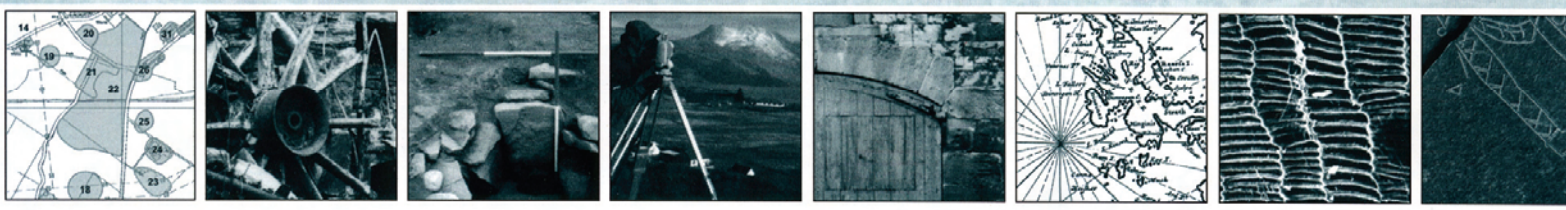

Assessment Report on the Results of Metro North Advance Archaeological Test Trenching, Testing Area 1, Belinstown and Lissenhall Little townlands, Co. Dublin, RPA ref: (MN101) Belinstown Depot

Excavation Licence Number: 09E450
Director: William O. Frazer
Report Author: Lyndsey Clark and William O. Frazer
Project Code: RPMN08
Client: Railway Procurement Agency RPA 7120_5
Townlands: Belinstown and Lissenhall Little
Ordnance Datum: 71.4
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HEADLAND ARCHAEOLOGY Ltd

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SUMMARY

Metro North is a light rail project, the route of which will run along a proposed 18 km corridor, from Belinstown in North County Dublin, through Dublin Airport, to the City Centre at St. Stephen's Green.

Headland Archaeology (Ireland) Ltd was commissioned by the Railway Procurement Agency (RPA) to carry out advance archaeological testing of the proposed Metro North scheme. For the purposes of archaeological assessment the Metro North route has been sub-divided into fourteen testing areas, TA 1–14. This report outlines the results of Advance Archaeological Test Trenching undertaken in Testing Area 1 Belinstown and Lissenhall Little townlands (MN101), Co. Dublin at the site of the proposed Belinstown depot (09E450).

The programme of advance archaeological testing for Metro North was carried out following a series of non-invasive archaeological investigations including an Environmental Impact Assessment (EIA; CRDS Ltd 2008), the preparation of an Archaeological Strategy Document (MGL Ltd 2007) and a programme of geophysical survey (08R0117; Thebaudeau and Harrison 2009).

The EIA process originally identified an archaeological complex (HC#'s 1-7) - within the immediate environs of the proposed depot (CRDS Ltd 2008). These comprise seven recorded monuments including three earthworks, a castle, a ringfort and a possible enclosure - (DU007-036; DU008-056; DU011-007; DU011-007001; DU011-007002; DU012-001; and DU012-002; The Belinstown and Lissenhall Little (HC # 412) townland boundary is located within the proposed testing area (CRDS Ltd 2008, 451). The geophysical survey noted a limited number of features of archaeological potential and numerous ferrous and increased magnetic responses at this location, including several possible pits and linear features (AS1 - G14, G15 and G22-G27) (Thebaudeau and Harrison 2009).

The advance archaeological testing for Testing Area 1 (09E450) was carried out on the 15 September 2009 by William O. Frazer. A total of 47 test trenches were excavated in 3 fields. A total of 5148 linear metres were excavated comprising 11.87% of the testing area.

The part of the townland boundary (HC # 412) which will be impacted by the proposed Metro North was fully recorded, including a drawn section and a photographic survey along its length. It was found that the boundary had been significantly altered in modern times with the stream course apparently widened and possibly deepened by mechanical excavator and what remains of the bank also graded by mechanical excavator, presumably in the course of agricultural activity.

No archaeological sites or isolated features were identified during the course of testing. The features of archaeological potential noted in the geophysical survey were identified as the remains of late post-medieval and modern agricultural activity - namely plough furrows, field boundaries, land drains and stone sockets (left from field clearance) - and were therefore considered to be of no archaeological significance.

This report outlines the results of the archaeological testing and assesses the impact of the proposed Metro North scheme on Testing Area 1. One flint tool was recovered from the topsoil close to the northern field boundary. A burnt mound has been identifed in Testing Area 2 immediately north of this boundary and there is a possibility that the lithic tool represents a continuation of the archaeology into Testing Area 1, though no features were identifed. As this area is the proposed location of tracks and metro vehicle stabling areas associated with the depot, any sub-surface archaeology is likely to be directly impacted upon by site preparation works (including removal of topsoil) and any sub-structure associated with the lines. It is therefore recommended in the Testing Area 2 assessment report (09E448) that archaeological excavation of the burnt mound (Belinstown 4) be carried out prior to construction works. The area proposed for excavation extends into the north of Testing Area 1 to incorporate the find-spot of the lithic tool.

1. INTRODUCTION

This document is submitted as an assessment report on the Advance Archaeological Testing of Metro North, Testing Area 1 Belinstown (MN101), Co. Dublin (09E450; Belinstown/Lissenhall Little).

Metro North will be a combined underground and surface light rail service development, segregated from traffic using tunnel, road median and Greenfield construction environments. The Metro North route will run along a proposed 18km corridor, from Belinstown in North County Dublin, through Dublin Airport, to the City Centre at St. Stephen's Green.

The route of the Metro North is generally a north-south alignment. It will have stops at Belinstown (where its depot will be located), Lissenhall (provisional), Estuary, (provisional), Seatown, Swords, Fosterstown, Dublin Airport, Dardistown, Northwood, Ballymun, Dublin City University, Griffith Avenue, Drumcondra, Mater Hospital, Parnell Square, O' Connell Bridge and St. Stephen's Green.

Testing Area 1 forms part of the Belinstown depot. The southern part of the area is to be maintained as a landscaped woodland area. An infrastructural maintenance building is proposed for the northwest side of the area while the north portion of Testing Area 1 will be occupied by tracks and metro vehicle stabling areas.

The purpose of the advance testing was to determine the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts along the route so as to inform the subsequent archaeological strategy in advance of construction. All areas of archaeological potential, sites and significant features recorded in the Metro North EIS or subsequently identified by the Metro North geophysical survey were investigated as part of the testing programme.

For the purposes of design and construction the Metro North route has been broken into seven zones or section areas (MN101-MN107):

Area 1 MN101 - Lissenhall to Fosterstown;

Area 2 MN102 - South of Fosterstown to Dublin Airport Boundary (North);

Area 3 MN103 - Dublin Airport;

Area 4 MN104 - Dublin Airport Boundary (South) to M50 motorway;

Area 5 MN105 - M50 (South) to Dublin City University (DCU);

Area 6 MN106 - DCU to Mater Hospital; and

Area 7 MN107 - Mater Hospital to St Stephen's Green

For management purposes, the Metro North route has been sub-divided into fourteen archaeological testing areas (TA1–14) by the RPA Project Archaeologist and each of these areas has been assigned an individual excavation licence number (see Table 1).

Testing Area	Excavation License No.
TA1	09E450
TA2	09E448
TA3	09E449
TA4	09E462
TA5	09E463
TA6	09E464
TA7	09E465
TA8	09E466
TA9	09E467
TA10	09E478
TA11	09E479
TA12	09E480
TA13	09E481

Testing Area	Excavation License No.
TA14	09E482

Table 1: Testing areas and their assigned excavation licence numbers.

2. SITE LOCATION AND DESCRIPTION

Testing Area 1 was located in the townlands of Belinstown and Lissentall Little, Barony of Nethercross, parish of Swords, Co. Dublin (Figure 1). This is within area MN101 - Lissenhall to Fosterstown. It is situated approximately 2km to the north of Swords and comprises the footprint of an east/west orientated depot. The depot will occupy an area of 36 hectares and Testing Area 1 constitutes 8.58 hectares of this. A maintenance depot, stabling facilitiy and a 110kV substation serving the proposed scheme are to be located in this area (ERM 2008). It extended from NGR 250070 on the north to NGR 249737 on the south, with the M1 motorway located directly to the east.

Testing Area 1 was situated on gently sloping, tilled land that encompassed the northern and northwestern extents of three large, roughly rectangular fields (sub-areas 3, 5 and 6). The western and northern sides of the testing area were bounded by the townland boundary between Belinstown and Lissenhall Little, consisting of an earthen bank with a parallel ditch, the latter contained a small stream (HC # 412; CRDS 2008, 451).

Soils specific to the region of North County Dublin are predominated by a highly consolidated, very stiff clay and silt matrix containing sand, gravel, cobbles and boulders. This clay is generally grey to black in colour. In Testing Area 1 of the proposed scheme, however, it is brown. Pockets of glacial sands and gravels occur within this boulder clay. These sands and gravels are likely to have been deposited in glacial ponds or streams and are generally water bearing. The underlying bedrock consists of a nodular and muddy argillaceous limestone with a relatively uniform bed thickness. It is interspersed with thin shale beds and contains major units of very distinctive, laminated fine limestone (ERM and Jacobs Engineering Ireland Ltd 2008).

3. PROJECT BACKGROUND

Several stages of non-invasive archaeological investigation were carried out on the route of Metro North prior to the archaeological testing, and the results of these investigations have had a direct influence on the strategy adopted for the testing programme.

