

# A47/A11 Thickthorn Junction

**Scheme Number: TR010037**

**Volume 6**

## **6.3 Environmental Statement Appendix** **Appendix 6.1 – Cultural heritage information**

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Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009**

The A47/A11 Thickthorn Junction  
Development Consent Order 202[x]

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**ENVIRONMENTAL STATEMENT APPENDIX**  
**Appendix 6.1 – Cultural heritage information**

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## 6 Appendix 6.1 - Cultural heritage information

### 6.1. Introduction

- 6.1.1. This appendix presents baseline historic environment data which has been used to inform the Environmental Statement (ES) Chapter 6 Cultural heritage (**TR010037/APP/6.1**).
- 6.1.2. A screening exercise is undertaken in Tables 8 (construction phase impacts) and 9 (operational phase impacts), in Section 6.10 of this document, to identify environmental effects of the final Proposed Scheme design (including design measures) without site-specific detailed mitigation recommendations. Any identified effects of Slight or higher are considered in detail in the ES Chapter 6, Cultural heritage (Tables 6.5 – 6.10) (**TR010037/APP/6.1**) with recommendations for mitigation.
- 6.1.3. For an assessment of residual effects (following recommended site-specific mitigation measures) please refer to ES Chapter 6, Cultural heritage (**TR010037/APP/6.1**).
- 6.1.4. Heritage assets are shown on ES Figures 6.1, 6.2 and 6.3 (**TR010037/APP/6.2**) and are listed in the gazetteer (Annex A to this ES appendix).
- 6.1.5. In this ES appendix, designated heritage assets are referred to by their National Heritage List for England (NHLE) reference number. Non-designated heritage assets are referred to by the relevant Norfolk Historic Environment Record (NHER) reference number, prefixed 'MNF'. Designated heritage assets recorded by both sources are referred to by their NHLE reference. Where assets have been identified by fieldwork as a part of this assessment, they are prefixed 'THK'.

### 6.2. Study area

- 6.2.1. In line with Design Manual for Roads and Bridges (DMRB) LA104 Environmental Impact Assessment & LA106 Cultural Heritage, the impact assessment for the setting of heritage assets as a result of the Proposed Scheme does not rely on a traditional study area. It is made up of assets within or outside the DCO boundary of the Proposed Scheme, that may experience physical effects, and assets (designated and non-designated) within the Zone of Visual Influence (ZVI) which may have effects on their settings and assets potentially affected by noise.
- 6.2.2. The ZVI does not have a mappable output, as it is based partly on professional judgement and will change with season and weather. The ZVI is therefore defined by the procedurally generated Zone of Theoretical Visibility (ZTV, see

ES Figure 6.1) which is modified based on site observations to account for vegetation or other factors not procedurally accounted for.

- 6.2.3. In the preparation of this report baseline data was gathered from the NHLE and NHER for an area of search buffered 1km from the scheme Scoping Boundary (August 2017, updated August 2018 and October 2019), on which an assessment of archaeological potential for hitherto unknown heritage assets within the Proposed Scheme DCO boundary has been based. All known heritage assets identified as part of the baseline assessment in this wider baseline area of search are described in a chronological narrative (Section 6.6).
- 6.2.4. The baseline data was updated in November 2019 and July 2020 for a 500m area of search buffered from the DCO boundary, in order to identify known heritage assets that would potentially be directly affected as a result of the Proposed Scheme.
- 6.2.5. Accordingly ‘assets that may be affected’ have been identified through a screening exercise of heritage assets in the gazetteer (Annex A to this ES appendix), and summarised in Tables 8 and 9 at Section 6.10.
- 6.2.6. Discussion of significant impacts is contained in the ES Chapter 6, Cultural heritage (**TR010037/APP/6.1**).

## 6.3. Consultation

- 6.3.1. A detailed description of the consultation which has taken place is presented in Table 1.

Table 1: Table Consultation detail

Consultee	Comment	Date	Response
Norfolk Environment Team	Suggested possible metal detecting survey around the area of the scheduled monument to determine whether there is any evidence of later re-use of the monument.	22 January 2018	Investigation of the scheduled monument area by Light Detection and Ranging (LiDAR) and aerial photographic analysis followed by trial trenching was subsequently agreed with Historic England and Norfolk County Council Environment Services (NCC ES). The results of each stage of investigation is presented in this ES appendix 6.1.
Historic England	Concern expressed regarding proximity of scheme to scheduled monument and its impact upon the monument’s setting.	26 February 2018	The Proposed Scheme is designed as far away from the scheduled monument as possible. A site meeting was subsequently arranged with Historic England and NCC ES to discuss setting (see consultation detail below).
Planning Inspectorate	<u>Scoping Opinion</u> The ES should provide a robust justification as to why the 1km study area is appropriate and sufficient to capture all heritage assets which could experience	March 2018	Further consultation was carried out to discuss an assessment area based on the Proposed Scheme ZTV to identify ‘assets that may be affected’ in accordance with DMRB (see consultation detail below).

Consultee	Comment	Date	Response
	impacts to their setting taking into account, for example, visual intrusion or increased noise emissions.		
Planning Inspectorate	<p><u>Scoping Opinion</u> The Inspectorate notes the potential for impacts on buried archaeological resource. Where relevant the ES should take into account guidance contained in Historic England's guidance document 'Preserving Archaeological Remains'.</p> <p>The ES should explain which of the Chartered Institute for Archaeologists standards and guidance have been used to inform the ES.</p>	March 2018	<p>This baseline assessment and fieldwork evaluations through geophysical survey (ES appendix 6.2 (<b>TR010037/APP/6.3</b>)) and trial trenching (ES appendix 6.3 (<b>TR010037/APP/6.2</b>)) have identified no archaeological remains of such that preservation in situ is warranted.</p> <p>The EIA has been carried out in accordance with all relevant and up-to-date guidance. See ES Chapter 6, Cultural heritage (<b>TR010037/APP/6.1</b>)</p>
Planning Inspectorate	<p><u>Scoping Opinion</u> The ES should include both a desk-based assessment and an archaeological field evaluation (where relevant). The scope of the field evaluation (where relevant) should be discussed and ideally agreed with South Norfolk Council Conservation Officer and archaeological staff at Norfolk County Council as appropriate.</p>	March 2018	<p>This supporting ES appendix 6.1 contains the results of a desk based assessment and has informed the preparation of this ES Chapter 6, Cultural heritage (<b>TR010037/APP/6.1</b>).</p> <p>The programme of trial trenching was implemented in accordance with a written scheme of investigation and trial trench location plan, approved in advance by NCC ES.</p>
Historic England	<p><u>Scoping Opinion</u> Assessment of setting should not be restricted to visual impact, but should also consider other environmental factors such as noise, traffic and lighting, where relevant. The cultural heritage chapter should be cross-referenced to other chapters or technical appendices; for example noise, light, traffic and landscape.</p>	March 2018	Noise, traffic and lighting is considered in the ES Chapter 6, Cultural heritage Table 6-5 ( <b>TR010037/APP/6.1</b> ).
Historic England	<p><u>Scoping Opinion</u> Whilst standardised EIA matrices are useful tools, we consider the analysis of setting (and the impact upon it) as a matter of qualitative and expert judgement which cannot be achieved solely by use of systematic matrices or scoring systems. Historic England therefore recommends that these should be seen primarily as material supporting a clearly expressed and non-technical narrative argument within the cultural heritage chapter.</p>	March 2018	<p>Assessment of the likely effect of the Proposed Scheme on the contribution that setting makes to the significance of heritage assets has been assessed through initial screening for sensitive assets, a narrative discussion of impact is presented, and concluded as an overall magnitude of impact, which is also resolved in terms of significance of effect as per the criteria presented in this ES appendix 6.1, Table 4.</p> <p>See ES Chapter 6, Cultural heritage (<b>TR010037/APP/6.1</b>)</p>
Historic England, Norfolk County Council Environment	<p><u>On-site consultation</u> HE acknowledged that there is less concern regarding the setting of SM barrows in Cantley Wood having visited the site. LiDAR and aerial photograph analysis to be</p>	26 June 2018	Aerial photography and LiDAR analysis has been undertaken and the results are presented in this ES appendix 6.1 (Part 6.5). Given the high quality of LiDAR data available, subsequent topographical survey is not considered to be necessary.

Consultee	Comment	Date	Response
Service (NCC ES)	undertaken, to be supplemented with detailed archaeological topographic survey if necessary.		
Historic England	<u>A47 Statutory Consultation Responses</u> Given that both of these prehistoric barrows survive with a high degree of integrity, we wish to reiterate our concerns about the likely harm to significance of these assets through a development within their setting.	June-July 2019	The Proposed Scheme is designed as far away from the scheduled monument as possible. A site meeting was subsequently arranged with Historic England and NCC ES to discuss setting (see consultation detail below).  See ES Chapter 6, Cultural heritage <b>(TR010037/APP/6.1)</b>
Historic England	<u>A47 Statutory Consultation Responses</u> It is also therefore worth reiterating that we expect to see our concerns about the harm accurately reflected in ES. In particular, the significance and the effects of the junction improvements on these assets would need to be clearly articulated, and a clear and convincing justification needs to be set out to specifically justify the heritage impacts.	June-July 2019	Significant setting effects on the barrows have been assessed. See ES Chapter 6, Cultural heritage <b>(TR010037/APP/6.1)</b> .  The methodology for the setting assessment carried out in the ES, including viewpoints and specific visualisations, has been discussed with HE to follow best practice Historic England guidance (GPA3), and will be in accordance with the requirements of the PINS statutory consultation responses. The benefits of the scheme will be presented in the Case for the Scheme <b>(TR010037/APP/7.1)</b> .
Historic England	<u>A47 Statutory Consultation Responses</u> We are also keen to see how the applicant will provide mitigation for these effects. This is not just about embedded mitigation (planting and landscaping), which is noted in the Preliminary Environmental Information Report chapter but we want to see a clearly expressed programme of mitigation for these designated heritage assets. This could include on and offsite mitigation, but the ES clearly needs to demonstrate how the mitigation will add public value to offset this harm.	June-July 2019	Offsite mitigation was further discussed during July 2020 telecon, in which a heritage interpretation board situated on the Cantley Lane Link overbridge was received favourably.  Historic England requested that any such board include an interpretation of the wider landscape setting in order to deliver public benefit.
Historic England	<u>A47 Statutory Consultation Responses</u> In addition, the ES will need to address cumulative impacts (particularly noise) and visual impacts (including lighting and night time views), and we expect the full ES to deliver heritage specific viewpoints, clearly illustrated with summer and winter photomontages.  We are particularly aware of noise as potential issue and would ask that a non-technical summary of the noise impacts on the designated heritage assets is provided in the heritage chapter.	June-July 2019	As agreed with Historic England by telecon, the assessment of heritage assets can effectively be demonstrated to the planning inspectorate through use of Landscape and visual assessment viewpoints 1 and 2 (ES Figures 7.6.1 – 7.6.2 <b>(TR010037/APP/6.2)</b> ) rather than additional heritage-specific viewpoints.  It was agreed that there is no requirement for a viewpoint at the barrows themselves. Long-sections will be appropriate to demonstrate the landscape context. It is requested that the visualisations include both existing and mitigation planting. See Heritage Long-Sections ES Figure 6.4 <b>(TR010037/APP/6.2)</b> .



Consultee	Comment	Date	Response
	This would need to be aimed at helping us to interpret the technical data and assess the impact.		<p>Assessment of setting has considered visual and other environmental factors such as noise, traffic and lighting (including night time views), where relevant. The cultural heritage chapter includes cross-references to other chapters or technical appendices; for example noise (including a non-technical summary of the noise impacts on the designated heritage assets provided in the heritage chapter), light, traffic and landscape.</p> <p>Assessment of the likely effect of the Proposed Scheme on the contribution that setting makes to the significance of heritage assets is assessed through initial screening for sensitive assets, a narrative discussion of impact is presented and concluded as an overall magnitude of setting impact, which is also resolved in terms of significance of effect (see ES Chapter 6, Cultural heritage <b>(TR010037/APP/6.1)</b>).</p>
Historic England	<u>Email and telecon</u> With regards to updating the HER data to reflect the extended redline boundary along the B1172, we consider that it is worthwhile including this area to ensure that the most complete and up-to-date dataset is being used in the EIA submission.	July 2020	Up to date Norfolk HER data was obtained July 2020 and used in the preparation of the baseline assessment presented in this ES appendix 6.1 and the impact assessment contained in ES Chapter 6, Cultural heritage. <b>(TR010037/APP/6.1)</b>
Historic England	<u>Email and telecon</u> We agree that approach for assessing visual impact using the ZTV with additional sensitive heritage assets beyond it, is appropriate.	July 2020	See Part 6.2 of this ES appendix 6.1. <b>(TR010037/APP/6.3)</b> .
Historic England	<u>Email and telecon</u> The assessment of heritage assets can effectively be demonstrated to the planning inspectorate through use of VPs 1 and 2, rather than additional heritage-specific viewpoints. There is no requirement for a viewpoint at the barrows themselves. Long-sections will be appropriate to demonstrate the landscape context. It is requested that the visualisations include both existing and mitigation planting.	July 2020	Landscape and visual assessment viewpoints 1 and 2 (ES Figures 7.6.1 – 7.6.2 <b>(TR010037/APP/6.2)</b> ).
Historic England	<u>Email and telecon</u> It is agreed that no other designated assets than the barrows require visualisations to demonstrate potential significant effects	July 2020	Landscape and visual assessment viewpoints 1 and 2 (ES Figures 7.6.1 – 7.6.2 <b>(TR010037/APP/6.2)</b> ).
Historic England	<u>Email and telecon</u> Retaining a wooded context for the barrows is likely to be the	July 2020	Environmental Masterplan <b>(TR010037/APP/6.8)</b> .

Consultee	Comment	Date	Response
	preferred option. Any assessment should bear in mind, however, that the wooded context may be removed in the future.		
Historic England	<u>Email and telecon</u> The Historic England Regional Science Advisor requests investigation into the potential for gravels of geoarchaeological interest in the area of the proposed stream diversion to be evaluated.	July 2020	Reference to grounds investigation Watching Brief proposed Spring 2021
NCCES	<u>Email and telecon</u> Final trial trenching reports (expected mid 2021) required before review of mitigation can be completed.	July 2020	To be addressed in Statement of Common Ground

## 6.4. Site background

### Geology and topography

- 6.4.1. The DCO boundary of the Proposed Scheme is largely situated on the eastern side of the shallow valley of the Cantley Stream, a tributary for the River Yare. The western end of the Proposed Scheme, at Station Farm, is sited at around 30m AOD, descending to around 15m AOD at the bottom of the Cantley Stream valley, then rising again to 30m AOD adjacent to the Thickthorn Park and Ride site, accessed from the B1172 Norwich Road.
- 6.4.2. The British Geological Survey (NERC 2017) identifies that the underlying bedrock comprises Lewes Nodular Chalk Formation overlain by alluvium of clay and silt in the area of the Cantley Stream, Sherringham Cliffs Formation sand and gravel along the valley sides and Lowestoft Formation Diamicton (unsorted/poorly sorted sediment) on the higher ground.
- 6.4.3. One soil type dominates: slightly acid loamy and clayey with impeded drainage. This soil type is moderately to highly fertile with arable and grassland landcover and a wide range of pasture and woodland types (Cranfield Soil and Agrifood Institute 2017).

### Ground investigation

- 6.4.4. A geotechnical and geoenvironmental investigation was undertaken between March and July 2018, comprising cable percussive boreholes, dynamic sample boreholes, trial pits and dynamic probes, as well as in situ and laboratory testing and reporting. A more detailed analysis of the investigation can be found in ES Chapter 9: Geology and Soils.
- 6.4.5. The report summarised the anticipated ground conditions within the site as follows:

- Topsoil or made ground – 0 – 1.5m thick
- Alluvium (if present) – soft brown sandy peaty gravel/ gravelly peat, 0 – 1.5m thick
- Lowestoft Formation – soft to firm slightly sandy slightly gravelly clay with possible sand and gravel bands, 3.0 – 10.0m thick
- Sheringham Cliffs Formation – medium dense brown and orangish brown fine to medium sand, clayey and gravelly in parts, 4.0 – 6.0m thick recovered as sand, gravel and cobble sized comminuted chalk with some flint gravel > 20.0m thick.

6.4.6. The report also notes that deposited waste material is anticipated within a former landfill site at Cantley Lane, identified immediately east of the A11.

### Walkover survey

- 6.4.7. Walkover surveys were undertaken in February and June 2018. The survey area accounted for potential later design iterations and the site description and assessment of archaeological potential remains relevant to the Proposed Scheme DCO boundary. The Proposed Scheme DCO boundary is described below from west to east.
- 6.4.8. The Proposed Scheme DCO boundary includes the existing A11 and B1172 Norwich Road carriageways to the north west and south west to allow for updated road sign work.
- 6.4.9. To the east of Station Lane, land take of the southern edge of an arable field is required for road widening. The field slopes down south-west towards the A11, from the high point in the north-eastern corner.
- 6.4.10. Moving eastwards, the DCO boundary includes the southern part of Thickthorn Park, a non-designated heritage asset MNF33732, the area of which is defined Norfolk Historic Environment Record, based on the Thickthorn Manor historic boundaries (thus distinct from the South Norfolk Local Plan allocation). At the time of survey this area had been planted with saplings. Tree belts screening the A11 contain what appear to be slightly raised, former field boundaries, including a small number of veteran trees.
- 6.4.11. The Cantley Lane link road (between Cantley Lane and the B1172 Norwich Road) would run through the eastern part of Thickthorn Park. The majority of this land use is arable agriculture (Figure 6.1.1). The land slopes down from the north, with its highest point where it meets the B1172, a proposed new junction. The Proposed Scheme primary compound will be located to the west and the pre-cast yard will be located to the east of the proposed link road.
- 6.4.12. A number of mature trees within the field are remnants of the former parkland, as indicated on the 1846 Hethersett Tithe Map (Figures 6.1.2 and 6.1.7). Fragments

of undated ceramic building material, in a degraded condition, were observed during the walkover, with a higher concentration towards the centre of the field. Belts of trees line the field boundaries, with a large tree belt placed along the western field boundary, effectively screening Thickthorn Hall from the arable land to its east. Further screening is established to the immediate east of the hall; historic planting evident on the 1846 tithe mapping (Figure 6.1.7).

- 6.4.13. To the immediate north of the A11, the proposed A11-A47 Connector Road would run through an area of current scrub and woodland.
- 6.4.14. To the south of the A11, west of Cantley Lane South, the proposed embanked Cantley Lane Link (S) is located within pasture around the Cantley Stream. This land was overgrown at the time of the survey.
- 6.4.15. The area surrounding the Cantley Stream is used as pasture and a raised track runs roughly parallel to the stream (Figure 6.1.3).



Figure 6.1.1: Arable field in Thickthorn Park, looking south-east



Figure 6.1.2: Mature trees in Thickthorn Park, looking west



Figure 6.1.3: Raised track in Thickthorn Park, looking north-west

- 6.4.16. To the north of the southern end of the Cantley Lane link road lies Cantley Wood, containing two barrows (prehistoric burial mounds, scheduled monument NHLE1003977, see Figure 6.1.4). The barrows are situated to the south-east of the A11, outside the Proposed Scheme DCO boundary, surrounded by young plantation. The Proposed Scheme DCO boundary at this location is situated within an area of former landfill.
- 6.4.17. To the north of Cantley Wood and south of the current A47/A11 junction, the proposed A11-A47 Connector Road would be located in a cutting, south of which a satellite compound is proposed within a field containing relict land divisions.
- 6.4.18. A balancing pond for the Proposed Scheme is proposed between Cantley Lane South and the A47, in a pasture field that slopes down to the south.
- 6.4.19. The fields to the east of the A47 have been previously archaeologically investigated by trial trenching for the Cringleford Residential Development. The land is arable and rises towards the current A47/A11 Thickthorn Junction.

### Historic landscape character

- 6.4.20. Historic landscape character (HLC) data was provided by NHER and the information below is cited from the Norfolk Landscape Archaeology Final Report (Dyson-Bruce & Thorogood, 2009).

#### *18th-19th century enclosure – lately enclosed fields*

- 6.4.21. This period of enclosure has a major impact on the Norfolk landscape. Maps indicate that much of the character of Norfolk emanates from this period of agrarian reform, and the various forms of lately enclosed fields cover the majority of the county. Two areas within the Proposed Scheme DCO boundary fall under this category:
- In the south-east of the Proposed Scheme DCO boundary is a ‘new enclosure’. Within the context of the Norfolk HLC, this is any enclosure occurring within the 19th century and usually evident when comparing Tithe Maps with 1884 1st edition OS maps. They are usually fields affected by the construction of the railways, in this case, the Great Eastern Railway (MNF13571).
  - In the east of the Proposed Scheme DCO boundary is a ‘Piecemeal enclosure by agreement’. This was the most commonplace type of field in Norfolk, of this period, until the 20th century. The fields were formed by informal piecemeal subdivision and enclosure of earlier field systems such as open fields. This type of enclosure has a long history within Norfolk and may have been replacing open fields since the 16th century to allow for the rationalisation of field boundaries and the concentration of land holdings into single blocks. These may reflect various earlier episodes of reversion to sheep grazing and pasture in the medieval period.

### *20th century agriculture*

- 6.4.22. The majority of the area within the Proposed Scheme DCO boundary is made up of 20<sup>th</sup> century field types, which generally comprise large-scale animal farms, boundary loss and new field boundaries and have had a major impact across the county. In this particular case, much of the landscape within the Proposed Scheme DCO boundary is classified as 20<sup>th</sup> century enclosure, namely “boundary gain”- these are either subdivisions of existing fields or newly drawn landscapes, and reflect a variety of drivers including new infrastructure, field subdivision due to paddocks or market gardens, or the replacement of lost field boundaries. Here can be seen the ‘halo effect’ of redrawn plots around urban fringes, with small fields in the central eastern area of the county surrounding Norwich. This is possibly a reflection of new grants for hedgerow replacement, or where the original historic fields were of a smaller size.
- 6.4.23. Field patterns are also defined by substantial modern roads crossing the county that emanate from/towards Norwich including the Norwich Southern Bypass (A47).

### *Inland – managed wetland*

- 6.4.24. A tributary to the River Yare branches off the river to the west and through the Proposed Scheme DCO boundary, surrounding which the land is characterised as enclosed meadows. These can usually be seen as sinuous narrow fields following a watercourse, often managed to provide a hay crop as animal fodder.

### *Woodland*

- 6.4.25. Within the Proposed Scheme DCO boundary are two areas that have been characterised as woodland. They fall into two categories; ‘Carr Woodland’, which is commonly found on wetland areas and are primarily identified using Faden’s map of 1797, and 18<sup>th</sup>-20<sup>th</sup> century woodland plantation’.

## **6.5. Cultural heritage baseline**

- 6.5.1. A gazetteer of all baseline heritage assets can be found in Annex A of this ES appendix. Heritage assets are shown on ES Figures 6.1, 6.2 and 6.3 (TR010037/APP/6.2).

### **Scheduled monuments**

- 6.5.2. There are two scheduled monuments (SM) located within the wider baseline area of search, each of which comprise a pair of Bronze Age round barrows, NHLE1003977 and NHLE1002888.

