APPENDIX F

ARCHAEOLOGY

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Fingal Landfill
Co. Dublin
Archaeology and Cultural Heritage EIS

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Illustrations

Figures

Plates

Tables

Appendices

Supporting Archaeological Reports

Archaeology and Cultural Heritage

NON-TECHNICAL SUMMARY

The proposed Fingal Landfill is located in North County Dublin, west of the M1 motorway (Fig. 1). A thorough investigation took place of the entire study area in 2004/2005. Key items of an archaeological potential and cultural heritage nature were further investigated by geophysical survey and test excavation.

Archaeological investigations combined with geophysical survey have identified a number of below ground archaeological sites and features. None of these features would have been revealed if it were not for the proposed landfill development. The redesign of the proposed landfill disposal area has ensured the preservation in situ of the largest and most complex remains. However, a number of archaeological features will be impacted upon by the proposed design and will require resolution in the form of excavation, recording and the publication of the results (preservation by record).

Eight areas of below ground remains indicating individual sites, three of which will be protected and will remain in situ and four areas of archaeological potential were revealed (Fig. 1a). The proposed design for the landfill has ensured that two of these sites, the largest and most complex, Site A situated in the east of the study alongside the M1 motorway and Site J situated north of the proposed disposal area will be preserved in situ and protected by an exclusion zone in which no development will be allowed take place. At the extreme north of the development, outside the study area, Site N, an enclosure with internal divisions was detected at the proposed location for the roundabout. The road design has now been altered to allow preservation in situ to take place and the site has therefore been avoided.

A circular cropmark (Site L) detected by aerial photography in Walshestown townland to the north of the disposal area was subject to investigation and geophysical survey and was revealed to be archaeological in nature. Only ephemeral subsurface remains survive of this site. The proposed access road has been redesigned to avoid this feature however earthen berms will be placed over the site, if preservation in situ is not a viable option the site will be excavated ensuring preservation by record well in advance of the construction stage of the development.

Three other sites, located within the proposed disposal area (E, D, B) were confirmed to be archaeological in nature by the testing regime employed throughout the development area. These sites while disturbed in places by deep ploughing or truncated due to ongoing agricultural practices will be preserved by record and will require full excavation in advance

of construction of the development. A further archaeological site, Site K, was detected by geophysical survey in the southeast corner of the proposed development; this site is similar in appearance and plan form as Site D on the geophysical images. As this site is located just north of an area proposed for the construction of a berm, archaeological excavation is put forward as the most appropriate mitigation strategy to be employed in order to accurately record this below ground site in advance of construction.

Three other areas C, I and G proved to be archaeological in nature although no site type could be assigned given the disturbed nature of the remains. During the testing exercise, Trench 3 (Site M) revealed two pits, no other associated material was revealed. Due to the ephemeral nature and fragile state of these remains, the preferred and most practical option for preservation is by record. These areas will be fully excavated and recorded in advance of any construction taking place for the proposed development.

Monitoring by a licenced archaeologist of the topsoil stripping process will take place at the site preparation stage of the development through out the site so archaeological material is recognised, reported to the authorities and appropriately preserved. Provision will be made to allow for and fund the archaeological works required to resolve any remains that are noted during the site preparation phase of development.

INTRODUCTION

This chapter considers and assesses the archaeological landscape with respect to the proposed siting of a landfill facility within the townlands of Nevitt, part of Tooman, part of Jordanstown, Walshestown, Johnstown and Knightstown in north County Dublin. The overall study area for consideration is approximately 210 hectares in size (Fig. 1).

The main purpose of the study is to assess the significance of the receiving archaeological and cultural heritage environment, and to identify and evaluate the significance of the impact of the proposed development on this environment. The architectural heritage is assessed and considered in a separate section.

In addition, the report seeks to advise and propose measures to avoid and to minimise and ameliorate the impacts of the proposed development on the receiving archaeological environment.

Ameliorative measures are proposed where necessary to safeguard any monuments, features or finds of antiquity or items of a cultural heritage interest that are identified during the course of the present study. In accordance with National Monuments Legislation where possible all archaeological features are to be avoided and where this is not achievable preservation by record is to be carried out to the best professional standards.

Detailed field inspection took place throughout the entire study area. A geophysical survey took place throughout the areas which are considered for development within the study area for the proposed landfill. Targeted archaeological investigation occurred where possible archaeological features were revealed by the geophysical survey (Fig. 2) and throughout the application area. Test trenching was also undertaken in areas between and around areas identified as having an archaeological potential in order to ensure the veracity of the geophysical survey results and to provide a comprehensive testing programme. A total area of 15,000 m^2 was invasively tested.

The use of this specialist survey has improved the quality of information and provided greater certainty and definition of the archaeological resource. This has allowed a more defined mitigation strategy to be adopted for the proposed development and has ensured that a complete as possible record of archaeological potential is presented and assessed.

All work was carried out in consultation with the National Monuments Section of the Department of Environment, Heritage and Local Government and the Conservation and Heritage Officers at Fingal County Council. The results of the various surveys and testing programme have informed the mitigation strategy included in this report and are shown on mapping, drawings and photographs accompanying this report.

METHODOLOGY

A consistent and systematic approach to identifying and assessing the impacts of the proposed development on the archaeological heritage was adhered to throughout the EIS process. Using the archaeological baseline, derived from the Record of Monuments and Places (RMP), the topographical files from the National Museum of Ireland, previous excavations, historical journals and published sources, a criteria for assessment was put in place based on an evaluation of the existing knowledge base and resources.

A thorough investigation took place of specific recorded sources (Appendix 1 Sources). Key items of an archaeological and cultural heritage nature were flagged for further investigation.

The following legislation, standards and advice notes were consulted:

- National Monuments Acts, 1930-2004
- Heritage Act, 1995
- Guidelines on the information to be contained in Environmental Impact Statements, 2002, EPA
- Advice Notes on Current Practice (in preparation of Environmental Impact Statements), 2003, EPA
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, Department of Arts, Heritage, *Gaeltacht* and Islands

The following sources were consulted

- Record of Monuments and Places (RMP)
- Sites and Monuments Record (SMR)
- National Museum of Ireland Topographical Files
- Fingal County Development Plan 1999-2004
- Fingal County Development Plan 2005-2011
- Fingal Heritage Plan 2005-2010
- Aerial Photographs
- Excavation Bulletin (www.excavations.ie)
- Documentary and cartographic sources

Consultation

Consultation with the statutory authorities responsible for the protection of the archaeological heritage took place to gain information on the suitability and acceptability of the proposed strategies designed to realise the full archaeological potential of the development area and on predicted impacts and mitigation proposals. Open communication throughout the project took place between the design team and the client. Consultation took place with relevant experts from universities and from the DoEHLG, local historians and local landowners. The archaeological techniques and results were also conveyed to the general public and interested parties at a work shop held in January 2006.

Field Inspection

Field inspection took place from February to March in 2004 and on April 26th, June 16th, July 21st, August 18th and September 26th in 2005 to assess present topography and land use within the proposed development area. It also sought to identify potential low-visibility archaeological features that will be subject to direct or indirect impacts as a result of the proposed development. The record of the field inspection is provided on a townland basis in Appendix 2, (Field Notes). The field inspection was undertaken by two experienced archaeologists and each field was walked, numbered and recorded in a systematic fashion (Figs.1a and 2).

Geophysical Survey

The aim of the geophysical survey was to determine the location and extent of any underlying archaeological features in order to assess the full archaeological potential of the site (Figs. 2 and 2a).

Local soils are dominated by gleys and derive from grey brown podzolics and gley soils (Association 38) overlying till of Irish Sea origin with limestone and shale (National Soil Survey of Ireland 1980) and are responsive to geophysical examination.

Approximately 174.8ha of gradiometer scanning complimented by 32.7ha of detailed gradiometer survey was undertaken under licence to the National Monuments Section of the Department of Environment, Heritage and Local Government and the National Museum of Ireland (Licence No. 05R062 and 06R035) (Figs. 2 and 2a).

Methodology

Gradiometer survey (Plate 1) is recognised for its ability to locate and delimit areas of archaeological potential in advance of intrusive ground investigations and site preparation

stages of development. Current gradiometer surveys employ a Geoscan Research FM36 fluxgate gradiometer. The survey was undertaken in scanning and detailed survey modes.

By observing significant fluctuations in instrument response along 10m traverses through the application area, anomalies of potential interest were referenced by temporary markers and later targeted for further investigation by sample detailed recorded survey.

Detailed recorded survey was conducted by collecting data at virtual fixed sample intervals of 0.25m along 1m traverses, giving 1600 readings per 20m Grid. Survey work was undertaken using a Bartington GRAD 601–2 dual sensor fluxgate gradiometer. This survey is designed to provide a detailed map of buried archaeological features. The summary results of the geophysical survey are listed in Appendix 3. The full geophysical survey report is contained in Appendices 10 and 11 of the EIS.

Test Excavation

A comprehensive testing strategy was devised in consultation with the Department of Environment, Heritage and Local Government. In total 27 test trenches (16 linear and 11 box type trenches) (an area of 1.5 hectares) were excavated (Fig. 3). The anomalies revealed by the geophysical survey (A-H) were subject to archaeological test excavation. Large trenches (40m x 20m and 50m x 20m) (Plate 2) were also excavated throughout greenfield areas of the site to test the veracity of the geophysical results and to ensure that an appropriate sample of the lands to be impacted by the proposed development were fully investigated in advance of construction. In addition to this a circular cropmark identified from aerial photographs in Walshestown was also archaeologically tested (Site L) (Plate 3). The main objective of the testing strategy was to inform the impact assessment of the archaeological potential of the proposed landfill development.

This work was carried out under licence to the Department of Environment, Heritage and Local Government and the National Museum of Ireland (Licence No. 05E1063), the results of the testing exercise are produced in Appendix 3 (Inventory of testing and geophysical results). The full archaeological report is contained in Appendix 12 of the EIS.

RECEIVING ENVIRONMENT

Context

The proposed landfill development site lies approximately 5km northwest of Lusk, north County Dublin in the townlands of Nevitt, Walshestown, Johnstown, Knightstown, (part of) Tooman (part of) and Jordanstown (Fig. 1). It is situated west of the M1 motorway and encompasses approximately 210 hectares. Historically, the area was located in the barony of Nethercross (Fig. 4) but is now located within the barony of Balrothery East. The majority of the land slopes gently south-south-east, interrupted by a steep valley cutting across the study area west to east through out the northern section of the site. The highest point of the study area is located in the townland of Walshestown at the most northern end, from here, on a clear day there are extensive views to the Sugar Loaf in Co. Wicklow (Plate 4). The site is split north-south by a road running approximately east-west from the Five Roads on the R132 (N1) to the Nags Head on the R108, Ballyboghil to Naul Road.

This road divides the townland of Nevitt into two halves, to the south of the road, the terrain is undulating in nature and generally at a lower elevation than the land to the north, however good views are still afforded to the south and east. Towards the west of study area, the land rises again to form a ridge running in a north-south direction on either side of the road, this is illustrated on Rocque's map of 1760 (Fig. 5). A stream forms part of the boundary between the townland of Nevitt and Johnstown and forms part of the overall southern boundary for the study area.

The land use within the application area is currently arable, pasture, set aside, under forestry or has been extensively disturbed by an unauthorised landfill. The majority of fields are currently being used for agricultural practices as has been the tradition in this area for several hundred years, as shown on Rocque's map of 1760 (Fig. 5) and stated in the Civil Survey records (1654-1656) (Appendix 5 Townland Names). Due to this activity many of the natural boundaries have been removed and fields amalgamated into large blocks of land providing easy access for farm machinery (Plate 5). For the purpose of the walk over survey, each field was assessed separately (Fig. 2 and Appendix 2 Field Notes).

The proposed landfill is located within a fertile plain in an area historically known as the Brega (Place of the low hills). The hill of Knockbrack rises to the north west of the proposed development and is the site of a group of mounds placed in a large internally ditched enclosure or hillfort (Newman 2005, 373). Further west again in the townland of Damastown, a copper ingot of Romano-British origin was found (Raftery 1994, 208) and to the east along the coast is Drumanagh promontory fort, where Roman material was found demonstrating a Roman influence. The historically important towns of Lusk and Balrothery

are respectively located to the south east and north east of the proposed development and Lambay Island is situated just off the coast.

A number of prehistoric flints, namely eighty three miscellaneous rolled flint pebbles, flakes, seven quartz pebbles, one large flint pebble (possible a core) and one irregular flint flake (1973:93-187) were found in the townland of Walshestown (which partially lies within the northern extent of the proposed development). Thus the archaeological evidence indicates human activity around the northern end of the site during the prehistoric period. A handful of flint nodules none of them worked were noted during the field inspection carried out for this study in the three most northern fields, north of the watercourse in Walshestown.

A ring ditch (DU004:024) is also located in Walshestown townland outside and to the west of the study area (approx 260m). An aerial photograph (1977 BKS Ltd) shows a circular cropmark of a single ditch feature approximately 15m in diameter. The site is situated on level ground, which falls away to the east, allowing superb views to the coast. There are no visible remains of this site.

Documentary research revealed that there are no recorded monuments located within the proposed development area (Fig. 6). The nearest archaeological feature is the site of an enclosure (DU004:026) in Rowans Little townland. The area of archaeological constraint surrounding the site as recorded on the RMP map is located approximately 20m north of the northern boundary of the proposed development lands (Fig. 6). The site was recorded by aerial photography in 1972 (Fairey Survey of Ireland (508/9; 470/1(7169)) and appears as a roughly circular cropmark approximately 40m in diameter located in a sloping field of pasture, south of a stream. No visible surface remains can be seen on the ground.

A further enclosure site (DU004:025) is located in Walshestown townland (220m west of the proposed development). This site is shown on the first edition Ordnance Survey 6 inch map (1837) and may be a later feature constructed to keep cattle out from the sails of the windmill as was the case at the mills in Skerries. There is no visible trace of this monument.

The enclosures may add to the evidence of further prehistoric activity or may relate to later phases of occupation during the early medieval period or later again in relation to the enclosing features surrounding the 19th century windmill. Enclosures can be described as sites that are marked on early maps but no longer exist above ground in the field or they may be sites that are clearly archaeological but defy categorisation. The term denotes any monument made largely or wholly of earth. A number of sites have been classified as enclosures surrounding the proposed landfill site and in all cases the surface expression has been depleted over time so categorisation in the field is difficult as there are little to no diagnostic features left upstanding. A number of sites that have been revealed as a result of

the investigation for the proposed landfill have been classified as enclosures and probably form part of a hidden, subsurface early medieval landscape of Fingal.

Recent archaeological excavation evidence emerging from the National Roads Authority (NRA) road schemes have identified the complex nature of sites that were previously thought of or defined as enclosures. Many sites have been identified as early medieval in nature and may have functioned as enclosed nucleated settlements or farm estate centres or have been used for specialist production such as metal working. Burials have also been revealed on some sites indicating a complex and multifunctional site use (NRA, part 4, page 5, 2005). At Roestown and Dowdstown along the Navan to Dunshaughlin Section of the N3 two D-shaped enclosures were detected as a result of geophysical survey. The sites measured *c.*70m x 55m and 60m x 40m and had a number or internal divisions and external annexes; it is thought that these may have functioned as animal pens. At Johnstown in Co Meath, a site locally known as a cillin or childrens burial ground, was excavated and revealed an extensive settlement which was intermittently reused as a burial site (Clarke, 2002, 13). There was no evidence for a church or any similar structure so it cannot be interpreted as an ecclesiastical site. The enclosures identified 3 phases of activity dating from the early medieval period onwards. A 'heart shaped' enclosure measuring 60-70m in diameter was revealed and excavated in the townland of Killickaweeny, Co Kildare. Many interesting features were revealed throughout the site consisting of structures, refuse pits and metal-working areas (Walsh and Harrison, 2003, 33).

To the northeast and closer to the study area, excavation of a recorded enclosure(s) site (DU005-057 (08)) identified by aerial photography (1972 St Joseph no. BDS. 57) in the townland of Rosepark in Balrothery revealed an early medieval multi-ditched defensive habitation site with souterrains and corn-drying kilns (Carroll, 2001). Similarly test excavation, south of Knightswood Park on the Lusk Road, Balrothery has revealed twenty five features of an early medieval date (Carroll, 2002). The evidence from these sites of similar scale and morphology and the investigations that have taken place within the proposed landfill development suggest that the newly revealed sites do form part of an early medieval landscape of earthen monuments that have been denuded over time or deliberately destroyed in the past leaving no visible trace.

No features of an archaeological significance were revealed as a result of excavations works for the Airport-Balbriggan Bypass in the following townlands Jordanstown, Rowans Little, Hedgestown, Nevitt, Ballystrane (Appendix 4 – Archaeological Background).

Two sites located within the boundary of the proposed landfill which were identified from aerial photography in the early 1970s were recorded in the Sites and Monuments Record (SMR). These sites, a possible ring ditch and cultivation ridges have subsequently been

delisted from that record and are not contained in the Record of Monuments and Places manual or map. These sites were examined by National Monuments personnel in the field and found to non-archaeological in origin. The location of these delisted sites was also examined as part of this study by geophysical survey, no archaeological features were revealed at these locations and the findings of the National Monuments personnel were confirmed.

Townland names are an invaluable source of information on topography, land ownership and land use within the landscape. They also provide information on the history, the archaeological monuments and folklore of an area. A placename may refer to a long forgotten site, and may indicate the possibility that the remains of certain sites may still survive below the ground surface. The Ordnance Survey surveyors wrote down townland names in the 1830s and 1840s, when the entire country was mapped for the first time. A description, possible explanation and assessment of each of the townland names within the proposed development area, Nevitt, Walshestown, Tooman (part of), Jordanstown (part of) and Johnstown is given in the following sections of the text (Appendix 5 - Notes on Townland Names). As commonly found in north Co. Dublin, the local placenames are a mixture of Irish, Scandinavian and English coinage.

A suite of archaeological techniques were applied across the proposed landfill development site in order to assess the archaeological potential of the area and to gain a better understanding of the evolution of the archaeological landscape. Field inspection in conjunction with a geophysical survey was undertaken across the proposed development site. These surveys were followed by comprehensive test excavation and the results of these investigations provided a better understanding of the archaeological potential of the proposed site.

Field inspection in addition with local consultation and literary research identified several areas considered to hold an archaeological potential. These areas as well as any area that may be subject to an impact by the proposed development were further investigated by geophysical survey (Appendix 3, 10 and 11) and test excavation (Appendix 12). Areas of archaeological potential and potential archaeological sites were located and listed in the following table, Table 1 Context of archaeological features and areas of potential archaeology, these areas are shown on figures 1a and 2. The following sites/areas are generally described from the north of the study area to the south.

Table 1 Context of archaeological features and areas of potential archaeology

Townland	Field Number	Site Ref.	Source	Location
Rowans Little	N/A outside development area	N	Geophysical Survey	Located outside the study area, adjacent to the south of the R132. Situated in a green field with an elevated aspect affording good views to the south and east.
Walshestown	11,12,13 and 14	N/A	Topographical files (Appendix 4) and field inspection (Appendix 2)	Exposed, steep sloping south facing tilled fields with extensive views to the south and east except for F14 (see below). Located at the northern end of the proposed development.
Walshestown	12	Crop-mark (L)	Aerial Photography (Appendix 4), test excavation and geophysical survey	Identified by an aerial photograph, the site is located on a south-facing slope overlooking the river valley.
Walshestown	14	J	Geophysical survey (Appendix 3 and 10) and field inspection (Appendix 2)	Sheltered field with mature field boundaries in place, formed on the lower slopes of Walshestown. Lowlying in nature containing two distinct hillocks which afford good views to the east and west, somewhat limited to the south and restricted to the north (Plate 6). The site is located north of a river and adjacent to a lowlying field subject to flooding.
Walshestown/ Nevitt	River Valley	N/A	Historic mapping (Figs. 3 & 4) & field inspection (Appendix 2)	Heavily vegetated steep sided river valley with some terracing occurring on the northern, south facing slopes.

Nevitt	7/8	E	Geophysical survey and test excavation (Appendix 3 and 10)	The site lies on relatively flat land bisected by a deep drainage ditch overlooking the river valley to the north.
Nevitt	23	D	Geophysical survey and test excavation (Appendix 3 and 10)	The site is situated on a northern slope of a ridge running east-west in the central portion of lands proposed for development.
Nevitt	19	C, E and I	Geophysical survey and test excavation (Appendix 3 and 10)	These features are noted in a large field in the western section of the site in a gently undulating landscape.
Nevitt	21, 9, 41, 40 and 54	N/A	Historic map sources (Fig. 3) and field inspection (Appendix 2)	Rocque (1760) shows a cluster of structures on either side of the Nevitt Road that runs in an east-west direction through the centre of the proposed development. A laneway is present to the east of these structures and to the north of the road.
Nevitt	51 and 40	A	Geophysical survey (Appendix 3 and 10) and local consultation	The site is situated on what appears to be a natural rise forming the summit of a slight knoll overlooking land to the south (southern half of field 51 and field 49) which is frequently flooded. It is divided by a mature field boundary and a deep drainage ditch running north-south. The site entertains extensive views to the south, good views to the east. Views are restricted to the north and west (Plate 7).

Johnstown	45	B	Geophysical survey and test excavation (Appendix 3 and 10)	The site is situated on a gentle south facing slope which commands extensive views of the landscape to the south and east.
Nevitt	42	K	Geophysical Survey (Appendix 3 and 10)	This site is located in a pasture field gently sloping to the east and located to the southwest of Site A.
Johnstown	River		Field inspection (Appendix 2)	To the north of the river, the land gently slopes to the south with restrictive views while to the south the ground level is relative flat.
Nevitt	26	M	Test Excavation (Appendix 3 and 10)	This tillage field slopes gently from the west to the east.

Character

Character of the Development

The proposed landfill facility will operate up to 30 years and will be capable of accepting in the order of 9.5 million tonnes of waste. The proposed facility will consist of a landfill disposal area with an outer surrounding buffer zone (Fig. 1 and 2). The landfill area will be divided into a number of phases, each comprising engineered cells with leachate and gas collection systems. As each phase is completed, the filled cells will be restored and landscaped to integrate with the surrounding area.

A proposed access road runs from the northern end of the study area, Rowans Little townland, west of the proposed disposal area to the south (Johnstown townland) where infrastructural features will be placed.

Character of the Archaeological Findings

A description of each of the sites and areas of potential revealed in the study area is described below in the table. The table details areas of archaeological potential given the topography of the site and the extent and where possible the depth of archaeological remains as revealed from the geophysical and testing results. All the sites have no surface expression and the archaeological remains are all located below ground (Figs. 1a and 2).

Table 2 Character of the archaeological findings

Site Reference/ type	Character/Description of site
Rowans Little	Strong archaeological type responses from geophysical survey were detected and form an enclosure with several divisions (44m n/s x 42m e/w), some strong possibly industrial responses internally. Likely to result from settlement activity and there are possibly several phases of occupation as a number of anomalies appear to be cut. These anomalies extend to the south and to the north.
Walshestown - Area of archaeological potential	The topographical files of the National Museum of Ireland record a number of prehistoric flints in the townland of Walshestown which partially lies within the northern extent of the proposed development. During the field inspection no artefacts were revealed but a number of naturally occurring flints were noted in the plough soil. These south facing slopes hold a potential to reveal archaeological features.
Crop mark (L)	A possible circular archaeological feature was identified on a 1992 Ordnance Survey 1:5000 aerial photograph at the northern end of the study area in the townland of Walshestown. Two trenches inserted over the feature identified three shallow linear ditches, possibly defining a circular or sub circular enclosure approximately 31m in diameter. No internal features were recorded and no datable artefacts were recovered leaving the date of the site unknown. Geophysical survey revealed a circular feature with a curving anomaly located to the north-west.
J	Located in F14, the area in the site selection report was identified as having an archaeological potential. The geophysical data revealed a definite archaeological presence in the western end of F14. Since the features appear to cut one another this does suggest a multiphased complex which was occupied over an extended time period. The site presents topographically as a distinct rise in the landscape. One of the enclosing features (30m x 30m) occupies the summit of the hill with the rest of the responses sloping to the south and extending to the north. The maximum extent of the detected archaeological responses is 70m east-west and 140m north-south. From the responses obtained it would appear that they should continue beyond the existing curving field boundary to the south and west into F15. However, the data retrieved from this field is unclear and while it appears natural, it could (and is likely) to be masking archaeological features.

