M11 Gorey to Enniscorthy Scheme, Co. Wexford
Archaeological Consultancy Services
E4201, Scurlocksbush 1&2

(A054)

Stage (iv) Final Archaeological Excavation Report

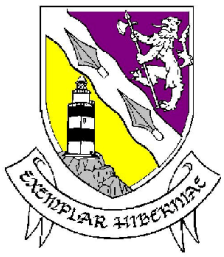
for

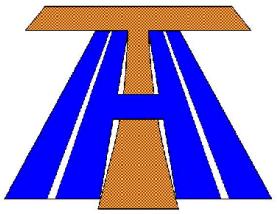
Wexford County Council

Director
Colum Hardy

Authors
Colum Hardy and Margaret McNamara
TVAS Ireland Ltd

Job J10/10





December 2012

Summary

Scheme name: M11 Gorey to Enniscorthy Scheme, Co. Wexford

Ministerial Directions reference number: A054

Site name: E4201, Scurlocksbush 1&2, Co. Wexford

Registration number: E4201

Townland: Scurlocksbush

Parish: Edermine

Barony: Ballaghkeen

County: Wexford

NGR: 299390 133761

OS 6" Sheet No: Co. Wexford Sheet 26

Chainage: 27675

Client: Wexford County Council

Naturally occurring geology: Topsoil is loose, grey silty clayey sand. Subsoil is yellow/brown and orange clayey sand glacial till

TVAS Ireland Job No: J10/10

Licence Eligible Director: Colum Hardy

Report authors: Colum Hardy and Margaret McNamara

Site activity: Excavation

Site area: 957.45 m^2

Date of fieldwork: 20th October -2nd November 2010

Date of report: December 2012

Summary of results: Two phases of activity were recorded at the site - a shallow burnt stone spread with a Late Bronze Age wood-lined trough and associated wooden stakes and a later phase of post-medieval field ditches and drains

Monuments identified: Burnt stone spread, Late Bronze Age wood-lined trough, post-medieval field ditches and drains

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

Report edited/checked by: Kate Taylor✓December 2012

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M11 Gorey to Enniscorthy Scheme
E4201, Scurlocksbush 1&2, Co. Wexford
Stage (iv) Final Archaeological Excavation Report

Colum Hardy and Margaret McNamara

Abstract

Scurlocksbush 1&2, E4201, was located on the proposed M11 Gorey to Enniscorthy scheme, Co. Wexford (NGR 299390 133761). The site was revealed during test trenching in 2010 and was excavated under the direction of Colum Hardy of TVAS (Ireland) Ltd in October and November 2010. The site encompassed an area of 957.45 m^2 and was situated in a field of pasture. The excavation revealed a disturbed burnt stone spread with an associated plank-lined trough and later post-medieval field ditches and drains, one of which truncated the trough. Waterlogged hazel from a stake in the trough lining was dated to the Late Bronze Age. Analysis of the charred plant showed that hazel, willow/poplar and alder were the preferred fuels for the fires that heated the stones. The archaeological deposits were fully excavated within the bounds of the site, however they continued beyond the limits of the CPO to the east and also continued beyond the limits of the site within the CPO to the south into an area where a drain and roadway had probably destroyed further features. Several drains and ditches also continue outside the CPO. The excavated area was backfilled and reinstated.

Introduction

This report documents the final results of the archaeological excavation of a burnt stone spread, Late Bronze Age wood-lined trough and later post-medieval field ditches and drains at Scurlocksbush 1&2 (E4201), on the route of the M11 Gorey to Enniscorthy Scheme, Co. Wexford (NGR 299390 133761) (Fig. 1). The excavation described here forms part of the M11 Gorey to Enniscorthy Scheme Archaeological Consultancy Services Contract.

A preliminary report on the excavation was produced in January 2012 (Hardy 2012).

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 2000)

The archaeological work was carried out following Ministerial Direction given under the National Monuments (Amendment) Act 2004.

Project background

The excavation was carried out on the route of the proposed M11 Gorey to Enniscorthy Scheme. The total length of the route is 40 km and comprises the construction of three new sections of road: M11/N11 mainline, N80 link road and N30 mainline.

The development includes the realignment of the N11 south of Gorey from Clogh, which is located approximately 19 km north-east of Enniscorthy, to Scurlocksbush approximately 7 km south of Enniscorthy. The realigned route will comprise the provision of approximately 26 km of M11 mainline with a standard dual motorway carriageway type along with approximately 1 km of N11 mainline with standard single carriageway type. The proposed M11/N11 mainline will be located to the east of the existing N11 and will bypass Camolin, Ferns and Enniscorthy. It is also proposed to provide approximately 8 km of a single carriageway to bypass Enniscorthy to the west. This bypass will connect to the existing N11 and existing N80 in Clavass to the north and to the existing N30 in Templescoby to the south. Approximately 4 km of a dual carriageway link road will connect the existing N11/N80 junction north of Enniscorthy in Ballynahallin at its eastern end to the M11 mainline in Ballydawmore to the west.

The archaeological work included assessment of sites previously recognised and prospection for sites without surface expression by means of mechanical test trenching. A number of archaeological sites were confirmed or recognised during this testing. As preservation *in situ* was not a feasible option, the resolution strategy for these sites was preservation by record, i.e. full archaeological excavation.

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

The archaeological work has taken place under Ministerial Directions scheme reference number A054.

Location, topography and geology

Archaeological site E4201 was located at NGR 299390 133761 in Scurlocksbush townland, parish of Edermine, barony of Ballaghkeen, Co. Wexford (Figs 1 and 2).

The route of the proposed M11 Gorey to Enniscorthy mainline connects with the existing N11 in Clogh to the north, continues southwards to a proposed junction at Frankfort and then bears south-west climbing through elevated land on the lower slopes of Carrigroe Hill. From the elevated land along the base of Carrigroe Hill there are long distant views over the wider lowland landscape below and long distant views east to the Blackstairs Mountains. West of Carrigroe Hill, the M11 mainline descends through sloping land. South-west of Carrigroe Hill the M11 mainline continues along the bottom of a local valley to Crane and then continues further south-west to the proposed Ballydawmore junction. From Ballydawmore the M11 mainline passes through gently sloping to undulating landscape with a combination of woodland and sloping valley topography. The M11 mainline emerges from the undulating landscape at Tomnafunshoge, from where it passes generally flat land towards Cooladine. South of Cooladine the landform rises towards Knockrathkyle from where it then slopes and sweeps across wide open arable fields to Glenteige. The combination of large scale open arable fields and elevation gives the landscape a vast open feeling, accentuated by long distant views to higher ground to the south and east of County Wexford and more locally, towards Vinegar Hill to the east of Enniscorthy. South of Glenteige the M11/N11 mainline passes though strongly undulating lowland to where it reconnects with the existing N11 at the proposed Scurlocksbush roundabout.

Scurlocksbush townland lies at the extreme southern end of the proposed road scheme, south of Enniscorthy town. Scurlocksbush 1&2 (E4201) was located in a field of pasture which slopes steeply down to the north-west and gently to the south-west. The investigated area was confined to the south-west part of the field. The townland boundary between Scurlocksbush and Garrynisk is located along the western boundary of the field.

Archaeological and historical background

A search of documentary and cartographic sources was made. Information was gathered from, amongst other sources, the Sites and Monuments Record (SMR), Record of Monuments and Places (RMP) files, The National Monument Service website www.archaeology.ie, the *Excavations* database and publications (www.excavations.ie and Bennett 1987-2008) and from the Architectural, Archaeological and Cultural Heritage Report that formed part of the Environmental Impact Statement (EIS) for the scheme (Scott-Cawley 2009).

The Irish name for Scurlocksbush is *Tor Scurlóg*. The first element refers to the Old English (Anglo Norman) surname of Scurlock (Sherlock) (Scott-Cawley 2009). The second element 'bush' is likely to be an English translation of the Irish word for bush, *Tor*. Rafferty suggests that the name may date to the 17th century (2004, 84). A townland with a very similar name Scurloguesbush (near Baldwinstown) is also found in this county.

Cartographic sources

The 1st edition OS map of 1840 (Fig. 3) shows Scurlocksbush as a sub-square townland composed mostly of large fields. The townland is bisected by an east-west orientated road through the northern extents and a north-east to south-west road through the centre. There are a number of buildings facing onto each of these roads. Small areas of forest are depicted in the south and north-east. The location of Scurlocksbush 1&2 is in the north-west corner of the townland in close proximity to the boundary with Garrynisk to the west and Roperstown to the north.

The 2nd edition OS map of 1903 (Fig. 4) shows some changes from the earlier map. There are some minor field modifications with the removal of field boundaries towards the middle and east of the townland. A number of the buildings facing onto the roads on the 1st edition map are no longer present. The small areas of forest in the south and north-east have been removed while a field in the south-east corner of the townland is now depicted as marsh.

The 3rd edition OS map of 1940 (with overlying 1996 SMR) (Fig. 5) shows very little change from the earlier maps.

Record of Monuments and Places

There is one site listed in the Sites and Monuments Record in Scurlocksbush townland on the County Wexford SMR map or RMP and online (www.archaeology.ie; Fig. 5). It is a bullaun stone (WX026-034) and is located in the north-east corner of the townland. Moore (1996, 149) provides the following description of the stone. 'Rough boulder (diam. 0.9 m; H 0.55 m) with sub-rectangular, round-bottomed basin. Modern inscription on exterior'

The Excavations database

There are no records of excavations in Scurlocksbush townland (as shown on www.excavations.ie on 18th July 2011).

National Museum of Ireland Topographic files

No stray finds are recorded on the National Museum of Ireland Topographic Files for Scurlocksbush or surrounding townlands.

Archaeological work undertaken as part of the current scheme

Archaeological test trenching, under record number E4110, was undertaken by Leigh Barker, Colum Hardy, Margaret McNamara, Aisling Mulcahy, Bruce Sutton and Yvonne Whitty (Hardy et al 2010).

The programme of investigation commenced on the 18th May 2010 and comprised five teams (Teams A – E) monitoring machine excavated test trenches. A centre line trench with offset trenches spaced at intervals of 20 m was excavated within the full extent of the CPO area, to identify areas of archaeological potential. This 'herring bone' pattern was not followed slavishly but was modified to maximise assessment potential according to 'in the field' conditions. The test trenches were excavated by 12 – 22 tonne machines fitted by 1.90 m wide toothless grading buckets. When it became apparent that archaeological deposits were present appropriate hand tools were used to clean and investigate the deposits. Each test trenching team was operated under the direction of a licence eligible director with a support team of supervisors and assistants. A minimum of 12% of the CPO area was required to be tested. The project was managed by TVAS (Ireland) Ltd Senior Archaeologist Graham Hull who liaised with the NRA Project Archaeologist.

Three other sites were excavated as part of this scheme in Scurlocksbush townland. These were: Scurlocksbush 3 (E4212) – post-medieval structures (Hardy and Bermingham 2012); Scurlocksbush 4 (E4213) – non-archaeological features (Hardy 2011) and Scurlocksbush 5 (E4214) – Middle Bronze Age burnt stone spread and troughs (Hardy and McNamara 2012).

Earlier test excavations

Site E4201 was identified during centre-line and offset testing of the road route (Hardy et al 2010, 97-98).

A burnt stone spread, trough, field ditches and drains were revealed during Stage (i) testing.

The burnt stone spread measured 6.00 x 2.50 m and consisted of a black and dark brown silty sand with frequent burnt stones and charcoal.

Following the submission of a report on the testing (Hardy et al 2010, 97-98) the site was excavated under Ministerial Directions.

Excavation Aims and Methodology

The aims of the excavation were to:

1) Preserve by record all archaeological deposits and features within the excavation area
2) Produce a high quality report of the findings

The fieldwork took place between 20th October and 2nd November 2010 and was directed by Colum Hardy, supervised by Iwona Sliwka and aided by ten assistants.

The excavation area was sub-rectangular, measured approximately 65.6 by 18.9 m and covered 957.45 m^2. Topsoil was removed by a 20 tonne tracked mechanical excavator fitted with 6-foot (1.8 m) toothless grading bucket and operated under direct and continuous archaeological supervision. The spoil was visually scanned for artefacts.

The archaeological features were excavated by hand.

A full written, drawn and photographic record was made according to the TVAS Ireland Field Recording Manual (First Edition 2003). The site was tied into the National Grid using a Global Positioning System (GPS) unit.

Excavation results (Figs 6-10, Plates 1-12)

The excavation has revealed evidence of at least three phases of activity represented by a stray Late Neolithic or Early Bronze Age struck flint, a burnt stone spread and Late Bronze Age wood-lined trough and later post-medieval field ditches and drains. All features and contexts are listed in Appendix 1.

The topsoil (50) is a loose, grey silty clayey sand while the natural subsoil (58) is a loose, mottled mix of yellow/brown and orange clayey sand.

Phase 1 – Late Neolithic – Early Bronze Age

A flint side scraper, representing domestic activity, was recovered from the topsoil. This item probably dates to this period, although there is a possibility that it could be contemporary with the later burnt stone features.

Phase 2 – Late Bronze Age

This phase is represented by a burnt stone spread with wood-lined trough, pits and an isolated post-hole.

Trough and pit (Figs 6-8, Plates 2-7)

A wood-lined trough (1), located at the southern end of the site, was pear-shaped with the north-east corner outside the limit of excavation. It had been truncated by a later, north-south orientated post-medieval field drain (7). The trough measured 3.00 x 2.70 x 1.20 m and contained four deposits overlying the wooden lining.

The base of the trough was lined by eight timber planks (62, 65, 67-71, 84) surrounded by thirteen stakes (63, 64, 85-95) to hold them in place. The planks were made of oak and ash with some tool marks evident especially on two planks (62 and 67) and two tapered stakes (63 and 64). The planks were 1.15-2.00 m long, 0.12-0.30 m wide and 0.03-0.10 m thick. They were aligned north to south and parallel to each other. The central plank (67) had a square mortice hole in its centre where a stake (92) was positioned to hold it in place.

