



**An interim statement of archaeological mitigation
and post-excavation programme for
the A5-M1 Link Road, Central Bedfordshire
February–July 2015**

Report No. 15/134

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Illustrator: James Ladocha



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Project Manager: Jim Brown
Site Code: LTNMG 1093
NGR: route between SP 9959 2435 and TL 0383 2587

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OASIS REPORT FORM

PROJECT DETAILS		molanort1 - 219183
Project name	An interim statement of archaeological mitigation and post-excavation programme for the A5-M1 Link Road, Central Bedfordshire, February–July 2015	
<p>Archaeological features and deposits were excavated along the route of the A5-M1 Link Road, Central Bedfordshire. Mitigation techniques included general and targeted archaeological watching briefs, detailed open area excavation, topographic surveys and historic building recording where archaeological remains and historic assets would be affected by the development. A total of 16 main work areas were accorded individual site codes for archaeological mitigation.</p> <p>Prehistoric worked flint was recovered to the east of Grove Farm that may be part of a wider flint scatter. Pit groups near M1 Junction 11a and Thorn Farm also produced flint tempered pottery, likely to be of Bronze Age date.</p> <p>A middle Iron Age pit alignment was investigated on the south side of Thorn Road, and a further pit alignment was investigated at Grove Farm. Both sites were associated with later boundary ditches on similar alignments. Iron Age evidence was widespread, with middle to late Iron Age sites also located at M1 Junction 11a and east of A5 Watling Street.</p> <p>The latter was an extensive enclosed farmstead with roundhouses and post-built structures, which was clearly abandoned before Roman cultural material entered common circulation. The farmstead was surrounded by a network of contemporary ditches that formed field systems, within which concentrated pit clusters contained mixed pottery, animal bone and other organic refuse. Settlement evidence became more dispersed moving eastward up the valley from A5 Watling Street, with occasional pit groups, ditches or isolated roundhouses.</p> <p>A late Iron Age to early Roman settlement was located on a hilltop at M1 Junction 11a, which comprised a series of interconnecting enclosures with trackways between them. The central focus of this settlement is thought to have been lost to the M1 motorway development. A small cremation cemetery was found by detailed excavation at Luton Road, Chalton.</p> <p>Anglo-Saxon artefacts including pottery and a decorated bone comb were recovered at Luton Road, Chalton. The finds are thought to have been part of dispersed settlement preceding the nucleated village. Funerary evidence to the east of this, at Long Meadow Farm, comprised an inhumation cemetery with Anglo-Saxon grave goods, pyre debris and un-urned cremation burials.</p> <p>Late Saxon and Saxo-Norman occupation was excavated at Thorn Farm, to the north of Thorn Spring medieval moated manor, including a timber-framed building and enclosures that were abandoned in the 12th century. Medieval occupation was also found at Luton Road, Chalton, where an isolated building stood between the 12th-14th centuries. To the rear of the building lay a series of small enclosures within which were pits that had been filled with midden waste. The site is thought to have been part of a medieval village end, together with the adjoining property at Hillcrest.</p> <p>This statement precedes the Stage 1 Assessment report and Updated Project Design (UPD). It summarises the archaeological information and material evidence recovered during fieldwork and describes the works required to provide the UPD, with a view to Stage 2 analysis and production of a full detailed analytical academic report in line with DMRB guidance.</p>		

Project type	mitigation scheme	
Site status	none	
Previous work	<i>Stage 1 Assessment of Cultural Heritage Effects</i> (OA 2002), Stage 2 cultural assessments (HA 2003; 2006a), desk-based assessment and walkover survey (HA 2006c), <i>Cultural Heritage Baseline Report</i> (HA 2007a), monitoring of geotechnical test pits (HA 2007b), LiDAR surveys (HA 2007c), geophysical survey (NA 2008a), trial trench evaluation (NA 2008b), trial trench reports (Brown 2014b; 2015a-b), geotechnical watching brief (Brown 2014a)	
Current Land use	agricultural, mixed pasture and arable	
Future work	none	
Monument type/period	Bronze Age, Iron Age, Roman, Saxon and late medieval/post-medieval	
Significant finds	pottery, animal bone, worked flint, building materials, metal objects (i.e. tools, weapons, jewellery etc.) , human remains (cremated and inhumated), querns, charred seeds, charcoal	
PROJECT LOCATION		
County	Central Bedfordshire	
Site address	parishes of Chalton and Houghton Regis	
Study area	c4.5km long road corridor	
OS Easting and Northing	route between SP 9959 2435 and TL 0383 2587	
Height aOD	c100-135m above Ordnance Datum	
PROJECT CREATORS		
Organisation	MOLA Northampton	
Project brief originators	Martin Oake, Central Bedfordshire Council	
Project Design originator	Andrew Copp, AECOM	
Director/Supervisor	Chris Jones, Ian Fisher, Jonathan Elston, James Fairclough, Gemma Hewitt Adam Meadows, Jason Clarke, Oliver Dindol, Paul Clements, Chris Chinnock Adam Reid and Simon Markus, MOLA	
Project Manager	Jim Brown, MOLA	
Sponsor or funding body	Costain-Carillion Joint Venture for Highways England	
PROJECT DATE		
Start date	May 2014	
End date	June 2015	
ARCHIVES	Location	Content
Physical	Luton Culture LTNMG 1093	pottery, animal bone, worked flint, building materials, metal objects (i.e. tools, weapons, jewellery etc.) , human remains (cremated and inhumated), querns, charred seeds, charcoal
Paper		background documentation, research notes, context record, photographic record, supporting registers etc.
Digital		client report PDF, digital photographs
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	An interim statement of archaeological mitigation and post-excavation programme for the A5-M1 Link Road, Central Bedfordshire, February–July 2015	
Serial title and volume	15/134	
Author(s)	Jim Brown	
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Abstract

Archaeological features and deposits were excavated along the route of the A5-M1 Link Road, Central Bedfordshire. Mitigation techniques included general and targeted archaeological watching briefs, detailed open area excavation, topographic surveys and historic building recording where archaeological remains and historic assets would be affected by the development. A total of 16 main work areas were accorded individual site codes for archaeological mitigation.

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A middle Iron Age pit alignment was investigated on the south side of Thorn Road, and a further pit alignment was investigated at Grove Farm. Both sites were associated with later boundary ditches on similar alignments. Iron Age evidence was widespread, with middle to late Iron Age sites also located at M1 Junction 11a and east of A5 Watling Street.

The latter was an extensive enclosed farmstead with roundhouses and post-built structures, which was clearly abandoned before Roman cultural material entered common circulation. The farmstead was surrounded by a network of contemporary ditches that formed field systems, within which concentrated pit clusters contained mixed pottery, animal bone and other organic refuse. Settlement evidence became more dispersed moving eastward up the valley from A5 Watling Street, with occasional pit groups, ditches or isolated roundhouses.

A late Iron Age to early Roman settlement was located on a hilltop at M1 Junction 11a, which comprised a series of interconnecting enclosures with trackways between them. The central focus of this settlement is thought to have been lost to the M1 motorway development. A small cremation cemetery was found by detailed excavation at Luton Road, Chalton.

Anglo-Saxon artefacts including pottery and a decorated bone comb were recovered at Luton Road, Chalton. The finds are thought to have been part of dispersed settlement preceding the nucleated village. Funerary evidence to the east of this, at Long Meadow Farm, comprised an inhumation cemetery with Anglo-Saxon grave goods, pyre debris and un-urned cremation burials.

Late Saxon and Saxo-Norman occupation was excavated at Thorn Farm, to the north of Thorn Spring medieval moated manor, including a timber-framed building and enclosures that were abandoned in the 12th century. Medieval occupation was also found at Luton Road, Chalton, where an isolated building stood between the 12th-14th centuries. To the rear of the building lay a series of small enclosures within which were pits that had been filled with midden waste. The site is thought to have been part of a medieval village end, together with the adjoining property at Hillcrest.

This statement precedes the Stage 1 Assessment report and Updated Project Design (UPD). It summarises the archaeological information and material evidence recovered during fieldwork and describes the works required to provide the UPD, with a view to Stage 2 analysis and production of a full detailed analytical academic report in line with DMRB guidance.

1 INTRODUCTION

1.1 Project background

MOLA was commissioned by Costain Carillion Joint Venture (CCJV), on behalf of Highways England (formerly Highways England), to provide archaeological mitigation prior to development of the dual carriageway link c.4.5km long from the A5 near the existing A5/A505 roundabout (north of Dunstable) to the M1, south-west of Chalton (Fig 1; between NGR SP 9959 2435 and TL 0383 2587). The A5-M1 Link will join the M1 motorway at a new junction (M1 Junction 11a) located between the existing Junction 11 at Luton and the Toddington Motorway Services.

Archaeological mitigation was necessary to meet the requirements of Phases 2 and 3 of the A5-M1 Link Road scheme as described in the archaeological strategy report (HA 2014a). A Written Scheme of Investigation (WSI) was prepared by AECOM (formerly URS), as the Designer's Archaeologist, which established a Detailed Design for this archaeological mitigation (HA 2015a). The WSI was prepared in accordance with the *Design Manual for Roads and Bridges (DMRB)* (HA 2001), in consultation with Central Bedfordshire Council (CBC). Further Archaeological Design Documents (FADDs) were issued to provide greater detail or clarification on the scope and extent of mitigation for specific areas, using the initial WSI as the base line for the project background, aims, objectives and methodology.

The following areas of the scheme were each covered by a FADD, or in the case of the evaluation and other non-excavation surveys, had their own specific WSI:

- Trial trench and hand-excavated test pit evaluation surveys (HA 2014b)
- UKPN utilities diversion at M1 Junction 11a and Woodside Link (HA 2014c)
- Topographic surveys and hand-excavated mitigation trenches (HA 2014d)
- Historic building recording of the M1 overbridges (HA 2014e)
- General archaeological watching brief during geotechnical works (HA 2014f)
- Detailed archaeological excavation at Thorn Road (HA 2015b)
- Detailed archaeological excavation at Luton Road (HA 2015c)
- Areas of targeted archaeological watching brief and general archaeological watching brief along the Scheme (HA 2015d)
- Detailed archaeological excavation at A5 Watling Street (HA 2015e)
- Detailed archaeological excavation at Long Meadow Farm (HA 2015f)
- Detailed archaeological excavation at Chalton Cross Farm (HA 2015g)
- Detailed archaeological excavation at Thorn Farm (HA 2015h)

A single archive of materials will be compiled that draws together the evaluation and mitigation work as a whole. The paper archive will comprise the initial strategy report (HA 2014a), Detailed Design (HA 2015a), each subsequent FADD (see above), all background information, method statements (MOLA 2014a; 2015), plans, section drawings, field record sheets, registers, photographs (both digital images and as

35mm monochrome contact prints), previous archaeological reports (NA 2008a; NA 2008d; Brown 2014a-b; 2015a-b), this report, the forthcoming Updated Project Design (UPD) and a copy of the academic manuscript and/or published academic report. The paper archive will accompany the material archive, which is quantified in Section 2.2 of this document; to be submitted to Luton Culture under Accession number **LTNMG 1093**. The locations of the various archaeological works are shown on Figures 2-3.

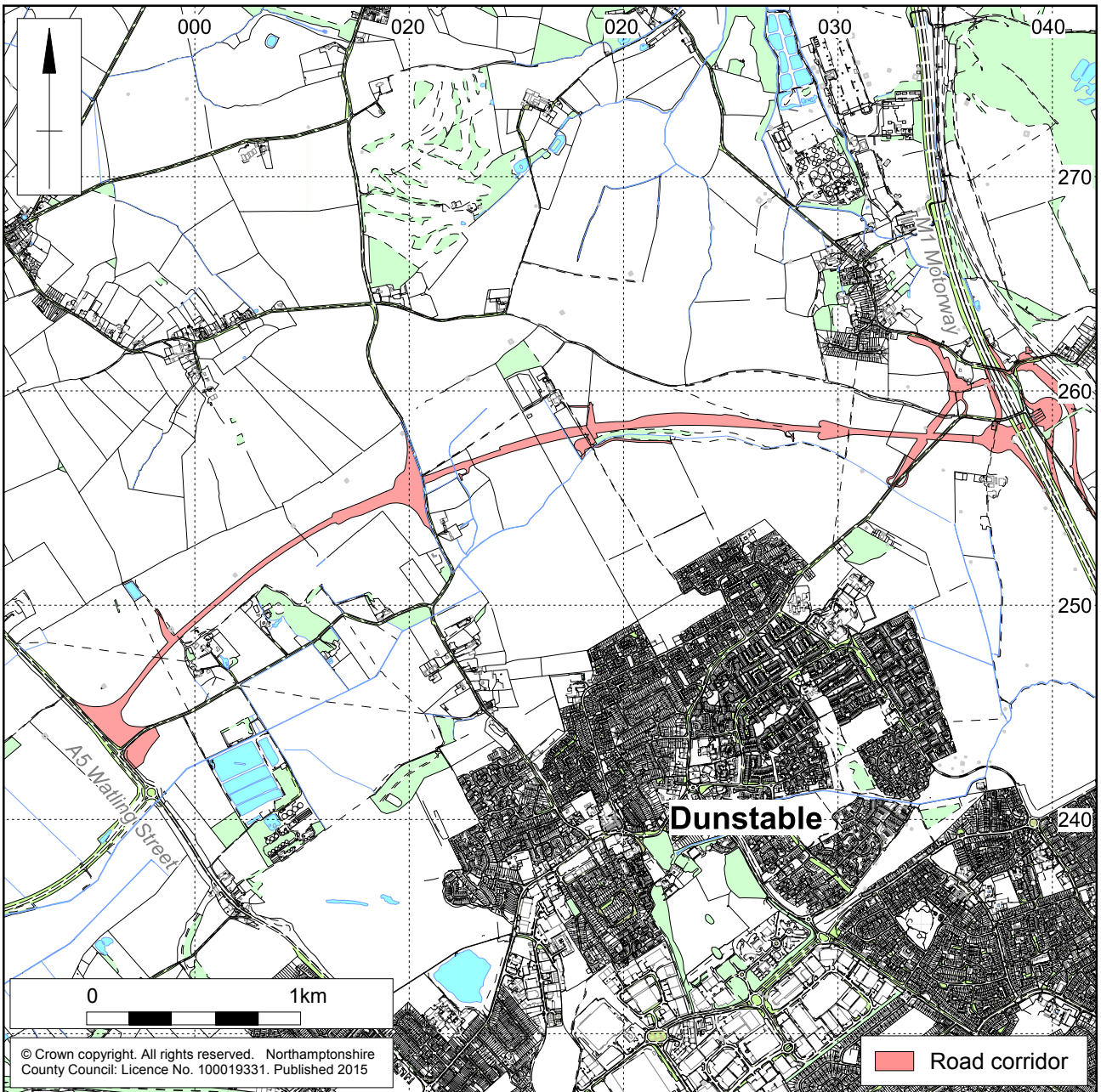
For the purpose of keeping an orderly archive, the project has been divided up into the following elements with each letter appended to the accession code as a suffix. These site codes update and replace the former evaluation area codes (HA 2015a).