E	A number of geophysical responses indicated a possible rectilinear enclosure (48m X 48m) bisected by an existing boundary ditch. The responses also indicated pits and areas of burning internally. Three trenches, trench 7 and 8 (2.6m x 40m) and trench 24 (80m x 2.6m) were excavated throughout the site. The northern portion of the site yielded poor results with only a shallow (0.35m in depth) ditch and modern agricultural features identified (trench 24 and 8). To the south a substantial ditch (2.60m wide, 1.20m deep with an exposed length of 2.6m) and pit (excavated to a depth of 1.2m, subcircular in shape) containing large amounts of charcoal and burnt clay as well as a very small pit (0.10m deep and 0.55m in diameter) filled with a mid grey silty clay containing small limestone pebbles. The archaeological evidence does not clearly fall into an easily recognisable site type, the domestic waste, such as the disarticulated bone may suggest a settlement site.
D	Geophysical survey detected a curvilinear response likely to represent the remains of a ditched circular enclosure (approx 33m in diameter) with some internal responses. A linear trench was placed over this anomaly (2m x 50m) (Plate 8) and eight archaeological features were revealed. The site has been truncated by ploughing and no feature is greater than 1.1m in depth. The internal features (Plate 9) are suggestive of dwellings, as well as this domestic waste such as animal bone and burnt material was recovered from the fill of the ditch. This is highly suggestive of an enclosed settlement site. No dateable artefacts were recovered and the morphology of circular enclosures is difficult to date considering the long lifespan as a settlement type. However, the majority of these sites date from the early medieval period.
C	Geophysical survey detected positive responses suggestive of pits, ditches and a possible enclosing ditch. The testing in this area revealed plough damaged archaeological remains, the trench (50m x 2.3m) contained 3 ditches (no more than 0.45m deep) and some modern agricultural features. While the features are archaeological in nature, no datable artefacts were recovered and a site type could not be established from the ephemeral nature of the remains.
G	A cluster of potential archaeological responses were detected by the geophysical survey. A trench (30m x 2m) was inserted over 3 possible pit-type responses and a linear response. Testing revealed two linear features and a pit containing burnt stone. No dateable finds

	were revealed and it is not possible to suggest a site type due to the heavily truncated features.
I	Geophysical data revealed a small sub-rectangular feature consisting of four linear features with an internal division measuring a maximum east-west dimension of 19m and a maximum dimension of 20m north-south. Two parallel linear features can be traced for 7.5m and 6.0m running in a southeast-northwest direction from the northern end of the possible site.
A	Geophysical survey within F51 and F40 revealed what appears to be an extensive archaeological complex measuring 175m east-west and at least 164m north-south. The complex is cellular in form and a number of potential settlement areas have been identified. In F51, a number of annexes or cellular divisions represented by ditch-type responses form part of this large site. An enclosure (28mx 28m) is present within a sub-oval enclosing ditch (this probably defines the centre of the complex and measures 45m north-south and at least 62m east-west). Outside this, a further enclosing feature is present (80m EW and 90m NS). Further responses of pit and short ditch type anomalies may indicate occupational activity. To the southeast of Area 34 (Fig. 2a), a series of linear responses form a rectilinear enclosure separate from the main complex. A positive elliptical shaped response approx. 21m in diameter located at the western edge of the complex in field 40 is separated from the main complex of results by a field boundary and water course flowing in a north/south direction. It has been interpreted as an enclosure and forms part of the cellular complex. A curving response surrounds this feature to the west and extends 80m north-south and 60m east-west from the eastern field boundary. This form of response may be indicative of an earlier feature and may suggest a multi-phased site that was used over an extended time period. Two test trenches were placed to establish the east and north eastern extent of the complex. In trench 21 (200m x 2.5m) no archaeological features were revealed. A strong linear area of increased response detected in Area 33 and 35 (Fig. 2a) by geophysical survey, perhaps representative of an old water course was not detected through test excavation. In trench 22, located to the northeast of the complex, four shallow pits were revealed and two linear features which are possible lazy beds or large furrows. It was not possible to establish the northern extent of the complex as the field to the north (field 54)

	contains an unauthorised landfill. Field 51 is known locally as 'chapel bank' field (northern section) and 'church park' (southern section) (It is shown on the 1st edition OS 1843, as two separate fields (Fig. 6) and also on the 1870 OS 1:2,500 (Fig. 7). The tradition of the name, 'chapel bank' is recorded locally elsewhere in north County Dublin, at a pre-Norman ecclesiastical site of St. Mochuda's Church (DU008-028--) at Burrow, north of Portraine. This field name may suggest that the responses from the geophysical survey form part of an ecclesiastical site.
B	The geophysical survey detected a complex of archaeological type responses suggestive of a double-ditched D-shaped enclosure measuring 42m from north to south and 41m from east to west. Two trenches (18 and 18a, 55m x 2.6m) were located over this anomaly and a number of archaeological features were revealed indicating a D-shaped enclosure with a disturbed interior. Internal features included linear features as well as an irregular shallow deposit of dark grey sandy clay, very rich in charcoal. Only the northern portion of the deposit was uncovered measuring 0.7m in diameter and 0.20m in depth. No datable artefactual evidence was recovered from the site, however some clinker and slag was removed from the straight external ditch. This may indicate an industrial function for the enclosure as well as a date from the Iron Age or later.
K	Subsurface curvilinear response identified by geophysical survey likely to represent the remains of a ditched circular enclosure approximately 38m in diameter. Responses may indicate internal archaeological features. An ephemeral curvilinear response may indicate a second circular enclosure overlapping with the first and measuring approximately 25m in diameter.
Nevitt	Nevitt is referred to on Rocque's map of 1760 as 'Nevet'. The map shows the area divided into two by a road running east-west through the centre of the proposed site. The ground level is shown as rising to the north where a ridge is shown overlooking the river valley. The river flows in a northwest-southeast direction. Another ridge is shown crossing the Nevitt road, on the lower ground, east of this, a cluster of structures are located. Two structures are shown with a wall surrounding them south of a bend on the road. Immediately opposite is another structure and a laneway to the east. This laneway still exists today and leads to a limekiln (field 9) described in the architectural heritage chapter. This sunken laneway is over 2m deep,

	flat bottomed and heavily overgrown with vegetation; it divides fields 9 and 21. Another structure faces onto the road and is located across from three structures on the southern side of the road. To the rear of these are what appear to be gardens. A further laneway with a structure at the end of it is shown north of the road and west of the ridge. The fields are shown as large and open, bounded by natural hedgerows and used for agricultural purposes. Some of the fields are shown as having been ploughed.
M	Two small pits (0.6m x 0.08m and 0.6m x 0.1m) located in trench 3, south of the Nevitt Road, containing charcoal no deeper then 0.1m were uncovered after an area of 50m x 20m was stripped. The pits were truncated by ploughing. No other archaeological features or deposits were revealed in association with these pits.
Nevitt	The placename 'Nevitt' first appears in the documentary sources in the fourteenth century and continues to be listed in various forms throughout the succeeding centuries 1326; Nynett, 1534; the Nuvet, 1547; the Newet and Newett, 1551; Newet, 1558; the Nuete, 1611; Nevett, Nevet and Neut, 1654; Newett, Beavett (sic) and Neavett, 1664; Newet, 1670c; Nevet, 1685; Neuet, 1821; the Nevit and 1836 Nevilstown or the Nivet. The continuous use of the name suggests that it was in existence prior to the coming of the Anglo-Normans in the later 12th century. The name may have derived from what is known in Modern Irish known as Neimhead or in Old Irish Neimed. The original sense of the word was probably that of a consecrated place or a sacred precint. It is possible that the word could refer to a church or graveyard. However, the word may also originate from the personal name Nemed rather than the Old Irish word Nemed (meaning sacred) (Appendix 5).
Walshestown	Also known as *Ballybrannagh* as the proper name for Walsh in Irish is Breathnach (Branagh) (Joyce, 1995). Dr Flanagan, senior lecturer in history from Queens University Belfast (QUB) also suggests that Walshestown could derive from Baile Breathnach which may be representative of 'Balibren' referred to in the mandates of 1222 and 1224 (Calendar of Documents relating to Ireland, 1171-1251, no. 1059 (close 7 Henry III; also in Rotuli Litterarum Clausarum, ed. By T.D. Hardy, 2 vols (London, 1833-44), I, 519) relating to land of Richered/Rytherid/Ryher Machanan/Makanam (a welsh settler) in the kingdom of the Saithne.
Tooman (part of)	Originates from the Irish *Tuaman*, meaning a small tumulus or

	mound. This small parcel of land while within the study area is currently under plantation forestry and will not be disturbed by the proposed development. The townland of Tooman lies to the west of the proposed development and will not be affected by this proposal.
Jordanstown (part of), Johnstown and Knightstown	These names are essentially English and were coined between the later medieval period and early modern periods taking their names from settlers of that time.

Significance

The study area extends for a maximum measurement of 1,450m east-west and 2000m north-south. A number of below ground individual archaeological features are dispersed throughout this area, the minimum distance between these features is approximately 210m while the maximum distance between two sites is just over 1800m. Together these sites probably make up part of the buried early medieval landscape of Fingal. By the 14th century in the written records (Alen's Reg 1326) there is no mention of the settlement or occupation activity that must have taken place in this area, indicating that it must have been in decline before or at the time of the arrival of the Anglo-Normans. Apart from the townland name of Nevitt surviving which may refer to the old Irish *Neimid* meaning a consecrated place or sacred precint or indicate a pre-Christian presence in the form of a sacred enclosure or grove and the folklore tradition of the name 'chapel bank' field no other historical resonances survive which attest to an earlier extensive presence in this area.

The evidence we have to date on the subsurface features bear some similarities with enclosure sites that have been excavated as part of roadway schemes or other buried archaeological sites that have been revealed in the Fingal region as part of geophysical prospection in advance of developments. The early medieval enclosure at Killickaweeny, Co Kildare (Walsh & Harrison, 2003, 33), produced evidence for settlement and metal working, a number of substantial pits, similar to the one revealed in Site E, were also revealed. At Raystown, Co Meath, (Seaver, 2005, 9) a complex of anomalies measuring 160 north-south by 210 east-west was confirmed by excavation to be a large early medieval multi-functional enclosed site with evidence for a cemetery and habitation. The archaeological record was however dominated by milling and cereal remains. This site is similar to Site A in size and extent and may indicate a multi purpose nature for the site in Nevitt townland. While burials were revealed at this site and at Johnstown, Co Meath (Clarke, 2002, 13) in an enclosure that had the tradition of a cillin, there was no evidence for a church or similar structure so the sites cannot be classified as being ecclesiastical in nature. Evidence from Balriggin, Co Louth (Roycroft, 2005), Killickaweeny and Raystown would suggest that these sites were strategically placed to avail of the natural resources or

take advantage of possible trading routes within the landscape. Perhaps the same could be said for the sites revealed in Nevitt, Johnstown, Rowans Little and Walshestown but without excavation the full significance and the interactions between these sites will never be completely understood.

The following criteria of, existing status, conservation/preservation, documentation, group value, rarity, visibility in the landscape and vulnerability (for a full explanation of these terms, Appendix 6) were used to evaluate the potential significance of the newly revealed features in the proposed development area. The sites revealed within the study area were only revealed as a result of the intensive archaeological investigations that were undertaken for the proposed landfill and none of them are included or listed in the Record of Monuments and Places (RMP).

The assigned significance levels are based on information to date of the below ground remains. The significance of the impact can also be addressed, impacts (NRA, 2005, 53) can be

Positive – A change that improves or enhances the setting of an archaeological monument or feature

Neutral - A change that does not affect the archaeological heritage

Negative – A change that will detract from or permanently remove an archaeological monument or feature from the landscape

The level of impact in accordance with the EPA guidelines (2003) can be

Profound	Reserved for adverse, negative effects where mitigation would be unlikely to remove adverse effect
Significant	An impact which by its character, magnitude, duration or intensity alters an archaeological feature/ site
Moderate	An impact that essentially alters the character of an archaeological site/feature
Slight	An impact which causes changes in the character of the environment but does not directly impact on the archaeological site or feature
Imperceptible	An impact capable of measurement but without noticeable consequences

In accordance to the EPA guidelines (2003, 139) the systematic removal and excavation of the below ground remains of archaeological sites will result in a negative, direct and

significant impact. This impact can be mitigated by providing a detailed record and archive of each site and the publication of the results ensuring preservation by record.

Table 3 Significance Level

Site/type Reference	Significance Criteria	Significance Level and Impact Level
N-Rowans Little	Revealed as a result of geophysical survey in a pasture field immediately south of the road. Enclosing feature with internal divisions, possible associated field system located to the south. An enclosure site (RMP 004-026) previously identified by aerial photography is located approx. 200m northwest of the road and it is possible that the two sites are associated. The proposed roundabout and route alignment was redesigned to avoid this newly revealed feature.	Avoided – Positive and Significant impact
Walshestown/ topographical files	Area of archaeological potential due to the finding of flint artefacts. However it is not specified whether or not the finds came from the fields within the study area or are located elsewhere within the townland. Field walking did not produce any artefactual evidence.	Potentially significant however geophysical survey or field walking did not reveal any additional finds within the study area
L - Cropmark-Walshestown	Identified by an aerial photograph and confirmed to be archaeological in nature by invasive testing. This site is not visible at ground level. The results of the testing revealed the feature to be ephemeral in nature, with very shallow remains of three sections, which probably form a continuous ditch. The preservation of the below ground remains is considered to be poor. The site appears as a circular enclosure 31m in diameter. A further curving feature of possible archaeological interest was detected by geophysical survey to the north-west of the site but this could be natural in nature. The site is positioned on a south-facing slope with good views to the south	Negative, direct and significant

	and east. Further enclosure sites located outside the study area, have been identified in the Record of Monuments and Places in the townlands of Rowans Little (DU004-026) and Walshestown (DU004-025) to the north and west of the newly identified site. There is no historic documentation to suggest the presence of an archaeological feature at this location.	
J - Walshestown	This site was identified by field inspection and geophysical survey. This survey revealed extensive remains measuring 70m east-west and 140m north-south of a complex site. The site is in a sheltered position adjacent to a river to the south and located on what appears to be a natural rise. However, apart from this topographical feature there are no surface indications of the extent of this site. The geophysical responses suggest that this is a significant multi-phased site. An irregular shaped exclusion zone measuring max. dimensions 180m N/S and 490m E/W has been placed around the site to protect it.	Avoided – Positive and significant impact
E - Nevitt	This site was identified by geophysical survey and confirmed to be archaeological in nature by test excavation. There is nothing to suggest at ground level the extent of the below ground remains (Plate 10). The site is divided by a deep drainage ditch and is heavily disturbed to the north. The preservation of the site to the south of this feature is good. No artefacts were revealed and as demonstrated by the testing the site is vulnerable to agricultural practices.	Negative, direct and significant impact
D - Nevitt	Testing revealed the presence of a circular enclosure, not visible at ground level. It is approximately 31m in diameter and testing produced no finds, however some animal bone was recovered from the ditch suggesting that the site may be used for habitation purposes. The site is probably a small ringfort. Although the ditch survives to 1.20m in depth, the features located in the interior are very truncated. This is not unexpected and is likely to be the case right across the site as the field was ploughed	Negative, direct and significant impact

	continually up to seven years ago.	
C - Nevitt	This site was identified by geophysical survey and revealed to be archaeological in nature by test excavation. The preservation of below ground remains are poor and are truncated by intensive ploughing over a prolonged period. No dateable artefacts were recovered from the three ditched features.	Negative, direct and significant impact
G - Nevitt	This feature was only revealed by geophysical survey and test excavation. There is no surface indication of this site. There is no structure morphology and no datable finds were recovered from the features. The site has been extensively disturbed.	Negative, direct and significant impact
I - Nevitt	A sub-rectangular feature was identified by geophysical survey, given the fact that the other two features (G and C) revealed in field 19 were highly disturbed it is likely that this site is similar in nature.	Negative, direct and potentially significant impact
A - Nevitt	This site was identified from geophysical survey and appears at ground level as a slight rise or as a natural hillock. The anomalies extend 175m east-west and over 164m north-south. The finds are suggestive that these features are archaeological in nature given the scale and type of responses. The survey revealed the buried remains of two concentric enclosures (possibly three) with a rectangular annex located to the south east. A further elliptical feature is located to the west of a watercourse which cuts the site in a north-south direction. Additional outlying curvilinear responses are also present to the west. Given the results of previous surveys undertaken in the Fingal region the morphology of the results are similar in nature to responses revealed in Oldtown and Grange and may indicate the presence of a previously unknown buried Early Medieval enclosure site possibly ecclesiastical in origin. The site may also be multi-phased incorporating different archaeological periods. The area is presently used to graze cattle but the fields have been ploughed in the past. Located immediately	Avoided - Positive and significant

	to the north in field 54 the presence of an unauthorised landfill prevented any further archaeological work from taking place. It remains unknown whether the site extends into this area. An irregular shaped exclusion zone measuring 480m N/S and 320m E/W (max. dimensions) will be placed around the site to protect it.	
B - Johnstown	This site was revealed by the use of geophysical survey as it has no visible remains. It extends 42m N/S and 41m E/W below the present ground level. There is no documentation of this site in the historic records. Test excavation revealed the below ground remains to be truncated and cut by modern field drains and cultivation ridges. The D-shaped enclosure produced no datable artefactual evidence apart from some slag in the outer ditch which may indicate a date of Iron Age or later.	Negative, direct and significant impact
K - Nevitt	Geophysical survey revealed a subsurface curvilinear response likely to represent the remains of a ditched circular enclosure approximately 38m in diameter similar in nature to Site D. Additional responses may indicate internal archaeological features. An ephemeral curvilinear response may indicate a second circular enclosure overlapping with the first and measuring approximately 25m in diameter. Further investigation is required to determine the extent of these features and assess the condition of the below ground remains.	Negative, direct and significant
M – Nevitt	Two truncated pits (0.6m x 0.08m + 0.6m x 0.1m) were identified and recorded by archaeological testing. They are not visible from the surface of the field and are not recorded in the in the RMP. The pits are fragile in nature.	Negative, direct and moderate impact
Nevitt	It is possible to suggest that the townland name Nevitt is consistent with the modern Irish form Neimhead, a modernised spelling of the Old Irish Neimed. In a Christian context the word could attest to a sanctuary perhaps referring to a church or a graveyard or in a	Neutral, as the proposed development will not affect the use of the townland name.

	pre-Christian sense of the word it could refer to a type of sacred enclosure or sacred grove (Mac Giolla Easpaig, 2005, unpublished) (Boyle 2005). It is important to consider Site A within this context as it may add weight to the fact that the responses which were revealed belong to a site which was consecrated or a sacred precinct.	
Tooman (part of)	The townland name of Tooman is derived from the Irish Tuaman, meaning small mound and is suggestive of archaeological remains. The townland of Tooman (part of) will not be affected or disturbed in any way by this proposal.	Neutral, as the proposed development will not affect the use of the townland name.

Sensitivity

It is important to assess the level of threat to archaeological monuments from existing conditions on site such as erosion, natural degradation, agricultural activity, forestry, unauthorised landfills and land clearance, as well as the level of impact from the proposed development. All the sites and features revealed as a result of on going investigations in 2005 and 2006 have been recorded for the purpose of this study and brought to the attention of the relevant authorities. From the information to date they qualify for inclusion in the Record of Monuments and Places (RMP) and protection under the National Monuments Legislation (1930-2004). None of the sites at present are recorded in the Record of Monuments and Places (RMP) or the Sites and Monuments Record (SMR). It must also be noted that all of these sites cannot be seen above ground even though some have extensive remains below the surface. These 'invisible' sites are especially vulnerable to damage and neglect as it is difficult to determine the extent of these features and to protect what one cannot see.

Table 4 Sensitivity Table

Site/type Reference	**Sensitivity**
N - Rowans Little	No visible remains are left of this site. It is possible that the site is disturbed by the roadway which lies immediately to the north. The proposed roundabout for the access route has been redesigned to avoid this feature. No development is now anticipated for the field in which this feature lies.

Walshestown/ topographical files	Area of archaeological potential, no further sites or features were revealed through investigation, monitoring will ensure that if there are sub-surface sites that they will be identified and recorded appropriately.
L - Cropmark - Walshestown	This site is ephemeral in nature and vulnerable to current agricultural practices. The proposed access route runs to the west of this feature. Before site preparation works take place it must be ensured that this feature is fenced off from construction work and machinery to ensure that no inadvertent damage occurs. However, earthen berms will be placed over the site, consultation with the engineers should take place to minimise any disturbance in the area and to put measures in place to protect the site. It may be considered that the best way to protect this site is to excavate the heavily truncated remains.
J - Walshestown	There are no upstanding remains of this site and it is represented topographically as a natural rise. The subsurface remains appear extensive. The field has been ploughed until recently and is vulnerable to agricultural practices. The proposed development avoids this site (Fig. 8).
E - Nevitt	There is nothing to suggest at ground level the extent of this rectangular enclosure's below ground remains and as such this site has been extensively disturbed. A substantial drainage ditch cuts the site in a southwest-northeast direction and all features to the north of this have been severely truncated and ploughed out. Preservation to the south of the drainage ditch is good. The below ground remains of this site have suffered due to land improvements. If development were to proceed it would be necessary to fully excavate these remains to ensure preservation by record.
D - Nevitt	This circular enclosure is not visible at ground level. While the surrounding ditch survives relatively intact, the internal features were disturbed. This is hardly surprising as this field was ploughed continually up until 1998. If development is to proceed, it would then be necessary to fully excavate this site to ensure that there is a full record and archive of the remains.
C - Nevitt	This site was identified as a series of truncated ditches during test excavation. The preservation of the remains was considered to be poor. This area of the proposed development has had all internal field boundaries cleared to create one large field (field 19) which has been intensively ploughed over a prolonged time period. If development is

	to proceed, these fragile remains will have to be carefully excavated in advance of construction.
G - Nevitt	There is no surface indication of this site and the archaeological features have been extensively disturbed. Again these features occur in Field 19. If development is to proceed, these fragile remains will have to be excavated in advance of construction.
I - Nevitt	A sub-rectangular feature was identified by geophysical survey. Given the fact that the other two features (G and C) revealed in field 19 were highly disturbed it is likely that this site is similar in nature. This feature would also require full excavation in advance of development occurring.
A - Nevitt	These subsurface extensive remains appear at ground level as a slight rise or as a natural hillock. The site has been subject to disturbance with the possible encroachment of an unauthorised landfill to the north. The land is presently grazed by cattle. This site has been avoided by the proposed development (Fig. 8).
B - Johnstown	Test excavation revealed part of the below ground remains of this D-shaped enclosure. The feature is cut by modern field drains and cultivation ridges. For the development to proceed, the removal of this feature would have to occur by archaeological excavation which would provide a paper and digital archive of the site.
K - Nevitt	Geophysical survey identified responses which are likely to indicate the remains of a ditched circular enclosure. This feature is similar in size and plan layout to Site D which was subject to test excavation. While this site is not visible at ground level, full archaeological excavation would be required in advance of development to systematically record the below ground features and archaeological material.
M – Nevitt	Two isolated pits were identified by test excavation, they are not visible from the surface of the field. These pits are fragile in nature and will require excavation in advance of development.
Nevitt	Placename and townland names will be retained throughout the study area.
Tooman (part of)	Placename and townland names will be retained throughout the study area.

IMPACTS ON CULTURAL HERITAGE

'Do Nothing' Impact

In the *do nothing scenario* the proposed development would not be built and there would not be any adverse affect to archaeological features. Within this scenario the newly revealed archaeological features and sites would not have been identified and no measures put in place for their preservation and protection. The sites would remain particularly vulnerable to impact from on going agricultural activity, land improvement and small scale development which falls below the threshold that requires an EIS and an archaeological impact report to be produced.

A *worst-case scenario* would be that archaeological material was destroyed during construction works, without preservation by record taking place or without archaeological features being identified in advance.

Predicted Impact

A number of archaeological techniques namely documentary and cartographic research, field inspection, geophysical survey and test excavation were employed through out the site in order to predict with a greater certainty the potential to reveal previously unknown archaeological features within this development area. Without these surveys taking place the following archaeological sites, features, material and areas of archaeological potential would not have been identified.

The area has been subject to detailed archaeological investigation in order to establish the potential to reveal features of a significant archaeological nature. The results that have informed this study, have allowed for a full assessment of the predicted impact. This assessment has led to the redesign of the development in order to protect *in situ* archaeological remains.

Even though there are no recorded monuments within the study area, the initial field inspection revealed areas of possible archaeological potential. These areas as well as the entire development area were then investigated to reveal (Fig.2):

- Two archaeological complexes - Site A and Site J
- Six individual sites - Site E, Site D, Site B, Site K, Site L and Site N
- Four areas of archaeological features - Site C, Site I, Site G and Site M

Table 5 Impact Table

Identification and site type	Type of impact
Site A archaeological complex	Positive impact – the complex has been identified and avoided
Site J archaeological complex	Positive impact – the complex has been identified and avoided
Site N enclosure with internal divisions	Positive impact – the site has been identified and avoided
Site E possible rectilinear enclosure	Significant, direct and permanent impact
Site D circular enclosure	Significant, direct and permanent impact
Site B double D-shaped enclosure	Significant, direct and permanent impact
Site K circular enclosure	Significant, direct and permanent impact
Site C irregular ditches and enclosing feature	Significant, direct and permanent impact
Site I irregular linear responses	Significant, direct and permanent impact
Site G area of burnt stone and charcoal	Significant, direct and permanent impact
Site L truncated ditch features forming a circular enclosure	Significant, direct and permanent impact
Site M two isolated pits	Moderate, direct and permanent impact

Due to the early recognition of the two archaeological complexes Site A and Site J it was possible to redesign the development and avoid these sites and their natural setting. These sites will not be affected by the proposed development and will remain in situ protected by an exclusion zone in which no development can take place (Fig. 8). There is no anticipated impact from the proposed landfill development to both these sites.