The stakes had diameters of 0.04-0.06 m and maximum lengths of 0.24 m with many of them in poorly preserved condition. Due to their poor preservation only two stakes (63 and 64) were retained and conserved. Waterlogged hazel sampled from stake 92 gave a radiocarbon determination of 998–844 cal. BC (UBA-19347; 2775 ±26 BP)

Directly over the timbers was a soft, dark brown sandy silt with organic inclusions (72). Deposit 72 extended across the entirety of the trough and was 0.15 m deep. Above this was a very soft, dark brown to black silt with occasional medium-sized sub-angular stones and only a small concentration of charcoal inclusions (74). Deposit 74 measured 2.4 x 2.35 x 0.20 m. Over this was a very soft, dark brown to black silt with medium-sized sub-rectangular stones and high concentrations of organic, peaty soil (82) which was only visible within the trough along the eastern edge of the feature, and extended beyond the limits of the site. Approximate measurements of 4.9 x 3.3 x 0.17 m were recorded for deposit 82. The upper fill consisted of a compact black to grey silty sand with charcoal and heat-affected stone (52). Deposit 52 across the entirety of the pit and extended beyond the limits of the feature and the site. Within the trough deposit 52 had a depth of 0.30 m.

Adjacent to the south-west corner of the trough was pit 21. The pit was sub-circular with gradually sloping sides and a concave base. Pit 21 measured 1.60 x 1.40 x 0.40 m and contained two fills. The primary fill was firm yellow to grey sandy to silty clay with sub-angular heat-affected stone and charcoal (76) which was 0.29 m thick, while the upper fill was the burnt stone spread material

(51/52), which filled the upper part of the pit and extended beyond the limits of the feature and the site. Within the pit deposit 51/52 had a depth of 0.19 m. The pit was truncated across its centre by a north-west to south-east orientated field drain (22). Given their proximity and similar stratigraphic location it is likely that the trough and pit had associated functions.

Burnt stone spread (Figs 6-8, Plate 1)

A burnt spread was recorded in the south-east corner of the site, a portion of which continued beyond the limit of excavation to the east and south. Approximate measurements of 21 m north – south, 11.0 m east – west, and 0.12-0.50 m deep, were recorded for the spread. It consisted of a loosely compacted black grey silty sand with frequent pieces of charcoal and heat-affected stone (51/52). The burnt stone spread covered and filled the top of trough 1 and pit 21.

Pits (Figs 6 and 9, Plate 8)

Three of four pits recorded across the site (Table 1) were located in the north area. One of the pits (20) was located at the north edge of the excavation. Two (4 and 5) were at the west, with pit 4 truncated by drain 15. The fourth pit (6) was located in the central part of the excavated area at the eastern edge of the site.

These features were filled with silty sand with some occasional small pebble, stone and quartz inclusions or some small charcoal flecks.

Table 1: Pits

Cut	Deposit	Length (m)	Width (m)	Depth (m)	Plan / Profile
4	55	1.24	0.78	0.37-0.40	Oval / Steep stepped sides, flat to irregular base
5	56	1.40	1.40	0.28	Oval / Gradually sloping sides, concave base
6	60	1.10	1.10	0.32	Circular / Irregular sides, irregular base
20	151	0.60	0.40	0.10	Sub-circular / Gently sloping sides, concave base

Post-hole (Figs 6 and 9, Plates 9-10)

An isolated oval post-hole (2) measuring 0.37 x 0.29 x 0.40 m was located in the southern part of the site, north of drain 12. The post-hole was filled with a soft dark grey/brown fine sand with occasional charcoal flecks (53).

Phase 3 – Post-medieval

Field ditches (Figs 6 and 10, Plates 11-12)

Four linear ditches were evident traversing and continuing outside the site. A fifth short length of ditch was also recorded within the site boundary.

The most substantial ditch (10) stretched from the north-west corner to the south-east part of the site. The ditch, where it occurred within the site, was 42.94 m long, 1.50 m wide and 0.40 m deep. It had an irregular profile, sides and base. It was filled with a soft dark grey to brown silty sand with occasional sub-angular stones (78). A small deposit of loose mid grey sand with flecks of charcoal was evident in the base of the ditch (98).

In the middle of the site this ditch cut an earlier east–west orientated ditch (11) that measured 4.40 m x 1.15 m x 0.25 m. Ditch 11 had gradually sloping sides and a concave base and was filled by a loose mid grey silty sand (79). This earlier ditch (11) was also truncated by two linear drains (9 and 14).

Three shallow ditches were also evident crossing the site in a north-east – south-west direction in the north part of the site. The earliest ditch (17) was 13.59 m long, 1.15 m wide and 0.36 m deep with a U-shaped profile and was filled with a soft dark grey to brown silty sand (99). This ditch was re-cut by a similar feature (16) with gradual sides and irregular base. It measured 12.80 m by 0.35 m and was 0.20 m deep and was filled with a yellow to brown silty sand (97). The latest ditch (18) ran parallel to ditches 16 and 17 and truncated their western edges. This ditch, which had a U-shaped profile, was 13.72 m long, 0.97 m wide and 0.42 m deep and was filled with a soft dark grey/brown silty sand (150).

Field drains (Figs 6-9, Plates 1-5)

A series of modern field drains (7-9, 12-15, 19 & 22) were recorded traversing the site and in many cases extending beyond the limits of excavation. They all had steep vertical sides, sharp breaks of slope and flat bases with widths of 0.20-0.50 m and depths between 0.15-0.40 m. The drains were filled with a grey to brown silty sand sometimes with a yellow to orange hue and with small to medium sized stones in the base.

Table 2: Field drains

Cut	Deposit	Width (m)	Depth (m)	Orientation
7	61, 73	0.53	0.25	North – south
8	75	0.32	0.27	North-east – south-west
9	77	0.35	0.45	North-west – south-east
12	80	0.31	0.29	East – west
13	81	0.41	0.24	East – west
14	83	0.20	0.35	East – west
15	96	0.48	0.40	North-west – south-east
19	59	0.50	0.15	North – south
22	154	0.30	0.32	North-west – south-east

Non-archaeological features

A number of root cavities, tree bowls, stone sockets and evidence for hillwash were all recorded across the site.

Finds

One small piece of struck flint was recovered from the topsoil (E4201:50:1). In addition the two stakes with clear tool marks were retained (E4201:63:1 and E4201:64:1). These finds are catalogued in Appendix 2.

Lithic by Dr Farina Sternke (Fig. 11)

Introduction

One lithic find from the archaeological excavation of a prehistoric site at Scurlockbush 1&2, Co. Wexford was presented for analysis (Table 3, Fig. 11). The find is associated with a burnt stone spread, a wood-lined trough and several pits.

Table 3: Composition of lithic assemblage from Scurlockbush 1&2 (E4201)

Find No.	Context	Material	Type	Condition	Cortex	L (mm)	W (mm)	T (mm)	Complete	Retouch
E4201:50:1	50	Flint	Retouched artefact	Slightly patinated	Yes	25	16	6	Yes	Left edge direct semiabrupt

Methodology

The artefact was examined visually and catalogued using Microsoft Excel. The following details were recorded: context information, raw material type, artefact type, the presence of cortex, artefact condition, length, width and thickness measurements, fragmentation and retouch type. The technological criteria are based on the terminology and technology presented in Inizan et al. 1999. The general typological and morphological classifications are based on Woodman et al. 2006.

Quantification

The find (E4201:50:1) is a flaked piece of flint.

Provenance

The artefact was recovered from the topsoil (50).

Condition

The lithic survives in slightly patinated and complete condition.

Retouched Artefact

The find is a retouched artefact. It was produced from a flake that appears to have been struck off a single platform pebble core. The artefact was most likely used as a side scraper. It measures 25 mm long, 16 mm wide and 6 mm thick.

Dating

There is a possibility that the scraper was directly associated with the Late Bronze Age burnt spread and through, but its technology suggest a dating to the late Neolithic period or to the Early Bronze Age (O'Hare 2005; Woodman et al. 2006). Thus, it is most likely a residual find.

Conservation

Lithics do not require specific conservation, but should be stored in a dry, stable environment. Preferably, each artefact should be bagged separately and contact with other lithics should be avoided, so as to prevent damage and breakage, in particular edge damage which could later be misinterpreted as retouch. Larger and heavier items are best kept in individual boxes to avoid crushing of smaller assemblage pieces.

Discussion

Flint is widely available in the form of small and medium size nodules on the Co. Wexford coast and as small remanié flint pebbles in the glacial tills. The flint used at Scurlockbush 1&2 is beach pebble flint. The scraper was probably used in domestic activities, e.g. hide working.

Summary

The lithic find from the archaeological excavation at Scurlockbush 1&2 (E4201), Co. Wexford is a small flint scraper. The artefact most likely dates to the Late Neolithic period or the Early Bronze Age based on its technology and represents general household waste.

This artefact makes a very minor contribution to the evidence for prehistoric settlement in Co. Wexford.

Wood technology by Caitríona Moore (Fig. 12, Plates 13-26)

Introduction

This report discusses an assemblage of six timbers and two wooden artefacts recovered during an excavation at Scurlocksbush 1&2, Co. Wexford. The excavation was carried out in advance of the M11 Gorey to Enniscorthy Scheme, and was directed by Colum Hardy for TVAS (Ireland) Ltd. The excavation revealed two phases of activity comprising a burnt stone spread and wood-lined trough, and later field ditches and drains (Hardy 2012a, 4). All the wood examined for this report was recovered from the trough (Cut 1) and has been identified as to species by Dr Lorna O'Donnell.

Dating

A piece of hazel brushwood from the trough has been dated to 998–844 cal. BC (UBA-19347).

Results

Timbers

The six timbers (Timbers 62, 65 & 67–70; Table 4) were all laid horizontally in the base of the trough and varied in condition from poor to good. They ranged in length from 116–210 cm, and in width and depth respectively from 16–34 cm and 1–7 cm. All were tangentially split with both inner and outer splits represented (Plates 13-14). Timbers 65, 68 and 69 had been split and further halved while Timber 67 was trimmed. Noted on almost all the timbers was clear differential preservation between the two sides or surfaces, whereby one was very soft and rotten while the opposite was better preserved, well split and flat (Plates 15-16). The edges and ends of almost all the timbers were broken and fragmentary, but where they did survive they were worn and eroded with no surviving toolmarks. Exceptions were Timbers 62 and 67 which were both well preserved (Plates 17-18). Timber 67 was also the only timber to retain toolmarks and one end was cut at 80° with at least 12 flat facets (Plate 19). These included three partial jam-curves of a tool with a minimum width of 5cm and a curved blade edge. In the centre of Timber 67 was a small rectangular mortice (Plate 20) into which was set a stake.

Artefacts

Only two stakes from the trough survived, they are almost identical and both have been classified as artefacts.

Timber 63 (E4201:63:1)
L60; Diam. 0.8–7.6 cm
Species: Oak
Timber 63 (Plates 21–22, Fig. 12) consists of a wooden object carved from a larger branch or trunk, c. 40% of which is sapwood. Much of the sapwood is eroded but at its widest and most intact point the object is approximately circular in cross-section with a diameter of 7.6 cm. At this point, cut into the sapwood is a dowel hole (Diam. 2.5; D 3.5 cm) which does not fully penetrate the wood, and tapers slightly to a flat base. Located 22 cm from this, one end of Timber 63 is cut to a very shallow pencil point with 8 faces and 22 small slightly concave facets (max. L 4; W 2 cm), between which are clean and stepped junctions. The opposite end tapers to an irregular eroded point of 0.8 cm in diameter. While the sapwood is soft and worn the remainder of the wood is very hard and well preserved.

Timber 64 (E4201:64:1)
L63; Diam. 0.5–6.5 cm
Species: Oak
Timber 64 (Plates 23–24, Fig. 12) is a wooden object carved from a larger branch or trunk, c. 20% of which is sapwood. Much of the sapwood is eroded but at its widest point it is approximately circular in cross-section with a diameter of 6.5 cm. At this point cut into the sapwood is a dowel hole (Diam. 2.1; D 2 cm) which does not fully penetrate the object, and tapers slightly to a flat base. Located 25 cm from this, one end of Timber 64 is cut to a very shallow pencil point with c. 7 faces and at least 16 small slightly concave facets (max. L 5; W 1.8 cm), between which are clean and stepped junctions. The opposite end tapers to an irregular eroded point of 0.5 cm in diameter. While the sapwood is soft and heavily worn the remainder of the wood is very hard and well preserved. The worked end is slightly warped.

Discussion

Timbers

The timbers used to line the trough at Scurlocksbush 1&2 were of quite uniform shape and size. They were all tangentially split, a method of timber conversion which splits a trunk across its width rather than along its radius. Tangential splitting allows for the production of wide planks, with a maximum width of the diameter of the tree, and evidence of its use in Ireland dates from the Neolithic (IAWU 2003, 23). Timbers 62, 65, 68 and 69 were outer tangential splits meaning they were taken from the outer part of the trunk, in contrast Timbers 67 and 70 were from the inner section. Most of the timbers had been additionally halved or trimmed and so although they were split using a method that creates wide planks, they were required to be narrower. The creation of these timbers would have necessitated the use of wooden wedges and mallets. The earliest known Irish mallets date to the Iron Age (Wood-Martin 1886, 104; Raftery 1996, 247; Moore 2008, 10) but Bronze Age examples are known from mainland Europe (Casparie 1984, 62–3). Prehistoric splitting wedges are less common but possible examples were found at Derraghan More (Raftery 1996, 262) and Derryfadda 23 (Buckley et al. 2005, 314), toghers of Iron Age and Middle Bronze Age date respectively. Although toolmarks were only preserved on Timber 67 it is likely that all the timbers were shaped and trimmed to some extent following splitting. Partial jam-curves on Timber 67 indicated the use of a metal tool with a curved blade edge and a minimum width of 5cm. Axes contemporary with the site are socketed and looped axes such as those of the Dowris Hoard (Waddell 2005, 262) the size of which can vary greatly. The small mortice in Timber 67 could have been cut with a small socketed axe or possibly a gouge.