Table 1: List of site codes used for post-excavation and accession of the archive

Archive code	Environmental Statement	Archaeological fieldwork carried out
A	Sites 5-9	Archaeological trial trench and hand-dug test pit excavations (HA 2014b), following on from earlier evaluation surveys (NA 2008a-b)
B	Sites 8-9	General watching brief for UKPN on cable trenches (HA 2014c)
C	Site 8	General watching brief for CCJV at M1 Junction 11a (HA 2015d)
D	Site 1	Detailed archaeological excavations of the A5 site compound (HA 2015b)
E	Sites 10-12	Topographic survey and hand excavated mitigation trenches (HA 2014d)
F	not identified	Detailed archaeological excavations and targeted watching brief at Luton Road, Chalton (HA 2015c)
G	Site 1, Area 2	Detailed archaeological excavations and targeted watching brief between Thorn Farm and A5 Watling Street (HA 2015d-e)
H	Site 9	Detailed archaeological excavations and targeted watching brief at Long Meadow Farm, east of the M1 Junction 11a (HA 2015f)
J	Site 7	General and targeted watching brief for Ch3100-4150 (HA 2015d)
K	east of Site 8	Detailed archaeological excavations and targeted watching brief at Chalton Cross Farm (HA 2015g)
L	not identified	General watching brief for Ch1180-1750 (HA 2015d)
M	Site 1, Area 1	Detailed archaeological excavation of the A5 balancing pond and general watching brief on the nearby drainage ditch (HA 2015e)
N	east of Site 8	General watching brief for the National Grid gas pipeline (HA 2015d)
P	Site 6	General and targeted watching brief at Grove Farm (HA 2015d)
Q	Site 3	Detailed archaeological excavations at Thorn Farm, north of Thorn Spring (HA 2015h)
R	2017 & 2018	Houghton Regis Overbridge, 2017, and Chalton Overbridge, 2018 Bridge recording at M1 Junction 11a (HA 2014e)

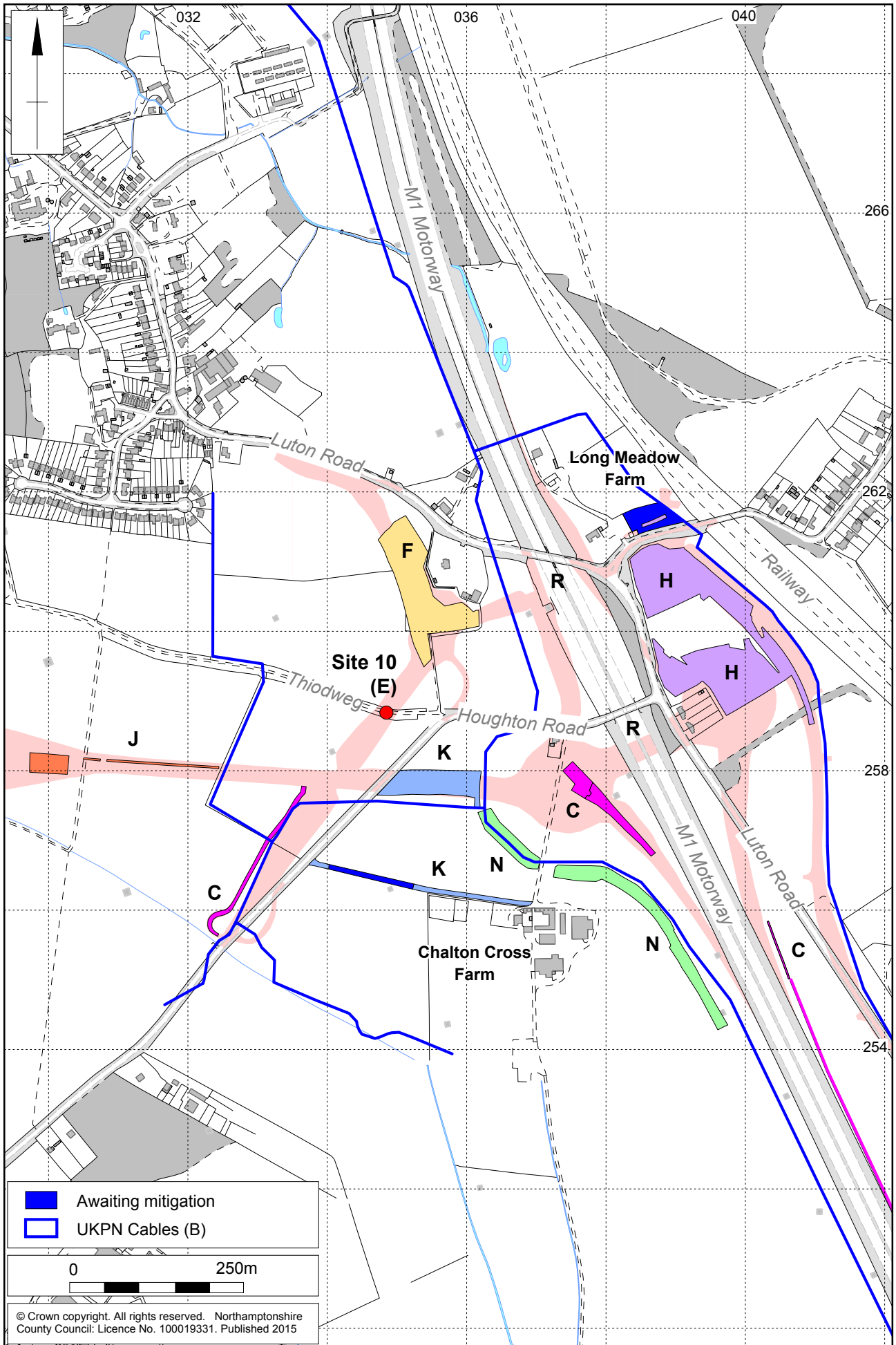
The letters 'I' and 'O' have been omitted to avoid confusion with numbers during finds and sample processing.

MOLA is a Chartered Institute for Archaeologists' (CIfA) registered organisation governed by a professional *Code of Conduct* (CIfA 2014a). All archaeological work was conducted in accordance with Volumes 10, Section 6, Part 1 of the *Design Manual for Roads and Bridges (DMRB)* (HA 2001), the procedural documents of Historic England (HE 2015a), and those published under English Heritage (1991; 2006; 2007; 2008; 2011), together with the appropriate standards and guidance for archaeological field evaluation, watching briefs, excavations, building recording and archives as set out by the Chartered Institute for Archaeologists (CIfA 2014b-g).

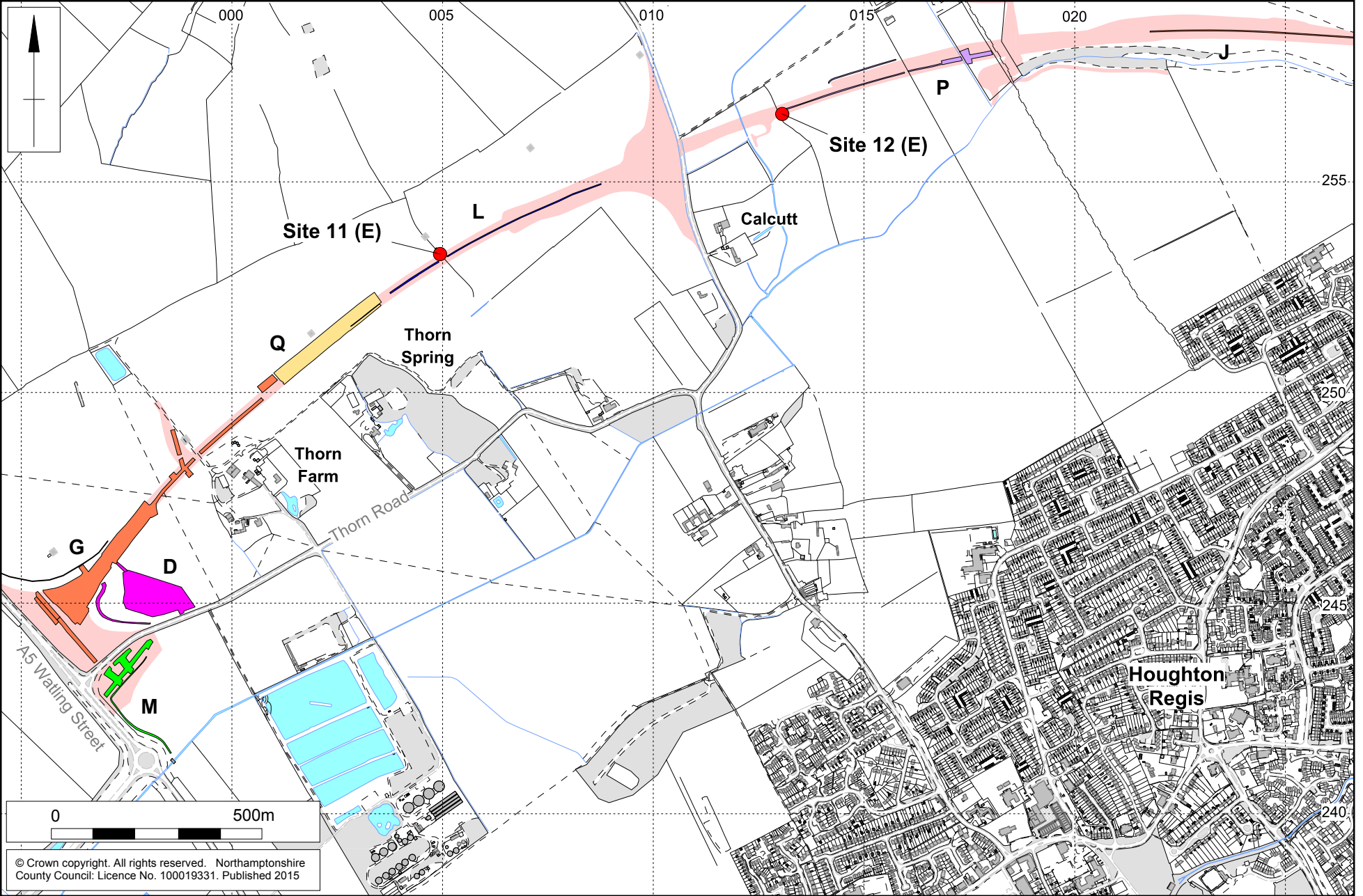


Scale 1:30,000

Site location Fig 1



Scale 1:7500 (A4) Locations of archaeological mitigation works around M1 Junction 11a Fig 2



Scale 1:12,500 (A4)

Locations of archaeological mitigation works along the road corridor Fig 3

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1.2 Archaeological background

Previous archaeological surveys were undertaken to assess the cultural heritage impact of the A5-M1 Link Road and to inform the Environmental Statement (HA 2009).

Earlier studies relating to cultural heritage were undertaken to assess different route options that were under consideration prior to the definition of the preferred Scheme. This work comprised the *DMRB Stage 1 Assessment of Cultural Heritage Effects* (OA 2002), *Preliminary Stage 2 Assessment* (HA 2003), an *Addendum to Stage 2 Environmental Assessment Report* (HA 2006a) and led into the *Cultural Heritage Baseline Report* (HA 2007a).

Cultural heritage desk-based assessment of Thorn Farm burial ground was undertaken by Scott Wilson to assist in determining the best route option (HA 2006c). The burial ground contains a small cemetery that is associated with a Baptist Meeting House that was established in 1740. The report concluded that the extent of the burial ground would not be affected by a proposed overbridge that would be constructed nearby.

There has been monitoring of selected ground investigation trial pits (HA 2007b) and a geophysical survey was conducted along available sections of the route prior to compulsory purchase (NA 2008a). Archaeological trial trench evaluation was undertaken to assess the results of the geophysical survey and to investigate the archaeological potential at Thorn Farm burial ground (NA 2008b). A total of 29 trenches of various sizes were excavated, which produced evidence of archaeological activity dating from the Bronze Age to the post-medieval period.

The results of these previous works were assessed and reviewed by AECOM in relation to updated design plans and as a result a further phase of intrusive survey was formally approved by the planning archaeologist for CBC in order to inform the archaeological mitigation strategy. The work comprised 43 trial trenches and 27 hand excavated test pits, which were conducted at intervals between May 2014 and January 2015 by MOLA and have been reported separately (Brown 2014b; 2015a-b). The work identified two main concentrations of archaeological remains in the vicinity of the M1 Junction 11a. Along the road corridor there were undated ditches to the north of Ouzel Brook, at Grove Farm, and at Thorn Farm. There were no archaeological features found to the north of Calcutt Lodge, Vauxhall Motors or in the footprint of Pond no. 4.

Relevant surveys undertaken for the M1 Junction 10-13 Widening Scheme

In addition, a number of surveys were undertaken for the M1 Junction 10 to 13 Widening Scheme, which was not constructed and was instead replaced by a smaller managed motorway scheme. These surveys are relevant to the A5-M1 Link Road background data and comprised:

- surface artefact collection by fieldwalking along available stretches of the widening scheme (BCAS 1993; NA 2006a; 2008c);
- detailed geophysical survey along available stretches of the widening scheme (GeoQuest 1993; Stratascan 1993; 1994; NA 2006b, 2007);
- trial trench evaluation at a number of locations identified by reconnaissance survey (BCAS 1995);
- the assessment of LiDAR data along the M1 scheme corridor (HA 2007c); and
- the assessment of ground disturbance along the M1 corridor (HA 2006c, Chapter 8).

Summary of archaeological discoveries prior to mitigation

The *Archaeological Strategy Report* provides a full inventory of archaeological information from which all subsequent Detailed Design documents derive (HA 2014a). This information is summarised below, with minor additions from recent trial trench evaluation (Brown 2014b; 2015a-b). The place names that are used here refer to local common names, and use numbers for known archaeological sites that originate from figures that accompanied the Environmental Statement and were used to compile the Detailed Design (HA 2009; 2015a). These are referenced here but should not be confused with the evaluation areas in the Detailed Design, which were coded with letters, and which owing to practicality in the field bear no relation to the codes used for the archive in Table 1 above.

Undated, probable prehistoric features

Undated, probably prehistoric, ditches were identified in a single trench to the north of Ouzel Brook at Ch3670-3970 (Brown 2015b). Other undated ditches were also found to the south of Grove Farm, although these did not extend to the east where a low level scatter of worked flint lay within ploughsoil. A single undated ditch was found beside the M1 motorway. Several ditches were found to the north of Thorn Farm, although owing to flooding it was not possible to complete their investigation.

Mesolithic (c10,000-4,000 BC)

A scatter of worked flint has been recorded from the surface of the ploughsoil, east of Grove Farm (Site 6). Mesolithic flint scatters have also been recovered to the south-west of Chalton Cross Farm and close to A5 Watling Street (HA 2009).

Neolithic and early Bronze Age (c4,000-1,500BC)

Scatters of Neolithic and/or early Bronze Age struck flint have been recorded at a number of different locations in the eastern extent of the development. Worked flints were recovered from Mesolithic flint scatters in the vicinity of the CCJV M1 site compound and to the south of the M1 Junction 11a, on both sides of the motorway. A number of undated cropmarks of possible enclosures are recorded in this area (HER 1037, 1039, 1048 and 1044). Neolithic and Bronze Age flint scatters and undated cropmarks to the south of Grove Farm (Site 6) have been identified as the possible location of a settlement. The Icknield Way (Site 11), a possible prehistoric trackway, is thought to cross the route of the scheme at around Ch1200-1300. *Thiodweg* (Salt Way), recorded in a 10th-century document (Site 10), crosses the scheme at M1 Junction 11a and may also have prehistoric origins as a branch from the Icknield Way

Middle to late Bronze Age (1,500-700BC)

An isolated pit containing pottery of Bronze Age date was recorded during trial trench evaluation to the west of Thorn Farm. Possible evidence for Bronze Age occupation, comprising four ditches or gullies containing limestone-tempered pottery sherds, were recorded at Site 3 to the north of Thorn Spring (Site 4), which is a medieval moated site and Scheduled Monument on the east side of Thorn Farm.

Iron Age (700BC-AD43)

Geophysical survey and trial trench evaluation identified an extensive spread of linear and penannular features to the west of Thorn Farm (Site 1). The remains were expected to represent a farmstead of early to middle Iron Age date. The presence of

recut ditches indicated prolonged phases of occupation on the site. In the centre of the site, numerous small pits and gullies were also recorded, suggesting greater complexity than the geophysical survey had at first indicated (NA 2008a-b).

Cropmark evidence, geophysical survey and trial trench evaluation has revealed a series of late Iron Age to early Roman enclosures (Site 3) to the north of Thorn Spring. A small farmstead was indicated by occupation debris, including pottery sherds, recovered from the gullies and pits, together with the presence of a cobbled surface (NA 2008b).

An area of possible Iron Age and Romano-British settlement was identified from fieldwalking and cropmarks on the south-east side of Grove Farm (Site 6), however, no features were detected by geophysical survey. Trial trench excavation in 2014-15 encountered ditches and pits; however, no securely datable material was present in any of the features (Brown 2015a-b).

Geophysical surveys and trial trench evaluation recorded fragments of late Iron Age ditches to the north-west of Chalton Cross Farm (Site 8). The paucity of pottery or other occupation debris suggested a location peripheral to settlement (NA 2008b). No further features were identified during the 2014 trial trench works (Brown 2014b; 2015b).