The proposed roundabout and access route into the site has been altered to avoid Site N. This has only been achievable due to the early identification of the below ground remains during the design process. The plan layout of Site N as shown on Figs. 1a and 2 will not be impacted upon by the proposed development.

Three of the newly revealed archaeological sites will be directly impacted by the excavation of the main waste disposal area. These sites are B, D and E. Two areas of archaeological features Site G and Site M will also be impacted upon by the proposed disposal area (Fig. 1a).

Site C, Site I and Site L are all located outside the area proposed for disposal. These sites present as a series of below ground, ephemeral archaeological features. All have experienced disturbance and have been previously impacted due to ongoing agricultural

and land improvement activity. These remains are in a fragile state and while it may be possible to avoid these areas, the merits of preserving these sites in situ would have to be examined. A more practical alternative would be to preserve these sites by record as any attempt to incorporate these features into the proposed development could further inadvertently disturb the vulnerable remains. It is suggested that these sites are recorded by excavation as a matter of urgency to ensure that the full, systematic and accurate recording of the remaining sub-surface archaeological material takes place.

Site K was also revealed by geophysical survey, and does appear to be similar in size and form to the test excavated Site D. Further testing is required to establish the nature and depth of remains. While the site is located outside the area proposed for disposal, it is located close to an area proposed for landscaping works and for future earthen berms. This site will be directly impacted during the construction of these associated features proposed for the landfill facility.

Other areas of archaeological potential have also been identified by the geophysical survey outside the disposal area. These areas are all described in Appendix 3 with a list of any further test excavation that may be required. A number of areas that were subject to the initial geophysical survey are now outside the proposed development area and therefore there will be no impact on Area 44, Area 47, Area 52 and Area 54 (Fig. 2a).

A number of areas, however, may be subject to impact from associated development such as an attenuation pond, landscaping, the construction of earthen berms, areas proposed for the stockpile of spoil, proposed infrastructure works such as roads and office space. The following areas require further investigatory test excavation to assess the nature of the anomalous responses:

- To the southeast of the study area, Area 40, and Area 41 (Fig. 2a)
- To the southwest of the study area, Area 50 and Area 58 (Fig. 2a).

Amorphous, positive responses revealed in Areas 37, 38 and 39 (Fig. 2a) located to the north of the Nevitt Road on the eastern edge of the study area are considered to be most likely natural in origin.

MITIGATING ADVERSE IMPACTS ON CULTURAL HERITAGE

The mitigation strategy details the techniques that will be adopted at pre-construction stage to ameliorate predicted impacts. The specific methodologies adopted will be drawn up by the National Monuments Section of the Department of the Environment, Heritage and Local Government.

Archaeology encountered at the pre-construction stage will be ameliorated by mitigation techniques that will involve where possible preservation 'in situ', by design and/or preservation by record, which may involve full or partial excavation. While avoidance is the preferable form of mitigation it is seen that given the nature of the development and the delicate remains of some of the sites that full excavation, archiving and the publication of results is a preferable option.

If any archaeological features are identified during the construction process, all construction work in that area will have to cease and the area fenced off. All archaeological issues will have to be resolved to the satisfaction of the Minister, Department of Environment, Heritage and Local Government and the National Museum of Ireland. All suggested mitigation strategies fully consider and have regard to the archaeological requirements of the proposed policies, aims and objectives recommended in the Fingal Development Plan (2005) and the National Monument Legislation (1930-2004).

Preservation 'in situ'

Site A is the largest and most complex feature (approx. 175m x 164m) that was identified by geophysical survey. Preservation 'in situ' and avoidance of this archaeological feature is the preferred mitigation measure. Test trenches were placed around this site in order to determine the greatest possible extent of below ground archaeological features associated with the geophysical results (Fig. 2 and 3). A zone of archaeological protection has been placed around this site in which no development can take place (exclusion zone) (Fig. 8). This zone ensures that no features associated with this site will be affected by the proposed development. It is dependent on specific landscaping factors and takes account of existing hedgerows, historic field boundaries and contour lines in order to provide a naturalised setting for the site while maintaining the views to the south and the east.

The zone itself extends to the road which bisects the townland of Nevitt in an east-west direction to the north of Site A and includes the existing field boundaries to the south and east of the site. To the west the exclusion zone will approximately follow the line of an historic field boundary and the natural contour lines in the area (Fig. 8 and Fig. 9). The exclusion zone is therefore irregular in shape measuring a maximum dimension of 480m N/S and 320m E/W.

Site J as shown by the geophysical responses appears as a significant archaeological complex approximately 70m east-west and 140m north-south. This site, while it has no upstanding archaeological features is located on a small raised dryland area in a corner of a field, with a curving boundary. All the natural features will be preserved in situ to ensure the setting for this below ground archaeological site remains the same. The mature boundaries and the river to the south are to be maintained (Fig. 8 and Fig. 9) this covers an area measuring 180m N/S and 490m E/W which will be excluded from the proposed development.

The field in which Site N was identified is being completely avoided by the road and roundabout construction associated with the proposed development. The central enclosure measures approximately 32m E/W with a 12m annex to the east and approximately 42m in a north-south direction. Possible features which may form part of a field system to the south will also be avoided by the proposed development. The existing road to the north of the site may have disturbed or truncated the below ground remains. It is for this reason that testing of the proposed road corridor is recommended even though it is located further north than the existing one.

These sites and their protection/exclusion zones are recommended for inclusion in the Record of Monuments and Places (RMP) where they will be protected by National Monuments Act of 1930-2004. Given the subterranean nature of these sites it may be necessary to highlight the position of these features within the landscape in order to avoid any inadvertent damage occurring in the future to the archaeological remains and their protection zones. By highlighting the location of these buried archaeological deposits and sites, a green field with no discernable archaeological features can be made into an accessible archaeological landscape. Appropriate identification may be in the form of illustrative displays/ descriptive plaques etc and would aid the drawing up of suitable maintenance policies in the vicinity of the sites.

Provision should be made for a management strategy to address the future preservation of the in situ remains. This could form part of an overall conservation management plan for the future maintenance and protection of the in situ archaeological remains by the authorities and landowners.

Preservation by Record

Where archaeological features have to be removed to facilitate the proposed disposal area within the landfill facility development it is essential that full excavation, recording and publication of the results of the following sites takes place.

Site B; a D-shaped enclosure,

Site D; a circular enclosure,

Site E; a rectilinear enclosure

Site G; a scatter of burnt material

Site M; two pits

Of the newly revealed below ground features or anomalous responses which had a definite archaeological pattern located outside the disposal area but still within the proposed landfill area, four features were identified that would be impacted upon by the proposed development;

Site C; a series of three curved linear ditches

Site L ; a circular enclosure

Site K; a circular enclosure

Site I; an irregular series of responses

It is proposed that the above mentioned archaeological sites and features will be resolved by archaeological excavation, recording and publication of results (Table 6 – Mitigation Table).

Further areas detected by geophysical survey as anomalous readings of an archaeological strength (Fig. 2a) that require further archaeological test excavation include:

- Area 40, Area 41, Area 50 and Area 58.
- The proposed landtake for the access route can be centreline tested (Fig. 1a).

In the event of the discovery of archaeological features in these areas, the proposed resolution is archaeological excavation and recording.

The process of preservation by record ensures that the features are recorded and excavated in advance of development. Excavation results in the removal of archaeological remains from their natural environment. Archaeological excavation ensures that this removal is systematically and accurately recorded, drawn and photographed, providing a paper and digital archive and adding to the archaeological knowledge of a specified area. It is also recommended that these sites are included in the Sites and Monuments Record (SMR) as 'sites of'. This will ensure that the location of each of these sites is recorded in the public domain and will aid further research taking place in the wider area.

Site No	Site Description	Approx. site Dimensions	Test-Excavation	Survival and Depth of Archaeology	Mitigation
Site E	Rectilinear Enclosure	48m x 48m	3 trenches (T7, T8 and T24)	Possible early medieval site. Ditches up to 1.2m deep, 50% truncated by ploughing, although some cut features survive across the site.	Excavation in advance of development. Publication of results.
Site D	Circular Enclosure	33m in diameter	1 trench (T5)	Possible early medieval enclosure, internal occupation, cut features up to 0.6m deep, ditch enclosure 2-3m wide, 1.1m deep.	Excavation in advance of development. Publication of results.
Site B	Double D-Shaped Enclosure	42m x 41m	2 trenches (T18 and T18a)	Possible late prehistoric, early medieval enclosure. The internal features are disturbed and truncated.	Excavation in advance of development. Publication of results.
Site G	Burnt stone and cut features	12m x 6m from geophysics	1 trench (T1)	Burnt stone and charcoal revealed, possible Bronze Age fulacht fiadh.	Excavation in advance of development. Publication of results.
Site M	Pits x 2	0.6m x 0.08m 0.6m x 0.1m	1 trench (T3)	Two simple, ephemeral pits, no associated material	Excavation in advance of development. Publication of results.
Site K	Circular Enclosure	38m x 39m	No testing	Circular Enclosure, possibly early medieval ringfort with entrance and internal features.	Excavation in advance of development. Publication of results.
Site C	Irregular ditches	42m x 30m	1 trench (T2)	3 external ditches 0.45m deep, truncated archaeological features.	Excavation in advance of development. Publication of results.
Site I	Irregular ditches	20m x 19m	No testing	Potential archaeological features.	Excavation in advance of development. Publication of results.
Site L	Enclosure	31m in diameter	2 trenches (T25 and T 25a)	Possible enclosure, truncated ditch features. 31m apart, *c.* 1.8m wide, 0.6m (max.) deep, no evidence for internal features.	Excavation in advance of development. Publication of results.
Site N	Enclosure feature with internal divisions	44m x 42m max dimensions	Avoided -no testing required	Enclosing feature with internal divisions and annex to the east. Main enclosure is 32m e-w with a 12m annex to the east and 42m n-s. Possible field system to the south.	Avoidance – preservation in situ.
Site A	Archaeological Complex	175me-w x 164m n-s	Avoided – no testing required	Possible multi-phased site, buried remains of 2 possibly 3 concentric enclosures and a rectangular annex to the southeast. A further elliptical feature is located to the west of a watercourse which cuts the site in a north-south direction.	Avoidance – preservation in situ. Maintenance of an exclusion zone.
Site J	Archaeological Complex	70m e-w x 140m n-s	Avoided – no testing required	Possible multi-phased site, complex cellular feature.	Avoidance – preservation in situ. Maintenance of an exclusion zone.

Riverine Archaeology

The archaeological record has shown that rivers have acted as focal points for both settlement and ritual activity through all periods of human settlement, this borne out in the study area by the number of newly revealed archaeological sites located close to the streams and wetland areas. It is possible that subsurface archaeological evidence or stray finds representing human activity may come to light during any earthmoving works for the proposed bridges in the vicinity of these rivers.

It is recommended that an underwater archaeological assessment, in the form of a wade and metal detection survey be carried out under licence to and in consultation with the Underwater Unit of the DoEHLG and National Museum of Ireland. A linear slit trench (20m x 2.6m), named as Site F/Trench 9 (Plate 11) (Lohan, 2006) (Appendix 3) was placed on the southern side of the river adjacent to the bridge proposed between Nevitt and Walshestown, no features of an archaeological nature were revealed. However, further archaeological testing of the river banks is recommended to be carried out as part of the overall mitigation strategy for the proposed road associated with the landfill facility.

General

All mitigation measures are subject to the approval of The National Monuments Section, Department of the Environment & Local Government, the National Museum and Fingal County Council.. They do not prejudice any further recommendations made by the Department of Environment, Heritage and Local Government who may seek additional information or consider alternative strategies.

Monitoring

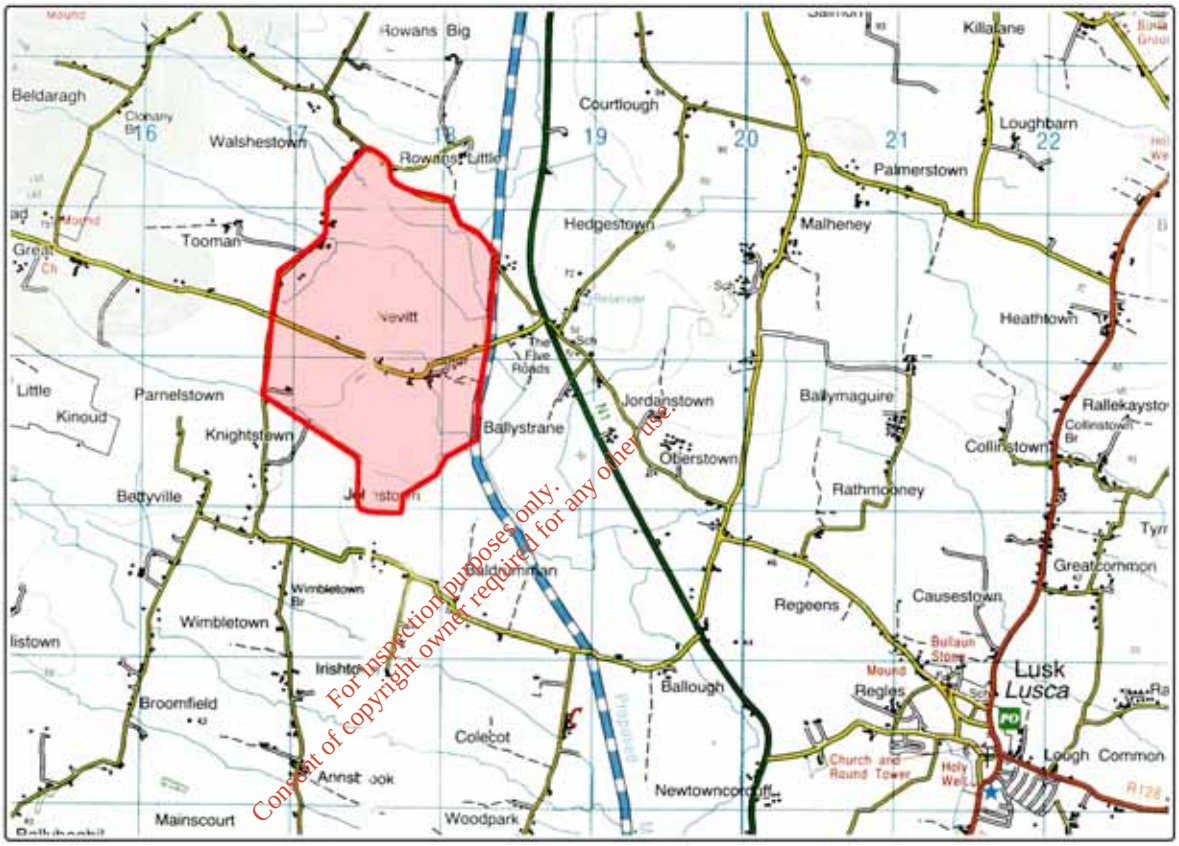
Monitoring of the stripping of topsoil by a licenced archaeologist will take place at the preconstruction and site preparation stage of development through out the site so archaeological material is recognised and appropriately recorded. Monitoring is also required in areas that could not be assessed to date due physical barriers such as forestry in field 24 and part of field 9 and an unauthorised landfill in fields 54 and 53.

Archaeological monitoring will also take place during the removal of townland boundaries and internal field boundaries, this is to ensure that if archaeological material is revealed that it is properly identified and recorded. Monitoring will also take place to assess the nature of the sunken laneway that lies between field 9 and field 21 and possibly continues between field 22 and field 21.

Provision will be made to allow for and fund the archaeological works required to resolve any remains that are noted during the construction phase of development. The attention of the developer is drawn to the relevant sections of the National Monuments Acts (1930–2004; Appendix 5), which describe the responsibility of the site owners to report the finding of archaeological items if any should be discovered during construction works.

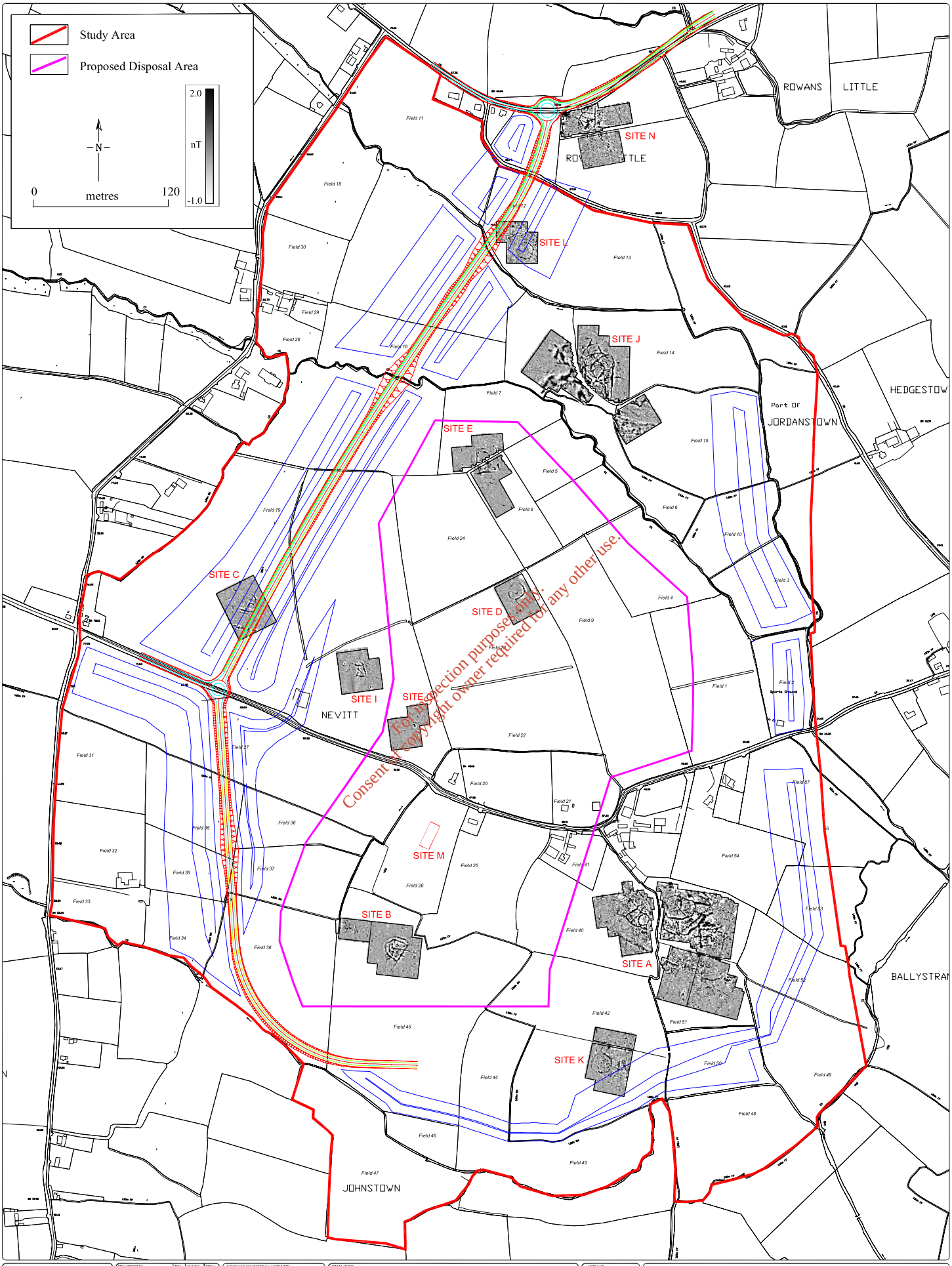
INTERACTIONS

The archaeological consultant liaised with the other consultant disciplines and members of the design team that were contributing to the EIS. This consultation ensured that possible interactions were considered and that the design consultants understood the archaeological constraints. Discussions occurred with the architectural heritage, landscape and visual and engineering consultants designing the proposed scheme.



Margaret Gowen & Co Ltd
Archaeological Consultants & Project Managers

Job	Fingal Landfill Project
Ref.	05037-R4
Date	21.03.06
Client	Fingal County Council
Scale	Not applicable
Fig. 1	Site location Map



ISO 9001:2000 ERA QUALITY ASSURED ORGANISATION CERT NO. 2976

REVISIONS: | BY: | DATE: | REV:

ARCHAEOLOGICAL LICENCE: 05 - R - 062

PRODUCED BY: DH | DATE SURVEYED: N/A

CHECKED BY: LC | DATE ISSUED: 23/03/2006

PROJECT: FINGAL LANDFILL PROJECT

TITLE: PROPOSED DEVELOPMENT & ARCHAEOLOGICAL SITES

CLIENT: FINGAL COUNTY COUNCIL

JOB NO.: 05037

DRAWING NO.: 05037_130

FIG. NO.: Fig. 1A

SCALE: 1/6500 @ A3

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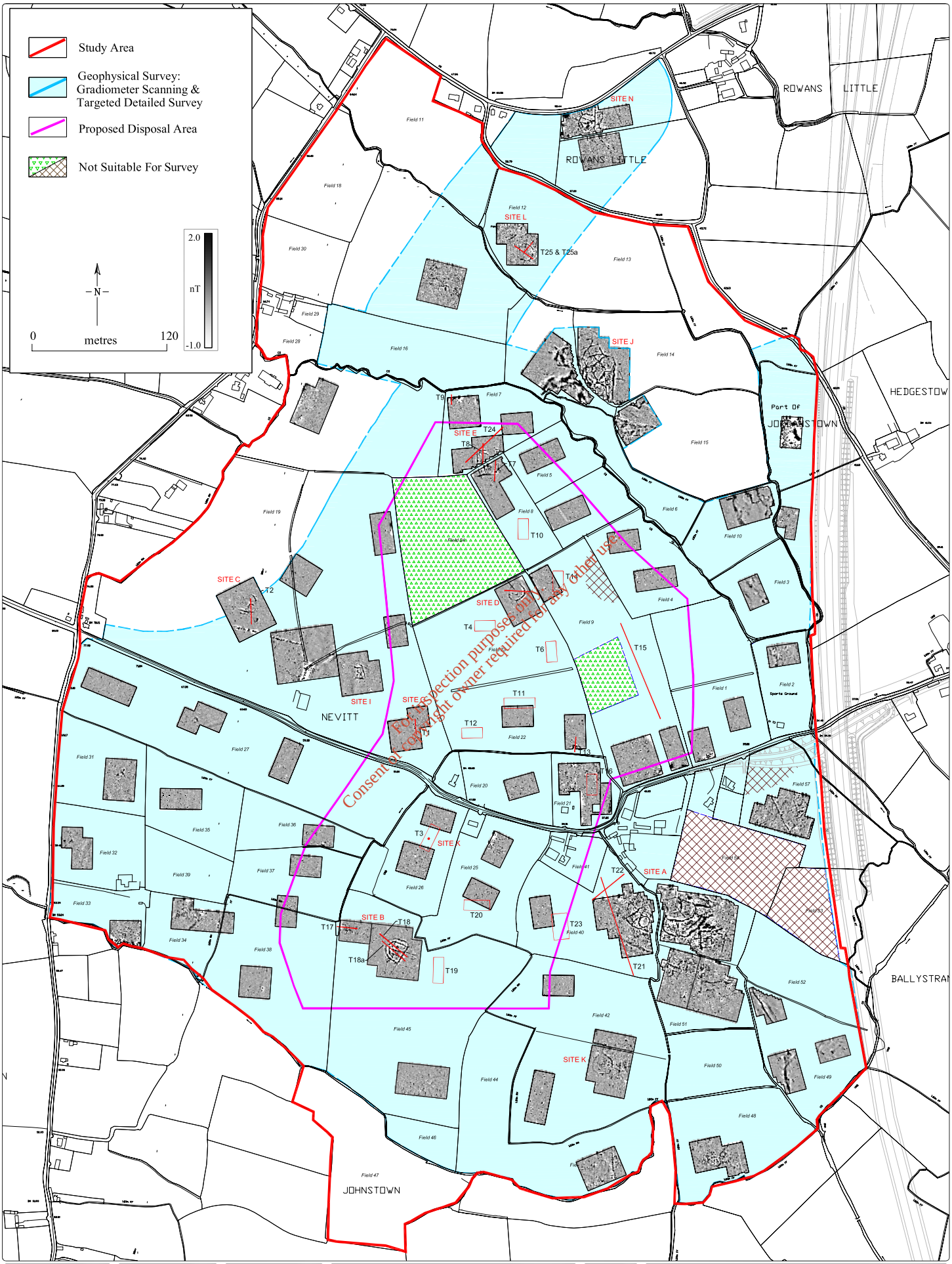

ISO 9001:2000 EQA QUALITY ASSURED ORGANISATION CERT NO. 2976

REVISIONS:	BY:	DATE:	REV:

ARCHAEOLOGICAL LICENCE: 05 - R - 062

PRODUCED BY: DH | DATE SURVEYED: N/A

CHECKED BY: LC | DATE ISSUED: 23/03/2006

PROJECT: FINGAL LANDFILL PROJECT

TITLE: PROPOSED DEVELOPMENT, FIELD NUMBERS, LOCATION OF SCANNED & DETAILED GEOPHYSICAL SURVEY & ARCHAEOLOGICAL TEST TRENCHES