3.1 Environmental Impact Statement

An Environmental Impact Assessment was carried out as part of the Railway Order Application for Metro North. Cultural Resource Development Services Limited on behalf of ERM Environmental Resources Management Ireland Limited ('ERM') completed the assessment for archaeology, architectural heritage and cultural heritage. The assessment consisted a review of the published and unpublished documentary, aerial and cartographic sources, supported by a field inspection of the proposed alignment.

3.2 Archaeological Strategy Document

In addition to the EIS chapter, an Archaeological Strategy document was prepared for Metro North by Margaret Gowen Limited (MGL) in 2007. The strategy supplements the provisions outlined in the EIS for the mitigation of impacts on archaeological heritage arising from the project. The strategy is a live document and is managed by the RPA Project Archaeologist and will continue to evolve on a phased basis to ensure that it remains appropriate and effective in managing archaeological risk throughout the project up to construction commencement.

The EIS and the Metro North Archaeological Strategy recommended that a programme of geophysical survey followed by a programme of testing should be carried out in the Greenfield areas of the route in advance of construction.

3.3 Geophysical Survey

A programme of geophysical survey was carried out by MGL between May and September 2008 with further investigations in 2009 (Thebaudeau and Harrison 2009). The methodology included a scanning gradiometry survey and a detailed magnetometry survey of approximately twenty-eight areas along the route of Metro North.

4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

This historical and archaeological background for Testing Area 1 has been compiled using the Archaeology, Architectural Heritage and Cultural Heritage chapter of the EIS (CRDS Ltd 2008), the aforementioned Archaeology Strategy (Gowen 2008) and Geophysical

Survey (Thebaudeau and Harrison 2009) in addition to available literary and cartographic sources.

"Evidence for prehistoric activity in north county Dublin comes from the Record of Monuments and Places, which includes prehistoric sites, previous development-led investigations and surveys and from stray finds. In the early historical period the area through which the route is aligned formed part of the geographical region of Brega with a range of sites of this period including ringforts, dispersed settlement sites and Early Christian ecclesiastical sites. There are relatively few surviving ringforts in north County Dublin due to the intensive cultivation and agricultural activity in this part of the county, which levelled many earthwork sites. These tend to survive as cropmarks, as illustrated in the archaeological desk study undertaken for the EIS.

After the conquest by Anglo-Normans in the twelfth century social structures, agrarian development and settlement centres of religious and secular origin followed. Throughout the medieval period monastic foundations and individual lordships held large tracts of lands in north Dublin. A period of great flux occasioned by warfare, confiscation and transfer of ownership occurred during the Tudor, Cromwellian and Jacobite wars and the development of demesne properties in subsequent years all influenced the character and layout of [the] rural north Dublin… landscape which was also influenced by…peacetime economic and… agricultural development (Gowen 2008, 4-5).

Recorded Archaeological Sites

Due to activities associated with modern development and progress - such as agriculture, industry and infrastructural improvements in the second half of the 20th century - many archaeological sites have been levelled. The present day archaeological landscape is not therefore fully representative of the human occupation of this island which has spanned some nine thousand years. Nonetheless, archaeological sites survive today as upstanding structures, earthwork monuments or sub-surface remains.

In all, there are eight recorded archaeological sites listed in the RMP for County Dublin within approximately 1km of the testing area (Table 1). They provide evidence for the human settlement and activity within the area. The presence of a ring-ditch (HC#350) is indicative of prehistoric (Bronze Age/Iron Age) activity within the immediate environs of the proposed depot. However, the most intensive period of known occupation dates to the early and late medieval period as noted by the presence of two enclosures (HC#6 and

HC#7) and a castle site (HC#4). The latter is located just 260m to the north of the proposed depot

HC #	RMP #	Site Type	NGR	Distance
1	DU007-036	Archaeological Complex (earthworks site)	318970/250350	420m to the northeast
2	DU008-056	Archaeological Complex (earthworks site)	318840/250670	700m to the north
3	DU011-007	Archaeological Complex	318640/250440	400m to the north
4	DU011-007001	Castle Site	318570/250370	260m to the north
5	DU011-007002	Earthworks Site	318650/250400	350m to the north
6	DU012-001	Archaeological complex (ringforts site)	319020/250230	420m to the north
7	DU012-002	Enclosure Site	319434/249943	400m to the northeast
350	DU012-003	Ring ditch	319168/249680	100 m to the southeast

Table 1 - RMP's located within the vicinity of Testing Area 1

The EIA process originally identified an archaeological complex (HC #'s 1-7) - consisting of three earthworks, a castle, a ringfort and a possible enclosure - at the site of the proposed depot within Testing Area 1 (CRDS Ltd 2008); however, this was later identified as being situated within Testing Area 2.

Townlands and Townland Boundaries

The Irish landscape is divided into approximately 60,000 townlands and the system of landholding is unique in Western Europe for its scale and antiquity. Many townlands predate the arrival of the Anglo Normans, and Irish historical documents consistently use townland names throughout the historic period to describe areas and locate events accurately in their geographical context. The townland names and boundaries were standardised in the nineteenth century when the Ordnance Survey began to produce large-scale maps of the country. The original Irish names were eventually anglicised to varying degrees, depending in part upon the linguistic skills of the surveyors and recorders. A study of the townland names can provide information on aspects of cultural heritage including descriptions of the use of the landscape by man.

Testing Area 1 is bounded to the north and west by the townland boundary between Belinstown and Lissenhall Little (HC # 412; CRDS 2008) the route of which is marked on the 1st Edition Ordnance Survey map for County Dublin (1843). It consists of an earthen bank and u-shaped ditch within which a stream is located. A survey of this boundary (detailed below) indicated that it has been significantly modified in the recent past in the course of agricultural activity.

According to the EIS (CRDS Ltd 2008) Belinstown is an English place name which incorporates the family name of Belin or Belyn, the landowners in the fourteenth century. Lissenhall Little derived from the Irish *Lisín*, meaning 'little fort' with the 'hall' element possibly being a later addition referring to a particular building within the townland.

A survey of this boundary (detailed below) indicated that it has been significantly modified in the recent past in the course of agricultural activity.

Previous Archaeological Excavations

The archaeological 'Excavations Bulletin' (1970-2005) was checked for a record of any licensed archaeological investigations carried out within the townlands of Belinstown and Lissenhall Little since 1970. Two such investigations were listed in the townland of Lissenhall Little (00E0953 and 01E1074), both of which were carried out by Valerie J. Keeley Ltd. prior to the Northern Motorway/Airport– Balbriggan bypass construction. No features of archaeological significance were identified during the testing of 00E0953 (Lynch 2000), however an Early Neolithic habitation site was identified at site 01E1074 (O'Reilly 2001). This site is located approximately 10 m to the south of Testing Area 2.

Geophysical Survey

The geophysical survey noted several features of archaeological potential and a moderate number of anomalies of ferrous and increased magnetic response within Testing Area 1 (Thebaudeau and Harrison 2009). These included:

- Some increased ferrous responses in sub-area 6 (G14) unlikely to represent ephemeral archaeological remains
- Several broad and amorphous increased magnetic responses in sub-area 6 (G14-G15 and G22-G26) thought to represent localised variations within the subsoil
- Occasional pit-type responses in sub-area 3 (G22-G24) thought to possibly represent isolated pits
- Several linear trends in sub-area 3 (G23, G26 and G27) thought to possibly represent ephemeral archaeological remains.

Cartographic Sources

Testing Area 1 comprises the northern and northwestern extents of three large, roughly rectangular fields (sub-areas 3, 5 and 6). The fields which encompass sub-areas 5 and 6 correspond closely to the 1st Edition 6" Ordnance Survey map (1843); showing little or no change to the general field layout.

The field in which sub-area 3 is situated is depicted as comprising of 5 small rectangular fields on the 1st Edition 6" maps; however, by the time of the 1st Edition 25" Ordnance Survey maps (1906-1908) considerable field enlargements had occurred, with the boundaries to the five fields removed to create one large, rectangular field.

5. OBJECTIVES

The objective of the testing was to determine the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts along the route so as to inform the subsequent archaeological strategy in advance of construction. All areas of archaeological potential, sites and significant features identified in the EIS and by the geophysical survey were investigated during the testing programme

As part of the advance archaeological testing of Metro North all townland boundaries directly impacted by the proposed scheme were investigated and surveyed. One of these townland boundaries (Belinstown/Lissenhall Little – HC # 412) was located between Testing Areas 1, 2, and 3 and the report on investigations and survey on the boundary is included in this report.

6. METHODOLOGY AND CONSTRAINTS

The archaeological excavation licence number 09E450 was granted to William O. Frazer of Headland Archaeology (Ireland) Ltd by the Department of the Environment, Heritage and Local Government (DoEHLG) in consultation with the National Museum of Ireland (NMI). This licence pertained to the excavation of test trenches as per the trench layout plan for Testing Area 1, which was submitted together with the licence application method statement (Figure 2).

The works were carried out by Headland Archaeology (Ireland) Ltd on behalf of the RPA on 15 September 2009.

The methodology of the investigation complied with the Policy and Guidelines on Archaeological Excavation (Dúchas 1999) and the specification, terms and conditions of the Contract between the RPA and Headland Archaeology (Ireland) Ltd. The work was undertaken in accordance with the Code of Practice agreed between the DoEHLG and the Railway Procurement Agency.