- 6.5.3. One of these SMs is located within the ZTV for the Proposed Scheme: NHLE1003977 *Two Tumuli in Big Wood*. 'Big Wood' is now referred to as Cantley Wood and is situated adjacent to the Proposed Scheme DCO boundary (Figure 6.1.4).
- 6.5.4. There are no other scheduled monuments likely to be affected by the Proposed Scheme.
- 6.5.5. NHLE1003977 has been previously recorded as part of a National Mapping Programme (NMP) aerial investigation and mapping project (Bales, et al., 2010). The NMP project did not have access to LiDAR data; it has therefore been requested by NCC ES and the Historic England Inspector of Ancient Monuments that this area be re-examined in the light of the Environment Agency data now available in order to accurately map and record the form and extent of the two barrows in Cantley Wood to inform this baseline assessment.
- 6.5.6. It was agreed that detailed analysis by remote sensing (aerial investigation and mapping) would be implemented in order to better understand the extent, significance and setting of NHLE1003977. This comprises interpretation of modern and historic aerial photographs, LiDAR and mapping, the results of which are presented below.
- 6.5.7. The aerial analysis and transcription focussed on Cantley Wood to the south of the A47/A11 Thickthorn Junction (see Figure 6.1.5).





Figure 6.1.4: Westernmost barrow of the scheduled monument, looking north-east



Figure 6.1.5: Aerial survey assessment area (red), overlaid on OS aerial imagery

Source: Crown copyright and database rights 2017 OS 100030649

## *Methodology*

- 6.5.8. The historic Ordnance Survey (OS) map sequence was consulted and described.
- 6.5.9. Historic vertical and oblique aerial photographs of the assessment area held within the Historic England archive were consulted.
- 6.5.10. Environment Agency LiDAR imagery is available for the assessment area at a spatial resolution of 50cm. The LiDAR DSM (Digital Surface Model) and DTM (Digital Terrain Model) data were used to create models for analysis.
- 6.5.11. Modern vertical orthophotographs are also available for the entirety of the assessment area, in the form of ESRI World Imagery and Ordnance Survey aerial imagery (accessed via the project online GIS viewer) for the project area.
- 6.5.12. Monument and event records from the Norfolk Historic Environment Record (NHER) database were used as a reference to aid interpretation of features visible on the remote sensed imagery.

## *Historic mapping and aerial photograph review*

- 6.5.13. The 1882 OS mapping records woodland across this area. By the time of the 1913 OS a sizeable extractive pit was recorded in the western half of the woodland, with a path or track leading to the south, and the area was at that time labelled 'Big Wood'.
- 6.5.14. The 1928 OS shows the former wooded area represented instead with the symbology for rough pasture and brushwood (National Library of Scotland, 2018). This is the earliest OS map to record the tumuli, with the western barrow outlined as larger, and crossed by a field boundary at its western edge. The extractive pit shown on the 1913 map had been expanded northwards by this point, and further pits had been opened to the north of the eastern barrow (in the field to the north). The symbology for the original extractive pit indicates a clay pit and sand pits. Several small structures or buildings are shown just within the southern boundary of the formerly wooded area, likely associated with the extractive activity.
- 6.5.15. The 1951 OS shows further development of the extractive activity across the area and beyond. Pits represented with the symbology for both clay and gravel extraction are shown to the immediate south, north, and west of the western barrow. The extraction in the field to the north of the eastern barrow had also been substantially expanded to the north and north-east. The map indicates trackways leading between the areas of quarrying. Several more buildings had been constructed within the south-western corner of the area.

- 6.5.16. The areas of quarrying indicated on the 1928 and 1951 OS maps are shown as purple hatched polygons in Figure 6.1.6.
- 6.5.17. Historic aerial photographs taken in the 1940s and 1950s show dense mature tree cover across the majority of the area, with the exception of the western barrow mound and the extractive pits surrounding it.
- 6.5.18. The Highways England online GIS viewer shows two areas of historic landfill within the aerial survey assessment area; presumably utilising the former extractive pits at this location. These areas are recorded as having been used for industrial, commercial and household waste between 1961 and 1969. According to the data supplied, the westernmost of the landfill pits overlaps the southern part of the western barrow mound; though this is not evident from the site visit undertaken in February 2018, as the mound is still present. The data also shows the easternmost area of landfill as directly on top of, or within, the eastern barrow mound. As it is probable that the landfill activity filled disused quarry pits, it seems likely that this landfill site has not been correctly located on the map. Recent ground investigation works identified made ground in several trial pits in the south-western quarter of the area (Geotechnics 2018).
- 6.5.19. The only extensive tree clearance visible on the historic aerial photographs is across the western half of the area during the 1980s, when it appears it may have been used as a construction compound for the adjacent A11. This half of the assessment area was still devoid of any trees in the early 1990s.

#### *LiDAR data transcription*

- 6.5.20. The two Bronze Age round barrows (NHLE1003977) and a possible extractive pit (THK01) are evident in LiDAR data within Cantley Wood (Figure 6.1.6). The western barrow appears as a prominent mound with sharply defined edges. The eastern barrow is slightly more diffuse- likely a result of erosion. Neither barrow exhibits a surrounding ditch in the topographical data. Interrogation of the LiDAR data allows for height measurements to be recorded.
- 6.5.21. The eastern barrow measures 31m in diameter and 3m high, and the western barrow is 35m in diameter and over 4m high; the former therefore being considerably larger than noted during the Norfolk NMP project, which recorded a diameter of 14-17m. This is presumably due to the fact this area is more densely covered in trees than the eastern barrow (see Figure 6.1.5).
- 6.5.22. The western barrow has been transcribed here with a slightly irregular outline. This is likely attributable to the former extractive pits which were immediately adjacent to it, and all but surrounded it (Figure 6.1.6). These were recorded on the 1928 and 1951 OS maps and were visible on some of the historic aerial photographs. Some or all of these pits were later used for landfill during the

1960s. The backfilling of the quarry pits or the finalisation and capping of this landfill will have involved landscaping activity which may be confusing the visibility of the edge of the barrow on the LiDAR imagery.

- 6.5.23. The possible extractive pit recorded as THK01, to the south-west of the eastern barrow (Figure 6.1.6) measures approximately 7.5m across. This is likely to be a remnant of the former extractive or landfill activity at this location. It is within an area recorded by an NHER record as the site of a limekiln and associated trackway (NHER 16685).

Table 2: Attribute data table for each feature transcribed

ID	HER	Period	Type	Evidence	Description	Source
SM: NHLE 1003977 (for both)	9463 and 9464	Bronze Age	Round Barrow	Earthwork	Two scheduled round barrows previously mapped as part of the Norfolk NMP project from aerial imagery. Both barrows are visible in the LiDAR data as clear earthworks. The eastern barrow, round in plan, measures 31m in diameter and 3m high. The western barrow, round in plan, is 35m in diameter and over 4m high. Neither barrow exhibits a surrounding ditch in the topographical data.	EA LiDAR 50cm TG1804 23/12/15
THK01	N/A	Post medieval / Twentieth Century	Extractive Pit	Earthwork	A possible extractive pit is visible in the LiDAR data as an earthwork beneath the tree cover. This area previously included quarrying (documented on historic OS maps), and more recently a landfill site. It is therefore unclear which phase of activity this relates to. May alternatively be modern activity.	EA LiDAR 50cm TG1804 23/12/15

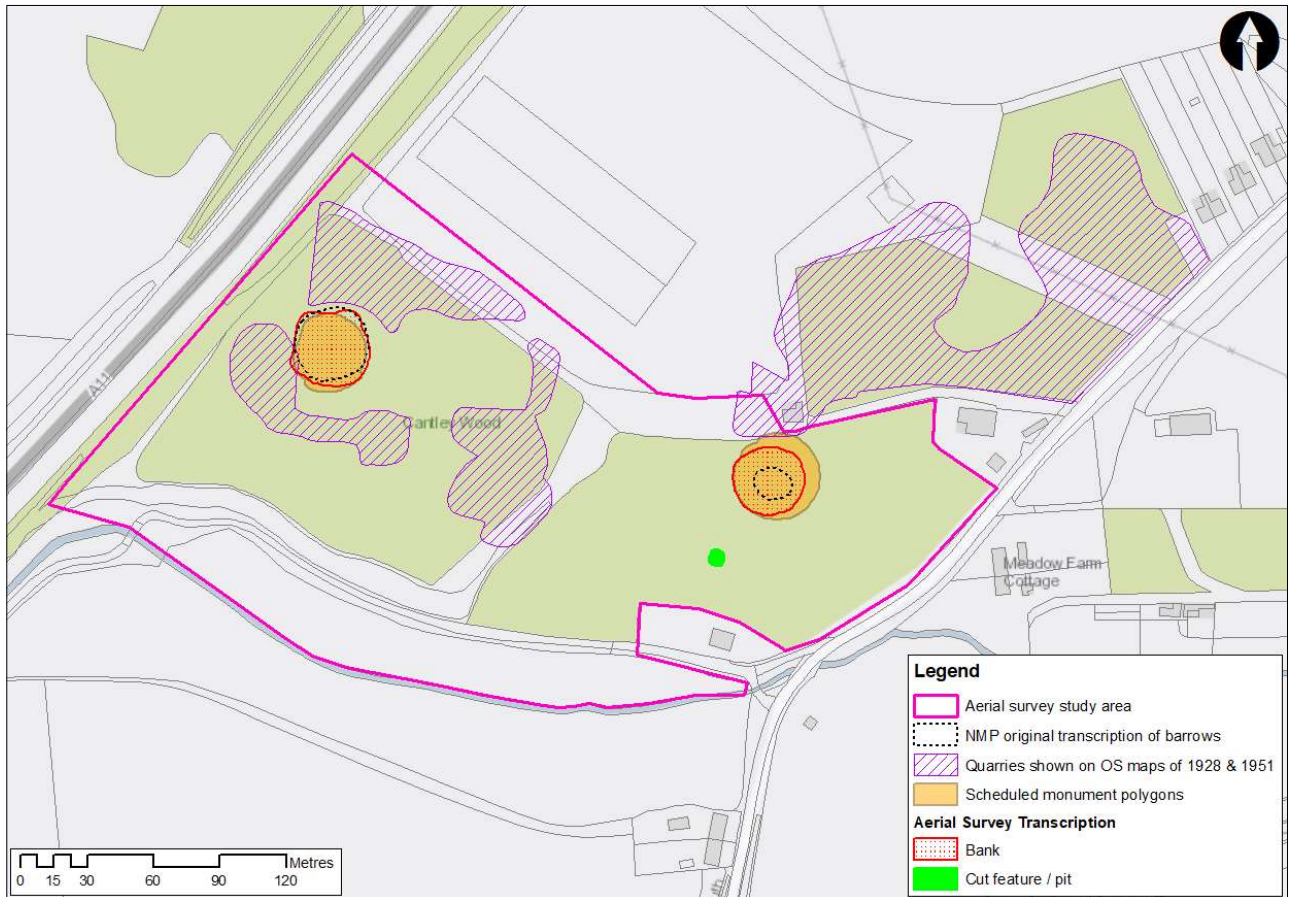


Figure 6.1.6: GIS and aerial survey analysis of SM, two Bronze Age barrows, Cantley Wood

Source: Contains OS data © Crown Copyright and database right 2020, OS 100030649

- 6.5.24. It is not possible to say from these survey results or the cartographic evidence whether all traces of possible archaeological features or deposits will have been removed from the vicinity of the barrows. There is no evidence that this was a single large open area of quarrying; rather multiple discrete pits that expanded intermittently. However, the 20<sup>th</sup> century tree removal, quarrying and subsequent landfill will have created sufficient ground disturbance, at least at the surface, to mask the identification of archaeological features should they remain preserved between the former extractive pits.

## Conservation areas

- 6.5.25. Cringleford Conservation Area, located in the southern half of Cringleford, over 600m north east of the Proposed Scheme DCO boundary, is not located within the ZTV for the Proposed Scheme.
- 6.5.26. There are no conservation areas likely to be affected by the Proposed Scheme.

## Registered Parks and Gardens

- 6.5.27. Intwood Hall Grade II\* Registered Park and Garden (NHLE1000320) is located over 600m south of the Proposed Scheme DCO boundary, is not located within the ZTV, and is thickly screened by woodlands.
- 6.5.28. There are no Registered Parks and Gardens likely to be affected by the Proposed Scheme.

## Listed buildings

- 6.5.29. There is one listed building located within the Proposed Scheme DCO boundary / ZTV:
- Milestone No 4 (NHLE1050573) Grade II listed building: Milestone, late 18th century, for Norwich and Thetford Turnpike Trust; limestone. Wedge shaped, about 60cm high with rounded cap, tapering from 14 to 31 cm. Recessed full width panels inscribed NORWICH / 4 / MILES and THETFORD / 25 / MILES. The road was turnpiked in 1767.
- 6.5.30. Five further listed buildings are located within the ZTV for the Proposed Scheme, the settings of which have the potential to be affected:
- The Round House (NHLE1050567) Grade II listed building: Cottage constructed in c. 1805 for the estate of Sir Roger Kerrison; octagonal in shape with a red brick with brick dentil cornice and black glazed pantiles.
  - Kitchen Garden Walls and Attached Octagonal Building c. 60m north-east of Thickthorn Hall (NHLE1050575) Grade II listed building: Early 19th century walls, constructed with red brick in Flemish bond; some ramped walls at angles. Included for group value with Thickthorn Hall.
  - North House / The Farmhouse (NHLE1169110) Grade II listed building: Late 18th and early 19th century farmhouse, now two dwellings; colourwashed brick, black glazed pantiles. The farm was originally the Hall Farm of Cringleford Hall (NHLE1050564).
  - Thickthorn Hall (NHLE1169537) Grade II listed building: An early 19th century mansion, with an early 19th century walled kitchen garden and a late 18th century octagonal barn. The principal façade of the Hall is to the south, and has Tuscan pilasters and a recessed doorway with Tuscan columns.
  - Cantley House (NHLE1306560) Grade II listed building: 16th and 17th century house (formerly a farmhouse), much of the timber frame now replaced with colourwashed brick and pantile roof. The main block of the house dates from the 17th century, and the interior of the house contains elaborately carved timbers with ovolo mouldings and other decorative details. The house and farmstead are the only remaining settlement of the former parish of Cantelose.

6.5.31. There are a further 28 listed buildings located within the wider baseline area of search, of which three are Grade II\* listed and the remainder are Grade II listed. These are each referenced in the chronological narrative (Part 6.6).

### Non-designated heritage assets

6.5.32. There are 176 known non-designated heritage assets recorded by the HER within the wider baseline area of search, of which 107 are findspots, the remainder comprising monuments, buildings, cropmarks, previous archaeological works (including two events resulting in negative archaeological evidence), and two non-designated landscaped parklands.

6.5.33. Non-designated heritage assets are presented in the gazetteer (Annex A of this ES appendix) and each asset is described in terms of its contribution to the assessment of archaeological potential within the Proposed Scheme DCO boundary within the chronological narrative at Part 6.6.

6.5.34. There are 27 non-designated heritage assets recorded by NHER located within the Proposed Scheme DCO boundary, of which 15 are records of findspots that cannot be affected as they have been removed from the site, and 12 have the potential to be directly affected by the Proposed Scheme.

- MNF18186: Linear ditches perhaps relating to a medieval parish boundary of Thickthorn and possible fragmentary enclosures of unknown date.
- MNF9409: Undated bank (earthwork), linear feature, hollow way.
- MNF70857: Ring ditch and two linear features identified through aerial photography and geophysical survey. Investigations in this area during 1978-92 recovered a wide variety of objects (MNF16230/MNF40384)
- MNF59885: Undated cropmarks of possible field boundaries.
- MNF43554: Prehistoric features identified through trial trenching/SMS during construction of Thickthorn Park and Ride.
- MNF45126: Prehistoric ditches, pits and post holes identified through trial trenching.
- MNF9396: Undated enclosure or field system and multi-period finds.
- MNF65378: Several possible ditches and pits of an unknown date identified through geophysical survey.
- MNF33732: Early 19th century landscaped park surrounding Thickthorn Hall.
- MNF16685: Site of modern lime kilns and tramway.
- MNF9469: The deserted medieval village of Cantley
- MNF11805: Original lodge of Thickthorn Hall.

- 6.5.35. Within the DCO boundary, MNF11820, a possible building visible as a cropmark on aerial photographs has been investigated by trial trenching as part of the Proposed Scheme and found to be non-archaeological: a remnant of agricultural activity in the area, and is not considered further.
- 6.5.36. Non-designated heritage assets have the potential to contribute to the significance of designated heritage assets through group and/or historical value within their setting. A screening exercise has identified that, within the ZTV for the Proposed Scheme, five non-designated assets associated with Grade II listed buildings Thickthorn Hall (NHLE1169537) and its kitchen garden (NHLE1050575) should be considered in the detailed setting assessment:
- Thickthorn Park (MNF33732) was an early 19th century landscaped park surrounding Thickthorn Hall. The park includes a medieval moat (MNF9352) that was turned into an ornamental lake, a late 19th century kitchen garden (MNF9410), early 19th century lodges (MNF11805, MNF47810) and concrete greenhouses from the 1930s.
  - Constructed in the late 18th or early 19th century, Lodge House (MNF11805) was the original lodge of Thickthorn Hall (NHLE1169537). The lodge is Georgian in style, compared to the neo-classical style of the hall. It has been suggested that the lodge was a deliberate device to make the park seem larger than it was.
  - Thickthorn Lodge (MNF47810), a late 19th century red brick lodge with a thatched roof. The lodge stands at the entrance to the landscape park surrounding Thickthorn Hall
  - Hollow way (MNF65395) visible as an earthwork on aerial photographs and on the ground. The hollow way may be a former approach to Thickthorn Hall.
  - Medieval moat (MNF9352) in the grounds of Thickthorn Hall. Medieval documents record that this was the site of the manor house of Alan de Thickthorn in the mid-13th century.

## 6.6. Background history and archaeology: chronological narrative

### Prehistoric (800,000 BC – AD 43)

- 6.6.1. The Palaeolithic period (800,000-10,000 BC) saw alternating warm and cold phases and intermittent, perhaps seasonal, occupation throughout the UK. It is probably during the Upper Palaeolithic (40,000- 10,000 BC), when further climate warming took place, that Britain first saw continuous occupation. Erosion has removed much of the Palaeolithic land surfaces, and finds are typically residual.
- 6.6.2. The Mesolithic hunter-gatherer communities of the postglacial period (10,000-4,000 BC) inhabited a still largely wooded environment. The river valleys, such as that of the River Yare to the east of the Proposed Scheme, would have been



favoured in providing a dependable source of food and water, as well as means of transport and communication. Evidence of activity dating to the Mesolithic period is generally characterised by flint tools rather than structural remains. The Neolithic (4000–2000 BC), Bronze Age (2000–600 BC) and Iron Age (600 BC–AD 43) are traditionally seen as times of technological change, increasingly settled communities and the construction of communal monuments. Farming was established and forest cleared for cultivation. An expanding population put pressure on available resources and necessitated the utilisation of previously marginal land (Bradley, 2007).

- 6.6.3. In addition to the Bronze Age scheduled monument discussed above at Cantley Wood, a number of prehistoric finds have been recorded within the wider baseline area of search to further suggest prehistoric occupation and activity. Of these, several are recorded within the Proposed Scheme DCO boundary; a number of Mesolithic and Neolithic flint flakes and blades (MNF22757, MNF22758, MNF22812, MNF22813, MNF22814, MNF22828) were found along the alignment of the A11 in 1986, prior to its construction.
- 6.6.4. Cropmarks, visible on aerial photographs, have been observed on several occasions within the Proposed Scheme DCO boundary, which could represent prehistoric activity. A series of ditches, which were also identified by the geophysical survey, are visible as cropmarks on land to the north of the A11 and to the south of Norwich Road (MNF59885), which could represent prehistoric field boundaries. In addition, cropmarks are visible on aerial photographs taken in 1973 (MNF9396) on the land on which the A11/ A47 Thickthorn Junction is located, which could represent a prehistoric enclosure or field system; prehistoric flint artefacts, as well as an Iron Age coin, have also been found on this site.
- 6.6.5. Investigations within the Proposed Scheme DCO boundary between 1978 and 1992 (MNF16229, MNF16230, MNF40384, MNF70857) recovered numerous finds dating to the prehistoric period, providing additional evidence for prehistoric activity in the area. These included prehistoric flints, prehistoric pottery sherds and three Bronze Age copper alloy socketed axe heads. An undated ring ditch and two undated linear features are also visible as cropmarks on aerial photographs that were taken in the 1940s and 1994; the linear features were detected in recent geophysical survey but the ring ditch was not. However, magnetic responses may have been masked by the presence of a pylon nearby.
- 6.6.6. In an area just outside the Proposed Scheme DCO boundary, but immediately west of the A11/A47 Thickthorn Junction, two scatters of prehistoric flint artefacts and burnt flints were found during fieldwalking in 2004 (MNF43554). Bronze Age and Iron Age features and prehistoric finds were also discovered during the subsequent evaluation excavation.

- 6.6.7. Outside the Proposed Scheme DCO boundary further evidence for prehistoric activity has been recorded by both intrusive methods, such as trial trenching, and non-intrusive methods, such as field-walking, metal detecting, geophysical survey and aerial photography. Fieldwalking and metal detecting on the line of the Norwich Southern Bypass to the south-east of the Proposed Scheme recovered numerous finds dating to the prehistoric period, mostly in the form of flint artefacts (MNF14273, MNF14274, MNF14276, MNF16229, MNF24830, MNF25706, MNF25600, MNF25601, MNF65375, MNF65377, MNF28149, MNF12622, MNF22817).
- 6.6.8. In close proximity to this, cropmarks of linear ditches can be seen on aerial photographs; it has been suggested that these could be interpreted as Neolithic flint mine shafts (MNF31555), associated with a probable Neolithic flint working site to its immediate west (MNF17836), from which a large number of Neolithic worked flints were recovered. Cropmarks have been noted in several other instances throughout the wider baseline area of search (MNF61771, MNF59884) suggesting the presence of Bronze Age ring ditches, as well as a low mound that appears on Ordnance Survey maps and as a cropmark on aerial photographs which could be a Bronze Age barrow (MNF9395), located just under 1km from the scheduled monument (NHLE1003977).
- 6.6.9. Further to the south (c.1.7km), two further scheduled possible Bronze Age round barrows are situated. One of the barrows was excavated in the mid-19th century and a fragment of Roman pottery was discovered. Both barrows are visible as earthworks on aerial photographs from 1956.

### Roman (AD 43 – AD 410)

- 6.6.10. The Proposed Scheme is located c 4.5km to the north-west of the known former Roman settlement of *Venta Icenorum* at Caistor St Edmund. Founded in c AD60, the town was the largest and most important Roman centre of northern East Anglia, acting as the administrative base for the area of Norfolk, northern Suffolk and eastern Cambridgeshire. Prior to the Roman invasion, the Proposed Scheme DCO boundary was located within the territory of the Ezeni (or Iceni) tribe, and it would seem that *Venta Icenorum* was already a significant place when the Romans established the town (Norfolk Archaeological Trust, 2016).
- 6.6.11. In the south of the wider baseline area of search, the line of a Roman road between *Venta Icenorum* and the site of a Roman temple at Crownthorpe has been traced, principally through earthworks, soilmarks and cropmarks visible on aerial photographs in several locations (MNF9762, MNF59882).
- 6.6.12. Other evidence of Roman activity is generally limited to findspots, as opposed to *in-situ* structural remains. The Proposed Scheme DCO boundary was likely

located too far from the main Roman town and road network to warrant any substantial development in the area, and settlement was likely limited to small farmsteads. Within the Proposed Scheme DCO boundary, primarily along the alignment of the A47, finds dating to the Roman period consist of pottery sherds, coins, a brooch and a bowl (MNF22755, MNF14273, MNF16229, MNF16230, MNF40384, MNF70857, MNF9396, MNF22992).

- 6.6.13. 600m east of the Proposed Scheme DCO boundary a Roman cremation urn was found in a garden in 1930. It was placed in the ground upside down and contained cremated bones. Pottery sherds and oyster shells, possibly Roman in date, were found at the same time in a field to the west (MNF9364).