Artefacts

The two artefacts found within the trough were made by carving sections of a larger trunk or branch into cylindrical shafts. Sapwood comprises a significant portion of each indicating that they were taken from a section close to the outermost part of the tree. The inclusion of sapwood is somewhat unusual as it is prone to insect attack and decays easily, however, this does not seem to have been

important. While the surfaces of both objects are worn and eroded, the toolmarks at the ends are better preserved. These are quite small and slightly concave in profile. Traditionally such facets are associated with Late Bronze Age axes, however, various toolmark studies (cf. O'Sullivan 1996; Sands 1997; Ó Néill 2005) have shown that a variety of facet types can occur with axes of the period. Nonetheless Late Bronze Age socketed and looped axes have an oval profile which can produce the type of facets seen on Timbers 63 and 64, and given the date of the site it would seem likely that such tools were used in the manufacture of these objects. Cut at very shallow angles the tools were sharp and strong, capable of cutting obliquely through the wood. The dowel holes in each object would have been made with a small gouge of which several Late Bronze Age examples are known (Waddell 2005, 260 Fig. 121).

Perforated wooden shafts have been found previously on archaeological excavations in Ireland (Moloney et al. 1993, 27 Fig. 27; Raftery 1996, 253; Buckley et al. 2005, 313), some made from sections of roundwood and some carved, similar to Timbers 63 and 64. The function of these objects is unknown but it is clear that they were part of composite wooden frameworks or structures such as carts or items of furniture. Neither of the dowel holes in Timbers 63 or 64 appear to have been functional in the position in which they were found. This suggests that they were reused and thus it is also possible that these objects were reworked.

Conclusions

Despite its small size the worked wood and artefact assemblage from Scurlocksbush 1&2 has provided evidence of several tools. Indirectly the timbers demonstrate the use of wooden wedges and mallets and at least one was worked with a metal blade. A small Late Bronze Age axe was most likely used in the manufacture of the artefacts, as was a bronze gouge. This material adds to our knowledge of prehistoric wood working and artefacts, and is important evidence of such from a county in which waterlogged archaeological sites are relatively rare.

Table 4: Wood assemblage from Scurlockbush 1&2 (E4201)

Timber No.	Sample No.	Condition	L (cm)	W (cm)	D (cm)	Conversion	Description	Species
1/62	7	Good	116	8-24	0.2-7	Tangential-outer	A solid timber trapezoidal in shape and cross-section. It appears to be an outer tangential split but may have been additionally trimmed. Its widest end is cut at 85° but is worn and eroded and no toolmarks remain. The opposite end tapers to a worn unworked point. The outer surface is rounded but reasonably smooth, no bark or sapwood are apparent. With the exception of a small portion which is smooth and flat, the inner split surface is grooved and eroded. There is a large knot hole in one edge.	Oak
1/65	5	Moderate	191	16	1-5	Tangential-outer half	A tangentially split and halved timber one surface of which is heavily eroded and soft. The opposite surface is well split and in places is very flat and well preserved. Both ends are broken and irregular as are the edges. It is quite sturdy but is broken down the centre. No toolmarks are present.	Oak
1/67	8	Good	148	34	5-7	Tangential-inner trimmed	A tangentially split and trimmed timber, approximately rectangular in shape and cross-section. One end is cut at 80° with at least 12 flat facets (max. L4; W4cm) including 3 partial jam-curves of a tool min. W5cm with a curved blade edge and a rounded corner. The junctions between the facets are clean and stepped. The opposite end is cut to a shallow wedge shape but is damaged and eroded. In approximately the centre of the timber is a rectangular mortice (L6; W9cm-as per L/W of overall timber), the sides of which are cracked. One surface of the timber is soft and striated but the opposite is well preserved. On this side, close to the worked end are the remains of possible toolmarks. One edge of the timber is cut more or less flat but is worn, the opposite edge is damaged.	Unknown
1/68	4	Moderate	210	21	1-5	Tangential-outer half	A well split timber broken in 3 pieces and approximately rectangular in shape and cross-section. One surface is heavily eroded and the wood is soft. The opposite is flat, smooth and very well split. Both ends are cut flat but no individual toolmarks remain. The edges are soft and fragile, especially that closest to the centre of the tree.	Ash
1/69	6	Poor	184	23	4	Tangential-outer half	A degraded timber, approximately rectangular in shape. Although still in one piece it is too fragile to be turned over. The visible surface (outer) is soft and very heavily eroded. A small portion of the opposite surface was examined and found to be very flat and well split similar to Timber 65. Both ends and edges are fragmentary and no toolmarks are present. The wood is red in colour.	Ash
1/70	3	Poor	173	21.5	3.5	Tangential-inner	A heavily fragmented timber, approximately rectangular in shape. One surface is very soft and eroded, the opposite is less so but is still in a poor condition. Both edges and ends are broken and no toolmarks are present.	Ash

Samples

Twelve samples were taken during the excavation. The first was from the middle fill (74) of the trough (1) and included charcoal and charred plant material. Charred plant remains were also recovered from fill 72 of the trough. The samples were floated and wet sieved through a 300 micron mesh and then through a 2 mm mesh in order to recover charred plant material, bone and small artefacts.

The remaining ten samples were of the timbers and wooden stakes lining the base of the trough (62-65, 67-70, 87 and 92). A catalogue of samples is given as Appendix 3.

Wood identifications by Lorna O'Donnell (Fig. 13)

Introduction

Scurlocksbush 1&2 (NGR 299390 133761) was excavated as part of the proposed M11 Gorey to Enniscorthy scheme. The site consisted of a Late Bronze Age burnt stone spread with associated wood-lined trough. Post-medieval field ditches and drains were also excavated (Hardy 2012, 1). Two stakes and sub-samples of seven planks were submitted to the author for identification.

Methodology

Each wood piece was identified by a first selection under a binocular microscope at a magnification of 10x-40x. This was used to discern features such as ring growth or insect channels. Samples one cell thick was taken with a razor blade from the transverse, radial and tangential planes of the wood. Analysis of thin sections was completed under a transmitted light microscope, at magnifications of 10x, 20x and 40x. Each taxon or species will have anatomical characteristics that are particular to them, and these are identified by comparing their relevant characteristics to keys (Schweingruber 1978; Hather 2000; Wheeler et al. 1989) and a reference collection supplied by the National Botanical Gardens of Ireland, Glasnevin. Annual rings were also counted.

Results

Nine wood pieces were identified from Scurlocksbush 1&2, all from fills within trough 1. Five are oak (*Quercus* sp.), three ash (*Fraxinus* sp.) and one hazel (*Corylus avellana*). Two stakes are made from oak (Timbers 63.1 and 64.1, Samples 9 and 10 respectively). Five of the planks (both oak and ash) are tangentially split (Samples 3-7) (Table 5). Oak Sample 11 and hazel Sample 12 are both roundwoods. Ring counts range from 6 on Sample 11 to 50+ on Sample 5. One hazel roundwood was identified, Sample 12 from deposit 92. This was recommended for radiocarbon dating.

Ash is a light demanding species, which grows well on limestone soils. It requires many soil nutrients a good source of light (Orme and Coles 1985). Ash trees can grow up to 45 m high but they do not live as long as oak (Hickie 2002, 44). Pedunculate oak (*Quercus robur*) will grow best in deep fertile clays and loams but will tolerate a wide range of soils (Lipscombe and Stokes 2008, 156). Sessile oak (*Quercus petraea*) prefers areas of high rainfall and grows best in deep, well-drained clays and loams (ibid., 202). Hazel is a medium sized, deciduous tree, and can reach a height of 15m. It will grow on a wide range of soils, including limestone, mildly acid soils and clays (ibid., 102).

In total, wooden linings were examined from seven *fulachtaí fia* troughs in advance of the M11 Gorey to Enniscorthy road scheme in Wexford, totalling 35 timbers. They range in date from the Early to the Late Bronze Age (Fig. 13). Oak alone was identified from the Early (Frankfort 1 E4181 and Moyne Middle 3 E4215) (O'Donnell 2011a, 2012a) and Middle Bronze Age troughs (Ballycarrigeen Lower 6 E4164, Kilcannon 2 E4284 and Scurlocksbush 5 E4214) (O'Donnell 2011b, 2011c, 2012b). Oak, ash and hazel were recorded from the Late Bronze Age trough at Scurlocksbush 1&2 (E4201) while ash alone was identified from the Late Bronze Age trough at Moyne Middle 2 (E4207) (O'Donnell 2012c). The appearance of ash only in the Late Bronze Age may indicate woodland clearance around

the site. Ash, a light demanding species will only grow when primary woodlands have been felled. It is unlikely, however, that the woods around Scurlocksbush 1&2 were only cleared during the Late Bronze Age. Clearance is evident from Courtlands East (00E0630) Co. Wexford where a Neolithic hearth was dominated by hazel, indicating open conditions, with no ash or oak identified (Stuijts 2000). Pollen analysis from Carnsore Point, Co. Wexford indicates that oak, birch and hazel were growing in the vicinity during the Middle Bronze Age (Maloney 1985, 77). Charcoal data from Dunger, Co. Wexford (00E0474) dating to the Late Bronze Age indicates that oak/ash/elm were growing in the vicinity (Dillon 2009). Wood identifications from the M11 Gorey to Enniscorthy scheme add to the environmental record of Wexford woodlands during the Bronze Age period.

Table 5: Wood identification details from Scurlocksbush 1&2 (E4201)

Sample no.	Cut	Deposit	Timber no.	Identification	Conversion	Ring count	Dendrochronology?
3	1	70	-	*Fraxinus* sp. (ash)	Tangential	15	No
4	1	68	-	*Fraxinus* sp. (ash)	Tangential	20	No
5	1	65	-	*Quercus* (oak)	Tangential	50+	No
6	1	69	-	*Fraxinus* sp. (ash)	Tangential	40+	No
7	1	62	-	*Quercus* (oak)	Tangential	30	No
9	1	63	63:1	*Quercus* (oak)			Didn't count rings as artefact
10	1	64	64:1	*Quercus* (oak)			Didn't count rings as artefact
11	1	87	-	*Quercus* (oak)	Roundwood	6	No
12	1	92	-	*Corylus avellana* (hazel)	Roundwood	15	C14 recommended

Summary

Two stakes and seven sub-samples of planks were identified from Scurlocksbush 1&2, Co. Wexford. These were identified as ash, oak and hazel. Ring counts on the oak pieces are two low to recommend dendrochronological dating. The results compare well to both earlier and contemporary *fulachtaí fia* in the Wexford region. Ash was used only at the two Late Bronze Age *fulachtaí fia*, Scurlocksbush 1&2 and Moyne Middle 2 on the development.

Charred plant remains by Roz McKenna

Summary

Environmental remains have been examined from two sub-samples of occupation deposits from excavations at Scurlocksbush 1&2, County Wexford in 2010.

Charcoal was present in the samples. The charcoal remains identified possibly represent firing debris from the fuel used in hearths to heat up stones. The fuel used to heat the stones appears to have been exploited mainly from a fen carr dominant woodland consisting of alder, willow and poplar, but also from a wider environment of an oak dominant woodland on the peripheries of which hazel thrives. The hazel would most likely have provided the main fuel for the fire as it provides long lasting heat at relatively high temperatures. Alder and willow/poplar were likely to have been used as kindling material for the fire.

Introduction

An archaeological excavation was carried out by TVAS Ireland at Scurlocksbush 1&2, County Wexford centred on NGR 299390 133761, between the 20th October and 2nd November 2010.

Archaeological deposits including a burnt stone spread with wood-lined trough and post-medieval field ditches and drains were recorded.

A programme of soil sampling was implemented during the excavation, which included the collection of soil samples from sealed contexts, ranging from 20 to 40 L in size. The aim of the sampling was:

- To assess the type of preservation and the potential of the biological remains
- To record any human activities undertaken on the site – both domestic and industrial
- To provide information on the past environment of the area.
- To provide suitable material for a radiocarbon dating sequence

Methods

Following selection, subsamples of raw sediment from the selected samples were processed. The samples were examined in the laboratory, where they were described using a pro forma. The subsamples were processed by staff at TVAS Ireland using their standard water flotation methods.

The flot (the sum of the material from each sample that floats) was sieved to 0.3mm and air dried. As very little material floated, the heavy residue (the material which does not float) was washed through the same mesh, dried and additional charcoal or charred material was retrieved. The material was examined under a low-power binocular microscope at magnifications between x12 and x40.

A four point semi quantitative scale was used, from '1' – one or a few specimens (less than an estimated six per kg of raw sediment) to '4' – abundant remains (many specimens per kg or a major component of the matrix). Data were recorded on paper and subsequently on a personal computer using a Microsoft Access database.

The flot was then sieved into convenient fractions (4, 2, 1 and 0.3 mm) for sorting and identification of charcoal fragments. Identifiable material was only present within the 4 and 2mm fractions. The number of charcoal fragments to be identified is dependent on the diversity of the flora. A study by Keepax (1988, 120-124) has indicated that depending on the location of the archaeology site, 100-400 fragments of charcoal would need to be identified in order to obtain a full range of species. As Ireland has a narrow species diversity in comparison to that of mainland Europe, an identification limit of 100 fragments has been deemed sufficient for samples (Keepax 1988 cited in Austin, 2005, 1). A random selection of ideally 100 fragments of charcoal of varying sizes was made, which were then identified. Where samples did not contain 100 identifiable fragments, all fragments were studied and recorded. This information is recorded with the results of the assessment in Table 6 below. Identification was made using the wood identification guides of Schweingruber (1978) and Hather (2000).

Taxa identified only to genus could not be identified more closely due to a lack of defining characteristics in charcoal material.