Testing Area 1 encompassed approximately 8.58 hectares. A total of 5148 linear metres of 2m-wide test trenches was excavated, comprising 11.87% of the testing area (Appendices 1 and 2). Testing was in the form of mechanically excavated test trenches. These were excavated using a mechanical tracked excavator (generally 21-tonne) with a toothless ditching / grading bucket under the direct and continuous supervision of the director William O. Frazer or his supervisor. This work was overseen by the Headland Archaeology Senior Archaeologist Ross MacLeod. One archaeological assistant was employed to assist the licensed director and the supervisor with the recording of the trenches and the features identified within them.

The layout of the test trenches was designed to test the features of archaeological potential identified in the geophysical survey. A total of 47 trenches, generally set at a distance of 10 m apart, were excavated throughout the sub-areas that comprise Testing

Area 1. This trenching layout was unchanged from that proposed in the method statement that accompanied the testing licence application:

- Sub-area 3: The geophysical survey had noted several pit-like responses and linear trends of possible archaeological origin within this area, and 32 test trenches were excavated to maximise the potential of identifying any archaeological sites or isolated features. The trenching in this area followed the trench layout plan for Testing Area 1, which was submitted together with the licence application method statement (Figure 2).
- Sub-area 5: A geophysical survey was not carried out in this area however 3 test trenches were excavated in order to determine if any features of archaeological significance were present. The trenching in this area followed the trench layout plan for Testing Area 1, which was submitted together with the licence application method statement (Figure 2).
- Sub-area 6: The geophysical survey had noted several trends, thought to represent ephemeral archaeological remains within this area and 12 trenches were excavated to maximise the potential of identifying any archaeological sites or isolated features. The trenching in this area followed the trench layout plan for Testing Area 1, which was submitted together with the licence application method statement (Figure 2).

Where features of archaeological potential were identified, mechanical excavation ceased and the features were cleaned back and tested by hand. The purpose of the testing was to establish the nature and extent of the archaeological deposits and features present. With this in mind, partial excavation and half-sectioning of features was undertaken where appropriate but every effort was made to preserve the stratigraphical integrity of archaeological sites/features. All features of archaeological potential were sectioned to ascertain their significance. If a feature was deemed to be non-archaeological due to its character or the presence of modern datable material no detailed recording was undertaken, but notes were made on the trench sheets contained within the site archive.

Recording

Unique numbers were given to all contexts of archaeological potential and small finds identified during archaeological test trenching. Prefixes were not used by Headland Archaeology (Ireland) Ltd. Digital photographs were taken of each field, trench and feature. All trenches were surveyed using Trimble GPS surveying equipment with accuracy levels

within 3mm for the duration of the project. All recording was undertaken on Headland Archaeology (Ireland) Ltd *pro forma* record cards. All archaeologically significant features have been related to Ordnance Datum and the Irish National Grid as per RPA Project Control.

Environmental Samples

No environmental samples were taken during the course of archaeological test trenching at Testing Area 1.

Finds Retrieval

One find was retrieved during the course of archaeological test trenching at Testing Area 1. The location of this find was noted and it was individually recorded and given a find's number (Figure 2; Appendix 4). It was allocated to a specific context, individually bagged and catalogued in accordance with National Museum of Ireland guidelines.

6.1 Methodology for recording Townland Boundaries

The recording of the townland boundary consisted of a photographic survey of the length of the boundary that would be impacted by the Metro North Scheme. Measurements were taken at a series of locations along the boundary and a written description was compiled. In accordance with the method statement submitted for the excavation licence a single test trench was also excavated through a section of the townland boundary. This was excavated by hand to provide more detailed information on the nature, composition and profile of the townland boundary.

In addition, in Testing Area 1, a survey of woody taxa in a designated 30m length of the boundary (immediately west of the location of the profile) was undertaken by the licenced director. This survey was undertaken according to a recognised scientific methodology based upon 'Hooper's rule' or the 'Hooper hypothesis' (see Pollard, Hooper & Moore 1974). The director contends that the absolute dating of hedgerows/boundaries according to such taxa counts is not substantiated in an Irish context (nor in most others; see Barnes and Williamson 2006), but that the chronological seriation of boundaries according to the number/type of woody taxa may be possible with a large enough localised sample, in the context of a detailed study of boundary morphology and other technical observations about the proximate landscape history.

In this instance, it was not feasible to undertaken such a contextual landscape study. Rather than as a basis for chronological serration therefore, the survey was conducted to

provide a baseline understanding of modern woody taxa present prior to development. It may serve as a comparison with reconstructed landscape environments derived from any palaeoenvironmental remains in the vicinity.

7. RESULTS

A total of 47 test trenches were mechanically excavated in 3 fields at Testing Area 1 (Figure 2; Plate 1), totalling approximately 10, 191m^2 of the entire Testing Area 1 space of 85,828 m² (i.e. 11.79% of the testing area). An additional trench was hand excavated across a designated section of the Townland Boundary.

The test trenches were excavated to an average depth of 0.40m exposing the underlying mid-yellowish brown silty clay subsoil. This subsoil contained bands of grey yellow coarse grained silty clay and blackish grey silty clay. Features identified within Testing Area 1 generally comprised linear furrows orientated E/W and N/S. A number of French, earthen, stone and terracotta land drains were also excavated across Testing Area 1. The remains of possible field boundaries were identified within Test Trenches 4-10 and 16-23; these corresponded with field boundaries depicted on the 1st Edition 6" Ordnance Survey map indicating that they pre-date 1843. An oval pit was investigated in Trench 12, but is interpreted as non-archaeological in nature.

No features of archaeological significance were identified in any of these trenches. A full description of all trenches is included in Appendix 2.

A lithic tool, consisting of a flint blade of probable prehistoric origin, was identified in the topsoil near the north end of Trench 11(Sub-area 3). No related archaeological features were identified in Testing Area 1, and the lithic find may be a residual find displaced from its original context as a result of recent agricultural activity. It is possible that it was dragged to the north headland of the existing field during post-medieval or modern ploughing. Perhaps more likely, it may have ended up in this location as a result of colluvial erosion; having migrated down the gradual hillslope from the north, in Testing Area 2: sub-area 1, prior to the construction of the intervening townland boundary, perhaps during flooding of the stream. With the latter possibility in mind, it is significant that archaeology, of putative Bronze Age date, was identified approximately 20–45m to the north of the find spot (Trenches 25 and 26; see report on licence 09E448).

A survey of the townland boundary between Belinstown and Lissenhall Little (HC # 412) was carried out along the western and eastern sides of Testing Area 1 (Figure 2; Plates 2-

4). The boundary consisted of a low earthen bank, measuring between 0.2 m and 0.4 m in height (1.6 m -1.8 m from bank top to ditch base), with a parallel water-filled ditch, measuring between 2.5 m and 4 m wide. The ditch seemed to follow the course of a small stream upon which the boundary line is based. On the western side of Testing Area 1 the bank was on the eastern side of the stream, while on the northern side of the testing area the bank was on the northern side of the stream.

The bank appeared to have been graded by modern machinery on the field side while it was occupied by hedging on the stream side. It was occasionally lined with a variety of flora, including (in descending order of frequency): mature hawthorns (*Crataegus* spp) formerly laid along the bank top as hedging, but more recently allowed to grow unmanaged); young and mature ash (*Fraxinus excelsior*), present at intervals that suggest a deliberate programme of planting; mature blackthorns (*Prunus spinosa*); ivy (*Hedera helix*;), a likely coloniser rather than a deliberate cultivar; and brambles (*Rubus fructicosus*), also a likely coloniser rather than a deliberate cultivar.

A series of measurements were taken along the length of the boundary which are representative of the minimum and maximum dimensions (see Figure 2 for locations) and are detailed here:

Measurement 1 (Plate 5): ditch 2.5 m wide, bank28 m high, depth from top of bank to base of ditch 1.63 m

Measurement 2 (Plate 6): ditch 3.8 m wide, bank2 m high, depth from top of bank to base of ditch 1.6 m

Measurement 3 (Plate 7): ditch 4 m wide, bank3 m high, depth from top of bank to base of ditch 1.8 m

An east-facing profile (Figure 3, Plate 3) and a west-facing section (Figure 4; Plate 8) of the boundary were drawn at an existing break on the north side of Testing Area 1, sub area 6.

It was noted that the entire length of the boundary had been subject to modern alteration. It seemed that the stream/ ditch had been widened and deepened in line with other field drains in the area and the low bank had been mechanically graded on the field side. It was not clear from the remains in the field if there ever was a more substantial bank in this location.

7.1 Interpretative assessment of the geophysical survey anomalies in Testing Area 1

The features of archaeological potential and the ferrous anomalies noted in the geophysical survey were identified during the course of archaeological test trenching as the remains of agricultural activity, namely land clearance, land improvement (drainage) and cultivation. Specifically, the pit-like responses and linear trends were the result of numerous plough furrows and land drains, occasional field boundaries and an occasional stone socket resulting from field clearance. Such linear agricultural features were aligned in a manner that coincided with the surviving upstanding fields and/or with the field systems represented on nineteenth-century Ordnance Survey maps. Most demonstrated physical characteristics (degree of straightness, spacing, etc.) clearly indicative of a mechanised origin and post-agricultural improvement (i.e. post *c.*AD 1750) process. In some instances, materials observed in the fills of the features confirmed a late post-medieval or modern origin (e.g. late transfer-printed ceramic, kiln-fired brick fragments, ceramic drain pipes, plastic sheeting, iron/steel fragments from modern farm machinery, etc.), and no finds indicated a date prior to the end of the eighteenth century at the earliest.

The geophysical anomalies resulting from elevated magnetic responses, present especially in the northwest part of area 3 and the north half of area 6, proved overwhelmingly to be the result of variation in the natural subsoil, namely: pockets of more water-'transmissive' sands and gravels; more impermeable clays in poorly drained locations where the soils had begun to gley and/or mineral pan (Fe and Mg) had begun to form. In limited instances this type of geophysical anomaly also partly correlated to the aforementioned late post-medieval/modern agricultural features described above.

