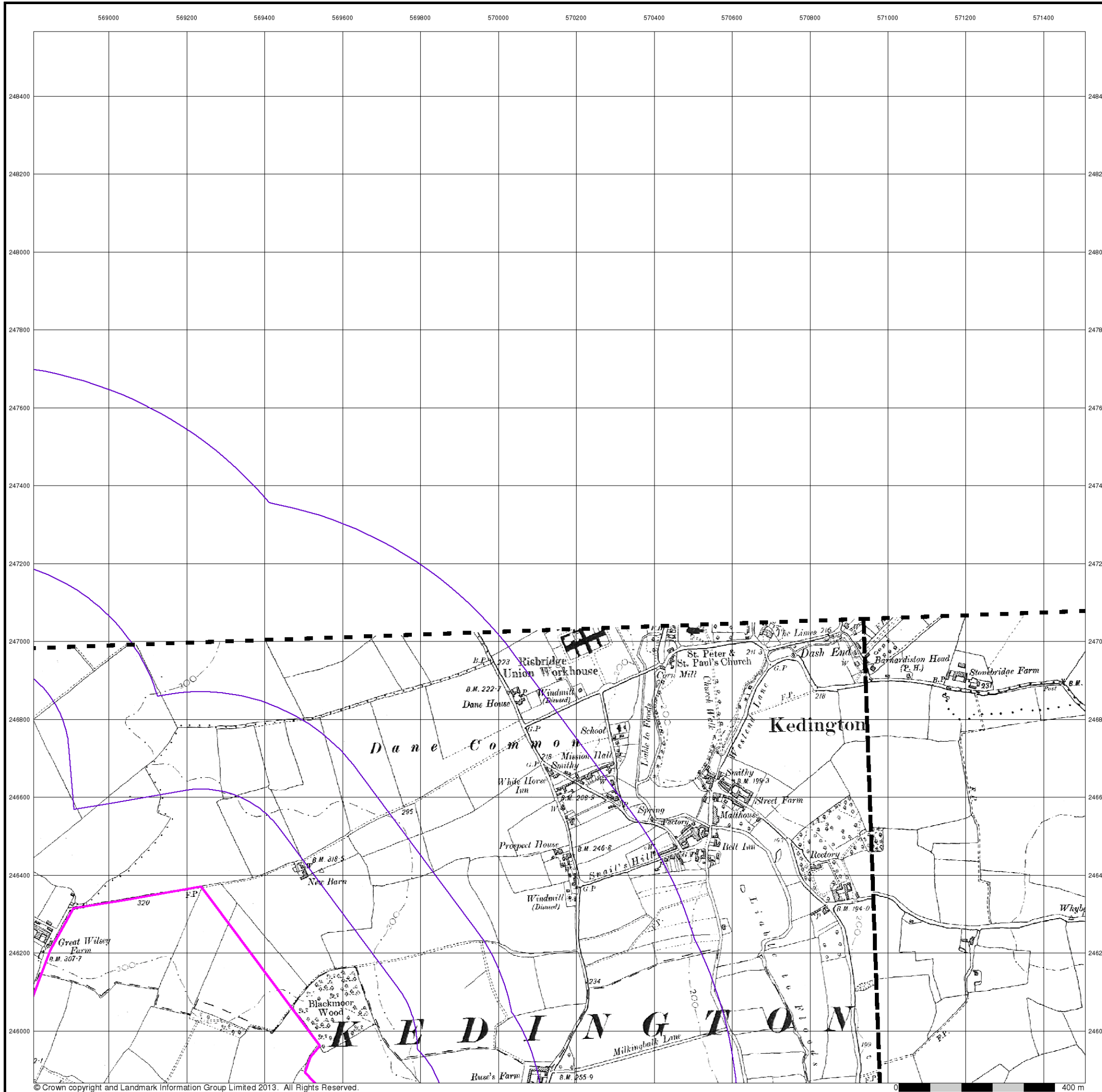


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



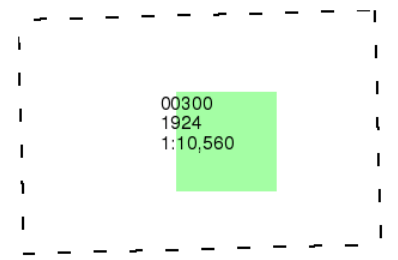
Essex

Published 1924

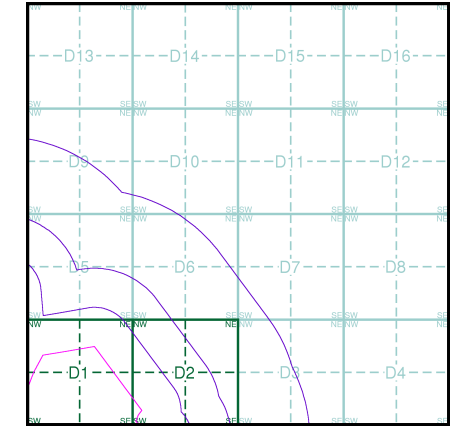
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D

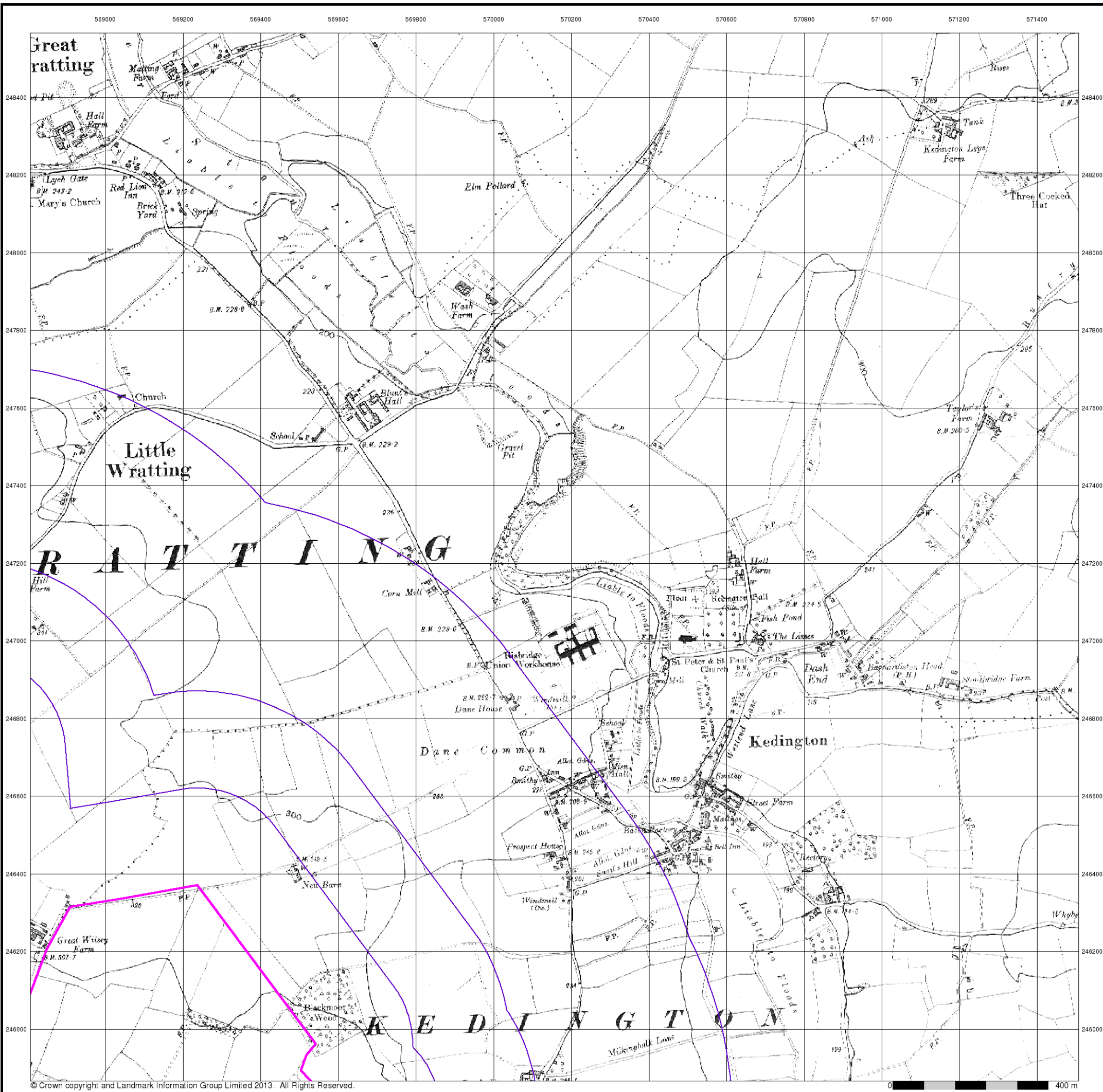


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



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Suffolk

Published 1927 - 1928

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

061SE	1927	1:10,560
070NE	1928	1:10,560

Historical Map - Slice D

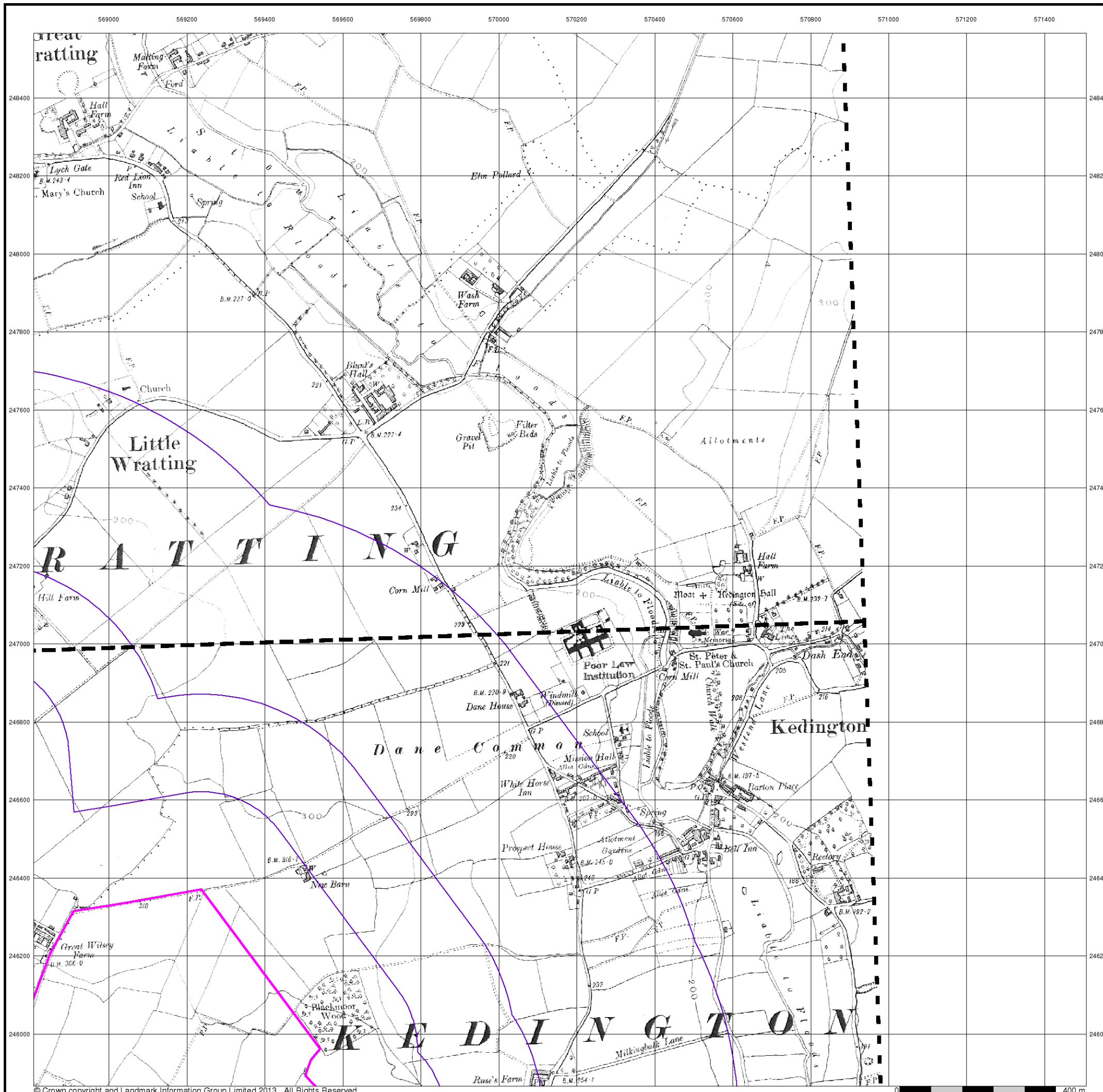


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



Brookbanks Consulting

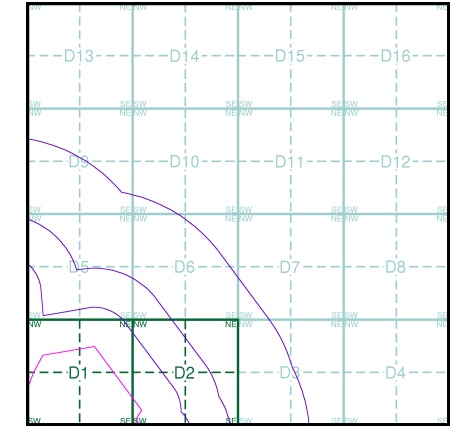
Suffolk
Published 1938 - 1951
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

061SE 1950 1:10,560	062SW 1950 1:10,560
070NE 1938 1:10,560	071NW 1951 1:10,560

Historical Map - Slice D



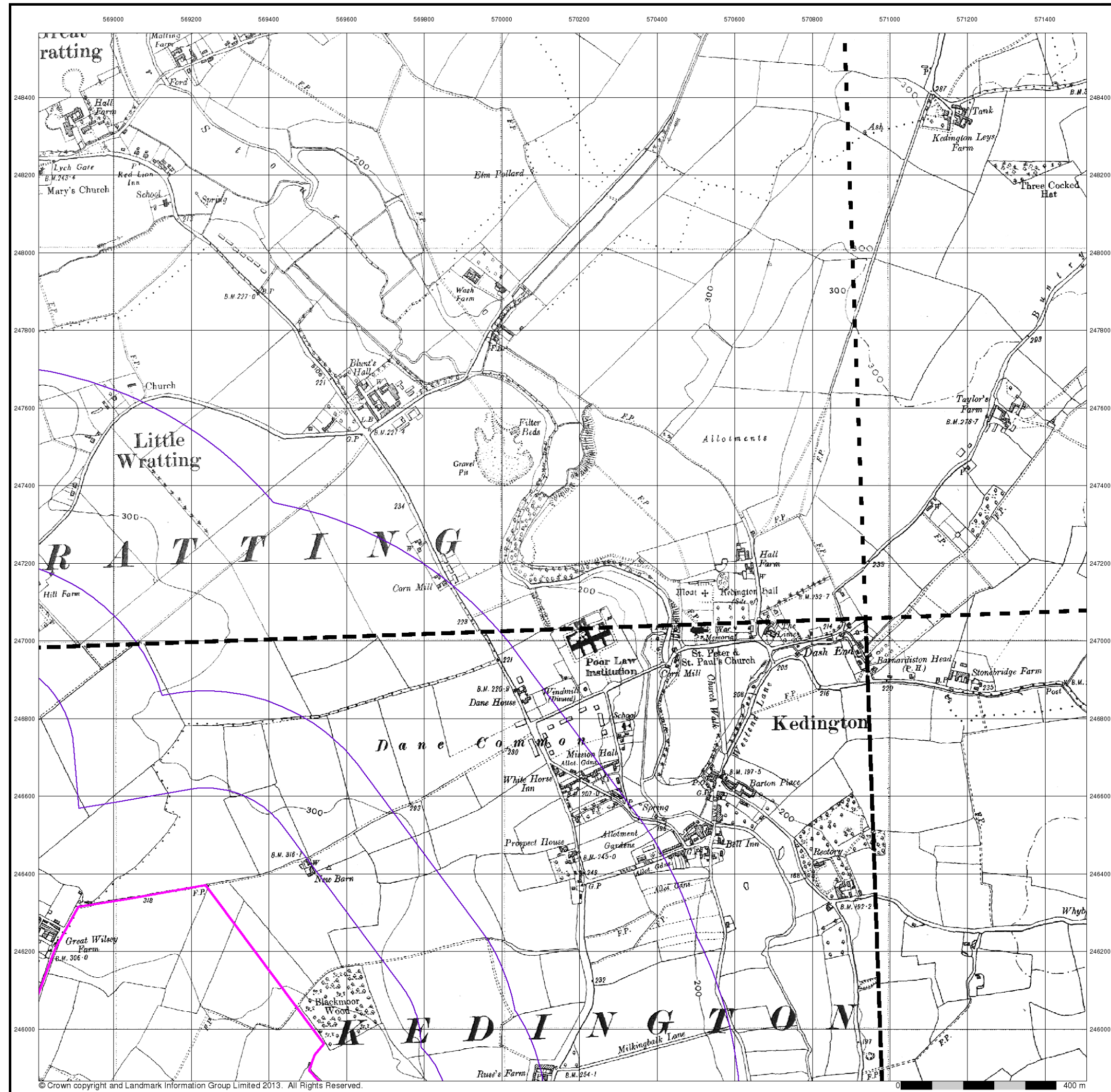
Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800

Landmark Information Group
 Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



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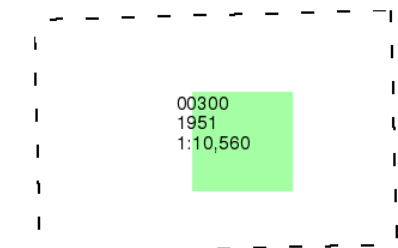
Essex

Published 1951

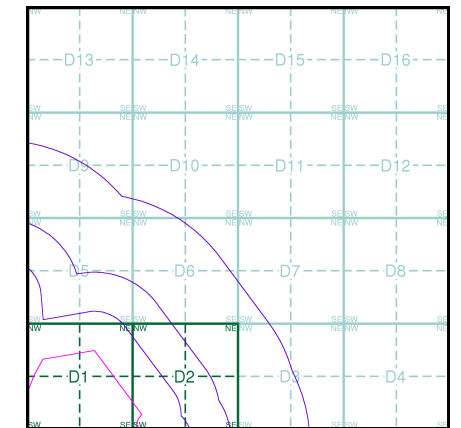
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D



Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



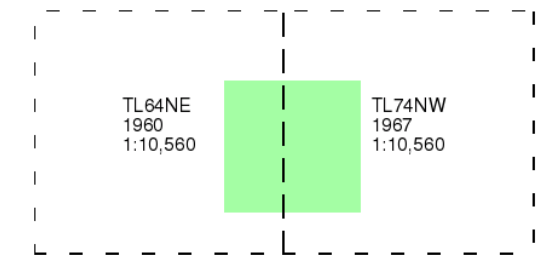
Ordnance Survey Plan

Published 1960 - 1967

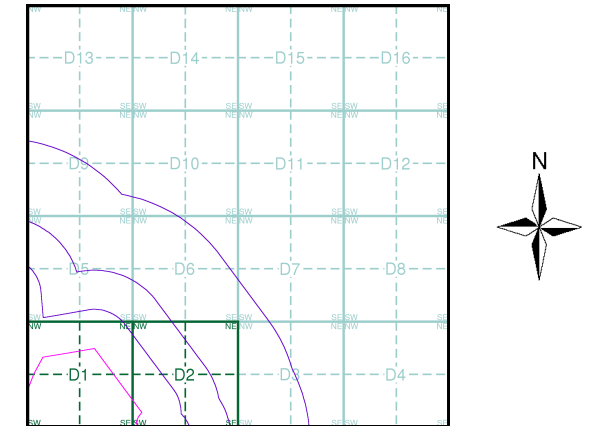
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D

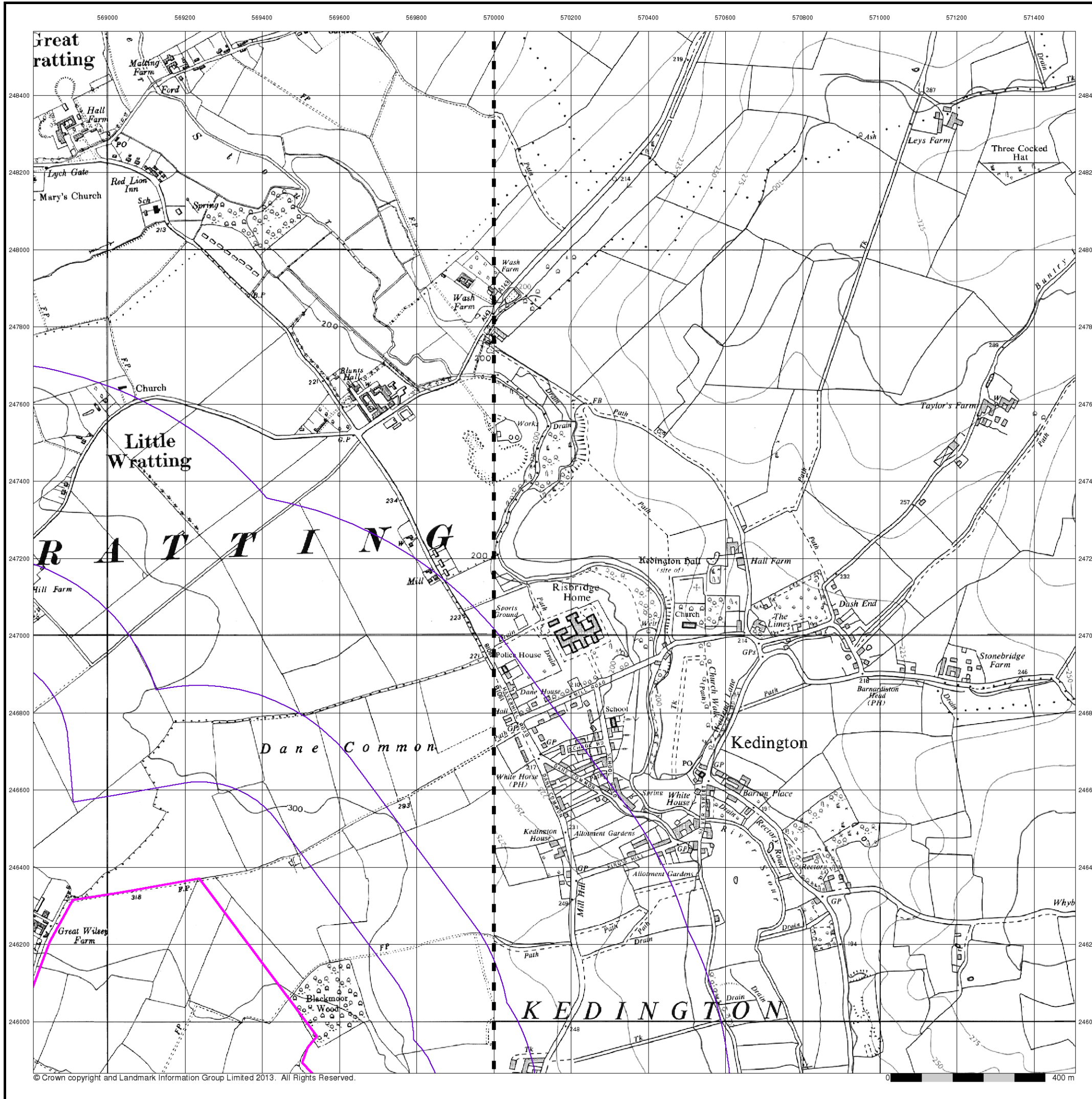


Order Details

Order Number: 60434700_1_1
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 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



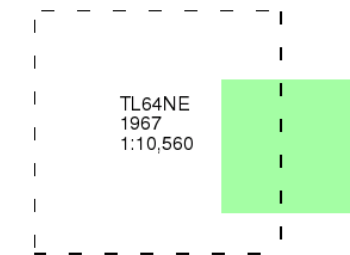
Ordnance Survey Plan

Published 1967

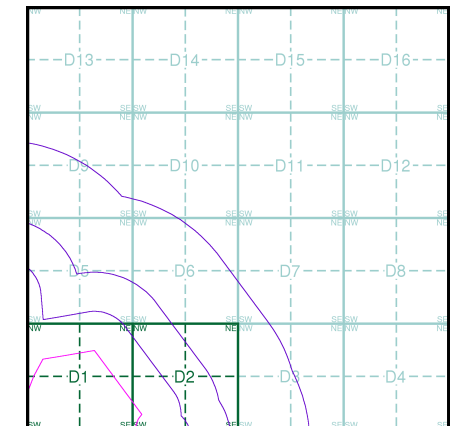
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D

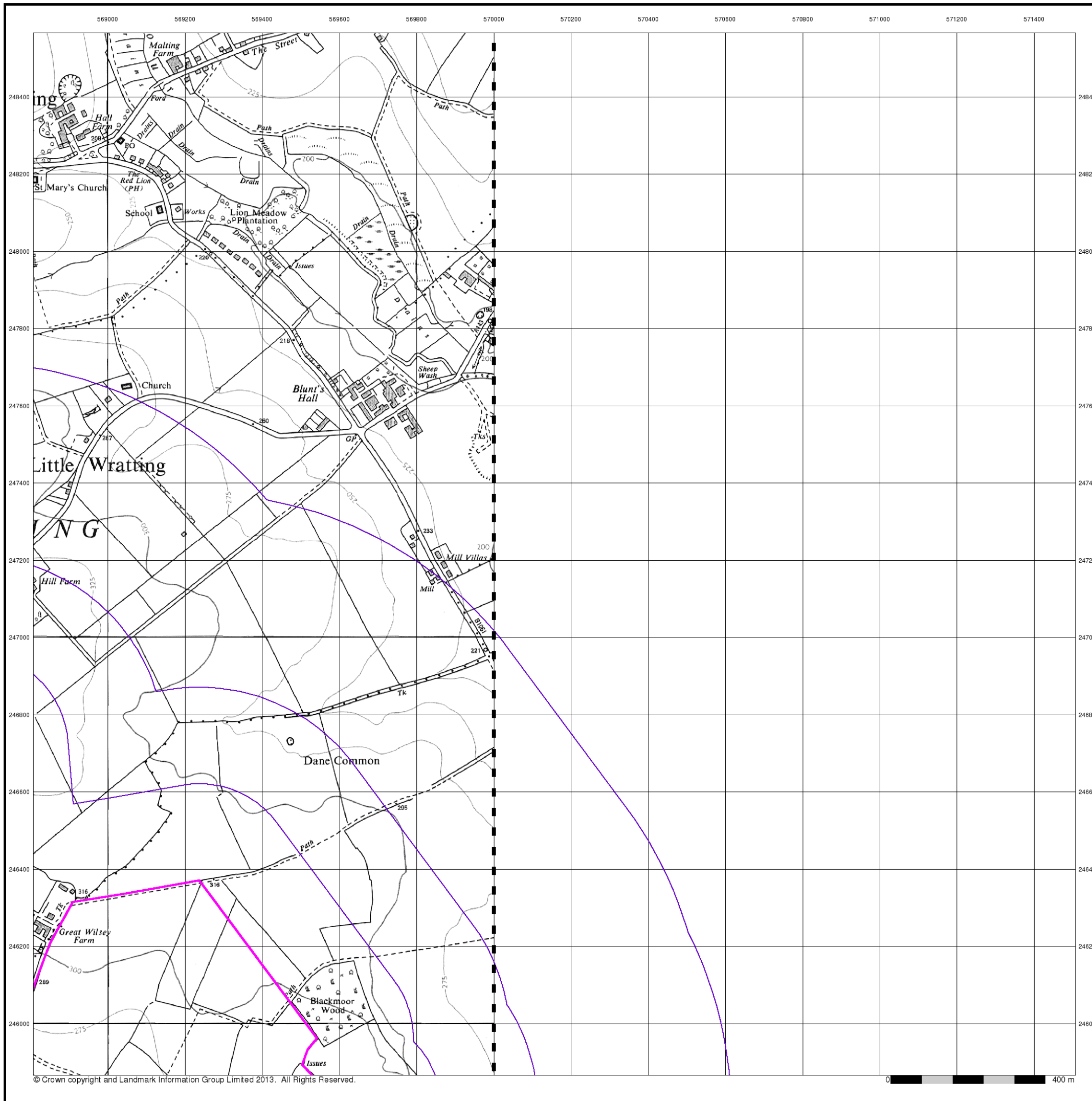


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



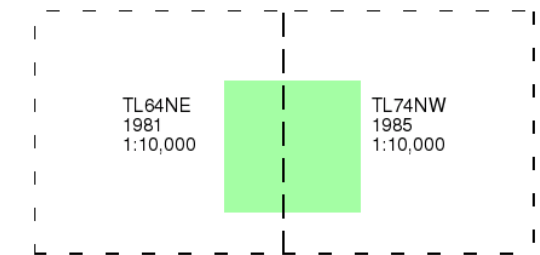
Ordnance Survey Plan

Published 1981 - 1985

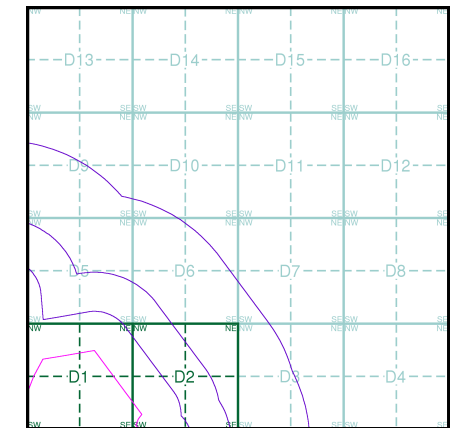
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D

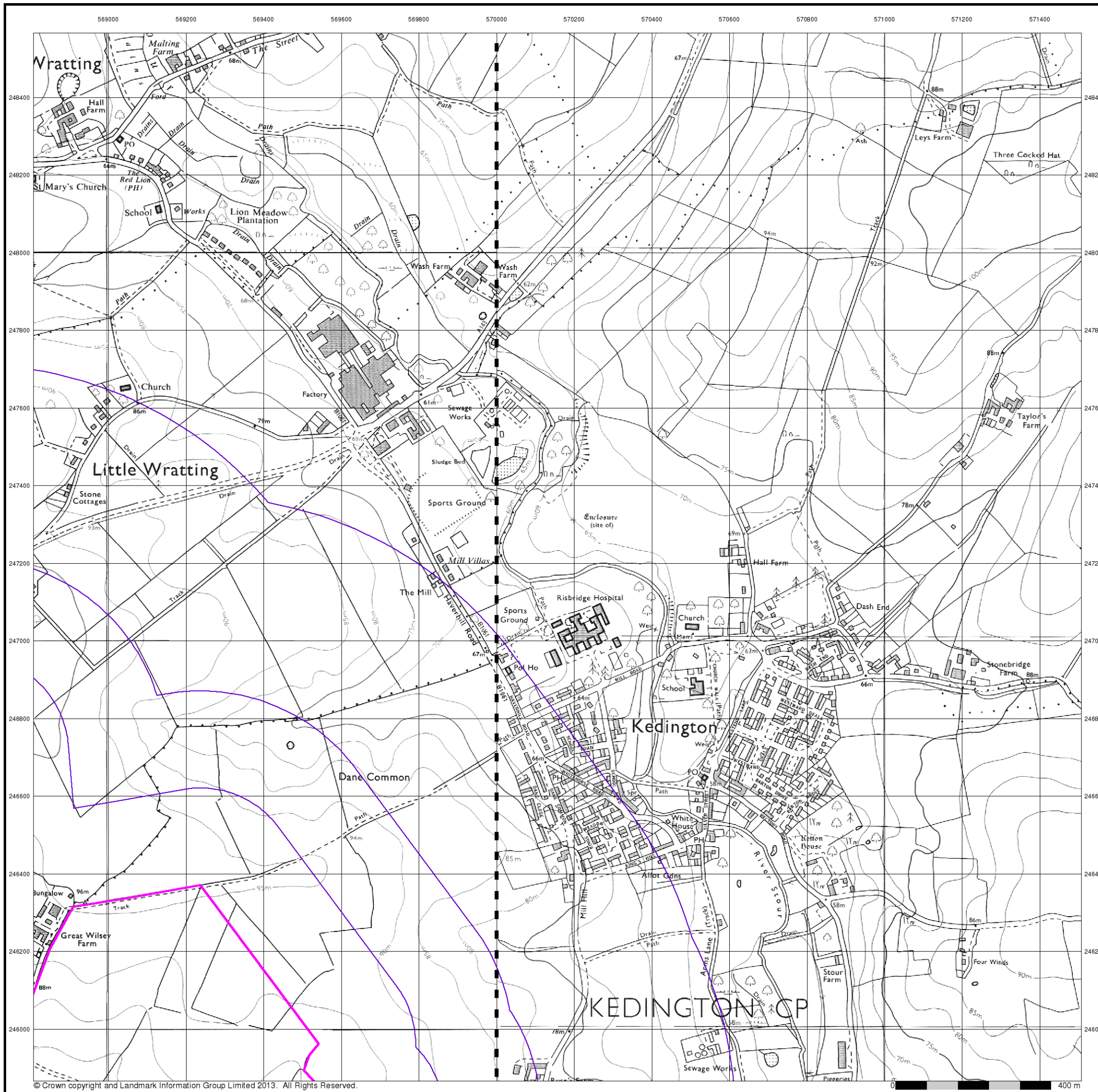


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



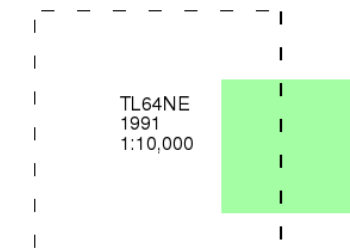
Ordnance Survey Plan

Published 1991

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice D

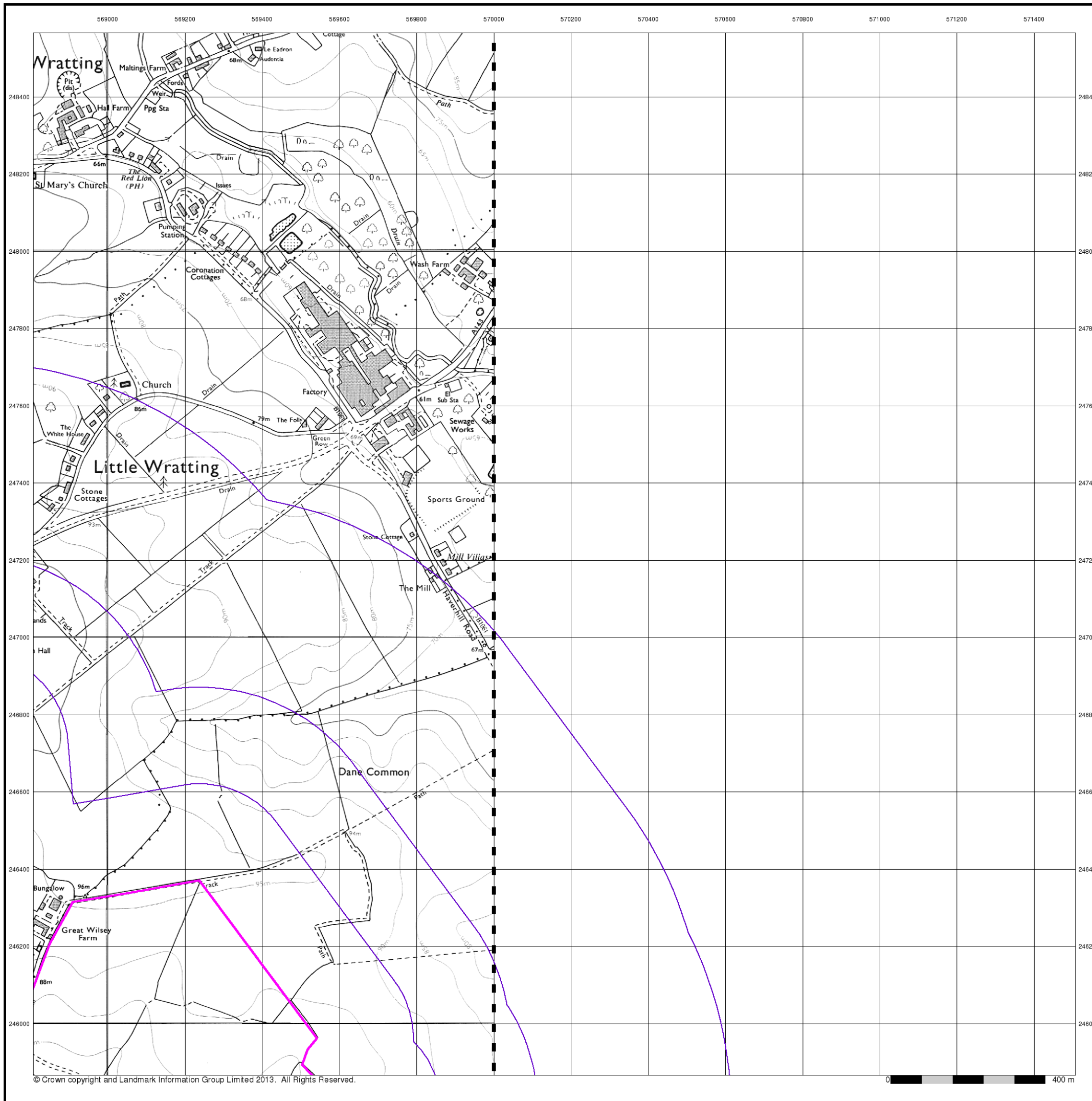


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



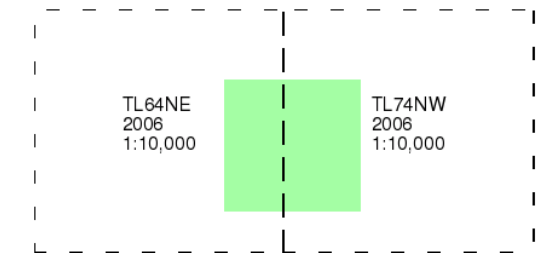
10k Raster Mapping

Published 2006

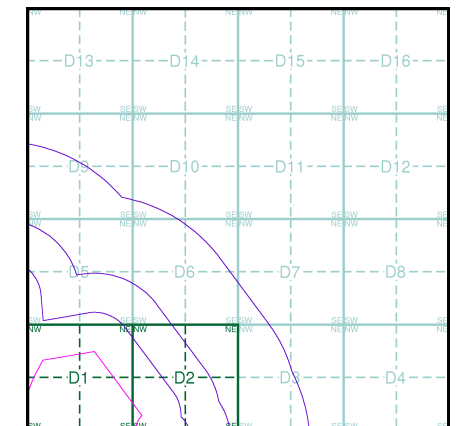
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice D

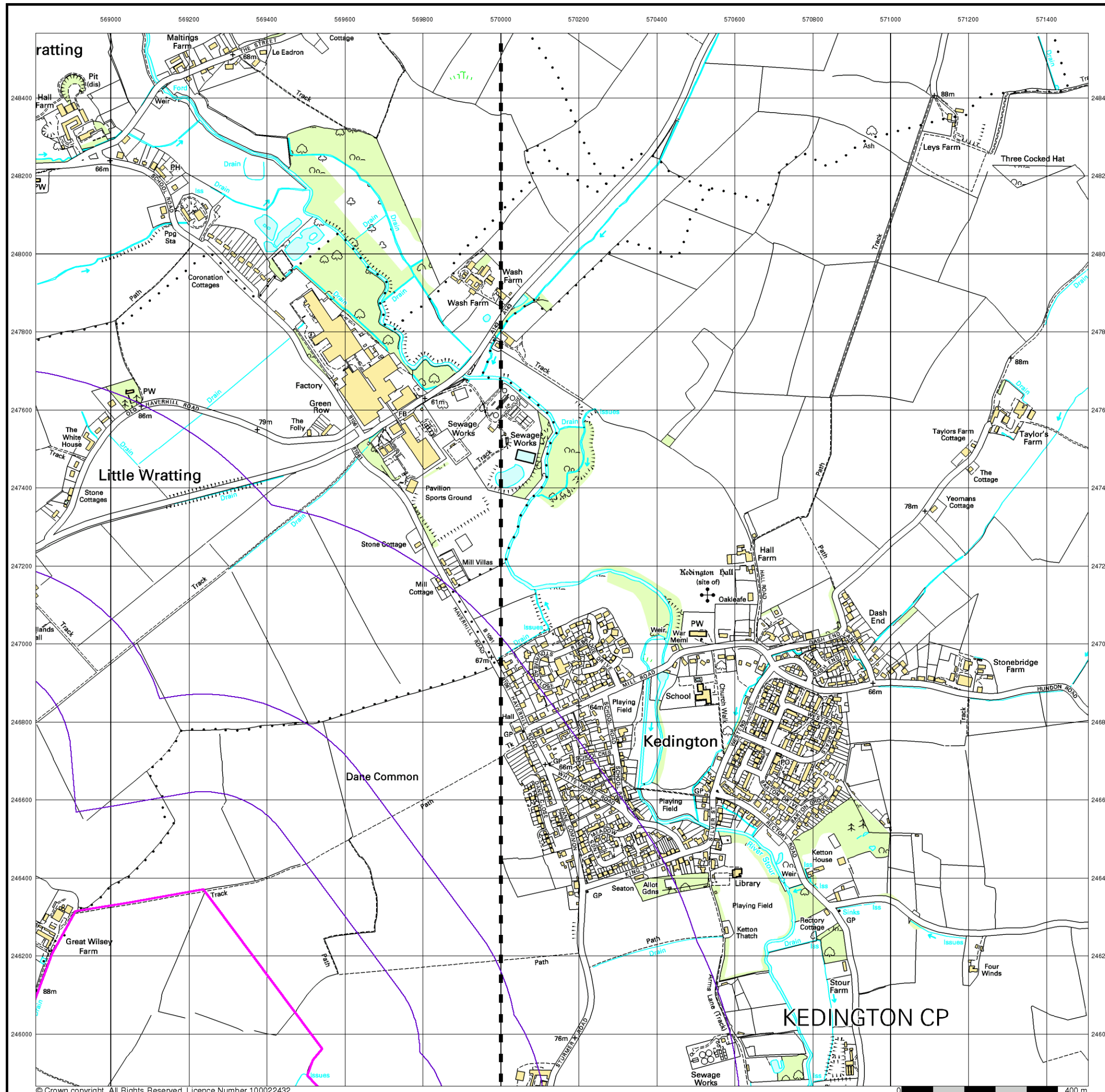


Order Details

Order Number: 60434700_1_1
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 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



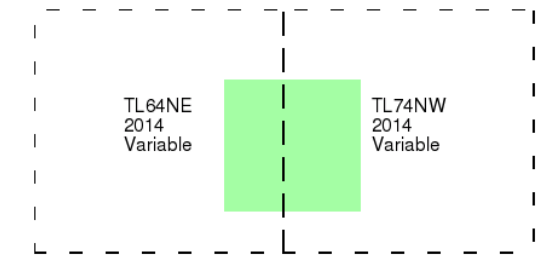
VectorMap Local

Published 2014

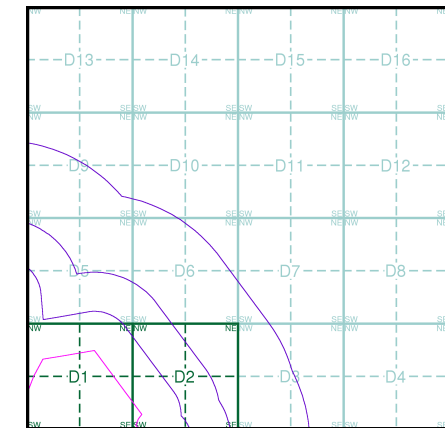
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice D

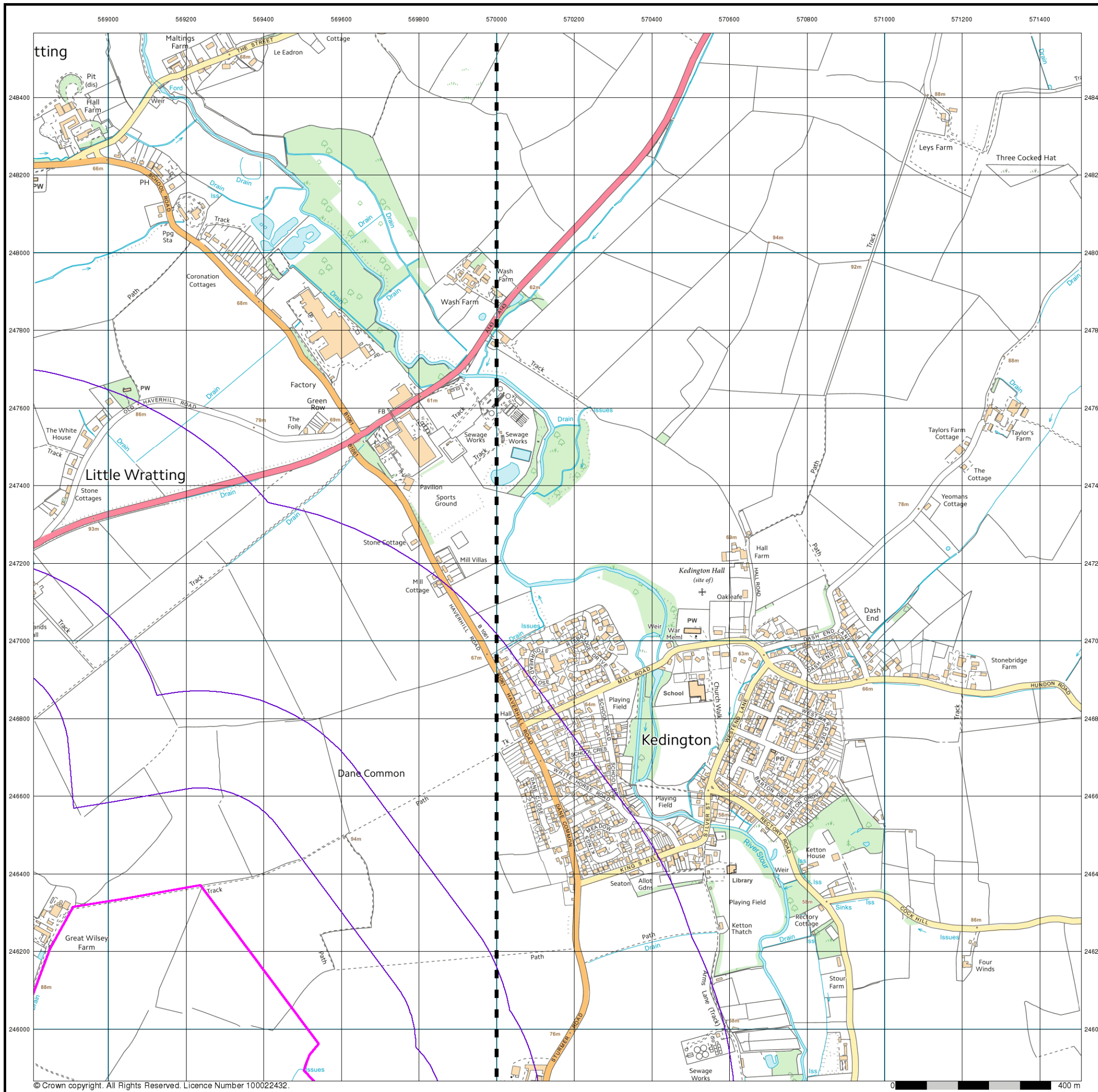


Order Details

Order Number: 60434700_1_1
 Customer Ref: 10173 Haverhill
 National Grid Reference: 569530, 246580
 Slice: D
 Site Area (Ha): 169.33
 Search Buffer (m): 1000

Site Details

Site at 568850, 245800



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British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 550509 : BGS Reference: TL74SW28
 British National Grid (27700) : 570290,244420
[Report an issue with this borehole](#)

continued

TL 74 SW 27



GRADING			GRADING				GRADING		
Mean for deposit percentages			Depth below surface (m)				percentages		
Fines	Sand	Gravel	Fines	Sand	Gravel				
			-1/4	+1/4 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
3	41	56	5	4	5	9	36	41	0
			Sandy silt with peat						
			4	5	10	19	45	17	0
			3	5	17	18	33	24	0
			3	4	20	20	33	20	0
			2	8	20	23	34	13	0
			3	8	21	22	27	19	0
			0	2	13	20	43	22	0
			6	5	19	26	35	5	4
			3	5	16	20	35	20	1

COMPOSITION		COMPOSITION										
Depth below surface (m)		Percentage by weight in the +16 -32 mm fraction										
		Flint			Chalk	Quartz	Quartzite	Sandstone	Argillaceous rocks	Fossil debris	Ironstone	Others
		W	R	Ang.	Patin.							
4.1-13.2		0	65	2	22	trace	5	2	2	1	trace	1

TL 74 SW 28 7029 4442 **Nr. Bull's Farm** **Block A**

Surface level + 72.0 m Waste 7.9 m
 Water not struck Bedrock 2.0 m+
 October 1979

LOG		LOG	
Geological classification		Lithology	
		Thickness m	Depth m
	Soil	0.2	0.2
Boulder Clay	Clay, brown becoming grey with chalk and flint pebbles	7.7	7.9
Upper Chalk	Chalk, soft	2.0+	9.9

TL 74 SW 29 7075 4386 **Water Hall** **Block A**

Surface level + 52.3 m Waste 5.5 m
 Water struck at + 50.4 m Bedrock 1.5 m+
 November 1979

LOG		LOG	
Geological classification		Lithology	
		Thickness m	Depth m
	Soil	0.4	0.4

Alluvium	Clay, brown	1.5	1.9
	Silty clay, grey	1.3	3.2
	Peat, brown	2.3	5.5
Upper Chalk	Chalk, soft	1.5	7.0



British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 550509 : BGS Reference: TL74SW28

British National Grid (27700) : 570290,244420

[Report an issue with this borehole](#)

TL 74 SW/28
7029 4442

IGS 1536 (1159) 2000 1/76

Institute of Geological Sciences

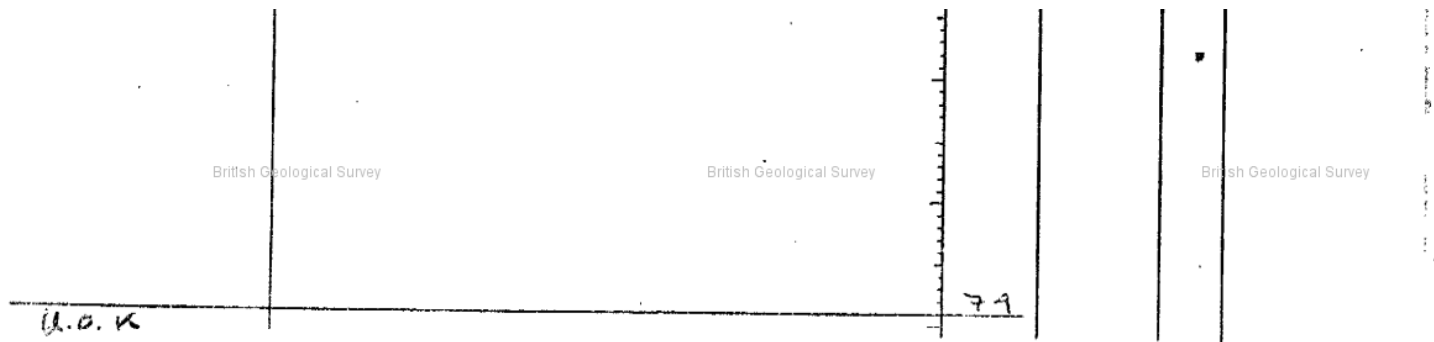
Sheet 1 of 2

Borehole Reg No: TL 74 SW/28 Temp borehole No: B Nat Grid Ref: 7029 4442 Locality: Bulls Farm Surface level: 72.0m O.D. (236ft O.D.) Drilled by: CD(i) Drill type: Percussion Hole diameter: 6" (152mm) Depth(s) bailed: None Date started: 1/10/79 Date finished: 11/10/79 Recorded by: R.J. Ward	Classification of ground	Thickness m	Nature
	Boulder Clay	7.9	Waste
	U. Chalk	2.0+	Bedrock
		9.9	

Remarks

- Explanation
- ▽ Groundwater depth first encountered
 - ◻ Morning water level
 - ◼ Evening water level
 - ==== Casing depth
 - Borehole depth
 - W Water sample
 - U_s sample; solid ornament shows fraction recovered
 - Spot disturbed sample
 - } Bulk sample
 - S.P.T. Standard Penetration Test

Geological Classification	Description of Strata	Sampling	Sample Nos	Water level	Drilling and Casing progress
	Soil				
	Moderate yellowish brown silty sandy clay mottled to light grey with S&S chert pebbles and scattered P/fin (Mottled Ch. Boulder Clay)	0.2			
Boulder Clay	- becomes olive grey with less chert pebbles and additional pebbles of fine R. shale (Coarse Cherty Boulder Clay)	2.9			





British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 550509 : BGS Reference: TL74SW28

British National Grid (27700) : 570290,244420

[Report an issue with this borehole](#)

TL 74 SW 28
7029 4442

Borehole Reg No: TL 74 SW
Temp. borehole No: B

Sheet 2 of 2

Geological Classification	Description of Strata	Sampling	Sample Nos	Water level	Drilling and Casing progress
Upper Chalk	Soft cream white pebbly chalk	7.9	CMS1		
	Borehole terminated at 9.9 m in bedrock	9.9			



British Geological Survey



British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 18595450 : BGS Reference: TL64SE19

British National Grid (27700) : 569760,244700

[Report an issue with this borehole](#)



Page 1 of 2



BGS COPY

7664/66



British Geological Survey

British Geological Survey

INFORMATION MANAGEMENT PROGRAMME

A SITE DETAILS

Borehole drilled for: PRIVATE WATER SUPPLY . MR C. GURREN
 Location: TANNERS IF, STURMER, ESSEX CB9 7XS
 NGR (8 figures): TL 6976 4470
 Ground Level (if known): _____ Please attach site plan
 Drilling Company: A.G BROWN DRILLING, HAVERHILL, SUFFOLK
 Date of Drilling: Commenced 1 JAN 2010 Completed 1 JAN 2010

B CONSTRUCTION DETAILS

Borehole Datum (if not ground level) _____ above
 _____ m below GL

(point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)

Borehole drilled diameter _____ 200 mm from GL to 2.5 m/depth
 _____ 150 mm from 2.5 to 30 m/depth
 _____ mm from _____ to _____ m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth
 and type (e.g. if plain steel, plastic slotted)

Casing material PLAIN STEEL diameter 150 mm from GL to 19.5 m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Grouting details

Water struck at _____ 2.5 m (depth below datum - mbd)
 _____ m (depth below datum - mbd)

Rest water level on completion _____ 15.1 mbd

C TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum (if different from borehole datum) _____ m _____ above
 _____ below borehole datum (mbd)

Pump Suction depth _____ 22.0 mbd

Water Level (Start of Test) _____ 15.1 mbd

Water Level (End of Test) _____ 15.1 mbd

Pumping rate _____ 4 m³/d/hrs PER HOUR

for _____ 2 days/hours

Recovery to
(from end of pumping)

15.1 mbd in 0 mins: hrs: days

15.1m

Date(s) of measurements

Jan 2010

Please **supply chemical Analysis if available**

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BGS ID: 18595450 : BGS Reference: TL64SE19

British National Grid (27700) : 569760,244700

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D STRATA LOG

Geological Classification (BGS only)	Description of strata	Thickness	Depth
		m	m
	TOPSOIL	0.5	0
	FIRM GREY BOULDER CLAY	0.7	0.5
	FIRM YELLOW CLAYEY SAND WITH GRAVEL FRAGMENTS	1.9	1.2
	STIFF GREY BOULDER CLAY WITH CHALK AND FLINT FRAGMENTS	9.4	3.1
	CHALK WITH FLINTS	37.5	12.5
			50.0
(continue on separate page if necessary)			
Other comments (e.g. gas encountered, saline water intercepted, etc.)			

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FILE

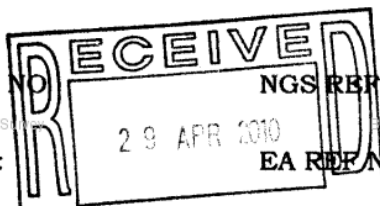
LIC NO:

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NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 18511748 : BGS Reference: TL64SE18

British National Grid (27700) : 569055,244895

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WD - 2010 - 87.

TL64/64

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INFORMATION MANAGEMENT PROGRAMME**A SITE DETAILS**

Borehole drilled for: Haverhill Golf Club Ltd.

Location: Cowals Rd., HAVERHILL, SUFFOLK CB9 7UW.

NGR (8 figures): TL 69055, BN 9 44 895

Ground Level (if known): _____ Please attach site plan

Drilling Company: Stockhill drilling

Date of Drilling: Commenced 16/2/10 Completed 19/2/10.

B CONSTRUCTION DETAILS

Borehole Datum (if not ground level) Q.L. above _____ m below GL

(point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)

Borehole drilled diameter 6 1/4" mm from Q.L. to 50.00 m/depth

_____ mm from _____ to _____ m/depth

_____ mm from _____ to _____ m/depth

Casing material Steel diameter 7 5/8" mm from Q.L. to 1.00 m/depth
and type (e.g. if plain steel, plastic slotted)

Casing material PVC plain diameter 125 mm from Q.L. to 24.00 m/depth

Casing material PVC slotted diameter 125 mm from 24.00 to 33.00 m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Grouting details Grack pack to 20 mtr above T.D. then swell tight bentonite to Q.L.

Water struck at _____ 13.00 m (depth below datum - mbd)
_____ m (depth below datum - mbd)

Rest water level on completion 5.22 mbd

C TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum _____ m _____ above
(if different from borehole datum) _____ below borehole datum (mbd)

Pump Suction depth 20.50 mbd

Water Level (Start of Test) 4.69 mbd

Water Level (End of Test) 5.22 mbd

Pumping rate 75 Ltr p. min m³/d: 1/0

for 12.0 days/hours

Recovery to
(from end of pumping)

5.22 mbd in 5 mins: hrs: days

Steady at 6.18 during test - Drawdown - 96 mtr.

Date(s) of measurements

19.2.10

Please supply chemical Analysis if available

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NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 18511748 : BGS Reference: TL64SE18

British National Grid (27700) : 569055,244895

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D STRATA LOG

Geological Classification (BGS only)	Description of strata	Thickness	Depth
		m	m
	Clay with chalk some flint	3.00	3.00
	Clay with chalk.	6.00	9.00
	Clay with chalk and flint.	4.00	13.00
	Chalk with flint.	3.00	16.00
	Chalk.	6.00	22.00
	Chalk with flint.	28.00	<u>50.00</u> T.D.
(continue on separate page if necessary)			
Other comments (e.g. gas encountered, saline water intercepted, etc.)			
NO Sands / gravel encountered.			

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EA REF NO: _____

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BGS ID: 18595391 : BGS Reference: TL64NE42

British National Grid (27700) : 567850,245990

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Page 1 of 2



TL64/67

**British Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

INFORMATION MANAGEMENT PROGRAMME**A SITE DETAILS**

Borehole drilled for: HAVERHILL COMMUNITY FOOTBALL PROJECT
 Location: CHALKSTONE WAY, HAVERHILL, SUFFOLK CB9 0LD
 NGR (8 figures): TL 6785 4599
 Ground Level (if known): NIK Please attach site plan
 Drilling Company: A G BROWN DRILLING
 Date of Drilling: Commenced 16/4/10 Completed 30/4/10

B CONSTRUCTION DETAILS

Borehole Datum (if not ground level) above
 m below GL
 (point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)

Borehole drilled diameter 200 mm from GL to 23 m/depth
 mm from to m/depth
 mm from to m/depth

Casing material diameter mm from to m/depth
 and type (e.g. if plain steel, plastic slotted)

Casing material PLAIN STEEL diameter 150 mm from GL to 43.5 m/depth
 Casing material PVC PLAIN diameter 125 mm from GL to 40 m/depth
 Casing material PVC SLOTTED diameter 125 mm from 40 to 80 m/depth

Grouting details

Water struck at 5.8 m (depth below datum - mbd)
 m (depth below datum - mbd)

Rest water level on completion 36.9 mbd

C TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum (if different from borehole datum) above
 m below borehole datum (mbd)

Pump Suction depth 36.9 mbd **(BALE TEST)**

Water Level (Start of Test) 36.9 mbd

Water Level (End of Test) 36.9 mbd

Pumping rate 1 m³/d:1/s
 for 1 ~~days~~/hours

Recovery to (from end of pumping) 36.9 mbd in 0 mins: hrs: days

Date(s) of measurements

30/4/10

Please supply chemical Analysis if available

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BGS ID: 18595391 : BGS Reference: TL64NE42

British National Grid (27700) : 567850,245990

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D STRATA LOG

Geological Classification (BGS only)	Description of strata	Thickness	Depth
		m	m
	BOULDER clay fill	1.0	0
	STIFF Brown BOULDER CLAY	4.1	1.0
	VERY STIFF Green BOULDER clay with occasional SILTY sandy water bearing lenses	1.9	5.1
	VERY STIFF Green BOULDER CLAY	31.5	7.0
	DENSE yellow Brown SILTY SAND	1.0	38.5
	CHALK WITH FLINTS (continue on separate page if necessary)	40.5	39.5
			80m
	Other comments (e.g. gas encountered, saline water intercepted, etc.)		

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Appendix 4.1

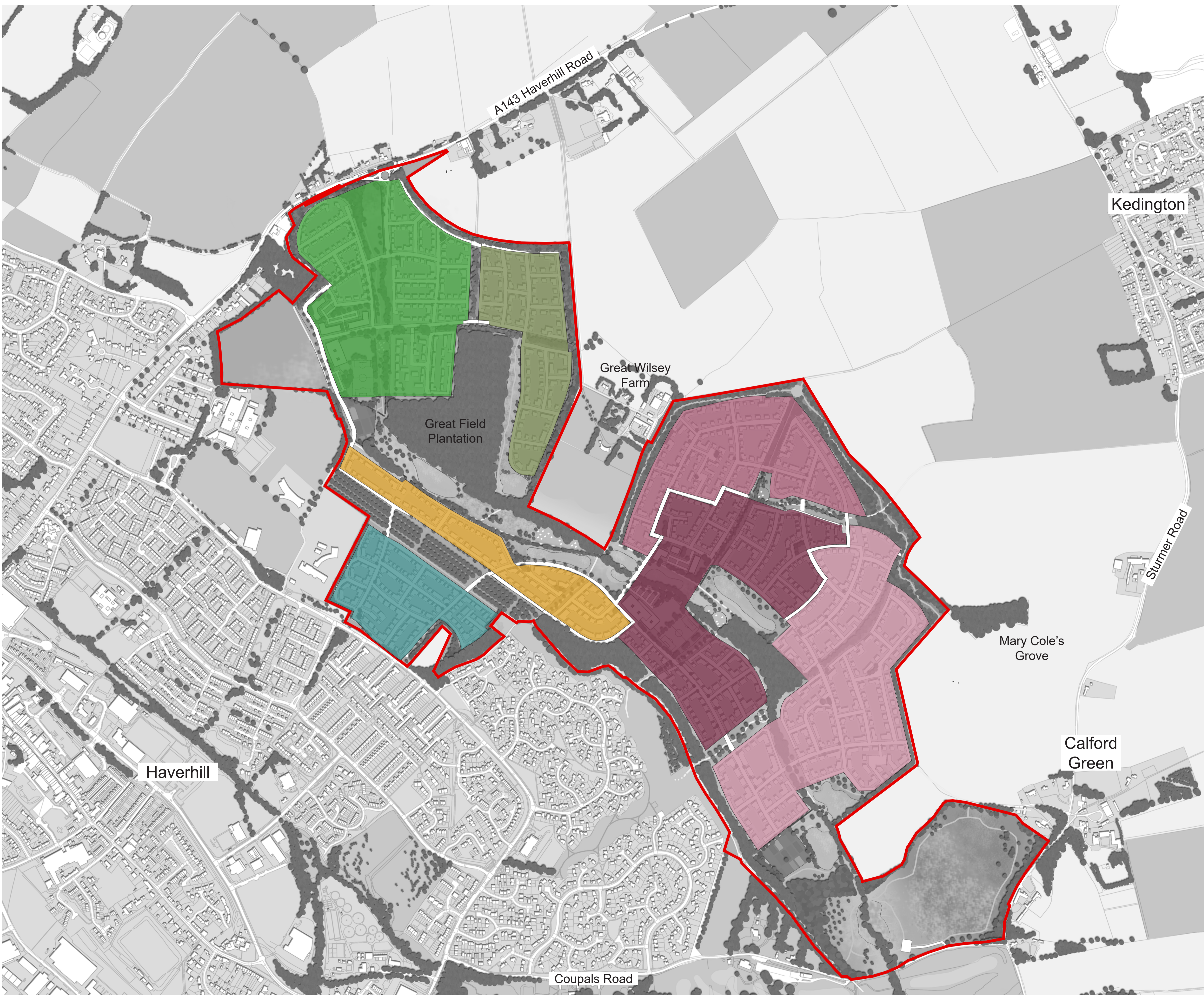
Revised Assessment

Parameter Plan

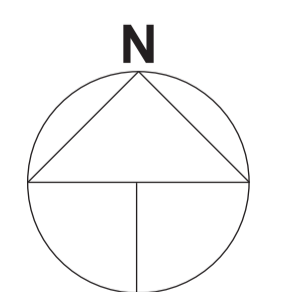


GREAT WILSEY PARK

-  Site Boundary
-  1. Great Wilsey Meadows - North
-  2. Great Wilsey Meadow - East
-  3. The Spine
-  4. Chalkstone Fields
-  5. Mary Cole's View - North
-  6. Mary Cole's View - Central
-  7. Mary Cole's View - East



Notes:
Plan 5055-ES-06 Revision A - April 2016



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Great Wilsey Park
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DEVELOPMENT CHARACTER AREAS - PARAMETERS

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Date: August 2015
Drawn: SJ / NJE

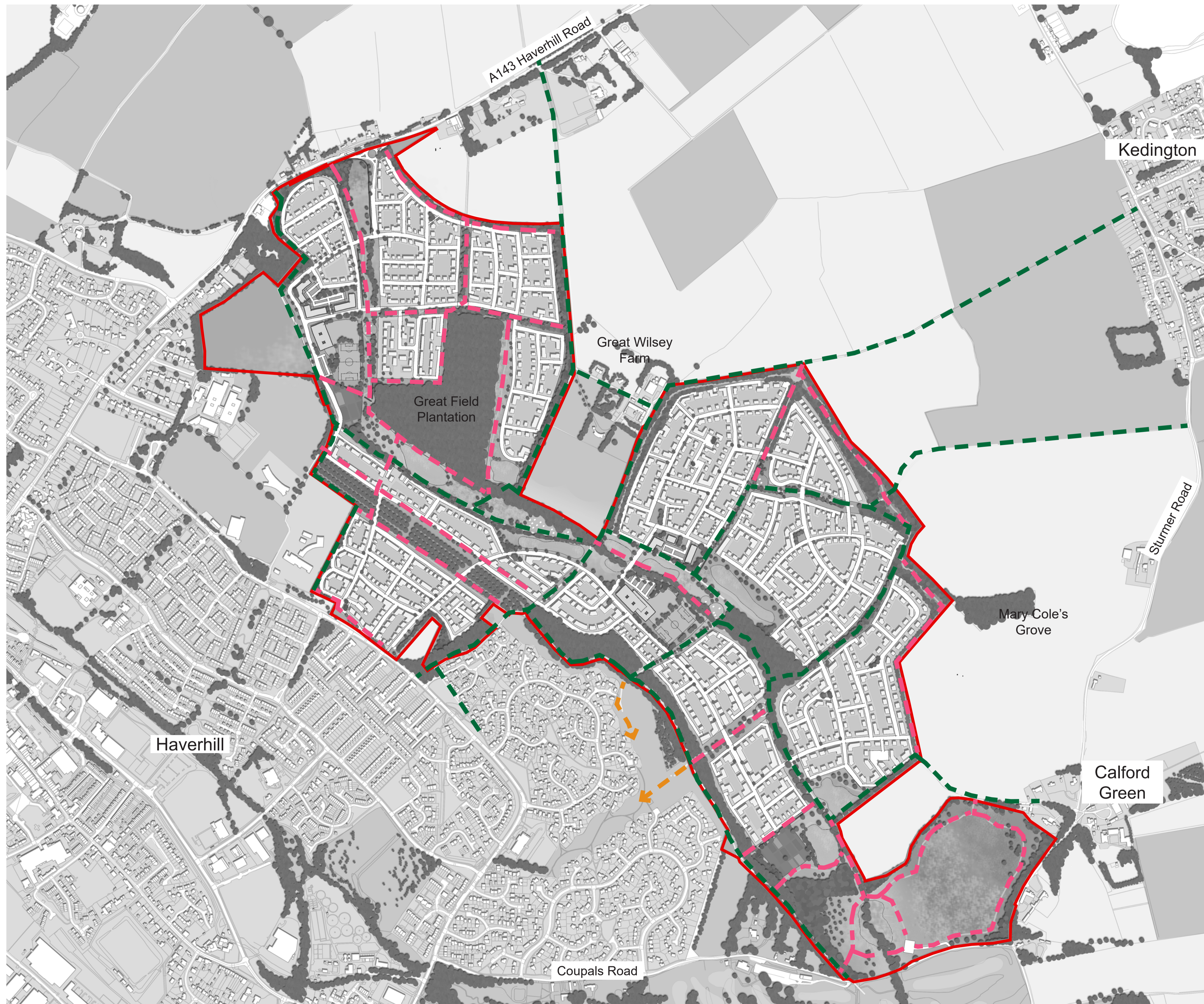
5055-ES-06 rev. A


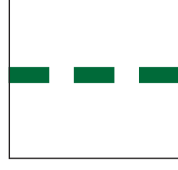
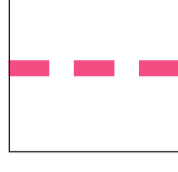



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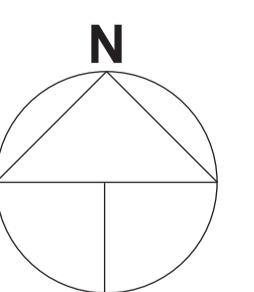
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w: www.fpcr.co.uk



-  Site Boundary
-  Existing Public Rights of Way
-  Proposed Public Rights of Way within the Site
-  Potential connections beyond the Site boundary

All footpaths are 2.0m wide with a combined footway/cycleway at 3.0m.

Notes:
 5055-ES-05 Revision D: April 2016
 5055-ES-05 Revision C: April 2016
 5055-ES-05 Revision B: September 2015
 5055-ES-05 Revision A: August 2015
 Drawing number changed: August 2015
 5055-L-105 Revision B: July 2015
 5055-L-105 Revision A: April 2015



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PUBLIC RIGHTS OF WAY - PARAMETERS

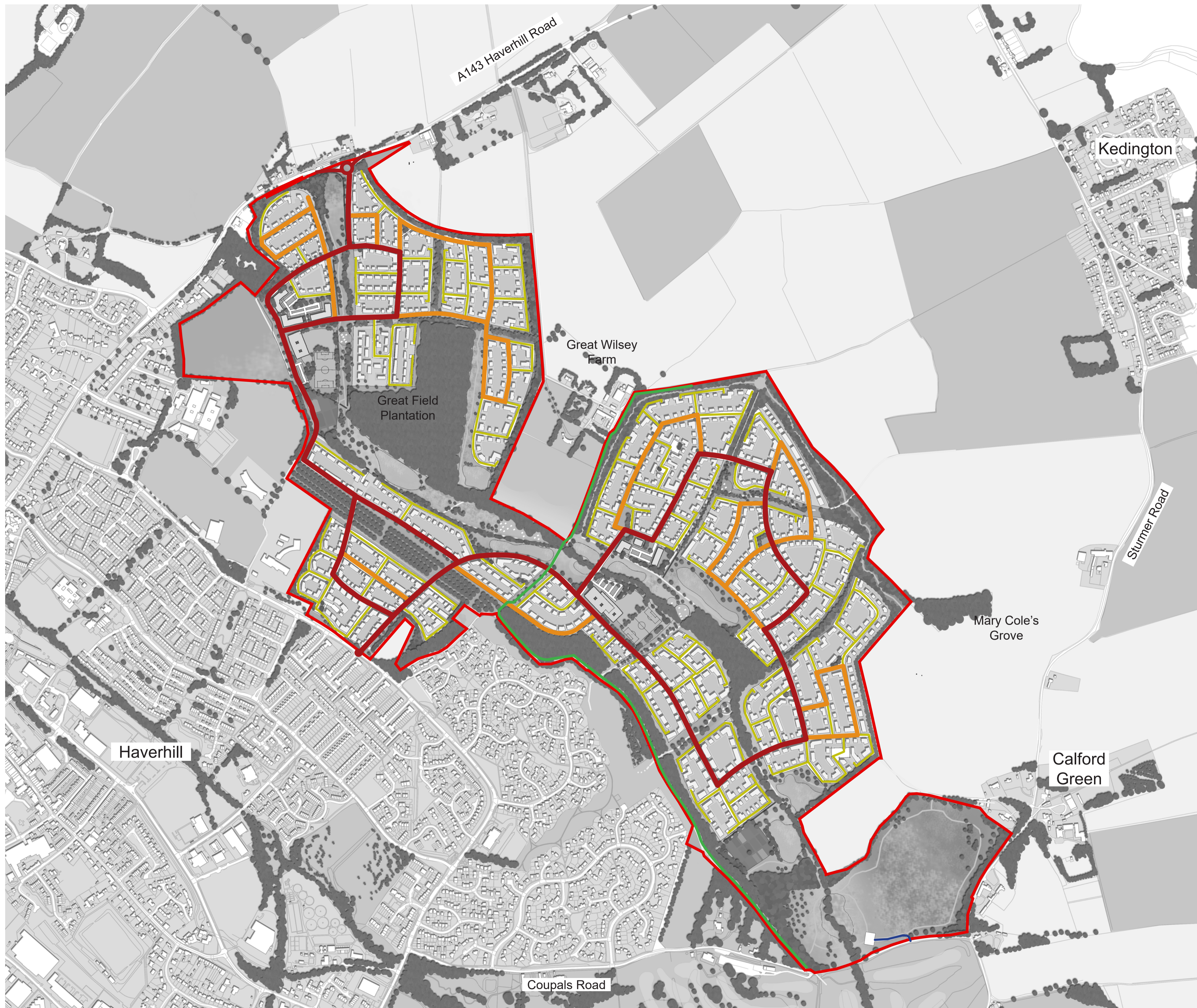
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 Date: April 2016
 Drawn: SDJ / NJE



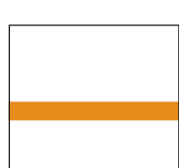

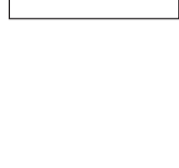

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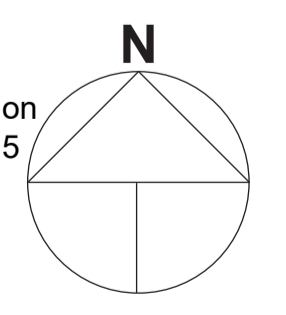
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-  Site Boundary
-  Primary circulation and bus route
7.3m to 6.5m wide
-  Secondary circulation
6.5m to 5.5m wide
-  Tertiary access
4.8m minimum width (adoptable),
4.0m minimum width (private)
-  Car park access only
-  Access for agricultural vehicles

Notes:
 5055-ES-04 Revision D: May 2016
 5055-ES-04 Revision C: April 2016
 5055-ES-04 Revision B: April 2016 - amended in line with client instruction
 5055-ES-04 Revision A - amended in line with client instruction Sep 2015
 Drawing Number Changed: August 2015
 5055-L-104 Revision D: July 2015
 5055-L-104 Revision C: April 2015
 5055-L-104 Revision B: December 2014
 5055-L-104 Revision A: November 2014



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ROAD HIERARCHY - PARAMETERS


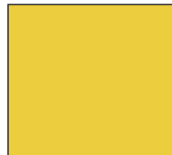



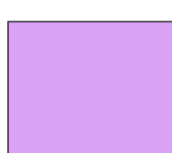

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 Date: May 2016
 Drawn: MP / NJE

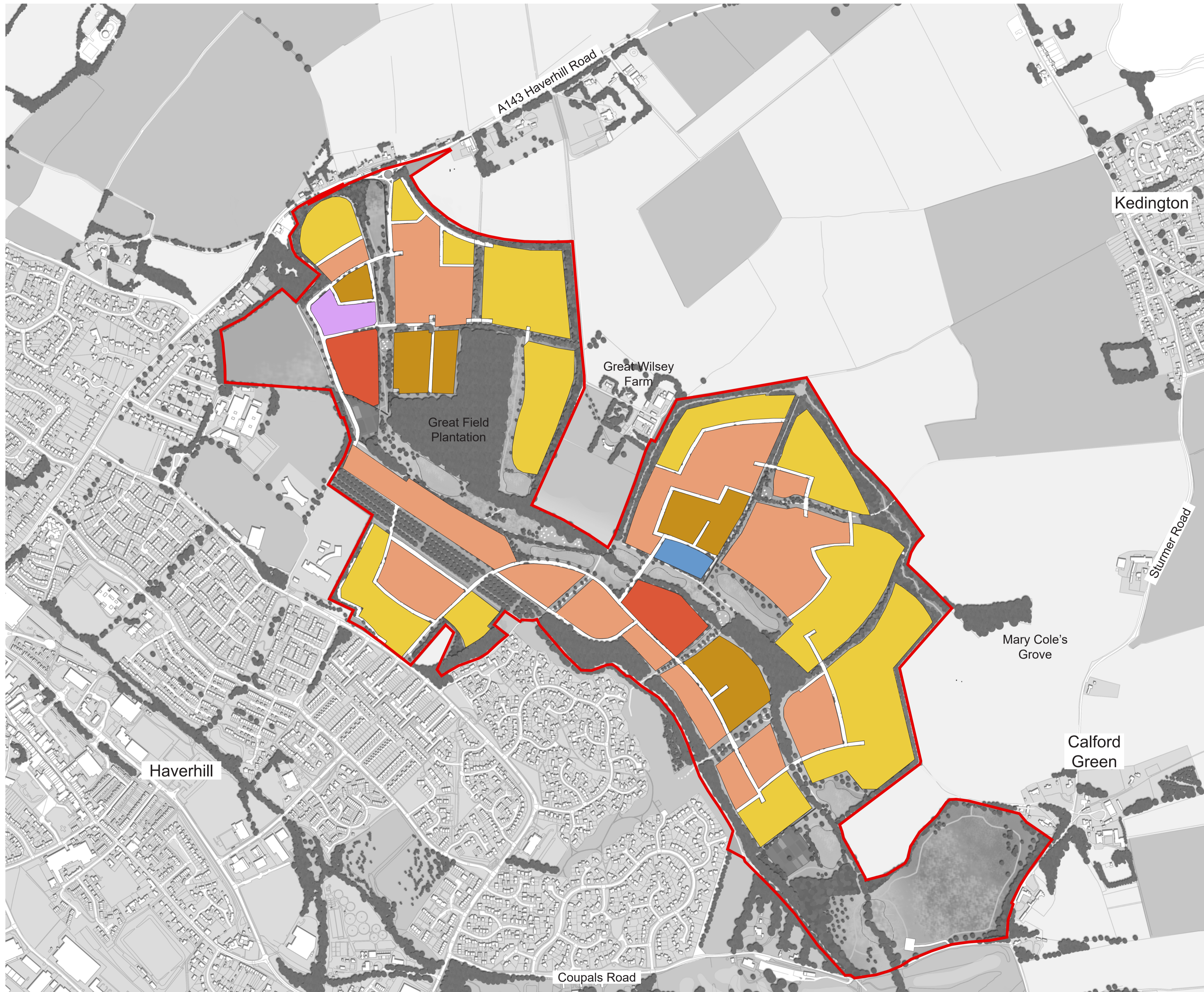
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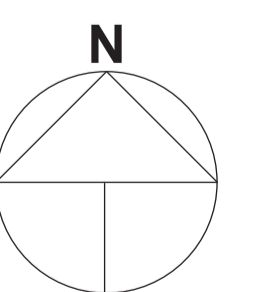


GREAT WILSEY PARK

-  Site Boundary
-  Up to 2 storeys (8m)
-  Up to 2.5 storeys (9.5m)
-  Up to 3 storeys (12m)
-  Building Zone: Local Centre
- Up to 3 storeys (12m)
-  Building Zone: Mixed Use Local Centre,
Employment and Healthcare
- Up to 3 storeys (12m)
-  Building Zone: Primary Schools
- Up to 2 storeys (8m)



Notes:
 5055-ES-03 Revision C - April 2016
 5055-ES-03 Revision B - April 2016
 5055-ES-03 Revision A - amended in line with client instruction sep 2015
 Drawing number changed August 2015
 Plan 5055-L-102 Revision F: August 2015
 Plan 5055-L-102 Revision E: July 2015
 Plan 5055-L-102 Revision D: April 2015
 Plan 5055-L-102 Revision C: February 2015
 Plan 5055-L-102 Revision B: November 2014
 Plan 5055-L-102 Revision A: March 2014



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Hallam Land Management
 Great Wilsey Park
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BUILDING HEIGHTS - PARAMETERS

Scale: 1:5000@A1 / 1:10000@A3
 Date: April 2016
 Drawn: SDJ / NJE

5055-ES-03 **C**

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LEGEND

-  Application Boundary - Total Area 168.34Ha.
-  Residential Development Use Class C3 - Total Area 74.75Ha.
-  Proposed Extra Care Residential Use Class C2/C3 - Total Area 1.5Ha.
Total Residential = 2500 units at an average density of 32.7 dph.
-  Proposed Schools - Total Area 4.2Ha (comprising of a 2FE School 2.2Ha and a 1FE School 2.0Ha).
-  Mixed-use Local Centre - Total Area 0.6Ha - comprising:
i. Up to 1,225sqm – use classes A1/2/3/4/5 and D1/2;
ii. Residential units (included within the 2,500 units above).
-  Mixed-use Local Centre - Total Area 1.3Ha - comprising:
i. Up to 1,225sqm – use classes A1/2/3/4/5 and D1/2;
ii. Residential units (included within the 2,500 units above);
iii. Up to 5,600sqm of uses comprising B1 and D1/2 (of which between 450-2,000sqm will be for D1 healthcare uses and up to 3,000sqm will be B1 uses).
-  Proposed Community Allotment Gardens - Total Area = 1.5Ha (comprising 1 plot of 0.6Ha and another at 0.9Ha).
-  Proposed Green Infrastructure, includes Public Open Space, Equipped Children's Play Areas, Sustainable Drainage (SuDS), Proposed Tree, Hedge and Shrub Planting, Meadow Creation, Wetland, Permissive Paths and Cycleways. - Total Area = 79.69Ha.
-  Existing Woodland Planting to be Retained and Brought Under Management.
-  Proposed Structural Woodland Planting.
-  Land for potential expansion of Samuel Ward Academy - Total Area 4.8Ha.
-  Existing Hedgerows Retained and Enhanced with Additional Planting.
-  Proposed Primary Access from Haverhill Road Via a Proposed New Roundabout.
-  Proposed Secondary Access from Chalkstone Way Via a Proposed New Signalled Junction.
-  Proposed Country Park Access Coupsals Road.
-  Indicative Route for Primary Road Infrastructure - Exact Routing of Internal Infrastructure Subject to Agreement.
-  Existing Public Rights of Way Retained Along Their Original Alignment and Enhanced.
-  Indicative location for proposed Country Park car park

PARAMETERS SCHEDULE

Zone	Zone Area	Density Range	Use Class	Residential Units	Height Storey (Max)	Building Height above existing levels (Max)	Gross Floor Area (sq.m)
A1	2.4ha	25-35 dph	C3	60-84	2.0	8.0m	n/a
A2	5.6ha	25-35 dph	C3	140-196	3.0	12.0m	n/a
A3	4.4ha	20-25 dph	C3	88-110	2.0	8.0m	n/a
A4	1.5ha	n/a	C2/C3	max 120	2.0	8.0m	n/a
A5	3.5ha	20-25 dph	C3	70-88	2.0	8.0m	n/a
A6	0.75ha	35-40 dph	C3	26-30	2.5	9.5m	n/a
A7	4.8ha	25-35 dph	C3	103-144	2.5	9.5m	n/a
A8	7.0ha	35-40 dph	C3	245-280	2.0	8.0m	n/a
A9	2.07ha	30-40 dph	C3	62-83	3.0	12.0m	n/a
A10	10.2ha	20-40 dph	C3	204-408	3.0	12.0m	n/a
A11	3.5ha	30-40 dph	C3	105-140	2.0	8.0m	n/a
A12	11.2ha	25-35 dph	C3	280-392	3.0	12m	n/a
A13	10.4ha	20-30 dph	C3	208-312	2.5	9.5m	n/a
A14	4.3ha	30-35 dph	C3	129-151	3.0	12.0m	n/a
A15	4.0ha	20-30 dph	C3	80-120	2.5	9.5m	n/a
A16	0.63	30-40 dph	C3	18-25	3.0	12m	n/a
B1	2.0ha	n/a	D1	n/a	2.0	8.0m	n/a
B2	2.2ha	n/a	D1	n/a	2.0	8.0m	n/a
C1	0.6ha	n/a	A1/C3/D1	40-60 Flats	3.0	12.0m	c. 1225 (assumes use classes A1/2/3/4/5 and D1/2 first floor only with C3 uses on a first and second floor)
D1	1.3ha	n/a	A1/C3	40-60 Flats	3.0	8.0m	c. 6825 (assumes use classes A1/2/3/4/5 first floor only with C3 uses on a first and second floor and B1 and D1/2 up to two storeys)

Notes: 1. dph = Dwellings per Hectare
2. ha = Hectare

Hallam Land Management Ltd

Great Wilsey Park
Haverhill

fpcr Landuse - Parameters



1:5000 @ A1

SJ/NJE

May 2016

5055-ES-01 Rev. L

GREAT WILSEY PARK



Appendix 7.1

Statement of Common

Ground

North East Haverhill Development Site – also known as Great Wilsey Park

Planning application reference - DC/15/2151/OUT

Tracker relating to Statement of Common Ground for Traffic and Transport

Date: 11/03/2016 Version: v02 - DRAFT

Technical tracker to inform Statement of Common Ground between Suffolk County Council (SCC) and Brookbanks Consulting Ltd (BCL).

Version history

Version	Description	Date	Comments
v01	First draft	26/02/2016	Starting point for discussion
V02	Second draft	11/03/16	Initial response

The outcomes of this review process will be used to populate the Statement of Common Ground between SCC and BCL, in response to the current planning application. The list below identifies all areas of discussion.

ID	Information / area of work	Agree (by/ date)	Agree subject to clarification (by/date)	Disagree (by whom)	Clarification required/ comments (by whom)	BCL/SCC comments	Further action (by whom / by when)
1	Assessment methodology						
1.1	Data collection methodology and applicability for transport assessment					This was provided within the scoping notes produced BCL. provided	none
1.2	Assessment years					This was provided within the scoping notes produced BCL. provided	none
1.3	Scenario options					This was provided within the scoping notes produced BCL. provided	none
1.4	Background Growth					This was provided within the scoping notes produced BCL. provided	none
1.5	Assessment method for Cangle junction					This was provided within the scoping notes produced BCL. provided	none
1.6	Cumulative impact with NW Haverhill development					This was provided within the scoping notes produced BCL. provided	none
1.7	Phasing of development – confirmation of housing numbers, delivery of schools and retail for each phase.					This is an outline application; The purpose of the TA is to ensure the	none

ID	Information / area of work	Agree (by/ date)	Agree subject to clarification (by/date)	Disagree (by whom)	Clarification required/ comments (by whom)	BCL/SCC comments	Further action (by whom / by when)
						highway network will operate satisfactorily. Elements of this is outside the TA.	
2. Baseline conditions							
2.1	Understanding of baseline conditions; highway network, PROW, bus services, site access and routes to the site					Chapter 4 provides this information.	none
2.2	Date of data collection					The traffic counts were carried out in November, with school term times.	none
2.3	Use of Census 2011 data wrt journey to work data					The TA confirms that 2001 Census data has been used to distribute trips as this provides a greater level of detail. .	none
3. Assessment of Impacts							
3.1	Development rate					This was provided within the scoping notes produced BCL. provided	none
3.2	Trip generation for housing					This was provided within the scoping notes produced BCL. provided	none

ID	Information / area of work	Agree (by/ date)	Agree subject to clarification (by/date)	Disagree (by whom)	Clarification required/ comments (by whom)	BCL/SCC comments	Further action (by whom / by when)
3.3	Trip generation and internalization for on-site primary schools					This was provided within the scoping notes produced BCL. provided	none
3.4	Trip generation for secondary schools, by mode					This was not identified within the scoping discussions, but can be included within a revised TA.	BCL
3.5	Trip generation retail					The level of retail will serve the development and is unlikely to generate significant trips.	none
3.6	Multi-modal assessment					This can be included within a revised TA.	BCL
4.	Vissim model						
4.1	Model specification report					This was provided within the scoping notes produced BCL. provided	none
4.2	Model validation					This has been carried out. A formal validation report can be provided.	BCL
4.3	Linsig assessment					These that are relevant have been provided. There is no need to provide	none

ID	Information / area of work	Agree (by/ date)	Agree subject to clarification (by/date)	Disagree (by whom)	Clarification required/ comments (by whom)	BCL/SCC comments	Further action (by whom / by when)
						additional assessments.	
4.4	Arcady assessment					These that are relevant have been provided. There is no need to provide additional assessments.	none
4.5	Model output and impact					The results are provided within the TA,.	none
4.6	Future year assessment					The results are provided within the TA,.	none
5. Access							
5.1	Wratting Rd access design, including pedestrian and cycle access					The design will be reviewed.	BCL
5.2	Chalkstone Way access design, including pedestrian and cycle access					The design will be reviewed.	BCL
5.3	Access assessed for HGV and bus					The Wratling Rd access points will be reviewed against HGV / bus / refuge. Chalkstone Way assessed against refuge.	BCL
5.4	Bus priority					None required on site access points or	none

ID	Information / area of work	Agree (by/ date)	Agree subject to clarification (by/date)	Disagree (by whom)	Clarification required/ comments (by whom)	BCL/SCC comments	Further action (by whom / by when)
						within site	
5.5	Location of Chalkstone Way access					A scheme needs to be shown to be deliverable within land in our control.	none
5.6	Road Safety Audits					These will be provided	BCL
5.7	Off-site junction improvements					Details are provided within the TA.	none
6	Sustainable Transport						
6.1	Bus service provision, routes and frequency					T A will be reviewed to ensure sufficient information is provided.	BCL
6.2	Pedestrian routes					T A will be reviewed to ensure sufficient information is provided.	BCL
6.3	Cycle routes					T A will be reviewed to ensure sufficient information is provided.	BCL
6.4							
6.5							
6.6							
7.	Travel Plan						

ID	Information / area of work	Agree (by/ date)	Agree subject to clarification (by/date)	Disagree (by whom)	Clarification required/ comments (by whom)	BCL/SCC comments	Further action (by whom / by when)
7.1	Content of TP to include Travel plan co-ordinator; website development; sustainable travel information pack; Personalised travel plans; TP monitoring; evaluation and support.					TP will be reviewed to ensure sufficient information is provided.	BCL
7.2	Smarter Choices					TP will be reviewed to ensure sufficient information is provided.	BCL
7.3	Bus service provision					TP will be reviewed to ensure sufficient information is provided.	BCL
8	Section 106						
8.1							
8.2							
9.	Interface with air quality and noise						
8.1	Impact on air quality in Withersfield Rd						
9.	Other						
9.1							

Appendix 7.2

Technical Note on A11 Junction

Land at Haverhill

Technical Note : Response to Highways England

29th February 2016

1 Introduction

- 1.1 Brookbanks Consulting Ltd (BCL) has been commissioned by Hallam Land Management (HLM) and Mrs Pelly to provide engineering support for a proposed residential development in Haverhill.
- 1.2 To support the application, a Transport Assessment (TA) has been produced that provided details regarding the development impact. The TA confirmed the total trips likely to be generated by the development and how these trips would be assigned to the road network. In advance of the TA, detailed discussions were held with Suffolk County Council (SCC) to agree the key principles of the assessment.
- 1.3 Subsequently, Highways England (HE) has reviewed the planning application documentation and has made observations on the TA.
- 1.4 The purpose of this note is to respond to observations of the HE on the TA.

2 Highways England Observations

- 2.1 The TA methodology was agreed through discussions with SCC. Agreement was reached in several areas which included extent of the study area. The study area concentrated on the area around Haverhill. The trip distribution identified that a proportion of the development trips are to be assigned to the A1307. The A1307 is a single carriageway road that provides for east – west trips between Haverhill to the east and the A11 to the west. The distribution reflects the importance of Cambridge which would be a centre for employment opportunities for the future residents.
- 2.2 HE identified that the distribution of trips to the west has the potential to cause a significant effect on the A11/A1307 junction. Therefore, an assessment of this junction has been carried out.

3 Trip Generation and Assignment

Trip Generation

- 3.1 In preparation of the TA, a Scoping Note was produced that confirmed the methodology to identify the number of development trips. The agreed trip generation methodology for the development was based on trip rates derived from the TRICS database.
- 3.2 The figure below quantifies the external trips.

Trips	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Housing – 2,500 units	423	1013	1435	990	618	1608
Primary Schools	48	33	81	1	4	5
Employment – 3000 sq.m	37	6	43	6	35	41

Figure 3a: Total external vehicle trips

Trip distribution

3.3 The development trips were then assigned to the road network based on Census travel to work statistics. This identified that 32.4% and 8.2% of residential / education and employment trips respectively were distributed to the west towards Cambridge. This resultant residential, education and employment trips distributed to the west are indicated below.

Trips	AM Peak			PM Peak		
	Towards Haverhill	Towards A11	Total	Towards Haverhill	Towards A11	Total
Total trips	156	339	495	322	204	526

Figure 3b: External vehicle trips to the west

3.4 The TA, following the scoping discussions with SCC, identified the distribution within the Haverhill hinterland. Following the comments from the HE, the distribution study area was extended to cover the A11 and the A1307. There are several areas between Haverhill and the A11 that could be a trip attractor, including the B1052 and Linton. Based on the Census distribution, 6.1% and 2.2% of residential / education and employment trips respectively were distributed to these areas. The traffic figures presented below identifies the residual trips towards the A11.

Trips	AM Peak			PM Peak		
	Towards Haverhill	Towards A11	Total	Towards Haverhill	Towards A11	Total
Total trips	126	275	401	261	166	427

Figure 3c: External vehicle trips to the A11

Trip Assignment

3.5 The development trips were then assigned to the A11 / A1307 junction in line with the Census distribution, as indicated below.



Figure 3d: A11 / A1307 turning counts – AM / (PM)

Assessment years

3.6 The study area has been extended to cover the A11/ A1307. Historical traffic surveys for 2015 have been obtained which has formed the basis of the assessment.

3.7 This junction was assessed for the scenarios presented in the TA.

4 Road Network Review - Junction Assessment

A11 / A1307 junction

4.1 The junction between A11 / A1307 junction is a grade separated junction, as indicated below.



Figure 4a: A11 / A1307 junction layout

4.2 This junction was assessed through the software package Arcady. The 2015 base line results are presented.

Trips	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A11 northern arm	0.750	3	0.315	1
A1307 eastern arm	0.454	1	0.479	1
A11 southern arm	0.652	2	0.557	1
A1307 western arm	0.362	1	0.376	1

Figure 4b: 2015 base year – no development

4.3 In reference to the assessment of the A11 junction, this has been considered in conjunction with HE over the past several months. To ensure that the base line model results, presented above, are reflective of existing travel patterns an assessment was carried out to confirm the average queue lengths from observed data were assessed against the baseline junction assessment output.

4.4 A capacity correction factor was included within the baseline junction assessment which resulted in a base model that reflected observed traffic conditions, and therefore is robust. The results demonstrate that in the base year the junction operates satisfactorily.

4.5 The validated model was then used to predict the revised future scenario.

4.6 The future year results, 2019 without development, are presented below.

Trips	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A11 northern arm	0.816	4	0.381	1
A1307 eastern arm	0.546	1	0.527	1
A11 southern arm	0.725	3	0.627	2
A1307 western arm	0.416	1	0.437	1

Figure 4c: 2019 future year – no development

4.7 The results demonstrate that in the base year the junction operates satisfactorily. The future year results, 2019 with development, are presented below.

Trips	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A11 northern arm	0.892	8	0.476	1
A1307 eastern arm	0.666	2	0.590	1
A11 southern arm	0.816	4	0.716	3
A1307 western arm	0.459	1	0.518	1

Figure 4c: 2019 future year – with development

4.8 The results demonstrate that the junction would require an intervention, with the highest RFC predicted to increase to 0.892. The evening peak operates within capacity thresholds. Therefore, a mitigation strategy has been considered at this location. This has included widening the northern approach arm by 1m.

4.9 This junction with the improvement has been assessed, with the results presented below.

Trips	AM Peak	
	RFC	Queue
A11 northern arm	0.852	5
A1307 eastern arm	0.666	2
A11 southern arm	0.816	4
A1307 western arm	0.459	1

Figure 4e: 2019 future year with junction improvement – with development

4.10 The results presented above, indicates that the impact of the development can be mitigated through minor widening. The extent of the improvement reflects the increase in trips on the northern arm. The increase in trips is predicted to be 19, equivalent to 1 trip every three minutes.

4.11 This demonstrates that this low cost scheme is sufficient to meet the requirements of the HE Circular 02/2013. However, it is considered that the impact of the development will be insignificant. The RFC does increase above the 0.850 threshold but the predicted queuing only increases to eight vehicles, which is not considered severe.

5 Summary

5.1 This note has been prepared in response to queries raised regarding the impact of the development on Strategic Road Network. The impact of the development will be centred on the A11 / A1307 junction.

5.2 The likely traffic increase at this junction has been determined based on the agreed methodology reported in the Transport Assessment. The assessment of the junction identifies that the junction is likely to experience a minor increase in delay and congestion in the morning peak.

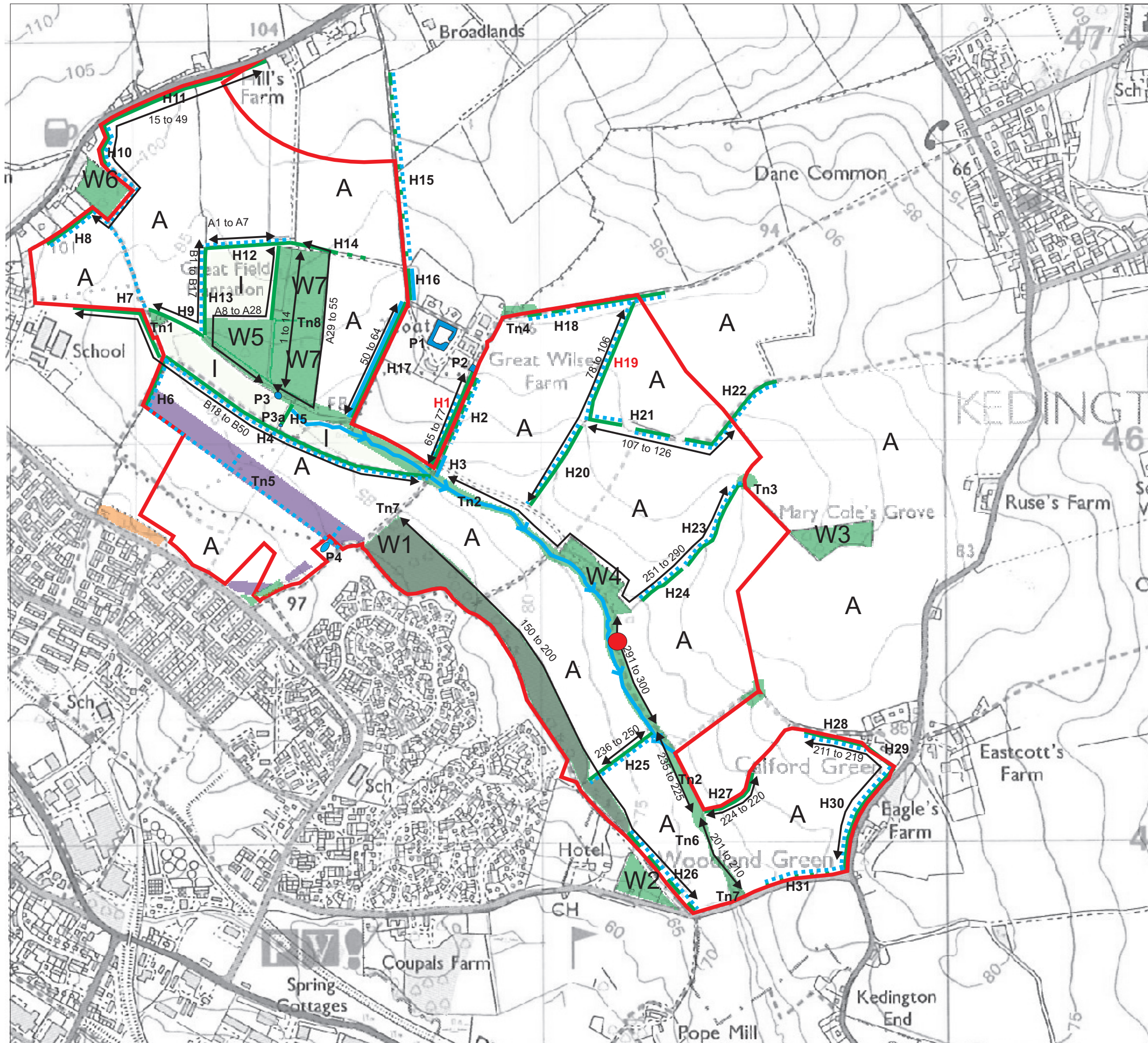
5.3 The junction assessments have demonstrated that localised widening will mitigate the impact of the development.