Results

Two samples were the basis of this investigation: sample 1 the middle fill (74) of trough 1 and sample 2 the primary fill (72) of trough 1.

Charred plant macrofossils were absent from the samples.

Charcoal fragments were present within the samples, and scored a '4' on the semi quantitative scale. The preservation of the charcoal fragments was relatively variable even within the sample. Some of the charcoal was firm and crisp and allowed for clean breaks to the material permitting clean surfaces where identifiable characteristics were visible. However, most of the fragments were very brittle, and the material tended to crumble or break in uneven patterns making the identifying characteristics harder to distinguish and interpret.

Table 6 shows the results of the charcoal assessment.

Table 6: Complete list of taxa recovered from Scurlocksbush 1&2 (E4201)

Sample		**1**	**2**
Cut		**1**	**1**
Deposit		**74**	**72**
Feature type		**Fill of trough**	**Fill of trough**
No fragments		**400+**	**300+**
Max size (mm)		**39**	**28**
Name	**Vernacular**		
Alnus glutinosa	Alder		11
Corylus avellana	Hazel		73
Salix / Populus	Willow / Poplar	45	16
	Indeterminate	55	

Taxonomy and nomenclature follow Schweingruber (1978). Numbers are identified charcoal fragment for each sample

The total range of taxa comprises alder, hazel and willow/poplar. These taxa belong to the group of species represented in the native Irish flora. A local environment with a fen carr woodland as well as an oak dominant woodland, with a relatively wide range of trees and shrubs, in the wider landscape is indicated from the charcoal of the site. As seen in Table 6, hazel and willow / poplar are recorded in similar numbers amongst the identified charcoal fragments, and it is possible that these were the preferred fuel wood obtained from a local environment containing a broader choice of species.

Generally, there are various, largely unquantifiable, factors that effect the representation of species in charcoal samples including bias in contemporary collection, inclusive of social and economic factors, and various factors of taphonomy and conservation (Thiéry-Parisot 2002). On account of these considerations, the identified taxa are not considered to be proportionately representative of the availability of wood resources in the environment in a definitive sense, and are possibly reflective of particular choice of fire making fuel from these resources.

Bark was also present on some of the charcoal fragments, and this indicates that the material is more likely to have been firewood, or the result of a natural fire.

Discussion

The samples produced little environmental material of interpretable value, with the identifiable charcoal remains from the two samples providing the only information.

It is probable that the remains are associated with *fulacht fia*-type activity. The interpretation of burnt mounds has varied from the traditional view that they represent cooking sites to leather or wool waterproofing, curing of animal hides, soap production, bathing and ritual practice (Monk 2007). Other functions have been argued, when found associated with stakeholes, that they may have been enclosed with wattle structures and used as saunas or sweathouses (Edwards 2000). Another interpretation is the dyeing of clothing or textiles (Edwards 2000) or for the seeping of animal hides in hot water as part of the production of leather (Waddell 2005). A more recent theory is the brewing of beer (Quinn and Moore 2009).

The charcoal remains showed the exploitation of several species native to Ireland, with hazel and willow / poplar being the most abundant in the fragment count, to be selected and used as fire wood. Hazel is recorded as a good fuel wood and was widely available within oak woodlands, particularly on the fringes of cleared areas (Grogan et al. 2007, 30). Willow/Poplar are species that are ideal to use for

kindling. They are anatomically less dense than for example, oak and ash and burn quickly at relatively high temperatures (Gale and Cutler 2000, 34, 236; Grogan et al. 2007, 29-31). This property makes them good to use as kindling, as the high temperatures produced would encourage the oak to ignite and start to burn. Alder was also represented in the samples. This wood is a poor fuel as it burns quickly and gives off little heat, but has been found suitable for charcoal production. This may indicate some small scale charcoal production, but given that it is not the most abundant taxa, may merely represent a selection of available firewood.

This composition of fuel used is typical for use within *fulacht fia* activity for example burnt mounds excavated long the N18 Crusheen to Gort excavations (Cobain, 2009) and the Gas Pipeline to the West (Grogan et al. 2007, 33-35). Typical fuels consisted of oak, ash and hazel with hawthorn/rowan/crab apple, wild/bird cherry, willow/poplar, elder, gorse, blackthorn/sloe used as kindling materials.

The evidence of carr fen woodland indicates a damp environment close to the site. This type of woodland would have consisted of alder, willow and poplar which are all trees that thrive in waterlogged and damp soils, particularly in areas close to streams or with a high water table (Stuijts 2005, 143; Gale and Cutler 2000). Willow/poplar are species typical of wetland environments and may hint at a damp area within or in close proximity to the site. By necessity, *fulacht fia* sites needed to be located in naturally wet ground or near a water source such as a stream, spring, river or bog margin, and the presence of willow/poplar may support this theory. Dryland wood species indicates the presence of an oak dominant woodland close to the site. This would have consisted of oak and ash which would be the dominant large tree species (Gale and Cutler 2000, 120, 205) and on the marginal areas or in clearings hazel thrives.

As asserted by Scholtz (1986) cited in Prins and Shackleton (1992:632), the "Principle of Least Effort" suggests that communities of the past collected firewood from the closest possible available wooded area, and in particular the collection of economically less important kindling fuel wood (which was most likely obtained from the area close to the site), the charcoal assemblage does suggest that the local vegetation would have consisted of an oak woodland close to the site.

Waterlogged hazel from stake 92 from trough 1 gave a radiocarbon date of 998–844 cal. BC dating the feature to the Late Bronze Age. Although burnt stone generating activity has produced dates ranging from the Mesolithic to the medieval period (Brindley et al. 1990), the majority of these types of sites were in use during the Bronze Age. Recent archaeological work on the Gas Pipeline to the West (Grogan et al. 2007) indicated that the main period use of *fulachtaí fia* was during the Middle and Late Bronze Age. Work by Stuijts (2005) also dates the majority of samples associated with these features to the Bronze Age.

Conclusion

The samples produced some limited environmental material of interpretable value with the charcoal remains from the samples providing the only information. The charcoal from the samples was affected by an orange substance, which filled the vessels and made some of the charcoal unidentifiable. This is caused by iron pan in the soil (a layer of iron oxide accumulation) which has been washed into the charcoal. Iron panning seems to predominantly affect charcoal from burnt mound sites.

The charcoal remains identified possibly represent firing debris from the fuel used in hearths to heat up stones. These stones would then have been used either to heat/boil water within troughs on site, all as part of *fulacht fia* activity dating to the Bronze Age. The fuel used to heat the stones appears to have been exploited mainly from a fen carr dominant woodland consisting of alder, willow and poplar, but also from a wider environment of an oak dominant woodland on the peripheries of which hazel thrives. The hazel would most likely have provided the main fuel for the fire as it provides long lasting heat at relatively high temperatures. Alder and willow/poplar were likely to have been used as kindling material for the fire.

There are several variables that affect the reconstruction of local woodland using charcoal assemblages, however if the charcoal were to be used as a 'presence' indicator it can be assumed that as the fuel wood (in particular kindling material) is usually selected from local woodlands these charcoal remains have also made it possible to suggest that the woodland in the close vicinity to the site would have consisted of a fen carr woodland. Alder, willow and poplar, are trees that thrive in waterlogged and damp soils, particularly in areas close to streams or with a high water table (Stuijts 2005, 143; Gale and Cutler 2000) and hint at a damp/wet area within close proximity to the site. An oak dominant woodland with hazel thriving of its peripheries would also have been located within the wider environment.

It is thought to be problematic using charcoal and plant macrofossil records from archaeological sites, as they do not accurately reflect the surrounding environment. Wood was gathered before burning or was used for building which introduces an element of bias. Plant remains were also gathered foods, and were generally only burnt by accident. Despite this, plant and charcoal remains can provide good information about the landscapes surrounding the sites presuming that people did not travel too far to gather food and fuel.

Recommendations

The samples have been assessed, and any interpretable data has been retrieved. No further work is required on any of the samples. Any material recovered by further excavations should be processed to 0.3mm in accordance with standardised processing methods such as Kenward et al. 1980, and the English Heritage guidelines for Environmental Archaeology (2002).

Archive

All extracted fossils and flots are currently stored with the site archive in the stores at TVAS Ireland, along with a paper and electronic record pertaining to the work described here.

Radiocarbon date

One radiocarbon determination was made by Queens University Belfast (Table 7, Fig. 13). The calibration curve used was IntCal09 (Reimer et al 2009) and the plot was created with OxCal v4.1.7 (Bronk Ramsey 2009).

Table 7: Radiocarbon determination

Lab code	Cut	Deposit	Sample no.	Sample material	$\delta^{13}C$	Radiometric age	Calendrical calibrations
UBA-19347	1	92	12	Waterlogged hazel	-26.4	2775 ±26 BP	2 sigma (95.4%) Cal BC 998- 887 (81.1%) Cal BC 884- 844 (18.9%) 1 sigma (68.3%) Cal BC 975- 955 (23.3%) Cal BC 943- 895 (67.5%) Cal BC 869- 856 (9.2%)

Hazel is considered ideal for radiocarbon dating, as it is a short-lived species, thus avoiding the 'old wood effect'. Sample 1 from the lining deposit (92) of trough 1 is dated to the Late Bronze Age.

Discussion

The excavation of E4201, Scurlocksbush 1&2, Co. Wexford has revealed evidence of a shallow burnt stone spread, wood-lined trough, pits and post-hole, and later field ditches and drains. Waterlogged

hazel from the lining of the trough yielded a Late Bronze Age date suggesting a similar date for the overlying burnt stone spread. A pit adjacent to the trough may be have been associated as both were sealed by the burnt stone spread. The other pits and post-hole, although located between 13 and 60 m north of the trough and beyond the spread, may be similarly associated.

The excavated features represent the remnants of Late Bronze Age *fulacht fia* activity. The trough was well constructed with oak and ash timbers lining the base, held in place by stakes of oak and hazel. Analysis of wood working techniques found evidence of wooden and metal tools, including a Late Bronze Age axe and gouge, an important deduction in relation to *fulacht fia* discoveries in County Wexford. The evidence of woodworking on the two best-preserved stakes suggests that they may have been reused. There was no evidence of an accompanying hearth, although one may have existed beyond the site or on top of the mound as it developed. The low lying and boggy nature of the site points towards the availability of water in ancient times and the identification of willow/poplar and alder having been used as fuel suggests a damp environment close to the site, with dryland wood also located in the vicinity as represented by hazel.

Nearby site Scurlocksbush 5 (E4214) also revealed evidence of timber-lined troughs and a burnt stone spread. That site was earlier in date, however, originating in the Middle Bronze Age (Hardy and McNamara 2012). It is clear that the local environment provided ideal conditions and resources for the construction of substantial *fulachtaí fia* and that this practice was carried out in what is now Scurlocksbush over at least several centuries.

Generally, *fulachtaí fia* prove to be Bronze Age in date. Fewer isolated burnt stone spreads have been examined in detail. General burnt stone-generating activity has produced dates of wider range, from the Mesolithic to the medieval period (Brindley et al. 1990). Recent archaeological work on the Gas Pipeline to the West (Grogan et al. 2007) indicated that the main period use of *fulachtaí fia* was during the Middle and Late Bronze Age. These sites have traditionally been interpreted as open air cooking sites, although the excavated evidence has failed to conclusively prove or disprove this theory. A number of other activities have been suggested for these sites, including bathing, dyeing, tanning and brewing. A large number of *fulacht fia* or burnt stone spread sites have found on the present road scheme. Numerous *fulachtaí fia* were also excavated along the route of the N11 Gorey Bypass (Scott-Cawley 2009, 15-21). Analysis of *fulachtaí fia* and burnt stone spreads excavated as part of this road scheme will undoubtedly enhance local, regional and national interpretations of burnt stone sites.

During the post-medieval and modern period a phase of field improvement through clearance and enhanced drainage system was undertaken.

Archaeological potential off the road CPO

Archaeological deposits, spreads of burnt stone, extend beyond the limits of site and beyond the CPO to the east. Archaeological deposits also extended beyond the site to the south, an area within the CPO but restricted due to the presence of a drain and roadway. The area outside the CPO is of archaeological potential.

Recommendations and further work

Fieldwork

Burnt stone deposits extend beyond the limit of excavation to the south, however this area is occupied by a drain and roadway and it is likely that any archaeological features have been destroyed. Therefore the site can be considered to have been fully excavated within the confines of the CPO and no further fieldwork is required.

Record of Monuments and Places

It is recommended that the site be entered into the RMP for County Wexford.

Post-excavation

The two stakes (E4201:63:1 and E4201:64:1) are currently being conserved. No other wood was recommended for retention by the specialists.

The finds have been cleaned and numbered, labelled, properly packed and will be deposited with the National Museum of Ireland in accordance with Advice Notes for Excavators (NMI 2010). This will include the stakes once they are conserved and, if recommended by the archaeobotanist, the charred plant remains.

An accessible archive of primary records (Appendix 4) has been 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.

Publication and dissemination plan

A summary of the findings of the excavation has been submitted to *Excavations 2010.*

The results of this excavation will be published as part of an NRA scheme monograph in 2012-13.