In this landscape history context, late post-medieval and modern agricultural features are not considered to be archaeologically significant. With the exception of the aforementioned flint blade recovered from topsoil (see Appendix 4), no significant archaeology was therefore identified in Testing Area 1.

8. IMPACT ASSESSMENT

No significant archaeological features were identified during the course of archaeological test trenching at Testing Area , however, a single flint topsoil find was identified near the north edge of the testing area, and is likely to relate to archaeology identified in Testing

Area 2 sub-area 1 (Trenches 25 and 26; 09E448) immediately to the north. This may indicate that there are sub-surface features in the vicinity. As this area is the proposed location of tracks and metro vehicle stabling areas associated with the depot, any sub-surface archaeology is likely to be directly impacted upon by site preparation works (including removal of topsoil) and any sub-structure associated with the lines.

The townland boundary between Belinstown and Lissenhall Little (HC # 412; CRDS 2008) outlined in the results section above will be directly impacted upon by the proposed scheme, as the proposed infrastructure maintenance building, sections of the tracks and landscaping are to be located where the boundary now stands. The boundary will be completely removed.

9.0 PROPOSED MITIGATION

In order to mitigate the predicted impact of the proposed scheme on Testing Area 1 a detailed mitigation strategy is presented here.

The part of the Townland boundary to the north of Testing Area 1 that will be impacted upon by the proposed depot has been fully recorded and so no further archaeological work is recommended in relation to it.

The lithic find recovered from the topsoil 5.50 m from the north end of sub-area 3 Trench 11 is likely to relate to the archaeological features, provisionally of prehistoric date, that have been identified 20–45 m to the north in Testing Area 2 (09E448). As such, the zone around the Testing Area 2 (Belinstown 4) archaeology requiring resolution (mitigation by archaeological excavation) should extend into the north of Testing Area 1 to include the location of the flint blade find. Further detail on the extent of the area of archaeological potential in this area is outlined in the assessment report for Area 2 (09E448).

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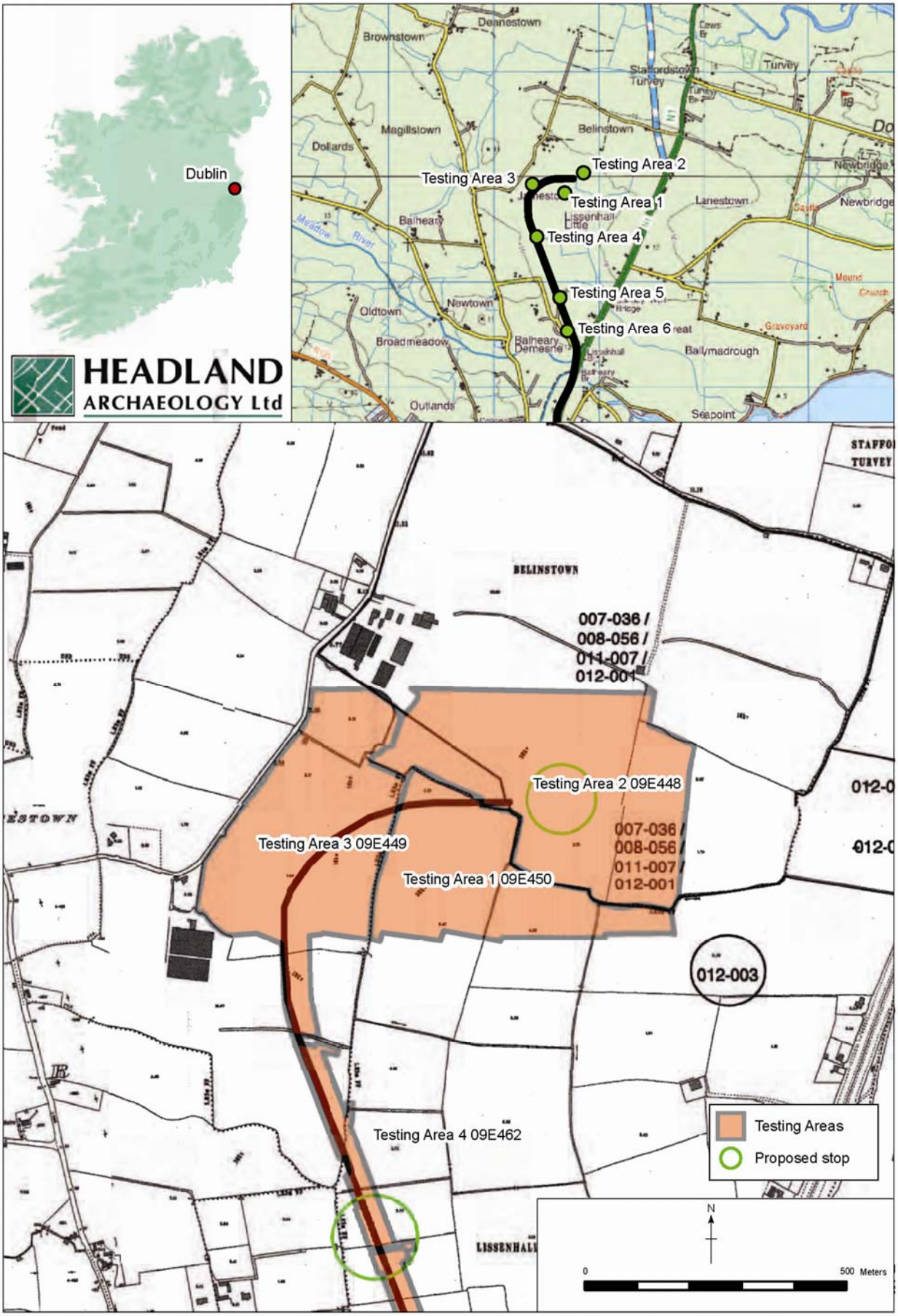

Figure 1 - Advanced Archaeological Testing of Metro North:
Testing Area 1- location and RMP extract.

Figure 2 - Advanced Archaeological Testing of Metro North: Testing Area 1 (Sub- Areas 3, 5 & 6) Lissenhall Little Townland, RPA Ref: MN101 Belinstown Depot- trench layout.

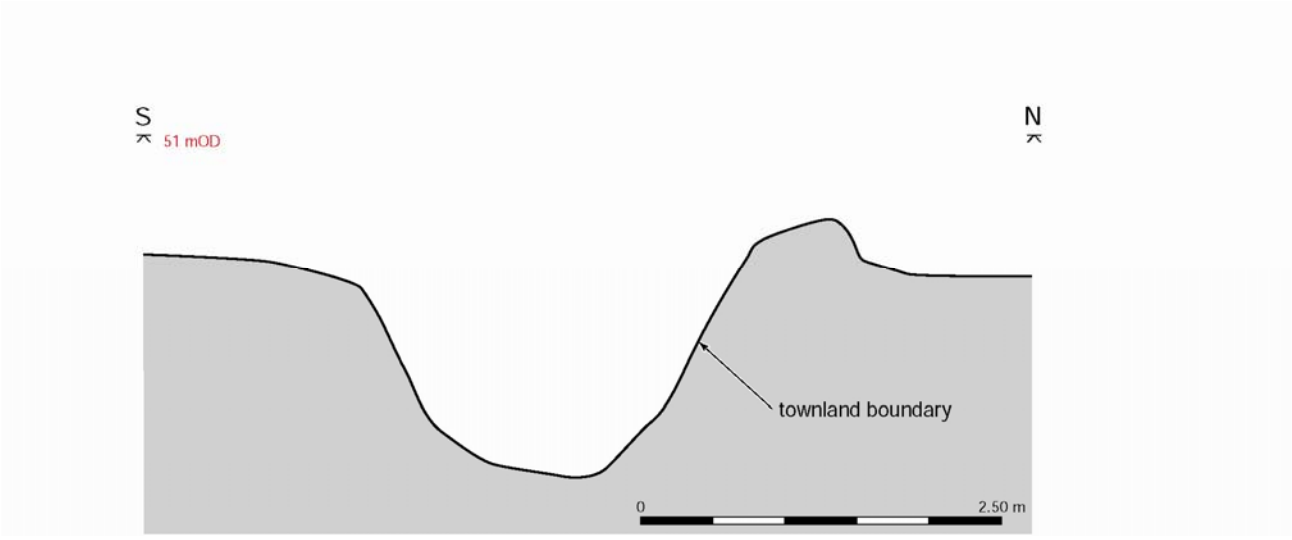

Figure 3 - Advanced Archaeological Testing of Metro North:
East-facing profile of Townland Boundary (HC # 412) Testing Area 1.