Roman (AD43-450)

Some Iron Age settlement sites may have continued in use or have been resettled in the Roman period. Sites from this period have been identified from pottery finds collected on the surface of the ploughsoil. A possible hilltop settlement lay in the immediate vicinity of M1 Junction 11a (Sites 8-9). Subsequent geophysical survey and trial trench evaluation has indicated that these remains are likely to be of a farmstead with outlying enclosures and field boundaries (NA 2008a-b). Further work confirmed that late Iron Age and Roman boundaries lay to either side of the M1 motorway, which may have been part of a contemporary ancient landscape that was fragmented by the motorway development (Brown 2014b; 2015b). A large Roman quarry pit may also indicate small-scale extraction.

Settlement close to the A5 Watling Street Roman road may have been abandoned and cleared shortly before the road was built (Site 1). Datable pottery was generally made in local late Iron Age fabrics, which were used into the 1st century AD, but there was a general lack of the characteristically late 1st century AD Roman material that often occurs into the first part of the 2nd century AD.

Anglo-Saxon, late Saxon and Norman (AD450-1150)

There were no known settlements or areas of burials for this period within the road development, although two Saxon cemeteries were known to lie in the Chalton area. A trackway called *Thiodweg* (Salt Way) is first noted in a 10th-century document and may have re-used part of an earlier route (Site 10). The route is roughly east to west along the ridge south of Chalton, and at least part of it may follow a bridle path from Lords Hill Cottage to Houghton Road, immediately adjacent to the CCJV M1 site compound.

Anglo-Saxon finds were recovered on the west side of the motorway, on the fringes of Chalton, comprising a loomweight and pottery (Brown 2014b; 2015b). Later remains of

the 12th century were also found nearby within ditches, which were thought to form part of an enclosure fronting onto the road from the village. Two existing adjacent enclosures at Hillcrest form a small village end, occupied by properties, with the medieval remains in the field adjacent indicating that further enclosures, pits and possible structures could be expected.

Medieval (AD1150-1540)

The hamlets of Thorn, where the Baptist Burial Ground (Site 2) is located, and Calcutt (Site 5) purportedly have medieval origins and were thought to be larger settlements with village greens. A well-preserved medieval moated site exists at Thorn Spring (Site 4). Such settlements would have also been surrounded by open field cultivation and at least one historic boundary (Site 12), near Calcutt, was thought to originate after this time.

Medieval pottery sherds from cooking vessels were recovered from a ditch during trial trench evaluations to the north of Thorn Spring moated site (at Site 3), suggesting settlement may extend into the road corridor (NA 2008b). A pit to the west of Thorn Farm also produced sherds of medieval pottery (Site 1).

Ridge and furrow cultivation earthworks were recorded in the field north of Calcutt Lodge (Site 5) and on the west side of the A5 Watling Street, near Thorn. Calcutt Lodge is recorded as the location of a possible moated site and shrunken medieval settlement, although geophysical survey recorded no evidence for archaeological features other than ridge and furrow cultivation in this area (NA 2008b).

Earthworks and geophysical anomalies corresponding with a historic parish boundary between Houghton Regis and Chalton are noted at Site 7.

Post-medieval and industrial (AD1540-1900)

Documentary sources refer to a number of quarry pits to the north of Houghton Regis to extract clay and gravel for building materials. Agriculture continued to be the dominant industry in the area and the late 18th and early 19th centuries brought about the parliamentary enclosure of the former medieval open fields.

Thorn Farm is the location of a post-medieval Baptist Burial Ground (Site 2). This was in use from the late 18th century to early 19th century. There are at least 20 burials in the burial ground, dating from 1769 to 1834, with one modern burial dating to the 1990s. The extent of the burial ground has been traced through historic mapping and its greatest extent is shown on the 1st edition Ordnance Survey map of 1879. Documentary research did not reveal any evidence for the expansion of the burial ground and no archaeological remains were identified in association (NA 2008a-b).

A substantial ditch, presumably relating to the former sub-division of the field, was recorded at Site 3, north of Thorn Spring (*ibid*). Other post-medieval enclosure boundaries were also identified during the 2014-15 trial trench works (Brown 2015a-b).

Modern (AD1900 to present)

Modern farm buildings are located at Thorn and Calcutt; however, the settlements themselves have been in existence since the medieval period.

The original M1 motorway was constructed, 1958–9, and aerial photographs suggest that there was a construction facility where the CCJV M1 site compound is located. During recent improvement works for the M1 there was a vehicle recovery compound on the east side of the motorway. Geophysical survey has detected a number of buried utilities close to and parallel with the M1 northbound motorway.

Other archaeological work nearby

Fieldwalking was conducted by Manshead Archaeological Society in the arable fields to the north of Houghton Regis. The results of their surveys are recorded in the Central Bedfordshire Historic Environment Record (HER). Reports on the fieldwalking appear in the *Manshead Magazine*, their society newsletter, *South Midlands Archaeology* and *Bedfordshire Archaeology* (Hudspith 1991).

Extensive evaluation, comprising geophysical survey and trial trench excavation, has been conducted to the north of Houghton Regis between the existing settlement and the A5-M1 Link Road Scheme across the whole area between these two main roads (Stratascan 2012a; AA 2012a; CA 2014a-b; PCG 2014). Since the area of urban expansion is still in the planning process, archaeological work for this development zone has not yet advanced beyond the evaluation surveys. An early Neolithic pit was found containing pottery, flint flakes, burnt hazelnut shells and charcoal (CA 2014b). Late Bronze Age and early Iron Age finds were also recovered from a nearby ditch. A late Iron Age and Roman settlement was identified in the northern part of the site, confirming geophysical survey data (PCG 2014), which suggested it extended north into the A5-M1 Link Road Scheme. The site of a second Roman site was confirmed to the north of Thorn Road and east of Thorn Spring.

Archaeological field evaluation of land at Thorn Turn comprised geophysical survey (Stratascan 2012b), followed by trial trench excavation (AA 2012b). Ditches and pits were identified, dating from the Roman period onwards. The majority of the features were associated with land division apart from any main settlement focus. This was noted as being of interest regarding the nature and evolution of rural settlement and field systems (Medlycott 2011, 70; Oake 2007, 14). Very few datable artefacts were recovered; there were pot sherds from two of the ditches. However, evidence for ancient field boundaries survive that has stratigraphic relationships with colluvial and alluvial layers.

1.4 Topography and geology along the route

The M1 Junction 11a lies upon a low natural plateau between the valley of the River Flit to the north, and the headwaters for the River Lee to the south-east and the River Ouzel to the south-west. These fields are fairly level and slope very gradually towards the south from c130m above Ordnance Datum (aOD). As the road corridor proceeds west it drops gradually along the north side of the Ouzel Brook onto the upper flood plain at c105m aOD where it crosses the A5120. The land is then fairly flat, proceeding west, with a very gentle downward slope as the road curves around to meet with the A5 Watling Street at c100m aOD. The land through which the road corridor passes is mainly arable, with a small amount of pasture in the vicinity of Grove Farm. Land boundaries are defined by modern drainage ditches and hedgerows.

The solid geology comprises geological units of the Upper Cretaceous (BGS 2001). The topsoil and subsoil is underlain by both the West Melbury Marly Chalk Formation

(formerly the Chalk Marl) and Zig Zag Chalk Formation (formerly the Grey Chalk) of the Lower Chalk Formation, separated with a thin limestone band (the Doolittle Limestone). Glacial Till is shown to overlie the chalk in a small area near the M1.

The soils of the plateau near M1 Junction 11a are of the Swaffham Prior association, comprising well drained calcareous coarse and fine loamy soils over chalk (LAT 1983, 511e). The southern slopes are covered by soils of the Wantage 1 association, which are similar but are siltier, and which follow the Ouzel Brook (*ibid*, 342c). The western extent of the route, from the fields west of Grove Farm to A5 Watling Street, comprises soils of the Block association, which are permeable calcareous loamy soils over chalky gravel (*ibid*, 512e). These soils only form over Cretaceous chalk.

2 FIELDWORK STRATEGY

2.1 Objectives

The objectives of the detailed archaeological excavation and watching brief works were determined by the *Archaeological Strategy Report* (HA 2014a), and set out in the Detailed Design as a WSI (HA 2015a), supplemented by FADDs where it was necessary to clarify changes to the requirements as determined by AECOM (HA 2014b-d; 2015b-h):

General

- To mitigate the impact of the Scheme on the archaeological resource;
- To preserve by record the archaeological remains that will be impacted by the Scheme;
- To confirm and enhance the results of the previous archaeological evaluations;
- To attempt a reconstruction of the history and use of each site, functions, activities, settlement patterns, site economics and communications;
- To contribute to the regional archaeological and historic landscape research archive (HA 2014a, Section 2.3);

Specific

- To understand the process of Neolithic colonisation and whether it occurred within an already occupied/exploited landscape;
- To investigate the development and character of occupation on the Chiltern ridge, from the Neolithic to the later prehistoric and Roman periods; and
- To investigate the development of field systems from the later prehistoric period, through their changes and continuity.

The principal objectives of the recording strategy follow the guidance of national and regional research frameworks. These include the National Framework (EH 1997), the research frameworks for the Eastern Counties (Brown and Glazebrook 2000; Medlycott and Brown 2008; Medlycott 2011), and the assessment for Bedfordshire (Oake et al 2007).

Principal approach to mitigation

The schedule of major archaeological works is detailed below (Table 2). Some form of archaeological mitigation was needed across the whole of the development area except where evaluation surveys and any subsequent work had demonstrated that no

remains were present. This approach was approved by CBC and the areas were signed off to construction at an early stage as described above. However, along stretches of the road corridor between the sites listed in Table 2, there were a combination of 2m-wide general watching brief transects and 8m-wide targeted watching brief transects designed to determine whether any areas between the known sites required detailed open area excavation or could be signed over to construction (Archive codes L, M, G, P, J). In most cases it was possible to limit the extent of detailed excavation to small area extensions such as those at Thorn Farm Overbridge (Site 1, Area B), Grove Farm (Site 6) and Ch3670-3970 (Site 7).

Table 2: Sites where significant remains were discovered

Archive code	Location	Description
B	Long Meadow Farm	undated, probably prehistoric pit
C	Chalton Cross Farm	prehistoric, probably late Bronze Age pits
D	Thorn Road	undated, probably late Iron Age boundary ditches pre-Roman Iron Age field systems and possible crop processing
E	<i>Thiodweg</i> (Salt Way)	no evidence of ancient trackway undated spread overlain by post-medieval causeway
E	Ch1320	no evidence of historic boundary modern drainage ditch
E	Calcutt Lodge	undated, probably post-medieval bank and ditch
F	Luton Road	late Iron Age to Roman boundaries late Iron Age to Roman cremation cemetery Anglo-Saxon pottery, animal bone and other finds medieval building, enclosures and burials
G	Thorn Road	pre-Roman Iron Age farming domestic settlement widely distributed field boundaries isolated roundhouse, north-east of main settlement
H	Long Meadow Farm	prehistoric, probably late Bronze Age pits late Iron Age to Roman enclosures and trackways Anglo-Saxon pottery and animal bone from features Anglo-Saxon funerary activity, pyres and burials
J	Ch3670-3970	late Iron Age ditches draining into a marshland late Iron Age marsh
K	Chalton Cross Farm	late Iron Age boundaries, possible crop processing and storage pits
L	Ch1325-1350	colluvial/alluvial layers and palaeochannel
M	A5 balancing pond	middle Iron Age pit alignment and later Iron Age boundaries
N	Chalton Cross Farm	undated, probably late Iron Age boundary ditches
P	Grove Farm	possible flint scatter undated, probably prehistoric pits and ditches
Q	Thorn Farm	late Bronze Age pits late Iron Age to Roman funerary activity and burials late Saxon building and medieval boundaries
R	M1 motorway	post-medieval boundaries 1958-9 motorway overbridges

Areas excluded from further mitigation works

Site 2 (Thorn Baptist Burial Ground) and Site 4 (a medieval moated manor at Thorn Spring), lay outside the Scheme footprint and therefore required no archaeological mitigation works.

The Cultural Heritage Stage 3 work for M1 Widening Junctions 10 to 13 (HA 2006b) had indicated that the area of the CCJV M1 site compound had previously been used for a construction compound when the original M1 motorway development was undertaken, 1958-9. This was substantiated by the results of trial trench excavation in May 2014, and the area was quickly signed over to construction by CBC.

There was no evidence for archaeological features at Site 8 where early works for construction of a bridge to carry the Houghton Road over the A5-M1 Link road required a general archaeological watching brief for the CCJV drainage works at the base of its embankment. No archaeological features were found in trial trenches 69-70 on its north side and there were no discoveries from the UKPN general watching brief within its vicinity. This section of development was subsequently excluded from further mitigation requirements.

A general archaeological watching brief was conducted on the early works for the drainage ditches on the east side of the M1 and for the works access into the field where the west dumbbell roundabout of M1 Junction 11a was located. Requirement for this area were also informed by the UKPN works and trial trenches 72-73. Whilst the watching briefs recorded a small group of prehistoric pits and several widely dispersed undated boundary ditches, and one prehistoric ditch in trench 73, there was no evidence for a substantial network of enclosures, settlement or major focus of archaeological features in the footprint of the west dumbbell roundabout, and this area was subsequently signed over to construction.

No archaeological features were encountered in the field immediately north of Vauxhall Motors, on the east side of the M1 motorway, during trial trench evaluation or the UKPN works. This was subsequently signed off for construction. At this time it was also agreed between AECOM and CBC that the row of properties along Luton Road, demolished for the construction of the east dumbbell roundabout at M1 Junction 11a, would probably have caused significant damage to archaeological remains and could be excluded from mitigation.

During mitigation works at Long Meadow Farm it became apparent that a large portion of ground within the compulsory purchase order of Highways England lay outside the footprint of the development. This area was set aside from the construction works to be used for topsoil storage and to allow preservation of any archaeological remains *in situ*. Readers will note that there is a large unexcavated area in the middle of the excavations at this site (Fig 2, Area H).

There was no evidence of the reported shrunken medieval settlement of Calcutt, Site 5, except for ridge and furrow cultivation. Any remains of domestic settlement (such as house platforms, enclosures, yards etc.) may lie further south, beyond the development. Archaeological requirements in this area were subsequently excluded from the mitigation programme.

There was minimal evidence of the reported prehistoric flint scatter to the east of Grove Farm, Site 6, and no evidence for archaeological features in the area of

Ch2725-3100. The extent of the area that required mitigation was therefore greatly reduced.

Unforeseen evidence of substantial and significant archaeological remains was found during trial trench excavation in October 2014 at Luton Road, Chalton. This area required mitigation by detailed area excavation. However, the extent was limited to the north by a large expanse of disturbed ground containing modern dumping and waste. To the south, only a single narrow gully had been recorded by trial trench excavation. These two areas were signed over to construction without further mitigation requirements.

The use of archaeological targeted watching brief transects to either side of Thorn Road at the A5 Watling street junction, Site 1 (Areas 1-3), were used to determine the likely extent and concentrations of surviving archaeological features. As a result, the overall area required for mitigation was significantly reduced to focus on the principal archaeological groups, having shown that the wider area was unlikely to yield greater information than had been determined by the transects themselves.

Outstanding mitigation works

Targeted archaeological watching brief works to the north of Sundon Road have not been fully completed at the time of this report and await removal of a large area of modern overburden to reach archaeological levels (Fig 2). A short stretch of trackway to the west of Chalton Cross Farm is also awaiting mitigation by detailed archaeological excavation (Fig 2). This area remains outstanding because of the resident badger population and the presence of a major power cable. Both pieces of work are expected to be completed by the end of August 2015.

The detailed historic building recording of the two M1 motorway overbridges has not yet been fully completed, as it is awaiting a temporary traffic management closure of the hard shoulder, scheduled for mid-September 2015.

2.2 Approach to investigation

Each site location was the subject of further discussion between AECOM and CBC, using the Detailed Design as a basis of decision making (HA 2015a), informed by the results of the evaluation surveys (NA 2008a-b; Brown 2014b; 2015a-b). The appropriate method of archaeological mitigation that would be required was determined by these discussions and the details were then confirmed within the Further Archaeological Design Documents (FADDs) by AECOM (HA 2014b-f; 2015b-h). MOLA undertook these works in compliance with these requirements under instruction from CCJV.