### Early medieval (AD 410 – AD 1066)

- 6.6.14. By the end of the Saxon period, the Proposed Scheme would have fallen within the ancient Hundred of Humbleyard. At the time of the Domesday Survey in 1086, both Cringleford and Hetherset were established settlements, suggesting their growth throughout the Saxon period. Hetherset was the larger of the two, recorded to have 131 households at the time of the survey; Cringleford was recorded to have 25. The population of Hetherset comprised mostly peasant families, who worked with cattle, sheep, horses, pigs and beehives, and worked arable lands, meadows and woods (The Hetherset Society Research Group, 2002).
- 6.6.15. Recent intrusive evaluation by trial trenching of the Cringleford Residential Development area, now located directly adjacent to the Proposed Scheme DCO boundary eastern boundary but the evaluation area for which included part of the Proposed Scheme DCO boundary, recorded Late Saxon period charcoal rich pits, a type of feature which was fairly numerous across the evaluation area (Suffolk Archaeology, March 2019, HER Ref. ENF144996).
- 6.6.16. There is limited evidence for Saxon activity within the wider baseline area of search. Two fragments of Late Saxon horse bridle cheekpieces were found by metal detecting, one in 1993 to the west of the Proposed Scheme (MNF38518), another to the north of the Proposed Scheme in 2004 (MNF14272). Fieldwalking and metal detecting has recorded a Saxon brooch and ladle handle (MNF14274), Saxon pottery (MNF14275), Saxon coins (MNF16229, MNF32333, MNF44230), an early Saxon wrist clasp and belt stiffener (MNF25706) and Saxon brooches (MNF25706, MNF32333).
- 6.6.17. To the south-east of the Proposed Scheme cropmarks can be seen on aerial photographs which could represent possible Early Saxon sunken featured buildings (MNF31555) suggesting, along with the find spots, background evidence of rural settlement throughout this period.

## Late medieval (1066 – 1485)

- 6.6.18. By 1086 most of the Saxon aristocracy who held land in Hethersett had been deposed and replaced by Norman noblemen. The village was known to have two churches, one of which had eight acres and stood at the deserted medieval village of Cantley (MNF9469), immediately south of the Proposed Scheme DCO boundary. All that remains of the ancient village is primarily Cantley House (NHLE1306560), formerly an early 17<sup>th</sup> century farmhouse standing opposite the site where the church once stood. Cantley was one of three hamlets located within the boundaries of Hethersett, along with Thickthorn and Lynch Green.
- 6.6.19. The hamlet of Thickthorn took its name from the dwellers of the medieval manor, which stood near to the site of Thickthorn Hall (NHLE1169537), around which there is clear evidence of a medieval moat (MNF9352). The medieval hamlet of Thickthorn now has no defined boundaries, although the estate is still identified by the historic name of its hall and land (MNF33732), the farm opposite and the A11/A47 junction (The Hethersett Society Research Group, 2002). Within the land of the historic manor (Thickthorn Park), pottery and ceramic building material dating to the medieval period have been found through fieldwalking and metal-detecting (MNF65378). Additionally, a hollow way is visible as an earthwork on aerial photographs which may be the former approach of the medieval manor (MNF65395). Just south of this, cropmarks of linear ditches are visible on aerial photographs which could relate to the medieval parish boundary (MNF18186).
- 6.6.20. A medieval manor was located at Intwood, to the south-east of the Proposed Scheme DCO boundary. The medieval manor of Intwood was rebuilt by its new owner Sir Richard Gresham, some time before 1545. This house was, in turn, extensively rebuilt by his son, around 1560. The house has since been rebuilt and the surrounding park is on the Register of Historic Park and Gardens of special historic interest, listed as Grade II\* (NHLE1000320). Metal detecting within the park has recovered finds dating to the medieval period; these include a lyre-shaped buckle or strap end and a handle in the form of an animal head (MNF44230), as well as a 14<sup>th</sup> century copper alloy strap end and a hasp (MNF25598). See below for a discussion of the development of the park as demonstrated through post medieval period mapping.
- 6.6.21. Within the Proposed Scheme DCO boundary, artefacts dating to the medieval period which have been recovered through field-walking and metal-detecting are limited to a 14<sup>th</sup> century coin (MNF23397) and sherds of medieval pottery (MNF14273, MNF16229, MNF43554).
- 6.6.22. To the east of Intwood Hall parkland is the Grade II\* listed Church of All Saints (NHLE1373136). The church probably dates to the 12<sup>th</sup> century, although it could

have Late Saxon origins, and has seen several phases of restoration; some of the earlier floors were identified underneath the church during an archaeological watching brief.

- 6.6.23. There are a further three listed buildings dating from the Medieval period in the wider baseline area of search: the Grade II gazebo at Intwood Hall (NHLE1306353), Grade II Pond Farmhouse (NHLE1373149), and the Grade II\* Church of St Remigus at Hethersett (NHLE1373115).
- 6.6.24. Throughout the wider baseline area of search, numerous medieval artefacts have been recovered through fieldwalking and metal detecting. These include pottery sherds and coins (MNF25511, MNF28201), three buckles and a brooch (MNF28594, MNF33920, MNF39146, MNF39147), a sword belt fitting (MNF28149) and a pilgrim badge (MNF33447). During construction work to the south-east of the Proposed Scheme a cluster of discrete medieval features comprising pits, post-holes and two heart or oven bases were identified. The pottery assemblage recovered suggests that medieval activity had ceased by the early 14<sup>th</sup> century, and there was only limited evidence for subsequent activity on the site (MNF69036).
- 6.6.25. Earthworks of linear ditches and a possible bank are visible on aerial photographs on land to the east of Shop Lane, Hethersett (MNF59881). A hollow way marking the course of the former Norwich Road. Earthwork ditches are visible on aerial photographs, and a track is marked on the Ordnance Survey 2nd edition map (MNF14202).

### Post-medieval (1485 – 1900)

- 6.6.26. The earliest cartographic evidence of the whole area consulted was Bowen's map of 1749, which shows the county of Norfolk divided into Hundreds. The map does not illustrate great detail; Hethersett, Cringleford and Intwood are named, but none of the ancient manor houses are shown on the map. The only relevant buildings illustrated on the map are the Church of All Saints at Intwood (NHLE1373136) and the former church that stood at Cantley (MNF9469), which is not referenced on the map. The Proposed Scheme DCO boundary is located within the Humbleyard Hundred, on a road that can be seen connecting the villages of Cringleford and Hethersett.
- 6.6.27. The medieval manor at Intwood, and its small surrounding garden, can be seen on a map of Intwood Estate from 1729 (not reproduced), as can the Church of All Saints (NHLE1373136) to the east. The rest of the estate was divided into arable fields and meadows on the map. The manor house (a non-designated building) was rebuilt in 1807, on a slightly different site, incorporating part of the 16<sup>th</sup> century fabric. During the mid-19<sup>th</sup> century, a park (registered Grade II\*) was

laid out around it (NHLE1000320). The restored 16<sup>th</sup> century gazebo and garden walls (NHLE1306353, NHLE1373137) are Grade II listed, as is the lodge constructed in the mid-19<sup>th</sup> century at the east end of the park (NHLE1050543). A trial trench excavated within the park in 1996 revealed several parallel ditches (MNF67519); these produced limited dating evidence, however cartographic sources suggest that they may have been associated with 17<sup>th</sup> century land use.

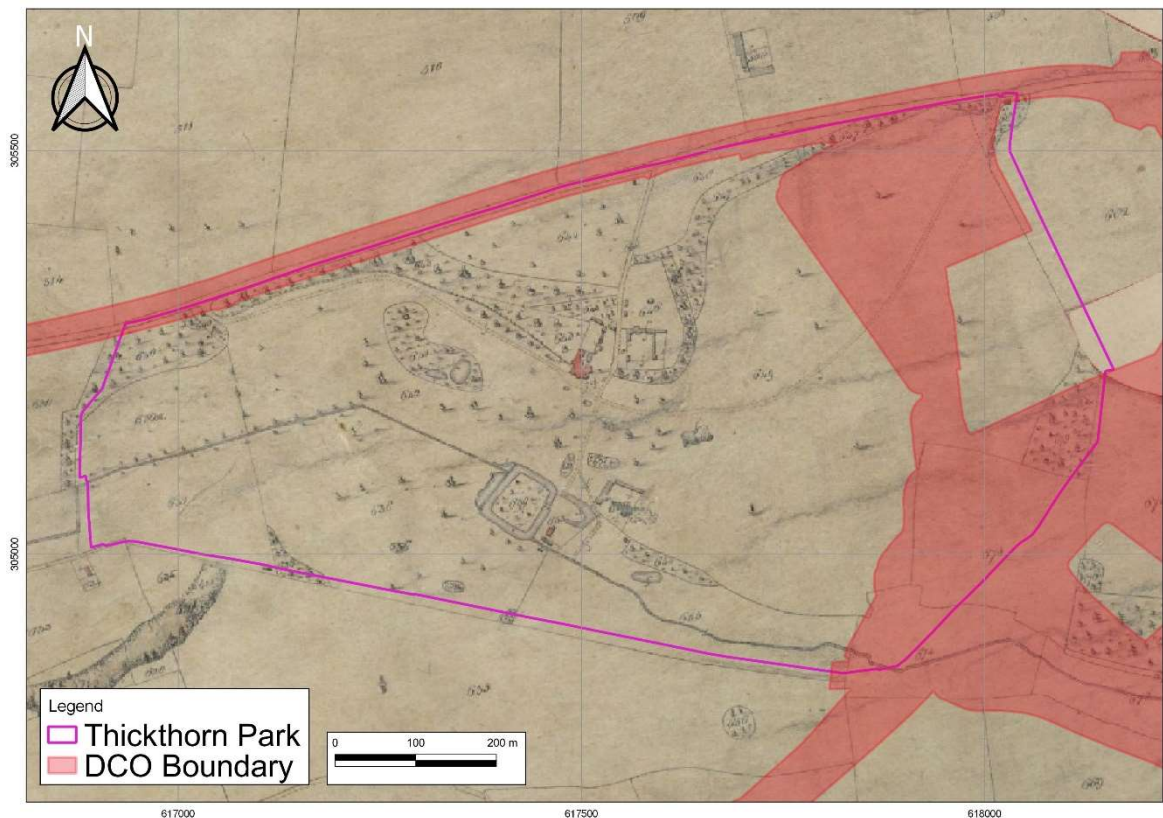


Figure 6.1.7. Extract of Hethersett Tithe Map (1846) showing Thickthorn Hall and Park (outlined)

- 6.6.28. The Hethersett Tithe Map of 1846 (Norfolk Record Office ref. BR 276/1/0074) shows Thickthorn Hall (NHLE1169537), following its construction in 1812 (Figure 6.1.7). The park was likely created at the same time. None of the constituent parts of the hall's grounds described below are located within the Proposed Scheme DCO boundary, other than former open parkland (now agricultural fields).
- 6.6.29. The hall is located to the north-east of the site of former manor house, the moat around which can still be seen on the map. The moat was widened in the late 19<sup>th</sup> century to create a small lake. Farm buildings and a cottage, which were screened from the view of the hall by plantations to the north, stood by the medieval moat. A continuous belt of woodland can be seen to the north of the house, and a service drive approaches the hall from the north, adjoining what is now Norwich Road. The principle carriage drives approach the hall from the west

and the east (see Figure 6.1.7); a lodge can be seen where both met the main road, the easternmost was the original lodge constructed in the late 18<sup>th</sup>/ early 19<sup>th</sup> century (MNF11805). By the late 19<sup>th</sup> century, a third lodge of red brick with a thatched roof was constructed to the north of the lodge by the entrance of the main drive (MNF47810). The lodges are unlisted but considered of historic interest.

- 6.6.30. The apportionments describe the gardens to the west of the house as 'pleasure grounds'. The associated kitchen garden walls and attached octagonal building, contemporary with the hall, are now Grade II listed (NHLE1050575). To the immediate east of the hall were farmhouses which surrounded a tack yard. Parkland lay to the east and south of the Hall (non-designated garden MNF33732), divided by a stream running north-west – south-east, and other watercourses and fences. The rest of the Hall's land was divided up into gardens, plantations and meadows used for cultivation and pasture.
- 6.6.31. To the south of the park, the tithe map shows Cantley Farm (NHLE1306560), the farmhouse of which is Grade II listed. The 16<sup>th</sup>-17<sup>th</sup> century house and farmstead are the only remnants of the settlement at the former parish of Cantelose.
- 6.6.32. The Ordnance Survey 1<sup>st</sup> edition 6 inch map of 1886 shows the area of the scheme as generally rural in character. Two roads exit Cringleford to the west, transecting open fields; one follows the alignment of Norwich road, running to the north of Thickthorn House towards Hethersett, the other runs south-west towards Cantley Farm. The main development that this map shows is the construction of the 'Great Eastern Railway' that runs east-west, to the north of Intwood and to the south of Thickthorn House (MNF13571). The line opened in 1844 as the Norwich and Yarmouth Railway; but from 1845 was the Norwich and Brandon Railway before the combined line became the Norfolk Railway, later the Eastern Counties, and then part of the Great Eastern.
- 6.6.33. The railway line is significant because it incorporated the Cooke and Wheatstone telegraph from its opening. This was the first telegraph system to be put into commercial service. Additionally, the Trowse swing bridge was one of the first in the world and was reconstructed in 1905 before being rebuilt in 1987 as the first overhead-electric swing bridge.
- 6.6.34. As well as those mentioned above, there are a further 21 Listed Buildings dating from the post-medieval period within the wider baseline area of search. One is Grade II\* listed- the Church of St Peter (NHLE1306659) in Cringleford; the remainder are Grade II, comprising: Cringleford hall (NHLE1050564), Norwich Lodge (NHLE1170166), a historical millhouse (NHLE1169144) and an obelisk monument (NHLE1050554); as well as eight cottages or houses (NHLE1050567, NHLE1373144, NHLE1050555, NHLE1306366, NHLE1373139,

NHLE1373146, NHLE1373146, NHLE1373148), five farmhouses (NHLE1169110, NHLE1169880, NHLE1050538, NHLE1169566, NHLE1170176) and a barn (NHLE1373147), and finally two water pumps (NHLE1050568, NHLE1373114).

- 6.6.35. Norfolk HER has identified the sites of post-medieval brick kilns to the south-east of the scheme, one is marked on Faden's map of 1797 (MNF15551), the other is marked on the Ordnance Survey 1<sup>st</sup> edition 25 inch map of 1883 (MNF39868).

### Modern (1900- present)

- 6.6.36. The HER has identified two assets within the wider baseline area of search that date to the Second World War (1939-1945). To the east of the Proposed Scheme DCO boundary a possible World War Two railblock is evident as a group of structures visible on aerial photographs along the line of the Norfolk Railway (MNF59513). The railblock was perhaps sited strategically on the west side of a rail bridge crossing Low Road (which runs between Cringleford and Keswick), although this is also the site of a level crossing, and it is not clear to what extent the structures relate to this non-military feature of the railway. If the site does represent a railblock, it was one of several established during this period on the railway lines surrounding Norwich; additional examples are evident further east along the line. It is not known whether any element of the site still survives today.
- 6.6.37. Additionally, a World War Two military camp or headquarters is visible on aerial photographs within the grounds of Keswick Hall (MNF58676). The site consisted of a number of Nissen huts, arranged within two groups and possible air raid shelters.
- 6.6.38. There are two Grade II Listed war memorials in the wider baseline area of search, at Ketteringham (NHLE1444514) and Hethersett (NHLE1443937).
- 6.6.39. The HER records one other non-designated asset of modern date in the wider baseline area of search. Within the immediate vicinity of the two scheduled round barrows is the site of limekilns that were used during the 1930s and 40s (MNF16685). A tramway was associated with the limekilns, and a tipping wagon survives on the site as a drinking trough.
- 6.6.40. The A11 was constructed in the 1970s and the Norwich southern bypass of the A47 was constructed in the early 1990s. Historic mapping indicates that prior to their construction, the area in which the scheme is located underwent little development.



## Previous archaeological events

- 6.6.41. The HER records 39 previous archaeological events in the wider baseline area of search. Where relevant to the assessment of archaeological potential, previous archaeological works have been referenced and summarised in the chronological narrative above.
- 6.6.42. Of the previous archaeological events recorded, seven were carried out in areas that overlap in part with the Proposed Scheme DCO boundary, summarised in Table 3 (in chronological order):

Table 3: Previous archaeological events recorded by HER within Proposed Scheme DCO boundary

Event UID	Description / date
ENF126373 (MNF65378)	<u>Geophysical Survey (magnetometry) by Northamptonshire Archaeology, March 2011</u> The survey, carried out at the eastern extent of Thickthorn Park, to the south of Norwich Road, identified possible ditches and pits and Prehistoric, medieval and post medieval finds.
ENF126374 (MNF65378)	<u>Systematic Fieldwalking Survey by Northamptonshire Archaeology, March-April 2011</u> The survey, carried out at the eastern extent of Thickthorn Park, to the south of Norwich Road, identified a wide range of finds dating to the Prehistoric, medieval, and post medieval periods.
ENF137569 (MNF67763)	<u>Geophysical Survey (magnetometry) by Archaeological Services WYAS, March 2013</u> Survey carried out in area of Cringleford Residential Development to the immediate east of the Proposed Scheme DCO boundary identified no magnetic anomalies of archaeological origin.
ENF143424	<u>Geophysical Survey by Archaeological Services WYAS, March 2018</u> Geophysical survey for the current Proposed Scheme, the results of which are presented in this report.
ENF143609	<u>Watching Brief by Wardell Armstrong, April-November 2018</u> Although an OASIS record was initially created for this work (wardella2-332708) this was removed at the request of the contractor in April 2019 (the notification email stated "...we have been advised that this record is either a duplicate or a test record").
ENF144996	<u>Trial Trenching by Suffolk Archaeology, September 2018</u> Although no results of this event are recorded by HER, there are records of previous trial trenching of in the area to the immediate east of the Proposed Scheme DCO boundary in 2004, the results of which are recorded as follows: Prehistoric flint artefacts and undated ditches, pits and post holes were found during trial trenching on the site of a proposed new school. The flints included a Later Neolithic/Bronze Age polished flint axe and the features could be prehistoric. Geophysical survey of this area and two additional fields to the west did not record any magnetic anomalies of possible archaeological origin [see ENF137569].
ENF149240	<u>Trial Trenching by Cotswold Archaeology (Suffolk), July 2020</u> Intrusive evaluation for the current Proposed Scheme, the results of which are presented in this report.

- 6.6.43. The HER records seven previous archaeological events relating to the Cringleford Residential Development, located to the immediate east of the Proposed Scheme DCO boundary. Investigation of this site during the period 1978-92 recovered a wide variety of objects (MNF16229, MNF16230, MNF40384, MNF70857).
- 6.6.44. A comprehensive intrusive evaluation of the Cringleford Residential Development area by trial trenching (ENF144996), which included a proportion of the current Proposed Scheme DCO boundary, recorded multi-phase prehistoric activity, limited Roman activity and Late Saxon activity across much

of the development area. This was at a generally low level across the majority of the site with some small concentrations.

- 6.6.45. As such there are proven archaeological remains within the eastern boundary of the Proposed Scheme DCO boundary. In particular a focused area of activity was seen in excavation Area 3 within the Proposed Scheme DCO boundary which contained Late Bronze Age to Early Iron Age period pits and ditches, activity which is likely to continue to the south western edge of the field, and possibly beyond the A47 (see Figure 6.1.8).



Figure 6.1.8. Cringleford Residential Development evaluation programme (Figure 5, Suffolk Archaeology, March 2019) showing previous investigation within Proposed Scheme DCO boundary

## Geophysical Survey

- 6.6.46. A geophysical survey was carried out by WYAS between 12 - 16 March 2018 across 10 areas surrounding the A47/ A11 Thickthorn junction and additional geophysical survey was undertaken by Magnitude Surveys between 30 November – 3 December 2020, which extended some of the previous survey areas (ES Appendix 6.2: Geophysical Survey Reports (**TR010037/APP/6.3**)).
- 6.6.47. The WYAS 2018 survey ('Areas 1 – 10') identified archaeological and possible archaeological anomalies in 'Area 7' and 'Area 4'. Anomalies across the remaining eight areas were interpreted to be modern or agricultural in origin.
- Area 7, to the immediate south of the A47/ A11 Thickthorn junction, showed weak curvilinear trends, which may represent possible ring ditches or barrows. Additionally, a strong magnetic response was detected in Area 4, 200m to the west of Area 7, which could represent the remains of a kiln or an area of intense burning, although it is possible that this anomaly could have been caused by a ferrous object of modern origin.
  - Archaeological anomalies in Area 4 consisted of ditches, linear trends and pits. One group of anomalies form a recti-linear enclosure with several pit-like features both in and out of the enclosure. The features did not correspond directly with any cropmarks, but are on the same alignment as a tentative building of an unknown date to the immediate north (MNF11820).
  - Additionally, several ditches were detected and are part of the complex of possible field boundaries, some of which are visible as cropmarks on aerial photographs (MNF59885).
- 6.6.48. The Magnitude Surveys 2020 survey ('Areas 9 – 15') detected anomalies of possible archaeological origin in 'Area 10' which may indicate fragmentary remains of enclosures or trackways, and a small number of discrete anomalies which may indicate cut features such as pits. Anomalies indicative of modern ploughing and drainage, as well as natural geological variations have also been identified across the remaining survey areas.

## Archaeological trial trenching

- 6.6.49. Intrusive evaluation of the DCO boundary and targeted to the results of the geophysical survey was undertaken by Cotswold Archaeology in September 2020 (ES Appendix 6.3: Archaeological Evaluation) (**TR010037/APP/6.3**). Further trial trenching is programmed to take place within the DCO boundary in Spring 2021. The results will not be received in time to assimilate into the ES impact assessment but will inform a mitigation strategy.

- 6.6.50. The completed evaluation programme, comprising 80 trial trenches, recorded archaeological deposits in 49 trenches in total, with 31 identified as containing no remains. The detailed results of the trial trenching evaluation have been incorporated to inform the assessment of archaeological potential for the DCO boundary, below.
- 6.6.51. The report concluded an overall incidence of (largely undated) ditches and pits spread roughly equally over the site, revealing a wider protracted occupation of the landscape that is generally peripheral to settlement activity. Concentrated areas of activity suggest two main foci of activity dating to the Early Iron Age ('Area C') and the medieval/early Post Medieval period ('Area B').
- 6.6.52. The concentration of investigated archaeological remains that has led to the definition of 'Area B' corresponds to known heritage assets recorded on the NHER (Trial Trenches 17-20, 22, 27 & 28-40): MNF59885 (Undated cropmarks of possible field boundaries); MNF65378 (Several possible ditches and pits of an unknown date identified through geophysical survey); and MNF33732 (Early 19th century landscaped park surrounding Thickthorn Hall.) Within 'Area B', the evaluation also determined that MNF11820 (a possible building visible as a cropmark on aerial photographs) was non-archaeological: a remnant of agricultural activity in the area.
- 6.6.53. The concentration of investigated archaeological remains that has led to the definition of 'Area C' corresponds to no known heritage assets recorded on the NHER (Trial trenches 60-78).
- 6.6.54. Trial trenches 79-81, excavated to the east of the A47 within an area of known archaeological potential (NHER MNF70875 and MNF16229), also corresponding with the area recently evaluated for Cringleford Residential Development, confirmed a low level presence of archaeological remains dating to both the prehistoric and Late Anglo Saxon periods.
- 6.6.55. It was not possible to excavate two trial trenches proposed directly alongside (west of) the Scheduled Monument 'Two Tumuli in Big Wood' (NHLE1003977) due to wooded overgrowth. However, trenches excavated within 200m of the barrows to both the north (Trench 58) and south (Trenches 46 and 47) recorded the presence of undated archaeological remains.

