

**N5 Longford Bypass
Stage 1 Test Trenching**

An Archaeological Assessment Report

for

Longford County Council

08E0861

Graham Hull

TVAS Ireland Ltd

J08/33

28th January 2009

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Summary

Site name: N5 Longford Bypass. Stage 1 Test Trenching

Townlands: Ballyminion, Aghareagh, Mullagh, Cartrons, Moneylagan, Aghadegnan

Parishes: Ballymacormick, Templemichael, Clongesh

Barony: Ardagh, Longford

County: Longford

NGR: Between 211600 274991 and 212790 277258

OS 6" Sheet No: Co. Longford, Sheet 13

Client: Longford County Council, Great Water Street, Longford, Co. Longford

Naturally occurring geology: Glacial tills with occasional limestone bedrock outcrops. Peats and riverine silts.

TVAS Ireland Job No: J08/33

Licence No: 08E0861

Licence holder: Graham Hull

Report author: Graham Hull

Site activity: Test trenching

Date of fieldwork: 21st October to 7th November 2008

Date of report: 28th January 2009

Summary of results: Centreline with offset test trenching examined 13016.08 linear metres at 2.0m wide (equivalent to 26032.16m²). The total area of the road CPO is 211,320m². The total examined sample percentage was therefore 12.3%.

Four archaeological sites were discovered. These sites are:, an iron smelting furnace and associated pit, a medieval/post-medieval inhumation cemetery, a feature with *in situ* burning and a cluster of three burnt stone deposits. A modern brick-making kiln and a modern pit were also found. In addition, a piece of struck and fire heated flint and a dump of post-medieval pottery were recovered.

Location and reference of archive: The primary records (written, drawn and photographic) are currently held by TVAS Ireland Ltd, Ahish, Ballinruan, Crusheen, Co. Clare.

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An Archaeological Assessment Report

Graham Hull

Report J08/33a

Introduction

This report documents and assesses the results of archaeological test trenching on the route of the proposed N5 Longford Bypass, Co. Longford (Fig. 1). The testing described here forms part of the Stage 1 Archaeological Works Contract.

The National Monuments Act 1930 (as amended) provides the legislative framework within which archaeological excavation can take place and the following government publications set out many of the procedures relating to planning/development and archaeology:

Framework and Principles for the Protection of the Archaeological Heritage (DAHGI 1999a)

Policy and Guidelines on Archaeological Excavation (DAHGI 1999b)

Code of Practice between the National Roads Authority and the Minister for Arts, Heritage, Gaeltacht and the Islands (NRA/MAHGI 2001)

Project background

Longford town is located approximately 125km west of Dublin and is situated on the southern bank of the River Camlin, Co. Longford. Longford town is a sub-regional centre through which the main Dublin to Sligo road (N4) and the Dublin to Westport road (N5) passes. The aim of the proposed bypass is to connect the N5 to the N4. The proposed bypass will travel through the townlands of Ballyminion, Mullagh, Cartrons, Moneylagan and Aghadegnan to the north-west of Longford town. The bypass will have a length of approximately 2.5km and a maximum width of approximately 65m.

The archaeological excavation and post excavation work were funded by the National Roads Authority through Longford County Council.

Location, topography and geology

Archaeological test trenching was carried out on the route of the proposed N5 Longford Bypass between NGR 211600 274991 and 212790 277258 (Figs 2 and 3). The testing took place in six townlands, listed in Table 1.

Table 1: Townland details

Townland (listed north to south)	Parish	Barony	Field Nos.
Aghadegnan	Templemichael	Longford	1, 2, 3, 4
Moneylagan	Clongesh	Longford	5, 6, 7, 8, 9
Cartrons (Longford)	Clongesh	Longford	10, 11, 12, 13, 14, 15, 16, 17
Mullagh	Templemichael	Longford	18, 19, 20, 21, 22, 24
Aghareagh (Longford By)	Templemichael	Longford	23, 26
Ballyminion	Ballymacormick	Ardagh	25

The proposed bypass is located within two distinct landscape types. The southern part is characterised by undulating pasture, with small areas of marshy ground, with the most dominant landscape feature being that of the hill within the townland of Mullagh. Excellent views of the surrounding landscape and Longford town can be gained from the summit of this hill. The northern half of the study area is formed by a more level landscape that is characterised by drained bog land that has been converted to pasture but remains rough and marginal in places.

The proposed route will travel across a landscape that is dominated by Carboniferous formations. The southern roundabout will be located in a Courceyan area dominated by limestone and calcareous sandstone. To the immediate east of this roundabout there is a band of Basal Clastics, which are dominated by sandstone, siltstone and conglomerate. Between the southern roundabout and the River Camlin, Argillaceous limestones dominate, which include dark limestone, shale and chert. The remaining geology that the route passes through is formed by undifferentiated limestone (Morris et al 2003).

Archaeological and historical background

The proposed route does not impact on any previously recorded archaeological sites (listed on the Record of Monuments and Places (RMP)) or protected structures.

The field inspection for the Environmental Impact Report (archaeological component- Bailey 2005) revealed several potential archaeological sites that were thought may be impacted on by the proposed route. These Areas of Archaeological Potential (AAPs) were two possible *fulacht fia* sites (AAP1 and 6), two river crossings (AAP2 and 5), a short section of denuded trackway (AAP3), which is not marked on any editions of the OS maps, a possible ring ditch (AAP7), the possible remains of a demolished building (AAP9), which is marked on the first edition OS map and the site of a brick yard (AAP10). The field inspection also revealed areas, which although did not display any obvious archaeological remains above ground, have potential to contain previously unidentified archaeological deposits. These areas were the high ground to the south-east of Mullagh House (AAP4) and an area of level bog and improved bog (AAP8).

All AAPs were tested and, bar those areas where archaeology was found and described below, no further work is required

Objectives and Methodology

The aims of the Stage 1 testing are summarised below:

- 1) Identify archaeological features and deposits
- 2) Characterise the nature, extent and significance of any such deposits
- 3) Identify large sites or site complexes that would cause serious delay if discovered at construction stage
- 4) Assess the archaeological risk of the road scheme
- 5) Produce a high quality testing report of the results

Stage 1 consisted of test excavations by machine at locations shown on Figures 2 and 3.

A detailed methodology for this test trenching was prepared by the NRA Project Archaeologist and this document formed the agreed basis of the archaeological fieldwork.

An archaeological licence to undertake test trenching was applied for and granted by the National Monuments Service of the Department of the Environment, Heritage and Local Government to Graham Hull. The licence number is 08E0861.

