

# Kings Lynn Power Connection



## Archaeological Evaluation Report



March 2012

**Client: National Grid**

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## **Kings Lynn Power Connection**

*Archaeological Evaluation*

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## Summary

*On 14th and 15th February 2012, OA East carried out an archaeological evaluation for a proposed overhead electricity connection to the south of Kings Lynn and west of West Winch (NGR 561598 315905). The archaeological work comprised nine evaluation trenches targeted on the footprints of nine proposed new pylon towers.*

*All trenches were excavated to a maximum depth of 0.50m in compliance with National Grid Health and Safety procedures. In each case this was sufficient to expose the upper surface of the natural silt and clay deposits. No pre-modern archaeological features or artefacts were found although part of a 19th century structure and a modern field boundary were exposed in two of the trenches. As a supplement to the trenches and in order to test the underlying peat and silt sequence, each of the trenches was augered by hand to a maximum depth of 4m. Together with the results of a previous borehole survey it is possible to reconstruct the deposit sequence. Solid geology (Kimmeridge clay) was reached at between c.4.2m to 10m depth below ground level. The Kimmeridge Clay is sealed by slightly organic clays or gravelly or sandy clays of Flandrian in date. Overlying these clays are deposits of peat and pockets of peat found within the clay. Peat deposits were recorded in eight of the surveyed locations and formed by rising water levels. The peat layers are now mostly desiccated - certainly the upper levels - although in one borehole the peat is described as 'fibrous'. The overall amorphous nature of the peat suggest that the medieval to modern drainage of the area has dried out at least some of these deposits.*

*Sealing the peat are clay and silt deposits directly below the topsoil. These clays and silts are up to 1.8m thick, and are likely to have continued to be deposited into the medieval period at which time sea defences were constructed, preventing further silting and allowing the land adjacent to the river Nar to be brought into agricultural use. A suspected up-standing medieval salt making area (saltern), and other objects of this period have been found during investigations within a few hundred metres of the site (aerial photographs, excavations, field walking and metal detecting). By contrast no definite features or artefacts of earlier (prehistoric, Roman or Saxon) date have been recovered in the same area.*

## 1 INTRODUCTION

### 1.1 Location and scope of work

- 1.1.1 An archaeological evaluation was conducted during the 14th and 15th February 2012 on land to the west of West Winch, near Kings Lynn, Norfolk (NGR 561598 315905; Fig. 1). The work took place prior to a proposed overhead electricity connection. Nine evaluation trenches, each 15m long, were targeted within the footprint of proposed new pylon towers.
- 1.1.2 This archaeological evaluation was undertaken to inform the archaeology and cultural heritage chapter of a draft environment statement (ES) supporting a planning application for a proposed overhead electricity connector. The archaeological work took place after a borehole survey (quoted in Buss 2011) and a desk-based assessment and field reconnaissance survey (Buss 2012). The evaluation was carried out in accordance with a Project Design prepared by RSK Environment (Buss 2011) and a Specification by OA East (Macaulay 2012).
- 1.1.3 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning Policy Statement 5: Planning for the Historic Environment* (Department for Communities and Local Government 2010). The results will enable decisions to be made by NCC, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found.
- 1.1.4 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

### 1.2 Geology and topography

- 1.2.1 This geology and topography section has been taken from the Project Design (Buss 2011). This report found the site is situated in open farmland directly west of the settlement of West Winch, situated a short distance south of King's Lynn. The majority of the site is situated in the parish of West Winch, with the exception of the south-western corner which lies in the parish of Wiggshall St German. The site is bisected south to north by the river Nar which traverses its centre. High Road and Thiegate Lane, both running along the Lynn Relief Channel, form the site boundary to the west, while the Lynn and Ely railway borders it to the east, and King's Lynn power station to the north-west. To the north-east and south the site boundary is not defined by any landscape features, but continues as open agricultural land. Fields within the site are mostly rectangular, with an east-west aligned long axis, and delineated by smaller drains. A number of (historic) farmsteads and residence are scattered across the area.
- 1.2.2 The solid geology of the area consists of mud-, silt-, and sandstone of the West Walton Formation of a Late Jurassic date, overlain by Quaternary alluvial silts, clays and sands (BGS downloads, <http://www.bgs.ac.uk/downloads/>).
- 1.2.3 The site is situated east of the Lynn Relief Channel, and west of Puny Drain. The river Nar bisects the site at its centre in a south-north alignment. Consistent with its nature as reclaimed land, the site is mostly flat with the nine trenches on land between 1.07m and 2.29m above Ordnance Datum (aOD) (Table 1; Fig. 2).