CLIENT: FINGAL COUNTY COUNCIL

JOB NO.: 05037

DRAWING NO.: 05037_128

FIG. NO.: Fig. 2

SCALE: 1/6500 @ A3

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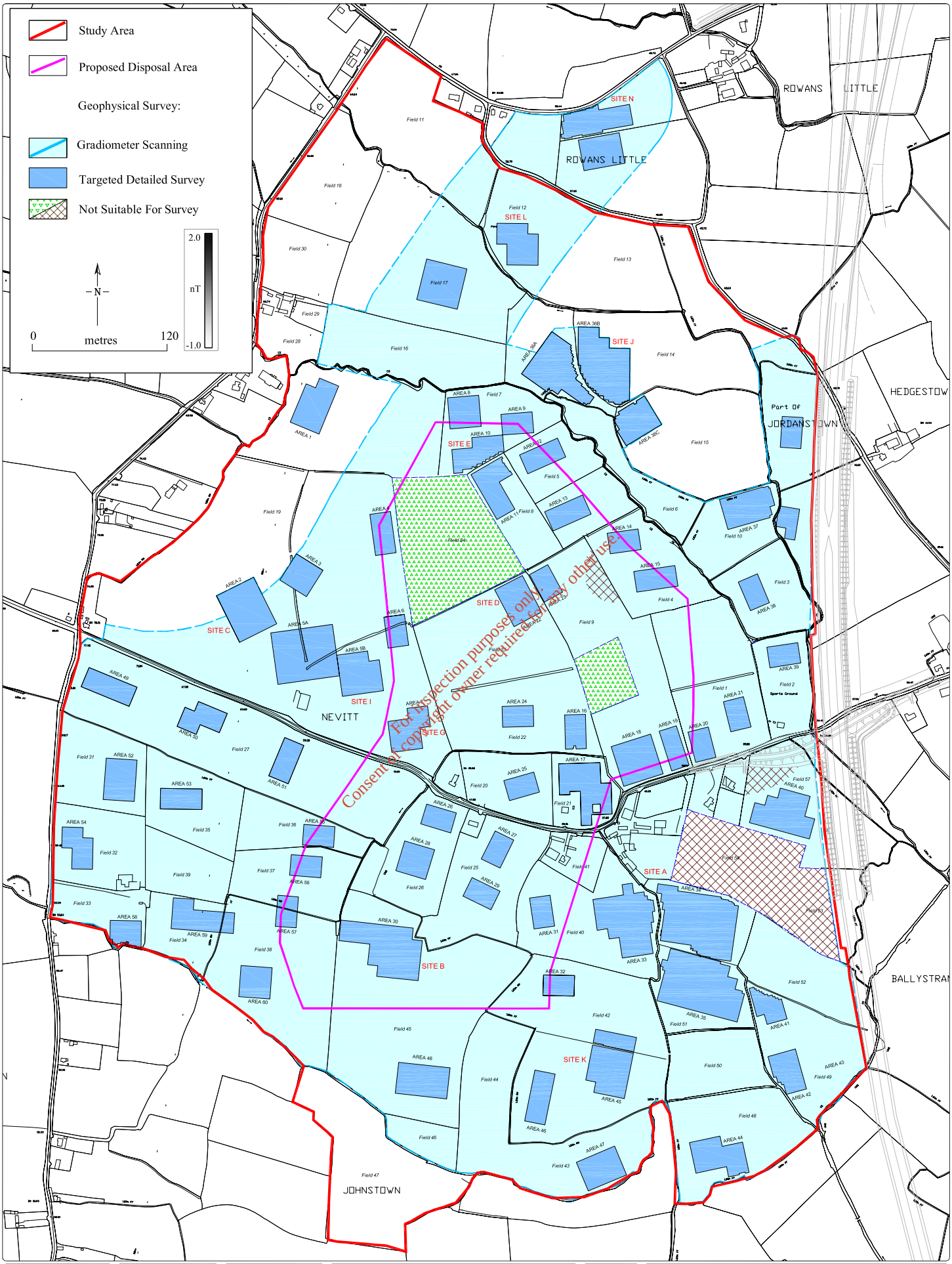

ISO 9001:2000 EQA QUALITY ASSURED ORGANISATION CERT NO. 2676

REVISIONS: | BY: | DATE: | REV:

ARCHAEOLOGICAL LICENCE: 05 - R - 062

PRODUCED BY: DH | DATE SURVEYED: N/A

CHECKED BY: LC | DATE ISSUED: WHEN?

PROJECT: FINGAL LANDFILL PROJECT

TITLE: LOCATION OF GEOPHYSICAL AREAS

CLIENT: FINGAL COUNTY COUNCIL

JOB NO.: 05037

DRAWING NO.: 05037_129

FIG. NO.: Fig. 2A

SCALE: 1/6500 @ A3

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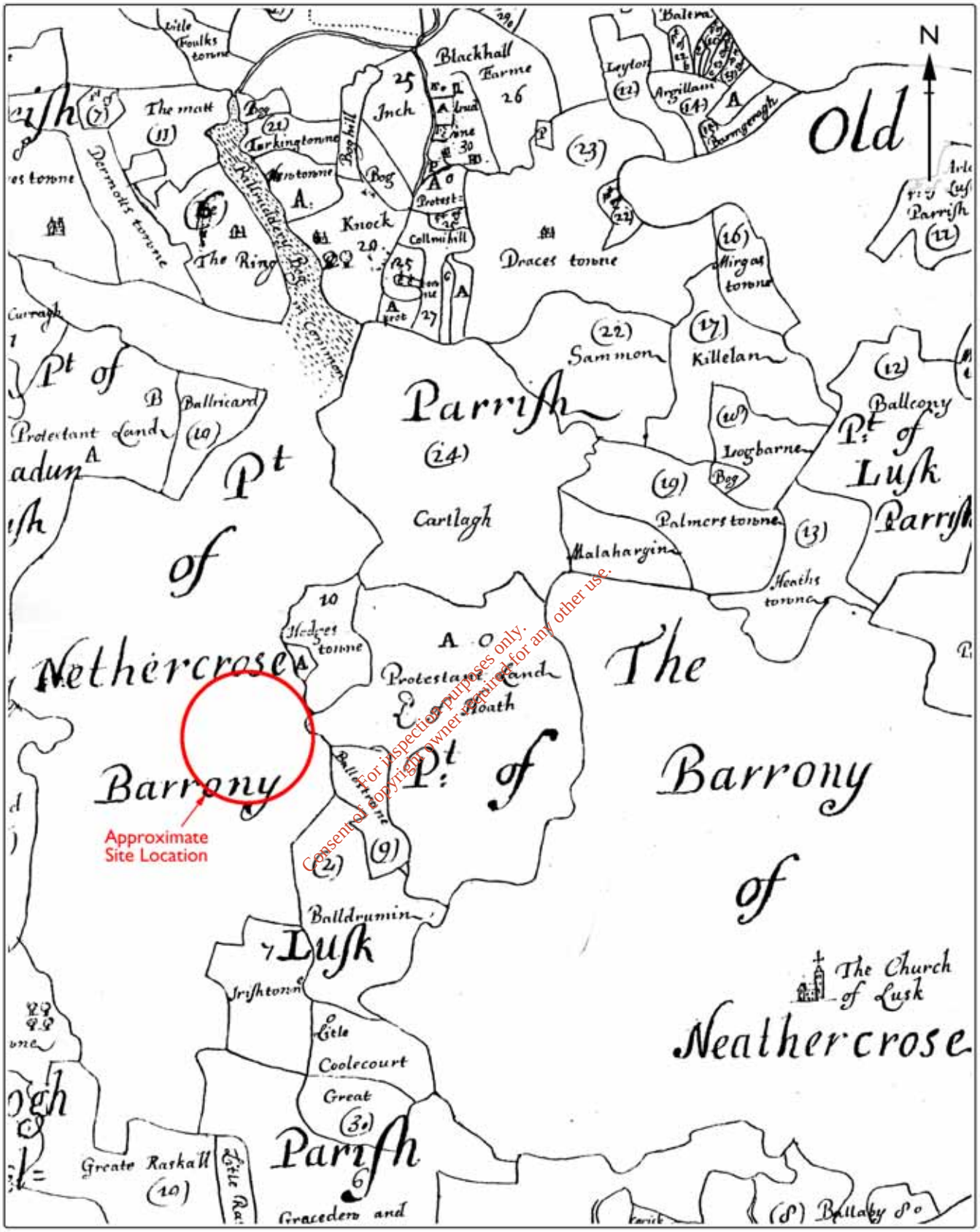
Job	Fingal Project
Ref.	5037-R4
Date	21.03.06
Client	Fingal County Council
Scale	Not applicable
Fig. 3	Aerial photograph



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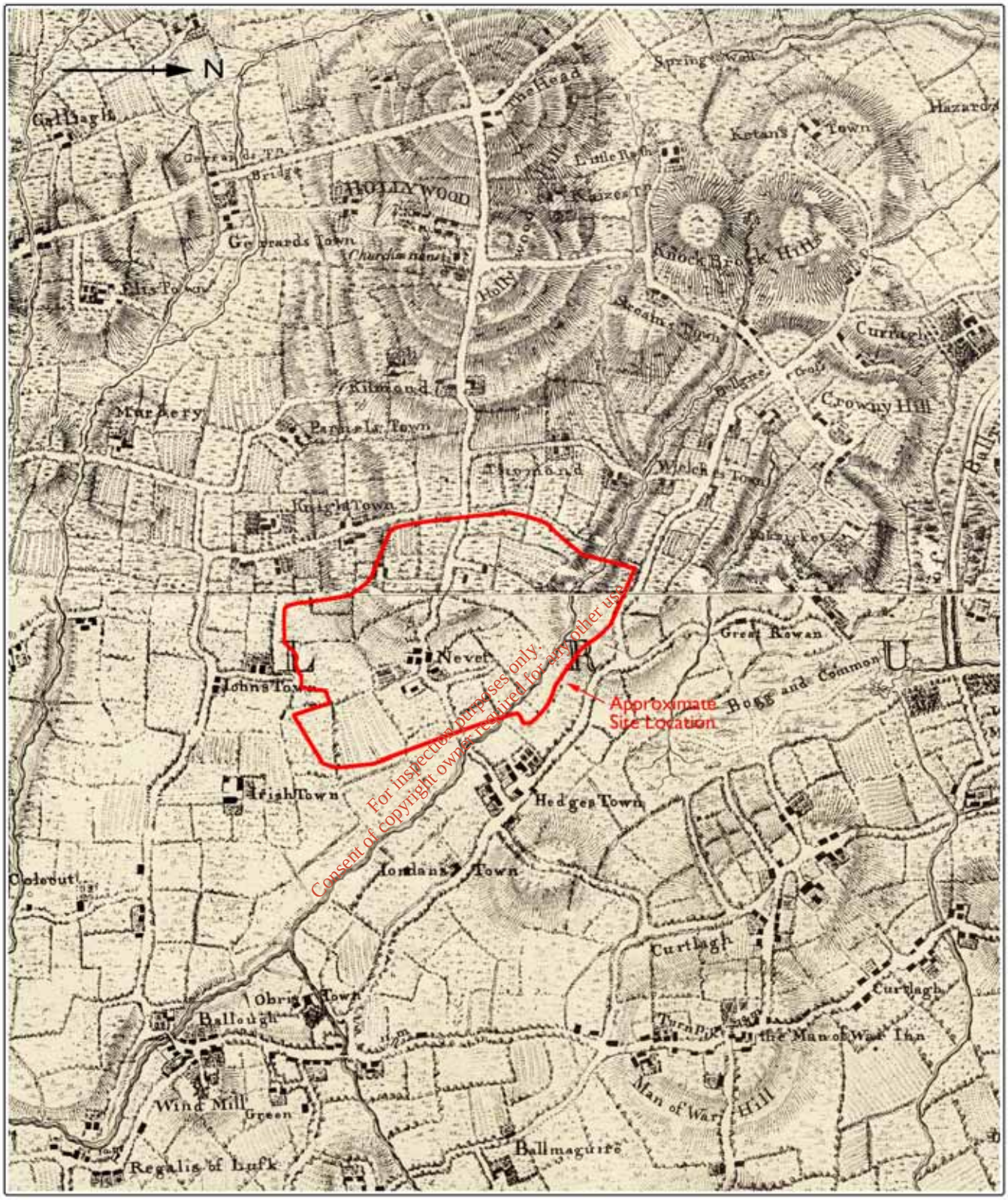
Job	Fingal Project
Ref.	5037-R4
Date	21.03.06
Client	Fingal County Council
Scale	Not applicable
Fig. 4	Down, 1656



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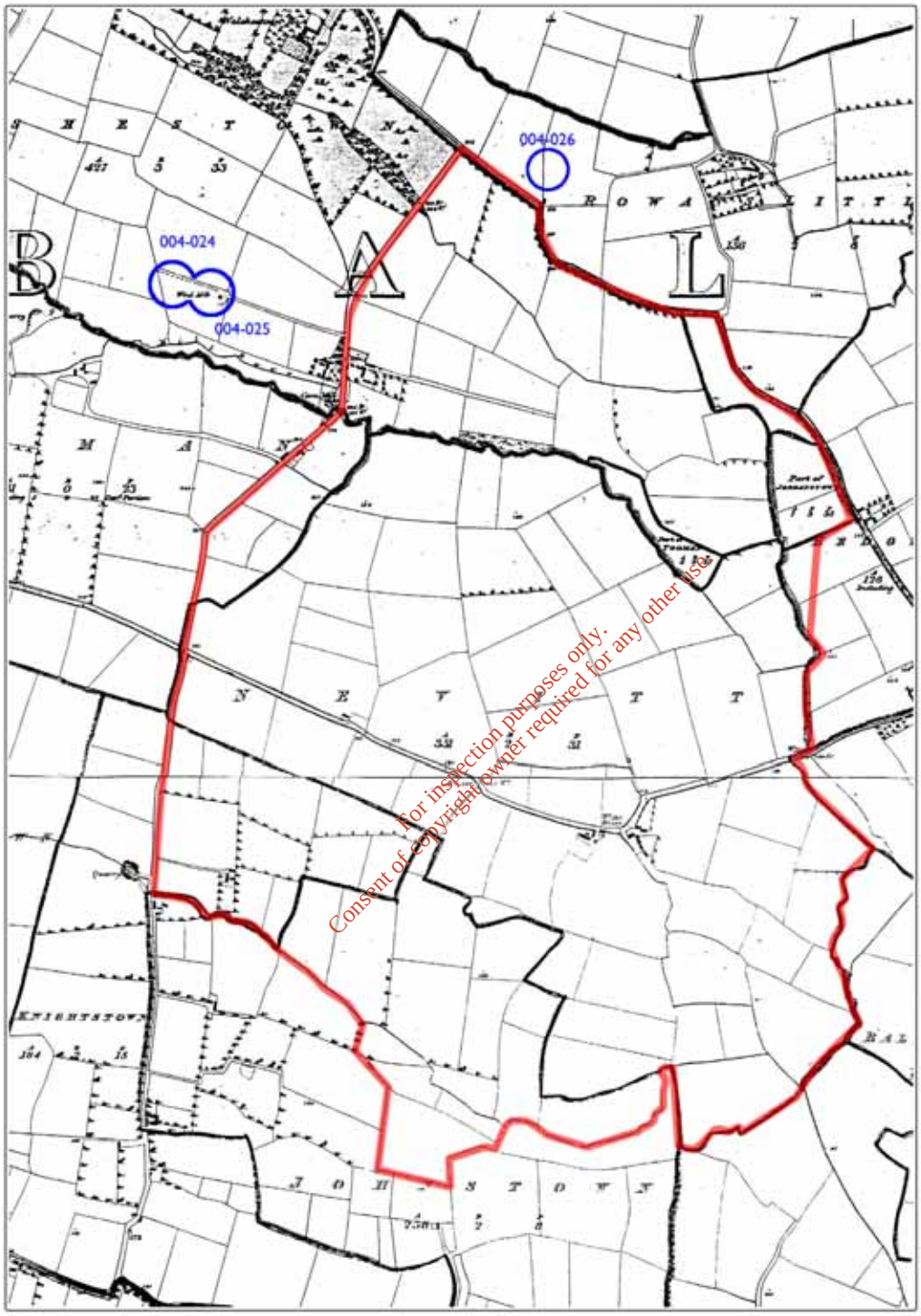
Job	Fingal Project
Ref.	5037-R4
Date	21.03.06
Client	Fingal County Council
Scale	Not applicable
Fig. 5	Rocque, 1760



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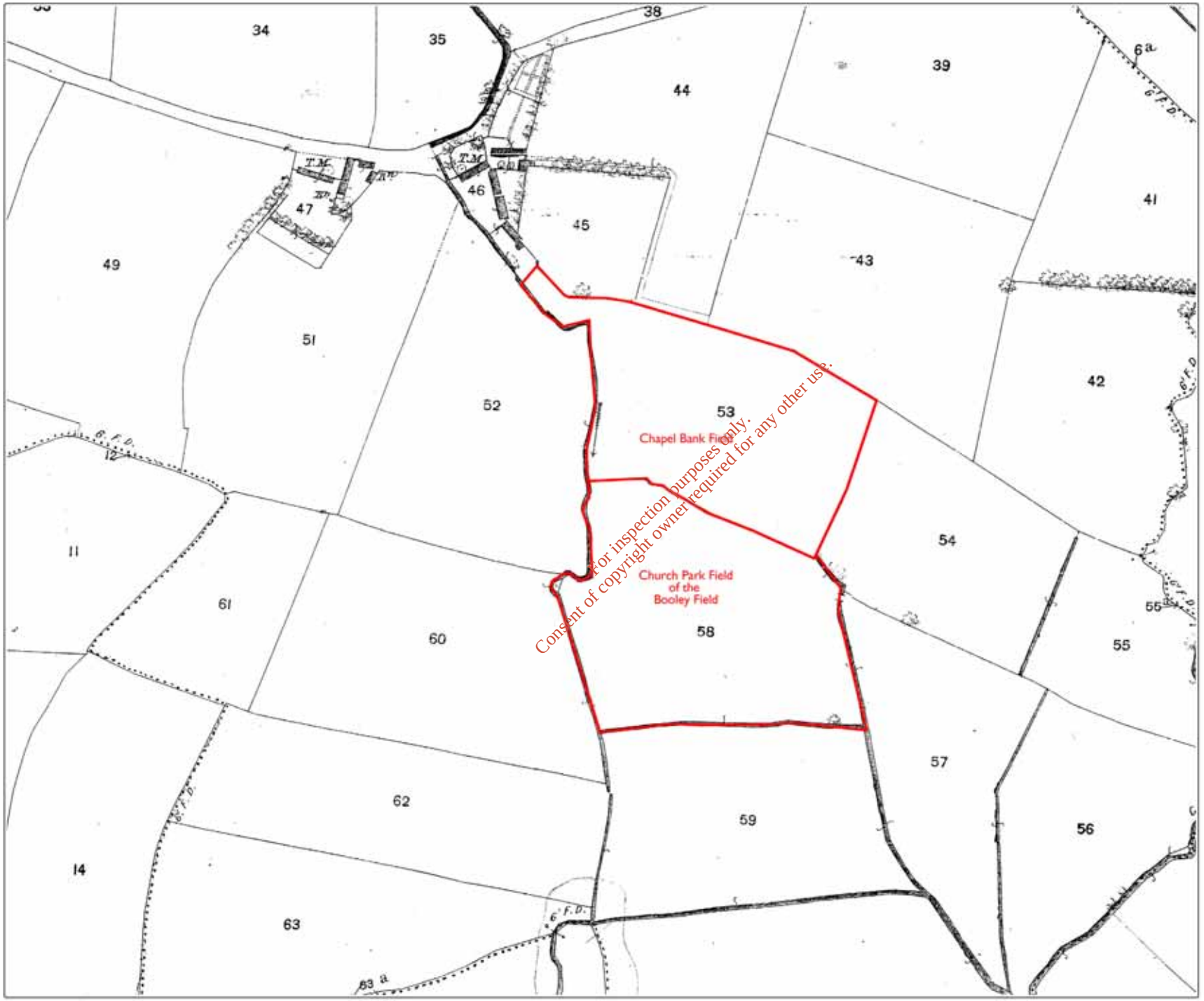
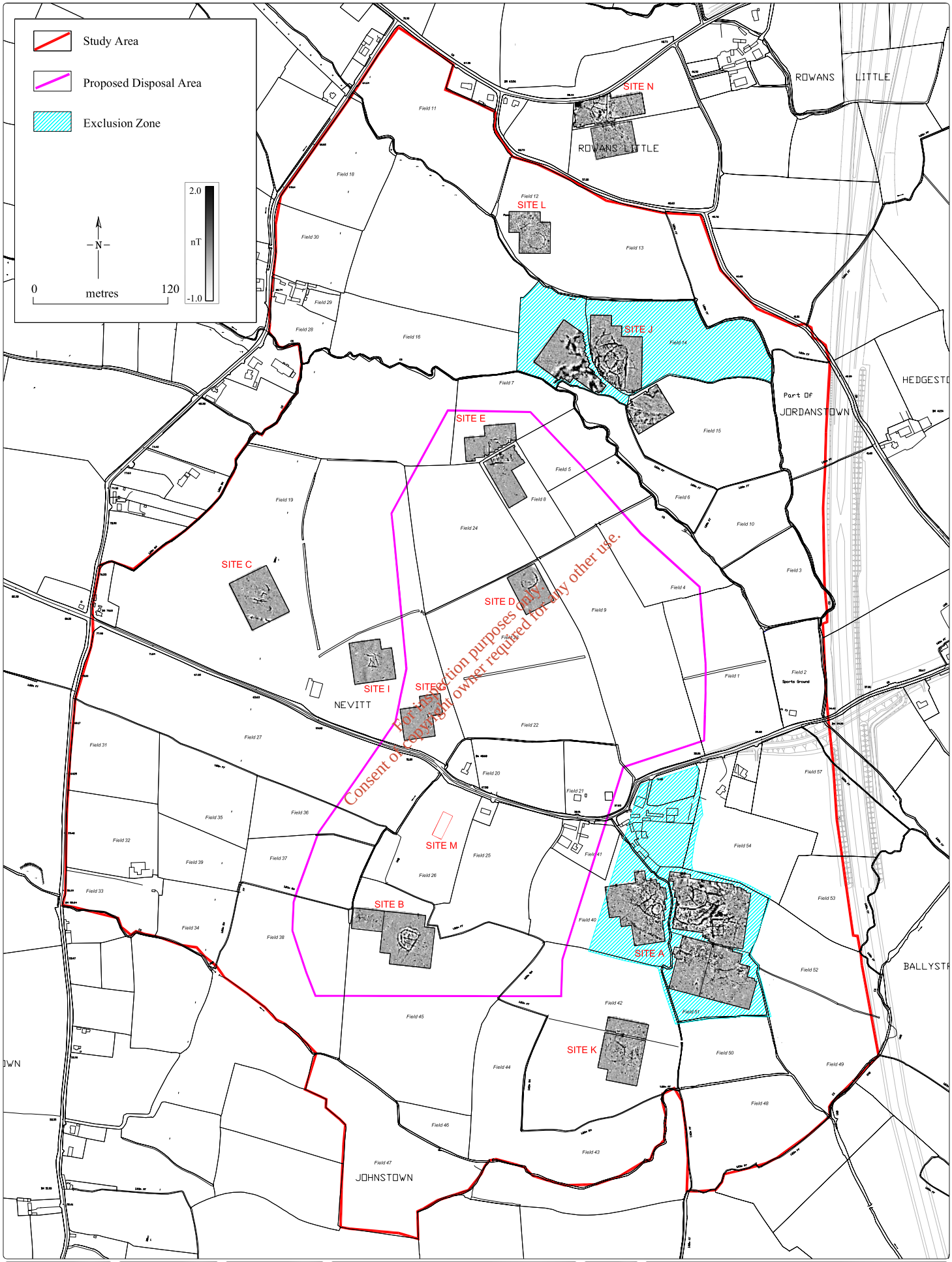
Job	Fingal Project
Ref.	5037-R4
Date	21.03.06
Client	Fingal County Council
Scale	Not applicable
Fig. 6	RMP site location map



Job Fingal Project
Ref. 5037-R4
Date 21.03.06
Client Fingal County Council
Scale 1:2,500 @ A3
Fig. 7 O.S. map, 1870



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CHECKED BY: LC | DATE ISSUED: 23/03/2006