In essence, the trial trenching consisted of a mechanically excavated centreline test trench, 2.0m wide and located along the new road's median line. Offset trenches, also 2.0m wide, were dug at typically 15m intervals and were staggered on each side. This 'herringbone' pattern was not followed slavishly but was modified to maximise assessment potential according to in-the-field conditions. Centreline with offset test trenching examined 13016.08 linear metres at 2.0m wide (equivalent to 26032.16m²). The total area of the road CPO is 211,320m². The examined sample percentage was therefore 12.3%. This proportion sits well with simulation modelling, based on empirical studies of archaeological testing (Hey et al 2000). This modelling has shown that the optimum sample fraction for the most commonly encountered conditions is in the order of 4-5%; beyond this the information gain suffers from sharply diminishing returns, while smaller fractions offer low probabilities for intercepting many potential sites. Higher sample fractions can be justified in exceptional circumstances (Orton 2000).

Where archaeological deposits were present, or thought to be present, the interval between the offset trenches was reduced to 10m or less. Some open areas were exposed around significant archaeological deposits to better quantify and qualify the archaeological material.

Where archaeological, or potential archaeological, deposits were encountered, examination and assessment followed the detailed methodology for this project as agreed with the Project Archaeologist. Specific evaluation strategies are described at field level within the body of this report. However, as a general principal, mechanical stripping of topsoil and homogenous non-archaeological overburden was carried out under direct and continuous archaeological supervision. Archaeological and potential archaeological deposits were examined with hand tools.

The trial trenches were excavated by three tracked 13.5 and 20 tonne machines fitted with 7-foot (2.0m) toothless grading buckets. The machines were operated under direct and continuous archaeological supervision. When it became apparent that archaeological deposits were present, appropriate hand tools were used to clean and investigate the deposits. The excavated spoil was systematically visually scanned for artefacts.

The archaeological team consisted of one licensed director, one supervisor and three assistants. The licensed director was Graham Hull, the supervisor was Joe McCooey and the assistants were Kris Kacprzak, Iwona Sliwka and Kamila Sliwka.

A written, drawn and photographic record was made following procedures outlined in the TVAS Ireland Field Recording Manual (First Edition 2003).

Recovered artefacts are currently stored at the offices of TVAS Ireland Ltd, Ahish, Ballinruan, Crusheen, Co. Clare and will be deposited with the National Museum of Ireland in due course.

An accessible archive of primary records, (drawn, written and photographic) will be maintained until such time as a State repository becomes available.

The fieldwork was carried out between 21st October and 7th November 2008. The weather during this period was varied, with cold dry spells interspersed with very wet conditions. It is likely that the effectiveness of the assessment was negatively affected by the conditions.

This archaeological report has been prepared in consultation with the NRA Project Archaeologist.

Results

Individual fields were assigned consecutive numbers from the north to the south of the scheme and are described and illustrated here according to this numbering system (Table 2 and Figs 2 and 3). The archaeological (and potential archaeological) sites are described below after Table 2.

Table 2: Field descriptions

Field No.	Linear metres	% of CPO tested	Observations	Arch. deposits present	Illustrations
1	301.18		Dry roughish pasture. Made ground at W end of field - C21 st dumped rubble and soils. Very dark brown to black deposit of domestic refuse including window glass and C20 th china. Typically 0.4-0.6m thick. Onto clean greyish blue clay. The field surface has probably been raised at the time of construction of N4 road to the south.	No	Fig. 2. Plates 1 and 2
2	393.07		Wet and reedy field adjacent to N4 road. Overhead powerlines present. Trenches typically 0.1-0.2m deep. Scraw onto mid orangish brown sandy glacial till with frequent small stone inclusions. Dumped deposit of modern hard material (builder's rubble) mostly at N of field. At W of site considerable depth of made ground (1.8m) probably associated with construction of N4 road to the north.	No	Fig. 2. Plates 3 and 4
3	288.85		Rough pasture, wet and reedy. Overhead powerlines present. Scraw 0.2m thick. Onto orangish brown silty glacial till with occasional areas of light grey silty clay. Occasional fragments of modern pottery in scraw.	No	Fig. 2. Plate 5
4	87.07		Wet and reedy pasture. Peaty topsoil 0.6m thick onto bluish grey silty clay. Occasional fragments of modern pottery.	No	Fig. 2. Plate 6
5	264.90		Wet and reedy pasture. Scraw 0.2m at N and 0.3m at S. onto 0.4m of silty peat onto bluish grey silty clay. Occasional modern pottery fragments. At S evidence of unrectified palaeochannels. Also at S small oval stones embanking ditch.	No	Fig. 2. Plates 7 and 8
6	631.24		Poor quality reedy pasture. Overhead powerlines present. Scraw 0.2m onto silty peat (0.4m at N shallowing to nil at extreme S) onto bluish grey clay. Becoming clay with boulders at S. Palaeochannels at W. Low gravel 'drumlin' at E.	No	Fig. 2. Plates 9 and 10
7	0	0	Overhead powerlines. Field not excavated. Unremarkable corner of a rough and reedy pasture field. Undoubtedly stratigraphically identical to N part of Field 6 to the E.	No	Fig. 2
8	1674.88		Well drained pasture at N. Undulating ground inclines down to wetter and reedier vegetation at S. At N: topsoil 0.3m onto grey sandy silts. At S: scraw 0.1m onto peat 1.2m onto clean grey silt. Heavily disturbed remnants of brick making kiln located. Open area of 110.71m ² stripped back.	Yes	Fig. 2. Plates 11, 12, 13 and 14
9	433.66		Man-made very level pasture. Topsoil 0.1m thick onto peat 1.1m thick onto clean grey clay. Stone-filled drain present at S (cut during trenching and reinstated). Landowner requested lesser trenching proportion.	No	Fig. 2. Plates 15 and 16
10	324.85		Man-made very level pasture. Overhead powerlines present. Topsoil 0.1m thick onto peat 1.9m thick onto clean grey clay. Stone-filled drain present at S (cut during trenching and reinstated). Landowner requested lesser trenching proportion.	No	Fig. 2. Plates 17 and 18
11	74.34		Man-made very level pasture. Overhead powerlines present. Topsoil 0.1m onto peat 0.7m onto clean grey clay.	No	Fig. 2. Plate 19
12	0	0	Small corner of field. Not tested. Likely to be stratigraphically identical to Field 13 to SE.	No	Fig. 2
13	509.82		Very wet reedy pasture. Overhead powerlines. Scraw 0.1m onto peat 1.4m (1.9m at SE) onto clean grey silty clay.	No	Fig. 2. Plates 20 and 21
14	427.29		Very wet reedy pasture. Overhead powerlines. Scraw 0.1m onto peat 0.7m onto clean grey silty clay with boulders.	No	Fig. 2. Plate 22
15	194.09		Rough and reedy pasture. Overhead powerlines. Scraw 0.1m onto peat 0.2m at N to 0.7m at S. Onto grey silty clay.	No	Fig. 2. Plate 23