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Colum Hardy and Margaret McNamara
TVAS Ireland Ltd
December 2012

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Appendix 1: Catalogue of features and deposits

Cut	Deposit	Group no.	Type	Length (m)	Width (m)	Depth (m)	Finds	Samples	Phase
1	62-71, 72, 74, 82, 84-95	-	Trough	2.35	2.40	1.20	E4201:63:1 E4201:64:1	1 – 10	2
-	51/52	-	Burnt spread	8.45	10.0	0.12-0.50	-	-	2
2	53	-	Post-hole	0.37	0.29	0.10	-	-	2
4	55	-	Pit	1.24	0.78	0.37-0.40	-	-	2
5	56	-	Pit	1.40	1.40	0.28	-	-	2
6	60	-	Pit	1.10	1.10	0.32	-	-	2
7	61, 73	-	Drain	4.13	0.58	0.25	-	-	3
8	75	-	Drain	2.25	0.32	0.27	-	-	3
9	77	-	Drain	4.35	0.35	0.45	-	-	3
10	78, 98	-	Ditch	42.94	2.39	0.40	-	-	3
11	79	-	Ditch	4.40	1.15	0.25	-	-	3
12	80	-	Drain	10.53	0.31	0.29	-	-	3
13	81	-	Drain	3.24	0.41	0.24	-	-	3
14	83	-	Drain	4.40	0.20	0.35	-	-	3
15	96	-	Drain	16.27	0.48	0.40	-	-	3
16	97	-	Ditch	12.80	0.35	0.20	-	-	3
17	99	-	Ditch	13.59	1.15	0.36	-	-	3
18	150	-	Ditch	13.72	0.97	0.42	-	-	3
19	59	-	Drain	9.00	0.50	0.15	-	-	3
20	151	-	Pit	0.60	0.40	0.10	-	-	2
21	51/52, 76	-	Pit	1.40	1.53	0.40	-	-	2
22	154	-	Drain	13.15	0.30	0.32	-	-	3
-	50	-	Topsoil	-	-	0.30	E4201:50:1	-	-
-	58	-	Natural	-	-	-	-	-	-

Appendix 2: Catalogue of finds

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Weight (g)
E4201:50:1	-	50	-	Stone - lithics	Flint scraper. L: 25.5 mm; W: 18 mm; T: 6.5 mm.	1	2
E4201:63:1	1	63	-	Wood	Stake. Oak. L: 600 mm; Diam: 80 mm; hole in centre: 25 mm; worked at one or both ends	1	-
E4201:64:1	1	64	-	Wood	Stake. Oak. L: 630 mm; Diam: 60 mm; hole in centre: 25 mm; worked at one or both ends	1	-

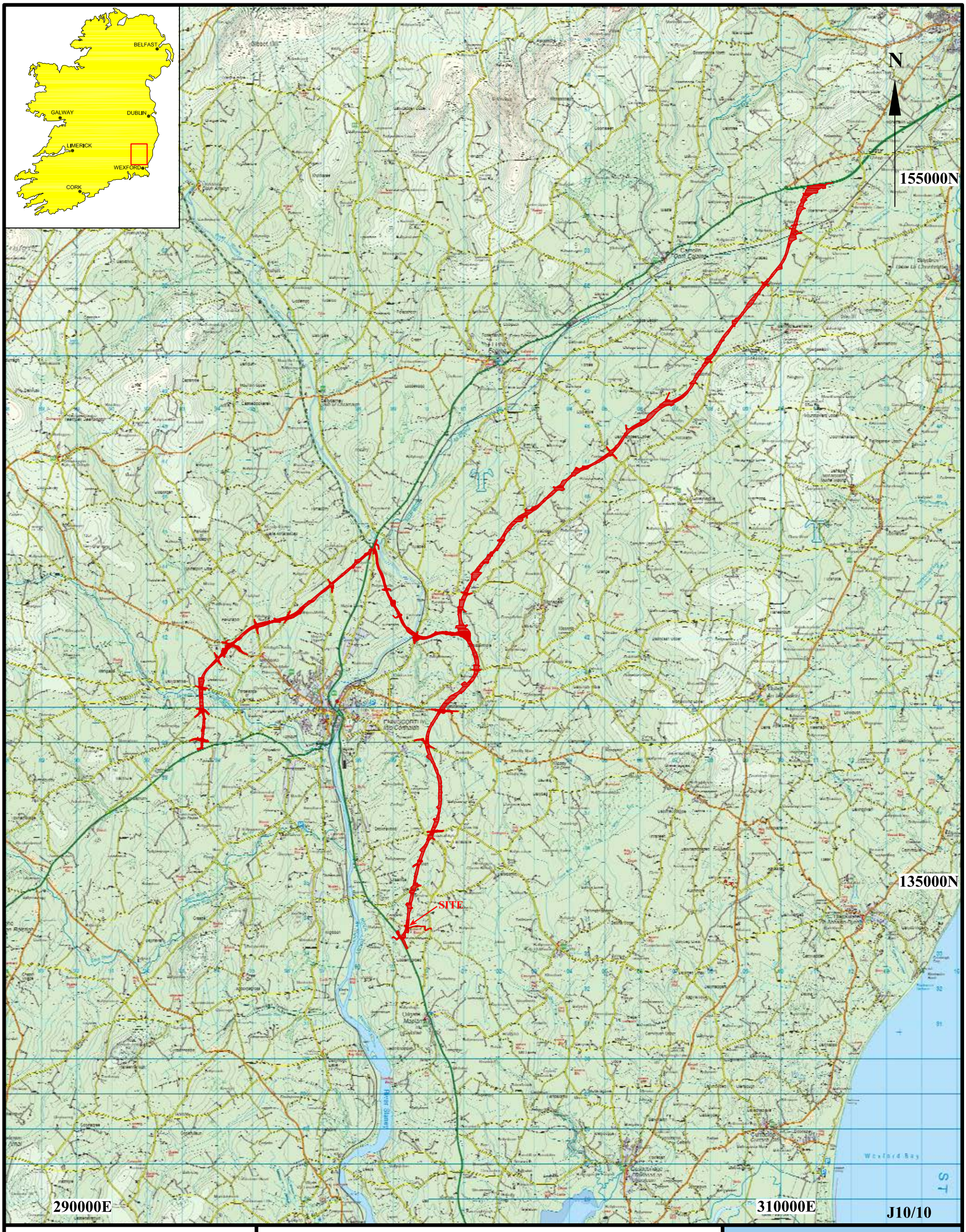
Appendix 3: Catalogue of samples

Sample No	Cut	Deposit	Volume sieved (L)	Volume floated (L)	Finds	Charred plant remains
1	1	74	20	20	-	Yes
2	1	72	40	40	-	Yes
3	1	70	wood	wood	-	-
4	1	68	wood	wood	-	-
5	1	65	wood	wood	-	-
6	1	69	wood	wood	-	-
7	1	62	wood	wood	-	-
8	1	67	wood	wood	-	-
9	1	63	wood	wood	-	-
10	1	64	wood	wood	-	-
11	1	87	wood	wood	-	-
12	1	92	wood	wood	-	-

Appendix 4: Archive contents

Category	Item	Quantity	Condition
Paper records	Context index sheets	4	Good
	Context sheets	83	Good
	Section index sheets	1	Good
	Plan keys	1	Good
	Sample index sheets	1	Good
	Level sheets	12	Good
	Finds register sheets	1	Good
Plans	1:200 pre-ex plans (A2)	0	
	1:20 pre-ex plans (A2)	13	Good
	1:20 mid-ex plans (A2)	3	Good
	1:20 post-ex plans (A2)	11	Good
	1:100 pre-ex plans (A2)	0	
Sections	Section sheets (A2)	3	Good
	1:10 section drawings (on those sheets)	15	Good
Photographs	Digital photographs	120	Digitally stored & backed-up

The archive is currently stored at the TVAS (Ireland) Ltd office, Ahish, Ballinruan, Crusheen, Co. Clare.



0 5 km

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 1: Location of site and road scheme on OS Discovery Series map

Scale: 1:100 000 @ A3
Based on Ordnance Survey Discovery Series map, 1:50 000

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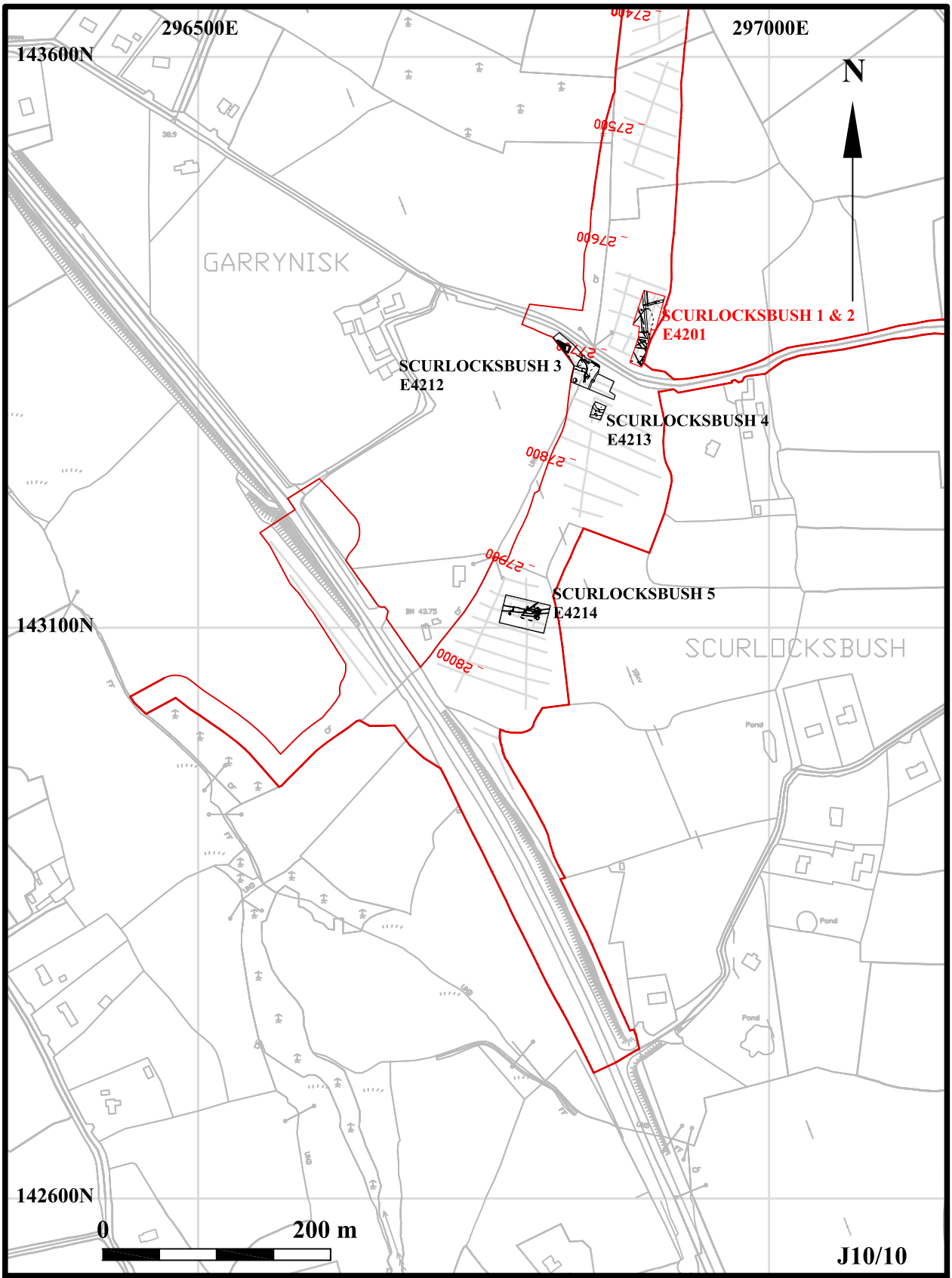

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 2: Location of site

Scale 1:5000 @ A4

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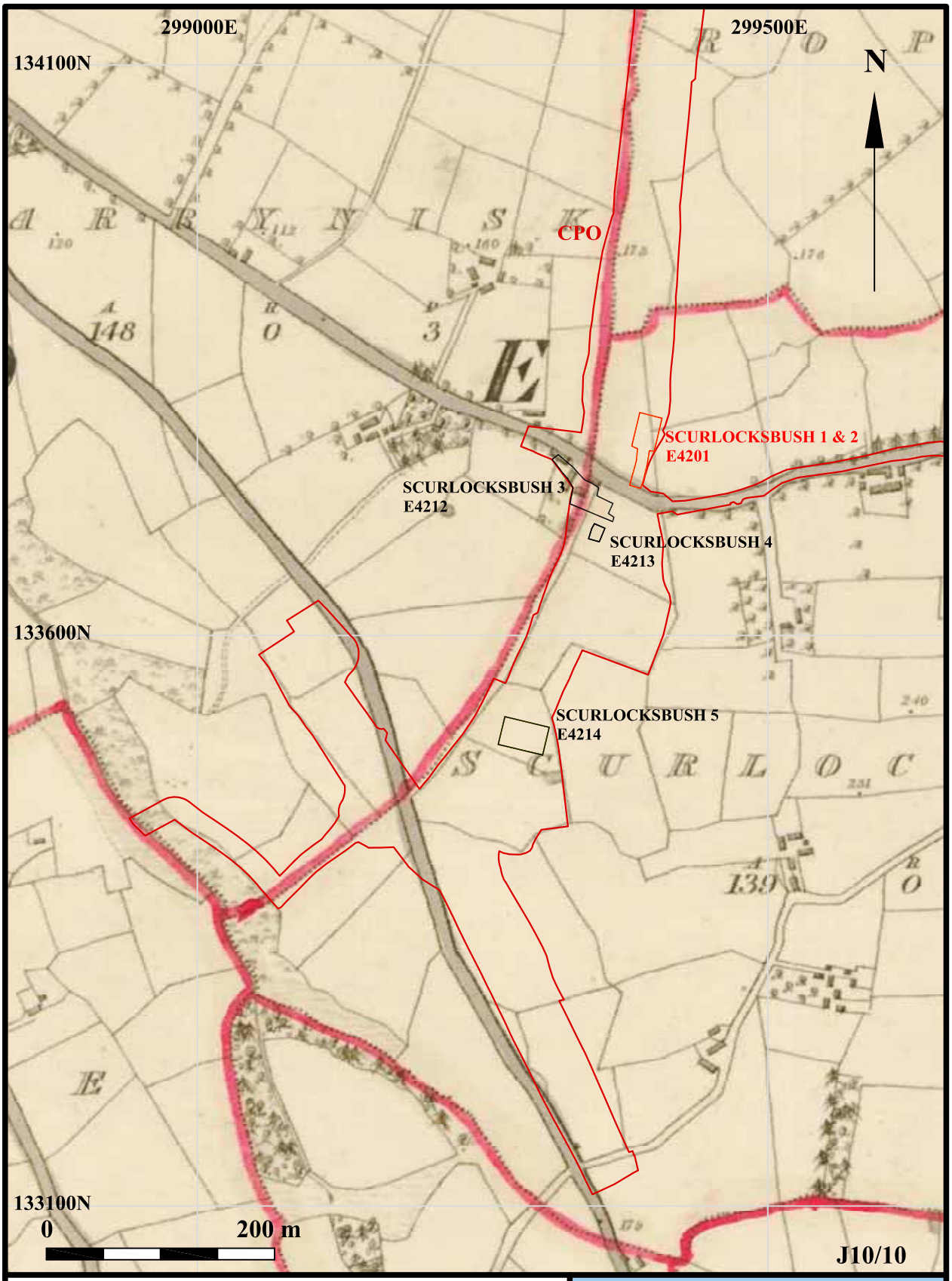