PROJECT: FINGAL LANDFILL PROJECT

TITLE: EXCLUSION ZONE SURROUNDING SITE A & SITE J

CLIENT: FINGAL COUNTY COUNCIL

JOB NO.: 05037

DRAWING NO.: 05037_131

FIG. NO.: Fig. 8

SCALE: 1/6500 @ A3

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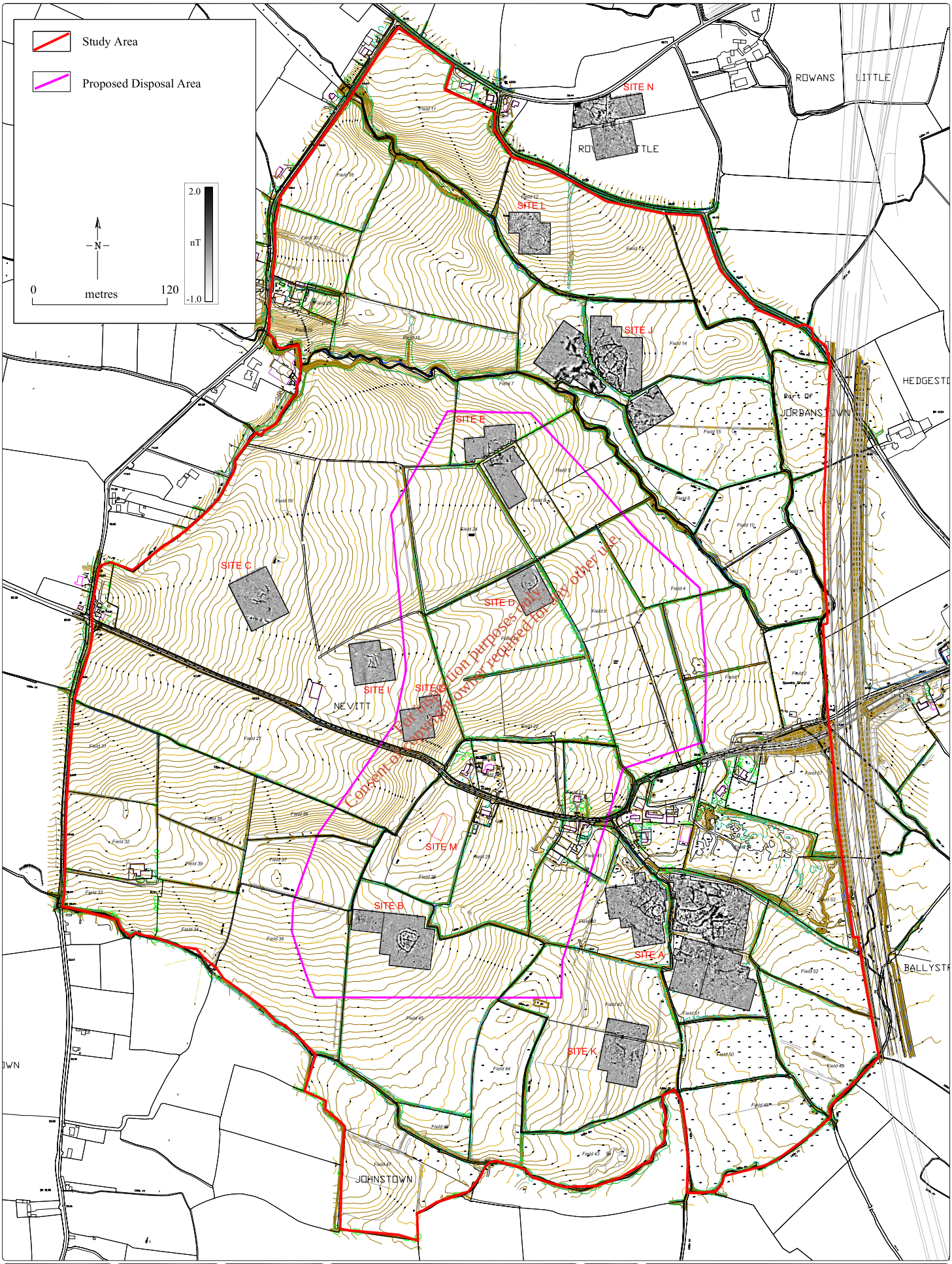

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PROJECT: FINGAL LANDFILL PROJECT

TITLE: TOPOGRAPHICAL SURVEY & GEOPHYSICAL RESULTS

CLIENT: FINGAL COUNTY COUNCIL

JOB NO.: 05037

DRAWING NO.: 05037_132

FIG. NO. Fig. 9

SCALE: 1/6500 @ A3

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Plate 1 Field operative using the Bartington GRAD 601-2 dual sensor fluxate gradiometer

Plate 2 An example of the large trenches that were opened as part of the archaeological investigations through out the site

Plate 3 A section of trench 25a Site L (field 12)

Plate 4 Extensive view from Walshestown townland, the northwest corner of the proposed landfill site (field 11)

Plate 5 View from the west looking east across field 19, a large amalgamated field

Plate 6 View from the east looking towards Site J (field 14)

Plate 7a View from the south looking north towards Site A in field 51, 'chapel bank field'

Plate 7b View from the north (Site A) looking south in field 51

Plate 8 Linear trench 5 located over Site D

Plate 9 Site D – internal features

Plate 10 View towards Site E

Plate 11 Large drainage ditch – Site E

APPENDIX 1 SOURCES

The Record of Monuments and Places

This provides a basic legal protection for all monuments listed and mapped under Section 12 of the 1994 Amendment Act. The record consists of a list of monuments and places and a map showing each monument and place in respect of each county in the State. Two months notice must be given to the Minister of Environment, Heritage and Local Government of any proposed works affecting a monument, place or archaeological area included in the Record of Monuments and Places or the Register of Historical Monuments (Section 5, National Monuments Amendment Act 1987).

The Topographical Files of the National Museum of Ireland

The topographical files of the NMI identify recorded stray finds held in the museum's archive. The finds, which have been donated to the state in accordance with national monuments legislation, are provenanced to townland, and the files sometimes include reports on excavations undertaken by NMI archaeologists.

Excavations Bulletins and Excavations Database

'Excavations' is an annual bulletin, which contains summary accounts of all excavations carried out annually in Ireland. The bulletins range from 1969 to 2000, and can now be accessed on the Internet at www.Excavations.ie. Both the bulletins and database were consulted to establish whether excavations have been previously carried out in the vicinity of the proposed development.

Documentary and Cartographic Sources

Documentary and literary sources were consulted in the Trinity map library and the National Library of Ireland. The following historical maps for the area were consulted: Down Survey map, c.1650 (Fig. 4); Rocque's map of Dublin, dated 1760 (Fig. 5); the 1st edition Ordnance Survey 6 inch edition (1837-43) (Fig. 6) and the RMP constraint map (Fig. 6).

APPENDIX 2 FIELD NOTES

Fingal Landfill Field Notes

Townlands Nevitt and Tooman **Field Numbers** 1-10

Physical Environment

The majority of these fields are low-lying and currently used for the grazing of horses. Field 6 is an exception, which belongs to Tooman townland, along with a section of Field 9 that has been subdivided by the use of electric fencing; both these areas are now under plantation forestry. A fast flowing watercourse (approximately 2.5 m wide and 50cm deep with a gravel bed) separates Fields 2, 3, 10 and 6 from Fields 1, 4, 5 and 7. The latter fields all slope gently to the watercourse, this aligns with their northern and eastern boundaries. There is a substantial drop from the surface of the fields to the river; which meanders through a tree-lined valley.

Cultural Landscape

The removal of a few boundaries has taken place although the townland boundary of Nevitt is still intact. Field 6 forms part of Tooman townland and the boundary is still clearly defined. The fields are divided by hedgerow and electric fences. The only building in the area is a modern one-storey structure, which was used as changing rooms for the local cricket club. This structure in Field 2 is now derelict. Remnants of a limekiln on the boundary between Field 9 and 22 were also noted. A pile of red brick and cut stone form a mound, which is heavily vegetated on the boundary. This mound is located at the end of a sunken laneway that divides Fields 9 and 21. The entrance of this laneway is located on the bend of the roadway, which bisects the study area in two and located opposite the entrance of an old farm stead that is marked on the first edition mapping (1837). The laneway is now completely overgrown with vegetation. The feature is approximately 2m in diameter, flat bottomed and consists of compacted clay (at its base). It is 3m in height but it is difficult to stand up right due to the vegetation. This laneway would have acted as access to the limekiln and the top of the structure would have been easy to charge from above field. This sunken laneway is also on Rocque's map of 1760 and it is possible that it may be the remnants of a sunken medieval laneway. Between fields 21 and 22 this laneway forms a substantial ditch, which is not passable due to vegetation.

The kiln structure would have consisted of a funnel, either stone or brick lined, to accommodate the charging material. This would have included limestone blocks and flammable materials like wood, charcoal and turf. Exposure to direct heat would have broken the limestone down into powdered quicklime. During the burning and at completion it would be possible to draw out the powdered quicklime through the draw arch or arches. These arches or recesses were constructed to allow sheltered access to the base of the kiln to extract the quicklime while also sheltering the product from the weather. The material was then probably carted off down the lane to a storage facility in a nearby farmyard.

Townland Walshestown **Field Numbers** 11-13

Physical Environment

These three fields consist of a south-facing slope recently reseeded. The land slopes to a watercourse and has spectacular and extensive views to the south and east from the northern section of these fields. This area is also very exposed to the elements.

Cultural Landscape

The northern boundary of these fields is bounded by 'Mays Road' an old laneway which is now used only for local use. Field boundaries have been removed; the boundary between Field 12 and 13 is still visible as an overgrown sunken ditch. A number of naturally occurring flints were found during the field inspection.

Townland Walshestown **Field Numbers** 14-18, 28-30

Physical Environment

All these fields lie to the south of the aforementioned watercourse while another watercourse forms their southern boundary. These watercourses range from 1-2m in width and are generally shallow not more than 0.6m deep on inspection, both have a flat-bottomed gravel bed. The area is low-lying to the east where the two rivers merge and rises to the west; the fields are slightly domed and slope down to each watercourse on either side. As the streams fall from a west to east direction the power of the water has forged a deep ravine in the landscape. This ravine is occupied by trees and scrub and terracing occurs on the lower southern slopes of Field 16. At the southwest corner of Field 16, a flat platform measuring 7 by 10 metres is located beside the river. Apart from Field 17 and part of field 14, which is under crop, all fields are under pasture and used for grazing. Towards the northwestern corner of Field 30 there is a linear hollow in the ground running from the interior western running east for *c.* 10m, being *c.*5m wide and 2m deep at its maximum.

Even though Field 14 is low-lying there are two distinct hillocks, which afford good views to the east and west, and somewhat more limited to the south and restricted to the north. The surface of Field 15 is very uneven and rises to the southwest corner. Given the proximity to the water courses and the topography of the landscape there is a significant potential to reveal archaeological features in these fields. Field 16 and 28 slope steeply to the south and the watercourse, there are good views over the valley from the northwest corner of Field 28.

Cultural Landscape

Field boundaries are defined by mature trees and hedgerow and some internal divisions have been removed leading to the creation of large open areas. The stream acts as a natural boundary and a deep drain separates Fields 14 and 15. There is a stone pillar at the entrance of Field 17 this is obviously associated with the farm holding located to the west.

A two-storey farmhouse and associated buildings were noted during the course of field inspection in Field 29. Cartographically this property is first shown on the Ordnance Survey map of 1837. Two of the farm outbuildings are of clay rendered in whitewash. There are further buildings shown on the opposite side of the road from Field 29 and to the south of these on the north bank of the watercourse there a corn mill marked on the historical map sources (see the architectural heritage chapter).

A delisted site lies adjacent to the southwest corner of Field 16. It was first identified by aerial photography in 1972 as a possible ring ditch but upon inspection by staff of the Archaeological Survey of Ireland was dismissed, as it was the site of an ESB pole (G. Crowley, National Monuments Section of the DE,H & LG *Pers. Comm*).

Townland Nevitt **Field Numbers** 19, 26, 27

Physical Environment

The exposed upper reaches of these fields in the townland of Nevitt have views which are most extensive to the northeast, east and south. The ground then falls away to the southeast and is relatively lowlying. Fields 19, 26 & 27 are all tilled land and under a recently reseeded crop. A road separates Field 19 from the others fields. Field 19 is one holding. Fields 26 and 27 form a separate holding. Several watercourses occur within the area, including a small stream (*c.* 2m wide and 0.5m deep) occurring on the northern perimeter of Field 19. Several drainage ditches are located around field boundaries.

The 1936 – 1937 revised Ordnance Survey map shows the northeast of Field 19 and the western half of Field 27 as being marshy ground, which in the interim have been greatly improved.

Cultural Landscape

Both Fields 19 and 27 have witnessed the removal of several internal field boundaries as is evidenced on examination of the first edition Ordnance Survey map (1837). The portion of the Nevitt townland boundary, which coincides with these fields, however remains intact. Cartographic research indicates the presence of a lane and structures in Field 19 on John Rocque's 1760 map. The first edition Ordnance Survey map also depicts the presence of a structure located on roadside to the west of the location of the present day barn. During field inspection the remnants of a stone wall was noted on the southern boundary of Field 19. Rocque's map also indicates the presence of a structure at the west end of Field 27.

The Sites and Monuments Record map shows the delisted SMR site DU004:028 – cultivation ridges identified through aerial photography in 1972, occurring in Field 19 (G. Crowley, *Pers. Comm*). The archaeological potential of these features was discounted when the site was inspected by National Monuments Section personnel.

Townland Nevitt **Field Numbers** 20-24

Physical Environment

These fields are located on low-lying ground but rise gradually from the road on the south towards the north. Fields 20-23 are open pasture with mature boundaries and have drainage ditches. Field 24 is under a recently planted deciduous crop. Field 24 is a large relatively flat field at the summit of a slope and is currently under plantation forestry. Owing to the mature boundaries, views are somewhat limited with the exception of to the east.

Cultural Landscape

Field 21 contains a two storey private property built at sometime between 1844 and 1936-'37 (architectural heritage chapter). Opposite the site of this house, the first edition Ordnance Survey map shows two of the structures (See architectural heritage chapter), which still exist there today. Rocque's 1760 map indicates the presence of two structures to the north of the road in the location of Fields 20 and 21. At the entrance to Field 20 a rough-cut stone gatepost with two incisions was noted. Field boundaries have remained relatively intact from their depiction on the first edition Ordnance Survey map. A tree-lined boundary shown in Field 24 on the 1837 map is no longer extant. A deep ditch separates field 22 from field 20 and 21, this ditch was not accessible due to the heavy vegetation.

Townland Knightstown **Field Numbers** 31-37, 39

Physical Environment

These eight fields occur in one holding and slope gradually from the north to a drainage ditch at the south. In general, views from are good to the east and south and less so to the west. This holding has a network of ditches and well-maintained hedgerows. Access to the fields is by means of several modern stone, concrete and infill bridges. Arable agriculture is practised throughout this holding with the exception of pasture in Field 36 and Field 35 and part of 35 are fallow.

Cultural Landscape

Field boundaries in this area have remained extant with the exception of the eastern boundary of Field 34 and the southern boundary of Field 37, which have been removed. A modern farm structure is located in the northeastern corner of Field 33. To the south and southwest of this there are the partial remains of a clay house and in Field 34 a pump (architectural heritage chapter). Cartographic research (Ordnance Survey 1837; Figure 7) indicates the presence of three structures in the northeast of Field 33 and a laneway accessing them from the public road to the west along the northern interior perimeter of Field 33.

Townland Johnstown **Field Numbers** 38, 43-46

Physical Environment

Fields to the north of the watercourse, slope to the south. Views from this area are limited to the west in general and it is only on upper ground in the northwest corner of Field 46 that views open up to the south and east. There is a mixture of mature hedges and trees in the field boundaries. Fields 43 and 46 are under pasture whereas Field 38 is arable land that is fallow and Fields 44 and 45 are under newly planted crop. The southern end of Field 38 is very damp and there is drainage work currently being carried out there.

Cultural Landscape

Cartographic research (1837 Ordnance Survey map) indicates that several internal field boundaries have been removed from Fields 38, 45, 46 & 48 however part of the distinctively shaped townland boundary between Johnstown and Nevitt remains intact with the exception of the removal of the northern and western boundaries which enclosed part of Field 38. During field inspection there was evidence of extensive land disturbance in Field 43.

Townland Nevitt **Field Numbers** 25, 40-42, 48-52

Physical Environment

This is a low lying area to the south of the road traversing the proposed development area in an east west direction and to the west of the M1 motorway. Views from this area are limited but are most prominent towards the east and less so towards the west. These eight fields are under pasture, with Field 50 having been recently reseeded and part of Field 42 containing a turnip patch. A mixture of hedgerows and trees and several drainage ditches surrounds these fields.

Cultural Environment

There are structures in Field 41 shown on Rocque's 1760 map (Figure 5) and again on the first edition Ordnance Survey map of 1837. In the southeastern corner of Field 42 there is a stone culvert *c.* 75cm high and over 1m wide. In addition a possible field drain outlet was noted in Field 42. These features are indicative of an improvement minded landowner making these adjustments to the holding in the past. Cartographic research (Ordnance Survey 1837; Figure 7) indicates that field boundaries have been removed from the interior of Fields 42, 50, 51 and 52. Field 51 is known as the 'chapel bank' field by local landowners, a rise in the topography was noted to the north of the field, this forms an ill defined hillock. The field is surrounded by large drainage ditches and during the winter time the southern end of the field can become flooded (pers comm. Billy Moran and Jim Monks).

Townland Nevitt **Field Numbers** 53-57

Physical Environment

This area is comprised of low-lying ground immediately to the south and west of a road and motorway respectively. There has been ground disturbance in relation to the recent construction of the motorway witnessed through the dumping of spoil. The ground level in Field 54 has been artificially raised due to the presence of an unauthorised landfill occurring in this field. This area includes pasture and three residences. Views from here are to the east and south.

Cultural Environment

Disturbance has taken place in these fields due to the newly built motorway to the east and the unauthorised landfill in field 54. Field 57 is currently used as a paddock for horses.

APPENDIX 3 Summary description of geophysical and testing results

Survey Area/Trench Number	Geophysical Description	Testing Description
Area 1	Two possible pit-type responses and an area of increased response likely to be modern in origin	
Area 2/ Trench 2 (50m x 2.3m) **Site C**	Positive responses of pits and ditches and an enclosing ditch may represent plough damaged archaeological remains.	Located over geophysical anomaly C. The trench contained 3 ditches (no more than 0.45m deep) and some modern agricultural features.
Area 3	Pit type responses, largely isolated and located in close proximity to former land divisions. May be of archaeological interest but equally likely to be agricultural in origin.	
Area 4	Pit type responses, largely isolated and located in close proximity to former land divisions. May be of archaeological interest but equally likely to be agricultural in origin.	
Area 5A	Responses correlate to a former field system as shown on the 1st ed OS map sheet 4 (1837). Not of archaeological significance	
Area 5B **Site I**	Linear and curvilinear responses are indicative of archaeology and may represent part of an enclosure (22.5m x 18m). Responses appear incomplete suggestive of plough damage.	Testing recommended to establish the archaeological significance of these responses.
Area 6	Responses correlate to a former field system as shown on the 1st ed OS map sheet 4 (1837). Not of archaeological significance.	
Area 7/ Trench 1 (30m x 2m) **Site G**	Cluster of potential archaeological responses, 3 possible pit-type and a linear responses.	Located over geophysical anomaly G. It contained two linear features and a pit containing burnt stone.
Area 8/Trench 9 (20 x 2.6m) **Site F**	Amorphous positive response maybe archaeological but likely to be natural in origin due to the proximity of the stream.	Located over anomaly F, this was a natural feature and not of archaeological in nature.
Area 9	No archaeological significance.	
Area 10/ Trench 8 (2.6m x	A number of responses form	Located over the northern

40m) **Site E**	a possible rectilinear enclosure (48m x 48m bisected by an existing boundary ditch. Responses also indicated pits and burning internally.	section of anomaly E. A shallow (0.35 in depth) ditch and modern agricultural features were detected.
Area 10/Trench 24 (80m x 2.6m) **Site E**		Located over the northern section of anomaly E, no new archaeological features came to light.
Area 11/Trench 7 (2.6m x 40m) **Site E**	A number of responses form a possible rectilinear enclosure (48m x 48m bisected by an existing boundary ditch. Responses also indicated pits and burning internally.	Located over the southern section anomaly E. Three archaeological features were revealed, a linear ditch, a very small pit and a substantial pit.
Trench 10 (40m x 20m)		Located to the southeast of anomaly E. No features of an archaeological nature were uncovered.
Area 12	No archaeological significance.	
Area 13	Linear negative responses indicate former field boundaries. No archaeological significance.	
Area 14	Linear negative responses indicate former field boundaries. No archaeological significance.	
Area 15	No archaeological significance.	
Area 16/Trench 13 (30m x 2.6m) **Site H**	Curving response corresponds to an area of disturbed ground, an archaeological interpretation is cautious.	Located over anomaly H, this proved to be natural in derivation and no archaeological features were revealed.
Area 17/Trench 16 (40m x 20m)	Increased response may be archaeological in origin but could be deposits of modern material.	No features of an archaeological nature were revealed during the excavation of this trench.
Area 18	Strong ferrous disturbance.	
Area 19	Strong ferrous disturbance.	
Area 20	Large area of disturbance likely to be modern in origin.	
Area 21	Pit-type of responses, no archaeological pattern is discernable, a natural explanation is preferred.	
Area 22/Trench 5 (2m x 50m) **Site D**	Curvilinear response likely to represent the remains of a ditched circular enclosure (approx. 30m in diameter). Responses may indicate internal archaeological features.	A linear trench was placed over geophysical anomaly D. Eight archaeological features were revealed, confirming that it is a sub-circular enclosure (40m in diameter) containing internal features.
Trench 4 (40m x 20m)		Located to the south west of geophysical anomaly D. No

		archaeological features or deposits were revealed
Trench 6 (40m x 20m)		Located to the south of anomaly D. No archaeological features were revealed.
Area 23/Trench 14 (40m x 20m)	Pit-type responses identified. However, no archaeological pattern is clear and a natural interpretation is equally plausible.	No features of an archaeological nature were revealed during the excavation of this trench.
Area 24/Trench 11 (50m x 20m)	A number of linear negative trends were identified likely to represent natural variations in the soil or agricultural features.	No archaeological features were revealed in this trench.
Trench 12 (40m x 20m)		No archaeological features were revealed in this trench.
Area 25	A number of linear negative trends were identified likely to represent natural variations in the soil or agricultural features.	
Area 26	A number of linear trends were identified and are likely to represent natural variations in the soil or agricultural activity.	
Area 27	A number of linear trends were identified and are likely to represent natural variations in the soil or agricultural activity.	
Area 28/Trench 3 **Site M**	A possible pit type of response was identified, it is isolated and could equally be natural or archaeological in origin.	Placed between Area 26 and 28. The trench measured 50m x 20m. The trench contained modern agricultural features and two small plough damaged pits.
Area 29	A number of linear trends were identified and are likely to represent natural variations in the soil or agricultural activity.	
Trench 20 (55m x 20m)		No archaeological features or deposits were revealed.
Area 30/Trench 17 (40m x 2m)	A cluster of responses of archaeological strength were identified and may represent plough damaged remains. However no discernable archaeological pattern is apparent and an archaeological interpretation is cautious.	Located to the west of anomaly B. This anomaly proved to be a seam of broken bedrock and a natural response upon test excavation.
Area 30/Trench 18 (55m x 2.6m) **SITE B**	A complex of archaeological type responses suggestive of a double-ditched D-shaped enclosure measuring 42m	Located over anomaly B, a number of archaeological features were revealed indicating a D shaped

	from north to south and 41m from east to west.	enclosure, disturbed in the interior. Finds of slag may tentatively date this features to the iron age or later.
Area 30/Trench 18A (55m x 2.6m) **SITE B**	A complex of archaeological type responses suggestive of a double-ditched D-shaped enclosure measuring 42m from north to south and 41m from east to west.	Located parallel and to the south of trench 18. Description as before.
Trench 19 (40m x 20m)		No archaeological features or deposits were revealed.
Area 31/Trench 23 (50m x 30m)	Number of isolated pit- like responses with no discernible archaeological pattern.	No archaeological features or deposits were revealed.
Area 32	A number of linear trends were identified and are likely to represent natural variations in the soil or agricultural activity.	
Area 33/Trench 21 (200m x 2.5m) **SITE A**	Responses suggestive of a significant archaeological complex extend through out Area 33-35. A number of annexes or cellular divisions represented by ditch-type responses may form part of a large multi-phased site.	Placed to establish the eastern extent of anomaly A. No archaeological features were revealed. A strong linear area of increased response, perhaps representative of an old water course that runs through Area 33 and Area 35 was not detected through test excavation.
Area 33/Trench 22 (80m x 2.6m) **SITE A**	A clear positive elliptical response has been interpreted as an enclosure some 21m in diameter and forms part of a cellular complex. A curving response surrounds this feature to the west and extends 80m north south and 60m east-west from the eastern field boundary.	Located to the northeast of anomaly A, four shallow pits were revealed and two linear features which are possible lazy beds or large furrows.
Area 34 **SITE A**	An enclosure (28m x 28m) is present within a sub-oval enclosing ditch (this probably defines the centre of the complex and measures 45m north to south and at least 62m east to west). Outside this, a further enclosing feature is present (80m EW x 90m NS). Further responses of pit and short ditch type may indicate occupational activity. To the southeast of Area 34 a series of linear responses form a rectilinear enclosure separated from the main complex.	