Table 2: Field descriptions continued

Field No.	Linear metres	% of CPO tested	Observations	Arch. deposits present	Illustrations
16	902.52		Rough pasture. N side: rushy scraw 0.2m onto peat and landfill 0.6m onto clean grey clay. S side: rushy scraw 0.2m onto peat and landfill 0.4m thick onto clean grey clay. Mound of higher ground adjacent to railway line at W is C20 th landfill – imported soil and builder's rubble.	No	Fig. 2. Plates 24, 25 and 26
17	1206.24		Well drained pasture on gently undulating S facing slope. Becomes wetter at S towards Camlin River. Topsoil 0.2m onto plough/subsoil 0.2m onto orangish brown glacial till (gravelly clay). Subsoil thinnest at higher ridge in centre of field. Single piece of struck and burnt flint in topsoil.	Yes	Fig. 3. Plates 27 and 28
18	435.16		Poorly drained pasture adjacent to Camlin River. Topsoil 0.1m onto subsoil/ploughsoil (0.2m at S to 0.8m at N) onto greyish brown gravelly riverine silt at N and clayier glacial till at S. Occasional patches of sand. Occasional stone-filled and ceramic drains.	No	Fig. 3. Plates 29 and 30
19	1202.89		Ploughed, well-drained fields with maize cropped in late October 2008. Field inclines downwards from S to N. Topsoil 0.1-0.2m onto ploughsoil/subsoil 0.1-0.2m thick (at extreme N subsoil is 0.4m thick – colluvium) onto mid orangish brown clayey glacial till with occasional gravelly patches. Occasional to frequent stone-filled drains and plough scars. Iron smelting furnace at or near high point on N facing ridge.	Yes	Figs 3, 4 and 7. Plates 31, 32, 33, 34, 35 and 36
20	672.88		Well-drained pasture. Field inclines gently downward from S to N. Topsoil 0.1-0.15m onto ploughsoil/subsoil 0.25-0.35m onto mid orangish brown clayey glacial till with occasional gravelly patches.	No	Fig. 3. Plates 37 and 38
21	1309.42		Ploughed, well-drained field with maize cropped in late October 2008. Field rises from N to E-W ridge then inclines gently to S. Topsoil 0.1m onto ploughsoil/subsoil 0.2-0.3m onto mid orangish brown clayey glacial till with occasional patches of gravel. Grey silts in places at N and becomes more gravelly at S. Frequent C19/20 th pottery in top/plough soils. Plough scars occasionally evident in natural geology. Inhumation cemetery at NW part of field on dry ridge. Pit with <i>in situ</i> burning at SE.	Yes	Figs 3, 5 and 7. Plates 39, 40, 41, 42, 43, 44, 45 and 46
22	417.04		Pasture. Field inclines gently down from N to S. Overhead powerlines. Topsoil 0.15m onto ploughsoil/subsoil (N: 0.4m, S: 0.3m) onto mixed hue (orangish brown/grey/yellowish brown) glacial till. Frequently sandy and frequently gravelly. <i>In situ</i> burning feature. Dump of post-medieval pottery in subsoil.	Yes	Figs 3 and 6. Plates 47, 48, 49, 50, 51 and 52
23	958.74		Pasture. Domestic services at S. Topsoil 0.15m onto ploughsoil/subsoil 0.15m onto mid orangish brown glacial till (clay but frequent gravel). Frequent C19 th /20 th plough scars.	No	Fig. 3. Plates 53 and 54
24	99.56		Reedy pasture. Topsoil/scraw 0.15m onto grey and orangish brown gravelly silts.	No	Fig. 3. Plates 55 and 56
25	68.63		Made ground including plastics and concrete blocks 1.1m thick. Probably from construction of N5 road to immediate S. Onto grey riverine gravels.	No	Fig. 3. Plates 57 and 58
26	137.76		Poorly drained reedy field adjacent to tributary stream of Camlin River. Scraw typically 0.2m thick but deepening to 0.4m at S over light grey coarse gravels and sands. Three deposits of burnt stone and probably timber-lined trough. Trenches immediately filled with water.	Yes	Fig 3. Plates 59, 60, 61 and 62

Archaeological deposits and finds

Archaeological deposits and finds were found at eight locations on the route of the proposed N5 Longford Bypass and are described below. See also Appendix 1.

Field 8

The heavily disturbed remnants of a brick making kiln were found in Moneylagan townland, centred on NGR 212451 276818 (chainage 2090) (Fig. 2 and Plate 14). The plough-damaged parallel lines of brick and charcoal were observed on the surface of the naturally deposited clay beneath approximately 0.15-0.20m of topsoil/scraw. An open area of 110.71m² was stripped back around the brick deposits to reveal the full extent. The brick-rich deposits measure approximately 24m (south-west to north-east) by 13m and are one brick thick (approximately 0.08m).

The archaeological component of the Environmental Impact Report (Bailey 2005) noted the presence of brick yards close to the road-take at chainages 2360 and 2350 on the 1838 Ordnance Survey map. These sites are a few hundred metres to the north of the site discovered by archaeological testing. AAP9 corresponds with the brick-making kiln.

Brick kilns (or clamps) are a relatively common feature of the later 18th and 19th century landscape, especially given the presence of fine clay and rapidly growing towns. The example found here to the west of Longford is undoubtedly of late 18th or earlier 19th century date.

Field 17

A single piece of struck and burnt flint was found in Cartrons (Longford) townland from the topsoil at NGR 211895 276008 (chainage 1100) (Fig. 3 and Plate 28). The piece measures 35mm by 30mm by 15mm and weighs 14 grammes.

Field 19

Two features were identified near the high point of the road-take in Mullagh townland at NGR 211602 975608 (chainage 610) (Figs 3, 4 and 7 and Plates 33-36).

Feature 1 is oval in plan and measures 1.30m (south-west to north-east) by 0.64m. The feature was not fully excavated but is likely to be in excess of 0.2m deep. The feature is characterised by red oxidised clay and frequent charcoal inclusions within a dark brown silty matrix (50). Iron slag and fuel ash residues suggest that the feature is an iron smelting furnace.

A piece of charcoal was recovered and has been submitted for radiocarbon dating. The charcoal has been identified as a *Quercus sp.* (oak) fragment weighing <1 gramme by Susan Lyons. A piece of this charcoal has been radiocarbon dated to the Iron Age (see below).

Feature 2 lies 0.8m to the north-west and is a circular bowl-shaped pit. The feature was half-sectioned, has a diameter of 0.62m and is 0.17m deep. Two fills were noted (51 and 52). The primary fill 51 is a 0.05m thick, friable, greyish brown silty loam with charcoal flecking and includes occasional small pebbles. The secondary fill 52 is a 0.09m thick, friable orangish brown loam with large pieces of limestone inclusions.

Given their proximity, it is very likely that Features 1 and 2 are contemporary.

The iron smelting furnace is within AAP4 identified by the archaeological component of the Environmental Impact Report (Bailey 2005).