There were three main mitigation measures employed across the Scheme:

- Detailed archaeological excavation was undertaken in areas where highly sensitive archaeological remains had been identified in the forerunning evaluation surveys that constituted occupational activity; domestic, funerary, agricultural or otherwise, which were considered of high value and significance to understanding past occupational activity within the region.

- Targeted archaeological watching brief work was undertaken in areas where there was a potential to encounter highly sensitive archaeological remains, but where these could not be clearly demonstrated from the available data. In such areas limited detailed work further characterised the date, extent, nature and state of preservation of features, where present, and informed further decisions between AECOM and CBC as to whether detailed archaeological excavation would be desirable or necessary.
- As a minimum, general archaeological watching brief work was required across the whole of the remainder of the Scheme except where evaluation surveys and any subsequent work had demonstrated that no remains were present.

In addition, there was limited topographical survey at Sites 10-12, where the *Thiodweg* and two historic boundaries were preserved as earthworks.

All of this work was monitored on site twice weekly by AECOM in the presence of a CCJV representative, and once each week in conjunction with the CBC Archaeologist. The progressive results of the fieldwork were considered at each monitoring meeting between all parties and decisions were made regarding the extent of the mitigation areas and the scope of the investigation that would be required to fulfil the terms of the Detailed Design and its relevant FADD.

2.3 Methodology

To meet the project objectives the following specific tasks had to be completed;

- Identification, characterisation, recording and dating, by means of archaeological excavation, all features exposed within the excavation areas thus providing detailed information on the nature of archaeological features exposed.
- Compilation of written, illustrative, digital and photographic records that form an archive for all archaeological works undertaken.
- Retrieval of sufficient material evidence in the form of artefact and faunal assemblages supplemented with environmental samples to inform interpretations of the site within the context of the agricultural, domestic, industrial and funerary activities that may have been on each site and their relationship with the surrounding landscape.

Detailed archaeological excavations

Detailed excavations where areas of significant archaeological remains had been identified by evaluation and the works were undertaken as a means of mitigation for the Scheme, comprising either sample excavation, complete excavation, or a combination of both, as confirmed by AECOM and approved by CBC. The sites where archaeological mitigation was required are listed in Table 2. At each location the area was accurately set out by CCJV and/or MOLA prior to the commencement of work using Leica System 1200 GPS, or similar, operating to an accuracy of +/- 0.05m on the Ordnance Survey National Grid. This data was continuously reviewed and updated by MOLA during the course of fieldwork.

All archaeological machine excavation was under the direction of a suitably experienced archaeologist. These areas were prepared for detailed hand sampling by using a toothless bucket to reveal the top of the archaeological horizon or, where this was absent, the surface of the natural substrate. The spoil heaps and excavated areas were scanned with a metal detector to ensure maximum finds retrieval on archaeological sites which exhibited domestic settlement activity.

Areas with archaeological features were hand-cleaned sufficiently to enhance their definition and were plotted with the GPS. A detailed hand drawn base plan was prepared at scales 1:100 or 1:50, as needed for each site.

Archaeological features were hand excavated sufficiently to characterise the remains and determine their date and function. Excavated sections were positioned to confirm stratigraphic relationships where these were not visible in plan, and to obtain a representative sample of larger features. The excavated portion of archaeological features was determined by the Detailed Design (HA 2015a, Section 5.2):

- *Linear features (ditches, boundary gullies etc.):* A minimum sample of 20% of each linear feature of less than 5m in length and a minimum sample of 10% of each linear feature greater than 5m in length (each section will be not less than 1.0m). Sample sections were positioned to record accurate profiles of any deposit and to identify structural/phasing sequences (for example terminus and intersections).
- *Discrete features (pits, isolated postholes etc.):* All pits, postholes and other isolated features were half-sectioned, and stakeholes fully excavated. Where large pits or deposits (over 1.5m diameter) were encountered, then the sample excavated was no less than 25%, sufficient to define the extent and maximum depth of the feature, and to achieve the objectives of the excavation.
- *Structural evidence (buildings, kilns, structured deposits, burials etc.):* Investigation sought to determine phasing, dates, character, and the nature of associated deposits. Structures received a higher level of field recording and detailed excavation of 100% of the features or deposits, together with an appropriate level of environmental sampling (EH 2011).

All archaeological deposits and artefacts encountered during the course of excavation were fully recorded. Recording followed standard MOLA Northampton procedures (MOLA 2014b). All archaeological features, deposits and events (cuts or recuts for example) were given a separate context number. Deposits were described on *pro-forma* context sheets to include details of the context, its relationships, interpretation and a checklist of associated finds. Sections or profiles through features and areas of complex stratigraphy were drawn at a scale of 1:10 or 1:20 as appropriate. All levels were related to Ordnance Datum and recorded for sections and site plans. Plans were prepared at scales 1:100 or 1:50, as needed, and updated as fieldwork proceeded with sections, context numbers, levels and any other relevant annotations.

A photographic record was maintained using digital photography with a minimum resolution of 10x megapixels supplemented by 35mm monochrome film. Photographs of the overall sites were taken prior to, and during, excavation.

Finds

Finds were collected from the individual deposits and appropriately packed and stored in stable conditions, by context and in accordance with recognised best practise (CIfA 2014e-f; Watkinson and Neal 2001; Walker 1990). Unstratified animal bones and modern material was not collected. A metal detector was employed by an experienced MOLA team member to scan areas of domestic settlement, cemeteries, industrial areas and other sites likely to contain metal artefacts. There were no finds during the mitigation works that constituted 'Treasure' as defined by statute.

Environmental samples

Bulk soil samples were routinely collected to retrieve seed, charcoal, small animal bones and mollusc remains from dated and sealed contexts that had the potential to contain palaeoenvironmental, palaeoeconomic or industrial materials of clear archaeological origin (EH 2011). Bulk sample sizes of 40 litres per context, or the entire excavated portion in smaller features such as postholes or hearths were collected and stored in sealable buckets. Other sampling strategies were not deemed necessary during the fieldwork by either AECOM or CBC, and almost all significant contexts have either datable finds or charred materials to enable spot dates to be determined. On this basis, where artefacts are absent, there should be sufficient charred material available for AMS radiocarbon dating.

Selected samples are being processed at MOLA Northampton, in consultation between the Project Manager and the MOLA environmental team, using the flotation technique and the resultant residues will then be hand sorted to retrieve other finds.

Human remains

Exhumation of human remains took place under the appropriate Ministry of Justice licence (No. 15-0034) and according to the conditions set out therein in accordance with Section 25 of the Burial Act 1857. The remains shall be deposited with Luton Cultural Services Trust no later than 31st October 2017.

Exhumation was conducted with care and respect in accordance with current best practise (McKinley and Roberts 1993; Brickley and McKinley 2004) and the conditions of the license. Post-excavation analysis will contain a statement for the future retention of the assemblage with options for reburial.

Cremated human remains were recovered intact within their respective urns, where possible, and have been excavated by an experienced archaeologist in controlled conditions, off-site, in 20mm spits. Un-urned cremations were excavated in 200mm spits on site and the whole of the material retained for analysis. Each spit was photographed and planned at an appropriate scale (1:2 or 1:5) and the un-urned cremations were stored in sealable plastic buckets and clearly labelled.

Targeted archaeological watching brief

Archaeological investigation and recording was undertaken where essential works such as slip roads, utility connections and drainage diversions had an impact upon archaeological remains close to or within archaeologically sensitive areas. A targeted watching brief was undertaken wherever topsoil and subsoil removal needed to be undertaken under controlled archaeological supervision. Soil stripping was undertaken by a machine fitted with a toothless bucket under continuous archaeological observation by a qualified and experienced archaeologist. Archaeological features and deposits were recorded in an appropriate fashion using the same methodology as for

detailed excavation, although sample sizes were generally lower, where agreed by AECOM and CBC.

General archaeological watching brief

Other sections of the scheme were subject to a general watching brief involving a programme of observation, investigation and recording during construction activities. This was employed where there remained a low risk of archaeological discoveries except where evaluation surveys and other works had demonstrated an absence of archaeological features, no mitigation was required at such locations.

Topographic survey

A topographic survey combined with hand-excavated trenches was undertaken at Sites 10-12 to record earthworks associated with the *Thiodweg* (Salt Way) and other historic boundaries. The survey used the Leica System 1200 Global Positioning System (GPS), operating using SMARTNET real-time corrections. Multiple spot heights were identified and recorded in sufficient detail to generate a 3D graphical image of the natural topography, from which hachure plans and modelled data have been derived. This data meets the Level 3 recording standards of English Heritage (EH 2007).

The survey data will be used to generate a series of line plans and drawings to accurately locate the remains in relation to the Ordnance Survey National Grid and datum. Detailed plans at a scale of 1:1000 or 1:2500 are in preparation to show the overall form of the remains, with larger plans used as necessary to illustrate areas of complexity. Hachure plans will be produced at the appropriate scale, which will be supplemented by profiles to appropriate scales. The form and setting of all features have been photographed using a digital camera. All further data processing work will conform the requirements of Highways England according to the WSI (HA 2014d).

3 SUMMARY OF RESULTS

3.1 Summary of archaeological works

Each stage of archaeological works has produced a section of the archive as presented in Table 1; their locations are shown on Figures 2-3. The results of the evaluation surveys form separate documentation to meet the requirements of the staged planning process (NA 2008a-b; Brown 2014b; 2015a-b).

B: General watching brief for UKPN Utilities Diversion works

Monitoring was required because the cable trench network was excavated through several archaeologically sensitive areas identified by the Environmental Statement (HA 2009) at a time before full archaeological evaluation had been completed. A single pit was identified on the eastern side of the M1 and lay on the periphery of Site 9 (Fig 2). The pit was c.1.8m wide by 0.55m deep, filled with dark grey silty-clay loam (Fig 4). A single fragment of prehistoric pottery was recovered from the section. However, the topsoil contained asbestos, and so no further investigation was permissible. No other features of archaeological interest were identified during the watching brief on any other part of the cable trench layout shown in Figure 2. The attendant archaeologist was not permitted within 5.0m of the operation on grounds of Health and Safety. Attendance was not requested when the trench was cut along the north-east side of Site 9.



Probable prehistoric pit in the side of UKPN cable trench, looking east Fig 4

C: General watching brief for CCJV at M1 Junction 11a

Archaeological monitoring was provided during the preparation of the heavy plant crossing at Houghton Road (Site 8), during the stripping of the northbound off-ramp and west dumbbell at M1 Junction 11a (between Sites 8-9), during the cutting of drainage ditches through Site 8 and along the drainage line on the east side of the M1 motorway and southbound on-ramp (Fig 2). Monitoring outside of the areas identified by the Environmental Statement was required because evaluation surveys had suggested a slight risk that archaeological remains might be present.

A small cluster of seven pits were excavated to the north of Chalton Cross Farm, within the footprint of the west dumbbell roundabout of M1 Junction 11a. The pit group produced a fairly substantial assemblage of flint tempered pottery of a late Bronze Age or early-middle Iron Age character and with associated animal bone.

There were 13 cut features, comprising both pits and ditches, and including possible tree throws, which were recorded along the drainage route on the east side of the M1 motorway. None of these features produced datable finds.

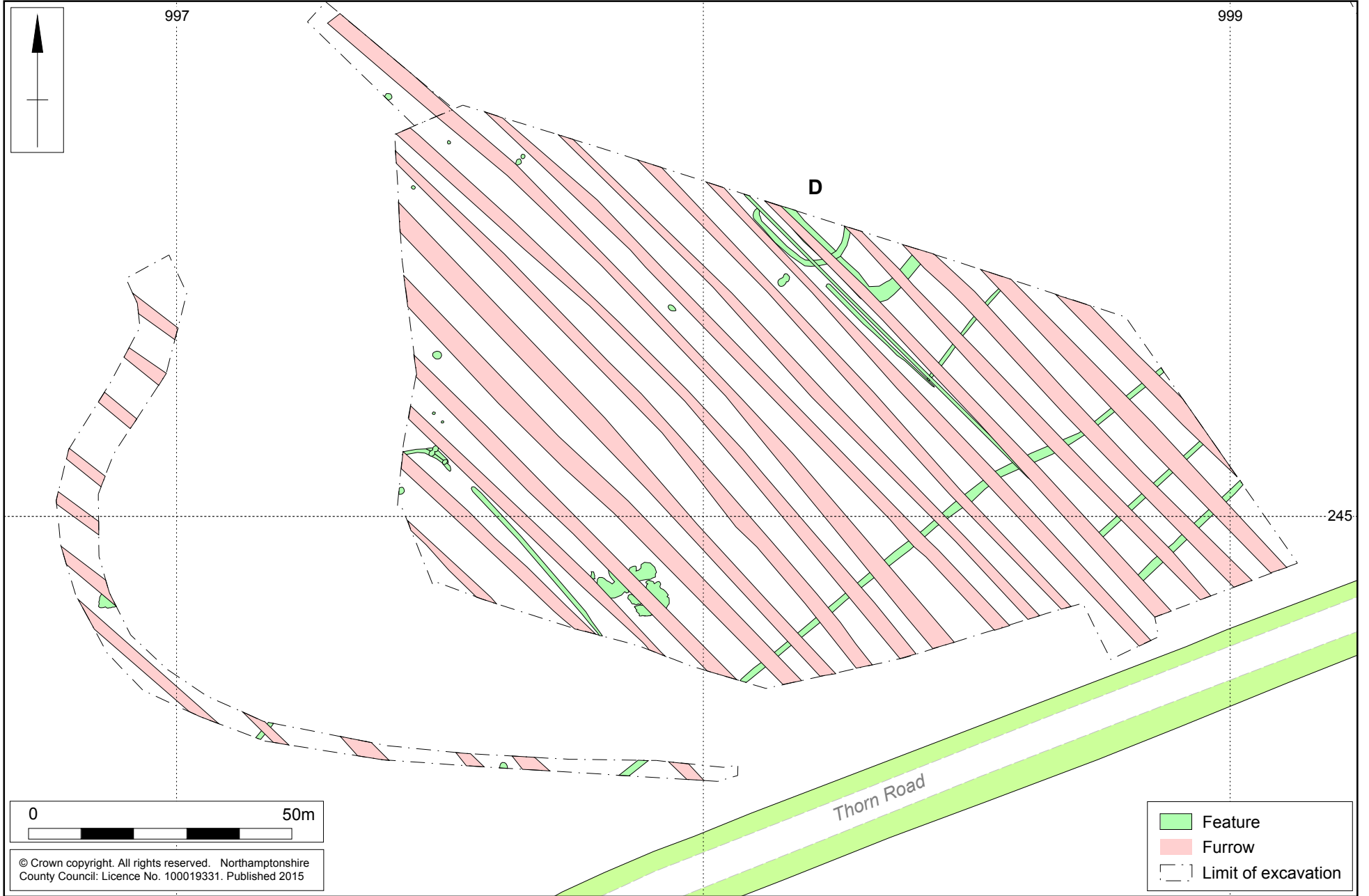
D: Detailed archaeological excavations for the A5 site compound

The excavation area was located on the east side of the A5 Watling Street, north of Thorn Road (Fig 3). Investigation found a series of ditches and gullies, probably abandoned in the mid-1st century AD, which followed a rectangular layout of boundaries to the south of a contemporary farming settlement (Fig 5). It is probable that these boundaries formed a series of enclosures or fields. Isolated groups of intersecting pit clusters, of similar date, lay within these fields (Figs 6-7). Whilst their function was not immediately apparent at the time of excavation, bulk soil samples will hopefully elucidate upon their contents, which included substantial charred debris. Two hypotheses have been suggested; quarrying to extract chalky clay or the disposal of crop processing waste, or animal bedding. Finds mainly comprised pottery and animal bone. The truncated remains of medieval and post-medieval furrows were recorded on a north-west to south-east alignment overlying the late Iron Age to mid-1st-century AD occupation.

Scale 1:1000 (A4)

Late Iron Age to mid-1st-century AD boundaries, north of Thorn Road

Fig 5



0 50m

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Feature
Furrow
Limit of excavation



Investigation of an intersecting pit cluster, north of Thorn Road, looking west Fig 6



Intersecting pit cluster, north of Thorn Road, looking south-west Fig 7

E: Topographic survey and hand excavated mitigation trenches

A topographic survey was undertaken at Sites 10-12. The survey recorded features associated with an historic route called the *Thiodweg* (Salt Way) at Site 10 (Fig 2) and two historic field boundaries at Sites 11 and 12 (Fig 3). Hand excavated trenches were placed across these features.