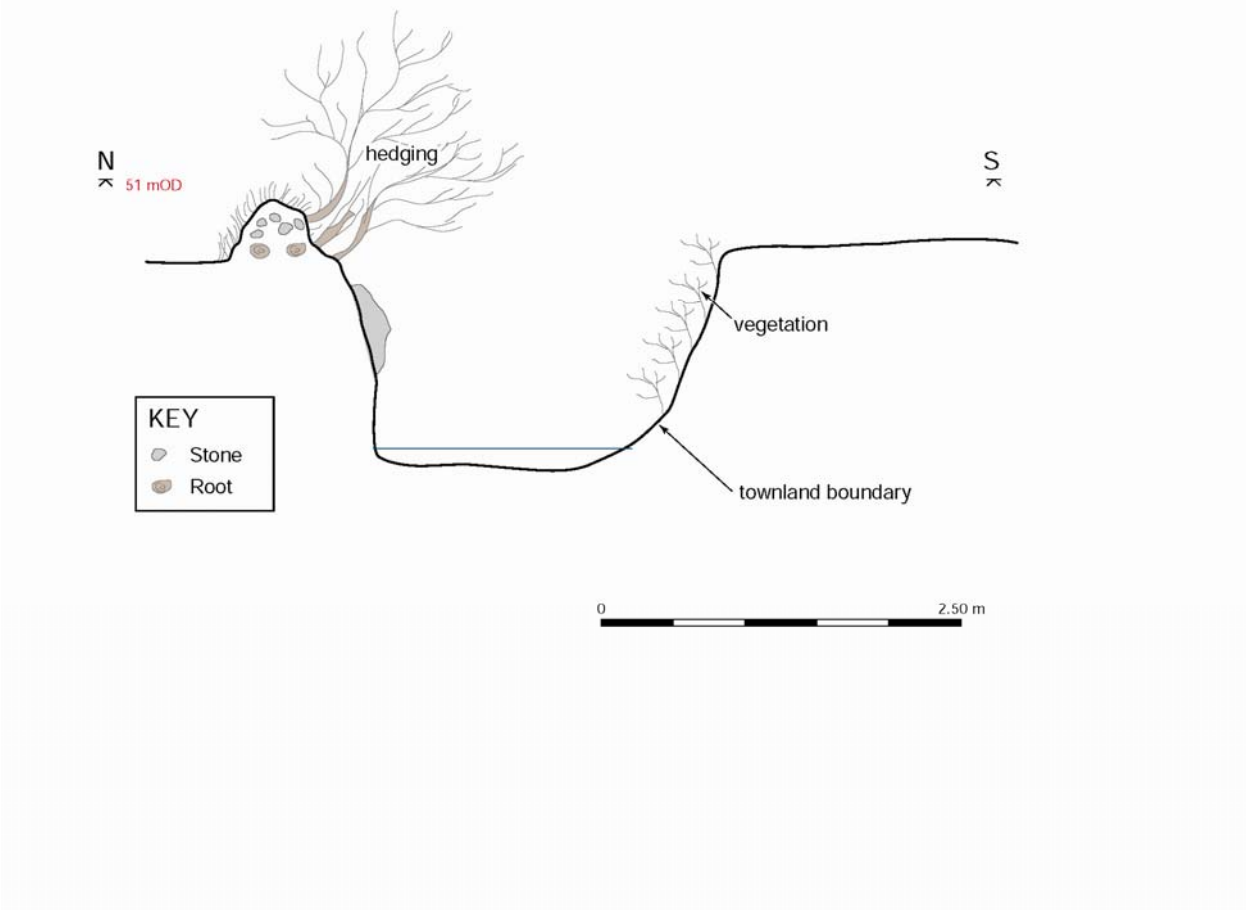

Figure 4 - Advanced Archaeological Testing of Metro North:
West-facing section of Townland Boundary (HC # 412) Testing Area 1.

Plate 1 - Test trenching in Testing Area 1.

Plate 2 - View west along Townland Boundary (HC#412) ditch on north side of Testing Area 1.

Plate 3 - Townland Boundary (HC#412) to the west of Teating Area 1, facing east.

Plate 4 - East-facing profile of Townland Boundary (HC#412).

Plate 5 - Measurement point 1 on the Townland Boundary (HC#412).

Plate 6 - Measurement point 2 on the Townland Boundary (HC#412).

Plate 7 - Measurement point 3 on the Townland Boundary (HC#412).

Plate 8 - West-facing section of Townland Boundary (HC#412).

Appendix 1: Field Register

Testing Area	Sub-area	Townland(s)	Description	Total Linear Metres	Services Present
1	3	Lissenhall Little	In stubble at time of testing, roughly large square area used for wheat (6.0241ha).	3614	Overhead ESB running diagonally NE/SW across area between trenches 20 and 19.
1	5	Lissenhall Little	In stubble at time of testing, rectangular east/west orientated area used for wheat (0.5976ha).	358	N/A
1	6	Lissenhall Little	Stubble at time of testing; crop used was wheat (1.96ha).	1176	N/A
			Total	5148	

Appendix 2: Trench Register

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
1	3	1	99.00	2.00	0.40	E/W	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Moderately compact brown silty clay with moderate occurrence of medium and small sub-angular stone. **Natural subsoil**: Mid-yellowish brown silty clay with bands of grey yellow coarse grained silt clay and blackish grey silt clay. **No features of archaeological significance identified**.	• Furrow (004) located approximately 26 m from the eastern end of the test trench. Corresponds to anomaly on geophysical survey. Half-sectioned. • Stone-filled field drain (006) located 19 m from the western end of the test trench. Corresponds to anomaly on geophysical survey. Half-sectioned.
1	3	2	95.00	2.00	0.40	E/W	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Moderately compact brown silty clay with moderate occurrence of medium and small sub-angular stone (plough soil). **Natural subsoil**: Mid-yellowish brown silty clay with bands of grey yellow coarse grained silt clay and blackish grey silt clay.	• Furrow (004) located approximately 26 m from the eastern end of the test trench. Does not correspond to anomalies on geophysical survey. Half-sectioned. • Furrow (008) located 20 m from the western end of the

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							No features of archaeological significance identified.	test trench. Does not correspond to anomalies on geophysical survey. Half-sectioned.
1	3	3	100.20	2.00	0.40	NNW/SSE	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Moderately compact brown silty clay with moderate occurrence of medium and small sub-angular stone (plough soil). **Natural subsoil**: Mid-yellowish brown silty clay with bands of grey yellow coarse grained silt clay and blackish grey silt clay. **No features of archaeological significance identified**.	• Furrow (004) located approximately 21 m from the eastern end of the test trench. Does not correspond to anomalies on geophysical survey. Half-sectioned. • Stone-filled field drain (006) located approximately 27 m from the eastern end of the test trench. Corresponds to anomaly on geophysical survey. Half-sectioned.
1	3	4	100.00	2.10	0.48	NNE/SSW	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Moderately compact brown silty clay with moderate occurrence of medium and small sub-angular stone	• Former field boundary (010), located approximately 40 m from SSW end of the test trench. Depicted on 1st

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							(plough soil). **Natural subsoil**: Mid-yellowish brown silty clay with bands of grey yellow coarse grained silt clay and blackish grey silt clay. **No features of archaeological significance identified**.	edition 6" OS map. Half-sectioned. • Drain (012) located approximately 20 m from NNE end of the test trench. • Furrow (013) located approximately 55 m from NNE end of the test trench. Not-half-sectioned. • Furrow (014) located approximately 70 m from NNE end of the test trench. • Drain (015) extending from the NNE end of the test trench. Half-sectioned.
1	3	5	100.00	1.80	0.55	NNE/SSW	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Moderately compact brown silty clay with moderate occurrence of medium and small sub-angular stone (plough soil). **Natural subsoil**: Mid-yellowish brown silty clay with bands of grey yellow coarse grained silt clay and blackish	• Former field boundary (010), located approximately 41 m from SSW end of the test trench. Depicted on 1st edition 6" OS map. Half-sectioned. • Drain (012) located

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							grey silt clay. **No features of archaeological significance identified**.	approximately 20 m from NNE end of the test trench. • Drain (017) located approximately 6 m from the SSW end of the test trench. Half-sectioned.
1	3	6	100.00	1.80	0.44	NNE/SSW	**Sod**: Dark brown loamy clay. **Topsoil**: Grey brown sticky silty clay. **Natural subsoil**: Varies greatly from grey gravelly patches of well sorted and rounded pebbles on average 0.15m in diameter, to yellow grey silty marly clay. **No features of archaeological significance identified**.	• Former field boundary (010), located approximately 39 m from SSW end of the test trench. Depicted on 1st edition 6" OS map. Half-sectioned. • Drain (012) located approximately 30 m from NNE end of the test trench. Half-sectioned.
1	3	7	100.00	2.00	0.43	NNE/SSW	**Sod**: Dark brown loamy clay. **Topsoil**: Grey brown sticky silty clay. **Natural subsoil**: Varies greatly from grey gravelly patches of well sorted and rounded pebbles on average 0.15m in diameters, to yellow grey	• Former field boundary (010), located approximately 35 m from SSW end of the test trench. Depicted on 1st edition 6" OS map.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							silty marly clay. **No features of archaeological significance identified**.	• Drain (012) located towards the NNE end of the test trench. Half-sectioned.
1	3	8	100.00	2.00	0.62	NNE/SSW	**Sod**: Dark brown loamy clay. **Topsoil**: Grey brown sticky silty clay. **Natural subsoil**: Varies greatly from yellowy grey brown marly boulder clay to naturally occurring patches of gravel. **No features of archaeological significance identified**.	• Former field boundary (010), located approximately 35 m from SSW end of the test trench. Depicted on 1st edition 6" OS map. Half-sectioned. • Furrow (013) located approximately 55 m from NNE end of the test trench. Half-sectioned. • Furrow (014) located approximately 70 m from NNE end of the test trench. Half-sectioned.
1	3	9	100.00	2.10	0.46	NNE/SSW	**Sod**: Dark brown loamy clay **Topsoil**: Mid-brown loam **Natural subsoil**: Greyish orange silty clay, frequent grey gravel towards southern end of trench.	• Former field boundary (010), located approximately 32 m from SSW end of the test trench. Depicted on 1st