Field 21

An inhumation cemetery was found on high ground in Mullagh townland centred on NGR 211550 275460 (chainage 450) (Fig. 3 and Plates 41-44). Once the graves were located, machining was undertaken very carefully in the vicinity and not all the burials were fully exposed. Extra trenching was excavated in order to define the limits of the cemetery. Approximately seven burials or grave cuts were identified. The burials are articulated and orientated from west (head) to east and this strongly suggests Christian ritual. Two pieces of iron that may be coffin nails or shroud pins were recognised but not retrieved at the testing stage. It was clear that some graves contained more than one individual and that infant and adult bones were present. A piece of a tibia and a tooth from different individuals were sampled and these have been submitted for radiocarbon dating.

Osteoarchaeologist Mara Tesorieri reports that the samples are:

One fragment of middle 3rd and proximal 3rd of right tibia shaft. No pathology. Distal and proximal ends are not present, however based on size the fragment belongs to a juvenile. The bone has been radiocarbon dated to the period between the earlier 16th century and the mid 17th century (see below).

One right mandibular deciduous molar. Fully formed. Minimum age for this individual is 3 years old. This tooth is usually lost around 11 years of age, however more information about the burial and where the tooth was found would be needed to give a maximum age. The tooth has been radiocarbon dated to the period between the later 15th century and the earlier 17th century (see below).

The burials had been damaged by ploughing – probably in the very recent past and lay beneath approximately 0.3m of topsoil/ploughsoil.

No evidence of an enclosing feature such as a ditch was recognised.

Given the radiocarbon dating, it is certain that the burials are medieval/post-medieval in date but unusual in that that no ecclesiastical remains are known in the immediate vicinity. Mullagh House, dating from the mid 19th century stands on the site of earlier structures and the 1656 Down Survey marks a castle at or near this location. Mullagh House is approximately 300m to the north-west of the cemetery and the two may be connected. The current owner of the now ruined Mullagh House reported that the building was used as an orphanage in the mid 19th century.

The cemetery is within AAP4 identified by the archaeological component of the Environmental Impact Report (Bailey 2005).

Field 21

A seemingly discrete feature (3) was found in the townland of Mullagh at NGR 211576 275381 (chainage 380) (Figs 3, 5 and 7 and Plates 45 and 46) on a south-facing incline. Feature 3 is oval in plan, measures 0.58m (north-west to south-east) by 0.28m and is 0.16m deep. A narrow slot was excavated across the feature. The feature fill 53 is a firm, mid orangish brown silty clay with occasional gravel inclusions. Frequent red and black oxidisation and charcoal deposits are present.

It is not known what the function of Feature 3 was, although given the relative proximity of the iron smelting furnace (Feature 1, approximately 230m to the north) a metallurgical use may not be unlikely.

Field 22

A second isolated feature (4) was found in Mullagh townland at NGR 211558 275292 (chainage 290) (Fig. 3 and 4 and Plates 49 and 50). Feature 4 has been truncated by a modern stone-filled drain at the south but was very probably circular and has a diameter of 0.7-0.8m. The feature fill 54 was a loose

mixed hue silty clay with frequent charcoal inclusions. Oxidised clay suggests *in situ* burning. A small slot excavated into Feature 4 established a depth of 0.03m.

A sample of charcoal was been taken and sent for radiocarbon dating. The charcoal has been identified as a small roundwood piece of *Betulaceae spp. cf Betula sp.* (birch), weighing 3 grammes by Susan Lyons. This piece of charcoal has been radiocarbon dated to the early modern period (see below).

Field 22

Also in Mullagh townland and at NGR 211568 275202 (chainage 200) (Fig. 3 and Plates 51 and 52), at the extreme south of the field adjacent to the boundary, a relatively dense concentration of post-medieval pottery was recovered from the ploughsoil/subsoil. This material is too much and too localized to have derived from manuring and must have arrived in the field as a deliberate dump.

The pottery is mostly glazed red earthenware but also includes Tin glazed earthenware and Black glazed ware. These wares combined indicate a 17th-19th century date. Some of the material is fine tableware and almost certainly derives from Mullagh House 500m to the north-west (see above).

Field 26

A cluster of three burnt stone deposits were found in Aghareagh (Longford By) townland centred on NGR 211527 274992 (chainage 0. South of southern roundabout) (Fig. 3 and Plates 59-62). The burnt stone deposits are in a field bounded on the north by the N5 road and on the south by a small tributary stream of the River Camlin. The field surface was reedy and it should be noted that the trenches filled with water almost instantly. The burnt stone deposits are buried by scraw typically 0.2m thick, but deepening to 0.4m at the south.

Within the lands set aside for the road-take, burnt stone deposit A measures 14m (east to west) by 5m (north to south) and is lenticular, between 0.1m and 0.4m thick. The monument is composed of fire-reddened limestone and sandstone pieces that are typically in the size range of 0.04-0.05m. A probable timber-lined trough was found a few metres to the east. Horizontal timbers were observed in a rectangular cut that measures 1m (east to west) by 0.5m (north to south – maximum extent visible in trench). The trench filled with water before the feature could be examined in more detail.

Burnt stone deposit B measures 4.3m (east to west) and is likely to be approximately 8m from north to south. The composition of burnt stone deposit B is identical to A.

Burnt stone deposit C measures 12m (east to west and extends outside the road-take to the west) by approximately 8m and is likely to be 0.1 m to 0.4m thick. The stones in this deposit were larger and in the size range of 0.15m.

These monuments are not of the same magnitude of scale as the larger, but similarly composed, *fulachtaí fia*. Burnt stone deposits lack the formal crescent shape of the *fulacht fia* but are found in similar watery locations and are often associated with troughs or pits. Rather than being thought of as ‘ploughed out’ or levelled *fulachtaí fia*, burnt stone deposits are becoming increasingly recognised as distinct monuments in their own right. Burnt stone deposits suggest similar, but less intense or less long lasting, activity than that currently postulated for the *fulacht fia* or burnt mound.

Burnt stone activity has been shown to date from the Mesolithic to the 1st Millennium AD with a distinct concentration in the Bronze Age (Brindley et al 1990).

The burnt stone deposits correspond with AAP2 as identified by the archaeological component of the Environmental Impact Report (Bailey 2005).

Radiocarbon determinations

Four samples of bone and charcoal were taken from archaeological features uncovered on the road route and sent for radiocarbon dating to Chrono14 Lab, Queen's University, Belfast and the results are shown in Table 3

Table 3: Radiocarbon determinations

Lab Code	Deposit	Site No.	Sample material	Yrs BP	Calibrated date ranges (two sigma)
UBA-10466	SK1-3	2	Tibia - human	301±19	AD 1516-1596 and 1618-1648
UBA-10467	SK6	2	Tooth - human	347±17	AD 1468-1528 and 1553-1633
UBA-10468	54	-	Charcoal - birch	112±18	AD 1685-1732, 1807-1894 and 1904-1928
UBA-10498	50	4	Charcoal - oak	2340±19	BC 409-386

The data was calibrated using Calib Rev 5.0.2 (Reimer et al 2004).