## 1.3 Archaeological and historical background

### *Desk-based assessment*

- 1.3.1 The desk-based assessment (DBA) presented research of two study areas (Buss 2012). Study area A included the area within the boundary for the proposals with an additional 1km buffer. This was defined in order to identify known and potential unknown heritage assets within or close to the site upon which physical impacts could potentially occur. Study area B was defined in order to identify designated heritage assets within a wider study area to a maximum radius of 10km. Study area A is most relevant to archaeology below ground.
- 1.3.2 The data below in Table 1 is an extract from the DBA (Buss 2012). It lists sites within 0.5km of the evaluation area and located on Figure 1:

Trench	Sites
Trench 1	HM 4 was directly to the north-west of the site. It was an old sea defence of post-medieval/modern/uncertain age which was shown on the 1st Edition OS map
Trench 2	Site 47 (NHER MNF44509) was c.200m to the south-west of Trench 2. This site was visible as cropmarks on 1961 RAF vertical aerial photographs and recorded as a group of undated but possibly medieval saltern mounds.
Trench 3	HM 5 was c.200m to north-east. It was a former post-medieval or modern pond shown on 1st edition OS map. AP 2 c.400m to the south, recorded an area of cropmarks of uncertain date. The cropmarks stop c.300m to the south of the trench. They are recorded as natural and/or of archaeological origin and were mapped from a 1962 aerial photo. They may represent possible field boundaries or other linears and pits. Site 32 (NHER MNF44509), c.400m to the south was recorded as an area of probable post-medieval ridge and furrow and a circular stack stand. It was visible as earthworks on 1946 RAF vertical aerial photographs.
Trench 4	HM 6 was located c.400m to the north-west. This was the site of two probable post-medieval agricultural buildings (possibly barns)
Trench 5	No records
Trench 6	AP 4 were cropmark features located around Trench 6. These cropmarks were recorded as natural and/or of archaeological origin and were mapped from a 1962 aerial photo. These cropmarks may represent a variety of features of unclear nature. Site 17 (NHER MNF22504), within 100m to the north of the trench fieldwalking by the Fenland Survey in 1986 recovered a couple of pieces of medieval pottery. Site 5 (NHER MNF22505), c.300m to the north the 1982 aerial photography shows the cropmark of a possible Bronze Age ring ditch. Fieldwalking in 1986 recovered a piece of medieval pottery. Sites 29/30 (NHER MNF50445), c.100m to the west were in an area of cropmarks recorded as AP 5 (below). A geophysical survey in 2006 detected magnetic anomalies which were indicative of complex geomorphology, but not of archaeological features. Fieldwalking did not find any significant scatters of medieval or later artefacts along the route of the proposed development. AP 5, c.100m to the west consisted of an area of cropmarks of natural and/or archaeological origin and were mapped from a 1962 aerial photo. Cropmarks include a possible large enclosure or a moat but may be related to activity recorded under AP 4. Site 33 (NHER MNF58484), more than 400m to the north-west a complex of post-medieval barns were converted to three residential dwellings in 2008. Site 27 (NHER MNF30130), nearly 400m to the north-west metal detecting in 1993 recovered a medieval lead ampulla. Site 14 (NHER MNF14671), c.300m to the north-west a sandstone mould used for making buttons was found in 1973. The mould has been dated to the late medieval period. Site 42 (NHER MNF54310), c.300m to the north-west, a post-medieval pit and a large shallow depression were discovered during excavation in 2006. The latter was a probable natural hollow filled with medieval material, probably derived from manuring of the land. EV 5 (NHER 49130WHW), c.300m to the north-west an excavation for the Pyny Drain Diversion Project recorded medieval manuring finds and a post-medieval pit. Information from

	OASIS Online Form. AP 3, c.400m to the north-west an area of cropmarks were of natural and/or archaeological origin and were mapped from a 1962 aerial photo. These cropmarks possible were linears of old channels.
Trench 7	Site 18 (NHER MNF22506), c.200m to the north-east a few pieces of medieval pottery was found during Fieldwalking in 1986. Site 19 (NHER MNF22507), c.100m to the east a few pieces of medieval pottery was found during Fieldwalking in 1986.
Trench 8	Site 28 (NHER MNF44530), c.100m to the west. A group of possibly post-medieval flood defence banks are visible as relatively extensive and parallel earthworks either side of the river Nar, on 1945-47 RAF vertical aerial photographs and aerial photographs from 1988.
Trench 9	No records