Area 35 **SITE A**	A broad area of increased response which is suggestive of potential archaeology.	
Trench 25A (44.6m x 2.5m) **Site L**	Circular enclosure 31m in diameter, data corresponds to a cropmark identified from an aerial photograph. Anomalous curve to the northwest of the enclosure could be associated archaeological material but equally could be natural in derivation.	Two sections of an archaeological ditch were revealed, which probably form part of the circular feature as located by aerial photography and geophysical survey.
Trench 25B (28.4m x 2.5m) **Site L**	As above	Inserted perpendicular to trench 25A, a shallow curvi-linear feature was exposed. This feature is a continuation of the features revealed in trench 25A, indicating a circular feature.
Trench 15 (200m x 2.6m)		No features or deposits of an archaeological nature were revealed in this trench.
Area 36B **SITE J**	Responses suggestive of a significant archaeological complex extend through out Area 36. A number of annexes or cellular divisions represented by ditch-type responses may form part of a large multi-phased site approximately 73m from east to west and 141m from north to south.	
Area 36A	A number of strong amorphous responses, a natural explanation is preferred but these responses may mask archaeology.	
Area 36C	A positive linear and two parallel linear trends were revealed. Interpretation is tentative due to the close proximity of the field boundary.	
Area 37	Series of amorphous positive responses most likely natural in origin.	
Area 38	Series of amorphous positive responses most likely natural in origin.	
Area 39	Series of amorphous positive responses most likely natural in origin.	
Area 40	A series of linear and isolated responses are of archaeological potential.	Testing is recommended to identify the archaeological potential of these responses.

	Interpretation is cautious due to magnetic disturbance from the M1 motorway to the east and un-official landfill to the south.	
Area 41	Two parallel responses were identified. The strength of responses is indicative of a field division or perhaps drainage ditches. The location of these responses to site A (north-west) dictates that an archaeological interpretation must be considered. These responses may represent archaeological ditches.	Testing is recommended to establish the origin of these linear responses.
Area 42	An amorphous response has been identified. Although in proximity to responses in Area 40, this is interpreted as natural in origin, due to its weak amorphous pattern. Archaeological potential is thought to be limited.	
Area 43	Two amorphous isolated responses are believed to be natural in origin. Archaeological potential is thought to be limited.	
Area 44	A large area (52m x 30m) of increased response has been identified. Clear responses are identified within the increased magnetic response. Although no clear pattern can be identified, these responses may represent burnt material and may be archaeological in nature or maybe localised gravel spreads.	Testing is required to investigate the nature of these responses. This area is now located outside the area proposed for development. There will be no impact to this area.
Area 45 **SITE K**	A fragmented curvilinear response is interpreted as representing a ditched sub-circular enclosure (approx. 38m in diameter). Internal responses may indicate associated archaeological features. Ephemeral curvilinear response may indicate a second circular enclosure (approx. 25m in diameter).	Test excavation is required to investigate the archaeological potential of the sub-circular response and internal responses. These series of responses is interpreted as of high archaeological potential.
Area 46	No responses of clear archaeological potential have been identified	
Area 47	A number of linear responses are identified but no clear	Testing is required to investigate the nature of

	archaeological pattern is discernable. These responses may represent plough damaged archaeology, or perhaps reflect natural variations within the top-soil. Archaeological interpretation is tentative.	these responses. This area is now located outside the area proposed for development. There will be no impact to this area.
Area 48	Two isolated responses have been identified. No clear archaeological pattern is evident. These responses may represent more deeply buried modern ferrous material. Archaeological potential is believed to be minimal.	
Area 49	No clear responses of archaeological potential have been identified.	
Area 50	A broad isolated anomaly has been identified. This anomaly is of archaeological strength and may represent an area of burnt material. No other responses indicative of archaeology were found in this area.	Testing is recommended to establish the archaeological potential of this broad response.
Area 51	No clear responses of archaeological potential have been identified.	
Area 52	As with Area 50, a broad anomaly of archaeological potential has been identified. This response may represent an area of archaeological burnt material.	Testing is recommended to establish the archaeological potential of this broad response. This anomaly is located outside the proposed development area.
Area 53	No clear responses of archaeological potential have been identified.	
Area 54	Two broad responses similar to those identified in Areas 50 and 52 have been identified. These responses may be of archaeological potential, perhaps indicative of burning.	Testing is recommended to establish the archaeological potential of these broad responses. This anomaly is located outside the proposed development area.
Area 55	Number of isolated responses with no discernible archaeological pattern. A natural interpretation is preferred.	
Area 56	No clear responses of archaeological potential have been identified.	
Area 57	No clear responses of archaeological potential have been identified. A spread of	

	ferrous responses is indicative of a former field boundary.	
Area 58	Magnetic disturbance in the south of the data is evident and confuses interpretation. Nevertheless, short linear responses are evident. No clear archaeological pattern is discernable.	
Area 59	Spreads of isolated anomalies are evident. These responses may represent modern activity as no clear archaeological pattern is evident. Archaeological potential is thought to be limited.	Testing is recommended to clarify the nature of the responses identified.
Area 60	No clear responses of archaeological potential have been identified.	
Further fields 1-6 (GSB, 2006) were subject to geophysical survey in the townlands of Rowans Little and Walshestown in line of an access route. **Site N Field 2**	Strong archaeological type responses are evident and form an enclosure with several divisions, possibly representing several phases of activity. Anomalies extend to the south (Field 3) and possibly represent remnants of an associated field system. This feature could extend north of the existing road.	Testing is recommended to the north of the existing road to establish if further features are present.
Fields 7-9 (GSB, 2006) (part of Jordanstown)	Anomalies of a modern derivation were detected.	

APPENDIX 3 ARCHAEOLOGICAL BACKGROUND – EXCAVATION REPORTS

Archaeological Background

Fingal has a rich and well-documented historical and archaeological heritage, the latter stretching back to prehistoric times. Evidence for activity in the Mesolithic (*c*. 7000 – 4000 BC), the period which saw the first people come to Ireland after the end of the last Ice Age, is generally confined to the coast, and the earliest indication of man in County Dublin comes from the discovery of a microlith at Knocklea, near Loughshinny (Stout & Stout 1992). Elsewhere, the discovery of flint scatters or implements in Ardgillan Demesne, Barnageeragh, Skerries and Holmpatrick highlight the degree of early prehistoric activity along the coastal strip between Balbriggan and Loughshinny, and attests, in conjunction with cairns in Barnageeragh, as well as passage tombs both at Rush and in Hampton Demesne, to the continued exploitation of these coastal locations during the subsequent Neolithic (*c*. 4000 – 2300 BC).

Funerary and ceremonial monuments, in conjunction with a now growing number of habitation or settlement related features, indicate that the prehistoric population was more widespread in the Bronze Age (*c*. 2300 to *c*. 500 BC), and had extended further inland from the coast. Simple cist burials with accompanying food vessels have been found throughout the Fingal region, including examples at Moat Hill or Courtlough (DU004:029/005:041), at Baltrasna (DU005:023) and at Milverton (DU005:032), east and north of the proposed landfill location respectively, and at Hollywood Great (DU004:021), Whitestown (DU007:025) and Oldtown (DU007:022), west and southwest of the proposed development area. There is also a record of a possible burial in Calliaghstown, southwest of the proposed development area. The extent of settlement in the Fingal region at this time is further emphasised by ring-ditches in Hampton Demesne (DU005:015) and Walshestown (DU004:015 and DU004:024), the closest recorded site (220m) west of the proposed landfill, habitation sites in Richardstown (DU007:034) and Broomfield (possible) (DU007:026), south of the proposed landfill area, potboiler sites in Newtown (Ballyboghil) (DU004:013) and in Richardstown (DU007:035) and a fulacht fiadh in Barnageeragh (DU005:058-01). The attraction of elevated ground during the period is highlighted, in particular by the topographic location of funerary and ceremonial monuments, most spectacularly by a hilltop enclosure and numerous tumuli in Knockbrack and Kitchenstown (DU004:012), northwest of the proposed landfill area.

There are no recorded monuments located within the proposed development area. The nearest archaeological feature is the site of an enclosure (DU004:026) in Rowans Little townland. The area of archaeological constraint surrounding the site as recorded on the RMP map is located approximately 20m north of the northern boundary of the proposed

development lands (Fig. 6). The site was recorded by aerial photography in 1972 (Fairey Survey of Ireland (508/9; 470/1(7169)) and appears as a roughly circular cropmark approximately 40m in diameter located in a sloping field of pasture, south of a stream. No visible surface remains can be seen on the ground.

A further enclosure site (DU004:025) is located in Walshestown townland (220m west of the proposed development). This site is shown on the first edition Ordnance Survey 6 inch map (1837) and may be a later feature constructed to keep cattle out from the sails of the windmill as was the case at the mills in Skerries. There is no visible trace of this monument.

The enclosures may add to the evidence of further prehistoric activity or may relate to later phases of occupation during the Early Christian period or later again in relation to the enclosure features surrounding the 19th century windmill. Enclosures have been described as sites that are marked on early maps but no longer exist above ground in the field or they may be sites that are clearly archaeological but defy categorisation. The term denotes any monument made largely or wholly of earth. A number of sites have been classified as enclosures surrounding the proposed landfill site and in all cases the surface expression has been depleted over time so categorisation in the field is difficult as there are little to no diagnostic features left upstanding.

A ring ditch (DU004:024) is also located in Walshestown townland and an aerial photograph (1977 BKS Ltd) shows a circular cropmark of a single ditch feature approximately 15m in diameter. The site is situated on level ground, which falls away to the east, allowing superb views to the coast. Again there are no visible remains of this site.

A number of prehistoric flints, namely eighty three miscellaneous rolled flint pebbles, flakes, seven quartz pebbles, one large flint pebble (possible a core) and one irregular flint flake (1973:93-187) were found in the townland of Walshestown (which partially lies within the northern extent of the proposed development). Thus the archaeological evidence indicates human activity around the northern end of the site during the prehistoric period. A handful of flint nodules were noted during the field inspection carried out for this study in the three most northern fields north of the watercourse in Walshestown.

No features of an archaeological significance were revealed as a result of excavations works for the Airport-Balbriggan Bypass in the following townlands Jordanstown, Rowans Little, Hedgestown, Nevitt, Ballystrane.

Two sites located within the boundary of the proposed landfill which were identified from aerial photography in the early 1970s were recorded in the Sites and Monuments Record (SMR). These sites, a possible ring ditch and cultivation ridges have subsequently been delisted from that record and are not contained in the Record of Monuments and Places manual or map. These sites were examined by National Monuments personnel in the field and found to non-archaeological in origin. The location of these delisted sites was also examined as part of this study by geophysical survey, no archaeological features were revealed at these sites and the findings of the National Monuments personnel were confirmed.

Historical Background

The lands discussed in this study lie within barony of Balrothery East in the Parish of Lusk. The area is within the bounds of Fingal, the regional name applied to the northern half of County Dublin. Fingal, is derived from *Fine Gall*, or the territory of the Galls or strangers, and it reflects the impact of Viking rule and settlement in the region – commencing with the initial predatory excursions and Viking attacks here in the ninth century – over a period of more than 250 years (Smyth 1992). The Fingal region, as recorded in the *Annals of the Four Masters* (AFM), was bound by the River Tolka on the south, and by the River Delvin, which is now part of the county boundary, on the north.

The continuing attraction of the Fingal region and its relationships with a wider cultural world ensured that Fingal developed as a distinct cultural zone. The productive plain of the region ensured continuity of settlement, and from the latter half of the twelfth century, Fingal formed part of the core region of Anglo-Norman colonisation. Manorial villages developed from pre-existing Early Christian settlements at Ballyboghil and Lusk, while new settlements developed in Naul and Balrothery. The strength of this colonisation is reflected in the density of old English names or immigrant surnames in the region. No other area in Ireland, including the northeast, has as great a diversity, and the northern Dublin baronies have a far higher proportion of English or immigrant names than the southern baronies – the high density of names ending in 'town' seems to be a zone of primary Norman colonisation (Smyth 1992).

At the dawn of the historical period (fifth to sixth centuries AD), the plains of Fingal formed part of the geographical region of Brega. Local kingship of the area later represented by the Balrothery baronies also belonged to the ruling line of *Saithne*, although the overkingship of Brega, from the seventh until the eleventh century, was dominated by *Síl nÁedo Sláine*, a dynasty of the Southern *Uí Néill* (Byrne 1973). A king of that lineage, *Ailill* son of Fergus died at Lusk from a horse fall on the Feast of Mac Cuilind, 6th September

800. The implication is that, at least by this time, there was an *óenach* or assembly place at Lusk. The presence of the *óenach*, which points to a commercial development and the number of recorded Early Christian church sites and cemeteries, including a major church at Lusk, church sites at Naul, Ballyboghil and Milverton (DU005:045) and a cemetery site at Gracedieu (DU007:015) indicate a significant centre of activity in the region.

This proposed landfill development is located in a territory which was ruled by the Saithne – four ecclesiastical sites are recorded in the annals and martyrologies; these are Lusk, Inis Pátraic, Rush and Bremore, the first two had close connections with Síl nÁeda Sláine, a dynasty of the southern Uí Néill. Although reduced in political terms as vassals of The Síl nÁeda Sláine, some of the more important lines of the Ciannachta Breg directed their energies into ecclesiastical affairs, becoming closely involved with several foundations in the territory of Saithne, which would later be drawn into the Hiberno-Scandinavian realm which the Irish called Fine Gall, or Fingal (MacShamhrain, 1996, 131).

In addition secular settlements, for example ringforts, which were often located in the vicinity of Early Christian ecclesiastical sites, attest to continuity of settlement in the region, and the richness of settlement during the period when the Vikings commenced their raids on the Dublin coastline. The emerging archaeological evidence would suggest that within these ecclesiastical centres there was a significant amount of secular activity, indicating the multi-functional nature of these sites.

By about this time, Viking raids on the Irish coastline had already commenced, markedly affecting most of the county, first by attacks and subsequently by settlement. The ecclesiastical sites in the Fingal region, such as those at Milverton, and Gracedieu, do not feature in the scant annal records of the period, and so it is difficult to ascertain whether or not they were subjected to raids. However, the prominent centre of Lusk was plundered and burned by Vikings in 828 *(A.U.* 827, 833; *A.F.M.* 825), and again in 857 *(A.U.* 856; *A.F.M.* 854). Similarly, it is not expressly stated whether or not the ecclesiastical foundations at Gracedieu or at Milverton were attacked when, in 960, a Viking lord named Sitric Cam plundered 'from the sea to *Uí Cholgan*', that is, from the coast at Rush/Loughshinney to Lusk and beyond.

The cemetery and enclosure at Gracedieu (DU 007:015), which was revealed during pipe laying for the Northeastern Gas Pipeline, Phase 2, in 1988, is located adjacent to a medieval nunnery, in an arable field directly south of the Ballyboghil road. The site is situated on a gentle north-facing slope, the summit of which occurs at the east/west field

boundary between it and the nunnery site. The field has and continues to be intensively tilled and was under a crop of wheat when excavated in 1988, emphasising the potential for the discovery of subsurface archaeological remains despite prior disturbance. This potential was noted and geophysical survey was recommended to ascertain and identify the whereabouts of subsurface archaeological remains within the proposed study area.

The districts surrounding Dublin, including Fingal, were among the first in Ireland to come under English Crown authority, commencing with the arrival of King Henry II in the winter of 1171. Large estates were bestowed on secular and ecclesiastical peers of the English realm in the form of manors, and this period saw the foundation at Lusk of a community of Augustinian canonesses, which was transferred around 1198 by Archbishop John Cumin to a new location, possibly an old Brigidine site, which was renamed Gracedieu. Archbishop Cumin endowed the new convent with tithes from several churches including St. Audeon's. Having augmented the community by transferring nuns from another old foundation at Swords, he charged them with educating daughters of the Anglo-Norman nobility. (Gwynn & Hadcock 1988, 317; Burry, 1994, 98).

The regions distinctiveness was still recognised in the post medieval period, and has often been referred to as 'the breadbasket of Dublin.' In his sixteenth century *Description of Ireland*, Richard Stanyhurst referred to Fingal as an important part of The Pale, the region around Dublin where the customs of the English settlers largely survived in opposition to the Gaelic culture that persisted outside. In the seventeenth century, the name Fingal was associated with the more arable portion of the lands north of Dublin, and it is estimated from details on land use provided in the *Civil Survey* that, on average, 70% of the baronies of Balrothery was then classified as arable (Smyth 1992). The regions strategic importance to the city was exploited by Owen Roe O'Neill who, in 1641, sacked the county between Castleknock and Drogheda, then containing 'the goodliest haggards of corn that ever was seen in those parts' (Smyth 1992, 126).

Record of Monuments and Places

RMP No	DU004:024	**Map**	2720
Townland	Walshetown	**NGR**	31682/25810
Site Type	Ring-ditch site		

Description An aerial photograph taken by BKS Ltd. in 1977 (2736231) shows a circular cropmark of single ditch feature (diameter. c.15m). Situated on level ground, which falls away to the east, allowing spectacular views of the coast. This feature is currently under tillage and there are no visible surface remains.

Distance *c.* 320m west of the northwestern portion of the proposed development area.

RMP No DU004:025 **Map** 2720
Townland Walshetown **NGR** 31691/25807
Site Type Enclosure site
Description Shown on the first edition Ordnance Survey map as a circular enclosure (diameter. *c*. 40m) encompassing a mill. This enclosure may have been constructed to keep cattle out from the sails of the windmill as was the case at the mills in Skerries. No visible surface trace of either monument. (Healy, P. 1975, p16). BKS CIS Ltd September 1977 2736231 (109/108)
Distance *c.* 220m west of the northwestern portion of the proposed development area.

RMP No DU004:026 **Map** 2720
Townland Rowans Little **NGR** 31768/25838
Site Type Enclosure Site
Description An aerial photograph shows a roughly circular cropmark of an enclosure (diameter *c.*40m) located in a sloping field of pasture south of a stream. No visible surface remains can be seen on the ground. Fairey Survey of Ireland July 1972, 4, 508/9; 470/1 (7169)
Distance *c.* 20m north of the northern perimeter of the proposed development area.

Excavation Reports

Monitoring of trail-pits, topsoil-stripping and drainage trenches was carried out in advance of the Airport-Balbriggan Bypass in the following townlands of Jordanstown, Rowans Little and Hedgestown, that lie adjacent to the proposed landfill site, nothing of an archaeological nature was revealed. Two areas were investigated in Nevitt townland, again no archaeological material was revealed.

Nevitt 318284 257484 01E1155

Two small pits were identified during the monitoring of topsoil-stripping and drainage trenches carried out on the second contract of the Airport-Balbriggan Bypass. These features were excavated and deemed to be of no archaeological significance.

Nevitt 318292 257933 02E0053

A series of ditches was identified during the monitoring of drainage trenches carried out on the second contract of the Airport-Balbriggan Bypass. The site was excavated and deemed to be of no archaeological significance.

Two additional areas in the adjacent townland of Ballystrane were subject to archaeological excavation.

Ballystrane 318309 256956 00E0953 ext.

An area identified as a possible prehistoric habitation was revealed during the topsoil-stripping carried out on the second contract of the Airport-Balbriggan Bypass. The site was excavated, and a series of criss-crossing modern field drains was identified. The site was deemed to be of no archaeological significance.

Ballystrane 318375 256708 00E0052

Although initially identified as a series of small pits with associated flint, this site on excavation was found to be of no archaeological significance.

Aerial Photography

A series of 1:5000 aerial photographs dating to the early 1990's were consulted during the course of the study. The proposed study area is shown as agricultural in nature and is either under crop or in pasture. An area immediately north of Site A, the large complex identified by geophysical survey, is shown to be heavily disturbed and earthmoving activity taking place.

None of the features identified by geophysical survey (A-N) could be identified from the aerial photographs. Ploughed out field boundaries which correspond to boundaries as shown on the 1st edition Ordnance Survey mapping (1837) are traceable as linear features. The extensive complex of site A is not detectable through aerial photography, a track located on the outer edge of the field recorded as 'chapel bank' is apparent. A slight oval (oriented east-west) feature (approx 80m east-west and 40m north-south) located to the north-west of Site B is evident from an aerial photograph (8822). This area was subject to archaeological testing and found to be natural in origin.

In Walshestown, two cropmarks occur side by side in the corner of a field approximately measuring 24m east-west by 22m north-south also to the north of these features an extremely faint curving feature is present. One of the cropmarks was tested and found to be archaeological in nature albeit the remains were very ephemeral. It was later subjected

to geophysical testing and a circular feature approx. 31m in diameter was revealed a curvilinear response was also noted to the north-west of the feature. This site is referred to as site L in the main impact report.

Both recorded monuments, a ringditch and enclosure site in Walshestown (RMP DU 004-024 and 004-025) located outside the study area and to the west of the proposed development are clearly visible on the aerial photographs.

Way to the west outside the study area a small circular feature was noted in one of the ploughed fields, the feature is approximate 10m x 10m in size (0047). In the townland of Knightstown a large linear curving feature is clearly evident from photograph numbers 8826 and 8828 as well as 1258. The feature extends for approximately 500m in a north-south direction encompassing two large fields. These fields were previously divided into three as shown on the 1st edition Ordnance Survey map and the southern half of this feature corresponds to a curving boundary as shown on this 1837 map. The feature is located to the rear of small land plots (possibly gardens) associated with dwellings fronting onto the road. The feature may be natural in origin reflecting a ridge or topographic feature in the landscape. However, an archaeological origin should not be ruled out at this stage.

APPENDIX 5 NOTES ON TOWNLAND NAMES

Taken from the Irish Placenames Commission

bar. Balrothery East
p. Lusk
Nevitt
(SO 4, 7)

*Neimhead

1326	le Nyuet	Alen's Reg.	175
1326	Nynett	Alen's Reg.	177
1534	the Nuvet	Alen's Reg.	284
1547	the Newet	F	70
1547	Newett	HSP	36
1551	Newet	F	672
1558	the Nuete	F	249
1611	Nevett	CPR	219
1611	Nevet	CPR	219
1611	Neut	CPR	219
1654	Newett	CS	58
1654	Beavett [*sic*]	CS	129
1654	Neavett	CS	129
1664	Newet	HMR (BÁC)	?
1670*c*	Nevet	BSD (BÁC)	12
1685	Neuet	Hib. Del.	
1821	The Nevit	Duncan	
1836	Nevilstown or the Nivet	BS:AL	

Abbreviations:

Alen's Reg.	Calendar of Archbishop Alen's Register (ed. McNeill, 1950)	1172–1534
F	Fiants ('Calendar to Fiants of reign of Henry VIII. 1510–47… of Queen Elizabeth. 1558-1603'in RDK 1875–90)	1510–1603
HSP	The History and Antiquities of … St. Patrick, Dublin (William Monck Mason)	1190–1819
CPR	Calendar of Patent Rolls (Irish Patent Rolls of James I - Calendar Prepared Prior to 1830), 1966	1603–23
CS	The Civil Survey A.D. 1654-1656 Vol. VII; County of Dublin; prepared for publication with introductory notes and appendix by Robert C. Simington.	1654
HMR (BÁC)	"Hearth Money Rolls for County Dublin, 1664"	1664
BSD (BÁC)	Book of Survey and Distribution, Co. Dublin	1660*c*
Hib. Del.	Hiberniae Delineatio (Map)	1685
Duncan	Map of County Dublin, Duncan 1821	1821
BS:AL	Boundary Surveyor *c.*1830, taken from the Ordnance Survey Name Books	1830*c*

Sources of the Name 'Nevitt'

Calendar of Archbishop Alen's Register (prepared and edited from original in Registry of the United Dioceses of Dublin, Glendalough and Kildare by Charles McNeill, 1950

Calendar is also known as Liber Niger Alani. It is a parchment manuscript preserved in the Registry of the United Dioceses pf Dublin, Glendalough and Kildare (Church of Ireland). It is esteemed as one of the precious pre-Reformation records of the see of Dublin. Records transcribed into it, in great part from originals which were still extant in Archbishop Alen's time, are authoritative evidences beginning with the bull Laudabiliter in 1155.

p 175
1326 March 14th Manor of Swerdes
Similar Inspeximus
Extent of the manor of Swerdes made by the King's writ at Dublin 14 March 19th year of King Edward son of King Edward by the underwritten, viz. Thomas le Younge, *Richard White (albus)* ***de le Nyuet,*** Philip Bodenham, Adam White (albus) de Arclo, Richard (son) of Ralph, Simon de Russhe, Willaim de Belyrgs … who being sworn say on oath that there are a hall, a chamber for the archbishop annexed to it…..

p 177
The burgagers of the vill of Swerdes hold six score and two burgages there by the law of Breuteuil (Bristoole), along with 16 free cottages for £6, 17s 11d a year and each does suit of court, their work in drawing hay, reaping and drawing corn, 20s, in repairing the mill-pond, 6s 8d, and there are 16 'burag' fornic' (forinsec) which render yearly 22s 8d. *Richard White (albus) son of Richard White, one carucate at* ***Nynett,*** *6l 13s 4d.* Adam White holds a carucate and a half at Rathmoney. *Geoffrey de* ***Sancto Bosco (Hollywood)*** *holds 2 carucates at Rogerestom £4 13s 4d. Thomas Young (juvenis), 2 carucates at le Walshulles £4.*

p 284
1534 *Summary of Evidence extracted from the Belyngs muniments*
In 15 Richard II (1391-92) John son of John Hoith appointed trustees over all the messuages, lands and tenements in Swerds that formerly belonged to Peter, Son of Rerysins. In 31 Edward II (1357) Bartholomew Golding of Arthurstowne quit claimed to Thomas son of Luke Belinges, owner (dominus) of Ballylogha, all the right he had in 200 acres of land in Ballyloghe in the tenement of Swerds. Witnesses, John Saynt *Michael, Philip le Blund of* ***the Nuvet***,…….