Archaeological Impact Statement and Recommended Mitigation

The test trenching identified eight areas of previously unknown archaeological activity. The proposed new road and associated works will destroy these archaeological sites.

Archaeological mitigation in this regionally significant infrastructural road scheme can be pragmatically achieved through preservation by record (archaeological excavation, reporting and publication).

It is proposed that archaeological intervention be carried out in Fields 19, 21, and 26 in the areas of the deposits recorded during the testing phase and listed in Table 4. These areas should extend beyond the immediate area of the recorded features or deposits, in order to facilitate a maximum retrieval of potentially related archaeological features. The sizes of these proposed excavation areas are included in Appendix 1 and are illustrated in Figures 2 and 3.

The sites proposed for excavation are:

- Site 1: Iron Age iron smelting furnace
- Site 2: Medieval/post-medieval inhumation cemetery
- Site 3: Undated pit
- Site 4: Probable Bronze Age burnt stone deposits

Excavation is not proposed for the brick kiln in Field 8 due to its late date or, for similar reasons, the early modern pit in Field 22. No further work is recommended in the vicinity of the find of struck flint in Field 17 or for the dump of post-medieval pottery in Field 22.

The opinions given in this archaeological assessment report are made subject to approval by the National Monuments Service of the Department of the Environment, Heritage and Local Government, the Director of the National Museum of Ireland and the NRA Project Archaeologist.

Table 4: Assessment by Field

Field No.	Proposed further archaeological work	Reason
1	No further work	No archaeology found
2	No further work	No archaeology found
3	No further work	No archaeology found
4	No further work	No archaeology found
5	No further work	No archaeology found
6	No further work	No archaeology found
7	No further work	Not tested but small and similar to adjacent fields
8	No further work	C18 th /19 th brick kiln
9	No further work	No archaeology found
10	No further work	No archaeology found
11	No further work	No archaeology found
12	No further work	Not tested but small and similar to adjacent fields
13	No further work	No archaeology found
14	No further work	No archaeology found
15	No further work	No archaeology found
16	No further work	No archaeology found
17	No further work	Prehistoric lithic found
18	No further work	No archaeology found
19	Excavation	Iron Age iron smelting furnace found. Features 1 and 2. Site 1
20	No further work	No archaeology found
21	Excavation	Medieval/post-medieval inhumation cemetery and isolated pit 3 found. Sites 2 and 3
22	No further work	Early modern Isolated feature 4 found
23	No further work	No archaeology found
24	No further work	No archaeology found
25	No further work	No archaeology found
26	Excavation	3 x burnt stone deposits found ?Bronze Age Site 4

Further Work

A summary report of the findings of this archaeological evaluation will be submitted to the editor of *Excavations 2008*.

An accessible archive of primary records will be prepared for long term storage and will be kept at the offices of TVAS (Ireland) Ltd until such time as a State archive repository becomes available.

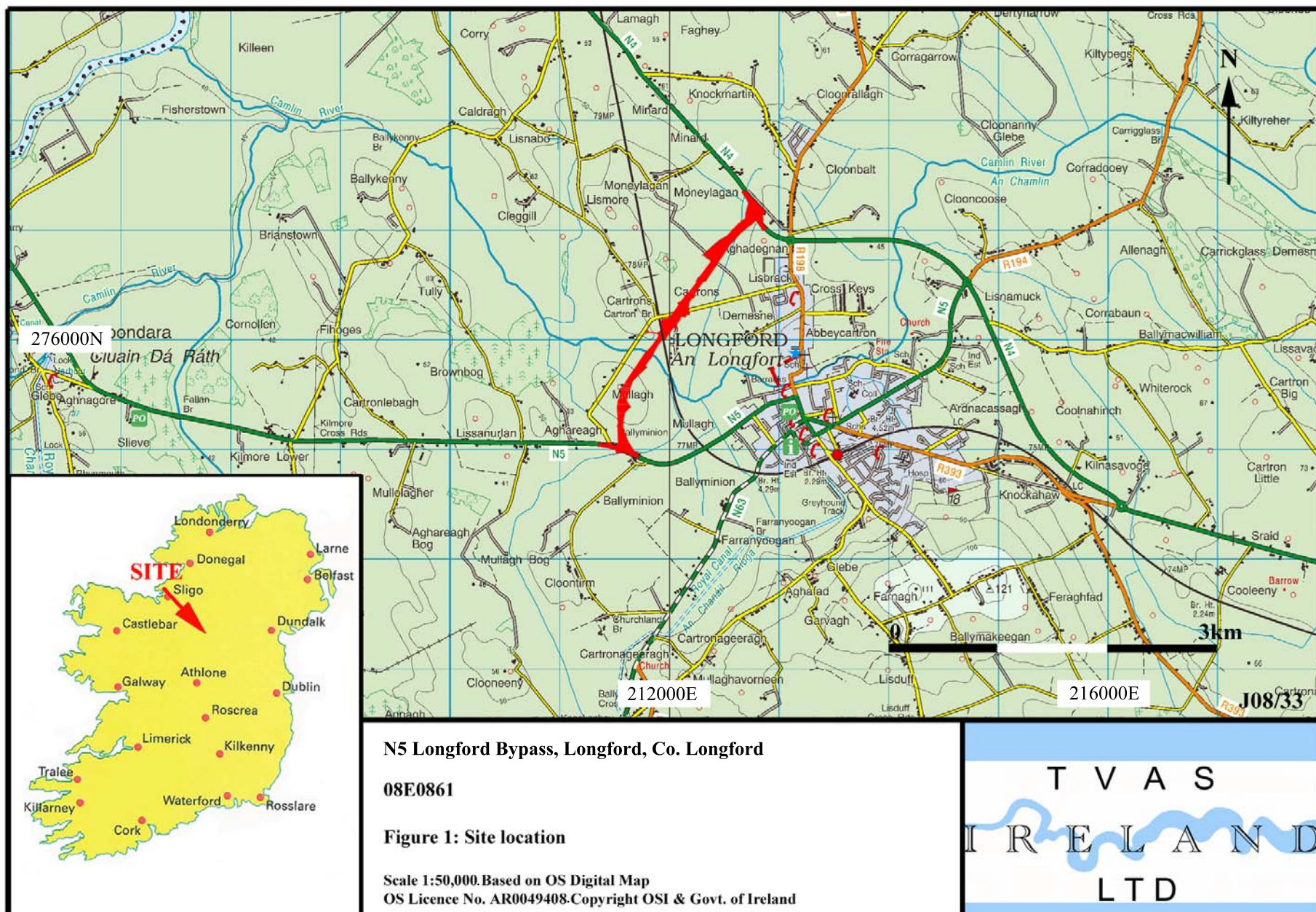
The finds have been cleaned and will be conserved (where necessary), numbered, labelled, properly packed and will be deposited with the National Museum of Ireland in accordance with *Advice Notes for Excavators* (NMI 1997).