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 3: Location of site on 1st Edition OS Map, 1840

Scale 1:5000 @ A4
Based on Ordnance Survey 1st Edition, map Sheet WX026, 6" to mile

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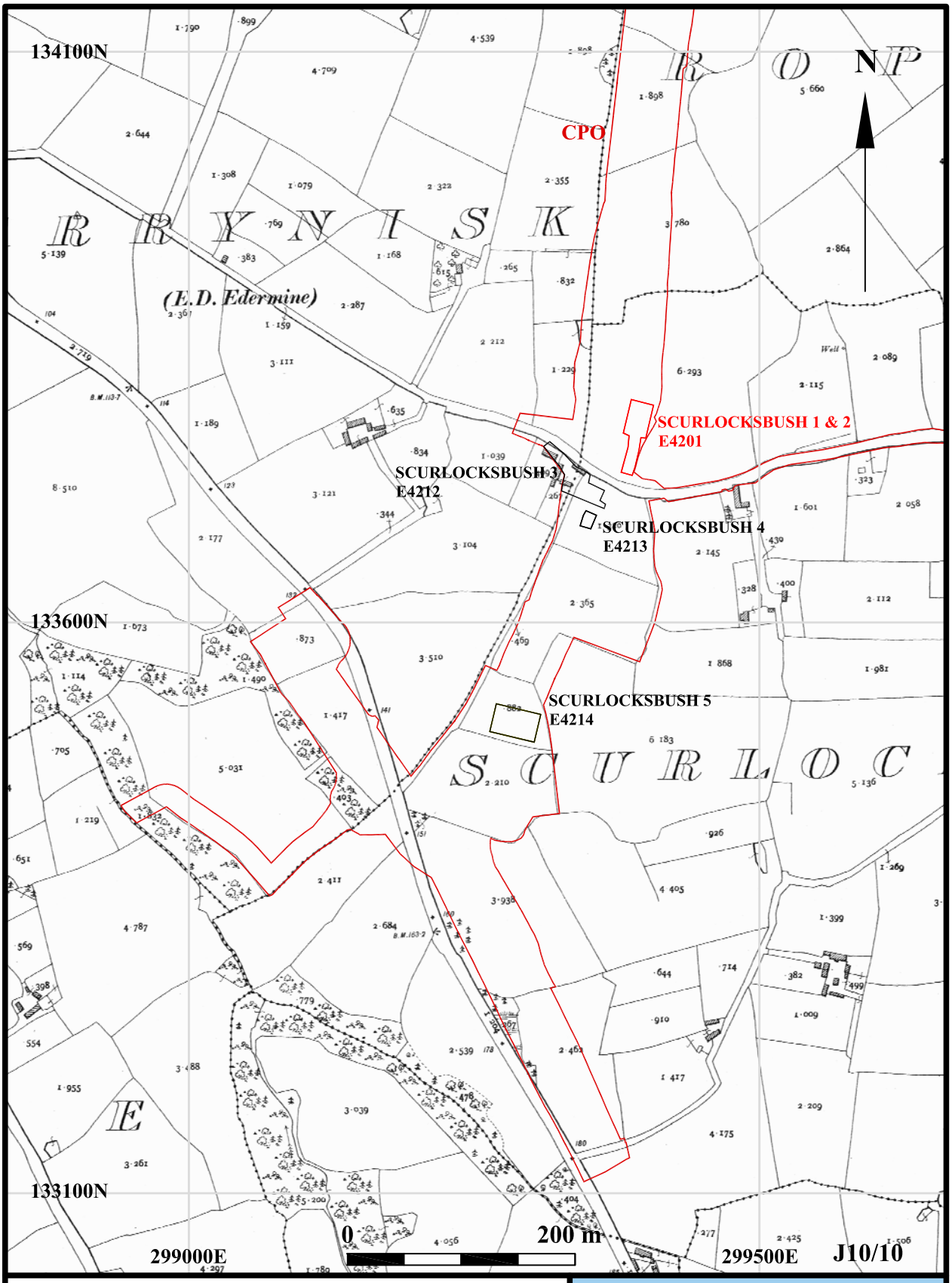

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 4: Location of site on 2nd Edition OS Map, 1903

Scale 1:5000 @ A4
Based on Ordnance Survey 2nd Edition map 25" to mile, Sheet WX026-14.

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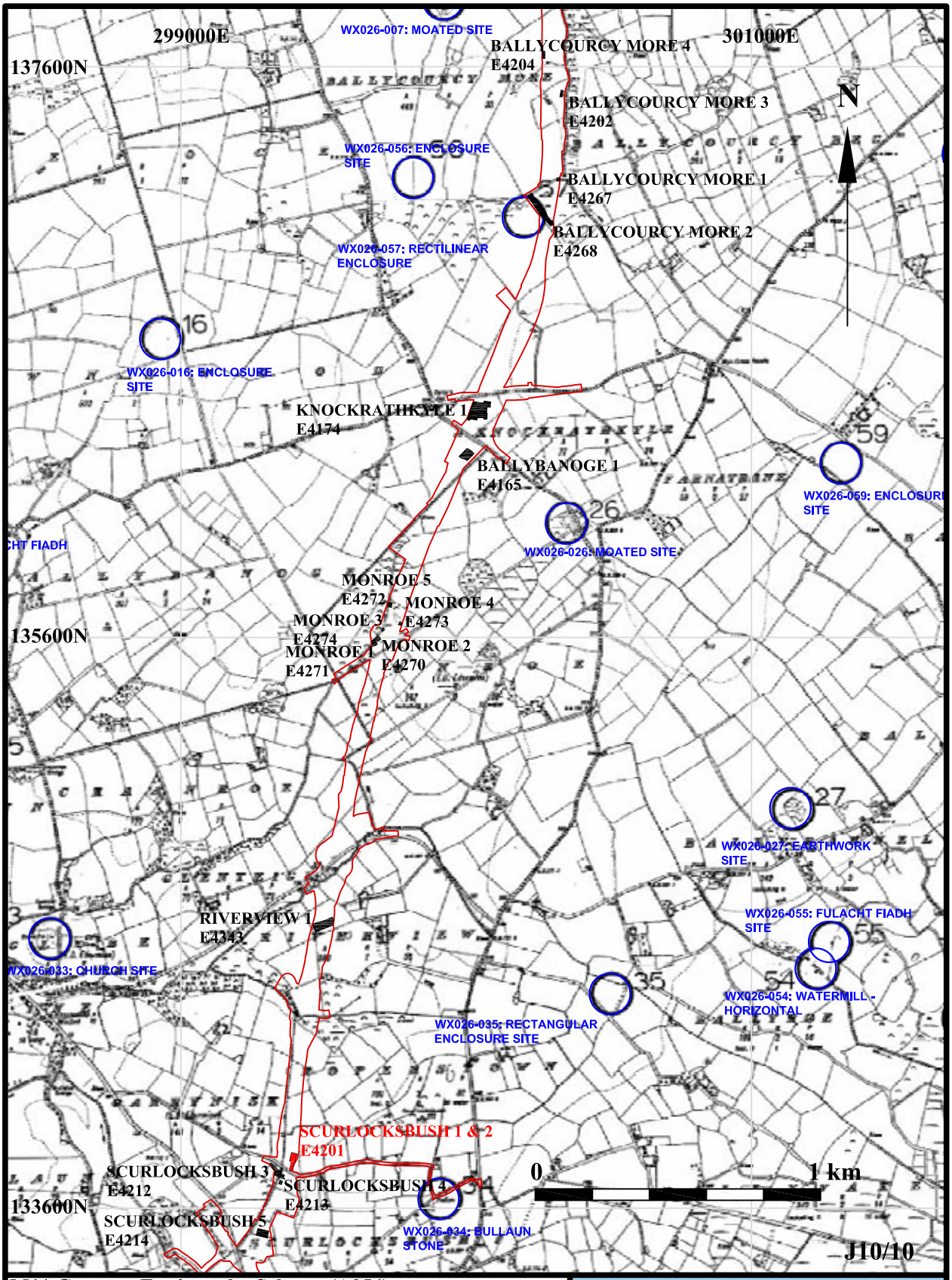

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 5: Location of site on Sites and Monuments Record Map

Scale 1:20 000 @ A4
Based on SMR 1996 map 6" to mile, Sheet WX026, Published 1940,
Surveyed 1903, Revised 1940, Levels revised 1943.

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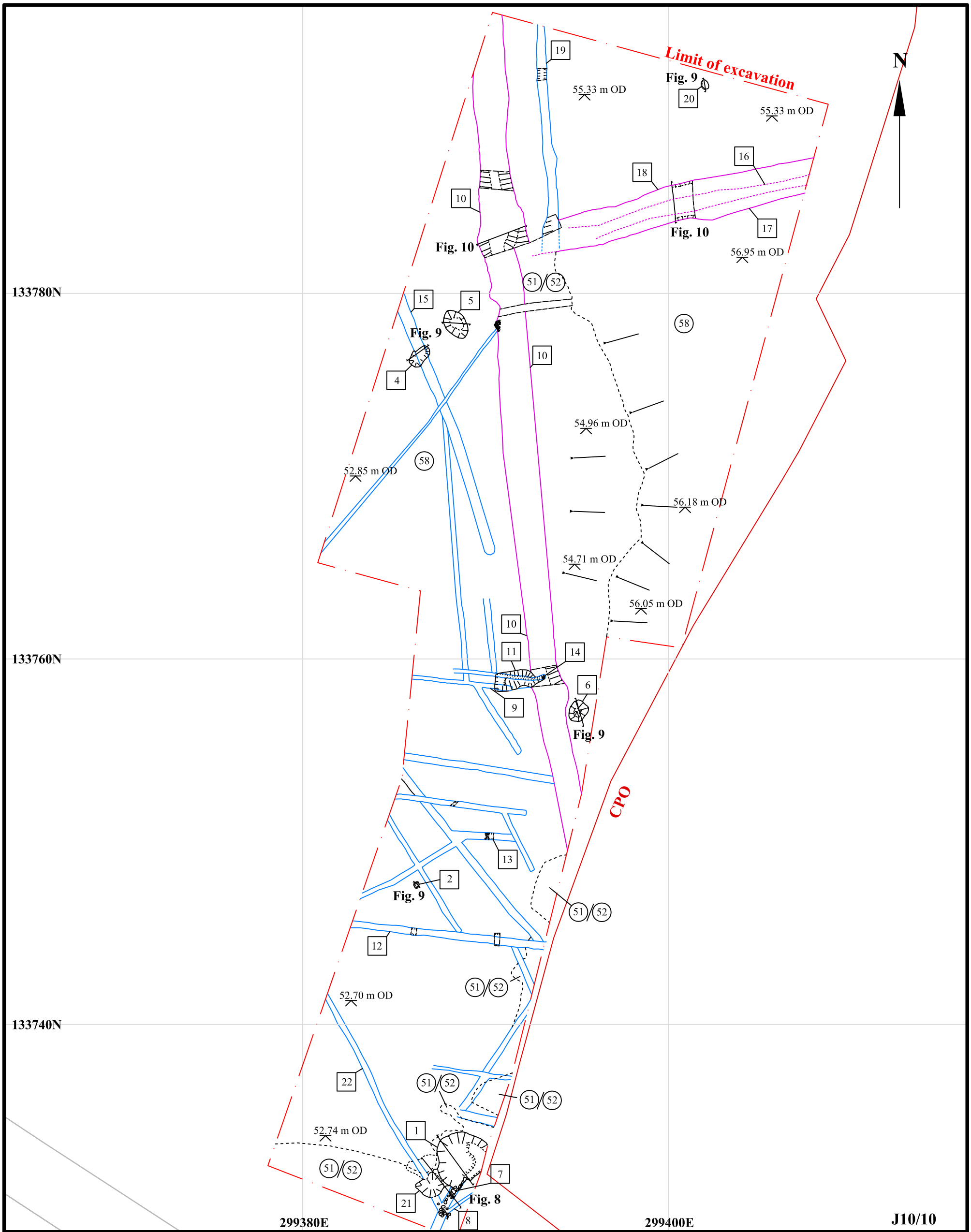

0 10 m

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 6: Post-excavation plan of site