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							No features of archaeological significance identified.	edition 6" OS map. Half-sectioned. • Furrow (014) located approximately towards the SSW end of the test trench. Half-sectioned. • Stone-filled drain (022) extending from the NNE end of the test trench. Half-sectioned.
1	3	10	100.00	2.00	0.42	N/S	**Sod**: Dark brown loamy clay **Topsoil**: Mid-brown loam **Natural subsoil**: Greyish orange silty clay, frequent grey gravel towards southern end of trench. **No features of archaeological significance identified**.	• Former field boundary (010), located approximately 30 m from SSW end of the test trench. Depicted on 1st edition 6" OS map. • Drain (024) located 26m from S end of test trench.
1	3	11	50.00	1.90	0.45	NE/SW	**Sod**: Dark brown loamy clay. **Topsoil**: Mid-brown loam. **Natural subsoil**: Greyish orange silty	• Numerous furrows (025) located in the N end of the test trench. • Flint blade found in

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							clay, frequent grey gravel. **No features of archaeological significance identified**.	topsoil (09E450:001:001)
1	3	12	60.00	1.90	0.40	NE/SW	**Sod**: Mid-grey brown silty clay. **Topsoil**: Mid-brown loam, with occasional tiny stones. **Natural subsoil**: Greyish orange silty clay, frequent grey. **No features of archaeological significance identified**.	• Numerous furrows (025) located in the N end of the test trench. • 1 irregular oval tree bole (026) located 28m from the N end of trench. Half-sectioned.
1	3	13	80.00	1.90	0.40	NE/SW	**Sod**: Mid-grey brown clayey silt. **Topsoil**: Light creamy brown silty sand. **Natural subsoil**: Mottled, dark brownish grey gravelly sand. **No features of archaeological significance identified**.	• Numerous furrows (025) located 25.50 m from the N end of the test trench.
1	3	14	24.60	2.00	0.39	NE/SW	**Sod**: Mid-grey brown clayey silt. **Topsoil**: Light creamy brown silty sand. **Natural subsoil**: Mottled, dark brownish grey gravelly sand. **No features of archaeological**	• Numerous land drains (026) located towards the centre of the test trench.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							significance identified.	
1	3	15	91.80	2.00	0.41	NE/SW	**Sod**: Mid-grey brown clayey silt. **Topsoil**: Light creamy brown silty sand. **Natural subsoil**: Mottled, dark brownish grey gravelly sand. **No features of archaeological significance identified**.	• Numerous land drains (026) located towards the centre of the test trench.
1	3	16	130.00	2.00	0.45	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	• Numerous furrows, orientated NW/SE. • Former field boundary (029), located approximately 4.50 m from SSW end of the test trench. Depicted on 1st edition 6" OS map.
1	3	17	150.00	1.80	0.45m	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow	• Former field boundary (029), located approximately 14 m from SSW end of the test trench. Depicted on 1st

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	edition 6" OS map.
1	3	18	139.00	2.00	0.35	NW/SE	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	• Former field boundary (029), located approximately 14 m from SSW end of the test trench. Depicted on 1st edition 6" OS map.
1	3	19	148.00	2.00	0.43	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	• Drain (032) located 32 m from north end of trench. Half-sectioned. • Former field boundary (029), located approximately 12 m from SSW end of the test trench. Depicted on 1st edition 6" OS map. Half-sectioned.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
1	3	20	280.00	1.80	0.45	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	• Numerous furrows (033) located throughout the test trench. • Former field boundary (010), located approximately 50 m from NNE end of the test trench. Depicted on 1st edition 6" OS map. • Former field boundary (029), located approximately 10 m from SSW end of the test trench. Depicted on 1st edition 6" OS map. • Field drain (036) located approximately 75 m from the NE extent of the test trench.
1	3	21	280.00	2.10	0.48	NE/SW	**Sod**: Dark brown root layer with some	• Numerous furrows (033) located

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	throughout the test trench. • Former field boundary (010), located approximately 55 m from NNE end of the test trench. Depicted on 1st edition 6" OS map. Corresponds to anomaly on geophysical survey. • Former field boundary (029), located approximately 7 m from SSW end of the test trench. Depicted on 1st edition 6" OS map.
1	3	22	280.00	2.00	0.41	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones.	• Numerous furrows (033) located throughout the test trench. • Former field boundary (010), located approximately 56 m from NNE end of the test trench.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							No features of archaeological significance identified.	Depicted on 1st edition 6" OS map. Corresponds to anomaly on geophysical survey. • Former field boundary (029), located approximately 15 m from SSW end of the test trench. Depicted on 1st edition 6" OS map. • Field drain (036) located approximately 80 m from the NE extent of the test trench. Half-sectioned.
1	3	23	100.00	1.90	0.40	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological**	• Former field boundary (010), located approximately 55 m from NNE end of the test trench. Depicted on 1st edition 6" OS map. Corresponds to anomaly on geophysical survey.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							significance identified.	• Numerous furrows (033) located throughout the test trench.
1	3	24	80.00	2.10	0.55	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	• Numerous furrows (033) located throughout the test trench. • Former field boundary (010), located approximately 45 m from NNE end of the test trench. Depicted on 1st edition 6" OS map. Corresponds to anomaly on geophysical survey.
1	3	25	100.00	1.90	0.40	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones.	• Numerous land drains (034) located throughout the test trench.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							No features of archaeological significance identified.	
1	3	26	53.00	1.85	0.40	NE/SW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. Blackish grey clayey silt. **No features of archaeological significance identified**.	• Drain (035) located 3.60m from the SW end of the test trench. Half-sectioned.
1	3	27	98.00	2.04	0.40	NNE/SSW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. Blackish grey clayey silt. **No features of archaeological significance identified**.	• Field drain (036) located approximately 14 m from the N end of the trench.
1	3	28	99.40	2.00	0.55	N/S	**Sod**: Dark brown root layer with some	• Field drain (036) located approximately

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. Blackish grey clayey silt. **No features of archaeological significance identified**.	12 m from the N end of the trench.
1	3	29	100.00	2.00	0.40	NNE/SSW	**Sod**: Dark brown root layer with some small stones. **Topsoil**: Mid-brown coloured sticky clay containing few stones and slightly plastic composition. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	None
1	3	30	75.50	2.00	0.47	E/W	**Sod**: Mid-greyish brown sandy silt. **Topsoil**: Mottled, Mid-brown coloured silty sand, dark brownish grey gravelly sand. **Natural subsoil**: Mottled yellow orange and brown boulder clay which	• Drain (038) located approximately 28 m from the W end of the test trench.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							contained small stones. **No features of archaeological significance identified**.	
1	3	31	80.00	2.10	0.42	E/W	**Sod**: Mid-greyish brown sandy silt. **Topsoil**: Mottled, Mid-brown coloured silty sand, dark brownish grey gravelly sand. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	None
1	3	32	79.50	2.00	0.46	E/W	**Sod**: Mid-greyish brown clayey silt. **Topsoil**: Mottled, Mid-brown coloured silty sand, dark brownish grey gravelly sand. **Natural subsoil**: Mottled yellow orange and brown boulder clay which contained small stones. **No features of archaeological significance identified**.	None
1	5	1	120.00	2.10	0.35	E/W	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Mid-greyish brown loam	• Numerous furrows (051) located throughout the test

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							Natural subsoil: Yellow silty boulder clay, medium limestone sub angular inclusions. Occasional iron pan staining. **No features of archaeological significance identified**.	trench.
1	5	2	120.00	1.80	0.45	E/W	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Mid-greyish brown loam **Natural subsoil**: Yellow silty boulder clay, medium limestone sub angular inclusions. Occasional iron pan staining. **No features of archaeological significance identified**.	• Numerous furrows (051) located throughout the test trench.
1	5	3	120.00	2.10	0.43	E/W	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Mid-greyish brown loam **Natural subsoil**: Yellow silty boulder clay, medium limestone sub angular inclusions. Occasional iron pan staining. **No features of archaeological significance identified**.	• Numerous furrows (051) located throughout the test trench.

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
1	6	1	123.00	2.00	0.45	N/S	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Described as plough soil described as brown silty clay. **Natural subsoil**: Boulder clay, mid-grey clayey sand with frequent small sub rounded stones included. **No features of archaeological significance identified**.	• Furrow (039) located approximately 35 m from the N end of the test trench. Half-sectioned. • Furrow (041) located approximately 60 m from the N end of the test trench. Half-sectioned.
1	6	2	130.00	1.90	0.45	WNW/ESE	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Described as plough soil described as brown silty clay. **Natural subsoil**: Boulder clay, mid-grey clayey sand with frequent small sub rounded stones included. **No features of archaeological significance identified**.	• Field drain (043) located approximately 40.50 m from the W end of the test trench. Corresponds to anomaly on geophysical survey.
1	6	3	127.00	2.00	0.40	WNW/ESE	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Described as plough soil described as brown silty clay. **Natural subsoil**: Boulder clay, mid-grey clayey sand with frequent small	• Field drain (043) located approximately 40.50 m from the W end of the test trench. Half-sectioned. • Furrow (045) located

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							sub rounded stones included. **No features of archaeological significance identified**.	approximately 22 m from the W end of the test trench. • Furrow (047) located approximately 35 m from the W end of the test trench.
1	6	4	130.00	1.90	0.35	WNW/ESE	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Described as plough soil described as brown silty clay. **Natural subsoil**: Boulder clay, mid-grey clayey sand with frequent small sub rounded stones included. **No features of archaeological significance identified**.	None
1	6	5	130.00	2.00	0.35	WNW/ESE	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Described as plough soil described as brown silty clay. **Natural subsoil**: Boulder clay, mid-grey clayey sand with frequent small sub rounded stones included. **No features of archaeological significance identified**.	None