- 5.4 However, it is considered that the impact of the development will be insignificant. The RFC does increase above the 0.850 threshold but the predicted queuing only increases to eight vehicles, which is not considered severe.
- 5.5 This note demonstrates that the impact of the development can be accommodated. Therefore, the development can be supported from a highways standpoint.

Appendix 9.1

Revised Phase One

Habitat Plan



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- Site Boundary
- A Arable Fields
- Semi-Natural Broadleaf Woodland
- Mixed Broadleaved / Conifer Woodland
- I Improved Grassland
- New Plantation Woodland
- Amenity Grassland
- TN1 Target Note
- Hedgerow with Reference
- Hedgerow of importance under REGS
- P2 Pond
- Watercourse
- Dry Ditch
- Wet Ditch
- Dormice Tube Locations
- Dormice Nest Location

Hallam Land Management Ltd



Great Wilsey Park,
 Haverhill, Suffolk

PHASE ONE HABITAT & PROTECTED SPECIES PLAN
 APPENDIX 9.1



Not to scale KAW / DAH 09.05.2016

Figure 9.2 5055-E-9.2

Appendix 9.2

Badger Report May 2016



Hallam Land Management Ltd
Great Wilsey Park, Haverhill, Suffolk

BADGER SURVEY REPORT

Appendix 9.2

CONFIDENTIAL DOCUMENT (Not to be Released)

May 2016

FPCR Environment and Design Ltd

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Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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-	Draft 1	DAH / 1.06.15	DAH / 1.06.15
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2.0 LEGISLATION.....4

3.0 METHODOLOGY.....4

4.0 RESULTS6

5.0 DISCUSSION AND RECOMMENDATIONS7

FIGURES

Figure 1: Habitats & Badger Evidence Plan

1.0 INTRODUCTION

- 1.1 The following report has been compiled by FPCR Environment and Design Ltd on behalf of Hallam Land Management Ltd. It provides details of badger *Meles meles* surveys which were undertaken on land at Great Wilsey Farm, Haverhill, Suffolk (central OS grid reference TL 689461).
- 1.2 The site is located within an arable landscape, on the north-eastern outskirts of Haverhill and can be accessed via a number of access points from the A143 to the north-west, Chalkstone way at the south and Sturmer Road, Kedington to the east. Arable land continues northwards beyond the site with roads, residential housing and gardens to the south and east. The site can be accessed via a network of public footpaths that crisscross the site.
- 1.3 The site is dominated by arable and pasture fields with species-rich field margins and hedgerows. Mixed and broad-leaved plantation woodland blocks are present as well as areas of new and established tree planting. Small copses and tree lines are present at field boundaries. The majority of the hedgerows were considered to be of nature conservation importance and the field margins comprised semi-improved neutral grassland. Two ponds and a network of dry ditches were present within the site boundary.
- 1.4 Surveys were undertaken throughout 2014 and updated during additional ecological works during the 2015 survey season. A further survey was undertaken on the 17th March 2016, as a result of comments made by the Suffolk Wildlife Trust as to regards the sett classification and the possibility of two clans and records of a badger sett within woodland W4 as recorded by the Suffolk Biological Records Centre.
- 1.5 During the initial surveys in 2015 two main setts were identified within the site. A main sett occurred on the eastern edges of Great Field Plantation; this had two outlier setts associated with the southern edge of the plantation. The second badger sett occurred along the riparian habitat which runs through the middle of the site, this consisted of seven holes with one main sett located on the western banks on the ditch in the south west. These showed evidence of recent activity during 2015, however during 2016 the sett within Great Field Plantation was not as clear to identify and a number of holes were disused and covered with debris.

2.0 LEGISLATION

- 2.1 Badgers are protected under the Protection of Badgers Act 1992. This act is based on the need to protect badgers from baiting and deliberate harm or injury and makes it an offence to:
- Wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempted to do so;
 - To intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access routes.
- 2.2 A sett is defined as:
- “Any structure or place that displays signs indicating current use by a badger”
- 2.3 Work that disturbs badgers whilst occupying a sett is illegal without a license from Natural England; badgers may be disturbed by work near the sett even if there is no direct interference or damage to the sett.
- 2.4 However, recent guidance from Natural England recommends that the potential for such disturbance might not be as great as originally assumed due to the relatively high tolerance level of badgers. Whether disturbance will be caused should take into account the sett characteristics, current usage and proposed extent of works with the need for a license being assessed on a site-by-site basis.
- 2.5 Licenses only allow works to be carried out between July and November inclusive.

3.0 METHODOLOGY

Desk Study

- 3.1 Consultations for existing ecological data were sent to the Suffolk Biological Records Centre.
- 3.2 Further inspection, using colour 1:25 000 OS base maps (www.ordnancesurvey.co.uk) and aerial photographs from Google Earth (www.maps.google.co.uk), was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.

Field Surveys

- 3.3 The standard methodology as recommended by Harris, Creswell and Jefferies (1989)¹ was followed to complete a thorough search for evidence which would indicate the presence of badgers both on the site and locally, including the identification of:
- Setts: including earth mounds, evidence of bedding and runways between setts;
 - Latrines: often located close to setts, at territory boundaries or adjacent to favoured feeding areas
 - Prints and paths or trackways
 - Hairs caught on rough wood or fencing

¹ Harris, Cresswell and Jeffries (1991) (*Report*) *Surveying Badgers*. The Mammal Society, Bristol.

- Other evidence: including snuffle holes, feeding and playing areas and scratching posts

3.4 Where setts are found, their status and level of activity is noted. Sett status is broadly categorised as follows:

- Main sett – usually continuously used with many signs of activity around, a large number of holes and conspicuous spoil mounds
- Annexe sett – usually located close to a main sett and connected to it by well used paths. Annexe's may not be continuously occupied
- *Subsidiary sett* – lesser used setts comprising a few holes and without associated well-used paths. Subsidiary setts are not continuously occupied
- *Outlier sett* – one or two holes without obvious paths. These are used sporadically.

3.5 Level of activity is described as:

- Well used – clear of debris, trampled soil mounds and obviously active, with signs of activity such as presence of prints, dislodged guard hairs around the entrances;
- *Partially used* – some associated debris or plants at the entrance. Could be used with minimal excavation and usually with signs of activity within the vicinity, for example, badger pathways;
- *Dis-used* – partially or completely blocked entrances

3.6 Surveys were undertaken in conjunction with reptile and GCN newt surveys in 2014 and 2015, this meant that a more accurate assessment could be made of the sites importance to the local badger population over a longer duration. The first surveys were undertaken April 2014, with the last surveys occurring during bat transects in May 2015. A updated surveys was undertaken on 17th March 2016.

4.0 RESULTS

Desk Study (Figure 1)

- 4.1 Suffolk Biological Records Centre had no badger records within the search area.

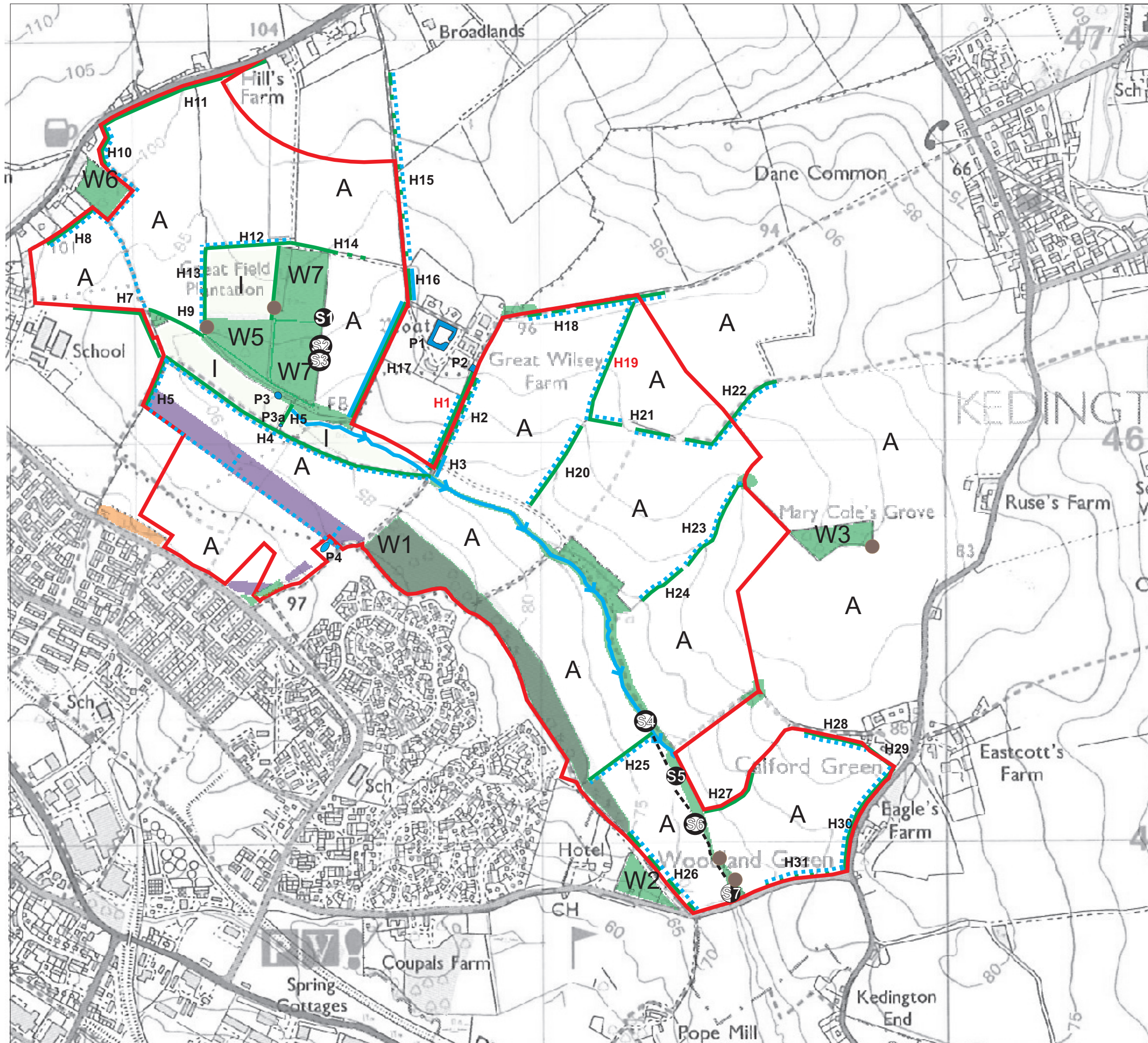
Field Survey (Figure 1)

- 4.2 Two main badger setts (S1 & S5) and a number of partially used setts were identified within the site boundary during the 2015 surveys. Approximately seven holes were recorded along the southern stretch of the riparian habitat running through the middle of the site, concentration of holes were found within the banks of the stream denoted by Setts S4 to S7 (Figure 1). The majority of the entrances were within the western bank S5, with three entrances within the field margin. All holes had spoil mounds, showed signs of recent excavations and discarded bedding. This was considered to be a main sett due to the activity levels. A number of singular holes were seen along the length of this stream, which were outliers. Another sett (S7) with four entrances was identified further south along the stream within the small block of plantation woodland at the southern boundary. Here two of the holes showed recent signs of excavation and the other two contained leaf litter indicating they had not recently been in use. This was considered to be a subsidiary sett. Two large latrine pits were identified within this woodland, which had historical and recent deposits.
- 4.3 During surveys in 2016 setts S4 to S6 looked to be still active with a number of entrances clear of any debris with well-trodden pathways; there was also evidence of fresh bedding material. Sett S7 in the south east corner did not look to be currently active.
- 4.4 Three further setts were identified on the eastern edge of Great Field Plantation in 2015; the largest of these comprised five active holes and latrines, due to the activity it was classified as a main sett. Two outlier setts comprising single and two active holes were identified a few meters south of the main sett, these had no linkage pathways and only consisted of a few holes. In 2016 the survey found that these holes that made up this sett were now disused with debris within them, the site also had a lack of topographical features within which sett locations are normally associated with. Based on the 2016 surveys this was no longer used as a badger sett; although there was evidence of snuffle holes and a large recently used latrine on the edge of woodland W5.

5.0 DISCUSSION AND RECOMMENDATIONS

- 5.1 A main sett occurred on the eastern edges of Great Field Plantation, this had two outlier setts associated with it further south, not currently linked by any badger runs. The framework plan suggests that an access road will run along the eastern edge of this plantation; a suitable buffer will be created for the Root Protection Areas (RPA) for the trees, this will incorporate areas of grassland which continue around the plantation and link to the GI in the south enabling continued movement around the site. This buffer will also ensure that disturbance from construction works will be limited, where there will be no direct damage from the construction of the road.
- 5.2 The road proposed in this location will only be for access to residential plots, so traffic will be at low speeds, ensuring that road collisions are unlikely. It is possible that residents may use paths through the Great Field Plantation and come in close proximity to the sett, this is however a common occurrence in the countryside. It is proposed that a hedgerow planting be undertaken around the wider proximity of this sett, providing a screen which will deter the public and dogs.
- 5.3 The main sett located along the riparian habitat occurs within the banks and are out of view apart from where they extend into the field. As GI and public rights of way runs near the sett locations, it is proposed that structural planting be undertaken at these locations so the sett is further screened, along with a deviation of the footpath way from the banks at this point. Current framework plans provide allotments in the south east of the site, near these badger sett locations; therefore to avoid badgers using such areas for foraging badger proof fencing should be installed. The small woodland compartment in the south east, where a subsidiary sett S7 was recorded in 2015, but disused in 2016, if reused will be located away from any public paths so disturbance should be limited; however structural hedgerow planting will take place around the peripheries of this wood, to restrict access further by the public.
- 5.4 It is currently thought that the activity within the site represents a single clan, that are utilising woodland habitats which provide better quality of foraging compared to arable land and pastures, as earthworm numbers are highest (Johnson et al., (2000)²). It is envisaged that further surveys in terms of baiting will not be required, as the fundamental results of the surveys have identified one main sett and that badgers are using the site; which has therefore provided input into the landscape design whereby all setts are retained and linkages can occur between the north and south through GI.
- 5.5 The current badger sett is located within the GI of the site, and suitable buffers will be installed around it to ensure that they are screened from disturbance. Areas of foraging is thought to concentrate on areas of woodland, which will all be retained within the design and linkages continued through the GI. The main access roads into the site all run to the south of the riparian and woodland habitats, therefore avoiding habitats used by badgers. There will be a few areas where GI is bisected by smaller roads, here traffic speeds will be limited, therefore collisions are unlikely. There will be a considerable amount of GI created through the site which will benefit badgers, this will include additional woodland planting and large grassland areas to the south east.

² Johnson, D. D. P., D.W. Macdonald, and A.J. Dickman. 2000. An analysis and review of models of the sociobiology of the Mustelidae. *Mammal Review* 30: 171-196.



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- Site Boundary
- A Arable Fields
- Semi-Natural Broadleaf Woodland
- I Semi-Improved Grassland
- New Plantation Woodland
- Amenity Grassland
- Mixed Broadleaved / Conifer Woodland
- Hedgerow with Reference
- Hedgerow of importance under REGS
- P2 Pond
- ▶ Stream
- Dry Ditch
- Wet Ditch
- S1 Main Badger Sett
- S2 Subsidiary Badger Sett
- S3 Outlier Badger Sett
- Latrine
- Potential Badger Runs

fpcr

Hallam Land Management Ltd

Great Wilsey Park,
Haverhill, Suffolk

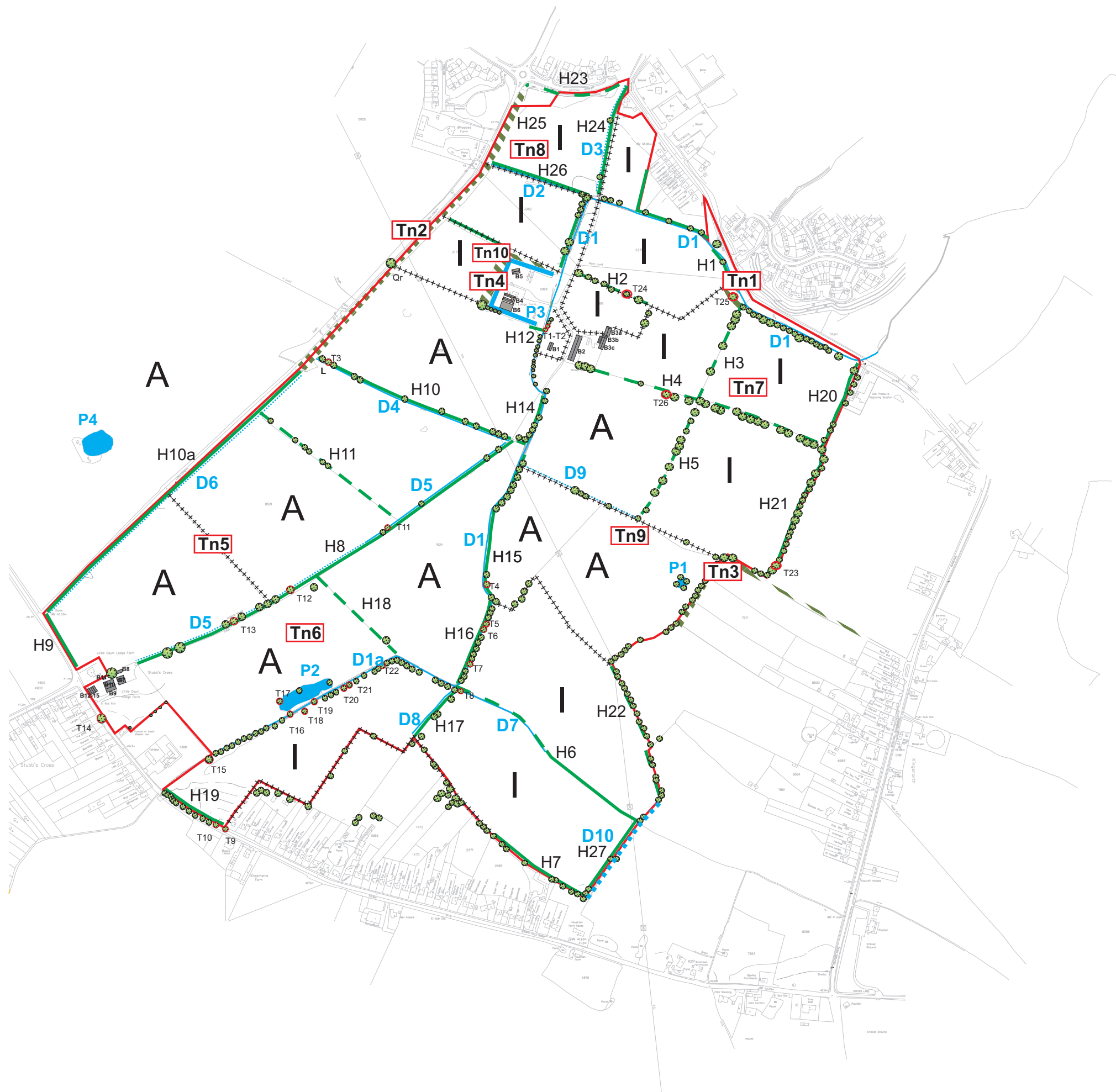
HABITATS & BADGER EVIDENCE PLAN












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I

Figure 1

5055-E-01



-  Site Boundary
-  Arable Fields
-  Hedgerows / Hedgerows with large gaps
-  Ditch / Dry Ditch
-  Broadleaved Woodland
-  Improved Grassland
-  Approximate Location of Individual Trees
-  Trees with Possible Bat Potential
 L - Low Potential
 M - Medium Potential
 H - High Potential
-  Buildings with Reference
-  Water body with Reference
-  Target Notes

 Hallam Land Management Ltd
 Court Lodge Farm
 Ashford, Kent
 PHASE HABITAT ONE PLAN

Not to Scale @ A3 LSN 23.07.2015
 **Figure 2** 3002-E-02

Appendix 9.3 Breeding Bird Report



Hallam Land Management Ltd

GREAT WILSEY PARK, HAVERHILL

Breeding Bird Survey Report

Appendix 9.3

March 2016

FPCR Environment and Design Ltd

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-	Draft 1	JEC / 20.08.15	DAH / 22.08.15
	Draft	NC / 21.03.16	JEC / 21.03.16

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1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment and Design Ltd on behalf of Hallam Land Management Ltd. It provides results of breeding bird surveys undertaken in 2015 on Great Wilsey Park, Haverhill, Suffolk (known hereafter as 'the application site' or 'the site').
- 1.2 The proposed development site covers approximately 168.34ha to the north east of Haverhill (Figure 1) and is mainly laid out for arable farming, interrupted by blocks of deciduous and mixed woodland.
- 1.3 The northern and southern boundaries form the sides of a valley within the site, created by a watercourse that flows into the proposed development site from the north west. The watercourse is a tributary of the River Stour, located approximately 1km to the north west of the proposed development site.
- 1.4 The proposed development site is bound by the A143 Haverhill Road to the northwest; open fields delineated by drainage ditches and Little Wrattling hamlet to the north; hedgerows and open fields to the northeast; B1061 Sturmer Road and Calford Green hamlet to the east; Coupals Road to the southeast; the edge of Haverhill to the southwest; Chalkstone Way, a secondary school and houses on the A143 Haverhill Road to the west.
- 1.5 The proposed development will comprise approximately 2,500 residential units, local employment uses, education, community and leisure facilities, public open space and recreation facilities.

Survey Objectives

- 1.6 The objectives of the survey were to:
- Identify the presence and distribution of birds on the site in the breeding season;
 - Assess the conservation importance of the site in relation to local populations;
 - Evaluate the importance of local bird populations and their habitat requirements.

2.0 LEGISLATION & GUIDANCE

The Wildlife & Countryside Act 1981 (as amended)

- 2.1 The Wildlife and Countryside Act 1981 (as amended) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions to recklessly or intentionally:
- Kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird while in use or being built;

- Take or destroy the egg of any wild bird.

2.2 Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are specially protected at all times.

Natural Environment and Rural Communities (NERC) Act 2006

2.3 A number of birds feature on the Natural Environment and Rural Communities (NERC) Act 2006, Section 41 (S41) as species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Non-Statutory Guidance

2.4 In addition to statutory protection, some bird species are classified according to their conservation status, such as their inclusion on the Red and Amber lists of Birds of Conservation Concern (BoCC) in the UK¹:

- Red list (high conservation concern) species are those that are Globally Threatened according to IUCN criteria; those whose population has declined rapidly (50% or more) in recent years; and those that have declined historically and not shown a substantial recent recovery.
- Amber list (medium conservation concern) species are those with an unfavourable conservation status in Europe; whose population or range has declined moderately (between 25% and 49%) in recent years; whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
- Green list (low conservation concern) species fulfil none of the above criteria.

Biodiversity Action Plan

2.5 The UK Biodiversity Action Plan (UKBAP), published in 1994, was the UK Government's response to the Convention on Biological Diversity, which the UK signed up to in 1992 in Rio de Janeiro. The UKBAP described the biological resources of the UK and provided detailed plans for conservation of these resources.

2.6 In 2012, the UKBAP was replaced by the *UK Post-2010 Biodiversity Framework (2012)*². The result of this change is that the BAP process has been devolved to local level with each county deciding its own way forward. Suffolk made the decision in June 2013 to continue to support the Suffolk BAP, still enshrined in law through the NERC Act 2006, and also in planning policy through the National Planning Policy Framework and National Policy Statements.

¹ Eaton, M.A. *et al.* 2009. Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 102:296-341

² <http://jncc.defra.gov.uk/page-6189>. All cited websites in this report accessed August 2015.

- 2.7 A full list of Suffolk Local Biodiversity Action Plan (LBAP) bird species is provided in Appendix A.

3.0 METHODOLOGY

Field Survey Methodology

- 3.1 The survey methodology employed was broadly based on that of territory mapping (Bibby *et al*, 1992) as used for the British Trust for Ornithology (BTO) Common Bird Census. Standard BTO species codes and symbols for bird activities were used to identify birds and denote activity, sex and age where appropriate. The criteria used in the assessment of breeding birds has been adapted from the standard criteria proposed by the European Ornithological Atlas Committee³ and are grouped into four categories, each with their own survey codes:

Confirmed breeder

- DD – distraction display or injury feigning
- UN – used nest or eggshells found from this season
- FL – recently fledged young or downy young
- ON – adults entering or leaving nest-site in circumstances indicating occupied nest
- FF – adult carrying faecal sac or food for young
- NE – nest containing eggs
- NY – nest with young seen or heard

Probable breeder

Evidence accumulated during the survey indicates that the bird species is breeding on site.

- P – pair in suitable nesting habitat
- T – permanent territory (defended over at least 2 survey occasions)
- D – courtship and display
- N – visiting probable nest site
- A – agitated behaviour
- I – brood patch of incubating bird (from bird in hand)
- B – nest building or excavating nest-hole

Possible breeder

Evidence accumulated during the survey indicates that the bird species could be breeding on site, but the evidence is less conclusive than that obtained for probable breeders.

- H – observed in suitable nesting habitat
 - S – singing male
- Non-breeder*

- F – flying over
- M – migrant
- U – summering non-breeder
- UH – observed in unsuitable nesting habitat

- 3.2 To provide a reasonable level of accuracy for determining the population status of the breeding birds on the site, three surveys were undertaken in the main bird breeding season (Apr-Jun) in 2015 between 05.00 and 11.00am.

³ European Ornithological Atlas Committee, 1979. Categories of Breeding Bird Evidence. EOAC.

- 3.3 A route was mapped out prior to the surveys being undertaken, paying particular attention to any linear features, such as hedgerows and tree lines, and natural features such as areas of scrub and waterbodies. Bird surveys were not undertaken in unfavourable conditions such as heavy rain or strong wind, which may negatively affect the results.

Assessment Methodology

- 3.1 The conservation value of bird populations has been measured using two separate approaches: nature conservation value and conservation status. The IEEM guidance on ecological impact assessment assesses nature conservation value within a geographical context. To attain each level of value, an ornithological resource or one of the features (species population or assemblage of species) should meet the criteria set out in Table 1 below. In some cases, professional judgement may be required to increase or decrease the allocation of specific value, based upon local knowledge.

Table 1: Definition of Terms Relating to Nature Conservation Value

Nature Conservation Value	Examples of Selection Criteria
International	A species which is part of the cited interest of an SPA and which regularly occurs in internationally or nationally important numbers. A species present in internationally important numbers (>1% of international population).
National	A species which is part of the cited interest of a SSSI and which regularly occurs in nationally or regionally important numbers. A nationally important assemblage of breeding or over-wintering species. A species present in nationally important numbers (>1% UK population). Rare breeding species (<300 breeding pairs in the UK).
Regional	Species of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006), which are not covered above, and which regularly occurs in regionally important numbers. Species present in regionally important numbers (>1% of regional population). Sustainable populations of species which are rare or scarce within a region. Species on the BoCC Red List and which regularly occurs in regionally important numbers.
County	Species of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006), which are not covered above and which regularly occurs in county important numbers Species present in county important numbers (>1% of county population). Sustainable populations of species which are rare or scarce within a county, or listed as of principal importance under S41 of the NERC Act. A site designated for its county important assemblage of birds (e.g. a SINC Site). Species on the BoCC Red List and which regularly occur in county important numbers.

Nature Conservation Value	Examples of Selection Criteria
District	<p>Species of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006), which are not covered above, and are rare in the locality or in the relevant Natural Area profile.</p> <p>Species present in numbers just short of county importance.</p> <p>Sustainable populations of species which are rare or scarce within the locality.</p> <p>A site whose designation falls just short for inclusion for its county important assemblage of birds (e.g. a SINC Site).</p> <p>Other species on the BoCC Red List and which are considered to regularly occur in district important numbers.</p>
Local	<p>Other species of conservation interest (e.g. all other species on the BoCC Red and Amber List and listed as of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006) which are not covered above) regularly occurring in locally sustainable populations.</p>
Site	<p>All other BoCC Green-listed common and widespread species.</p>

4.0 RESULTS

Conservation Status

4.1 A total of 49 species (Appendix A) were recorded within the site boundary during the surveys, including 19 (Table 2) that feature on one or more of the following lists:

- NERC species of principal importance;
- UK BoCC Red and Amber;
- Suffolk LBAP.

Table 2: NERC, UK BoCC Red- and Amber-Listed and Suffolk LBAP Species recorded at the Application Site during Breeding Bird Surveys 2015 and their Recent Breeding Status in Suffolk

Species	Conservation Status	Breeding status on site	Recent Breeding Status in Suffolk ⁴
Mallard	Amber	Possible	Very common resident
Kestrel	Amber	Possible	Common resident
Black-headed gull	Amber	Non-breeder	Very common resident
Stock dove	Amber	Probable	Fairly common resident
Swift	Amber, LBAP	Non-breeder	Very common summer visitor
Skylark	Red, NERC, LBAP	Probable	Common resident
House martin	Amber	Non-breeder	Very common summer visitor
Starling	Red, NERC, LBAP	Possible	Very common resident
Song thrush	Red, NERC, LBAP	Probable	Fairly common resident
Mistle thrush	Red	Possible	Fairly common resident
Willow warbler	Amber	Probable	Common summer visitor
Dunnock	Amber, NERC, LBAP	Probable	Very common resident
House sparrow	Red, NERC, LBAP	Non-breeder	Common resident
Yellow wagtail	Red, NERC, LBAP	Possible	Summer visitor
Meadow pipit	Amber	Possible	Common resident
Linnet	Red, NERC, LBAP	Probable	Common summer visitor

⁴ Suffolk Ornithologists' Group (2014): Suffolk Birds 2013; Vol.63. The following definitions are given as a guide to relative species status: Very common – occurs in large numbers in suitable habitat and season; Common – occurs regularly or widely distributed in suitable habitat and season; Fairly common – occurs in small numbers in suitable habitat and season; Scarce – one or two records each year or restricted to specific habitats.

Species	Conservation Status	Breeding status on site	Recent Breeding Status in Suffolk ⁴
Bullfinch	Amber, NERC, LBAP	Possible	Common resident
Yellowhammer	Red, NERC, LBAP	Probable	Common resident
Reed bunting	Amber, NERC, LBAP	Probable	Common resident

4.2 A further twenty-five green-listed species of low conservation concern and two unlisted (introduced) species of no conservation concern were recorded.

Breeding Status

4.3 Eight low/no conservation concern species were confirmed as breeding onsite: woodpigeon *Columba palumbus*, great-spotted woodpecker *Dendrocopos major*, blue tit *Cyanistes caeruleus*, great tit *Parus major*, long-tailed tit *Aegithalos caudatus*, wren *Troglodytes troglodytes*, robin *Erithacus rubecula* (all Green-listed) and red-legged partridge *Alectoris rufa* (unlisted).

4.4 Twenty-three species were considered probable breeders, including the following notable species:

- NERC/Red/LBAP – skylark *Alauda arvensis*, song thrush *Turdus philomelos* and yellowhammer *Emberiza citrinella*;
- NERC/Amber/LBAP – dunnock *Prunella modularis* and reed bunting *Emberiza schoeniclus*;
- Amber – stock dove *Columba oenas* and willow warbler *Phylloscopus trochilus*.

4.5 Eighteen species were considered possible breeders (12) or non-breeders (6).

5.0 DISCUSSION AND EVALUATION OF IMPACTS

Bird Assemblage Value

5.1 The species recorded on site are typical of the main habitats available on site, and are particularly characterised by notable species of open arable farmland and field margins (e.g. kestrel, black-headed gull, stock dove, swift, skylark, yellow wagtail, meadow pipit, linnet, yellowhammer, reed bunting); woodland (stock dove, song thrush, mistle thrush, willow warbler, dunnock) hedgerows and trees (song thrush, dunnock, linnet, yellowhammer, bullfinch, reed bunting); ponds (mallard) and the urban fringe (swift, starling, house martin, song thrush, dunnock, house sparrow).

5.2 All of the 49 recorded species are fairly common to very common resident or summering species in Suffolk and the UK, and no significant populations were registered. None of the 19 notable species were confirmed breeding species on site.

5.3 The application site is considered to be of **Local** nature conservation value in the breeding season for the 19 notable species listed in Table 2. For the remaining 28

green-listed and two unlisted species, the site is assessed as being of **Site** nature conservation value in the breeding season.

Impacts of Habitat Loss/Change

- 5.4 The impact on breeding bird species arising from the potential effects of development is based upon an understanding of each species' ecological requirements, the type of development, number of birds recorded on site, their nature conservation criteria based on legislation and current guidance (e.g. Red and Amber listed Birds of Conservation Concern 3 (2009); S41 NERC Act priority species and Local BAP species), their local status according to the *Suffolk 2013 Bird Report* and professional judgement.
- 5.5 The species recorded on site that are arguably the most vulnerable to impacts are the 12 notable species that appear on the BoCC Red list and/or are listed as priority species for nature conservation under S41 of the NERC Act or feature on the Suffolk LBAP (swift, skylark, starling, song thrush, mistle thrush, dunnock, house sparrow, yellow wagtail, linnet, bullfinch, yellowhammer and reed bunting).
- 5.6 The habitat requirements, species account, and nature conservation value of these 12 species are discussed further (Table 3). In addition, residual impacts arising from the proposed development in terms of habitat loss / change have been assessed against the development proposals set out in the Illustrative Masterplan Rev B (August 2015).

Table 3: Habitat Requirements, Account, Nature Conservation Value and Impact Assessment of BoCC Red-listed, NERC Species of Principal Importance and/or Suffolk LBAP Species recorded during Breeding Bird Surveys 2015 at the Application Site

Species <i>Consvn. Status</i>	Breeding Habitat Requirements ⁵	Species Account ⁶ (Counts Apr;May;Jun)	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ⁷
Swift <i>Amber LBAP</i>	Summer visitor. Breeds almost exclusively in buildings, especially older ones that provide suitable access to roof space.	(0;0;2) Two birds were observed foraging high over the site's western edge in June only. Non-breeding species.	None anticipated	Swift nest boxes should be incorporated into the project design on suitable buildings. This will provide new nesting habitat for the species.	Minor Positive
Skylark <i>NERC Red LBAP</i>	Ground nesting birds favouring open farmland habitats where short, grassy or sparse vegetation provides nesting cover and foraging opportunities	(10;14;15) Up to ten territories (denoted by singing males) in open arable farmland fields across the northern section of the site on all surveys. Probable breeding species.	Loss of probable breeding habitat (arable).	Skylarks are reluctant to use areas that are subject to high levels of regular human disturbance. Areas of grassland are proposed to buffer Calford Green in the east from development; this has the potential to mitigate for some of the lost territories but not all and its suitability as breeding habitat will depend on several factors, including disturbance levels and how open it is. As such, this open-arable field specialist is likely to be mostly lost to development, given the loss of arable habitat and a reduction of an open-field structure.	Minor Negative

⁵ Snow, D. W. & Perrins, C. M. (1998): The Birds of the Western Palearctic Concise Edition

⁷ Assumes that any suggested or proposed mitigation, compensation or enhancements are undertaken in full

Species <i>Consvn. Status</i>	Breeding Habitat Requirements ⁵	Species Account ⁶ (Counts Apr;May;Jun)	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ⁷
Starling <i>NERC</i> <i>Red</i> <i>LBAP</i>	During breeding season will concentrate where suitable holes are available, either naturally or in apertures of buildings. Invertebrate food fed to young. Forages mainly on the ground in open areas of short grass or sparse vegetation, e.g. cereal stubble, farmyards.	(3;1;5) Adult birds were recorded foraging in arable grassland in the south and west of the site and taking food off-site to existing residential areas along Haverhill Rd and Chalkstone Way, where breeding was likely. Possible breeding species.	Loss of foraging habitat (arable).	Any open space habitats with the GI proposals, particularly in the east towards Calford Green, will continue to provide suitable foraging opportunities for the species. Starlings will also readily breed in residential areas, particularly once gardens mature. Starling nestboxes on suitable trees and buildings should be incorporated into the project design.	Minor Positive
Song thrush <i>NERC</i> <i>Red</i> <i>LBAP</i>	Birds can exist anywhere where trees or bushes accompany open grassland or patches of dead leaves supporting ample invertebrates. Will readily take to hedgerows, railway embankments and small gardens.	(3;3;3) At least two males were singing on all surveys in woodlands and hedgerow trees. Probable breeding species.	None anticipated (woodland and trees to be retained).	Areas in which song thrush was recorded (woodland and trees) are to be retained. Further tree and hedgerow planting within the GI will likely increase the overall useable habitat available to the species and provide a movement corridor through the site. Song thrushes will also readily inhabit residential areas, particularly once established.	Minor Positive

Species <i>Consvn. Status</i>	Breeding Habitat Requirements ⁵	Species Account ⁶ (Counts Apr;May;Jun)	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ⁷
Mistle thrush <i>Red</i> <i>NBoCC</i>	Found almost everywhere except the highest, barest ground. Commonly in woodland, parkland and gardens. Requires open woodland and other places where there are tall trees for nesting and song posts, and also areas of short grass for feeding. Varied diet including fruit, seeds, worms, insects, molluscs and spiders.	(1;0;0) A single bird was recorded close to the woodland edge along the south-western site boundary during the first survey only. Possible breeding species.	Loss of limited foraging habitat (arable and grassland)	Suitable nesting habitat for the species is to be retained in the development proposals including woodland and trees. Strategic planting and grassland provision throughout the site will compensate for the loss of foraging particularly where associated with nesting habitat. However, the number of mistle thrush recorded was unexceptional and this suggests that the site is not overly important to the local population.	Negligible
Dunnock <i>NERC</i> <i>Amber</i> <i>LBAP</i>	Commonly invades a wide variety of scrub grown situations. Has adapted to field hedgerows, farms, railway embankments, parks, gardens and vacant urban land. Feeds mainly on insects.	(6;3;7) Recorded on all surveys in intact hedgerows across the site; with a max of 7 birds present in June. Probable breeding species.	Minor loss of potential nesting habitat (e.g. short hedgerow sections, where access roads are proposed).	Much of the hedgerow habitat will be retained and enhanced with native species planting. Further planting will continue to provide a suitable breeding resource for this species. Dunnocks will also readily inhabit residential areas, particularly once established.	Minor Positive

Species <i>Consvn. Status</i>	Breeding Habitat Requirements ⁵	Species Account ⁶ (Counts Apr;May;Jun)	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ⁷
<p>House sparrow</p> <p><i>NERC</i> <i>Red</i> <i>LBAP</i></p>	<p>Often associated with man, will avoid closed or dense vegetation, and except for seasonal foraging in corn fields and other crops, will usually avoid open terrain lacking in shrubs, trees, and other cover.</p>	<p>(up to 5 colonies)</p> <p>Five house sparrow colonies were recorded foraging in hedgerows, field margins and woodland edge on the site boundaries adjacent to existing residential areas: 1 colony in the NW site boundary associated with houses and gardens along Haverhill Rd and Bladon Way; 1 colony associated with the houses and gardens of Calford Green and up to 3 colonies on the SSE boundary associated with houses and gardens along Coupals Rd, Marcus Close and Shetland Way. A 6th colony was also present at Great Wilsey Farm, just outside of the site boundary.</p> <p>Non-breeding species.</p>	<p>Minor loss of foraging resource (hedgerow and field margin habitats).</p>	<p>House sparrows were not breeding onsite, but in the nearby houses and farm complex. The species will readily habituate to new residential areas.</p> <p>The retention of boundary trees and hedgerows combined with new residential gardens and buildings will support the colonies currently on the peripheries of the site and increase breeding and foraging opportunities.</p> <p>House sparrow nestboxes should be incorporated into the project design in order to augment this.</p>	<p>Minor Positive</p>

Species <i>Consvn. Status</i>	Breeding Habitat Requirements ⁵	Species Account ⁶ (Counts Apr;May;Jun)	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ⁷
Yellow wagtail <i>NERC</i> <i>Red</i> <i>LBAP</i>	Summer visitor. Found in lowland pastures, water meadows, marshes, riversides and arable fields.	(0;1;0) A female was calling in an arable field in the easternmost section of the site in May; not recorded in April or June. Possible breeding species.	Loss of potential breeding habitat (arable grassland).	Any open space habitats with the GI proposals, particularly the greenspace in the east, will continue to provide suitable foraging opportunities for the species. The single bird recorded suggests that the site is not important for yellow wagtails.	Negligible
Linnet <i>NERC</i> <i>Red</i> <i>LBAP</i>	Nests mainly on gorse-covered commons, rough ground where there are low bushes and scrub, bushy places on open farmland, hedges, young plantations and rural gardens.	(1;2;4) Single birds were recorded in April and May, and two pairs in June, associated with hedgerows surrounding arable fields in the northern half of the application site where breeding was likely. Probable breeding species.	Loss of nesting (hedgerow) and foraging habitats (arable fields and their margins).	Much of the hedgerow will be retained and enhanced. However, linnets are reluctant to use areas that are subject to high levels of regular human disturbance. The proposed eastern green buffer will mitigate for some of the lost foraging habitat but its suitability will depend on disturbance levels. An area of arable weeds, an important food source, should be encouraged to grow within the grassland GI. This open-farmland species is likely to be mostly lost to development, given the loss of arable habitat and a reduction of an open-field structure; however, the low numbers recorded suggests that the site is not overly important for the local linnet breeding population.	Negligible

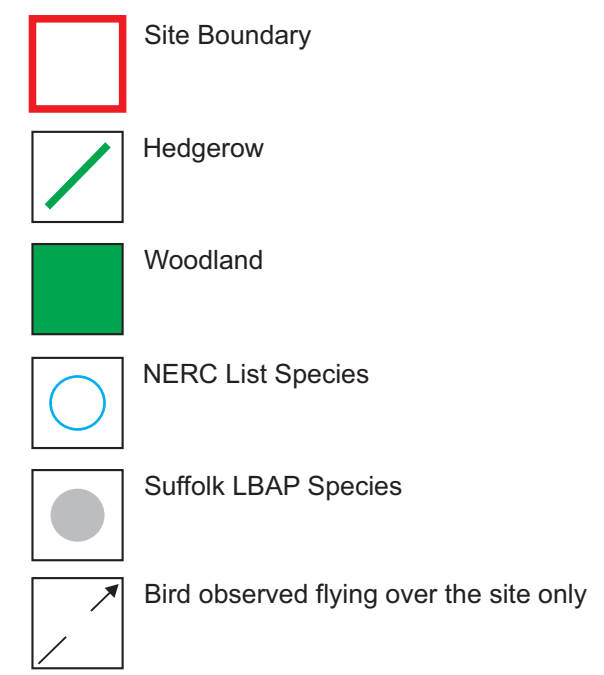
Species <i>Consvn. Status</i>	Breeding Habitat Requirements ⁵	Species Account ⁶ (Counts Apr;May;Jun)	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ⁷
Bullfinch <i>NERC</i> <i>Amber</i> <i>LBAP</i>	Nests in thick woodland undergrowth, thickets, shrubby areas and thick hedges. Many of these habitats occur on lowland farmland. Also visits gardens and orchards.	(0;0;1) A male was calling from a tree in hedgerow H5 south of Great Wilsey Farm in June; not recorded in April or May. Possible breeding species.	Minor loss of nesting and foraging resource (hedgerow).	Any newly-planted native tree and hedgerow species should include bud-, berry- and fruit-bearing species. Once mature, residential gardens will be used by bullfinches.	Negligible
Yellowhammer <i>NERC</i> <i>Red</i> <i>LBAP</i>	Associated with areas of grass and arable fields with hedges and banks, railway embankments, commons and heaths.	(10;9;9) Singles and pairs were concentrated in the northern half of the site, particularly on and around hedgerows. Probable breeding species.	Minor loss of nesting (hedgerow) and foraging resource (arable fields and margins).	Like skylark and linnet, yellowhammers occupy open arable and grassland habitats and shy away from areas of regular human disturbance. Much of the hedgerow will be retained, but those surrounded by development will offer little value to the species. The proposed eastern grassland will continue to provide some foraging opportunities.	Minor Negative
Reed bunting <i>NERC</i> <i>Amber</i> <i>LBAP</i>	Traditionally a bird of wet places such as reedbeds, river margins, fens, marshes and coastal grazing marshes. More recently colonised drier habitats such as ditches, young forestry plantations and some farm crops, especially oilseed rape.	(4;1;2) Individuals and pairs of birds were associated with hedgerows and field margins in the north of the site. Probable breeding species.	Minor loss of nesting (hedgerow) and foraging resource (arable fields and margins).	As above, reed buntings are open farmland birds and unlikely to use much of the site post-development. However, the number of reed buntings recorded was unexceptional and this suggests that the site is not overly important to the local population.	Negligible

- 5.7 The proposed development will result in the loss of open arable habitat from the site. This has the potential to impact upon two notable species in the breeding season – skylark and yellowhammer. Neither species thrives close to residential areas and the associated levels of regular human disturbance. Although some suitable habitat will be retained in the east of the application site, these open-farmland specialists are likely to be mostly displaced from the site post-development and residual **minor negative** impacts to the local breeding skylark and yellowhammer populations are predicted.
- 5.8 Swift, starling, song thrush, dunnock and house sparrow are expected to benefit from the proposed GI within the Illustrative Masterplan Rev B, including the retention of many of the existing hedgerows and trees (important for all species), new tree planting (starling and song thrush) and the creation of an area of open greenspace in the east of the site (particularly important for foraging starlings). In addition, all five species show varying degrees of habituation to residential areas, particularly as gardens mature, and an ability to thrive in urban environments. Therefore, **minor positive** residual impacts for swift, starling, song thrush, dunnock and house sparrow are predicted.
- 5.9 Mistle thrush, yellow wagtail, linnet, bullfinch and reed bunting were all recorded in modest populations throughout the breeding surveys. **Negligible** residual impacts are expected for the local populations of all five species.
- 5.10 To comply with wildlife legislation, any removal of woody vegetation including hedgerow sections and trees will occur outside of the bird breeding season to minimise the risk of disturbance to breeding birds. If this is not possible, such vegetation will be checked prior to removal by a suitably experienced ecologist to confirm the absence of active nests. If active nests are found, vegetation will be left undisturbed and suitably buffered from works until all birds have fledged. Specific advice will be sought prior to undertaking the clearance.
- 5.11 To mitigate for the loss of any potential bird nesting and foraging habitat on the site it is recommended that the scheme includes habitat enhancements through the planting of native and ornamental trees and shrubs, with preference given to species of value to local bird populations, e.g. berry- and fruit-bearing species such as crab apple *Malus sylvestris*, hawthorn *Crataegus monogyna*, rowan *Sorbus aucuparia*, holly *Ilex aquifolium* and guelder rose *Viburnum opulus*. The scheme will provide habitat buffers adjacent to retained hedgerows to minimise potential impacts to local bird populations in the long-term. New areas of woody species planting throughout the site will in time mature into habitats suitable for use by foraging and nesting birds.
- 5.12 It is recommended that consideration be given to the provision of bird boxes to be affixed to suitable buildings and retained trees to enhance nesting opportunities for birds in the local area and therefore contribute to requirements of NPPF via biodiversity enhancement. A selection of hole- and open-fronted designs should be used in order to encourage a variety of species. Further advice on appropriate siting and box-types can be provided on request.

6.0 CONCLUSIONS

- 6.1 A total of 49 species were recorded within the site boundary during the surveys, including 19 notable species that are either listed as NERC species of principal importance, on the UK Birds of Conservation Concern Red and Amber lists and/or the Suffolk LBAP list. None of the notable species was confirmed as breeding on site.
- 6.2 All of the 49 recorded species are fairly to very common species in Suffolk and the UK, and no significant populations were registered.
- 6.3 Impacts of development were considered for the 12 most vulnerable species recorded on site (i.e. species of highest conservation concern).
- 6.4 The proposed development is expected to result in minor negative residual impacts for skylark and yellowhammer. Negligible residual impacts are predicted for mistle thrush, yellow wagtail, linnet, bullfinch and reed bunting.
- 6.5 Other than in the short term, i.e. during the construction phase, the proposals and suggested compensation are expected to have a positive residual impact upon swift, starling, song thrush, dunnock and house sparrow.
- 6.6 The application site is considered to be of **Local** nature conservation value in the breeding season for the 19 notable species listed in Table 2. For the remaining 30 green-listed and unlisted species, the site is assessed as being of **Site** nature conservation value in the breeding season.
- 6.7 The retention of existing vegetation and provision of new semi-natural areas which will provide corridors of movement across the site, along with a new resource of residential gardens, will provide some compensation for the loss of suitable breeding habitats for many of the recorded species. The proposed GI will increase the degree of usable habitat across the site for a number of urban edge species, provide connectivity with the wider landscape and support conservation and biodiversity enhancement. Overall, the developed site is expected to remain a valuable resource for local bird populations, with a shift in emphasis from birds of open arable farmland to those more traditionally associated with urban edge environments.

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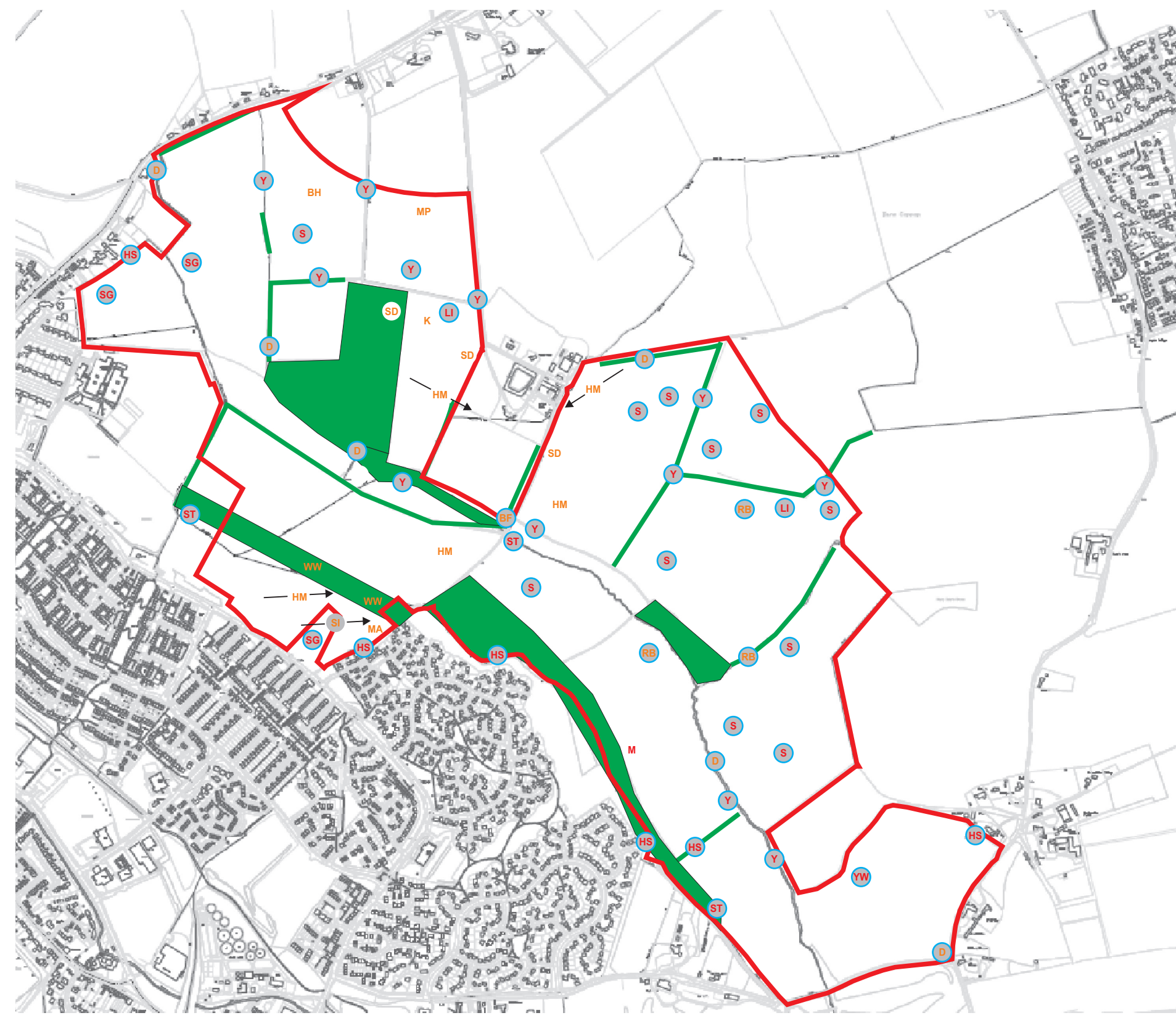


BoCC Red-listed Birds

- S Skylark
- SG Starling
- ST Song thrush
- M Mistle thrush
- HS House sparrow
- LI Linnet
- Y Yellowhammer
- YW Yellow wagtail

BoCC Amber-listed Birds

- K Kestrel
- BH Black-headed gull
- SD Stock dove
- G Green woodpecker
- D Dunnock
- MP Meadow pipit
- BF Bullfinch
- RB Reed bunting
- SI Swift
- HM House martin
- WW Willow warbler
- MA Mallard



Hallam Land Management Ltd
 Great Wilsey Park,
 Haverhill
 BREEDING BIRD SURVEY 2015:
 DISTRIBUTION OF NOTABLE SPECIES PLAN

Not to scale NC/DAH 21.03.2016
Figure 1 5055-E-01

Appendix A: Haverhill Breeding Bird Survey Results 2015

Survey	Date	Cloud cover (%)	Rain	Wind	Visibility
1	16.04.15	100	None	Gentle breeze	Good
2	27.05.15	10	None	Light air	Good
3	30.06.15	0	None	Calm	Good

Species	Latin	16.04.15	27.05.15	30.06.15	Conservation Status	Breeding Status onsite
Grey heron	<i>Ardea cinerea</i>	1		1	Green list	Non-breeder
Mallard	<i>Anas platyrhynchos</i>	2			Amber list	Possible
Moorhen	<i>Gallinula chloropus</i>	1	1	1	Green list	Probable
Red-legged partridge	<i>Alectoris rufa</i>	5		2	None (Introduced)	Confirmed
Pheasant	<i>Phasianus colchicus</i>	2	3	4	None (Introduced)	Probable
Buzzard	<i>Buteo buteo</i>	1		1	Green list	Possible
Sparrowhawk	<i>Accipiter nisus</i>	1			Green list	Possible
Kestrel	<i>Falco tinnunculus</i>	1			Amber list	Possible
Black-headed gull	<i>Chroicocephalus ridibundus</i>			3	Amber list	Non-breeder
Woodpigeon	<i>Columba palumbus</i>	25	10	41	Green list	Confirmed
Stock dove	<i>Columba oenas</i>	1	3	2	Amber list	Probable
Collared dove	<i>Streptopelia decaocto</i>	2			Green list	Possible
Swift	<i>Apus apus</i>			2	Amber list LBAP	Non-breeder
Magpie	<i>Pica pica</i>	5	6	8	Green list	Probable
Jackdaw	<i>Corvus monedula</i>	10	4	11	Green list	Probable
Carrion crow	<i>Corvus corone</i>	4	4	6	Green list	Probable
Green woodpecker	<i>Picus viridis</i>			2	Green list	Possible
Great spotted woodpecker	<i>Dendrocopos major</i>	1	1	2	Green list	Confirmed
Goldcrest	<i>Regulus regulus</i>	1	2	2	Green list	Probable

Appendix A: Haverhill Breeding Bird Survey Results 2015

Species	Latin	16.04.15	27.05.15	30.06.15	Conservation Status	Breeding Status onsite
Coal tit	<i>Periparus ater</i>	2	2	2	Green list	Probable
Blue tit	<i>Cyanistes caeruleus</i>	4	5	9	Green list	Confirmed
Great tit	<i>Parus major</i>	9	8	12	Green list	Confirmed
Skylark	<i>Alauda arvensis</i>	10	14	15	NERC Red list LBAP	Probable
Swallow	<i>Hirundo rustica</i>	3	2	8	Green list	Non-breeder
House martin	<i>Delichon urbica</i>	2	4	12	Amber list	Non-breeder
Long-tailed tit	<i>Aegithalos caudatus</i>	2 flocks	flock	flock	Green list	Confirmed
Wren	<i>Troglodytes troglodytes</i>	5	8	7	Green list	Confirmed
Starling	<i>Sturnus vulgaris</i>	3	1	5	NERC Red list LBAP	Possible
Blackbird	<i>Turdus merula</i>	7	6	10	Green list	Probable
Song thrush	<i>Turdus philomelos</i>	3	3	3	NERC Red list LBAP	Probable
Mistle thrush	<i>Turdus viscivorus</i>	1			Red list	Possible
Blackcap	<i>Sylvia atricapilla</i>	4	8	5	Green list	Probable
Willow warbler	<i>Phylloscopus trochilus</i>	1	1	1	Amber list	Probable
Lesser whitethroat	<i>Sylvia curruca</i>		2	2	Green list	Probable
Common whitethroat	<i>Sylvia communis</i>	2	8	8	Green list	Probable
Chiffchaff	<i>Phylloscopus collybita</i>	4	4	5	Green list	Probable
Robin	<i>Erithacus rubecula</i>	7	11	9	Green list	Confirmed
Dunnock	<i>Prunella modularis</i>	6	3	7	NERC Amber list LBAP	Probable
House sparrow	<i>Passer domesticus</i>	Up to 5 colonies			NERC Red list LBAP	Non-breeder
Yellow wagtail	<i>Motacilla flava</i>		1		NERC Red list LBAP	Possible
Pied wagtail	<i>Motacilla alba</i>	2			Green list	Possible
Meadow pipit	<i>Anthus pratensis</i>			2	Amber list	Possible

Appendix A: Haverhill Breeding Bird Survey Results 2015

Species	Latin	16.04.15	27.05.15	30.06.15	Conservation Status	Breeding Status onsite
Chaffinch	<i>Fringilla coelebs</i>	11	12	10	Green list	Probable
Greenfinch	<i>Carduelis chloris</i>	6		1	Green list	Probable
Goldfinch	<i>Carduelis carduelis</i>		2	6	Green list	Probable
Linnet	<i>Carduelis cannabina</i>	1	2	4	NERC Red list LBAP	Probable
Bullfinch	<i>Pyrrhula pyrrhula</i>			1	NERC Amber list LBAP	Possible
Yellowhammer	<i>Emberiza citronella</i>	10	9	9	NERC Red list LBAP	Probable
Reed bunting	<i>Emberiza schoeniclus</i>	4	1	2	NERC Amber list LBAP	Probable

Suffolk LBAP Bird Species

Barn Owl *Tyto alba**
 Bullfinch *Pyrrhula pyrrhula*
 Dunnock *Prunella modularis*
 Common Starling *Sturnus vulgaris*
 House Sparrow *Passer domesticus*
 Song Thrush *Turdus philomelos*
 Spotted Flycatcher *Muscicapa striata*
 Bittern *Botaurus stellaris*
 Black-tailed Godwit *Limosa limosa*
 Herring Gull subsp. *argenteus* *Larus argentatus* subsp. *argenteus*
 Cuckoo *Cuculus canorus*
 Grasshopper Warbler *Locustella naevia*
 Curlew *Numenius arquata*
 Hawfinch *Coccothraustes coccothraustes*
 Lesser Redpoll *Carduelis cabaret*
 Lesser Spotted Woodpecker *Dendrocopos minor*
 Little Tern *Sterna albifrons*
 Marsh Tit *Poecile palustris*
 Nightjar *Caprimulgus europaeus*
 Swift *Apus apus**
 Savi's Warbler *Locustella luscinioides*
 Stone Curlew *Burhinus oedicephalus*
 Tree Pipit *Anthus trivialis*
 Twite *Carduelis flavirostris*
 Willow Tit *Poecile montanus*
 Wood Lark *Lullula arborea*
 Wood Warbler *Phylloscopus sibilatrix*
 Corn Bunting *Miliaria calandra*
 Tree Sparrow *Passer montanus*
 Grey Partridge *Perdix perdix*
 Yellow Wagtail *Motacilla flava*
 Northern Lapwing *Vanellus vanellus*
 Turtle Dove *Streptopelia turtur*
 Linnet *Carduelis cannabina*
 Skylark *Alauda arvensis*
 Yellowhammer *Emberiza citronella*
 Reed Bunting *Emberiza schoeniclus*

Appendix A: Haverhill Breeding Bird Survey Results 2015

NB * = Suffolk BAP species (locally important – not national Priority Species)

Appendix 9.4

Winter Bird Survey



Hallam Land Management Ltd

GREAT WILSEY PARK, HAVERHILL

Winter Bird Survey

Appendix 9.4

March 2016

FPCR Environment and Design Ltd

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Figure 1: Winter Bird Survey 2014/15: Distribution of Notable Species Plan

APPENDICES

Appendix A: Full Survey Results and Suffolk LBAP Species

1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment and Design Ltd on behalf of Hallam Land Management Ltd. It provides results of winter bird surveys undertaken in 2014/15 at Great Wilsey Park, Haverhill, Suffolk (known hereafter as 'the application site' or 'the site').
- 1.2 The proposed development site covers approximately 168.34ha to the north east of Haverhill (Figure 1) and is mainly laid out for arable farming, interrupted by blocks of deciduous and mixed woodland.
- 1.3 The northern and southern boundaries form the sides of a valley within the site, created by a watercourse that flows into the proposed development site from the north-west. The watercourse is a tributary of the River Stour, located approximately 1km to the north west of the proposed development site.
- 1.4 The proposed development site is bound by the A143 Haverhill Road to the northwest; open fields delineated by drainage ditches and Little Wratting hamlet to the north; hedgerows and open fields to the northeast; B1061 Sturmer Road and Calford Green hamlet to the east; Coupals Road to the southeast; the edge of Haverhill to the southwest; Chalkstone Way, a secondary school and houses on the A143 Haverhill Road to the west.
- 1.5 The proposed development will comprise approximately 2,500 residential units, local employment uses, education, community and leisure facilities, public open space and recreation facilities.

2.0 LEGISLATION AND GUIDANCE

The Wildlife & Countryside Act 1981 (as amended)

2.1 The Wildlife and Countryside Act 1981 (as amended)¹ is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions to recklessly or intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while in use or being built;
- Take or destroy the egg of any wild bird.

2.2 Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are specially protected at all times.

Natural Environment and Rural Communities (NERC) Act 2006

2.3 A number of birds feature on the Natural Environment and Rural Communities (NERC) Act 2006², Section 41 (S41) as species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Biodiversity Action Plan

2.4 The UK Biodiversity Action Plan (UKBAP), published in 1994, was the UK Government's response to the Convention on Biological Diversity, which the UK signed up to in 1992 in Rio de Janeiro. The UKBAP described the biological resources of the UK and provided detailed plans for conservation of these resources.

2.5 In 2012, the UKBAP was replaced by the *UK Post-2010 Biodiversity Framework (2012)*³. The result of this change is that the BAP process has been devolved to local level with each county deciding its own way forward. Suffolk made the decision in June 2013 to continue to support the Suffolk BAP, still enshrined in law through the NERC Act 2006, and also in planning policy through the National Planning Policy Framework and National Policy Statements.

2.6 A full list of Suffolk Local Biodiversity Action Plan (LBAP) bird species is provided in Appendix A.

¹ <http://www.legislation.gov.uk/ukpga/1981/69>

² <http://www.legislation.gov.uk/ukpga/2006/16/contents>

³ <http://jncc.defra.gov.uk/page-6189>

Non-Statutory Guidance

2.7 In addition to statutory protection, some bird species are classified according to their conservation status, such as their inclusion on the Red and Amber lists of Birds of Conservation Concern (BoCC) in the UK⁴:

- Red list (high conservation concern) species are those that are Globally Threatened according to IUCN criteria; those whose population has declined rapidly (50% or more) in recent years; and those that have declined historically and not shown a substantial recent recovery.
- Amber list (medium conservation concern) species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately (between 25% and 49%) in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
- Green list (low conservation concern) species fulfil none of the above criteria.

⁴ Eaton MA, Brown AF, Noble DG, Musgrove AJ, Hearn R, Aebischer NJ, Gibbons DW, Evans A and Gregory RD, 2009: Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man. British Birds 102, pp296–341: http://www.rspb.org.uk/Images/BoCC_tcm9-217852.pdf

3.0 METHODOLOGY

Field Survey Methodology

Winter Bird Survey

- 3.1 The survey methodology employed was based on that recommended in standard literature e.g. Winter Farmland Bird Survey as used for the British Trust for Ornithology (BTO)^{5,6}. Standard BTO species codes and symbols for bird activities were used to identify birds and denote activity, sex and age where appropriate.
- 3.2 To provide a reasonable level of accuracy for determining the population status of the wintering birds on the site, four surveys were undertaken between November 2014 and February 2015 between 08.00 and 16.00hrs.
- 3.3 A route was mapped out prior to the surveys being undertaken, paying particular attention to any linear features, such as hedgerows and tree lines, and natural features such as areas of scrub, woodland and waterbodies. The surveyor walked this predefined transect during each visit. All birds seen or heard were marked on a plan using standard BTO notation. Bird surveys were not undertaken in unfavourable conditions such as heavy rain or strong wind, which may negatively affect the results.

Assessment Methodology

- 3.4 The conservation value of bird populations has been measured using two separate approaches: nature conservation value and conservation status. The IEEM guidance on ecological impact assessment assesses nature conservation value within a geographical context. To attain each level of value, an ornithological resource or one of the features (species population or assemblage of species) should meet the criteria set out in Table 1 below. In some cases, professional judgement may be required to increase or decrease the allocation of specific value, based upon local knowledge.

Table 1: Definition of Terms Relating to Nature Conservation Value

Nature Conservation Value	Examples of Selection Criteria
International	<p>A species which is part of the cited interest of an SPA and which regularly occurs in internationally or nationally important numbers.</p> <p>A species present in internationally important numbers (>1% of international population).</p>
National	<p>A species which is part of the cited interest of a SSSI and which regularly occurs in nationally or regionally important numbers.</p> <p>A nationally important assemblage of breeding or over-wintering species.</p> <p>A species present in nationally important numbers (>1% UK population).</p> <p>Rare breeding species (<300 breeding pairs in the UK).</p>

⁵ Bibby, C.J., N.D. Burgess & D.A. Hill (1992): Bird Census Techniques. London: Academic Press

⁶ Gilbert, G., Gibbons, D.W., and Evans, J. (1998). Bird Monitoring Methods: a manual of techniques for key UK species. RSPB, Sandy

Nature Conservation Value	Examples of Selection Criteria
Regional	<p>Species of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006), which are not covered above, and which regularly occurs in regionally important numbers.</p> <p>Species present in regionally important numbers (>1% of regional population).</p> <p>Sustainable populations of species which are rare or scarce within a region.</p> <p>Species on the BoCC Red List and which regularly occurs in regionally important numbers.</p>
County	<p>Species of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006), which are not covered above and which regularly occurs in county important numbers</p> <p>Species present in county important numbers (>1% of county population).</p> <p>Sustainable populations of species which are rare or scarce within a county, or listed as of principal importance under S41 of the NERC Act.</p> <p>A site designated for its county important assemblage of birds (e.g. a SINC Site).</p> <p>Species on the BoCC Red List and which regularly occur in county important numbers.</p>
District	<p>Species of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006), which are not covered above, and are rare in the locality or in the relevant Natural Area profile.</p> <p>Species present in numbers just short of county importance.</p> <p>Sustainable populations of species which are rare or scarce within the locality.</p> <p>A site whose designation falls just short for inclusion for its county important assemblage of birds (e.g. a SINC Site).</p> <p>Other species on the BoCC Red List and which are considered to regularly occur in district important numbers.</p>
Local	<p>Other species of conservation interest (e.g. all other species on the BoCC Red and Amber List and listed as of principal importance under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act (2006) which are not covered above) regularly occurring in locally sustainable populations.</p>
Site	<p>All other BoCC Green-listed common and widespread species.</p>

4.0 RESULTS

4.1 A total of 42 species were recorded within the site boundary during the surveys, including 15 species that are listed as Schedule 1, NERC or LBAP priority species and/or feature on the BoCC Red and Amber lists (Table 2). Full survey results are provided in Appendix A.

Table 2: Schedule 1, NERC, LBAP, BoCC Red- and Amber-Listed Bird Species Recorded at Great Wilsey Park, Haverhill during Winter Bird Surveys 2014/15 and their Recent Status in Suffolk

Species	Conservation Status	Recent Status in Suffolk ⁷
Kestrel	Amber	Common resident. Scarce passage migrant.
Black-headed gull	Amber	Very common resident, winter visitor and passage migrant
Herring gull	Red, NERC, LBAP	Very common resident, winter visitor and passage migrant
Stock dove	Amber	Fairly common resident and passage migrant
Skylark	Red, NERC, LBAP	Common resident, winter visitor and passage migrant
Starling	Red, NERC, LBAP	Very common resident, winter visitor and passage migrant
Fieldfare	Red, Schedule 1	Common winter visitor and passage migrant
Song thrush	Red, NERC, LBAP	Fairly common resident, winter visitor and passage migrant
Redwing	Red, Schedule 1	Common winter visitor and passage migrant
Mistle thrush	Red	Fairly common resident and scarce passage migrant
Dunnock	Amber, NERC, LBAP	Very common resident and fairly common migrant
House sparrow	Red, NERC, LBAP	Common resident
Meadow pipit	Amber	Common resident, winter visitor and passage migrant
Bullfinch	Amber, NERC, LBAP	Common resident
Reed bunting	Amber, NERC, LBAP	Common resident and passage migrant

⁷ Suffolk Ornithologists' Group (2014): Suffolk Birds 2013; Vol.63. The following definitions are given as a guide to relative species status: Very common – occurs in large numbers in suitable habitat and season; Common – occurs regularly or widely distributed in suitable habitat and season; Fairly common – occurs in small numbers in suitable habitat and season; Scarce – one or two records each year or restricted to specific habitats.

5.0 DISCUSSION AND EVALUATION OF IMPACTS

Bird Assemblage Value

- 5.1 The species recorded on site are typical of the main habitats available on site, and are particularly characterised by notable species of open arable farmland and field margins (e.g. kestrel, black-headed gull, herring gull, stock dove, skylark, fieldfare, meadow pipit, reed bunting); woodland (stock dove song thrush, redwing, mistle thrush, dunnock) hedgerows and trees (fieldfare, song thrush, redwing, dunnock, bullfinch, reed bunting) and the urban fringe (starling, song thrush, dunnock, house sparrow).
- 5.2 All of the 42 recorded species are fairly common to very common resident or overwintering species in Suffolk and the UK, and no significant populations were registered⁸. The application site is considered to be of **local** nature conservation value in winter for the 15 notable species listed in Table 2. For the remaining 27 green-listed and unlisted species, the site is assessed as being of **Site** nature conservation value in winter.

Impacts of Habitat Loss/Change

- 5.3 The impact on wintering bird species arising from the potential effects of development is based upon an understanding of each species' ecological requirements, the type of development, number of birds recorded on site, their nature conservation criteria based on legislation and current guidance (e.g. Red and Amber listed Birds of Conservation Concern 3 (2009); S41 NERC Act priority species and Local BAP species), their local status according to the *Suffolk 2013 Bird Report* and professional judgement.
- 5.4 The species recorded on site that are arguably the most vulnerable to impacts are the 11 'notable' species that appear on the BoCC Red list and/or are listed as priority species for nature conservation under S41 of the NERC Act or feature on the Suffolk LBAP. The habitat requirements, species account, and nature conservation value of these species are discussed further (Table 3). In addition, residual impacts arising from the proposed development in terms of habitat loss / change have been assessed against the development proposals set out in the Illustrative Masterplan Rev B (August 2015).

⁸ A max count of 90+ black-headed gulls (Amber) was recorded loafing in an arable field compartment in the SW part of the site in February, immediately east of the Samuel Ward Academy School; however, the Suffolk Bird Reports list several registrations of 1,000+ flocks in the county each winter and, in this context, the flock of 90 birds on site is considered to be unexceptional.

Table 3: Habitat Requirements, Species Account, Nature Conservation Value and Impact Assessment of Schedule 1, BoCC Red-listed, NERC Act and Suffolk LBAP Species Recorded during Winter Bird Surveys 2014/15 at Great Wilsey Park, Haverhill

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Herring gull	Breeds around the coasts of Britain and Ireland on cliffs, beaches, shingle islands, moorland and buildings. Widespread outside breeding season, but still concentrated on the coasts. Feeds on urban rubbish tips, visits town parks during the day and roosts on playing fields and at night on reservoirs and estuaries.	(0;1;0;0) The only record was of a single immature bird loafing with black-headed gulls in an arable field in the SW corner of the site in Dec. County context: Very common resident, winter visitor and passage migrant. Winter herring gull flocks in the hundreds are not uncommon in Suffolk, particularly near to the coast and large waterbodies.	Local	Minor loss of loafing habitat (arable fields).	The development proposals include 71.4ha of Green Infrastructure (GI), 42% of the total site area. Within the GI proposals, areas of the existing landscape of woodland, hedgerows and trees etc, will be supported by a network of new broadleaved woodland, trees, hedgerows, allotments, areas of parkland including a country park, conservation grassland and wetland habitats, including Sustainable Drainage Systems (SuDS). Larger areas of public open space, such as the proposed country park and SuDS through the middle of the site, will continue to provide suitable loafing areas for the modest number of gulls recorded on site in winter.	Negligible

⁹ Snow, D. W. & Perrins, C. M. (1998): The Birds of the Western Palearctic Concise Edition

¹⁰ County contexts are summarised from Suffolk 2010 Bird Report

¹¹ Based upon criteria set out in Table 1 and professional judgement

¹² Assumes that any suggested or proposed mitigation, compensation or enhancements are undertaken in full

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Skylark	Ground nesting birds favouring open farmland habitats. Plant and animal material taken at all times of the year, but weed seeds especially important in winter. UK winter numbers are significantly boosted by birds from northern and eastern Europe arrive in Britain in October and return in January.	(6;4;0;0). A small flock of six birds was recorded in Nov in an arable stubble field in the north of the site adjacent to Little Wratting; four birds were foraging in arable habitat in the SW corner of the site adjacent to Samuel Ward Academy in Dec. Not recorded in Jan or Feb. County context: Common resident, winter visitor and passage migrant. Twelve county sites are cited where winter flocks of more than 100 skylarks occurred.	Local	Loss of winter foraging habitat (arable).	Skylarks are reluctant to use areas that are subject to high levels of regular human disturbance. As such, this open-arable field specialist is likely to be lost to development, given the loss of arable habitat and a reduction of an open-field structure. However, the species was recorded using the site in modest numbers throughout winter and the loss of habitat is not significant to the local skylark population.	Minor Negative

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Starling	Forages mainly on the ground in open areas of short grass or sparse vegetation, e.g. cereal stubble, farmyards. Like skylarks, the UK winter population is increased massively by mainland European birds.	(25;23;30;38) Small flocks of birds were recorded throughout winter foraging in arable habitat, with a peak count in Feb. County context: Very common resident, winter visitor and passage migrant. Flocks of 1000+ starlings are reported from several Suffolk sites, with winter roosts of 50,000+ birds reported on the east coast.	Local	Loss of foraging habitat. (arable)	The country park and SuDS habitats with the GI proposals will continue to provide suitable foraging opportunities for the species. In particular, consideration within the SuDS design of the creation of a new reedbed would provide a new roosting resource for the local starling population. Starlings will also readily frequent residential areas, particularly once established.	Minor Positive

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Fieldfare	Widespread winter visitor occurring almost anywhere. Feeds along hedgerows and in orchards, pastures and other areas of short grass, and on arable fields. Feeding sites are often close to woodland and tall hedges. Nomadic in winter as they travel the countryside for food, sometimes joined by other thrushes and starlings.	(0;0;32;0) A small flock of 32 birds were recorded foraging in arable habitat in the south-eastern section of the site, south of Calford Green, in Jan only. County context: Common winter visitor and passage migrant. Three figure flocks were reported from 24 sites in Suffolk, with nine of those citing flocks of more than 200 birds.	Local	Loss of foraging habitat (arable).	Trees and hedgerows, valuable winter fieldfare foraging and roosting features, will be retained and enhanced across the application site. Any newly-planted native tree and hedgerow species should include berry- and fruit-bearing species. Fieldfares will also use open amenity and wetland grasslands in which to forage for invertebrates.	Negligible

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Song thrush	Birds can exist anywhere where trees or bushes accompany open grassland or patches of dead leaves supporting ample invertebrates. Will readily take to hedgerows, railway embankments and small gardens. Many that breed in Scandinavia pass through Britain as they head south in autumn; others from Belgium and Holland winter in southern Britain.	(1;3;2;2) Single birds were recorded in various locations across the site on all surveys, always associated with established woodland blocks and treelines. County context: Fairly common resident, winter visitor and passage migrant. No specific winter population data is provided in county bird reports, but the species <i>fairly common</i> classification means song thrushes occur in small numbers in suitable habitat and season in Suffolk, although what constitutes 'small numbers' is not clarified.	Local	Minor loss of foraging habitat (e.g. short hedgerow sections, where access roads are proposed).	Areas in which song thrush was recorded are to be retained (woodland blocks and mature trees). Further woodland, tree and hedgerow planting within the GI will likely increase the overall useable habitat available to song thrush and provide a movement corridor through the site. Song thrushes will also readily inhabit residential areas, particularly once established.	Negligible

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Redwing	Widespread winter visitor in Britain between October and March. Generally rather shy feeding in hedges and orchards and open areas of short grass. Visits farmland, parks and large gardens. The winter population of Britain and Ireland has been estimated at over a million birds. Will feed and roost with other thrushes, especially fieldfares.	(27;1;14;0) A small November flock of 27 birds was recorded foraging along the eastern woodland edge of Great Field Plantation and 14 birds were doing the same in Jan. A single bird flew over the immature woodland plantation south of Great Field Plantation in Dec. None recorded in Feb. County context: Common winter visitor and passage migrant. Three-figure flocks were reported from 12 Suffolk sites in winter, with three reporting flocks of 200 birds.	Local	Minor loss of foraging habitat (e.g. short hedgerow sections, where access roads are proposed).	Areas in which redwings was recorded (woodland edge) are to be retained. Further woodland, tree and hedgerow planting within the GI will likely increase the overall useable habitat available to the species and provide a movement corridor through the site.	Negligible

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Mistle thrush <i>Red</i>	Found almost everywhere except the highest, barest ground. Commonly in woodland, parkland and gardens. Requires areas of short grass for feeding. Varied diet including fruit, seeds, worms, insects, molluscs and spiders.	(3;0;2;0) Individuals were recorded in mature hedgerow and woodland edge habitats in November 2014 and January of 2015.	Local	Loss of foraging habitat (arable and grassland)	Strategic planting and grassland provision throughout the site will compensate for the loss of winter foraging habitat particularly where associated with retained features such as the woodland and hedgerows in which the species was recorded.	Negligible
Dunnock	Commonly invades a wide variety of scrub grown situations. Has adapted to field hedgerows, farms, railway embankments, parks, gardens and vacant urban land. Feeds mainly on insects but small seeds are an important winter food.	(3;3;6;7) Recorded on all surveys in hedgerows throughout the site; with a max of 7 birds present in Feb. County context: Very common resident and fairly common migrant. Little winter data is provided in county reports; classification as a <i>very common resident</i> reflects dunnock as a well-represented species in the county <i>in large numbers in suitable habitat and season.</i>	Local	Minor loss of foraging, roosting and territorial habitat (e.g. short hedgerow sections, where access roads are proposed).	Much of the hedgerow habitat will be retained and enhanced with native species planting. Further woodland planting will continue to provide a suitable winter resource for this species. Dunnocks will also readily inhabit residential areas, particularly once established.	Minor Positive

<p>House sparrow</p>	<p>Often associated with man, will avoid closed or dense vegetation, and except for seasonal foraging in corn fields and other crops, will usually avoid open terrain lacking in shrubs, trees, and other cover.</p>	<p>(5 colonies)</p> <p>Five house sparrow colonies averaging approximately 20 birds were recorded foraging in hedgerows, field margins and woodland edge on the site boundaries adjacent to existing residential areas: 1 colony in the NW site boundary associated with houses and gardens along Haverhill Rd and Bladon Way; 1 colony associated with the houses and gardens of Calford Green and up to 3 colonies on the SSE boundary associated with houses and gardens along Coupals Rd, Marcus Close and Shetland Way. A 6th colony was also present at Great Wilsey Farm, just outside of the site boundary.</p> <p>County context: Common resident. Several sizeable flocks of 40-150 birds were reported in winter in Suffolk.</p>	<p>Local</p>	<p>Minor loss of foraging resource (hedgerow and field margin habitats).</p>	<p>House sparrows will readily habituate to new residential areas. The retention of boundary trees and hedgerows combined with new residential gardens and buildings will support the current colonies on the peripheries of the site and further increase winter foraging opportunities.</p>	<p>Minor Positive</p>
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Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Bullfinch	Found throughout Britain and is most abundant in S England. Associated with thick woodland undergrowth, thickets, shrubby areas and thick hedges. Many of these habitats occur on lowland farmland. Also visits gardens and orchards.	(0;1;2;1) A male was foraging in Great Field Plantation in Dec; a presumed pair were contact calling along woodland edge adjacent to Forties Close on the southern site boundary in Jan, and a male was singing there in Feb. Not recorded in December. County context: Common resident. The species is widely reported from many localities, with the highest counts coming from west Suffolk. Winter counts ranging from six to eleven birds were returned from 14 different sites.	Local	Minor loss of foraging habitat (hedgerows).	Woodland, trees and hedgerows, valuable bullfinch foraging and roosting features, will be retained and enhanced across the application site. Any newly-planted native tree and hedgerow species should include bud-, berry- and fruit-bearing species.	Negligible

Species	Habitat Requirements ⁹	Species Account ¹⁰ (Counts Nov;Dec;Jan;Feb)	Nature Conservation Value ¹¹	Characterisation of Unmitigated Impact	Suggested Mitigation / Compensation / Enhancements / Comments	Residual Impact ¹²
Reed bunting	Traditionally a bird of wet places such as reedbeds, river margins, fens, marshes and coastal grazing marshes. More recently colonised drier habitats such as ditches, young forestry plantations and some farm crops, especially oilseed rape. In winter it feeds on agricultural land and other open areas, often away from water.	(1;1;2;0) Single birds in early winter were present with skylarks in an arable stubble field adjacent to Little Wratting; a presumed pair were in a hedgerow west of Great Field Plantation in Jan. Not recorded in February. County context: Common resident and passage migrant. Counts of double-figure flocks were returned from 24 different county sites, including a county-record flock of 676 at Lackford Lakes in November.	Local	Loss of foraging (arable) and minor loss of roosting/foraging (hedgerow) habitats	Hedgerow sections will be retained where feasible and enhanced with native species planting. The stubble arable habitat in the north of the site will be lost to development. However, the low number of birds recorded strongly suggests that the site is not important for the local reed bunting population in winter.	Negligible

- 5.5 The proposed development will result in the total loss of arable habitat from the site. This has the potential to impact upon skylark in winter. This open-farmland specialist is likely to be displaced from the site post-development and residual **minor negative** impacts to the local skylark population are predicted.
- 5.6 Starling, dunnoek and house sparrow are expected to benefit from the proposed GI within the Development Framework Plan, including the retention of many of the existing hedgerows and trees (important for all species), new woodland planting (dunnoek and starling) and the creation of a 'Green Spine' through the centre of the site. This green space will link Haverhill Road in the north with Coupals Road in the south and will benefit all three species. In addition, all three species show varying degrees of habituation to residential areas, particularly as gardens mature, and an ability to thrive in urban environments. Therefore, **minor positive** residual impacts for starling, dunnoek and house sparrow are predicted.
- 5.7 Herring gull, fieldfare, song thrush, mistle thrush, redwing, bullfinch and reed bunting were all recorded in modest populations throughout the winter surveys. **Negligible** residual impacts are expected for the populations of all seven species.
- 5.8 Proposed native species planting, along with the retention and enhancement where possible of existing vegetation, will provide further compensation for any winter habitat loss, provide connectivity with the wider landscape and support conservation and biodiversity enhancement.

6.0 CONCLUSIONS

- 6.1 A total of 42 species were recorded within the site boundary during the surveys, including 16 'notable' species that are listed as Schedule 1, NERC or Suffolk LBAP priority species and/or feature on the BoCC Red and Amber lists.
- 6.2 Impacts of development were considered for the 11 most vulnerable species recorded on site (i.e. notable species recorded in significant populations or the highest conservation concern species).
- 6.3 The proposed development is expected to result in minor negative residual impacts for skylark in winter. Negligible residual impacts are predicted in winter for herring gull, fieldfare, song thrush, mistle thrush, redwing, bullfinch and reed bunting.
- 6.4 Other than in the short term, i.e. during the construction phase, the proposals and suggested compensation are expected to have a positive residual impact for three notable species currently using the site in winter; starling, dunnock and house sparrow.
- 6.5 The site is considered to be of **Local** nature conservation value for the 15 notable species, and of **Site** conservation value for the remaining BoCC Green-listed and unlisted species.
- 6.6 The proposed GI detailed in Illustrative Masterplan Rev B (August 2015) aims to retain all of the woodland and the majority of hedgerows and trees on site; to enhance hedgerows with native species planting and to create new habitats including further woodland planting, SuDS facilities and grassland areas.
- 6.7 The site's existing woodland blocks, watercourse and hedgerow network will form the basis of a linear country park, linking green space and providing a green corridor through the site from northwest to southeast. Development will be set back from this green space, with trees, hedgerows and woodland used to define the park in place of built frontage wherever possible.
- 6.8 The retention of existing vegetation and provision of these new areas which will provide corridors of movement across the site, along with a new resource of residential gardens, will provide some compensation for the loss of suitable winter habitats for many of the recorded species. The GI will increase the degree of usable habitat across the site for a number of woodland edge and parkland species, provide connectivity with the wider landscape and support conservation and biodiversity enhancement. Overall, the developed site is expected to remain a valuable resource for local bird populations, with a shift in emphasis from birds of open-arable farmland to those more traditionally associated with urban edge environments. Furthermore, the GI proposals have the potential to attract new species associated and not currently recorded on site.

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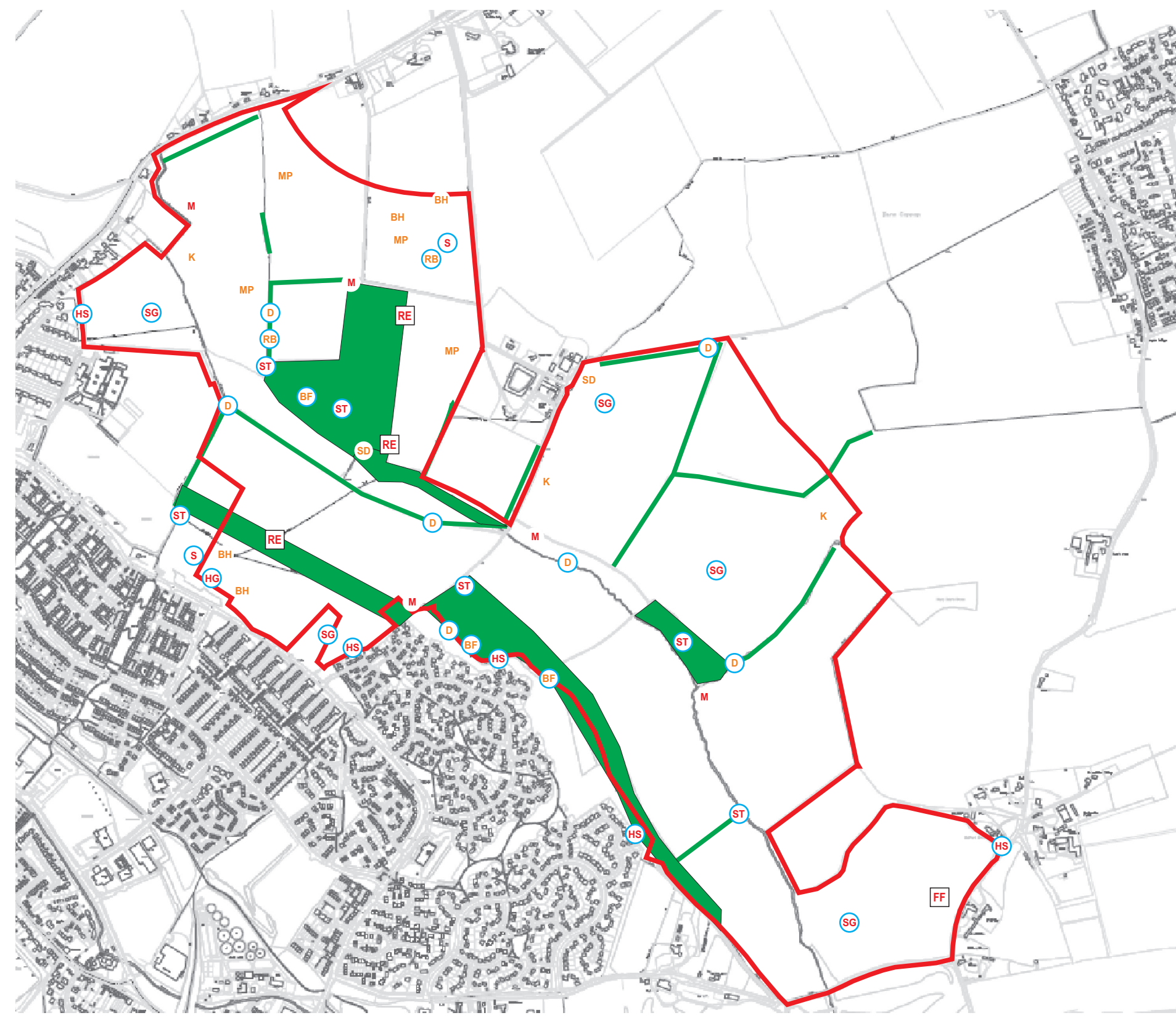
-  Site Boundary
-  Hedgerow
-  Woodland
-  Schedule 1 Species
-  NERC / Suffolk LBAP Species


BoCC Red-listed Birds

- HG Herring gull
- S Skylark
- SG Starling
- FF Fieldfare
- ST Song thrush
- M Mistle thrush
- RE Redwing
- HS House sparrow

BoCC Amber-listed Birds


- K Kestrel
- BH Black-headed gull
- SD Stock dove
- D Dunnock
- MP Meadow pipit
- BF Bullfinch
- RB Reed bunting



 Hallam Land Management Ltd
 Great Wilsey Park, Haverhill

WINTER BIRD SURVEY 2014/15:
 DISTRIBUTION OF NOTABLE SPECIES PLAN

Not to scale JEC/DAH 21.03.2016

 **Figure 1** 5055-E-01

Appendix A: Great Wilsey Park, Haverhill Winter Bird Survey Results 2014-15

Survey	Date	Cloud cover (%)	Rain	Wind	Visibility
1	06.11.14	60	None	Calm	Good
2	08.12.14	80	None	Calm	Good
3	13.01.15	100	None	Gentle breeze	Good
4	19.02.15	100	Light drizzle	Light air	Good/fair

Species	Latin	Survey 1 06.11.14	Survey 2 08.12.14	Survey 3 13.01.15	Survey 4 19.02.15	Conservation Status
Pheasant	<i>Phasianus colchicus</i>		1	4	8	Not listed (Introduced)
Sparrowhawk	<i>Accipiter nisus</i>		1	1		Green list
Buzzard	<i>Buteo buteo</i>	1	1	1	1	Green list
Kestrel	<i>Falco tinnunculus</i>		2	1		Amber list
Moorhen	<i>Gallinula chloropus</i>		1	1	1	Green list
Black-headed gull	<i>Chroicocephalus ridibundus</i>	2	12	65	94	Amber list
Herring gull	<i>Larus argentatus</i>		1			NERC Red list LBAP
Woodpigeon	<i>Columba palumbus</i>	86	115	60	74	Green list
Stock dove	<i>Columba oenas</i>			2	5	Amber list
Collared dove	<i>Streptopelia decaocto</i>			2		Green list
Green woodpecker	<i>Picus viridis</i>	1	2	1		Green list
Great spotted woodpecker	<i>Dendrocopos major</i>	1	1	1		Green list
Magpie	<i>Pica pica</i>	4	14	6	7	Green list
Jay	<i>Garrulus glandarius</i>		2	1	2	Green list
Jackdaw	<i>Corvus monedula</i>	14		5	2	Green list
Rook	<i>Corvus frugilegus</i>	12				Green list
Carrion crow	<i>Corvus corone</i>	4	6	14	7	Green list
Goldcrest	<i>Regulus regulus</i>	2	2	1		Green list

Appendix A: Great Wilsey Park, Haverhill Winter Bird Survey Results 2014-15

Species	Latin	Survey 1 06.11.14	Survey 2 08.12.14	Survey 3 13.01.15	Survey 4 19.02.15	Conservation Status
Blue tit	<i>Cyanistes caeruleus</i>	12	22	17	14	Green list
Great tit	<i>Parus major</i>	9	10	8	13	Green list
Skylark	<i>Alauda arvensis</i>	6	4			NERC Red list LBAP
Long-tailed tit	<i>Aegithalos caudatus</i>	19	24	14	2	Green list
Nuthatch	<i>Sitta europaea</i>	2		1		Green list
Treecreeper	<i>Certhia familiaris</i>			1	2	Green list
Wren	<i>Troglodytes troglodytes</i>	4	5	3	3	Green list
Starling	<i>Sturnus vulgaris</i>	25	23	30	38	NERC Red list LBAP
Blackbird	<i>Turdus merula</i>	8	19	16	7	Green list
Fieldfare	<i>Turdus pilaris</i>			32		Schedule 1 Red list
Song thrush	<i>Turdus philomelos</i>	1	3	2	2	NERC Red list LBAP
Redwing	<i>Turdus iliacus</i>	27	1	14		Schedule 1 Red list
Mistle thrush	<i>Turdus viscivorus</i>	3		2		Red list
Robin	<i>Erithacus rubecula</i>	8	9	11	13	Green list
Dunnock	<i>Prunella modularis</i>	3	3	6	7	NERC Amber list LBAP
House sparrow	<i>Passer domesticus</i>	5 colonies				NERC Red list LBAP
Pied wagtail	<i>Motacilla alba</i>	2	3	2		Green list
Meadow pipit	<i>Anthus pratensis</i>	6		12	16	Amber list
Chaffinch	<i>Fringilla coelebs</i>	31	5	15	5	Green list
Greenfinch	<i>Carduelis chloris</i>	2		2		Green list
Goldfinch	<i>Carduelis carduelis</i>	29	5	14	7	Green list
Siskin	<i>Carduelis spinus</i>		20			Green list
Bullfinch	<i>Pyrrhula pyrrhula</i>		1	2	1	NERC Amber list LBAP

Appendix A: Great Wilsey Park, Haverhill Winter Bird Survey Results 2014-15

Species	Latin	Survey 1 06.11.14	Survey 2 08.12.14	Survey 3 13.01.15	Survey 4 19.02.15	Conservation Status
Reed bunting	<i>Emberiza schoeniclus</i>	1	1	2		NERC Amber list LBAP
Total Species = 42						

Suffolk LBAP Bird Species

Barn Owl *Tyto alba**
 Bullfinch *Pyrrhula pyrrhula*
 Dunnock *Prunella modularis*
 Common Starling *Sturnus vulgaris*
 House Sparrow *Passer domesticus*
 Song Thrush *Turdus philomelos*
 Spotted Flycatcher *Muscicapa striata*
 Bittern *Botaurus stellaris*
 Black-tailed Godwit *Limosa limosa*
 Herring Gull subsp. *argenteus* *Larus argentatus* subsp. *argenteus*
 Cuckoo *Cuculus canorus*
 Grasshopper Warbler *Locustella naevia*
 Curlew *Numenius arquata*
 Hawfinch *Coccothraustes coccothraustes*
 Lesser Redpoll *Carduelis cabaret*
 Lesser Spotted Woodpecker *Dendrocopos minor*
 Little Tern *Sterna albifrons*
 Marsh Tit *Poecile palustris*
 Nightjar *Caprimulgus europaeus*
 Swift *Apus apus**
 Savi's Warbler *Locustella luscinioides*
 Stone Curlew *Burhinus oedicephalus*
 Tree Pipit *Anthus trivialis*
 Twite *Carduelis flavirostris*
 Willow Tit *Poecile montanus*
 Wood Lark *Lullula arborea*
 Wood Warbler *Phylloscopus sibilatrix*
 Corn Bunting *Miliaria calandra*
 Tree Sparrow *Passer montanus*
 Grey Partridge *Perdix perdix*
 Yellow Wagtail *Motacilla flava*
 Northern Lapwing *Vanellus vanellus*
 Turtle Dove *Streptopelia turtur*
 Linnet *Carduelis cannabina*
 Skylark *Alauda arvensis*
 Yellowhammer *Emberiza citrinella*
 Reed Bunting *Emberiza schoeniclus*

NB * = Suffolk BAP species (locally important – not national Priority Species)

Appendix 9.5

SWT & FPCR Comments



Hallam Land Management Ltd

Great Wilsey Park, Haverhill, Suffolk

Wildlife Trust Objections and FPCR Responses

Appendix 9.5



Chris Rand
Planning Department
St Edmundsbury Borough Council
West Suffolk House
Western Way
Bury St Edmunds
IP33 3YU

08/01/2016

Dear Chris

DC/15/2151/OUT: Outline Application (Means of Access to be considered) - Residential development of up to 2,500 units (within use classes C2/C3); two primary schools; two local centres including retail, community and employment uses (with use classes A1/A2/A3/A4/A5, B1 and D1/D2; open space; landscaping and associated infrastructure. Great Wilsey Park, Wilsey Road, Little Wratting.

Thank you for sending us details of this application. For the reasons stated below we wish to **object** to this proposal.

We have read the Ecology chapter of the Environmental Statement (ES) and the associated ecology reports (Ecological Appraisal; Badgers; Breeding Birds; Winter Birds; Dormice; Great Crested Newts; Reptiles and Bats). We have also read the Lighting Assessment; Bat Lighting Mitigation Strategy and the Hedgerow Removal Plan.

Plan Discrepancies

There appears to be several discrepancies between the plans provided in the application documentation. In particular, the Hedgerow Removal Plan (5055-L-112) appears not to show several areas where hedgerow removal is required as there are not existing gaps in the vegetation, as shown on the Phase One Habitat and Protected Species Plan (5055-E-9.2).

The Hedgerow Removal Plan (5055-L-112) also appears to differ from the Concept Masterplan (5055-L-10), particularly in relation to the route of the proposed primary access road. The Hedgerow Removal Plan shows it passing to the south of woodland W4, whereas the Concept Masterplan shows it running through the middle of woodland W4. Such discrepancies make it impossible to accurately quantify all of the likely ecological impacts. These matters should be addressed and clarified urgently.

Hazel Dormice

We note that the consultant ecologists found a dormouse nest in the hedgerow bordering the stream running through the site. This is a significant record as there are no other known records in this locality, although there have been two possible records in recent years as acknowledged in 5.2 of Appendix 9.2 (Dormice).

In 6.4, reference is made to the Dormouse Conservation Handbook (2006)¹ to describe populations in Suffolk as 'widespread'. This term is derived from a map on page 7 of the handbook, which only broadly illustrates the known population distribution at the time of

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Suffolk Wildlife Trust is a
registered charity
no. 262777

¹ Bright, P., Morris, P. and Mitchell-Jones, T. (2006). *The Dormouse Conservation Handbook, 2nd Edition*. English Nature, Peterborough.

publication. We consider that the assessment of the current distribution of dormice in Suffolk should have been derived from the records held by Suffolk Biological Records Centre, which will be up to date and detailed.

We have been surveying dormice in Suffolk for the last 16 years, undertaking numerous surveys, which has helped build up a detailed picture of their known distribution. All confirmed records are submitted to Suffolk Biological Records Centre. Until this recent find at Little Wrattling, populations of dormice were known to be distributed in only five 'clusters' within the County, three within the southern part of Suffolk within the Stour Valley, with the other two in a more central location. In terms of the modern UK range, these populations in Suffolk are now the most north-easterly (excluding re-introductions).

We are part of the Essex and Suffolk Dormouse Group which was set up in 2002, working together to understand the status and ecology of populations in the East of England. Surveys in Essex indicate there are no known dormouse populations to the south of Haverhill and they are also not known from east Cambridgeshire. The nearest records in Suffolk are at least 25 kilometres from this new record at Little Wrattling. As they naturally live at low densities, their population ecology dictates that they are likely to be distributed over a wider location than just the proposed development site boundary. In our opinion, the finding of a hitherto unknown population of hazel dormouse (a European Protected Species and UK Priority Species) at this location is of National significance.

Dormice can be difficult species to survey and even with large numbers of tubes deployed it is not unusual to only find a small amount of evidence to indicate their presence. Consequently, the finding of a single nest in a survey that was then curtailed in early October does not enable any predictions to be made with regards to the overall distribution or size of this population. There is therefore a deficiency in the scope of the surveys.

In addition, the Ecology Chapter of the Environmental Statement refers to the Geographical Frame of Reference used for the assessment (9.1). Under 'National Level of Value' an example is given of 'Any regularly occurring, regionally or county significant population/number of any nationally important species'. Further work is therefore required to assess both the extent and size of the population. There is currently insufficient survey data provided in Appendix 9.5 to be able to reliably state that the population is confined to a small area (6.6) or that it is of local importance (6.4). This population is likely to be widely spread and of National importance.

There seems to be some discrepancy between the Hedgerow Removal Plan and the Concept Masterplan which shows at least two new access routes in the vicinity of where the dormouse nest was found, passing through habitats where we believe there are currently no gaps. We therefore query whether the amounts of hedgerow predicted for removal in 6.5 are accurate. Dormice are extremely susceptible to habitat fragmentation and interruption in connectivity can quickly lead to isolation and reduction in population viability.

In the Ecology Chapter of the Environmental Statement, a summary of effects is provided in 9.5. The permanent impacts on dormice of isolation, injury/death and loss of habitat are proposed to be dealt with under Natural England licence. However, we feel there is insufficient data to be able to allow the three tests identified within the Habitats Regulations² to be satisfied. In addition, for the reasons stated above, we disagree that the geographical importance is 'local' and this then has a bearing on the residual effects. This means that it is not possible to reliably assess the residual impacts upon the dormouse population in this locality, but we disagree that this would be 'Negligible'.