Key:
- drains
- ditches

Scale 1:200 @ A3

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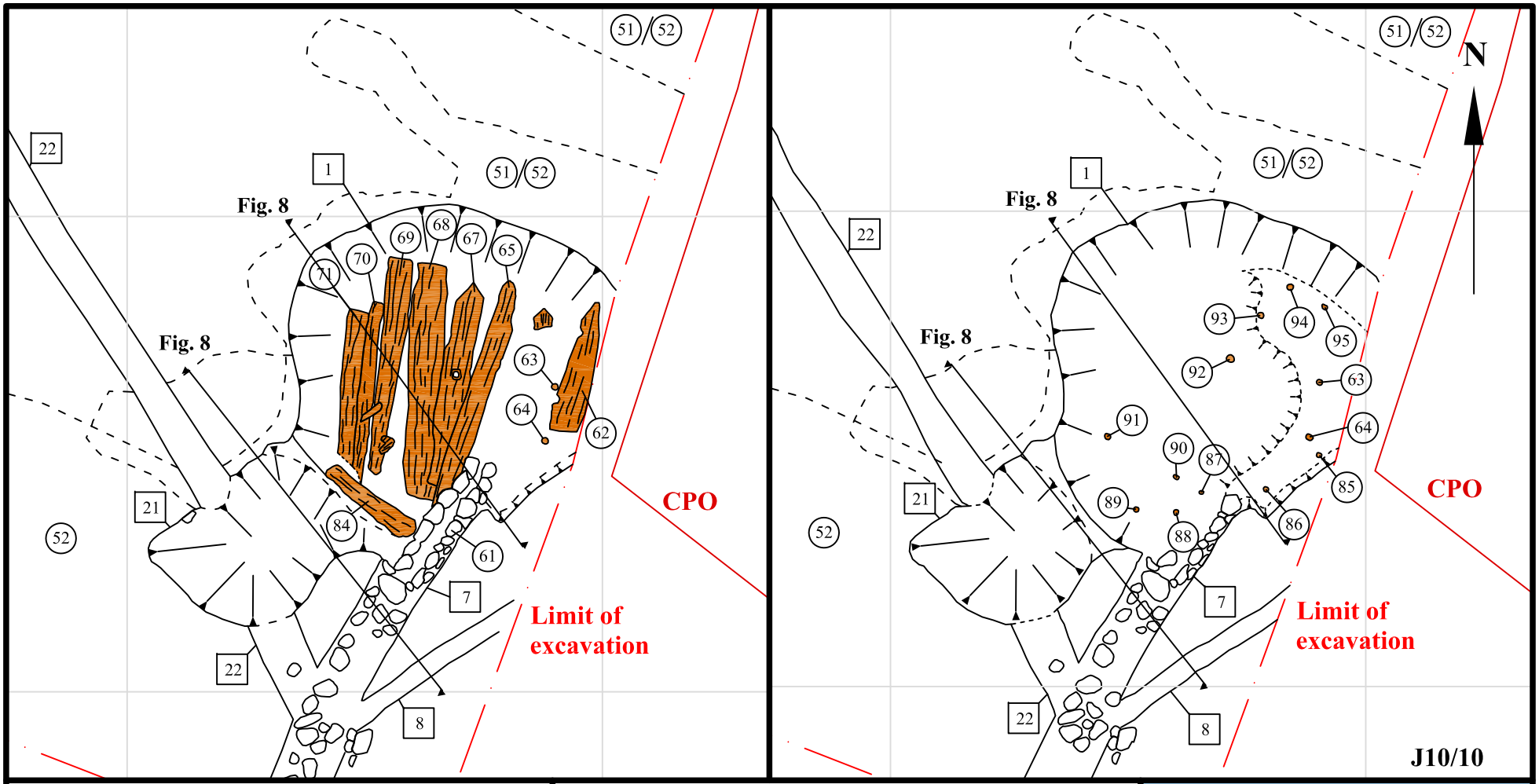

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 7: Mid-excavation plans of trough 1

Scale 1:50 @ A4

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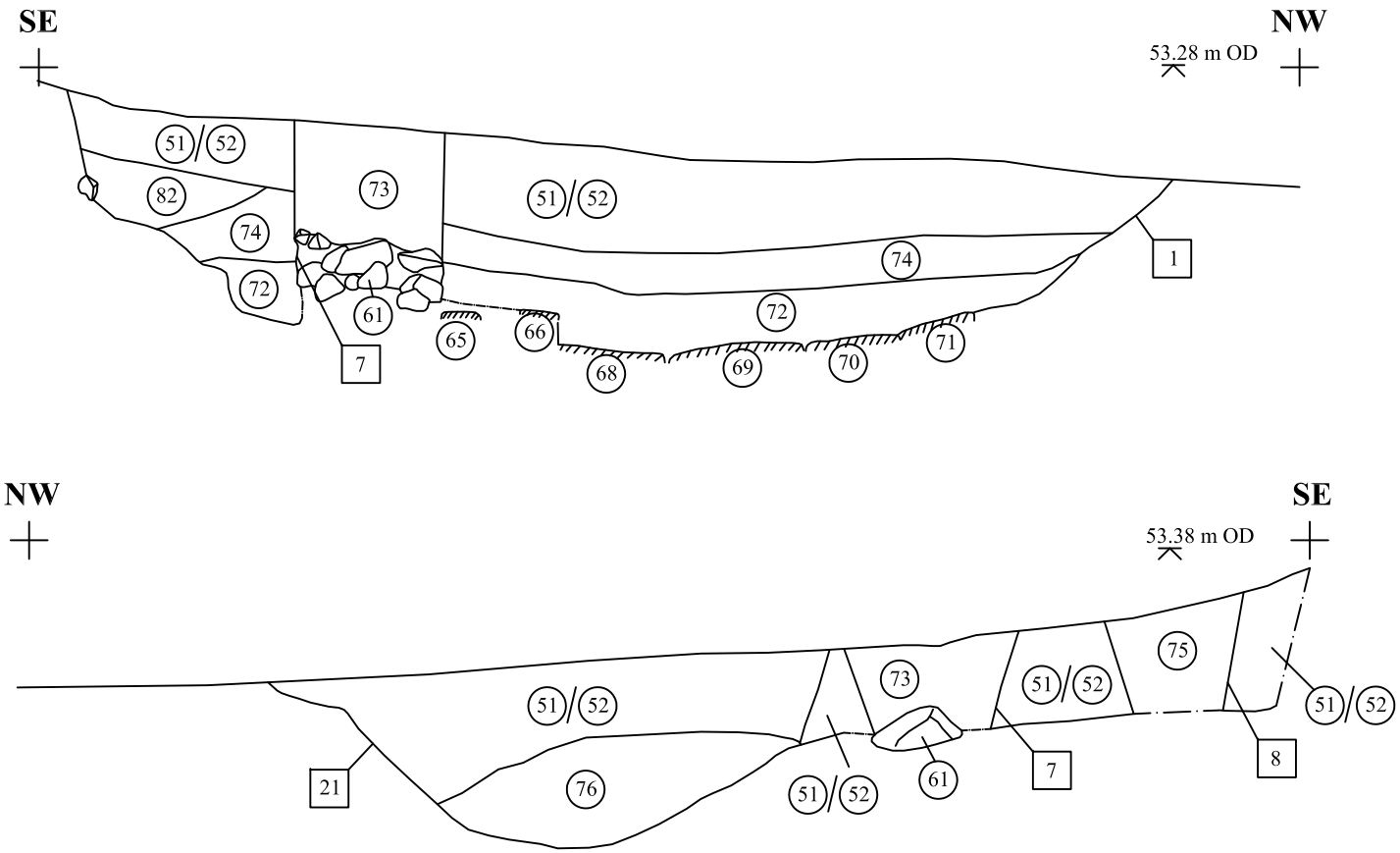

J10/10

0 1 m

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 8: Sections through trough 1, pit 21 and drains 7 & 8

Scale 1:20 @ A4

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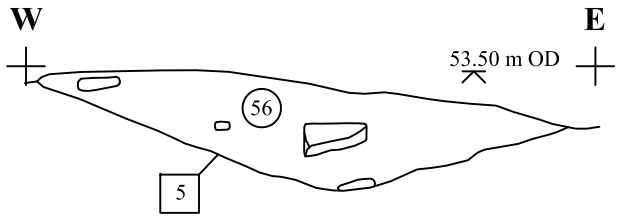

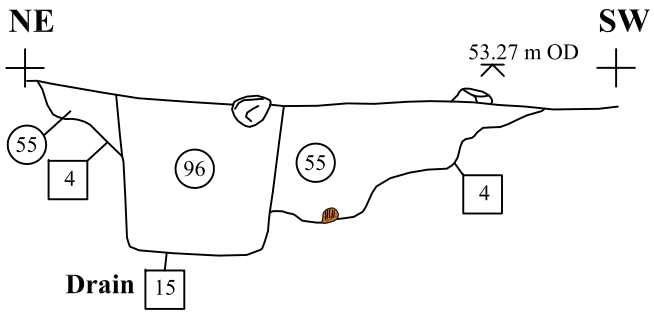

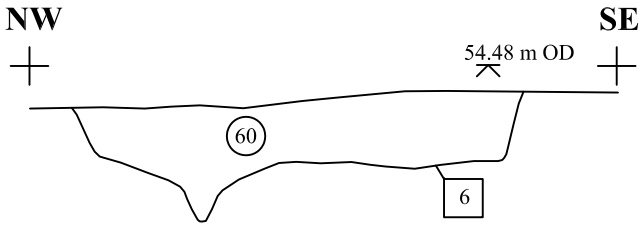

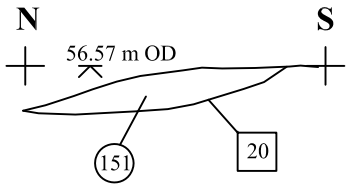

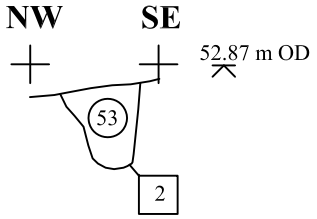

J10/10

Key:

- timber

0 **1 m**

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 9: Sections through pits 4, 5, 6, 20 and post-hole 2

Scale 1:20 @ A4

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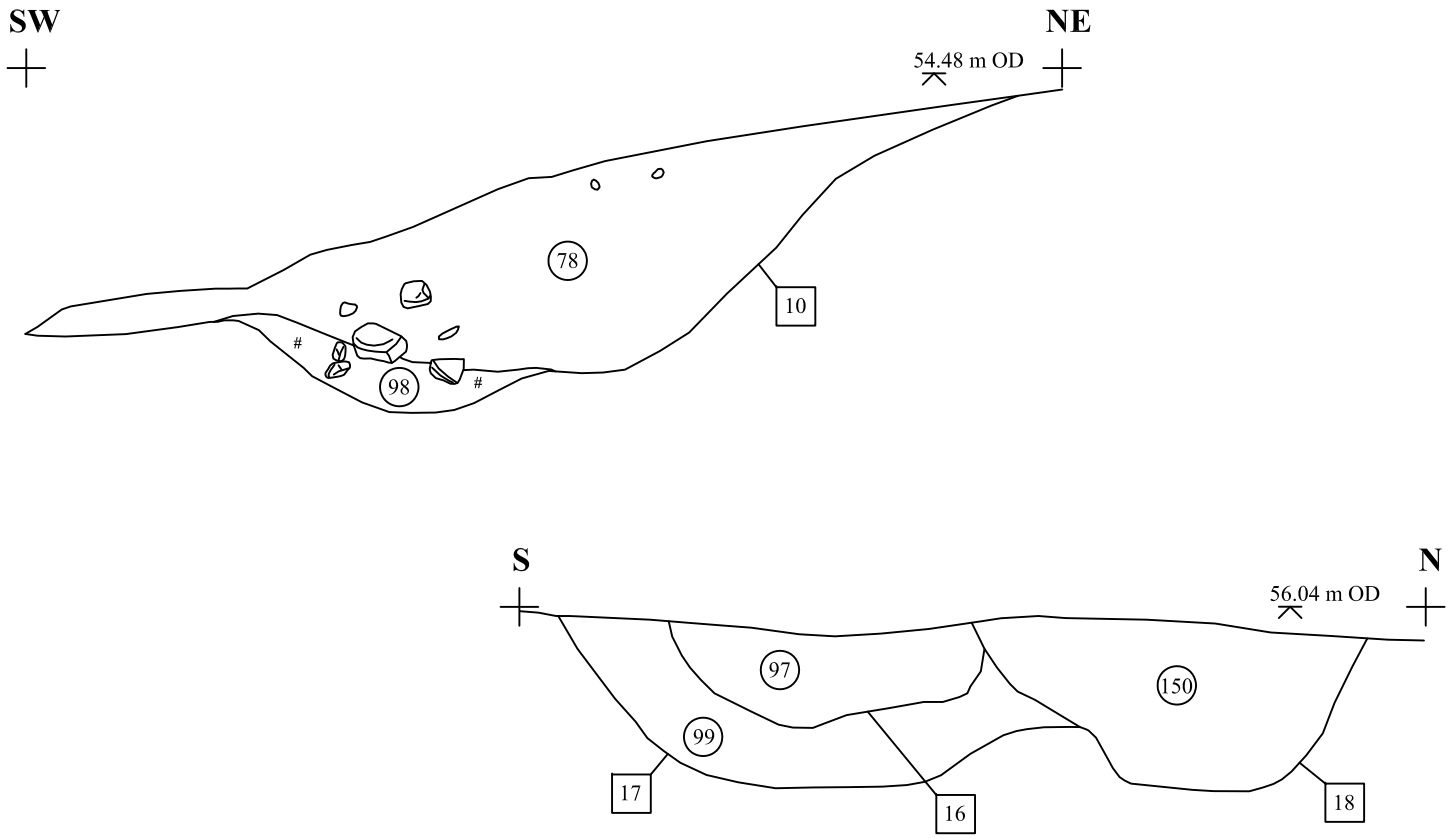

J10/10

Key:
 # - charcoal

0 **1 m**

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1 & 2, Co. Wexford

Figure 10: Sections through ditches 10, 16, 17 & 18

Scale 1:20 @ A4

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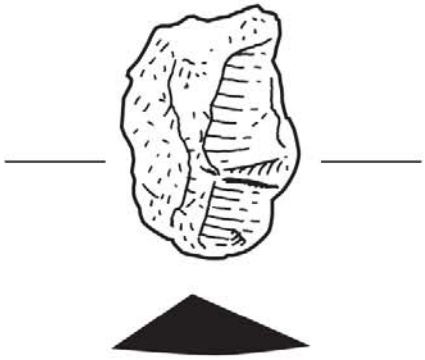