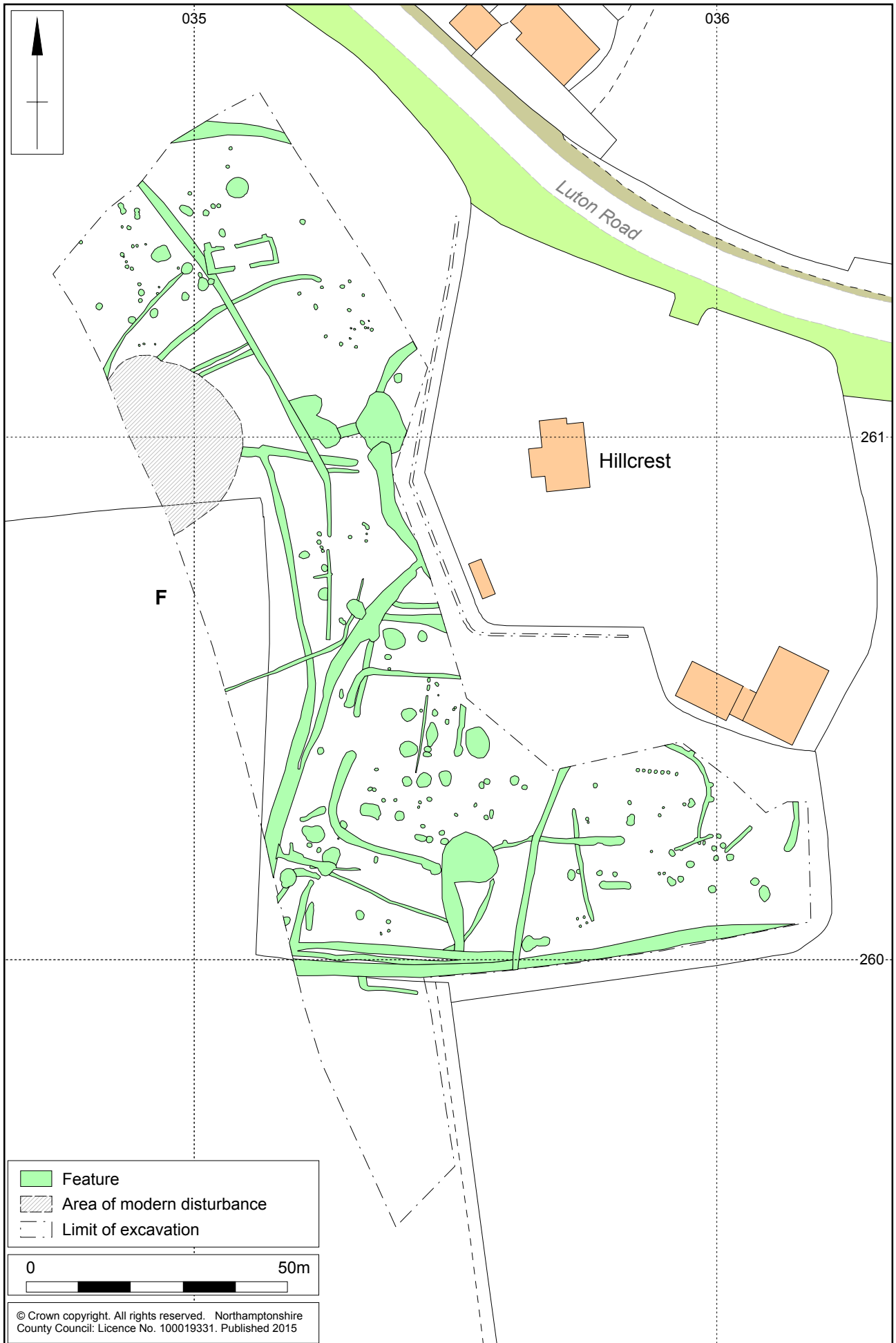
The investigation of *Thiodweg* (Site 10) showed that the historic trackway consisted of a raised causeway made of indistinct clay subsoil (Fig 8). There was no evidence for flanking ditches or cart ruts at this level and no dating material to support a Saxon or medieval origin. In its final phase the trackway was capped with chalk, which preserved cart ruts along its surface. This level produced a small assemblage of post-medieval and modern material (including glass and glazed wares) from the latest spreads and deposits.



Post-medieval cart ruts and causeway, Site 10, looking north Fig 8

The historic boundary at Site 11 lies at Ch1320, north of Thorn Spring, alongside a footpath associated with the Icknield Way. Investigations within and next to an open watercourse indicated that the sides of the watercourse comprised possible colluvial deposits, but no archaeological remains were identified.

The historic boundary at Site 12 lies at Ch2200, west of Grove Farm. Investigations confirmed the depth and character of the ditch and bank that were visible as earthworks along the field boundary. No finds were recovered that could provide a secure date for the feature



Scale 1:1000 (A4)

Archaeological features excavated at Luton Road, Chalton Fig 9

F: Detailed archaeological excavations and targeted watching brief at Luton Road, Chalton

The excavation was located north-west of the CCJV M1 site compound on the south side of Luton Road, outside the village of Chalton (Fig 2). A targeted watching brief was also later conducted along the drainage route adjacent to where human remains had been found during the detailed excavations. At least three periods of activity were evident within the site, which seem to be completely separate. At this time the site has not yet been phased against spot dates, which will be a high priority (Fig 9).

A natural solution hollow

A single large pit was hand excavated to 1.4m depth, and then subsequently machine investigated to a further 3.0m depth before being backfilled (Fig 9). The surface deposits contained finds of medieval date; however, lower fills were largely sterile redeposited natural clay and gravel. The pit is thought to have been a solution hollow.

A small cremation cemetery

A cluster of ten late Iron Age and early Roman cremation burials were excavated on the north facing slope overlooking the Flit Valley (Fig 9). These were accompanied by a pit filled with accessory vessels that also contained a Nauheim derivative brooch (Fig 10). No other contemporary features were identified at the time of excavation, but it is expected that at least some of the neighbouring gullies and pits may yield contemporary material once assessed closely.



Early Roman cremation accessory vessels Fig 10

Anglo-Saxon finds

A small quantity of finds from this site included Anglo-Saxon pottery, fragments of loomweight and a bone comb (Fig 11), which are stylistically of the 7th-8th centuries (Brown 2014b). It is likely that close assessment will identify features amongst this

dense archaeological concentration that are specifically Anglo-Saxon, however, the general dearth of late Saxon material indicates that continuity with the medieval settlement is unlikely.



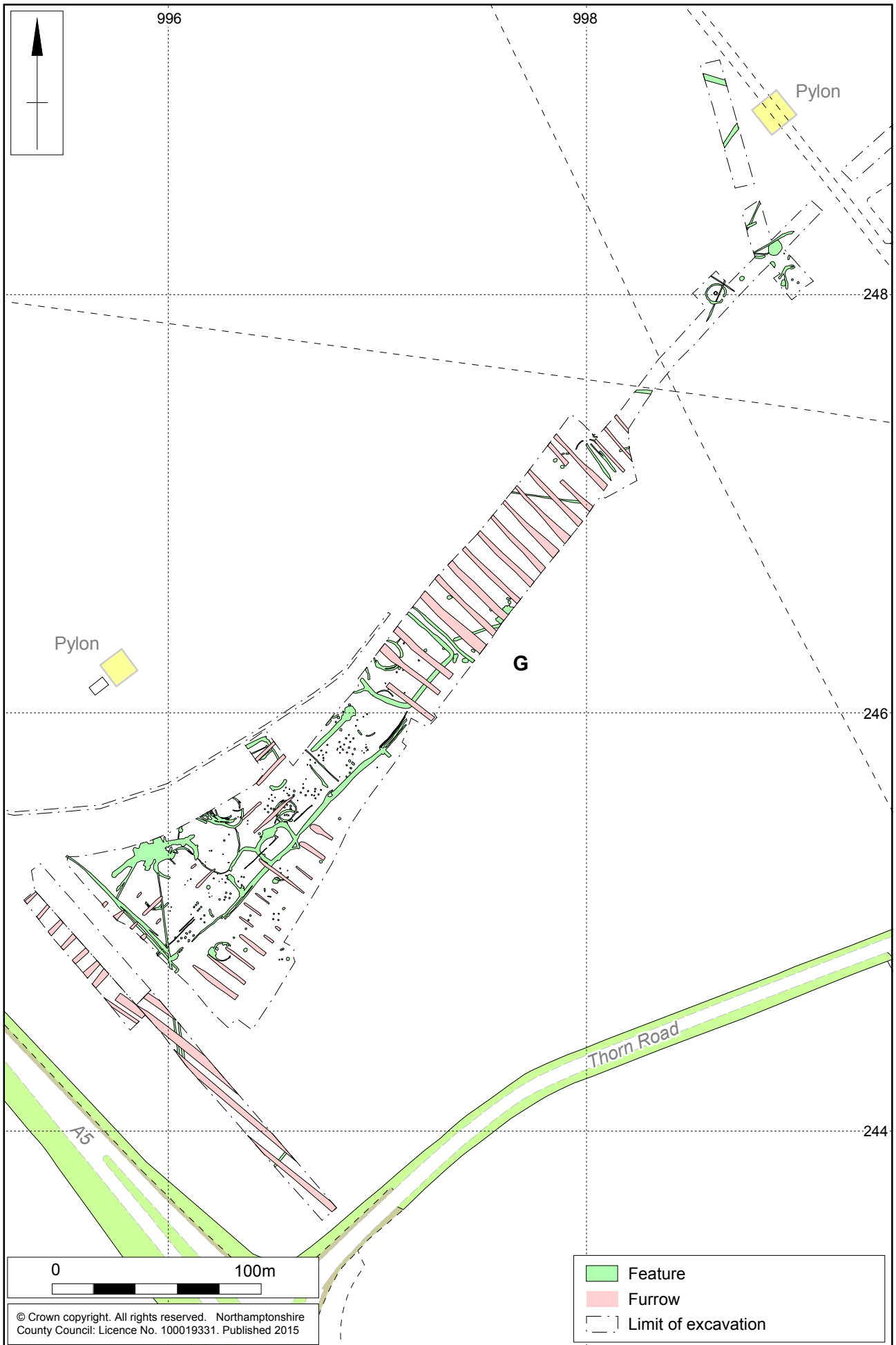
Anglo-Saxon decorated bone comb, Luton Road, Chalton, scale 10mm Fig 11

Medieval settlement and burials

Also on the north facing slope of the hill was a small medieval building with a chalk foundation wall (Figs 9 and 12), which is thought to have been a small cottage of the 12th-14th centuries. A short distance from the building there were three shallow graves, inhumations that had been disturbed by the plough. At the top of the slope, where the ground levelled out, there were many intersecting ditches and gullies that formed small enclosures. At the junction of two enclosures there was a large depression that suggested a possible pond. Within the enclosures were a substantial number of pits and at least one well. The inconsistent character of the pits suggests that they represent a variety of functions, so that a single interpretation is difficult at this stage of assessment; however, it is expected they will yield a combination of midden material and processing waste. The majority of pottery from these features was contemporary with the building. The distribution of the enclosures suggests a relationship with the adjacent property at Hillcrest, which may be a relict landscape feature for a medieval end to the village of Chalton.



12th-14th-century building with chalk wall foundation, looking east Fig 12



Scale 1:2,500 (A4)

Late Iron Age to mid-1st-century AD farmstead Fig 13

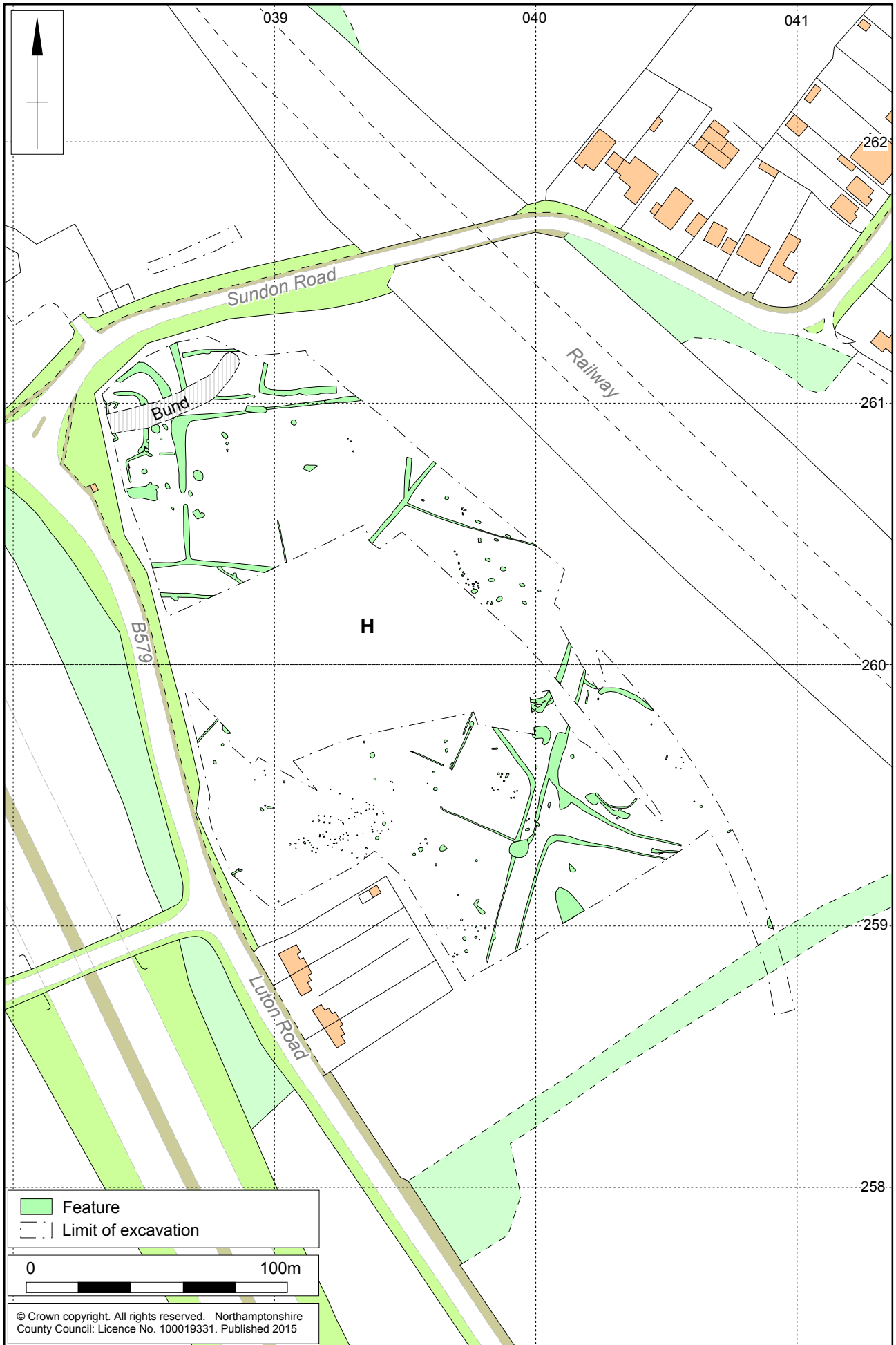
G: Detailed archaeological excavations and targeted watching brief between Thorn Farm and A5 Watling Street

Excavations on the north-east side of Watling Street investigated the remains of a late Iron Age farmstead (Figs 3 and 13). The edge of the principal rectangular enclosure was offset from the present line of Watling Street by 80m, and there was no evidence that the land between was occupied. Only the southern edge of the enclosure and its interior were exposed within the footprint of the land required for the Scheme. The enclosure was 160m long by over 50m wide, and attached to a smaller rectangular enclosure at its north-east end, 40m long by over 30m wide. It is expected that a study of the finds and bulk soil samples will provide evidence for a mixed agricultural economy, and that there will be a distinct cut off in occupation in the mid-1st century AD, which was observed at Puddlehill (Matthews and Warren 1992), to the south, although it is not yet certain how closely the sites may be related.