## 6.7. Archaeological potential

### Prehistoric

- 6.7.1. Prehistoric communities were likely attracted to the area and the predictable resources of the River Yare. Several finds of a prehistoric date from the Mesolithic onwards have been recorded within the Proposed Scheme DCO

boundary, as well as a series of potential prehistoric features that are evident both through geophysical survey and as cropmarks. Previous intrusive evaluations carried out within the Proposed Scheme DCO boundary have identified preserved archaeological remains of prehistoric date. Additionally, outside of the Proposed Scheme DCO boundary, excavation has revealed Bronze Age and Iron Age features, further indicating a prehistoric presence in the area. The close proximity of the Proposed Scheme to the scheduled Bronze Age barrows gives rise to the potential for nationally significant remains of prehistoric date associated with the scheduled monument.

- 6.7.2. During the programme of trial trenching (Cotswold Archaeology, September 2020: ES Appendix 6.3: Archaeological Evaluation) (**TR010037/APP/6.3**) flint and stone tools dating to the Neolithic and Bronze Age were collected. Settlement activity dating to the Early Iron Age was also demonstrated by the presence of a group of pits which showed either in situ burning or produced heat-altered flint, and which may show either cooking or small scale industrial activity, close to Bronze Age barrows ('Area C').
- 6.7.3. In addition, previous intrusive evaluation of Cringleford Residential Development identified a focused area of archaeological activity in excavation Area 3 within the Proposed Scheme DCO boundary which contained Late Bronze Age to Early Iron Age period pits and ditches, activity which is likely to continue to the south western edge of the field, and possibly beyond the A47.
- 6.7.4. There is a high potential for prehistoric period remains to be disturbed by the Proposed Scheme. Depending on the nature of any hitherto unknown archaeological remains, these could potentially be of up to national archaeological significance.

## Roman

- 6.7.5. Evidence for Roman activity in the wider baseline area of search is limited to findspots, suggesting that perhaps Roman presence in the area was transitory or dispersed, non-intensive farming. The Proposed Scheme DCO boundary was likely located too far from a main Roman town and road network to warrant any substantial development in the area.
- 6.7.6. During the programme of trial trenching (Cotswold Archaeology, September 2020: ES Appendix 6.3: Archaeological Evaluation) (**TR010037/APP/6.3**) Roman activity was limited to one possible ditch and a residual pottery find.
- 6.7.7. There is a low potential for Roman period remains to be disturbed by the Proposed Scheme. Any such remains would be of regional archaeological significance, given the current lack of data relating to this period in the area.

## Early medieval

- 6.7.8. Settlement was starting to develop during this period at Cringleford and Hethersett, and recent evaluation of Cringleford Residential Development area to the east of the Proposed Scheme DCO boundary identified discrete burning activities carbon dated to the Late Saxon period. The land within the Proposed Scheme DCO boundary was probably predominantly in agricultural use at the time, being used for either cultivation or pasture, or was marginal land beyond the limit of the managed rural hinterlands of Cringleford and Hethersett.
- 6.7.9. During the programme of trial trenching (Cotswold Archaeology, September 2020: ES Appendix 6.3: Archaeological Evaluation) (**TR010037/APP/6.3**), and also during previous intrusive evaluation of Cringleford Residential Development, Late Anglo Saxon activity was recorded to the east of the A47, albeit in sparse quantity.
- 6.7.10. There is a generally low potential for early medieval period remains to be disturbed by the Proposed Scheme; this potential is increased to moderate to the east of the A47. Previous evaluations indicate that remains in this area are of low importance, however any occupation remains would be of regional archaeological significance, given the current lack of similar data relating to this period in the area.

## Late medieval

- 6.7.11. Evidence suggests that there was a medieval hamlet within Thickthorn Park, within and to the immediate north-west of the Proposed Scheme, as well as medieval occupation at Intwood to the immediate south-west. No remains of a structural nature dating to the medieval period have been found within the Proposed Scheme DCO boundary to date, where evidence for medieval activity is manifested in sporadic findspots and earthwork landscaping, which does indicate a lack of subsequent disturbance in these areas. It is likely that the land fell largely under agricultural use, although there is potential for settlement evidence to be preserved.
- 6.7.12. During the programme of trial trenching (Cotswold Archaeology, September 2020: ES Appendix 6.3: Archaeological Evaluation) (**TR010037/APP/6.3**) a focus of medieval pits and ditches, shown by artefactual evidence to continue into the early post-medieval period, was recorded ('Area B'), interpreted as likely relate to a nearby moated site and may evidence wider activity within a manorial complex.
- 6.7.13. There is a moderate potential for late medieval period remains to be disturbed by the Proposed Scheme. Any remains relating to the 14<sup>th</sup> – 17<sup>th</sup> centuries would be of regional archaeological interest, as current data indicates a hiatus in the use of land within the Proposed Scheme DCO boundary during this period.

## Post-medieval

- 6.7.14. The landscape likely continued to be used in a similar fashion to that of the preceding periods. Cartographic evidence indicates that the area of the Proposed Scheme remained rural in character until the construction of the A11 and the A47, the land being used for agricultural purposes. Much of the character of Norfolk emanates from this period of agrarian reform, and the various forms of lately enclosed fields cover the majority of the county.
- 6.7.15. There is a moderate potential for post-medieval period remains to be disturbed by the Proposed Scheme.
- 6.7.16. Any preserved remains present are likely to be of local archaeological significance, other than any that are associated with the early 19<sup>th</sup> century layout and landscape development relating to Thickthorn Park (MNF33732) which would be of regional significance.

## Modern

- 6.7.17. Cartographic evidence indicates that the area remained rural in character until the construction of the A11 and the A47 and the HER identifies only three assets of historical interest dating to the modern period within the wider baseline area of search.
- 6.7.18. There is a low potential for modern period remains to be disturbed by the Proposed Scheme. Any hitherto unknown modern landscaping that is not identified on the historic OS mapping sequence is likely to be of negligible archaeological significance.

## 6.8. Impact assessment

- 6.8.1. Within national planning policy and guidance, the value (also known as ‘interest’ or ‘sensitivity’) attributed to a heritage asset is referred to as its “significance”. To prevent confusion with EIA terminology regarding “significance of effect” this assessment will use the phrase “heritage value/sensitivity” in place of “significance” when referring to heritage assets. The definition attributed to “heritage value/sensitivity” remains unchanged from that attributed to “significance” in national planning policy and guidance.
- 6.8.2. The assessment has also considered that occasionally some heritage assets have a lower or higher than normal heritage value/sensitivity within a local context. In addition, the assessment process has considered the component of the heritage asset that is being affected, and the ability of the heritage asset to absorb change without compromising the understanding or appreciation of the resource.



- 6.8.3. Effects can be beneficial or adverse, temporary or permanent, depending on the nature of the development, mitigation measures, and any enhancement measures proposed. In accordance with DMRB LA104, table 3.7 Note 3, moderate, large or very large effects are considered significant.
- 6.8.4. The impact assessment presented in this baseline report includes design measures that has evolved through iterations of the Proposed Scheme in order to remove or reduce effects on the historic environment, but does not account for site-specific detailed mitigation recommendations.
- 6.8.5. The impact assessment presented in the ES Chapter 6, Cultural heritage (**TR010037/APP/6.1**) reassesses each identified effect of Slight or higher, accounting for site-specific detailed mitigation recommendations, thereby defining any likely significant residual effects.

## Design measures

- 6.8.6. Design measures include:
- Altered design in the vicinity of scheduled monument NHLE1003977 Two Tumuli in Big Wood to minimise as far as possible impact to the asset by placing proposed groundworks as far as possible from the monument.
  - Retention of tree planting along the embankment for the Cantley Lane South Diversion to maintain the current screening of the scheduled monument.
  - Sensitive planting plan to limit impacts on the setting of Thickthorn Hall (particularly upon the historic parkland MNF33732 Thickthorn Park)
  - Use of low-noise surfacing throughout the Proposed Scheme to reduce aural effects on historic environment receptors.
  - Relocation of compound to avoid impact to the Grade II listed Lodge to Intwood Hall, as well as to the Grade II\* listed Church of All Saints, the Grade II listed Gazebo circa 60m east of Intwood Hall, and to the Grade II\* listed Intwood Hall Registered Park and Garden.
  - Limit impact to historic landscape character by restricting permanent land take within the DCO boundary of the Proposed Scheme, with no loss for temporary purposes such as haul routes and compounds.
  - Limit impact to buried archaeological features across the Scheme DCO boundary by avoiding ground disturbance in areas of temporary use, such as haul routes and compounds, using track matting as an alternative.
  - Ensure the veteran trees within the areas of the proposed compounds either side of the Cantley Lane South Diversion are retained and not damaged. This will avoid permanent impacts to the historic parkland for temporary uses.
  - Keep lighting levels the same as current levels, or lower, in order to reduce impact to the nearby designated assets and to the historic landscape.

## 6.9. Assessment of heritage value or sensitivity

- 6.9.1. The value or sensitivity of heritage assets is based on the criteria outlined in table 3.2N of DMRB LA 104.
- 6.9.2. Each heritage asset is graded for value/sensitivity on a scale of Negligible, Low, Medium, High and Very High. This accords with the criteria outlined in DMRB LA 104 and with reference to other appropriate criteria such as the Secretary of State’s non-statutory criteria for the scheduling of ancient monuments, assessment criteria adopted by Historic England as part of the Monument Protection Programme (DCMS 2013, Annex 1), and the Secretary of State’s Principles of Selection Criteria for Listed Buildings (DCMS 2018) (that is the value or sensitivity of a heritage asset will derive from factors including fabric, rarity, completeness, historic and cultural associations, community, research and place-making potential) which is assessed through professional judgement. An assessment of the sensitivity of a heritage asset to change within its setting is also a professional judgement, based on consideration of the asset’s value or sensitivity and the contribution its current and historical setting makes to that value or sensitivity.
- 6.9.3. Temporary and permanent construction and operational effects on heritage assets have been considered. Temporary effects could arise from construction-related activities, whereas permanent effects can be either physical effects on the integrity of the asset or effects on their setting.
- 6.9.4. The value or sensitivity of heritage assets presented in Table 5 has been based on the criteria outlined in Table 4.

Table 4: Criteria for establishing value or sensitivity of archaeological assets and historic buildings

Value/Sensitivity	Typical criteria
Very high	World Heritage sites, assets of acknowledged international importance, assets that can contribute significantly to acknowledged international research objectives.
High	Scheduled monuments, listed buildings, registered parks and gardens, registered battlefields, undesignated assets of schedulable quality, undesignated monuments, sites or landscapes that can be shown to have specific nationally important qualities and assets that can contribute significantly to national research objectives.
Medium	Conservation areas, undesignated sites of high importance identified through research or survey, monuments or sites that can be shown to have important qualities in their fabric or historical association.
Low	Non-designated assets - buildings, structures, monuments or archaeological sites with a local importance for education or cultural appreciation, and which add to local archaeological and historical research. Very badly damaged assets that are of such poor quality that they cannot be classed as high or medium, parks and gardens of local interest.

Value/Sensitivity	Typical criteria
Negligible	Heritage resources identified as being of little historic, evidential, aesthetic or communal interest, resources whose importance is compromised by poor preservation or survival or by contextual associations to justify inclusion into a higher grade.

Source: Based on DMRB (LA104 Environmental Impact Assessment, Table 3.2N), 2019

Table 5: Assessment of Value/Sensitivity

NHLE/ HER no.	Name	Type	Description of value/sensitivity	Value/sensitivity
<b>Designated heritage assets located within Proposed Scheme DCO boundary</b>				
1050573	Milestone no. 4	Grade II listed building	Grade II listed buildings; includes buildings dating from the 18th – 19th century. Considered of regional importance and protected under the Planning (Listed Buildings and Conservation Areas) Act 1990.	High
<b>Designated heritage assets located outside Proposed Scheme DCO boundary, within ZTV</b>				
1003977, MNF9463, MNF9464	Two tumuli in Big Wood	Scheduled Monument	Nationally important site; evidence of Bronze Age funerary practice is an extremely rare resource and can contribute significantly to acknowledged national research objectives. Despite the proximity to the current A47, the barrows are heavily screened by large trees and, with the exception of rabbit activity, both barrows are undisturbed. Protected under the Ancient Monuments and Archaeological Areas Act 1979.	High
1169110, 1050567, 1306560	The Round House, North House & Farmhouse, Cantley House	Grade II listed buildings	Grade II listed buildings; includes buildings dating from the 18th – 19th century. Considered of regional importance and protected under the Planning (Listed Buildings and Conservation Areas) Act 1990.	High
1050575, 1169537	Thickthorn Hall with its Kitchen Garden Walls and attached Octagonal Building NE of Thickthorn Hall and associated non-designated heritage assets within its setting	Grade II listed building / non-designated assets (group value)	Grade II listed buildings; includes buildings dating from the 18th – 19th century. Considered of regional importance and protected under the Planning (Listed Buildings and Conservation Areas) Act 1990. Setting includes: Thickthorn Park (MNF33732), Lodge House (MNF11805), Thickthorn Lodge (MNF47810), Hollow way (MNF65395), Medieval moat (MNF9352).	High
<b>Designated heritage assets located outside Proposed Scheme ZTV</b>				
1002888	Two round barrows near Norwich Lodge, Ketteringham Hall	Scheduled Monument	Nationally important site; evidence of Bronze Age funerary practice is an extremely rare resource. One of the barrows was excavated in the mid 19th century and a fragment of Roman pottery was discovered. Protected under the Ancient Monuments and Archaeological Areas Act 1979.	High
6590	Cringleford Conservation Area	Conservation Area	Considered of regional importance and protected under the Planning (Listed Buildings and Conservation Areas) Act 1990. The conservation area comprises the older part of the village. The special character is defined by a combination of factors. Essentially, the remnants of the original village core are still intact and there is still a feeling of a village “street”. There are several important buildings of historic interest within the area.	Medium
1000320, MNF30465, MNF9473	Intwood Hall	Registered Park & Garden	Registered as Grade II* under the Historic Buildings and Ancient Monuments Act 1953 within the Historic England Register of Historic Parks and Gardens of special historic interest in England; originally the grounds to the former medieval manor house at Intwood. Considered of national significance.	High

NHLE/ HER no.	Name	Type	Description of value/sensitivity	Value/sensitivity
1373136, (MNF9495, MNF9514), 1373115, 1306659	Church of All Saints, Church of St Remigius, Church of St Peter	Grade II* listed buildings	Grade II* listed buildings of medieval origin. Considered of national importance and protected under the Planning (Listed Buildings and Conservation Areas) Act 1990.	High
1306353, 1373149, 1050543, 1050564, 1050568, 1306611, 1373137, 1373147, 1050538, 1306525, 1169566, 1443937, 1373114, 1444514, 1373144, 1050555, 1170176, 1170166, 1050554, 1306366, 1373139, 1373146, 1050566, 1373148, 1169144	Gazebo E of Intwood Hall, Pond Farmhouse, Lodge to E of Intwood Hall, Cringleford Hall, Waterpump, Milestone no. 3, Garden Walls, Gazebo and Urn to N and NW of Intwood Hall, Barn to E of Cringleford Hall, Whitehouse Farm, Milestone No. 5, Building at Church Farm, Hethersett War Memorial, Waterpump at TG 1590 0491, Ketteringham War Memorial, Juniper House, Appletree Cottage and The White House, Ivy Farmhouse, Norwich Lodge, Obelisk at Fiveways, The White House, Honeysuckle Cottage, Hill Grove, Cringleford House and Rosalind House, Ford End, The Millhouse	Grade II listed buildings	Grade II listed buildings; includes buildings dating from the 18th – 20th century. Considered of regional importance and protected under the Planning (Listed Buildings and Conservation Areas) Act 1990.	High
<b>Non-designated heritage assets within Proposed Scheme DCO boundary</b>				
MNF33732	Thickthorn Park	Archaeological remains of historic park	Non-designated asset dating to the early 19th century, although with medieval origins; considered of local importance. Investigation through trial trenching for the Proposed Scheme identified archaeological features relating to the parkland only outside the DCO boundary.	Medium
MNF43554	Prehistoric features identified through trial trenching/SMS during construction of Thickthorn Park and Ride, the southern extent of which is located within the Proposed Scheme DCO boundary	Archaeological remains	Non-designated asset; prehistoric remains generally considered a rare resource and could contribute towards regional research objectives. Survival of asset contributes to its value and is uncertain; 27 trenches excavated in evaluation in 2003, and further excavation following topsoil stripping took place the following year. Finds of prehistoric, Roman, medieval and post-medieval date also found at this site through systematic fieldwalking.	Low

NHLE/ HER no.	Name	Type	Description of value/sensitivity	Value/sensitivity
MNF59885	Possible prehistoric field boundaries	Cropmarks	Non-designated asset; prehistoric remains are generally considered a rare resource and could contribute towards regional research objectives. Visible in aerial photographs and located in rural land; with the exception of slight agricultural disturbance the remains should be well preserved. Asset investigation through trial trenching for the Proposed Scheme (Trenches 31-44) identified Medieval and undated features ('Area B').	Low
MNF18186	Linear ditches perhaps relating to a medieval parish boundary and possible fragmentary enclosures of unknown date	Cropmarks	Non-designated asset; asset of limited value but with the potential to contribute to local research objectives. Visible in aerial photographs and located in rural land; with the exception of slight agricultural disturbance the remains should be well preserved.	Low
MNF11820	Foundations of building of unknown date	Cropmarks	Non-designated asset of an unknown date or function. Feature could be a remnant of agricultural activity. Asset investigation through trial trenching for the Proposed Scheme (Trenches 27-31) and found to be non-archaeological.	Negligible
MNF65378	Several possible ditches and pits of an unknown date identified through geophysical survey	Archaeological remains	Non-designated asset of an unknown date; systematic fieldwalking in the area produced a wide range of finds dating from the Neolithic to the post-medieval period. Located within agricultural land, and so with the exception of slight disturbance the remains should be well preserved. Asset investigation through trial trenching for the Proposed Scheme (Trenches 17-31) identified late prehistoric, Roman, Medieval, and undated features ('Area B').	Low
MNF45126	Prehistoric (?) ditches, pits and post holes identified through trial trenching	Archaeological remains	Non-designated asset; prehistoric remains generally considered a rare resource and could contribute towards regional research objectives. Survival of asset is uncertain; 17 trenches were excavated which equated to a minimum of 5% of the proposed development area <sup>1</sup> , but land remained undeveloped; features will likely remain undisturbed outside the DCO boundary of trenches.	Low
MNF70857	Ring ditch and 2 linear features identified through aerial photography and geophysical survey	Cropmarks	Non-designated asset of an unknown date; located within pasture land and so the remains should be well preserved. Asset investigation through trial trenching for the Proposed Scheme (Trenches 79-81) identified prehistoric, Roman, Late Anglo Saxon and undated features.	Low
MNF9409	Bank (earthwork), linear feature, hollow way	Earthwork	Undated low bank may have been part of a hollow way that led to a moated house to the east.	Low

<sup>1</sup> Emery, G. (2004) 'An Archaeological Evaluation for a proposed school at land off Cantley Lane, Cringleford, Norfolk' Norfolk Archaeological Unit, unpub. report

NHLE/ HER no.	Name	Type	Description of value/sensitivity	Value/sensitivity
MNF9396	Undated enclosure or field system and multi-period finds	Cropmark & findspot	Non-designated asset; asset of limited value but with the potential to contribute to local research objectives. An undated enclosure or field system is visible as cropmarks on aerial photographs taken in 1973. Prehistoric flint artefacts, an Iron Age coin, a Roman coin, medieval pottery sherds and a post medieval seal have also been found on the site. Area likely largely disturbed through construction of adjacent Thickthorn roundabout.	Low
MNF16685	Site of lime kilns and tramway	Structure	Non-designated asset; site of lime kilns that were in use during the 1930s and 1940s. A tramway was associated with the lime kilns, and a tipping wagon survives as a drinking trough.	Low
MNF9469	Deserted medieval village (DMV) of Cantley	Archaeological remains	Non-designated asset; one of a great number of DMVs within the county and therefore can contribute to local research objectives. Visible in aerial photographs and located in rural land; with the exception of slight agricultural disturbance the remains should be well preserved.	Low
MNF11805	Lodge House	Building	Original lodge of Thickthorn Hall. Georgian style (compare neo-classical of hall), half octagonal to drive. Central chimney. Fair condition.	Low
MNF16230 MNF40384 MNF22757, MNF22758, MNF22812, MNF22755, MNF14273, MNF14274, MNF14275, MNF16229, MNF22813, MNF22814, MNF22828, MNF60081, MNF22756, MNF22816, MNF22815	Findspots within the Proposed Scheme DCO boundary identified through fieldwalking and metal detecting	Findspots	Non-designated asset; multi-period finds, unstratified across the site. Their residual nature reduces the value of the asset, but they could have implications for <i>in-situ</i> features or structural remains.	Low
THK02	'Area C' Early Iron Age remains identified through trial trenching	Archaeological remains	Settlement activity dating to the Early Iron Age was also demonstrated by the presence of a group of pits which showed either in situ burning or produced heat-altered flint, and which may show either cooking or small scale industrial activity, close to Bronze Age barrows.	Low
ARCHAEOLOGICAL POTENTIAL	Areas of final DCO boundary not subject to previous geophysical survey or intrusive evaluation through trial trenching (programmed post ES-submission)	Archaeological remains	Extensive archaeological evaluation works in the vicinity of the Proposed Scheme suggests any archaeological remains that may be preserved in areas not subject to investigation to date are unlikely to be of more than low (local) archaeological significance.	Low

NHLE/ HER no.	Name	Type	Description of value/sensitivity	Value/sensitivity
HNF48794, HNF48795, HNF48806, HNF48796, HNF48799, HNF48767, HNF48759, HNF48761, HNF48758, HNF48773, HNF48770, HNF48780, HNF48772, HNF53198, HNF53203, HNF53226	Historic Landscape Character	Historic Landscape	The Norfolk Historic Landscape Characterisation identifies 93 character areas across the area, 17 of which fall within the Proposed Scheme DCO boundary. The dominant HLC in the in the area is one of 20th century agriculture, which includes areas of former medieval manors: It is considered a robust non-designated historic landscape with importance to local interest groups. HLC type of inland managed wetland has the potential to be altered in character.	Low
<b>Non-designated heritage assets located outside Proposed Scheme DCO boundary</b>				
MNF17836	Probable Neolithic flint working site	Archaeological remains	Non-designated asset; prehistoric remains are generally considered a rare resource and could contribute towards regional if not national research objectives. Site identified through fieldwalking and metal detecting; no excavation has taken place and the site is located in rural land. With the exception of slight agricultural disturbance, the remains should be well preserved.	High
MNF9395	Possible Bronze Age round barrow	Monument	Potentially a nationally important site; evidence of Bronze Age funerary monuments are an extremely rare resource and can contribute significantly to acknowledged national research objectives. Feature located in rural land; with the exception of slight agricultural disturbance, the remains should be well preserved.	High
MNF9481	Two possible Bronze Age round barrows near Norwich Lodge, Ketteringham Hall	Monument	Potentially a nationally important site; evidence of Bronze Age funerary monuments are an extremely rare resource and can contribute significantly to acknowledged national research objectives. Features located in rural land; with the exception of slight agricultural disturbance, the remains should be well preserved.	High
MNF9496	Burnt mound	Monument	Non-designated asset; prehistoric remains are generally considered a rare resource and could contribute towards regional and potentially national research objectives. The feature has not been subject to archaeological investigation and is located in rural land; with the exception of slight agricultural disturbance, the remains should be well preserved.	Low
MNF49305	Ketteringham Park	Park	Non-designated asset dating to the late 18th century; considered of local importance.	Low
MNF62390	Possible kiln site identified through geophysical survey	Archaeological remains	Non-designated asset of an unknown date. The feature has not been subject to archaeological investigation and is located in rural land; with the exception of slight agricultural disturbance, the remains should be well preserved.	Low



NHLE/ HER no.	Name	Type	Description of value/sensitivity	Value/sensitivity
MNF31789	Known prehistoric features outside the Proposed Scheme DCO boundary	Archaeological remains	Non-designated assets; prehistoric remains are generally considered a rare resource and could contribute towards regional research objectives. Varied levels of preservation; all assets have been subjected to some level of excavation.	Low
MNF58522, MNF59980	Known Roman features outside the Proposed Scheme DCO boundary	Archaeological remains	Non-designated assets; Roman remains are generally considered a rare resource and could contribute to regional research objectives. Visible in aerial photographs and located in rural land; with the exception of slight agricultural disturbance the remains should be well preserved.	Low
MNF67519, MNF12486	Known post-medieval buried features outside the Proposed Scheme DCO boundary	Archaeological remains	Non-designated assets; asset of limited value but with the potential to contribute to local research objectives. Varied levels of preservation, level of excavation unknown.	Low
MNF14211, MNF63301, MNF9510, MNF9513, MNF13571	Non-designated post-medieval buildings and structures outside the Proposed Scheme DCO boundary	Building/monument	Non-designated assets dating to the 18th-12th century. Considered of local importance.	Low
See gazetteer	Findspots outside the Proposed Scheme DCO boundary identified through fieldwalking and metal detecting	Findspot	Non-designated asset; multi-period finds, unstratified across the area. Their residual nature reduces the value of the asset, but they could have implications for in-situ features or structural remains.	Low
See gazetteer	Cropmarks and earthworks outside the Proposed Scheme DCO boundary	Cropmark and Earthwork	Non-designated asset; varying value depending on date and state of preservation. Many assets located in agricultural land; with the exception of slight agricultural disturbance, many of the remains should be well preserved.	Low- Medium

## 6.10. Assessment of impact before site-specific mitigation

### Assessment of magnitude of impact

- 6.10.1. The assessment of magnitude of impact is based on the criteria outlined in table 3.4N of DMRB LA 104, presented in Table 6.
- 6.10.2. Magnitude of impact is assessed in Tables 8 (construction phase effects) and 9 (operational phase effects).