Table 1: Sites recorded in the DBA within 0.5km of the trenches (NHER and aerial photographs)

*Prehistoric/Roman*

1.3.3 The DBA identified a low potential for the presence of archaeological deposits from the prehistoric and Roman periods, although earlier remains may be present at depth, buried under later alluviation (Buss 2012). The only possible prehistoric feature recorded in the NHER was a putative Bronze Age ring ditch (site 5 close to Trench 6 above) recorded as a cropmark feature. A few undated cropmarks have been recorded in air photographs but they may be natural (see above). No prehistoric or Roman artefacts seem to have been found within 0.5km of the site, despite several field walking projects, metal detecting and archaeological evaluations/excavations in this area.

1.3.4 In the DBA, six prehistoric and five Roman sites were recorded more than 0.5km from the evaluation including within the present village of West Winch.

*Saxon*

1.3.5 No Saxon remains have been found within 0.5km of the site.

*Medieval*

1.3.6 For the medieval period, the DBA considered the potential for the presence of buried remains within the development footprint as moderate (Buss 2012).

1.3.7 There was a postulated upstanding medieval saltern identified from a 1961 aerial photograph (site 47, Trench 2). Artefacts of this date occur in the topsoil across this 0.5km area. Small quantities of medieval pottery ranging from one to a few sherds were recovered in six fieldwalking areas (sites 5, 17, 18, 19, 29 and 30). In addition a medieval lead ampulla was found during metal detecting (site 27, near Trench 6) and a late medieval sandstone mould was found at site 14. A further site (EV 5) recorded a scatter of finds, probably from medieval manuring and at site 42 there were residual medieval finds.

1.3.8 An archaeological excavation at nearby White House Farm, 1km to the north of the evaluation and adjacent to the east of the river Nar, found extant landscape features such as sea banks possibly of medieval date and there were also sparse features dating to the post-medieval period (Buss 2011).

*Post-medieval*

1.3.9 For the later post-medieval period, the DBA recorded a high potential for the presence of buried and above ground features of agricultural origin and mostly negligible to low heritage significance (Buss 2012).



- 1.3.10 Several features and artefacts dating to this period were found in the 0.5km area. An old sea defence at HM 4 and another at site 28 possibly date from the post-medieval period. Two probable post-medieval agricultural buildings were found at site HM 6 and a complex of post-medieval barns at site 33. Post-medieval ridge and furrow and a circular stack stand were recorded at site 32 and two post-medieval pits were found, one at site 42 and another at EV 5.

*Undated*

- 1.3.11 The assessment also identified a number of areas with potential buried features of an uncertain nature. A high number are likely to be former watercourses and drains/field boundaries (identified through aerial photographic examination and field reconnaissance). It is likely the cropmarks recorded are not archaeological features but relate to the former water courses. It is perhaps significant that the cropmarks identified in AP 4 were recorded by geophysical survey at sites 29 and 30 as complex geomorphology and not representing archaeological features.