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
1	6	6	128.00	2.00	0.47	WNW/ESE	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Mid-brown clay with small sub rounded and sub angular stones. **Natural subsoil**: Fine gritty, slightly clayey sand mottled orangey brown with frequent small stones. **No features of archaeological significance identified**.	None
1	6	7	110.00	2.00	0.38	WNW/ESE	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Mid-brown clay with small sub rounded and sub angular stones. **Natural subsoil**: Fine gritty, slightly clayey sand mottled orangey brown with frequent small stones. **No features of archaeological significance identified**.	• Land drain (049) located approximately 11 m from SE end of test trench.
1	6	8	36.70	2.00	0.36	E/W	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Mid-brown clay with small sub rounded and sub angular stones. **Natural subsoil**: Fine gritty, slightly clayey sand mottled orangey brown with frequent small stones.	None

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							No features of archaeological significance identified.	
1	6	9	60.00	2.00	0.42	E/W	**Sod**: Dark brown with humus and mineral elements. **Topsoil**: Mid-brown clay with small sub rounded and sub angular stones. **Natural subsoil**: Fine gritty, slightly clayey sand mottled orangey brown with frequent small stones. **No features of archaeological significance identified**.	None
1	6	10	79.00	2.00	0.40	N/S	**Sod**: Mid- to dark silty clay with occasional sub angular stones and roots. **Topsoil**: Mid-orangey brown clay with only very occasional, usually small stone inclusions. **Natural subsoil**: Fine gritty, slightly sandy clay, mottled orangey brown with frequent small stones. **No features of archaeological significance identified**.	• Land drain (050) located approximately 27 m from the N end of the test trench.
1	6	11	55.00	2.00	0.40	N/S	**Sod**: Mid-to dark silty clay with occasional sub angular stones and roots.	• Land drain (050) located approximately 12 m from the N end

Testing Area	Sub-area	Trench No.	Length (m)	Width (m)	Depth (m)	Orientation	Description	Summary of Features
							Topsoil: Mid-orangey brown clay with only very occasional, usually small stone inclusions. **Natural subsoil**: Fine gritty, slightly sandy clay, mottled orangey brown with frequent small stones. **No features of archaeological significance identified**.	of the test trench.
1	6	12	54.00	2.00	0.47	N/S	**Sod**: Mid-to dark silty clay with occasional sub angular stones and roots. **Topsoil**: Mid-orangey brown clay with only very occasional, usually small stone inclusions. **Natural subsoil**: Fine gritty, slightly sandy clay, mottled orangey brown with frequent small stones. **No features of archaeological significance identified**.	Land drain (050) located approximately 12 m from the N end of the test trench.

Townland Boundary Section

Testing Area	Sub-area	Trench	Length	Width	Depth	Orientation	Description
1	1	Townland Boundary section	N/A	0.5 m	0.32 m	N/S	Existing break in the boundary was used to record the section. The West facing section was hand cleaned to natural subsoil which was yellow-brown silty clay with occasion stone.

Appendix 3: Context Register

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
001	1	All	All	Deposit	-	-	0.10	Dark brown with humus and mineral elements.	Sod
002	1	All	All	Deposit	-	-	0.35	Varies between moderately compact brown silty clay with moderate inclusions of small to medium sub-angular stones to mid-greyish brown loam.	Topsoil
003	1	All	All	Deposit	-	-	-	Mid-yellowish brown silty clay mottled with greyish yellow and blackish grey silty clay with occasional stone inclusions	Natural subsoil

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
004	1	3	1 2 3	Cut	-	1.30	0.45	Linear feature orientated N/S.	Cut of a furrow
005	1	3	1 2 3	Fill	-	1.30	0.45	Light brown silty clay	Fill of furrow (004)
006	1	3	1 3	Cut	-	0.24	-	Linear feature orientated N/S. Present in test trench 3.	Cut of a stone-filled field drain
007	1	3	1 3	Fill	-	0.24	-	Medium sized sub-angular stones within a brown silty clay matrix.	Fill of stone-filled field drain (006)
008	1	3	2	Cut	-	2.00	0.40	Linear feature orientated N/S.	Cut of a furrow
009	1	3	2	Fill	-	2.00	0.40	Light brown silty clay	Fill of furrow (008)
010	1	3	4-10 23-24	Cut	-	2.00	0.30	Linear feature orientated NW/SE.	Cut of a former field boundary

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
011	1	3	4-10 23-24	Fill	-	2.00	0.30	Loosely compacted, dark brown organic peaty material.	Fill of former field boundary (010)
012	1	3	4 5 6 8	Cut	-	1.00	0.18	Linear feature orientated NW/SE.	Cut of a Drain
013	1	3	4 7	Cut	-	0.80	-	Linear feature orientated NW/SE.	Cut of a Furrow
014	1	3	4 7 9	Cut	-	0.58	-	Linear feature orientated NW/SE.	Cut of a Furrow
015	1	3	4	Cut	-	1.05	0.10	Linear feature orientated N/S with concave sides and a rounded base.	Cut of a drain
016	1	3	4	Fill	-	1.05	0.10	Dark grey silty clay.	Fill of drain (015)

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
017	1	3	5	Cut	-	1.20	-	Linear feature orientated NW/SE.	Cut of a drain
018	1	3	5	Fill	-	1.20	-	Light brown silty clay.	Fill of drain (017)
019	1	3	4 5 6 8	Fill	-	1.00	0.18	Light brown silty clay.	Fill of drain (012)
020	1	3	4 7	Fill	-	0.80	-	Light yellowish brown silty clay.	Fill of furrow (013)
021	1	3	4 7 9	Fill	-	0.58	-	Light yellowish brown silty clay.	Fill of furrow (014)
022	1	3	9	Cut	-	0.25	-	Linear feature orientated NE/SW.	Cut of a stone-filled drain
023	1	3	9	Fill	-	0.25	-	Medium sub-rounded stoned in a brown silty clay matrix.	Fill of stone-filled linear (022)

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
024	1	3	10	Cut	-	-	-	Linear feature orientated E/W.	Cut of a drain
025	1	3	11 12 13	Cut	-	0.30	-	Numerous linear features orientated E/W.	Cut of numerous furrows
026	1	3	12	Cut	1.90	0.90	-	Irregular oval feature orientated E/W with irregular sides and an irregular base.	Cut of a tree bole
027	1	3	12	Fill	1.90	0.90	-	Mid-grey sandy silty clay with frequent small to medium stone inclusions.	Fill of tree bole (026)
028	1	3	14 15	Cut	-	-	-	Numerous linear features orientated E/W.	Cut of numerous field drains

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
029	1	3	16 17 18 19 20 21 22	Cut	-	1.20	-	Linear feature orientated NW/SE with concave sides and a rounded base.	Cut of a former field boundary
030	1	3	16 17 18 19 20 21 22	Fill	-	1.20	-	Grey clayey silt.	Basal fill of former field boundary (029)
031	1	3	16 17 18 19 20 21 22	Fill	-	1.20	-	Brown peat.	Upper fill of former field boundary (029)
032	1	3	19	Cut	-	-	-	Linear feature orientated E/W. Contained a ceramic pipe within the cut.	Cut of a modern drainage ditch

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
033	1	3	20 21 22 23 24 25	Cut	-	-	-	Numerous linear features orientated E/W.	Cut of numerous furrows
034	1	3	25	Cut	-	-	-	Numerous linear features orientated E/W.	Cut of numerous land drains
035	1	3	26	Cut	-	-	-	Linear feature orientated NWSE. Contained a ceramic pipe within the cut.	Cut of a modern drainage ditch
036	1	3	20 22 27 28	Cut	-	0.80	0.30	Linear feature orientated NW/SE with steeply sloping sides and a rounded base.	Cut of a field drain
037	1	3	20 22 27 28	Fill	-	0.80	0.30	Firmly compacted pale brown silty clay.	Fill of field drain (036)

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
038	1	3	30	Cut	-	-	-	Linear feature orientated NW/SE.	Cut of a drain
039	1	6	1	Cut	-	0.76	0.12	Linear feature orientated NNE/SSW with gradual breaks of slope, concave sides and a flat base.	Cut of a furrow
040	1	6	1	Fill	-	0.76	0.12	Firmly compacted, yellowish brown silty clay with occasional sub-angular stone inclusions.	Fill of furrow (039)
041	1	6	1	Cut	-	0.70	0.10	Linear feature orientated NNE/SSW with gradual breaks of slope, concave sides and a flat base.	Cut of a furrow

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
042	1	6	1	Fill	-	0.70	0.10	Firmly compacted, yellowish brown silty clay with occasional sub-angular stone inclusions.	Fill of furrow (041)
043	1	6	2 3	Cut	-	1.80	0.12	Linear feature orientated NNE/SSW with slightly convex sides and a rounded base.	Cut of a field drain
044	1	6	2 3	Fill	-	1.80	0.12	Medium stones with a mid-brown silty clay matrix.	Fill of field drain (043)
045	1	6	3	Cut	-	0.50	0.12	Linear feature orientated NE/SW with sharp breaks of slope, tapered sides and a concave base.	Cut of a furrow