Table 6: Factors in the assessment of the magnitude of impacts

Magnitude	Criteria
Major adverse	Total loss or fundamental alteration to heritage asset's significance or setting. Addition of new features that substantially alter the setting of a heritage asset.
Moderate adverse	Partial loss or alteration to a heritage asset's significance or its setting. Addition of new features that partially alter setting of a heritage asset to the extent where the significance is impacted.
Minor adverse	Minor loss of an element of a heritage asset or its setting. Addition of new features that form largely inconspicuous elements in the setting of a heritage asset to the extent that its significance is slightly impacted.
Negligible adverse	Very minor loss of elements of a heritage asset or its setting. Addition of new features that do not alter the setting of a heritage asset.
No change	No change to the heritage asset.
Negligible beneficial	Very minor enhancements to the heritage asset or its setting that help slightly better reveal the assets heritage value.
Minor beneficial	Changes that have a limited benefit to the heritage value of the asset. Changes to the setting of the asset which have a slight beneficial impact on heritage value and enhance the ability to understand the asset its historic context and setting.
Moderate beneficial	Changes that are beneficial to the heritage value of the asset. Changes that result in the setting of the asset being noticeably enhanced and improving the ability to understand the asset and its historic context and setting.
Major beneficial	Changes that are extremely beneficial to the value of the asset. Comprehensive changes to the setting of the asset which greatly reveal and enhance its heritage value.

Source: Based on DMRB (LA104 Environmental Impact Assessment, Table 3.4N), 2019

## Assessment of significance of effect

- 6.10.3. Significance of effect is based on the criteria outlined in table 3.8.1 of DMRB LA 104.
- 6.10.4. Assessment of the likely effect that the Proposed Scheme would have on the contribution that setting makes to the significance of heritage assets is assessed in Tables 8 (construction phase effects) and 9 (operational phase effects).
- 6.10.5. The significance of identified effects are established by combining the assessment of both the heritage value/sensitivity of an asset with the magnitude of the impact. This allows the prediction of the significance of the effect as shown in the matrix at Table 7. A detailed narrative discussion of impact is presented in ES Chapter 6 (**TR010037/APP/6.1**), and concluded as an overall magnitude of setting impact, which is also resolved in terms of significance of effect as per the criteria presented in matrix Table 7.

Table 7: Criteria for assessing Significance of Effect

<b>Heritage Value/sensitivity</b>	<b>Very High</b>	Neutral	Slight	Moderate/Large	Large/Very Large	Very large
	<b>High</b>	Neutral	Slight	Moderate/Slight	Moderate/Large	Large/Very Large
	<b>Medium</b>	Neutral	Neutral/Slight	Slight	Moderate	Moderate/Large
	<b>Low</b>	Neutral	Neutral/Slight	Neutral/Slight	Slight	Slight/Moderate
	<b>Negligible</b>	Neutral	Neutral	Neutral/Slight	Neutral/Slight	Slight
		<b>No Change</b>	<b>Negligible</b>	<b>Minor</b>	<b>Moderate</b>	<b>Major</b>
<b>Magnitude of Impact</b>						

Source: Based on DMRB (LA104 Environmental Impact Assessment, Table 3.8.1), 2019

- 6.10.6. Unless otherwise noted, impacts are adverse.
- 6.10.7. The impact assessment includes design measures but does not account for any site-specific detailed mitigation recommendations.
- 6.10.8. For a discussion of residual effects (following implementation of recommended site-specific mitigation measures), including the identification of potential significant impacts, refer to the ES Chapter 6, Cultural heritage (**TR010037/APP/6.1**).
- 6.10.9. In accordance with the Design Manual for Roads and Bridges (DMRB) LA 104, table 3.7 Note 3, those effects of Moderate to Very Large are considered to be significant.

Table 8: Temporary and permanent construction impacts of the Proposed Scheme

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
<b>Designated heritage assets located within Proposed Scheme DCO boundary</b>						
1050573	Milestone no. 4	Grade II listed building	<b>Temporary:</b> Asset will be protected with fencing throughout construction which will restrict access and alter setting. <b>Permanent:</b> No physical impact predicted. Setting will remain preserved.	High	Minor adverse	Slight
<b>Designated heritage assets located outside Proposed Scheme DCO boundary, within ZTV</b>						
1003977, MNF9463, MNF9464	Two tumuli in Big Wood	Scheduled monument	<b>Temporary:</b> Activities during construction would have a major adverse impact on the setting of the asset through visual, noise and light intrusion. <b>Permanent:</b> No physical impact predicted to either barrow, preserving the archaeological significance of the assets. Although the design has placed the road as far as possible from the monuments, and the immediate vicinity has already been eroded by quarrying, construction groundworks have the potential to result in the loss of, or damage to any peripheral archaeological deposits of low value located alongside the Bronze Age monuments.	High	Major adverse	Large
1050575, 1169537	Thickthorn Hall with its Kitchen Garden Walls and attached Octagonal Building NE of Thickthorn Hall and associated non-designated heritage assets within its setting	Grade II listed building / non-designated assets (group value)	<b>Temporary:</b> Activities during construction would have no effect on the relationship between the listed buildings or the significance contributed through association with medieval assets within its historical parkland setting. The Noise and Vibration assessment (ES Chapter 11 (TR010037/APP/6.1)) concludes no significant effects. Two belts of intervening trees would limit any visual change and is not considered likely to be significant. <b>Permanent:</b> No physical impact predicted to either listed building. Construction of the Cantley Lane Link Road within the former parkland would permanently alter the park boundaries (albeit, the parkland is no longer discernible in the landscape) and the road would sever the relationship of Thickthorn Hall with its original Lodge House (MNF11805) and eastern approach.	High	Minor adverse	Slight
1169110, 1050567, 1306560	The Round House, North House & The Farm House, Cantley House	Grade II listed buildings	<b>Temporary:</b> Activities during construction could have a slight adverse impact on the setting of each asset through noise intrusion. <b>Permanent:</b> No physical impact predicted to the listed buildings.	High	Minor adverse	Slight

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
<b>Designated heritage assets located outside Proposed Scheme ZTV</b>						
1002888	Two round barrows near Norwich Lodge, Ketteringham Hall	Scheduled Monument	No impact. Archaeological interest preserved.	High	No change	Neutral
6590	Cringleford Conservation Area	Conservation Area	No impact. Character and appearance preserved.	Medium	No change	Neutral
1000320, MNF30465, MNF9473	Intwood Hall	Registered Park & Garden	No impact. The RPG is well-screened, with construction works over 600m away. RPG is not located within the ZTV for the Proposed Scheme demonstrates that significant visual or aural intrusion is unlikely.	High	No change	Neutral
1373136, MNF9495, MNF9514, 1373115, 1306659	Church of All Saints, Church of St Remigius, Church of St Peter	Grade II* listed buildings	No impact. Architectural and historical interest preserved.	High	No change	Neutral
1050543, 1306353, 1373149, 1050564, 1050568, 1306611, 1373137, 1373147, 1050538, 1306525, 1169566, 1443937, 1373114, 1444514, 1373144, 1050555, 1170176, 1170166, 1050554, 1306366, 1373139, 1373146, 1050566, 1373148, 1169144	Lodge to E of Intwood Hall, Gazebo E of Intwood Hall, Pond Farmhouse, Cringleford Hall, Waterpump, Milestone no. 3, Garden Walls, Gazebo and Urn to N and NW of Intwood Hall, Barn to E of Cringleford Hall, Whitehouse Farm, Milestone No. 5, Building at Church Farm, Hethersett War Memorial, Waterpump at TG 1590 0491, Ketteringham War Memorial, Juniper House, Appletree Cottage and The White House, Ivy Farmhouse, Norwich Lodge, Obelisk at Fiveways, The White House, Honeysuckle Cottage, Hill Grove, Cringleford House and Rosalind House, Ford End, The Millhouse	Grade II listed buildings	No impact. Architectural and historical interest preserved.	High	No change	Neutral

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
<b>Non-designated heritage assets within Proposed Scheme DCO boundary</b>						
MNF33732	Thickthorn Park	Archaeological remains	<b>Permanent:</b> Direct impacts to the former parkland comprise the construction of the Cantley Lane Link (N) and A11-A47 Connector Road and a proposed detention basin (drainage pond) to the west of the Cantley Lane Link. No known physical remains of the parkland features will be impacted, however there is a potential for associated archaeological deposits associated with the park to be exposed across a relatively small part of the overall parkland area. The impacted area has already been disturbed by modern agricultural practices.	Medium	Minor adverse	Slight
MNF43554	Prehistoric features identified through trial trenching	Archaeological remains	<b>Permanent:</b> Construction groundworks associated with cutting for the A11-A47 Connector Road (W) have the potential to result in the loss or damage of archaeological remains preserved in a very small area to the south of the previously investigated Thickthorn Park and Ride SMS.	Low	Minor adverse	Slight
MNF59885	Possible prehistoric field boundaries	Cropmarks	<b>Permanent:</b> Construction groundworks associated with the Cantley Lane Link (N), cutting for the A11-A47 Connector Road (W) and the detention basin (drainage pond) have the potential to result in the loss or damage of archaeological remains over a significant area.	Low	Moderate adverse	Slight
MNF18186	Linear ditches perhaps relating to a medieval parish boundary and possible fragmentary enclosures of unknown date	Cropmarks	<b>Permanent:</b> Construction groundworks associated with cutting for the A11-A47 Connector Road (W) and access track realignment have the potential to result in the loss or damage of archaeological remains over a substantial portion of the area.	Low	Moderate adverse	Slight
MNF11820	Foundations of building of unknown date	Cropmarks	No impact. Feature is non-archaeological.	Negligible	No change	Neutral
MNF65378	Several possible ditches and pits of an unknown date identified through geophysical survey	Archaeological remains	<b>Permanent:</b> Construction groundworks associated with the Cantley Lane Link (N) have the potential to result in the loss or damage of archaeological remains over a substantial portion of the area.	Low	Moderate adverse	Slight
MNF45126	Prehistoric (?) ditches, pits and post holes identified through trial trenching	Archaeological remains	<b>Permanent:</b> Construction groundworks associated with embankment for the A11-A47 Connector Road (E) and utility diversions have the potential to result in the loss or damage of archaeological remains over small part of the area.	Low	Minor adverse	Slight

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
MNF70857	Ring ditch and 2 linear features identified through aerial photography and geophysical survey	Cropmarks	<b>Permanent:</b> Construction groundworks associated with cutting for the A11-A47 Connector Road (E) have the potential to result in the loss or damage of archaeological remains over a relatively small part of the area.	Low	Minor adverse	Slight
MNF9409	Bank (earthwork), linear feature, hollow way	Earthwork	<b>Permanent:</b> Construction groundworks associated with cutting for the A11-A47 Connector Road (E) have the potential to result in the loss or damage of archaeological remains over a relatively small part of the area.	Low	Minor adverse	Slight
MNF9396	Undated enclosure or field system and multi-period finds	Cropmark & findspot	<b>Permanent:</b> Construction groundworks associated with junction island reconfiguration, including the segregated left turn lane and bund have the potential to result in the loss or damage of archaeological remains over a relatively small part of the area.	Low	Minor adverse	Slight
MNF16685	Site of lime kilns and tramway	Structure	<b>Permanent:</b> Construction groundworks associated with bund for Cantley Lane Link Road (S) have the potential to result in the loss or damage of archaeological remains over a very small part of the area.	Low	Negligible adverse	Neutral
MNF9469	Deserted medieval village (DMV) of Cantley	Archaeological remains	<b>Permanent:</b> Construction groundworks associated with an access track realignment have the potential to result in the loss or damage of archaeological remains over a very small part of the area. Groundworks involved in the construction of the Cantley Lane Link (S) may result in the permanent loss or damage of archaeological remains that are located outside of the HER-defined area but are associated with the deserted medieval village of Cantley, such as field boundaries or features that extend within the Proposed Scheme DCO boundary which provide context to the known DMV.	Low	Minor adverse	Slight
MNF11805	Lodge House	Building	No impact.	Low	No change	Neutral
THK02	'Area C' Early Iron Age remains identified through trial trenching for the Proposed Scheme	Archaeological remains	<b>Permanent:</b> Construction groundworks associated with proposed A11-A47 connector road, Cantley Lane footbridge, proposed detention basin, and earthwork bunds have the potential to result in the loss or damage of archaeological remains over a substantial portion of the area.	Low	Major adverse	Slight

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
ARCHAEOLOGICAL POTENTIAL	Areas of final DCO boundary not subject to previous geophysical survey or intrusive evaluation through trial trenching (programmed post ES-submission)	Archaeological remains	<b>Permanent:</b> Construction groundworks have the potential to result in the loss or damage of archaeological remains over a substantial portion of the area.	Low	Major adverse	Slight
MNF16230, MNF40384, MNF22757, MNF22758, MNF22812, MNF22755, MNF14273, MNF14274, MNF14275, MNF16229, MNF22813, MNF22814, MNF22828, MNF60081	Findspots within the Proposed Scheme DCO boundary identified through fieldwalking and metal detecting	Findspots	Construction would not impact these findspots which are no longer present on the site, but groundworks would have the potential to result in the loss or damage of any unknown archaeological remains which may be associated with the findspots (assessed separately through evaluation – see below).	Low	No change	Neutral
HNF48794, HNF48795, HNF48806, HNF48796, HNF48799, HNF48767, HNF48759, HNF48761, HNF48758, HNF48773, HNF48770, HNF48780, HNF48772, HNF53198, HNF53203, HNF53226, HNF48741	Historic Landscape Character	Historic Landscape	See Operational Effects (below) which would commence during Construction Phase.	Low	Minor adverse	Slight
<b>Non-designated heritage assets located outside Proposed Scheme DCO boundary</b>						
MNF17836	Probable Neolithic flint working site	Archaeological remains	No impact	High	No change	Neutral
MNF9395	Possible Bronze Age round barrow	Monument	No impact	High	No change	Neutral
MNF9481	Two possible Bronze Age round barrows near Norwich Lodge, Ketteringham Hall	Monument	No impact	High	No change	Neutral
MNF9496	Burnt mound	Monument	No impact	High	No change	Neutral
MNF49305	Ketteringham Park	Park	No impact	Low	No change	Neutral
MNF62390	Possible kiln site identified through geophysical survey	Archaeological remains	No impact	Low	No change	Neutral



NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
MNF31789	Known prehistoric features outside the Proposed Scheme DCO boundary	Archaeological remains	No impact	Medium	No change	Neutral
MNF58522, MNF59980	Known Roman features outside the Proposed Scheme DCO boundary	Archaeological remains	No impact	Medium	No change	Neutral
MNF67519, MNF12486	Known post-medieval buried features outside the Proposed Scheme DCO boundary	Archaeological remains	No impact	Low	No change	Neutral
MNF14211, MNF63301, MNF9510, MNF9513, MNF13571	Non-designated post-medieval buildings and structures outside the Proposed Scheme DCO boundary	Building/ monument	No impact	Low	No change	Neutral
See gazetteer	Cropmarks and earthworks outside the Proposed Scheme DCO boundary	Cropmark and Earthwork	No impact	Low-Medium	No change	Neutral
See gazetteer	Findspots outside the Proposed Scheme DCO boundary identified through fieldwalking and metal detecting	Findspot	No impact	Low	No change	Neutral

Table 9.: Operational impacts of the Proposed Scheme

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
<b>Designated heritage assets located within Proposed Scheme DCO boundary</b>						
1050573	Milestone no. 4	Grade II listed building	Roadside setting will remain preserved and legible.	High	No change	Neutral
<b>Designated heritage assets located outside Proposed Scheme DCO boundary, within ZTV</b>						
1003977, MNF9463, MNF9464	Two tumuli in Big Wood	Scheduled monument	Reference is made to Landscape and visual assessment viewpoints 1 and 2 (Figures 7.6.1 – 7.6.2 <b>(TR010037/APP/6.2)</b> . The setting to the west, north and east of the barrow group is already permanently altered by the existing road network and as such the monument draws little significance from its setting currently. However, construction of the embanked proposed Cantley Lane Link Road (S) immediately adjacent to the western barrow would cause severance from the monument's associated landscape to the south, from where the barrows are currently viewed prominently. Long-sections (Figure 6.4) demonstrate that the top of the new embankment will be taller than the AOD of the western barrow. The cumulative effect would be to block this view and to remove the last remaining preserved part of the setting permanently. The effects will be of reduced magnitude for the eastern barrow due to the thicker vegetation. Group value will remain unaffected. The Noise and Vibration assessment (ES Chapter 11) <b>(TR010037/APP/6.1)</b> predicts a minor to moderate reduction in noise in the short-term (although this does not lead a significant beneficial noise effect). Night time lighting levels will remain the same as current levels with no adverse effects predicted.	High	Moderate adverse	Large

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
1050575, 1169537	Thickthorn Hall with its Kitchen Garden Walls and attached Octagonal Building NE of Thickthorn Hall and associated non-designated heritage assets within its setting	Grade II listed building / non-designated assets (group value)	The construction of the Cantley Lane Link (N) and A11-A47 Connector Road will permanently bisect the historical parkland setting of these two listed buildings (MNF33732). This former essential part of Thickthorn Hall's parkland setting is not preserved, now under the plough as C20th fields, however, the Cantley Lane Link (N) would sever the relationship of Thickthorn Hall with its original Lodge House (MNF11805) and eastern approach. The two veteran trees identified for removal as part of the Proposed Scheme are part of a field boundary and not remnants of the designed parkland setting of Thickthorn Hall. The Noise and Vibration assessment (ES Chapter 11) <b>(TR010037/APP/6.1)</b> concludes no significant effects. Night time lighting levels will remain the same as current levels with no adverse effects predicted.	High	Minor adverse	Slight
1169110, 1050567, 1306560	The Round House, North House & The Farm House, Cantley House	Grade II listed buildings	In the long-term, the Proposed Scheme would have no effect on the significance of the listed buildings, or on the contribution made by their setting. These assets are experienced in an immediate, local setting, with no contribution made by the wider landscape or long views. The Proposed Scheme will fall within visual and aural parameters of the currently experienced baseline at these receptors as a result of the existing road network. The Noise and Vibration assessment (ES Chapter 11) <b>(TR010037/APP/6.1)</b> concludes no significant effects. Night time lighting levels will remain the same as current levels with no adverse effects predicted.	High	No change	Neutral
<b>Designated heritage assets located outside Proposed Scheme ZTV</b>						
1002888	Two round barrows near Norwich Lodge, Ketteringham Hall	Scheduled Monument	No impact	High	No change	Neutral
6590	Cringleford Conservation Area	Conservation Area	No impact	Medium	No change	Neutral
1000320, MNF30465, MNF9473	Intwood Hall	Registered Park & Garden	No impact.	High	No change	Neutral
1373136, (MNF9495, MNF9514), 1373115, 1306659	Church of All Saints, Church of St Remigius, Church of St Peter	Grade II* listed buildings	No impact	High	No change	Neutral

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
1306353, 1373149, 1050543, 1050564, 1050568, 1306611, 1373137, 1373147, 1050538, 1306525, 1169566, 1443937, 1373114, 1444514, 1373144, 1050555, 1170176, 1170166, 1050554, 1306366, 1373139, 1373146, 1050566, 1373148, 1169144	Gazebo E of Intwood Hall, Pond Farmhouse, Lodge to E of Intwood Hall, Cringleford Hall, Waterpump, Milestone no. 3, Garden Walls, Gazebo and Urn to N and NW of Intwood Hall, Barn to E of Cringleford Hall, Whitehouse Farm, Milestone No. 5, Building at Church Farm, Hethersett War Memorial, Waterpump at TG 1590 0491, Ketteringham War Memorial, Juniper House, Appletree Cottage and The White House, Ivy Farmhouse, Norwich Lodge, Obelisk at Fiveways, The White House, Honeysuckle Cottage, Hill Grove, Cringleford House and Rosalind House, Ford End, The Millhouse	Grade II listed buildings	No impact	High	No change	Neutral
<b>Non-designated heritage assets within Proposed Scheme DCO boundary</b>						
MNF43554	Prehistoric features identified through trial trenching	Archaeological remains	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF59885	Possible prehistoric field boundaries	Cropmarks	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF18186	Linear ditches perhaps relating to a medieval parish boundary and possible fragmentary enclosures of unknown date	Cropmarks	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
MNF11820	Foundations of building of unknown date	Cropmarks	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Negligible	Negligible	Neutral
MNF65378	Several possible ditches and pits of an unknown date identified through geophysical survey	Archaeological remains	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF45126	Prehistoric (?) ditches, pits and post holes identified through trial trenching	Archaeological remains	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF70857	Ring ditch and 2 linear features identified through aerial photography and geophysical survey	Cropmarks	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF9409	Bank (earthwork), linear feature, hollow way	Earthwork	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF9396	Undated enclosure or field system and multi-period finds	Cropmark & findspot	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF16685	Site of lime kilns and tramway	Structure	Setting of preserved surface remains adjacent to the Proposed Scheme DCO boundary would be permanently altered.	Low	Minor	Slight
MNF9469	Deserted medieval village (DMV) of Cantley	Archaeological remains	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF11805	Lodge House	Building	Roadside setting and contribution to significance largely preserved, although the ability to interpret the Lodge's relationship with Thickthorn Hall would be reduced through severance by the Cantley Lane Link (N)	Low	Moderate adverse	Slight
THK02	'Area C' Early Iron Age remains identified through trial trenching for the Proposed Scheme	Archaeological remains	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral

NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
ARCHAEOLOGICAL POTENTIAL	Areas of final DCO boundary not subject to previous geophysical survey or intrusive evaluation through trial trenching (programmed post ES-submission)	Archaeological remains	Setting of the part of the archaeological site that is preserved outside the Proposed Scheme DCO boundary would be permanently altered. The contribution made to archaeological significance is negligible.	Low	Negligible	Neutral
MNF16230 MNF40384 MNF22757, MNF22758, MNF22812, MNF22755, MNF14273, MNF14274, MNF14275, MNF16229, MNF22813, MNF22814, MNF22828,MNF60081	Findspots within the Proposed Scheme DCO boundary identified through fieldwalking and metal detecting	Findspots	No impact	Low	No change	Neutral
HNF48794, HNF48795 HNF48806, HNF48796, HNF48799 HNF48767 HNF48759 HNF48761 HNF48758 HNF48773 HNF48770 HNF48780 HNF48772 HNF53198 HNF53203 HNF53226 HNF48741	Historic Landscape Character	Historic Landscape	<b>Permanent:</b> There will be some loss or alteration of landscape character areas, particularly in the area of the Cantley Lane Link Road. In terms of landscape character, the 'inland managed wetlands' will be most affected by the realignment of the watercourse.  Construction of the scheme would require partial loss of field boundaries. However, this will not represent a major change in light of previous works to the Thickthorn Junction. The dominant 20th century agricultural landscape will remain. Historic Landscape Character of the former medieval manors are each now 'C20th agriculture'. The original access tracks are preserved / not severed.	Low	Minor adverse	Slight
<b>Non-designated heritage assets located outside Proposed Scheme DCO boundary</b>						
MNF17836	Probable Neolithic flint working site	Archaeological remains	No impact	Medium	No change	Neutral

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NHLE/ HER no.	Name	Type	Description of impact	Value/ sensitivity	Magnitude of impact	Significance of effect
MNF9395	Possible Bronze Age round barrow	Monument	No impact	High	No change	Neutral
MNF9481	Two possible Bronze Age round barrows near Norwich Lodge, Ketteringham Hall	Monument	No impact	High	No change	Neutral
MNF9496	Burnt mound	Monument	No impact	Medium	No change	Neutral
MNF49305	Ketteringham Park	Park	No impact	Low	No change	Neutral
MNF62390	Possible kiln site identified through geophysical survey	Archaeological remains	No impact	Low	No change	Neutral
MNF31789	Known prehistoric features outside the Proposed Scheme DCO boundary	Archaeological remains	No impact	Medium	No change	Neutral
MNF58522, MNF59980	Known Roman features outside the Proposed Scheme DCO boundary	Archaeological remains	No impact	Medium	No change	Neutral
MNF67519 MNF12486	Known post-medieval buried features outside the Proposed Scheme DCO boundary	Archaeological remains	No impact	Low	No change	Neutral
MNF14211, MNF63301, MNF9510 MNF9513, MNF13571	Non-designated post-medieval buildings and structures outside the Proposed Scheme DCO boundary	Building/ monument	No impact	Low	No change	Neutral
See gazetteer	Cropmarks and earthworks outside the Proposed Scheme DCO boundary	Cropmark and Earthwork	No impact	Low-Medium	No change	Neutral
See gazetteer	Findspots outside the Proposed Scheme DCO boundary identified through fieldwalking and metal detecting	Findspot	No impact	Low	No change	Neutral

## 6.11. Baseline conclusions

- 6.11.1. This baseline assessment has been produced in accordance with national and local planning policy guidance and the DMRB to assess the likely effects on the historic environment of the Proposed Scheme to improve the traffic flow at the A47/A11 Thickthorn Junction. Designated and non-designated heritage assets within the wider baseline area of search have been considered.
- 6.11.2. Designated assets comprise one conservation area, one Grade II\* Registered Park and Garden, two Scheduled Monuments, three Grade II\* listed buildings, and 32 Grade II listed buildings.
- 6.11.3. There are 176 known non-designated heritage assets recorded by the Norfolk HER within the wider baseline area of search, of which 107 are findspots, the remainder comprising monument, buildings, cropmarks, previous archaeological works (including two events resulting in negative archaeological evidence), and two non-designated landscaped parklands.
- 6.11.4. Of the known baseline historic environment, there is one designated heritage asset located within the Proposed Scheme DCO boundary (Milestone No.4 NHLE1050573); there are six designated heritage assets located within the ZTV for the Proposed Scheme (one scheduled monument: 'Two Tumuli in Big Wood' NHLE1003977, and five Grade II listed buildings: The Round House NHLE1050567, Kitchen Garden Walls and attached Octagonal Building c.60m north-east of Thickthorn Hall NHLE1050575, North House / The Farmhouse NHLE1169110, Thickthorn Hall NHLE1169537, and Cantley House NHLE1306560). In addition, a group of five non-designated heritage assets within the setting are considered positive and contributory to the significance of Thickthorn Hall (MNF11805, MNF65395, MNF33732, MNF9352, MNF47810).
- 6.11.5. There are 27 non-designated heritage assets recorded by NHER located within the Proposed Scheme DCO boundary, of which 15 are records of findspots that cannot be affected as they have been removed from the site, and 12 have the potential to be directly affected by the Proposed Scheme (MNF18186, MNF9409, MNF16230/MNF40384/MNF70857, MNF59885, MNF43554, MNF45126, MNF9396, MNF65378, MNF33732, MNF16685, MNF11820).
- 6.11.6. The dominant historic landscape character within the Proposed Scheme DCO boundary is one of 20<sup>th</sup> century agriculture.
- 6.11.7. The archaeological potential of the Proposed Scheme DCO boundary has been determined through consideration of the available HER data, documentary evidence and previous archaeological investigations, indicating a high potential for unknown buried remains of prehistoric date and a moderate potential for



unknown buried remains of a late medieval and post medieval date within the Proposed Scheme DCO boundary, which would be adversely impacted by the scheme.

- 6.11.8. A geophysical survey and intrusive evaluation through trial trenching within the Proposed Scheme DCO boundary has helped to determine specific areas of archaeological interest.

### Screening results

- 6.11.9. Following several heritage stakeholder meetings and ongoing consultation, in design mitigation recommendations have already been put forward through early design phases.
- 6.11.10. A screening exercise has been carried out in which the value/sensitivity of each heritage asset that may be affected and magnitude of impact was determined to produce the significance of effect, considering only design measures (i.e. without recommended site-specific mitigation measures).
- 6.11.11. In accordance the DMRB LA104, table 3.7 Note 3, moderate, large, or very large effects are considered significant.
- 6.11.12. The screening exercise has identified a likely significant effect upon one designated heritage asset (NHLE1003977) which would be experienced both during construction and operation.
- 6.11.13. An assessment of the potential impact of the Proposed Scheme on unknown archaeological remains was undertaken based on the evaluation of potential within areas of the final DCO boundary not subject to previous geophysical survey or intrusive evaluation through trial trenching (programmed post ES-submission). Extensive archaeological evaluation works in the vicinity of the Proposed Scheme suggests any archaeological remains that may be preserved in areas not subject to investigation are unlikely to result in significant effects.
- 6.11.14. Assessment of residual effects following the implementation of recommended site-specific mitigation measures is contained in the ES Chapter 6, Cultural heritage (**TR010037/APP/6.1**).

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## Annex A: Gazetteer

THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
<b>Designated heritage assets</b>							
	6590		Conservation Area	Cringleford Conservation Area	Medieval to Modern	CA	
	1000320	MNF30465 MNF9473	Registered Park & Garden	Intwood Hall	Medieval	II*	The medieval manor house of Intwood was rebuilt by its new owner Sir Richard Gresham, some time before 1545. This house was, in turn, extensively rebuilt by his son, also Richard Gresham, around 1560. In 1807, the house was rebuilt, on a slightly different site, incorporating part of the 16th century fabric. During the mid- 19th century a small park was laid out around it and in the late 19th century the house was extended, refaced in red brick and given 'Jacobethan' features. The historic parkland contains a formal garden that was recorded on a painting of 1680. The 16th century walled gardens survive. The surrounding 18th century park is small. It was extended in the 19th century. These extensions are no longer part of the park and have been returned to agricultural land. Possible park features are visible as earthworks on aerial photographs and have been recorded.
	1003977	MNF9463, MNF9464	Scheduled Monument	Two tumuli in Big Wood	Bronze Age	SM	Two Bronze-Age round barrows. Barrow 'A' is recorded as a fern covered bowl barrow, 30m in diameter and 2.2m high. Barrow 'B' is recorded as a tree covered bowl barrow, 25m in diameter and 2.0m high. Neither barrow have a ditch and both are undisturbed except by rabbits. Located near to gravel pits.
	1002888	MNF9481	Scheduled Monument	Two round barrows near Norwich Lodge, Ketteringham Hall	Bronze Age to Roman	SM	Two possible Bronze Age round barrows. One of the barrows was excavated in the mid 19th century and a fragment of Roman pottery was discovered. Both barrows are visible as earthworks on aerial photographs from 1956.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
	1373136	MNF9495, MNF9514	Listed Building	Church of All Saints	Medieval	II*	12th century parish church, restored 1852-3. This round-towered church probably dates to the 12th century although it could be Late Saxon. The tower was raised and the chancel was rebuilt around 1400. The church may have been converted into a sheep shelter in the 16th century. It was certainly left to fall into disrepair and was restored in 1601 and again in 1852 when an exceptionally fine ensemble of woodwork was installed. Parts of two earlier floors were identified underneath the church during an archaeological watching brief. In 2010 a watching brief revealed a sequence of undated graveyard soils truncated by the construction cut for a rectangular brick structure which formed the foundation of a boiler room.
	1373115		Listed Building	Church of St Remigius	Medieval	II*	Parish church, C14, restored 1874, flint with some erratics, stone dressings, lead and slate roofs.
	1306659		Listed Building	Church of St Peter	Medieval to Post Medieval	II*	Parish church, Medieval, restored 1898. Flint with some iron conglomerate and erratics, limestone dressings; plain tiles
	1373149	MNF11612	Listed Building	Pond Farmhouse	Medieval	II	Early 16th century house with 17th and 19th century additions. Pond Farm is an extended medieval hall house. It is timber framed and has thick brick walls and a thatched queen post roof. It survived the fire in 1589 which destroyed most of Cringleford and may have been extended soon after. A late 18th century milestone is built into one of the walls.
	1050543	MNF49240	Listed Building	Lodge to E of Intwood Hall c. 100m north of Church of All Saints	Post-medieval	II	Lodge cottage, constructed c. 1844; flint with gault brick dressings, hipped thatch roof. The windows are Gothick in style. The cottage has been extended.
	1050564	MNF11610	Listed Building	Cringleford Hall	Post-medieval	II	16th century house, adjacent to moated site, with 16th century additions. 16th century build is rendered brick, possibly over timber frame. The house was known as Hellesdon House in the C16; from 1845-1959 it was the parsonage for Intwood and Keswick.
	1050567	MNF11613	Listed Building	The Round House at TG 188 056	Post-medieval	II	Cottage constructed in c. 1805 for the estate of Sir Roger Kerrison; octagonal in shape with a red brick with brick dentil cornice and black glazed pantiles.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
	1050568	MNF38150	Listed Building	Waterpump at TG 1947 0563	Post-medieval	II	Water pump dating to 1835, made of cast iron; c. 2.3m high with 1.6m handle. The pump was originally sited c. 600m to the west over a 72 foot bore but was moved due to road widening c. 1974.
	1050573	MNF48354	Listed Building	Milestone no. 4 at TG 1800 0556	Post-medieval	II	Milestone, late 18th century, for Norwich and Thetford Turnpike Trust; limestone. Wedge shaped, about 60cm high with rounded cap, tapering from 14 to 31 cm. Recessed full width panels inscribed NORWICH / 4 / MILES and THETFORD / 25 / MILES. The road was turnpiked in 1767.
	1050575		Listed Building	Kitchen Garden Walls and attached Octagonal Building c.60m north-east of Thickthorn Hall Q.V. 2/42	Post-medieval	II	Early 19th century walls, constructed with red brick in Flemish bond; some ramped walls at angles. Included for group value.
	1169110		Listed Building	North House TG 192 049 The Farmhouse TG 192 049	Post-medieval	II	Late 18th and early 19th century farmhouse, now two dwellings; colourwashed brick, black glazed pantiles. The farm was originally the Hall Farm of Cringleford Hall (NHLE1050564).
	1169537	MNF9417	Listed Building	Thickthorn Hall	Post-medieval	II	An early 19th century mansion, with an early 19th century walled kitchen garden and a late 18th century octagonal barn. The principal façade of the Hall is to the south, and has Tuscan pilasters and a recessed doorway with Tuscan columns.
	1306560	MNF14209	Listed Building	Cantley House	Post-medieval	II	16th and 17th century house (formerly a farmhouse), much of the timber frame now replaced with colourwashed brick and pantile roof. The main block of the house dates from the 17th century, and the interior of the house contains elaborately carved timbers with ovolo mouldings and other decorative details. The house and farmstead are the only-remaining settlement of the former parish of Cantelose.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
	1306611	MNF62751	Listed Building	Milestone no. 3 against pond farmhouse Q.V. 2/17	Post-medieval	II	Milestone, c.1770, limestone. Wedge shaped with 10cm wide face to front, rounded cap, 0.5m high. Faces inscribed Norwich / 3 MILES and THETFORD / 26 MILES. The road was turnpiked 1767.
	1373137		Listed Building	Garden Walls, Gazebo and Urn to north and north-west of Intwood Hall	Post-medieval	II	16th century walls to rectangular garden. Shortened and restored c. 1850, brick.
	1373147	MNF50937	Listed Building	Barn c. 30m to east of Cringleford Hall	Post-medieval	II	18th century barn, tarred weather boarding on tarred brick plinth, pantiles. Single stead. Large doors to north in gable end. Interior: timber framed, 3 bays with diagonal braces to studding; tie beams with small crooked braces.
	1169880	MNF12080	Listed Building	Low Farm	Post-medieval	II	This early 17th century timber framed farmhouse has two storeys. The timber frame is very complete and the high level of detailing suggests the building was quite high status. It was altered in the 18th and 19th centuries and had become derelict by the mid 20th century. It has now been restored.
	1050538	MNF11614	Listed Building	Whitehouse Farm	Post Medieval	II	A 17th century brick farmhouse with later alterations. The house has now been divided into two dwellings.
	1306525	MNF48355	Listed Building	MILESTONE NO 5 AT TG 1646 0517.  19th century milestone marking Norwich 5 miles Thetford 24 miles	19th Century	II	A 19th century milestone erected for the Norwich and Thetford Turnpike Trust. The road was turnpiked in 1767.



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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
	1169566		Listed Building	BUILDING AT CHURCH FARM C.180M NORTH EAST OF CHURCH OF ST REMIGIUS Q.V. 5/45	Post Medieval	II	Farm out-building previously a dwelling, C17
	1443937		Listed Building	Hethersett War Memorial	Modern	II	First World War memorial, unveiled 1920, with Second World War additions. Portland stone cross (after Sir Reginald Blomfield) on a three-stepped base.
	1373114		Listed Building	WATERPUMP AT TG 1590 0491 C.200M SOUTH-WEST OF CHURCH OF ST REMIGIUS	Post Medieval	II	Waterpump, 1835, cast iron.
	1444514		Listed Building	Ketteringham War Memorial	Modern	II	First World War memorial, erected c1920.
	1373144		Listed Building	JUNIPER HOUSE	Post Medieval	II	House, C17 and later, probably timber framed, red brick, thatched roof.
	1050555		Listed Building	APPLETREE COTTAGE AND THE WHITE HOUSE	Post Medieval	II	House, now 2 dwellings, C18, clay lump on flint footings, colourwashed, part rendered.
	1170176	MNF20450	Listed Building	IVY FARMHOUSE	Post Medieval	II	A 16th and 17th century timber-framed and clay lump farmhouse with a 19th century extension. The 19th century farm buildings include a stable and a cart shed.
	1170166	MNF49247	Listed Building	NORWICH LODGE	Post Medieval to Modern	II	A Gothick style lodge built in about 1840 at the entrance to Ketteringham Park. The lodge has traceried Gothick windows and an octagonal stone finial.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
	1050554	MNF49245	Listed Building	Obelisk, Fiveways  MONUMENT AT TG 1735 0342	Post Medieval to Modern	II	A white marble obelisk erected in 1897 to commemorate Queen Victoria's Diamond Jubilee.
	1306366	MNF49241	Listed Building	THE WHITE HOUSE	Post Medieval to Modern	II	This brick house was built around 1850. Although it has a gault brick façade the rear and side walls are built of red brick. The central single storey rendered porch dates to the 19th century.
	1373139	MNF38159	Listed Building	HONEYSUCKLE COTTAGE	Post Medieval to Modern	II	This 16th century timber framed brick, flint and render building was a parsonage until 1845. The two-storey building has a central chimney. The timber frame is completely exposed on the first floor.
	1373146		Listed Building	HILL GROVE	Post Medieval	II	House, now residential home for the elderly, c1780 for John Ewing.
	1050566		Listed Building	CRINGLEFORD HOUSE  ROSILAND HOUSE	Post Medieval	II	House now 2 dwellings, c.1794, a rebuild of late C16 house, for Thrower Buckle.
	1373148		Listed Building	FORD END	Post Medieval to Modern	II	House, C17 with additions of 1929.
	1169144		Listed Building	THE MILLHOUSE	Medieval to Post Medieval	II	Millhouse, on ancient site, 1795 on earlier core
<b>Non-designated heritage assets</b>							
		MNF14536	Findspot	Prehistoric flint flake	Prehistoric		A prehistoric circular grey flint flake with slight retouch on one side was found under a hedge in 1977.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF64870	Findspot	Late prehistoric worked flint and Iron Age pottery	Prehistoric		Fieldwalking in 2012 recovered Iron Age pottery sherds as well as late prehistoric worked flints, including an Early Neolithic scraper and an Early Neolithic/Late Bronze Age blade.
		MNF22757	Findspot	Prehistoric and post medieval finds from Hethersett Racecourse	Palaeolithic & post-medieval		Prehistoric worked flints, part of a post medieval vessel and a post medieval musket ball mould found during fieldwalking.
		MNF22758	Findspot	Multi-period finds from Cantley Stream Culvert	Prehistoric, Roman & post-medieval		A prehistoric flint flake retouched as a scraper, a Neolithic flint flake, a prehistoric pot boiler, Roman pottery and a post medieval weight found in 1986.
		MNF62118	Findspot	Multi-period finds	Prehistoric, medieval & post-medieval		A fieldwalking survey undertaken in May 2009 recovered a possible Upper Palaeolithic flint blade; a range of Neolithic/Bronze Age worked flints; medieval and post-medieval pottery and tiles and fragments of post-medieval clay pipes.
		MNF20023	Findspot	Neolithic to Bronze Age blade and flake	Neolithic - Bronze Age		A Neolithic to Bronze Age flint blade and flake were found.
		MNF21638	Findspot	Neolithic flaked flint axehead	Neolithic		At some time prior to 1984 a Neolithic flaked flint axehead was found in the garden here.
		MNF22812	Findspot	Neolithic blade found on route of A11	Neolithic		A small Neolithic flint blade found in 1986.
		MNF9330	Findspot	Neolithic axehead	Neolithic		A Neolithic chipped flint axehead was found east of Hethersett Lane.
		MNF9462	Findspot	Neolithic axehead, Hethersett Station	Neolithic		Chipped flint axe found in trench opposite bungalows near Hethersett Station., 1967.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF9705	Findspot	Neolithic axehead from Low Farm	Neolithic		A Neolithic flaked flint axehead was found. The axehead may have been made from a flint saddle quern.
		MNF22755	Findspot	Roman brooch and post medieval seal	Roman		A Roman brooch and a post medieval cloth seal found by metal detecting.
		MNF44741	Findspot	Roman coin	Roman		Metal detecting in this area during 2004 recovered an early 4th century AD coin.
		MNF9364	Findspot	Roman cremation	Roman		In 1930 a Roman cremation urn was found in a garden. It was placed in the ground upside down and contained cremated bones. Pottery sherds and oyster shells, possibly Roman in date, were found at the same time in a field to the west.
		MNF9366	Findspot	Roman coin	Roman		In 1953 a Roman coin was found at this location during building work.
		MNF23397	Findspot	Medieval jetton and post medieval coin	Medieval		Metal detecting in this area during 1986 recovered a jetton from the reign of Edward II and a coin minted in 1756.
		MNF25511	Findspot	Medieval pottery found northeast of Cantley Farm	Medieval		Two fragments of medieval pottery found during fieldwalking in 1989.
		MNF28201	Findspot	Medieval pottery and coin	Medieval		A fragment of medieval pottery and a medieval coin found during fieldwalking and metal detecting.
		MNF28594	Findspot	Medieval buckle	Medieval		Metal detecting in this area during 1991 recovered a 13th century buckle.
		MNF32146	Findspot	Medieval coin and papal bull	Medieval		Metal detecting in this area during 1996 and 1998 recovered a coin of Henry III and a 13th century papal bull.
		MNF33920	Findspot	Medieval brooch and buckle, post medieval token	Medieval & post-medieval		Metal detecting in this area during 1997-98 recovered a medieval brooch, a medieval buckle and a post medieval Norwich token.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF39146 MNF39147	Findspot	Medieval/post medieval buckle or fitting	Medieval		In 1997 a metal detectorist found a late medieval/early post medieval buckle, belt fitting or strap fitting.
		MNF9472	Findspot	Undated wall and medieval and post medieval finds	Medieval		Fieldwalking recovered pieces of medieval and post medieval pot and iron and copper alloy metal working debris. An undated flint wall was also recorded.
		MNF33915	Findspot	Post medieval coin weight	Post-medieval		Metal detecting in this area during 1998 recovered a 16th century coin weight, with one bevelled face.
		MNF33916 MNF33917 MNF33918 MNF33921 MNF33922 MNF33923	Findspot	Metal-detecting	Post-medieval		Metal detecting in this area during 1998 recovered a 17th century token, a 16th century jetton, a post-medieval coin of Charles I and two early post-medieval coin weights.
		MNF45349	Findspot	Post medieval coin weight	Post-medieval		Metal detecting at this location in 2004 recovered a coin weight dating to the reign of James I.
		MNF11805	Building	Lodge House	Post-medieval		Original lodge of Thickthorn Hall. Georgian style (compare neo-classical of hall), half octagonal to drive. Central chimney. Fair condition.
		MNF9510	Structure	Two post medieval hydraulic ram	Post-medieval		Two post medieval hydraulic rams, one in a horizontal brick chamber, the other in a brick chamber 1.2m high with a slate roof. Both good condition.
		MNF9513	Structure	Post medieval saw pit	Post-medieval		This post medieval saw pit may once have stood within a flint building. There are no remains of the flint building.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF13571	Structure	Railway transport site	Post-medieval		This line opened in 1844 as the Norwich and Yarmouth Railway; but from 1845 was the Norwich and Brandon Railway before the combined line became the Norfolk Railway, later the Eastern Counties, and then part of the Great Eastern. It is still in use today and runs from Yarmouth Vauxhall through Norwich Thorpe, Wymondham, Attleborough, Snetterton before ending in Brandon. A disastrous and early accident on this line took place by the river bridge at Whitlingham station. The railway line is important because it had Cooke and Wheatstone telegraph from its opening and was thus the first block system in Britain. Additionally, the Trowse swing bridge was one of the first in the world and was reconstructed in 1905 before being rebuilt in 1987 as the first overhead-electric swing bridge.
		MNF9409	Earthwork	Bank (earthwork), linear feature, hollow way	Unknown		There is a undated low bank at this site. It may have been part of a hollow way that led to a moated house to the east.
		MNF13214	Findspot	Neolithic flints	Prehistoric		Neolithic flint implements found in pipe-trench in 1977.
		MNF14273	Findspot	Multi-period finds	Prehistoric		Fieldwalking and metal detecting in advance of the Norwich Southern Bypass recovered a scatter of Late Neolithic or Early Bronze Age worked flints, an undated metal figurine and undated glass fragments. Pieces of Roman, medieval and post medieval pottery were also found.
		MNF14274	Findspot	Multi-period finds	Prehistoric		Fieldwalking and metal detecting on the line of Norwich Southern Bypass recovered prehistoric worked flints, Roman coins, an Early Saxon brooch, a Late Saxon paffrath (ladle) handle, a medieval seal and medieval coins. Medieval and post medieval fragments of pottery were also found.
		MNF14275	Findspot	Multi-period finds	Prehistoric		Fieldwalking and metal detecting on the line of the Norwich Southern Bypass recovered prehistoric worked flints, two 14th century strap ends and a post medieval pipe clay figurine of an infant in a shell surround. Late Saxon, medieval and post medieval pottery fragments were also recorded. Metal-detecting in 2012 recovered Roman coins and a post-medieval token, a Roman steelyard weight and a post-medieval lead cloth seal.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF14276	Findspot	Prehistoric worked flints and post medieval pottery	Prehistoric		Fieldwalking on the line of the Norwich Southern Bypass recovered two prehistoric flint tools and five pieces of 17th century pottery.
		MNF16229	Findspot	Multi-period objects, coins and pottery sherds	Prehistoric		Investigations of this site during the period 1978-92 recovered a wide variety of objects. Finds included prehistoric flints, three Bronze Age copper alloy socketed axeheads, a Roman coin, a Middle Saxon coin and a post medieval clay tobacco pipe and spur. Sherds of Beaker, Iron Age, Roman and medieval pottery were also retrieved.
		MNF16230 MNF40384 MNF70857	Findspot	Multi-period objects, coins and pottery sherds	Prehistoric		Investigations in this area during 1978-92 recovered a wide variety of objects. Finds included prehistoric flints, a Roman patera and a post-medieval clay tobacco pipe. Sherds of prehistoric, Iron Age and post-medieval pottery were also retrieved. Metal-detecting in 2010 recovered medieval and post-medieval metal objects. An undated ring ditch and two undated linear features are visible as cropmarks on aerial photographs that were taken in the 1940's and in 1994. Geophysical survey carried out in 2013 detected weak linear anomalies in the area of the linear cropmarks but did not locate any variation in the area of the possible ring ditch. However, magnetic responses in this area may have been masked by the presence of a pylon in the immediate vicinity.
		MNF16307	Findspot	Neolithic to Bronze Age adze and 16th century buckle	Prehistoric		A Neolithic to Bronze Age flint adze was found on the surface of this ploughed field. Metal detecting recovered a circular 16th century copper alloy buckle.
		MNF17835	Findspot	Neolithic to Bronze Age worked flints from northwest of Foxburrow Plantation	Prehistoric		Eleven Neolithic to Bronze Age flint flakes and one Neolithic to Bronze Age flint blade were found on the surface.
		MNF22756	Findspot	Prehistoric flints and pottery of unknown date	Prehistoric		Prehistoric worked flints and pottery of unknown date collected during fieldwalking.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF22813	Findspot	Prehistoric and Neolithic flakes found on route of A11	Prehistoric		Prehistoric and Neolithic flint flakes found on gravel in side of drainage ditch below the topsoil, 1986.
		MNF22814	Findspot	Mesolithic flint blade and Neolithic flint flakes, route of A11	Prehistoric		A Mesolithic flint blade and several Neolithic flint flakes were found in 1986.
		MNF22815	Findspot	Neolithic core and flakes from route of A11	Prehistoric		A Neolithic flint core and flint flakes found in 1986.
		MNF22816	Findspot	Neolithic flakes from line of A11	Prehistoric		Neolithic flint flakes found during fieldwalking before the construction of the A11.
		MNF22828	Findspot	Neolithic flint artefacts	Prehistoric		Fieldwalking in this area during 1986 recovered various Neolithic flint artefacts including a blade, flakes and scrapers.
		MNF24830	Findspot	Prehistoric worked flints	Prehistoric		Fieldwalking on the line of the Norwich southern bypass recovered prehistoric worked flints.