History of Antiquities of the Collegiate and Cathedral Church of St. Patrick, near Dublin from its foundation in 1190 to the year 1819, collected chiefly from sources of original record by William Monck Mason, Esq. Dublin 1820

pp 35 & 36
Extent of the Rectory of Luske, divided into 2 portions, the one moiety of James Umfrey, late Precentor; the other of Nicholas Fitzwilliams, late Treasurer.

Newett *– the tithes of Newet are worth per annum 28s and are divided as the preceeding; the Precentors part demised to Thomas Boylle for 24s. The treasurers to Donaghe' O' Kean for the like sum. Total amount £2 8s.*

Walshestowne – the tithes of corn and hay whereof are worth, per annum £72 shillings divided as the preceding; the Precentors part demised to Patrick Coke for 36 shillings and the Treasurers (with half Thoman above mentioned) to Patrick Aghs for 36s.

The Civil survey AD 1654-1656 Vol. VII, Co. of Dublin
pp 58
Hodgistowne – bounded on ye east and south to Jordanstowne, on ye west to ye land of ***Newett***, on ye north to Roanes.

pp 159

Beavett	Proprietor	Lord of Hoath
	No. of acres	160 acres
	Profitable lands	Meadow 3 acres
		Arable 157 acres
	No unprofitable land	
	Value of both Anno 1640	Forty poundes

The proprietor held ye said land Anno 1641 as his inheritance.
Buildings and tithes: The tythes Anno 1640 belonged to ye Treasurer and Charter of St. Patrick's Church Dublin, Archbishop of Dublin and now to ye Colledge. Bounded on east with Ballystrane, south with Balldruman, on ye west with ye hill of Hollywood, on ye north with Hodgistowne.

pp 129
Towmond – bounded on ye East with ***Neavet***

p 123

Walshtowne	Proprietor:	John Geydon of Irishtowne, Irish Papist
	No. of acres	140 acres
	Profitable lands	20 arable
		120 heath and mountaine

The proprietor held his lands as his inheritance Anno 1641. There is upon ye premises foure tenements with their backsides valued by ye Jury at £7. Also ye walls of ye parish church. Bounded on ye west with Kinade, east with Damallstown, north with little Hollywood and south with Balgeth.

pp 129
Towmond (Tooman)

Proprietor	Lord of Hoath
No. of acres	100 acres
	100 arable and meadow

The proprietor held premises Anno 1641 as his inheritance.

Ordnance Survey Letters of Co. Dublin (ed. Michael Herity, MRIA, Four Masters Press, Dublin 2001)

Balrothery – Knights town. O'Donovan states '*Here is a castle and an old church with a fortified bell tower. Tradition is that James II of England stayed at the "White Hart" here the night before the Battle of the Boyne'.*

The Irish form of the placename Balrothery, *Baile an Ridire*, taken from the Ordnance Survey Name Book according to O'Donovan, means the town of the ritter or knight. This would appear to denote a name which dates back to the Anglo-Norman period and suggests Anglo-Norman settlement in the area. However, Dr. MT Flanagan from Queens University of Belfast proposes an alternative derivation from a Welsh personal name, Richerid/Rytherid/Ryheri Machanan/Makanam as evidence has been gathered from charters indicating the presence of a Welsh landowner in north Co. Dublin in the immediate post-Norman period.

The charter issued by Geoffrey, prior of Llanthony, in favour of Archbishop Cumin and detailing the partition of the spiritualities of Saithne, stated that he retained for the use of the priory

'The church of the vill of Ogary, with the chapel which once belonged to Ricardus Camerarius and the church *de Santo Nemore* with the chapel is called Grauele, and the church of the vill of Stephen de Crues with its appurtenances, that is with the tithes and offerings of the land of Richerid Machanan and the land of Reginald of Shrewsbury'. (Alen's Reg. 14)

The complimentary charter issued by Archbishop Cumin stated that the Archbishop conseded to Llanthony Priory

'the church of the vill of Ogary with the chapel of the vill which once belonged to Palmerius and the church de Santo Nemore with the chapel which is called Grathele, and the church of the vill of Stephen de Crues with its appurtenances, namely with the tithes and offerings of the land of Rytherid and of the land of Reginald Shrewsbury'. (Cartularies of Llanthony, 14)

The places named above can be identified as Garristown; the vill of Ogari, Palmerstown; the chapel of Richardus Camerarius (alias Palmerius), Hollywood; de Santo Nemore and Grallagh; the chapel of Grauele/Grathele. Naul represents the vill of Stephanus de Cruesto which the tithes and offerings of 'the land of Richerid/Rytherid Machanan' are said to be appurtenant.

It is possible that the townland name of Nevitt derived from *Neimheadh* meaning a sacred or privileged person, place or thing – a sanctuary, a sacred grove, churchland, glebe, name of an ancient chapel at Armagh' (Boyle 2005).

The following is a note received by email from Donall Mac Giolla Easpaig, Chief Placenames Officer with the Placename Branch of the Department of Community, Rural and Gaeltacht Affairs, Dublin.

The townland of Nevitt is well documented from the early fourteenth century on. The earliest spellings of the name such as *le Nyuet* (1326), and *the Nuvet* (1534) in Archbishop Alen's Register, and *Newet* (1551) in the Fiants, are consistent with the modern English spelling Nevitt and with the local pronunciation.
Because of its relatively early attestation, it is reasonable to suggest that the name is of Irish language rather than of English language origin, particularly when considers that the earliest English names in this region are generally of the structure of surname + town (most of which are fairly transparent). For historical reasons, it is also safe to say that the name belongs to the pre-Conquest period. Also, from its monothematic structure, one can also say that is a relatively old name, like Turvey < *Tuirbhe*, and Lusk < *Lusca*, in the same parish.

All the evidence for the name is consistent with a Modern Irish form *Neimhead*, and this is the official Irish form recommended by the Placenames Branch. It is reasonable to hold that the modern form is a reflex of an earlier form *Neimheadh*, a modernised spelling of Old Irish *neimed*, in which the final *–d* is also lenited.

Evidence shows that in the late Middle Irish Period and Early Modern Period, that is the 12th and 13th centuries, lenited *–d-*, or in present orthography *–dh-*, was pronounced as a voiced fricative, like English *th* in the words then and this. This voiced fricative generally became a voiced or an unvoiced stop in names which were borrowed into English during the same period, that is, a -d- or a –t-. There are many examples of this phenomenon in placenames; for example, Irish *Sidheán* became anglicised as Siddan during this period, and remains the English name of a parish in Meath; note also Knocksedan in this locality.

Old Irish *neimed* is a regular development of Common Celtic *nemeton*, which is attested in Gaulish. The original sense of the word was probably that of a consecrated place or a sacred precinct. The word is attested in Early Irish in the same sense, literally 'a sanctuary', but it was also used to refer to a church or a graveyard. Although all the attestations of the word in Irish occur in Christian contexts, *neimed* was undoubtedly used in the Pre-Christian Ireland in the same sense as it was in Gaul in Roman times. The fact that there is no archaeological evidence for any type of early settlement or structure in the townland of Nevitt makes it almost impossible to date the name. There is a strong possibility, however, that it is Pre-Christian and that it referred to some type of sacred enclosure, possibly a sacred grove of the type attested in Gaul. Nevitt is the only known reflex of the word in Irish placenames.

Dónall Mac Giolla Easpaig,
21 November 2005.

Tooman

The historical evidence for the townland of **Tooman**, par. Lusk, is as follows (the official Irish form is *Tuaman*):

Thoman (Robert de T.), Alen's Reg. 104 (1257–63)
Thomon, HSP 36 (1547)
Thomon, F 70 (1547)
Toman, CPR 219 (1611)
Touman, HMR 414 (1664)
Toomond, BSD 12 (1670c)
Toomen, BS:AL (1836)
tuaman, dim. of *tuam*, a small mound, OD:AL (1836)

Alen's Reg.
Calendar of Archbishop Alen's Register (ed. McNeill, 1950)

HSP
William Monck Mason, The History and Antiquities of ... St. Patrick, Dublin

F
Fiant ('Calendar to Fiants of the Reign of Henry VIII. 1510-47... Queen Elizabeth. 1558-1603' in Report of the Deputy Keeper of the Public Records... in Ireland 1875-90)

CPR
Calendar of Patent Rolls (Irish Patent Rolls of James I - Calendar prepared prior to 1830, 1966)

HMR
Hearth Money Rolls for County Dublin, 1664

BSD
Books of Survey and Distribution, County of Dublin

BS:AL
Form noted by Boundary Surveyors, taken from Ordnance Survey Namebook

OD:AL
Irish form and note written in ink by Seán Ó Donnabháin in Ordnance Survey Namebook

APPENDIX 6 SIGNIFICANCE CRITERIA

The following table is taken from the National Roads Authority (NRA) Guidelines for the assessment of archaeological heritage impacts of National Road Schemes (2005).

Criteria	Explanation
Existing Status	The level of protection associated with a monument or complex is an important consideration.
Condition/Preservation	The survival of a monument's archaeological potential both above and below ground is an important consideration and should be assessed in relation to its present condition and surviving features. Well preserved sites should be highlighted, this assessment can only be based on a field inspection.
Documentation/Historical Significance	The significance of a monument may be enhanced by the existence of records of previous investigations, or contemporary documentation supported by written evidence or historic maps. Sites with a definite historical association, or an example a notable event or person should be highlighted.
Group Value	The value of a single monument may be greatly enhanced by its association with related contemporary monuments or with monuments from different periods indicating an extended time presence in any specific area. In some cases it may be preferable to protect the complete group, including associated and adjacent land, rather than to protect isolated monuments within that group.
Rarity	The rarity of some monument types can be a central factor affecting response strategies for development, whatever the condition of the individual feature. It is important to recognise sites that have a limited distribution.
Visibility in the landscape	Monuments that are highly visible in the landscape have a heightened physical presence. The inter-visibility between monuments may also be explored in this category.
Fragility/vulnerability	It is important to assess the level of threat to archaeological monuments from erosion, natural degradation, agricultural activity, land clearance, neglect, careless treatment or development. The nature of the archaeological evidence cannot always be specified precisely but it may still be possible to document reasons to justify the significance of the feature. This category relates to the probability of monuments producing material of archaeological significance as a result of future investigative work. It is usually confined to sites of rather than upstanding monuments.

APPENDIX 7 GLOSSARY OF ARCHAEOLOGICAL TERMS

Architectural Heritage
Structures, buildings, traditional and designed, and groups of buildings including street-scapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents.

Archaeology
The study of past societies through surviving structures, artefacts and environmental data.

Do EHLG
Department of the Environment, Heritage and Local Government.

Excavation
As an archaeological term, excavation means the manual and mechanical excavation by an archaeologist-led team with specific objectives as regards information, preservation, recording, etc. of archaeological information. Its purpose is to fully investigate archaeological deposits and features.

Geophysics
A non-invasive survey method involving one or more of the following; earth resistance, various types of magnetometry and ground penetrating radar.

In situ
In its original place.

Licence

Excavation licence, archaeological excavation requires a licence granted by the Minister of the DoEHLG following consultation with the National Museum of Ireland

Mitigation
Measures taken to avoid, reduce or remedy adverse impacts

NGR

National Grid Reference

Test excavation
A form of archaeological excavation where the purpose is to establish the nature and extent of archaeological deposits and features present in a location that is proposed for development. Its purpose is not to fully investigate those deposits or features.

Test trenching
see Test excavation.

APPENDIX 8 NATIONAL MONUMENTS LEGISLATION 1930-2004

Archaeological sites have the protection of the national monuments legislation (Principal Act 1930; Amendments 1954, 1987, 1994 and 2004). In the 1987 Amendment of Section 2 of the Principal Act (1930), the definition of a national monument is specified as:

any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections,

any artificial cave, stone or natural product, whether forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position,

any, or any part of any, prehistoric or ancient

(i.) tomb, grave or burial deposit, or

(ii.) ritual, industrial or habitation site,

and

any place comprising the remains or traces of any such building, structure or erection, any cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site...

Under Section 14 of the Principal Act (1930):

It shall be unlawful...

to demolish or remove wholly or in part or to disfigure, deface, alter, or in any manner injure or interfere with any such national monument without or otherwise than in accordance with the consent hereinafter mentioned (a licence issued by the Office of Public Works National Monuments Branch),

or

to excavate, dig, plough or otherwise disturb the ground within, around, or in the proximity to any such national monument without or otherwise than in accordance...

Under Amendment to Section 23 of the Principal Act (1930),

A person who finds an archaeological object shall, within four days after the finding, make a report of it to a member of the Garda Síochána or the Director of the National Museum...

The latter is of relevance to any finds made during a watching brief. In the 1994 Amendment of Section 12 of the Principal Act (1930), all the sites and 'places' recorded by the Sites and Monuments Record of the Office of Public Works are provided with a new status in law. This new status provides a level of protection to the listed sites that is equivalent to that accorded to 'registered' sites [Section 8(1), National Monuments Amendment Act 1954] as follows:

The Commissioners shall establish and maintain a record of monuments and places where they believe there are monuments and the record shall be comprised of a list of monuments and such places and a map or maps showing each monument and such place in respect of each county in the State.

The Commissioners shall cause to be exhibited in a prescribed manner in each county the list and map or maps of the county drawn up and publish in a prescribed manner information about when and where the lists and maps may be consulted.

In addition, when the owner or occupier (not being the Commissioners) of a monument or place which has been recorded, or any person proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such monument or place, he shall give notice in writing of his proposal to carry out the work to the Commissioners and shall not, except in the case of urgent necessity and with the consent of the Commissioners, commence the work for a period of two months after having given the notice.

The National Monuments Amendment Act 2004

The National Monuments Amendment Act enacted in 2004 provides clarification in relation to the division of responsibilities between the Minister of Environment, Heritage and Local Government, Finance and Arts, Sports and Tourism together with the Commissioners of Public Works. The Minister of Environment, Heritage and Local Government will issue directions relating to archaeological works and will be advised by the National Monuments Section and the National Museum of Ireland. The Act gives discretion to the Minister of Environment, Heritage and Local Government to grant consent or issue directions in relation to road developments (Section 49 and 51) approved by An Bord Pleanála and/or in relation to the discovery of National Monuments

14A. (1) The consent of the Minister under section 14 of this Act and any further consent or licence under any other provision of the National Monuments Acts 1930 to 2004 shall not be required where the works involved are connected with an approved road development.

(2) Any works of an archaeological nature that are carried out in respect of an approved road development shall be carried out in accordance with the directions of the Minister, which directions shall be issued following consultation by the minister with the Director of the National Museum of Ireland.

Subsection 14A (4) Where a national monument has been discovered to which subsection (3) of this section relates, then

(a) the road authority carrying out the road development shall report the discovery to the Minister

(b) subject to subsection (7) of this section, and pending any directions by the minister under paragraph (d) of this subsection, no works which would interfere with the monument shall be carried out, except works urgently required to secure its preservation carried out in accordance with such measures as may be specified by the Minister

The Minister will consult with the Director of the National Museum of Ireland for a period not longer than 14 days before issuing further directions in relation to the national monument.

The Minister will not be restricted to archaeological considerations alone, but will also consider the wider public interest.

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APPENDIX 10 GEOPHYSICAL SURVEY, FINGAL LANDFILL PROJECT, CO DUBLIN LICENCE NO. 05R062, MARGARET GOWEN & CO LTD (2006)

Geophysical Survey

Fingal Landfill Project
Fingal
Co. Dublin

Licence Ref. 05R062

By
David Harrison & Joanna Leigh
Margaret Gowen & Co. Ltd.
Job No. 05037-R3

For
Fingal County Council

16th March 2003

Illustrations

Location Diagrams

Summary Diagrams

Appendices

A1.1	Area 1: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.2	Area 2: X-Y Trace & Dot Density Plot	1:625
A1.3	Area 2: Interpretation	1:625
A1.4	Area 3: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.5	Area 4: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.6	Area 5: X-Y Trace	1:625
A1.7	Area 5: Dot Density Plot	1:625
A1.8	Area 5: Interpretation	1:625
A1.9	Area 6: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.10	Area 7: X-Y Trace & Dot Density Plot	1:625
A1.11	Area 7: Interpretation	1:625
A1.12	Area 8: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.13	Area 9: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.14	Area 10: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.15	Area 11: X-Y Trace & Dot Density Plot	1:625
A1.16	Area 11: Interpretation	1:625
A1.17	Areas 12 & 13: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.18	Areas 14 & 15: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.19	Area 16: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.20	Area 17: X-Y Trace & Dot Density Plot	1:625
A1.21	Area 17: Interpretation	1:625
A1.22	Area 18: X-Y Trace & Dot Density Plot	1:625
A1.23	Area 18: Interpretation	1:625
A1.24	Area 19: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.25	Area 20: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.26	Area 21: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.27	Area 22: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.28	Area 23: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.29	Areas 24 & 25: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.30	Areas 26 & 27: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.31	Areas 28 & 29: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.32	Area 30A: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.33	Area 30B: X-Y Trace & Dot Density Plot	1:625
A1.34	Area 30B: Interpretation	1:625
A1.35	Areas 31 & 32: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.36	Area 33: X-Y Trace & Dot Density Plot	1:625

A1.37	Area 33: Interpretation	1:625
A1.38	Area 34: X-Y Trace	1:625
A1.39	Area 34: Dot Density Plot	1:625
A1.40	Area 34: Interpretation	1:625
A1.41	Area 35A: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.42	Area 35B: X-Y Trace & Dot Density Plot	1:625
A1.43	Area 35B: Interpretation	1:625
A1.44	Area 36A: X-Y Trace	1:625
A1.45	Area 36A: Dot Density Plot	1:625
A1.46	Area 36A: Interpretation	1:625
A1.47	Area 36B: X-Y Trace & Dot Density Plot	1:625
A1.48	Area 36B: Interpretation	1:625
A1.49	Area 36C: X-Y Trace & Dot Density Plot	1:625
A1.50	Area 36C: Interpretation	1:625
A1.51	Area 37: X-Y Trace & Dot Density Plot	1:625
A1.52	Area 37: Interpretation	1:625
A1.53	Area 38: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.54	Area 39: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.55	Area 40: X-Y Trace & Dot Density Plot	1:625
A1.56	Area 40: Interpretation	1:625
A1.57	Area 41: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.58	Area 42: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.59	Area 43: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.60	Area 44: X-Y Trace & Dot Density Plot	1:625
A1.61	Area 44: Interpretation	1:625
A1.62	Area 45: X-Y Trace & Dot Density Plot	1:625
A1.63	Area 45: Interpretation	1:625
A1.64	Area 46: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.65	Area 47: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.66	Area 48: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.67	Area 49: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.68	Area 50: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.69	Area 51: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.70	Area 52: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.71	Area 53: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.72	Area 54: X-Y Trace, Dot Density Plot & Interpretation	1:625
A1.73	Area 55: X-Y Trace, Dot Density Plot & Interpretation	1:625

Executive Summary

Survey Objectives

Geophysical survey was undertaken to determine the location and nature of any significant archaeological responses if present at the proposed site of a landfill facility within the townlands of Nevitt, Walshestown, Johnstown, Knightstown and Tooman approximately 5km northwest of Lusk, north Co. Dublin. The information from the geophysical survey will inform the archaeological report of the EIS for the proposed landfill site. The objectives of the survey are to identify and map any significant archaeological responses.

Survey Location, Soils and Geology

The study area is located in the townlands of Nevitt, Walshestown, Johnstown, Knightstown and Tooman, Co. Dublin (Centred at NGR E317630 / N257350).

The soils at the survey site are dominated by gleys with associated grey brown podzolics over a parent material of till of Irish Sea origin with limestone and shale (An Foras Taluntais, 1980).

Archaeological Background

There are no recorded archaeological sites located within the proposed development area, however there are three sites located on high ground to the north and north west of the study area. These are a ring ditch (DU004:024) and an enclosure (DU004:025) in Walshestown and an enclosure within the townland of Rowans Little (DU004:026).

Several miscellaneous rolled flint pebbles, flakes and quartz pebbles have also been recorded in Walshestown and are now held in the National Museum of Ireland.

There are two delisted archaeological sites located within the proposed area for development. These are DU004-027, a possible ring barrow and DU044-028; a possible field system. These features were discounted as being archaeologically significant upon inspection by the staff of the archaeological survey of Ireland in the early 1990's and so were not included in the Record of Monuments and Places (RMP) and are not recorded on the maps now held within the Department of Environment, Heritage and Local Government.

The proposed site was subject to a full field inspection. This identified several areas of archaeological potential which were highlighted for detailed geophysical survey.

Summary of Results

Several areas containing significant responses have been identified and multiple archaeological sites are suggested. Although the contemporary nature of these sites is unclear, the results suggest a concentration of archaeological activity within the application area.

Survey within Areas 33-35 has revealed what appears to be an extensive archaeological complex measuring approximately 175m from east to west and at least 164m from north to south. The complex is cellular in form and a number of potential occupational areas have been identified. South of the main complex there are a number of responses indicative of archaeological activity. No clear pattern is discernable amongst them but it can be speculated that they represent a continuation of this significant archaeological site.

A second archaeological complex measuring at least 141m from north to south and 73m from east to west has been identified upon a prominent rise within Area 36. At least two phases of occupation are evident within a web of linear ditch-type responses.

Within Area 30 a potential double-ditched D-shaped enclosure has been identified. The enclosure measures approximately 41m in diameter and a number of internal responses and potential exterior annexes are evident.

Within the north of the proposed development area responses suggestive of a rectilinear enclosure measuring approximately 48m x 48m have been identified (Areas 10 and 11). The responses are dissected by a current field boundary ditch.

South of the rectilinear enclosure, within Area 22, responses indicative of a sub circular ditched enclosure measuring 34m in diameter have been identified (Area 22). Internally a number of responses possibly representing pits or internal features have been recorded.

Another sub circular ditched enclosure measuring approximately 38m in diameter has been recorded within Area 45. Several internal features have been suggested and the possibility of a separate enclosure, representing a different phase of activity, has been raised.

Within the west of the area of investigation two concentrations of linear and curvilinear responses have been identified and may represent plough damaged archaeology (Areas 2 and 5B).

1 **Areas of Investigation** (Figure 2)

1.1 Approximately 156.8ha of gradiometer scanning complimented by 30ha of detailed gradiometer survey was undertaken on behalf of Fingal County Council. The survey was undertaken between June and December 2005 under licence to the National Museum of Ireland and the National Monuments Section of the Department of Environment, Heritage and Local Government (licence ref 05R062).

1.2 Figure 1 shows the site location (scale 1:10,000). Figure 2 demonstrates the area of geophysical investigation with detailed survey areas (Areas 1-60) at a scale of 1:6,500.

1.3 The survey was conducted in accordance with English Heritage guidelines (David 1995). Tie-in reference points were recorded with a DGPS system by the staff of Margaret Gowen & Co. Ltd at the time of survey. The tie-in information is available upon request.

2 Data Display

2.1 Overall summary greyscale and interpretation diagrams are presented in Figures 3 and 4 at a scale of 1:3,000.

2.2 Summary greyscale images with accompanying interpretation diagrams are presented in Figures 5-33, all at a scale of 1:1500.

2.3 In addition to summary greyscale and interpretation diagrams, archive plots of the raw data in x-y trace format with accompanying interpretation diagrams are presented in appendices (A1.1 – A1.77) which accompany this report. All diagrams within the archive section are displayed at a scale of 1:625.

2.4 A brief summary of results is presented as a table in appendices A2.1.

2.5 Letters in parentheses in the text of the report refer to specific responses highlighted on the interpretation diagrams.

2.6 The display formats referred to above are discussed in the Summary Technical Information section, attached to this report.

3 Ground Conditions and Further Information (Figure 2)

3.1 The area under investigation comprised a total of 24 fields. At the time of the survey the majority of the fields were used for grazing or were under pasture. Fields 14, 19, 26, 27, 31-38 and 45 contained recently harvested cereal crop. The presence of tree plantations prevented survey taking place within field 24 and also within an area in the centre of field 9. An unofficial landfill facility prevented survey within fields 53 and 54. In field 9, an area of dense thistles made survey unsuitable within the east of the field, whilst farm equipment and hay bales prevented survey within the north of field 57.

Elsewhere, ground conditions were considered suitable for geophysical survey.

3.2 The extent of the survey was limited in some areas by the presence of disturbed ground, metal cattle feeders and water troughs, power lines, metal fences, gates and metal bore holes. This disturbance is visible within some of the data and can mask or obscure responses produced by any archaeological features that might be present within the affected areas.

3.3 Isolated ferrous-type responses were apparent throughout the gradiometer data. These anomalies are usually caused by the presence of modern ferrous debris within the topsoil and are not referred to in the text unless considered relevant.

3.4 Instrumentation specifications and survey methodology are discussed in the Summary Technical Information document included with this report.