² The Conservation of Habitats and Species Regulations (2010) (as amended).

Bats

We note that the bat surveys carried out at the site have been undertaken in accordance with the guidance set out in the published best practice guidelines³, and that eight species of bat have been recorded utilising the site. The most notable of these is the barbastelle, which was recorded using the woodlands and a large number of the hedgerows on the site. As recognised in the bat survey report (Appendix 9.8) barbastelle is listed on Annex II of the Habitats Directive⁴ and although records of the species have increased in the county in recent years⁵, it remains relatively rare. We therefore consider that any hedgerow on which a barbastelle was recorded should be considered a hedgerow of importance and the potential impacts should be assessed on this basis. This approach has previously been used in assessing the impacts of Nationally Significant Infrastructure Proposals, such as the East Anglia ONE Offshore Wind Farm⁶. The assessment of the impact of the loss of hedgerows and woodland on bats should therefore be revisited to ensure that it accurately reflects the value of these features for barbastelle. If necessary, further mitigation measures should be included in the proposals.

We also note that the Suffolk County Council lighting requirements will be implemented for this development (Appendix 4.3), and that the design includes dark corridors to provide connectivity for nocturnal wildlife such as bats. However, it is unclear whether lighting of all cycle and footpaths would be required. Appendix 4.3 Figure 1 indicates that there will be several lit footpaths/cyclepaths running alongside hedges which were identified as being used by barbastelle (e.g. hedges 12; 14 and 20). If these are lit it is unclear how their suitability as corridors for bats will be maintained. We therefore consider that the lighting strategy for the site should be revisited to ensure that adequate dark corridors can be maintained along corridors which are important for bats.

The strategy in Appendix 4.3 also states that bat hop-overs will be created where a dark corridor is crossed by a lit road. It is understood that this will be done by planting trees of the same height as the lighting columns (6 metres) (Appendix 9.8 section 4.43), however there is no information on how these trees will be protected during construction of the roads and other parts of the development or what aftercare will be required. Further information on this should therefore be provided to ensure that the proposed mitigation can be satisfactorily implemented.

Table 4 in Appendix 9.8 sets out the summary of nocturnal tree surveys undertaken at the site. It appears that the results of the third surveys on the majority of the identified trees are not included in the report. This information should be provided, prior to the determination of the application, in order to inform whether any further confirmed roosts have been identified.

It is noted that the proposed bat mitigation involves the installation of bat boxes across the site. We would be happy to provide further comment on the location and design of boxes as part of the detailed design of the site, should permission be granted.

Badgers

We note the ecological consultant's conclusion that the badger setts recorded at the site are all within the territory of one social clan. However, we consider that based on the evidence available, it is probable that the site supports two different clans. A bait marking study, undertaken at the appropriate time of year, would be required to determine this. Based on information available about wider badger use of the landscape around the development site, we estimate that each clan could have a home range of approximately 165-175 hectares (therefore a combined total of approximately 330-350 hectares). Paragraph 5.4 of the badger survey report (Appendix 9.2) also states that the ecological consultant considers that the two

³ Hundt, L. (2012). *Bat Surveys: Good Practice Guidelines*, 2nd Edition. Bat Conservation Trust.

⁴ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

⁵ Suffolk Bat Group. (2012). *Bats in Suffolk – Distribution Atlas 1982-2011*.

⁶ East Anglia ONE Planning Inspectorate webpage (<http://infrastructure.planninginspectorate.gov.uk/projects/eastern/east-anglia-one-offshore-windfarm/>) (accessed 08/01/2016).

main setts identified in the report represent the same clan given their proximity to one another. However, work undertaken elsewhere in Suffolk (such as by Suffolk Mammal Group) suggests that such proximity between clans is possible (indeed the distance between sett S1 and sett S7 is over 1,500m). The proposed development land take of 168 hectares would result in the loss of around half of each clan's home range (although it is accepted that a proportion of the development area will be comprised of green infrastructure areas with habitat suitable for badgers). Such a reduction in clan home range is likely to lead to significant changes in social interactions between the clans and an impact in the seasonal use of foraging areas. As recognised in the Ecology chapter of the ES (paragraphs 9.5.60 to 9.5.62), the proposed development would also bring human disturbance factors within much close proximity of existing badger setts which, unmitigated, would result in adverse impacts on this species.

Mitigation for potential impacts on badgers includes the provision of extensive areas of new green infrastructure as part of the proposed development. Owing to the Outline nature of this application, exact details on the types of green infrastructure within these areas does not appear to be available. However, certain types of open space use (such as playing fields and allotments) can result in conflict between humans and badgers. Therefore, whilst such areas may in theory provide suitable badger habitat (i.e. for foraging), in reality they will not be suitable and should therefore not be counted in the calculation of the area of suitable habitat which will be available should the development be constructed in its proposed form.

The badger survey report (paragraph 5.5) also states that limited traffic speeds resulting from the smaller nature of the roads within the development will reduce the risk of badger injuries and fatalities resulting from traffic collisions. To ensure this we request that traffic calming measures are included within the road layouts to ensure that vehicle speeds are actually reduced, this is particularly important where roads run in relatively close proximity to existing setts. The use of crossing points (in the form of badger tunnels) should also be explored, located in association with the bat hop-over points on the primary access route.

Also, whilst the badger survey report (Appendix 9.2) records a number of badger setts on the site, a sett recorded associated with woodland W4 (information available from Suffolk Biological Records Centre) does not appear to have been identified. The Concept Masterplan shows the proposed primary access route running through this woodland, although the impact assessment and mitigation measures for badgers do not appear to include this. We request that this part of the assessment is revisited to ensure that any likely impacts on this species are fully assessed.

Otter and Water Vole

It is noted that no signs of otter or water vole were recorded during the surveys undertaken in 2014 or 2015. However, both of these species have been recorded on the River Stour of which the watercourse running through the site is a tributary. As the proposed development involves bridging and other works to the watercourse, further surveys for these species should be undertaken prior to the detailed design of these elements of the scheme and prior to any works commencing. Should otter or water vole be identified appropriate mitigation measures must be implemented.

Reptiles and Amphibians

We note that three species have been recorded within the site, with good populations of common lizard. Many of the survey visits were undertaken during a sub-optimal time of year for reptile surveys (July-August), which is likely to have suppressed the numbers recorded. Passive displacement is proposed as the means to avoid killing and injury of reptiles, but this tends to be most effective in small areas of habitat and where there are lower numbers. We ask that this methodology is reviewed to also allow, where appropriate, the option of translocation of reptiles into suitable habitats proposed to be retained on-site, which have been suitably enhanced to support a higher number of animals.

We note that no great crested newts were not recorded during the pond surveys. However, toads, a UK Priority species, were recorded in four ponds. Connectivity between these ponds and terrestrial habitat suitable for toads must therefore be maintained as part of the development proposals. Of particular importance is ensuring that suitable road crossings are incorporated into the design of the scheme.

Breeding and wintering birds

In December 2015, Birds of Conservation Concern (BoCC) Version 4 was published (commonly known as the UK Red List for birds). Additional species have been added to the Red List and Mistle Thrush (>50% decline in the last 25 years) is relevant to this application and should now be included within the impact assessment. As this is an early breeding species, the timing of the surveys means that the presence of this species may not have been fully evaluated.

We note that a range of BoCC Red List and UK Priority farmland birds are recorded as probable breeding birds on site (most notably skylark, linnet and yellowhammer). It is acknowledged in 9.3 Breeding Birds that most of these open farmland species would be 'lost to development, however in the Ecology Chapter 'Summary of Effects' table this impact is described as negligible. It is presumed that these losses may not be significant in the context of the locality, but their loss will contribute to the reduction and fragmentation of the local population. If this loss cannot be avoided or mitigated, then compensation off-site must be delivered. Monitoring of the effectiveness of this compensation should be undertaken for at least 5 years post development.

Hedgehogs

In 2014 and 2015 an on-line survey coordinated by Suffolk Wildlife Trust resulted in significant numbers of hedgehog records being submitted to Suffolk Biological Records Centre (SBRC) and there are seven records within 500m of the site during this period. These records relate to residential areas to the south and west of the site. There is therefore a high level of certainty that hedgehogs forage and nest within parts of the proposed development site, particularly in the areas of scrub and woodland. Such habitats can provide a key hibernation resource for the local hedgehog population and unmitigated development can have a significant impact on this species, either through loss of habitat or death or injury to animals during clearance. We therefore consider that there is insufficient detail relating to this species in the reports. Hedgehog is a UK and Suffolk Priority species.

Due to high risk of impact upon hedgehogs, winter site clearance should be avoided, unless it can be undertaken in a staged way with an ecologist on site searching for hibernation nests. Clearance at other times of year still requires a check to be undertaken for nest sites. Suitable habitats for nesting should be retained within the site's green infrastructure and any future management of these areas should include enhancement for hedgehog. In addition, we recommend that the design of the individual gardens incorporates holes in fences to enable these areas to become accessible to hedgehogs.

Flora

Suffolk Biological Records Centre (SBRC) hold a record of the UK Priority plant species Shepherd's-needle (*Scandix pecten-veneris*) for the site. It does not appear that any specialist floristic surveys have been undertaken to inform this application. Although the Phase 1 survey did include such recording as part of the assessment of habitat types, it is unclear from the Ecological Appraisal (Appendix 9.1) a what time of year this survey was undertaken. It is therefore possible that this species was missed if it remains present on the site.

It is also noted that betony (*Stachys officinalis*) was recorded during the Phase 1 survey. Whilst not a Priority species, it is a good indicator of habitat quality⁷ and areas where it was recorded should be sought to be retained as part of the site's green infrastructure.

⁷ Sanford, M. and Fisk, R. (2010). *A Flora of Suffolk* (page 296). D.K. and M.N. Sanford, Ipswich.

Cumulative Impacts

The table of residual impacts (ES Volume 2) includes reference to cumulative effects of this proposal in relation to the proposed development North West of Haverhill. However, the effects listed are limited to construction dust; loss of hedgerows and recreational pressures. They do not appear to include consideration of impacts on fauna such as farmland birds. As discussed above, the ES concludes that the Great Wilsey park development will have an adverse impact on birds such as skylark. No compensation measures are proposed for such losses and it is concluded that birds will be displaced to neighbouring farmland. Given the associated loss of such habitat to the North West Haverhill development, assessment of cumulative impacts on farmland birds should be undertaken.

There may also be other cumulative faunal impacts and we therefore recommend that a full review of the assessment such impacts is undertaken prior to the determination of this application.

Long Term Management and Monitoring

The application documentation includes reference to the production of a Landscape and Ecology Management Plan to be produced as part of the detailed Reserve Matters application for the development, should Outline consent be granted. We consider that the production and implementation of such a plan is essential. Such a plan should include mitigation/compensation measures to be implemented; the long term management measures for the site's green infrastructure and the methodologies for long term monitoring of the ecological receptors identified as being impact upon by the proposed development in the ES. This plan is particularly important given the likely length of the construction period for such a development.

Further surveys

It is noted that this application is for Outline planning consent. It may therefore be necessary to update the existing survey and assessment work as part of any Reserved Matters applications (should Outline consent be granted), dependent on the amount of time which elapses between applications.

Conclusion

We appreciate that the site of the proposed development has been allocated through the St Edmundsbury Core Strategy Development Plan Document (policy CS12) and the Haverhill Vision 2031 document (policy HV4). However, we consider that the application fails to demonstrate that the proposed development would not result in a significant adverse impact on Protected and/or UK and Suffolk Priority species (in particular dormice; bats; badgers; reptiles and breeding and wintering birds). The proposal is therefore not in accordance with the requirements of the National Planning Policy Framework (NPPF) and St Edmundsbury Borough Council's adopted planning policy (Core Strategy Policy CS2 and Joint Development Management Policies Policy DM10). For the reasons set out above we **object** to this application.

If you require any further information or wish to discuss any of the matters raised above, please do not hesitate to contact us.

Yours sincerely

James Meyer
Conservation Planner



Our ref: 5055 / Objections / DAH

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21st March 2016

Dear James,

WILDLIFE TRUST OBJECTIONS: GREAT WILSEY PARK (DC/15/2151/OUT)

This letter has been written in response to the objections raised by James Meyer Conservation Planner at the Suffolk Wildlife Trust; it addresses the comments made and provides additional information and/or clarification where it is required.

Plan Discrepancies

Wildlife Trust identified possible discrepancies between *The Hedgerow Removal Plan (5055-L-112)* and the *Concept Masterplan (5055-L-10)*, and raised concerns that the potential primary route of the access road will passing through woodland W4.

The Hedgerow Removal Plan was drawn using base maps purchased from emapsite (<http://www.emapsite.com/mapshop/>). The bases provided have a number of potential topographical features marked which are not associated with hedgerows, or topographical features but these marked features are similar to the lines drawn on the Concept Masterplan to identify access roads.

We can confirm that there are no access roads going through woodland W4. The lines shown through this woodland are discrepancies on the OS base. The eDWG files have been modified to remove lines that are not associated with hedgerows/tree and topographical features which are physically present.

There is an existing footpath running through woodland W4. Therefore, the inclusion of the path through this area of woodland will not require vegetation removal or result in habitat loss around the area where the dormouse nest were identified.

The Habitat / Public Open Space Plan (5055-L-119 Rev D) has been updated and is attached. This shows the above alterations and reductions to hedgerows removal, which has breaks minimised to approximately 12m where feasible, which is the distance that is unlikely to act as a barrier for dispersal for dormice, should they be present in the wider area in the future. This plan also shows the degree of habitat creation likely to occur as a result of the development.

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It is important to remember that all access road placements are currently only indicative and the precise locations will not be fully identified until the later planning stage, whereby onsite coordinates will give a precise measure of habitat loss and enhance more detailed mitigation.

Hazel Dormice

The substantive points raised by the Wildlife Trust relating to Hazel Dormice are summarised below.

1. The assessment of Hazel Dormice distribution in Suffolk;
2. The significance of the Hazel Dormouse population within the site;
3. The survey effort employed to confirm the presence / absence of the species and the population assessment;
4. The potential impacts to the population from fragmentation and isolation; and
5. Whether there is adequate survey information to support a Natural England development license.

1 - Dormouse Distribution.

The Suffolk Biological Records Centre (SBRC) were consulted for dormice records within a 1km radius of the site; during which no dormice were records were confirmed. However, unofficial records of dormice have been identified at the Haverhill Disused Railway County Wildlife Site (CWS), which is approximately 490m south from the site. This information was gathered from conversations Dr Simone Bullion, The Senior Conservation Adviser at Suffolk Wildlife Trust. It is accepted that the dormice population status was assessed from the Dormouse Handbook, as this is the guidance document.

The surveys undertaken during 2015, followed the current recommended guidance the Dormouse Handbook (2006), and the areas surveyed were restricted to those areas under ownership by the client; therefore it is not known what the population levels are within the immediate area, and when assessing the potential effect of a development the current survey guidelines do not require the survey area to be extended to confirm the presence or absence of dormouse outside the development area. However, if the recorded referred to above is accurate, it is likely that dormouse are present locally around Haverhill and therefore the distribution of dormice local is more widespread.

2 – Significance of the Population.

The statement that the population of dormice found within the development were of National significance is incorrect, as the WT has already mentioned the existence of other 'clusters' within the County, it is accepted that these records are on the north eastern range for this species. The absence of data for the immediate area does not necessary mean that dormice area absence, but surveys have not been undertaken or are less frequently undertaken with positive results. However, the data provide by Dr Bullion would suggest that dormouse is present in a wider area surrounding Haverhill.

The County has records to the east/south, therefore the species is not as rare as more northern regions of the UK, where populations are completely absent. Regionally dormice are known to exist within the five clusters mentioned by the WT and potential within areas near the CWS, with the possible population within the development making part of a north eastern cluster. From this evidence it is appropriate to concluded that the dormice populations are scarce at a Regional level, but populations where identified which does not warrant consideration at a National level of significance.

Table 9.1 Geographical Frame of Reference within Chapter 9 of the FPCR Environmental Statement, is based on the CIEEM Guidance. This states that for a National geographical level of value for a species that they should be:

“Any regularly occurring, nationally significant population/number of any internationally important species”

Based on this definition and the identification of a single nest over an extensive survey period the population cannot therefore be defined as *“regularly occurring”* or *“significant population/number”* which is necessary to classify where populations are identified as being of National significance. Therefore, given the findings it is our professional opinion that the appropriate classification for the small population is at a Local geographical significance.

3 - Survey Effort

The work was completed by an experienced / licensed ecologist and the work has been conducted following the guidelines outlined within the Dormouse Conservation Handbook (Bright et al 2006). Following this methodology a single vacant dormice nest was recorded at one location in September and October, within a woodland margin that extends from woodland W4 to the south east of the site. No individuals were seen during the surveys.

The level of survey work completed provides a score of 160 which exceeds minimum effort score of 20. This score was achieved by setting and checking 381 dormice tubes over the period of May to September, Furthermore, an additional check was completed in October when tubes were removed.

The complete surveys follow the current guidance and tube numbers / distribution allowed for a sufficient coverage for the presence of dormice to be confirmed in one nest that is located in the retained habitats in GI. No dormice were actually seen throughout the surveys. These results confirm the population is small population because if a larger populations was present additional evidence of occupation would be been identified over the extensive survey work.

Thus it is our professional opinion that the completed survey work exceeds that required by the standard survey guidelines, is adequate to confirm the distribution of dormice within the site and there is no deficiency in the scope of work undertaken by FPCR.

4- Impact to Dormouse including fragmentation / isolation

The discrepancies within the Hedgerow Removal Plan have been addressed above with the attached Habitat / Public Open Space Plan.

Since the application there has been a number of changes to the degree of habitat loss, which will favour dormice and other wildlife species. Of particular significance to dormice is the reduction of hedgerow losses around the dormice nest recorded near woodland W4, this is to ensure the gaps in the hedgerow corridors are less than 12m.

Current, research completed between 2007 and 2010 (Paul Chanin et al., 2012¹), has demonstrated that dormice do not travel across roads which were greater than 12m in width including the verges. The development has been designed to maximise retention of hedgerows and other habitats within the sites GI. Where this is not possible, removal of linear features has been minimised to 12m to ensure species such as dormice can cross, therefore avoiding fragmentation and isolation. The location of access roads currently proposed will utilise existing gaps as much as possible. It is also important to mention that the final layout of the scheme is yet to be confirmed, once this has, a more precise evaluation habitat loss will be available, the current evaluation is therefore only indicative but mitigation measure adopted that will ensure linkages are retained as much as possible.

¹ Chanin P & Gubert L (2012). *Common dormouse (Muscardinus avellanarius) movement in a landscape fragmented by roads*. Lutra 55 (1): pages 3-15.

In addition to the retaining hedgerows and minimising hedgerow loss, the development will create additional habitats for dormice which include:

- approximately 13.9ha of woodland;
- strengthened boundary features to the east of the site through the implementation of woodland;
- extensive habitat creation in the southern area of the site; and
- reinforcement of retained hedgerows.

In conclusion, the habitats effected by the development will not affect where the dormouse nest was found, and although there will be some habitat losses along hedgerows to the north of the nest, these will utilise existing gaps and where new gaps are to be created they will not exceed 12m, which research shows dormice will cross. The degree of habitat creation will increase foraging and commuting opportunities within the development and the wider areas. Therefore with the application of such measure is unlikely that the development will result in long term negative effects to the local dormouse population but minor positive effects are predicted which will ensure the Favourable Conservation Status of the species is maintained.

5 – Consideration of the Conservation of Habitats & Species Regulations 2010 (as amended).

Since the submission the development designs and mitigation package have been amended. These measures include habitat enhancements which reduce habitat loss around woodland and improve connectivity. Through the application of mitigation / enhancement measures and the lack of evidence of occupation by dormice in the wider areas of the development it has been concluded that a Natural England development license is not required to facilitate the development. The justification to the revised approach is outline below.

Where a European Protected Species (EPS) may be affected by a development it is necessary to consider if an offence is likely to be committed under Article 12(1) of the Habitats Directive. If it is likely that an offence is to occur then a mitigation licence would be required from Natural England. Article 12 (1) states:

“1, Member States shall take the requisite measures to establish a system of strict protection for the animal species in Annex IV(a)....prohibiting:

- a) All forms of deliberate capture or killing of specimens of these species in the wild;***
- b) Deliberate disturbance of these species, particularly during the periods of breeding, rearing, hibernation and migration;***
- c) deliberate destruction or taking of eggs from the wild;***
- d) deterioration or destruction of breeding sites or resting places.”***

When assessing whether proposals are likely to offend the Regulations it is important to consider the definition of 'breeding site or resting places'. Such guidance is provided within '*Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. Final Version February 2007*'. Further interpretation of 'breeding site and resting places' is provided in the supreme court decision of *Morge v Hampshire County Council* 2011.

Paragraphs 54 and 59 within EEC guidance document provide the principle guidance as to the definition of 'breeding site and resting places'.

When considering breeding sites and resting places the guidance is clear that although these areas should be protected even when the species is not present such protection only applies to such areas when there is a likelihood that the species will return. This is clarified at paragraph 54 of the guidance which states:

'It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.'

Further clarity as to the definition of a resting place is provided at paragraph 59 of the guidance, which states:

'Resting places are defined here as the areas essential to sustain an animal or group of animals when they are not active. For species that have a sessile stage, a resting place is defined as the site of attachment. Resting places will include structures created by animals to function as resting places. Resting places that are used regularly, either within or between years, must be protected even when not occupied.'

Thus, the ECC guidance is clear that regularly used 'breeding site or resting places' must be protected at all time. However, those sites which are only used on an occasional basis are not covered by the Regulations and as such removal of such site would not offend the Regulations.

The Supreme Court judgement of *Morge V HCC* 2011 confirm this conclusion. The judgement correctly identified that whilst 'resting places' are afforded strict protection, such strict protection should is not required for when 'resting places' are only occasionally used by a particularly species.

The judgement also provides further useful clarity when considering 'potential resting places'. Here the judgement is clear that Article 12(1)(d) only covers defined elements of habitats which are used as breeding site or resting places. It is also clear that a development which may result in the loss of potential resting places this would not contravene Article 12(1)(d) (Paragraph 58: Court of Appeal Decision).

During the dormice surveys the guidance was followed, whereby the only evidence of dormice through the entire site and checks of 381 tubes, was one nest within habitat near woodland W4 during September and October. These surveys demonstrate that dormice are not using the site in a significant manner and are restricted to limited areas of the site.

The nest recorded within the development area was recorded in September and October. Breeding within dormice normally occur between May-September, and *"most litters may not be produced until August or September. In very bad years dormice may not produce young until October"* Suffolk Wildlife Trust². No evidence of dormice either adults or young was identified over the survey period. The survey results therefore indicate that dormouse are also not breeding within the site.

The surveys indicate that no breeding was occurring, but also that the current development proposals will retain the habitat within which the nest was found. Therefore an offence under the Conservation of Habitats & Species Regulations 2010 (as amended) concerning disturbance/damage or destroying of a breeding site, will not occur and a licence will also not be required.

Furthermore, given that the only resting place confirmed over the survey was an individual nest the remaining habitats cannot be defined as anything more than 'potential resting site' which are not covered by the Regulations and a license to remove or effect such habitats is not required. Therefore, to ensure the development is completed in accordance to the requirements of the

² <http://www.suffolkwildlifetrust.org/dormouse>. Assessed 11.03.16

Regulations it is recommended that appropriate working methods are employed during the development.

A Precautionary Method Statement will minimise any disturbance. Measures employed will include the appropriate timing of hedgerow/woodland removal; whereby the over ground vegetation is cut but left insitu (dead hedgerows etc) while the dormice are in hibernation below ground. Once dormice emerge from hibernation the vegetation can be used as linkage habitats to surrounding enacted habitats, after which the hedgerows/woodland can be removed.

Bats

The Wildlife Trust has determined that the level of survey work completed across the site is in accordance with the standard guidance provided within Bat Survey: Good practise Guidelines 2nd Edition (BCT, 2012). Whilst these guidelines have recently been updated through the release of the 3rd Edition in January 2016, the 2nd Edition of the guidelines is the relevant document against which the survey methods employed and assessment of potential effect for the proposals should be assessed.

The only substantive point made by the Wildlife Trust relating to the completed surveys and assessment was that any hedgerow on which a Barbastelle was recorded should be considered as 'important' under the Hedgerow Regulations 1997. This judgement is based on an assessment previously submitted to the Local Planning Authority and the project cited is the East Anglia ONE Offshore Wind Farm.

Where comparison across projects and the methods used to assess to the potential effects or significant are made it is essential that there is some similarity in the overall surveys methods employed across the project. From review of the project details it is clear that the survey methods employed at Haverhill were far more extensive than the methods employed by East Anglia ONE Offshore Wind Farm when assessing the potential effects of the installation of a cabling route.

At Haverhill the surveys method employed were specifically to assess the level of bat activity across the site, assess the potential effects of the development and inform a mitigation package to ensure the 'Favourable Conservation Status' of not only Barbastelle but the other species / groups identified over the surveys. This involved completing extensive monthly bat survey work. Thus the data obtained allow reliable conclusions to be reached to the primary foraging area and commuting route used by the species identified at the site.

The data gathered for the assessment of potential effects for the East Anglia ONE Offshore Wind Farm, was gathered over a limited period comprising static detector / bat activity surveys completed on two survey occasions June / July 2012. Furthermore, the surveys for the cabling route focused on hedgerows where there were known maternity roost or a likely roost maternity roost with 200m. The completed survey work at Haverhill has not confirmed the presence of a maternity roost within any of the mature tree for any species identified.

From this assessment it is clear that the level of survey work completed to support the planning application for residential development at Haverhill is far more extensive than that completed for the cabling route. Thus given the limited survey work completed for the cabling route it is entirely understandable that a precautionary approach was adopted for the assessment of the significance of the hedgerow.

For the cabling route, one of the primary criteria used when using the level of Barbastelle activity as a measure for assessing whether a hedgerow was classified as 'important' in the Hedgerow Regulation 1997 included the identification of five registrations of Barbastelle along any one hedgerow on one survey date. This number of registrations on any one survey date is an extremely low bar as the number of registrations on a static detector does not provide a measure of the number of bats passing the detector, as the registrations may have be the result on one

individual animal passing the detector on five separate occasions whilst foraging for a short period or five separate animals passing the detector.

Regardless of whether it was one animal or five animals passing the detector five registrations of Barbastelle one survey evening, does not confirm a particular hedgerow is significant to the species or the local population or is essential for maintaining the FCS of the species as defined in the Conservation of Habitats & Species Regulations 2010 (as amended). Thus it does not follow that such low levels of results in the classification of a hedgerow as 'important' under the Hedgerow Regulations 1997 and there is no published guidance which indicates that low level of use by an Annex II species requires such classification. However, the precautionary approach adopted on the cabling route application is reflective of the limited survey information available when considering the potential effects of the project which is not the case at Haverhill.

Considering the above, it is our professional judgement that the application of the assessment criteria used for the cabling route application is not justified for the Haverhill application given the level of evidence we have obtained and given that areas of increase Barbastelle activity have been retained.

The remaining elements of the Wildlife Trust response related to the submission of additional design and technical information relating to:

- 1 – Lighting adjacent to footpaths / cyclepath adjacent to hedgerows where Barbastelle were identified;
- 2 – Additional technical details relating to the protection of hop-overs;
- 3 – Additional information on the proposed bat box scheme; and
- 4 – The submission of the additional nocturnal survey information on the mature trees.

1 - Lighting

The requirement for footpaths and cycle routes to be lit should be a matter for detailed design set against the parameters of the details provided at the outline application stage. The current lighting report clearly states worst case scenario has been assumed, that all cycle and footpaths as highlighted within Appendix 4.3 Figure 1 will be lit. Lighting alongside cycle/ footpaths adjacent to hedgerows (H12, H14, H20) utilised by Barbastelle will remain as a suitable corridor for bats. How this is achieved for hedgerows H12, H14 and H20 is described within Paragraph 6.1 and Figure 2a of Appendix 4.3 Lighting Assessment August 2015.

2 - Hop Over / Proposed Bat Box Scheme

The measures required for protection of the hop overs and additional information relating to bat boxes are also matters which can be addressed at the detailed design stage.

3 - Additional Survey Information

Attached with this submission is the Additional Bat Survey Report, which provides data obtained following submission of the planning application. This information makes no significant changes to the assessment of potential effects or the proposed mitigation package.

Badgers

The substantive points raised by the Wildlife Trust relating to badgers are summarised below.

- 1) Occurrence of two main setts presents two clans
- 2) Habitat loss would result in a loss of each potential clans home range, affecting foraging opportunities;
- 3) Road traffic collisions will cause fatalities;
- 4) A sett recorded by the SBRC is absent from the badger report.

1 – Occurrence of two main setts represents two clans

An updated badger survey was undertaken on the 17th March 2016. This confirmed that sett S5 to the south east was still active. A number of entrances were identified that were clear of any vegetation, debris and consisted of well-trodden compacted soil; there was also evidence of dried grass which was thought to be from bedding removed from the sett. The setts in the south eastern corner (S7) did not look currently active.

A survey of Great Field Plantation (W5 & W7) found one large recently used latrine on the western edge of W5, this was surrounded by a number of snuffle holes. The main sett identified previously as sett S1, was not as clear as previous described and the entire area lacked any topographical features and was very flat with a large amount of debris on the woodland floor. A number of holes were identified to the east but these were covered with debris and had no evidence to suggest any recent activity. Based on this up to date survey, there was no evidence to suggest a main active sett in this location, there was also an absence of other setts within the wider area; therefore the existence of two clans can be discounted, and there would be no requirement for such survey techniques as bait marking.

Continued monitoring of the badger population will be required, especially during the approach of commencement of construction works, so a more accurate assessment of the final design and disturbance to the badgers can be concluded. As the results over the recent years have shown, activity in the north as varied, but that the main sett to the south east has remained constantly used.

2- Habitat Loss

The changes in the evidence found during the 2016 survey would suggest that individuals within the main sett S5 in the south east are visiting areas to the north, such as Great Field Plantation, however there was a lack of consistent field evidence such as latrines and foraging that could suggest that these areas are an important foraging resources for the clan. Regardless of this there will be linkages of GI through the development which utilises the habitats that occur along the ditch that runs through the site; although there are proposed access roads bisecting through some linear features, the majority will be utilising existing and gaps, and those that are created would be negotiable by badgers once the development has been completed. Therefore if further setts are established in the future to the north, linkages will still continue through the development.

It is also important to mentioned that there will be substantial GI created within the vicinity of the main sett S5, with species rich grassland and season meadow habitats created, there will also be new woodland habitat created near the sett and in the wider area, whereby 13.9ha of woodland will be created. Thus it is anticipated that such habitats in the long term, will provide more foraging opportunities for the clan, and therefore mitigate for the loss of more sub-standard arable land that is proposed to be lost.

3 – Road Traffic Collisions

The main sett is located within an area largely consisting of GI, whereby there will be new woodland and grassland habitats created; this also means that there is an absence of traffic as roads are absent,

There are a number of roads north of this sett, and in accordance with the current parameters plans the majority of these will be for access to residential units or allotments, therefore traffic speeds will be limited. There will be a few roads bisecting through some of the linear natural features, however these will be situated on existing gaps, where possible and will be limited in width to enable movement of wildlife. As mentioned above, the final layout is yet to be confirmed and therefore exact road classification is not known, but mitigation measures will be adopted to ensure safe passage for wildlife. Such mitigation measures will be detailed with mitigation strategies submitted with the full planning application.

4 – SBRC records of a sett within Woodland W4

The surveys of the site found no setts within woodland W4 during 2014 and 2015; and the updated survey in March 2016 can also confirm that there was no active sett recorded within this woodland, there were a number of disused holes but there were not identified as badgers but rabbits due to the thin nature of the entrances and associated droppings. There were two well-trodden paths through this woodland, which were wide and concaved, resembling possible badger runs.

The understorey within this wood is not dense and topographical features such as an embankment were isolated to the northern edges, there is a clearance between the woodland and the ditch to the south, this is actively used by members of the public and therefore the open nature of this woodland would make the presence of a badger sett easier to identify. This woodland will not be suffer any habitat losses during the construction of the development, although the existing path through the woodland will be retained and is shown on all parameters plans, which may have been confused for new access routes.

Water Vole / Otters

The ES Chapter has identified a number of water vole records within the wider area and one otter record; however there was no evidence within the site during 2015 & 2014 of either of these species.

To inform a full planning application updated surveys will be carried out to ensure that there are no changes to the habitats and protective species content within the development. If species are recorded that were not previously documented, then appropriate mitigation measures will be provided to ensure that a FCS is maintained.

Reptiles & Amphibians

The reptile surveys have confirmed that a good population of common lizards have been confirmed within the development area, and that the suggested method of mitigation is to passive displace from the working area. The WT has mentioned the possibility of use of trapping and translocation as an alternative mitigation measure; however the current scheme shows that where reptile populations do occur that they will be within areas of GI, so the population will be able to be incorporated within such areas. The method of passive displacement within the current parameters of the design would equate to only small areas of habitat loss, which would suggest that this method would ensure that the protection these species, whereby there would be no offence committed under the Wildlife & Countryside Act 1981 (as amended).

The GI created will also ensure that there improvements to existing habitats where reptiles are found, whereby areas will be increased in size and habitat suitability; there are also opportunities for linkages to be created around the site ensure isolated is limited.

The mitigation measures are based upon the current parameters plan, therefore if during the final design there are areas of complete loss where reptiles were found, and passive displacement is not a suitable mitigation measure, then trapping and translocation may be adopted.

Common toads were found in one onsite pond P3 located to the south of Great Field Plantation, these species of Principal Importance under section 41 of NERC. The location of this pond is currently to be used for onsite attenuation, therefore creating additional water features that could be utilised by this species. The surrounding habitat is currently improved grassland, which will be retained and enhanced during the development; after which more suitable terrestrial habitats will be provided and linkages to the adjacent woodland will be retained ensuring refuge opportunities are retained. As previously mentioned the design is only outline and could be subjected to some changes, however mitigation measures such as method statements will be adopted where works are scheduled to take place in areas where such species occur, which will include appropriate timing of excavation works and incorporation of refuge/hibernation opportunities.

The remaining ponds within which toads occur are in areas outside of the development and therefore direct disturbance will not occur; however new habitats such as woodland will be created in close proximity ensuring additional foraging and refuge opportunities are available into the future.

Breeding and Wintering Birds

The substantive points raised by the Wildlife Trust relating to bird are summarised below.:

- 1) Results need to be revised to reflect the BoCC version 4 (December 2015);
- 2) Timing of surveys might have miss evaluated early breeding species such as mistle thrush;
- 3) Probably breeding of BoCC Red list and UK Priority farmland birds such as skylarks, linnet and yellowhammer.

1 – Updates regarding BoCC (December 2015)

The FPCR Breeding and Wintering Bird reports have been updated and attached to this document, the changes are summarised below:

Recorded during Breeding Bird Survey:

- Green woodpecker - from Amber to Green;
- Swallow - from Amber to Green;
- Common whitethroat - from Amber to Green;
- Mistle thrush – from Amber to Red.

Recorded during Winter Bird Survey:

- Green woodpecker
- Mistle thrush

2 - Surveys missing early breeders such as mistle thrush

The British Trust for Ornithology (BTO) cites the mean laying date for the species' first clutch as 7th April (with a range between 17 Mar – 22 May)³. Breeding bird surveys were undertaken in Apr-Jun 2015; therefore, we consider that any breeding evidence would have been registered and mistle thrush has been fully evaluated.

3 - Probably breeding of BoCC Red list and UK Priority farmland birds

It has been acknowledge within the ES Chapter that there will be a minor adverse effect upon the on-site populations of skylark, linnet and yellowhammer. However, we maintain that the effect will be negligible upon the local populations of each species.

All three species are Red-listed birds of high conservation concern in the 2015 BoCC4 review⁴, due to a reduction of their UK population and range in both winter and summer. For context, the UK breeding population of each species are :

- Skylark: 1.5 million territories⁵ (in winter, the resident population is joined in winter by a significant proportion of the northern European population - possibly up to 25 million individuals)⁶;
- Linnet: 410,000 territories⁵;

³ Joys & Crick 2004 Breeding periods for bird species in England BTO, Thetford, published on BTO website <http://blx1.bto.org/birdfacts/results/bob12020.htm> (all cited websites were accessed 21.03.16)

⁴ Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746

⁵ Musgrove, A. et al. (2013) British Birds 106:64-100

⁶ <http://www.suffolkbiodiversity.org/content/suffolkbiodiversity.org/PDFs/action-plans/skylark.pdf>

- Yellowhammer: 710,000 territories⁷.

The most-recently available Suffolk Bird Report⁸ lists the following population information:

- Skylark – common resident, passage migrant and winter visitor;
- Linnet – common summer visitor and passage migrant; overwinters in small numbers;
- Yellowhammer - common resident and passage migrant.
-

The report defines common as “***occurs regularly or widely distributed in suitable habitat and season***”.

During the surveys at Great Wisely Farm the following counts were provided, more details can be seen in the updated FPCR Breeding Bird Report:

- Skylark – maximum count of 15 in June, with up to 10 territories;
- Linnet – maximum count of 4 in June, with up to 5 territories;
- Yellowhammer – maximum count of 10 in April, with up to 5 territories.

Skylark and linnet are Suffolk Biodiversity Action Plan (BAP) species. The list of current factors affecting skylarks in the county, as listed on the Suffolk BAP, pertain to farmland management rather than land loss, e.g. through development:

- 1) Winter cereals grow too dense to allow skylarks to raise more than a single brood. This is insufficient to sustain the population;
- 2) Intensive management of arable fields has reduced broad-leaved weed seeds and insect prey through the use of agro-chemicals;
- 3) Intensive management of grasslands and high stocking rates;
- 4) Silage fields are often cut too frequently which destroys nests and exposes skylarks to predators; and
- 5) Decline in area of weedy stubbles may reduce over-winter survival.

The same is true for linnets; all factors affecting the species locally are linked to farmland management practices rather than land take⁹. Yellowhammer is not a Suffolk BAP species; however, given this species occupies similar habitats and has similar breeding/feeding requirements to skylark and linnet, the current factors affecting its' decline are likely to be the same.

Some 70% (17.2 million ha) of UK land is in agricultural use¹⁰ (i.e. it potentially provides suitable farmland birds habitat). It is considered that the loss of <167ha (the extent of the Application Site, the majority of which is agricultural land) of suitable farmland habitat is not significant at any more than the immediate zone of influence, i.e. the site itself.

All of the above considerations strongly suggest that the loss of suitable farmland bird habitat under the development proposals, and the subsequent displacement of low populations of skylark, linnet and yellowhammer (max 15, 4 & 10 respectively) will be negligible to the local populations of each species.

⁷ <https://www.britishbirds.co.uk/wp-content/uploads/2010/12/APEP3.pdf>

⁸ Suffolk Ornithologists' Group (2014): Suffolk Birds 2013; Vol.63. The following definitions are given as a guide to relative species status: Very common – occurs in large numbers in suitable habitat and season;; Fairly common – occurs in small numbers in suitable habitat and season.

⁹ <http://www.suffolkbiodiversity.org/content/suffolkbiodiversity.org/PDFs/action-plans/Linnet.pdf>

¹⁰ <http://www.tradingeconomics.com/united-kingdom/agricultural-land-percent-of-land-area-wb-data.html>

Hedgehogs

Concerns that the effects on hedgehogs was not adequately addressed within the ES Chapter and that records in the surroundings were not considered.

The ES Chapter has addressed the occurrence of hedgehogs within para 9.6.27, where during the construction phase any excavations are covered overnight to ensure that individuals do not get trapped. The design layout is only indicative at this stage, however for the final submission a mitigation strategy could be written, which would incorporate mitigation measure to ensure that the design is favourable to hedgehogs. This could include suitable timing for vegetation removal outside the hibernation period (November to January) or under the supervision of an ecologist, management and enhancement of habitats ensuring there are areas of deadwood/habitat piles, increase linkage habitats along hedgerows, good horticultural practices which will reduce harmful chemical build up in the food chain and the incorporation of gaps under fencing used with residential dwelling, thus ensure movement.

Flora

The substantive points raised by the Wildlife Trust relating to flora are:

- 1) SBRC records of shepherd's needle within the site, but not recorded during surveys;
- 2) Betony recorded within site, which is a good indicator of habitat quality.

1 – Records of Shepherd's Needle

The SBRC records of Shepherd's – needle *Scandix pecten-veneris* within the site date back to 2004, whereby it is possible that this no longer occurs within the site as this species was not picked up during the FPCR assessment. The grid reference given is not precise and currently occurs within the middle of an arable field, the lack of a detailed grid reference could possibly indicate it being of common occurrence within the County. The Ecological Appraisal also mentions that the arable fields had been ploughed during the survey, therefore reducing the likelihood of this species being recorded, which would have also resulted in the species being destroyed. It is concluded that the FPCR surveys provide a more recent data set than that provided by the SBRC, and as this species was not recorded during the surveys, it is likely to be absent.

It is also important to put this species into perspective, although this species is quite rare outside of East Anglia, it is common within it. It is listed on the Suffolk Rare Plant Register (RPR) but probably because of its National Status (Endangered) rather than its rarity in the County, where there are at least 100 sites (Suffolk Natural History Society, <http://www.suffolkbrc.org.uk/downloads>). Since the Suffolk RPR was produced a new Vascular Plant Red List for England has been produced (http://www.bsbi.org.uk/England_Red_List_1.pdf) and *S. pecten-veneris* was one of 11 species that resulted in being afforded a lower threat status in England than was afforded under the GB list, so it come down from Critically Endangered (as listed on the Suffolk RPR) to Endangered.

Despite its National status and the inclusion on in the Suffolk RPR it is relatively common in the County. Even if the development proposals have the potential to have a negative effect on the recorded population, and feasible mitigation/compensation is likely to be problematic, this is unlikely to have a significant effect on the conservation status of the Suffolk population.

2 – Betony Recorded within the Site

Betony was noted only infrequently across the site and furthermore restricted to the semi improved neutral grassland field margins surrounding the large arable field compartments. Whilst it is acknowledged that the species is normally indicative of habitats of greater quality (and value) such as NVC mesotrophic grassland communities MG2, MG4 and MG5 its presence in this instance is considered relic of formerly more widespread herb-rich lowland hay meadows before conversion to productive, nitrogen rich arable land and subject to agricultural improvement.

The only place from which the species was recorded was the restricted arable field margins, the majority of which are to be retained within the Green Infrastructure of the Proposed Development

and enhanced to increase the biodiversity across the site. The species is also considered to be widespread nationally.

Conclusion

The additional information provided as addressed the comments made by the Wildlife Trust, and provided evidence that the surveys undertaken have to best practice and available guidance methods. The development and mitigation measures adopted within the site will avoid significant adverse impacts on protected species recorded within the site; and the GI proposed will increase foraging, refuge and commuting opportunities for those species recorded and will endeavour to attract species which were not recorded, through the creation of habitat features that are current absent and/or poorly represented.

The creation and enhancement of existing habitats and the incorporation of species of Principal Importance, would meet the requirements of NPPF and St Edmundsbury Borough Council's adopted policies (Core Strategy Policy CS2 and Joint Development Management Policies, policy DM10).

I trust that the information provides the clarification required, but if you have any further queries or problems please do not hesitate to contact me.

Yours sincerely



Dave Harper

Associate Ecologist
FPCR Environment and Design Ltd

David.harper@fpcr.co.uk

Attached Documents:

Habitat / Public Open Space Plan (5055-L-119 Rev D)
Additional Bat Survey Report
Breeding and Wintering Bird Report

Chris Rand
Planning Department
St Edmundsbury Borough Council
West Suffolk House
Western Way
Bury St Edmunds
IP33 3YU

13/04/2016

Dear Chris,

DC/15/2151/OUT: Outline Application (Means of Access to be considered) - Residential development of up to 2,500 units (within use classes C2/C3); two primary schools; two local centres including retail, community and employment uses (with use classes A1/A2/A3/A4/A5, B1 and D1/D2; open space; landscaping and associated infrastructure - Further Comments. Great Wilsey Park, Wilsey Road, Little Wratting

Further to our consultation response (our letter of 08/01/2016) objecting to this application and the meeting which was held on 21/01/2016 at which further discussion took place, we have received correspondence (FPCR's letter of 29/03/2016) and further information (Additional Bat Survey report (FPCR, Mar 2016); Breeding Bird Survey report (FPCR, Mar 2016); Winter Bird Survey report (FPCR, Mar 2016) and updated Habitat/Public Open Space plan (ref. 5055-L-119 Rev D)) from FPCR, the applicant's ecological consultant. We have had no further correspondence with the applicant or their ecological consultant following the meeting of the 21/01/2016 and therefore the following comments are based solely on the additional material provided on 30/03/2016:

Plan Discrepancies

As stated in our letter of 08/01/2016 the submitted Concept Masterplan (drawing ref. 50055-L-10) shows a primary access road passing through the centre of woodland W4. We note the updated Habitat/Public Opens Space Plan (5055-L-119 Rev D) and the confirmation from FPCR that no road will be routed through woodland W4. Whilst we welcome this confirmation, we request that either the Concept Masterplan is also updated to reflect this, or it is removed from the application. Whilst it is understood that the layout in these plans is largely indicative, as this is an Outline application, there still needs to be sufficient certainty that an appropriate scheme can be delivered. A new access route through woodland W4 would not be appropriate, and nor would the loss of lengths of hedgerow over 12m (as identified in FPCR's letter of 29/03/2016).

Hazel Dormice

1) Dormouse Distribution

The letter from FPCR states that "*it is accepted that the dormice population status was assessed from the Dormouse Handbook, the relevant guidance document*". We do not dispute that the EIA for this application did use Figure 1 in the Dormouse Conservation Handbook¹, However, as set out in our letter of 08/01/2016, we maintain that it was incorrect to establish the distribution and status of this species in the county; region and country purely from this map which is 10 years old and represents only a simplistic illustration of dormouse distribution in the UK.

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Suffolk Wildlife Trust is a
registered charity
no. 262777

¹ Bright, P., Morris, P. and Mitchell-Jones, T. (2006). *The Dormouse Conservation Handbook, 2nd Edition*. English Nature, Peterborough

2) Significance of the Population

We query the relevance of the consultant's statement that dormice in Suffolk are "*not as rare as in more northern regions of the UK where populations are completely absent*", if the species is absent from a county it cannot therefore be rare there. We considered that the restricted distribution of dormice in England and Wales highlights the importance of Suffolk populations in the national context. The response from FPCR goes on to conclude that "*dormice populations are scarce at a Regional level*", we therefore maintain our opinion that the conclusion presented in the ES (Appendix 9.5) that dormice are of Local importance is incorrect. The population is of at least Regional importance, and given the restricted national distribution of the species possibly National importance.

3) Survey Effort

FPCR's letter makes reference to a check of the deployed dormice nest tubes in October. However, it is understood that this was the visit in which the tubes were collected and it occurred approximately a week after the check in September. Given the short period of time between the survey visits in September and October we do not consider that October can be counted as survey visit.

We disagree that the results from the dormouse surveys undertaken to date "*confirms the population is a small population*". As stated in section 3.6 of the Dormouse Conservation Handbook, nest tubes are intended to detect the presence of dormice and do not permit the estimation of density unless detailed work to calibrate the method has been carried out. The assessment presented in the ES does not make allowance for the presence of dormice in natural nests (i.e. not using the nest tubes) being present within the site (as per Table 2 of the Dormouse Conservation Handbook).

4) Impact to Dormouse including Fragmentation/Isolation

We note the intention to minimise gaps in hedgerows to less than 12m, in accordance with the quoted published evidence. Given that this is an Outline application; we query how this can be secured? Dormouse is a European Protected Species and therefore the Local Planning Authority must be confident that any necessary avoidance or mitigation measures can be appropriately secured.

5) Consideration the Conservation of Habitats and Species Regulations (2010) (as amended)

We note that the ecological consultant has concluded that a Natural England development licence will not be required to facilitate development. Whilst strictly the decision on a licence application is a matter for the applicant; their consultant and Natural England, when granting consent for a development the Local Planning Authority must also take account of the tests set out in the Conservation of Habitats and Species Regulations (2010) (as amended) which relate to the granting of a licence.

Surveys to date have demonstrated that dormice are present on the site. However, the conclusion that, based on the survey work undertaken, no breeding was occurring on site and that remaining habitats cannot be defined as anything more than "potential resting sites" ignores the potential presence of animals in natural nests. We are concerned that as currently presented, the conclusion on the level of impact is based on a number of assumptions. We therefore believe there is insufficient information to be able to fully assess the impacts on the dormouse population in this area and consequently, further surveys are required.

Bats

In our letter of 08/01/2016 we recommended that all hedgerows on which barbastelle bats were recorded should be classed as important for the purposes of the assessment of impact in the EIA. This approach has previously been used on other projects, including the East Anglia ONE Offshore Wind Farm terrestrial cable route². Whilst it is acknowledged that the Offshore Wind Farm

² East Anglia ONE Planning Inspectorate webpage (<http://infrastructure.planninginspectorate.gov.uk/projects/eastern/east-anglia-one-offshore-windfarm/>) (accessed 08/01/2016).

project is different to the residential development proposed in this application (and was therefore subject to differing levels of survey effort), such classification was a recognition of the barbastelle's rarity in Suffolk and the UK (and its inclusion on Annex II of the Habitats Directive³). We accept that there is no published guidance relating use by Annex II species to importance under the Hedgerow Regulations (1997), our intention (as described in our consultation response) was that this importance should be included as part of the EIA process.

1) Lighting

We note the statement that lighting of footpaths and cycle routes is a matter for the detailed design of the development. Whilst this is understood, at Outline stage the LPA should be reasonably confident the proposal can be delivered without significant impact on protected species and therefore a level of certainty around lighting requirements is needed.

2) Hop Over/Proposed Bat Box Scheme

As with lighting, the LPA should be reasonably confident the proposal can be delivered without significant impact on protected species and therefore a level of certainty around whether hop over mitigation is deliverable.

In our consultation response we did not recommend that the LPA seek further information on bat box provision at this stage and agree that this is best left to any detailed design stage.

Badgers

We note the findings of the updated badger survey undertaken in March 2016. With regard to the SBRC record within W4, to the best of our knowledge the sett recorded in this location in 2014 was identified by a suitably experienced individual and we therefore have no reason to doubt its validity. Whilst it is likely that it has become inactive since that time, it could be recolonised in the future and therefore this should be considered as this proposal is taken forward.

Otter and Water Vole

No further comment.

Reptiles and Amphibians

We note the consultant's further comments on the use of passive displacement and have no further comment.

Breeding and Wintering Birds

3) Probably Breeding BoCC Red List and UK Priority Farmland Birds

The ES acknowledges that there will be a minor adverse effect upon on-site populations of skylark; linnet and yellowhammer, but concludes that the effect will be negligible upon the local populations of each species. Despite this conclusion, the loss will still contribute to the reduction and fragmentation of the local population. This loss has also not been assessed in-combination with other developments in the vicinity of the development site. We therefore maintain our opinion that offsite compensation should be secured as part of any development at this site.

Hedgehogs

We note the additional information on this species provided by the ecological consultant.

Flora

1) Records of Shepherd's Needle

Whilst the Shepherd's needle record for the site does date from 2004, assuming suitable habitat remains present it could still persist onsite. We disagree with the assertion that this species is relatively common in the county, whilst Suffolk does have a significant proportion of the British

³ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

population (it being very scarce outside East Anglia) it remains recorded from only 141 tetrads in the county⁴. We therefore maintain the opinion that the presence of this species should be considered when designing the detail of any development at this site.

2) Betony Recorded within the Site

We note that the majority of the areas where this species was recorded are to be retained within the proposed GI.

If you require any further information or wish to discuss any of the matters raised above, please do not hesitate to contact us.

Yours sincerely

Dr Simone Bullion
Senior Conservation Adviser

James Meyer
Conservation Planner

⁴ Sanford, M. and Fisk, R. (2010). *A Flora of Suffolk (page 296)*. D.K. and M.N. Sanford, Ipswich



Our ref: 5055 / Objections / DAH

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29th April 2016

Dear Chris,

WILDLIFE TRUST RESPONSE: DATED - 13.04.16: GREAT WILSEY PARK (DC/15/2151/OUT)

The following details comprise a response to the substantive comments provided by the Suffolk Wildlife Trust to the Local Planning Authority on 13th April 2016 in relation to the above mentioned planning application.

Plan Discrepancies

The Wildlife Trust has welcomed the clarification that there has never been a plan for any primary access road through woodland W4, and that there are no additional plans for any additional routes whether this be a footpath or road. As mentioned within our previous response there is an existing footpath, which is identified on the Public Rights of Way - Parameters Plan (5055-ES-05 Rev C) and on the Illustrative Masterplan (5055-L-111 (Rev D)). The importance of the woodland compartments has been identified within all ecological reports, and mitigation measures for buffer zones have been implemented where development backs onto such areas. The client is aware of the significance of retaining such areas and regardless of possible changes in the indicative layout there will be no bisection of any woodland habitats, particularly woodland W4.

The Habitat / Public Open Space Plan (5055-L-119 Rev D) submitted with the previous response has showed the alternations in the hedgerow losses to ensure that they are limited to existing gaps or do not exceed 12m, where possible. This is a significant feature for habitats around the location of the dormice nest, whereby possible dispersal is unlikely to be affected by such vegetation losses. Although this application is at the outline stage any future changes to a detail application will incorporate these avoidance measures to protect linkages. These plans form part of the ES and as such will be subject to conditions attached to the planning permission. Any deviation from these plans would require formal submission to the LPA to vary the condition and as such it is entirely within the capacity of the LPA to protect these habitats from development.

Hazel Dormice

The additional points raised by the Wildlife Trust relating to Hazel Dormice in their second letter, are similar to those previously addressed and include:

1. Hazel Dormice distribution in Suffolk;
2. Significance of the Hazel Dormouse population;
3. The survey effort employed to confirm the presence / absence of the species and the population assessment;

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4. The potential impacts to the population from fragmentation and isolation; and
5. Whether there is adequate survey information to support a Natural England development license.
6. Potential Impacts

1 - Dormouse Distribution.

As stated in FPCR's previous response, the population distribution within Suffolk was based on the available data provided by the Suffolk Biological Records Centre (SBRC), which concluded that there were not any records within the vicinity, and published data within the recommended text (The Dormice Conservation Handbook, 2006). FPCR had conversations with the Suffolk Wildlife Trust, who indicated there was anecdotal data of dormice to the south of the site. It is also important to point out that the data sets which were referred to by Dr Simone Bullion in the previous objection, had identified 'five clusters' within the County, excluding those found by third parties (Haverhill Disused Railway County Wildlife Site) and evidence within this application site; and therefore those recorded within the site are not the only records of this species within Suffolk.

The survey work completed and data sets gained, have been achieved using the most current available guidance (The Dormice Conservation Handbook, 2006). Whilst it accepted that these guidelines have not been updated for ten years, the recommendations and guidance provided in this document are current and the basis for which survey strategies / mitigation proposals are designed.

We therefore conclude that, although we have not the experience of all completed survey work previously undertaken throughout the County, we have used all available data and current guidance to make an assessment of the population distribution within the site and the value of the population within the Environmental Statement.

2 – Significance of the Population.

The dormice within the site have been reassessed based on the useful information provided by Dr Bullion, and the interpretation of the CIEEM Guidance in terms of Geographical Frame of Reference; whereby the populations within the site could not be defined as "*regularly occurring*" or a "*significant population/number*", and therefore cannot be of National significance.

The recent comments from the Wildlife Trust now consider the dormouse population "*of at least Regional importance...*" rather than the National level of importance as previously stated. Whilst, in our professional opinion and using guidance provided by the CIEEM we consider a local level value could be attributed to the population, the acceptance of a Regional level value for this receptor will not result in altering the overall impact assessment or mitigation proposed for this species.

3 - Survey Effort

We note the Wildlife Trust's ongoing concerns with the survey effort within the current application site, however similar concerns for developments within the surrounding areas do not appear to have been under the same scrutiny as this application. This is particularly the case for the planning application at Land North West Haverhill (LNWH) (SE/09/1283), which is situated adjacent to our application site and separated by Haverhill Road. The habitats within the LNWH application consist of a number of hedgerows and a woodland compartment, with linkages to surrounding County Wildlife Site (CWS) such as Ann Suckling's Way and Norney Plantation which is also ancient woodland. The LNWH development will consist of approximately 1150 dwellings and a new relief road, which bisects through a number of 'important' and 'ancient and/or species rich' hedgerows. In many ways the LNWH application is similar to our planning application; however survey effort appears substantially less, whereby no dormice surveys were undertaken regardless of the habitat loss and linkages to surrounding habitats, that could contain dormice.

The surveys were undertaken within our application site are in accordance with the guidelines outlined within the Dormouse Conservation Handbook (Bright et al 2006). Consequently, as this is

the current guidance used by ecological consultants the methods applied accord with current survey guidelines.

Furthermore, the survey work completed provides a score of 160 which exceeds minimum effort score of 20. This score was achieved by setting and checking 381 dormice tubes over the period of May to September 2015. Therefore, the completed survey work significantly exceeds the minimum requirements as documented within the guidelines, without the inclusion of the inspection which was completed in October 2015 when the dormouse tube were removed, as documented within the FPCR Dormice Report (paragraph 5.7).

The recent letter by the Wildlife Trust suggests that direct searches for 'natural nests' should have been completed to confirm an absence of such sites. This survey technique was not employed as it was likely to be unsuccessful and inconclusive given the size / nature of the habitats across the site, a conclusion which is confirmed in the Dormouse Conversation Handbook, which states:

“Searching for nests is time consuming and often unsuccessful – even where dormice are known to be present – as they mainly use other places to rest (for example, tree holes) and do not often construct nests of their own. Thus, failure to find woven nests should not be used as evidence of absence (Page 24)”.

Whilst, direct nest searches were not completed within habitats including hedgerows and areas of woodland, inspections of mature trees with suitable features to be used as a bat roost were completed. As a proportion of the suitable roost features also provided suitable cavities for the creation of 'natural' dormice nest sites, a nest search was effectively completed in areas of the site which were likely to provide a degree of success in the identification of dormouse nest. This inspection covered trees which were not removed by the development but those where the development potentially could affect bat roost sites, if present. No dormouse nest sites were found in any of the trees surveyed providing further evidence that the population within the site is small and isolated.

When considering potential survey methods the Dormouse Conservation Handbook also states *“Nest tubes should therefore be considered as an excellent tool for surveys, but not for long term population monitoring. Page 27”.* Therefore, it is our opinion that the survey methods employed were in accordance with the requirements of the current guidelines, adequate to confirm the distribution of dormice within the site and as such there is no deficiency in the scope of work undertaken.

4- Impact to Dormouse including Fragmentation / Isolation

The Wildlife Trust have acknowledged that the changes of hedgerow loss to a maximum of 12m, these gaps are likely to be secured through the design stages from outline to the final full planning application, whereby all future proposals are sympathetic to the requirements of this species, providing enhancements for the population and reducing potential isolation of the confirmed population. Should planning permission be granted, these measures could be secured by a condition requiring the submission of the dormouse mitigation strategy which includes the requirement for developers to minimise any bisections of hedgerows to 12m, where appropriate, or the provision of alternative mitigation, if required.

5 – Consideration of the Conservation of Habitats & Species Regulations 2010 (as amended).

The current survey results have demonstrated that a single dormouse nest is situated in habitats which are retained by the proposals. No further nest sites or evidence of dormouse nests were identified in the nest tubes within location affected by the development proposals. From this evidence it has been concluded that the proposals will not affect a breeding site or resting place which are afforded strict protection under the Regulations.

On the basis of this evidence, it is reasonable to conclude that the proposals will not result in potential offences under the Regulations and therefore a license is not required to legitimise the

works. This conclusion is supported in Section 5.2 of the Dormice Conservation Handbook which states:

“Ultimately this is a decision to be made by the consultant and client. A licence permits an action that would otherwise be unlawful. To minimise the risk of illegal activities being undertaken, it is recommended that a licence is applied for if – on the basis of survey information and specialist knowledge – it is considered that:

- *The site in question is demonstrably a breeding site or resting place for dormice.*
- *The proposed activity is reasonably likely to result in an offence being committed. (page 45)”*

In situations, where no evidence of dormouse activity has been identified in habitat effected by proposals, but dormice are known locally, the Dormice Conservation Handbook confirms a license can be avoided ‘*if the proposed activity can be timed, organised and carried out to avoid committing offences*’. The guidance also confirms that where impacts can be completely avoided, the Regulations are not offended and a license is not required.

Given this guidance, the result of the surveys and the proposals, any license application for dormice submitted to Natural England (NE) would be on a precautionary basis. The submission of such a precautionary license would be unacceptable to Natural England’s licensing department, as licenses are only issued for proposals which would result in offences under the Regulations not proposals which may result in ‘potential offences’.

In consideration of the above, it is our opinion, based on guidelines and interpretation of the Regulations that a licence will not be required. However, when exercising duties under the Regulation if the Local Planning Authority considered on balance that a license application should be submitted to Natural England, the Local Planning Authority only have to consider based on the evidence and mitigation proposals whether it is likely that Natural England are likely to grant a license. The ultimate decision on whether a license application meets the requirements of the Regulation is Natural England (as the statutory body on matter concerning the Regulations). To date we have had no objection from Natural England regarding the scheme.

If there remains a concern about the potential existence of ‘natural nests’ within habitats effected by the proposals, it is wholly acceptable for the works to proceed in accordance with a method statement. This method statement would require the removal of vegetation to be undertaken at appropriate time of the year and following the completion of further investigations prior to commencing any works. In the event evidence of dormouse activity is identified in areas of vegetation scheduled for removal, the method statement would also require all works to stop and a license be obtained. The application of such methods would ensure compliance with the requirements of the Regulations.

An outline risk assessment and method statement will be submitted to the Local Planning Authority in due course. The method recommended in this document could form the basis of a condition if planning permission is granted.

Furthermore, as the proposals include significant enhancements for dormice overall it is also reasonable to conclude that the development will not only maintain the ‘favourable conservation status’ of the population but will improve the conservation status of the population. Consequently, the proposals also conform to the requirement of Regulation 53(9)(b) ‘*maintenance of the favourable conservation status*’.

6 – Potential Impacts

The Wildlife Trust have raised further concerns about ‘assumptions’ made in terms of the assessment of the impacts to dormice and believe that there still is ‘insufficient’ information to

assess the impacts and require more surveys. The Dormice Handbook states in section 5.4 Predicting likely impacts (Page 46) that:

“The task of determining the impact of a proposed development is made easier by good survey information and detailed plans, showing pre-development and post development site layout in relation to the places where evidence of dormice has been found”

The surveys undertaken, as stated above, follow those suggested within the handbook, whereby nesting tubes were used as they have been deemed ‘*an excellent tool for surveys*’ and the survey effort exhibited within the site is eight times more than that required in the guidance.

The requirement for ‘natural nest’ searches are more likely to result in a negative result due to the length of habitat which needs to be searched and variety in potential nesting places, such as tree cavities etc, which are largely absent within the vicinity of the nest found; this method of searching for evidence of dormice is ‘...*often unsuccessful – even where dormice are known to be present.*’. It is therefore deemed additional surveys for such structures would unlikely provide further data than that which is provided from more appropriate survey methods already undertaken within the site.

FPCR reiterate that all surveys have followed and exceeded the methods recommended within the standard guidelines, where sufficient information has been completed to determine the impacts of the proposed development; which has informed the design of the development avoiding habitats and limiting vegetation losses.

Therefore, it is our opinion that the data sets are robust, fit for purpose, fulfil the requirements under the guidelines and are adequate to assess the potential effects of the development on dormice. Consequently, we do not consider any further survey work is required to support this outline application.

Bats

The Wildlife Trust has acknowledged that there is ‘*no published guidance relating use by Annex II species to importance under Hedgerow Regulations (1997)*’, furthermore the rarity of barbastelles has been assessed through accepted survey methods and adequate mitigation measures have been designed into the scheme, to ensure dark corridors are maintained; thus maintaining linear linkages to the wider area.

It is FPCR’s opinion that the survey data is adequate to assess the effects and therefore there is no requirement for an assessment in accordance with the Wildlife Trusts suggestions.

1) Lighting

Current lighting strategies have assumed a worst case scenario based on the outlined parameters plan for an outlined application. No further information is required at this stage, but a condition requiring the submission of a sensitive lighting scheme is wholly appropriate.

2) Hop overs / Proposed Bat Box Scheme

As with the lighting strategy, it is proposed that the measures to protect hop-overs be conditioned for the detailed planning stage. Bat box provisions will also be provided on the finalise layout.

Badgers

Surveys undertaken in March 2016 have clarified a number of issues previously raised by the Wildlife Trust. It is also concluded that due to the transient nature and the population dynamics of badgers, that activity within the site could change within the intervening years; as such further survey work will be undertaken before a finalise scheme is confirmed, where all eventualities will be

taken into account. Therefore, the application of a suitability worded condition requiring the completion of further survey work and the submission of appropriate mitigation for each reserved matter application is wholly acceptable for this species.

Breeding and Wintering Birds

The previous response had highlighted that Suffolk Bird Report had listed skylarks, linnet and yellowhammer as common resident or visitors "*occurs regularly or widely distributed in suitable habitat and season*". The numbers of each species recorded at the application site included a maximum of 15 for skylarks, 4 for linnet and 10 yellowhammers; and the loss of arable habitats during the proposed development would not be significant for the species concerned.

There are wider arable fields within the vicinity of the development that could provide alternatives; there are also opportunities for the County Park in the south east to incorporate features that would benefit these species. This would include grassland habitats with a managed sward height and wildflower content to enable foraging as invertebrate assemblages would be increased, the open field nature will ensure a wide field of vision, ensure predators can be seen; such habitats would favour skylarks and yellowhammer. Periphery and potential bisecting hedgerows would ensure that foraging and refuge habitats are created for linnets and yellowhammers, however hedgerows would still need to ensure larger field compartments for skylarks.

Land at North West Haverhill (LNWH) was surveyed by RSP in 2007, whereby the majority of the habitat consisted of arable land, during breeding bird surveys RPS found the following:

- Linnet – 1 pair
- Skylarks – 6 pairs
- Yellowhammer – 11 pairs

These number recorded are similar to those recorded within Great Wilsey Park, with the expectation of yellowhammer which LNWH recorded 22 individuals. From review of the Environmental Statement 2009 for LNWH this stated that the impact of habitat loss was minor adverse for all breeding birds and did not state any specific mitigation measures, until the Supplementary Environmental Statement 2010. The supplementary information only addressed the issue of yellowhammers, whereby mitigation measures provided within the scheme would include new hedgerow planting with associated grassland buffers, the impacts after such mitigation was considered to be not significant. There appears to be no objections to the mitigation measures proposed within LNWH in regards to the breeding bird assemblages from the Wildlife Trust.

The Great Wilsey Park application will retain large majorities of the existing hedgerow network and biodiversity enhancements within the main development area will provide buffer areas around hedgerows and increase floral diversity which will benefit invertebrate assemblages and increase foraging opportunities for breeding birds. The County Park in the south east will provide opportunities for further habitat enhancements with specific biodiversity enhancements, as previously mentioned.

FPCR conclude that although arable habitats are to be lost, the bird assemblages recorded are in low numbers, which are considered to be common within Suffolk. The mitigation measures will provide habitats suitable for the linnet, skylarks and yellowhammers; although surrounding farmland habitat will still be of more value. It is therefore thought that there would not be a requirement for further off site compensation.

Flora

1) Records of Shepherd's Needle

The surveys undertaken by FPCR are more recent, relevant and accurate than those records from Suffolk Biological Records Centre which were dated 2004, with such areas now intensively farmed.

It is also concluded that this species is relatively common within Suffolk, and that if such species were to be present it would not represent a significant effect on the species conservation status regionally or nationally.

I trust that the information provides the clarification required, but if you have any further queries or problems please do not hesitate to contact me.

Yours sincerely



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Attached Documents:

Public Right of Way Parameters Plan (5055-ES-05)

Illustrative Masterplan (5055-L-111 Rev D)

The Habitat / Public Open Space Plan (5055-L-119 Rev D)

Appendix 9.6

Dormice Method

Statement



Hallam Land Management Ltd

Great Wilsey Park, Haverhill, Suffolk

Addendum Document

Appendix 9.6

DORMICE METHOD STATEMENT AND RISK ASSESSMENT

May 2016

FPCR Environment and Design Ltd

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Figure 1: Habitat Loss and Creation with Dormice Nesting Box Locations

1.0 SUMMARY

- 1.1 A dormice survey was undertaken on land at Great Wilsey Farm, Haverhill, Suffolk in 2015; whereby a single dormice nest was recorded in a nesting tube in September, the same nest was also confirmed during the removal of the nesting tubes in October 2015. This nest was located within habitats that are to be retained within the green infrastructure of the Proposed Development, therefore an offence under the Directive or the Conservation of Habitats and Species Regulations 2010 (as amended) concerning disturbance/damage or destroying a regularly breeding or resting site will not occur and a licence will not be required.
- 1.2 During the surveys of entire Application Site no further evidence of dormice was recorded. The Proposed Development will limit the extent of habitat losses around the positive record of a dormice, whereby the only proposed loss would be through the bisection of hedgerows to allow for access roads into the field compartments, these gaps will largely be limited to 12m ensuring potential linkages are retained.
- 1.3 The small amount of hedgerow losses within stretches where no evidence of dormice were recorded would have a very low risk of committing an offence. Rather than applying for a Natural England licence, works within the site will proceed under a precautionary method statement with appropriate working practices that will further reduce any risk of committing an offence; this will include the following:
- Erecting dormouse nesting boxes prior to works;
 - Timed vegetation removal;
 - Habitat Enhancement/Creation/Compensation;
 - Habitat Management Strategy (to follow).
- 1.4 This Method Statement provides the methods that will be adopted within the site to ensure that no offence is committed under the Regulations regarding dormice; these measures are currently based on the Illustrative Masterplan (5055-L-111). As the application is currently only at the outline stage, specific details regarding complete habitat losses and mitigation planting in terms of numbers and species can only be indicative at this stage. More details will be provided at the detailed planning stage.

2.0 INTRODUCTION

- 2.1 FPCR Environment and Design Ltd were commissioned to undertake a variety of surveys within land at Great Wilsey Farm, Haverhill, Suffolk (central OS grid reference TL 689461). A dormice survey was undertaken between May and September 2015, due to the habitats available within the Proposed Development and anecdotal evidence of a possible dormice nest within Haverhill Disused Railway County Wildlife Site, approximately 490m south.
- 2.2 A total of 381 nesting tubes were spread through the Application Site within hedgerows and woodland compartments in March 2015. The subsequent checks only found one dormouse nest in a nesting tube during the September surveys, where a tube had nesting material that was conducive to dormouse, however no specific sighting of an actual dormouse was recorded.
- 2.3 The woodland (W4) within which the dormouse nest was found will be incorporated within the green infrastructure, whereby it will be adequately buffered from the construction and operational phases of the development. The surveys demonstrate that dormice are not using the site in a significant manner and are restricted to limited areas, which are retained. As such habitats are not going to be affected, an offence under Article 12 (1) of the Habitats Directive or the Conservation of Habitats and Species regulations 2010 (as amended) concerning disturbance/damage or destroying of a regularly used breeding or resting place, will not occur and a Natural England licence will not be required.
- 2.4 Adjacent habitats to where the dormice nest was recorded, found no evidence of dormice during the survey period; therefore these remaining habitats cannot be defined as anything more than 'potential resting sites' which are not covered by the Regulations.
- 2.5 The probability of encountering dormice within habitat outside of that where the nest was found is thought to be low. In situations where no evidence of dormouse activity has been identified in habitats effected by proposals, but dormice are known locally the Dormice Conservation Handbook confirms a licence can be avoided '*if the proposed activity can be timed, organised and carried out to avoid committing offences*'. The guidance also confirms that where impacts can be completely avoided, the Regulations are not offended and a licence is not required. To ensure such circumstances a precautionary this Method Statement has been written.

3.0 LEGISLATION

3.1 The hazel dormouse is listed under Annex IVa of the EC Habitats Directive and as a result is covered by Section 41 of the Conservation of Habitats and Species Regulations 2010. It is also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these make it an offence to:

- deliberately capture or intentionally take a dormouse;
- deliberately or intentionally kill or injure a dormouse;
- to be in possession or control of any live or dead dormouse or any part of, or anything derived from a dormouse;
- damage or destroy a breeding site or resting place of a dormouse;
- Intentionally or recklessly obstruct access to any place that a dormouse uses for shelter or protection;
- intentionally or recklessly disturb a dormouse while it is occupying a structure or place that it uses for shelter or protection;
- deliberately disturb any dormouse in particular any disturbance which is likely to
 - impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or
 - affect significantly the local distribution or abundance of the species to which they belong.

3.2 Although the law provides strict protection to dormice, it also allows derogation from this protection under Section 53 of the Conservation of Habitats and Species Regulations 2010 through the issuing of EPS licences for development works. These licences in England are currently determined by Natural England (NE).

3.3 Where a lawful operation is required to be carried out, which is likely to result in one of the above offences, an EPS licence may be obtained from NE to allow the operation to proceed.

3.4 As part of the licence application process a number of 'Tests' have to be met by the application.

3.5 Natural England Guidance Note: European Protected Species and the Planning Process – Natural England's Application of the 'Three Tests' to Licence Applications (March 2011) states:

"In determining whether or not to grant a licence Natural England must apply the requirements of Regulation 53(2)(e) of the Regulations and, in particular, the three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b)6. (1) Regulation 53(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".

(2) Regulation 53(9)(a) states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".

(3) Regulation 53(9)(b) states: the appropriate authority shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."

- 3.6 Conservation status is defined as “the sum of the influences acting on the species concerned that may affect the long term distribution and abundance of its population within its territory”. It is assessed as favourable when:
- population dynamics data on the species concerned indicate that it is maintaining itself on a long term basis as a viable component of its natural habitats, and
 - The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
 - There is, or will probably continue to be, a sufficiently large habitat to maintain its populations on a long term basis.
- 3.7 These tests must not only reach agreement with Natural England when assessing a Licence application they must also be assessed by the planning authority when determining a planning application.
- 3.8 The dormouse is listed as a “Species of Principle Importance for the conservation of biological diversity” in the Natural Environmental & Rural Communities Act (2006) and as a result public bodies must have regard to it when carrying out their duties.
- 3.9 The dormouse is also listed within the Suffolk Biodiversity Action Plan.

Reasoning why a Natural England licence is not required

- 3.10 Where a European Protected Species (EPS) may be affected by a development it is necessary to consider if an offence is likely to be committed under Article 12(1) of the Habitats Directive. If it is likely that an offence is to occur then a mitigation licence would be required from Natural England. Article 12 (1) states:
- “1, Member States shall take the requisite measures to establish a system of strict protection for the animal species in Annex IV(a)....prohibiting:*
- a) All forms of deliberate capture or killing of specimens of these species in the wild;*
 - b) Deliberate disturbance of these species, particularly during the periods of breeding, rearing, hibernation and migration;*
 - c) deliberate destruction or taking of eggs from the wild;*
 - d) deterioration or destruction of breeding sites or resting places.”*
- 3.11 The current survey results have demonstrated that a single dormouse nest is situated in habitats which are retained by the proposals. No further nest sites or evidence of dormouse nests were identified in the nest tubes within locations affected by the Development Proposals. From this evidence it has been concluded that the proposals will not affect a breeding site or resting place which are afforded strict protection under the Regulations.
- 3.12 On the basis of this evidence, it is reasonable to conclude that the proposals will not result in potential offences under the Regulations and therefore a license is not required to legitimise the works. This conclusion is supported in Section 5.2 of the Dormice Conservation Handbook which states:

“Ultimately this is a decision to be made by the consultant and client. A licence permits an action that would otherwise be unlawful. To minimise the risk of illegal activities being undertaken, it is

recommended that a licence is applied for if – on the basis of survey information and specialist knowledge – it is considered that:

- *The site in question is demonstrably a breeding site or resting place for dormice.*
- *The proposed activity is reasonably likely to result in an offence being committed. (page 45)”*

3.13 In situations, where no evidence of dormouse activity has been identified in habitat effected by proposals, but dormice are known locally the Dormice Conservation Handbook confirms a license can be avoided ‘*if the proposed activity can be timed, organised and carried out to avoid committing offences*’. The guidance also confirms that where impacts can be completely avoided, the Regulations are not offended and a license is not required. Hence the reason for this Method Statement to be written, to ensure works are carried out during periods that could avoid committing an offence, if dormice are present.

4.0 METHOD STATEMENT

Nesting Boxes

- 4.1 Prior to any habitat losses a number of dormice nesting boxes will be installed around the proximity of the existing nest found within the site and near planned habitat losses for access. Additional boxes will also be installed within woodland habitats, as the development will eventually bridge the existing gaps between the current dormice nest and such habitats where dormice are currently absent.
- 4.2 Wooden nest boxes will be installed within habitat adjacent to any vegetation losses, these will increase the nesting opportunities within the site and thus increase the carrying capacity in the long term. The precise locations will be determined at the detailed stage however figure 1 shows the habitats within which these will be installed. These will be monitored to ensure they remain viable as nesting features, and will also be used for future assessment of the population.

Timed Vegetation Removal - Hedgerows

- 4.3 The current development proposals are only at the outline stage, therefore confirmed detailed aspects of the habitat losses and locations are not known, regardless the length of loss will be limited to 12m in the majority of locations, and this is assumed for this assessment.
- 4.4 The scheduling of the construction works is also currently unknown; therefore the methods below cover potential habitat removal during the winter and summer.

Winter

- 4.5 Vegetation checks and removal will be undertaken during the winter between November and March inclusive under the supervision of a licenced ecologist. This period will avoid the bird breeding season and the active period for dormice, as they are more likely to be in hibernation underground. Searches of the vegetation will be undertaken prior to any vegetation removal whereby nests and any cavities within trees etc will be inspected for dormice. The clearance of vegetation will be undertaken by hand with no heavy machinery to be used in close proximity to the areas of removal, so avoiding any possible disturbance through noise and vibrations. All tree felling should also be undertaken during this period, provided there are no bat roosting constraints.
- 4.6 The vegetation will be cut down to approximately 10-15cm, whereby disturbance to the ground will be avoided and the roots and stubs are kept, this is to avoid any potential hibernation dormice within the ground. The hedgerow canopy will be removed from the stem, a small proportion of the hedge will be kept as a 'dead hedge', which will provide a feature within which dormice could continue to move when they wake from hibernation, this also means that individuals will be able to move along such breaks into surrounding retained habitats.
- 4.7 The removal of the root systems of the prior removed vegetation will be undertaken when dormice are active between April to October, although care should be taken to avoid periods of cold wet weather, when dormice can go into torpor. All root removals will need to be supervised by a licenced ecologist. During this period the 'dead hedge' should also be removed from the site; care should be taken to ensure that there are no nesting birds present; if they are present then

work should stop until young have fledged and a buffer created to ensure that the nest is not disturbed. These areas will also be searched for dormice nests prior to removal.

Summer

- 4.8 The vegetation will be cleared by hand during the summer when dormice are active; this will be between May to late September, but clearance should ideally be undertaken in May to avoid separating young that would be dependent on their mothers. All vegetation that is scheduled for removal will be checked for bird and dormice nests before any removal is undertaken this is especially important during the breeding period. All removal will take place under a watching brief by a licenced ecologist, whereby removal of small lengths will be undertaken over consecutive days, thus allowing time for any possible dormice to move from the area. The removal of the canopy of vegetation will be undertaken by hand, this will ensure that sightings of dormice are more likely. The root system of the vegetation should also be removed during this period so to avoid potential refuge and hibernation opportunities in the future.

Timed Vegetation Removal – Woodland - Winter

- 4.9 Small sections of woodland are to be removed to the west of the site, these are isolated from the habitats within which the dormice nest was found; adequately surveyed effort was under within all woodland whereby no evidence of dormice were found.
- 4.10 The north western corner of woodland W1 will have the largest degree of habitat loss which is approximately 1ha in size. This woodland consisted of a number of early mature Norway maple *Acer platanoides* and sycamore with a mixture of Scots pine and Austrian pine. Under canopy species included English elm, field maple *Acer campestre*, blackthorn *Prunus spinose* and dog wood *Cornus sanguinea*.
- 4.11 There is an additional two areas of recently planted woodland, in the north west, that will result in approximately 3086m² removal of specimens; these are also adequately situated away from the dormice nest recorded. There will also be some habitat losses within the central region of woodland W1, again to facilitate access roads.
- 4.12 During the winter months (November to March) ground level vegetation will be removed from the woodland areas, this will persuade any dormice that could potentially be present to move when they come out of hibernation. As with the above a 'dead hedge' will be provide to allow safe passage to surrounding retained habitats/woodland. The remaining tree stumps and any ground removal will take place in the summer months when dormice have left the area (May to September).

Timed Vegetation Removal – Woodland - Summer

- 4.13 The summer removal will take place between May and September, whereby small sections of the woodland compartments will be removed over a number of consecutive days. This will allow time and opportunities for any dormice that might be present to move into adjacent retained habitats. Care will be taken to endure that no habitats contain nesting birds.

Construction Period

- 4.14 During the construction period all contractors will be briefed by FPCR ecologists and/or onsite managers about the importance of the habitats within the site for the range of species that have been identified, and that care should be taken when conducting any works near existing natural features. All vegetation removal will have been predetermined at the full planning stages, and no additional losses would occur until FPCR ecologists have confirmed so.
- 4.15 Where site offices, material and vehicle storage are proposed, and where the phased development commences all natural habitats will be fenced off with an appropriate buffer using high visibility fencing or similar. This will ensure that habitats are not degraded through soil compaction and interference by contractors and machinery.

Habitat Enhancement/Creation/Compensation

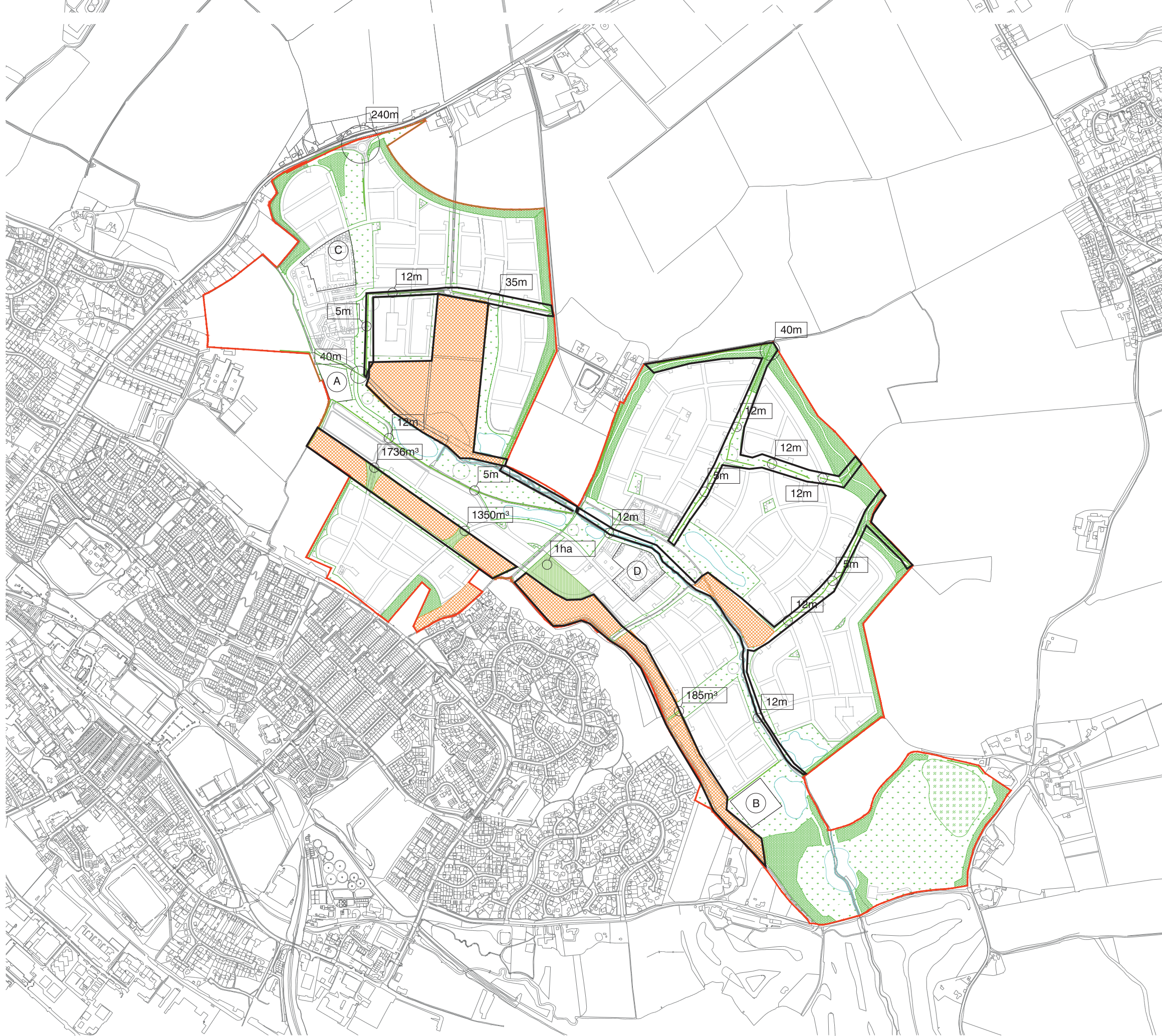
- 4.16 All existing and retained habitats will be enhanced with additional planting to ensure that poor structure and gaps are filled with native species that will benefit foraging, commuting and nest building, these will have a positive effect on dormice but also other species.
- 4.17 Woodland compartments will be thinned to allow understorey shrub development, which are of more value to dormice than the current tree canopy. Additional species will include oak, honeysuckle, hawthorn, wayfaring tree, bramble, crab apple, cherry and hazel. Management will be secured through a Section 106 agreement, whereby an Ecological Management Strategy will be written to ensure that the habitats maintain their value into the future. Management practise will include coppicing, rotational cutting of sections of hedgerows at 3 to 5 year intervals and/or hedgerow laying; such measures will ensure increased fruiting bodies and understorey renewal of growth which will benefit invertebrates.
- 4.18 There will be a number of new habitats created within the site that will increase opportunities for dormice to spread from their current isolation into the wider site and off site. The current parameters plan has indicated that there will be approximately 1.32ha of new woodland planted around the peripheries of the site and within the proposed county park on the south east. There will also be a number of hedgerows created that will strengthen the linkages between existing habitats; the length of hedgerow creation has not been defined within the parameters plan as this will be at the more detailed stage. However, these will include species raised above and be of a suitable width to ensure that they provide refuge from predation.
- 4.19 The gaps created within existing hedgerows will be limited to 12m where possible, this is to facilitate potential movement of dormice at ground level. However to limit the requirement for individuals to go to ground taller shrubs/trees will be planted either side of any gaps, whereby management will ensure that the canopy is lifted to create a natural bridge over time. Similar measures will be adopted across the stream that runs through the site, whereby tree canopies will be encourage to bridge the gap and potentially provide links to habitats where dormice are currently absent.

Management Strategy

- 4.20 Once a finalised masterplan and design has been confirmed, a detailed management strategy can be written to ensure that the existing and created habitats function as biodiversity receptors and that management processes will facilitate the expansion of dormice suitable habitats within

the site. It is envisaged that the substantial creation and enhancement of habitats will increase the foraging and nesting opportunities within the site; the management of such features will be important to ensure the Favourable Conservation Status of dormice is maintained and enhanced in perpetuity.

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	Application boundary	168.34ha
	Existing woodland habitat	16.08ha
	New woodland habitat	13.9ha
	Woodland to be removed (Total area)	1.327ha
	Species rich grassland and seasonal meadow	34.92ha
	Scrub area V Natural regeneration	2.30ha
	Attenuation Ponds Wetland Habitat	4.45ha
	Tributory of the River Stour Riparian habitat	1.14ha
	Existing Hedge Retained	4988m
	Hedgerow to be removed to facilitate road access and footpath links (Total length) (Assumed 2.5 roadside clearance for visibility)	470m
	Allotment Site	0.6ha
	Allotment Site	0.9ha
	School Playing Fields	1.4ha
	School Playing Fields	1.2ha
	Habitats with Dormice Nesting Boxes to be Installed	

Hallam Land Management Ltd
 Great Wilsey Park
 Haverhill

fpcr HABITAT LOSS AND CREATION WITH DORMICE NESTING BOX LOCATION

Not to Scale @ A3 DAH 13.05.2016

Figure 1 **5055-E-01**

Appendix 9.7

Additional Bat Report

2016



Hallam Land Management Ltd

Great Wilsey Park

ADDITIONAL BAT SURVEY REPORT

March 2016

FPCR Environment and Design Ltd

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Appendix 1: Automated Static Detector survey Timings & Conditions

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Appendix 5: Summary of Barbastelle Registrations at Statics September 2015

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1.0 INTRODUCTION

- 1.1 FPCR Environment and Design Ltd were commissioned by Hallam Land Management Ltd (HLM) to complete detailed bat surveys within the site boundaries of a proposed development on land north east of Haverhill, Suffolk.
- 1.2 The *Bat Survey Report* (FPCR, August 2015) contains full details of all previous bat surveys completed over the period of April to September 2014 and April to August 2015. This report provides details of additional bat surveys completed over the period of August September 2015. These additional survey include:
- Additional activity transect surveys September 2015;
 - Additional static detectors surveys over the period of August September 2015; and
 - Further nocturnal surveys on mature trees identified as providing features which could be used as a roost site.

2.0 METHODOLOGY

Foraging / Commuting Habitat

Activity Transect

- 2.1 Eleven activity transects have previously been completed, during the following months:
- April, June, July, August and September 2014 and
 - April, May, June, July and August 2015 (FPCR *Bat Survey Report* August 2015).
- 2.2 One additional activity transect was completed, during September 2015.
- 2.3 The primary objectives of transects completed was to identify foraging areas, commuting routes and species utilisation of the development area.
- 2.4 This methodology takes into account the statutory guidance from English Nature (now Natural England)¹ and further guidelines introduced by the Bat Conservation Trust² and JNCC³. The survey effort was determined from recommendations provided in BCT² guidance and is based on a large site offering medium habitat quality.
- 2.5 The transect route was predetermined prior to survey in order to comprehensively cover all areas of the site and included point count stops to identify activity levels around the features of potential value to bats that are to be most affected by proposals (i.e. Hedgerows, tree lines, dense scrub etc.). Each point count was between 3 and 5 minutes long, during which time all bat activity was recorded.
- 2.6 The dusk transects commenced approximately 15 minutes prior to sunset and were a minimum of 2 hours in duration. The dawn transect commenced approximately 120 minutes prior to sunrise until sunrise. Each transect was walked at a steady pace and when a bat passed by, the species, time and behaviour was recorded on a site plan to help to form a general view of the bat activity present on site and highlight any habitats types associated with bat activity.

¹ English Nature (2004) Bat Mitigation Guidelines

² Bat Conservation Trust (2012) Bat Surveys- Good Practice Guidelines

³ JNCC (1999) Bat Workers Manual

- 2.7 Surveyors used ultrasonic (frequency division) bat detectors (Bat Box Duets and Mp3 or a Wildlife Acoustics Echo Meter EM3+) during the transect surveys to detect bats and aid species identification.
- 2.8 Post-survey, bat calls were analysed using AnaLookW[®] software (Titley Scientific) and/or BatSound (version 4), by taking measurements of the peak frequency, inter-pulse interval, call duration and end frequency. From this, the level of bat activity across the site in relation to the abundance of individual species foraging and commuting along habitats was assessed.
- 2.9 All transects were undertaken when conditions were suitable (i.e. when the ambient air temperature exceeded 10°C and there was little wind and no rain) see Table 1.

Table 1: Activity Transect Survey Conditions

Date	Sunset/ Sunrise	Temperature °C	Rain	Wind	Cloud %
01.09.15*	19:47	17-16°C	0	0	25%
02.09.15*	06:11	10°C	0	1	30%

*Survey completed within one 24 hour period counts as one survey occasion.

Automated Surveys

- 2.10 Static passive recording broadband detectors were deployed on site to supplement the manual transects surveys. In addition, passive recording is stipulated in the guidance document Bat Conservation Trust (2012) Bat Surveys- Good Practice Guidelines 2nd edition^[1].
- 2.11 Passive monitoring was undertaken using an automated logging system (SM2BAT+, Wildlife Acoustics) with its output saved to an internal storage device. SM2BAT+ devices were placed along linear features considered to be of value to bats, such as hedgerows, woodlands, water courses and tree lines.
- 2.12 Nine static units were deployed within the site. Devices were placed in each location for an extended period of time (5-6 nights) of suitable weather conditions (little no rain/wind and temperatures above 10°C). Detectors were programmed to activate 30 minutes before dusk and recorded continuously until 30 minutes following sunrise.
- 3rd 8th August 2015
 - 2nd 8th September 2015
- 2.13 The recorded data was analysed using AnaLookW[®] software (Titley Scientific) and Bat Sound (Version 4) to assess the amount of bat activity on site by recording the number of bat passes. The automated static detector survey timings and weather conditions can be found in Appendix 1.

Nocturnal Tree Surveys

- 2.14 The final (third) nocturnal survey was undertaken on a number of trees with identified bat roosting potential within the development site during August and September 2015. Surveyors were positioned at various aspects of the trees from approximately 15 minutes prior to sunset and 90-

120 minutes after or 90 minutes prior until sunrise. The number and species of bats observed emerging or entering the tree was recorded.

- 2.15 Ultrasonic bat detectors (Bat Box Duets) were used by surveyors to aid in identification. All of the nocturnal surveys were conducted in appropriate conditions, i.e. ambient temperature exceeding 10 C and little wind / rain (Table 2).

Table 2 – Nocturnal Tree Survey Weather Data

Date	Trees Covered	Sunset/Sunrise	Wind (0-5)	Temperature	Cloud Cover	Rain (mm)
22.08.15*	T49	20:08	1	24-21°C	5%	0
23.08.15*	T49	05:55	1	18-17°C	20%	0
26.08.15	T28, W3.6	19:59	1	18-16°C	0%	0
27.08.15	T28, TG11.7	06:01	0	13-12°C	0%	0
27.08.15	T25, T26	19:58	0	17-12°C	15%	0
28.08.15	W7.17, W7.21	06:02	0	11-10°C	5%	0
28.08.15	T30, T27	19:56	1	18-17°C	70%	0
29.08.15	T30, T27	06:04	1	15-13°C	90%	0
01.09.15	T60, W6.3	19:40	1	15-14°C	30%	0
02.09.15	T48, T69	06:11	1	11-11°C	80%	0
08.09.15*	T44	19:29	1	15-13°C	40%	0
09.09.15*	T44	06:23	1	12-12°C	100%	0

*Survey completed within one 24 hour period counts as one survey occasion

Limitations

- 2.16 During 2015 static detectors were deployed for extended periods over a minimum of 5 consecutive nights. Where weather conditions over the period of deployment were poor or detectors malfunctioned the survey period was extended.
- 2.17 During the static detector surveys in September 2015 the overnight temperatures were below 10°C for three of the nights. In addition rain was experienced during the dawn of the 8th September 2015. However, these weather conditions are typical for these periods and the resultant dataset is considered to be representative of bat activity over these seasons.
- 2.18 During the nocturnal tree surveys, due to the dense growth and continual changes to the foliage, visibility of potential roost features altered throughout the survey season. Surveyor positions were adapted over the survey period to allow surveillance of the potential roost features.

3.0 RESULTS

Activity Transect Surveys (Figure 2A, 2B, 2C)

- 3.1 The following section provides a summary of the results recorded during the additional September 2015 nocturnal survey over the on-site habitats. A full detailed breakdown of the data, including full detailed tables and locations are available in the associated plans (as indicated).
- 3.2 Three transect routes were used to cover the development area and, for reference, are described in this report as the eastern, western and southern transect routes / areas.

Dusk Transect 12, 1st September 2015 (Figure 2 and Appendix 2)

- 3.3 Overall bat activity levels were low along the eastern transect, only three bat contacts (excluding point counts) were identified, on the western transect nine bat contacts were identified (excluding point counts) and five bat contacts during the southern transect (excluding point counts).

Western Route

- 3.4 The dominant species identified was common pipistrelle *Pipistrellus pipistrellus* foraging alongside the edge of woodland W5, W7, W6 and hedgerows H7 and H15. The only other species recorded was an individual brown long-eared *Plecotus auritus* recorded alongside hedgerow H4.

Southern Route

- 3.5 The activity in this area of the site comprised single passes of brown long-eared and a unidentified *Myotis* species along the northern edge of W1. Multiple passes of an individual Barbastelle *Barbastella barbastellus* foraging along this woodland edge were also recorded. The remaining contacts comprised two soprano pipistrelle *Pipistrellus pygmaeus* close to the new plantation woodland in the south west of the site.

Eastern Route

- 3.6 Activity comprised single passes of a common pipistrelle alongside the northern edge of the water course and woodland W4.

Point Counts

- 3.7 Only bat activity was identified on the western transect at point count 2 (along H10) and 3 (southern edge of W7) comprising of common pipistrelle foraging.
- 3.8 Along the southern transect activity was identified at:
- point count 4 where a common pipistrelle was recorded foraging along the northern edge of new plantation woodland,
 - point count 6 where a single pass of a unidentified *Myotis* species close to new plantation woodland in the south west was identified.
- 3.9 On the eastern transect the only activity was identified at point count 5 along hedgerow H20 where a common pipistrelle was recorded.

Dawn Transect 12, 2nd September 2015 (Figure 2 and Appendix 2)

- 3.10 Overall bat activity levels were lower during the dawn survey than during the dusk survey. Only one bat contact (excluding point counts) was identified along each of the transect routes.

Western Route

- 3.11 Activity comprised a single pass of a pipistrelle species along the southern edge of woodland W7.

Southern & Eastern Route

- 3.12 Activity comprised a single pass of a common pipistrelle along both routes. On the eastern transect route this was recorded at the eastern edge of H20 and on the southern transect route the activity was identified close to new plantation woodland in the south west.

Point Counts

- 3.13 On the southern transect bat activity was recorded at point count 1 (southern edge of the water course in the south) comprising a pass from an unidentified *Myotis* species. During point count 4 (northern edge of new plantation woodland) a single pass of a soprano pipistrelle was heard and a common pipistrelle pass was heard at point count 6 (new plantation woodland in the south west).
- 3.14 During the western transect point counts; bat activity was only identified at point count 3 along the southern edge of W7 comprising one pass of a pipistrelle species.
- 3.15 No bat activity was recorded during the eastern transect point counts.

Static Detector Survey (Appendix 3)**3rd – 10th August 2015**

- 3.16 Nine static detectors were deployed within the site at L65 to L73 over the period 3rd – 10th August 2015 (see Figure 1). These were located as follows:
- L65 along hedgerow H11,
 - L66 along hedgerow H23,
 - L67 within woodland W4,
 - L68 along hedgerow H25,
 - L69 on the southern edge of W1,
 - L70 along hedgerow H4,
 - L71 along the eastern edge of woodland W7,
 - L72 north western corner of woodland W7,
 - L73 along the central ride between W5 and W7.
- 3.17 The lowest bat activity was recorded at L73 within the central woodland ride of W5/W7 (with an average recording rate of 1.94 bat registrations per hour) and the highest bat activity was recorded at L67 within woodland W4 (with an average recording rate of 51.91 bat registrations per hour).

- 3.18 Common pipistrelle was the dominant species recorded at the majority of the static locations with an average of between 0.29- 49.22 registrations per hour. The only exception was at L73 where brown long-eared was the dominant species recorded with an average recording rate of 1.46 registrations per hour, whilst common pipistrelle was the second most commonly recorded species at this location. This static was located within the centre of woodland W5/W7 and thus it is not an unexpected outcome within a typical woodland habitat as brown long-eared primarily hunt within woodlands. Brown long-eared bats were recorded at all the static locations but at lower frequencies than at L73.
- 3.19 At all other locations except for L70, soprano pipistrelle were the second most common species recorded with an average of 0.09 – 2.40 registrations per hour. At L70 (along hedgerow H4) unidentified *Myotis* species was the second most commonly recorded species with an average recording rate of 0.88 per hour. Low levels of registrations from unidentified *Myotis* species were recorded at all static locations (except for L66).
- 3.20 Other species identified with low average recording rates ranging from 0.01 to 0.41 registrations per hour included: unidentified *Nyctalus* species at L65 to L72, noctule *Nyctalus noctula* L65 to L68, L70 to L73, pipistrelle species at L69 and Barbastelle at L66 to L72.

Barbastelle

- 3.21 Appendix 4 summarises the Barbastelle registrations identified on statics during August 2015. Overall the data shows individual registrations throughout the night which is likely to be from individual or a small number of Barbastelle. The number of registrations does not indicate significant foraging areas or commuting routes for this species over this survey period.

2nd – 8th September 2015

- 3.22 Nine static detectors were deployed within the site at L74 to L82 over the period 2nd – 8th September 2015 (Figure 1). These were located as follows:
- L74 along hedgerow H11,
 - L75 along hedgerow H19,
 - L76 along hedgerow H4,
 - L77 the northern edge of W1,
 - L78 on the eastern edge of W7,
 - L79 on the northern edge of W7,
 - L80 southern edge of W1,
 - L81 southern edge of W1,
 - L82 northern edge of W4.
- 3.23 The lowest bat activity was recorded at L82 on the northern edge of W4 with an average recording rate of 1.02 bat registrations per hour. The highest bat activity was recorded at L75 along hedgerow H19 with an average recording rate of 92.45 bat registrations per hour.
- 3.24 Common pipistrelle was the dominant species recorded at the majority of the static locations (L74, L75, L76, L79, L80 and L81) with an average recording rates between 0.67- 88.99 registrations per hour. At locations L78 and L82 Barbastelle was the most commonly recorded

species, albeit with low levels of registrations, with an average recording rate of 1.25 and 0.78 registrations per hour. At location L77 soprano pipistrelle were the most commonly recorded species with common pipistrelle the second most common.