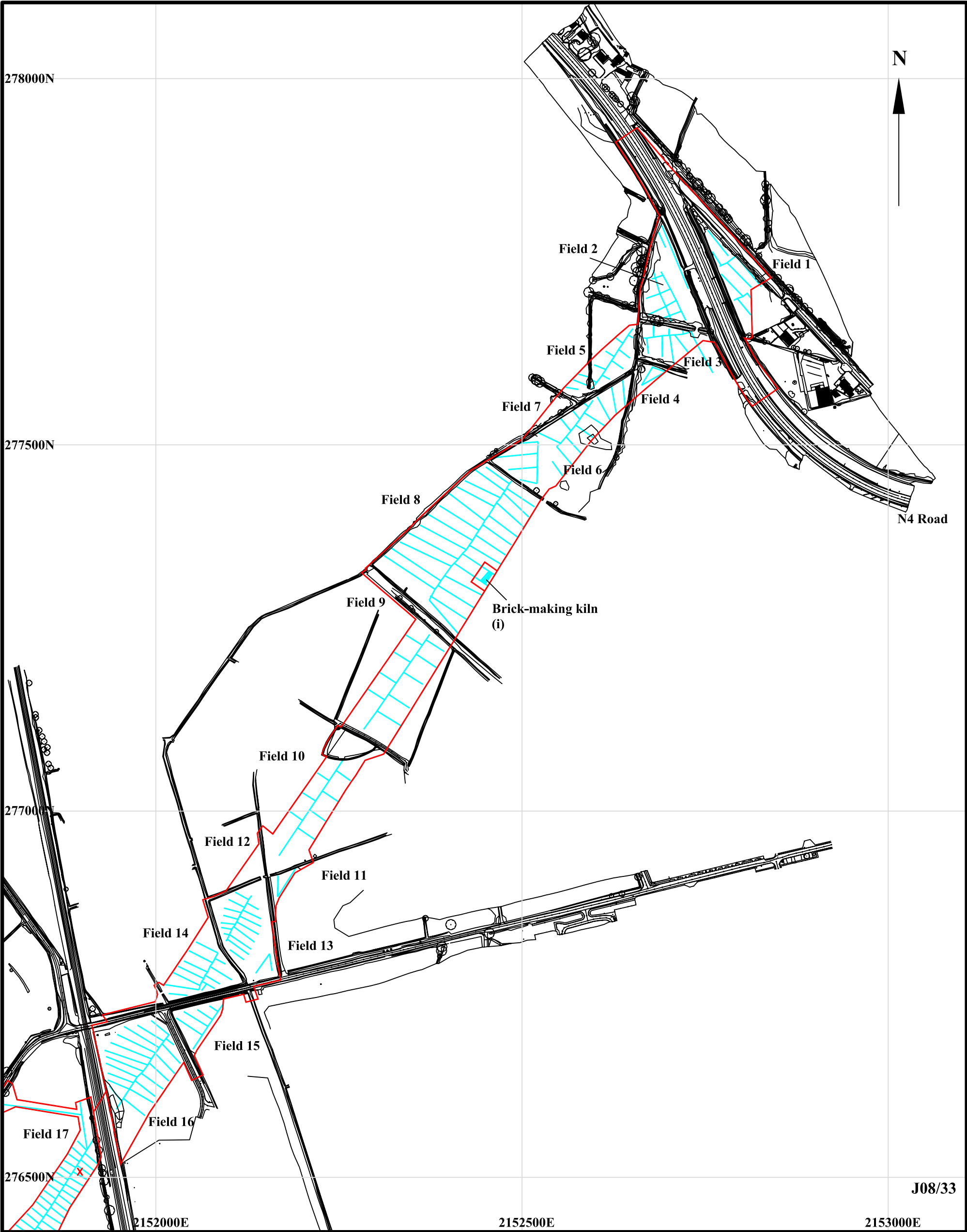
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Appendix 1: Catalogue of sites (archaeological and potential archaeological)

Number	Site type	Townland	Parish	Barony	County	NGR	Chainage	Field No.	Assessed?	Resolved?	Further fieldwork?	Further reporting?
i)	Modern brick-making kiln	Moneylagan	Clongesh	Longford	Longford	212451 276818	2090	8	Yes	No	No	No
ii)	Struck flint associated with AAP7	Cartrons (Longford)	Clongesh	Longford	Longford	211895 276008	1100	17	Yes	Yes	No	No
iii)	Iron smelting furnace Site 1	Mullagh	Templemichael	Longford	Longford	211602 975608	610	19	Yes	No	Excavation 68m ²	After resolution
iv)	Inhumation cemetery Site 2	Mullagh	Templemichael	Longford	Longford	211550 275460	450	21	Yes	No	Excavation 1174m ²	After resolution
v)	Pit Site 3	Mullagh	Templemichael	Longford	Longford	211576 275381	380	21	Yes	No	Excavation 73m ²	After resolution
vi)	Pit. Early modern	Mullagh	Templemichael	Longford	Longford	211558 275292	290	22	Yes	No	No	No
vii)	3 x burnt stone spread Site 4	Aghareagh (Longford By)	Templemichael	Longford	Longford	211527 274992	0	26	Yes	No	Excavation 1378m ²	After resolution