4 **Preliminary Gradiometer Scan** (Figure 2)

4.1 Gradiometer scanning was undertaken along 10m traverses throughout the geophysical survey area. The technique employs trained operatives to observe and note significant fluctuations in instrument response along each traverse. Anomalies of potential interest are then referenced by temporary markers and later targeted for further investigation with detailed recorded survey.

In general, a low level of background response was noted throughout much of the area scanned. These conditions were overall of benefit to the scanning procedure.

4.2 Scanning noted an area of noise adjacent to the road within the south of Field 1 (Area 20). To the east of this anomaly a low level fluctuation (±1.5nT) was noted and detailed survey was undertaken to investigate (Area 21).

4.3 An area of noise was observed within the north of Field 2. Detailed survey (Area 39) was undertaken here to assess the nature of this response.

4.4 An isolated positive anomaly (±2nT) was noted during scanning within Field 3. Detailed survey was undertaken to investigate (Area 38).

4.5 Broad anomalies of an archaeological strength (±4nT) were noted during scanning in the northern extents of Field 7 (Area 8) and Field 8 (Area 11). These responses were later targeted for investigation by detailed recorded survey.

4.6 Detailed survey was undertaken within the northwest corner of Field 9 (Area 23) to examine the potential for a continuation of the scanned anomalies noted in the adjacent field, Field 23 (Area 22).

4.7 Three broad anomalies (±2nT) were identified within Field 10. Detailed survey was conducted here (Area 37) to target and investigate these anomalies.

4.8 A series of strong anomalies (±4nT) were recorded concentrated upon a prominent rise within Field 14. Detailed survey (Area 36B) was positioned here to investigate.

4.9 Further anomalies (±3nT) were noted within the north of the adjacent field, Field 15. Detailed survey (Area 36C) was positioned to assess the possibility of a continuation of responses from within Field 14.

4.10 Detailed survey was undertaken over a number of anomalies throughout Field 19. Areas 2 and 5B in particular were observed as concentrations of magnetically strong responses (±3nT). Detailed survey was undertaken here to determine the nature of these response. Area 5A was positioned to investigate and confirm the delisted status of monument DU044-028; a possible field system. Areas 3, 4 and 6 were positioned to investigate lower level (±1.5nT) more isolated responses.

4.11 An isolated anomaly (±1.5nT) was detected within Field 20. Detailed survey (Area 25) was undertaken in this location to determine the nature of this response.

4.12 Within the southeast of Field 22 a strong broad anomaly was observed. The anomaly coincided with an area of disturbed ground adjacent to a field boundary. Detailed survey was undertaken in this location to determine the nature of this response (Area 16).

4.13 A strong response (±8nT) was observed within the northeast corner of Field 23. Detailed recorded survey was undertaken in this area (Area 22).

4.14 Within the north of Field 25, a broad area of noise coincided with an area of disturbance and a water-filled depression in this part of the field. This area was targeted for detailed survey to investigate the nature of this anomaly (Area 27).

4.15 A faint low level fluctuation (±1.5nT) was noted within the centre of Field 26. This area was the target of detailed survey to investigate the nature of the response (Area 28).

4.16 Within the south of Field 33, a strong response (±10nT) was observed amid a broad area of noise. Detailed survey (Area 58) was located here to investigate.

4.17 A broad area of increased background response (±1.5nT) and two isolated anomalies were noted within the north of Field 34. Detailed survey was undertaken in this location to determine the nature of these responses (Area 59).

4.18 An isolated response (±3.5nT) was noted close to the boundary within the south of Field 36. This anomaly was the target of detailed survey to investigate the nature of the response (Area 55).

4.19 Within the north of Field 37, an isolated response (±5nT) was recorded. Detailed survey (Area 56) was positioned to investigate the nature of this response.

4.20 A broad area of strong responses (±7nT) was observed throughout the eastern extent of Field 40 and much of the adjacent field (Field 51). Detailed gradiometer survey was undertaken here to assess the nature of the anomalies (Areas 33-35).

4.21 Towards the south of Field 42 a broad area of increased response (±1nT) was noted. Detailed survey was undertaken here to confirm the nature of the response (Area 45).

4.22 A number of strong isolated responses (±3-10nT) were observed upon a prominent rise within Field 43. Detailed survey (Area 47) was positioned here so as to target all of these anomalies.

4.23 A concentration of broad strong anomalies (±6nT) was noted towards the northwest of Field 45. Detailed survey was undertaken here to confirm the nature of these responses (Area 30). Towards the south of this field a general increase in background response was observed. Detailed survey was positioned here to investigate (Area 48).

4.24 Several responses (±2nT) were noted concentrated within the south of Field 48. Detailed survey was undertaken here to investigate the nature of these responses (Area 44).

4.25 A number of strong responses (±3nT) were noted within the northwest corner of Field 49. Detailed survey was located here to target these responses (Area 41). Two lower level responses (±2nT) were recorded within the east and the west of this field and detailed survey (Areas 42 and 43) were positioned to target these anomalies.

4.26 A number of responses (±2nT) were noted throughout Field 57. Detailed survey was undertaken here to assess the nature of these responses (Area 40).

4.27 Generally minimal background variation was noted within the area of the scan and detailed survey was undertaken in Areas 7, 9, 10, 12-15, 24, 26, 31, 32, 38, 46, 49-54, 57, 60 to confirm the low levels of response noted elsewhere during scanning.

4.28 Four areas, Areas 1, 17-19, were targeted by detailed survey based upon information formed as part of the EIS. Area 1, within the north of Field 19 was positioned to investigate and confirm the delisted status of monument DU004-027; a possible ring barrow. Areas 17-19 were deemed to be potentially archaeologically sensitive areas within the EIS and these areas were the target of detailed survey to investigate.

5 Results of Detailed Gradiometer Survey

5.1 ***Area 1*** *(Figure 5)*

5.1.1 Two possible pit-type responses have been identified within Area 1. No clear archaeological pattern is apparent and a natural explanation is preferred.

5.1.2 An area of increased response in the northeast of the data set may be of archaeological interest. It is equally likely, however, that this response is the result of a heavily machine-rutted track way which runs through this part of the field. A modern interpretation for this increase in response is preferred.

5.2 ***Areas 2-7*** *(Figure 6 & 7)*

5.2.1 Positive responses typical of pits and ditches are evident within Area 2 possibly bordered on the south and east by an enclosing ditch. A curvilinear ditch-type response may be representative of an internal structure or division. The strength of the responses weaken to the northwest and may represent plough-damaged archaeological remains.

5.2.2 A group of positive linear and pit-type responses have been identified within Area 5B. The responses measure approximately 22.5m from north to south and 18m from east to west. It is likely that these responses represent plough-damaged archaeological remains.

5.2.3 A small cluster of potential archaeological responses have been identified in the northeast of Area 7. This includes three possible pit-type responses and a linear response. An area of increased response to the east of this cluster may be of archaeological interest although it should be noted that a machine-rutted track way exists a short distance to the east of this area and may be the cause of this increased response.

5.2.4 A number of pit-type responses within Areas 3-6 may be of archaeological interest. However, they are largely isolated or located within a close proximity to former land divisions. An agricultural interpretation is equally viable.

5.2.5 Ferrous and negative linear responses occurring within Areas 2, 3 and 5 correlate closely to a former field system illustrated on the 1st ed OS map Sheet 4 (1837). These responses are not thought to be of archaeological significance.

5.3 ***Areas 8-14*** *(Figure 8 & 9)*

5.3.1 In Area 8, amorphous positive responses have been identified. These responses may be of archaeological interest although interpretation is tentative due to the close proximity of the adjacent stream. A natural explanation is equally likely.

5.3.2 A series of responses forming a possible rectilinear enclosure have been identified within the south of Area 10 and the north of Area 11. A number of internal responses are clearly enclosed on four sides by a series of broken linear responses enclosing an area measuring approximately 48m x 48m. A possible separate rectilinear cell is defined adjoining the western bounds of the possible enclosure. These responses are dissected by a current field boundary ditch.

5.3.3 Within the possible enclosure, a curvi-linear ditch-type response can be seen possibly indicating an internal division or structure. Responses possibly representing occupational features such as pits and ditches are also apparent and a strong positive response typical of an area of burning has been identified in the southeast corner.

5.3.4 Linear negative responses are evident within Areas 13 and 14. These responses are thought to represent former field boundaries and are not thought to be of any archaeological significance.

5.3.5 An isolated area of increased response has been identified within Area 14 which may be archaeological in origin. However, no archaeological pattern is clear and a natural explanation is equally viable.

5.4 ***Areas 15-21*** *(Figure 10 & 11)*

5.4.1 Within Area 15 an area of increased response, similar to that identified in Area 14, has been noted. This area corresponds to a shallow dip in the topography of the field and is thought to be natural in origin.

5.4.2 A curving response within the south of Area 16 may be of archaeological interest. However, this response coincides with an area of disturbed ground adjacent to a field boundary ditch and an archaeological interpretation is cautious.

5.4.3 In Area 17, a region of increased response may be archaeological in origin. It is equally plausible, however, that this response is the result of a dump of more modern material.

5.4.4 A sinuous negative response within Area 19 is likely to represent a natural feature and is not thought to be of archaeological significance.

5.4.5 A number of possible pit-type responses were detected throughout areas 15 to 21. However, these responses are isolated and no archaeological pattern is discernable. A natural explanation is therefore preferred.

5.4.6 Strong ferrous disturbance within Area 17 is the result of the presence of the boundary fence, a borehole cover and a number of cattle feeders and water troughs. Strong ferrous disturbance within Areas 18 and 19 corresponds to iron gates and metal fences bordering these areas. In the southernmost part of Area 20 a large area of disturbance is likely to be modern in origin.

5.5 ***Areas 22-25*** *(Figure 12 & 13)*

5.5.1 A strong curvilinear response within Area 22 is thought likely to represent the remains of a ditched circular enclosure. The response is notably stronger in the southeast perhaps suggestive of a better state of preservation or a larger deposit of magnetically enhanced material within the ditch. The potential enclosure measures approximately 30m in diameter.

5.5.2 A well defined gap within the curvilinear response to its south may represent an entranceway into the enclosure. Interpretation is tentative however, and this gap could be the result of later plough damage.

5.5.3 A number of responses of archaeological strength have been identified within the possible enclosure. These responses may represent internal archaeological features.

5.5.4 Whilst a number of trends and a linear negative response have been identified within Areas 24 & 25, these are thought likely to represent natural variations in the soil or agricultural features and are not thought to be of archaeological significance. An isolated response has been identified within Area 25. Archaeological potential is limited and this response may be natural in origin.

5.6 ***Areas 26-30*** *(Figure 14 & 15)*

5.6.1 Within Area 30, a complex of archaeological-type responses suggestive of a double-ditched D-shaped enclosure has been identified. The responses measure approximately 42m from north to south and 41m from east to west.

5.6.2 Two positive parallel curvilinear responses probably representing an enclosing double-ditch bound all but the south-eastern extent of the responses where a single ditch-type response completes the 'flat' side of the D-shaped enclosure.

5.6.3 A number of responses indicative of internal features such as pits and ditches have been identified within the possible enclosure.

5.6.4 Two parallel linear responses running from east-west appear to truncate the possible enclosure and these may represent later plough damage.

5.6.5 A number of small positive anomalies have been identified in between the two enclosing ditches. These are thought to be archaeological in nature and may represent small pits.

5.6.6 Weak curvilinear trends and responses have been identified extending from and abutting the southern and north-western extents of the main double-ditched enclosure. These may represent associated features.

5.6.7 A cluster of responses of archaeological strength have been identified within the west of Area 30. These comprise of short linear and curvilinear responses and may be representative of plough damaged archaeological remains. However no discernable archaeological pattern is apparent and interpretation of these responses is cautious.

5.6.8 An isolated anomaly has been identified within Area 28. No other responses of interest are present and a natural origin is possible.

5.7 ***Areas 31-35*** *(Figure 16 & 17)*

5.7.1 Responses suggestive of a significant archaeological complex extend throughout Area 34 and into Areas 33 and 35. A number of annexes or cellular divisions represented by ditch-type responses (A, B, C & D) may form part of a large multi-phase site.

5.7.2 Response (A) is indicative of a sub-oval enclosing ditch perhaps defining the centre of the complex and measuring approximately 45m from north to south and at least 62m from east to west. The western extent of the response was unattainable during survey due to the presence of a fence and track way bordering this part of the field.

5.7.3 Within the confines of response (A) a strong positive rectilinear response (B) may indicate an internal division within the enclosure. However, this is speculative and the response (B) may equally indicate a separate enclosing ditch representing a different phase of activity. The western extents of response (B) are unclear and the exact dimensions of the response unknown. However it can be estimated that the enclosure measures at least 28m x 28m.

5.7.4 A series of further responses including pit-type responses and short ditch-type responses indicative of occupational activity are apparent within the bounds of

responses (A) and (B). Responses (E) in particular may represent the remnants of a rectilinear internal division or possible structural remains.

5.7.5 Response (C) encompasses responses (A) and (B) and is interpreted as a further enclosing ditch possibly defining the perimeter of the southern extent of the main complex. The full extents of the curvilinear response (C) are unknown as it appears to extend beyond the survey area to the north and west.

5.7.6 An apparent break in the strength of response (C) in the east of the complex coincides with the meeting of two positive radial ditch-type responses emanating from the eastern bounds of response (A) and forming separate divisions or cells.

5.7.7 A series of linear responses orientated north-south are confined within the southernmost cell. These responses may be indicative of occupational activity.

5.7.8 A series of responses within Area 33 indicates a probable continuation of the complex identified within Area 34.

5.7.9 Within Area 33, response (F) indicates a curvilinear ditch-type response which borders the south-western extent of the potential site, and may be related to response (C) in Area 34. A number of linear responses to the north of (F) most likely represent further ditch divisions and are indicative of occupational activity.

5.7.10 A clear positive elliptical response within Area 33, is interpreted as representing a sub circular enclosure approximately 21m in diameter and forms part of the cellular structure of the complex. A number of small positive responses have been identified within the enclosure and a larger pit-type response is apparent within its northeast.

5.7.11 A series of pit and ditch-type responses have been identified within the north of Area 33. However, these responses correspond to an area of heavily rutted, disturbed ground and any archaeological interpretation of these responses must be cautious.

5.7.12 To the southeast of Area 34 a series of linear responses (D) possibly form a rectilinear enclosure separated from the main complex. A number of linear ditch-type responses may indicate internal divisions and a series of pit and short ditch-type responses may be representative of occupational activity. It can be postulated that the responses (D) extend south into Area 35, however, the strength and form of the responses are ill-defined and interpretation is tentative. Nevertheless, the rectilinear form of these responses clearly differs from the more curvilinear form of the main complex of responses. This may represent a separate phase of activity at the site.

5.7.13 Within Area 35, a broad area of increased response has been identified. Although no clear archaeological pattern is discernable here, a number of responses are suggestive of potential archaeology. A strong linear ditch-type response within the east of Area 35 may continue westwards into Area 33 where a linear area of increased response may be interpreted as a curving ditch. However, the response is not as clearly defined as the responses elsewhere within the complex and a natural interpretation for this response is viable. Perhaps the response represents an old water course.

5.7.14 Finally, a number of strong broad responses have been identified in several locations around the exterior of the main complex. These responses are strong and amorphous and are indicative of spreads of burnt material or perhaps middens.

5.8 ***Area 36*** *(Figure 18)*

5.8.1 Responses suggestive of a substantial archaeological complex extend throughout Area 36 measuring approximately 141m from north to south and 73m from east to west. A number of cellular divisions represented by a web of linear ditch-type responses are likely to form part of a large multi-phase site.

5.8.2 A curvilinear response within the centre of the dataset corresponds with a prominent rise in the field's topography and may represent the focal point of the complex since a number of linear responses respect and emanate from it. The response measures approximately 29m in diameter.

5.8.3 Several internal responses have been identified which are likely to represent internal features such as small pits.

5.8.4 Towards the south of Area 36B a curving linear response runs from east to west and appears to be truncated by a number of stronger linear responses. It is likely that this represents a separate phase of activity at the site.

5.8.5 To the west of the complex, in (Area 36A), a number of strong amorphous responses may be archaeological in nature but form no discernable pattern. A natural explanation is preferred. These natural responses may mask any archaeology present here.

5.8.6 To the southeast of the complex (Area 36C) a positive linear response and two parallel linear trends may represent a continuation of the site into the adjacent field. Interpretation is tentative, however, due to the close proximity of the field boundary.

5.8.7 Within the south of the dataset a linear negative response corresponds with the position of a drainage ditch and is not thought to be archaeological in origin. A number of positive responses here may represent plough damaged archaeological remains although a natural interpretation is equally plausible.

5.9 ***Area 37 – 39*** *(Figure 19 & 20)*

5.9.1 A number of positive amorphous responses have been identified throughout Areas 37, 38 and 39. Their form is suggestive of a natural origin and they are not thought to be of archaeological significance.

5.9.2 An area of modern magnetic disturbance within the northeast of Area 37 corresponds with the location of a corrugated iron sheet within the adjacent boundary.

5.10 ***Area 40*** *(Figure 21)*

5.10.1 A number of positive responses and linear trends throughout Area 40 may be indicative of plough-damaged archaeological remains.

5.10.2 A linear response running north-south within the east of the dataset and a linear response running southeast-northwest are likely to represent former land divisions, although responses within the northeast of the dataset may be of greater archaeological potential. A curvilinear response may be of particular interest. However, no clear archaeological pattern is discernable here and a natural or agricultural interpretation must also be considered.

5.11 ***Area 41-44*** *(Figure 22 & 23)*

5.11.1 Within Area 41 a strong positive linear response is orientated northwest-southeast. Whilst this response may represent a former field boundary an archaeological interpretation must also be considered due to its close proximity to the probable archaeological complex to the northwest. A lower level linear response runs parallel to it and a pit type response has been identified within the north of the dataset. An archaeological interpretation should be considered for these responses.

5.11.2 Within Area 44 a cluster of positive responses amid an area of increased background response may be indicative of archaeology, possibly representing a large spread of burnt material. However, a natural interpretation should not be discounted. This response may represent localised gravel spreads.

5.11.3 Several parallel positive and negative trends have also been identified within Area 44. It is likely that these trends relate to former land use such as ploughing and drainage.

5.11.4 A series of amorphous positive responses have been identified within Area 42. These responses may represent a continuation of the responses recorded within Area 41. However, their form is less defined and a natural explanation is preferred.

5.11.5 Two isolated responses have been noted within Area 43. Whilst these responses may be archaeological in origin a natural interpretation is equally plausible. A number of amorphous responses and short linear trends within the same dataset are thought to be natural in origin.

5.12 ***Area 45-47*** *(Figure 24 & 25)*

5.12.1 A curvilinear response has been identified within Area 45 which is likely to represent the remains of a ditched circular enclosure measuring approximately 38m in diameter. The response is notably stronger to the east of the possible enclosure perhaps indicating a better state of preservation here or a larger concentration of burnt material within the ditch.

5.12.2 A well defined gap within the east of the curvilinear response may indicate an entranceway into the possible enclosure.

5.12.3 A number of pit type responses and linear trends are noted within the confines of the possible enclosure. These may represent internal archaeological features.

5.12.4 To the east of the possible enclosure an ephemeral curvilinear trend may indicate a second circular enclosure, approximately 25m in diameter. The westernmost section of the curvilinear response is partly masked by the larger of the two possible enclosures and it is likely that this represents a separate phase of activity at the site.

5.12.5 To the north and east of the possible enclosure(s) several isolated positive responses and linear trends may be indicative of further plough damaged archaeological remains. However, there exists no discernable archaeological pattern and a natural interpretation is viable.

5.12.6 A linear area of magnetic disturbance within the north of the dataset is the result of a modern fenced boundary.

5.12.7 A scatter of positive responses within Area 47 may represent plough damaged archaeological remains. Since no archaeological pattern is clear, however, a natural interpretation must also be considered.

5.12.8 A positive linear response in the east of Area 47 is likely to represent a former field boundary and, running roughly parallel to it, a series of linear trends indicate former ploughing activity.

5.13 ***Area 48*** *(Figure 26)*

5.13.1 Several isolated anomalies and short linear trends may be archaeological in origin. However, no archaeological pattern is discernable and a natural interpretation is preferable.

5.14 ***Area 49-50*** *(Figure 27 & 28)*

5.14.1 An amorphous positive response within Area 50 may be archaeological in nature, possibly indicating a spread of burnt material. No archaeological pattern can be recognised however, and a natural interpretation must also be considered.

5.14.2 Parallel linear trends within Areas 49 and 50 are thought to be agricultural in nature and are not thought to be of any archaeological significance.

5.15 ***Area 51-53*** *(Figure 29 & 30)*

5.15.1 An amorphous positive response, similar to that observed within Area 50, has been identified within Area 52. Again, no archaeological pattern is clear; however the strength of the response is suggestive of archaeology, perhaps representing an area of burning.

5.15.2 An increase in background response to the southwest of Area 52 is thought to be natural in origin.

5.16 ***Area 54*** *(Figure 31)*

5.16.1 A further cluster of amorphous positive responses like those within Areas 50 and 52 have been recorded within Area 54. Whilst a natural interpretation must be considered, it is possible that these responses indicate archaeological remains, possibly areas of burning.

5.17 ***Area 55-57*** *(Figure 32)*

5.17.1 Positive responses have been highlighted within Areas 55 and 56 as being of potential archaeological interest. The larger of these responses may by archaeological in nature although interpretation is cautious. These responses may result from more deeply buried ferrous objects.

5.17.2 A concentration of ferrous responses within Area 57 relates to a former field boundary, the depression of which was evident during fieldwork.

5.17.3 An area of magnetic disturbance within the east of Area 57 corresponds with the position of a metal borehole cover.

5.18 ***Area 58-60*** *(Figure 33)*

5.18.1 A number of responses of potential archaeological interest have been identified within Area 59.

5.18.2 A cluster of positive responses within an area of increased background response may be indicative of archaeological remains and likewise a number of more isolated responses within the centre of the dataset. However, interpretation must be tentative as no clear archaeological pattern is visible.

5.18.3 A broad linear response within the centre of Area 59 may be archaeological in origin. However, interpretation is unclear and this response may be natural in origin.

5.18.4 Positive responses within the east of Area 59 form a linear arrangement and are likely to relate to a former field boundary.

5.18.5 An area of magnetic disturbance within the north of Area 59 correlates to a deposit of modern material within the adjacent field boundary.

5.18.6 A positive linear response within Area 58 may represent the remains of a former ditch and may be of archaeological interest. Interpretation is tentative however, due to the magnetic disturbance resulting from machinery on the opposite side of the river.

5.18.7 Isolated responses are evident within Area 60. No archaeological pattern is visible, however, and these responses may relate to deeply buried ferrous debris.

6 Conclusion

6.1 Areas of significant archaeological potential have been identified in several locations across the proposed development site.

6.2 An extensive complex of curvilinear ditch-type responses has been identified within Areas 33-35. Responses indicative of archaeological activity have been identified throughout the complex. A series of rectilinear responses to the southeast of the main complex may represent a separate phase of activity at the site. Further south, a series of responses suggestive of archaeological activity have been identified. Although no discernable pattern is obvious, it is likely that they form part of the southern extents of the complex. The limits of the site have only been ascertained to the south and west of the complex and it is possible that the site extends to the north and the west. In total, this site appears to measure approximately 175m from east to west and at least 164m from north to south.

6.3 A second archaeological complex is suggested within Area 36. Several linear responses have been identified forming a web of probable ditches and suggesting multiphase occupation of the site. The site extends approximately 141m from north to south and 73m from east to west although the full extent of the complex has not been ascertained on its eastern and northern sides.

6.4 A further site with definite archaeological potential has been identified within Area 30. Ditch-type responses detected within this area are highly suggestive of a double-ditched D-shaped enclosure measuring approximately 41m in diameter. A number of responses indicative of archaeological remains have been noted within the enclosure.

6.5 A potential rectilinear enclosure has been identified within the north of the proposed development area (Areas 10 & 11). The possible enclosure measures approximately 48m x 48m and a number of responses indicative of occupational activity have been identified within its interior.

6.6 A probable sub circular enclosure measuring approximately 34m in diameter has been identified within Area 22. Archaeological-type responses within the possible enclosure

have been identified, and may indicate internal features. A well-defined gap in the south of the enclosure may indicate an entranceway.

6.7 A second sub circular enclosure with an approximate diameter of 38m has been identified within Area 45. Several responses typical of internal features such as pits and short ditches have been identified and a possible entranceway has been suggested within the east of the enclosing ditch. A faint curvilinear trend and associated positive responses to the east of the enclosure may indicate a further circular enclosure and may suggest a separate phase of activity at the site.

6.8 A series of responses within Areas 2 and5B are interpreted as potential plough damaged archaeological remains. The concentration of linear and curvilinear responses visible, are suggestive of ditch remains and may indicate occupational activity.

6.9 Several further areas of archaeological potential have been identified across the proposed development site including responses suggestive of possible burnt spreads within Areas 44, 50, 52, and 54 and clusters of positive responses within areas 7, 40, 47 and 59. Whilst no clear archaeological pattern is evident amongst these responses their strength and clarity confirms their potential archaeological significance.

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