- 3.25 Unidentified *Myotis* species and noctule were recorded at all static detector locations with low average recording rates ranging from 0.01 to 0.45.
- 3.26 Other species identified with low average recording rates ranging from 0.01 to 0.41 registrations per hour included: *Nyctalus* species at L74 to 76, L78, L82, brown long-eared L76 to L78, L80 to L82, *Pipistrellus* species at L75, L76, L78, L80 and Nathusius pipistrelle *Pipistrellus nathusii* (a single registration) at L78.

Barbastelle

- 3.27 Appendix 5 summarises the Barbastelle registrations identified on statics during September 2015. Overall the level of registrations were low and the majority of the registrations were recorded earlier in the evening (from 20:05 00:00) across a number of nights. No corresponding peak in activity were recorded at dawn.
- 3.28 Over this survey period increase numbers of registrations were recorded on three on the static detectors 136 on L76 (along hedgerow H4), 140 on L80 (southern edge of woodland W1, along the public footpath) and 196 on L81 (southern edge of W1). Whilst the number of registrations identified were increased on these survey occasions, the number of registrations on the static detectors does not correlate individual animals as the registrations may reflect one or a small number of animals foraging or commuting past a detector repeatedly.
- 3.29 The majority of the registrations (106 registrations) on L76 were recorded on three of the survey nights 02 04 September 2015. The peak periods when the majority of these registrations (83 registrations) were recorded was 20.00 21.00, 23.00 00.00 and 01,00 02.00. No peaks at the dawn peak were recorded. At L80 the majority of the registrations (115 registrations) were again recorded over three of the survey nights 02, 05 and 07 September 2015. The peak period of these registrations was on the night 07 September 2015 00:34 to 03:17 (46 registrations). The registrations recorded at L81 were relatively consistent over the survey. However, the peak period over which the majority of these registrations (153 registrations) were recorded was 20.00 21.00, 00.00 03.00. Again no corresponding peak in activity were recorded at dawn. Whilst higher levels of registrations for Barbastelle were identified at these locations, the results are indicative of Barbastelle foraging throughout their range and not that these features provide a significant foraging resource or commuting route.

Nocturnal Tree Surveys (Figures 3 – 9 & Appendix 6)

- 3.30 The remaining nocturnal tree surveys were completed on trees confirmed with bat roosts and high / moderate bat roosting potential. Table 3 below shows the summary of the overall completed nocturnal tree surveys.

Table 3: Summary of Nocturnal Tree Surveys

Tree	1 st Survey	2 nd Survey	3 rd Survey
Confirmed Roosts			
T44	24.06.15 Dawn	21.07.15 Dawn	08.09.15 Dusk/Dawn

Tree	1 st Survey	2 nd Survey	3 rd Survey
T49	24.06.15 Dawn	21.07.15 Dawn	22.08.15 Dusk/Dawn
T28	24.06.15 Dawn	21.07.15 Dawn	26.08.15 Dusk/Dawn
W3.6	02.07.15 Dusk	03-04.08.15 Dusk/Dawn	26.08.15 Dusk
High / Moderate Potential			
T48	03.07.14 Dawn	28-29.07.15 Dusk/Dawn	02.09.15 Dawn
T30	20.07.15 Dusk	03-04.08.15 Dusk/Dawn	28.08.15 Dusk/Dawn
T27	20.07.15 Dusk	30-31.07.15 Dusk/Dawn	28.08.15 Dusk/Dawn
T26	03.07.14 Dawn	30-31.07.15 Dusk/Dawn	27.08.15 Dusk
T25	03.07.14 Dawn	30-31.07.15 Dusk/Dawn	27.08.15 Dusk
T69	23.06.15 Dusk	23-24.07.15 Dusk/Dawn	02.09.15 Dawn
TG11.7	23.06.15 Dusk	23-24.07.15 Dusk/Dawn	04.08.15 Dawn & 27.08.15 Dawn
TG11.8	23.06.15 Dusk	23-24.07.15 Dusk/Dawn	04.08.15 Dawn
T999	02.07.15 Dusk	23-24.07.15 Dusk/Dawn	03-04.08.15 Dusk/Dawn
T60	02.07.15 Dusk	28-29.07.15 Dusk/Dawn	01.09.15 Dusk
W7.17	03.07.14 Dawn	30-31.07.15 Dusk/Dawn	28.08.15 Dawn
W7.21	03.07.14 Dawn	30-31.07.15 Dusk/Dawn	28.08.15 Dawn
W6.3	20.07.15 Dusk	28-29.07.15 Dusk/Dawn	01.09.15 Dusk
Low Potential Trees To be Removed			
T4	04.06.13 Dawn	N/A	N/A

Confirmed Roosts

- 3.31 Bat roost have been confirmed in four trees: T28, T44, T49 and W3.6 (off-site). These trees are all retained within the development design and buffered. In order to establish the species, size and status of the roosts further nocturnal surveys were completed.
- 3.32 No bats were seen emerging or returning to roost within the trees T28, T44 or W3.6 during the remaining completed nocturnal surveys.
- 3.33 Previously one bat which was not echolocating (likely to be a pipistrelle species) was seen returning to roost within T49 on the 21st July 2015. The bat returned at 04:28 (35 minutes prior to sunrise) into a west facing branch cavity near a fork in the tree. Immediately prior to this both common and soprano pipistrelle bats were heard in the vicinity.
- 3.34 During the third nocturnal survey on the 2nd August 2015 a soprano pipistrelle was seen emerging from the same location at 20:44 (36 minutes after sunset).

High/ Moderate Potential

- 3.35 Thirteen trees were identified as offering moderate/ high bat roosting potential (Category 2a): T25, T26, T27, T30, T48, T60, T69, T999, TG11.7, TG11.8, W7.17, W7.21 and W6.3. From the

additional completed survey work no bats have been identified emerging or returning to roost within these trees.

4.0 DISCUSSION & RECOMMENDATIONS

Bats

- 4.1 All UK species of bat are listed on the Conservation of Habitats and Species Regulations 2010 (as amended) making it illegal to deliberately disturb any such animal or damage / destroy a breeding site or roosting place of any such animal. Bats are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is illegal to recklessly or intentionally kill, injure or take a species of bat or recklessly or intentionally damage or obstruct access to or destroy any place of shelter or protection or disturb any animal whilst they are occupying such a place of shelter or protection. Some bat species, including soprano pipistrelle, are Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC).

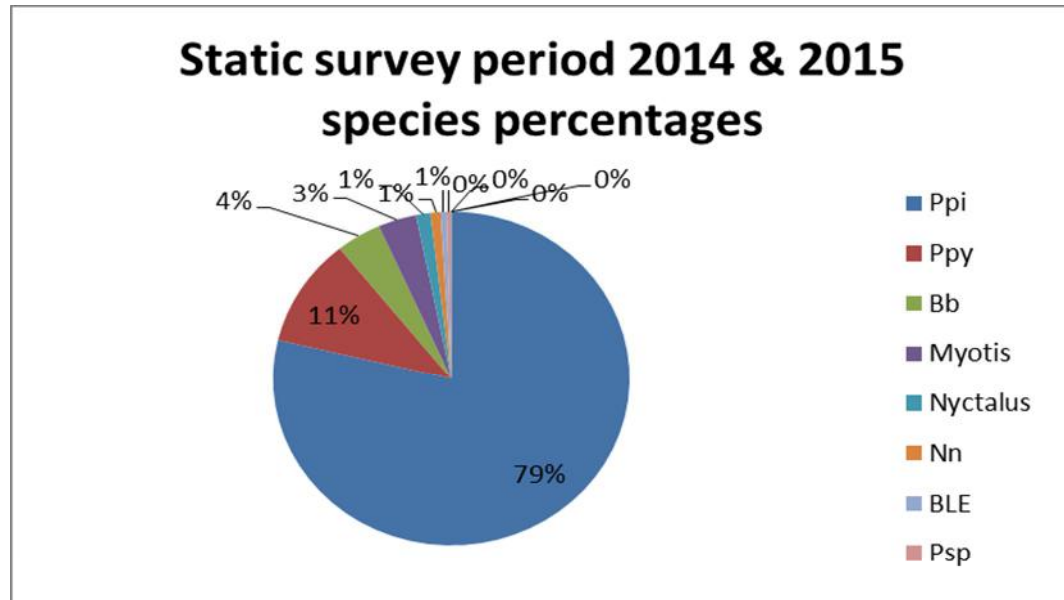
Roost Sites

- 4.2 From the completed survey work no further roosts were identified within the trees offering bat potential within the development site. Therefore, the presence of a roost site in the trees referenced (T25, T26, T27, T30, T48, T60, T69, T999, TG11.7, TG11.8, W7.17, W7.21, W6.3) has not been identified as a statutory constraint to the proposed development.
- 4.3 The final nocturnal survey completed on T49 confirmed the presence of a small soprano pipistrelle roost used by an individual bat in a west facing branch cavity. This tree is retained within the developments green infrastructure. Mitigation measures to ensure the roost is protected from disturbance should be implemented prior to and during the development works, this includes no lighting surrounding the trees at night and the implementation of the buffer zone prior to and during development works. These are detailed within the FPCR *Bat Survey Report* August 2015.

Foraging/ Commuting

- 4.4 Previously ten species have been confirmed utilising the development site (FPCR *Bat Survey Report* August 2015). These species included common pipistrelle, soprano pipistrelle, Nathusius pipistrelle, unidentified *Myotis* species, *Nyctalus* species, noctule, brown long-eared, Barbastelle, serotine and unidentified bat species. No additional bat species were identified during the additional survey work completed in August – September 2015.
- 4.5 During the 2014 and 2015 static detector surveys the dominant species recorded species was common pipistrelle (overall 8 registrations per hour) with soprano pipistrelle the second most frequently recorded species (overall 1 registration per hour) and Barbastelle the third most commonly recorded species (overall 0.4 registrations per hour), see Graph 1 below. Overall the species assemblage using a site of this size is not unexpected in this geographical range. The following section discussed the general species assemblage however; Barbastelle use across the site is discussed separately.

Graph 1: The pie chart below shows the species composition across the site for static surveys 2014 and 2015.



General Species Assemblage

- 4.6 The highest level of bat activity identified within the site during 2014 occurred during the summer (July) and in 2015 within the autumn period (September). This data is supported by general bat ecology principles as within both peak activity months foraging activity is likely to increase given that:
- July is the maternity period for bats, and
 - September is a period in which bats are foraging to gain sufficient weight for the hibernation period.
- 4.7 From the completed survey work during 2014 and 2015 the main habitats utilised by common pipistrelle comprised:
- hedgerow H19,
 - hedgerow H4, and
 - woodlands W1, W5, W7 and W4.
- 4.8 The nocturnal survey results indicate that the habitats listed above form a small part of the foraging habitat within the natural range of the local bat population. The results do not demonstrate that the hedgerows or woodlands form a significant commuting route to roost sites surrounding the site, as significant activity both at dusk and dawn was not recorded.
- 4.9 Soprano pipistrelle was most commonly recorded utilising the boundary of W5, the southern edge of W1 and hedgerows H4, H12 & H19 during the 2014 and 2015 nocturnal surveys.
- 4.10 Brown long-eared bats were recorded with low numbers of registrations across the site during 2014 and 2015. This species was recorded more frequently at within the central ride between W5 and W7 than in other areas of the site.

- 4.11 Noctule and *Nyctalus* species were also recorded at low frequency rates during 2014 and 2015. This species was identified on the static detectors / during the activity surveys along hedgerows H4, H9, H11, H14, H19, H23, H25, H26, H27, H30, the water course corridor, woodland edges W1, W4, W5, W7 and the young plantation woodland. This species favour open habitats flying fast at varying heights from 30 – 200m⁴. The survey results do not show significant or continuous use from this species which has a foraging range of approximately 10Km. Consequently, it has been concluded that the habitats within the site form a small part of the foraging habitat for this species but do not provide a significant foraging resource for this species.
- 4.12 Unidentified *Myotis* species were identified utilising H4, H11, H12, H19, H23, H25 habitat close to pond 4, young plantation woodland, woodland W1, W4, W5/W7 and the central water course corridor during the 2014 and 2015 nocturnal surveys.
- 4.13 Single registrations of *Nathusius pipistrelle* occurred during the April, May, June, August and September 2015 static detector surveys along hedgerow H4, and the woodland edges of W1, W5 and W7. *Nathusius pipistrelle* are widespread but rare across the UK, most commonly encountered on migration in late summer/autumn although some do remain all year and breed in the UK. Within Suffolk it is likely that this species is under recorded and thus records of these species are not considered significant as it is likely that this species was foraging within its natural range.

Barbastelle

- 4.14 Barbastelle (an Annex II species of The Habitats Directive) has been recorded regularly across the site in low numbers throughout the survey season of 2014 and 2015. From the completed surveys the overall levels of Barbastelle activity was generally low with individual registrations being recorded. Throughout the survey period Barbastelle have been identified throughout 2014 and 2015 utilising;
- Hedgerows H4, H9, H10, H11, H12, H13, H14, H16, H19, H20, H23, H24, H25, H26 and H30;
 - Woodland edges W1, W3, W4, W5, W6 and W7; and
 - Other areas including the central water course corridor, the southern boundary and the north western boundary.
- 4.15 The peak period of Barbastelle registrations occurred during spring / autumn 2015 surveys in restricted areas of the site, though overall the general number of registration remains low. These peak areas comprise:
- Southern and northern edge of woodland W1;
 - Hedgerow H4; and
 - Eastern edge of W7,.
- 4.16 Within Suffolk this species is known to be widespread within suitable habitat but in small number (*Bats in Suffolk Distribution Atlas 1982 – 2011*, Suffolk wildlife Trust) which concurs with the findings of the completed survey work. From the completed survey work (2014 and 2015) no Barbastelle roosts were identified within the site. Habitat features utilised by Barbastelle only

⁴ BCT *Determining the potential ecological impact of wind turbines on bat populations in Britain* May 2009, University of Bristol

provide a small proportion of the Barbastelle foraging range (as this species is known to forage over a large territory of mixed habitats). The survey information has also demonstrated that it is unlikely that the habitats used by Barbastelle provide significant commuting routes for the local population.

Overall Summary

4.17 In summary from the completed surveys throughout 2014 and 2015 features identified to be utilised by bats species for foraging and commuting include;

- Hedgerows H4, H9, H10, H11, H12, H13, H14, H16, H19, H20, H23, H24, H25, H26, H27, H30,
- Woodland edges W1, W3, W4, W5, W6, W7 and young plantation woodland,
- Woodland rides between W5 and W7, and
- The water course corridor and pond P4.

Mitigation & Enhancement for the Local Bat Population

4.18 Within FPCR *Bat Survey Report* August 2015 mitigation and compensation was considered in line with (Hedgerow Removal Plan 5055-L-11). This plan has now been updated to Hedgerow Removal Plan 5055-L-119 REV D, this plan shows the maximum length of hedgerows and areas of woodland habitat to be removed to facilitate the development thus the impacts with regards to hedgerows has been revisited below.

Table 4: Summary of Hedgerows

Hedgerow	Retained or Length to be Lost	Barbastelle Utilised the Hedgerow during 2014-2015 surveys	Summary of use by Barbastelle
H1	Retained	No	N/A
H2	Retained	No	N/A
H3	Retained	No	N/A
H4	12m & 5m sections	Yes	12 registrations August 2015 (static) 136 registrations September 2015 (static) 3 registrations April 2015 (static) 1 registration May 2015 (Transect)
H5	Retained	No	N/A
H6	Retained	No	N/A
H7	Retained	No	N/A
H8	Retained	No	N/A
H9	40m	Yes	33 registrations August 2014 (static) 1 registration April 2015 (static)
H10	Retained	Yes	3 registrations May 2015 (static)
H11	240m	Yes	2 registrations September 2015 (static)
H12	12m	Yes	3 registrations July 2014 (static) 10 registrations May 2015 (static)
H13	5m	Yes	10 registrations June 2015 (static)
H14	35m (though currently a defunct)	Yes	3 registrations July 2014 (static)

	hedgerow)		
H15	Retained	Yes	N/A
H16	Retained	No	1 registration July 2014 (transect)
H17	Retained	No	N/A
H18	Retained	No	N/A
H19	40m + 13m	Yes	11 registrations September 2015 (static)
H20	5m	Yes	1 registration September 2014 (static) 36 registrations July 2015 (static)
H21	12m & 12m sections	No	N/A
H22	Retained	No	N/A
H23	5m	Yes	7 registrations August 2015 (static)
H24	12m	Yes	71 registrations May 2015 (static) 2 registrations May 2015 (transect)
H25	Retained	Yes	8 registrations August 2015 (static)
H26	Retained	Yes	27 registrations August 2014 (static)
H27	Retained	No	N/A
H28	Retained	No	N/A
H29	Retained	No	N/A
H30	Retained	Yes	9 registrations August 2014 (static)
H31	Retained	No	N/A
Total Hedgerow Length to be lost			448m

4.19 Hedgerows H10, H16, H25, H26 and H30 which are utilised by Barbastelle (Table 4) are retained. Hedgerows which require partial removal to facilitate road access and are utilised by Barbastelle include; H4, H9, H11, H12, H13, H14, H19, H20, H23 and H24, resulting in the loss of foraging habitat. The majority of these hedgerow sections to be removed are minimal and the hedgerow will remain suitable for Barbastelle to utilise as the threshold at which a hedgerow would be considered unsuitable for Barbastelle to use is gaps >20m⁵. Sections of hedgerow to be removed above this threshold include H9, H11 and H19. However no significant commuting routes have been identified along these hedgerows and thus it is unlikely to affect the favourable conservation status of Barbastelle or other species identified using the site over the extended survey period.

4.20 Woodland areas lost to development include 1ha from the northern corner of W1, 185m² gap of W1 in the south and two sections from the young plantation woodland (1350m² & 1736m²). To compensate for the loss of foraging habitats of hedgerows and woodlands throughout the site the following mitigation and compensation has been provided in the development design:

- Planting of 13.9ha of new woodland habitat (FPCR, Habitat / Public Open Space - 5055-L-119 REV D);
- Creation of 34.92ha species rich grassland and seasonal meadow;
- Scrub creation (2.3ha);
- New attenuation ponds (4.45ha);
- Include the retained hedgerows within the green linkages;

⁵ R.Howorth (2009) *Field Survey of Barbastelle Bat Flightlines' Condition from Ebernoe SAC 2008*. Sussex Wildlife Trust

- Gapping up of retained hedgerows with native species, this will increase species diversity, strengthen the hedgerow and improve the corridor for foraging bats;
 - Planting of a native species rich hedgerow alongside H23 and H24 to create a dark corridor of movement (along with the provision of hop overs within this corridor for sections to be removed);
 - Reinforced boundary planting across the site in the area of green open space in the south east of the site and along the northern boundaries (5055-L-119 REV D);
 - Where the 40m of H19 is to be removed a glade is to be created with additional planting surrounding the area, this will create woodland edge foraging habitat;
 - Where 40m of hedgerow H9 is to be removed an additional hop over is proposed and a new dark corridor will be created for bats to commute and forage along towards the north (Appendix 8: Figure 30 Rev A).
- 4.21 In order to maintain connectivity across the site to and into the wider area and ensure that foraging and commuting habitat remains suitable for use by bats dark corridors have been designed to ensure and incorporate habitats of value to bats for foraging, potential roosting and commuting into the wider area. The Prevention of Lighting Impacts on Bats Report (August 2015) and FPCR *Bat Survey Report August 2015* fully outlines the requirements for lighting and buffers across the site in order to maintain the dark corridor of movement (light below 1 lux). The proposed lit routes are shown in Appendix 8, Figure 30 REV A which provides an updated lighting strategy including an additional hop over to maintain connectivity across hedgerow H9.
- 4.22 Additional details for enhancements such as bat box installation are also provided within FPCR *Bat Survey Report August 2015*.
- 4.23 From the extensive survey work completed it has been concluded that the implementation of the proposed mitigation, compensation and enhancements within the site will ensure habitat connectivity across the site and into the wider area for foraging and commuting bats. The application of these measures will ensure the Favourable Conservation Status of the bat species recorded using the site is maintained particularly with regards to the local Barbastelle population and result in an overall positive.

Appendix 1: Automated Static Detector Survey timings and conditions

Date Recorded	Survey type	Location on Figure 9	Area covered	Timing/ conditions	Weather
03.08.15 10.08.15	Unit 14 - SM2 Static Detector	L65	Northern boundary hedgerow H11	Sunset 20:52 to 20:40 Sunrise 05:34 to 05:45 Temperature 25 to 14°C Average wind speed 8 -19 km/h, no rain during the night	
	Unit 13 - SM2 Static Detector	L66	Hedgerow H23		
	Unit 11 - SM2 Static Detector	L67	Public footpath through W4		
	Unit 23 - SM2 Static Detector	L68	Hedgerow H25		
	Unit 25 - SM2 Static Detector	L69	Southern edge of W1		
03.08.15 09.08.15	Unit 9 - SM2 Static Detector	L70	Hedgerow H4		
03.08.15 07.08.15	Unit 12 - SM2 Static Detector	L71	Eastern edge of W7		
03.08.15 10.08.15	Unit 10 - SM2 Static Detector	L72	North western corner of W7		

	Unit 24 - SM2 Static Detector	L73	Central ride between W5/W7	
02.09.15 08.09.15	Unit 9- SM2 Static Detector	L74	Northern boundary hedgerow H11	Sunset 19:52 to 19:38 Sunrise 06:22 to 06:31 Temperature 19 to 7°C, below 10°C on 2 nd , 6 th and 7 th September 2015; Average wind speed 7 -14 km/h, no rain during the night, rain only on the morning of 08.09.15
	Unit 24- SM2 Static Detector	L75	Hedgerow H19	
	Unit 27- SM2 Static Detector	L76	Hedgerow H4	
	Unit 12- SM2 Static Detector	L77	Northern edge of W5	
	Unit 25- SM2 Static Detector	L78	Easter edge of W7	
	Unit 28- SM2 Static Detector	L79	Northern edge of W7	
	Unit 23- SM2 Static Detector	L80	Southern edge of W1	
02.09.15 05.09.15	Unit 14- SM2 Static Detector	L81	Southern edge of W1	

02.09.15 05.09.15	Unit 26- SM2 Static Detector	L82	Northern edge of W4	
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Appendix 2: Activity Transect Results

Bat Contacts from Bat Transect

Date	Ref.	Time	Species	No. Passes	Behaviour
<i>1st September 2015– Dusk Transect</i>					
01/09/15	Western Transect				
	NV	19:32-19:41	No bats	-	-
	NV	19:48-19:53	No bats	-	-
	2	19:58-20:36	Common pipistrelle	3	Foraging
	3		Brown long-eared	1	Foraging
	4		Common pipistrelle	1	Foraging
	5		Common pipistrelle	1	Foraging
	6	20:41-20:56	Common pipistrelle	Multiple	Foraging
	7		Common pipistrelle	Multiple	Foraging
	NV	21:01-21:12	No bats	-	-
	8	21:17-21:30	Common pipistrelle	Multiple	Foraging
	9	21:35-21:39	Common pipistrelle	1	Pass
	NV	21:44-21:53	No bats	-	-
	10	21:58-22:11	Common pipistrelle	1	Pass
	Eastern Transect				
	NV	19:32-19:47	No bats	-	-
	NV	19:52-19:59	No bats	-	-
	NV	20:04-20:20	No bats	-	-
	NV	20:25-20:36	No bats	-	-
	1	20:41-20:52	Common pipistrelle	1	Pass
	3	20:57-21:05	Common pipistrelle	1	Pass
	4	21:10-21:24	Common pipistrelle	1	Pass
	NV	21:29-21:39	No bats	-	-
	NV	21:42-21:47	No bats	-	-
	Southern Transect				
	NV	19:32-19:42	No bats	-	-
	NV	19:47-19:56	No bats	-	-
	NV	20:01-20:17	No bats	-	-
	1	20:22-20:45	Myotis species	1	Pass
	2		Barbastelle	Multiple	Foraging
2	Brown long-eared		1	Pass	
NV	20:50-20:58	No bats	-	-	
NV	21:03-21:11	No bats	-	-	
5	21:16-21:29	Soprano pipistrelle	2	Pass	
6		Soprano pipistrelle	1	Pass	
NV	21:34-21:38	No bats	-	-	
<i>2nd September 2015- Dawn Transect</i>					
02/09/15	Western Transect				
	NV	04:25-04:36	No bats	-	-
	NV	04:39-04:43	No bats	-	-
	1	04:46-05:10	Pipistrelle species	1	Pass
	NV	05:13-05:27	No bats	-	-
	NV	05:30-05:35	No bats	-	-
	NV	05:38-05:51	No bats	-	-
	NV	05:54-05:58	No bats	-	-
	NV	06:01-06:06	No bats	-	-
	NV	06:09-06:20	No bats	-	-
	Eastern Transect				
	NV	04:30-04:40	No bats	-	-
	NV	04:43-04:51	No bats	-	-
NV	04:54-05:05	No bats	-	-	
NV	05:08-05:21	No bats	-	-	

	NV	05:24-05:31	No bats	-	-
	1	05:34-05:40	Common pipistrelle	1	Pass
	NV	05:45-05:48	No bats	-	-
	NV	05:48-05:59	No bats	-	-
Southern Transect					
	NV	04:29-04:32	No bats	-	-
	NV	04:35-04:39	No bats	-	-
	NV	04:42-04:52	No bats	-	-
	NV	04:55-05:07	No bats	-	-
	NV	05:10-05:21	No bats	-	-
	NV	05:24-05:36	No bats	-	-
	4	05:39-05:52	Common pipistrelle	2	Foraging
	NV	05:55-05:59	No bats	-	-
	NV	06:02-06:10	No bats	-	-

Point Counts from Bat Transect

Date	Ref.	Time	Species	No. Passes	Behaviour
<i>1st September 2015– Dusk Transect</i>					
01/09/15	Western Transect				
	PC1	19:41-19:48	No bats	-	-
		19:53-19:58	Common pipistrelle	2	Commuting north along hedgerow, ref 1
	PC2				
	PC3	20:36-20:41	Common pipistrelle	Multiple	Foraging, ref 6
	PC4	20:56-21:01	No bats	-	-
	PC5	21:12-21:17	No bats	-	-
	PC6	21:30-21:35	No bats	-	-
	PC7	21:39-21:44	No bats	-	-
	PC8	21:53-21:58	No bats	-	-
	Eastern Transect				
	PC1	19:47-19:52	No bats	-	-
	PC2	19:59-20:04	No bats	-	-
	PC3	20:20-20:25	No bats	-	-
	PC4	20:36-20:41	No bats	-	-
	PC5	20:52-20:57	Common pipistrelle	2	Pass, ref 2
	PC6	21:05-21:10	No bats	-	-
	PC7	21:24-21:29	No bats	-	-
	PC8	21:39-21:42	No bats	-	-
	Southern Transect				
	PC1	19:42-19:47	No bats	-	-
	PC2	19:56-20:01	No bats	-	-
	PC3	20:17-20:22	No bats	-	-
	PC4	20:45-20:50	Common pipistrelle	2	Foraging , ref 3
PC5	20:58-21:03	No bats	-	-	
PC6	21:11-21:16	Myotis species	1	Pass, ref 4	
PC7	21:29-21:34	No bats	-	-	
<i>2nd September 2015- Dawn Transect</i>					
02/09/15	Western Transect				
	PC1	04:36-04:39	No bats	-	-
	PC2	04:43-04:46	No bats	-	-
	PC3	05:10-05:13	Pipistrelle species	1	Pass, ref 2
	PC4	05:27-05:30	No bats	-	-
	PC5	05:35-05:38	No bats	-	-
	PC6	05:51-05:54	No bats	-	-
	PC7	05:58-06:01	No bats	-	-
	PC8	06:06-06:09	No bats	-	-
	Eastern Transect				

	PC1	04:40-04:43	No bats	-	-
	PC2	04:51-04:54	No bats	-	-
	PC3	05:05-05:08	No bats	-	-
	PC4	05:21-05:24	No bats	-	-
	PC5	05:31-05:34	No bats	-	-
	PC6	05:40-05:45	No bats	-	-
	PC7	05:48-05:51	No bats	-	-
	PC8	05:56-05:59	No bats	-	-
	Southern Transect				
	PC1	04:32-04:35	Myotis species	1	Pass, ref 1
	PC2	04:39-04:42	No bats	-	-
	PC3	04:52-04:55	No bats	-	-
	PC4	05:07-05:10	Soprano pipistrelle	1	Pass, ref 2
	PC5	05:21-05:24	No bats	-	-
	PC6	05:36-05:39	Common pipistrelle	1	Pass, ref 3
	PC7	05:52-05:55	No bats	-	-
	PC8	05:59-06:02	No bats	-	-

Appendix 3: Additional Static Detector Results 2015

Recording Period	Unit Number	Survey Dates	Survey Hours	Total Avg-p per hour	Total Registrations	Common Pipistrelle			Soprano Pipistrelle			Barbastelle			Myotis Species			Nyctalus Species			Noctule			Brown Long-eared			Pipistrelle Species			Serotine			Nathusius' pipistrelle			Unknown Species		
						Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total	Avg .per hour	Peak Count	Period Total
Apr	30	14/04/2015 - 19/04/2015	59	0.24	14	0.22	9	13	0.00	0	0	0.02	1	1	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Apr	35	14/04/2015 - 19/04/2015	59	4.93	291	1.64	56	97	1.51	51	89	1.32	42	78	0.34	13	20	0.00	0	0	0.00	0	0	0.02	1	1	0.08	5	5	0.00	0	0	0.00	0	0	0.02	1	1
Apr	37	14/04/2015 - 19/04/2015	59	1.66	98	0.30	17	18	0.49	22	29	0.76	40	45	0.07	2	4	0.00	0	0	0.00	0	0	0.00	0	0	0.02	1	1	0.00	0	0	0.00	0	0	0.02	1	1
Apr	34	14/04/2015 - 19/04/2015	59	7.62	450	5.35	258	316	2.08	123	123	0.07	3	4	0.08	2	5	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.03	1	2
Apr	36	14/04/2015 - 19/04/2015	59	2.01	119	1.34	52	79	0.64	32	38	0.00	0	0	0.00	0	0	0.03	1	2	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Apr	29	14/04/2015 - 20/04/2015	68	2.39	164	0.66	27	45	1.58	50	108	0.04	3	3	0.10	3	7	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.01	1	1	0.00	0	0
Apr	33	14/04/2015 - 20/04/2015	68	2.67	183	0.77	41	53	0.22	9	15	1.46	64	100	0.13	4	9	0.03	2	2	0.00	0	0	0.04	3	3	0.00	0	0	0.01	1	1	0.00	0	0	0.00	0	0
Apr	31	14/04/2015 - 19/04/2015	59	0.14	8	0.14	8	8	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Apr	32	14/04/2015 - 19/04/2015	59	2.17	128	1.76	61	104	0.14	4	8	0.17	8	10	0.02	1	1	0.08	3	5	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
May	38	07/05/2015 - 12/05	50	11.06	559	6.00	165	303	1.29	28	65	1.40	32	71	0.08	2	4	1.66	69	84	0.47	10	24	0.06	2	3	0.10	3	5	0.00	0	0	0.00	0	0	0.00	0	0

Jun	53	03/06/2015 - 08/06/2015	44	3.71	164	2.81	61	124	0.70	17	31	0.05	1	2	0.02	1	1	0.05	1	2	0.05	2	2	0.00	0	0	0.05	1	2	0.00	0	0	0.00	0	0	0.00	0	0
Jun	54	03/06/2015 - 08/06/2015	44	30.68	1355	26.29	473	1161	3.67	86	162	0.23	4	10	0.20	4	9	0.05	1	2	0.16	3	7	0.05	1	2	0.05	1	2	0.00	0	0	0.00	0	0	0.00	0	0
Jun	55	03/06/2015 - 08/06/2015	44	3.22	142	1.52	24	67	0.61	9	27	0.36	11	16	0.16	3	7	0.38	8	17	0.07	2	3	0.11	2	5	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Jul	56	02/07/2015 - 09/07/2015	59	47.05	2784	31.49	1214	1863	5.02	214	297	0.10	4	6	10.09	124	597	0.22	5	13	0.14	5	8	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Jul	57	02/07/2015 - 09/07/2015	59	30.81	1823	29.25	471	1731	0.66	10	39	0.61	15	36	0.19	3	11	0.05	1	3	0.02	1	1	0.02	1	1	0.02	1	1	0.00	0	0	0.00	0	0	0.00	0	0
Jul	58	02/07/2015 - 09/07/2015	59	29.34	1736	15.53	245	919	6.32	96	374	0.12	3	7	7.23	105	428	0.00	0	0	0.12	3	7	0.02	1	1	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Jul	59	02/07/2015 - 09/07/2015	59	1.10	65	0.86	25	51	0.08	2	5	0.00	0	0	0.02	1	1	0.08	3	5	0.05	1	3	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Jul	60	02/07/2015 - 09/07/2015	59	8.10	479	6.42	95	380	0.19	3	11	0.25	6	15	0.71	11	42	0.29	7	17	0.02	1	1	0.20	4	12	0.00	0	0	0.02	1	1	0.00	0	0	0.00	0	0
Jul	61	02/07/2015 - 09/07/2015	59	4.95	293	4.38	87	259	0.39	7	23	0.02	1	1	0.14	3	8	0.00	0	0	0.03	2	2	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Jul	62	02/07/2015 - 09/07/2015	59	3.45	204	2.45	63	145	0.54	15	32	0.24	10	14	0.03	1	2	0.15	4	9	0.02	1	1	0.00	0	0	0.00	0	0	0.02	1	1	0.00	0	0	0.00	0	0
Jul	63	02/07/2015 - 09/07/2015	59	19.96	1181	17.91	401	1060	1.06	29	63	0.03	2	2	0.66	8	39	0.12	3	7	0.00	0	0	0.12	4	7	0.00	0	0	0.05	1	3	0.00	0	0	0.00	0	0
Jul	64	02/07/2015 - 09/07/2015	59	2.75	163	1.88	48	111	0.22	7	13	0.27	7	16	0.03	2	2	0.25	8	15	0.08	3	5	0.02	1	1	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Aug	65	03/08/2015 - 10/08/2015	70	2.81	197	2.18	49	153	0.34	10	24	0.00	0	0	0.04	2	3	0.03	2	2	0.14	3	10	0.07	2	5	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Aug	66	03/08/2015 - 10/08/2015	70	13.68	959	12.24	209	858	1.14	19	80	0.10	2	7	0.00	0	0	0.13	4	9	0.03	2	2	0.04	2	3	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Aug	67	03/08/2015 - 10/08/2015	70	51.91	3638	49.22	698	3449	2.40	55	168	0.14	4	10	0.04	1	3	0.03	2	2	0.07	2	5	0.01	1	1	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Aug	68	03/08/2015 - 10/08/2015	70	4.81	337	3.81	54	267	0.73	15	51	0.11	3	8	0.06	2	4	0.03	1	2	0.03	1	2	0.04	1	3	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Aug	69	03/08/2015 - 10/08/2015	70	28.28	1982	27.43	468	1922	0.63	20	44	0.03	2	2	0.03	1	2	0.11	6	8	0.00	0	0	0.04	1	3	0.01	1	1	0.00	0	0	0.00	0	0	0.00	0	0
Aug	70	03/08/2015 - 09/08/2015	61	8.52	520	7.01	133	428	0.21	3	13	0.20	4	12	0.88	27	54	0.05	1	3	0.02	1	1	0.15	7	9	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Aug	71	03/08/2015 - 10/08/2015	52	4.07	212	3.19	102	166	0.50	11	26	0.15	5	8	0.06	2	3	0.08	4	4	0.06	3	3	0.04	1	2	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Aug	72	03/08/2015 - 10/08/2015	70	16.92	1186	14.70	349	1030	1.14	42	80	0.11	4	8	0.37	9	26	0.41	9	29	0.04	1	3	0.14	5	10	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0

Aug	73	03/08/2015 - 10/08/2015	70	1.94	136	0.29	6	20	0.09	3	6	0.00	0	0	0.10	2	7	0.00	0	0	0.01	1	1	1.46	34	102	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Sep	74	02/09/2015 - 08/09/2015	73	1.24	91	0.98	34	72	0.03	1	2	0.03	1	2	0.03	1	2	0.04	2	3	0.14	4	10	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Sep	75	02/09/2015 - 08/09/2015	73	92.45	6795	88.99	1986	6541	3.05	208	224	0.15	5	11	0.07	3	5	0.01	1	1	0.12	4	9	0.00	0	0	0.05	4	4	0.00	0	0	0.00	0	0	0.00	0	0
Sep	76	02/09/2015 - 08/09/2015	73	12.05	886	5.86	217	431	3.82	83	281	1.85	46	136	0.39	12	29	0.01	1	1	0.03	2	2	0.07	3	5	0.01	1	1	0.00	0	0	0.00	0	0	0.00	0	0
Sep	77	02/09/2015 - 08/09/2015	73	4.75	349	1.89	59	139	2.01	74	148	0.54	24	40	0.24	6	18	0.00	0	0	0.01	1	1	0.04	2	3	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Sep	78	02/09/2015 - 08/09/2015	73	3.48	256	0.91	45	67	0.49	12	36	1.25	29	92	0.45	9	33	0.01	1	1	0.11	4	8	0.22	6	16	0.03	2	2	0.00	0	0	0.01	1	1	0.00	0	0
Sep	79	02/09/2015 - 08/09/2015	73	1.59	117	0.67	19	49	0.54	19	40	0.26	6	19	0.11	4	8	0.00	0	0	0.01	1	1	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Sep	80	02/09/2015 - 08/09/2015	73	11.07	814	8.33	290	612	0.44	11	32	1.90	66	140	0.29	5	21	0.00	0	0	0.04	1	3	0.07	3	5	0.01	1	1	0.00	0	0	0.00	0	0	0.00	0	0
Sep	81	02/09/2015 - 06/09/2015	52	14.84	773	6.43	133	335	4.32	91	225	3.76	66	196	0.17	4	9	0.00	0	0	0.04	2	2	0.12	3	6	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0
Sep	82	02/09/2015 - 05/09/2015	41	1.82	75	0.24	7	10	0.05	2	2	0.78	12	32	0.41	10	17	0.15	3	6	0.07	3	3	0.12	3	5	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0

Appendix 4: Summary of Barbastelle Registrations at Statics August 2015

Static Location	Date of Registration	Time Registration	of	Number of Registrations
L66	05/08/2015	22:30:00		1
		23:10:00		1
	07/08/2015	02:56:00		1
	08/08/2015	01:04:00		1
		01:06:00		1
	09/08/2015	22:18:00		1
23:46:00			1	
Total of Registrations				7
L67	04/08/2015	22:03:00		1
		22:04:00		1
		23:07:00		1
		00:48:00		1
		01:26:00		1
		02:19:00		1
	05/08/2015	01:07:00		1
	09/08/2015	00:37:00		1
	10/08/2015	03:15:00		1
		03:28:00		1
Total of Registrations				10
L68	06/08/2015	22:29:00		1
	07/08/2015	22:47:00		1
		01:33:00		1
		03:01:00		1
	08/08/2015	00:19:00		1
	09/08/2015	22:17:00		1
		22:24:00		1
02:01:00			1	
Total of Registrations				8
L69	07/08/2015	23:27:00		1
	08/08/2015	02:09:00		1
Total of Registrations				2
L70	03/08/2015	21:40:00		1
	04/08/2015	21:30:00		1
		00:30:00		1
	05/08/2015	21:45:00		1
		23:55:00		1
	06/08/2015	01:45:00		1
02:00:00			1	

Static Location	Date of Registration	Time Registration	of	Number of Registrations
	07/08/2015	02:00:00		1
		02:10:00		1
		04:30:00		1
	08/08/2015	02:15:00		2
Total of Registrations				12
L71	03/08/2015	22:42:00		1
	04/08/2015	00:10:00		1
		00:25:00		1
		00:37:00		1
		03:58:00		1
	05/08/2015	22:31:00		1
		03:33:00		1
		03:50:00		1
Total of Registrations				8
L72	05/08/2015	21:31:00		1
	06/08/2015	03:43:00		1
		03:53:00		1
		03:54:00		1
	07/08/2015	22:18:00		1
		22:40:00		1
		22:41:00		1
	10/08/2015	01:57:00		1
Total of Registrations				8

Appendix 5: Summary of Barbastelle Registrations at Statics September 2015

Static Location	Date of Registration	Time of Registration	Number of Registrations
L74	03/09/2015	23:15:00	1
	07/09/2015	21:48:00	1
Total of Registrations			2
L75	02/09/2015	20:47:00	1
	03/09/2015	21:22:00	2
	04/09/2015	21:37:00	1
		21:38:00	4
	06/09/2015	20:56:00	1
	07/09/2015	23:14:00	1
		23:35:00	1
Total of Registrations			11
L76	02/09/2015	20:21:00	2
		20:22:00	1
		20:28:00	1
		20:36:00	1
		20:56:00	1
		22:37:00	1
		23:20:00	1
		23:35:00	1
		23:40:00	1
	03/09/2015	00:31:00	2
		01:21:00	1
		01:22:00	1
		01:37:00	1
		01:38:00	4
		01:59:00	1
		02:06:00	1
		02:10:00	1
		02:14:00	1
		02:18:00	1
		02:20:00	1
		02:50:00	1
		02:59:00	1
	03:55:00	1	
	03/09/2015	20:15:00	2
		20:16:00	1
		20:21:00	2
		20:35:00	1

Static Location	Date of Registration	Time of Registration	Number of Registrations
		20:39:00	2
		21:26:00	1
		21:37:00	1
		22:02:00	1
		22:08:00	1
		22:40:00	1
		23:03:00	1
		23:24:00	1
		23:49:00	2
		23:50:00	1
		23:52:00	1
		23:56:00	1
	04/09/2015	01:58:00	1
		01:59:00	1
		02:03:00	2
		02:20:00	1
		02:52:00	1
		03:02:00	1
		03:03:00	1
		03:13:00	1
		03:32:00	1
		04:20:00	1
		05:14:00	1
	04/09/2015	20:14:00	2
		20:17:00	1
		20:19:00	1
		20:20:00	1
		20:23:00	1
		20:26:00	1
		20:28:00	1
		20:29:00	1
		20:31:00	2
		20:54:00	1
21:07:00		1	
22:04:00		2	
22:25:00		1	
22:27:00		1	
22:46:00		1	
22:50:00		1	
22:58:00		1	

Static Location	Date Registration	of	Time Registration	of	Number of Registrations	
			23:13:00		2	
			23:14:00		1	
			23:26:00		1	
			23:34:00		1	
			23:39:00		2	
	05/09/2015			00:20:00		1
				00:25:00		1
				00:29:00		4
				00:59:00		1
				01:07:00		1
				01:08:00		1
				01:10:00		1
				01:22:00		1
				01:33:00		1
				01:37:00		1
				01:49:00		1
				01:53:00		1
				02:08:00		1
				02:14:00		1
				02:24:00		1
			02:31:00		1	
	05/09/2015			20:19:00		1
				20:20:00		1
				20:30:00		1
				21:56:00		1
				22:02:00		1
				22:21:00		2
				22:39:00		1
				23:12:00		1
				23:40:00		1
	06/09/2015			00:00:00		1
			01:15:00		1	
06/09/2015			20:19:00		1	
			20:28:00		1	
			20:32:00		2	
			20:36:00		1	
			20:37:00		2	
			20:51:00		1	
			21:06:00		1	
			23:24:00		1	

Static Location	Date of Registration	Time of Registration	Number of Registrations	
		23:28:00	2	
		23:38:00	1	
		23:48:00	1	
	07/09/2015	01:16:00	1	
		01:48:00	1	
		02:02:00	1	
		02:12:00	1	
Total of Registrations			136	
L77	02/09/2015	20:13:00	1	
		20:17:00	2	
		20:18:00	1	
		20:19:00	3	
		20:20:00	3	
		20:21:00	1	
		20:23:00	2	
		20:25:00	1	
		20:26:00	1	
		20:39:00	1	
		20:59:00	1	
		21:41:00	1	
		22:02:00	1	
		22:27:00	1	
		22:37:00	1	
	23:01:00	1		
	03/09/2015	00:01:00	1	
		02:06:00	1	
	04/09/2015	20:10:00	1	
	05/09/2015	00:48:00	1	
		00:52:00	1	
	05/09/2015	20:14:00	1	
		22:26:00	1	
	06/09/2015	20:12:00	4	
		20:13:00	3	
	07/09/2015	21:26:00	1	
	08/09/2015	00:15:00	1	
		01:18:00	1	
		02:40:00	1	
	Total of Registrations			40
	L78	02/09/2015	20:20:00	2

Static Location	Date of Registration	Time of Registration	Number of Registrations
		20:41:00	1
		21:40:00	1
		23:34:00	1
		23:37:00	1
		23:49:00	1
	03/09/2015	00:10:00	1
		01:01:00	1
		01:25:00	1
		02:13:00	1
		03:33:00	1
	03/09/2015	20:18:00	1
		20:27:00	1
		20:54:00	1
		22:28:00	1
		23:32:00	1
	04/09/2015	02:28:00	1
		03:53:00	1
	04/09/2015	20:11:00	1
		20:17:00	1
		20:18:00	1
		20:32:00	1
		23:12:00	1
		23:33:00	1
		23:39:00	1
	05/09/2015	00:04:00	1
		01:25:00	1
		01:26:00	1
	05/09/2015	20:18:00	1
20:20:00		1	
22:12:00		1	
23:10:00		1	
06/09/2015	01:05:00	1	
06/09/2015	20:16:00	2	
	20:17:00	1	
	20:27:00	1	
	20:29:00	1	
	20:30:00	1	
	20:32:00	1	
	20:44:00	1	
	21:04:00	1	

Static Location	Date of Registration	Time of Registration	Number of Registrations
		21:07:00	1
		21:10:00	2
		21:16:00	1
		21:19:00	2
		21:20:00	2
		21:30:00	1
		21:31:00	1
		21:35:00	2
		23:43:00	1
	07/09/2015	01:01:00	1
		02:08:00	1
		02:11:00	1
		02:14:00	1
		03:53:00	1
		05:09:00	1
		05:13:00	1
	07/09/2015	22:10:00	1
		22:18:00	1
		23:13:00	1
		23:14:00	1
		23:24:00	1
		23:33:00	1
		23:52:00	1
	08/09/2015	00:02:00	1
		00:04:00	1
		00:06:00	1
		00:10:00	1
		00:11:00	1
		00:12:00	1
		00:55:00	2
		00:57:00	2
		00:59:00	2
		01:01:00	1
		01:02:00	1
		01:04:00	1
		01:05:00	1
01:07:00		1	
02:35:00		1	
02:36:00		1	
03:07:00		1	

Static Location	Date of Registration	Time of Registration	Number of Registrations
		04:45:00	1
		05:18:00	1
Total of Registrations			92
L79	02/09/2015	22:40:00	1
		22:54:00	1
	03/09/2015	02:16:00	1
		04:49:00	1
	03/09/2015	20:38:00	1
		23:30:00	1
	04/09/2015	04:54:00	1
	04/09/2015	20:10:00	1
		20:11:00	1
		20:27:00	1
		20:46:00	1
	05/09/2015	00:45:00	1
	06/09/2015	20:30:00	1
		20:36:00	1
		20:38:00	1
		23:42:00	1
	07/09/2015	00:28:00	1
		04:00:00	1
	08/09/2015	01:10:00	1
Total of Registrations			19
L80	02/09/2015	20:18:00	1
		20:20:00	2
		20:21:00	4
		20:27:00	1
		20:29:00	1
		20:30:00	1
		20:31:00	3
		20:40:00	1
		23:43:00	1
	03/09/2015	00:14:00	1
		00:17:00	1
		00:20:00	1
		00:39:00	1
		00:41:00	1
		00:57:00	1
		00:59:00	1

Static Location	Date of Registration	Time of Registration	Number of Registrations
		01:10:00	1
		01:12:00	1
		01:16:00	1
		01:25:00	1
		01:36:00	1
		01:42:00	1
	03/09/2015	20:32:00	1
		20:34:00	1
		23:30:00	1
	04/09/2015	00:00:00	1
		00:46:00	1
		00:57:00	1
		02:36:00	1
		02:46:00	1
	04/09/2015	20:08:00	1
		23:16:00	1
		23:58:00	1
	05/09/2015	00:08:00	1
		00:17:00	1
		02:29:00	1
	05/09/2015	20:15:00	1
		20:17:00	1
		20:18:00	2
		20:19:00	1
		20:23:00	2
		20:24:00	1
		20:29:00	2
		20:30:00	1
		20:31:00	1
		20:33:00	1
22:36:00		1	
23:45:00		1	
06/09/2015		00:02:00	1
	00:43:00	1	
	00:51:00	1	
	00:53:00	1	
	01:10:00	1	
	01:13:00	1	
06/09/2015	20:28:00	1	
	23:52:00	1	

Static Location	Date Registration of	Time Registration of	Number of Registrations
	07/09/2015	00:10:00	1
		00:47:00	1
		01:07:00	1
		01:19:00	1
		01:22:00	1
		01:30:00	1
		01:34:00	1
		01:49:00	1
		02:38:00	1
	07/09/2015	20:13:00	2
		20:14:00	4
		20:15:00	1
		20:16:00	1
		20:17:00	1
		20:20:00	1
		20:21:00	1
		20:23:00	1
		20:27:00	1
		21:00:00	1
		22:57:00	1
		23:24:00	1
		23:59:00	3
	08/09/2015	00:34:00	1
		00:57:00	1
		01:01:00	1
		01:16:00	1
		01:17:00	1
		01:18:00	4
		01:19:00	1
		01:20:00	1
		01:27:00	2
		01:28:00	1
		01:29:00	1
		01:31:00	1
		01:33:00	1
		01:34:00	1
01:35:00	1		
01:38:00	1		
01:39:00	2		
01:40:00	1		

Static Location	Date of Registration	Time of Registration	Number of Registrations
		01:42:00	1
		01:47:00	1
		01:55:00	2
		01:56:00	1
		02:01:00	1
		02:09:00	1
		02:11:00	1
		02:15:00	2
		02:36:00	1
		02:42:00	2
		02:47:00	1
		02:56:00	1
		02:59:00	1
		03:00:00	3
		03:01:00	1
		03:05:00	1
		03:06:00	1
03:17:00	1		
04:22:00	1		
Total of Registrations			140
L81	02/09/2015	20:14:00	1
		20:23:00	1
		20:24:00	3
		20:34:00	1
		20:35:00	4
		20:36:00	2
		20:37:00	2
		21:44:00	1
		23:08:00	1
	03/09/2015	00:16:00	2
		00:27:00	1
		00:35:00	1
		00:36:00	1
		00:42:00	1
		00:43:00	1
		00:46:00	1
		01:13:00	1
		01:28:00	1
		01:30:00	1
		01:51:00	2

Static Location	Date Registration	Time Registration	Number of Registrations
		01:52:00	1
		02:00:00	1
		02:01:00	1
		02:06:00	1
		02:11:00	1
		02:14:00	1
		02:16:00	1
		02:19:00	1
		02:20:00	1
		02:24:00	1
		02:49:00	1
		03:07:00	1
		03:08:00	1
		03:10:00	1
		03:12:00	1
		03:26:00	1
		03:37:00	1
		03:38:00	1
		03:44:00	1
		04:13:00	1
	04:16:00	1	
	04:30:00	1	
	03/09/2015	20:25:00	1
		20:28:00	2
		20:30:00	1
		20:31:00	1
		20:32:00	1
		20:33:00	1
		20:39:00	1
		20:42:00	1
		20:43:00	1
		20:46:00	2
		20:54:00	2
		22:02:00	1
		23:54:00	1
	23:56:00	1	
	04/09/2015	00:00:00	1
		00:19:00	2
		00:49:00	1
		00:51:00	1

Static Location	Date of Registration	Time of Registration	Number of Registrations
		00:55:00	1
		00:56:00	1
		00:58:00	1
		00:59:00	1
		01:00:00	1
		01:01:00	1
		01:07:00	2
		01:10:00	2
		01:12:00	1
		01:14:00	2
		01:15:00	2
		01:18:00	1
		01:21:00	1
		01:27:00	1
		01:32:00	1
		01:35:00	2
		01:38:00	1
		01:42:00	1
		01:48:00	1
		02:04:00	1
		02:08:00	1
		02:17:00	1
		02:23:00	1
		02:25:00	1
		02:46:00	1
02:48:00	1		
02:50:00	1		
02:55:00	1		
03:04:00	1		
03:13:00	1		
	04/09/2015	20:05:00	1
		20:22:00	1
		20:24:00	1
		20:25:00	1
		20:27:00	1
		20:33:00	2
		21:44:00	1
		22:50:00	1
		22:57:00	1
		22:59:00	1

Static Location	Date of Registration	Time of Registration	Number of Registrations
		23:43:00	1
		23:49:00	1
		23:50:00	1
		23:53:00	1
		23:56:00	1
	05/09/2015	00:09:00	1
		00:10:00	2
		00:23:00	2
		00:24:00	1
		00:29:00	1
		00:35:00	1
		00:37:00	1
		00:46:00	1
		00:49:00	2
		00:54:00	1
		00:59:00	1
		01:01:00	1
		01:02:00	1
		01:04:00	1
		01:06:00	1
		01:08:00	1
		01:21:00	1
		01:23:00	1
		01:24:00	1
		01:26:00	1
		01:28:00	2
		01:30:00	1
		01:32:00	2
		01:35:00	1
		01:36:00	1
		01:38:00	1
		01:40:00	1
		01:42:00	1
01:47:00	1		
01:48:00	2		
01:49:00	2		
01:50:00	1		
01:51:00	1		
01:52:00	1		

Static Location	Date Registration	of	Time Registration	of	Number of Registrations
			02:01:00		1
			02:05:00		1
			02:08:00		1
			02:10:00		1
			02:13:00		2
			02:20:00		1
			02:29:00		1
			03:50:00		1
	05/09/2015		20:21:00		1
			20:27:00		2
			20:29:00		1
			20:30:00		1
			20:46:00		1
			20:53:00		1
			20:58:00		2
			21:02:00		3
			21:17:00		1
			21:31:00		1
			21:32:00		2
			21:39:00		2
			21:42:00		1
			21:43:00		1
			21:44:00		1
Total of Registrations					196
L82	02/09/2015		21:21:00		1
			21:46:00		1
			22:07:00		1
			22:14:00		1
			22:33:00		1
			22:49:00		1
	03/09/2015		00:21:00		1
			02:10:00		1
	03/09/2015		20:32:00		1
			20:42:00		1
			20:50:00		1
			21:11:00		1
			21:47:00		1
			21:48:00		1
		22:58:00		1	

Static Location	Date of Registration	Time of Registration	Number of Registrations
		23:29:00	2
	04/09/2015	01:36:00	1
		02:35:00	1
		02:47:00	1
	04/09/2015	20:37:00	1
		20:38:00	1
		20:41:00	1
		20:55:00	1
		22:36:00	1
		23:26:00	1
		23:27:00	1
	05/09/2015	00:13:00	1
		01:12:00	1
		01:16:00	1
		01:55:00	1
Total of Registrations			32

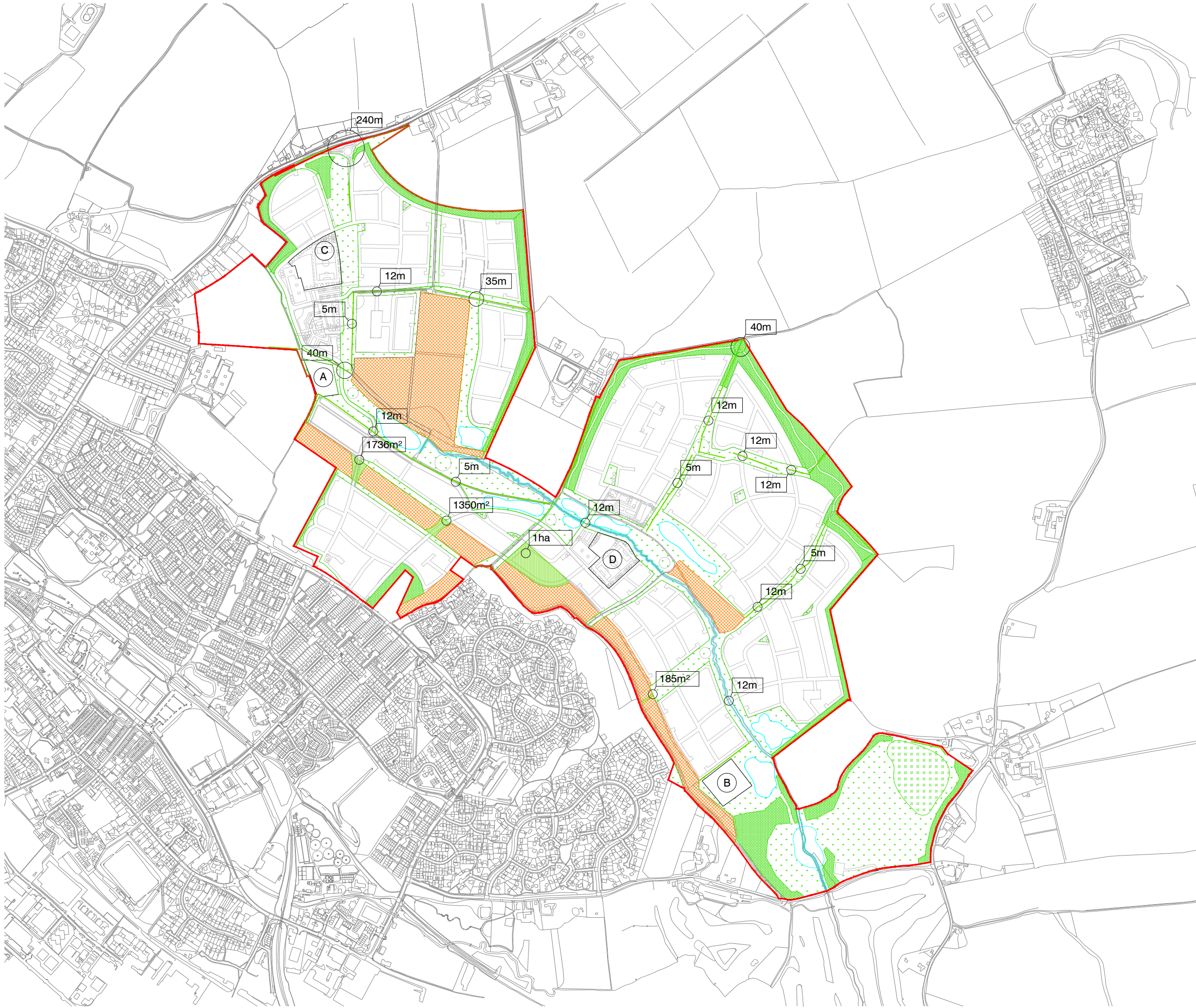
Appendix 6: Additional Nocturnal tree survey Results

Location	Ref.	Time	Species	No. Passes	Behaviour
<i>22nd August 2015 – Dusk T49</i>					
L1 (AA) T49	1	20:35	Pipistrelle species	1	Pass
	2	20:44	Soprano pipistrelle	1	Emerged from branch
		20:44	Bat species	1	Foraging
	NV	21:02	Myotis species	2	Foraging
	NV	21:08	Myotis species	1	Foraging
	NV	21:13	Brown long-eared	1	Foraging
	NV	21:15	Pipistrelle species	5	Pass
	NV	21:27	Pipistrelle species	4	Pass
	NV	21:34	Common pipistrelle	1	Foraging
	NV	21:37	Common pipistrelle	1	Foraging
L2 (LG) T49	NV	20:25	Soprano pipistrelle	1	Pass
	2	20:33	Common pipistrelle	1	Pass
	NV	20:36	Common pipistrelle	1	Foraging
	3	20:36	Soprano pipistrelle	Multiple	Foraging
	1	20:43	Common pipistrelle	1	Foraging
	1	20:50	Myotis species	1	Foraging
	NV	20:51	Myotis species	2	Foraging
	NV	20:53	Myotis species	2	Foraging
	1	20:56	Myotis species	4	Foraging
	NV	20:58	Myotis species	1	Foraging
	NV	21:02	Myotis species	2	Foraging
	NV	21:05	Myotis species	1	Foraging
	NV	21:10	Myotis species	1	Foraging
	NV	21:13	Barbastelle	1	Foraging
	NV	21:15	Myotis species	1	Foraging
	NV	21:18	Pipistrelle species	1	Foraging
NV	21:21	Common pipistrelle	1	Foraging	
<i>22nd August 2015 – Dawn T49</i>					
L1 (AA) T49	NV	04:29	Soprano pipistrelle	1	Pass
	NV	04:38	Brown long-eared	1	Pass
	NV	04:40	Brown long-eared	2	Pass
	NV	04:53	Pipistrelle species & Bat species	1	Pass faint
	NV	05:05	Bat species	1	Pass faint
	NV	05:11	Bat species	1	Pass faint
	NV	05:13	Pipistrelle species	1	Pass
	1	05:15	Common pipistrelle	1	Commuting
	2	05:26	Bat species	1	Pass seen not heard
L2 (LG) T49	NV	04:31	Myotis species	1	Foraging
	NV	04:33	Common pipistrelle	1	Foraging
	NV	04:40	Myotis species	1	Foraging
	NV	04:43	Soprano pipistrelle	1	Foraging
	NV	04:48	Common pipistrelle	1	Foraging
	NV	05:02	Soprano pipistrelle	1	Pass
	NV	05:04	Common pipistrelle	1	Foraging
	NV	05:08	Myotis species	3	Foraging
	NV	05:11	Common pipistrelle	1	Foraging
	NV	05:13	Common pipistrelle	2	Foraging
	3	05:19	Myotis species	2	Foraging
NV	05:25	Common pipistrelle	1	Foraging	
<i>26th August 2015 – Dusk T28, W3.6</i>					
L1 (AM)	1	20:31	Common pipistrelle	1	Pass

T28	2	20:50	Common pipistrelle & Soprano pipistrelle	1	Pass
	NV	21:07	Nyctalus species	1	Pass
L3 (DG) W3.6	-	-	No bats	-	-
<i>27th August 2015 – Dawn T28, TG11.7</i>					
L2 (AM) T28	-	-	No bats	-	-
L4 (DG) TG11.7	-	-	No bats	-	-
<i>27th August 2015 – Dusk T25, T26</i>					
L1 (JL) T25	NV	20:21	Common pipistrelle & Soprano pipistrelle	3	Foraging
	NV	20:40	Myotis Sp.	1	Foraging
	NV	20:44	Common pipistrelle	1	Pass
	NV	20:46	Common pipistrelle	1	Pass
	NV	20:48	Common pipistrelle	1	Pass
	1	20:51	Myotis Sp.	Multiple	Foraging
	NV	20:55	Soprano pipistrelle	2	Foraging
	NV	21:01	Noctule	1	Pass
L2 (LOA) T26	NV	20:20	Common pipistrelle	1	Pass
	NV	20:48	Common pipistrelle	1	Pass
L3 (AA) T26	2	20:31	Bat sp. Seen not Heard	1	Pass
	3	20:40	Brown long-eared	2	Pass
	4	20:44	Common pipistrelle	Multiple	Foraging
	4	20:46	Common pipistrelle	Multiple	Foraging
	NV	20:56	Common pipistrelleX2	Multiple	Foraging
	NV	21:13	Common pipistrelleX2	Multiple	Foraging
	NV	21:34	Brown long-eared	2	Foraging
	5	20:38	Brown long-eared	2	Pass
L4 (JEC) T25	6	20:43	Common pipistrelle	Constant	Foraging
<i>28th August 2015 – Dawn W7.17, W7.21</i>					
L5 (AA) T7.21	NV	04:52	Brown long-eared	1	Faint pass
L6 (JEC) W7.21	-	-	No bats	-	-
L7 (JL) W7.17	-	-	No bats	-	-
L8 (LOA) W7.17	-	-	No bats	-	-
<i>28th August 2015 – Dusk T27, T30</i>					
L1 (LG) T301	NV	20:39	Myotis species	1	Pass
	NV	20:44	Pipistrelle species	1	Pass
	NV	20:46	Pipistrelle species	2	Foraging
	NV	20:48	Pipistrelle species	3	Foraging
	NV	20:51	Barbastelle	1	Pass
	NV	20:53	Bat species	1	Pass
	NV	20:56	Common pipistrelle	2	Pass
	NV	20:58	Bat species	3	Foraging
	NV	21:01	Common pipistrelle & Myotis species	3	Foraging
	1	21:03	Common pipistrelle	3	Foraging
	NV	21:08	Pipistrelle species	2	Foraging
	NV	21:09	Pipistrelle species	1	Foraging
	NV	21:11	Common pipistrelle	10	Foraging
	NV	21:17	Common pipistrelle	2	Foraging
	NV	21:20	Bat species	1	Foraging

	NV	21:21	Common pipistrelle	1	Foraging
	NV	21:23	Common pipistrelle	4	Foraging
	NV	21:24	Common pipistrelle	1	Foraging
	NV	21:26	Common pipistrelle	1	Foraging
L2 (HT) T30	2	20:12	Soprano pipistrelle	1	Pass
	3	20:14	Soprano pipistrelle	1	Pass
	3	20:15	Soprano pipistrelle	1	Pass
	NV	20:42	Common pipistrelle	1	Foraging
	NV	20:42	Soprano pipistrelle	4	
	2	20:44	Bat species	1	Pass, seen not heard
	4	20:46	Pipistrelle species	1	Pass
	NV	20:47	Soprano pipistrelle	1	Pass
	NV	20:48	Pipistrelle species	1	Pass
	NV	20:49	Common pipistrelle	2	Foraging
	NV	20:55	Common pipistrelle	1	Pass
	NV	20:57	Soprano pipistrelle	1	Foraging
	NV	20:57	Common pipistrelle	2	Foraging
	NV	21:00	Soprano pipistrelle	1	Foraging
	NV	21:01	Common pipistrelle	2	Foraging
	NV	21:24	Pipistrelle species	1	Foraging
L3 (AA) T27	NV	20:13	Common pipistrelle	1	Foraging
	5	20:39	Brown long-eared	1	Commuting
	NV	20:48	Soprano pipistrelle	1	Faint pass
	NV	20:49	Soprano pipistrelle	1	Foraging
	NV	20:52	Soprano pipistrelle	1	Foraging
	NV	20:57	Soprano pipistrelle	3	Foraging
<i>29th August 2015 – Dawn T27, T30</i>					
L1 (LG) T30	NV	04:35	Common pipistrelle	1	Foraging
	NV	04:36	Common pipistrelle	1	Foraging
	NV	04:42	Common pipistrelle	4	Foraging
	NV	04:45	Common pipistrelle	2	Foraging
	NV	04:50	Soprano pipistrelle	2	Foraging
	NV	04:58	Bat species	7	Foraging
	NV	05:00	Common pipistrelle	1	Foraging
	NV	05:05	Common pipistrelle	2	Foraging
	NV	05:08	Nyctalus species	1	Pass
	NV	05:11	Pipistrelle species	6	Foraging
L2 (HT) T30	NV	04:44	Common pipistrelle	1	Foraging
	1	05:17	Brown long-eared	1	Foraging
	2	05:25	Common pipistrelle	1	Pass
	3	05:31	Brown long-eared	1	Seen but not heard
L4 (AA) T27	NV	04:36	Common pipistrelle	Multiple	Foraging
	NV	04:44	Common pipistrelle & Soprano pipistrelle	Multiple	Foraging
	NV	05:07	Common pipistrelle	Multiple	Foraging
	NV	05:18	Soprano pipistrelle	Multiple	Foraging
<i>1st September 2015 – Dusk W6.3, T60</i>					
L1 (LG) W6.3	NV	19:56	Pipistrelle species	3	Foraging
	1	20:02	Common pipistrelle	6	Foraging
	NV	20:11	Common pipistrelle	2	Foraging
	NV	20:15	Common pipistrelle	1	Foraging
	NV	20:18	Pipistrelle species	1	Foraging
	NV	20:20	Common pipistrelle	1	Foraging
	NV	20:22	Pipistrelle species	1	Pass
	NV	20:27	Common pipistrelle	8	Foraging
NV	20:37	Common pipistrelle	1	Foraging	

	NV	20:51	Common pipistrelle	5	Foraging
	NV	20:57	Pipistrelle species	1	Pass
	NV	20:59	Pipistrelle species	5	Foraging
	NV	21:03	Pipistrelle species	1	Foraging
	NV	21:11	Pipistrelle species	1	Pass
	NV	21:13	Pipistrelle species	1	Foraging
L2 (AM) W6.3	NV	19:56	Pipistrelle species	1	Foraging
	NV	20:02	Common pipistrelle	Multiple	Foraging
	NV	20:12	Common pipistrelle	2	Foraging
	NV	20:15	Common pipistrelle	1	Foraging
	NV	20:18	Common pipistrelle	1	Foraging
	NV	20:20	Pipistrelle species	1	Pass
	NV	20:22	Pipistrelle species	1	Foraging
	NV	20:28	Pipistrelle species	Multiple	Foraging
	NV	20:37	Common pipistrelle	Multiple	Foraging
	NV	20:51	Common pipistrelle	3	Foraging
	NV	20:57	Pipistrelle species	1	Pass
	NV	20:59	Pipistrelle species	2	Foraging
	NV	21:03	Common pipistrelle	1	Foraging
	NV	21:11	Pipistrelle species	1	Foraging
	NV	21:13	Pipistrelle species	1	Foraging
L3 (DS) T60	-	-	No bats	-	-
<i>2nd September 2015 – Dawn T48, T69</i>					
L1 (LG) T69	NV	05:10	Pipistrelle species	1	Pass
	NV	05:12	Barbastelle	1	Pass
	NV	05:24	Pipistrelle species	1	Pass
L2 (AM) T69	NV	05:12	Bat species	1	Pass
	NV	05:24	Pipistrelle species	1	Pass
L3 (NB) T48	1	05:08	Common pipistrelle	1	Pass
	NV	05:24	Common pipistrelle	1	Pass
L4 (DS) T48	1	05:08	Common pipistrelle	1	Pass
	1	05:23	Common pipistrelle	1	Pass
	2	05:28	Myotis species	1	Pass
<i>8th September 2015 – Dusk T44</i>					
L1 (LOA) T44	1	20:13	Common pipistrelle	1	Pass
	2	20:18	Common pipistrelle	3	Foraging
	NV	20:26	Common pipistrelle	1	Pass
	3	21:10	Common pipistrelle	Multiple	Foraging
L2 (JL) T44	4	20:13	Common pipistrelle	1	Pass
	5	20:19	Common pipistrelle	3	Foraging
	NV	20:27	Common pipistrelle	2	Pass
	5	21:09	Common pipistrelle	Multiple	Foraging
<i>9th September 2015 – Dawn T44</i>					
L1 (LOA) T44	-	-	No bats	-	-
L2 (JL) T44	-	-	No bats	-	-



NOTES

All dimensions to be verified on site. Do not scale this drawing.
 All discrepancies to be clarified with project Landscape Architect.
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	Scale 1:10,000 @ A3	
	Application boundary	168.34ha
	Existing woodland habitat	16.08ha
	New woodland habitat	13.9ha
	Woodland to be removed (Total area)	1.327ha
	Species rich grassland and seasonal meadow	34.92ha
	Scrub area / Natural regeneration	2.30ha
	Attenuation Ponds Wetland Habitat	4.45ha
	Tributary of the River Stour Riparian habitat	1.14ha
	Existing Hedge Retained	4988m
	Hedgerow to be removed to facilitate road access and footpath links (Total length) (Assumed 2.5 roadside clearance for visibility)	470m
	Allotment Site	0.6ha
	Allotment Site	0.9ha
	School Playing Fields	1.4ha
	School Playing Fields	1.2ha

D	21.03.16	Areas cross checked by Project Ecologist	NJE
C	21.03.16	Areas cross checked by Project Ecologist	NJE
B	09.03.16	Areas of open space revised and Hedgerow re-evaluated	SJ
A	05.02.16	Drawing amended following input from Project Ecologist	SJ

rev	date	description	by
-----	------	-------------	----

masterplanning		FPCR Environment and Design Ltd
environmental assessment		Lockington Hall
landscape design		Lockington
urban design		Derby DE74 2RH
ecology		
architecture		
arboriculture		

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 f: 01509 674565
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 w: www.fpcr.co.uk

client
HALLAM LAND MANAGEMENT LTD

project
**Great Wilsey Park
 Haverhill**

drawing title
Habitat / Public Open Space

scale
 1:10,000@A3

drawn
 NJE

date
 Feb 2016

drawing number
5055-L-119

rev
D



Figure 3a: Properties backing onto bat routes

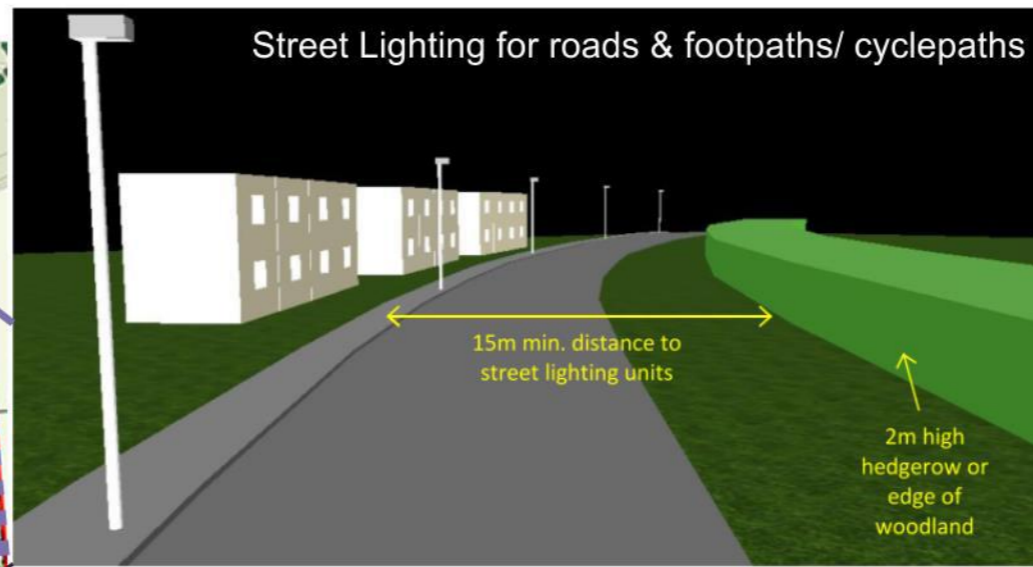
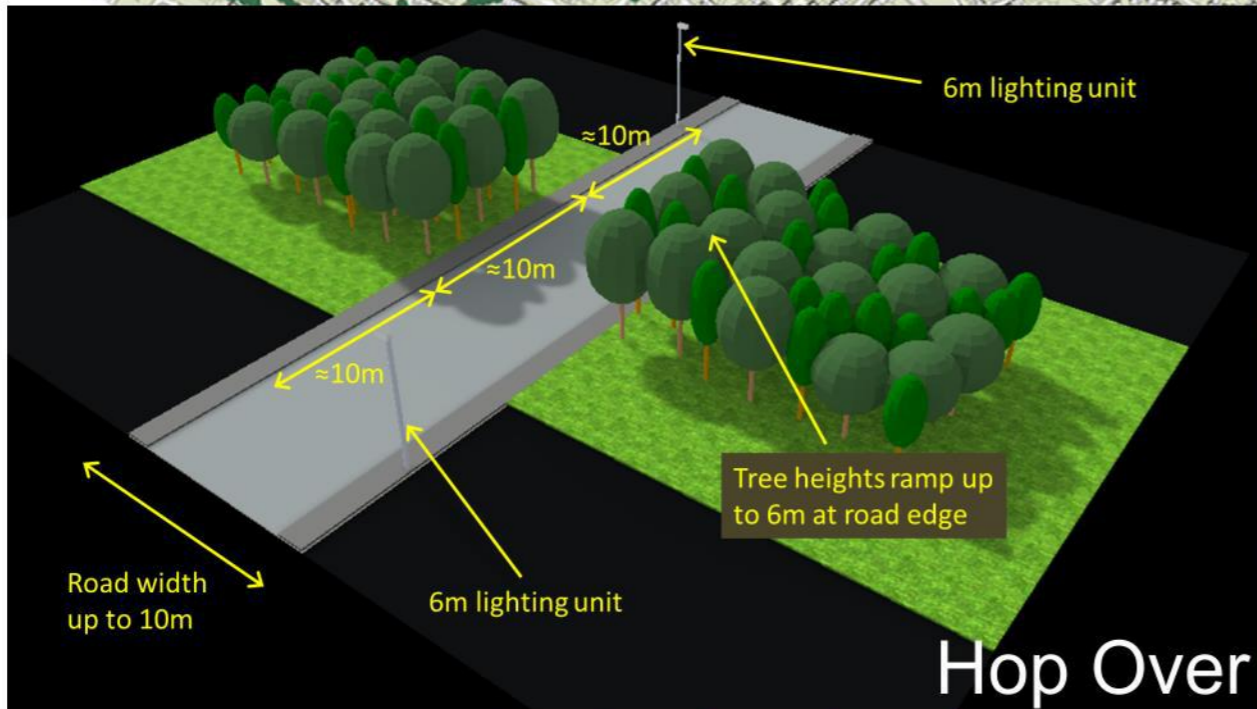


Figure 2a: Street lighting arrangement near bat routes



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-  Development Boundary
-  Proposed Hop Over Location
-  Bat Route - Dark Corridor
-  Lit Cycle Paths
-  Lit Roads

Hallam Land Management Ltd

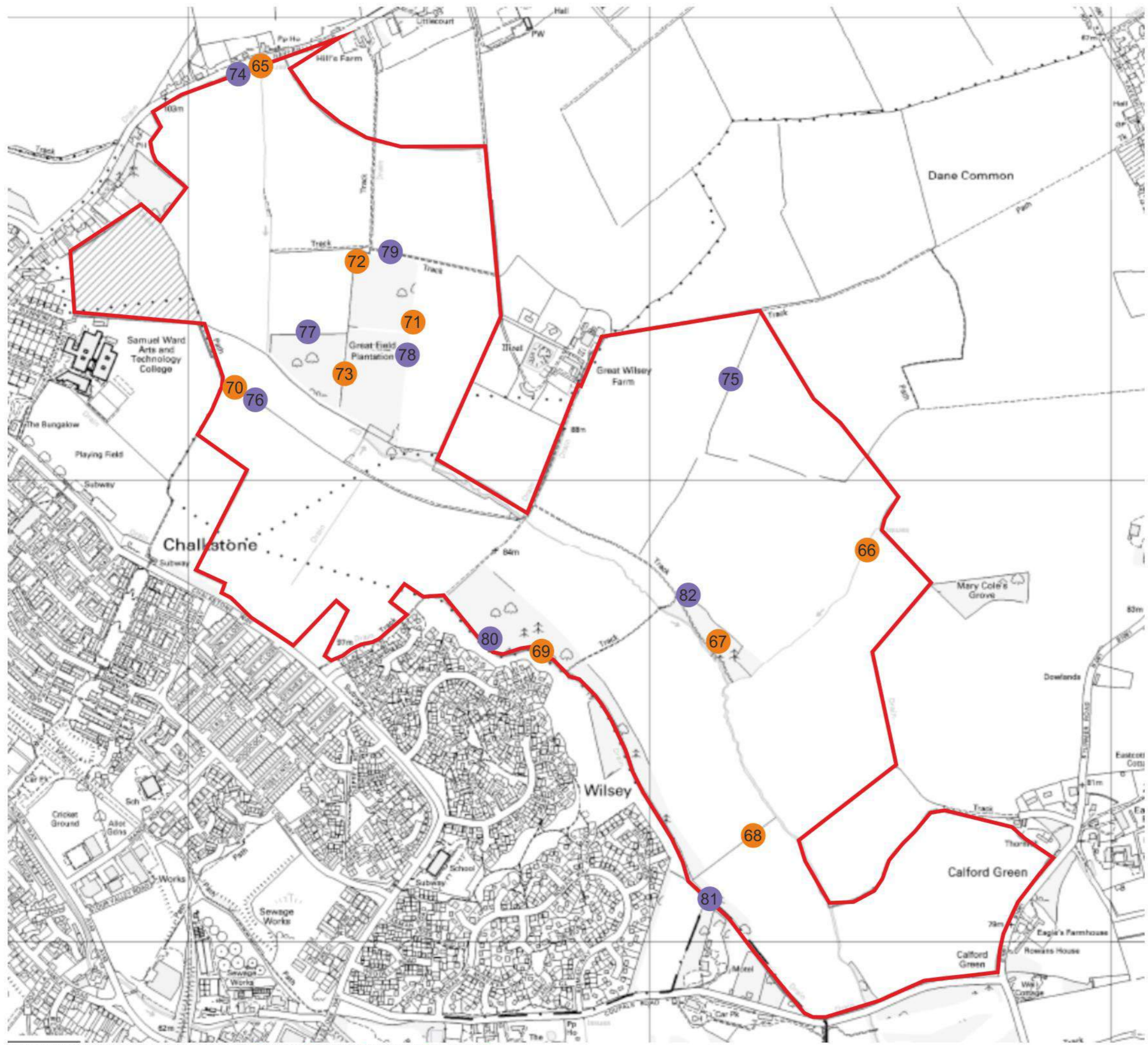
Great Wilsey Park,
Haverhffolk

 Bat Lighting Mitigation Strategy

NTS @ A3 REH 04/02/2016

 **Figure 30** **REV A**

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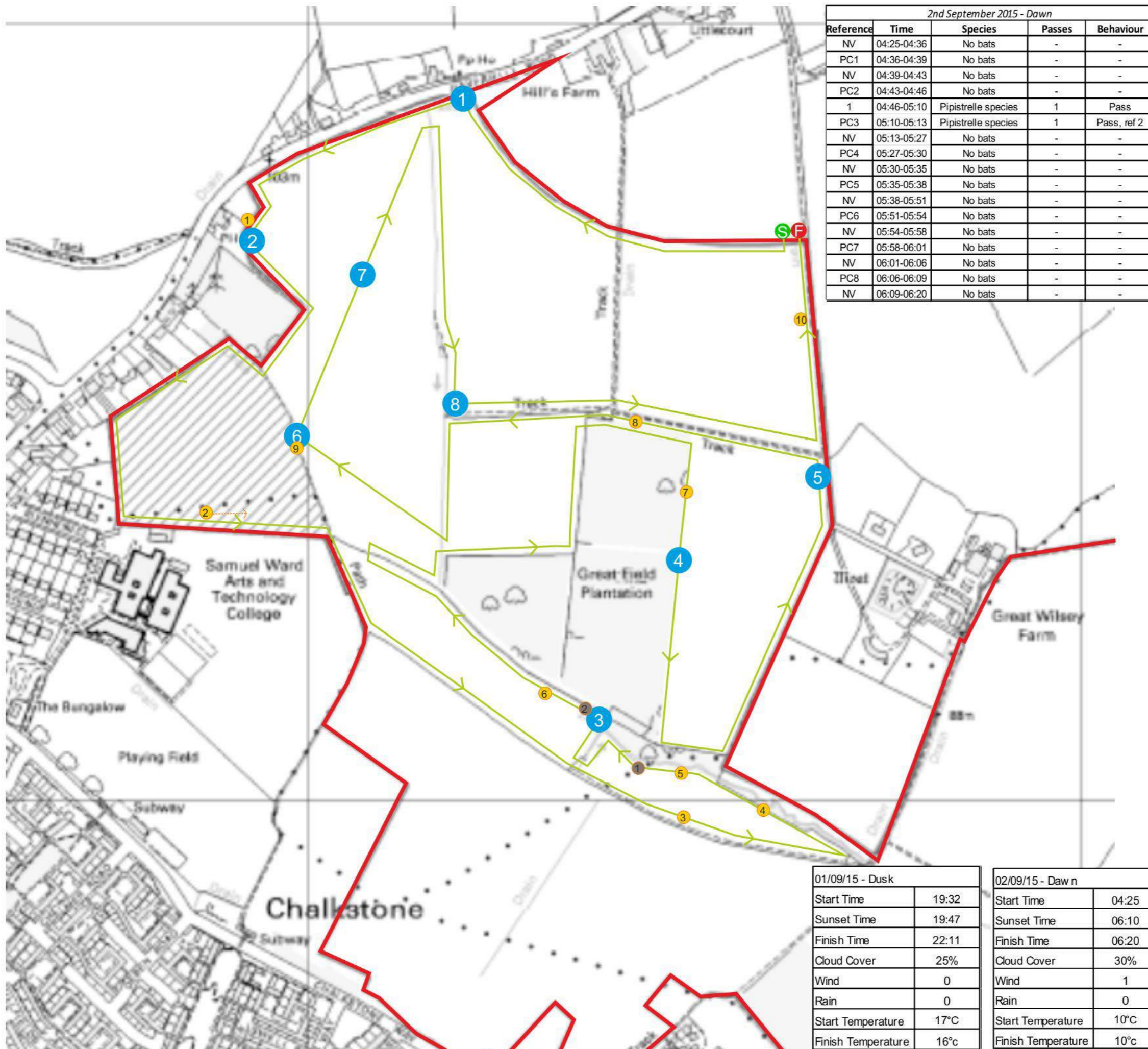
- August 2015 Static Locations:**
- 65 - Unit 14
 - 66 - Unit 13
 - 67 - Unit 11
 - 68 - Unit 23
 - 69 - Unit 25
 - 70 - Unit 9
 - 71 - Unit 12
 - 72 - Unit 10
 - 73 - Unit 24
- September 2015 Static Locations:**
- 74 - Unit 9
 - 75 - Unit 24
 - 76 - Unit 27
 - 77 - Unit 12
 - 78 - Unit 25
 - 79 - Unit 28
 - 80 - Unit 23
 - 81 - Unit 14
 - 82 - Unit 26

fpcr Hallam Land Management Ltd
 Great Wilsey Park
 Haverhill, Suffolk

Static Location Plan 2015

NTS @ A3 RJJH 23/09/2015

Figure 1



2nd September 2015 - Dawn				
Reference	Time	Species	Passes	Behaviour
NV	04:25-04:36	No bats	-	-
PC1	04:36-04:39	No bats	-	-
NV	04:39-04:43	No bats	-	-
PC2	04:43-04:46	No bats	-	-
1	04:46-05:10	Pipistrelle species	1	Pass
PC3	05:10-05:13	Pipistrelle species	1	Pass, ref 2
NV	05:13-05:27	No bats	-	-
PC4	05:27-05:30	No bats	-	-
NV	05:30-05:35	No bats	-	-
PC5	05:35-05:38	No bats	-	-
NV	05:38-05:51	No bats	-	-
PC6	05:51-05:54	No bats	-	-
NV	05:54-05:58	No bats	-	-
PC7	05:58-06:01	No bats	-	-
NV	06:01-06:06	No bats	-	-
PC8	06:06-06:09	No bats	-	-
NV	06:09-06:20	No bats	-	-

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- Development Boundary
- Western Transect Route
- Start / Finish Point
- Western Point Count (with reference)
- Bat Contact (with reference) and Route of Bat (if sighted) DUSK
- Bat Contact (with reference) and Route of Bat (if sighted) DAWN

1st September 2015 - Dusk				
Reference	Time	Species	Passes	Behaviour
NV	19:32-19:41	No bats	-	-
PC1	19:41-19:48	No bats	-	-
NV	19:48-19:53	No bats	-	-
PC2	19:53-19:58	Common pipistrelle	2	Commuting north along hedgerow, ref 1
2	19:58-20:36	Common pipistrelle	3	Foraging
3		Brown long-eared	1	Foraging
4		Common pipistrelle	1	Foraging
5		Common pipistrelle	1	Foraging
PC3		20:36-20:41	Common pipistrelle	Multiple
6	20:41-20:56	Common pipistrelle	Multiple	Foraging
7		Common pipistrelle	Multiple	Foraging
PC4	20:56-21:01	No bats	-	-
NV	21:01-21:12	No bats	-	-
PC5	21:12-21:17	No bats	-	-
8	21:17-21:30	Common pipistrelle	Multiple	Foraging
PC6	21:30-21:35	No bats	-	-
9	21:35-21:39	Common pipistrelle	1	Pass
PC7	21:39-21:44	No bats	-	-
NV	21:44-21:53	No bats	-	-
PC8	21:53-21:58	No bats	-	-
10	21:58-22:11	Common pipistrelle	1	Pass

01/09/15 - Dusk	
Start Time	19:32
Sunset Time	19:47
Finish Time	22:11
Cloud Cover	25%
Wind	0
Rain	0
Start Temperature	17°C
Finish Temperature	16°C

02/09/15 - Dawn	
Start Time	04:25
Sunset Time	06:10
Finish Time	06:20
Cloud Cover	30%
Wind	1
Rain	0
Start Temperature	10°C
Finish Temperature	10°C

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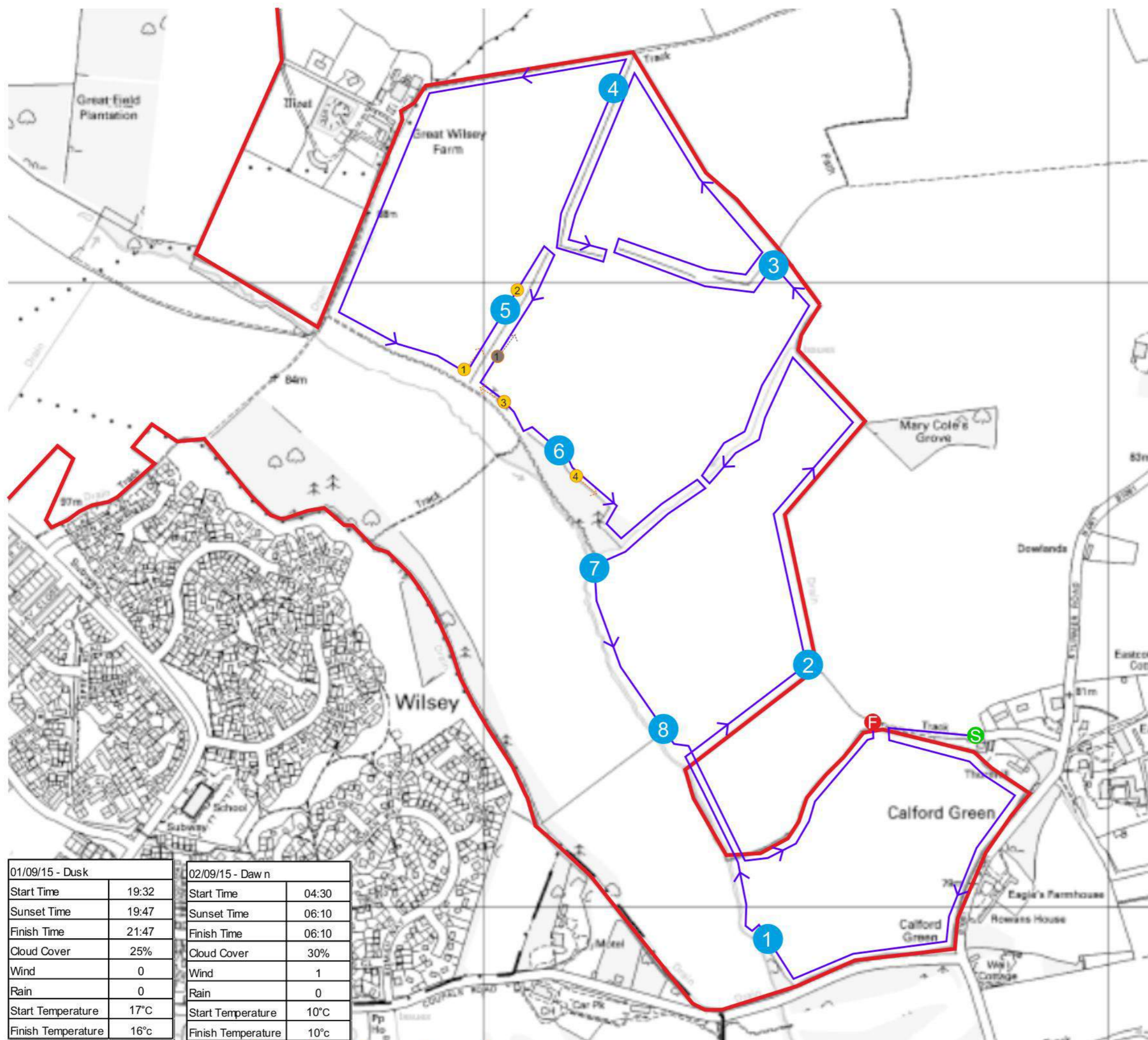
Activity Transect 1st September 2015 - Western







NTS @A3 RJJH 23/09/2015

Figure 2a

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-  Development Boundary
-  Eastern Transect Route
-  Start / Finish Point
-  Point Count (with reference)
-  Bat Contact (with reference) and Route of Bat (if sighted)
-  Bat Contact (with reference) and Route of Bat (if sighted) DAWN

1st September 2015 - Dusk				
Reference	Time	Species	Passes	Behaviour
NV	19:32-19:47	No bats	-	-
PC1	19:47-19:52	No bats	-	-
NV	19:52-19:59	No bats	-	-
PC2	19:59-20:04	No bats	-	-
NV	20:04-20:20	No bats	-	-
PC3	20:20-20:25	No bats	-	-
NV	20:25-20:36	No bats	-	-
PC4	20:36-20:41	No bats	-	-
1	20:41-20:52	Common pipistrelle	1	Pass
PC5	20:52-20:57	Common pipistrelle	2	Pass, ref 2
3	20:57-21:05	Common pipistrelle	1	Pass
PC6	21:05-21:10	No bats	-	-
4	21:10-21:24	Common pipistrelle	1	Pass
PC7	21:24-21:29	No bats	-	-
NV	21:29-21:39	No bats	-	-
PC8	21:39-21:42	No bats	-	-
NV	21:42-21:47	No bats	-	-

2nd September 2015 - Dawn				
Reference	Time	Species	Passes	Behaviour
NV	04:30-04:40	No bats	-	-
PC1	04:40-04:43	No bats	-	-
NV	04:43-04:51	No bats	-	-
PC2	04:51-04:54	No bats	-	-
	04:54-05:05	No bats	-	-
PC3	05:05-05:08	No bats	-	-
NV	05:08-05:21	No bats	-	-
PC4	05:21-05:24	No bats	-	-
NV	05:24-05:31	No bats	-	-
PC5	05:31-05:34	No bats	-	-
1	05:34-05:40	Common pipistrelle	1	Pass
PC6	05:40-05:45	No bats	-	-
NV	05:45-05:48	No bats	-	-
PC7	05:48-05:51	No bats	-	-
NV	05:48-05:59	No bats	-	-
PC8	05:56-05:59	No bats	-	-
NV	05:59-06:10	No bats	-	-

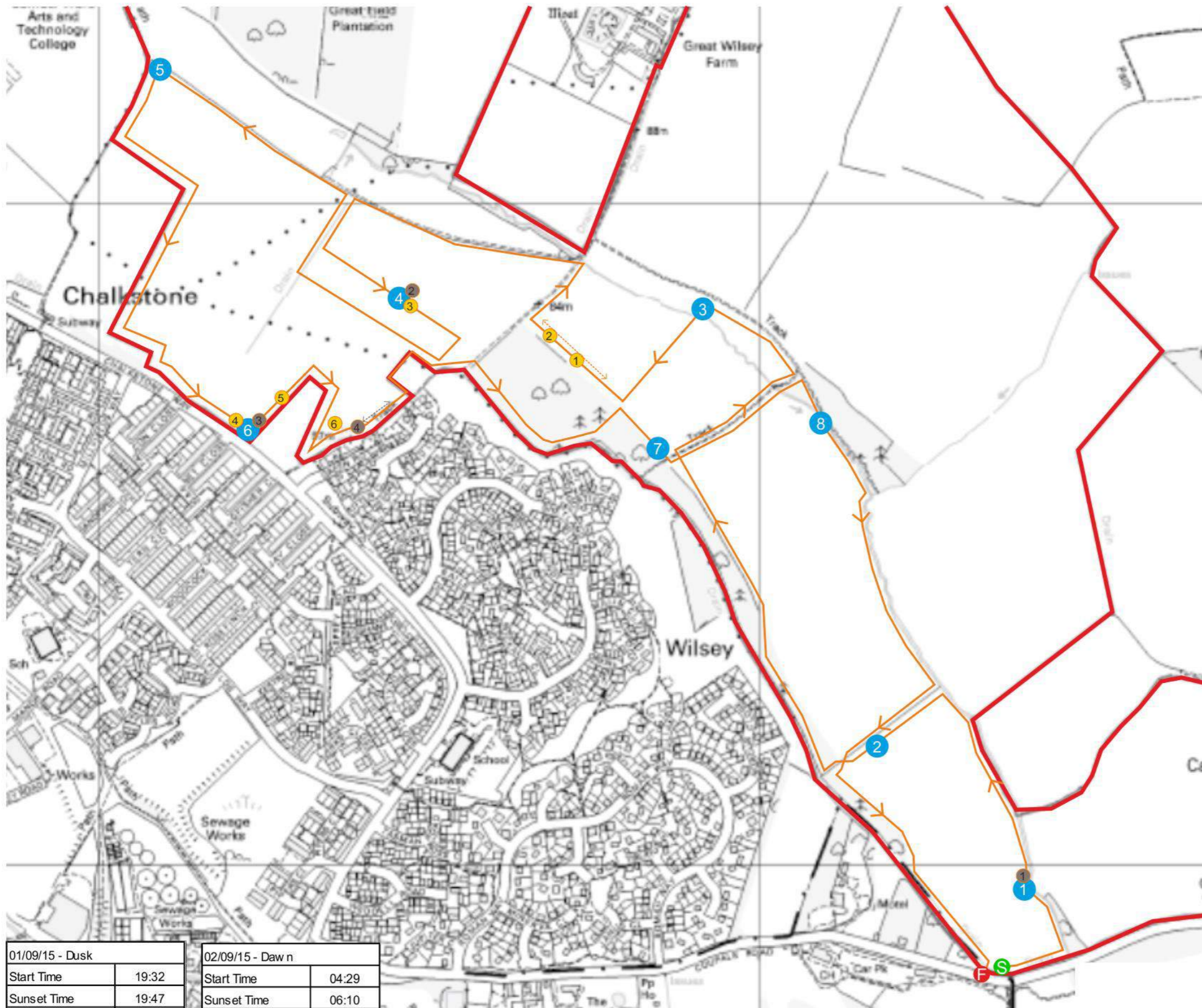
01/09/15 - Dusk		02/09/15 - Dawn	
Start Time	19:32	Start Time	04:30
Sunset Time	19:47	Sunset Time	06:10
Finish Time	21:47	Finish Time	06:10
Cloud Cover	25%	Cloud Cover	30%
Wind	0	Wind	1
Rain	0	Rain	0
Start Temperature	17°C	Start Temperature	10°C
Finish Temperature	16°C	Finish Temperature	10°C

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 Activity Transect 1st September 2015- Eastern

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Figure 2b



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-  Development Boundary
-  Southern Transect Route
-  Start / Finish Point
-  Point Count (with reference)
-  Bat Contact (with reference) and Route of Bat (if sighted) DUSK
-  Bat Contact (with reference) and Route of Bat (if sighted) DAWN

1st September 2015 - Dusk				
Reference	Time	Species	Passes	Behaviour
NV	19:32-19:42	No bats	-	-
PC1	19:42-19:47	No bats	-	-
NV	19:47-19:56	No bats	-	-
PC2	19:56-20:01	No bats	-	-
NV	20:01-20:17	No bats	-	-
PC3	20:17-20:22	No bats	-	-
1		Myotis species	1	Pass
2	20:22-20:45	Barbastelle	Multiple	Foraging
2		Brown long-eared	1	Pass
PC4	20:45-20:50	Common pipistrelle	2	Foraging, ref 3
NV	20:50-20:58	No bats	-	-
PC5	20:58-21:03	No bats	-	-
NV	21:03-21:11	No bats	-	-
PC6	21:11-21:16	Myotis species	1	Pass, ref 4
5	21:16-21:29	Soprano pipistrelle	2	Pass
6		Soprano pipistrelle	1	Pass
PC7	21:29-21:34	No bats	-	-
NV	21:34-21:38	No bats	-	-

2nd September 2015 - Dawn				
Reference	Time	Species	Passes	Behaviour
NV	04:29-04:32	No bats	-	-
PC1	04:32-04:35	Myotis species	1	Pass, ref 1
NV	04:35-04:39	No bats	-	-
PC2	04:39-04:42	No bats	-	-
NV	04:42-04:52	No bats	-	-
PC3	04:52-04:55	No bats	-	-
NV	04:55-05:07	No bats	-	-
PC4	05:07-05:10	Soprano pipistrelle	1	Pass, ref 2
NV	05:10-05:21	No bats	-	-
PC5	05:21-05:24	No bats	-	-
NV	05:24-05:36	No bats	-	-
PC6	05:36-05:39	Common pipistrelle	1	Pass, ref 3
4	05:39-05:52	Common pipistrelle	2	Foraging
PC7	05:52-05:55	No bats	-	-
NV	05:55-05:59	No bats	-	-
PC8	05:59-06:02	No bats	-	-
NV	06:02-06:10	No bats	-	-