Within the principal enclosure was evidence for four possible roundhouse ring ditches (Fig 14), one of these had up to seven recuts, although most had fewer than three. Attached to the southern boundary were two small sub-rectangular areas, possibly gardens or paddocks, and connecting gullies between these and the roundhouses showed that the interior of the principal enclosure was subdivided into yard spaces. Within the east and west yards were two large groups of four-post and six-post timber structures, possibly granaries. The enclosure to the north-east was largely open space with a single substantial roundhouse, and nearby pits. Extending from the farm was a network of field boundaries, and although there were occasional points where activity in the fields had produced clusters of intersecting pits, there was no firm evidence for dispersed settlement except for an isolated roundhouse in the targeted watching brief to the north-east of the main settlement. It is likely, however, that this was peripheral to other enclosures outside the Scheme corridor. The network of boundaries were widely distributed and extended to the south of Thorn Road, where at least one ditch was preceded by a middle Iron Age pit alignment; however, this pit alignment did not connect with the settlement.



Late Iron Age ring ditch in foreground, looking south towards Puddlehill Fig 14



Scale 1:2000 (A4) Archaeological features excavated at Long Meadow Farm, Chalton Fig 15

H: Detailed archaeological excavations and targeted watching brief at Long Meadow Farm, Chalton

The excavation was located on the east side of the M1 motorway, M1 Junction 11a (Fig 2). Three periods of occupation were evident within the site; earlier prehistoric pits, late Iron Age to early Roman agricultural land use followed much later by a period of Anglo-Saxon funerary activity, with no evidence for continuity in between. At this time the site has not yet been phased against spot dates, which will be a high priority (Fig 15).

Prehistoric pits

At least two isolated pits contained burnt material and produced flint tempered pottery similar to the fabrics recovered from the pit cluster on the west side of the motorway during the general watching brief (Figs 2 and 15). These are likely to be late Bronze Age or early-middle Iron Age in date and will require careful fabric analysis against the local ceramic typology.

Late Iron Age to early Roman enclosures

Ditches and gullies extended across the site that suggest an interconnecting pattern of rectangular enclosure boundaries (Fig 15). Some of the ditches lay parallel and were c.6-8m apart in the form of a trackway. At least two of these met at a junction, with the wider areas to either side lying within the enclosures. The enclosures contained few, if any, features other than scattered pits or postholes, which were not directly datable. At the northern edge of excavation the ditches drained downslope into a basin filled by mixed colluvial and alluvial deposits, which could not be safely investigated further.

Anglo-Saxon funerary evidence

Ten grave cuts were exposed that contained human skeletal remains at Long Meadow Farm (Fig 15). A further 17 un-urned cremation burials were also excavated, including four that comprised largely pyre debris from probable *bustum* (elongated pits that act as a flue in order draw oxygen into the pyre laid above). At the time of excavation it was thought that the inhumation and cremation cemetery were closely associated with the late Iron Age and early Roman features and that the whole site represented continuity from a farming regime into a funerary site. Cremation deposits clearly overlay and cut through earlier agricultural boundary ditches, however, subsequent finds processing has indicated that the inhumation burials are likely to be Anglo-Saxon with particular reference to the grave goods that included a spear, sheath knives, a copper-alloy work box and jewellery (Fig 16). These burials may have a relationship with the 7th-8th-century finds from the Luton Road excavation site (Brown 2014b).

Since most of the cremation burials from this site were un-urned, these and the pyre debris will need to undergo a level of AMS radiocarbon dating to identify whether they are contemporary with inhumation burials represent a different episode of funerary activity.



Anglo-Saxon jewellery, Long Meadow Farm cemetery, Chalton, scale 10mm Fig 16

J: General and targeted watching brief for Chainages 3100-4150

General watching brief

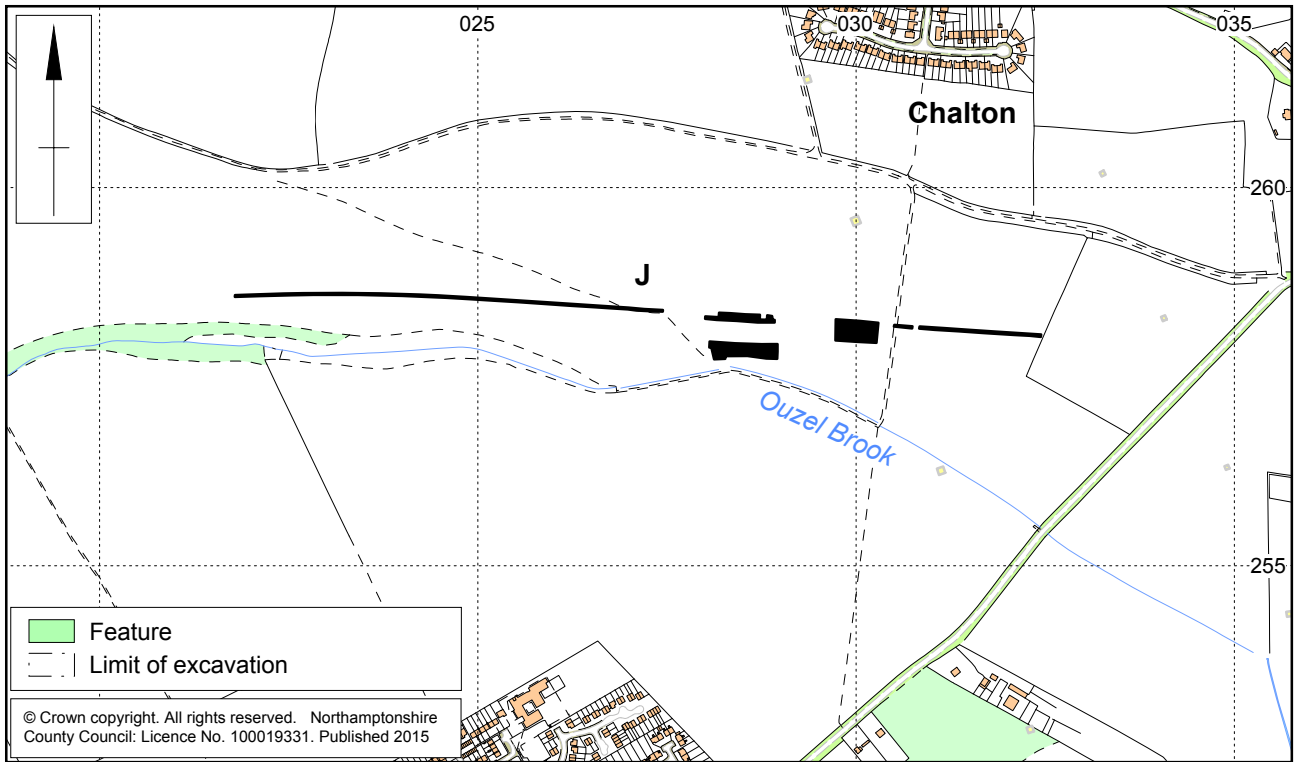
Two boundary features lay within a 2.0m wide transect between Ch3100-3670, at roughly NGR TL 02248 25887 (Fig 2). Boundary 1035 was 3.4m wide by 0.37m deep, it had gently sloped uneven sides and base with irregular hollows penetrating the natural. The fill comprised mid-greyish-brown silty clay with flecks of charcoal. The feature was aligned north to south and was undated, but it is thought likely to have been a grubbed-out hedgerow.

The other boundary feature, ditch 1011, was 1.03m wide by 0.62m deep with steep sloped sides and a narrow rounded base at roughly NGR TL 02595 25880. The fill comprised mid-greyish-brown silty clay, which was quite sterile. The ditch appears on the geophysical survey (NA 2008a, figs 12-13). However, it is thought to be fairly recent and is mapped along the route of the parish boundary between Chalton and Houghton Regis by the current Ordnance Survey.

A further stretch of general watching brief between Ch3970-4150 (Fig 2), identified furrows that were aligned north to south. This provided evidence for the open field on the south side of the village of Chalton.

Targeted watching brief

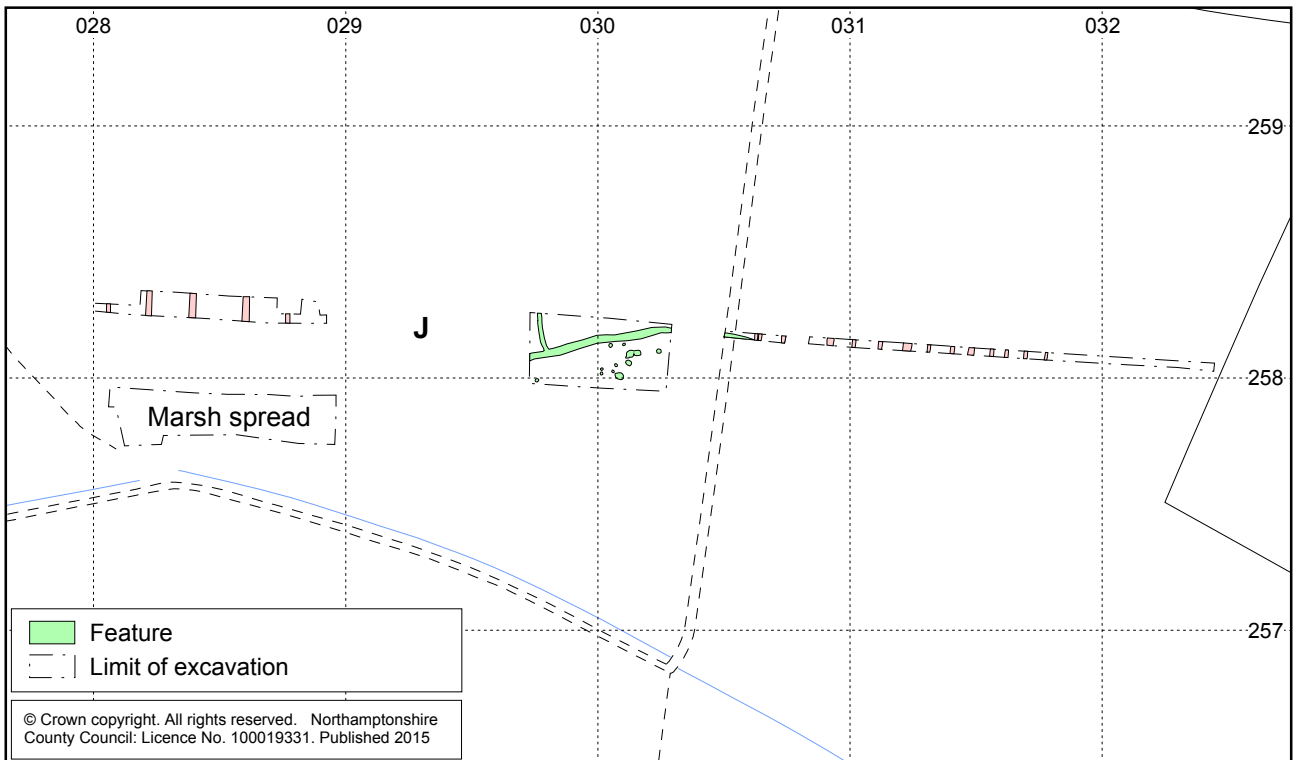
Three trenches, J1-J3, were located between Ch3670-3970 where evaluation had identified archaeological features (Fig 18). The southernmost trench, J1, lay at the base of the slope, and at the head of the Ouzel Valley, close to where the spring line rises. This exposed a spread of firm dark bluish-black silty clay that was 100-140mm thick, overlying the natural chalky clay (Fig 19). Bulk soil samples from this deposit are expected to produce plant macrofossils indicative of marshy conditions.



Scale 1:10,000 (A4)

Areas of investigation to the south of Chalton, Ch3100-4150

Fig 17



Scale 1:3000 (A4)

Ditches draining into an ancient marsh, Ch3670-3970

Fig 18

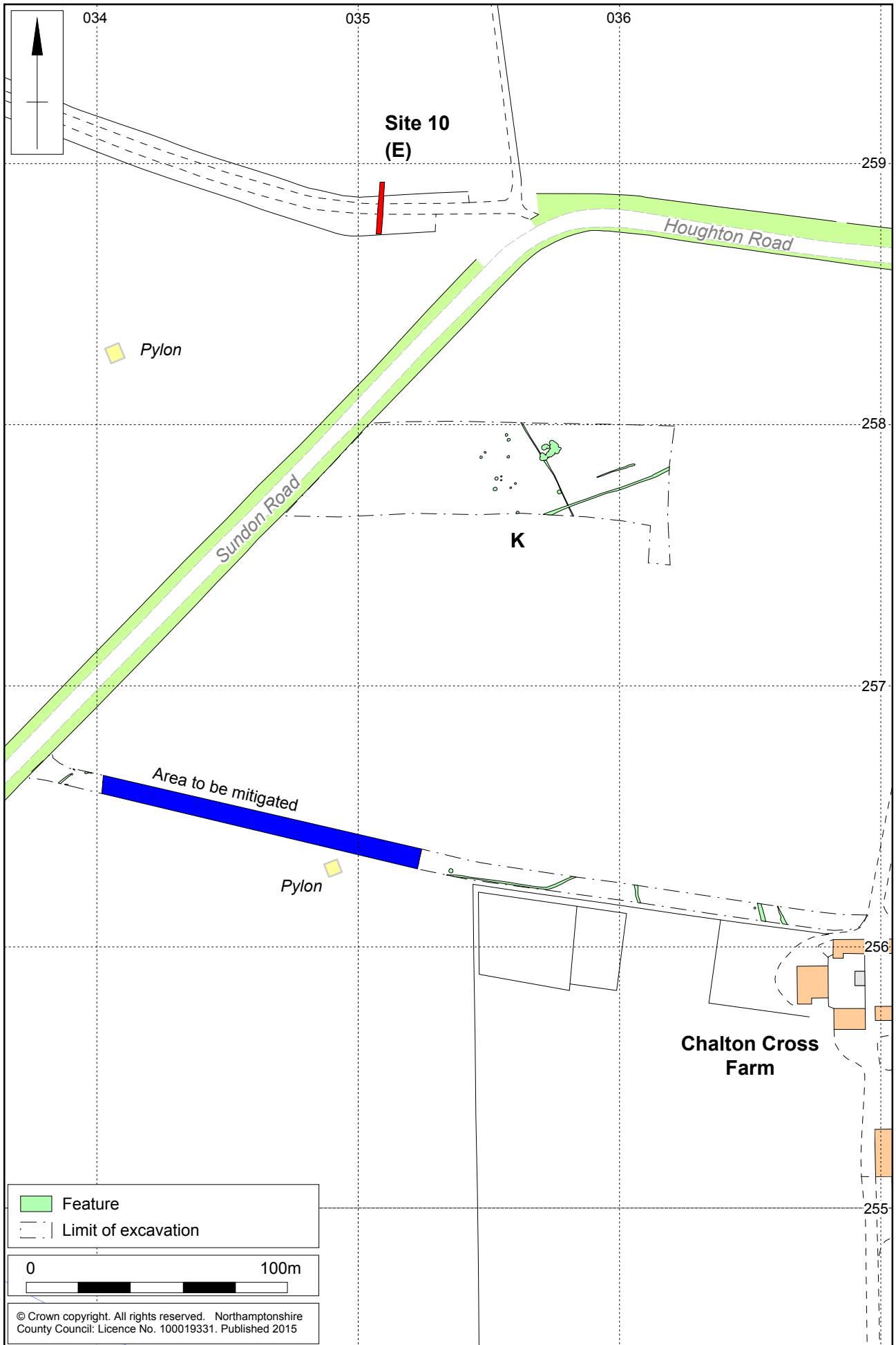


Possible ancient soil horizon, Trench J1, Ch3670-3970, looking west Fig 19

Trench J2 was excavated to the north of the marsh deposits, where the ground began to arise gently upslope. No archaeological features or deposits were present within this area, except for medieval and post-medieval furrows, aligned north to south.