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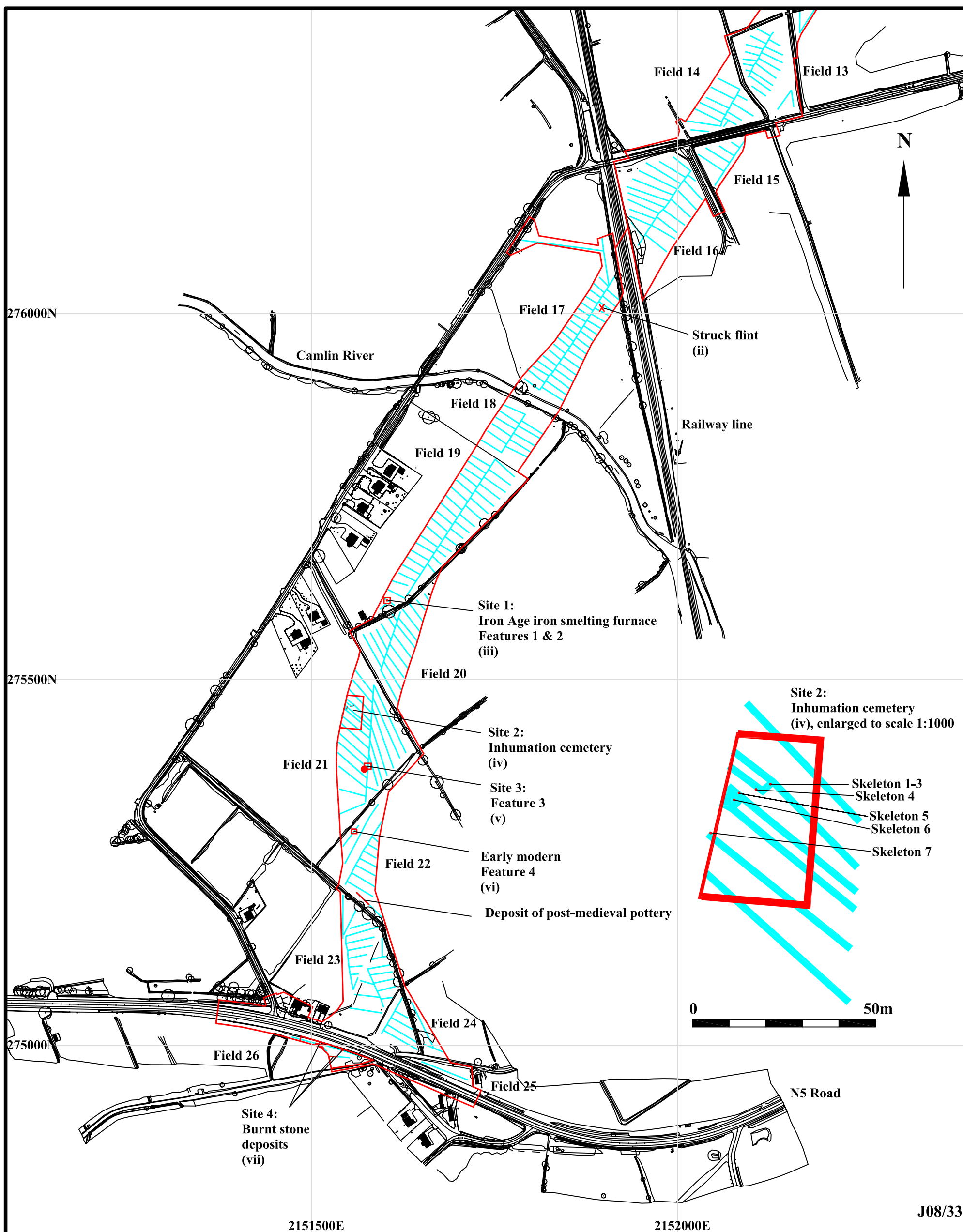
0 250m

N5 Longford Bypass, Longford, Co. Longford
08E0861

Figure 2: Test trenches (N)

Scale 1:5000
Ordnance Survey Ireland digital mapping
OSI Licence: AR0049408. Copyright OSI & Govt. of Ireland

T V A S
IRELAND
LTD



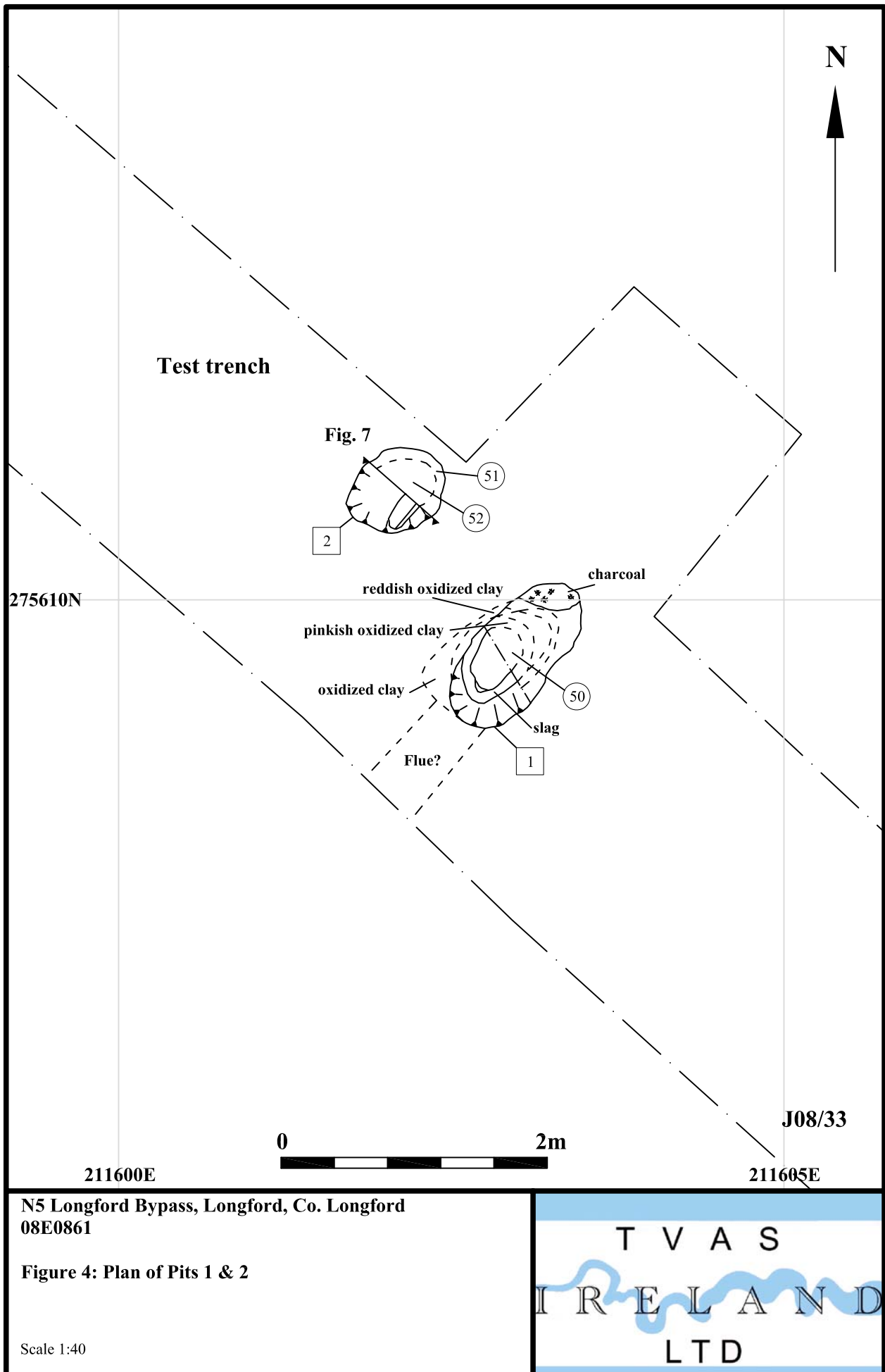
0 250m

N5 Longford Bypass, Longford, Co. Longford
08E0861

Figure 3: Test trenches (S)

Scale 1:5000
Ordnance Survey Ireland digital mapping
OSI Licence: AR0049408. Copyright OSI & Govt. of Ireland