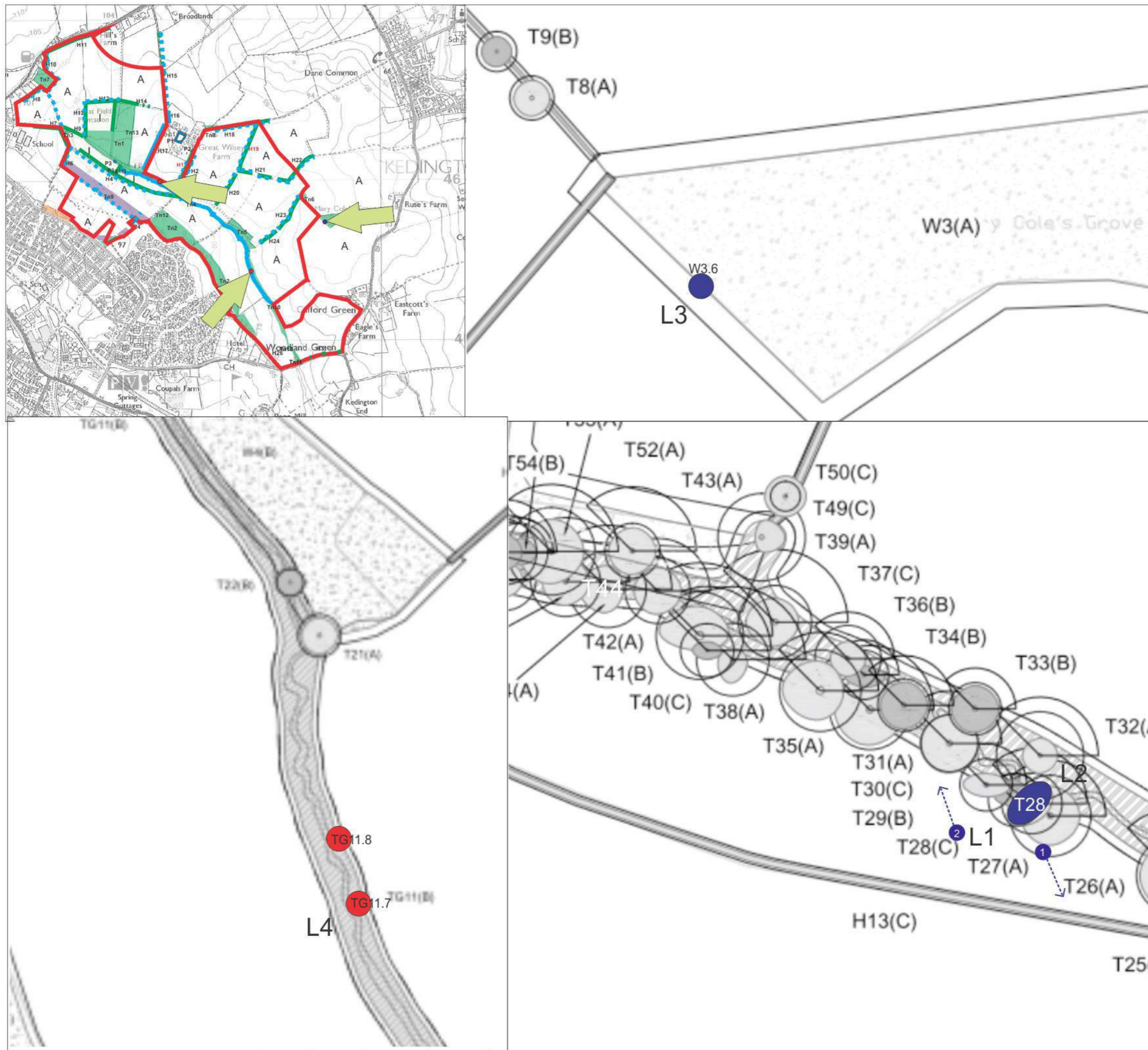
01/09/15 - Dusk		02/09/15 - Dawn	
Start Time	19:32	Start Time	04:29
Sunset Time	19:47	Sunset Time	06:10
Finish Time	21:45	Finish Time	06:10
Cloud Cover	25%	Cloud Cover	30%
Wind	0	Wind	1
Rain	0	Rain	0
Start Temperature	17°C	Start Temperature	10°C
Finish Temperature	16°C	Finish Temperature	10°C

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 Great Wilsey Park
 Haverhill, Suffolk







 Activity Transect 1st September 2015 - Southern

NTS @A3 RJJH 23/09/2015

 **Figure 2c**



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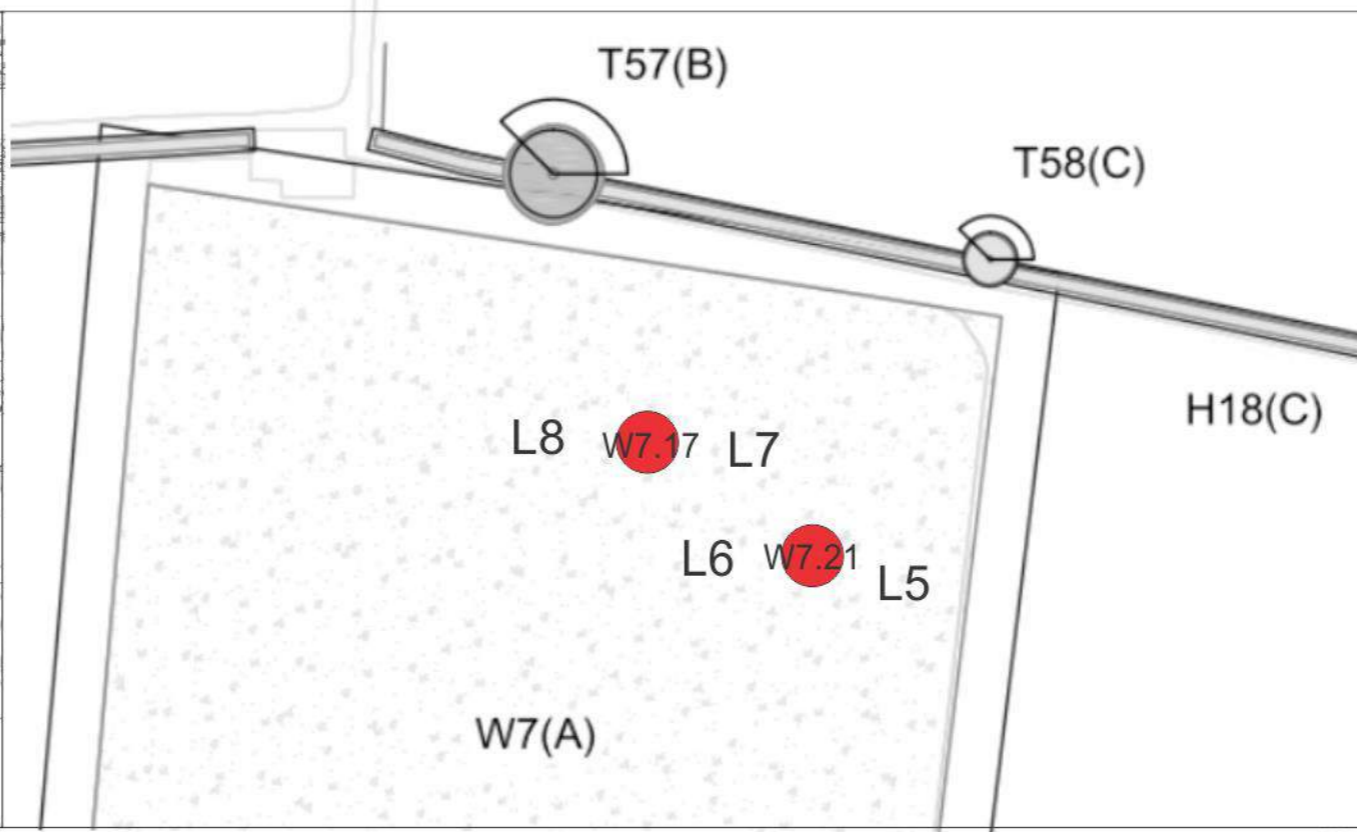
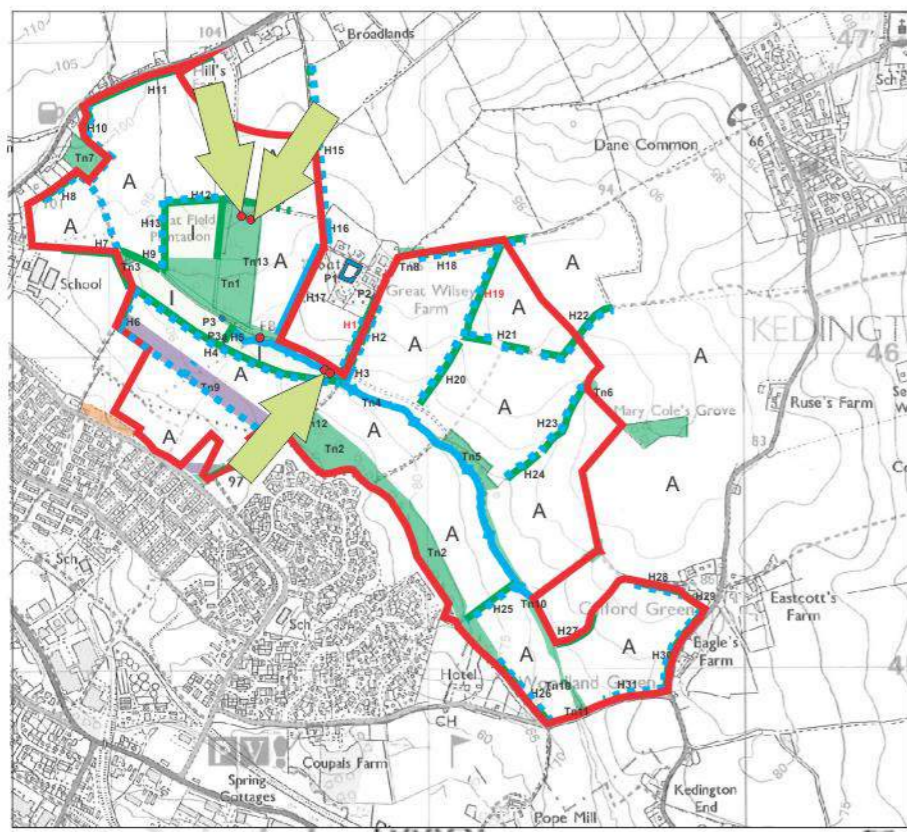
-  Surveyor Location
-  Tree with 2b Low Potential
-  Tree with 2a High / Moderate Potential
-  Tree with a Confirmed Roost
-  Bat Sighting - Recorded: Dawn
-  Bat Sighting - Recorded: Dusk

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




Bat Emergence Survey 26th & 27th August 2015
 - Dusk / Dawn

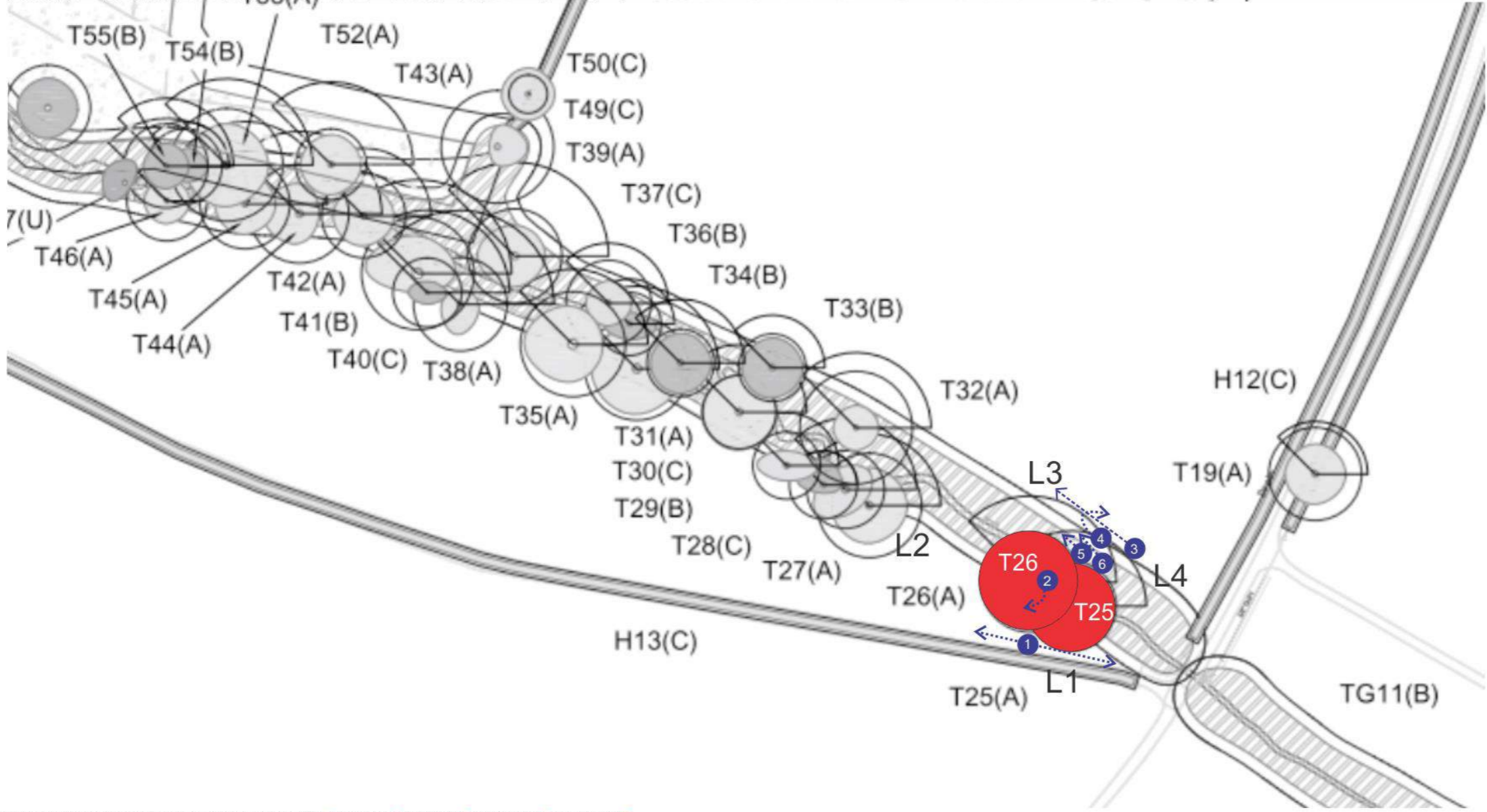
Not to scale KAW / DAH / REH 13.09.2015


Figure 4 5055-E-04



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-  Surveyor Location
-  Tree with 2b Low Potential
-  Tree with 2a High / Moderate Potential
-  Tree with a Confirmed Roost
-  Bat Sighting - Recorded: Dawn
-  Bat Sighting - Recorded: Dusk



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 Great Wilsey Park,
 Haverhill, Suffolk

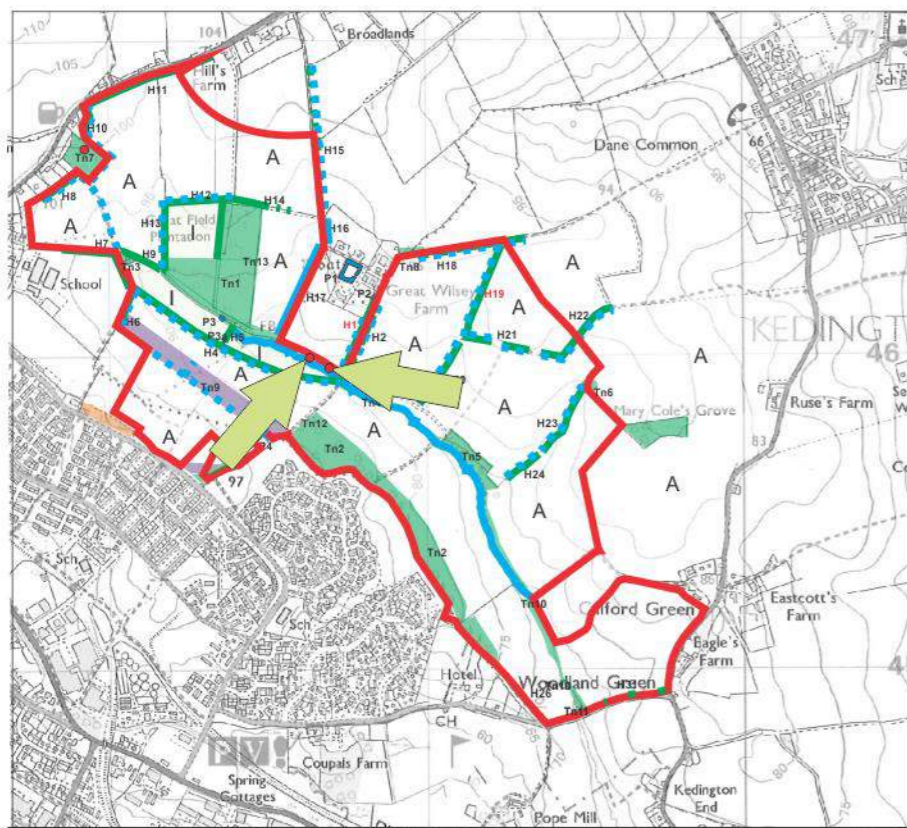
Bat Emergence Survey 27th August 2015
 - Dusk T25, T26 & Dawn 28th August 2015
 W7.17, W7.21







Not to scale MRD 07.09.2015

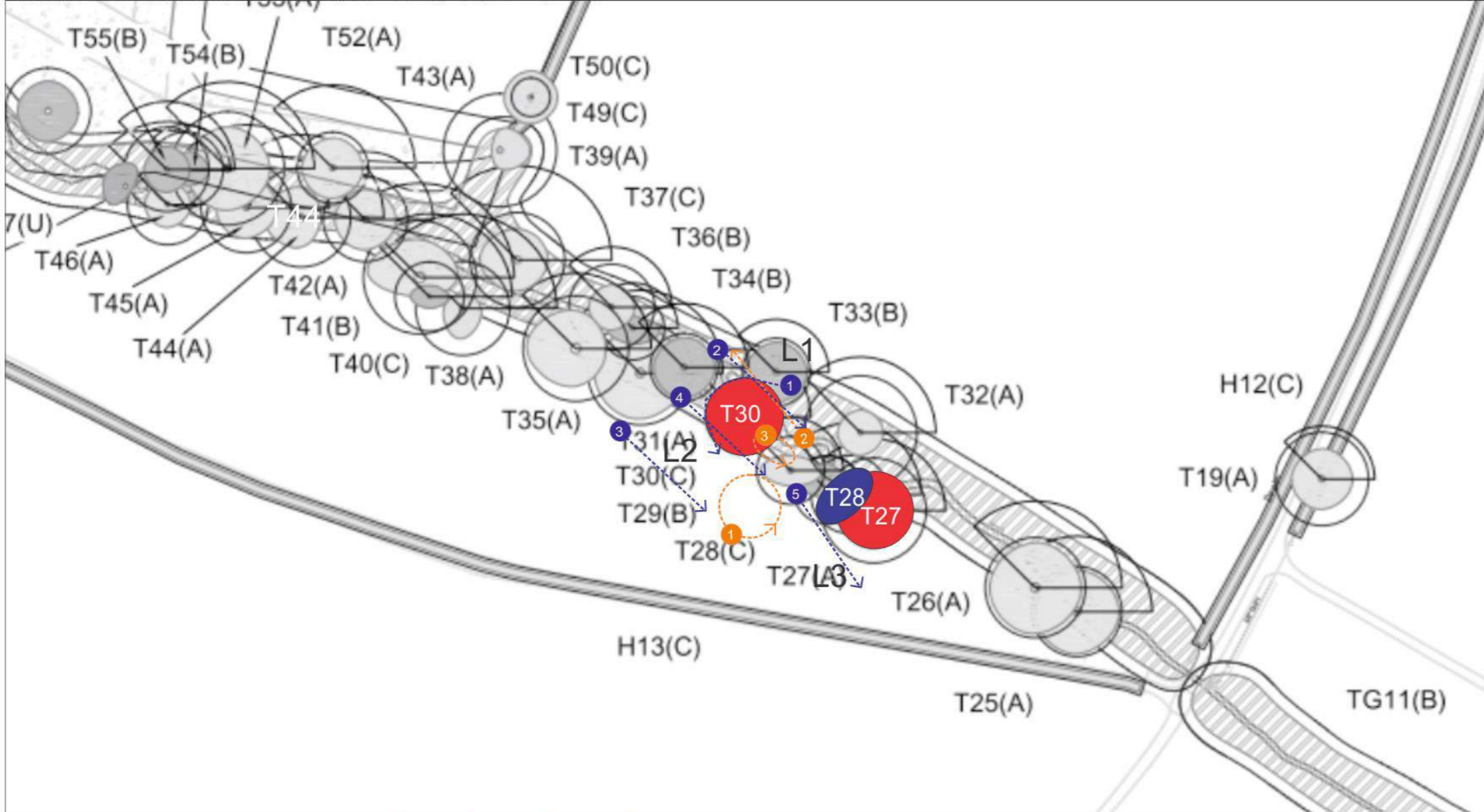
Figure 5 5055-E-05

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




-  Surveyor Location
-  Tree with 2b Low Potential
-  Tree with 2a High / Moderate Potential
-  Tree with a Confirmed Roost
-  Bat Sighting - Recorded: Dawn
-  Bat Sighting - Recorded: Dusk

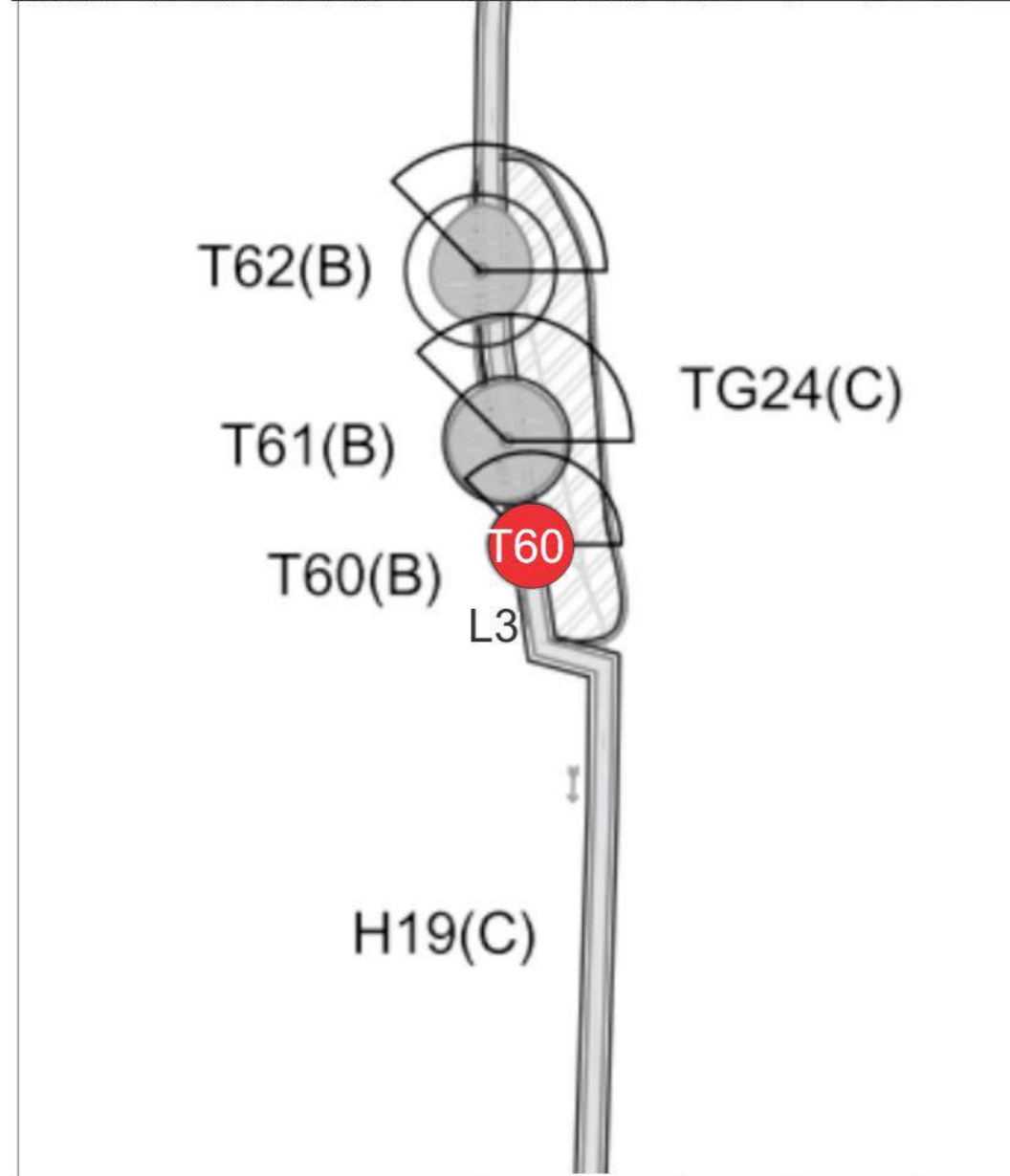




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 Great Wilsey Park,
 Haverhill, Suffolk
 Bat Emergence Survey 28th & 29th August 2015
 - Dusk / Dawn
 Not to scale KAW / DAH / REH 21.09.2015
Figure 6 5055-E-06



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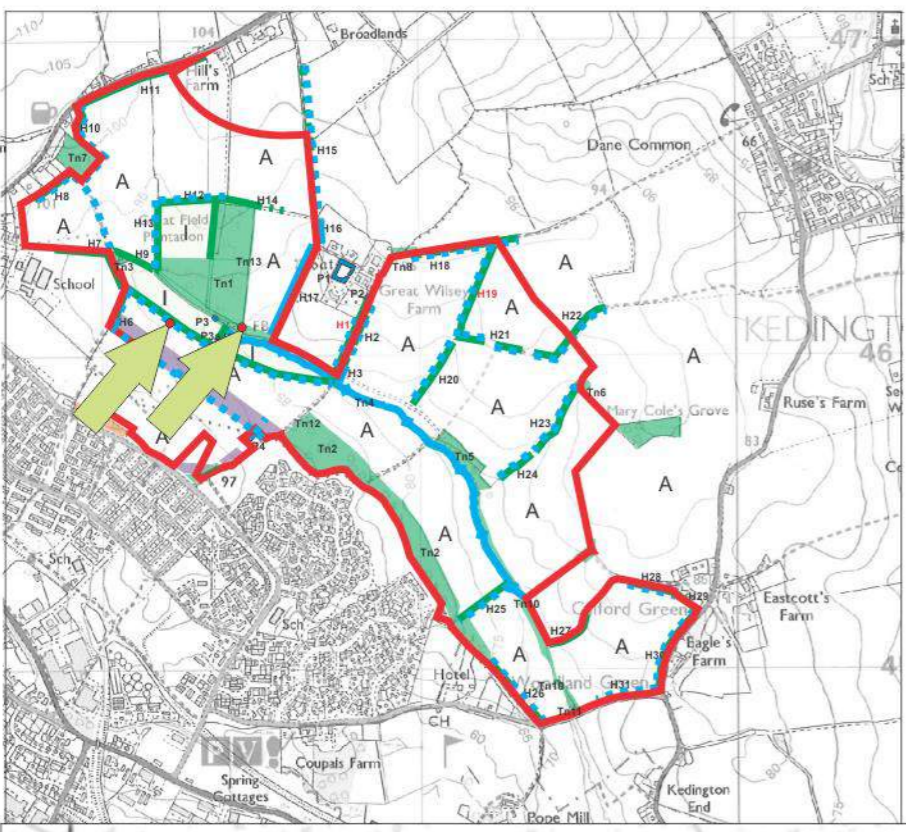
-  Surveyor Location
-  Tree with 2b Low Potential
-  Tree with 2a High / Moderate Potential
-  Tree with a Confirmed Roost
-  Bat Sighting - Recorded: Dawn
-  Bat Sighting - Recorded: Dusk









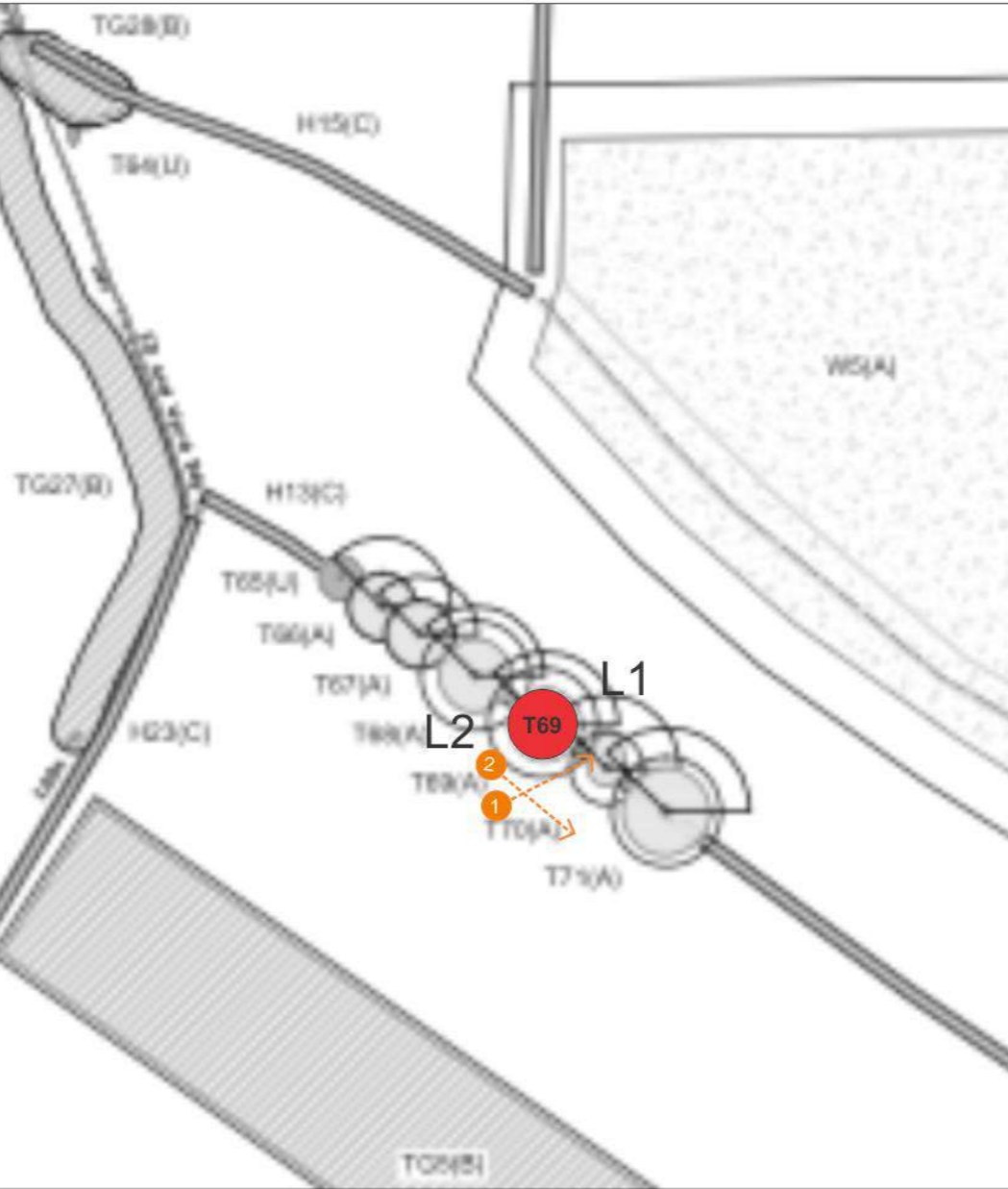
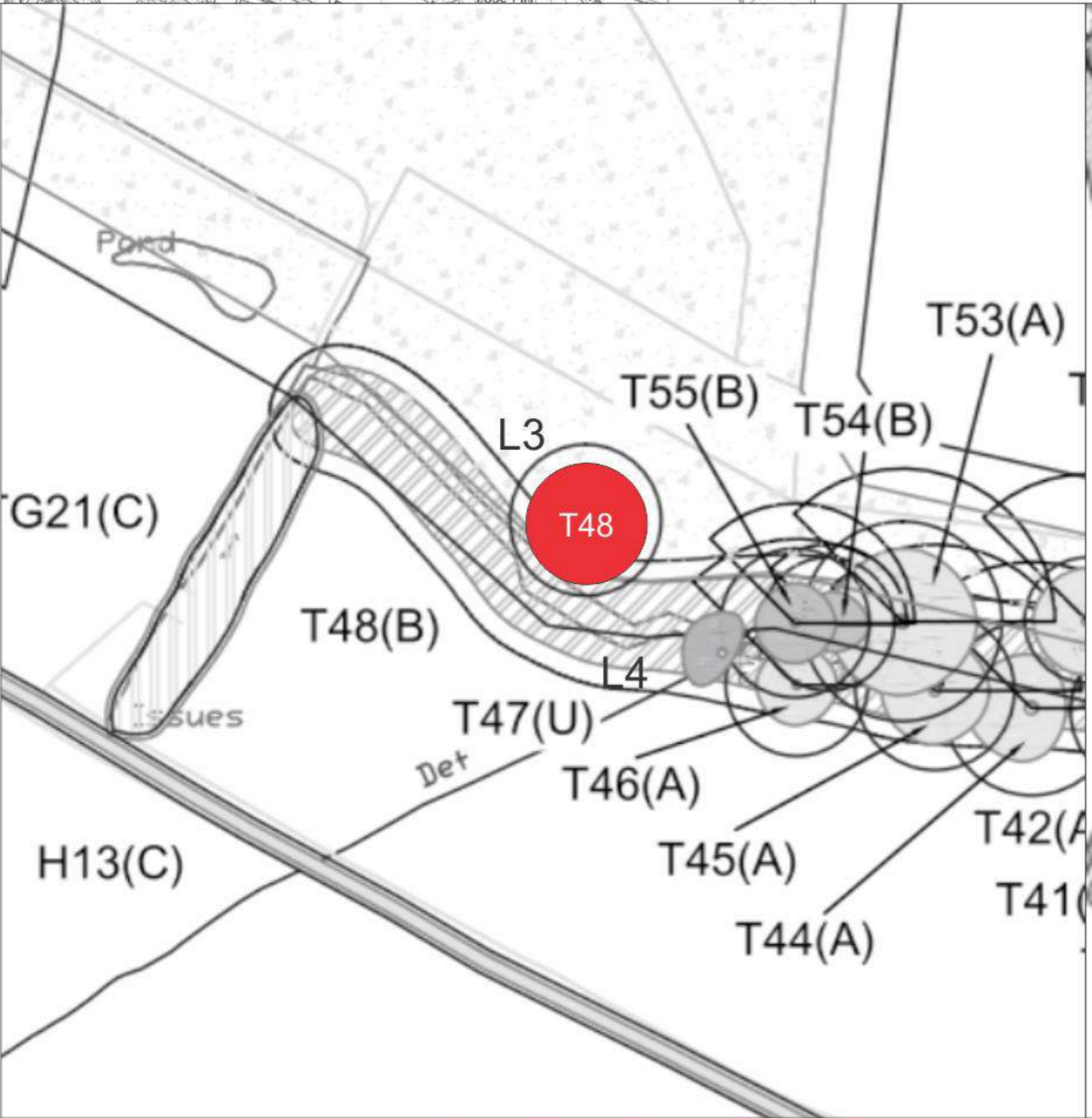
 Hallam Land Management Ltd
 Great Wilsey Park,
 Haverhill, Suffolk
 Bat Emergence Survey 1st September 2015
 - Dusk
 Not to scale KAW / DAH / REH 05.10.2015
 **Figure 7** 5055-E-07


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-  Surveyor Location
-  Tree with 2b Low Potential
-  Tree with 2a High / Moderate Potential
-  Tree with a Confirmed Roost
-  Bat Sighting - Recorded: Dawn
-  Bat Sighting - Recorded: Dusk




 Hallam Land Management Ltd

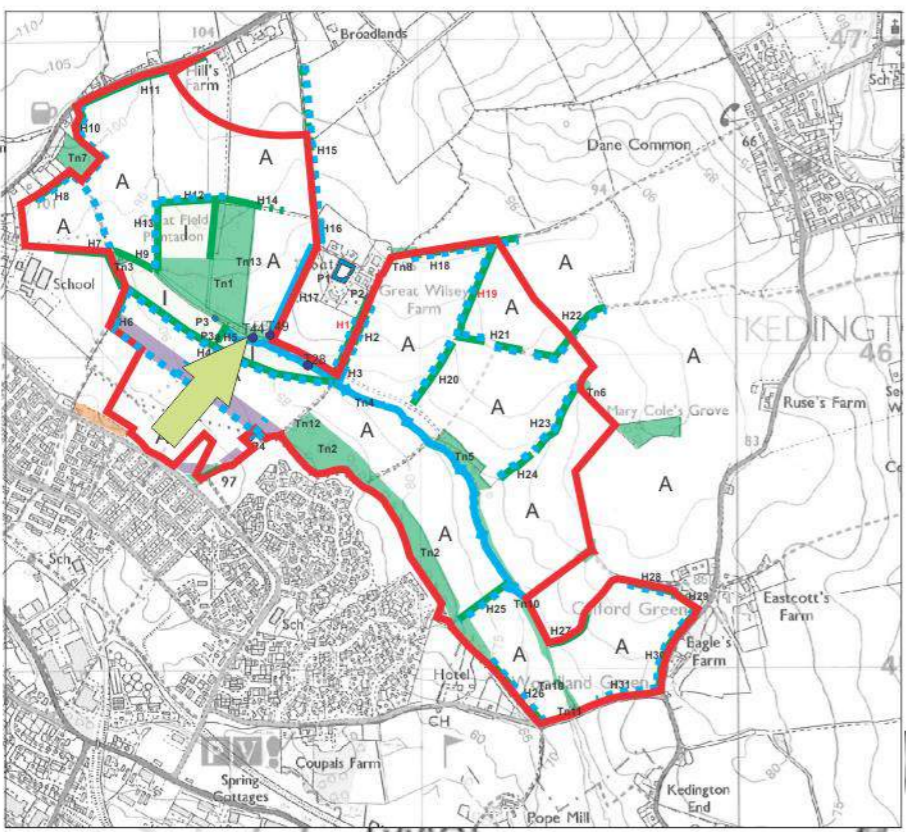
Great Wilsey Park,
Haverhill, Suffolk







Bat Emergence Survey 2nd September 2015
- Dawn

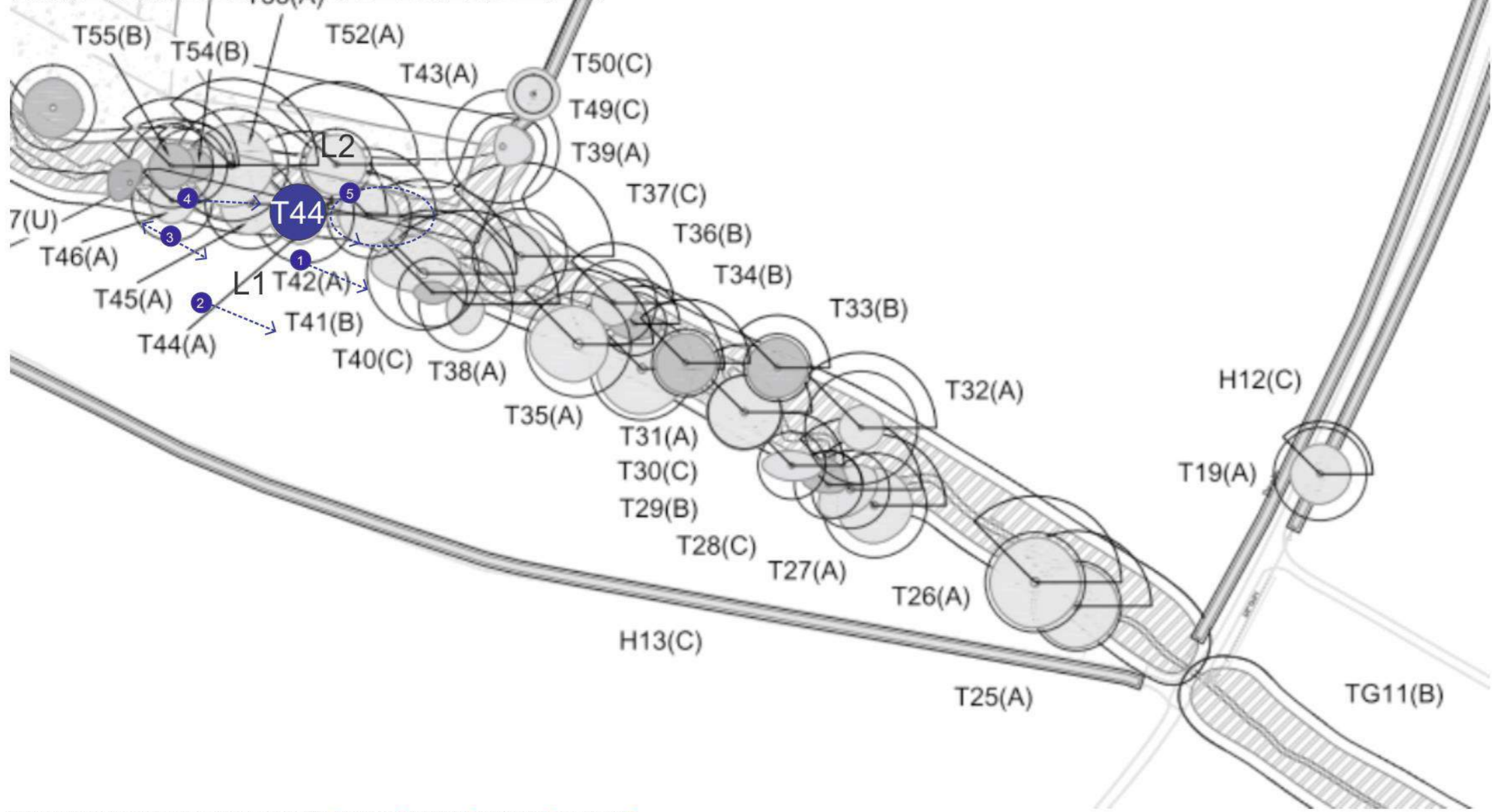
Not to scale KAW / DAH / REH 01.10.2015

 **Figure 8** 5055-E-08

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-  Surveyor Location
-  Tree with 2b Low Potential
-  Tree with 2a High / Moderate Potential
-  Tree with a Confirmed Roost
-  Bat Sighting - Recorded: Dawn
-  Bat Sighting - Recorded: Dusk



 Hallam Land Management Ltd
 Great Wilsey Park,
 Haverhill, Suffolk

Bat Emergence & Re-entry Survey
 8th & 9th September 2015

Not to scale KAW / DAH / REH 29.09.2015

Figure 9 5055-E-09



Appendix 13.1

MOLA Report



**Trial trench evaluation
on land at Great Wilsey Park
Haverhill, Suffolk
October-December 2015**

Report No. 16/55

Author: Susan Porter

Illustrators: James Ladocha
Olly Dindol



**Trial trench evaluation
on land at Great Wilsey Park
Haverhill, Suffolk
October-December 2015**

Planning reference: DC/14/2276/EIASCO

Report No. 16/55

Quality control and sign off:

Issue No.	Date approved:	Checked by:	Verified by:	Approved by:	Reason for Issue:
1	06/04/2016	Pat Chapman and Claire Finn	Mo Muldowney	Andy Chapman	Draft for client review

Author: Susan Porter

Illustrators: James Ladocha,
Olly Dindol

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Tora Hylton
Phil Mills PhD MCIfA
Susan Porter
Yvonne Wolfram-Murray BSc PhD

OASIS REPORT FORM

PROJECT DETAILS		OASIS No: molarnort1 - 224133
Project name	Archaeological trial trench evaluation on land at Great Wilsey Park, Haverhill Suffolk	
MOLA Northampton was commissioned by Orion Heritage to carry out an archaeological trial trench evaluation on land at Great Wilsey Park, Haverhill, Suffolk prior to the proposed development of the site. Three hundred and fourteen trenches were excavated. Archaeological remains were concentrated around the central areas, with prehistoric and Iron Age activity represented by a number of isolated pits in the south and east along with two possible field systems in the central-western and south-eastern areas. A possible small industrial kiln and enclosure lay in the western-central area and a possible dwelling and hearth were observed in the central eastern area. Medieval (12th and 13th century) activity was concentrated in two distinct areas and was probably associated with the surrounding landscape of two nearby moated sites. No later medieval activity was present, and only limited post-medieval activity was identified. No deposits of conclusively Roman date were observed. A large number of trenches contained either no archaeological remains, or only post-medieval/modern land boundaries as depicted on the 1881 and 1905 Ordnance Survey Historic maps.		
Project type (eg DBA, evaluation etc)	Evaluation	
Site status (none, NT, SAM etc)	None	
Previous work (SMR numbers etc)	Heritage Desk-based assessment (CgMs 2013)	
Current Land use	Pasture farmland	
Future work (yes, no, unknown)	Unknown	
Monument type/ period	Ditches and isolated featuresm middle Iron Age, medieval and post-medieval	
Significant finds (artefact type and period)	Middle Iron Age pottery, 12th-13th-century Medieval pottery, animal bone, slag, lava quern, post-medieval CBM, single piece Roman tegula	
PROJECT LOCATION		
County	Suffolk	
Site address (including postcode)	Land at Great Wilsey Park, Haverhill, Suffolk	
Study area (sq.m or ha)	c.170 ha	
OS Easting & Northing (use grid sq. letter code)	TL688 459	
Height OD	c.90-100m AoD	
PROJECT CREATORS		
Organisation	MOLA Northampton	
Project brief originator	Orion Heritage	
Project Design originator	MOLA Northampton	
Director/Supervisor	Jonathon Elston	
Project Manager	Liz Muldowney	
Sponsor or funding body	Orion Heritage	
PROJECT DATE		
Start date/End date	05/10/15 – 18/12/15	
ARCHIVES	Location (Accession no.)	Content (eg pottery, animal bone etc)
Physical	Suffolk County Council Archaeological Service KDG050, HVH 099, WTL 013	Pottery, flint, report
Paper		Site records, maps, permatrace drawings
Digital	MOLA Northampton Offices:	Mapinfo plans, Word report
BIBLIOGRAPHY		
Journal/monograph, published or forthcoming, or unpublished client report (MOLA report)		
Title	Trial trench evaluation on land at Great Wilsey Park, Haverhill, Suffolk, October-December 2015	
Serial title & volume	MOLA 16/55	
Author(s)	Susan Porter	
Page numbers	132	
Date	April 2016	

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- 2 BACKGROUND
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 - 2.2 Historical and archaeological background
- 3 AIMS AND OBJECTIVES
- 4 EXCAVATION METHODOLOGY
- 5 THE EXCAVATED EVIDENCE
 - 5.1 Iron Age Area IA1 (Field 16)
 - 5.2 Iron Age Area IA2 (Field 17)
 - 5.3 Iron Age Area IA3 (Field 8)
 - 5.4 Iron Age Area IA4 (Field 21)
 - 5.5 Iron Age Area IA5 (Field 13)
 - 5.6 Medieval Area M1 (Field 18)
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 - 5.9 Medieval Area M4 (Fields 12, 13 and 14)
 - 5.10 Other medieval features
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Trial trench evaluation on land at Great Wilsey Park Haverhill, Suffolk October-December 2015

Abstract

MOLA Northampton was commissioned by Orion Heritage to carry out an archaeological trial trench evaluation on land at Great Wilsey Park, Haverhill, Suffolk prior to the proposed development of the site. Three hundred and fourteen trenches were excavated. Archaeological remains were concentrated around the central areas, with prehistoric and Iron Age comprising a number of isolated pits in the south and east along with two possible field systems in the central-western and south-eastern areas. An enclosure and a pit containing kiln/hearth debris lay in the western-central area and a possible dwelling and hearth were observed in the central eastern area. No deposits of conclusively Roman date were observed. Medieval activity of 12th- and 13th-century date was concentrated in two distinct areas and was probably associated with the surrounding landscape of two nearby moated sites. No later medieval activity was present, and only limited post-medieval activity was identified. A large number of trenches contained either no archaeological remains, or only post-medieval/modern land boundaries as depicted on the 1881 and 1905 Ordnance Survey Historic maps.

1 INTRODUCTION

MOLA Northampton was commissioned by Orion Heritage to carry out trial trench evaluation over c.170ha of land at Great Wilsey Park, Haverhill, Suffolk, (TL 688 459).

A planning application (DC/14/2276/EIASCO) has been submitted for the construction of 2,500 residential units, local employment uses, education community and leisure facilities, public open space and recreation facilities, landscaping and other ancillary and enabling works. The Planning Archaeologist for Suffolk County Council Archaeological Service had requested that a programme of archaeological evaluation should be undertaken to determine the nature and extent of any archaeological remains within the development area. This was achieved through trial trench evaluation. The requirements were outlined in a Written Scheme of Investigation prepared by MOLA (2015).

2 BACKGROUND

2.1 Location, topography and geology

Haverhill is a market town in Suffolk, and forms the second largest town in the borough of St. Edmundsbury. The town centre lies at the base of a dip in the chalk hills of the Newmarket Ridge, and is situated on the Stour Brook, which flows into the River Stour to the south. The proposed area of development comprises around 13 arable fields, covering an area of c.170ha, on the north-eastern side of Haverhill (TL 688 459). The site is bounded to the north and east by agricultural land, and to the south and west by the residential areas of Chalkstone and Wilsey, areas of Haverhill.

The development site lies on sloping land between the higher ground at Hill's Farm and the A143, falling away to the south and east. Levels within the site range from c.100m aOD in the north-west to c.90m close to the north-east edge of Haverhill. To the east of the site the land slopes more dramatically in the valley of the River Stour. The geology of the site is Lewes Nodular Chalk Formation and Seaford Chalk Formation, overlain by superficial deposits of Lowestoft Formation diamiction. Head clay, silt, and gravel can be found to the south of the site along the path of the stream (BGS 2015). The soil is Hanslope association chalky till; slowly permeable calcareous clayey soils (LAT 1983).

2.2 Historical and archaeological background

A desk-based assessment was undertaken by CgMs Consulting in 2013 to examine the area of development and a 1km radius study area (Bourn 2013). The following historical and archaeological background is summarised from that work.

A Scheduled Monument, the Great Wilsey moated site (list ID: 1020175) is located at TL68757 46270 on the north-eastern edge of the site. Five Grade II listed buildings comprising four cottages and a farmhouse lie to the east of the site outside of the development boundaries. A second moat (unscheduled) is present at Little Wilsey Farm within the south-east area of the site. The earthwork is recorded as being infilled in 2001.

Palaeolithic, Mesolithic and Neolithic

A limited number of finds of these dates have been recovered from the area. Within the search area two Palaeolithic hand axes were found, one at Hudson Close in the east of Haverhill, c.750m to the south of the study site, and one c.1km to the west. At least 21 small Mesolithic flint blade flakes have been recorded c.1km to the north-east of the site. No finds of Neolithic date are recorded.

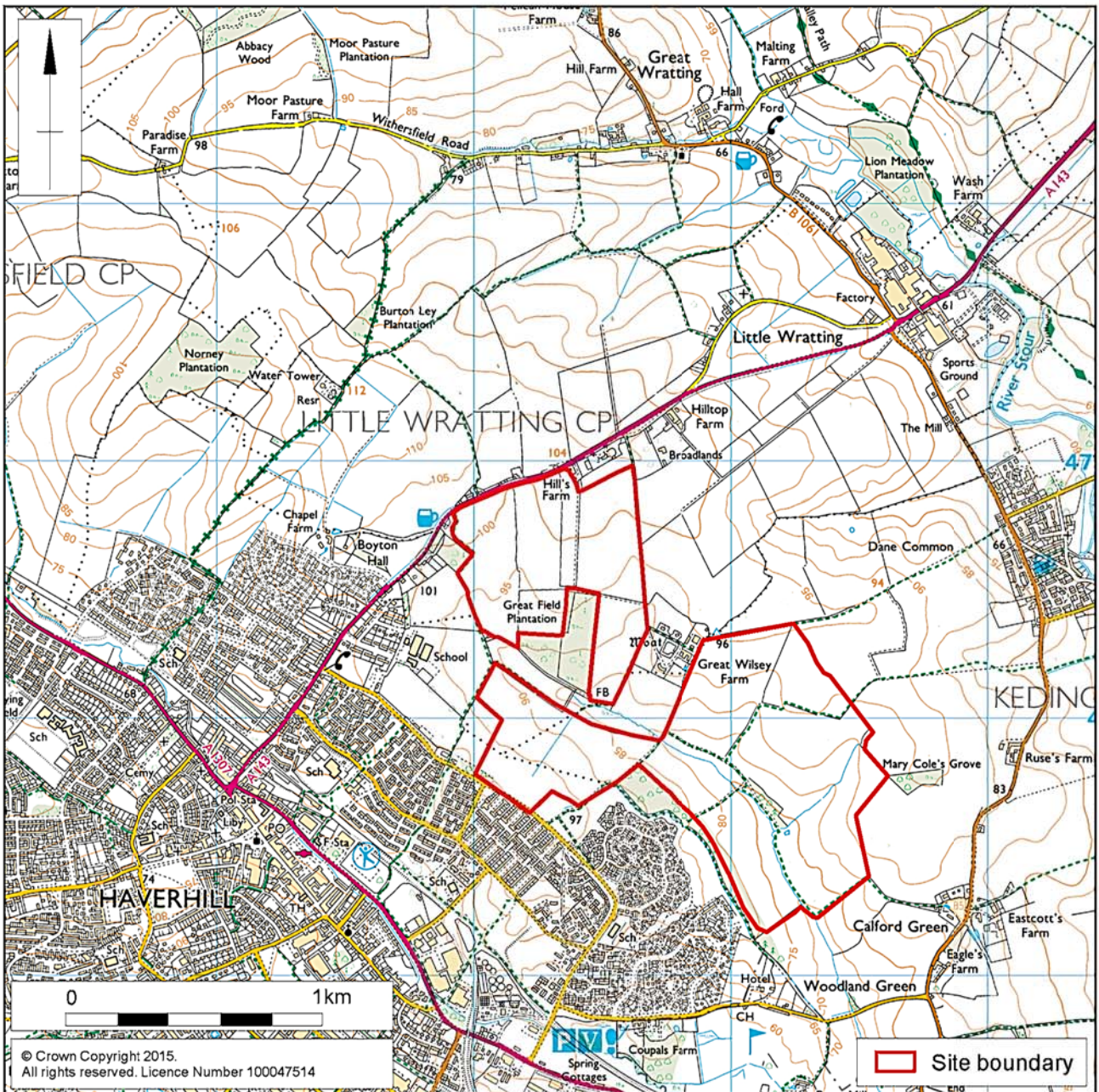
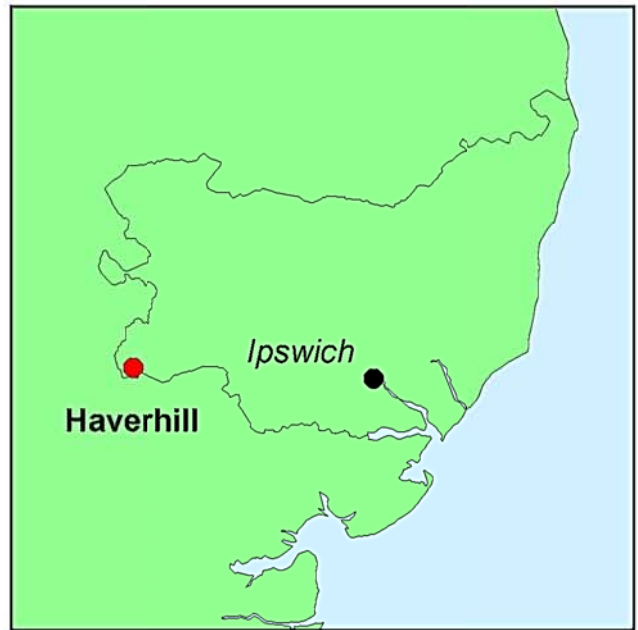
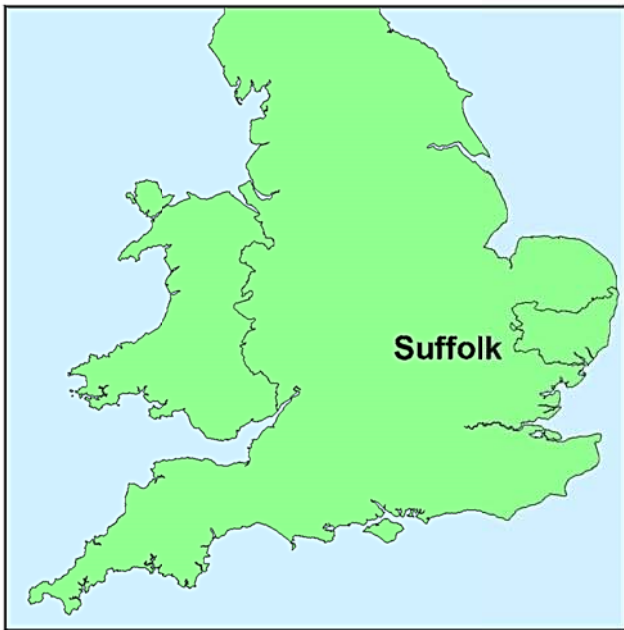
Bronze Age

A Scheduled monument (list ID 1008189), thought to be a Bronze Age bowl barrow, lies c.700m away on the southern edge of Haverhill. A previous evaluation to the south-west of the study site recorded a small pit of Bronze Age date and two undated ditches. Within the search area two Bronze Age axes have been found as spot finds one within the boundaries of the site in the north-western corner, and a second c.1km to the north.

Iron Age

Iron Age activity in the area appears abundant. An evaluation during development at Westfield Primary School Replacement site immediately to the south of the site recorded part of an enclosure of Bronze Age/ Earlier Iron Age date, a circular enclosure of Middle Iron Age date (possibly a roundhouse) and a double-ditched enclosure interpreted as a barrow or temple/shrine. Subsequent excavation revealed no evidence for later occupation of the site, however, earlier finds and features suggested occupation may have begun in the later Neolithic/earlier Bronze Age.

To the south of the site an evaluation off Chalkstone way produced evidence for isolated pits and a system of parallel ditches dating from the late Bronze Age to early Iron Age. Other pits and cut features dating to the Iron Age were found at Millfields way c.350m to the south-west of the site. Approximately 800m to the south of the study site, an inhumation and associated scattered Iron Age pottery were also discovered.



Scale 1:25,000

Site location Fig 1

Within 150m south-west of the site an Iron Age hoard and possible coin mould were recovered in the 18th century. A Greek silver *tetradrachm* (coin) of the middle Iron Age was found c.150m north-east of the site and a bun-shaped rotary quern was found south of the site within a garden of Mount Road.

Roman

Approximately 1km to the east, near Cotton Hall, lies a scheduled Roman settlement, (List ID: 1005973) where large quantities of stone building materials, pottery and other artefacts have been recorded. To the east of the site in Kedington Village ten ditches and an amphora dated to the Roman era have been recorded.

The majority of Roman material recovered from the vicinity of the site has been spot finds. A Roman coin of the Emperor Augustus (27BC-AD14) was found at the cricket ground to the west of the site. Two coins of the Emperors Gordian III (AD238-244) and Licinus II (AD315-326) were found on the south-western edge of the site on Chalkstone Hill. To the west of the site, in the eastern edge of Haverhill town, other finds have been recovered including a miniature stone head from a portable amulet, pottery, tile, tesserae, coins and a brooch.

Anglo-Saxon and later medieval

Anglo-Saxon evidence in the area is limited. Fragments of architectural Saxon stone work are contained within the medieval Church of St. Mary's at Little Wratting to the north of the site. A single additional find spot comprising a large Saxon pin with ornate gilded bronze head was found close to the church.

The scheduled monument site at Great Wilsey Farm is located on the north-eastern border of the study area. The monument comprises a sub-rectangular raised island 1m high, measuring c.46m north-east by south-west and c.38m north-west by south-east. The raised land is bordered by a water-filled moat c.14m wide and 1.5m deep. The site has been associated with Wilsey Hall Manor which was owned by Gilbert de Clare in the first half of the 12th century. In the 16th century, owners of the manor included Robert Cornewall, Sir Giles Alington, Henry Turner, John Skinner and William Smythe. A house on the island was probably replaced in the 17th century by one to the east of the moated site, on the footprint of the present 1960s Great Wilsey Farmhouse. Within the boundaries of the site to the south-east, at Little Wilsey Farm, a second unscheduled moated site is recorded, although this may no longer be extant.

Archaeological evaluation work on land to the west of the study site revealed an area of medieval occupation activity in the area of Chapel Farm (SCCAS 2007), where a medieval chapel is known to have stood. Flint and ashlar from the former chapel have been incorporated into the current 19th-century Grade II Listed cottage and farm buildings. Monitoring works for a water pipeline c.500m to the north of the site in Little Wratting identified medieval pottery and cut features indicative of occupation.

Post-medieval and modern

Post-medieval activity mainly took place some distance away from the site, with focus on urban areas such as Haverhill. Historic maps have shown the site to have been agricultural land throughout most of the post-medieval period, with the only significant post-medieval and modern activity taking place at Great and Little Wilsey Farms.

An historic tythe map of 1840 depicts the eastern half of the site as comprising fields and marks the surviving three sides of the Little Wilsey moated site within the buildings of the farm, surrounded by long fields on each side sloping down to the stream. On the Ordnance Survey map of 1891, the two farms and their associated

moated sites are clearly marked. The study site comprised numerous fields within an enclosed wider agricultural landscape, containing hedged, treed and fenced boundaries. By the 1905 Ordnance Survey map, the Great Field Plantation is now in existence to the west of Great Wilsey Farm. The plantation had been extended to the west by 1928. Small-scale construction of ancillary farm buildings to the north of Great Wilsey Farm had been undertaken by 1949. There is no further significant change to the study site or to its boundaries until the present day, with the exception of the encroachment of Haverhill urban area to the west after 1970.

Previous archaeological investigation

An evaluation was undertaken in 2007 on 45ha of similar farm land immediately to the north-west of the site (SCCAS 2007). Trenching revealed some Iron Age and Roman pits, along with localised scatters of Iron Age, Roman and Saxon finds. More significant was a defined area of medieval activity to the area's eastern edge. A number of post-medieval field boundaries were located. Another recent evaluation on Westfield Primary School Replacement site on the south-west boundary of the site has revealed an Iron Age settlement along with a possible ritual and funerary monuments.

A geophysical survey of the proposed development area identified three main clusters of cut features, including former backfilled pits, linear features and a former ring ditch. It has been hypothesised that some of the features may be Iron Age, given the extensive activity of this date in the area (Davies 2014).

3 AIMS AND OBJECTIVES

The principal aim of the archaeological evaluation was to quantify the quality and extent of the archaeological resource and inform further decisions regarding the suitability of the site for development. The evaluation was designed to gather sufficient information to generate a reliable predictive model of the extent, character, date, state of preservation and depth of archaeological remains within the application area. This was achieved via the following aims and objectives:

- establishing the date, nature, significance and extent of activity or occupation in the development site;
- determining the relationship of any remains found to the surrounding contemporary landscapes;
- assessing the potential for the recovery of artefacts to assist in the development of type series within the region;
- assessing the potential for palaeo-environmental remains to determine local environmental conditions;
- assessing the impact of the proposed works upon any surviving archaeological remains, and;
- to inform any future excavation and/or preservation *in-situ* strategy.

The evaluation was carried out in accordance with the Chartered Institute for Archaeologists' *Code of Conduct* (CIfA 2014a) and *Standards and Guidance for Archaeological Field Evaluation* (CIfA 2014b), the MOLA *Fieldwork Manual* (2014) and the procedural document *The Management of Research Projects in the Historic Environment* (HE 2015).

The evaluation had the potential to address the following research topics set out for the East of England by Brown and Glazebrook 2000; Glazebrook 1997 and Medlycott 2011:

Iron Age:

- The development of the agrarian economy
- Artefact production and distribution
- Social organisation and settlement form and function in the Early and Middle Iron Age

Medieval:

- Rural Settlement Diversity
- Field Systems
- Land use changes

4 EXCAVATION METHODOLOGY

All but four (97, 98, 120 and 121) of the proposed trenches were excavated. These were omitted due to localised ground conditions including flooding. The remaining trenches were excavated using a 360° mechanical excavator equipped with a 2m-wide toothless ditching bucket. With one exception (see below), each was 50m long. A small number were re-oriented due to the aforementioned flooding.

Work was undertaken over four phases in groups of fields based on accessibility and parish boundaries. The evaluation aimed to give a full and varied sample, totalling 2.5% of the development area. The trenches were positioned to target geophysical anomalies and evenly sample areas apparently devoid of archaeology as indicated by the geophysical survey. Following discussion with the client and the Senior Archaeological Officer for Suffolk one of up to thirty contingency trenches was excavated (Trench 314).

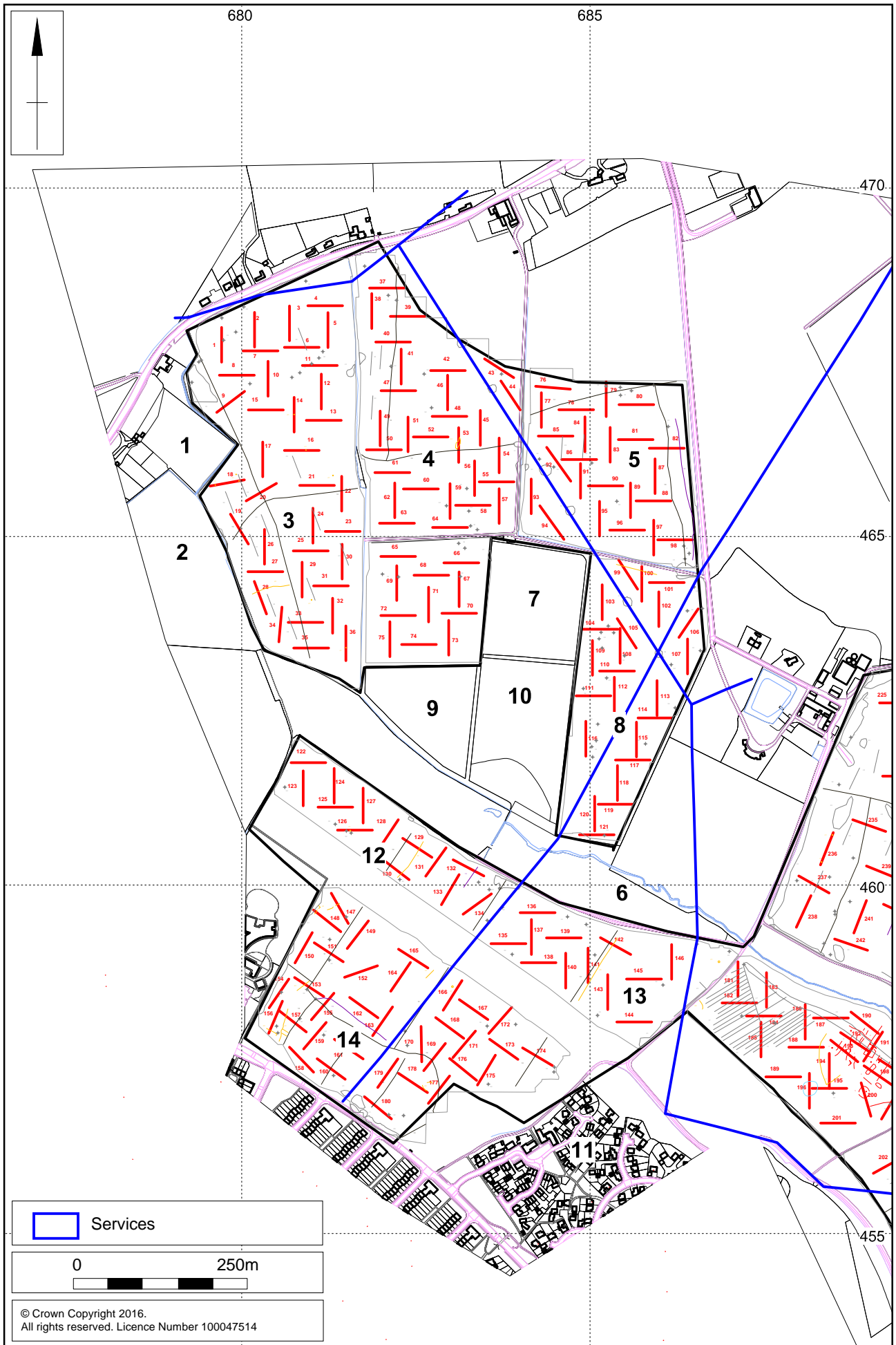
Removal of topsoil and subsoil took place under constant archaeological direction to reveal the archaeological horizon and were stacked, where possible separately at the side of the trench. All procedures complied with MOLA Health and Safety provisions and MOLA Health and Safety at Work Guidelines.

All archaeological deposits encountered during the course of the excavation were fully recorded, following standard MOLA procedures (MOLA 2014). All deposits were given a separate context number in a sequence assigned to each trench. They were described on *pro-forma* context sheets to include details of the context, its relationships and interpretation.

All trench locations were recorded using Leica Viva Global Positioning System (GPS) survey equipment using SMARTNET real-time corrections, operating to a 3D tolerance of $\pm 0.05\text{m}$. A full digital photographic record was maintained. The field data from the evaluation has been compiled into a site archive with appropriate cross-referencing.

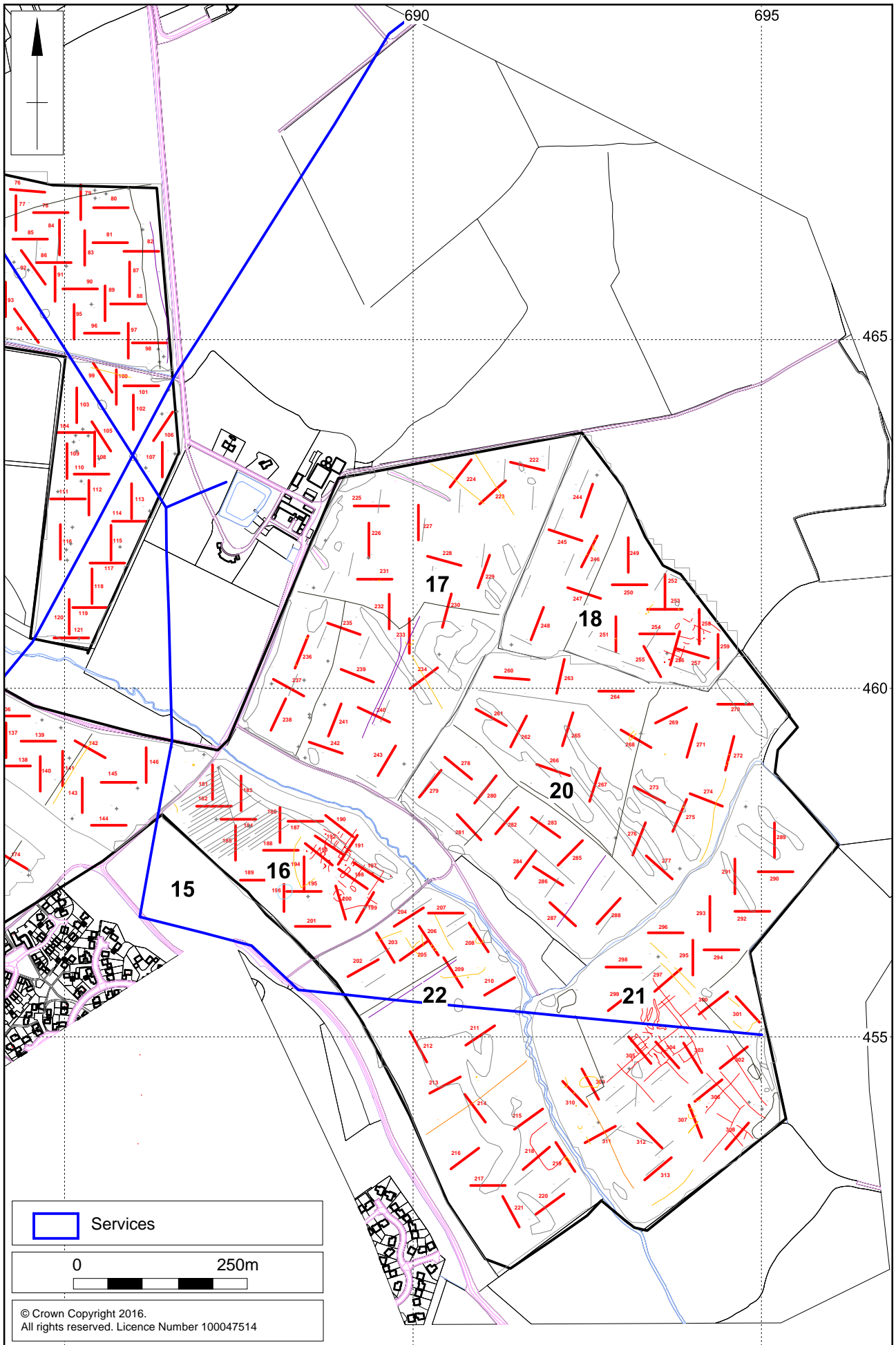
The evaluation conformed to the Chartered Institute for Archaeologists' *Standard and Guidance for Archaeological Field Evaluation* (2014b). All stages of the project were undertaken in accordance with Historic England, *Management of Research Projects in the Historic Environment* (MoRPHE) (HE 2015). The evaluation was carried out in accordance with Written Scheme of Investigation (WSI) prepared by MOLA (2015).

All trenches were backfilled with their up-cast material and compacted by the mechanical excavator.



Scale 1:7500

Excavated trenches, fields 1 - 14 Fig 2



Scale 1:7500

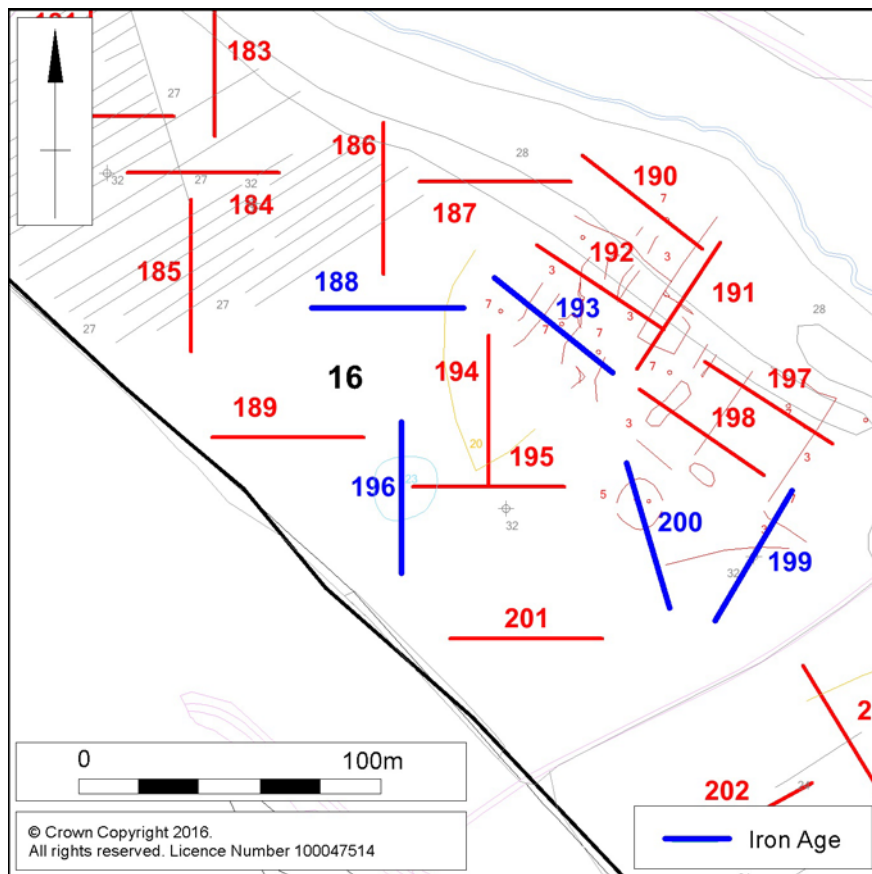
Excavated trenches, fields 15 - 22 Fig 3

5 THE EXCAVATED EVIDENCE

The excavation identified remains from a number of archaeological periods. Eight clear clusters of archaeological remains were identified, dating from the Iron Age and medieval periods. A number of other scattered features of similar dates, and features dating to the post-medieval and modern periods, were also observed. A large proportion of the development area, however, contained no observable archaeological remains. The evidence for each clustered area of activity will be discussed in chronological order. Full context details are presented in Appendix 1, which is organised in the same manner for consistency.

5.1 Iron Age Area IA1 (Field 16)

In the centre of the development area, on the southern edge of the site in Field 16 was an area highlighted by the geophysical survey as containing a number of anomalous features. A number of features dating to the Iron Age were identified in this area, as well as medieval features (see Chapter 5.7). The Iron Age activity included a pit containing kiln/hearth debris, linear ditches and a ring ditch (Fig 4).



Scale 1:2500

Iron Age Area IA1 Fig 4

Trench 188

Ditch [18806] lay at the eastern end of the trench and is likely to be the anomaly identified by the geophysical survey. It was curvilinear, oriented north-west to south-east, and was 0.90m wide by 0.60m deep, with a U-shaped profile. Pottery dating to the Middle Iron Age was recovered from fill (18805). The ditch was truncated by tree throw (18804) and a modern drain.

Trench 193 (Fig 23)

Pit [19308] was sub-circular, 0.80m in diameter, with steep sides to an irregular base 0.35m deep. Although no finds were recovered from its fill, the pit may belong to this phase as it was cut by later medieval ditch [19306].

Ditch [19310] was also aligned north-east to south-west. It had gently curving sides and a broad base and was at least 0.75m wide by 0.38m deep. Pottery of Middle Iron Age date was recovered from deposit (19309).

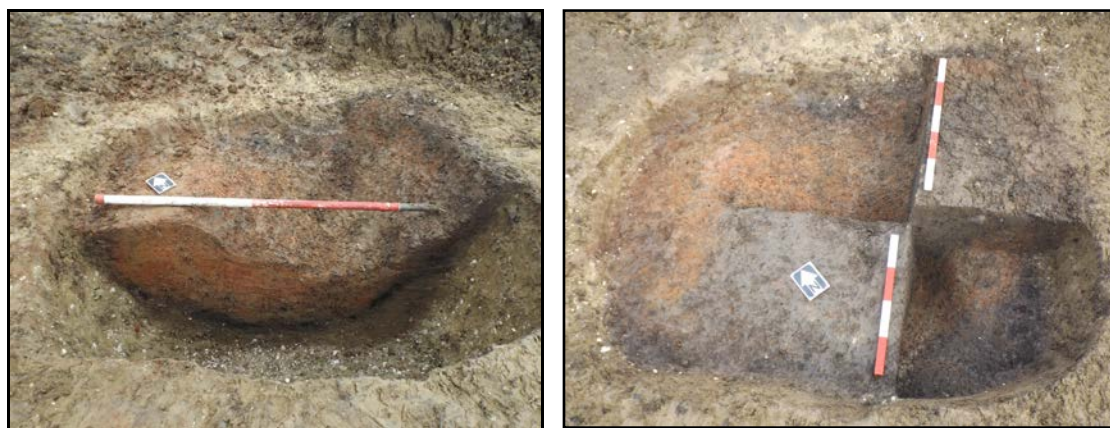
Trench 196

Ditch [19608] lay in the centre of the trench, aligned east to west. It was 2.07m wide by 0.26m deep, with a U-shaped profile. It was truncated by a modern land drain to the north. Ditch [19612] was positioned to the south, oriented north-west to south-east. Its sides sloped steeply to a flat base, 1.20m wide by 0.50m deep. The size and alignment of the ditch suggest that it is likely to be the continuation of ditches in Trenches 194 and 195.

Trench 199 (Fig 23)

Ditch [19905] was aligned east-west, and was 0.80m wide by 0.62m deep, with a U-shaped profile. It was truncated to the west by ditch [19907], which lay on an east-west alignment and may have been a re-cut of the first ditch [19905]. The recut was also U-shaped in profile, 0.80m wide and 0.32m deep. No finds were recovered from either ditch. A narrow ditch, aligned north-east to south-west, is likely to be a cultivation channel [19909]. This is 0.70m wide by 0.20m deep with a V-shaped profile. Further to the south was a parallel ditch [19912] which was at least 1.50m wide by 0.72m deep. No finds were recovered from the ditches in Trench 199, but they are thought to relate to the Iron Age activity in the near vicinity.

Pit [19917] in the centre of the trench contained kiln/hearth debris (Fig 18, Section 7). The feature was sub-rectangular, with the long axis aligned north-west to south-east. It was steep-sided and flat-bottomed in profile, and contained a number of fill deposits, one of which, layer (19915) comprised a large amount of ashy material. The uppermost layers were burnt and a large amount of burnt clay, possibly kiln lining was observed within deposit (19914). Middle Iron Age pottery was recovered from fill (19913).



Excavation of pit containing kiln/hearth debris Figs 5 and 6

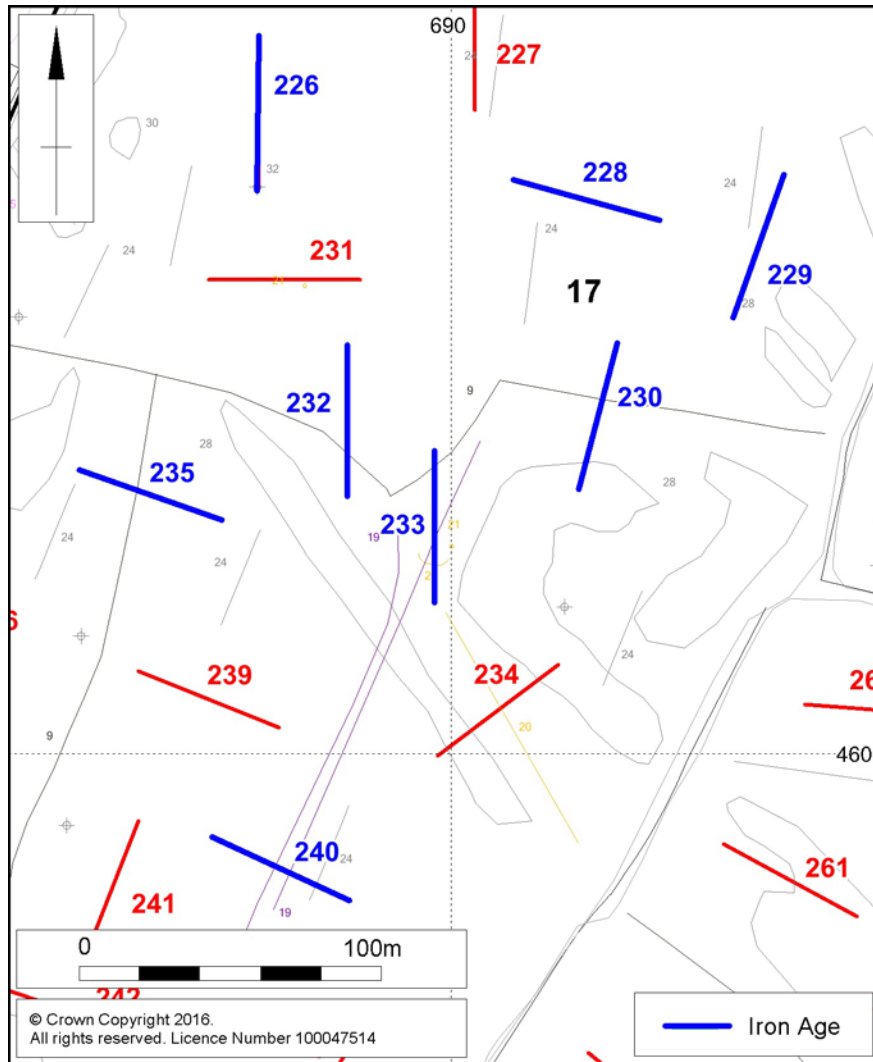
Trench 200 (Fig 23)

Ditch [20012] correlated with an observed linear anomaly on the geophysical survey, and was the continuation of ditch [19912] in Trench 199. It was therefore not excavated within this trench. Ditch [20017] terminated within the trench. It was aligned north-south and was 0.71m wide by 0.56m deep with a V-shaped profile. A large quantity of pottery and animal bone were recovered from fill (20015).

Ditches [20006] and [20008] (Fig 18, Sections 8 and 9) were both curvilinear ditches, oriented north-south, with broadly U-shaped profiles, between 1.18-1.30m wide and 0.43-0.67m deep. Pottery of Middle Iron Age date, one sherd of Roman date, and worked flint were recovered from fill (20007) of [20008]. It is considered that the two excavated slots are part of the same ring ditch. Ditch [20006] was truncated by a modern land drain [20010].

5.2 Iron Age Area IA2 (Field 17)

Around 150m to the north of Area IA1 was another cluster of Iron Age activity. A number of undated features in the close vicinity are also thought to be associated.



Scale 1:2500

Iron Age Area IA2 Fig 7

Trench 226

Gully [22605] was located at the southern end of Trench 226. It was aligned north-east to south-west, and was 0.48m wide by 0.11m deep, with shallow sloping sides to a concave base. The gully produced Middle Iron Age pottery and animal bone.

Trench 228

A ditch in trench 28 was aligned north-east by south-west [22805]. It had a V-shaped profile, at least 0.85m wide by 0.56m deep. No dating material was recovered from the ditch but it is likely to be part of the Iron Age boundary system in this area.

Trench 229

A single pit [22904] lay in the southern end of the trench. It was sub-circular, 0.76m in diameter by 0.11m deep, with a U-shaped profile. No finds were recovered.

Trench 230

A single ditch was identified in Trench 230, and correlates with a geophysical anomaly. Ditch [23006] was aligned north-west to south-east. The ditch measured 2.00m wide by 0.67m deep, with a V-shaped profile. It was heavily truncated by a modern field drain [23008], and no datable material was found.

Trench 232

Ditch [23205] was aligned east to west at the southern end of the trench. It was at least 0.85m wide by 0.28m deep, with gently sloping sides to a broad base. It was truncated by a modern field drain. Around 15m to the north was another ditch, aligned parallel [23207]. This ditch was 2.00m wide and 0.58m deep, with a U-shaped profile. No finds were recovered from either ditch. To the north of these features was a large pit which extended to the west beyond the limit of excavation [23209]. It was broadly oval, 2.34m wide and 0.84m in depth, with steeply sloping sides to a sharp concave base. Pottery of Middle Iron Age date was recovered in large quantities from fill (23212) and in smaller amounts from fills (23208 and 23210).

Trench 233

Trench 233 contained two parallel ditches and two pits. Ditch [23307] at the north end of the trench was aligned north-east to south-west. It was 1.30m wide and 0.30m deep, and had sloping sides to a flat base. Animal bone was recovered from fill (23306). To the south, ditch [23309] was 0.85m wide and 0.35m deep, with moderately sloping sides to a flat base. No finds were recovered.

Two pits were located at the southern end of the trench. Pit [23312] was sub-circular, 0.95m wide by 0.45m deep, with sloping sides to a flat base. Iron Age pottery recovered from the primary deposit (23311). Pit [23314] was also sub-circular, 1.30m wide and 0.42m deep, with sloping sides to a flat base. No finds were recovered.

Trench 235

No finds were recovered from the ditches in Trench 235, but these may have been associated with the other Iron Age boundaries. Ditch terminal [23505] was visible in the trench aligned north-south, 1.22m wide and 0.25m deep, with gently curving sides to a broad base. In the centre of the trench was ditch [23507]; a feature which correlates with the north-east to south-west linear feature identified on the geophysical survey. The ditch was 1.10m wide and 0.60m deep, with steep sides coming to a broad base. Another possible ditch in the trench may have been aligned

south-west to north-east. It appeared to be around 0.60m wide by 0.34m deep with gently sloping sides [23509].

Trench 240 (Fig. 24)

A hearth [24014] and two postholes [24009] and [24012] were located in the eastern end of Trench 240 (Fig 8). The hearth was oval, oriented roughly north-south. The cut measured 0.50m wide by 0.05m deep, filled with medium to large burnt stones, charcoal and ashy material. Iron Age pottery and oyster shell were recovered from the fill (24013). On the eastern edge of the trench were two postholes which may have been associated with the hearth, possibly structural. Both pits were sub-circular, between 0.30-0.40m in diameter and 0.22-0.25m deep. They were cut with steep, nearly vertical, sides and a flat base. Pottery of Iron Age date was recovered from the upper fills of both postholes (24007, 24010).



The possible hearth [24014] in Trench 240, looking east Fig 8

5.3 Iron Age Area IA3 (Field 8)

The third area of Iron Age activity lies in the western half of the site, to the east of Great Wilsey Farm in Field 8. A number of undated features in this area may be associated with the Iron Age activity.

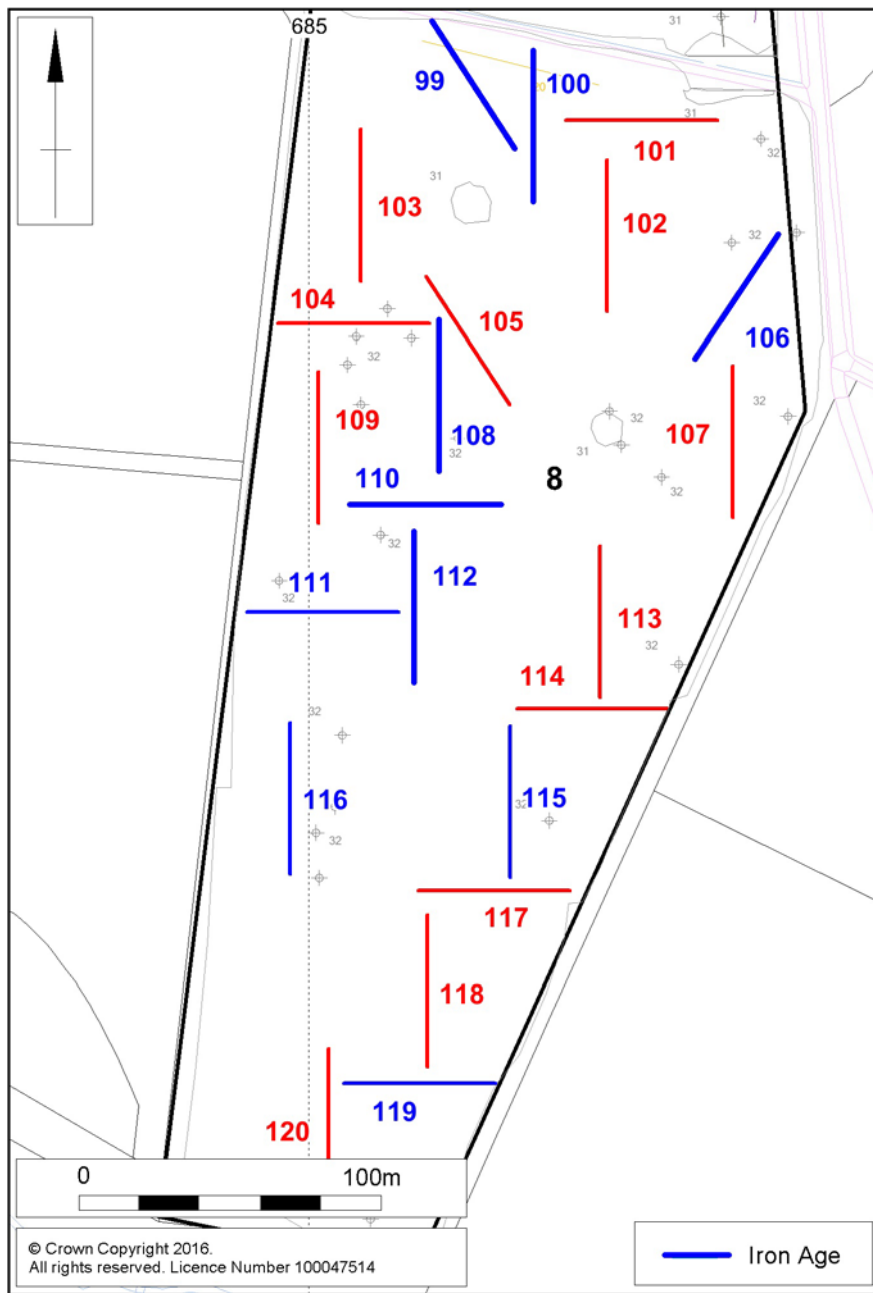
Trench 99

Ditches [9906] and [9908] lay on a parallel north-west to south-east alignment. Ditch [9906] was U-shaped in profile and was at least 2.33m wide by 0.76m deep. Ditch [9908] was not excavated within the trench but was observed to be c.2m wide. Finds were not recovered from either feature.

Trench 100

Ditches [10007] and [10010] lay on a parallel alignment, north-west by south-east. One of these ditches is likely to be the same as that observed on the geophysical survey. Ditch [10010] was the earlier feature. It was at least 1.20m wide by 0.84m deep, with steeply-sloping sides and a flat base. It was truncated by later ditch [10007] to the north, and by field drain [10012] to the south. Ditch [10007] cut into the

uppermost fill of ditch [10010] and had a V-shaped profile at least 1.56m wide by 0.68m deep. Pottery of Middle Iron Age date was recovered from lower fill (10005).



Scale 1:2500

Iron Age Area IA3 Fig 9

Trench 106

Trench 106 contained two ditches. Ditches [10607] and [10605] were broadly parallel, aligned north-west to south-east. Prehistoric pottery recovered from fill (10604) of ditch [10605] indicates that the ditch is the earlier of the two ditches. This ditch was V-shaped in profile, at least 0.80m wide by 0.50m deep. The second ditch in this trench, ditch [10607], was a shallower, with a U-shaped in profile, 0.68m wide and 0.12m deep. The pottery recovered from the fill (10606) indicates that this ditch was not contemporaneous with the other Iron Age features, probably instead dating to the 12th century.

Trenches 108, 110 and 112

A long ditch was observed in Trenches 108, 110 and 112 as [10805], [11005] and [11205]. A section was excavated in Trench 108. The ditch lay on a north-east to south-west alignment at the northern end of the trench. The ditch had steeply sloping sides to a concave base and was at least 1.10m wide by 0.37m deep. A small piece of pottery of probable prehistoric date was recovered from fill (10804).

Trench 111

A single ditch [11106] was observed, oriented north-east to south-west. It was steep-sided in profile with an irregular base, and was truncated to the west by a field drain. No finds were recovered.

Trenches 115 and 116

Trench 115 contained two ditches, [11505] and [11507]. The ditches were aligned north-west to south-east and lay at the northern end of the trench. Ditch [11505] was the earlier of the two, and was U-shaped in profile, it was truncated to the south by ditch [11507]. Animal bone was recovered from fill (11504). Ditch [11507] had moderately sloping sides, 1.24m wide and 0.44m deep to a concave base. Animal bone was recovered from fill (11506). A ditch in Trench 116 lay on the same alignment as the ditches in Trench 115, and is assumed to be a continuation of the feature.

Trench 119

A ditch [11905] and gully [11907] were observed, neither of which contained any dating material. Ditch [11905] was aligned north-west to south-east. It had a V-shaped profile at least 1.10m wide by 0.12m deep. Gully [11907] was oriented north-west to south-east. It was V-shaped in profile 0.70m wide by 0.15m deep.

5.4 Iron Age Area IA4 (Field 21)

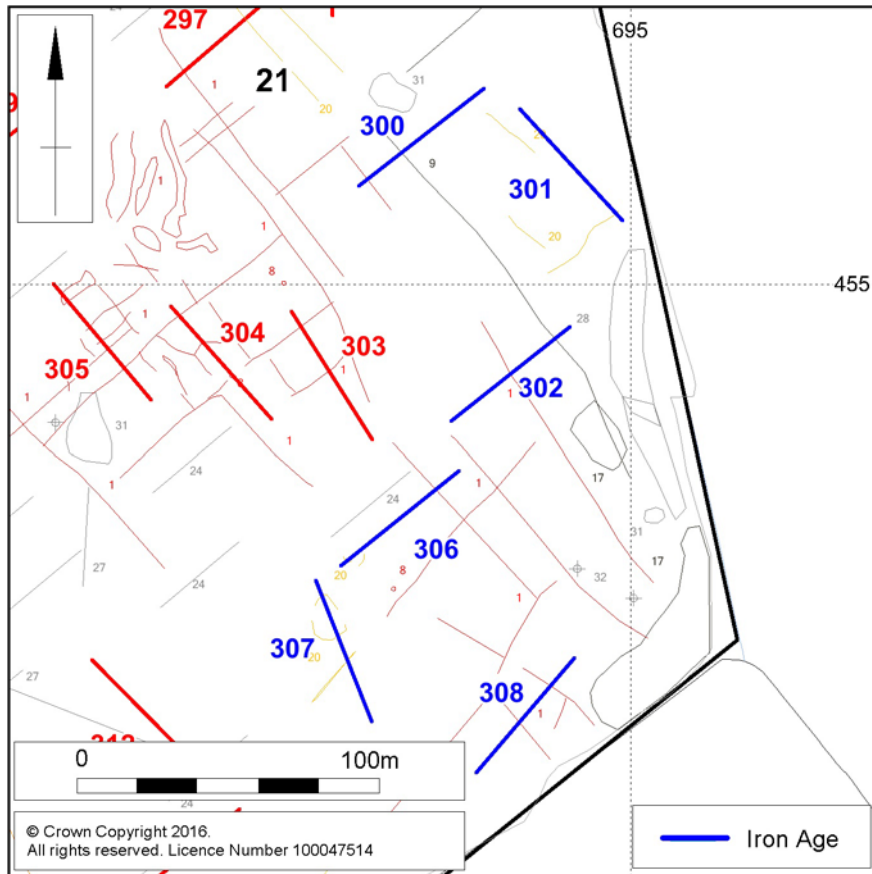
Area IA4 was situated in the south-east corner of the site, and probably comprised features in five trenches. It lay adjacent to Medieval Area M2 (see Chapter 5.7). A number of undated ditch features to the north of the area are also thought to be associated with the Iron Age Activity.

Trenches 300 and 302

A series of intercutting ditches aligned north-west to south-east were observed within both trenches, the earliest of which [30011] survived only in Trench 300, 0.90m wide and 0.40m deep. Where the profile could be observed, it was steep sided with a flat base and was truncated to the west by ditch [30009]. Ditch [30009]/ [30208] survived to 1.40-2.30m wide by 0.50-0.70m deep, with steep sides and a rounded base. Ditch [30007]/ [30206] was the final ditch of the sequence, and was observable on the geophysical survey. It truncated ditch [30009] and was at least 1.80m wide by 0.60-1.00m deep, with a V-shaped profile. Ditch [30014] lay at the western end of Trench 300. It was aligned north-west to south-east and 1.67m wide by 0.94m deep with a U-shaped profile. It was also detected by the geophysical survey. These ditches did not produce any dating evidence.

A further ditch was observed at the eastern end of Trench 300 but was not excavated; however it continued to the south and was excavated in Trench 302 [30210]. It was aligned south-east to north-west, 1.44m wide and 0.21m deep, with gently sloping sides to a rounded base. No finds were recovered from the fill. Two further ditches

were observed within Trench 302, both of which were visible on the geophysical survey. Ditch [30216] was the earlier of the two and was V-shaped in profile, 1.00m wide by 0.50m deep, oriented north-west to south east. Ditch [30213] truncated it to the north, although lay on the same alignment. It was 1.20m wide by 0.50m deep with steep sides to a rounded base. No pottery was recovered from either ditch, although fill (302015) of ditch [30216] contained two sherds of medieval roof tile.



Scale 1:2500

Iron Age Area IA4 Fig 10

Trench 301 (Fig 21, Section 15; Fig 24)

Two gullies [30114] and [30116] were noted; both lay on a north-east to south-west alignment and were V-shaped in profile, varying between 0.23-0.60m wide and 0.19-0.62m deep. The gullies lay primarily parallel, although it is unclear whether gully [30114] slightly truncates gully [30116]. These gullies are dated to the Iron Age by fragments of Middle Iron Age pottery recovered from fill (30113).

A wide, shallow ditch [30118], aligned south-east to north-west, truncated both gullies. The ditch, which was not observable in the geophysical survey, was 3.28m wide by 0.70m deep, with irregular sides and base. Cutting ditch [30118] were three intercutting ditches similar to those observed within Trenches 300 and 302. They had parallel north-east to south-west alignments. The earliest [30112] survived to a width of 1.12m to 0.70m deep, with gently sloping sides to a rounded base. It was truncated on the eastern side by ditch [30110], at least 2.90m wide and 0.90m deep, with steep sides to a sloping base. This ditch in turn was truncated by [30107], at least 2.15m wide by 1.02m deep, with a V-shaped profile. None of the above features produced any dating evidence.

Trench 306

Two ditches were recorded within Trench 306. Ditch [30609] was observed in the geophysical survey. It was aligned south-east to north-west and was at least 1.90m wide and 0.84m deep, with steep sides and a narrow flat base. Animal bone was recovered from upper fill deposit (30607). Ditch [30606] was aligned north-west to south-east, and was V-shaped in profile, 1.60m wide by 0.50m deep. A possible terminal [30613] was observed at the south-western end of the trench, extending to the west beyond the limit of the trench. The terminal was 1.60m wide by 1.07m deep with near vertical sides, undercutting to the north to a flattened base. Pottery of Middle Iron Age date was recovered from all of the ditch fills, along with flint and animal bone.

Trench 307

Of the four ditches observed within the trench, only one corresponds with a geophysical anomaly. Ditch [30707] lay on a north-east to south-west alignment and was V-shaped in profile, at least 1.75m wide by 0.65m deep. Ditch [30705] was aligned north-east to south-west and was 1.30m wide; it was V-shaped in profile 0.60m deep, containing a fill from which no dating evidence was recovered. Ditch [30709] was also oriented north-east to south-west and was 1.00m wide and 0.35m deep, with steeply-sloping sides to a concave base. The linear ditch [30712] lay at the north-western end of the trench; it was 0.90m wide and 0.44m deep, with steep sides and a flat base. Flint was recovered from fill (30710).