The principal ditch, Trench J3, Ch3670-3970, looking north-east Fig 20



Scale 1:2000 (A4)

Middle to late Iron Age features at Chalton Cross Farm Fig 21

A further trench, J3, was opened to the north-east of the marsh deposits where a geophysical anomaly had been identified (NA 2008a, figs 13-14). This anomaly had been investigated during the trial trench evaluation, and had exposed a substantial ditch, 6309, which was aligned north-west to south-east, 2.00m wide by 0.95m deep, and had been accompanied by two smaller ditches (Brown 2015a-b). The wider strip of trench J3 demonstrated that as the principal ditch drained downslope its dimensions became broader and less steeply cut towards the marsh, with evidence for recuts (Fig 20). The ditch was filled with firm dark greyish-brown silty clay and produced a few sherds of middle to late Iron Age pottery and fragments of animal bone. The sides of the ditch exhibited ancient tree root disturbances and other smaller boundary ditches also drained into it.

The area also exposed a group of five pits, the largest of which, pit 1016, was 2.0m wide by 0.75m deep. This particular example had a clear sequence of fills that comprised light orangey-grey clayey silt at the base, blending towards firm orangey-brown sandy clay, and then with dark greyish-brown sandy clay on top. Pottery and animal bone retrieved from the pit was similar to that found in the nearby ditches, probably middle to late Iron Age in date, and although this was the most productive pit for finds, the other four pits within the group had far fewer finds suggesting that the group was probably located at some distance from the main focus of settlement activity.

K: Detailed archaeological excavations at Chalton Cross Farm

Two areas were excavated to the north and west of the farm (Figs 2 and 21). The larger area lay within the road corridor between Ch4400-4550, west of the dumbbell roundabout of M1 junction 11a. The narrower strip was for a new access between Houghton Road and Chalton Cross Farm.

Geophysical survey had previously shown that this area contained anomalies that were consistent with boundary ditches extending north-west and north-east from the north corner of a small enclosure (NA 2008a, figs 15-16). However, whilst peripheral features were found by excavation, the enclosure itself lay outside of the development between the two stripped areas.

Boundary ditches

Ditch 1004 extended to the north-east of the enclosure and was heavily plough truncated at 0.84m wide by 0.10m deep, with only its flattish base remaining (Fig 21). The fill comprised light to mid-brown clay with white and grey chalky flecks. A few sherds of pottery indicated middle to late Iron Age deposition. Several ditches and gullies also crossed the narrow strip of the access track to the south of the enclosure, and these are likely to be elements that formed a network of boundaries in the past. Most of the ditches were of comparable size and tended to have light coloured clayey fill indicative of natural accumulations of in-wash rather than dumping. Very few finds were recovered amongst these features and it seems unlikely that the nearby enclosure identified by geophysical survey would be of a domestic nature (*ibid*).

Storage pits

Two substantial bell-shaped pits, 17 and 95, were fully excavated and bulk soil samples retrieved (Fig 21). Pit 95 was circular in plan, 0.92m wide by 0.93m deep. The sides undercut the surface from the lip of the pit and formed a bulbous bowl below ground, hence, bell-shaped. A sequence of fill comprised firm mid-brownish-grey silty clay at the bottom, overlain by light brownish-orange clay with charcoal flecks, and with firm dark brownish-grey silty clay at the top. Pottery, animal bone and charred materials were recovered throughout, and included most of an Iron Age bone comb (Fig 22). Pit 17 was 1.16m wide by 0.83m deep; it was similar to pit 95 in shape, profile, and the character of its fill. The pit was also subject to a high level of bulk soil sampling at different levels within the pit, and produced a similar array of finds. Both pits were strong candidates for grain storage.

Intercutting pits

A single intersecting pit cluster, of middle to late Iron Age date, lay in close proximity to the potential storage pits (Fig 23). The pits varied in shape and size in a similar fashion to those discovered near to A5 Watling Street. Bulk soil samples will hopefully identify plant macrofossils within their contents to determine whether they were used to dispose of crop processing waste, animal bedding or other material. Finds were fairly few, mainly pottery and animal bone and, like those at the west end of the Scheme, there was no evident structure or uniformity to the individual pits.

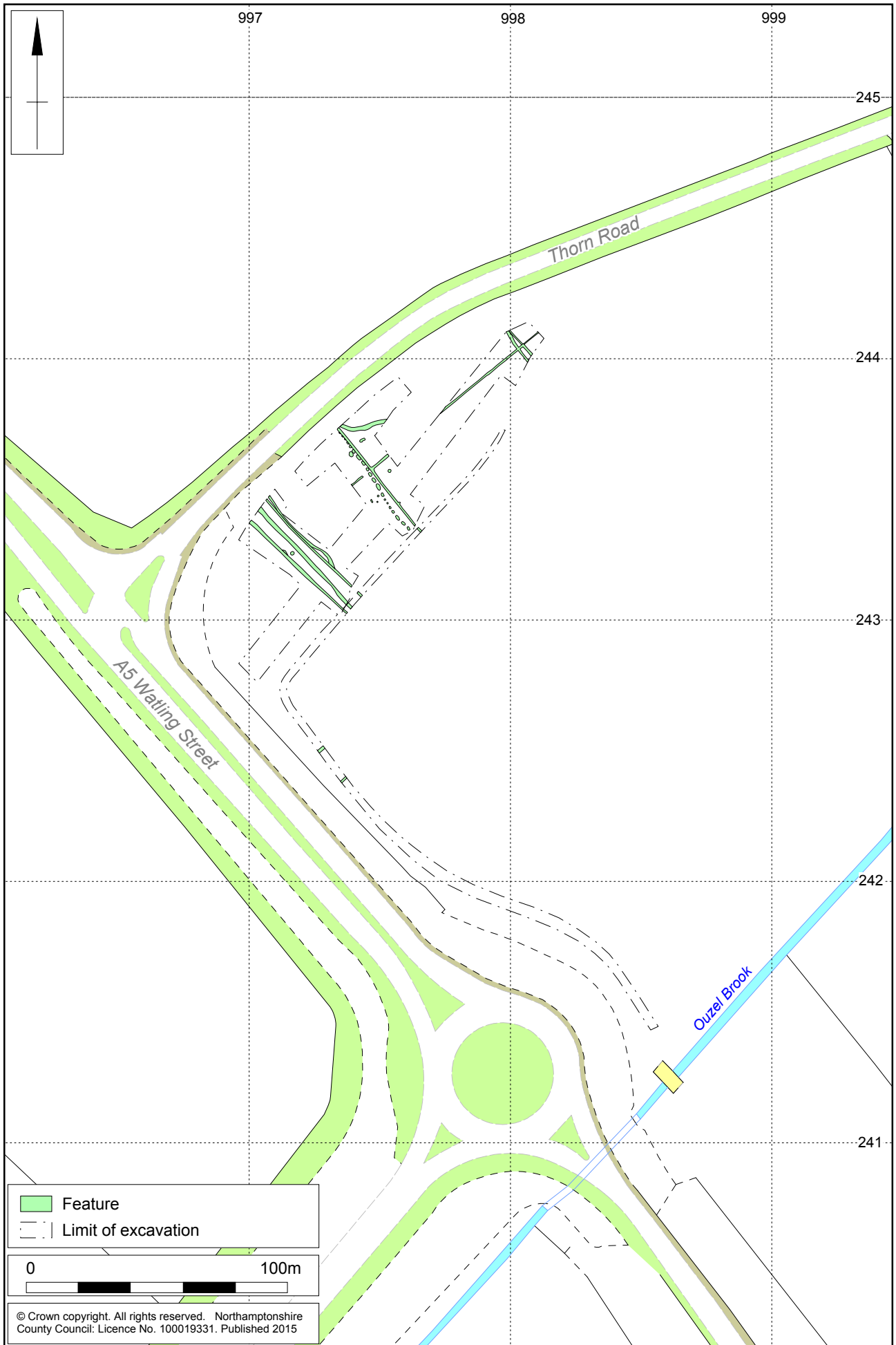


Iron Age bone comb,
Chalton Cross Farm,
Scale 10mm

Fig 22



Intersecting pit cluster, Chalton Cross Farm, looking north-west Fig 23



Scale 1:2000 (A4)

Middle Iron Age pit alignment and later boundaries, south of Thorn Road Fig 24

L: General watching brief for Chainages 1180-1750

A 2.0m wide transect between Ch1180-1750 identified four boundary ditches to the west of the hedgerow at Ch1320 (Fig 3). One of these ditches was modern, the other three were undated. On the east side of the hedgerow there was evidence for a palaeochannel (an ancient stream) that flowed south-east towards the modern Ouzel Brook. Further to the east were the heavily plough truncated remains of furrows, aligned north-west to south-east, and depicted by the geophysical survey (NA 2008a, fig 8).

M: Detailed archaeological excavation at the A5 balancing pond and general watching brief along the adjoining A5 embankment drainage ditch

The excavation was located compound on the south side of Thorn Road and to the east of A5 Watling Street (Figs 3 and 24).

Alluvial flood deposits

A general watching brief was conducted along a new drainage ditch at the base of the A5 embankment. Bands of alluvial clay were present in layers close to the Ouzel Brook, suggesting that the modern watercourse follows an ancient channel. Several undated ditches were recorded in profile, cutting the surface of the alluvial layers, which are likely to be associated with the late Iron Age field systems identified nearby.



Pit alignment and later ditch, south of Thorn Road, looking north-west Fig 25

A middle Iron Age pit alignment

The pit alignment represents a boundary, comprising 20 individual pits along this section, laid roughly north-west to south-east (Fig 25). The pits were fairly evenly spaced and varied in shape, with some being slightly sub-rectangular or oval and others being circular. The size and profiles of each pit were also unique, with the average pit at around 1.0m wide by 0.5m deep. Fill constituents were fairly consistent

with most merging between medium to dark orangey-grey or greyish-brown clay. All of the pits were 100% excavated and bulk soil samples were recovered from one quarter of the pits. A couple of sherds of pottery were present throughout all of the excavated sections and no other notable finds. Five pits at the north-west end showed that the alignment was cut by a later ditch. The alignment was not identified in the excavated areas to the north of Thorn Road.

Late Iron Age boundary ditches

The ditches were probably part of a network of landscape boundaries associated with those to the north of Thorn Road and in the periphery of a late Iron Age farmstead (Fig 24). These are thought to have been abandoned by the mid-1st century AD. Most of these ditches were fairly narrow, less than 0.8m wide, and fairly truncated, less than 0.50m deep. In most cases the fills were light greyish-brown in colour and are likely to be the product of in-wash rather than dumping. The site produced very few finds, which is consistent with expectation given its relative distance from the nearest known possible contemporary habitation.



Boundary ditch 007, National Grid easement, looking north-east Fig 26

N: General watching brief for the National Grid gas pipeline

Four ditches were identified to the north of Chalton Cross Farm along the easement of the National Grid gas pipeline (Fig 2). The ditches were mainly aligned north to south and were roughly parallel. The largest ditch, 007, was 1.92m wide by 0.45m deep and contained a sequence of firm light to mid-greyish-brown sandy clay that merged towards friable dark brown sandy clay at the top (Fig 26). Pottery suggests that this ditch and at least one of its neighbours were of middle to late Iron Age date and are

likely to be part of connecting boundary features further to the east of a small enclosure identified by geophysical survey (NA 2008a, figs 15-16). One of the ditches is also depicted by this survey.

P: General and targeted watching brief at Grove Farm

Archaeological trial trench evaluation identified undated archaeological features at Grove Farm that required mitigation. The general lack of finds suggested that the features were less likely to be closely associated with a focus of domestic activity. A targeted watching brief was conducted where features had been found. To the west of this, where there had been no evaluation trenches, mitigation took the form of a general watching brief, whilst because evaluation had demonstrated an absence of archaeological features to the east, there were no mitigation requirements.

Targeted watching brief

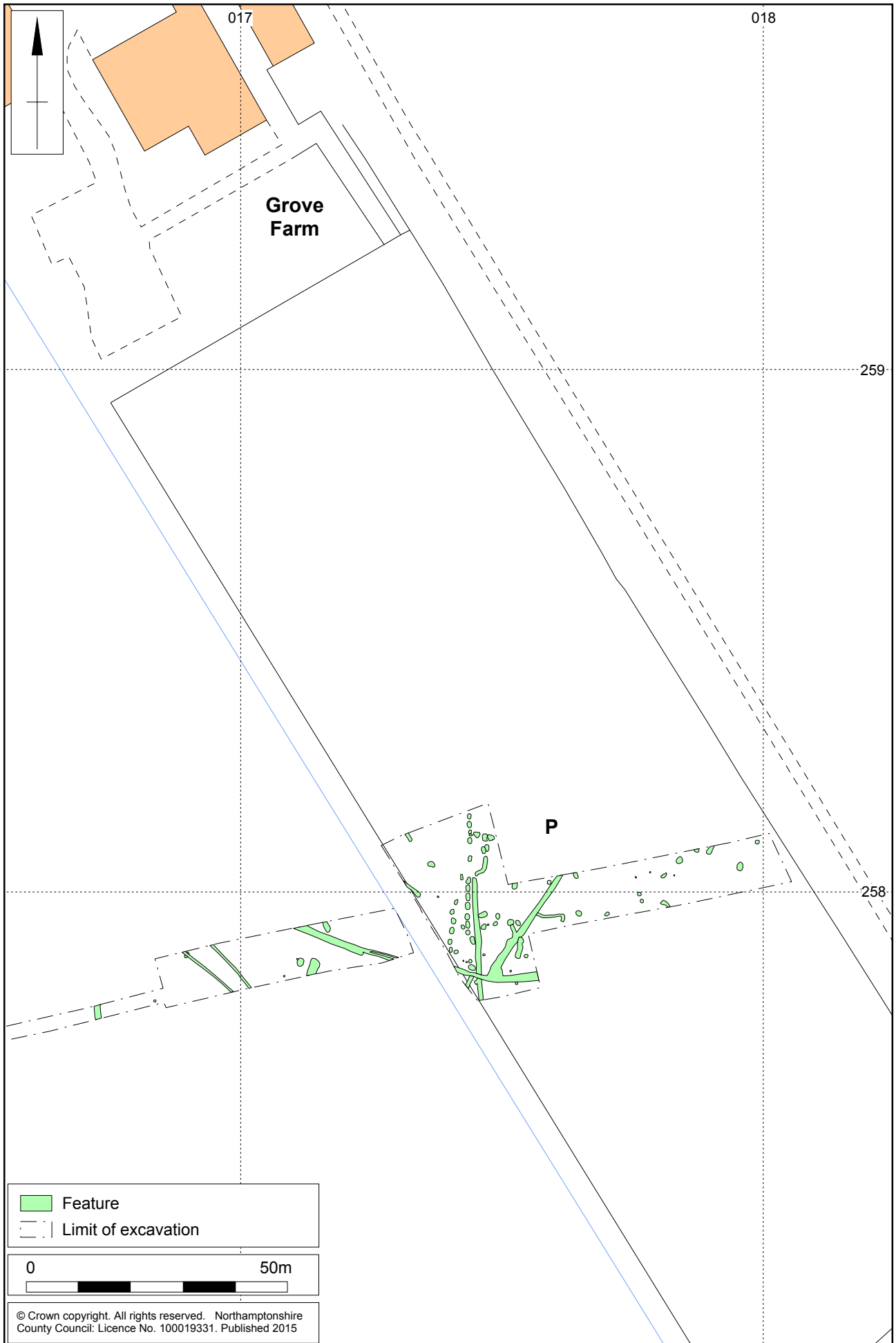
A small open area trench was located between Ch2600-2730, which began as an 8.0m wide transect, but was widened further upon discovery of a concentration of features comprising pits and ditches (Figs 27-28). There were at least 13 pits aligned, north to south, and a further 12 pits that formed a second alignment, slightly offset from the first. The site was quite badly disturbed by root disturbance from the modern hedgerow. In addition, a later boundary ditch followed the course of the pit alignments with a terminal at its north end and a junction with three other boundary ditches at its southern end. At the junction was a substantial masking spread of soil that seems to have built up from flooding, as the capacity for the ditches to drain water away became less effective.

General watching brief

Four ditches lay within a 2.0m wide transect between Ch2200-2600 (Fig 3). A further seven features, both pits and ditches, were identified during the cutting of the drainage ditches before this area was signed off by AECOM with CBC approval. The ditches were fairly narrow, less than 0.6m wide, and fairly shallow, less than 0.5m deep. The fills suggested that some natural in-wash, comprising paler greyish-orange silty clay, had later been followed by deliberate infill with dark brownish-grey silty clay loam. However, a general dearth of datable finds suggests that this material was not derived from midden waste, which is a conventional source for filling unwanted ditches.