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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF25706	Findspot	Multi-period finds	Prehistoric		Fieldwalking on the line of the Norwich southern bypass recovered prehistoric worked flints, one piece of medieval pottery and a medieval iron knife. Later metal-detecting and fieldwalking between 2004 and 2013 found a large scatter of prehistoric worked flint, including Neolithic to Bronze Age flakes, blades, scrapers and cores and a Neolithic laurel leaf arrowhead; Iron Age, Roman, medieval and post-medieval pottery sherds; Roman, medieval and post-medieval coins; medieval and post medieval jettons; post-medieval tokens and Roman, Early Saxon and Late Saxon to post-medieval metal objects. The metal finds include a Roman bell, furniture fitting, stylus and dolphin brooch; an Early Saxon wrist clasp and belt stiffener; a Late Saxon disc brooch; a medieval lead seal matrix, key, thimble, harness mount and dress accessories including an unusual buckle plate; fragments of a medieval/post-medieval copper alloy vessel, a paperclip rivet and several rings and post medieval dress accessories, coin weights, trade weights, an apothecaries' weight, book clasp, crotal bell, harness mounts and numerous lead cloth seals.
		MNF25600	Findspot	Multi-period finds	Prehistoric		Fieldwalking and metal detecting recovered finds dating from the Neolithic to the post medieval period. These include Neolithic worked flints, a 12th to 13th century swivel from a dog leash, a piece of medieval pottery, a medieval buckle plate engraved with the initials MR and a heart and a post medieval mourning ring. The ring was inscribed 'Jacob Boak Esqr Died 3 Feby 1812 Aged 71' on the back. Medieval and post medieval coins and tokens were also found.
		MNF25601	Findspot	Multi-period finds	Prehistoric		Fieldwalking and metal detecting recovered finds dating from the Neolithic to post medieval period. These include Neolithic flint flakes and blades, a medieval cauldron leg, medieval and post medieval buckles and post medieval thimbles. Medieval and post medieval coins and jettons were also found.
		MNF28021 MNF59887	Findspot and cropmarks	Prehistoric flint scraper and possible prehistoric field boundaries	Prehistoric		Fieldwalking in this area during 1978 recovered a single prehistoric flint scraper. Possible prehistoric field boundaries are visible as cropmarks on aerial photographs in the same area to the east of the Thickthorn interchange, Cringleford.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF31555	Earthwork	Possible Early Saxon buildings or Neolithic flint mines at Foxburrow Plantation	Prehistoric		Cropmarks of possible Early Saxon sunken featured buildings and some linear ditches can be seen on aerial photographs. The proximity of a nearby Neolithic flint working site (MNF17836) suggests these could also be interpreted as Neolithic flint mine shafts.
		MNF31789	Event (evaluation)	Potentially prehistoric pits	Prehistoric		Trial trenching during an evaluation in 1996, prior to the construction of three reservoirs recorded two sub-square pits with charcoal-rich fills. Possibly prehistoric, although a single retouched flint flake was the only find recovered.
		MNF32333	Findspot	Multi-period objects, coins and pottery sherds	Prehistoric		Metal detecting and fieldwalking during 1996-2001 recovered a variety of objects. Finds included prehistoric flints, Roman coins, an Early Saxon brooch, a Late Saxon coin, a medieval seal and a post medieval lead fitting or escutcheon.
		MNF40466	Findspot	Prehistoric flint artefacts, medieval and post medieval pottery sherds	Prehistoric		Fieldwalking in this area during 2001 recovered prehistoric flint artefacts and medieval and post medieval pottery sherds. The prehistoric flints included a scraper, borers, a core and flakes.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF43156 MNF43163 MNF43164 MNF43165 MNF43166 MNF43168 MNF43169 MNF43411 MNF39294 MNF41585	Event (field walking, metal-detecting, geophysical survey, trial trenching, aerial photography)	Undated ditches and pits and multi-period finds	Prehistoric, medieval & post-medieval		This site was subject to a programme of investigation carried out between 2004 and 2006 in advance of construction of a new road and housing. Initial surveys comprising geophysical survey, field walking and metal detecting recorded a substantial number of finds and features, primarily dating to the prehistoric, medieval and post-medieval periods. These include worked prehistoric flints (including blades, piercers, scrapers, cores and a possible arrowhead, prehistoric pottery sherds, medieval pottery sherds, a medieval harness fitting, post-medieval pottery, post-medieval ceramic building material, post-medieval coins, clay pipe fragments, a 16th century jetton, a post-medieval gun flint and an undated quern stone fragment. The subsequent monitoring of topsoil stripping revealed little other than five small, shallow pits, which contained charcoal rich deposits and were tentatively interpreted as post-medieval burnt out tree stumps, as well as the possible foundations of a post-medieval structure. Later trial trenching recorded a series of undated pits, possibly of prehistoric date, and ditches, which correspond with those identified in aerial photographs. Additional metal detecting at this site in 2012 recovered a Roman pin, a medieval seal matrix and a post-medieval lead weight. Fieldwalking in this area during 2002 recovered sherds of medieval and post medieval pottery, post medieval tiles, a post medieval wig curler and a post medieval coin.
		MNF59885	Earthwork	Cropmarks of possible field boundaries	Prehistoric		Possible field boundaries are visible as cropmarks on aerial photographs on land to the south of Norwich Road, Hethersett. They consist of several ditches at right angles to each other, as well as at least two banks which appear to surround a possible pit. At least one of the ditches, towards the south west of the site, appears to be on the same orientation as the possible prehistoric field boundaries 824m to the north east.
		MNF43554	Event (field walking and trial trenching)	Bronze Age/Iron Age features and multi-period finds, Thickthorn Park and Ride	Prehistoric, Roman, medieval & post-medieval		In 2004 two scatters of prehistoric flint artefacts were found during fieldwalking, along with burnt flints, a piece of possible Roman pottery and medieval and post medieval pottery and metalwork. Bronze Age and Iron Age features and prehistoric finds were discovered during the subsequent evaluation excavation.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF45126	Event (trial trenching)	Prehistoric flint artefacts and undated features	Palaeolithic		In 2004 prehistoric flint artefacts and undated ditches, pits and post holes were found during trial trenching on the site of a proposed new school. The flints included a Later Neolithic/Bronze Age polished flint axe and the features could be prehistoric. Geophysical survey of this area and two additional fields to the west did not record any magnetic anomalies of possible archaeological origin. Compositional changes in the soils may have prevented any archaeological features from being detected.
		MNF62118	Findspot	Multi-period finds	Prehistoric, medieval & post-medieval		A fieldwalking survey undertaken in May 2009 recovered a possible Upper Palaeolithic flint blade; a range of Neolithic/Bronze Age worked flints; medieval and post-medieval pottery and tiles and fragments of post-medieval clay pipes.
		MNF64736	Findspot	Multi-period finds	Prehistoric & post-medieval		Fieldwalking and metal-detecting in 2011 recorded 203 finds ranging in date from the Prehistoric to the early modern period. Early activity was represented by a small assemblage of Prehistoric flint flakes and a single Bronze Age arrowhead. Roman, Middle Saxon, and medieval occupation in this area appears to have been very sparse, represented by only four pottery sherds. The majority of the finds were located in the north and centre of the site and dated to the post-medieval to early modern period. Post-medieval objects include pottery, brick, roof tile, clay pipe stems, copper alloy coins, tokens, lead cloth seals, buttons, buckles, cap badges, furniture fittings, a possible vessel foot, a portion of a bell, a thimble lining, and a fragment of a possible necklace pendant.
		MNF69036		Prehistoric and medieval features and multi-period finds	Prehistoric & medieval		Between 2014 and 2015 a range of archaeologically significant remains were identified and investigated during the construction of several new residential dwellings. With the exception of a small number of potentially prehistoric pits, the majority of the excavated features were of probable medieval date. These features included a substantial drainage ditch and a series of boundaries or enclosure ditches. A cluster of discrete medieval features comprising pits, post-holes and two hearth or oven bases was also identified in one part of the site. There, features contained very little occupation debris, suggesting that the main focus of any occupation lay to the west. The pottery assemblage recovered suggests that medieval activity had ceased by the early 14th century and there was only limited evidence for subsequent activity on the site. Apart from a small and unremarkable assemblage of post-medieval finds there was no evidence for subsequent activity on the site.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF9396	Cropmark & findspot	Undated enclosure or field system and multi-period finds	Prehistoric		An undated enclosure or field system is visible as cropmarks on aerial photographs taken in 1973. Prehistoric flint artefacts, an Iron Age coin, a Roman coin, medieval pottery sherds and a post medieval seal have also been found on the site.
		MNF50337	Findspot	Neolithic worked flints	Neolithic		Two Early Neolithic worked flints and a medieval sherd were found by fieldwalking in 2005.
		MNF63172	Event (trial trenching)	Later prehistoric ditches, post-medieval quarry pit, and multi-period finds	Prehistoric & post-medieval		Excavation of sixteen trial trenches in advance of construction of a new school recorded three ditches of possible later prehistoric date, 38 pottery sherds from a single Middle Iron Age shouldered jar, and a post-medieval quarry pit. Unstratified objects recovered from the spoil include later prehistoric struck flint, medieval to post-medieval pottery, an 18th to 19th century watch key, and a George V farthing dated to 1917.
		MNF65378	Event (field-walking and geophysical survey)	Possible ditches and pits and Prehistoric, medieval and post medieval finds	Prehistoric, medieval & post-medieval		A systematic fieldwalking survey of this area has identified a wide range of finds dating to the Prehistoric, medieval, and post medieval periods. The worked flint assemblage has been broadly dated to the Neolithic to Early Bronze Age and includes flakes, blades, and cores. A small quantity of medieval pottery and ceramic building material was recovered from the northern portion of the field, and a moderate quantity post medieval finds including pottery, pantile, brick, and clay pipe fragments was recovered throughout. The medieval and post medieval objects were likely re-deposited during arable farming activities, and an unusually high proportion of 17th to early 19th century high-status wares within the assemblage likely indicates night-soiling from Norwich or a nearby inn. Geophysical survey in the northern portion of this area identified several possible ditches and pits of unknown date.
		MNF9708	Findspot	Possible Neolithic flint working site	Neolithic		Between 1941 and 2014 Neolithic worked flints, including flint axeheads, were recovered as stray finds, during metal detecting and through fieldwalking in advance of the Norwich Southern Bypass. This site may be a Neolithic flint working site. Medieval pottery sherds were also recovered during the fieldwalking in 1986.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF5008	Findspot	Undated human bones	Bronze Age		During the late 18th century and early 19th century a large quantity of human bones was discovered on this site. The context in which they were buried is not clear. They may have been buried in a mound, a possible Bronze Age barrow. Another possibility is that they were associated with a ruined stone building that was recorded in 1800. The building could have been a medieval chapel which was recorded in the parish by Blomefield.
		MNF61771	Cropmark	Cropmark of possible Bronze Age ring ditch and undated linear features	Bronze Age		A large possible Bronze Age ring ditch and undated linear features are visible on aerial photographs to the east of Cantley Farm, Keswick and Intwood.
		MNF59884	Cropmark	Cropmark of possible ring ditch	Bronze Age		A possible ring ditch is visible as a cropmark on aerial photographs on land to the west of Thickthorn Farm, Hethersett.
		MNF9395	Earthwork	Possible Bronze Age round barrow	Bronze Age		A low mound survives at this location. It has been surveyed and appears on Ordnance Survey maps and is visible as a cropmark on aerial photographs. It could be a Bronze Age barrow.
		MNF44230	Findspot	Multi-period finds	Roman		Metal detecting recovered finds dating from the Roman to the post medieval period. These include a Roman cosmetic mortar, a medieval lyre-shaped buckle or strap end, a medieval or post medieval handle in the form of an animal head and a post medieval thimble with an inscription. Roman, Late Saxon, medieval and post medieval coins and one post medieval token were also found.
		MNF31627	Findspot	Roman coin, Middle Saxon brooch and medieval strap end	Roman		Metal detecting in this area during 1995 recovered a 2nd century AD coin, a Middle Saxon disc brooch and a medieval strap end.
		MNF28707	Findspot	Multi-period finds	Roman		Two Roman coins, a medieval buckle plate and a post medieval coin found during metal detecting.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF45621	Findspot	Roman, medieval and post medieval objects	Roman		Metal detecting in this area during 2004 recovered a Roman coin, a coin of William and Mary, a medieval or post medieval bell and pieces of post medieval pottery and metalwork.
		MNF67642	Findspot	Roman, medieval and post-medieval finds	Roman		Metal-detecting in 2012 recovered Roman and medieval coins, medieval buckles, strap-fittings, and casket fitting, post medieval buckles, mounts, and finger ring, and an undated steelyard weight.
		MNF68927	Findspot	Multi-period pottery sherds and Roman coins	Roman		Fieldwalking and metal-detecting in 1992 recovered Roman coins and Roman, Middle Saxon, medieval and post-medieval pottery sherds.
		MNF38518	Findspot	Late Saxon and medieval finds	Early-medieval		A fragment of a Late Saxon bridle cheekpiece and a medieval mount found by metal detecting in 1993.
		MNF11527	Earthwork	Medieval to post medieval hollow way	Medieval		A hollow way is visible as an earthwork on aerial photographs and on the ground. The hollow way may be a former approach to Thickthorn Hall.
		MNF18186	Cropmark	Cropmarks of linear ditches perhaps relating to parish boundary, and possible enclosures of unknown date	Medieval		Cropmarks of linear ditches perhaps relating to the parish boundary, together with several possible fragmentary enclosures of unknown date are visible on aerial photographs on land that is now Hethersett Racecourse, Hethersett.
		MNF56272	Findspot	Medieval and post medieval finds	Medieval		Medieval and post medieval metal objects recovered during metal detecting in 2007.
		MNF33732	Archaeological remains of historic park	Thickthorn Park	Medieval		An early 19th century landscape park surrounding Thickthorn Hall. The park includes a medieval moat that was turned into an ornamental lake, a late 19th century kitchen garden, early 19th century lodges and concrete greenhouses from the 1930s.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF25598	Findspot	Medieval and post medieval finds	Medieval		Metal detecting recovered a 14th century copper alloy strap end, a medieval hasp and a post medieval copper alloy chape.
		MNF45666	Findspot	Medieval and post medieval metal objects	Medieval		Metal detecting in this area during 2004-05 recovered a medieval strap fitting, a medieval coin, a medieval French jetton and a post medieval coin.
		MNF56118	Findspot	Medieval/post medieval pottery, post medieval and undated finds	Medieval		A medieval/post medieval pottery sherd, a post medieval lead cloth seal and undatable casting waste were recovered from this site during metal detecting in 2007.
		MNF67519	Event (trial trenching)	Post-medieval ditches	Post-medieval		A trial trench excavated here in 1996 revealed several parallel ditches. Although these features produced only limited dating evidence it is likely that they were post-medieval. Cartographic sources suggest that they may have been associated with 17th century land use.
		MNF60081	Findspot	Medieval/post-medieval and post-medieval findspot	Medieval		Metal-detecting in 2010 recovered a post-medieval coin, medieval/post-medieval and post-medieval metal objects, including a medieval/post-medieval attachment stud from a chafing dish or cupboard door and a post-medieval buckle frame.
		MNF61763	Cropmark	Cropmarks of possible double ditched enclosure	Medieval		Cropmarks of a possible double ditched enclosure are visible on aerial photographs to the north of the site of Cantley deserted medieval village, Ketteringham.
		MNF59888	Cropmark	Cropmarks of possible field boundaries	Medieval		Three linear banks are visible as earthworks on aerial photographs, on land to the south of Cantley Lane, Cringleford. It is possible that these features are caused by natural undulations in the ground, although it seems probable that they are post medieval drainage features.
		MNF9352	Earthwork	Medieval moat, Thickthorn Hall	Medieval		A medieval moat in the grounds of Thickthorn Hall. The moat became part of an ornamental lake created in the early 19th century. Medieval documents record that this was the site of the manor house of Alan de Thickthorn in the mid-13th century.