Trench 308

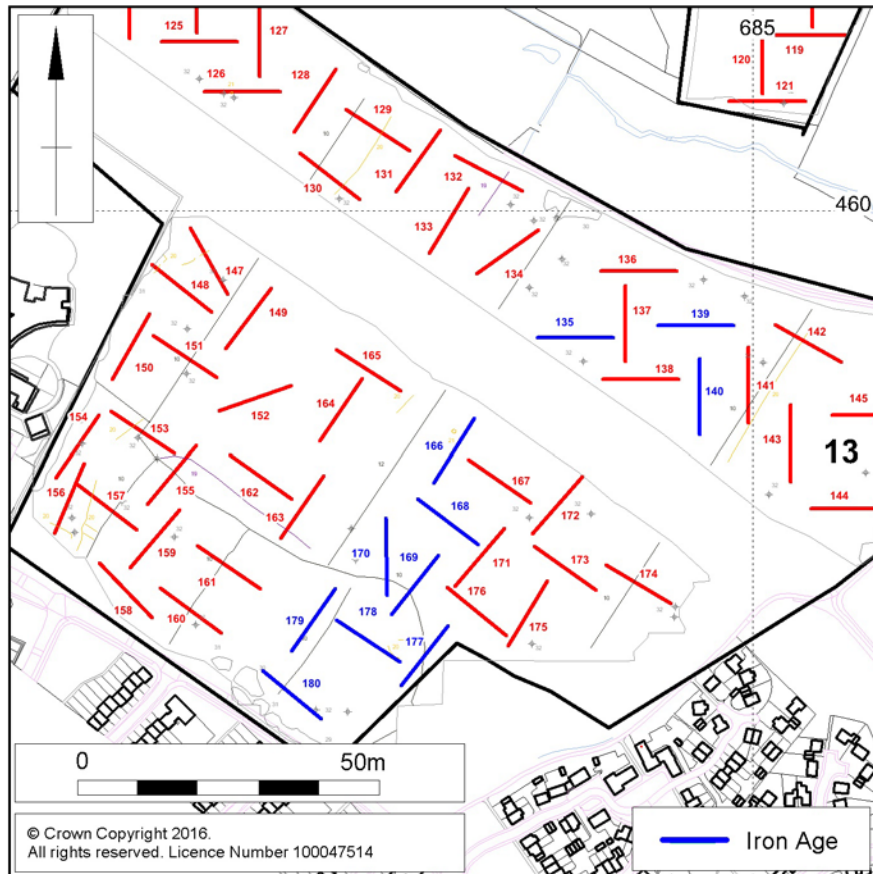
Two of the ditches within Trench 308 correspond with features observed in the geophysical survey. Ditch [30806] was located at the north-eastern end of the trench and was aligned east to west. It was U-shaped in profile, 2.26m wide by 1.00m deep. The upper fill (30804) contained worked flint, animal bone and medieval roof tile. Ditch [30812] was aligned south-west to north-east in the centre of the trench. It was 1.60m wide by 0.40m deep. Middle Iron Age pottery and a Roman *tegula* roof tile sherd were recovered from its fill (30811). Ditch [30808], aligned east to west, was 0.90m wide by 0.15m deep, with steep sides to a rounded base. The ditch was truncated to the south by ditch [30810], which was also aligned east to west, 1.10m wide and 0.25m deep, with gently sloping sides to a rounded base. It did not contain any datable material.

5.5 Iron Age Area IA5

On the south-western edge of the site was an area of dispersed Iron Age activity, and a number of undated features which might also have been in use during this period. This area of the site was heavily disturbed by later cultivation channels and furrows.

Trench 135

Pit [13513] was situated in the centre of the trench. It was sub-circular, 0.68m in diameter and 0.17m deep, with a steep-sided profile. No finds were recovered.



Scale 1:2500

Iron Age Area IA5 Fig 11

Trench 139

Pit [13906] lay at the western end of the trench and extended to the north beyond the trench boundary. The pit was sub-circular, at least 1.72m in diameter and 0.54m deep, with a U-shaped profile. The lower fill of the pit (13905) produced finds of Middle Iron Age pottery and animal bone. It was truncated to the north-east by cultivation channel [13908].

Trench 140

Trench 140 contained a ditch terminal [14009] and palaeochannel [14012]. The terminal [14009] lay at the north end of the trench, 0.80m wide by 0.24m deep, with a broad, shallow U-shaped profile. It was aligned north-west to south-east, and extended to the south-east beyond the trench limits. A natural channel [10412] was 6.1m wide and 0.56m deep with a shallow U-shaped profile.

Trench 166

Feature [16607] extended beyond the limit of the trench and was likely to be a pit although it may have been the terminal of a linear feature. It was sub-circular, at least 2.10m wide with steep sides and a wide V-shaped profile. Middle Iron Age dated pottery was recovered from fill (16606).

Trench 168

Trench 168 contained a pit [16806] and ditch [16808]. The pit was sub-circular, 0.35m wide by 0.15m deep, with a wide U-shaped profile. Ditch [16808] lay on an east-west

alignment at the north-eastern end of the trench. It was 0.80m wide by 0.33m deep, with a V-shaped profile. Neither feature contained any datable finds.

Trench 169

Ditch [16904] was oriented broadly north-west to south-east, and was not observed during the geophysical survey. It was at least 5.05m wide by 0.51m deep, with gently sloping sides to a broad base. No finds were recovered from the fill. Immediately to the south-west lay ditch [16906]; this was aligned north-east to south-west, 1.90m wide by 0.80m deep. It had a wide U-shaped profile, and was truncated by a later land drain [16914]. Gully [16908] lay at the south-western end of the trench and extended beyond the limit of the trench to the south-west and west.

Trench 170

Ditches [17004] and [17012] toward the southern end of the trench. Ditch [17012] was the earliest of the two features, and was 0.40m wide by 0.22m deep with a V-shaped profile. It was aligned east – west, and did not contain any finds. The ditch was truncated by ditch [17004], which was aligned north-west to south-east, measuring 1.30m wide by 0.28m deep. A land drain was laid in this ditch.

Trench 177

Ditch [17709] was oriented north-south. It was 0.55m wide by 0.60m deep, and had steeply-sloping sides. The ditch appeared to have been recut at least once, by ditch [17704]. Ditch [17704] lay on the same alignment and was similar in profile with moderately sloping sides and a flat base, 1.40m wide by 0.62m deep, and was itself truncated by a modern field drain. No archaeological finds were recovered from either ditch. Ditch terminal [17713] was oriented north to south, and had steep sides to a flat base. It was at least 0.75m wide by 0.27m deep and contained a fill from which no finds were recovered.

Trench 178

Two pits [17806] and [17808] were recorded within the trench. Pit [17806] was sub-circular, 0.35m wide and 0.11m deep, with shallow sloping sides to a concave base. No archaeological dating material was recovered from the pit. Pit [17808] was also sub-circular, 0.76m wide and 0.14m deep. It was U-shaped in profile with a flattened base. No datable material was recovered.

Trench 179

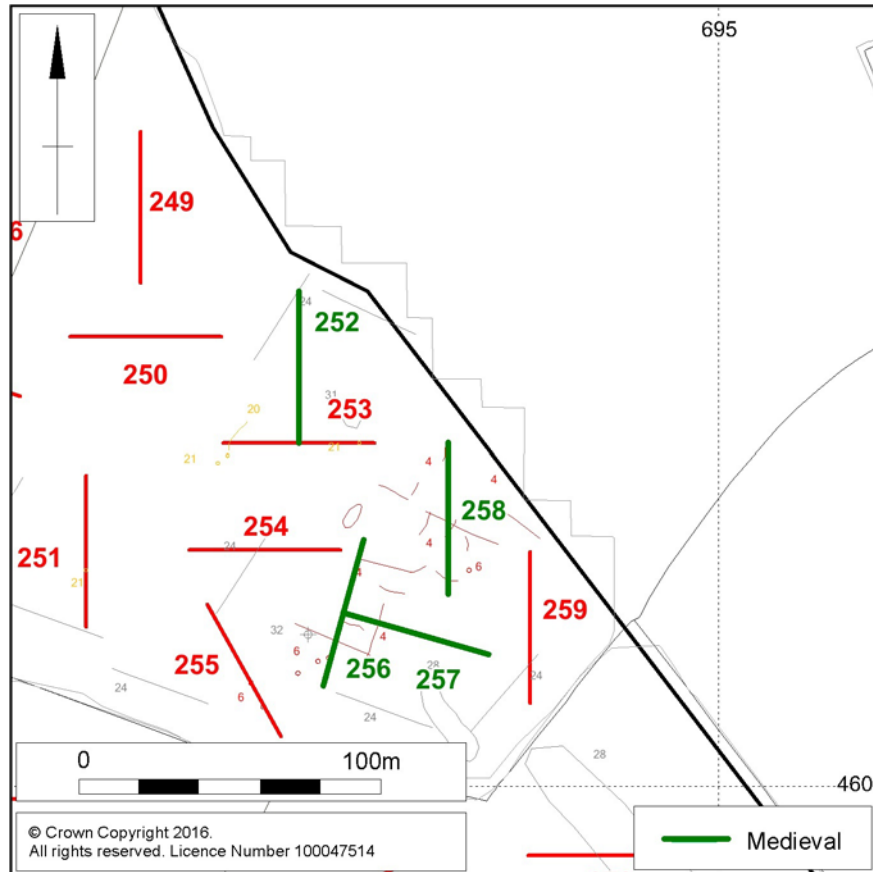
Trench 179 contained three ditches on differing alignments. Ditch [17904] was the widest, at 2.43m wide but only 0.13m deep. It lay on a north-south alignment and was U-shaped in profile. No datable finds were recovered. Ditch [17906] was aligned north-west to south-east, 1.20m wide by 0.50m deep, with moderately sloping sides to a flattened base (Fig 18, Section 3). No datable finds were recovered. The third ditch, [17908], oriented south-west to north-east, 1.28m wide by 0.22m deep, with a U-shaped profile (Fig 18, Section 2). No finds were recovered.

Trench 180

Ditch [18006] is correlates with an anomaly observed in the geophysical survey. It lay on a broadly north-east to south-west alignment, 2.30m wide and 0.62m deep, with a U-shaped profile and a rounded base. No datable material was recovered. Pit [18008] was sub-circular, 0.80m wide and 0.27m deep, with moderately sloping sides to a concave base. Pottery of Middle Iron Age date was recovered from fill (18007).

5.6 Medieval Area M1 (Field 18)

A small area of features dating to the medieval period was located in the north-east of the site, including activity in four trenches. Only one trench produced a significant density of archaeology, and a small quantity of pottery dating from the 11th to 13th centuries may indicate that this area was peripheral activity rather than a focus.



Scale 1:2500

Medieval Area M1 Fig 12

Trench 252

Ditch [25204] was orientated east-west, 0.87m wide by 0.39m deep. It had asymmetrical sides, stepped to the north and curving to the south, with a rounded base. The fill contained no finds.

Trench 256 (Fig 25)

There were four linear features and two pits. Gully [25606] was oriented north-west to south-east. It was 0.70m wide and 0.45m deep, with a U-shaped profile. The upper fill (25604) contained animal bone. Ditch [25608] was also aligned north-west to south-east, with irregularly sloping sides to a flat base. It measured 0.45m wide by 0.18m deep. The fill produced a single sherd of 11th-century pottery. Ditch terminal [25612] was steep-sided with a rounded base, 0.15m wide by 0.28m deep. It was truncated by a later pit [25610]. Ditch [25614] was aligned east to west and was 3.10m wide by 1.10m deep with a V-shaped profile. It too was heavily truncated by a pit [25616] (Fig 20, Section 10). Pit [25616] was probably circular with curved sides to a rounded base although its full extent did not survive. Its truncated width was 0.80m wide by 0.75m deep. Pit [25610] was oval, 0.70m long and 0.22m deep, with steep sides to a rounded base. The fill of the pit produced five sherds of early 13th-century pottery.

Trench 257 (Fig 25)

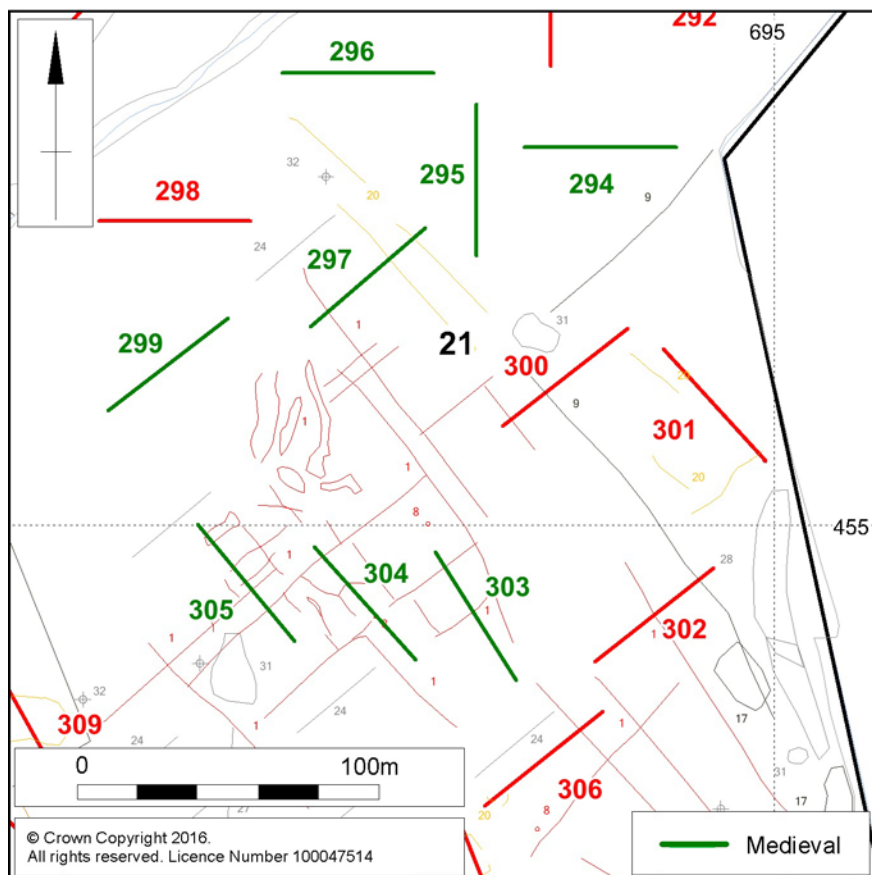
A single curvilinear ditch in this trench correlated with an anomaly on the geophysical survey [25704]. The ditch was 0.55m wide by 0.25m deep, and was aligned south-west by north. It was steep-sided with a rounded base. It did not contain any datable material, although its proximity to the medieval activity in Area M1 may mean it dates from this period.

Trench 258 (Fig 20, Sections 11 and 12)

Pit 25807, was located along the eastern side of the trench and extended beyond the limit of the excavation. It was circular, 2.10m wide by 0.55m deep with U-shaped profile; the uppermost fill (25804) produced pottery. Ditch [25814] was oriented north-south and was V-shaped in profile at least 1.30m wide by 0.65m deep (Fig 20, Section 12). Ditch 25809 was not excavated but was aligned east-west across the trench.

5.7 Medieval Area M2 (Field 21)

Area M2 correlated with a number of parallel and transverse linear features, aligned north-east by south-west and north-west by south-east. An area of Iron Age activity is situated immediately to the south-east (Area IA4).



Scale 1:2500

Medieval Area M2 Fig 13

Trench 294

Curvilinear ditch [29405] lay at the western end of the trench. It was aligned west-north-west to east-south-east, curving towards the north-east. The ditch had a steep

V-shaped profile, at least 1.00m wide by 0.32m deep. No finds were recovered from the fill.

Trench 295 (Fig 24)

Ditch [29504] terminated within the trench, aligned south-west to north-east. No finds were recovered. Parallel ditches [29506] and [29508] were situated at the northern end of the trench, aligned west to east. Ditch [29506] was the larger of the two, 1.38m wide by 0.60m deep, with gently sloping sides to a rounded base. Ditch [29508] had a similar shape and profile, 0.80m wide by 0.21m deep. No finds were recovered.

The remaining features in the trench comprised two gullies, which may have formed part of a structure. The gullies [29510] and [29512] were both U-shaped in profile, between 0.64-0.75m wide by 0.16-0.21m deep. The gullies were observed to intersect at a right angle, and so may form the corner of a structure, functioning as beam slots (Fig 14). Gully [29512] appears to cut gully [29510]. Both contained a fill from which no finds were recovered. Although an area of medieval activity is known to the south, the gullies appeared to be rather isolated, and there was no other indication of a dwelling in this area (Field 22)



Possible beam slots within Trench 295 looking west Fig 14

Trench 296

A ditch was observed in Trench 296, however due to flooding in this trench it was not excavated. The ditch may have been contemporary with the other medieval activity in this area.

Trench 297 (Figs 20 and 21, Sections 13 and 14; Fig 24)

Six ditches were noted within the trench, four of which [29707], [29711], [29716] and [29719] are likely to correspond with the anomalies noted by the geophysical survey. Those four ditches were V-shaped in profile, between 0.65-0.72m wide and 0.25-0.32m deep. They were all oriented east-west, and may have functioned as drainage channels.

Two further ditches [29709] and [29714] (Fig 20, Section 13) may be plot boundaries. They lie on an east to west alignment and are between 1.20-1.50m wide and 0.46-0.52m deep. Both ditches have steep sides with a flat base. Animal bone was recovered from deposit (29708). A third ditch [29723] may also be a plot boundary, aligned east-west, and 0.70m wide. It had steep sides and a flat base, containing multiple fill deposits from which no finds were recovered. It was truncated by a drainage channel [29719].

Two pits were in the centre of the trench. Pit [29705] was an elongated oval, with a U-shaped profile, 0.84m wide by 0.19m deep. No finds were recovered from the fill. A second pit [27931] lay along the southern edge of the trench and extended to the south beyond the limits of the trench. The pit was sub-rectangular, 2.60m wide and 1.10m deep, with straight sides to a flat base (Fig 21, Section 14). Medieval pottery was recovered from fill (29725).

Trench 299

Ditch terminal [29905] lay at the north-eastern end of the trench, and was aligned north to south, extending to the south beyond the limit of the trench. It was V-shaped in profile, at least 0.98m wide by 0.26m deep, and contained no finds.

Trenches 303 and 304

Two long linear ditches, identified as anomalies on the geophysical survey, were seen to extent through both trenches. Ditch [30309]/[30405] lay in the centre of Trench 303, aligned north-east to south-west. It was V-shaped in profile, 0.95m wide by 0.40m deep. Animal bone and CBM were recovered from the upper fill (30307). Ditch [30316]/[30412] lay at the northern end of both trenches. It was aligned north-east to south-west and was steep sided with a flat base, between 0.70-1.40m wide and 0.42-0.58m deep. Fill (30313) of this ditch produced 13th-century pottery.

Ditch [30306] was only partially excavated due to flooding, and so the full profile and depth could not be observed. It appeared to be aligned north-east to south-west and is likely to have continued to the west, appearing in Trench 304 as [30407] or [30409]. Of these two, ditch [30409] is the earliest, truncated on the north-west side by the later ditch [30407]. It survived to a width of 0.60m and depth of 0.30m, with a U-shaped profile. Pottery of 12th-century date was recovered from fill (30408). Ditch [30407] was also U-shaped, and at least 0.75m wide by 0.40m deep.

Within Trench 303 was a pit [30311], which lay on the north-western side of ditch [30316] and truncated the uppermost deposit of the ditch. It was oval, 1.00m wide by 0.18m deep, with sloping sides to a rounded base. No finds were recovered.

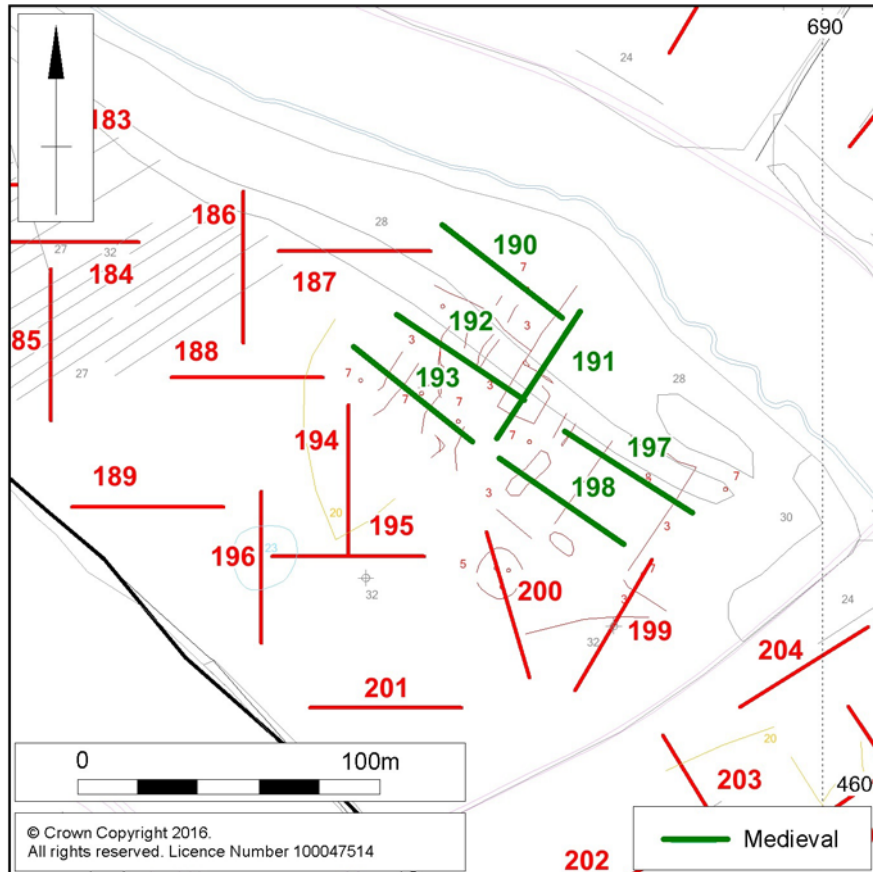
Two additional ditches were observed within Trench 304. A ditch, aligned south-west to north-east [30415], was 0.85m wide by 0.48m deep with steep sides to a flat base. This was probably a drainage ditch. Ditch [30418] lay on the same alignment, and was V-shaped in profile, 0.85m wide by 0.55m deep. This ditch had been filled in two events. No finds were recovered.

Trench 305

Ditch [30507] is the continuation of ditch [30309/30405] from the trenches to the east. The ditch, aligned north-east to south-west, was 2.20m wide by 0.40m deep, with a U-shaped profile. Late 12th-century pottery was recovered from fill (30506). At the north-western end of the trench were two ditches aligned north to south. Ditch [30511] was U-shaped in profile, 1.14m wide by 0.70m deep. It was truncated by later ditch [30513], 1.33m wide by 0.50m deep, with gently sloping sides to a rounded base.

5.8 Medieval Area M3 (Field 16)

In the centre of the development area, on the southern edge of the site in Field 16, was an area highlighted by the geophysical survey as containing a number of anomalous features. Excavation showed that the main body of the features were medieval in date, appearing to be a system of linear and perpendicular ditched boundaries and pits. Apart from a single, undated posthole, no structural evidence remained.



Scale 1:2500

Medieval Area M3 Fig 15

Trench 190

Ditch [19005] matched the linear anomaly detected by the geophysical survey. It was oriented broadly north-east to south-west, 0.70m wide with steeply sloping sides to a concave base 0.30m deep, containing a fill which produced flint, CBM and Small Finds SFs1, 2 and 3. It is likely to be of medieval date.

Trench 191 (Fig 18, Section 4; Fig 22)

Trench 191 was archaeologically dense, containing six pits and seven ditches. Ditch [19114] was located at the south-western end of the trench. It was 0.36m wide by 0.18m deep with a V-shaped profile. The fill contained finds of medieval pottery and animal bone. The ditch truncated earlier pit [19116].

The remaining six ditches formed a series of ditches and re-cuts possibly forming part of a 12th-century boundary system. Ditch [191120] was situated at the north end of the trench. It was aligned north-west to south-east, 1.95m wide by 0.66m deep with a V-shaped profile. Ditches [19122], [19125], [19129], [19132] and [19136] were all re-

cuts of the same ditch [191120]. The recuts were all broadly V-shaped in profile, between 0.80-2.72m wide and 0.66-1.10m deep. Most of the re-cuts contained multiple fills, a number of which produced pottery and other finds of medieval date.

Recut [19129] truncated an earlier pit [19134]. Where it survived, the pit was sub-circular, at least 1.09m wide and 0.24m deep, with moderately sloping sides. No finds were recovered from the fill (19133).

Two intercutting pits were situated in the centre of the trench. Pit [19107] was cut by later pit [19105]. Both pits were sub-circular 0.55m wide and 0.18m deep, with flat bases and moderately sloping sides. Pottery of 12th-century date was recovered from a fill of the earlier pit (19106). East of these pits were another three pits. Pit [19109] was circular, 0.75m wide and 0.24m deep, with sloping sides to a flat base. The pit fill contained 12th-century pottery (19108). Pit [19112] was sub-rectangular, 0.92m wide by 0.24m deep, and produced late 12th-century pottery from its upper fill (19110). A large circular pit [19116] was truncated by ditch [19114]. The pit was sub-circular, 0.75m wide by 0.35m deep, and produced a single sherd of 12th-century pottery in fill (19115). The ditch which truncated it [19114] was aligned east-west, and produced sherds of early 13th-century pottery.

Trench 192 (Fig 19, Sections 5 and 6; Fig 22; Fig 16)

Trench 192 was extended to the north and south to investigate the features uncovered. It contained eight ditches, two gullies, two pits, a single posthole and an unexcavated spread of features [19220]. Ditch [19207] was aligned north-south, at least 1.42m wide by 0.62m deep, and with a U-shaped profile. The upper fill produced late 12th-century pottery, worked flint and animal bone (19204). Ditch [19209] terminated within the trench; it was aligned north-east to south-west, at least 0.89m wide by 0.21m deep with gently curving sides and a broad base. Late 12th-century pottery, worked flint and animal bone were recovered from the fill (19208). The other ditches were all aligned broadly north-south, or north-east to south-west, and mostly contained pottery of 12th-century date.



Trench 192, looking south Fig 16

Gully [19214] was aligned north to south, 0.52m wide by 0.23m deep with a U-shaped profile. The upper fill (19212) contained worked flints. Gully [19224] was oriented west to east, with a wide U-shaped profile, 0.37m wide by 0.13m deep.

Feature [19231] may be an oval pit or the terminal of a ditch. It was 2.10m wide and 1.06m deep, with steep sides to a broad base. Pottery dating to the 12th century was recovered. Posthole [19238] was circular, 0.32m in diameter and 0.18m deep, with near vertical sides to a slightly curved base. Posthole [19211] was also circular, 0.35m in diameter and 0.13m deep located in the base of ditch terminal [19209].

Trench 193 (Fig 23)

Ditch [19306] was located at the south-eastern end of the trench, and was aligned north-east to south-west, 1.30m wide and 0.49m deep, with gently curving sides and a broad base. Pottery dating to the 12th-century was recovered from fill (19305). Ditch [19315] was aligned north-east by south-west, with a V-shaped profile, 0.99m wide by 0.32m deep. This ditch also produced late 12th-century pottery from fill (19314). At the northern end of the trench, ditch [19318] was aligned north-south, 0.85m wide by 0.32m deep, with a U-shaped profile. Pottery of late 12th-century date was recovered from the upper fill (19316). An irregular area of disturbance, possibly natural, was located halfway along the trench [19313]. It measured 1.47m wide and 0.10m deep, and may be natural.

Trench 197

A number of linear features within the trench correlate with those observed in the geophysical survey. Few features contained any dating evidence, but they are likely to be contemporary with the other medieval features in the vicinity. Gully [19705] in the centre of the trench was oriented north-east to south-west, 0.52m wide and 0.11m deep, with gently curving sides to a broad base. No finds were recovered from the fill. Ditch [19710], at the southern end of the trench, is likely to have continued into Trench 198 as [19817]. It was aligned north-east to south-west, 1.70m wide and 0.45m deep, with steeply-sloping sides and an irregular base. Pit [19707] was south of gully [19705]. It was circular, 1.80m in diameter and 0.12m deep, with shallow curving sides to a broad base. Worked flint was recovered from fill (19706).

Pit [19712] was circular, 0.90m in diameter and 0.38m deep, with steeply-sloping sides to a flat base. No finds were recovered. Pit [19717] lay partially outside the trench to the east. It was circular, 1.00m in diameter and 0.70m deep, with straight sides and a flat base. Pottery dating to the 12th century was recovered from upper fills (19715) and (19714). A single posthole [19713] was recorded, cut by ditch [19710]. It was circular, 0.20m in diameter and 0.10m deep, with straight sides to a flat base. No finds or dating evidence were recovered.

Trench 198

Ditches [19807] [19815] and [19817] were unexcavated. The ditches were parallel on a north-south alignment. Ditch [19817] is considered to be the continuation of ditch [19707] seen in Trench 197. Ditches [19809] and [19813] were probably cultivation channels; both were U-shaped in profile, 0.30-0.40m wide and 0.20m deep. Ditch [19811] was oriented east-west, with a U-shaped profile, 0.80m wide by 0.20m deep. This ditch cut earlier ditches [19809] and [19813] to the south and was itself truncated by unexcavated ditches [19815] and [19817] to the east. Ditch [19819] was oriented north-west to south-east, and had rounded sloping sides to a flat base 0.54m wide by 0.28m deep. Ditch [19821] was aligned east to west and was V-shaped in profile, 0.90m wide by 0.30m deep. It was truncated to the east by ditches [19815] and

[19817]; no finds were recovered. Pit [19805] was circular, 1.15m in diameter by 0.20m deep with rounded sides to a flattened base; no finds were recovered.

5.9 Medieval Area M4 (Field 12, 13 and 14)

In the south-west corner of the site, fields 12, 13 and 14 showed evidence for medieval activity in the form of ridge and furrow cultivation.



1:50000

Medieval Area M4 Fig 17

Other undated features in this area may also originate from this period. Cultivation channels were observed within Trenches 134-142, 166-174, 176-178 and 180. In general, the channels were all broadly aligned north-east to south-west, and were spaced at regular intervals c.1.50-2m apart. Profiles were generally U-shaped although some examples were of a slightly sharper-edged profile. The furrows varied between 0.55 and 0.77m wide, and between 0.11 to 0.27m deep. No dating material was recovered from any of the furrows. The cultivation channels observed within Trench 134 appeared to be aligned north-south but were otherwise the same as those observed throughout the field.

5.10 Other medieval features

A number of other scattered features across the area of excavation have been dated to the medieval period by pottery finds. These do not fit into any of the interest areas as highlighted above, but are summarised below.

Trenches 82 and 88

Ditches [8207] and [8209], in Trench 82 on the eastern edge of Field 5, are aligned north to south. Both appear to be truncated by field drain [8205]. Ditch [8209] is the earlier of the two. It was at least 2m wide by 0.50m deep with irregular sides to an irregular base. Animal bone was recovered from ditch fill (8208). The ditch was truncated to the west by a later ditch [8207]. This ditch was at least 1.50m wide by 0.50m deep with a wide U-shaped profile, although the base is unknown due to the presence of field drain [8205]. Late 12th-century pottery was recovered from ditch fill (8206). Both ditches extended into Trench 88 as features [8806] and [8808]. It seems reasonable to correlate these ditches with the linear features identified during the geophysical survey, and to suggest that they would have been shown to extend into Trench 98 had excavation of that trench been possible.

Trench 128 (Fig 18: Section 1)

This trench was situated in the north of Field 12. Gullies [12805] and [12807] were located at the north-eastern end of the trench. Gully [12805] was aligned east to west and was 2.10m wide and 0.58m deep with a U-shaped profile. Pottery of 12th-century date was recovered from fill (12804). Gully [12807] lay 3.0m north-west of gully [12805]. The gully was U-shaped in profile, 0.75m wide by 0.37m deep, and was aligned east to west across the trench (Fig 18, Section 1). Medieval pottery of later 12th-century date than that recovered from (12804) was recovered from fill (12806), suggesting that gully [12807] was a slightly later re-cut of the same boundary feature.

Trench 207

Trench 207 was situated in the north of Field 22. The trench contains a number of intercutting ditches. At the south-western end of the trench ditches [20711], [20707] and [20709] were all on a north-south alignment. Of these three ditches [20711] is the earliest; it had been truncated by ditch [20707] but survived to 1.10m wide with steep sloping sides and a concave base 0.36m deep. Ditch [20707] was truncated by ditch [20709], but survived as U-shaped in profile, at least 0.50m wide by 0.37m deep. Ditch [20709] was U-shaped in profile, and at least 1.38m wide by 0.52m deep, containing a single sherd of 12th century pottery.

Two further intercutting ditches, [20713] and [20715], lay parallel to this first group of features. Ditch [20715] was the earliest feature. It was U-shaped in profile, surviving to a width of 0.49m and depth of 0.29m. It is truncated to the south by ditch [20713] which was also U-shaped in profile, 0.40m wide by 0.16m deep. No finds were recovered from these ditches.

Gully [20717] lay immediately to the north-east on a parallel north-south alignment. It was 0.45m wide and 0.14m deep with gently curving sides and a concave base. Just 3m to the north-east on the same north-south axis lay gully [20719]. This was also U-shaped in profile, and at least 0.52m wide and 0.15m deep. No dating material was recovered.

Trench 283

Trench 283 was situated in the south of Field 20. A number of other undated features were found in the vicinity. Pit [28305] lay 14.50m from the south-eastern end of the trench and was sub-circular, 1.10m wide and 0.25m deep, with a U-shaped profile. A single sherd of late 12th-century pottery was recovered from its fill.

5.11 Undated features

Trench 28

Two features [2805] and [2807] were present within the trench. Both were aligned east-west and [2807] was observed to truncate [2805]. Ditch [2805], the earlier of the two, was not visible in the geophysical survey and was at least 1.89m wide by 0.80m deep with a U-shaped profile and flat base. No finds were recovered from the single fill (2804). It was truncated by modern field drain [2807].

Trench 45

Ditch [4505] was aligned east to west, and was not observed on the geophysical survey. It was at least 1.38m wide by 0.17m deep, with gently sloping sides to a flat base.

Trench 51

Ditch [5105] was aligned east-north-east to west-south-west. The ditch was not visible on the geophysical survey. It was at least 1.19m wide by 0.38m deep with steeply sloping sides to a flat base, and may be the same as that observed in Trench 45.

Trench 59

Ditch [5905] was aligned north-west to south-east and lay 9.90m to 11.10m from the southern end of the trench. The ditch was not visible in the geophysical survey; it was at least 1.40m wide by 0.45m deep with steeply sloping sides to a concave base. No finds were recovered and it is likely that this is the continuation of one of the ditches within Trench 62.

Trench 62

Ditches [6205] and [6207] lay 15.0m and 16.10m respectively from the northern end of the trench. The ditches lay in parallel on a north-west to south-east alignment. Ditch [6205] was at least 1.20m wide by 0.76m deep and was U-shaped in profile with a rounded base. Ditch [6207] was the smaller of the two, at least 1.10m wide by 0.64m deep, with a U-shaped profile and rounded base.

Trench 63

Ditch [6305] was aligned north-east to south-west. It was at least 1.25m wide by 0.48m deep, with gently sloping sides to a broad base. This ditch probably continued into Trench 65.

Trench 65

Three features were recorded within Trench 65. Ditch [6505] was aligned south-west to north-east and was at least 1.20m wide by 0.13m deep. It was U-shaped in profile with a concave base. The ditch is likely to be the continuation of that observed in Trench 63. Posthole [6507] was circular, 0.30m in diameter and 0.10m deep with rounded gently curving sides to a U-shaped base. Pit [6509] was also circular 0.65m in diameter and 0.30m deep with rounded gently sloping sides to a concave base.

Trench 67

Pit [6705] lay only partially within the trench, extending beyond the trench to east. The extent of the pit within the trench was circular, 1.00m in diameter and 0.37m deep with steep sides to a flat base.

Trench 69

Ditch [6905] was aligned south-east to north-west, and was at least 1.70m wide by 0.63m deep. The sides were steeply sloping to a concave base.

Trench 75

Ditch [7505] was aligned south-west to north-east. It was at least 1.10m wide by 0.20m deep with gently curving sides to a flat base.

Trench 80

Colluvial layer (8004) was observed as orangey sand to the eastern end of the trench. Pit [8007] was sub-circular, 0.92m wide by 0.22m deep, with a V-shaped profile and rounded base.

Trench 81

The trench contained two intercutting pits, [8105] and [8108]. Sub-circular pit [8105] was the earlier feature and was at least 1m wide by 0.19m deep, with moderately sloping sides to a flat base. Flint was recovered from fill (8104). The pit was truncated to the west by sub-circular pit [8108], at least 3.65m wide by 0.36m deep, with moderately sloping sides to a concave base.

Trench 122

A single pit [12205] measured 0.37m wide and 0.30m deep. It was circular, with a bowl-shaped profile, and a broad flat base. A modern disturbance was observed towards the eastern end of the trench.

Trench 125

Ditch [12505] was aligned north-east to south-west with a U-shaped profile, at least 0.78m wide by 0.28m deep, with a broad base. It contained no finds.

Trench 126

Two pits were recorded within Trench 126. Pit [12607] extended beyond the northern limit of the trench and, although apparently a pit, may also prove to be a ditch terminal. It was V-shaped in profile, at least 0.92m wide by 0.75m deep. Pit [12609] lay further to the east, extending beyond the trench boundary to the north. It was 0.80m wide and 0.63m deep, broadly oval with gently sloping sides to a flat base. Flint was recovered from fill (12608).

Trench 131

A single ditch [13105] was observed within Trench 131 at south-western end of the trench, on a broadly north to south alignment. In profile, the ditch had gently curving sides and a flat base, at least 1.20m wide by 0.15m deep.

Trench 133

Ditch [13305] was aligned east to west across the trench, 1.20m wide by 0.20m deep, with a U-shaped in profile.

Trench 142

Ditch [14211] was aligned north-east to south-west, with a U-shaped profile, 1.55m wide by 0.60m deep. To the north-west, the ditch truncated an earlier cultivation channel [14209].

Trench 147

Trench 147 contained a ditch [14705] and two gullies intersecting with a second ditch [14707]. Ditch [14705] was aligned south-west to north-east, at least 3.0m wide by 0.56m deep, with a V-shaped profile. This is likely to be the feature identified on the geophysical survey. Of the three intercutting features, the two gullies [14709] and [14711] are the earliest. Both are aligned broadly east to west and are shallow with flattened bases between 0.52 and 0.91m wide and 0.13 and 0.07m deep. Ditch [27407] truncates both gullies. The ditch is curvilinear and runs south-west to north-east across the trench. It was at least 1.15m wide by 0.24m deep with gently curving sides to a broad base.

Trench 148

A single ditch [14805], aligned east to west, was at least 0.69m wide by 0.24m deep with a U-shaped profile.

Trench 149

Ditch [14905] was oriented east to west, and was 0.80m wide and 0.40m deep, with straight steep sides sloping to a wide flat base.

Trench 150

A ditch [15005] and three pits [15007], [15009] and [15011] were recorded within the trench. Ditch [15005] lay towards the south-western end of the trench and was aligned east to west, at least 0.80m wide by 0.34m deep with gently sloping sides to a broad base. The three pits were located towards the north-eastern end of the trench, with pit [15011] truncating earlier pit [15009].

Trench 151

A total of four ditches and pit were recorded for Trench 151. Ditch [15105] is possibly the continuation of ditch [15005] in Trench 150. The ditch was aligned south-west to north-east, and was 0.76m wide by 0.30m deep with a U-shaped profile. It was truncated by pit [15111]. The pit was circular, 1.30m wide by 0.50m deep, and was itself truncated by modern drain [15107]. This drain also truncated ditch [15109], aligned south-west to north-east, with a V-shaped profile, 1.15m wide by 0.40m deep.

Ditch [15113] was aligned broadly north to south, 1.08m wide by 0.50m deep with a V-shaped profile. The final feature within the trench was ditch [15115], which was aligned north-east to south-west, 0.98m wide and 0.33m deep, with gently curving sides to a flat base. It was truncated by a modern drain. A large linear feature, likely a sewer pipe was identified between 28.0 and 31.5m from the north-western end of the trench. It is likely that this is the anomaly highlighted by the geophysical survey.

Trench 152

Two ditches [15204] and [15206] were observed within the trench. Curvilinear ditch [15204] lay on a north-south alignment. It had straightened edges to a rounded base, at least 0.50m wide by 0.21m deep. Ditch [15206] was wider and deeper; 1.20m wide by 0.34m deep, with a wide U-shaped profile, and was aligned north-south.

Trench 153

Three ditches [15306], [15310] and [15312] were recorded within the trench. Ditch [15306] was aligned north-west to south-east, 2.15m wide by 0.63m deep, with steep sides and a wide flat base. Slag, bone and fragments of CBM were recovered from deposit (15305). Ditch [15310], aligned north to south, was 0.85m wide by 0.39m

deep, with a U-shaped profile that had stepped edges eroded at the top. Small Find SF1, an iron strap, and two sherds of animal bone were recovered from deposit (15309). Ditch [15310] was aligned north-south, with a U-shaped profile, 0.77m wide and 0.24m deep. No finds were recovered. The sewer pipe noted in Trench 151 and on the geophysical survey was also noted here as was a modern drain [15308].

Trench 154

Gully terminal [15404] lay at the north-eastern end of the trench and extended beyond the trench to the north. The gully was at least 0.67m wide by 0.15m deep, with gently curving sides to a broad base and contained a fill (15403) from which bone and CBM was recovered. The terminal truncated posthole [15406], which survived as a circular depression 0.22m wide by 0.07m deep. Ditch [15408] was aligned north-west to south-east, 2.40m wide and 0.70m deep, with steep sides and a broad base. Feature [15410] formed an irregular sub-circle. In profile it was irregular with a flat base at least 2m wide by 0.38m deep, likely to be a tree hollow or quarrying pit.

Trench 155

Ditch [15505] was 3.0m wide. A modern field drain was laid in the base, containing fragments of modern pottery. It is probably the feature observed during the geophysical survey. A second ditch, [15507], not observed in the geophysical survey, was aligned north-west to south-east, 0.90m wide by 0.34m deep, with moderately sloping sides and a concave base.

Trench 156

A single terminal [15605], aligned east to west, was at least 0.60m wide and 0.15m deep, with shallow sloping sides and a concave base.

Trench 157

Short gully [15709], aligned north-west to south-east, was 0.40m wide and 0.18m deep, with moderately sloping sides and a concave base. Ditch [15705] appeared modern in date, and is probably the feature seen on the geophysical survey in this position. An irregular patch of root disturbance [15711] was also noted within the trench.

Trench 162

Two gully terminals, [16204] and [16208], were observed at opposite ends of the trench. Terminal [16204] was aligned north to south, in the southern end of the trench. It was 0.86m wide by 0.24m deep, with gently sloping sides and a broad base. Terminal [16208] was aligned north-south in the northern end. It was slightly curvilinear, 1.0m wide and 0.43m deep, with moderately sloping sides to a concave base. Ditch [16206], aligned north-south, was 1.17m wide by 0.45m deep, with a U-shaped profile. It was truncated by a modern drain.

Trench 163

Pit [16304] was sub-circular, 1.10m in diameter and 0.19m deep, with asymmetrical sides and a broad base.

Trench 204

Ditch [20406] was aligned east-west, 1.00m wide by 0.38m deep, with a U-shaped profile. Burnt material was observed within the upper fill (20404). Ditch [20408] was aligned north-west to south-east, 0.80m wide and 0.26m deep with a U-shaped

profile. A third ditch [20411] at the southern end of the trench was aligned north-east to south-west, 1.50m wide by 0.63m deep with a V-shaped profile.

Trench 205

Ditch [20505] was aligned west to east, and continued into Trench 206 although was not excavated in that trench. The ditch was at least 1.05m wide by 0.31m deep, with a U-shaped profile and corresponded with a linear anomaly detected during the geophysical survey. Gully [20509], aligned north-west to south-east, was 0.50m wide by 0.20m deep, with a U-shaped profile. Gully [20511] was not excavated but ran parallel to [20509] and was likely to be of similar nature.

Trench 206

Three ditches, a pit, and an area of wider disturbance at the south-eastern end of the trench were noted. Ditch [20605], aligned north-east to south-west, was 0.80m wide by 0.25m deep with a U-shaped profile. Ditches [20609] and [20611] were aligned north-east to south-west. Ditch [20609] was U-shaped in profile, 0.90m wide by 0.30m deep. Ditch [20611] was unexcavated. Feature [20607] was initially thought to be a pit; however, excavation suggested it was instead the terminal of a ditch extending to the north beyond the trench. It was at least 0.80m wide with an excavated depth of 0.15m, with a U-shaped profile.

Trench 208

Ditch [20805], aligned south-west to north-east, was 1.00m wide and 0.25m deep, with a U-shaped profile. No finds were recovered. A feature aligned north-east to south-west across the trench has been identified as a palaeochannel [20807].

Trench 209

Ditches [20905] and [20907] towards the north-western end of the trench are likely to correspond with the geophysical anomalies noted during the survey. Both ditches are oriented north-east to south-west and are U-shaped in profile, 1.23-2.50m wide and 0.40m in depth. Gully [20909], in the centre of the trench, was aligned north-east to south-west, 0.55m wide by 0.17m deep, with a U-shaped profile. Ditch [20917] at the north-western end of the trench was aligned north-east to south-west, 0.84m wide by 0.51m deep, and had steep sloping sides to a broad flat base. Ditch [20922] was probably also visible on the geophysical survey. This trench was not excavated.

Trench 210

Ditch [21007] lay on a north-west to south-east alignment and was U-shaped in profile. Ditch [21009] was aligned east-west, with a V-shaped in profile, 0.60m wide by 0.20m deep.

Trench 211

Ditch [21108] was the earlier of the two within Trench 211. The ditch was aligned broadly north to south, 1.20m wide by 0.45m deep, and had moderately sloping sides to a flat base. It was truncated by ditch [21106], which was aligned north-north-east to south-south-west, 0.80m wide by 0.25m deep, with steep sloping sides to a flat base.

Trench 213

Ditch [21305] was aligned north-south, 0.70m wide by 0.18m deep and was V-shaped in profile.

Trench 214

Two ditches were recorded, one of which [21406] correlated with a geophysical anomaly. Ditch [21406], aligned north-east to south-west, was at least 1.90m wide by 0.75m deep, with a V-shaped profile. Ditch [21409] was aligned north-east to south-west, and was not visible in the geophysical survey. It was 1.30m wide and 0.90m deep, with moderately sloping sides to a flat base.

Trench 218 (Fig 23)

Ditch [21815] correlates with a geophysical survey anomaly. It lay across the centre of the trench, aligned north-west to south-east, 2.40m wide by 0.90m deep with a broadly U-shaped profile. Ditch [21806] was oriented north-west to south-east, 0.80m wide by 0.32m deep, with a U-shaped profile. It was truncated by modern land drain [21808]. Two pits were located at the north-eastern end of the trench. Pit [21810] was sub-circular, 0.50m in diameter and 0.10m deep, with shallow sides to a curving base. Pit [21817] was circular, 0.40m in diameter and 0.25m deep, with gently sloping sides to a broad base.

Trench 219 (Fig 24)

Postholes [21910], [21912], [21914], [21916], [21918] and [21920] in the south-east end of the trench were on a straight alignment running broadly north-west to south-east. The postholes are all are circular, with U-shaped profiles, between 0.25-0.45m wide and 0.04-0.20m deep. The features are likely structural. Ditch [21922] lay parallel to the alignment of postholes, and is probably associated with them. The ditch was 0.59m wide and 0.21m deep, with a V-shaped profile. Ditch [21924] was oriented north-east to south-west. It measured 2.27m wide by 0.68m deep, and had gently curving sides to a flat base. Ditch [21927] at the north-western end of the trench was aligned south-west to north-east, 2.20m wide and 0.73m deep, with steeply sloping sides to a flat base.

Trench 220

A single ditch [22005] was recorded, aligned north-west to south-east, 0.80m wide by 0.34m deep, with moderately sloping sides to a flat base. This feature correlates with an anomaly on the geophysical survey.

Trench 222

Ditch [22205] was oriented east to west and was at least 1.20m wide and 0.58m deep, with steeply sloping sides to a concave base. The ditch was not identified during the geophysical survey.

Trench 223

Gully [22305] terminated within the trench, aligned north to south, 0.58m wide and 0.15m deep, with moderately sloping sides to a concave base. Ditch [22307] was aligned north-east to south-west, 1.05m wide by 0.45m deep, with a U-shaped profile.

Trench 224

Ditch [22405] at the south-western end of the trench was aligned north to south. It had shallow sloping sides to a flat base and was 1.00m wide by 0.12m deep. Ditch [22409] was 0.70m wide and 0.60m deep with moderately sloping sides to a concave base. The ditch was truncated by modern field drain [22407]. A natural channel [22411] was also observed within the trench.

Trench 244

Gully [24405] was aligned south-east to north-west, 0.50m wide and 0.47m deep, with steep sides to a flat base.

Trench 262

Ditch [26206] was aligned south-east to north-west, at least 1.10m wide by 0.40m deep, with steeply sloping sides to a flat base.

Trench 268

Ditch [26806] at the south-eastern end of the trench was at least 2.0m wide by 0.98m deep, with steeply sloping sides to a flat base.

Trench 282

Ditch [28205] was aligned north-east to south-west, V-shaped in profile, and at least 1.10m wide by 0.38m deep.

Trench 287

Ditch [28706] was at least 1.80m wide and 0.90m deep, with a U-shaped profile.

Trench 314

Four ditches [31404], [31406], [31408] and [31410] and a terminal [31412] were observed. None were excavated as all intersected and it was considered that excavation would be better undertaken under conditions pertaining to full excavation.

5.12 Post-medieval / modern features, and blank trenches**Field 3**

Thirty-six trenches were excavated in Field 3, of which 1-8, 11-16, 18, 20-21, 23-27, 29-32, and 34 were devoid of archaeology. Trench 10 contained a modern posthole [1005] and a modern disturbance was noted in Trench 17. Two features were excavated in Trench 36 but were considered to be of natural origin.

Two ditches visible in the geophysical survey were targeted by a number of trenches. The ditch aligned north-west to south-east was observed in Trenches 9, 33 and 35, although not in Trench 20. It was shown to be the remains of a hedgerow, at least 1m wide and V-shaped in profile, with brick and tile recovered from lower fill (905). The linear feature identified by the geophysical survey aligned east-west in this area was located within Trenches 19 and 22. The ditch was between 1.05m and 1.80m wide and 0.60m to 0.70m deep, with gently sloping sides to a concave base. A field drain was observed in the base of both slots and nails were recovered from deposit (2204).

Field 4

Within Field 4, Trenches 38, 41-44, 48-49, 52, 55-58, 60-61, 64 were devoid of archaeology, and a natural channel was observed in Trench 46. A feature identified by the geophysical survey, aligned north to south, was located within Trenches 37, 39, 40, 47 and 50. The ditch was between 0.80m -1.25m wide by 0.58m deep. Brick and tile were recovered from deposit (5004). The ditch was unexcavated in trenches 37, 39, and 40. A ditch [5307], aligned east to west on the geophysical survey, was located within Trenches 53 and 54. It was at least 1.00m wide by 0.68m deep. The ditch remained unexcavated in Trench 54.

Field 5

Archaeologically blank trenches comprised Trenches 76, 78, 83-87, 91-92, 94-96; Trenches 97 and 98 were not excavated due to the presence of a lake.

Within Field 5 the linear feature aligned north-east to south-west, identified on the geophysics was located with trenches 77 and 79. The ditch was V-shaped in profile and between 1.37m to 1.42m wide by 0.62m to 0.74m deep. Modern ceramic pottery was recovered from fill (7907) and in Trench 79 the ditch was observed to truncate treebole [7906] located immediately to the north of the ditch. The linear anomalies aligned north-south were shown to be geological anomalies were observed in trenches 82, 88 and 98.

Trench 113 contained a shallow linear [11305], at least 2.90m wide by 0.12m deep containing a sterile fill (11304) and is considered to have been a water channel.

Field 6

Six blank trenches were recorded for Field 6: 66, 68, and 70-74.

Field 8

Field 8 also recorded a number of blank trenches comprising 101-105, 107, 109, 114, 117, 118, and 120 and Trench 121 was not excavated due to proximity to a stream.

Field 12

Within Field 12, Trenches 123 and 124 contained modern features [12305] and [12405], while possible remnant furrows of medieval ridge and furrow were observed but unexcavated within Trenches 123 and 127. Linear anomalies from the geophysical survey were targeted and observed within Trenches 129 and 130. Both were modern in date, aligned north-west to south-east and U-shaped in profile.

Field 13

Within Field 13, Trenches 143-145 were devoid of archaeology and features excavated in Trench 146, [14605] and [14607] were determined to be of natural origin.

Field 14

Field 14 contained three blank trenches (158, 159, 175). Trenches 160 and 161 identified a linear anomaly recorded by the geophysical survey. It was truncated in both trenches by a field drain. Within Trench 164, two features were investigated but determined to be of natural origin. Trench 165 identified the line of a modern hedgerow boundary [16505], 1.40m wide and 0.32m deep but no finds were recovered. Trench 174 identified the linear feature detected in the geophysical survey as a drainage ditch, 1.20m wide by 0.48m deep and V-shaped in profile.

Field 16

Field 16 contained a number of blank trenches comprising 181-182, 184-185, 189 and 201. Within Trench 186 were a series of drains picked up by the geophysical survey. A water channel observed by the geophysical survey was located within Trenches 183, 186 and 187. Trenches 194 and 195 contained the remains of a hedgerow located by the geophysical survey in Trench 194, and continuing through Trenches 195 and 196.

Field 17

Field 17 contained 11 blank trenches, although several showed geological striations. The blank trenches comprised 225, 227, 231, 234, 236-239 and 241-243. A modern pond was observed in Trench 236.

Field 18

Blank trenches comprise 245-6, 248-251, 253, 255, and 259. Trenches 247 and 254 located the linear features identified by the geophysical survey. These ditches were undated and likely to represent post-medieval field boundaries.

Field 20

Field 20 contained mostly blank trenches, although geological striations were observed and investigated. The blank trenches comprised numbers 260-261, 263-267, 269-281, 284-286 and 288.

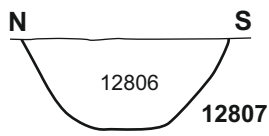
Field 21

Archaeologically blank trenches within Field 21 comprised 289-293, 298, 310 and 312-313. Trench 311 targeted a linear anomaly detected by the geophysical survey. It was observed in the trench running north-west to south-east and was V-shaped in profile containing a field drain and modern bricks. It was 1.52m wide by 0.90m deep.

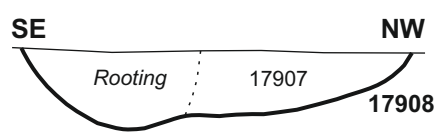
Field 22

Field 22 contained five blank trenches, comprising Trenches 212, 215-217 and 221. Trench 202 contained a single gully [20205], thought to be a cultivation channel aligned north-east by south-west, 0.80m wide and 0.30m deep with a U-shaped profile. Trench 203 located the two ditches identified by the geophysical survey, both were aligned north-west to south-east, and were V-shaped in profile, 0.80-1.50m wide and 0.35-0.82m deep.

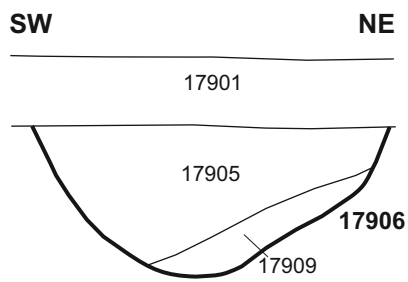
Section 1



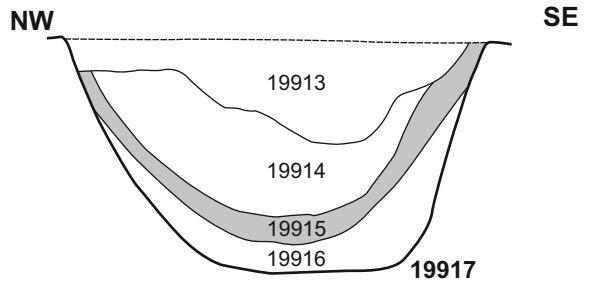
Section 2



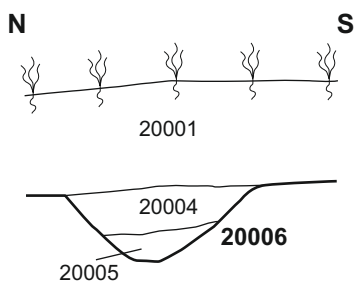
Section 3



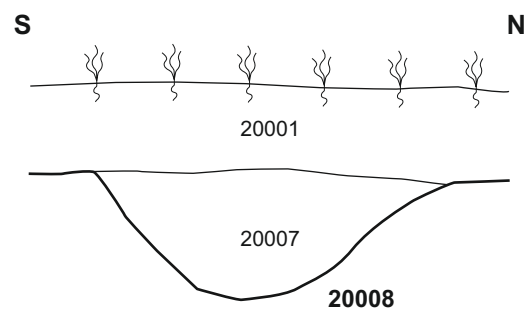
Section 7



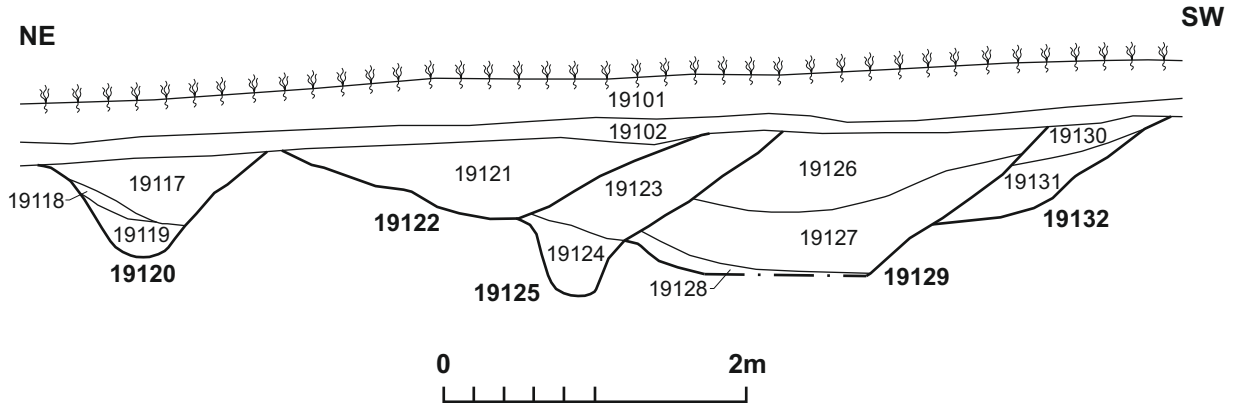
Section 8



Section 9



Section 4

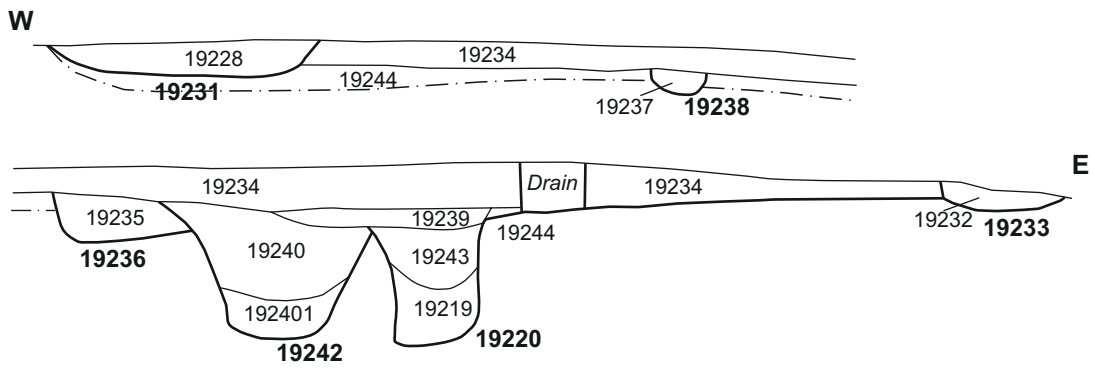


Scale 1:25 and 1:50 (section 4)

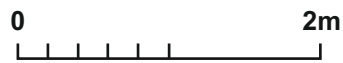
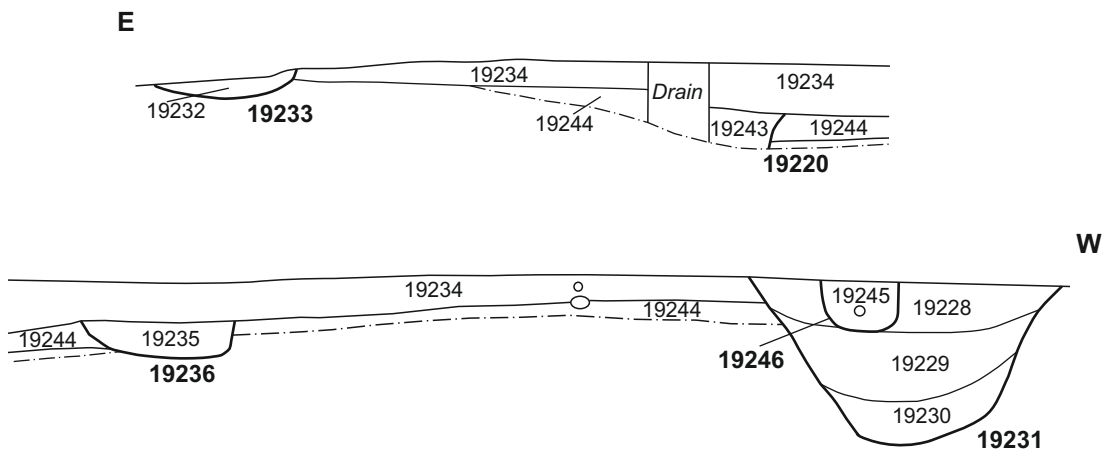
Section of features in trenches 128, 179, 191 and 200

Fig 18

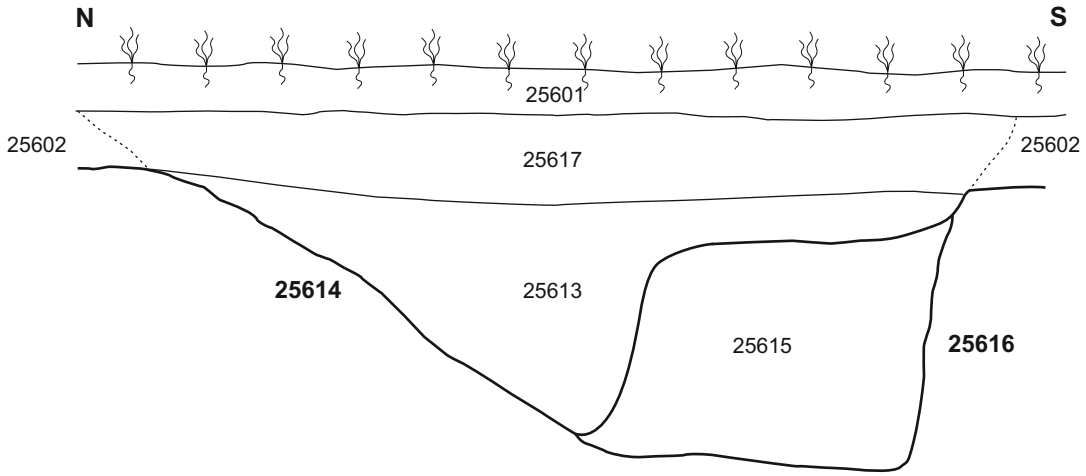
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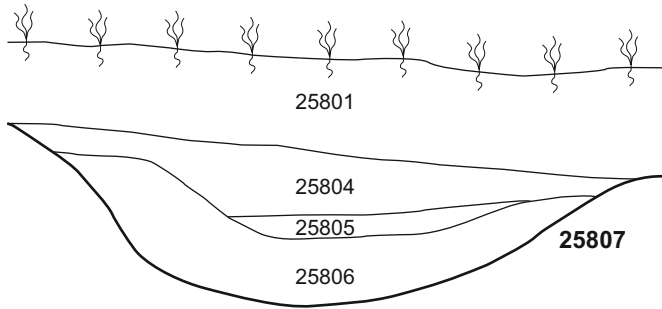
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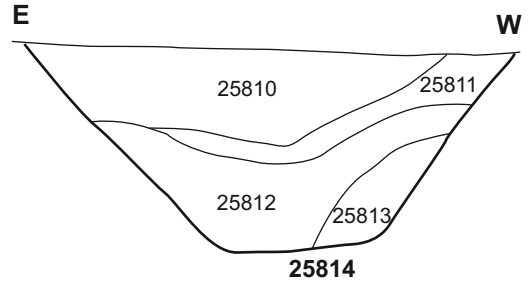
Section 10



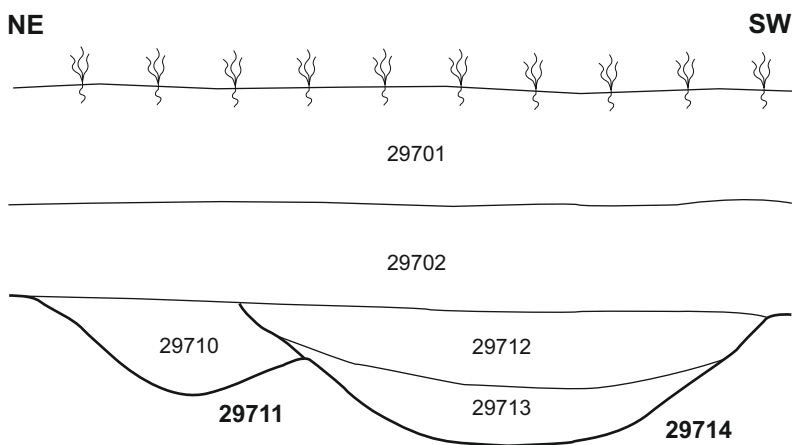
Section 11



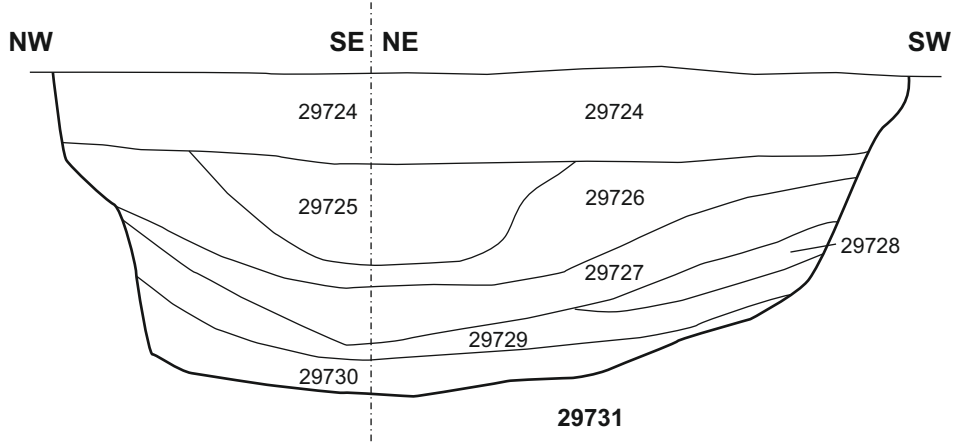
Section 12



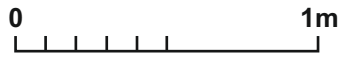
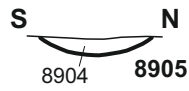
Section 13



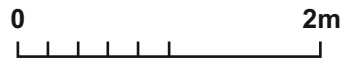
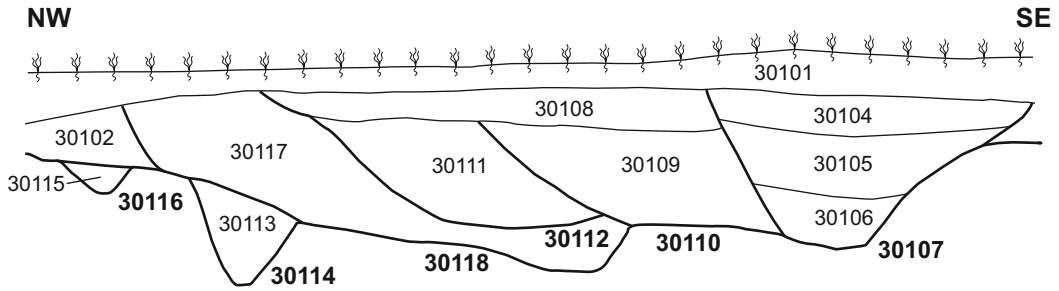
Section 14

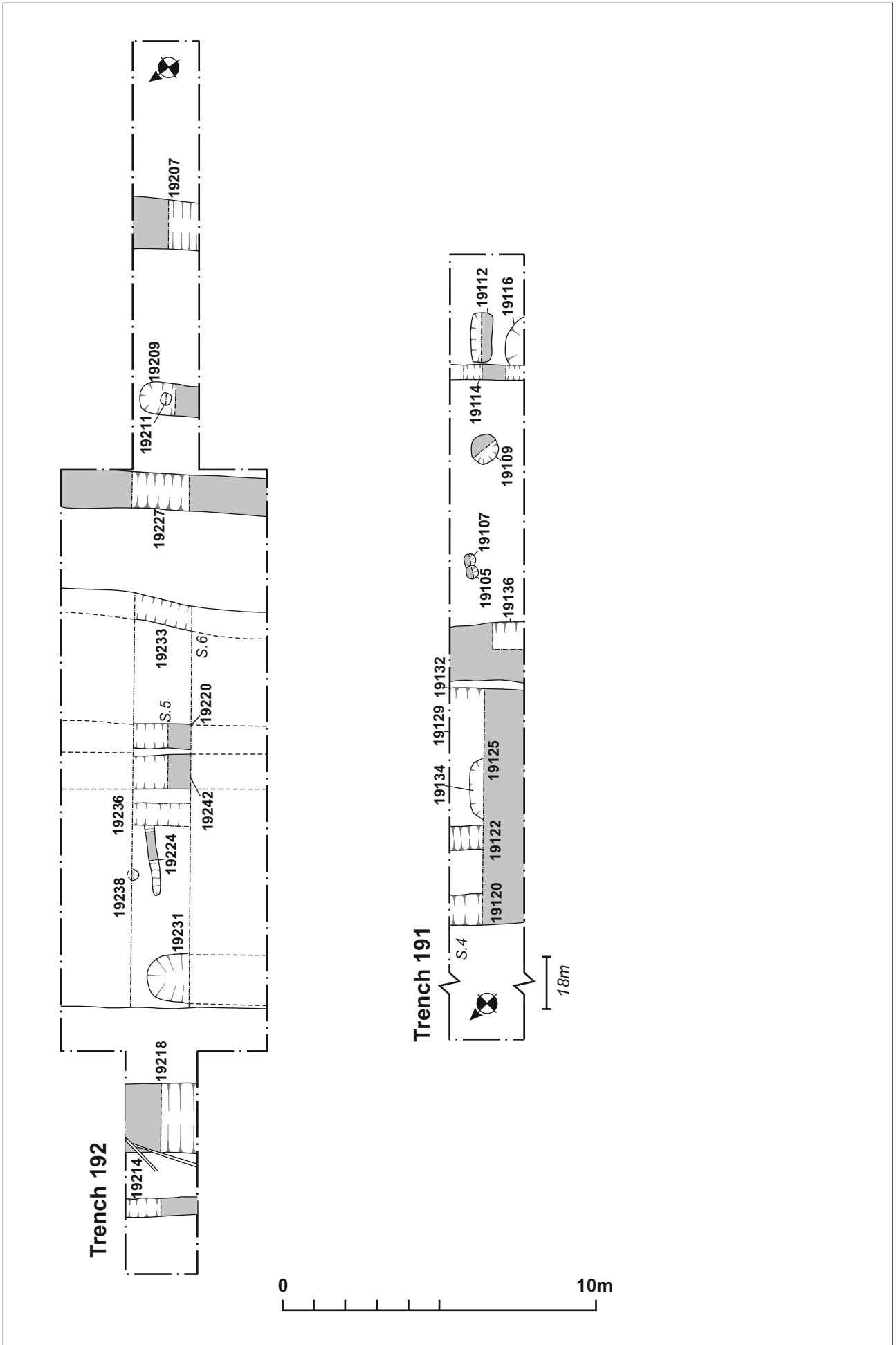


Section 16



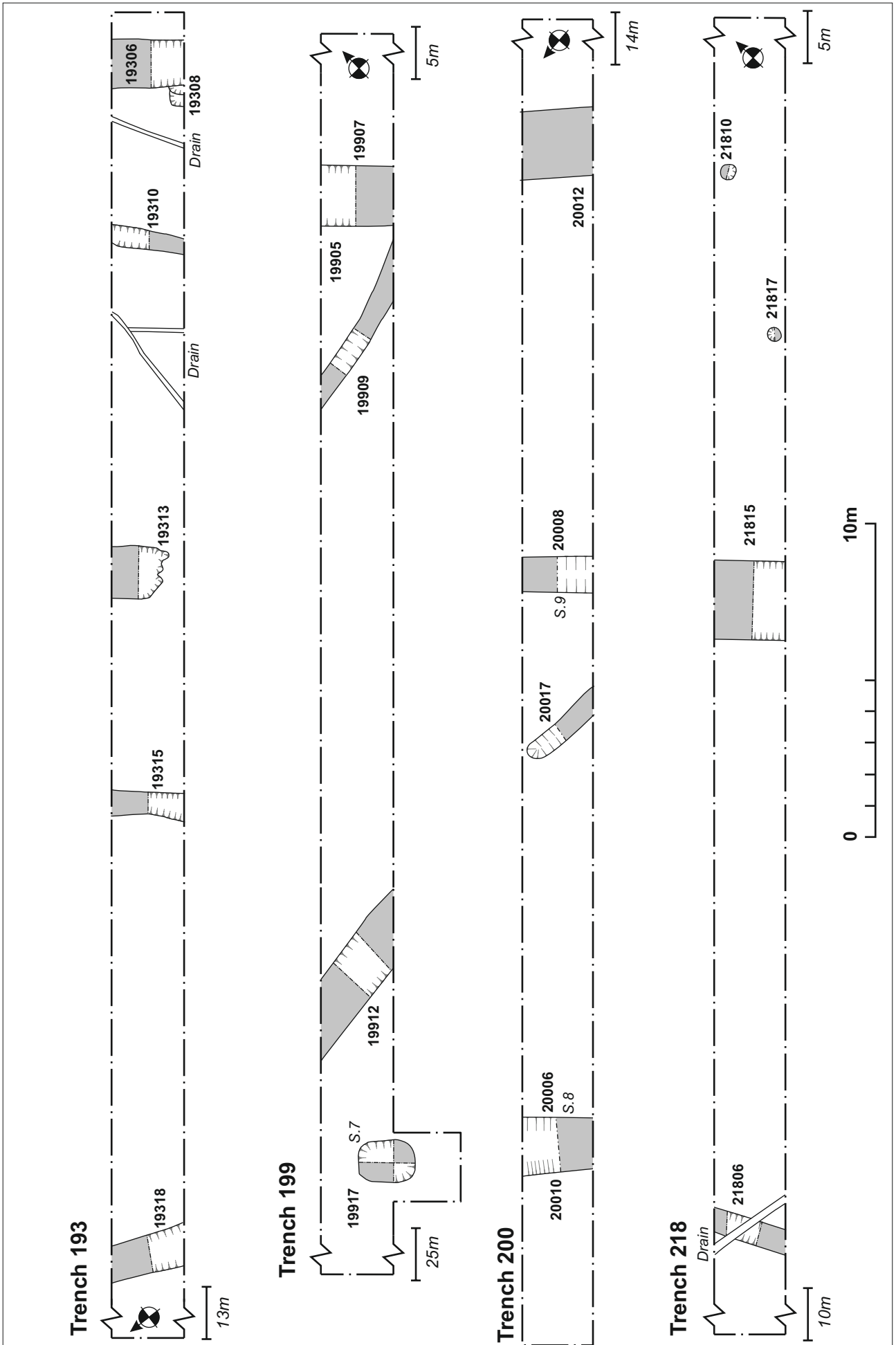
Section 15





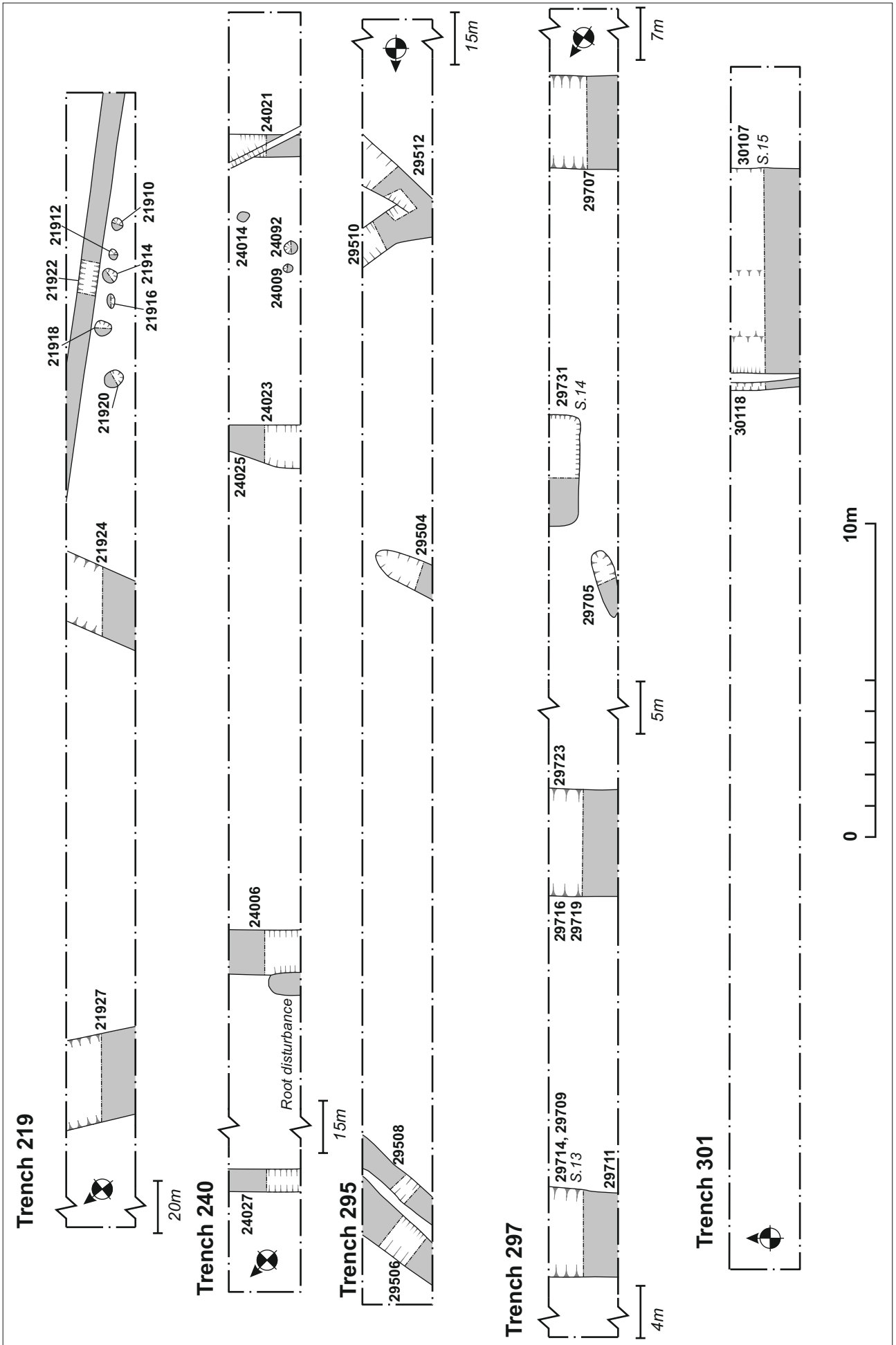
Scale 1:150

Plans of trenches 191 and 192 Fig 22



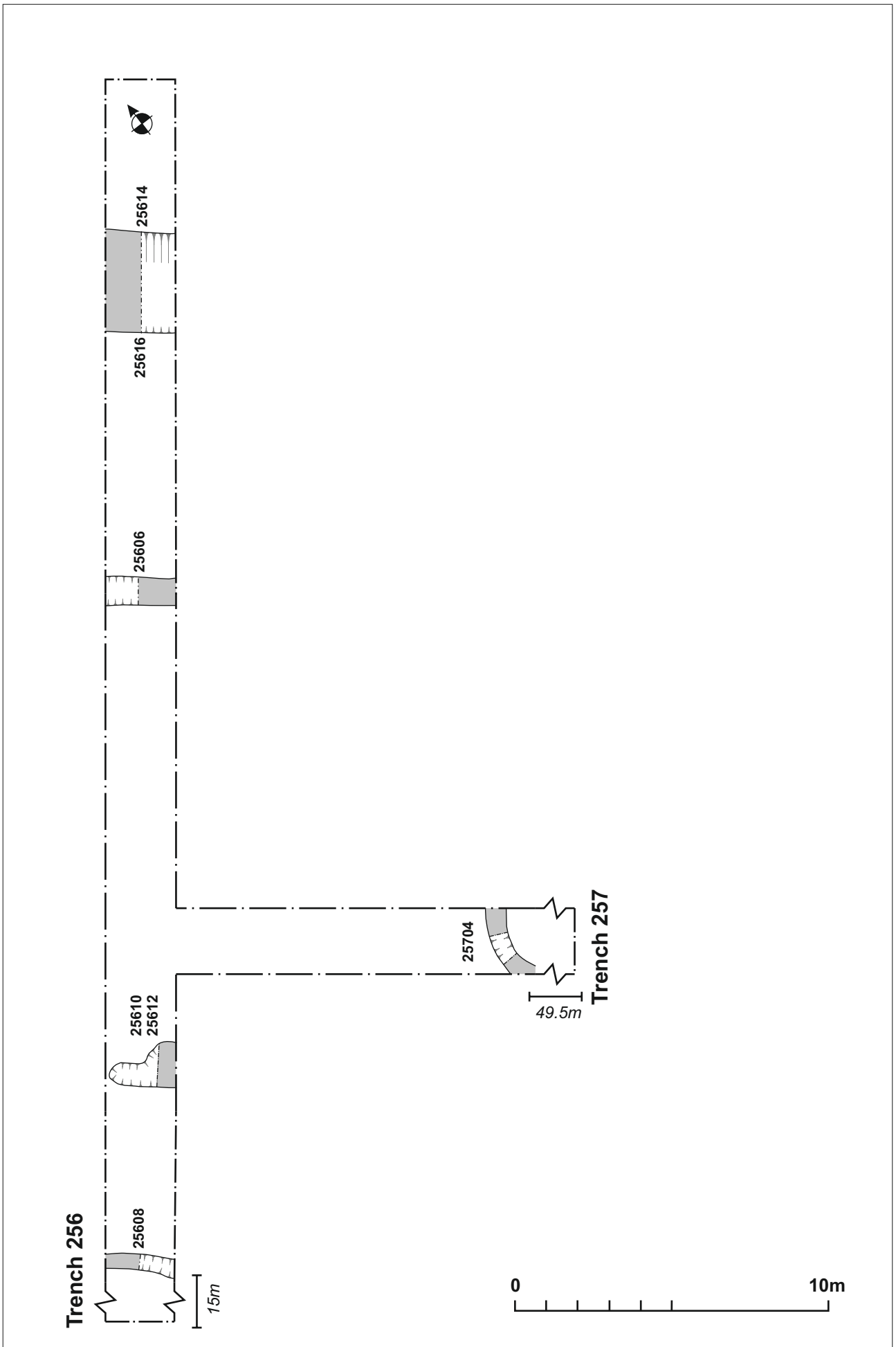
Scale 1:150

Plans of trenches 193, 199, 200 and 218 Fig 23



Scale 1:150

Plans of trenches 219, 240, 297, 298 and 301 Fig 24



Scale 1:150

Plan of trenches 257 and 256 Fig 25

6 THE FINDS AND ENVIRONMENTAL EVIDENCE

6.1 Worked flint by Yvonne Wolfram-Murray

In total 16 pieces of worked flint were recovered from Iron Age and later features. The flint comprises eleven flakes and five blades.

The condition of the artefacts was good to moderate, the post-depositional edge damage range from the occasional small edge spall to frequent edge spalls and crushing of the edges. Patination shows on half of the pieces as a slight to moderate discolouration of the surface.

The raw material is a grey and grey-brown coloured vitreous and granular flint. The cortex is light to mid brown and is present on the majority of the artefacts. The raw material was likely to have comprised local gravel deposits.

The assemblage comprises waste flakes and blades. One flake, from fill (19706), shows utilisation in the form of sickle gloss on part of one of the lateral edges, there is very little post-depositional edge damage on artefacts retrieved from this feature.

The worked flint is not directly dateable, but the technological characteristics of the flakes and blades suggest a broadly Neolithic to early Bronze Age date.

Two heavily burnt natural pieces of flint were recovered from fill (19913).

6.2 Iron Age Pottery by Phil Mills

Introduction

There were 922 sherds, 9182g of material presented for study. This included 15 rim sherds, eight bases and one handle fragment. The material was examined by context with sherds grouped into the fabrics described in the southern Fens fabric series (Evans *et al* in press) after examination under a digital microscope. Data was quantified in sherd families, recording number of sherds (Nosh), weight in grams (Wt), minimum number of rims (RE), rim equivalent (RE), base equivalent (BE), mean sherd weight (MSW = Wt/Nosh) and mean percentage of rim (MPW = RE/MNR). The overall RE for the site was 159% and BE was 203%.

Dating

The majority of the material belongs to Class P, material in the Iron Age tradition. There are two possible body sherds of oxidized Roman material from ditch deposit (20007). There is a sherd in shell tempered fabric P42 residually present in (19913) that may be of later Iron Age date. The majority of the material, both of fabric and form evidence can be placed within the Middle Iron Age (MIA) period, with some close parallels in form and fabric with West Stow Iron Age Phases I and II (West 1990).

Taphonomy

Table 1 shows the breakdown of the amount of pottery from each trench. It is clear that there are foci of activities around trenches 232 and 233, as well as trenches 306 and 308.

Table 1: Pottery by trench

Trench	Number of sherds	Weight (g)	MNR	RE	BE
100	0.1%	0.2%	-	-	-
139	0.2%	0.1%	-	-	-
166	0.1%	0.4%	-	-	-
169	0.3%	0.2%	-	-	-
180	0.4%	0.1%	-	-	-
188	0.1%	0.0%	-	-	-
193	0.1%	0.1%	-	-	-
199	1.6%	1.1%	-	-	-
200	2.3%	1.4%	-	-	-
226	1.2%	0.5%	-	-	-
232	51.3%	31.9%	20.0%	22.6%	14.3%
233	0.5%	0.1%	-	-	0.0%
240	3.8%	3.0%	6.7%	1.9%	0.0%
301	2.9%	1.8%	6.7%	1.9%	14.3%
306	34.8%	59.1%	66.7%	73.6%	57.1%
308	0.1%	0.1%	-	-	14.3%
N	922	9182	15	159	7

Table 2 shows the breakdown of the assemblage by context type. The majority of the material by Number of sherds (Nosh), comes from pits and ditch terminals, with only a small amount coming from ditches. Interestingly there is an under-representation of rim sherds in ditches, and an under-representation of base sherds in pits. Whilst rim sherd sizes are similar in pits and ditch termini overall, sherd size is smaller for pits. The material from the kiln deposit is residual.

This fits with the emerging regional pattern (Mills 2015) of differential deposition of different pottery parts. The preference for discarding ceramics in pits and ditch terminal, rather than ditches are also emerging as a cultural indicators in the Eastern counties.

Table 2: Breakdown of the assemblage by context type

Context type	Nosh%	Wt%	MNR%	RE%	BE%	MSW	MPR
Ditch	5.6%	3.5%	6.7%	1.9%	14.3%	6.25	3.00
Ditch terminus	34.8%	59.1%	66.7%	72.7%	76.4%	16.91	11.20
Gully	1.5%	0.6%	0.0%	0.0%	-	4.00	-
Posthole	2.2%	2.3%	6.7%	1.9%	-	10.50	3.00
Pit	52.6%	32.7%	20.0%	23.4%	9.4%	6.19	12.00
Hearth	1.6%	0.7%	0.0%	0.0%	-	4.13	-
Kiln debris	1.6%	1.1%	0.0%	0.0%	-	6.67	-
N/Avg	922	9182	15	154	203	9.96	10.27

The pottery is too widely distributed to break down context type by trench, but it is interesting to note that the material from Trenches 232 and 30 are very similar in character, and largely contemporary, but the material from Trench 232 derives from pits and from Trench 30 from ditch terminals.

Supply

The breakdown of the assemblage by ware class is shown in Table 3 and Table 4. The main class present is Class P, material in the Iron Age tradition, with a small amount of possibly Roman material.

Table 3: Quantification of the pottery by fabric

Fabric Code	Main inclusion	No%	Wt%	MNR%	RE%	BE%	MSW	MPR
O00	Sand	0.2%	0.1%	-	-	-	3.00	-
P01	Find Sand	0.2%	0.1%	-	-	-	5.00	-
P03	Coarse sand	3.6%	1.8%	-	-	4.4	5.12	-
P11	Organics	1.5%	1.0%	6.7%	2.6%	-	6.79	4.00
P12	Organics; Ironstone	1.7%	1.0%	-	-	-	5.63	-
P22	Grog	0.1%	0.1%	-	-	-	12.00	-
P33	some flint	0.3%	0.2%	20.0%	9.1%	-	7.00	4.67
P34	Abundant flint	90.1%	94.6%	73.3%	88.3%	95.6%	10.45	12.36
P41	Fine Shell	0.7%	0.2%	-	-	-	3.33	-
P42	Common Shell	1.5%	0.8%	-	-	-	5.50	-
N/Avg	-	922	9182	15	154	203	9.96	10.27

Class O, Roman oxidized wares

This class is used for Roman oxidized fabrics. Only two possible body sherds in this class, both from ditch deposit (20007). They were fairly soft with an irregular fracture and common medium sand temper.

Class P, Iron Age Tradition

The full fabric descriptions are given in Appendix 2. The fabrics are grouped by main inclusion type.

Table 4: Summary of Iron Age pottery by context

Trench	Context type	Context	Spotdate	Number of sherds	Weight (g)
100	Ditch	10005	Middle Iron Age	1	14
139	Pit	13905	Middle Iron Age	2	13
166	Pit	16606	Middle Iron Age	1	36
169	Gully	16912	Middle Iron Age	3	14
180	Pit	18007	Middle Iron Age	4	13
188	Ditch	18805	Middle Iron Age	1	3
193	Ditch	19309	Middle Iron Age	1	7
199	Pottery kiln	19913	Middle Iron Age	15	100
200	Ditch	20007	Middle Iron Age	21	128
226	Gully	22604	Middle Iron Age	11	42
232	Pit	23208	Middle Iron Age	5	18
232	Pit	23210	Middle Iron Age	36	227
232	Pit	23212	Middle Iron Age	432	2688
233	Pit	23311	Middle Iron Age	5	7
240	Posthole	24007	Middle Iron Age	1	5
240	Posthole	24010	Middle Iron Age	19	205
240	Hearth/Oven	24013	Middle Iron Age	15	62

301	Ditch	30113	Middle Iron Age	27	162
306	Terminus	30610	Middle Iron Age	69	663
306	Terminus	30611	Middle Iron Age	140	2598
306	Terminus	30612	Middle Iron Age	112	2166
308	Ditch	30811	Middle Iron Age	1	11

Function

There were 15 rim sherds, of which 60% were jars, 7% were storage jars and 33% were bowls. This suggests a range of activities that include some form of social display.

Discussion

This is a modest assemblage of mainly middle Iron Age pottery. Functionally it could reflect domestic material, although the number of bowls hints at perhaps a slightly higher status site than a lone farmstead. The deposition of the material is interesting as it is clearly reflecting a larger regional pattern of deliberate sorting of material before deposition as well as a much higher level of material being deposited in pits and termini than in ditches, which is the case further to the west. The larger assemblages in pits and termini are perhaps best considered as structured deposits but are presumably related to separate activities and events.

The main fabric present is flint-tempered, common in Iron Age Suffolk, but not so common to the west, in Cambridgeshire. The other fabrics present are however noted in the wider region.

6.3 Medieval and post-medieval pottery by Paul Blinkhorn

The pottery assemblage comprises 355 sherds with a total weight of 4,688g. It was almost entirely of 12th – 13th-century date. The following fabric types were noted:

- GRE: Glazed Red Earthenware, 16th – 19th centuries (Brears 1969). 1 sherd, 402g.
- HEDC: Hedingham Coarseware, 12th – 14th centuries (Walker 2012, 33). 231 sherds, 2313g.
- HEDF: Hedingham Ware, 12th – 14th centuries (Cotter 2000, 75). 18 sherds, 512g.
- MEDG: Medieval Sandy Greywares, late 12th – 14th centuries (ibid. 91). 81 sherds, 1166g.
- MOD: Miscellaneous 19th and 20th century wares. 3 sherds, 4g.
- MSS: Shelly-Sandy wares, 12th-13th centuries (Blackmore and Pearce 2010). 7 sherds, 144g.
- SHEL: Medieval Shelly Ware, 1100-1400 (McCarthy 1979). 9 sherds, 88g.
- SNW: St Neots Ware, c. AD900-1200 (Denham 1985). 1 sherd, 33g.

In addition, residual material was present in the form of three sherds of prehistoric pottery (23g) and a single sherd of Romano-British (3g). The pottery occurrence by number and weight of sherds per context by fabric type is shown in Appendix 4. Each date should be regarded as a *terminus post quem*. The range of fabric types is fairly typical of sites in the region, with the wares present indicating that the bulk of activity dates to the 12th and 13th centuries. Well-known late medieval (15th – 16th century)

wares were entirely absent. Nearly all the vessel types present were jars, bowls, and jugs, with the first-named dominating the assemblage. This is entirely in keeping with assemblages of such date. A bodysherd from context (19715) is from a large vessel with thumbled applied strip decoration, and fairly heavy internal sooting. It seems likely to be a fragment of a curfew (fire-cover), another vessel type known from the early medieval period.

The earliest medieval pottery from the site was the single sherd of SNW, a rimsherd from a jar from context (25607). The sherd is in Denham's T1(2) fabric (ibid 1985), and thus of 11th or 12th-century date. The rim diameter is fairly large for such vessels (c.170mm), which is also in keeping with the later products of the St Neots Ware tradition. The medieval shelly ware (SHEL) is a product of the industries on the Northamptonshire/Bedfordshire border, and occurs throughout the south-east midlands.

Most of the HEDF glazed assemblage consists of highly-decorated jugs of 13th-century type, such as the complete rim with bridge-spout and strap-handle terminal from a Rouen-style jug (Cotter 2000, 86) from context (30313), and a fragment of a stamped strip jug with the same stamp as a vessel from Colchester (Cotter 2000, fig. 50.20) in context (25610). The latter dates to AD1225 – 1300 (ibid. 86). A twisted rod handle, a type usually found on stamped strip style jugs (ibid. 81), occurred in context (19113).

Most of the assemblage is in fairly good condition, and the sherds fresh and unabraded. Some vessels are very well-represented, such as a partially complete MEDG jar in context (19226). It is clearly the product of primary deposition, and the assemblage as a whole indicates that is very likely that there was fairly substantial medieval occupation in the immediate vicinity of these excavations.

A complete catalogue of medieval pottery can be found in Appendix 4.

6.4 Ceramic building material by *Pat Chapman*

Roman roof tile

There is one *tegula* roof tile sherd, weighing 375g, from (30811) ditch [30812]. It is made with very hard fine dark sandy orange clay, the surface is black. The body is 25mm thick, the flange rises 30mm above the body and is 25mm thick with a flat top.

Other roof tile

This comprises 21 small sherds, weighing 743g, 20 from flat roof tiles (Table 5). Eighteen sherds are made from sandy to coarse sandy orange or dark orange clay with occasional small gravel/flint and calcareous inclusions; one sherd is made from coarse red sandy clay and one sherd is made with fine sandy orange clay.

The few largest sherds are no more than 70x70mm, some are small fragments. Ten measurable tiles are 11-15mm thick, and one is 20mm thick with a wide grey core; two sherds have traces of white lime mortar adhering to surfaces. One sherd, from fill (16903) ditch [16904], is most likely from a small ridge tile. It is made with fine white clay, is 9mm thick and has a probable base diameter of c80mm.

There are no diagnostic features on the tiles, such as pegholes or nibs, but their overall character suggests a late medieval to early post-medieval date.

Table 5: Quantification of ceramic roof tile

Fill / cut / type	Number	Weight (g)	Description
905 / 906 / ditch	1	82	12mm, sandy orange
1904 / 1905 / ditch	1	81	14mm, sandy dark orange
15303 / 15304 / drain	1	5	Fragment, sandy orange
15305 / 15306 / ditch	1	58	11mm thick, sandy orange
15703 / subsoil	1	26	15mm thick, coarse red sand
16103 / 16104 / ditch	2	5	Sandy orange fragments
16903 / 16904 / ditch	3	50	2x sandy orange fragments Ridge type, fine silty white, 9mm thick
19219 / 19220 / ditch	2	157	15mm thick, coarse sandy orange
19309 / 19310 / ditch	1	6	Fragment sandy orange
23206 / 23207 / ditch	2	22	12mm thick coarse sandy orange
23310 / 23312 / pit	1	6	Fragment, coarse sandy orange
24004 / 24006 / ditch	1	65	13mm thick, fine sandy orange, white mortar
30802 / subsoil	1	60	12mm thick sandy orange
30806 / ditch	2	75	15mm sandy orange, white mortar; fragment
30215 / 30216 / ditch	2	90	2x sandy orange: 1x 11-12mm thick and 1x20mm thick, grey core
Totals	21	743	-

Brick

There are 14 brick fragments of varying sizes, weighing 1724g. The fabric is similar to those of the tiles, dark orange sandy clay or coarse dark red sandy clay. The two largest and measurable pieces, from (15303) drain [15304] and (30802) subsoil, have been over-fired to a degree and have blackened surfaces. The former is 110mm wide by 50mm thick ($4\frac{3}{8}$ x 2 inches), the latter is 60mm thick ($2\frac{3}{8}$ inches), neither has a frog. Five are small fragments similar in fabric; six small pieces from KDG050 (27205), comprise one from a modern brick and five silty orange and buff from old handmade bricks.

These are most likely locally made bricks from the late 18th century to the early 20th century.

Table 6: Quantification of brick

Fill / cut / type	No	Wt(g)	Description
8204/ 8205 / drain	1	40	Fragment, sandy dark orange
15303 / 15304 / drain	1	1170	110x50mm-broken, sandy, red, some black, overfired, no frog
16910 / ditch	1	11	Dark red coarse sandy fragment
19119 / 19120 / ditch	1	14	Orange sandy
19204 / 19207 / ditch	1	14	Orange sandy
27205 / 27206 / pit	7	110	1x tiny modern brick fragment 6x silty sandy orange and buff roughly mixed old brick frags
30802 / subsoil	2	405	1x 60mm thick, dark orange-red, no frog 1 fragment slightly black
Totals	14	1724	-

Fired clay

These 89 pieces of fired clay weigh 466g, comprising, in part, 59 tiny irregular fragments, typically made with sandy orange-brown clay with frequent small gravel, flint and calcareous material, very sparsely scattered.

However 30 fragments, from three contexts, appear to have a structural origin. From fill (19913) kiln [19917] there are 25 pieces of various sizes, the largest 40x40x40mm, some with flat surfaces where they might have been smoothed over, all made with buff to orange fine sandy clay with frequent small gravel, flint and calcareous material. From fills (30610) and (30611) of ditch terminus [30613] five hard black fragments with orange-brown flat and curved surfaces were recovered.

Table 7: Quantification of fired clay

Fill/cut	No	Wt(g)	Description
10004 / 10005 / ditch	5	1	Fragments
10604 / 10605 / ditch	5	9	Fragments
12804 / 12805 / gully	1	4	Fragment
15303 / 15304 / drain	1	5	Cindery fragment
15403 / 15404 / gully	1	11	Fragment
16003 / subsoil	2	5	Fragment
18804 / 18805 / treebole	8	6	Fragments
19004 / 19005 / ditch	1	5	Fragment
19229 / 19231 / pit	15	23	Small fragments
19312 / 19313 / treebole	3	28	Small fragments
19913 / 19917 / kiln debris	29	212	25 fragments, flat surfaces 1-(T133) fragment; 3-(T199) fragments
21917 / 21918 / posthole	5	10	Fragments
25609 / 25610 / pit	6	14	Fragments
25804 / 25806 / pit	1	5	Fragment
29725 / 29731 / pit	1	8	Fragment
30610 / 30613 / ditch	4	85	Roughly smoothed flat and curved surfaces
30611 / 30613 / ditch	1	35	Roughly smoothed surface
Totals	89	466	

6.5 Other Finds by Tora Hylton

A small group of medieval and post-medieval finds were recovered. In total 33 objects of copper alloy (x 3) and iron (x 30) were recovered from 14 trenches. The majority of finds (x 26) were recovered from the fills of linear features, while the remainder (x 7) were located in topsoil and subsoil deposits overlying the trenches. Chronologically the earliest datable finds were recovered from the trenches sited to the east of the area of excavation (Trenches 190,192, 193, 207, 232, 302, 303) and post-medieval finds were recovered from trenches lying to the north-west (22, 53, 93) and south-west (135, 153, 177). The assemblage is dominated by iron nails; these making up over half the assemblage (x 21), of these, eight are medieval horseshoe nails. The remaining finds are primarily undiagnostic fittings and fragments.