Context No.	Testing Area	Sub-area	Trench No.	Type (cut/fill/ deposit)	Length (m)	Width (m)	Depth (m)	Description	Interpretation
046	1	6	3	Fill	-	0.50	0.12	Mid-brown silty clay with occasional charcoal fleck inclusions.	Fill of furrow (045)
047	1	6	3	Cut	-	0.67	0.12	Linear feature with gradual breaks of slope, concave sides and a flat base.	Cut of a furrow
048	1	6	3	Fill	-	0.67	0.12	Greyish yellow silty clay.	Fill of furrow (047)
049	1	6	7	Cut	-	-	-	Linear feature orientated N/S.	Cut of a land drain
050	1	6	10	Cut	-	-	-	Linear feature orientated E/W.	Cut of a land drain.
051	1	5	1	Cut	-	-	-	Numerous linear features orientated N/S.	Cut of numerous furrows

Appendix 4: Finds Register

Find No.	Material	Type	Identification	Townland	Description
09E450:001:001	Lithic	Flint blade	Prehistoric	Lissenhall Little	Small flint blade located in topsoil 5.50 m from north end of area 3 trench 11

Appendix 5: Photo register

Photo No.	Camera No.	Sub-area	Trench No.	Townland	Direction Facing	Description
2	Casio 21	5	1	Lissenhall Little	E	General view of test trench 1
3	Casio 21	5	2	Lissenhall Little	E	General view of test trench 2
4	Casio 21	5	3	Lissenhall Little	E	General view of test trench 3
5	Casio 21	3	21	Lissenhall Little	SSE	General view of test trench 21
6	Casio 21	3	20	Lissenhall Little	SSE	General view of test trench 20
7	Casio 21	3	24	Lissenhall Little	SW	General view of test trench 24
8	Casio 21	3	31	Lissenhall Little	W	General view of test trench 31
9	Casio 21	3	4	Lissenhall Little	SSW	General view of test trench 4
10	Casio 21	3	7	Lissenhall Little	SSW	General view of test trench 7
11	Casio 21	3	5	Lissenhall Little	SSW	General view of test trench 5
12	Casio 21	3	8	Lissenhall Little	N	General view of test trench 8
13	Casio 21	3	12	Lissenhall Little	N	General view of test trench 12
14	Casio 21	3	11	Lissenhall Little	SSW	General view of test trench 11
15	Casio 21	3	9	Lissenhall Little	S	General view of test trench 9
16	Casio 21	3	19	Lissenhall Little	W	General view of test trench 19
17	Casio 21	3	19	Lissenhall Little	S	Mid-excavation view of plough furrow in northern end of trench

Photo No.	Camera No.	Sub-area	Trench No.	Townland	Direction Facing	Description
18	Casio 21	3	18	Lissenhall Little	S	General view of test trench 18
19	Casio 21	3	17	Lissenhall Little	S	General view of test trench 17
20	Casio 21	3	17	Lissenhall Little	SSE	General view of test trench 17
21	Casio 21	3	15	Lissenhall Little	S	General view of test trench 15
22	Casio 21	3	14	Lissenhall Little	S	General view of test trench 14
23	Casio 21	3	16	Lissenhall Little	N	General view of test trench 16
24	Casio 21	3	13	Lissenhall Little	E	Mid-excavation view of plough furrow in northern end of trench
25	Casio 21	3	13	Lissenhall Little	E	Mid-excavation view of plough furrow in centre of trench
100-824	Casio 15	6	1	Lissenhall Little	N	General view of test trench 1
100-825	Casio 15	6	1	Lissenhall Little	E	Mid-excavation view of plough furrow in northern end of trench
100-826	Casio 15	6	2	Lissenhall Little	E	General view of test trench 2
100-827	Casio 15	6	3	Lissenhall Little	E	General view of test trench 3
100-828	Casio 15	6	3	Lissenhall Little	SE	Mid-excavation view of plough furrow in western end of trench
100-829	Casio 15	6	3	Lissenhall Little	S	Mid-excavation view of plough furrow in centre of trench
100-830	Casio 15	6	3	Lissenhall Little	NW	General view of stone land drain in eastern end of trench
100-831	Casio 15	6	4	Lissenhall Little	W	General view of test trench 4

Photo No.	Camera No.	Sub-area	Trench No.	Townland	Direction Facing	Description
100-832	Casio 15	6	5	Lissenhall Little	W	General view of test trench 5
100-833	Casio 15	6	6	Lissenhall Little	W	General view of test trench 6
100-834	Casio 15	6	7	Lissenhall Little	W	General view of test trench 7
100-835	Casio 15	6	8	Lissenhall Little	WSW	General view of test trench 8
100-836	Casio 15	6	9	Lissenhall Little	WSW	General view of test trench 9
100-837	Casio 15	6	10	Lissenhall Little	N	General view of test trench 10
100-838	Casio 15	6	11	Lissenhall Little	N	General view of test trench 11
100-839	Casio 15	6	12	Lissenhall Little	N	General view of test trench 12
100-840	Casio 15	3	25	Lissenhall Little	SSW	General view of test trench 25
100-841	Casio 15	3	23	Lissenhall Little	N	General view of test trench 23
100-842	Casio 15	3	23	Lissenhall Little	N	General view of remnant field boundary
100-843	Casio 15	3	29	Lissenhall Little	S	General view of test trench 29
100-844	Casio 15	3	28	Lissenhall Little	S	General view of test trench 28
100-845	Casio 15	3	27	Lissenhall Little	S	General view of test trench 27
100-846	Casio 15	3	26	Lissenhall Little	S	General view of test trench 26
100-847	Casio 15	3	30	Lissenhall Little	E	General view of test trench 30
100-848	Casio 15	3	32	Lissenhall Little	E	General view of test trench 32

Photo No.	Camera No.	Sub-area	Trench No.	Townland	Direction Facing	Description
100-849	Casio 15	3	22	Lissenhall Little	N	General view of test trench 22
100-850	Casio 15	3	13	Lissenhall Little	S	General view of test trench 13
100-851	Casio 15	3	1	Lissenhall Little	W	General view of test trench 1
100-852	Casio 15	3	2	Lissenhall Little	W	General view of test trench 2
100-853	Casio 15	3	2	Lissenhall Little	S	Mid-excavation view of plough furrow in eastern end of trench
100-854	Casio 15	3	3	Lissenhall Little	W	General view of test trench 3
100-855	Casio 15	3	10	Lissenhall Little	SSW	General view of test trench 10

Townland Boundary photos

Photo No.	Camera No.	Direction Facing	Description
1023	Casio 4	E	Townland Boundary on East side of Testing Area 1
1024	Casio 4	E	Townland Boundary on East side of Testing Area 1
1025	Casio 4	E	Townland Boundary on East side of Testing Area 1
1026	Casio 4	E	Townland Boundary on East side of Testing Area 1
1027	Casio 4	E	Townland Boundary on East side of Testing Area 1
1028	Casio 4	E	Townland Boundary on East side of Testing Area 1
1029	Casio 4	E	Townland Boundary on East side of Testing Area 1
1030	Casio 4	E	Townland Boundary on East side of Testing Area 1
1031	Casio 4	S	Measurement point 1, view south along boundary
1032	Casio 4	E	Townland Boundary on East side of Testing Area 1
1033	Casio 4	E	Townland Boundary on East side of Testing Area 1
1034	Casio 4	E	Townland Boundary on East side of Testing Area 1

Photo No.	Camera No.	Direction Facing	Description
1035	Casio 4	E	Townland Boundary on East side of Testing Area 1
1036	Casio 4	E	Townland Boundary on East side of Testing Area 1
1037	Casio 4	E	Townland Boundary on East side of Testing Area 1
1038	Casio 4	E	Townland Boundary on East side of Testing Area 1
1039	Casio 4	E	Townland Boundary on East side of Testing Area 1
1040	Casio 4	E	Townland Boundary on East side of Testing Area 1
1041	Casio 4	E	Townland Boundary on East side of Testing Area 1
1042	Casio 4	E	Townland Boundary on East side of Testing Area 1
1043	Casio 4	E	Townland Boundary on East side of Testing Area 1
1044	Casio 4	E	Townland Boundary on East side of Testing Area 1
1045	Casio 4	E	Townland Boundary on East side of Testing Area 1
1046	Casio 4	E	Townland Boundary on East side of Testing Area 1
1047	Casio 4	E	Townland Boundary on East side of Testing Area 1
1048	Casio 4	E	Townland Boundary on East side of Testing Area 1
1049	Casio 4	E	Measurement point 2
1050	Casio 4	E	Townland Boundary on East side of Testing Area 1
1051	Casio 4	E	Townland Boundary on East side of Testing Area 1
1052	Casio 4	S	Townland boundary on North side of Testing Area 1
1053	Casio 4	E	West facing section of Townland boundary
1054	Casio 4	E	West facing section of Townland boundary
1055	Casio 4	E	West facing section of Townland boundary
1056	Casio 4	S	Townland boundary on North side of Testing Area 1
1057	Casio 4	W	View along bank of boundary on North side of testing Area 1
1058	Casio 4	W	East facing profile of Townland Boundary
1059	Casio 4	S	East facing profile of Townland Boundary

Photo No.	Camera No.	Direction Facing	Description
1060	Casio 4	S	Townland boundary on North side of Testing Area 1
1061	Casio 4	S	Townland boundary on North side of Testing Area 1
1062	Casio 4	S	Townland boundary on North side of Testing Area 1

Appendix 6: Drawing register

Drawing No.	Type	Scale	Trench No.	Townland	Description
001	Profile	1:50	Townland boundary	Belinstown	East-facing profile of Townland Boundary
002	Section	1:50	Townland boundary	Belinstown	West-facing section of Townland Boundary

Appendix 7 - Archive Quantities

Item	Quantity
Context Sheets	0
Trench Record Sheets	48
Field record sheets	3
Drawings	2
Photographs	95
Registers	0
Notebooks	0