0 50 mm

J10/10

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlockbusch 1&2, Co. Wexford

Figure 11: Flint scraper E4201:50:1

Drawn by Conor McHale

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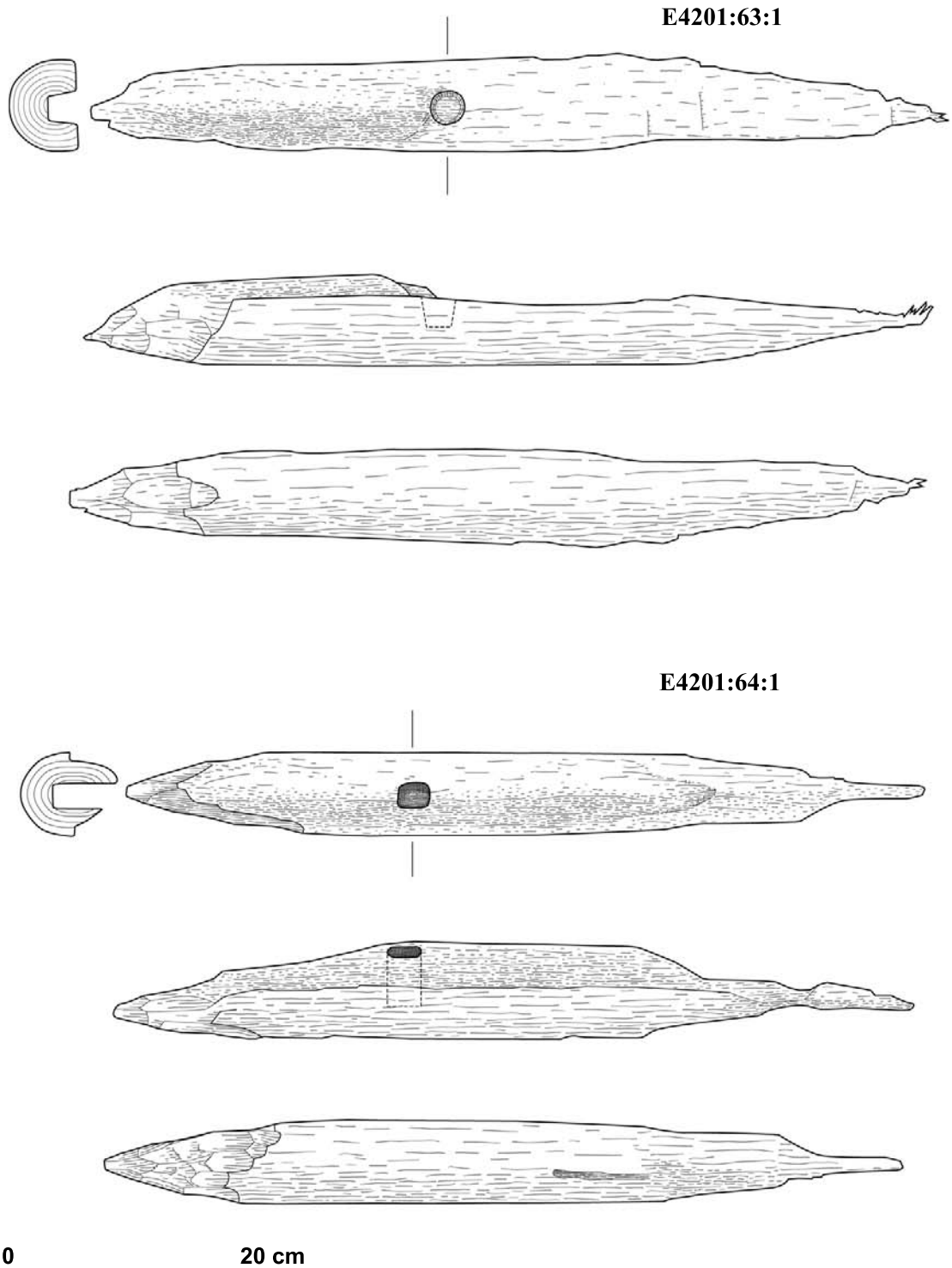

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlockbusch 1&2, Co. Wexford

Figure 12: Stakes E4201:63:1 and E4201:64:1

Scale 1:4
Drawn by Conor McHale

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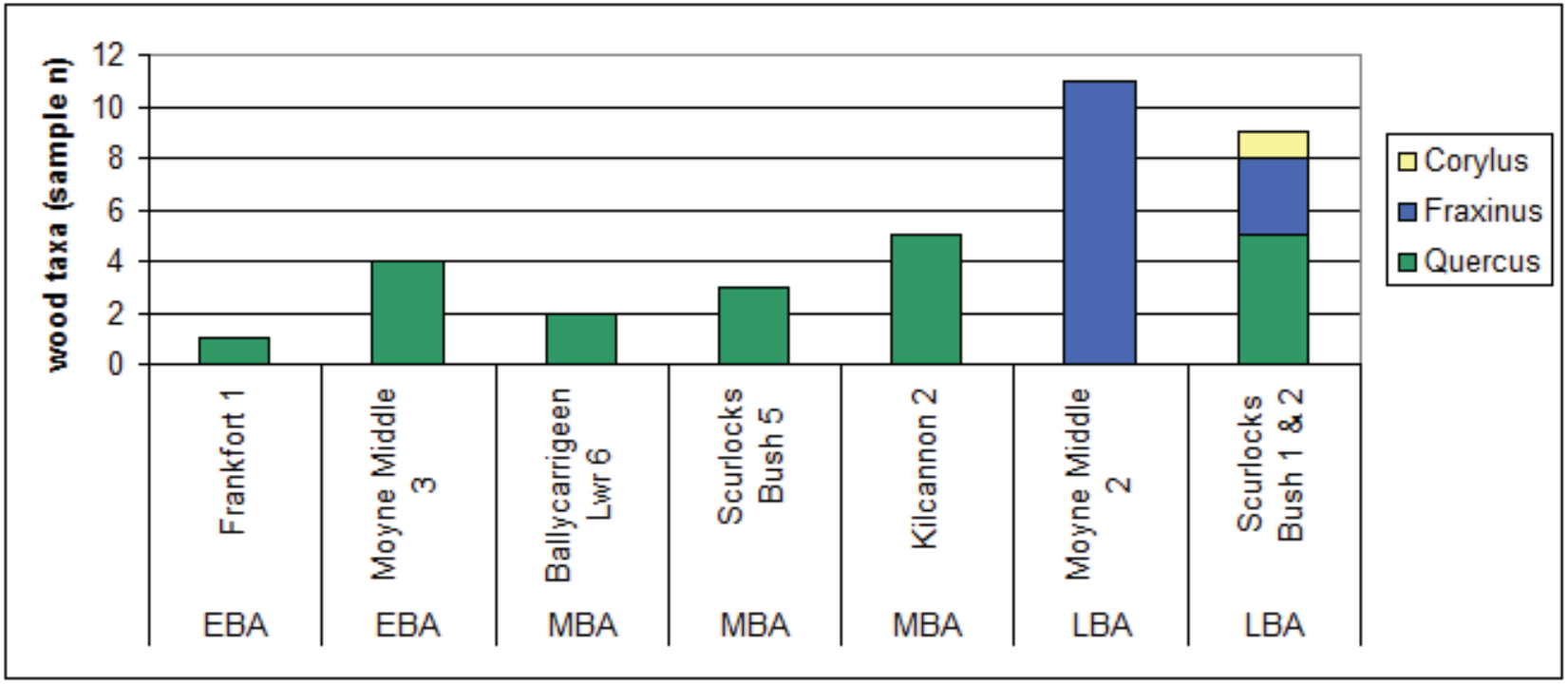

J10/10

M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1&2, Co. Wexford

Figure 13: Wood identifications from the M11 Gorey to Enniscorthy development

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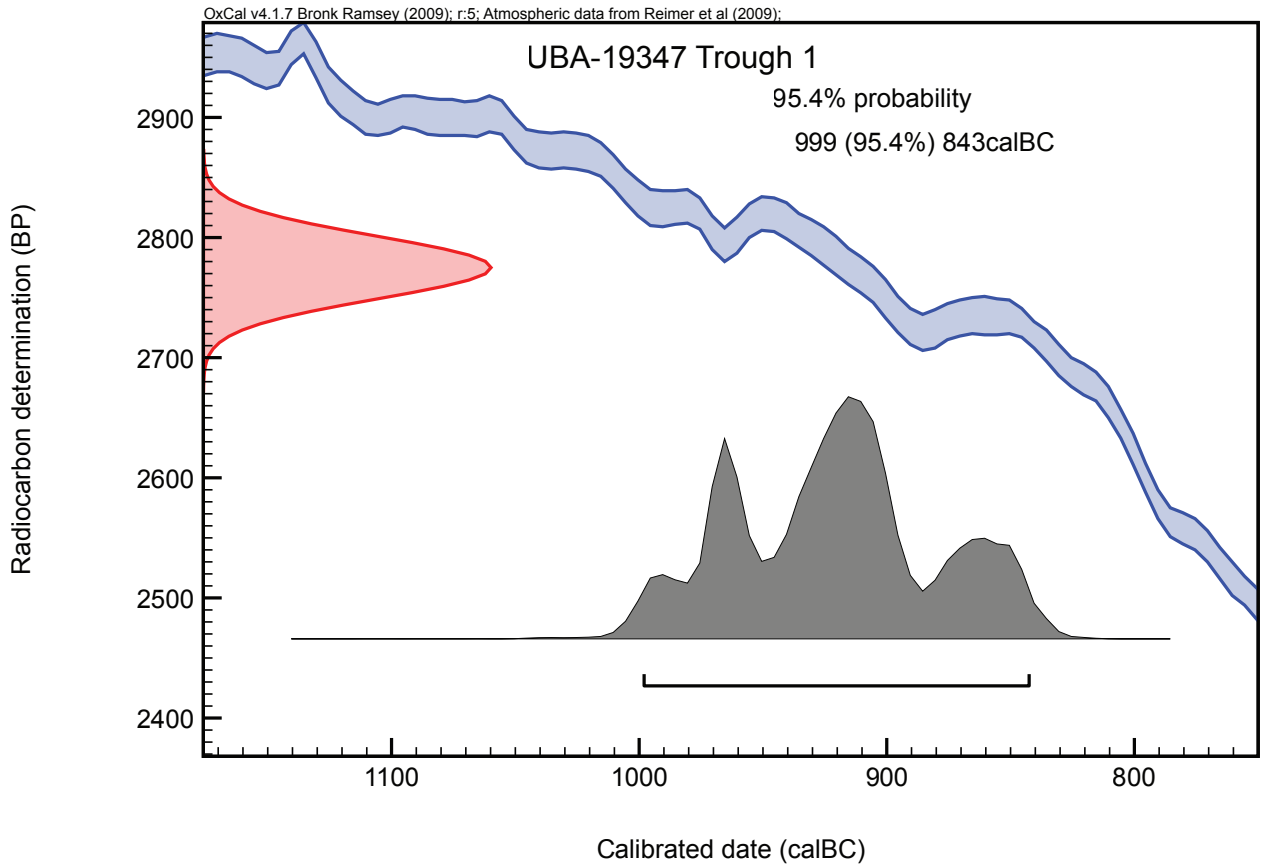

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M11 Gorey to Enniscorthy Scheme (A054)
E4201, Scurlocksbush 1&2, Co. Wexford

Figure 14: Calibrated radiocarbon date

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Plate 1: Burnt stone spread 51/52 prior to excavation, looking north. Scales 1 m & 1 m

Plate 2: Trough 1 half-sectioned with timbers 62, 65–71 and stone drain 7, looking south-west. Scales 1 m & 1 m.

Plate 3: Pit 21 half-sectioned, trough 1 and drains 7, 8 & 22 mid-excavation, looking north-east. Scales 1 m & 1 m

Plate 4: Trough 1 mid-excavation with timbers 62, 65-71 & 84, looking north-west. Scales 1 m & 1 m.

Plate 5: Position of wooden stakes 63, 64, 85-95 in base of trough 1, looking east. Scales 1 m & 1 m.

Plate 6: Mortice hole within centre of wooden plank 67, looking east. Scale 0.50 m.

Plate 7: Wooden stake 64. Scale 0.50 m.

Plate 8: Pit 5 fully excavated, looking north-north-west. Scale 1 m.

Plate 9: Post-hole 2 half-sectioned, looking north. Scales 0.30 m & 0.20 m..

Plate 10: Post-hole 2 fully excavated, looking north. Scales 0.30 m & 0.20 m.

Plate 11: Section through ditch 10, looking south. Scale 1 m.

Plate 12: Section through ditches 16-18, looking west. Scales 1 m & 0.50 m.

Plate 13: Timber 68, a halved outer tangential split

Plate 14: Timber 62, an outer tangential split. Scale 0.20 m

Plate 15: Well preserved surface of Timber 68. Scale 0.20 m

Plate 16: Poorly preserved surface of Timber 69. Scale 0.20 m

Plate 17: Well preserved Timber 62. Scale 0.10 m

Plate 18: Timber 67. Scale 0.10 m

Plate 19: Worked end of Timber 67. Scale 0.20 m

Plate 20: Mortice in Timber 67. Scale 0.20 m

Plate 21: Timber 63, the upper worn half is sapwood. Scale 0.20 m

Plate 22: Detail of worked end with slightly concave facets on Timber 63

Plate 23: Facets on Timber 63

Plate 24: Detail of dowel hole in Timber 63. Scale 0.20 m

Plate 25: Timber 64, the upper eroded portion is sapwood. Scale 0.20 m

Plate 26: Detail of worked end on Timber 64. Scale 0.20 m

Plate 27: Detail of slightly concave facets on Timber 64

Plate 28: Detail of dowel hole in Timber 64. Scale 0.15 m