Table 8: Small finds by functional category

Functional category	Medieval	Post-medieval	Undated
Personal Possessions			
Dress accessories	1	-	-
Equipment and furnishings			
Nails	6	7	-
Misc equipment	-	-	1
Horse equipment			
Buckle frame	-	1	-
Horseshoe nails	8	-	-
Miscellaneous and unidentified			
Copper alloy	-	1	1
Iron	1	1	5
Total	16	10	7

Medieval finds

The only datable medieval finds are eight horseshoe nails and a copper alloy pin. In addition an iron ring and six structural nail fragments were recovered from medieval deposits.

With the exception of two stratified horseshoe nails from Trenches 191 [19113] and 304 [30402], all were recovered from topsoil/subsoil deposits overlying Trenches 303 and 304. There are two complete examples, measuring up to 42mm in length, both are clenched indicating that they have been used. The nails have been classified on the basis of the head shape, two types have been identified; five fiddle key nails and three nails with a T-shaped head. The latter type is thought to be a well-worn fiddle-key nail (Clark 1995, 86). Horseshoe nails of this type would have been used with a distinctive style of horseshoe which has a sinuous wavy outline, a "Norman-shoe". The wavy outline is created during the punching of the ovoid/rectangular countersinking's and circular/rectangular nail holes. Horseshoes of this type date to the 11th-12th centuries.

Part of a copper alloy pin, SF 24, was recovered from subsoil (30302). Typologically it represents a wound wire-headed pin with a head formed from a tightly wound spiral of wire which has been clamped to form a sphere. The earliest examples are known from 13th and 14th century contexts (cf. Caple 2005, 359-60).

Other iron objects include a large annular ring, SF 20, which was recovered from the fill of a ditch [30215]. The ring has a circular cross-section and measures 70mm x 65mm. Such objects could have had any number of uses, from harness fittings to fastenings for chains etc.

Post-medieval

With the exception of seven post-medieval nails, other finds worthy of note include an iron buckle frame and a copper alloy ring. The buckle frame, SF43, was recovered from the fill of a ditch [17703], it is rectangular with a sub-circular cross-section, 50mm x 38mm, and stylistically represents the type of buckle frame used to secure straps on horse tack etc. The copper alloy ring was recovered from the fill of a ditch [19204]. It has a plano-convex cross-section and it measures c.30mm in diameter. It is possible that this is an eyelet (pers. com. Ian Meadows), for making a small round hole in an item of leather or cloth for threading a lace, string, or rope through.

6.6 Querns by Andy Chapman

Features in Trench 191, the fill (19133) of pit [19134]; Trench 192, the fill (19243) of ditch [1942]; and Trench 199, the fill (19913) of possible kiln [19917], all contained numerous small abraded fragments of lava, typically measuring 10mm-40mm diameter, and characteristically light grey and highly vesicular, to a total weight of 655g. This material is all likely to be derived from broken-up lava querns or millstones.

Lava querns and millstones imported from the Eifel region of Germany, near the French border, were in widespread use through the Roman and Anglo-Saxon periods. Use declined in the late Saxon period, as other stone types rose to prominence, particularly the use of Millstone Grit, but some use of lava stone continued for following the Norman Conquest.

6.7 Slag by Andy Chapman

In Trench 153, the fill (15303) of a post-medieval drain [15304] produced 509g of light and vesicular fuel ash slag, with some fired clay adhering to the surface, and including a couple of pieces of shale/coal, possible remains of the fuel for firing. Fuel ash slag is indicative of high-temperature burning, but not of any specific cause. A further two small pieces of similar material, weighing 8g, came from the fill (15305) of ditch [15306].

In Trench 192, the fill (19225) of ditch [19226], dated to the 12th century, produced 385g of undiagnostic ferrous slag, perhaps derived from smithing. The fill (19204) of ditch [19205] produced two small pieces, weighing 122g, of lighter and less dense fuel ash slag, but perhaps still related to the ferrous slag from the nearby feature.

6.8 Stone by Susan Porter

Three large fragments of stone were recovered from deposit (19126), the uppermost fill deposit of medieval ditch [19129]. Two of the stones are reddish in colour, possibly burnt, whilst the third is a flatter squared fragment of limestone. The smallest of the pieces weighs 802g and is very slightly dished along one side, 110mm long by 90mm wide and 40mm in depth. It is possibly worked although more likely worn by natural processes as it lacks the smooth sheen of a whetstone. The opposing side is slightly curved as if for a corner, although again does not appear worked. The second of the red stones is larger, weighing 1973g and measuring 160mm long by 130mm wide and 90mm deep. The stone is curved around two sides with the appearance of a structural corner stone; however, it lacks evidence of working and is likely to be a large cobble of natural origin. The flattened limestone fragment measures 120mm wide by 100mm long and 30mm deep with a weight of 771g. The stone is roughly square but the wear is suggestive of natural processes rather than use as flooring.

A large fragment of volcanic stone with fossilized shell inclusions was recovered from deposit (19611), the primary deposit of medieval ditch [19112]. For its size the piece is light weighing 908g, and measuring 130mm wide by 150mm long and 30mm deep. The edges of the stone are worn, however there is no indication of working and it seems likely that the stone has travelled through natural processes, likely via fluvial processes.

A large fragment of limestone was recovered from pit [23209] deposit (23212). The pit is considered to be Iron Age in date. The limestone fragment is large measuring 160mm by 140mm and 50mm in depth with a weight of 1610g. Flint and shell inclusions are clearly visible and the upper surface is smooth whilst the lower is

heavily pitted suggesting the previous presence of pebbles. Although the corners are sharp, the fragment appears unworked.

The stones were collected from site as possible building material remains and as the composition were not native to the area. However, none demonstrate signs of having been worked and it must be considered that they have arrived on site through natural process, such as river travel or glaciation.

6.9 **Animal bone** by Matilda Holmes

Background

The sample of recovered animal bone was too small to be worth further analysis as a stand-alone assemblage. However, a mention of the taxa present should be included in any reports.

Methods

All bones and teeth were recorded, although for some elements a restricted count was employed to reduce fragmentation bias: vertebrae were recorded when the vertebral body was present; maxilla, zygomatic arch and occipital areas of the skull were identified from skull fragments. A basic recording method was employed to assess the potential of the animal bone assemblage. The number of bones and teeth that could be identified to taxa were noted, as were those that could be used to age the major domesticates (tooth wear and bone fusion). The quantity of bones likely to be used for metrical data was also recorded. Other information included condition (good, fair or poor) and the incidence of gnawing, burning and butchery marks. All fragments were recorded by context, although articulated or associated fragments were entered as a count of 1 so they did not bias the relative frequency of species present. Fragments that could not be identified to taxa were not included, and fragments that could be conjoined were recorded as a single bone. Recording methods and analysis are based on guidelines from Baker and Worley (2014).

Summary of findings

Bones were in poor to fair condition, with very few incidences of butchery or gnawing recorded – possibly due to the eroded surfaces of many of the bones. A single burnt fragment was recovered.

No associated bone groups or discrete deposits of bone working or butchery waste were observed. Eighty bones could be identified to taxa, of which cattle and sheep/goat were the most common, then horse, with occasional finds of pig and cat (Table 9).

Potential and significance

Only hand collected bones were available for analysis, so bones and teeth from small mammals, birds and fish may be under-represented. The poor condition of the assemblage further means that the more friable bones from younger animals, as well as bone surface modifications such as butchery and gnaw marks will also be less likely to survive. Despite the small sample size, a number of bones have the potential to provide fusion data, with fewer available for tooth wear or biometrical analysis (Table 10).

The size of the assemblage falls below the recommended 100 fragments for even a basic analysis to be worthwhile (Davis 1987). Quantification of such a small sample would be unreliable to draw conclusions regarding economy or diet, or to be used as comparanda with other sites.

Recommendations

Further analysis is not recommended at this stage, although if future excavations are carried out in the area then this assemblage should be included with any new zooarchaeological remains that may be recovered. A basic quantification (such as Table 9) should be included with any report or publication of the site so that a record of the material is available.

Table 9: Species representation (nisp)

Taxa	Total
Cattle	31
Sheep	37
Pig	2
Horse	9
Cat	1
Total	80

Table 10: Number of bones and teeth with potential for the recovery of ageing (tooth wear and eruption and bone fusion) and metrical data

Potential Data	Cattle	Sheep	Pig
Mandible and tooth wear	1	2	1
Fusion	16	8	
Measurable	4	7	1

6.10 Charred plant macrofossils by Val Fryer (forthcoming)

The charred plant remains analysis will be inserted here in due course.

7 DISCUSSION

The evaluation has demonstrated that the north-western part of the development area, comprising Fields 3, 4, 5 and 6 contained a low level of archaeological remains, primarily comprising intrusive post-medieval and modern activity.

Likewise, the eastern part of the site, comprising Fields 18, 20 and the easternmost part of Field 21, appear devoid of archaeological remains. Significant archaeological activity of Iron Age date appears to have taken place within the central area of the site in Iron Age Areas 1, 3 and 4, with more sporadic activity of this date in Iron Age Areas 2 and 5. Activity of medieval date is again centrally focussed on the site, primarily in Medieval Areas 2 and 3, with some activity to the north in Medieval Area 1. To the south lay medieval open fields (Medieval Area 4).

Post-medieval and modern activity was distributed across the area sampled by the trenches, and took the form of cut features such as hedgerows. These were generally visible on the geophysical survey.

Archaeological features mostly comprised ditches, with a small number of pits and postholes, as well as a single hearth (Trench 240), possible post-built structures (Trenches 219 and 295) and kiln (Trench 199).

A large number of undated linear features were observed across the site. Almost without exception, the features detected by the geophysical survey reflected field boundaries of post-medieval/ modern date, most of which are visible on the Ordnance Survey maps of 1881 and 1905. In addition to the ridge and furrow in Medieval Area 4, a number of cultivation channels, likely to be medieval ridge and furrow, were also detected by the survey within Field 16, to the west of Medieval Area 3.

7.1 Prehistoric

A number of worked flints recovered from the site indicate limited Neolithic and Bronze Age activity; however, none of the excavated features could be securely tied to these early phases of activity.

7.2 Middle Iron Age

Occupation and activity in the Iron Age seems dominated by pottery of Middle Iron Age date, with nothing conclusively early or later Iron Age recovered from features. The pottery assemblage comprises domestic forms; however, is of a nature suggestive of a higher status occupation rather than a lone farmstead. Iron Age activity appears focussed around the centre of the site with concentrations in Iron Age Areas 3 (Field 8), 1 (Field 16) and 2 (Field 17), and further activity in 5 (Fields 13 and 14) and 4 (Field 21).

Iron Age Area IA1 (Field 16)

A small concentration of Iron Age activity was recorded within Trenches 188, 193, 199 and 200. Ditches in Trenches 188 and 193 may have formed an enclosure for the kiln located within Trench 199. No trace of slag was revealed within the excavated Iron Age features, however, the presence of 122g of fuel ash slag in an undated ditch in Trench 192 may be related. The kiln itself takes the form of a rectangular feature with several fill deposits, the uppermost of which were ashy and contained debris suggestive of a roof collapse. Over 100g of Middle Iron Age pottery was recovered from this layer.

There was a ring ditch identified by the geophysical survey. This was targeted by Trench 200 and two curving ditches, believed to be the opposing arms of the ring

ditch, were excavated and recorded. Middle Iron Age pottery was recovered. Although no postholes were encountered, it is possible that the Area contained a small building surrounded by a ring ditch, with a further enclosure around the area of the kiln denoting a small area of Iron Age industrial activity.

Iron Age Area IA2 (Field 17)

Trench 240 in IA2 contained evidence for a structure of probable Iron Age date in the form of a hearth and two postholes. The hearth contained pottery and oyster shell, suggesting a domestic rather than industrial use and implying the presence of at least one structural dwelling of Iron Age date. Two pits of Middle Iron Age date lay to the north (Trenches 232 and 233), with a single gully oriented north-east to south-west, slightly further to the north in Trench 226. This may be a possible field boundary.

Iron Age Area IA3 (Field 8)

A linear ditch of probable prehistoric date was recorded aligned north-east to south-west through Trenches 108, 110 and 112. This was undetected by the geophysical survey and may be related to two similarly undetected ditch features to the south in Trenches 115 and 116, and the north in Trenches 100 and 106, which together may be interpreted to form part of an Iron Age field system. Further to the south, an undated ditch observed in Trench 131 (Field 12) lay parallel to the ditch. This would indicate perhaps an extensive prehistoric field system lying to the west within unexcavated Fields 7, 9 and 10.

Iron Age Area IA4 (Field 21)

A second field system of prehistoric date may be present where parallel and transverse ditch features containing Iron Age pottery were encountered.

Iron Age Area IA5 (Field 14)

A number of pits of Iron Age date were recorded in the south western part of the site.

Iron Age summary

In summary the Iron Age occupation seems to occur in small pockets of activity with possible field systems, a small possible dwelling and a possible small industrial dwelling or work area in the southern central area. No indication of prehistoric activity was observed to the north and west of the site, which seems consistent with the increased presence of Bronze and Iron Age dated features previously recorded to the south of the development area.

7.3 Roman

Roman activity is represented by a single fragment of *tegula* roof tile recovered from an undated ditch in Trench 308 in Area IA4. However, as medieval activity is present in this area, it seems likely that the tile is residual. A small assemblage of Romano-British pottery was noted, but it appears residual as part of a larger medieval assemblage in the vicinity of Trenches 191-193.

7.4 Medieval

Medieval activity of 12th- to early 13th-century date appears to have been concentrated in the south-eastern part of the site, with a number of ditches corresponding to those detected by the geophysical survey. In total, twelve ditches and eight pits can be attributed to the 12th - early 13th centuries, with a single ditch

containing residual pottery of 11th-century date. This probably represents medieval agricultural activity; field boundaries and pits.

Medieval Area M1

This comprised a small area of activity in four trenches. Only one trench produced a significant density of archaeology, including ditches and pits. The pottery produced a wide date range from the 11th to 13th century, which indicates that this area was peripheral, probably agricultural, activity.

Medieval Area M2

There were a number of parallel and transverse linear features, probably part of a medieval field-boundary system. In this area, the medieval activity is sufficiently clustered to suggest that it is associated with Little Wilsey moated site.

Medieval Area M3

A dense concentration of ditches within Field 16 were in part detected by the geophysical survey and may have formed a series of small enclosures through Trenches 190-193 with more ditches observed within Trench 197. The activity in this area, and dispersed activity in Fields 8 and 12, is likely to be associated with the landscape of Wilsey Hall Manor during the 12th century.

Medieval Area M4

Within Fields 14, and to a lesser extent also Fields 12 and 13, a series of cultivation channels oriented north-east to south-west lying between 1.50-2m apart were recorded. The channels lie within an area that can be identified as being a single field encompassing Trenches 134-143 and 166-180. This covers a clearly rectangular area and may therefore be considered as a single large field for cultivation of probable 12th-century date, comprising ridge and furrow type agricultural practice. As this space lies between the area of the two manor houses, it is possible that this represents common ground or rented agricultural land between the manors.

Medieval summary

The medieval pottery recovered from the site implies a substantial settlement within the immediate environs of the site, which tallies with the location of both Wilsey Manor Hall and Little Wilsey moated site. The total absence of late medieval pottery is perhaps consistent with an abandonment of Wilsey Hall Manor, which was known to be owned by Gilbert de Clare in the early 12th century, but is not mentioned again until the 16th century when there seem to have been frequent changes in ownership, before the building was replaced in the 17th century.

Overall the medieval landscape appears to be that of farm and pasture land either associated with, or owned by, the moated sites of Wilsey Hall Manor located close to the centre of the site and the unscheduled Little Wilsey moated site located to the south-east of the site boundary, with a possible area of common ground ridge and furrow agriculture taking place to the south.

7.5 Undated features

Within Trench 219 at the southern extent of Field 22, a series of six postholes on a broadly north-south alignment with a parallel ditch were observed. Both postholes and ditch remain undated; however, it is possible to suggest that the postholes formed a palisade or similar structure to the ditch, which may have been an enclosure

or boundary. Alternatively, the remains of a post-built structure may have been truncated away by a later ditch.

7.6 Post-medieval and modern

Features of post-medieval and modern date were located across the site with most of the ditches detected by the geophysical survey. These features comprised field boundaries such as the hedgerow aligned north-west to south-east observed through Trenches 9, 33 and 35 within Field 3. This boundary is visible on the 1881 and 1905 Ordnance Survey maps

A right-angled boundary ditch within Field 4 was oriented broadly north to south through Trenches 37, 39, 40, 47 and 50, before turning through 90° to run east to west through Trenches 56 and 55. This was also seen on the Ordnance Survey maps of 1881 and 1905. A second post-medieval or modern boundary probably crossed Fields 4 and 5 through Trenches 51, 45, 77, and 79, before turning to the south through Trenches 82 and 88. Pottery recovered from deposits within Trenches 79 and 82 was of modern date. The parts of these two probable boundary ditches aligned east-west may be observed to form a driveway through Field 4, visible as linear parallel anomalies on the geophysical survey.

Most of the linear features detected by the geophysical survey reflect field boundaries visible on the Ordnance Survey maps of 1881, 1905 and 1928. Most appear to have fallen out of use as boundaries by the time of the 1972 Ordnance Survey map. Earlier post-medieval activity of 17th century date is likely to have been associated with the replacement of Wilsey Hall Manor and the siting of Great Wilsey Farm.

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APPENDIX 1: DESCRIPTION OF IRON AGE POTTERY BY FABRIC

Sand Inclusions

- P01** This fabric was represented by a single body sherd, from ditch (20007).
- P03** This fabric, with much coarse sand than P01 is the second most common fabric on the site at 4%.
- P03/1 This is a well finished fragment of a flat base with out-curving 7mm thick wall sherd. Ditch (30811) 1 sherd, 11g, BD = 150mm , BE = 9%. Iron Age

Organic Inclusions

- P11** This fabric has common large organic voids. It comprises some 2% of the assemblage. There is a single jar rim sherd in this fabric.
- P11/1 A rim fragment from a globular jar with an everted, slightly outcurving rim, with 8mm thick wall. (Ditch Terminus (30610), 1 sherd, 21g, RD = 150mm, RE = 4%.cf West, S. 1990, fig47 no 112. MIA.
- P12** This fabric has somewhat less organic voids than P11. It is present at 2%, all as body sherds.

Grog Inclusions

- P22** This fabric is only present in small quantities, mainly residually from kiln deposit (19913).

Flint Inclusions

- P33** P33 represents the fine edge of a continuum with P34. Whilst this is only minimally present as part of the assemblage at 0.3% there are two rims, including a complete profile noted in this fabric.
- P33/1 A rim fragment from a jar, 5mm thick, with a straight everted rim squared at the tip. Cxt Ditch Terminus (30610) 2 sherds, 11g, RD= 160mm, RE = 11%. Perhaps c.f. West, S. 1990, fig47 no 111. MIA.
- P33/2 A rim fragment from a jar, 5mm thick, with a straight everted rim slightly rounded at tip. Cxt Ditch Terminus (30610) 1 sherd, 10g, RD= 110mm, RE = 8%.. West, S. 1990, fig47 no 110. MIA.
- P34** This is the most abundant fabric at 90%, and is a common early to middle Iron Age fabric in Suffolk. This represents the coarser end of the range that includes P33.
- P34/1 A large handmade bowl with pronounced shoulder – almost carinated and an everted outcurving rim with pushed down tip with impressed fingertip decoration Terminus (30611) 7 sherds, 163g, Rd= 200mm, RE = 35%. West, S. 1990 Fig 46, 83-86. MIA.
- P34/2 A large handmade bowl with pronounced shoulder with an everted out-curving rim with pushed down tip with impressed fingertip decoration possibly same vessel as P34/1 Terminus (30612) 2 sherds, 115g, Rd = 200mm , RE = 15%. West, S. 1990 Fig 46, 83-86. MIA.
- P34/3 A slack profile jar with finger impressed decoration on slightly rounded shoulder and everted strongly outcurving rim, squared on tip. Pit 23212, 1 sherd, 42g, RD = 160mm RE = 4%. Possibly related to West, S.1990, Fig 46, 83-86. MIA?
- P34/4 A slack profile jar with an everted straight rim slightly pushed down on tip. Pit (23212) No =2, 33g, RD – 150mm, RE = 18%. West, S.1990 Fig 46, no 80, MIA.
- P34/5 A bowl rim fragment, possibly from similar vessel as P34/1 with squared tip and impressed fingertip decoration. Terminus (30612) 1 sherd, 21g, RD = 200mm, RE = 6%. MIA.
- P34/6 A bowl? Rim fragment possibly from a similar vessel to P34/1 with fingertip

and finger nail impressed decoration on pushed down rim tip. Posthole (24010), 1 sherd. 9g, RD = 150mm, RE = 3%, MIA

P34/7 A storage jar, 15mm thick, with rounded shoulders and everted thickening rim flattened at tip. Related to P34/1 forms. Cxt ditch terminus (30612) 1 sherd, 116g, RD = 300mm, RE = 20%

P34/8 A jar with a long everted outcurving rim with thumbled tip. Cxt Pit (23212) 2 sherds, 42g, RD= 150mm RE = 14%. West, S. 1990 Fig 47, no 106. MIA.

P34/9 A jar with a long everted straight rim with slightly thickened tip and slight concavity to internal face. . Ditch terminus (30611) 1 sherd, 11g, RD= 140mm RE = 7%. West, S. 1990 Fig 47, no 105. MIA.

P34/10 A globular bowl(?) with an everted outcurving rim, thickening at tip straight rim with slightly thickened tip and slight concavity to internal face. .Ditch terminus (30611) 1 sherd, 22g, RD= 200mm RE = 8%. West, S. 1990 Fig 47, no 107. MIA.

P34/11 A jar(?) with straight everted rim, with rough external bead..Ditch terminus (30611), 1 sherd, 22g, RD= 150mm RE = 3%. West, S. 1990 Fig 46, no 80. MIA.

P34/12 A jar rim fragment with a squared pushed down tip. Ditch (30113) 1 sherd, 3g, RD- 150mm, RE = 3%.

P34/13 A plain flat jar base. Ditch (30113) 2 sherds, 42g, BD = 200mm BE = 15%.

P34/14 A plain flat jar base. Ditch terminus (30612) 1 sherd, 74g, BD = 150 mm BE = 15%.

P34/15 A flat outturned jar base. Ditch (30113) 1 sherd, 16g, BD = 100mm BE = 25%.

P34/16 A flat outturned jar base. Ditch terminus (30611) 2 sherds, 259g, BD = 100mm BE = 60%.

P34/17 A flat outturned jar base. Ditch terminus (30612) 1 sherd, 135g, BD = 100mm BE = 55%

P34/18 A flat outturned jar base. Pit (23212) 2 sherds, 33g, BD = 110mm BE = 19%

P34/19 Fragment from a lug Handle. Pit (23212) 1 sherd, 33g.

P34/20 Two sherds 10 mm thick with shallow incised lines ditch terminus (30612) 4 sherds, 119g.

P34/21 Two 10 mm thick sherd with shallow incised lines, ditch terminus (30611) 2 sherds, 61g.

Shell Inclusions

P41

This is a Late Iron Age or early Roman fabric and is represented here by body sherds present residually in (19913). There is one sherd with grass impressions on the surface, although it is unclear if this is deliberate.

P41/1 A body sherd with grass and seed impressions on external surface. Cxt Kiln (19913) 1 sherd, 10g.

P42 This fabric has small amount of fine shell. It is present at 2% but is only represented by body sherds.

GREAT WILSEY PARK, HAVERHILL

APPENDIX 2: FULL IRON-AGE POTTERY CATALOGUE

Context	Fabric Code	Drawing	Part	Function	NoSh	Wt	MNR	RE	RD	Base	BD	BE	Handle	Comments
10005	p34	-	Body	-	1	14	0	0	0	-	-	-	-	-
13905	P11	-	Body	-	2	13	0	0	0	-	-	-	-	-
16606	p34	-	Body	-	1	36	0	0	0	-	-	-	-	-
16912	p34	-	Body	-	3	14	0	0	0	-	-	-	-	-
18007	p34	-	Body	-	4	13	0	0	0	-	-	-	-	-
18805	P11	-	Body	-	1	3	0	0	0	-	-	-	-	-
19309	P42	-	Body	-	1	7	0	0	0	-	-	-	-	-
19913	P03	-	Body	-	3	23	0	0	0	-	-	-	-	-
19913	P11	-	Body	-	1	35	0	0	0	-	-	-	-	-
19913	P12	-	Body	-	1	7	0	0	0	-	-	-	-	-
19913	P12	-	Body	-	3	8	0	0	0	-	-	-	-	-
19913	P12	-	Body	-	1	7	0	0	0	-	-	-	-	-
19913	P41	-	Body	-	5	10	0	0	0	-	-	-	-	-
19913	P41	22	Body	-	1	10	0	0	0	-	-	-	-	grass/ seed imp
20007	O00	-	Body	-	2	6	0	0	0	-	-	-	-	-
20007	P01	-	Body	-	2	10	0	0	0	-	-	-	-	-
20007	P11	-	Body	-	4	16	0	0	0	-	-	-	-	-
20007	P12	-	Body	-	3	19	0	0	0	-	-	-	-	-
20007	P12	-	Body	-	8	49	0	0	0	-	-	-	-	-
20007	P42	-	Body	-	2	28	0	0	0	-	-	-	-	-
22604	P42	-	Body	-	11	42	0	0	0	-	-	-	-	-
23208	p34	-	Body	-	5	18	0	0	0	-	-	-	-	-
23210	p34	-	Body	-	36	227	0	0	0	-	-	-	-	-
23212	P22	-	Body	-	1	12	0	0	0	-	-	-	-	-
23212	p34	-	Body	-	13	22	0	0	0	-	-	-	-	-
23212	p34	-	Body	-	410	2482	0	0	0	-	-	-	-	-
23212	p34	1	Base	-	2	33	0	0	0	12	11	19	-	-
23212	p34	2	Body	-	1	22	0	0	0	-	-	-	9	Lug

GREAT WILSEY PARK, HAVERHILL

23212	p34	3	Rim	J	1	42	1	4	#	-	-	-	-	A slack profile jar with everted outcurving rim squared at tip.
23212	p34	4	Rim	J	2	42	1	14	#	-	-	-	-	a hand made slack profile jar with irregular everted outcurving rim
23212	p34	5	Rim	J	2	33	1	18	#	-	-	-	-	A hand made slack profile jar with an everted rim slightly thickened at the tip
23311	P11	-	Body	-	5	7	0	0	0	-	-	-	-	-
24007	p34	-	Body	-	1	5	0	0	0	-	-	-	-	-
24010	p34	-	Body	-	18	196	0	0	0	-	-	-	-	-
24010	p34	27	Rim	b	1	9	1	3	#	-	-	-	-	jar rim fragment thickened squared tip with impressed finger nail decoration
24013	P03	-	Body	-	15	62	0	0	0	-	-	-	-	-
30113	P03	-	Body	-	14	73	0	0	0	-	-	-	-	-
30113	p34	-	Body	-	10	44	0	0	0	-	-	-	-	-
30113	p34	25	Base	-	2	42	0	0	0	12	15	20		-
30113	p34	26	Rim	J	1	3	1	3	#	-	-	-	-	jar rim fragment with squared tip
30610	P11	20	Rim	J	1	21	1	4	#	-	-	-	-	rim fragment from a globular jar with an everted slightly outcurving rim, with 8mm thick wall.
30610	P33	17	Rim	J	1	10	1	8	#	-	-	-	-	everted outcurving rim
30610	P33	18	Rim	J	1	5	1	11	#	-	-	-	-	same vessel as #19
30610	P33	19	Body	J	1	6	0	0	0					18
30610	p34	-	Body	-	62	538	0	0	0	-	-	-	-	-
30610	p34	15	Body	-	2	35	0	0	0					shallow incised decoration
30610	p34	16	Base	-	1	48	0	0	0	50	10	25	-	-
30611	p34	-	Body	-	3	62	0	0	0	-	-	-	-	-
30611	p34	-	Body	-	48	1034	0	0	0	-	-	-	-	-
30611	p34	-	Body	-	75	969	0	0	0	-	-	-	-	-
30611	p34	6	Base	-	2	259	0	0	0	12	10	60	-	-
30611	p34	7	Body	-	2	61	0	0	0	-	-	-	-	slight incised line decoration
30611	p34	8	Rim	b	7	163	1	35	#	-	-	-	-	Carinated ? jar with slightly

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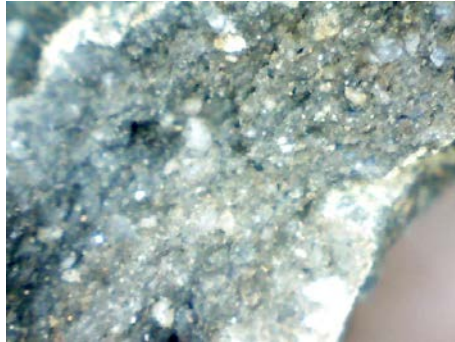
															outcurving im finger tip dec. on rim
30611	p34	11	Rim	b	1	22	1	8	#	-	-	-	-	-	small globular jar with everted rim
										-	-	-	-	-	small jar with slack profile and everted rim outcurving squared at tip
30611	p34	9	Rim	J	1	11	1	7	#	-	-	-	-	-	slack profile with stubby everted rim squared at tip
30611	p34	10	Rim	J	1	17	1	3	#	-	-	-	-	-	everted rim squared at tip
30612	p34	-	Body	-	36	243	0	0	0	-	-	-	-	-	-
30612	p34	-	Body	-	25	456	0	0	0	-	-	-	-	-	-
30612	p34	-	Body	-	23	483	0	0	0	-	-	-	-	-	-
30612	p34	-	Body	-	16	324	0	0	0	-	-	-	-	-	-
30612	p34	12	Body	-	2	70	0	0	0	-	-	-	-	-	slightly incised
30612	p34	23	Body	-	2	43	0	0	0	-	-	-	-	-	incised dec
30612	p34	24	Base	-	2	86	0	0	0	12	-	-	-	-	-
30612	p34	28	Base	-	1	135	0	0	0	11	10	55	-	-	-
30612	p34	29	Base	-	1	74	0	0	0	11	15	15	-	-	-
										-	-	-			A large handmade bowl with pronounced shoulder with an everted out-curving rim with pushed down tip with impressed finger-tip decoration
30612	p34	13	Rim	b	2	115	1	15	#	-	-	-	-	-	everted rim squared at tip
30612	p34	13	Rim	b	1	21	1	6	#	-	-	-	-	-	slack profile everted
										-	-	-			thickening rim flatend on top
30612	p34	14	Rim	SJ	1	116	1	20	#	-	-	-	-	-	-
30811	P03	21	Base	-	1	11	0	0	0	11	15	9	-	-	-

APPENDIX 3: FABRIC DESCRIPTIONS AND ILLUSTRATIONS

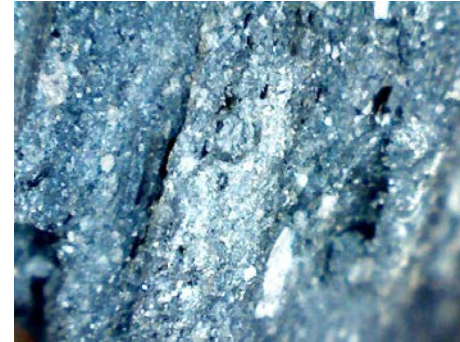
Fabric Code	Description of fabric
P01	A handmade reduced fabric with a black core, and margins and orange-brown or black surfaces, with common fine sand temper c0.2mm and occasional organic voids up to 1mm.
P03	A handmade fabric with a dark grey core and orange to brown surfaces. It is hard with an irregular fracture and a harsh feel. It has common rounded quartz inclusions at 0.4mm and occasional black iron stone at 0.3mm.
P11	A handmade reduced fabric with a black core, margins and surfaces, with common large organic temper voids up to 4mm and some moderate sand c0.3mm.
P12	A handmade reduced fabric with a dark grey core and black surfaces with common fine organic voids and moderate rounded quartz at 0.8mm.
P22	A handmade reduced fabric with a black or brown core and brown margins and surfaces, with a slightly 'soapy' texture, with common angular brown or grey grog c0.3-0.7mm in a clean matrix.
P33	A handmade reduced fabric with a black core, margins and surfaces, with common coarse sand c0.5-1mm and some white flint(?) c1-2mm.
P34	A hand made fabric with a black core and orange to brown surfaces. It is softy with a hard feel and very irregular fracture. It has inclusions of common angular white flint at 0.8 – 1.5mm and common sub rounded sand at 0.4mm.
P41	A handmade reduced fabric with a black core and sometimes thin brown margins and surfaces, with abundant fine shell temper c0.1-1mm and occasional larger shell up to 3mm.
P42	A handmade reduced fabric with a grey core and margins and black surfaces, with some fine shell c0.3-1.5mm.



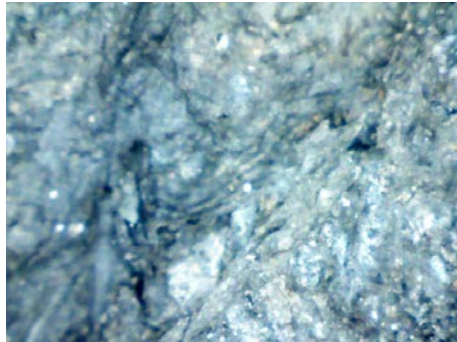
P01 at x 10



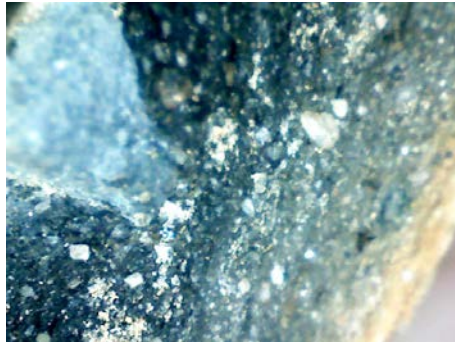
P03 at x 10



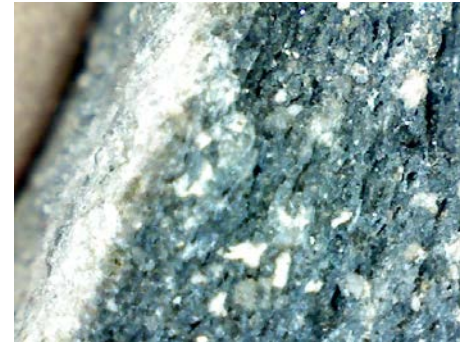
P11 at x 10



P12 at x 10



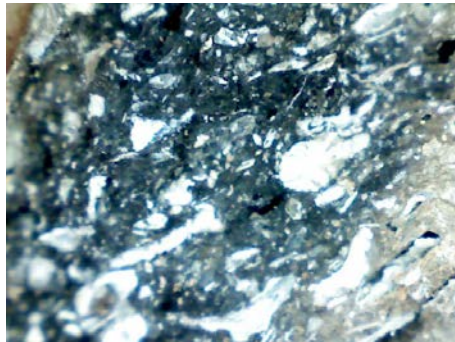
P22 at x 10



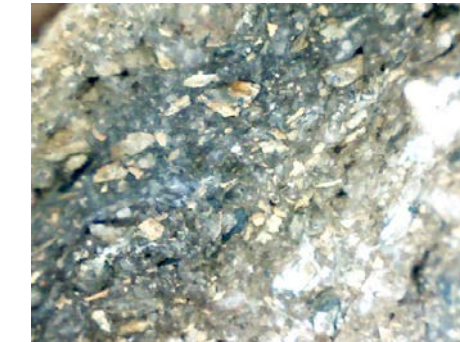
P33 at x 10



PP34 at x 10



P41 at x 10



P42 at x 10

APPENDIX 4: MEDIEVAL AND POST-MEDIEVAL POTTERY*Pottery occurrence by number and weight (in g) of sherds per context by fabric type*

Context	GRE		HEDC		HEDF		MEDG		MOD		MSS		SHEL		SNW		Date
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	
3041*	-	-	7	89	-	-	-	-	-	-	5	129	-	-	-	-	12thC
7907	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	MOD
8204	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	MOD
10606	-	-	1	54	-	-	-	-	-	-	-	-	-	-	-	-	12thC
12804	-	-	4	21	-	-	-	-	-	-	-	-	-	-	-	-	12thC
12806	-	-	1	15	-	-	1	65	-	-	-	-	-	-	-	-	L12thC
15303	1	402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17thC
19106	-	-	2	37	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19108	-	-	1	6	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19110	-	-	8	33	-	-	6	44	-	-	-	-	-	-	-	-	L12thC
19113	-	-	6	194	1	47	-	-	-	-	-	-	1	7	-	-	E13thC
19115	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19126	-	-	28	274	-	-	4	78	-	-	-	-	-	-	-	-	L12thC
19128	-	-	-	-	-	-	1	5	-	-	-	-	-	-	-	-	L12thC
19204	-	-	7	30	-	-	7	30	-	-	1	6	-	-	-	-	L12thC
19208	-	-	31	196	1	2	7	48	-	-	-	-	5	15	-	-	L12thC
19210	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19213	-	-	2	53	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19214	-	-	-	-	-	-	1	47	-	-	-	-	-	-	-	-	L12thC
19215	-	-	13	94	1	7	1	9	-	-	-	-	-	-	-	-	13thC
19216	-	-	3	10	2	5	-	-	-	-	-	-	-	-	-	-	13thC
19219	-	-	4	26	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19225	-	-	37	536	-	-	10	165	-	-	-	-	-	-	-	-	L12thC
19226*	-	-	33	292	1	11	29	544	-	-	-	-	1	37	-	-	L12thC
19229	-	-	8	44	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19230	-	-	3	28	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19234	-	-	-	-	-	-	1	43	-	-	-	-	-	-	-	-	L12thC
19235	-	-	2	9	-	-	1	5	-	-	-	-	1	24	-	-	L12thC
19240	-	-	1	3	-	-	3	15	-	-	-	-	-	-	-	-	L12thC

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19243	-	-	3	22	-	-	3	17	-	-	-	-	-	-	-	-	L12thC
19305	-	-	2	9	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19312	-	-	1	22	6	27	1	4	-	-	-	-	-	-	-	-	L12thC
19314	-	-	1	13	-	-	1	5	-	-	-	-	-	-	-	-	L12thC
19714	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19715	-	-	1	49	-	-	-	-	-	-	-	-	-	-	-	-	12thC
19716	-	-	-	-	-	-	-	-	-	-	-	1	5	-	-	-	12thC
20708*	-	-	1	9	-	-	-	-	-	-	-	-	-	-	-	-	12thC
25607	-	-	-	-	-	-	-	-	-	-	-	-	-	1	33	-	11thC
25610	-	-	4	26	1	9	-	-	-	-	-	-	-	-	-	-	E13thC
28304	-	-	-	-	-	-	1	5	-	-	-	-	-	-	-	-	L12thC
29725	-	-	5	27	-	-	-	-	-	-	-	-	-	-	-	-	12thC
30313	-	-	2	20	4	391	2	31	-	-	1	9	-	-	-	-	13thC
30408	-	-	4	49	-	-	-	-	-	-	-	-	-	-	-	-	12thC
30506	-	-	2	19	1	13	1	6	-	-	-	-	-	-	-	-	L12thC
Total	1	402	231	2313	18	512	81	1166	3	4	7	144	9	88	1	33	

* = residual prehistoric and/or Romano-British sherds also present

APPENDIX 5: SMALL FINDS CATALOGUE

	Context	Type	Dimensions	Description
HVH099				
SF 40	13509	Fill of Ditch	18 x 6mm	Sheet, copper alloy. Very small undiagnostic sheet fragment, one edge with curved profile and other damaged/missing.
SF41	15305	Fill of ditch	Length: 35mm	Nail, iron. Complete, small sub-rectangular head with square-sectioned shank tapered to a point.
SF 42	15303	Fill of drain	Length: 20mm	Nail, iron. Complete, small sub-circular head with square-sectioned shank tapered to a point. Looks like a tack.
			Length incomplete: 30mm	Nail, iron. Incomplete, rectangular-sectioned shank slightly expanding towards top of head.
			Length incomplete 20mm	Nail, iron. Incomplete, shank only. Tapered square-sectioned shank, no head or point.
SF 43	17703	Fill of ditch	50 x 38mm	Two undiagnostic fragments. Buckle frame, iron. Rectangular frame with sub-circular cross-section. Type of buckle which would have been used for straps etc on horses. Post-medieval.
WTL013				
SF 1 (30)	9308	Fill of ditch	64 x 20mm	Perforated strip, iron. Incomplete, one terminal missing. Tapered strip with rectangular cross-section and pointed terminal; small circular perforation 30mm from terminal.
SF 31			Length: 67mm	Nail, iron. Complete. Flat circular head with square-sectioned shank tapered to a point.
			Length: 68mm	Nail, iron. Complete. Flat circular head with square-sectioned shank tapered to a point.
	2204	Ditch	Length incomplete: 32mm	Nail, iron. Incomplete, rectangular-sectioned shank slightly expanding towards top of head. Post-medieval
SF 32	5306	Ditch	Length: 97mm	?pivot fitting, iron. Some sort of modern pivot fitting for machinery. Post-medieval
KDG050				
SF 3	19004	Fill of ditch		Undiagnostic strip, iron. Small strip with rounded terminal (30 x 8mm). Nature of object impossible to determine.
SF 4	19204	fill of ditch	External diameter: 30mm, Internal diameter: 18 mm	Ring fragment, copper alloy. Annular ring with plano-convex cross-section, good patina on external surface. Possibly an eyelet; on one side of the ring the edges have been folded in creating a waisted/notched recess on the inner and outer edges, at the thinnest point there is a shallow transverse groove, indicating that it was attached by thread.

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SF 5	19113	Fill of ditch	Length: 25mm	Horseshoe nail, iron. Incomplete, terminal of shank missing. Worn fiddle key nail, with square sectioned shank.
SF 14	19204	Fill of Ditch	Length incomplete: 70mm	Nail, iron. Incomplete, terminal of shank missing. Heavily encrusted in corrosion products, but appears to represent a flat circular head with square-sectioned shank.
SF 15	19208	Fill of ditch	Length: 35mm	Nail, iron. Incomplete, tapered square-sectioned shank only
SF 16	19312	Fill of ditch	Length incomplete: 22mm	? nail, iron. Incomplete, tapered square-sectioned shank only.
SF17	19314	Fill of ditch	13 x 16mm	Fragment, iron. Small undiagnostic nodule, impossible to identify.
SF 18	20708	Fill of ditch	Length incomplete: 56mm	Nail, iron. Incomplete, head missing. Tapered square-sectioned shank with clenched terminal.
SF 19	23206	Fill of Ditch	Length: 148mm Width: 13mm Th: 4mm	Looped fitting, iron. Incomplete, part of loop missing. Flat rectangular- sectioned strip tapering to circular-sectioned looped terminal.
SF 20	30215	Fill of ditch	70 x 65mm	Ring, iron. Ovoid annular ring with circular cross-section.
SF21	30411	Fill of ditch	Length: 26mm	Horseshoe nail, iron. Incomplete, terminal of shank missing. Worn fiddle key nail, with square sectioned shank.
	30411	Fill of ditch	Length: 34mm	Horseshoe nail, iron. Incomplete, terminal of shank missing. Nail with T-shaped head (heavily worn fiddle key nail), with square sectioned shank.
SF 22	30402	Subsoil	Length: 42mm	Horseshoe nail, iron. Complete. Worn fiddle key nail, with square sectioned shank tapered to a point, with clenched terminal.
	30402	Subsoil		Horseshoe nail, iron. Incomplete, terminal of shank missing. Nail with T-shaped head (heavily worn fiddle key nail), with tapered square sectioned shank. Length: 42mm
	30402	Subsoil		Nail, iron. Incomplete, part of square-sectioned shank only, curved profile. No measurements
SF 23	30406	Fill of ditch	Length: 60mm	Nail, iron. Complete. Small T-shaped head with square-sectioned shank tapered to a point.
SF 24	30302	Subsoil	Length incomplete: 22mm	Pin, copper alloy. Incomplete, terminal of shaft missing. Pin with wound wire head and circular sectioned shaft.
SF 25	30301	Topsoil	Length: 38mm	Horseshoe nail, iron. Complete. Worn fiddle key nail, with square sectioned shank tapered to a point, with clenched terminal.
	30301	Topsoil	Length: 21mm	Horseshoe nail, iron. Incomplete, terminal of shank missing. Worn fiddle key nail with tapered square sectioned shank.
	30402	Subsoil	Length: 16mm	Horseshoe nail, iron. Incomplete, terminal of shank missing. Nail with T-shaped head (heavily worn fiddle key nail), with tapered square sectioned shank.

APPENDIX 6: CONTEXT INVENTORY

The following tables contain detail of the trenches containing archaeology, and are arranged numerically by field number

Fields 3 – 6

Field 3.		Covers trenches 1-36		
Context	Context type	Description	Dimensions	Artefacts/Samples
01	Topsoil	Generally dark grey brown silty clay with occasional stone inclusions	0.20 – 0.50m thick	-
02	Subsoil	Generally light grey brown silty clay with occasional angular stone inclusions	0.10 - 40m thick	-
03	Natural	Generally light grey silty clay, with chalk flecks and dark orange patches	-	-

Trench No.	Length, width & alignment			Depth of natural
28	NW-SE 1.8m x 50m			0.40 – 0.60m
Context	Context type	Description	Dimensions	Artefacts/Samples
2804	Fill of ditch	Firm mid grey brown silty clay with occasional flint and chalk inclusions	1.89m wide 0.80m deep	-
2805	Cut of ditch	Linear U-shaped in profile ditch running east-west	1.89m wide 0.80m deep	-
2806	Fill of [2807]	Fill of land drain		-
2807	Cut of drain	Linear land drain truncates (2804)		-

Field 4.		Covers trenches 37-64		
Context	Context type	Description	Dimensions	Artefacts/Samples
01	Topsoil	Generally mid grey brown silty clay with chalk and flint inclusions	0.29 – 0.45m thick	-
02	Subsoil	Generally light yellow brown silty clay with chalk and flint inclusions	0.20 – 0.90m thick	-
03	Natural	Generally light grey silty clay, with chalk flecks and dark orange patches	-	-

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Trench No.	Length, width & alignment			Depth of natural
45	N-S 1.8m x 50m			0.50m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
4504	Fill of ditch	Firm mid grey brown silty clay with occasional chalk flecks and rounded stones	1.40m wide 0.17m deep	-
4505	Cut of ditch	Linear with steeply sloping sides to a flat base running east-west	1.40m wide 0.17m deep	-

Trench No.	Length, width & alignment			Depth of natural
51	N-S 1.8m x 50m			0.50-0.80m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
5104	Fill of ditch	Firm mid grey brown silty clay with occasional chalk flecks and sub-angular flint	1.19m wide 0.38m deep	-
5105	Cut of ditch	Linear with steep sloping sides to a flat base running ENE-WSW	1.19m wide 0.38m deep	

Trench No.	Length, width & alignment			Depth of natural
59	N-S 1.8m x 50m			0.50m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
5904	Fill of ditch	Firm mid grey brown silty clay with occasional chalk flecks and rounded stones	1.40m wide 0.45m deep	-
5905	Cut of ditch	Linear with steeply sloping sides to a concave base running NW-SE	1.40m wide 0.45m deep	-

Trench No.	Length, width & alignment			Depth of natural
62	N-S 1.8m x 50m			0.60 – 0.66m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
6204	Fill of ditch	Firm mid greyish brown silty clay with small flint and chalk (5%) inclusions	1.20m wide 0.76m deep	-
6205	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	1.20m wide 0.76m deep	-
6206	Fill of ditch	Firm mid greyish brown silty clay with flint and chalk inclusions (5%)	1.10m wide 0.64m deep	-
6207	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	1.10m wide 0.64m deep	-

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Trench No.	Length, width & alignment			Depth of natural
63	E-W 1.8m x 50m			0.41 – 0.60m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
6304	Fill of ditch	Hard mid grey brown silty clay with frequent chalk inclusions	1.25m wide 0.48m deep	-
6305	Cut of ditch	Linear running NE-SW with gently sloping sides to a concave base	1.25m wide 0.48m deep	-

Field 6.		Covers trenches 65-75		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally dark grey brown silty clay with occasional stone inclusions	0.14 – 0.22m thick	-
02	Subsoil	Generally light grey brown silty clay with occasional angular stone inclusions	0.12 – 0.29m thick	-
03	Natural	Generally light brown grey silty clay, with chalk flecks and dark orange patches	-	-

Trench No.	Length, width & alignment			Depth of natural
65	W-E 1.8m x 50m			0.42 – 0.47m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
6504	Fill of ditch	Firm light brown orange grey silty clay with occasional chalk inclusions	1.20m wide 0.13m deep	-
6505	Cut of ditch	Linear running SW-NE with rounded sides sloping to a concave base	1.20m wide 0.13m deep	-
6506	Fill of posthole	Friable dark black greyish brown with charcoal flecks silty clay	0.30m wide 0.10m deep	-
6507	Cut of posthole	Circular in plan posthole with rounded gently curving sides to a U-shaped base	0.30m wide 0.10m deep	-
6508	Fill of pit	Firm light brown grey clay with occasional chalk inclusions	0.65m wide 0.30m deep	-

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Trench No.	Length, width & alignment			Depth of natural
67	N-S 1.8m x 50m			0.44 – 0.48m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
6704	Fill of pit	Firm light greyish blue and orange clay with occasional charcoal flecks and small stone inclusions	1.00m wide 0.37m deep	-
6705	Cut of pit	Circular in plan pit with steep sides to a flat base	1.00m wide 0.37m deep	-

Trench No.	Length, width & alignment			Depth of natural
69	N-S 1.8m x 50m			0.40 – 0.46m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
6904	Fill of ditch	Firm mid brown greyish blue silty clay with occasional chalk inclusions	1.70m wide 0.33m deep	-
6905	Cut of ditch	Linear with steeply sloping sides to a concave base running NW-SE	1.70m wide 0.63m deep	-
6906	Fill of ditch	Firm light grey clay	0.83m wide 0.08m deep	-
9607	Fill of ditch	Firm light brown orange clay with charcoal flecks	0.72m wide 0.22m deep	-

Trench No.	Length, width & alignment			Depth of natural
75	N-S 1.8m x 50m			0.36 – 0.43m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
7504	Fill of ditch	Firm light brown grey slay with occasional chalk inclusions	1.10m wide 0.20m deep	-
7505	Cut of ditch	Linear with gently sloping sides to a flat base running SW-NE	1.10m wide 0.20m deep	-

Field 5.		Covers trenches 76-98		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally mid brown grey silty clay with chalk inclusions	0.20 – 0.40m thick	-
02	Subsoil	Generally light yellow brown silty clay with occasional angular stone and chalk inclusions	0.15 – 0.50m thick	-
03	Natural	Generally light grey silty clay, with chalk flecks and dark orange patches	-	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
80	W-E 1.8m x 50m			0.50 – 0.60m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
8004	Colluvium	Orangey sand towards the east end of trench	-	-
8005	Fill of pit	Firm mid greyish brown silty clay	0.56m wide 0.14m deep	-
8006	Fill of pit	Firm dark grey brown silty clay with occasional chalk flecks	0.74m wide 0.19m deep	-
8007	Cut of pit	Sub-circular in plan, V-shaped in profile pit with rounded base filled by 8005 and 8006	0.92m wide 0.22m deep	-

Trench No.	Length, width & alignment			Depth of natural
81	E-W 1.8m x 50m			0.40 – 80m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
8104	Fill of pit	Firm dark grey brown silty clay with occasional charcoal flecks	1.00m wide 0.19m deep	Flint
8105	Cut of pit	Sub-circular in plan pit with moderately sloping sides to a flat base truncated by [8108]	1.00m wide 0.19m deep	-
8106	Fill of pit	Firm mid grey brown silty clay with occasional charcoal flecks	3.65m wide 0.21m deep	-
8107	Fill of pit	Firm dark grey brown silty clay with occasional flint inclusions	3.25m wide 0.15m deep	-
8108	Cut of pit	Sub-circular in plan pit with moderately sloping sides to a concave base	3.65m wide 0.36m deep	-

Trench No.	Length, width & alignment			Depth of natural
82	E-W 1.8m x 50m			0.60 – 80m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
8204	Fill of drain	Fill of land drain	-	-
8205	Cut of drain	Cut of land drain	-	-
8206	Fill of ditch	Firm light brown grey clay with 10% flint inclusions	1.50m wide 0.50m deep	-
8207	Cut of ditch	Linear U-shaped in profile ditch running N-S	1.50m wide 0.50m deep	-
8208	Fill of ditch	Firm mid-dark grey brown silty clay with 5% chalk flecks and charcoal	2.00m wide 0.50m deep	Bone
8209	Cut of ditch	Linear with irregular sides to an irregular base ditch	2.00m wide 0.50m deep	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
88	W-E 1.8m x 50m			0.50 – 60m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
8804	Alluvium	Light yellow brown silty sand towards eastern end of trench	-	-
8805	Fill of ditch	Dark grey brown silty clay with chalk flecks	Unexcavated	-
8806	Cut of ditch	N-S oriented Linear	Unexcavated	-
8807	Fill of ditch	Light brown grey silty clay with 5% charcoal flecks	Unexcavated	-
8808	Cut of ditch	Linear ditch profile unknown	Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
89	N-S 1.8m x 50m			0.40 – 70m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
8904	Fill of gully	Firm light yellow brown silty clay with 10% small stone inclusions	0.40m wide 0.08m deep	-
8905	Cut of gully	Linear with steeply sloping sides to a flattened base running E-W	0.40m wide 0.08m deep	-
8906	Fill of gully	Firm light grey brown clay with 10% mixed small stones and iron panning	0.70m wide 0.25m deep	-
8907	Cut of gully	Linear V-shaped in profile gully running NW-SE	0.70m wide 0.25m deep	-

Trench No.	Length, width & alignment			Depth of natural
90	W-E 1.8m x 50m			0.30 – 0.50m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
9004	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.60m wide 0.26m deep	-
9005	Cut of gully	Linear with steeply sloping sides to a broad concave base running NW-SE	0.60m wide 0.26m deep	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
93	N-S 1.8m x 50m			0.54 – 0.75m
Context	Context type	Description	Dimensions	Artefacts/Samples
9304	Fill of ditch	Firm light - mid grey brown silty clay with occasional chalk flecks and rounded stones	1.60m wide 0.44m deep	-
9305	Cut of ditch	Linear with steeply sloping sides to a flat base running NE-SW	1.60m wide 0.66m deep	-
9306	Fill of drain	Fill of field drain	-	-
9307	Cut of drain	Cut of field drain	-	-
9308	Fill of ditch	Firm mid grey brown silty clay with chalk flecks	0.77m wide 0.22m deep	-
9309	Fill of drain	Fill of field drain	-	-
9310	Cut of drain	Cut of field drain	-	-

Field 8.		Covers trenches 99-121		
Context	Context type	Description	Dimensions	Artefacts/Samples
01	Topsoil	Generally mid brown grey silty clay with chalk inclusions	0.20 – 0.40m thick	-
02	Subsoil	Generally light yellow brown silty clay with occasional angular stone and chalk inclusions	0.20 – 0.50m thick	-
03	Natural	Generally light grey silty clay, with chalk flecks and dark orange patches	-	-

Trench No.	Length, width & alignment			Depth of natural
99	NW-SE 1.8m x 50m			0.40 – 0.50m
Context	Context type	Description	Dimensions	Artefacts/Samples
9904	Fill of ditch	Firm mid greyish brown silty clay with 5% chalk inclusions	2.33m wide 0.54m deep	-
9905	Fill of ditch	Firm light greyish brown silty sandy clay with 20% chalk flecks	1.23m wide 0.22m deep	-
9906	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	2.33m wide 0.76m deep	-
9907	Fill of ditch	Mid grey brown silty clay unexcavated	2m wide Unexcavated	-
9908	Cut of ditch	Ditch running NW-SE unexcavated	2.00m wide Unexcavated	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
100	N-S 1.8m x 50m			0.54 – 0.75m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
10004	Fill of ditch	Firm light grey brown silty clay with occasional chalk flecks and flint inclusions	1.25m wide 0.43m deep	CBM
10005	Fill of ditch	Firm mid grey brown silty clay with chalk and charcoal flecks	0.85m wide 0.26m deep	MIA Pottery
10006	Fill of ditch	Firm mixed light grey brown silty clay with moderate chalk flecks and stone inclusions	0.30m wide 0.40m deep	-
10007	Cut of ditch	Linear with steeply sloping sides to flat base, running NW-SE	1.56m wide 0.68m deep	-
10008	Fill of ditch	Firm mid-dark grey brown silty clay with occasional chalk, stone and flint inclusions	0.90m wide 0.56m deep	-
10009	Fill of ditch	Firm mid grey brown silty clay with moderate stone and flint inclusions	1.10m wide 0.28m deep	-
10010	Cut of ditch	Linear, steep sided in profile with flattened base running NW-SE	1.20m wide 0.84m deep	-
10011	Fill of drain	Fill of field drain	-	-
10012	Cut of drain	Cut of field drain	-	-

Trench No.	Length, width & alignment			Depth of natural
106	NE-SW 1.8m x 50m			0.50 – 0.80m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
10604	Fill of ditch	Firm mid greyish brown silty clay	0.83m wide 0.50m deep	-
10605	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	0.83m wide 0.50m deep	-
10606	Fill of gully	Friable mid greyish brown sandy silty clay	0.68m wide 0.12m deep	Pottery 12thC
10607	Cut of gully	Linear U-shaped in profile ditch running NW-SE	0.68m wide 0.12m deep	-

Trench No.	Length, width & alignment			Depth of natural
108	N-S 1.8m x 50m			0.42 – 0.50m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
10804	Fill of ditch	Firm mid grey brown silty clay with occasional chalk flecks and flint inclusions	1.10m wide 0.37m deep	-
10805	Cut of ditch	Linear with steep sloping sides to a concave base running NE-SW	1.10m wide 0.37m deep	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
110	E-W 1.8m x 50m			0.46 – 0.51m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
11004	Fill of ditch	Mid grey brown silty clay	Unexcavated	-
11005	Cut of ditch	Linear running NNE-SSW same as trench 108, 112	Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
111	E-W 1.8m x 50m			0.38 – 0.47m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
11104	Fill of ditch	Firm mid grey brown silty clay with 3% chalk flecks	1.30m wide 0.25m deep	-
11105	Fill of ditch	Compact mixed grey brown with grey patches clay with %5 flint and chalk fleck inclusions	0.95m wide 0.20m deep	-
11106	Cut of ditch	Linear steep sided in profile ditch with irregular base running NE-SW	1.30m wide 0.45m deep	-

Trench No.	Length, width & alignment			Depth of natural
112	N-S 1.8m x 50m			0.49 – 0.52m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
11204	Fill of ditch	Mid grey brown silty clay with chalk and flint inclusions	Unexcavated	-
11205	Cut of ditch	Linear running NNW-SSE, same as trench 108, 110	Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
115	N-S 1.8m x 50m			0.40 – 0.50m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
11504	Fill of ditch	Firm mid-light greyish brown silty clay with flint and chalk flecks 5%	-	Bone
11505	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	-	-
11506	Fill of ditch	Firm mid grey brown silty clay with occasional chalk flecks	1.24m wide 0.44m deep	Bone
11507	Cut of ditch	Linear with moderate sloping sides in profile to concave base running NW-SE	1.24m wide 0.44m deep	-
11508	Fill of ditch	Light-mid brown silty clay	-	-
11509	Cut of ditch	Linear U-shaped in profile running NW-SE	-	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
116	N-S 1.8m x 50m			0.47 – 0.53m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
11604	Fill of ditch	Mid grey brown silty clay with flint inclusions	Unexcavated	-
11605	Cut of ditch	Linear ditch running NNW-SSE	Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
119	E-W 1.8m x 50m			0.51 – 0.80m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
11904	Fill of ditch	Compact mid dark brown silty clay with 5% stone inclusions	1.10m wide 0.12m deep	-
11905	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	1.10m wide 0.12m deep	-
11906	Fill of ditch	Compact mid dark brown silty clay with 5% stone inclusions	0.70m wide 0.15m deep	-
11907	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	0.70m wide 0.15m deep	-

Field 12.		Covers trenches 122-133		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally dark grey brown silty clay with occasional stone inclusions	0.08 – 0.40m thick	-
02	Subsoil	Generally dark grey brown silty clay more compacted than topsoil with occasional chalk flecks	0.01 – 0.40m thick	-
03	Natural	Generally light brown orange silty clays with chalk flecks throughout	-	-

Trench No.	Length, width & alignment			Depth of natural
122	E-W 1.8m x 50m			0.33 – 0.42m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
12204	Fill of pit	Firm light-mid yellowish grey brown silty clay with small stones	0.37m wide 0.38m deep	-
12205	Cut of pit	Circular in plan, bowl shaped in profile pit with broad base	0.37m wide 0.38m deep	-
12206	Fill	Loose backfill clay and topsoil	-	-
12207	Cut	Modern disturbance	-	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
125	E-W 1.8m x 50m			0.37 – 0.45m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
12504	Fill of ditch	Firm light-mid yellowish grey brown silty clay with gravel and chalk inclusions	0.78m wide 0.28m deep	-
12505	Cut of ditch	Linear bowl shaped in profile ditch running SW-NE	0.78m wide 0.28m deep	-

Trench No.	Length, width & alignment			Depth of natural
126	NE-SW 1.8m x 50m			0.30 – 0.42m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
12604	Fill of pit	Firm dark grey brown silty clay with frequent charcoal inclusions	0.92m wide 0.33m deep	-
12605	Fill of pit	Yellowish to orange brown silty clay	0.60m wide 0.22m deep	-
12606	Fill of pit	Firm black silty clay with copious charcoal	0.34m wide 0.18m deep	-
12607	Cut of pit	Sub-circular in plan, V-shaped in profile pit/ possible terminal	0.92m wide 0.75m deep	-
12608	Fill of pit	Firm mid-light grey brown silty clay with occasional chalk	0.80m wide 0.63m deep	Flint
12609	Cut of pit	Oval in plan, pit with gently sloping sides to a flat base	0.80m wide 0.63m deep	-

Trench No.	Length, width & alignment			Depth of natural
128	NE-SW 1.8m x 50m			0.41 – 0.69m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
12804	Fill of gully	Firm mid greyish brown silty clay with 5% flint and chalk inclusions	2.10m wide 0.58m deep	Pottery 12thC
12805	Cut of gully	Linear, U-shaped in profile gully running E-W	2.10m wide 0.58m deep	-
12806	Fill of gully	Firm mid greyish brown silty clay with 10% flint and chalk inclusions	0.75m wide 0.37m deep	Pottery, L12thC
12807	Cut of gully	Linear, U-shaped in profile gully running E-W	0.75m wide 0.37m deep	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
131	NE-SW 1.8m x 50m			0.50 – 0.60m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
13104	Fill of gully	Firm light-mid grey brown silty clay with chalk inclusions	1.20m wide 0.15m deep	-
13105	Cut of gully	Linear gully with gently curving sides to a flattened base	1.20m wide 0.15m deep	-

Trench No.	Length, width & alignment			Depth of natural
132	NW-SE 1.8m x 50m			0.55 – 0.60m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
13204	Fill of gully	Firm mid greyish brown silty clay with chalk and stone 5% incl.	1.20m wide 0.20m deep	-
13205	Cut of gully	Linear gully with gently sloping sides to a flat base running SW-NE	1.20m wide 0.20m deep	-
13206	Fill of ditch	Firm mid grey brown silty clay with moderate chalk inclusions	1.30m wide 0.44m deep	-
13207	Cut of ditch	Linear, V-shaped in profile ditch running NE-SW	1.30m wide 0.44m deep	-
13208	Fill of gully	Mid grey brown silty clay with flint inclusions	1.20m wide Unexcavated	-
13209	Cut of gully	Linear cut of cultivation channel running NE-SW	1.20m wide Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
134	NE-SW 1.8m x 50m			0.36 – 0.45m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
13404	Fill of gully	Firm mid greyish brown silty clay with 10% chalk and flint inclusions	0.62m wide 0.32m deep	-
13405	Cut of gully	Linear, U-shaped in profile gully running N-S	0.62m wide 0.32m deep	-
13406	Fill of gully	Firm mid greyish brown silty clay with 10% chalk and flint inclusions	0.70m Unexcavated	-
13407	Cut of gully	Cut of cultivation gully running N-S	0.70m wide Unexcavated	-
13408	Fill of gully	Firm mid greyish brown silty clay with 5% stone and chalk	0.75m wide 0.20m deep	-
13409	Cut of gully	Linear U-shaped in profile gully running N-S	0.75m wide 0.20m deep	-
13410	Fill of gully	Firm mid greyish brown silty clay with 5% stone and chalk	0.70m wide Unexcavated	-
13411	Cut of gully	Cut of cultivation gully running N-S	0.70m wide Unexcavated	-

GREAT WILSEY PARK, HAVERHILL

Trench No.	Length, width & alignment			Depth of natural
133	NE-SW 1.8m x 50m			0.50 – 0.70m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
13304	Fill of ditch	Firm mid brown grey silty clay with charcoal flecks and stones		-
13305	Cut of ditch	Linear U-shaped in profile ditch running SW-NE		-

Field 13.		Covers trenches 134-146		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally dark grey brown silty clay with occasional stone inclusions	0.24 – 0.32m thick	-
02	Subsoil	Generally mid grey brown silty clay with occasional chalk flecks	0.06 – 0.29m thick	-
03	Natural	Generally light brown clays with chalk flecks throughout	-	-

Trench No.	Length, width & alignment			Depth of natural
134	NE-SW 1.8m x 50m			0.36 – 0.45m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
13404	Fill of gully	Firm mid greyish brown silty clay with 10% chalk and flint inclusions	0.62m wide 0.32m deep	-
13405	Cut of gully	Linear, U-shaped in profile gully running N-S	0.62m wide 0.32m deep	-
13406	Fill of gully	Firm mid greyish brown silty clay with 10% chalk and flint inclusions	0.70m Unexcavated	-
13407	Cut of gully	Cut of cultivation gully running N-S	0.70m wide Unexcavated	-
13408	Fill of gully	Firm mid greyish brown silty clay with 5% stone and chalk	0.75m wide 0.20m deep	-
13409	Cut of gully	Linear U-shaped in profile gully running N-S	0.75m wide 0.20m deep	-
13410	Fill of gully	Firm mid greyish brown silty clay with 5% stone and chalk	0.70m wide Unexcavated	-
13411	Cut of gully	Cut of cultivation gully running N-S	0.70m wide Unexcavated	-

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Trench No.	Length, width & alignment			Depth of natural
135	W-E 1.8m x 50m			0.40 – 0.46m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
13504	Fill of gully	Firm mid grey brown silty clay with small stones and chalk 5%	0.77m wide 0.27m deep	-
13505	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.77m wide 0.27m deep	-
13506	Fill of gully	Firm mid grey brown silty clay with small stones and chalk 5%	0.70m wide Unexcavated	-
13507	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13508	Fill of ditch	Firm mid grey brown silty clay with small stone and chalk inclusions 5%	1.05m wide 0.33m deep	Fired clay
13509	Cut of ditch	Linear V-shaped in profile ditch running NE-SW	1.05m wide 0.33m deep	-
13510	Fill of gully	Firm mid grey brown silty clay with small stones and chalk 5%	0.70m wide Unexcavated	-
13511	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13512	Fill of pit	Firm dark greyish brown silty clay with flint and chalk inclusions 5%	0.68m wide 0.17m deep	-
13513	Cut of pit	Sub-circular in plan U-shaped in profile pit	0.68m wide 0.17m deep	-
13514	Fill of gully	Firm mid grey brown silty clay with small stones and chalk 5%	0.70m wide Unexcavated	-
13515	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
136	W-E 1.8m x 50m			0.30 – 0.57m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
13604	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m Unexcavated	-
13605	Cut of gully	Cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13606	Fill of gully	Firm mid grey brown silty clay with 1% flint inclusions	0.65m wide 0.19m deep	-
13607	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.65m wide 0.19m deep	-
13608	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-
13609	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13610	Fill of gully	Firm mid greyish brown silty clay	0.55m wide 0.11m deep	-
13611	Cut of gully	Linear, U-shaped in profile gully running NE-SW	0.55m wide 0.11m deep	-
13612	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-

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13613	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13614	Fill of gully	Firm mid greyish brown silty clay with 5% small stone and chalk	0.65m wide 0.20m deep	-
13615	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.65m wide 0.20m deep	-
13616	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-
13617	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13618	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-
13619	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
137	N-S 1.8m x 50m			0.35 – 0.41m
Context	Context type	Description	Dimensions	Artefacts/Samples
13704	Fill of gully	Firm mid grey brown silty clay with chalk flecks	0.70m wide Unexcavated	-
13705	Cut of gully	Cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13706	Fill of gully	Firm mid grey brown silty clay with chalk and gravel inclusions	0.61m wide 0.14m deep	-
13707	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.61m wide 0.14m deep	-
13708	Fill of gully	Firm mid grey brown silty clay with chalk flecks	0.70m wide Unexcavated	-
13709	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13710	Fill of gully	Firm mid greyish brown silty clay with 10% chalk and stone	0.75m wide 0.11m deep	-
13711	Cut of gully	Linear, U-shaped in profile gully running NE-SW	0.75m wide 0.11m deep	-
13712	Fill of gully	Firm mid greyish brown silty clay with occasional chalk flecks 5%	0.62m wide 0.14m deep	-
13713	Cut of gully	Linear V-shaped profile gully running NE-SW	0.62m wide 0.14m deep	-
13714	Fill of gully	Firm mid grey brown silty clay with chalk flecks	0.70m wide Unexcavated	-
13715	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-

Trench No.	Length, width & alignment			Depth of natural
138	E-W 1.8m x 50m			0.36 – 0.40m
Context	Context type	Description	Dimensions	Artefacts/Samples
13804	Fill of gully	Firm mid grey brown silty clay with chalk flecks	0.70m wide Unexcavated	-

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13805	Cut of gully	Cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13806	Fill of gully	Firm mid greyish brown silty clay with chalk and gravel inclusions	0.58m wide 0.11m deep	-
13807	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.58m wide 0.11m deep	-
13808	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-
13809	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13810	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-
13811	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13812	Fill of gully	Firm mid greyish brown silty clay with occasional stone/ flint 5%	0.97m wide 0.11m deep	-
13813	Cut of gully	Linear U-shaped profile gully running NE-SW	0.97m wide 0.11m deep	-
13814	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-
13815	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13816	Fill of gully	Firm mid grey brown silty clay with occasional chalk flecks	0.70m wide Unexcavated	-
13817	Cut of gully	Linear cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
13818	Fill of gully	Firm mid greyish brown silty clay with stone and chalk 3% inclusions	0.67m wide 0.07m deep	-
13819	Cut of gully	Linear, U-shaped in profile running NE-SW	0.67m wide 0.07m deep	-

Trench No.	Length, width & alignment			Depth of natural
139	W-E 1.8m x 50m			0.36 – 0.38m
Context	Context type	Description	Dimensions	Artefacts/ Samples
13904	Fill of pit	Firm mid grey brown silty clay with flint and chalk inclusions	1.72m wide 0.21m deep	-
13905	Fill of pit	Firm dark grey silty clay with small flint and chalk inclusions	1.63m wide 0.32m deep	MIA Pottery, Bone S <14>
13906	Cut of pit	Sub-circular pit U-shaped in profile truncated by [13908]	1.72m wide 0.54m deep	-
13907	Fill of gully	Mid grey brown silty clay with chalk and stone inclusions	Unexcavated	-
13908	Cut of gully	Linear cut of cultivation gully running NE-SW	Unexcavated	-
13909	Fill of gully	Mid grey brown silty clay with chalk, charcoal and stone incl.	Unexcavated	-
13910	Cut of gully	Linear cut of cultivation gully running NE-SW	Unexcavated	-
13911	Fill of gully	Mid grey brown silty clay with chalk and flint inclusions	Unexcavated	-
13912	Cut of gully	Linear cut of cultivation gully running NE-SW	Unexcavated	-

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13913	Fill of gully	Mid grey brown silty clay with chalk and stone inclusions	Unexcavated	-
13914	Cut of gully	Linear cut of cultivation gully running NE-SW	Unexcavated	-
13915	Fill of gully	Mid grey brown silty clay with chalk and stone inclusions	Unexcavated	-
13916	Cut of gully	Linear cut of cultivation gully running NE-SW	Unexcavated	-
13917	Fill of gully	Firm mid grey brown silty clay with flint and chalk inclusions	0.68m wide 0.20m deep	-
13918	Cut of gully	Linear, U-shaped in profile running NE-SW	0.68m wide 0.20m deep	-
13919	Fill of gully	Mid grey brown silty clay with chalk and stone inclusions	Unexcavated	-
13920	Cut of gully	Linear cut of cultivation gully running NE-SW	Unexcavated	-
13921	Fill of gully	Firm mid grey brown silty clay with chalk and gravel	0.57m wide 0.18m deep	-
13922	Cut of gully	Linear U-shaped in profile running NE-SW	0.57m wide 0.18m deep	-

Trench No.	Length, width & alignment			Depth of natural
140	N-S 1.8m x 50m			0.42 – 0.44m
Context	Context type	Description	Dimensions	Artefacts/Samples
14004	Fill of gully	Firm mid grey brown silty clay with chalk flecks	0.70m wide Unexcavated	-
14005	Cut of gully	Cut of cultivation gully running NE-SW	0.70m wide Unexcavated	-
14006	Fill of gully	Firm mid grey brown silty clay with flint and chalk flecks	0.60m wide 0.12m deep	-
14007	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.60m wide 0.12m deep	-
14008	Fill of terminus	Firmly compacted mid brownish grey clayey silt with chalk flecks	0.80m wide 0.24m deep	-
14009	Cut of terminus	Linear, wide shallow U-Shape in profile ditch running NW-SE	0.80m wide 0.24m deep	-
14010	Fill of natural feature	Soft mid greyish brown sandy silty clay with small angular stones	6.10m wide 0.45m deep	-
14011	Fill of natural feature	Firmly compacted mid grey brown silty clay with chalk flecks	4.20m wide 0.25m deep	-
14012	Natural feature	Linear palaeochannel with very wide U-shaped profile running E-W	6.10m wide 0.56m deep	-

Trench No.	Length, width & alignment			Depth of natural
141	N-S 1.8m x 50m			0.40 – 0.50m
Context	Context type	Description	Dimensions	Artefacts/Samples
14104	Fill of gully	Firm mid greyish silty clay with chalk and flint inclusions	0.55m wide 0.12m deep	-

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14105	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.55m wide 0.12m deep	-
14106	Fill of gully	Mid grey brown silty clay with chalk inclusions	Unexcavated	-
14107	Cut of gully	Linear cut of cultivation gully running NE-SW	Unexcavated	-
14108	Fill of gully	Firm mid grey brown silty clay with occasional chalk and gravel	0.49m wide 0.12m deep	-
14109	Cut of gully	Linear U-shaped gully running NE-SW	0.49m wide 0.12m deep	-
14110	Fill of natural feature	Mid grey brown silty clay with stone flint and chalk inclusions	Unexcavated	-
14111	Natural feature	Irregular in plan, natural feature		-

Trench No.	Length, width & alignment			Depth of natural
142	NW-SE 1.8m x 50m			0.40 – 0.42m
Context	Context type	Description	Dimensions	Artefacts/Samples
14204	Fill of gully	Firm mid grey brown silty clay with chalk flecks and flint	0.85m wide 0.28m deep	-
14205	Cut of gully	Linear U-shaped in profile gully running N-S	0.85m wide 0.28m deep	-
14206	Fill of gully	Firm mid brown silty clay with 5% stone inclusions	0.90m wide 0.32m deep	-
14207	Cut of gully	Linear U-shaped in profile gully running N-S	0.90m wide 0.32m deep	-
14208	Fill of gully	Compact mid brown silty clay with stone inclusions	0.90m wide 0.28m deep	-
14209	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.90m wide 0.28m deep	-
14210	Fill of ditch	Firm mid grey brown silty clay with charcoal and flint incl.	1.55m wide 0.60m deep	-
14211	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	1.55m wide 0.60m deep	-
14212	Fill of gully	Compact mid brown silty clay with stone inclusions	Unexcavated	-
14213	Cut of gully	Linear cut for cultivation gully Running NE-SW	0.90m wide Unexcavated	

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Field 14.		Covers trenches 147-180		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally dark grey brown silty clay with occasional stone inclusions	0.10 – 0.30m thick	-
02	Subsoil	Generally mid-light yellow grey silty clay more compacted than topsoil with occasional chalk flecks – subsoil was not observed in all trenches	0.01 – 0.22m thick	-
03	Natural	Generally mid brownish grey to light yellow grey silty clays with chalk flecks throughout	-	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
147	NW-SE 1.8m x 50m		93.679m	0.30 – 0.36m 94.039m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
14704	Fill of ditch	Firm light brownish grey silty clay with moderate chalk inclusions	3.00m wide 0.56m deep	-
14705	Cut of ditch	Linear cut of ditch running NE-SW	3.00m wide 0.56m deep	-
14706	Fill of ditch	Firm light brownish grey silty clay with moderate chalk inclusions	1.15m wide 0.24m deep	-
14707	Cut of ditch	Curvilinear ditch, with gently curving sides to a broad base, running SW-NE	1.15m wide 0.24m deep	-
14708	Fill of gully	Firm light brownish grey silty clay with small chalk inclusions	0.52m wide 0.13m deep	-
14709	Cut of gully	Linear gully with gently sloping sides to a broad base	0.52m wide 0.13m deep	-
14710	Fill of gully	Firm mid grey brown silty clay with occasional chalk inclusions	0.91m wide 0.07m deep	-
14711	Cut of gully	Linear gully with shallow sides to flat base, running E-W	0.91m wide 0.07m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
148	NW-SE 1.8m x 50m		94.792m	0.30 – 0.44m 95.232m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
14804	Fill of ditch	Firm mid brownish grey silty clay with occasional chalk and limestone (1%) inclusions	0.69m wide 0.24m deep	-
14805	Cut of ditch	Linear, U-shaped in profile ditch running E-W	0.69m wide 0.24m deep	-

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Trench No.	Length, width & alignment			Depth of natural
149	NE-SW 1.8m x 50m		93.045m	0.27 – 0.38m 93.425m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
14904	Fill of ditch	Firm mid grey brown silty clay with chalk inclusions	0.80m wide 0.40m deep	-
14905	Cut of ditch	Linear, steep sided gully with flat base running E-W	0.80m wide 0.40m deep	-

Trench No.	Length, width & alignment			Depth of natural
150	NE-SW 1.8m x 50m		95.284m	0.26 – 0.37m 95.654m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
15004	Fill of ditch	Firm light brownish grey silty clay with chalk and manganese	0.80m wide 0.34m deep	-
15005	Cut of ditch	Linear ditch with gently curving sides and broad base running E-W	0.80m wide 0.34m deep	-
15006	Fill of pit	No details	0.40m wide 0.12m deep	-
15007	Cut of pit	No details	0.40m wide 0.12m deep	-
15008	Fill of pit	No details	0.30m wide 0.14m deep	-
15009	Cut of pit	No details	0.30m wide 0.14m deep	-
15010	Fill of pit	No details	0.40m wide 0.06m deep	-
15011	Cut of pit	No details	0.40m wide 0.06m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
151	NW-SE 1.8m x 50m		95.443m	0.25 – 0.30m 95.743m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
15104	Fill of ditch	Firm light brown yellow silty clay with manganese and chalk flecks	0.76m wide 0.30m deep	-
15105	Cut of ditch	Linear, U-shaped in profile ditch running SW-NE	0.76m wide 0.30m deep	-
15106	Fill of drain	Firm mid greyish brown silty clay with chalk inclusions	0.28m wide 0.40m deep	-
15107	Cut of drain	Modern linear drain, V-shaped in profile running SW-NE	0.28m wide 0.40m deep	-
15108	Fill of ditch	Firm mid brownish grey silty clay with chalk and manganese incl.	1.15m wide 0.40m deep	-
15109	Cut of ditch	Linear V-shaped in profile ditch running SW-NE	1.15m wide 0.40m deep	-

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15110	Fill of pit	Firm mid brownish grey silty clay with chalk and manganese incl.	1.30m wide 0.50m deep	-
15111	Cut of pit	Circular in plan pit with gently sloping sides to broad base.	1.30m wide 0.50m deep	-
15112	Fill of ditch	Firm light brownish grey silty clay with stone and chalk inclusions	1.08m wide 0.50m deep	-
15113	Cut of ditch	Linear V-shaped in profile ditch running N-S	1.08m wide 0.50m deep	-
15114	Fill of ditch	Firm dark greyish brown silty clay with chalk and charcoal incl.	0.98m wide 0.33m deep	-
15115	Cut of ditch	Linear ditch with gently sloping sides to a flat base running NE-SW	0.98m wide 0.33m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
152	NE-SW 1.8m x 50m		94.361m	0.33 – 0.34m 94.701
Context	Context type	Description	Dimensions	Artefacts/Samples
15203	Fill of gully	Compact grey with hints of brown clay with charcoal and stone incl.	0.50m wide 0.21m deep	-
15204	Cut of gully	Curving linear with curved sides to a rounded base gully running N-S	0.50m wide 0.21m deep	-
15205	Fill of ditch	Firm mid yellow brown clay with occasional chalk and charcoal flecks	1.20m wide 0.34m deep	-
15206	Cut of ditch	Linear U-shaped in profile ditch running N-S	1.20m wide 0.34m deep	-

Trench No.	Length, width & alignment		Surface height, W end (aOD)	Depth of natural
153	NW-SE 1.8m x 50m		96.229m	0.24 – 0.29m 96.519m
Context	Context type	Description	Dimensions	Artefacts/Samples
15303	Fill of drain	Firm dark brown grey silty clay	Unexcavated	Pottery 17thC
15304	Cut of drain	Linear likely sewer pipe from which ceramic pipe recovered	Unexcavated	-
15305	Fill of ditch	Firm dark grey brown silty clay with frequent chalk and charcoal	2.16m wide 0.63m deep	Bone, Slag, CBM
15306	Cut of ditch	Linear ditch with moderately steep sides to wide flat base	2.16m wide 0.63m deep	-
15307	Fill	Firm mid-light greyish brown silty clay with 1% chalk and charcoal	1.04m wide 0.16m deep	-
15308	Cut	Linear in plan cut of modern disturbance with gently curving sides and broad base	1.04m wide 0.16m deep	-
15309	Fill of ditch	Firm mid grey brown silty clay with occasional charcoal and small stones	0.85m wide 0.39m deep	Bone, SF1
15310	Cut of ditch	Linear U-shaped in profile ditch with flattened base running N-S	0.85m wide 0.39m deep	-

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15311	Fill of ditch	Firm light brown grey silty clay with stone inclusions	0.77m wide 0.24m deep	-
15312	Cut of ditch	Linear U-shaped in profile ditch running N-S	0.77m wide 0.24m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
154	NE-SW 1.8m x 50m		96.222m	0.25m 96.472m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
15403	Fill of gully	Firm mid-light brownish grey silty clay with chalk inclusions	0.67m wide 0.15m deep	Bone, CBM
15404	Cut of gully	Linear ditch with gently sloping sides to broad base running N-S	0.67m wide 0.15m deep	-
15405	Fill of posthole	Firm light brownish orange silty clay with manganese flecks	0.22m wide 0.07m deep	-
15406	Cut of posthole	Circular in plan posthole U-shaped in profile	0.22m wide 0.07m deep	-
15407	Fill of ditch	Firm mid greyish brown silty clay with frequent chalk inclusions	2.40m wide 0.70m deep	-
15408	Cut of ditch	Linear steep sided ditch with broad base running NW-SE	2.40m wide 0.70m deep	-
15409	Fill of pit	Firm dark grey brown silty clay with frequent chalk	2.00m wide 0.38m deep	-
15410	Cut of pit	Irregular circle in plan with irregular profile pit	2.00m wide 0.38m wide	-

Trench No.	Length, width & alignment		Surface height, NNE end (aOD)	Depth of natural
156	NE-SW 1.8m x 50m		96.119m	0.32 – 0.36m 96.479m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
15604	Fill of ditch terminus	Firm mid grey brown silty clay with occasional chalk flecks	0.60m wide 0.15m deep	-
15605	Cut of ditch terminus	Linear ditch with shallow sides and concave base running E-W	0.60m wide 0.15m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
157	NW-SE 1.8m x 50m		95.947m	0.30 – 0.43m 96.377m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
15704	Fill of ditch	Firm mid brown grey silty clay with chalk flecks	0.50m wide 0.43m deep	-
15705	Cut of ditch	Linear with moderate sloping sides to a concave base running NE-SW	0.50m wide 0.43m deep	-
15706	Fill of drain	Firm dark grey brown silty clay with chalk and stone inclusions	0.62m wide 0.18m deep	-

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15707	Cut of drain	Cut of modern land drain	0.62m wide 0.18m deep	-
15708	Fill of gully	Firm mid grey brown silty clay with chalk flecks and stone incl.	0.40m wide 0.18m deep	-
15709	Cut of gully	Linear with moderate sloping sides to a concave base running NW-SE	0.40m wide 0.18m deep	-
15710	Fill of 15710	Mottled grey brown silty clay with chalk flecks and stone incl.	0.70m wide 0.21m deep	-
15711	Root disturbance	Irregular cut of root disturbance	0.70m wide 0.21m deep	-

Trench No.	Length, width & alignment		Surface height, WNW end (aOD)	Depth of natural
162	NW-SE 1.8m x 50m		95.985m	0.21 – 0.26m 96.245m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
16203	Fill of ditch	Firm mid greyish brown silty clay with occasional manganese flecks	0.86m wide 0.24m deep	-
16204	Cut of ditch	Linear ditch with gently curving sides to broad base running N-S	0.86m wide 0.24m deep	-
16205	Fill of ditch	Firm light brownish grey silty clay with frequent chalk inclusions	1.17m wide 0.45m deep	-
16206	Cut of ditch	Linear U-shaped in profile ditch running N-S	1.17m wide 0.45m deep	-
16207	Fill of gully	Firm mid brown grey silty clay with occasional charcoal flecks	1.00m wide 0.43m deep	-
16208	Cut of gully	Linear gully with moderately sloping sides to concave base running N-S	1.00m wide 0.43m deep	-
16209	Fill of drain	Firm mid brownish grey silty clay with frequent stone inclusions	0.42m wide 0.49m deep	-
16210	Cut of drain	Linear V-shaped in profile drain cut running N-S	0.42m wide 0.49m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
163	NE-SW 1.8m x 50m		95.599m	0.27 – 0.29m 95.889m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
16303	Fill of pit	Firm mid grey brown silty clay with chalk and manganese incl.	1.10m wide 0.19m deep	-
16304	Cut of pit	Irregular circle in plan pit with asymmetrical sides and broad base	1.10m wide 0.19m deep	-

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Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
166	NE-SW 1.8m x 50m		92.980m	0.32 – 0.46m 93.440m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
16604	Fill of gully	Firm, mid grey brown silty clay with chalk and flint inclusions	0.65m wide 0.18m deep	-
16605	Cut of gully	Linear V-shaped in profile cultivation gully running NNE-SSW	0.65m wide 0.18m deep	-
16606	Fill of pit	Firm mid grey brown clay with charcoal and chalk inclusions	2.10m wide 0.38m deep	MIA Pottery S7
06607	Cut of pit	Sub-circular in plan pit with wide V-shaped profile	2.10m wide 0.38m deep	-
16608	Fill of gully	Firm mid grey brown silty clay with chalk and flint inclusions	0.65m wide 0.20m deep	-
16609	Cut of gully	Linear U-shaped in profile cultivation gully running NNE-SSW	0.65m wide 0.20m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
167	WNW-ESE 1.8m x 50m		93.875m	0.25 – 0.30m 94.175m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
16704	Cut of gully	Compact mid brown silty clay with chalk and stone inclusions	0.72m wide 0.24m deep	-
16705	Fill of gully	Linear U-shaped in profile cultivation channel running NE-SW	0.72m wide 0.24m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
168	NW-SE 1.8m x 50m		95.282m	0.32 – 0.40m 95.682m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
16803	Fill of gully	Firm mid greyish brown silty clay	-	-
16804	Cut of gully	Linear cultivation gully	-	-
16805	Fill of pit	Firm mid brown red clay with charcoal inclusions	0.35m wide 0.15m deep	-
16806	Cut of pit	Sub-circular pit with wide U-shaped profile	0.35m wide 0.15m deep	-
16807	Fill of ditch	Firm mid grey brown silty clay with chalk and flint inclusions	0.80m wide 0.33m deep	-
16808	Cut of ditch	Linear V-shaped in profile ditch running E-W	0.80m wide 0.33m deep	-
16809	Layer	Mid orange brown silty clay interface layer	-	-

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Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
169	NE-SW 1.8m x 50m		95.966m	0.25 – 0.30m 96.266m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
16903	Fill of ditch	Firm mid brownish grey silty clay with magnesium flecks	5.05m wide 0.51m deep	-
16904	Cut of ditch	Linear ditch with gently sloping sides to broad base running NW-SE	5.05m wide 0.51m deep	-
16905	Fill of ditch	Firm light grey brown silty clay with chalk flecks	1.90m wide 0.80m deep	-
16906	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	1.90m wide 0.80m deep	-
16907	Fill of gully	Firm mid yellow brown silty clay with chalk inclusions	0.65m wide 0.15m deep	-
16908	Cut of gully	Linear gully with gentle gradient sides to concave base running E-W	0.65m wide 0.15m deep	-
16909	Fill of ditch	Firm mid brown silty clay with charcoal inclusions	0.80m wide 0.16m deep	-
16910	Cut of ditch	Linear ditch with gently curving sides to broad base running N-S	0.80m wide 0.16m deep	-

Trench No.	Length, width & alignment			Depth of natural
170	N-S 1.8m x 50m		95.837m	0.30 – 0.34m 96.177m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17003	Fill of ditch	Firm dark brownish grey silty clay with occasional charcoal flecks	-	Bone
17004	Cut of ditch	Linear U-shaped in profile gully running NW-SE	-	-
17005	Fill of gully	Dark reddish brown silty clay	Unexcavated	-
17006	Cut of gully	Linear gully running NE-SW	Unexcavated	-
17007	Fill of gully	Firm light yellowish brown silty clay with occasional charcoal and stone inclusions	0.86m wide 0.16m deep	-
17008	Cut of gully	Linear gully with gently curving sides to broad base running NE-SW	0.86m wide 0.16m deep	-
17009	Fill of gully	Firm mid yellowish brown silty clay with stone and chalk incl.	0.75m wide 0.17m deep	-
17010	Cut of gully	Linear gully with gently curving sides to a broad base running NE-SW	0.75m wide 0.17m deep	-
17011	Fill of ditch	Firm mid brown grey silty clay with chalk inclusions	-	-
17012	Cut of ditch	Linear V-shaped in profile ditch running E-W	-	-

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Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
171	NE-SW 1.8m x 50m		94.342m	0.39 – 0.41m 94.752m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17103	Fill of gully	Firm mid grey brown silty clay with chalk and flint inclusions	0.47m wide 0.11m deep	-
17104	Cut of gully	Linear U-shaped in profile gully running N-S	0.47m wide 0.11m deep	-
17105	Fill of gully	Dark reddish brown silty clay with stone, flint and chalk incl.	1.20m wide Unexcavated	-
17106	Cut of gully	Linear cultivation gully running N-S	1.20m wide Unexcavated	-
17107	Fill of gully	Dark greyish brown silty clay with stone inclusions	0.80m wide Unexcavated	-
17108	Cut of gully	Linear cultivation gully running N-S	0.80m wide Unexcavated	-
17109	Fill of gully	Compacted light-mid brown silty clay with chalk inclusions	0.90m wide 0.35m deep	-
17110	Cut of gully	Linear U-shaped in profile ditch running E-W	0.90m wide 0.35m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
172	NE-SW 1.8m x 50m		92.464m	0.28m 92.744m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17204	Fill of gully	Compact light-mid brown silty clay with charcoal flecks	1.50m wide 0.21m deep	-
17205	Cut of gully	Linear cultivation gully with shallow sides to flat base running N-S	1.50m wide 0.21m deep	-
17206	Fill of treebole	Compact mid-dark brown silty clay with chalk flecks	-	-
17207	Cut of treebole	Roundish in plan with curved sides to rounded base	-	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
173	NW-SE 1.8m x 50m		94.384m	0.37 – 0.40m 95.240m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17304	Fill of gully	Compact light-mid brown silty clay with chalk flecks	0.75m wide 0.11m deep	-
17305	Cut of gully	Linear gully with gently sloping sides to flat base running NNE-SSW	0.75m wide 0.11m deep	-

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Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
174	NW-SE 1.8m x 50m		92.827m	0.36 – 0.42m 93.247m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17404	Fill of ditch	Firm dark brown grey silty clay with chalk and flint inclusions	1.20m wide 0.48m deep	-
17405	Cut of ditch	Linear V-shaped in profile ditch running NE-SW	1.20m wide 0.48m deep	-
17406	Fill of gully	Firm mid grey brown silty clay with chalk inclusions <1%	0.70m wide 0.19m deep	-
17407	Cut of gully	Linear U-shaped in profile cultivation gully running NE-SW	0.70m wide 0.19m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
176	NW-SE 1.8m x 50m		96.341m	0.28 – 0.31m 96.651m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17603	Fill of gully	Firm mid grey brown silty clay with chalk and small stone incl.	1.30m wide 0.15m deep	-
17604	Cut of gully	Linear U-shaped in profile cultivation gully running NE-SW	1.30m wide 0.15m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
177	NE-SW 1.8m x 50m		96.820m	0.27m 97.090m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17703	Fill of ditch	Firm mid grey brown silty clay with chalk and small stone inclusions	1.40m wide 0.25m deep	-
17704	Cut of ditch	Linear ditch with moderately sloping sides to flat base running NNE-SSW	1.40m wide 0.62m deep	-
17705	Fill of gully	Firm mid grey brown silty clay with occasional chalk and stone	0.47m wide 0.22m deep	-
17706	Cut of gully	Linear cultivation gully with steep concave sides to flat base running NE-SW	0.47m wide 0.22m deep	-
17707	Fill of ditch	Firm dark grey brown silty clay with chalk and small stone incl.	1.00m wide 0.37m deep	-
17708	Fill of ditch	Firm light grey brown silty clay with chalk flecks and small stones	0.55m wide 0.60m deep	-
17709	Cut of ditch	Linear ditch withj steeply sloping sides running NNE-SSW truncated by [17704]	0.55m wide 0.60m deep	-
17710	Fill of drain	Firm dark grey brown silty clay	0.45m wide 0.37m deep	-
17711	Cut of drain	Linear drain with vertical sides and flat base running NNE-SSW	0.45m wide 0.37m deep	-

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17712	Fill of terminal	Firm light grey brown silty clay with occasional chalk and stones	0.76m wide 0.27m deep	-
17713	Cut of terminal	Linear ditch with steep concave sides to flat base running NNE-SSW	0.76m wide 0.27m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
178	NW-SE 1.8m x 50m		96.854m	0.26 – 0.31m 97.164m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
17803	Fill of gully	Firm mid grey brown silty clay with chalk and small stone incl.	1.00m wide 0.40m deep	-
17804	Cut of gully	Linear cultivation gully with moderate sloping sides to flat base running NE-SW	1.00m wide 0.40m deep	-
17805	Fill of pit	Firm dark grey brown silty clay with chalk flecks and small stones	0.35m wide 0.11m deep	-
17806	Cut of pit	Sub-circular pit with shallow sides and concave base	0.35m wide 0.11m deep	-
17807	Fill of pit	Firm dark grey brown silty clay with flint and chalk inclusions	0.46m wide 0.14m deep	-
17808	Cut of pit	Sub-circular pit, U-shaped in profile	0.46m wide 0.14m deep	-

Trench No.	Length, width & alignment		Surface height, NNE end (aOD)	Depth of natural
179	NE-SW 1.8m x 50m		96.800m	0.25 – 0.26m 97.060m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
19703	Fill of ditch	Firm mid grey brown silty clay with chalk and stone inclusions	2.43m wide 0.13m deep	-
17904	Cut of ditch	Linear U-shaped in profile ditch running N-S	2.43m wide 0.13m deep	-
17905	Fill of ditch	Firm mid grey brown silty clay with chalk and small stone incl.	1.20m wide 0.46m deep	-
17906	Cut of ditch	Linear ditch with moderate sloping sides to flat base running NW-SE	1.20m wide 0.50m deep	-
17907	Fill of ditch	Firm mid greyish brown silty clay with chalk and small stone incl.	1.28m wide 0.22m deep	Modern Pottery
17908	Cut of ditch	Linear U-shaped in profile ditch running SW-NE	1.28m wide 0.22m deep	-
17909	Fill of ditch [17906]	Firm mid-dark grey brown silty clay with occasional small stones	0.73m wide 0.15m deep	-

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Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
180	NE-SW 1.8m x 50m		96.230m	0.24 – 0.30m 96.530m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
18004	Fill of ditch	Firm dark greyish brown silty clay with chalk, stone and flint incl.	2.16m wide 0.62m deep	-
18005	Fill of ditch	Firm light greyish brown silty clay with chalk inclusions	0.30m wide 0.10m deep	-
18006	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	2.30m wide 0.62m deep	-
18007	Fill of pit	Firm dark grey brown silty clay with chalk, charcoal and stone	0.80m wide 0.27m deep	MIA pottery
18008	Cut of pit	Sub-circular pit with moderately sloping sides to concave base	0.80m wide 0.27m deep	-

Field 16.		Covers trenches 181-201		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally mid grey brown silty clay with chalk and flint inclusions	0.24 – 0.47m thick	-
02	Subsoil	Generally firm mid grey brown silty clay with chalk and flint inclusions	0.06 – 0.30m thick	-
03	Natural	Generally light brown orange silty clay, with chalky patches	-	-

Trench No.	Length, width & alignment		Surface height, W end (aOD)	Depth of natural
188	E-S 1.8m x 50m		83.345m	0.35 – 0.44m 83.785m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
18804	Fill of treebole	Firm mixed light brownish grey silty clay with rooting	-	-
18805	Fill of ditch	Firm mixed mid brownish grey sandy clay	0.80m wide 0.60m deep	MIA Pottery
18806	Cut of ditch	Linear U-shaped ditch running NW-SE	0.90m wide 0.60m deep	-
18807	Fill of ditch	Firm mid brownish orange sandy clay	0.25m wide 0.60m deep	-

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Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
190	SE-NW 1.8m x 50m		78.440m	0.30 – 0.50m 78.940m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
19004	Fill of ditch	Friable mid grey brown silty clay with stone and flint inclusions	0.70m wide 0.30m deep	Flint, CBM, iron SF1, 2, 3
19005	Cut of ditch	Linear ditch with steep sloping sides to concave base	0.70m wide 0.30m deep	-

Trench No.	Length, width & alignment		Surface height, NNE end (aOD)	Depth of natural
191	NE-SW 1.8m x 50m		77.992m	0.35 – 0.40m 78.392m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
19104	Fill of pit	Friable mid brown grey silty clay with occasional stone and flint	0.55m wide 0.18m deep	-
19105	Re-cut of pit	Oval in plan pit with steeply sloping sides to flat base	0.55m wide 0.18m deep	-
19106	Fill of pit	Friable mid brown grey silty clay with small stone inclusions	0.10m wide 0.16m deep	Pottery, 12thC
19107	Cut of pit	Sub-circular in plan pit with moderately sloping sides to flat base, truncated by [19105]	0.10m wide 0.16m deep	-
19108	Fill of pit	Friable mid grey brown silty clay with occasional stone and chalk	0.27m wide 0.24m deep	Pottery, 12thC
19109	Cut of pit	Oval in plan pit with moderately sloping sides to flat base	0.27m wide 0.24m deep	-
19110	Fill of pit	Firm mid grey silty clay with occasional flint and stone incl.	0.92m wide 0.22m deep	Pottery, L12thC
19111	Fill of pit	Hard dark red silty clay with frequent limestone inclusions	0.50m wide 0.02m deep	-
19112	Cut of pit	Sub-rectangular in plan pit with gently curving sides and broad base	0.92m wide 0.24m deep	-
19113	Fill of ditch	Firm mid greyish brown with yellow mottling silty clay with flint	0.36m wide 0.18m deep	Pottery E13thC, and bone
19114	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	0.36m wide 0.18m deep	-
19115	Fill of pit	Firm mid greyish brown with yellow mottling silty clay with stone inclusions	0.75m wide 0.35m deep	Pottery, 12thC
19116	Cut of pit	Sub-circular in plan pit with gently curving sides to flat base	0.75m wide 0.35m deep	-
19117	Fill of ditch	Firm mid grey brown silty clay with flint and chalk inclusions	1.95m wide 0.44m deep	-
19118	Fill of ditch	Firm dark brown grey silty clay with moderate chalk and charcoal	0.18m wide 0.08m deep	-
19119	Fill of ditch	Firm light yellow brown silty clay with chalk and flint inclusions	0.55m wide 0.24m deep	Flint, CBM, SF6, 7
19120	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	1.95m wide 0.66m deep	-