The majority of the pits were fairly small in size, less than 1.0m long by 0.6m wide by 0.30m deep. However, they were more uniform in their shape, tending to be sub-rectangular and orientated lengthways. There seem also to have been ancient root disturbances that suggest some substantial trees growing in the vicinity contemporary with the pits and the boundary ditches. There were few finds, a single pit produced pottery, which is probably middle Iron Age in date, whilst the worked flint is probably residual from the nearby scatter to the east. Bulk soil samples were retrieved where possible, avoiding those features that had modern hedgerow disturbance in their fill.

Four main boundary ditches converged at a junction, from the north-west, north, north-east and east. Like those to the west, they were fairly narrow, less than 1.0m wide, and fairly shallow, less than 0.5m deep. The ditches are thought to be of a similar date to, if likely to be later than, the pit alignment based upon the juxtaposition of features. However, like the boundary ditches identified in the general watching brief immediately to the west, and those features investigated by trial trench excavation (Brown 2015a-b), none of these boundaries produced clear datable evidence.



Scale 1:1000 (A4)

Archaeological features excavated at Grove Farm Fig 27



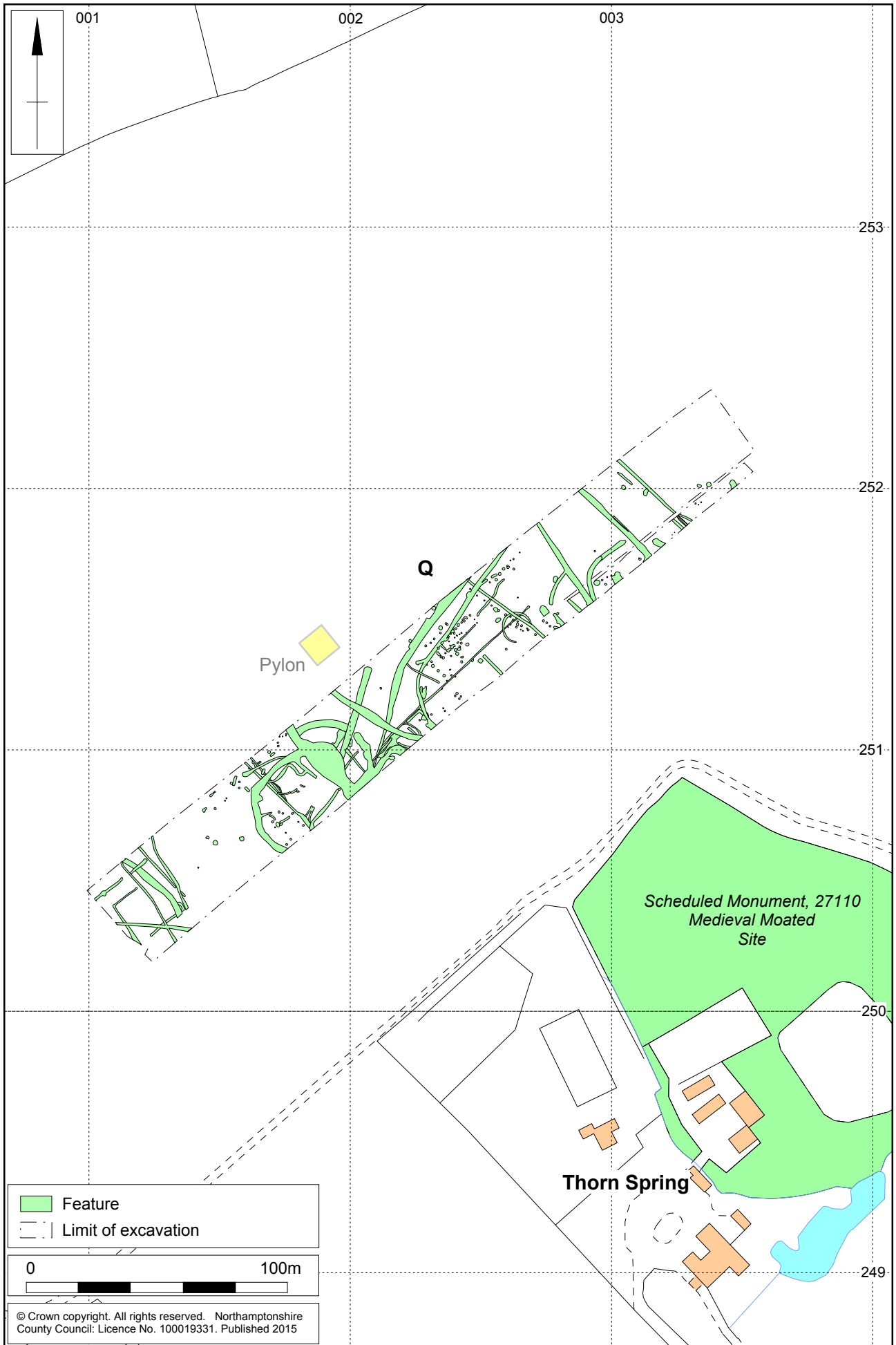
Pit alignment and boundary ditch, Grove Farm, looking north Fig 28

Q: Detailed archaeological excavations at Thorn Farm, north of Thorn Spring

The excavation was located to the north-west of a Scheduled Monument (SAM 27110), the medieval moated site, at Thorn Spring (Figs 3 and 29). The fieldwork investigated a multi-period occupation divided into two distinctly separate periods; prehistoric and late Saxon to medieval. Enclosure boundaries were investigated for both periods and the site plan has yet to be phased using spot dates, which is currently a high priority (Fig 29).

Prehistoric funerary activity

At the west end of the excavation were some very substantial ditches that formed the larger part of a sub-circular ditch, c.20m across, over 2.0-3.0m wide and cut to a depth of 1.0-1.5m (Fig 30). Several ditches extended from the sub-circular ring ditch, beyond the excavation area. There was no evidence for domestic activity, although a substantial sequence of fills may assist in determining whether there was bank material associated with these ditches. Five late Iron Age or early Roman cremations (example, Fig 31) and two inhumations (example, Fig 32) lay outside the ring ditch and the working hypothesis is that this may have been a Bronze Age barrow, which was respected by later funerary activity. Some evidence of dispersed late Iron Age activity was also identified to the east of the excavated area, including a roundhouse ring gully and several prehistoric pits.



Scale 1:2000 (A4)

Archaeological features excavated at Thorn Farm, north of Thorn Spring Fig 29



Prehistoric ditches, Thorn Farm, looking east Fig 30



Cremation burial 1, Thorn Farm, looking north-west Fig 31



Inhumation burial 2, Thorn Farm, looking north-west Fig 32



Timber-framed building, Thorn Farm, looking west Fig 33

A late Saxon building and medieval enclosures

At the east end of the excavation were pits, postholes and beam slots for a timber-framed building that is likely to be of late Saxon date (Fig 33). The building represents settlement to the north of Thorn Spring that predates several ditches of 12th-century date, which probably connect with the moated manor site and which form the boundaries for enclosures on its north side. It is thought likely that artefact studies will show continuity in settlement between the late Saxon building and the 12th-century Norman filling of the boundary ditches to the north of the moated site.

R: Bridge recording at M1 Junction 11a

Historic building recording of the two M1 motorway overbridges near Chalton is planned for September 2015, prior to their demolition. The work will be undertaken in accordance with English Heritage Level 2 Building Recording standards (EH 2006). A preliminary site visit was conducted in June 2015 to examine the photographic angles of the structures and to record general images of the bridges before any scaffolding is raised, which may cause a visual obstruction (Fig 34). Detailed recording will be undertaken on the next visit to examine the fabric, fittings and repairs of the bridges, and to obtain close up images from the below the parapets, when full traffic management has been installed along the hard shoulder.



Houghton overbridge, M1 motorway, looking east Fig 34

3.2 Quantification of the site archive

The archive of materials prior to assessment comprises the following, listed in Table 3:

Table 3: Quantification of records, samples and finds by site code

Archive	Records							Boxes of bulk finds						Individual registered finds			
	Plans	Sections	Contexts	Photos	Levels	Samples	Pottery	CBM	Stone	Animal bone	Cremated bone	Human bone	Misc.	Flint	Copper	Iron	Other
A	7	37	166	247	178	-	-	-	-	-	-	-	1	29	-	-	-
B	-	-	-	152	-	-	-	-	-	-	-	-	1	-	-	-	-
C	6	12	53	57	12	3	-	-	-	-	-	-	1	-	-	-	-
D	3	56	252	141	59	7	2	-	-	2	-	-	-	7	-	3	4
E	6	3	30	129	84	-	-	-	-	-	-	-	1	3	4	9	-
F	81	335	1264	857	476	74	5	3	1	6	10	3	-	1	11	48	16
G	9	433	1545	557	408	35	11	-	1	18	-	-	-	34	-	6	7
H	64	274	810	530	302	68	6	1	-	10	17	10	-	8	15	36	2
J	9	13	53	29	13	4	-	-	-	-	-	-	1	-	1	-	-
K	9	37	154	108	30	8	-	-	-	-	-	-	1	-	-	-	4
L	1	7	20	20	7	-	-	-	-	1	-	-	1	-	-	-	-
M	3	65	198	128	47	7	-	-	-	-	-	-	1	-	-	-	-
N	-	4	15	32	-	-	-	-	-	-	-	-	1	-	-	-	-
P	9	99	397	141	84	7	-	-	-	-	-	-	1	11	-	1	-
Q	22	324	1217	362	391	90	10	-	1	7	5	2	-	6	4	27	3
R	-	-	-	17	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	229	1699	6174	3507	2091	306	34	4	2	44	32	15	10	99	35	130	36

All environmental samples were retrieved as bulk soil samples, there are no specialist samples for pollen or molluscs.

This quantification is prior to sorting and cataloguing, whereupon finds will be distributed between boxes by weight according to museum accession requirements and standard professional practises. Similarly, following assessment, not all the flots and resultant residues from soil samples will be retained. Some material will be disposed of once it has been examined, such as natural flint, burnt stone or contaminated samples; whilst other material, such as selected charred material, will be consumed through scientific analysis.

The archive has been offered to Luton Cultural Services who have agreed to accept the archive upon completion of the project (Accession no: LTNMG 1093). The archive will be retained at the Northampton MOLA office until the conclusion of the work. OASIS forms will be completed for the project upon the issue of each report as part of the report procedure and each report will be submitted to the Archaeological Data Service (ADS). There is no requirement for the archive to be digitised. A microfilm copy of the site archive and narrative will be made to RCHME standards and submitted to the National Archaeological Record. The archive will be prepared according to professional standards and guidelines, together with the specific requirements for Luton Culture (Walker 1990; MGC 1992; SMA 1993; Watkinson and Neal 2001; Duncan 2011; ClfA 2014e-f; LC 2013).

The archive will comprise all written, drawn and photographic records, and all material finds and processed sample residues recovered from the excavation. The site archive will be accompanied by the research archive, which will comprise the text, tabulated data, the original drawings and all other records generated in the analysis of the site archive. The archive will be fully catalogued and prepared for deposition. Any material requiring special curation will be handled under the recognised guidelines (Watkinson and Neal 2001).

Luton Culture is currently closed for refurbishment and does not expect to open before July 2017.

4 RESOURCES AND TIMETABLE

4.1 Programme of work

The final target deadline is to have a published academic report available for the opening ceremony in spring 2017; this is expected to fall around March 2017. To achieve this, the following milestones need to be met:

- Completion of all fieldwork by the end of October 2015.
- Completion of all specialist assessments by the end of January 2016.
- Delivery of the Updated Project Design and Assessment report by May 2016.
- Completion of any further analysis by the end of August 2016.
- Delivery of a draft academic report by the end of November 2016.
- Submit final proofs to printers by end of February 2017.

Please note that MOLA cannot control the publication timetable of external bodies, should the final point of publication be in a form other than a MOLA company monograph.

Table 4: Timetable

Task list	2015						2016						2017													
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<i>Fieldwork</i>																										
Completion of fieldwork (Major works)																										
Completion of fieldwork (Chalton Cross Farm)																										
Completion of fieldwork (Longmeadow Farm)																										
Completion of fieldwork (Bridge Surveys)																										
<i>Processing</i>																										
Consolidation of archives																										
Draft project framework																										
Finds washing																										
Finds marking																										
Box contexts indexes and cataloguing																										
Environmental samples sieved and dried																										
Environmental flots indexed and catalogued																										
Final quantification of materials																										
<i>Updated Project Design (UPD)</i>																										
Draft report framework																										
Establish anticipated site phases																										
Digitise site plans and locate finds/samples																										
Preparation of any other specialist information																										
Pottery and other datable finds assessments																										
Apply spot dates to finalise phase plans																										
Finalise stratigraphic relationships																										
Update specialist information																										
Draft site plan illustrations																										
All other finds assessments reliant on relative dating																										
Animal bone and environmental assessments																										
Human bone analysis and assessments																										
Draft narrative texts																										
Draft narrative illustrations																										
Integrate assessment results with narrative texts																										
Finalise illustrations																										
Review project objectives and requirements																										
Produce summary of potential and discussion																										
Check through draft and submit to copyeditor																										
Copyediting																										
Proof reading																										
Issue draft UPD to AECOM for comment																										
Receive comments and edit accordingly																										
Issue final UPD for CBC and client																										

A5-M1 LINK ROAD, DUNSTABLE

Task list	2015						2016						2017												
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<i>Academic report</i>																									
Receive response and intruction to proceed																									
Examine recommendations for further work																									
Select artefacts and samples for further analysis																									
Provide any additional specialist information																									
Further analysis where required																									
Draft further narrative detail																									
Draft further narrative illustrations																									
Integrate further analysis with narrative texts																									
Finalise illustrations																									
Produce further discussion																									
Check through draft and submit to copyeditor																									
Copyediting																									
Proof reading																									
Issue draft report to AECOM for comment																									
Receive comments and edit accordingly																									
Check through drafts and prepare typesetting																									
Submit to MOLA London as publisher																									
Undertake MOLA London editing process																									
Check proofs & submit for printing																									
Publish academic report																									
<i>Archive deposition</i>																									
Receive response and intruction to proceed																									
Assess archive for submission to Luton Culture																									
Consolidate and prepare to museum standards																									
Submit for microfilming and digitising																									
Deposit archive with Luton Culture (closed until July 2017)																									

4.2 Key personnel

All staff are adequately qualified to undertake the tasks allotted to them and many have been established specialists for some years with an extensive track record of written and published material. Other project staff will be appointed as appropriate and specialist analysis will be undertaken by period and artefact specialists regularly used by MOLA Northampton. Most specialists will be drawn from the following pool:

Table 5: Personnel

Name	Specialism
<i>MOLA Northampton specialists</i>	
Andy Chapman	Prehistoric pottery and artefact specialist, also querns, industrial metalworking debris and medieval game counters Senior Project Manager
Tora Hylton	Roman, medieval and post-medieval finds Finds Manager
Yvonne Wolframm-Murray	Prehistoric flint and stone tools Project Supervisor
Pat Chapman	Building materials Post-excavation Supervisor
Rebecca Gordon	Faunal remains Post-excavation Supervisor
<i>MOLA London specialists</i>	
Charlotte Burn	Roman, medieval and post-medieval pottery and other finds
Beth Richardson	
Amy Thorp	
Fiona Seeley	
Nigel Jeffries	
Jacqui Pearce	
Rupert Featherby	
Lyn Blackmore	
Michael Marshall	
Angela Wardle	
Michael Henderson	Human remains
Mary Ruddy	
Don Walker	
Alan Pipe	Faunal remains and molluscs
Karen Stewart	Seeds, plant macrofossils, charcoal and wood
Graham Spurr	Geoarchaeology
<i>External specialists</i>	
Jackie Wells	Bedfordshire ceramics (all periods) Albion Archaeology
Paul Blinkhorn	Saxon, medieval and post-medieval pottery Independent
Philip Armitage	Faunal remains Independent
Val Fryer	Seeds and plant macro-fossils Independent
Imogen Poole	Charcoal Independent
Dana Challinor	Charcoal Independent
Steve Critchley	Geology Independent

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