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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF9410		Medieval moated site	Medieval		This medieval moat has wide water-filled arms. It may have been abandoned during the 17th or 18th centuries when the Hall (NHLE1050564) to the north was increased in size. The central island is quite marshy; the water table may have been altered in the post medieval period to allow the island to be used as a garden.
		MNF9469	Village	Deserted medieval village of Cantley	Medieval		This is the site of the deserted medieval village of Cantley, mentioned in the Domesday Book. Prehistoric flint flakes, and medieval and post medieval pottery and building materials have been found. Cropmarks of a possible double ditched enclosure are visible on aerial photographs to the north east.
		MNF14272	Findspot	Late Saxon bridle cheek piece and post medieval pottery sherds	Post-medieval		Over one hundred sherds of post medieval pottery, possibly debris from a pottery kiln, were found during fieldwalking in the 1970s. Metal detecting in 2004 recovered a fragment of a Late Saxon bridle cheek piece from this site.
		MNF14211	Building	North House and The Farmhouse	Post-medieval		This T-shaped two storey painted brick house was built in two stages. The rear wing (known as North House) is thought to date to the 18th century. The main block (The Farmhouse) was built in 1829. The red brick barns date to 1828. This was the estate farm for Cringleford Hall.
		MNF61759	Earthwork	Earthworks of undated linear ditch and bank, possible post medieval drainage feature	Post-medieval		Earthworks of an undated linear ditch and bank, a possible post medieval drainage feature, are visible on aerial photographs to the south of Norwich Road, Hethersett.
		MNF61817	Earthwork	Earthworks of undated ditches, possible post medieval park features	Post-medieval		Earthworks of ditches, possible park features, are visible on aerial photographs to the south of Intwood Hall. The earthworks are rather ephemeral, and appear differently on each of the photographic sources, and have therefore been recorded with a note of caution.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF61818	Cropmark	Cropmark of undated ditch, possible post medieval drainage feature	Post-medieval		A cropmark of an undated ditch, or possible post medieval drainage feature, is visible on aerial photographs, on land to the south of Intwood Hall. It is likely to have performed a drainage function.
		MNF63301	Building	Cringleford Church of England Voluntary School	Post-medieval		The school and adjoining master's house was built in 1858. The school was scheduled for closure in 1951/2 but is still in use.
		MNF9406	Structure	Post medieval kilns and associated finds	Post-medieval		In 1976 a scatter of post medieval kiln debris and pottery wasters was found in a field and on the edge of a pit. A geophysical survey in 1977 suggested the location of three possible kilns. Documents from the 17th century mention a potter using the site.
		MNF9407	Earthwork	Post medieval clay pit	Post-medieval		This large disused quarry has now been partially deepened and converted into an area used for clay pigeon shooting. This may originally have been a clay pit.
		MNF16685	Structure	Site of lime kilns and tramway	Modern		This is the site of lime kilns that were in use during the 1930s and 1940s. A tramway was associated with the lime kilns, and a tipping wagon survives as a drinking trough.
		MNF59513	Structure	Site of possible World War Two railblock on the Norfolk Railway	Modern		A possible World War Two railblock is evident as a group of structures visible on aerial photographs along the line of the Norfolk Railway (MNF13571). The railblock was perhaps sited strategically on the west side of a rail bridge crossing Low Road (which runs between Cringleford and Keswick), although this is also the site of a level crossing, and it is not clear to what extent the structures relate to this non-military feature of the railway. If the site does represent a railblock, it was one of several established during this period on the railway lines surrounding Norwich; additional examples are evident further east along the line. It is not known whether any element of the site still survives today.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF66245	Negative Evidence	Site with no archaeological finds or features	Undated		Magnetometer survey of two fields recorded no features of possible archaeological origin. The area was subject to extensive magnetic disturbance caused by modern activities which may mask any potential archaeological features.
		MNF67763	Negative Evidence	Site with no archaeological finds or features.	Undated		A detailed magnetometer survey was carried out in 2013 in advance of development. No magnetic anomalies of archaeological origin were identified within this area.
		MNF9403	Findspot	Post medieval pottery sherds	Prehistoric		In 1975 a scatter of post medieval pottery sherds were found in the ploughed field here. They may have been part of a dump into an old clay pit.
		MNF11820	Cropmark	Cropmark of building of unknown date	Unknown		A building of unknown date is visible as a cropmark on aerial photographs. The building has internal divisions, but its date and function are unknown. It is quite possible, however, that this feature is a remnant of agricultural activity in the area, as it coincides with the agricultural tramlines in the field.
		MNF25507	Cropmark & findspot	Cropmark site and prehistoric worked flint	Unknown		A circular enclosure (possibly a ring ditch) with a linear feature cutting through it, a larger enclosure with a pit like feature within it and further linear features including a ditched feature that runs through the middle of the field can be seen on aerial photographs of this area. The large ditched feature may be an old field boundary. Prehistoric worked flints, including a Neolithic pick, have been found here.
		MNF62390	Structure	Possible kiln site	Unknown		A geophysical survey between May and June 2009 revealed two large magnetic anomalies, which could be due to incidents of burning and may indicate the remains of a highly magnetised feature such as a kiln.
		MNF9394	Cropmark	Cropmarks of undated enclosure	Unknown		An undated enclosure is visible as cropmarks on aerial photographs that were taken in 1972. Burnt flints and shells have been found on the site. A watching brief during the construction of the A47 Norwich Southern Bypass revealed no features, although metal detecting recovered undated metal working debris.
		MNF9500	Cropmark	Site of unknown date	Unknown		Several black patches of unknown date and origin were noted at the top of a steep slope in 1969. The available aerial photographs were examined and these are thought to be geological features.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF47810	Building	Thickthorn Lodge	Post-medieval		A late 19th century red brick lodge with a thatched roof. The lodge stands at the entrance to the landscape park surrounding Thickthorn Hall
		MNF39148	Findspot	Medieval horse harness pendant	Medieval		Metal detecting in this area during 1997 recovered a 13th or 14th century horse harness pendant.
		MNF25707	Findspot	Multi-period finds	Prehistoric, Roman, medieval & post-medieval		Fieldwalking on the line of the Norwich southern bypass recovered prehistoric worked flints and pieces of Roman, medieval and post medieval pot. Subsequent metal-detecting between 2011 and 2014 recovered further Roman pottery sherds; Roman, medieval and post-medieval coins and post-medieval coin weights and a rotary key.
		MNF20021	Findspot	Multi-period finds	Prehistoric and Roman		Initially Neolithic to Bronze Age worked flints were found on the site and subsequent fieldwalking in advance of the Norwich southern bypass recovered a Roman coin along with medieval pottery and metal objects. Metal-detecting between 1986 and 2012 recovered a post-medieval coin and jetton as well as Roman, medieval and post-medieval metal objects. The metal finds include a Roman disc mount; medieval buckles, rivets, a harness pendant and a possible knife blade guard or candle snuffer and post-medieval buckles, a purse frame, sword belt attachment and casket lock front.
		MNF45154	Findspot	Medieval and post medieval coins and tokens from Keswick Hall	Medieval and post-medieval		Three medieval coins, one post medieval coin and two post medieval jettons were found in the 1930s by a gardener at Keswick Hall.
		MNF58676	Monument	World War Two military camp or headquarters, Keswick Old Hall	Modern		A World War Two military camp or headquarters is visible on aerial photographs at Keswick Old Hall. The site consists of a number of Nissen huts, arranged within two groups and possible air raid shelters.
		MNF58675	Monument	Earthworks of post medieval boundaries	Post-medieval		The earthworks of post medieval boundaries are visible on aerial photographs within the grounds of Keswick Hall. These earthworks are likely to relate to former layouts and divisions within the park.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF39868	Monument	Site of post-medieval brick kiln in Keswick Hall Park	Post-medieval		The 1847 Keswick Tithe map indicates a 'Brick Ground' at this location. A disused brick kiln is marked here on the Ordnance Survey 1st edition 25 inch map made in 1883. Ditches relating to the edge of this site, as depicted on the Tithe map, are visible on aerial photographs.
		MNF63806	Findspot	Medieval to post-medieval finds	Medieval and post-medieval		Metal-detecting in 2011 recovered medieval and post-medieval coins as well as medieval/post-medieval and post-medieval metal objects. The metal finds include a medieval/post-medieval lead weight and a post-medieval circular mount.
		MNF14278	Findspot	Prehistoric worked flints and post medieval pot	Prehistoric and post-medieval		Fieldwalking on the line of the Norwich southern bypass recovered prehistoric flakes, Neolithic scrapers, a Neolithic blade core, a Neolithic polished flint axehead and pieces of post medieval pottery.
		MNF58523	Cropmark	Cropmarks of trackway of unknown date	Unknown		The cropmarks of a possible trackway and associated boundaries of unknown definite date and origin, are visible on aerial photographs cutting across the line of a Roman road (NHER 52027), which now forms the Keswick and Swardeston parish boundary. The archaeological origin of this trackway-like feature is uncertain and it is feasible that some, if not all, of the marks relate to relatively recent agricultural activity.
		MNF58521	Cropmark	Cropmarks of fragmentary ditches of unknown date	Unknown		The cropmarks of fragmentary ditches of unknown date, some of which are likely to represent former field boundaries, are visible on aerial photographs to the north of the Keswick and Swardeston parish boundary near Foxburrow Plantation.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF58522 MNF59980	Road	Roman road from Caistor St Edmund to Crownthorpe	Roman		<p>The line of a Roman road between Caistor St Edmund (the Roman town of Venta Icenorum) and Crownthorpe (the site of a Roman temple) has been traced, principally through earthworks, soilmarks and cropmarks visible on aerial photographs. To the west of Crownthorpe, the line has been postulated to continue as far as Saham Toney and Watton, although physical evidence for this is scant. This road would potentially have linked up with the section of Roman road to the north of Wymondham, which is recorded from aerial photographs running from the Roman settlement and temple at Crownthorpe towards the Roman town at Caistor. Evidence, either aerial photographic and field survey, section of road is not known past Ketteringham village, although the route is likely to be fossilised in the eastern section of 'The Street' and the western part of the track leading east from the Fiveways junction.</p> <p>The eastern continuation of the Roman road leading from the Roman settlement and temple at Crownthorpe towards the Roman town at Caistor is visible on aerial photographs. The cropmarks of the more easterly section of this road, the section that approaches the town itself is the overall parent record for both segments. This route is visible as two sections of the road and runs along the line of the Keswick and Swardeston parish boundary, which presumably has its origins in the line of the Roman road and later boundaries based upon that road (potentially once it had ceased to be used as a road).</p>
		MNF17834	Findspot	Prehistoric, Roman and post-medieval finds	Prehistoric, Roman & post-medieval		Thirteen prehistoric flint flakes and one prehistoric flint core were found as stray finds in 1982, while metal-detecting in 2016 recovered Roman coins and a post-medieval jetton.
		MNF61772	Cropmark	Cropmarks of undated fragmentary linear ditches, possible medieval to post medieval field boundaries	Medieval and post-medieval		Undated fragmentary linear ditches are visible on aerial photographs to the north of Swardeston Common, Swardeston. It is possible that they are medieval to post medieval in date, being aligned in a similar way to some of the medieval to post medieval field boundaries recorded to the south east.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF17836	Findspot	Probable Neolithic flint working site	Prehistoric		A large number of Neolithic worked flints including an axehead, two axehead roughouts, flakes, a scraper and a knife made from a retouched flake were found by fieldwalking and metal detecting. This is probably a Neolithic flint working site. Medieval pottery and metal finds were also recovered.
		MNF58674	Cropmark	Cropmarks of an undated ditch	Unknown		The cropmarks of a possible ditch of unknown date, which may represent a former field boundary, are visible on aerial photographs between Foxburrow Plantation and Breck Plantation, Keswick.
		MNF15551	Monument	Site of post medieval brick kiln	Post-medieval		This is the site of a post medieval brick kiln, marked on Faden's map of 1797.
		MNF59441	Monument	Site of World War Two road block	Modern		A World War Two road block is evident as a group of structures visible on 1940s aerial photographs. The road block consisted of two rows of concrete anti-tank cubes, only the marks left by which on the road surface are visible by 1945. The road block was sited to control access along Low Road between Cringleford and Keswick, and was one of numerous such defences erected around the outskirts of Norwich during this period. It is not known whether any trace of the site still survives today.
		MNF30895	Findspot	Neolithic axehead	Prehistoric		Two thirds of a Neolithic flaked flint axehead were found.
		MNF61635	Findspot	Medieval jetton			Metal-detecting in 1998 recovered a medieval jetton.
		MNF14868	Findspot	Undated human skull	Unknown		Half of an undated human skull was found protruding from soil in a wood by a metal detectorist in 1979.
		MNF24749	Monument	Post-medieval icehouse at Old Hall	Post-medieval		Parts of a post medieval icehouse were revealed by gardening. These include the brick base of a dome, dug out of the steep hillside. The icehouse probably dates to the remodelling of the hall in 1800 by Soane. It was demolished sometime in the 20th century.
		MNF19523	Findspot	Roman pot	Roman		A few pieces of coarse Roman greyware pottery were found.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF9703	Findspot	Palaeolithic flint scraper, opposite Hall Gate	Prehistoric		A Palaeolithic flint scraper was found during a small excavation undertaken here in around 1956. No information is available on the nature of this work.
		MNF16228	Findspot	Prehistoric flint flakes	Prehistoric		A concentration of prehistoric flint flakes was found on the surface of this field. A pipe clay model of a bird and two pieces of undated pottery may also have been found here.
		MNF9713	Findspot	Two Roman pots from Keswick Hall Training College	Roman		Two complete Roman greyware pottery jars were found when Keswick Hall Training College was extended.
		MNF16222	Findspot	Bronze Age knife	Prehistoric		A Bronze Age plano-convex flint knife was found on the surface of this field.
		MNF14277	Findspot	Multi-period finds	Prehistoric, medieval & post-medieval		Fieldwalking on the line of the Norwich Southern Bypass recovered a prehistoric flint tool, a prehistoric burnt flint and pieces of medieval and post medieval pottery. A post medieval pipe or piece of pottery was also recorded.
		MNF20862	Findspot	Roman coins	Roman		Metal detecting in the loose soil where an electricity pylon had been removed recovered two 4th century Roman coins.
		MNF16227	Findspot	Prehistoric flint flakes	Prehistoric		A concentration of prehistoric flint flakes was found on the surface of this field. A pipe clay model of a bird and two pieces of undated pottery may also have been found here.
		MNF25512	Findspot	Roman coin	Roman		Metal detecting recovered a 2nd century AD Roman coin.
		MNF25599	Findspot	Medieval belt fitting	Medieval		Metal detecting recovered a medieval copper alloy belt fitting.
		MNF18558	Cropmark	Cropmark of ring ditch	Prehistoric		A ring ditch, probably dating to the Bronze Age, is visible as a cropmark on aerial photographs.



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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF23829	Findspot	?Mesolithic flint blade and Neolithic flint flakes	Prehistoric		A potentially Mesolithic flint blade and Neolithic flint flakes were found here during fieldwalking in 1987.
		MNF20910	Findspot	Post medieval weight	Post-medieval		A post medieval lead weight found by metal detecting.
		MNF28160	Findspot	Medieval buckle	Medieval		A 13th century buckle found during metal detecting.
		MNF9481	Monument	Two possible Bronze Age round barrows near Norwich Lodge, Ketteringham Hall	Prehistoric		Two possible Bronze Age round barrows. One of the barrows was excavated in the mid-19th century and a fragment of Roman pottery was discovered. Both barrows are visible as earthworks on aerial photographs from 1956.
		MNF28161	Findspot	Multi-period finds	Roman to post-medieval		A Roman coin, a Late Saxon strap end, a medieval mirror case, and a post medieval buckle and a pair of tweezers or tongs found during metal detecting.
		MNF49305	Park	Ketteringham Park	Post-medieval		A landscape park was in existence around Ketteringham Hall by the late 18th century and is shown in detail on 19th century maps. The park is surrounded by belts of trees and contains a number of 19th century plantations and a lake in front of the house.
		MNF28415	Findspot	Multi-period finds	Prehistoric to post-medieval		A flint scraper, a borer and flakes dating from the Bronze Age to the Iron Age, a Roman brooch, Roman coins, and medieval/post medieval metal finds including brooches and buckles found during metal detecting.
		MNF41008	Findspot	Multi-period finds	Medieval to post-medieval		An Early Saxon brooch, a unusual Middle or Late Saxon cast head that may have come from a crucifix, Late Saxon stirrup mounts and medieval and post medieval coins and metal finds including buckles and harness mounts found during metal detecting.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF31274	Findspot	Multi-period finds	Roman, medieval & post-medieval		A Roman brooch, fragments of Roman pottery and medieval and post medieval pottery and metal finds including a seal matrix and a harness mount found during metal detecting.
		MNF22817 , MNF22992	Findspot	Prehistoric flake from route of A11 and a silver Roman coin found by metal detecting in 1986	Prehistoric and Roman		A prehistoric flint flake and a silver Roman coin found in 1986.
		MNF9496	Burnt mound	Prehistoric pot boilers	Prehistoric		A mound of prehistoric pot boilers found in 1949.
		MNF12622	Findspot	Neolithic flints	Prehistoric		Neolithic flint flakes, scrapers and other flint implements found in the 1970s.
		MNF61755	Monument	Earthworks of undated linear ditches and banks, probable post medieval drainage features	Post-medieval		Earthworks of undated linear ditches and banks, probable post medieval drainage features, are visible on aerial photographs to the west of station Lane, Hethersett. They are similar in character to further possible drainage earthworks recorded to the north.
		MNF12486	Monument	Site of Mockbeggar Hall	Post-medieval		This is the site of a large hall which became known as Mockbeggar Hall after it was divided into labourers' cottages. The hall was demolished before the late 19th century. A concentration of 16th century bricks, tiles and pottery has been found at the site.
		MNF13216	Findspot	Neolithic flints	Prehistoric		A scatter of Neolithic flint implements found in 1977.
		MNF59878	Earthwork	Earthworks and cropmarks of linear ditches and bank	Unknown		Earthworks and cropmarks of linear ditches and a bank are visible on aerial photographs on land to the south of Norwich Road, Hethersett.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF38158	Building	Outbuilding at Church Farm	Post-medieval		A 17th century brick outbuilding with crowstepped gables, and a pedimented window and door. The building was formerly used as a dwelling, and has dove holes in one of the gables.
		MNF9351	Findspot	Roman finds	Roman		Roman coins, Roman pottery and a Roman box mount or furniture fitting found during digging and metal detecting.
		MNF13414 , MNF25509	Findspot	Neolithic flints and Roman brooch, Roman figurine and post-medieval coin	Prehistoric, Roman & post-medieval		Neolithic flint implements found in 1977 and a Roman brooch found by metal detecting in 1987. A Roman figurine in the shape of a ram and a post medieval gold coin found by metal detecting in 1989.
		MNF9371	Findspot	Possible medieval iron spearhead	medieval		In 1961 an iron spearhead was found in a sewer trench here. It was felt that the spearhead could be medieval in date.
		MNF9762	Embankment	Possible Roman road	Roman		This stretch of embanked road is possibly Roman in date.
		MNF65375	Findspot	Multi-period finds	Early Mesolithic – C19th		A fieldwalking survey in 2011 identified evidence of human activity in this area from the Mesolithic to the post-medieval period.
		MNF65377	Findspot	Iron Age pit, Roman ditch, undated cremation, post medieval ditches, and multi-period finds	Early Neolithic to Mid 20th Century		A programme of systematic fieldwalking and trial trenching in 2011 and 2012 has recorded features and finds dating from the Neolithic to the post medieval period.
		MNF59881	Monument	Earthworks of linear ditches and possible bank	Medieval to 19th Century		Earthworks of linear ditches and a possible bank are visible on aerial photographs on land to the east of Shop Lane, Hethersett.

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THK ID	NHLE no.	HER no.	Entry type	Name	Period	Grade	Description
		MNF14202	Monument	Hollow way of medieval road	Medieval		A hollow way marking the course of the former Norwich Road. Earthwork ditches are visible on aerial photographs, and a track is marked on the Ordnance Survey 2nd edition map
		MNF59882	Monument	Cropmark of linear ditch	Unknown		A linear ditch is visible as a cropmark on aerial photographs on land to the west of Colney Lane, Hetherset
		MNF28149	Findspot	Neolithic axehead and medieval strap fitting	Early Neolithic to Medieval		A Neolithic flaked flint axehead and a medieval sword belt fitting found by metal detecting and fieldwalking in 1989.
		MNF33447	Findspot	Medieval pilgrim badge	Medieval		A medieval pilgrim badge found in 1997 is in the form of a female figure holding a feather and a branch.
		MNF12622	Findspot	Neolithic flints	Neolithic		Neolithic flint flakes, scrapers and other flint implements found in the 1970s.
		MNF22992	Findspot	Roman coin	Roman		A silver Roman coin found by metal detecting in 1986.
		MNF22817	Findspot	Prehistoric flake from route of A11	Prehistoric		A prehistoric flint flake found in 1986.
THK01			Earthwork	A possible extractive pit visible on LiDAR	Post-medieval - Modern		A possible extractive pit is visible on LiDAR as an earthwork beneath the tree cover. This area previously included gravel pits, limekilns (both documented on historic OS maps), and more recently a landfill site. It is therefore unclear which phase of activity this relates to. May alternatively be modern activity. EA LiDAR 50cm TG1804 23/12/15
THK02			Archaeological remains	'Area C' remains identified through trial trenching	Early Iron Age		Settlement activity dating to the Early Iron Age demonstrated by the presence of a group of pits which showed either in situ burning or produced heat-altered flint, and which may show either cooking or small scale industrial activity, close to Bronze Age barrows.

## Annex B: Glossary

Term	Description
Artefact	An item of archaeological interest
Baseline	In EIA, 'baseline conditions' are the environmental conditions in existence just before the occurrence of an impact – i.e. they are the conditions that would be affected. Baseline conditions are not the same as existing conditions, which are those in existence at the time of carrying out the EIA, because, this may be some time in advance of the occurrence of an impact and environmental conditions may change in the intervening period.
Bronze Age	The period of human activity between 2,500 BC and 700 BC
Construction Environmental Management Plan (CEMP)	A plan prepared by a contractor before the start of construction work, detailing 'environmental aspects' that may be affected by the construction work and management methods to prevent any such effects. The CEMP would include methods and site management practices to be applied to prevent generation of nuisance dust, accidental pollution events and a range of other potential sources of accidental damage to the environment, and response and reporting procedures to minimise the damage in the event of a pollution incident.
Construction activity	Vegetation removal, topsoil stripping, temporary storage of materials, ground excavation and remodelling, bare earth, movement of construction vehicles and tall features such as cranes and other construction plant.
Desk study	A collation and review of relevant existing information available from published, archival or online sources, including for instance geological and hydrogeological mapping, historical maps, environmental records etc., allowing an assessment of risks to the human and environmental receptors to be undertaken.
Design Manual for Roads and Bridges (DMRB)	DMRB provides guidance for all aspects of the design of roads and bridges in the UK, including environmental mitigation and environmental impact assessment.
Earthworks	The moving of soil or rock to reconfigure the topography of a site.
Environmental Impact Assessment (EIA)	An assessment of certain types of major project of the significant effects that the project could have on the environment. The applicant is required to carry out the assessment by law, in this case under the Infrastructure Planning (Environmental Impact Assessment) Regulations, 2017.
Environmental Statement (ES)	The report on the results of the EIA.
Fieldwalking survey	Method of systematic non-intrusive survey involving walking across a plough field along transects to collect archaeological artefacts.
Geology	Geology is the study of solid earth, the material of which it is composed (principally rocks) and the processes by which they evolve.
Geophysical survey	Method of non-intrusive investigation involving the use of magnetometers to identify fluctuations in the earth's magnetic field which might indicate the presence of archaeological remains. Burnt remains and metals are best identified through this method of survey.
Grade Separated	Refers to a junction where one road has been elevated or lowered to a different level so that the main flow of traffic is separated.
Heritage asset	An item of heritage interest, for example an historic building or an archaeological find.
Highways England	The applicant and government company charged with operating, maintaining and improving England's motorway and major A roads. Formerly the Highways Agency.

Term	Description
Historic Environment Records (HER)	A database maintained by individual counties or local authorities, containing records of archaeological sites, historic buildings and other aspects.
Historic landscape character types (HLCT)	Historic landscape character types are distinctive and repeated combinations of components defining generic historic landscapes such as 'ancient woodland' or 'parliamentary enclosure'. The types used in this study were defined based on evidence from historic maps and other sources.
Iron Age	The period of human activity between 700 BC and 43 AD
Made Ground	Ground created by infilling an area with material taken from elsewhere; typically, reworked soils, rubble, gravel, sand or former waste material e.g. ash.
Medieval	The period of human activity between 1066 AD and 1550 AD
Mesolithic	Middle Stone Age. The period of human activity between 10,000 BC and 4,500 BC.
Metal detector survey	Method of intrusive investigation involving the use of metal detectors to locate buried metal objects.
Mitigation	Measures which have the purpose of avoiding, reducing or compensating for adverse environmental impacts. It may also include measures to create environmental benefits.
Modern	The period of human activity from 1900 to the present day
National Mapping Programme (NMP)	A project funded by Historic England and local councils involving assessment and interpretation of aerial photographs and other remote sensing data, such as LiDAR.
Neolithic	New Stone Age. The period of human activity between 4,500 BC and 2,500 BC
Non-motorised user (NMU)	Includes walkers, cyclists and horse riders.
Ordnance Datum	The standard measure of sea level in the UK, from which all heights are measured for mapping purposes.
Palaeolithic	Old Stone Age. The period of human and pre-human activity before around 10,000 BC
Photomontage	A photorealistic image of the scheme, based on a 3D computer model of the scheme, overlaid onto a base photograph to visually represent the scheme. Features that would be removed as part of the scheme are removed from the base photograph.
Post-medieval	The period of human activity between 1550 AD and 1900 AD
Prehistoric	The period before the year 43 AD
Receptor	The existing environmental feature that would be affected by an impact – for instance, the population of a protected species, or a specific archaeological site, or the occupants of a residential property.
Requirement	A requirement listed in the Development Consent Order which is a condition of the grant of development consent.
Roman	The period of human activity between 43 AD and 410 AD
Saxon	The period of human activity between 410 AD and 1066 AD
Statutory Consultation	Community and stakeholder consultation carried out in line with the statutory requirements set out in s42, s47 and s48 of the Planning Act 2008

Term	Description
Statutory consultees	Organisations that Highways England is required to consult under s42 of the Planning Act 2008. Statutory consultees are listed in Schedule 1 of the APFP 2009
Zone of Theoretical Influence (ZVI)	The zone from which the scheme could theoretically impart an impact based partly on visibility and professional judgement
Zone of Theoretical Visibility (ZTV)	The zone from which the scheme is theoretically visible over 'bare earth'