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19121	Fill of ditch	Firm mid grey brown silty clay with chalk and charcoal	2.72m wide 0.50m deep	Animal bone
12122	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	2.72m wide 0.50m deep	-
19123	Fill of ditch	Firm light grey brown silty clay with chalk flecks and small stones	0.80m wide 0.48m deep	Pottery, flint, bone, SF8
19124	Fill of ditch	Firm mid reddish brown silty clay with small rounded stones	0.56m wide 0.45m deep	-
19125	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	0.95m wide 0.76m deep	-
19126	Fill of ditch	Firm dark grey brown silty clay with chalk flecks and small stones	1.70m wide 0.51m deep	Pottery, L12thC, SF9
19127	Fill of ditch	Firm mid grey brown silty clay with chalk and small stones	1.80m wide 0.44m deep	-
19128	Fill of ditch	Firm dark grey brown silty clay with chalk and small stones	1.08m wide 0.12m deep	Pottery, L12thC, flint, SF10
19129	Cut of ditch	Linear ditch with steeply sloping sides to flat base running NW-SE	1.80m wide 1.10m deep	-
19130	Fill of ditch	Firm mid grey brown silty clay with chalk flecks and small stones	0.80m wide 0.21m deep	-
19131	Fill of ditch	Firm mid orange brown silty clay with chalk and small stones	0.52m wide 0.34m deep	-
19132	Cut of ditch	Linear ditch with moderate sloping sides running NW-SE	0.80m wide 0.53m deep	-
19133	Fill of pit	Firm mid grey brown silty clay with chalk flecks and stones	1.09m wide 0.24m deep	Slag
19134	Cut of pit	Sub-circular in plan pit with moderate sloping sides	1.09m wide 0.24m deep	-
19135	Fill of ditch	Mid grey brown silty clay with small stone inclusions	1.19m wide 0.40m deep	-
19136	Cut of ditch	Linear ditch running NW-SE	1.90m wide 0.40m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
192	E-W 1.8m x 50m		80.146m	0.51 – 0.60m 80.746m
Context	Context type	Description	Dimensions	Artefacts/Samples
19204	Fill of ditch	Loose mid brown sandy loam with small stone and chalk inclusions	1.42m wide 0.50m deep	Pottery, L12thC, flint, bone, CBM
19205	Fill of ditch	Compact mid brown sandy loam with frequent small stones	0.28m wide 0.03m deep	-
19206	Fill of ditch	Loose mid brownish grey sandy loam	0.28m wide 0.12m deep	-
19207	Cut of ditch	Linear U-shaped in profile ditch running N-S	1.42m wide 0.62m deep	-
19208	Fill of ditch	Firm mid brownish grey sandy loam with stone and chalk incl.	0.89m wide 0.21m deep	Pottery L12thC
19209	Cut of ditch	Linear ditch with gently curving sides to broad base running NE-SW	0.89m wide 0.21m deep	-
19210	Fill of posthole	Firm mid greyish brown sandy clay with moderate flint incl.	0.35m wide 0.13m deep	Pottery, 12thC

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19211	Cut of posthole	Circular in plan posthole U-shaped in profile at base of [19209]	0.35m wide 0.13m deep	-
19212	Fill of gully	Firm light yellowish brown sandy loam with occasional flint incl.	0.52m wide 0.13m deep	Flint
19213	Fill of gully	Firm mid orangey brown sandy loam	0.36m wide 0.10m deep	Pottery, 12thC
19214	Cut of gully	Linear U-shaped in profile gully, running N-S	0.52m wide 0.23m deep	Pottery, L12thC
19215	Fill of ditch	Friable mid brownish grey sandy clay loam with occasional stones	1.63m wide 0.12m deep	Pottery, 13thC, flint, bone
19216	Fill of ditch	Hard mid brown clay with occasional stone inclusions	1.07m wide 0.28m deep	Pottery, 13thC
19217	Fill of ditch	Firm mid brownish orange sand with small stones and charcoal	1.91m wide 0.47m deep	-
19218	Cut of ditch	Linear U-shaped ditch running SW-NE	1.91m wide 0.48m deep	-
19219	Fill of ditch	Firm dark grey brown silty clay with charcoal flecks	0.50m wide 0.40m deep	Pottery 12thC
19220	Cut of ditch	Linear U-shaped ditch running NE-SW	0.70m wide 0.80m deep	-
19221	Fill of ditch	Firm dark brown grey clayey silt with occasional flint inclusions	1.50m wide Unexcavated	-
19222	Cut of ditch	Linear ditch running NE-SW	1.50m wide Unexcavated	-
19223	Fill of gully	Firm mid greyish brown sandy silty clay with chalk and stone incl.	0.37m wide 0.13m deep	-
19224	Cut of gully	Linear ditch with steep sides to flat base running W-E	0.37m wide 0.13m deep	-
19225	Fill of ditch	Firm mid-dark greyish brown silty sandy clay with stone inclusions	1.30m wide 0.26m deep	Pottery, L12thC
19226	Fill of ditch	Firm mid-dark greyish brown silty sandy clay with stone inclusions	0.56m wide 0.22m deep	Pottery, L12thC (residual roman)
19227	Cut of gully	Linear U-shaped ditch running N-S	1.30m wide 0.48m deep	-
19228	Fill of pit	Firm dark greyish brown silty sandy clay with charcoal, chalk and stone inclusions	2.10m wide 0.32m deep	-
19229	Fill of pit	Firm mid-dark greyish brown silty sandy clay with chalk and stone	1.58m wide 0.45m deep	Pottery, 12thC, bone
19230	Fill of pit	Firm mid greyish brown silty sandy clay with stone and chalk	1.10m wide 0.23m deep	Pottery, 12thC
19231	Cut of pit	Oval in plan pit with steeply sloping sides and broad base	2.10m wide 1.06m deep	-
19232	Fill of ditch	Firm dark grey brown silty clay with stone and charcoal flecks	0.65m wide 0.15m deep	-
19233	Cut of ditch	Linear bowl shaped in profile ditch running NE-SW	0.65m wide 0.15m deep	-
19234	Spread	Firm mid grey brown with patches of dark orange silty clay with charcoal and chalk flecks	Unclear 0.20m deep	Pottery, L12thC
19235	Fill of ditch	Firm mid greyish brown silty sandy clay with chalk and stone	1.00m wide 0.24m deep	Pottery, L12thC
19236	Cut of ditch	Linear U-shaped in profile ditch running N-S	1.00m wide 0.24m deep	-

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19237	Fill of posthole	Firm mid greyish brown silty sandy clay with chalk and stone	0.32m wide 0.18m deep	-
19238	Cut of posthole	Circular in plan posthole with U-shaped profile	0.32m wide 0.18m deep	-
19239	Gravel dump	Firm dark orange grey loamy clay with 40% med sized gravel incl.	1.40m wide 0.20m deep	-
19240	Fill of ditch	Firm dark grey brown silty clay with charcoal flecks and stones	1.40m wide 0.30m deep	Pottery, L12thC
19241	Fill of ditch	Firm dark grey brown silty clay with chalk and charcoal flecks	0.70m wide 0.25m deep	-
19242	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	1.40m wide 0.65m deep	-
19243	Fill of ditch	Firm mid grey brown silty clay with charcoal flecks and flint incl.	0.70m wide 0.50m deep	Pottery, L12thC

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
193	SE-NW 1.8m x 50m		80.783m	0.38 – 0.40m 81.183m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
19305	Fill of ditch	Hard mid-dark greyish brown clay loam with charcoal and flint	1.30m wide 0.49m deep	Pottery, 12thC
19306	Cut of ditch	Linear ditch with gently curving sides and broad base running NE-SW	1.30m wide 0.79m deep	-
19307	Fill of pit	Firm mid reddish brown sandy clay loam with occasional flint	0.80m wide 0.35m deep	-
19308	Cut of pit	Sub-circular in plan pit with steep sides to irregular base	0.80m wide 0.35m deep	-
19309	Fill of ditch	Firm mid greyish brown silty clay with charcoal and flint incl.	0.75m wide 0.26m deep	MIA Pottery
19310	Cut of ditch	Linear ditch with gently curving sides to a broad base running NE-SW	0.75m wide 0.38m deep	-
19311	Fill of ditch	Firm light yellowish brown silty clay with charcoal and stone incl.	0.20m wide 0.14m deep	-
19312	Fill of treebole	Firm dark greyish brown silty clay with chalk and small stone incl.	1.47m wide 0.10m deep	Pottery, L12thC
19313	Cut of treebole	Irregular in plan feature with shallow curving sides to broad base	1.47m wide 0.10m deep	-
19314	Fill of ditch	Firm mid greyish brown silty clay with flint and charcoal	0.99m wide 0.32m deep	Pottery, L12thC
19315	Cut of ditch	Linear V-shaped in profile ditch running SW-NE	0.99m wide 0.32m deep	-
19316	Fill of ditch	Firm mid greyish brown silty sandy clay with charcoal and stone inclusions	0.52m wide 0.20m deep	-
19317	Fill of ditch	Firm light-mid greyish brown silty sandy clay with small stone incl.	0.85m wide 0.32m deep	-
19318	Cut of ditch	Linear bowl shaped in profile ditch running N-S	0.85m wide 0.32m deep	-

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Trench No.	Length, width & alignment			Depth of natural
196	N-S 1.8m x 50m		83.782m	0.28 – 0.36m 84.142m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
19604	Deposit	Firm silty clay with stone and flint	2.00m wide	-
19605	Deposit	Firm silty clay glacial wash	2.00m wide	-
19606	Fill of ditch	Firm mid greyish brown silty clay with flint, chalk and small stones	1.20m wide 0.17m deep	-
19607	Fill of ditch	Firm mid grey very silty clay with chalk and flint inclusions 25%	1.16m wide 0.23m deep	-
19608	Cut of ditch	Linear U-shaped in profile ditch running E-W	2.07m wide 0.26m deep	-
19609	Fill of ditch	Firm light greyish brown silty clay with chalk inclusions	1.20m wide 0.30m deep	-
19610	Fill of ditch	Firm mid greyish brown silty clay with occasional small stones	0.88m wide 0.14m deep	-
19611	Fill of ditch	Firm light greyish brown silty clay with occasional chalk flecks	0.76m wide 0.12m deep	Pottery
19612	Cut of ditch	Linear steep sided ditch with flattened base running NW-SE	1.20m wide 0.50m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
197	NW-SE 1.8m x 50m		79.271m	0.55 – 0.68m 79.951m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
19704	Fill of gully	Firm mid greyish brown, silty clay with stone and charcoal incl.	0.52m wide 0.11m deep	-
19705	Cut of gully	Linear ditch with gently curving sides to a broad base running NE-SW	0.52m wide 0.11m deep	-
19706	Fill of pit	Firm mid greyish brown silty clay with charcoal flecks	1.80m wide 0.12m deep	Flint
19707	Cut of pit	Circular in plan pit with curving sides and broad base	1.80m wide 0.12m deep	-
19708	Fill of ditch	Firm mid brown grey silty clay with charcoal and flint flecks	1.70m wide 0.40m deep	-
19709	Fill of posthole	Firm light yellow brown silty clay with <1% small pebble incl.	0.60m wide 0.10m deep	-
19710	Cut of ditch	Linear ditch with steep sides to irregular base running NE-SW	1.70m wide 0.45m deep	-
19711	Fill of pit	Firm dark mixed black/ brown greyish silty clay with stones	0.30m wide 0.38m deep	-
19712	Cut of pit	Circular in plan pit with steep sides to flat base	0.30m wide 0.38m deep	-
19713	Cut of posthole	Circular in plan posthole with straight vertical sides to flat base	0.60m wide 0.10m deep	-
19714	Fill of pit	Firm mid grey brown silty clay with <5% charcoal and chalk	1.00m wide 0.40m deep	Pottery, 12thC, slag, shell, S9
19715	Fill of pit	Very compact light brown yellow with 30% chalk and 10% charcoal	0.85m wide 0.27m deep	Pottery, 12thC

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19716	Fill of pit	Firm light-mid grey brown silty sand with <10% charcoal flecks	0.76m wide 0.33m deep	Pottery, 12thC
19717	Cut of pit	Circular in plan pit with straight sides and flat base	1.00m wide 0.70m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
198	NW-SE 1.8m x 50m		80.146m	0.37 – 0.42m 80.566m
Context	Context type	Description	Dimensions	Artefacts/ Samples
19804	Fill of pit	Friable dark black grey sandy silt with stone and charcoal incl.	1.15m wide 0.20m deep	-
19805	Cut of pit	Circular in plan pit with rounded sides and flat base	1.15m wide 0.20m deep	-
19806	Fill of ditch	Firm light-mid brown grey silty clay with 10% flint flecks	1.00m wide Unexcavated	-
19807	Cut of ditch	Linear ditch running N-S unexcavated	1.00m wide Unexcavated	-
19808	Fill of gully	Firm mid grey silty clay with <1% flint flecks and 10% rooting	0.40m wide Unexcavated	-
19809	Cut of gully	Linear cultivation gully running N-S	0.40m wide Unexcavated	-
19810	Fill of ditch	Firm mid grey brown silty clay with 1% flint flecks and rooting	0.80m wide 0.20m deep	-
19811	Cut of ditch	Linear U-shaped in profile ditch running W-E	0.80m wide 0.20m deep	-
19812	Fill of gully	Firm mid grey silty clay with <1% flint flakes and 10% rooting	0.30m wide 0.20m deep	-
19813	Cut of gully	Linear U-shaped in profile cultivation gully running N-S	0.30m wide 0.20m deep	-
19814	Fill of ditch	Firm mid-dark brown grey silty clay with 30% flint nodules	1.60m wide Unexcavated	-
19815	Cut of ditch	Linear ditch, possible hedgerow oriented N-S	1.60m wide Unexcavated	-
19816	Fill of gully	Firm mid brown grey silty clay with 5% flint flakes	0.60m wide Unexcavated	-
19817	Cut of gully	Linear cultivation gully running N-S	0.60m wide Unexcavated	-
19818	Fill of ditch	Firm dark black greyish sandy silt with small stones and charcoal	-	-
19819	Cut of ditch	Linear ditch with rounded sloping sides to flat base running NW-SE	-	-
19820	Fill of ditch	Firm mid grey brown silty clay with 10% rooting and 1% flint incl.	0.90m wide 0.30m deep	-
19821	Cut of ditch	Linear V-shaped in profile ditch running E-W	0.90m wide 0.30m deep	-

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Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
199	NE-SW 1.8m x 50m		79.428m	0.27 – 0.78m 80.208m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
19904	Fill of ditch	Firm mid grey brown silty clay with 5% charcoal and 1% chalk	0.80m wide 0.62m deep	-
19905	Cut of ditch	Linear U-shaped ditch running E-W	0.80m wide 0.62m deep	-
19906	Fill of ditch	Firm dark brown grey silty clay with 5% rooting and 1% flint incl.	0.80m wide 0.32m deep	-
19907	Cut of ditch	Linear U-shaped in profile ditch running E-W	0.80m wide 0.32m deep	-
19908	Fill of gully	Firm yellow grey silty clay with 5% chalk flecks	0.70m wide 0.20m deep	-
19909	Cut of gully	Linear V-shaped in profile ditch running Sw-NE	0.70m wide 0.20m deep	-
19910	Fill of ditch	Firm mid grey brown silty clay with 1% chalk inclusions	1.50m wide 0.55m deep	-
19911	Fill of ditch	Firm light yellow silty clay with 30% chalk inclusions	0.40m wide 0.17m deep	-
19912	Cut of ditch	Linear steep sides ditch with flattened base running NE-SW	1.50m wide 0.72m deep	-
19913	Fill of kiln	Firm mid-light grey silty clay with 20% charcoal flecks	1.10m wide 0.40m deep	MIA pottery S10
19914	Fill of kiln	Firm dark orange red sandy clay with very infrequent chalk flecks	1.00m wide	S13
19915	Fill of kiln	Firm very dark grey, clay loam with ash and 10% charcoal	-	-
19916	Fill of kiln	Firm mid grey brown silty sandy clay with occasional charcoal	-	-
19917	Cut of kiln	Sub-rectangular U-shaped in profile kiln, long axis runs NW-SE	-	-

Trench No.	Length, width & alignment			Depth of natural
200	NW-SE 1.8m x 50m		81.213m	0.34 – 0.39m 81.603m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
20004	Fill of ditch	Firm mid black greyish brown sandy silty clay with charcoal and small stones	0.72m wide 0.40m deep	Pottery, flint
20005	Fill of ditch	Firm mid yellowish brown sandy silt	0.28m wide 0.32m deep	-
20006	Cut of ditch	Linear ditch with steep sides and irregular base running S-N	1.30m wide 0.67m deep	-
20007	Fill of ditch	Firm mid greyish brown silty clay with stone and charcoal inclusions	1.18m wide 0.43m deep	MIA Pottery, flint, bone S1
20008	Cut of ditch	Linear U-shaped in profile ditch running S-N	1.18m wide 0.43m deep	-
20009	Fill of drain	Firm dark black greyish brown sandy silt with charcoal and stone	0.34m wide 0.28m deep	-
20010	Cut of drain	Linear cut of field drain running S-N	0.34m wide 0.28m deep	-

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20011	Fill of ditch	Firm light yellow silty clay with 30% chalk inclusions	Unexcavated	-
20012	Cut of ditch	Linear ditch running NE-SW	Unexcavated	-
20013	Fill of ditch 20006	Firm mid brown orange, silty clay with <5% chalk flecks	0.50m wide 0.25m deep	-
20014	Fill of gully	Firm light greyish brown silty sandy clay with charcoal and flint	0.71m wide 0.17m deep	-
20015	Fill of gully	Firm dark grey bluish silty clay with 70% charcoal and flint incl.	0.56m wide 0.10m deep	Flint S12
20016	Fill of gully	Firm light greyish brown silty sandy clay with chalk, stone, flint	0.38m wide 0.16m deep	Bone
20017	Cut of gully	Linear V-shaped in profile gully running N-S	0.71m wide 0.56m deep	-

Field 22.		Covers trenches 202-221 + 314		
Context	Context type	Description	Dimensions	Artefacts/Samples
01	Topsoil	Generally mid grey brown silty clay with occasional stone and flint inclusions	0.25 – 0.40m thick	-
02	Subsoil	Generally mid grey brown silty clay with occasional angular stone and flint inclusions	0.08 – 0.72m thick	-
03	Natural	Generally light brown orange silty clay, with flint and gravel patches	-	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
204	NE-SW 1.8m x 50m		77.163m	0.32 – 0.71m 77.873m
Context	Context type	Description	Dimensions	Artefacts/Samples
20404	Fill of ditch	Firm dark grey brown silty clay with stones and charcoal	0.50m wide 0.28m deep	-
20405	Fill of ditch	Firm dark orange grey brown silty clay with charcoal flecks	1.00m wide 0.37m deep	-
20406	Cut of ditch	Linear ditch with bowl shaped profile running E-W	1.00m wide 0.38m deep	-
20407	Fill of ditch	Firm light brownish grey silty clay sand with charcoal flecks	0.30m wide 0.26m deep	-
20408	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	0.30m wide 0.26m deep	-
20409	Fill of ditch	Firm light greyish brown sandy clay with charcoal flecks	1.50m wide 0.32m deep	-
20410	Fill of ditch	Firm light brown greyish silty clay with chalk inclusions	0.30m wide 0.39m deep	-
20411	Cut of ditch	Linear V-shaped in profile ditch running NE-SW	1.50m wide 0.69m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
205	NE-SW 1.8m x 50m		77.955m	0.31 – 0.52m 78.475m

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Context	Context type	Description	Dimensions	Artefacts/Samples
20504	Fill of ditch	Firm dark black grey sandy silt with charcoal flecks and stones	1.05m wide 0.31m deep	-
20505	Cut of ditch	Linear ditch with curving sides and concave base running E-W	1.05m wide 0.31m deep	-
20506	Fill of treebole	Mixed sandy silt	-	-
20507	Cut of treebole	Irregular shape treebole	-	-
20508	Fill of gully	Firm dark brown black sandy silt with chalk inclusions	0.50m wide 0.20m deep	-
20509	Cut of gully	Linear U-shaped in profile gully running NW-SE	0.50m wide 0.20m deep	-
20510	Fill of gully	Firm dark brown black sandy silt with chalk inclusions	Unexcavated	-
20511	Cut of gully	Linear gully running NW-SE	Unexcavated	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
206	NW-SE 1.8m x 50m		77.952m	0.48m 78.432m
Context	Context type	Description	Dimensions	Artefacts/Samples
20604	Fill of ditch	Firm mid grey brown silty clay with charcoal flecks	0.80m wide 0.25m deep	-
20605	Cut of ditch	Linear ditch with bowl shaped in profile running NE-SW	0.80m wide 0.25m deep	-
20606	Fill of terminal	Firm light grey brown silty clay with occasional flint inclusions	0.80m wide 0.15m deep	-
20607	Cut of terminal	Linear bowl shaped in profile ditch terminal running N-S	0.80m wide 0.15m deep	-
20608	Fill of ditch	Firm mid grey brown silty clay with stone inclusions	0.90m wide 0.30m deep	-
20609	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	0.90m wide 0.30m deep	-
20610	Fill of ditch	Dark grey silty clay	Unexcavated	-
20611	Cut of ditch	Linear ditch running N-S	Unexcavated	-
20612	Fill of linear	Silty clay fill of plough scar	Unexcavated	-
20613	Cut of linear	Linear cut of plough scar	Unexcavated	-

Trench No.	Length, width & alignment		Surface height, W end (aOD)	Depth of natural
207	W-E 1.8m x 50m		77.125m	0.64 – 0.73m 77.855m
Context	Context type	Description	Dimensions	Artefacts/Samples
20705	Fill of ditch	Firm dark black/brown silty clay with charcoal flecks and stones	0.45m wide 0.21m deep	-
20706	Fill of ditch	Firm dark-mid brown yellow silty clay with charcoal and stone incl.	0.56m wide 0.14m deep	-
20707	Cut of ditch	Linear U-shaped in profile ditch running S-N truncated by [20709]	0.50m wide 0.37m deep	-

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20708	Fill of ditch	Firm dark black silty clay with small charcoal and stone incl.	1.38m wide 0.52m deep	Pottery, 12thC (residual roman)
20709	Cut of ditch	Linear U-shaped in profile ditch running N-S	1.38m wide 0.52m deep	-
20710	Fill of ditch	Friable dark brown orange silty with charcoal flecks and stones	1.10m wide 0.36m deep	-
20711	Cut of ditch	Linear U-shaped in profile ditch running N-S truncated by [20707]	1.10m wide 0.36m deep	-
20712	Fill of ditch	Firm mid brown greyish orange silty clay with chalk and stone incl.	0.40m wide 0.16m deep	-
20713	Cut of ditch	Linear ditch with gently curving sides and flat base running S-N	0.40m wide 0.16m deep	-
20714	Fill of ditch	Firm dark black brown silty clay with stone and charcoal incl.	0.49m wide 0.29m deep	Flint S11
20715	Cut of ditch	Linear U-shaped in profile ditch running N-S truncated by [20713]	0.49m wide 0.29m deep	-
20716	Fill of gully	Firm mid brown orange grey silty clay with small stone inclusions	0.45m wide 0.14m deep	-
20717	Cut of gully	Linear gully with gently curving sides and concave base running N-S	0.45m wide 0.14m deep	-
20718	Fill of gully	Firm light greyish brown silty clay with occasional chalk inclusions	0.52m wide 0.15m deep	-
20719	Cut of ditch	Linear U-shaped in profile gully running E-W	0.52m wide 0.15m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
208	NW-SE 1.8m x 50m		75.329m	0.54 – 0.75m 76.079m
Context	Context type	Description	Dimensions	Artefacts/ Samples
20804	Fill of ditch	Firm mid red brown silty clay with chalk and angular flint inclusions	1.00m wide 0.25m deep	-
20805	Cut of ditch	Linear bowl shaped in profile ditch running SW-NE	1.00m wide 0.25m deep	-
20806	Fill of palaeo-channel	Firm light grey silty clay with infrequent angular stone incl.	4.40m wide 0.26m deep	-
20807	Cut of palaeo-channel	Linear wide and broad based in profile palaeochannel running NE-SW	4.40m wide 0.25m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
209	NW-SE 1.8m x 50m		77.596m	0.55 – 0.57m 78.166m
Context	Context type	Description	Dimensions	Artefacts/ Samples
20904	Fill of ditch	Firm dark-mid grey brown silty clay with small stones and chalk	1.23m wide 0.28m deep	-
20905	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	1.23m wide 0.40m deep	-

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20906	Fill of ditch	Firm mid grey brown silty clay with gravel and chalk	2.50m wide 0.40m deep	-
20907	Cut of ditch	Linear U-shaped in profile ditch north running NE-SW	2.50m wide 0.40m deep	-
20908	Fill of gully	Firm mid brown silty clay with small stone and chalk inclusions	0.55 wide 0.17m deep	-
20909	Cut of gully	Linear U-shaped in profile gully running NE-SW	0.55m wide 0.17m deep	-
20910	Fill of ditch	Firm dark grey brown silty clay with chalk and flint inclusions	1.25m wide 0.21m deep	-
20911	Fill of drain	Dark grey brown silty clay	-	-
20912	Cut of drain	Modern drainage ditch	-	-
20913	Fill of drain	Dark grey brown silty clay	-	-
20914	Cut of drain	Modern drainage ditch	-	-
20915	Fill of ditch	Firm light brownish grey sandy silt with 10% small stones	0.80m wide 0.29m deep	-
20916	Fill of ditch	Firm dark brownish grey sandy silty clay with charcoal and stones	0.61m wide 0.34m deep	-
20917	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	0.84m wide 0.51m deep	-
20918	Fill of ditch	No information	-	-
20919	Fill of ditch	No information	-	-
20920	Fill of ditch	No information	-	-
20921	Fill of ditch	No information	-	-
20922	Cut of ditch	No information	-	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
210	NE-SW 1.8m x 50m		73.571m	0.49 – 1.13m 74.701m
Context	Context type	Description	Dimensions	Artefacts/ Samples
21005	Fill of ditch	Firm mid orange brown silty clay with occasional stone inclusions	-	-
21006	Fill of ditch	Firm mid grey brown silty clay with occasional chalk flecks	-	-
21007	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	-	-
21008	Fill of gully	Firm mid red brown silty clay with infrequent stone inclusions	0.60m wide 0.20m deep	-
21009	Cut of ditch	Linear V-shaped in profile ditch running E-W	0.60m wide 0.20m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
211	NE-SW 1.8m x 50m		74.708m	0.45 – 0.65m 75.358m
Context	Context type	Description	Dimensions	Artefacts/ Samples
21105	Fill of ditch	Firm mid-dark grey brown silty clay with chalk, charcoal and stone inclusions	0.80m wide 0.25m deep	-
21106	Cut of ditch	Linear ditch with steeply sloping sides to flat base running NNE-SSW	0.80m wide 0.25m deep	-

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21107	Fill of ditch	Firm mid grey brown silty clay with charcoal, chalk and stones	1.20m wide 0.45m deep	-
21108	Cut of ditch	Linear ditch with moderately sloping sides to flat base running N-S truncated by [21106]	1.20m wide 0.45m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
213	NE-SW 1.8m x 50m		77.211m	0.44 – 0.51m 77.721m
Context	Context type	Description	Dimensions	Artefacts/Samples
21304	Fill of ditch	Firm mid greyish brown silty clay	0.70m wide 0.18m deep	-
21305	Cut of ditch	Linear U-shaped in profile ditch running N-S	0.70m wide 0.18m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
214	NE-SW 1.8m x 50m		77.205m	0.29 – 0.38m 77.585m
Context	Context type	Description	Dimensions	Artefacts/Samples
21404	Fill of ditch	Firm mid grey brown silty clay with chalk and charcoal flecks	1.19m wide 0.37m deep	-
21405	Fill of ditch	Firm mid grey brown silty clay with moderate chalk flecks	0.90m wide 0.38m deep	-
21406	Cut of ditch	Linear V-shaped in profile ditch running NE-SW	1.90m wide 0.75m deep	-
21407	Fill of ditch	Firm mid grey brown silty clay with chalk flecks and stone incl.	0.90m wide 0.40m deep	-
21408	Fill of ditch	Firm mid grey brown silty clay with moderate chalk and stone	0.40m wide 0.50m deep	-
21409	Cut of ditch	Linear ditch with moderate sloping sides running NE-SW	1.30m wide 0.50m deep	-

Trench No.	Length, width & alignment		Surface height, NNE end (aOD)	Depth of natural
218	SW-NE 1.8m x 50m		73.161m	0.40 – 0.46m 73.621m
Context	Context type	Description	Dimensions	Artefacts/Samples
21805	Fill of ditch	Firm mid-light yellowish brown silty sandy clay with stone incl.	0.80m wide 0.32m deep	-
21806	Cut of ditch	Linear ditch, bowl shaped in profile running NW-SE	0.80m wide 0.32m deep	-
21807	Fill of drain	Fill of land drain	-	-
21808	Cut of drain	Cut of modern land drain	-	-
21809	Fill of pit	Firm mid-dark grey brown silty sandy clay with charcoal flecks	0.50m wide 0.10m deep	-
21810	Cut of pit	Oval in plan pit with gently curving sides to broad flat base	0.50m wide 0.10m deep	-

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21811	Fill of ditch	Firm mid-light yellowish grey silty sandy clay with stone inclusions	2.40m wide 0.25m deep	-
21812	Fill of ditch	Firm dark greyish brown silty sandy clay with stone and charcoal	1.35m wide 0.17m deep	-
21813	Fill of ditch	Hard mid-dark greyish brown silty sandy clay with small flint incl.	1.88m wide 0.30m deep	-
21814	Fill of ditch	Hard mid-dark greyish brown silty clay with chalk, flint and stone	0.52m wide 0.15m deep	-
21815	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	2.40m wide 0.90m deep	-
21816	Fill of posthole	Firm mid-dark greyish brown silty sandy clay with stone inclusions	0.40m wide 0.25m deep	-
21817	Cut of posthole	Circular in plan posthole with steep sides to broad base	0.40m wide 0.25m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
219	NW-SE 1.8m x 50m		72.740m	0.82 – 0.92m 73.660
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
21908	Structure	Posthole alignment	-	-
21909	Fill of posthole	Firm dark brownish grey silty clay	0.25m wide 0.05m deep	-
21910	Cut of posthole	Circular in plan posthole U-shaped in profile	0.25m wide 0.05m deep	-
21911	Fill of posthole	Firm dark brownish grey silty clay	0.25m wide 0.12m deep	-
21912	Cut of posthole	Circular in plan posthole U-shaped in profile	0.25m wide 0.12m deep	-
21913	Fill of posthole	Firm dark brownish grey silty clay	0.40m wide 0.15m deep	-
21914	Cut of posthole	Sub-circular in plan posthole U-shaped in profile	0.40m wide 0.15m deep	-
21915	Fill of posthole	Firm dark brownish grey silty clay	0.30m wide 0.04m deep	-
21916	Cut of posthole	Oval in plan posthole U-shaped in profile	0.30m wide 0.04m deep	-
21917	Fill of posthole	Firm dark brownish grey silty clay with small stone inclusions	0.40m wide 0.20m deep	-
21918	Cut of posthole	Circular in plan posthole, U-shaped in profile	0.40m wide 0.20m deep	-
21919	Fill of posthole	Firm dark brownish grey silty clay	0.45m wide 0.08m deep	-
21920	Cut of posthole	Circular in plan posthole, U-shaped in profile	0.45m wide 0.08m deep	-
21921	Fill of ditch	Firm dark brownish grey silty clay with stone and flint incl.	0.59m wide 0.21m deep	-
21922	Cut of ditch	Linear V-shaped in profile ditch running NW-SE	0.59m wide 0.21m deep	-
21923	Fill of ditch	Firm mid greyish brown silty sandy clay with small stone and flint inclusions	2.27m wide 0.68m deep	-
21924	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	2.27m wide 0.68m deep	-

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21925	Fill of ditch	Firm dark-mid greyish brown silty sandy clay with small stone and flint inclusions	2.50m wide 0.22m deep	-
21926	Fill of ditch	Firm mid greyish brown silty sandy clay with stone, flint and charcoal inclusions	1.50m wide 0.52m deep	-
21927	Cut of ditch	Linear ditch U-shaped in profile running SW-NE	2.50m wide 0.73m deep	-

Trench No.	Length, width & alignment		Surface height, NNNE end (aOD)	Depth of natural
220	W-E 1.8m x 50m		73.196m	0.64 – 0.73m 73.926m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
22004	Fill of ditch	Firm mid grey brown silty clay with chalk flecks and stone incl.	0.80m wide 0.34m deep	-
22005	Cut of ditch	Linear ditch with moderate sloping sides to flat base running NW-SE	0.80m wide 0.34m deep	-

Field 17.		Covers trenches 222-243		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally dark grey brown silty clay with occasional stone inclusions	0.20 – 0.50m thick	-
02	Subsoil	Generally light grey brown silty clay with occasional angular stone inclusions	0.10 - 40m thick	-
03	Natural	Generally light grey silty clay, with chalk flecks and dark orange patches	-	-

Trench No.	Length, width & alignment			Depth of natural
222	ENE-WSW 1.8m x 50m			0.40 – 0.42m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
22204	Fill of ditch	Firm mid-dark grey brown silty clay with chalk and charcoal	1.20m wide 0.32m deep	-
22205	Cut of ditch	Linear ditch with steep sloping sides to a concave base running E-W	1.20m wide 0.58m deep	-
22206	Fill of ditch	Firm light-mid grey brown silty clay with chalk and stone incl.	0.64m wide 0.26m deep	-

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Trench No.	Length, width & alignment			Depth of natural
223	SW-NE 1.8m x 50m			0.38 – 0.42m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
22304	Fill of gully terminus	Firm mid grey brown silty clay with chalk and charcoal flecks	0.58m wide 0.15m deep	-
22305	Cut of gully terminus	Linear gully with moderately sloping sides and concave base running N-S	0.85m wide 0.15m deep	-
22306	Fill of ditch	Firm mid grey brown silty clay with occasional chalk and charcoal flecks	1.05m wide 0.45m deep	-
22307	Cut of ditch	Linear U-shaped in profile ditch running NE-SW	1.05m wide 0.45m deep	-

Trench No.	Length, width & alignment			Depth of natural
224	NE-SW 1.8m x 50m			0.38 – 0.45m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
22404	Fill of ditch	Firm mid grey brown silty clay with chalk and stone incl.	1.00m wide 0.12m deep	-
22405	Cut of ditch	Linear ditch with shallow sides and flat base running N-S	1.00m wide 0.12m deep	-
22406	Fill of drain	Firm dark grey brown silty clay with stone inclusions	0.62m wide 0.27m deep	-
22407	Cut of drain	Linear drain cut vertical sides flat base running N-S	0.62m wide 0.27m deep	-
22408	Fill of ditch	Firm mid grey brown silty clay with flecks of charcoal and chalk	0.70m wide 0.60m deep	-
22409	Cut of ditch	Linear ditch with moderately sloping sides and concave base running NW-SE	0.70m wide 0.60m deep	-
22410	Fill of channel	Firm mid greyish brown silty clay with flint and chalk	0.91m wide 0.27m deep	-
22411	Natural channel	Linear channel of natural origin V-shaped in profile running N-S	0.91m wide 0.27m deep	-

Trench No.	Length, width & alignment			Depth of natural
226	N-S 1.8m x 50m			0.41 – 0.50m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
22604	Fill of gully	Firm mixed dark grey brown silty clay with charcoal and stone incl.	0.48m wide 0.11m deep	MIA Pottery, bone S5
22605	Cut of gully	Linear gully with shallow sides and concave base running NE-SW	0.48m wide 0.11m deep	-
22606	Deposit	Mid greyish brown silty clay	0.35m wide 0.06m deep	-

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22607	Root disturbance	Almost circular irregular hollow	0.35m wide 0.06m deep	-
22608	Fill of natural feature	Mid grey brown silty clay	0.96m wide 0.40m deep	-
22609	Natural feature	Circular root disturbance	0.96m wide 0.40m deep	-

Trench No.	Length, width & alignment			Depth of natural
228	NW-SE 1.8m x 50m			0.30 – 0.31m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
22803	Fill of ditch	Firm mid grey brown silty clay with chalk and charcoal flecks	0.85m wide 0.56m deep	-
22804	Cut of ditch	Linear V-shaped in profile ditch running NE-SW	0.85m wide 0.56m deep	-

Trench No.	Length, width & alignment			Depth of natural
229	NNE-SSW 1.8m x 50m			0.38 – 0.40m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
22903	Fill of pit	Firm dark grey brown silty clay with charcoal chalk and stone incl.	0.76m wide 0.11m deep	-
22904	Cut of pit	Sub-circular V-shaped in profile ditch running E-W	0.76m wide 0.11m deep	-

Trench No.	Length, width & alignment			Depth of natural
230	NE-SW 1.8m x 50m			0.36 – 0.85m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
23005	Fill of ditch	Firm mid grey brown silty clay with occasional chalk flecks	2.00m wide 0.67m deep	-
23006	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	2.00m wide 0.67m deep	-
23007	Fill of drain	Firm dark grey brown silty clay with chalk and stone incl.	-	-
23008	Cut of drain	Linear with vertical sides and flat base running NW-SE	-	-

Trench No.	Length, width & alignment			Depth of natural
232	N-S 1.8m x 50m			0.26 – 0.39m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
23204	Fill of ditch	Firm light brownish grey silty clay with limestone and chalk incl.	0.85m wide 0.28m deep	-

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23205	Cut of ditch	Linear ditch with gently curving sides and broad base running E-W	0.85m wide 0.28m deep	-
23206	Fill of ditch	Firm mid greyish brown silty clay with occasional stones	2.00m wide 0.58m deep	-
23207	Cut of ditch	Linear U-shaped ditch running E-W truncated by modern drain	2.00m wide 0.58m deep	-
23208	Fill of pit	Firm light greyish brown silty clay with manganese and flint incl.	2.34m wide 0.23m deep	MIA Pottery
23209	Cut of pit	Circular oval steep sided pit with concave base	2.34m wide 0.84m deep	-
23210	Fill of pit	Firm dark greyish black silty clay with charcoal and manganese	1.84m wide 0.20m deep	MIA Pottery, bone S3
23211	Fill of pit	Firm light brownish yellow silty clay with manganese flecks	1.84m wide 0.25m deep	-
23212	Fill of pit	Firm dark greyish black silty clay with manganese and charcoal	1.15m wide 0.10m deep	MIA Pottery, flint, bone S6
23213	Fill of pit	Firm light yellowish grey mixed silty clay with manganese and chalk	0.38m wide 0.10m deep	-
23214	Fill of drain	Firm light brown grey silty clay with charcoal and chalk flecks	0.40m wide 0.53m deep	-
23215	Cut of drain	Linear drain cut with steep sides and irregular base running N-S	0.40m wide 0.53m deep	-

Trench No.	Length, width & alignment			Depth of natural
233	N-S 1.8m x 50m			0.35 – 0.40m
Context	Context type	Description	Dimensions	Artefacts/Samples
23304	Fill of drain	Firm dark grey brown silty clay with chalk and stone inclusions	0.77m wide 0.25m deep	-
23305	Cut of drain	Linear with steep sloping sides to flat base running NE-SW	0.77m wide 0.25m deep	-
23306	Fill of ditch	Firm mid grey brown silty clay with chalk and small stone incl.	1.30m wide 0.30m deep	Bone
23307	Cut of ditch	Linear ditch with moderate sloping sides to flat base running NE-SW	1.30m wide 0.30m deep	-
23308	Fill of ditch	Firm mid grey brown silty clay with flecks of charcoal and chalk	0.85m wide 0.35m deep	-
23309	Cut of ditch	Linear ditch with moderately sloping sides to flat base running ENE-WSW	0.85m wide 0.35m deep	-
23310	Fill of pit	Firm dark grey brown silty clay with chalk, charcoal and stones	0.75m wide 0.25m deep	Bone, S4
23311	Fill of pit	Firm mid grey brown silty clay with chalk flecks and stone incl.	0.95m wide 0.20m deep	MIA Pottery
23312	Cut of pit	Sub-circular in plan pit with moderately sloping sides to concave base	0.95m wide 0.45m deep	-
23313	Fill of pit	Firm mid grey brown silty clay with chalk flecks and small stones	1.30m wide 0.42m deep	-
23314	Cut of pit	Sub-circular in plan pit with moderately sloping sides to flat base	1.30m wide 0.42m deep	-

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Trench No.	Length, width & alignment			Depth of natural
235	WNW-ESE 1.8m x 50m			0.40 – 0.43m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
23504	Fill of ditch	Firm light brownish grey silty clay with chalk inclusions	1.22m wide 0.25m deep	-
23505	Cut of ditch	Linear ditch with gently sloping sides and broad base running N-S	1.22m wide 0.25m deep	-
23506	Fill of ditch	Firm mid –dark greyish brown silty clay with charcoal flecks	1.10m wide 0.60m deep	-
23507	Cut of ditch	Linear ditch steep sides to broad base running SW-NE	1.10m wide 0.60m deep	-
23508	Fill of ditch	Firm mid greyish brown silty clay with chalk inclusions	0.60m wide 0.34m deep	-
23509	Cut of ditch	Linear ditch with gently curving sides to broad base running SW-NE	0.60m wide 0.347m deep	-

Trench No.	Length, width & alignment			Depth of natural
240	NE-SW 1.8m x 50m			0.38 – 0.62m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
24004	Fill of ditch	Firm mid grey brown silty clay with occasional chalk and stone	1.32m wide 0.44m deep	-
24005	Fill of ditch	Firm dark grey brown silty clay with occasional chalk and stone	0.47m wide 0.15m deep	-
24006	Cut of ditch	Linear ditch with moderately sloping sides to flat base running NE-SW	1.32m wide 0.57m deep	-
24007	Fill of posthole	Firm dark grey brown silty clay with frequent charcoal and stones	0.30m wide 0.25m deep	MIA Pottery
24008	Fill of posthole	Firm mid grey brown silty clay with charcoal, chalk and stone	0.20m wide 0.12m deep	-
24009	Cut of posthole	Sub-circular in plan posthole with near vertical sides and flat base	0.30m wide 0.25m deep	-
24010	Fill of posthole	Firm dark grey brown silty clay with charcoal and stone incl.	0.40m wide 0.15m deep	MIA Pottery
24011	Fill of posthole	Firm mid grey brown silty clay with flint and chalk inclusions	0.40m wide 0.10m deep	-
24012	Cut of posthole	Sub-circular in plan posthole with near vertical sides to flat base	0.40m wide 0.22m deep	-
24013	Fill of hearth	Mid greyish brown silty clay with stone and charcoal inclusions	0.50m wide 0.05m deep	MIA Pottery
24014	Cut of hearth	Oval in plan aligned N-S hearth	0.50m wide 0.05m deep	-
24015	Fill of plough scar	Dark grey brown silty clay with small stones	0.20m wide 0.20m deep	-
24016	Cut of plough scar	Linear plough scar oriented N-S	0.20m wide 0.20m deep	-
24017	Fill of drain	Dark grey brown silty clay with small stone inclusions	0.25m wide 0.25m deep	-

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24018	Cut of drain	Linear field drain of modern date	0.25m wide 0.25m deep	-
24019	Fill of ditch	Firm mid reddish brown silty clay with chalk flecks and small stones	0.60m wide 0.22m deep	-
24020	Fill of ditch	Firm mid grey brown silty clay with chalk flecks and stone incl.	0.62m wide 0.14m deep	-
24021	Cut of ditch	Linear ditch with moderately sloping sides to concave base running NE-SW	0.62m wide 0.36m deep	-
24022	Fill of ditch	Firm dark grey brown silty clay with chalk flecks and small stones	1.30m wide 0.30m deep	-
24023	Cut of ditch	Linear ditch with moderately sloping sides to flat base running NE-SW	1.30m wide 0.30m deep	-
24024	Fill of ditch	Firm mid grey brown silty clay with chalk and small stone incl.	0.67m wide 0.17m deep	-
24025	Cut of ditch	Linear ditch with moderately sloping sides to concave base running NE-SW	0.67m wide 0.17m deep	-
24026	Fill of ditch	Firm mid greyish brown silty clay with small stone and chalk incl.	0.77m wide 0.15m deep	-
24027	Cut of ditch	Linear ditch with gently sloping sides to broad base running NE-SW	0.77m wide 0.15m deep	-

Phase 3: Fields 18 – 21

Field 18.		Covers trenches 244-259		
Context	Context type	Description	Dimensions	Artefacts/Samples
01	Topsoil	Generally mid brown grey silty clay with chalk inclusions	0.25 – 0.50m thick	-
02	Subsoil	Generally light yellow brown silty clay with occasional angular stone, chalk and flint inclusions	0.10 – 0.30m thick	-
03	Natural	Generally light grey silty clay, with chalk flecks and dark orange patches	-	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
244	NW-SW 1.8m x 50m		95.372m	0.25 – 0.35m 95.722m
Context	Context type	Description	Dimensions	Artefacts/Samples
24403	Fill of gully	Compact brown grey silty clay with chalk inclusions	0.50m wide 0.21m deep	-
24404	Fill of gully	Compact brown grey silty clay with chalk inclusions	0.49m wide 0.26m deep	-
24405	Cut of gully	Linear gully with steep sides to flat base running SE-NW	0.50m wide 0.47m deep	-

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Trench No.	Length, width & alignment			Depth of natural
252	N-S 1.8m x 50m		93.292m	0.40 – 0.50m 93.792m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
25203	Fill of gully	Light brown silty clay with chalk and small stone inclusions	0.87m wide 0.39m deep	-
25204	Cut of gully	Linear gully with asymmetrical sides and rounded base running E-W	0.87m wide 0.39m deep	-

Trench No.	Length, width & alignment			Depth of natural
256	NE-SW 1.8m x 50m		90.894m	0.50 – 0.62m 91.514m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
25604	Fill of ditch	Firm mid orange brown silty clay with chalk flecks	0.60m wide 0.45m deep	Bone
25605	Fill of ditch	Firm dark red grey with black patches silty clay with charcoal	0.45m wide 0.15m deep	-
25606	Cut of ditch	Linear U-shaped in profile ditch running NW-SE	0.70m wide 0.45m deep	-
25607	Fill of ditch	Firm mid-light grey brown silty clay with 5% small stones	0.45m wide 0.18m deep	Pottery, 11thC
25608	Cut of ditch	Linear irregular in profile ditch running NW-SE	0.45m wide 0.18m deep	-
25609	Fill of pit	Firm mixed blue grey yellow brown silty clay with chalk flecks	0.70m wide 0.22m deep	
25610	Cut of pit	Oval pit with steep sides and rounded base	0.70m wide 0.22m deep	Pottery E13thC
25611	Fill of ditch terminus	Firm light grey brown clay with 1% chalk flecks	0.15m wide 0.28m deep	-
25612	Cut of ditch terminus	Linear steep sided ditch terminus with rounded base running W-E	0.15m wide 0.28m deep	-
25613	Fill of ditch	Firm light brown silty clay with chalk and small stone inclusions	3.10m wide 1.10m deep	-
25614	Cut of ditch	Linear V-shaped in profile ditch running E-W	310m wide 1.10m deep	-
25615	Fill of pit	Firm dark grey silty clay with small-mid stone and chalk incl.	0.80m wide 0.75m deep	-
25616	Cut of pit	Shape unknown in plan pit truncated by ditch [25614]	0.80m wide 0.75m deep	-
25617	Fill of ditch	Firm light yellow brown silty clay upper fill of ditch [25614]	3.00m wide 0.30m deep	-

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Trench No.	Length, width & alignment			Depth of natural
258	N-S 1.8m x 50m		91.143m	0.50 – 0.60m 91.743m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
25804	Fill of pit	Firm dark blackish grey silty clay with chalk flecks	2.10m wide 0.25m deep	Pottery
25805	Fill of pit	Loose mid orangey brown sandy gravel	0.95m wide 0.07m deep	-
25806	Fill of pit	Light grey brown silty clay with chalk flecks	1.70m wide 0.30m deep	-
25807	Cut of pit	Circular in plan pit with U-shaped profile	2.10m wide 0.55m deep	-
25808	Fill of ditch	Hard dark grey brown silty clay	Unexcavated	-
25809	Cut of ditch	Linear running E-W	Unexcavated	-
25810	Fill of ditch	Soft dark brownish grey with rare chalk inclusions	1.30m wide 0.30m deep	-
25811	Fill of ditch	Hard light yellow brown silty clay with small gravel inclusions	1.10m wide 0.20m deep	-
25812	Fill of ditch	Firm dark brownish grey silty clay with chalk inclusions	1.20m wide 0.30m deep	-
25813	Fill of ditch	Firm mid yellow brown silty clay with frequent chalk inclusions	0.40m wide 0.25m deep	-
25814	Cut of ditch	Linear V-shaped in profile ditch running N-S	1.30m wide 0.65m deep	-

Field 20.		Covers trenches 260-288		
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
01	Topsoil	Generally dark-mid brown grey silty clay with chalk inclusions	0.20 – 0.60m thick	-
02	Subsoil	Generally light yellow grey silty clay with occasional angular stone and chalk inclusions	0.10 – 0.74m thick	-
03	Natural	Generally mid- light orange brown silty clay, with chalk flecks.	-	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
262	NE-SW 1.8m x 50m		87.481m	0.30 – 0.50m 78.981m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
26204	Fill of ditch	Firm light yellow brown silty clay with 30% chalk flecks	1.10m wide 0.40m deep	-
26205	Fill of ditch	Firm mid-light brown grey silty clay with 1% small stones and chalk	1.10m wide 0.05m deep	-
26206	Cut of ditch	Steep sided in profile ditch with flat base running SE-NW	1.10m wide 0.40m deep	-

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Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
268	NW-SE 1.8m x 50m		89.081m	0.40 – 0.50m 89.581m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
26804	Fill of ditch	Friable dark greyish brown silty clay with rooting and small stones	2.00m wide 0.98m deep	-
26805	Fill of ditch	Friable mid yellowish brown silty clay with rooting disturbance	2.00m wide 0.98m deep	-
26806	Cut of ditch	Steep sided in profile ditch running E-W	2.00m wide 0.98m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
282	NE-SW 1.8m x 50m		82.543m	0.54 – 0.60m 83.143m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
28204	Fill of ditch	Firm mid brownish grey silty loam with stone and chalk inclusions	1.10m wide 0.38m deep	-
28205	Cut of ditch	V-shaped in profile ditch running NE-SW	1.10m wide 0.38m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
283	NW-SE 1.8m x 50m		82.535m	0.40 – 0.50m 83.035m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
28304	Fill of pit	Firm mid greyish brown silty clay with small stones and chalk incl.	1.10m wide 0.25m deep	Pottery L12thC
28305	Cut of pit	Cut of pit, sub-circular in plan U-shaped in profile	1.10m wide 0.25m deep	-

Trench No.	Length, width & alignment		Surface height, NNW end (aOD)	Depth of natural
287	NW-SE 1.8m x 50m		78.552m	0.41 – 0.55m 79.102m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
28704	Fill of ditch	Firm mid greyish brown silty clay with chalk and stone inclusions	1.80m wide 0.55m deep	-
28705	Fill of ditch	Firm light-mid greyish brown silty clay with chalk flecks	1.10m wide 0.40m deep	-
28706	Cut of ditch	U-shaped in profile ditch running NE-SW	1.80m wide 0.90m deep	-

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Field 21.		Covers trenches 289-313		
Context	Context type	Description	Dimensions	Artefacts/Samples
01	Topsoil	Generally dark-mid brown grey silty clay with chalk inclusions	0.20 – 0.40m thick	-
02	Subsoil	Generally light yellow grey silty clay with occasional angular stone and chalk inclusions	0.08 – 0.63m thick	-
03	Natural	Generally mid- light yellow grey silty clay, with chalk flecks.	-	-

Trench No.	Length, width & alignment		Surface height, W end (aOD)	Depth of natural
294	W-E 1.8m x 50m		83.609m	0.33 – 0.50m 84.109m
Context	Context type	Description	Dimensions	Artefacts/Samples
29404	Fill of ditch	Firm mid greyish brown silty clay with chalk and manganese flecks	1.00m wide 0.32m deep	-
29405	Cut of ditch	V-shaped in profile curvilinear ditch running WNW-ESE	1.00m wide 0.32m deep	-

Trench No.	Length, width & alignment			Depth of natural
295	N-S 1.8m x 50m		82.343m	0.40 – 0.43m 82.773m
Context	Context type	Description	Dimensions	Artefacts/Samples
29503	Fill of ditch terminus	Firm mid-dark grey brown silty clay with charcoal flecks	1.00m wide 0.24m deep	-
29504	Cut of ditch	Irregular in profile ditch terminus running SW-NE	1.00m wide 0.24m deep	-
29505	Fill of ditch	Firm light-mid grey brown silty clay with chalk, CBM and flint incl.	1.38m wide 0.60m deep	-
29506	Cut of ditch	Ditch with gently sloping sides to rounded base running W-E	1.38m wide 0.60m deep	-
29507	Fill of ditch	Firm mid-light yellow brown silty clay with chalk flecks	0.80m wide 0.21m deep	-
29508	Cut of ditch	Ditch with gently sloping sides to rounded base running W-E	0.80m wide 0.21m deep	-
29509	Fill of gully	Firm mid greyish brown silty clay with chalk flecks and flint incl.	0.75m wide 0.25m deep	-
29510	Cut of gully	U-shaped in profile gully running NE-SW	0.75m wide 0.25m deep	-
29511	Fill of gully	Firm mid brownish grey silty clay with gravel chalk and flint incl.	0.64m wide 0.16m deep	-
29512	Cut of gully	U-shaped in profile gully running NW-SE	0.64m wide 0.16m deep	-
29513	Structure	Probable structure formed by gullies [29510] and [29512]	-	-

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Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
297	NE-SW 1.8m x 50m		82.594m	0.48 – 0.60m 83.194m
Context	Context type	Description	Dimensions	Artefacts/Samples
29704	Fill of pit	Soft mid orangey brown silty clay with stone chalk and charcoal incl.	0.84m wide 0.19m deep	-
29705	Cut of pit	Oval in plan pit with shallow sides to flat base	0.84m wide 0.19m deep	-
29706	Fill of ditch	Firm mid reddish brown silty clay with chalk and flint inclusions	0.72m wide 0.32m deep	-
29707	Cut of ditch	V-shaped in profile ditch running E-W	0.72m wide 0.32m deep	-
29708	Fill of ditch	Firm light-mid yellow brown with 10% chalk and 3% flint inclusions	1.50m wide 0.52m deep	Bone
29709	Cut of ditch	Steep sides ditch with rounded base running E-W	1.50m wide 0.52m deep	-
29710	Fill of ditch	Firm light-mid grey brown silty clay with chalk and iron panning	0.70m wide 0.32m deep	-
29711	Cut of ditch	V shaped in profile ditch running E-W	0.70m wide 0.32m deep	-
29712	Fill of ditch	Firm mid grey brown silty clay with chalk flecks	0.74m wide 0.26m deep	-
29713	Fill of ditch	Firm light yellow brown silty clay with chalk, iron panning and flint	1.12m wide 0.20m deep	-
29714	Cut of ditch	Ditch with steeply sloping sides to flat base running E-W	1.20m wide 0.46m deep	-
29715	Fill of ditch	Compacted dark greyish brown silty clay with chalk and gravel	0.65m wide 0.25m deep	-
29716	Cut of ditch	Steep sided ditch with concave base running NW-SE	0.65m wide 0.25m deep	-
29717	Fill of ditch	Compacted mid greyish brown silty clay with chalk flecks	0.10m wide 0.10m deep	-
29718	Fill of ditch	Compacted mid-dark greyish brown silty clay withy chalk flecks	0.40m wide 0.30m deep	-
29719	Cut of ditch	V-shaped in profile ditch running NW-SE	0.50m wide 0.30m deep	-
29720	Fill of ditch	Compacted mid greyish brown silty clay with chalk inclusions	0.55m wide 0.16m deep	-
29721	Fill of ditch	Compacted mid brown silty clay with chalk inclusions	0.52m wide 0.19m deep	-
29722	Fill of ditch	Firm light yellow brown silty clay with chalk and flint inclusions	0.55m wide 0.20m deep	-
29723	Cut of ditch	Linear with steep sides to flat base running E-W	0.70m wide 0.50m deep	-
29724	Fill of pit	Friable mid greyish brown silty clay with chalk and stone incl.	2.60m wide 0.30m deep	-
29725	Fill of pit	Friable mid greyish brown silty clay with chalk and stone incl.	1.30m wide 0.30m deep	Pottery, 12thC
29726	Fill of pit	Firm mid-dark grey brown silty clay with chalk and flint incl.	2.20m wide 0.30m deep	-
29727	Fill of pit	Firm mid-dark grey brown silty clay with 1% chalk incl.	2.40m wide 0.20m deep	-
29728	Fill of pit	Friable light brownish yellow silty clay with chalk flecks	0.80m wide 0.10m deep	-

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29729	Fill of pit	Friable light brownish grey silty clay with 1% chalk inclusions	1.70m wide 0.10m deep	-
29730	Fill of pit	Firm light yellow brown silty clay with 5% chalk flecks	1.60m wide 0.10m deep	-
29731	Cut of pit	Playing card shaped in plan pit with straight sides to flat base	2.60m wide 1.10m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
299	NE-SW 1.8m x 50m		79.343m	0.49 – 0.55m 79.893m
Context	Context type	Description	Dimensions	Artefacts/Samples
29904	Fill of ditch	Firm light orange brown silty clay with 5% flint inclusions	0.93.m wide 0.26m deep	-
29905	Cut of ditch	V-shaped in profile ditch running N-S	0.93m wide 0.26m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
300	W-E 1.8m x 50m		85.226m	0.70 – 0.90m 86.126m
Context	Context type	Description	Dimensions	Artefacts/Samples
30004	Fill of ditch	Firm mid dark brown silty clay	-	-
30005	Cut of ditch	V-shaped in profile ditch running NW-SE	-	-
30006	Fill of ditch	Firm mid dark grey brown silty clay with chalk, and stone incl.	1.80m wide 1.00m deep	Bone
30007	Cut of ditch	V-shaped in profile ditch running NW-SE	1.80m wide 1.00m deep	-
30008	Fill of ditch	Firm mid-light yellow brown silty clay with chalk, and stone incl.	1.40m wide 0.70m deep	-
30009	Cut of ditch	Steep sided ditch with rounded base running NW-SE	1.40m wide 0.70m deep	-
30010	Fill of ditch	Firm light yellow brown silty clay with chalk, charcoal and stone	0.90m wide 0.40m deep	-
30011	Cut of ditch	Steep sided ditch with flattened base running NW-SE	0.90m wide 0.40m deep	-
30012	Fill of ditch	Friable light yellow brown silty clay with chalk and stone incl.	1.67m wide 0.22m deep	-
30013	Fill of ditch	Firm light yellow brown silty clay with stone and chalk flecks	1.63m wide 0.72m deep	-
30014	Cut of ditch	U-shaped in profile ditch running NW-SE	1.67m wide 0.94m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
301	NW-SE 1.8m x 50m		85.440m	0.43 – 0.48m 85.920m
Context	Context type	Description	Dimensions	Artefacts/Samples
30104	Fill of ditch	Firm mid blackish grey silty clay with 5% chalk inclusions	2.15m wide 0.26m deep	-

GREAT WILSEY PARK, HAVERHILL

30105	Fill of ditch	Firm dark blackish grey silty clay with chalk flecks	1.80m wide 0.40m deep	-
30106	Fill of ditch	Firm mid greyish brown silty clay with small stones and chalk	0.96m wide 0.36m deep	-
30107	Cut of ditch	V-shaped in profile ditch with flat base running NE-SW	2.15m wide 1.02m deep	-
30108	Fill of ditch	Firm mixed grey brown with orange flecks silty clay with stone	2.90m wide 0.28m deep	-
30109	Fill of ditch	Firm light-mid grey brown silty clay with rooting	1.62m wide 0.62m deep	-
30110	Cut of ditch	Steep sided ditch with sloping base running NE-SW	2.90m wide 0.90m deep	-
30111	Fill of ditch	Firm light-mid grey brown silty clay with 5% chalk flecks	1.12m wide 0.70m deep	-
30112	Cut of ditch	Ditch with gently sloping sides to rounded base running NE-SW	1.12m wide 0.70m deep	-
30113	Fill of ditch	Firm mid brown silty clay with chalk inclusions	0.60m wide 0.62m deep	MIA pottery, flint
30114	Cut of ditch	V-shaped in profile ditch running NE-SW	0.60m wide 0.62m deep	-
30115	Fill of gully	Friable mid brown silty clay with chalk and burnt clay inclusions	0.23m wide 0.19m deep	-
30116	Cut of gully	V-shaped in profile gully running NE-SW	0.23m wide 0.19m deep	-
30117	Fill of ditch	Firm mid brown silty clay with chalk inclusions	3.28m wide 0.70m deep	-
30118	Cut of ditch	Ditch with irregular sides and base running SE-NW	3.28m wide 0.70m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
302	NE-SW 1.8m x 50m		84.127m	0.40 – 0.66m 84.787m
Context	Context type	Description	Dimensions	Artefacts/ Samples
30204	Fill of ditch	Friable mid-dark grey brown silty clay with 10% small stone incl.	1.80m wide 0.752m deep	-
30205	Fill of ditch	Firm light-mid yellow grey silty clay with 5% chalk flecks	0.50m wide 0.10m deep	-
30206	Cut of ditch	U-shaped in profile ditch running NW-SE	1.80m wide 0.60m deep	-
30207	Fill of ditch	Firm light-mid orange brown silty clay with 5% chalk inclusions	2.30m wide 0.50m deep	-
30208	Cut of ditch	Stepped in profile ditch running SE-NW	2.30m wide 0.50m deep	-
30209	Fill of ditch	Firm light yellow brown silty clay with 3% chalk inclusions	1.44m wide 0.21m deep	-
30210	Cut of ditch	Ditch with gently sloping sides to flat base running SE-NW	1.44m wide 0.21m deep	-
30211	Layer	Firm mid yellow grey silty clay with 10% chalk flecks and stones	2.50m wide 0.50m deep	-
30212	Fill of ditch	Firm mid-dark orange brown silty clay with chalk and iron panning	1.20m wide 0.50m deep	-
30213	Cut of ditch	U-shaped in profile ditch running NW-SE	1.20m wide 0.50m deep	-
30214	Fill of ditch	Firm mid-dark orange brown silty clay with 5% small stones	1.30m wide 0.45m deep	-

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30215	Fill of ditch	Firm light yellow grey silty clay with chalk and iron panning	1.00m wide 0.50m deep	-
30216	Cut of ditch	V-shaped in profile ditch running NW-SE	1.00m wide 0.50m deep	

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
303	NW-SE 1.8m x 50m		80.837m	0.50 – 0.74m 81.577m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
30304	Fill of ditch	Dark grey brown silty clay with charcoal	-	-
30305	Fill of ditch	Mid grey brown silty clay with flint and charcoal	-	-
30306	Cut of ditch	Steep sided in profile ditch base unknown as flooded	-	-
30307	Fill of ditch	Firm dark brown grey silty clay with chalk and charcoal flecks	0.95m wide 0.20m deep	Bone
30308	Fill of ditch	Compact orange brown silty clay with 10% chalk and stone incl.	0.40m wide 0.16m deep	-
30309	Cut of ditch	V-shaped in profile ditch running NE-SW	0.95m wide 0.40m deep	-
30310	Fill of pit	Compacted mid grey brown silty clay with 3% chalk and flint incl.	1.00m wide 0.18m deep	-
30311	Cut of pit	Oval in plan pit with gentle sides to rounded base	1.00m wide 0.18m deep	-
30312	Fill of ditch	Compacted light grey brown with orange mottling sandy clay with chalk and charcoal flecks	0.90m wide 0.25m deep	-
30313	Fill of ditch	Firm mid brownish grey silty clay with 10% chalk and 1% flint	1.20m wide 0.35m deep	Pottery, 13thC, bone
30314	Fill of ditch	Firm light yellow brown silty clay with 20% small stone incl.	0.30m wide 0.35m deep	-
30315	Fill of ditch	Compacted light brownish grey silty clay with 40% stone incl.	0.75m wide 0.18m deep	-
30316	Cut of ditch	Steep sided in profile linear with flat base running NE-SW	1.40m wide 0.58m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
304	NW-SE 1.8m x 50m		79.891m	0.50 – 0.60m 80.491m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
30404	Fill of ditch	Dark grey brown silty clay with 5% flint flecks	1.60m wide Unexcavated	-
30405	Cut of ditch	Linear ditch running SW-NE	1.60m wide Unexcavated	-
30406	Fill of ditch	Friable dark grey black silty clay with 15% chalk flecks	0.75m wide 0.40m deep	Bone, shell
30407	Cut of ditch	U-shaped in profile ditch running NE-SW	0.75m wide 0.40m deep	-
30408	Fill of ditch	Firmly compacted mottled grey brown silty clay	0.60m wide 0.30m deep	Pottery, 12thC

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30409	Cut of ditch	U-shaped in profile ditch cut by [30407] running NE-SW	0.60m wide 0.30m deep	-
30410	Fill of ditch	Friable mid grey brown silty clay with chalk and flint inclusions	0.70m wide 0.26m deep	-
30411	Fill of ditch	Firm light greyish brown silty clay with chalk inclusions	0.50m wide 0.16m deep	-
30412	Cut of ditch	U-shaped in profile ditch running NW-SE	0.70m wide 0.42m deep	-
30413	Fill of ditch	Friable light-mid brownish grey silty clay with 5% small stones	0.30m wide 0.05m deep	-
30414	Fill of ditch	Firm light yellow brown silty clay with 20% chalk incl.	0.85m wide 0.45m deep	-
30415	Cut of ditch	Steep sided in profile ditch with flat base running SW-NE	0.85m wide 0.48m deep	-
30416	Fill of ditch	Firm light yellow brown silty clay with chalk flecks	0.10m wide 0.53m deep	-
30417	Fill of ditch	Firm light-mid grey brown silty clay with stone and chalk	0.70m wide 0.70m deep	-
30418	Cut of ditch	V-shaped in profile ditch running SW-NE	0.85m wide 0.55m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
305	SE-NW 1.8m x 50m		78.815m	0.60 – 0.90m 79.715m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
30505	Fill of ditch	Firm mid grey silty clay with flint inclusions	2.20m wide 0.40m deep	-
30506	Fill of ditch	Firm dark greyish brown silty clay with flint inclusions	-	Pottery, L12thC
30507	Cut of ditch	U-shaped in profile ditch running NE-SW	2.20m wide 0.40m deep	-
30508	Fill of ditch	Firmly compacted dark grey brown silty clay with stone incl.	1.40m wide 0.34m deep	-
30509	Fill of ditch	Firmly compacted mid grey silty clay with 1% stone and charcoal	1.40m wide 0.26m deep	-
30510	Fill of ditch	Firm light grey brown silty clay with small stones	0.23m deep	-
30511	Cut of ditch	U-shaped in profile ditch running NE-SW	1.40m wide 0.70m deep	-
30512	Fill of ditch	Compact mid grey brown silty clay with stone and charcoal incl.	1.33m wide 0.55m deep	-
30513	Cut of ditch	U-shaped in profile ditch running NE-SW	1.33m wide 0.50m deep	-

Trench No.	Length, width & alignment		Surface height, NE end (aOD)	Depth of natural
306	SW-NE 1.8m x 50m		81.180m	0.40 – 0.44m 81.620m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
30604	Fill of ditch	Firm mid brownish grey silty clay with flint and chalk inclusions	1.60m wide 0.40m deep	CBM
30605	Fill of ditch	Firm mid greyish brown silty clay with chalk flecks	1.60m wide 0.10m deep	-

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30606	Cut of ditch	U-shaped in profile ditch running NW-SE	1.60m wide 0.50m deep	-
30607	Fill of ditch	Firm mid grey brown silty clay with stone and flint inclusions	1.93m wide 0.62m deep	Bone
30608	Fill of ditch	Firm mid reddish brown silty clay with chalk flecks	0.820m wide 0.22m deep	-
30609	Cut of ditch	V-shaped in profile ditch running SE-NW	1.93m wide 0.84m deep	-
30610	Fill of ditch terminus	Firm mid grey brown silty clay with stone, flint and CBM	1.60m wide 0.50m deep	MIA Pottery, flint, bone
30611	Fill of ditch terminus	Firm mid grey brown silty clay with charcoal and iron panning	1.60m wide 0.30m deep	MIA Pottery, bone
30612	Fill of ditch terminus	Firm light yellow brown silty clay with chalk flecks and charcoal	1.50m wide 0.27m deep	MIA Pottery, bone
30613	Cut of ditch terminus	Ditch terminal with undercutting sides and irregular base	1.60m wide 1.07m deep	-

Trench No.	Length, width & alignment			Depth of natural
307	SW-NE 1.8m x 50m		78.500m	0.30 – 0.40m 78.900
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
30704	Fill of ditch	Firm mid yellow brown silty clay with chalk inclusions	1.30m wide 0.60m deep	-
30705	Cut of ditch	V-shaped in profile ditch running NE-SW	1.30m wide 0.60m deep	-
30706	Fill of ditch	Firm mid yellow brown silty clay with chalk inclusions	1.75m wide 0.65m deep	-
30707	Cut of ditch	V-shaped in profile ditch running NE-SW	1.75m wide 0.65m deep	-
30708	Fill of ditch	Firm mid yellow brown silty clay with chalk inclusions	1.00m wide 0.35m deep	-
30709	Cut of ditch	U-shaped in profile ditch running NE-SW	1.00m wide 0.35m deep	-
30710	Fill of ditch	Friable mid-dark grey silty clay with 5% CBM and charcoal	0.50m wide 0.30m deep	-
30711	Fill of ditch	Mid yellow brown silty clay with stone and chalk inclusions	0.90m wide 0.35m deep	-
30712	Cut of ditch	Steep-sided in profile ditch with flat base running NE-SW	0.90m wide 0.44m deep	-

Trench No.	Length, width & alignment		Surface height, NW end (aOD)	Depth of natural
308	NE-SW 1.8m x 50m		79.849m	0.40 – 0.55m 80.399m
<i>Context</i>	<i>Context type</i>	<i>Description</i>	<i>Dimensions</i>	<i>Artefacts/Samples</i>
30804	Fill of ditch	Firm mid-dark grey brown silty clay with stone and chalk incl.	2.26m wide 0.72m deep	Flint
30805	Fill of ditch	Firm dark grey brown silty clay with 10% chalk	2.00m wide 0.28m deep	-
30806	Cut of ditch	U-shaped in profile ditch running E-W	2.26m wide 1.00m deep	-
30807	Fill of ditch	Firm light yellow brown silty clay with chalk and iron panning	0.90m wide 0.15m deep	CBM

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30808	Cut of ditch	U-shaped in profile ditch running E-W	0.90m wide 0.15m deep	-
30809	Fill of ditch	Firm light-mid brown silty clay with chalk inclusions	1.10m wide 0.25m deep	-
30810	Cut of ditch	U-shaped in profile ditch running E-W	1.10m wide 0.25m deep	-
30811	Fill of ditch	Firm light-mid yellow brown silty clay with chalk and charcoal incl.	1.60m wide 0.40m deep	MIA Pottery
30812	Cut of ditch	V-shaped in profile ditch running SW-NE	1.60m wide 0.40m deep	-

Trench No.	Length, width & alignment			Depth of natural
314	NE-SW 1.8m x 50m			0.40 – 0.51m
Context	Context type	Description	Dimensions	Artefacts/Samples
31403	Fill of ditch	Light grey silty clay with charcoal flecks	Unexcavated	-
31404	Cut of ditch	Linear ditch running NW-SE	1.00m wide Unexcavated	-
31405	Fill of ditch	Light grey brown silty clay with charcoal flecks	Unexcavated	-
31406	Cut of ditch	Linear ditch running E-W	0.80m wide Unexcavated	-
31407	Fill of ditch	Light grey brown silty clay with charcoal and flint inclusions	Unexcavated	-
31408	Cut of ditch	Linear ditch running E-W	0.80m wide Unexcavated	-
31409	Fill of ditch	Dark grey silty clay with frequent charcoal flecks	Unexcavated	-
31410	Cut of ditch	Linear ditch running NW-SE	0.70m wide Unexcavated	-
31411	Fill of terminus	Mid grey silty clay with chalk flecks	Unexcavated	-
31412	Cut of Terminus	Terminal of linear ditch running NE-SW	0.50m wide Unexcavated	



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Appendix 15.1

Additional Views

Appendix 15.2 Rev A

Landscape and Visual Impact Assessment Additional Viewpoints

1. St Edmundsbury Borough Council were consulted on 25th February and 2nd April with regard to the selection and location of representative viewpoints to be included within the Landscape and Visual Assessment (LVA). As well as the locations identified as part of the desk study, the Ecology, Tree and Landscape Officer for the council requested additional areas be included. These areas were therefore visited as part of the field assessment on 3rd and 4th March. The following provides a summary of the findings and should be read in conjunction with Table 15.2: Additional Views, Visual Effects Table.

The visual impact from the small hamlets to the east including Barnardiston (church), Brockley Green (pub) and Boyton End, and from Withersfield and Burton End to the north west.

2. These locations were all visited as suggested. The site was not visible from Barnardiston itself but was visible from further along the public footpath, south of Leys Farm (see photograph A). The northern edge of the site is just visible on the horizon, set within the wide panoramic view possible from this elevated location. Industrial development in Haverhill and buildings (including factory buildings) at Little Wratting can be seen within the view. Any new development that may be visible on completion will be viewed within this setting and will form a small part of the wider views. Visual effects were therefore considered to be negligible on completion and once the proposed northern boundary planting has matured, the new development will not be visible at year 10. Visual effects are not therefore considered to be significant.
3. Views towards the site are possible from Buntry Lane between Highfield Farm and Brockley Green (illustrated by photograph B), but not from Brockley Green village itself. From Buntry Lane, the open field boundary along the lane allows long distance and wide panoramic views to the south west, with the site visible in the distance beyond Kedington village. On completion the new development will be visible in the distance, however, will be viewed as a small part of the wider view and will be set within the existing context which includes other development, roads and overhead cables. The proposed internal planting and substantial northern boundary planting will mature and will therefore provide an effective screen at year 10. Visual effects arising from development are not considered to be significant.
4. At Boyton End, views towards the site are only possible from the Stour Valley Path long distance route which leads out of the village to the west (photograph C). The site is just visible in the distance adjacent to existing industrial and residential development at Haverhill, however views are filtered by existing field boundary vegetation. The new development may just be visible on completion, however the south eastern part of the site which may be visible, is to be developed as a country park which will blend with the existing view. Visual effects are therefore considered to be Negligible for footpath users.
5. Lower Farm is located adjacent to the footpath but is surrounded by mature vegetation which will screen views of the site for residential receptors. Visual effects are not therefore considered to be significant.

6. Withersfield and Burton Green lie to the north west of the site. The site is not visible from these locations due to the distance from the site, but a photograph was taken from the public footpath leading towards Burton Ley Plantation which is nearer (photograph D), and the site can be located by the tops of the trees within the site boundary.
7. Whilst the rooflines of new buildings may just be visible on completion, once the proposed northern boundary planting has matured, it is very unlikely that any of the new development will be visible at year 10. Visual effects are not therefore considered to be significant.

The impact from the Stour Valley Path

8. The Zone of Theoretical Visibility (ZTV) drawing (Figure 15.7) indicated that the site may be visible from some locations along the Stour Valley Path. Areas to the north west of Malting Farm and to the north west of Kedington (photographs E & F), identified as having potential visibility within the ZTV were visited.
9. To the north west of Malting Farm the site was just visible in the distance from the Stour Valley Path. As such the new development may just be visible on completion, however would form a very small part of a much wider view and would be viewed in the context of the existing properties visible on The Street. Visual effects are therefore considered to be negligible. On completion, the new development would be screened by the new boundary planting.
10. From the Stour Valley Path to the north of Kedington, the site was not visible due to distance, landform and vegetation. The proposed development would therefore not be visible to receptors using the path in this location. Visual effects will therefore not be significant.

The impact from the south western side of Haverhill in particular the paths through Puddle Brook Playing Field and from Chivers Road and Chimswell Way

11. These locations were all visited however visibility was extremely limited mainly due to existing development and vegetation. The site was not visible from Puddle Brook Playing Fields (photograph G) or Chivers Road (photograph H) but was just visible through the boundary trees from the public open space off Chimswell Way (photograph I). Great Field Plantation could just be seen through the trees and on completion, new development is likely to be glimpsed through the trees in winter months, although will be screened during the summer when the trees are in full leaf. Once the associated landscape planting has matured, the new development will assimilate into the surrounding context and visual effects are therefore considered to be Negligible and not significant.

The impact from Sturmer Hall

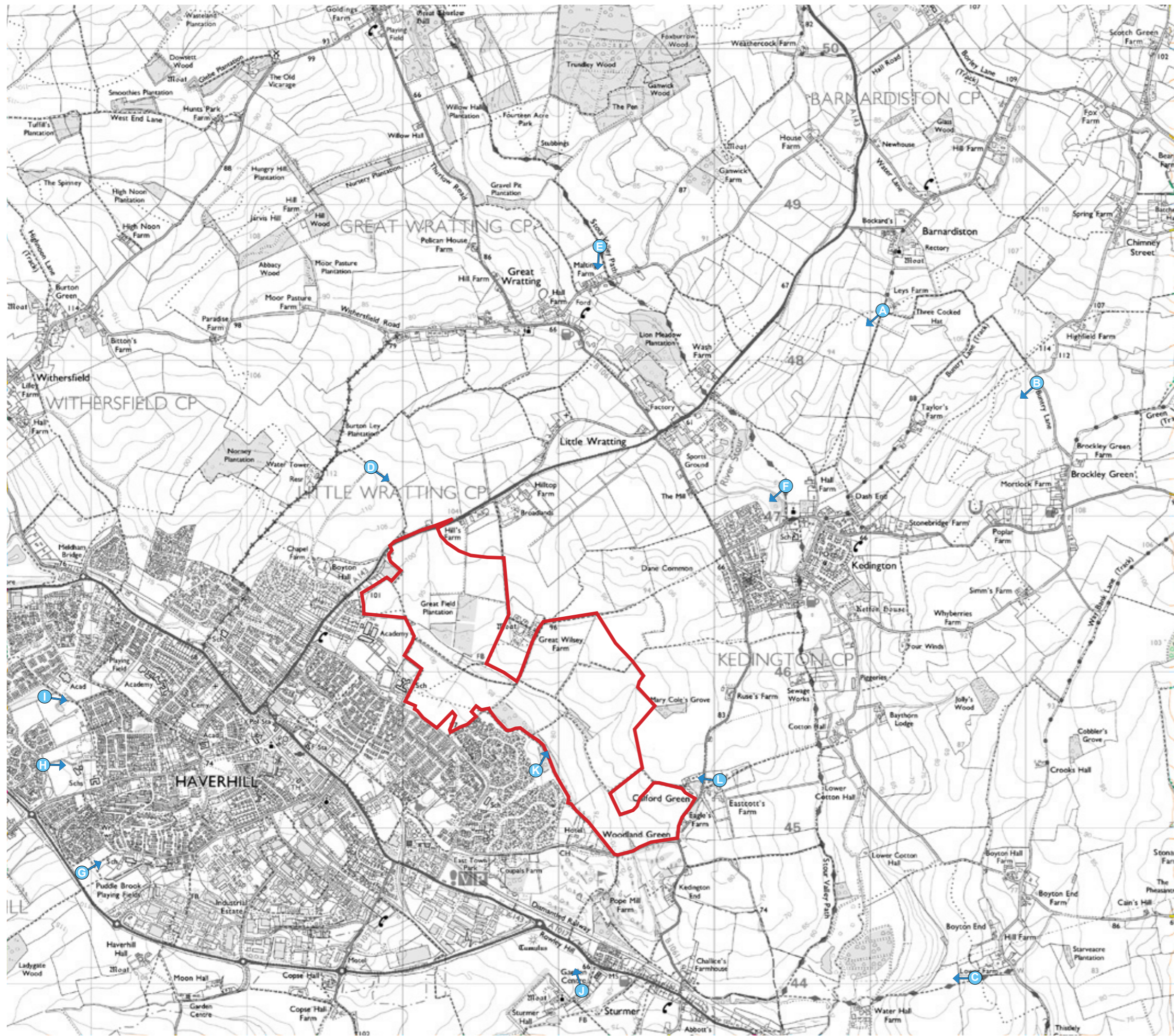
12. The site is just visible from the public footpath leading from the A1017 towards Sturmer Hall. The top of Great Field Plantation is just visible on the horizon as well as Mary Cole's Grove (photograph J). Whilst new development may just be visible on completion, it will be filtered by existing vegetation along the A1017 Rowley Hill and will be further screened as the associated new landscape planting matures. Visual effect are therefore considered to be Negligible and not therefore significant.

The impact from the public open space off Shetland Road

13. Photograph K shows that the existing tree belt along the south western site boundary forms an effective screen to the site. The tree belt is to be retained and reinforced although a narrow 'ride' is to be created which will accommodate a pedestrian and cycleway link to proposed areas of public open space within the development. The 'ride' will be formed by creating a 5m break in the tree belt and whilst this will open up a short section of the trees, the alignment of the ride and its setting will seek to ensure that views between existing and proposed Public Open Space are restricted. Where views along this route are possible, for users of the open space, these will only be fleeting. Once the proposed tree planting along the route has matured, any views towards development will be filtered by the tree planting.
14. Some residential properties may also have views along the 'ride' however, these would be partial oblique views due to the angle of view from existing property windows and the alignment of the 'ride' itself. Visual effects are therefore considered to be Minor or Negligible and not significant.



Public footpath to the east of Eastcott's Farm

15. This location was visited along the public footpath which leads eastwards, away from Calford Green and the site. Whilst trees at Mary Cole's Grove and around Eastcott's Farm and Eagle's Farm are visible, the site itself is located on falling land beyond and is therefore not visible (photograph L). Whilst new development may just be visible on the horizon on completion, the proposed new boundary planting will provide an effective screen once mature at year 10. Visual effects are therefore considered to be negligible for footpath users and therefore not significant.



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-  Site Boundary
-  Photo Viewpoint Locations

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project
Great Wilsey Park,
Haverhill

drawing title
**ADDITIONAL PHOTO VIEWPOINT
LOCATIONS**

scale
1:20,000 @ A3

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Appendix 15.2 -

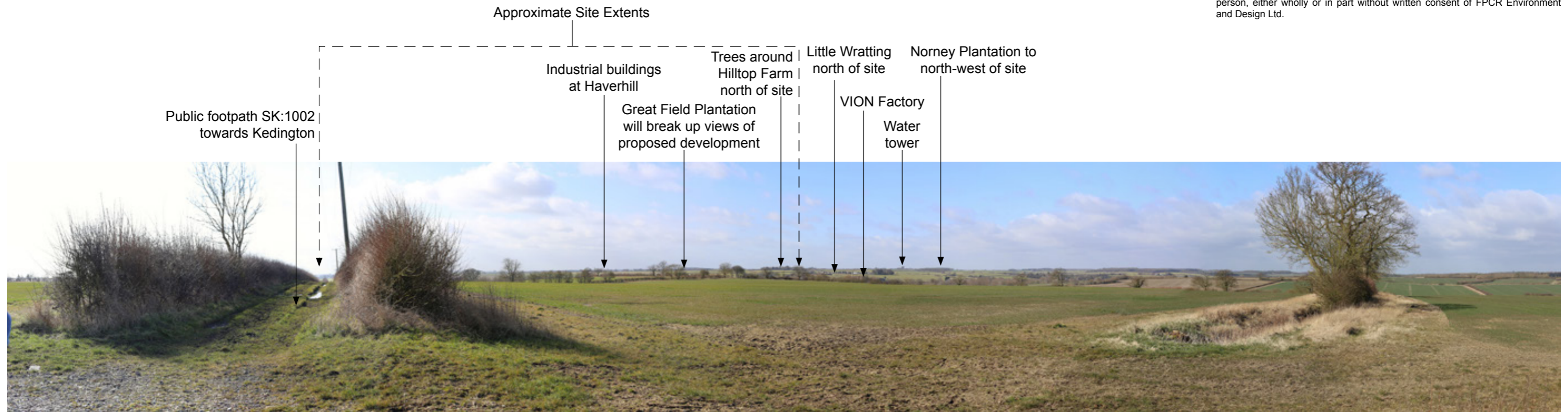


PHOTO VIEWPOINT A: View south-west from public footpath SK:1002 south of Barnardiston

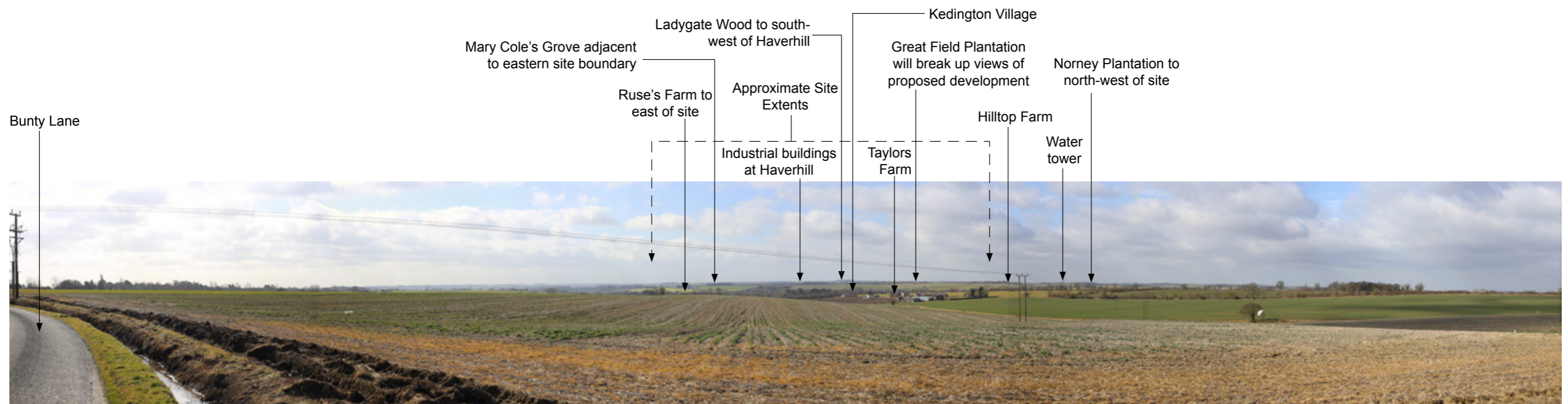


PHOTO VIEWPOINT B: View south-west from Buntry Lane

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ADDITIONAL PHOTO VIEWPOINTS A & B

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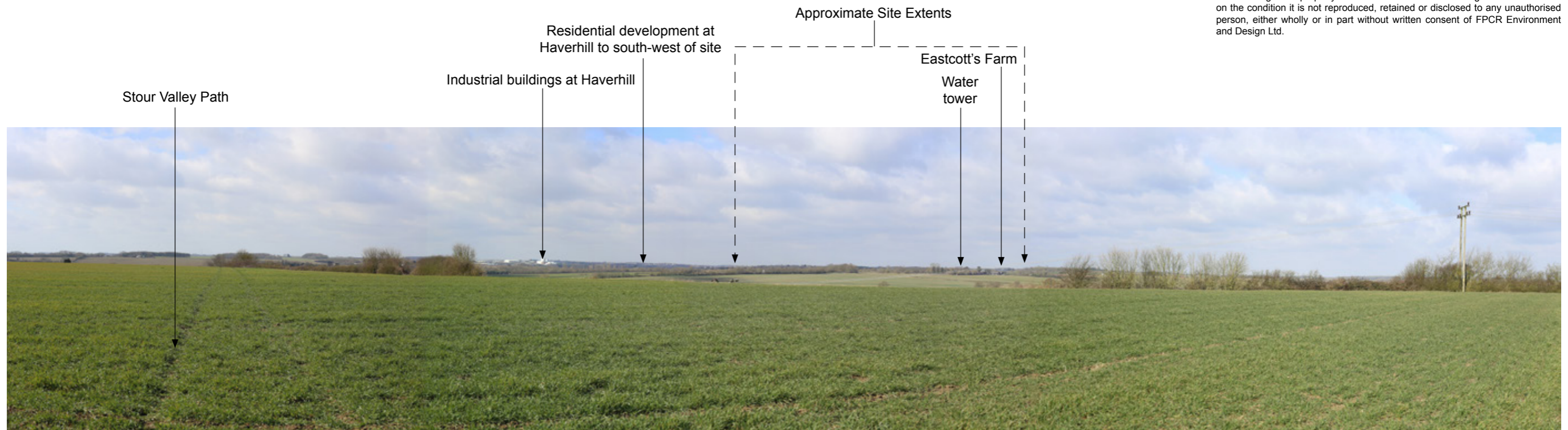


PHOTO VIEWPOINT C: View west from Stour Valley Path - long distance route, at Boyton End



PHOTO VIEWPOINT D: View south-east from public footpath SK:1206 leading towards Burton Ley Plantation

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PHOTO VIEWPOINT E: View south from Stour Valley Path - long distance route, north of Malting Farm

The Parish Church of Saint Peter and Saint Paul, Kedington



PHOTO VIEWPOINT F: View south-west from Stour Valley Path - long distance route, north of Kedington

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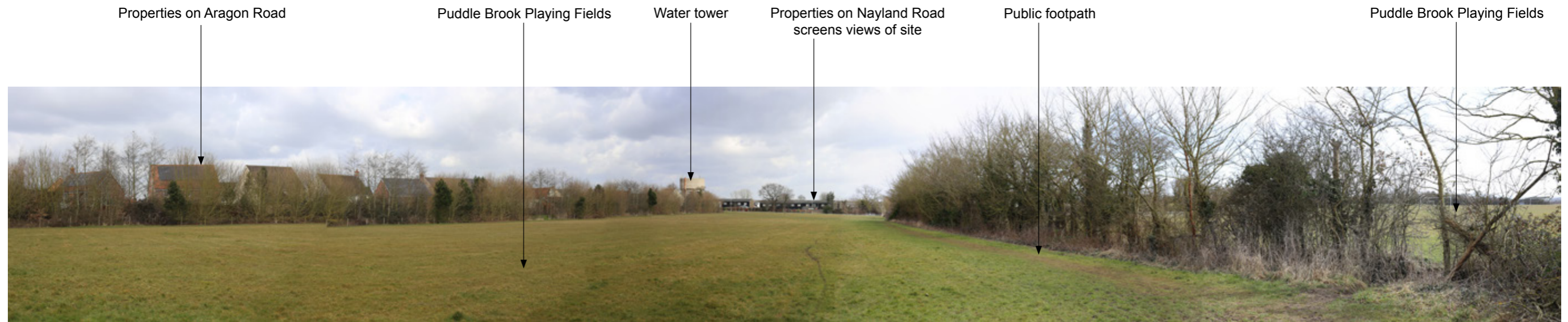
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Properties on Aragon Road

Puddle Brook Playing Fields

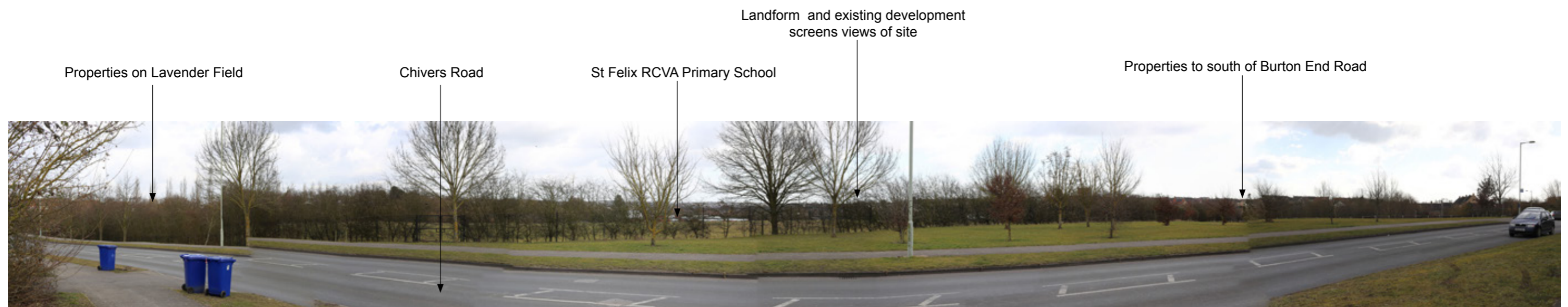
Water tower

Properties on Nayland Road screens views of site

Public footpath

Puddle Brook Playing Fields

PHOTO VIEWPOINT G: View north-east from Puddle Brook Playing Fields to the south-west of Haverhill



Properties on Lavender Field

Chivers Road

St Felix RCVA Primary School

Landform and existing development screens views of site

Properties to south of Burton End Road

PHOTO VIEWPOINT H: View east from Chivers Road, west of Haverhill

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Great Field Plantation within site
 Castle Manor Academy playing fields
 Boundary vegetation filters views of site
 Public Open Space
 Properties off Princess Way



PHOTO VIEWPOINT I: View east from public open space adjacent to Chimswell Way

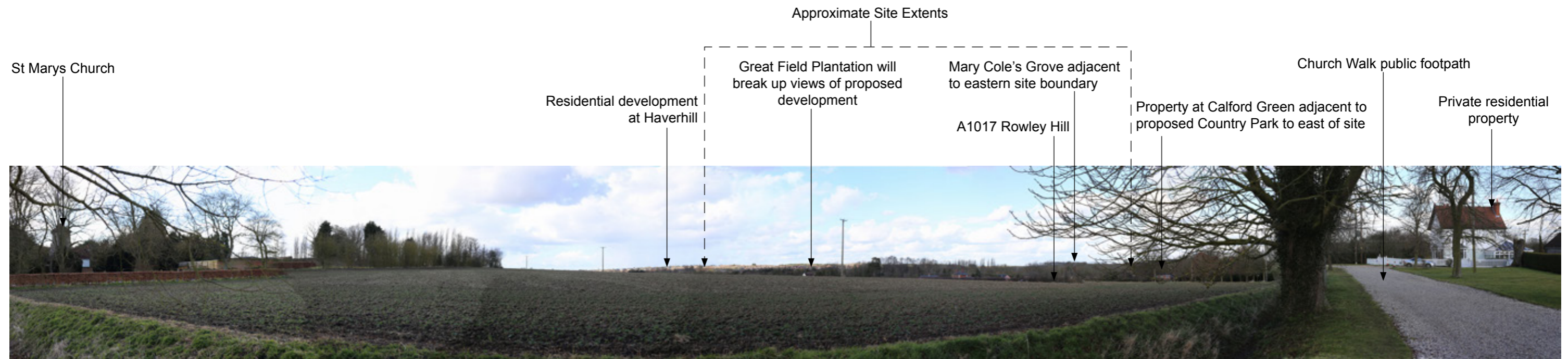


PHOTO VIEWPOINT J: View from public footpath EX: 4257 leading towards Sturmer Hall

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PHOTO K: View north-east from public open space off Shetland Road



PHOTO L: View west from public footpath SK:997#1 near Eastcott's Farm

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APPENDIX 15.2: ADDITIONAL VIEWS, VISUAL EFFECTS TABLE (VET)													
Ref	Receptor Type and Location (including approx no. of dwellings where applicable)	Judged Sensitivity of Visual Receptor		Judged Magnitude of Visual Effects				Description/ Notes	Overall Effect at Construction Phase	Overall Effect upon Completion	Overall Effect 10 Years post Completion	Is the effect Significant?	
		Susceptibility to Change	Value	Distance from Site Boundary (or Built Development where stated) (approx. m/km)	Nature of View	Is the View Permanent or Transient?	Size/Scale of Visual Effect (incl. degree of contrast/ integration) (at Stages of Project)		Major Moderate Minor Negligible None	Major Moderate Minor Negligible None	Major Moderate Minor Negligible None	Yes No	
		High Medium Low	High Medium Low		Full Partial Glimpse None		High Medium Low Negligible/ None		Adverse or Beneficial	Adverse or Beneficial	Adverse or Beneficial		
A	Public footpath ref SK:1002, leading south west from Barnardiston • Users of PROW	High	Medium	2.6km	Glimpse	Permanent	Construction: Negligible Completion: Negligible Year 10: Negligible	This viewpoint is located on public footpath ref SK:1002 which leads south away from Barnardiston and towards Kedington village. Wide panoramic views are possible from this elevated location with existing buildings of Haverhill and Little Wrating just visible in the distance. Part of the site is just visible on the horizon. Once complete, some of the new development may just be visible, however the proposed planting around the northern boundary will provide an effective screen and at this distance, the new development will not be visible once the planting has matured.	Negligible	Negligible	None	No	
B	Buntry Lane to north east of site. • Road users	Medium	Medium	3.2km	Glimpse	Transient	Construction: Negligible Completion: Negligible Year 10: Negligible	Buntry Lane leads towards Brockley Green to the north east of the site and views towards the site are possible in some locations. Wide panoramic views are possible from the slightly elevated land and the site is only just visible in the distance with features such as Taylors Farm and Kedington village providing more prominent features. On completion, some elements of the new buildings may just be visible, however the boundary planting will be implemented ahead of the building phase and once mature, it is very unlikely that the development will be visible at this distance.	Negligible	Negligible	Negligible/None	No	
C	Stour Valley Way long distance path at Boyton End • Users of PROW • Residents of Lower Farm	High High	Medium Medium	2.15km 2.25km	Glimpse None	Permanent Permanent	Construction: Negligible Completion: Negligible Year 10: Negligible None	The Stour Valley Way long distance route leads west towards Haverhill from Boyton End and passes Lower Farm. Wide views are possible from the footpath as it passes through an open field with buildings within Haverhill visible in the distance, The site can be located as the tops of the trees within the site are just visible on the horizon although the actual fields within the site are not visible due to the landform. Whilst some glimpses of new buildings may just be visible between the existing trees and existing properties on completion, the proposed boundary planting will provide a screen on completion. Existing trees around Lower Farm will screen any views of the development from the residential property.	Negligible None	Negligible None	Negligible None	No No	
D	Public footpath SK:1206 leading towards Burton Ley Plantation • Users of PROW	High	Medium	0.5km	Glimpse	Permanent	Construction: Negligible Completion: Negligible	Public footpath ref SK:1206 leads through rising fields towards Burton Ley Plantation, a water tower and a reservoir, to the north west of the site boundary. The site is screened by existing trees around the properties on Haverhill Road although can be located by the tops of the trees within the site boundary that are just visible.	Negligible	Negligible	None	No	

							Year 10: None	Due to the existing trees and falling landform, new development will not be visible within the site.				
E	Stour Valley Way long distance path north of Malting Farm. • Users of PROW	High	Medium	2.10km	Glimpse	Permanent	Construction: Low Completion: Negligible Year 10: Negligible	The Stour Valley Way leads north west away from Great Wrating to the north of the site. The site is just visible on the horizon located beyond existing properties on The Street and the context of mature trees. The majority of the proposed development will occur on the falling land beyond the horizon. New planting is proposed around the northern boundary and this will provide an effective screen once mature.	Negligible	Negligible	None	No
F	Stour Valley Way long distance path north of Kedington • Users of PROW	High	Medium	1.4km	None	N/A	Construction: None Completion: None Year 10: None	The Stour Valley Way leads north out of Kedington Village. Views towards the site from this part of the route are screened by existing field boundary hedgerows and trees and the new development will therefore not be visible from this location.	None	None	None	No
G	Puddle Brook Playing Fields to south west of Haverhill • Users of recreation facility • Users of PROW	Low High	Medium Medium	2.3km 2.3km	None None	N/A N/A	None None	The Puddle Brook Playing Fields are located towards the south western edge of Haverhill, adjacent to the A1017. The playing fields are set within a built up area with residential development, a school and industrial area adjacent. Public footpaths and a bridleway pass through the playing fields. Due to the location of the playing fields on the edge of the residential area and the existing development around the perimeter, the site is not visible for receptors using the playing fields or the public footpaths.	None	None	None	No
H	Chivers Road, residential street on western side of Haverhill • Residents • Road users	High Low	Medium Medium	2.25km 2.25km	None None	N/A N/A	None None	Chivers Road runs through a residential area towards the south western side of Haverhill. The road runs past the more open school playing fields of St Felix RCVA primary school however views of the site are restricted by the existing boundary vegetation, existing development and the distance involved.	None	None	None	No
I	Public Open Space adjacent to Chimswell Way • Users of PROW • Users of Public Open Space	High Medium	Medium Medium	2.2km 2.2km	Glimpse Glimpse	Permanent Permanent	Construction: Negligible Completion: Negligible Year 10: Negligible Construction: Negligible Completion: Negligible Year 10: Negligible	An area of public open space lies adjacent to Castle Manor Academy to the east of Chimsell Way. The site can be glimpsed through the boundary vegetation with Great Field Plantation just visible through the trees. The new development may be visible on completion but will be heavily filtered by the existing vegetation and will be seen within the context of the existing urban area of Haverhill. Views will be screened during summer months when the vegetation is in full leaf.	Negligible Negligible	Negligible Negligible	Negligible Negligible	No No
J	Public footpath ref EX:4257 leading to Sturmer Hall						Construction: Low	Sturmer Hall is located to the south east of Haverhill and a public footpath leads south west off the A1017 towards the hall. The site is just visible on the rising ground in the distance but is viewed within the context of the existing urban area of Haverhill.				

	• Users of PROW	High	Medium	1km	Glimpse	Permanent	Completion: Low Year 10: Negligible	Whilst the new development may just be visible, it will be seen as an extension of the existing urban area of Haverhill and views will be heavily screened by the exiting intervening vegetation.	Negligible	Negligible	Negligible	No
K	Public Open Space off Shetland Road											
	• Residents	High	Medium	1.15km	None	Permanent	Construction: Low Completion: Low Year 10: Negligible	Shetland Road is a residential road which loops off Chalkstone Way near to the south western site boundary. An existing tree belt runs around an area of public open space adjacent to the housing and follows the site boundary. It is proposed that a 5m 'ride' will be created through the tree belt to accommodate a new pedestrian and cycle way link to areas of public open space within the development. Whilst oblique views may be possible from some residential properties, the route will form a green corridor with new development set back from the route with boundary planting.	Minor Adverse	Minor Adverse	Negligible	No
	• Users of POS	Medium	Medium	1.25km	None	Permanent	Construction: Low Completion: Low Year 10: Negligible	The tree belt includes coniferous trees which will provide a year round screen for the proposed development.	Minor Adverse	Negligible	Negligible	No
L	Public Footpath ref SK:997#1 to east of Eastcott's Farm											
	• Residents	High	Medium	120m	None	N/A	None	A public footpath leads east off the B 1061 Sturmer Road at Calford Green to the east of the site boundary. The properties around Eastcott's Farm are set within mature vegetation and views of the site are therefore not possible. The public footpath leads away from the site and follows the sloping landform down towards the River Stour and the site is therefore screened by existing trees, buildings and the landform.	None	None	None	No
	• Users of PROW	High/Medium	Medium	120m+	Negligible	Permanent	Construction: Negligible Completion: Negligible Year 10: None		Negligible	Negligible	None	No



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