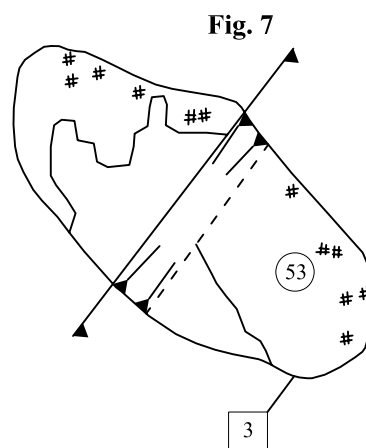
T V A S
IRELAND
LTD



275384N



Test trench



275380N



211575E

J08/33

N5 Longford Bypass, Longford, Co. Longford
08E0861

Figure 5: Plan of Pit 3

Scale 1:25

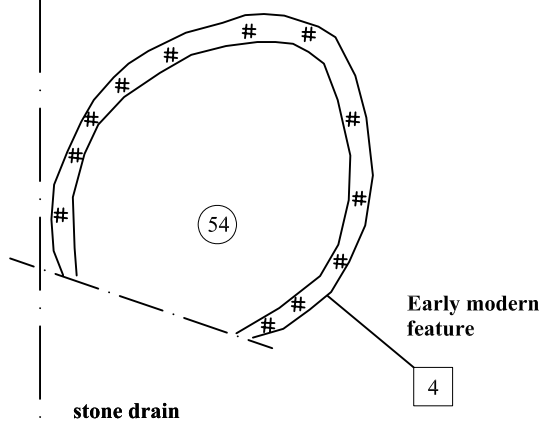
T V A S
I R E L A N D
L T D

275295N

N



Test trench



0

1m

275290N

211555E

J08/33

N5 Longford Bypass, Longford, Co. Longford
08E0861

Figure 6: Plan of Pit 4

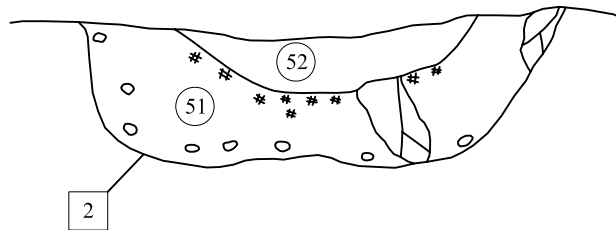
Scale 1:25

T V A S
I R E L A N D
L T D

NW

SW facing section

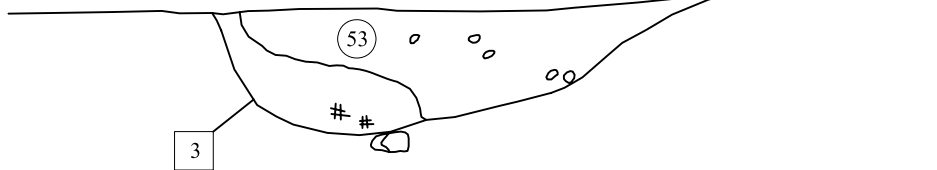
SE



SW

SE facing section

NE



0

0.5m



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Figure 7: Sections through Features 2 and 3

Scale 1:10

T V A S
I R E L A N D
L T D



Plate 1: Field 1. Looking south-east



Plate 2: Field 2. Made ground over natural geology



Plate 3: Field 2. Looking west



Plate 4: Field 2. Typical stratigraphy

08E0861



Plate 5: Field 3. Typical stratigraphy



Plate 6: Field 4



Plate 7: Field 5. Looking north



Plate 8: Field 5. Typical stratigraphy



Plate 9: Field 6. Looking south. Typical stratigraphy



Plate 10: Field 6. Boulder clay at south



Plate 11: Field 8. Looking north



Plate 12: Typical stratigraphy at north of field



Plate 13: Field 8. Typical stratigraphy at south



Plate 14: Field 8. Brick making kiln



Plate 15: Field 9. Looking south-west



Plate 16: Field 9. Typical stratigraphy



Plate 17: Field 10. Looking north-east



Plate 18: Field 10. Typical stratigraphy. Scale 2m



Plate 19: Field 11. Looking north-east. Typical stratigraphy



Plate 20: Field 13. Looking north-east. Typical stratigraphy



Plate 21: Field 13. Typical stratigraphy



Plate 22: Field 14. Looking north-west. Typical stratigraphy



Plate 23: Field 15. Typical stratigraphy. Looking south-east



Plate 24: Field 16. Looking south-east



Plate 25: Field 16. Mound of landfill adjacent to railway. Looking east



Plate 26: Field 16. Typical stratigraphy.



Plate 27: Field 17. Typical stratigraphy at north of field. Note stone-filled drains



Plate 28: Burnt and struck flint. Topsoil Field 17



Plate 29: Field 18. Looking east



Plate 30: Field 18. Typical stratigraphy



Plate 31: Field 19. Field 17 in background. Looking north



Plate 32: Field 19. Typical stratigraphy. Looking north



**Plate 33: Field 19. Feature 1 (r) and Feature 2 (l). Looking north-east.
Scale 0.3m**



**Plate 34: Field 19. Feature 1 (l) and Feature 2 (r). Looking north-west.
Scale 0.3m**



Plate 35: Field 19. Feature 1. Partially excavated. Looking north-west. Scale 0.3m



Plate 36: Field 19. Feature 2. Half sectioned. Looking north-east. Scale 0.3m



Plate 37: Field 20. Looking east



Plate 38: Field 20. Typical stratigraphy



Plate 39: Field 21. Top of field. Looking south-east



Plate 40. Field 21. Typical stratigraphy. Scale 0.3m



Plate 41: Field 21. Skeletons 1-3. Looking west. Scale 0.3m



Plate 42: Field 21. Skeletons 1-3 (detail). Looking west. Scale 0.3m



Plate 43: Field 21. Skeleton 4. Looking south. Scale 0.3m



Plate 44: Field 21. Grave cuts. Looking south-west



Plate 45: Field 21. Feature 3. Looking north-east. Scale 0.3m



Plate 46: Field 21. Feature 3 (detail). Looking north. Scale 0.3m



Plate 47: Field 22. Typical stratigraphy. Looking south



Plate 48: Field 22. Typical stratigraphy. Looking south



Plate 49: Field 22. Feature 4. Looking west. Scale 0.3m



Plate 50: Field 22. Feature 4 (detail). Looking west. Scale 0.3m



Plate 51: Field 22. Pottery from ploughsoil



Plate 52: Field 22. Pottery from ploughsoil



Plate 53: Field 23. Looking south



Plate 54: Field 23. Typical stratigraphy. Looking north



Plate 55: Field 24. Looking south



Plate 56: Field 24. Typical stratigraphy. Looking north



Plate 57: Field 25. Looking east



Plate 58: Field 25. Typical stratigraphy. Looking east



Plate 59: Field 26. Burnt stone deposit A. Looking east



Plate 60: Field 26. Burnt stone deposit A. Looking east. Scale 0.3m



Plate 61: Field 26. Burnt stone deposit B. Looking south-west. Scale 0.3m



Plate 62: Field 26. Burnt stone deposit C. Looking west. Scale 0.3m