***Previous environmental work in the area***

- 1.3.12 The Nar Valley has been studied by both Smith (1982; 1984 and 1985) and he has produced a lithostratigraphy of the valley (redrawn in Waller 1994, fig. 12.2), as part of the Fenland Project (Silvester 1988) and by Waller (1994). Smith has produced two pollen diagrams from this valley and various radiocarbon dates (BP) have been recorded including those dating from  $4210 \pm 65$  to  $1875 \pm 100$  (quoted from Waller 1994, 253). In addition to Smith's work, Waller has recorded thirty-two boreholes sunk between the river Great Ouse and the modern Fen edge at West Winch (Waller 1994, fig. 12.4). Smith and Waller's works have found changing sediments in the Nar Valley, at Nar A, for example, the basal peat contained high *Alnus* and *Quercus* values, types seen as indicative of rising water levels (*ibid*, 255). It is also important to note that the Nar Valley was part of the larger 'Fenland basin' and in this area for the last 10,000 years sediment has been accumulating in conjunction with rising sea level (*ibid*, 1). Where peat deposits are still waterlogged in the Fenland area, there has been some impressive survival of remains. Relatively near to the site, at Must Farm, nr. Whittlesey, six Bronze Age log boats, eel traps and fish weirs are in the process of excavated. They are laying where they had been abandoned in the eddying waters, c.3m to 6m below the present ground level (Knight *pers. comm.*).
- 1.3.13 The present evaluation is recorded in the Fenland Project as 'Marshland' with the main 'Peat Fens' directly to the east (c.3km) further in the Nar Valley and also a separate area c.10km to the south (Silvester 1988, fig. 2). The Marshland area encompassed approximately 248km<sup>2</sup> starting at The Wash and continuing southwards on either side of the river Great Ouse. Silvester produced a schematic section through the Flandrian deposits of Marshland (*ibid*, 6-7 and fig. 5). This section shows the earliest Flandrian deposits to be a peat layer which is found only intermittently in this Marshland area. The next layer was a fen clay deposit laid down from c.8000-7000 BP to about 3000 BP, which was sealed by another peat deposit found across most of the Marshland. This peat was in turn overlaid by an Iron Age silt (alluvium). In the Late Iron Age period The Fenland Project recorded north to south roddons and silt being deposited across the site (*ibid*, 21 and fig. 13). Some of these roddons are probably recorded in the 'former River Channel' in Fig. 1 on land to the south of the site. The Iron Age sequence was overlain by post-Roman silt layers including within the site (*ibid*, fig. 13).
- 1.3.14 Silvester suggests that the Marshland area was brought to agricultural use as a post-Conquest drainage and land reclaiming enterprise and he recorded two east to west

sea banks protecting the Marshland (*ibid*, fig. 15). The southernmost sea bank runs across the site up to the river Nar. Sylvester recorded the site being farmed in this medieval period with regular pattern of east to west strips. Although farming continued into the post-medieval period Dugdale writing in the 17th century noted that there continuing problem of maintaining the flood defences for this Marshland (*ibid*, 4-5). Sylvester recorded a series of low mounds, one within the site and a few to the north of it, postulating they were probably medieval salterns utilising the tidal water in the Nar (*ibid*, 26).

- 1.3.15 The name marshland was a name given to this area historically. "At least as far back as the second half of the 13th century the name *Merselonde* or an equivalent form occurs in historical documents ...to what have been called the seven towns of Marshland ...as well as the silt flats of King's Lynn and West Finch, which for administrative purposes were grouped within that part of the hundred of Freebridge Marshland, were viewed as a separate area in the medieval period" (*ibid*, 4).

#### ***Existing geotechnical information for the site from recent boreholes***

- 1.3.16 Recently 26 boreholes were dug on the site by Ian Farmer associates with the results of this survey being highlighted in the project design and below in Table 2 (Buss 2011). These boreholes were of either 10m or 25m maximum depth, concentrated around the proposed nine tower locations and two proposed temporary river crossings. The results suggests there to be considerable desiccation and decay of peat deposits, and therefore poor preservation conditions for organic materials and none of the boreholes recorded cultural materials (Buss 2012).
- 1.3.17 The top of the solid geology, represented by a stiff blue grey clay with shell and fossil fragments, is consistent with the Upper Kimmeridge clay formation, and was commonly reached between 4.2m-10m depth below ground level. These were sealed by (stratified) clays, and in some cases sand and gravel. These were overlain by deposits which contained peat and these are found at varying heights in the different boreholes between 1.4m and 7m below ground level. Most of the peats were found as relatively thin bands with the smallest only 0.4m wide (borehole 1) and the thickest at 3.3m (borehole 11). The peats were mostly described as 'amorphous' suggesting that long-term drainage of the land during the post-medieval and modern periods has resulted in desiccation sufficient to lead to a decay of the organic components (Buss 2011). Peat deposits were overlain by clays and/or silty clays.
- 1.3.18 The borehole results have been integrated in with the evaluation results (Table 2)

## **1.4 Acknowledgements**

- 1.4.1 The author would like to thank Brigitte Buss of RSK Environment, consultant for the scheme, for the smooth running of the project. Thanks are also extended to National Grid who commissioned and funded the project especially to Robert Fielden who arranged access to the various fields in the evaluation. Dr Ken Hamilton, Senior Historic Environment Officer for Norfolk County Council Historic Environment Services, monitored the archaeological work. LOC provided the mechanical 360°excavator. The project was managed by Aileen Connor who also edited this report. Sarah Henley surveyed the evaluation trenches with the archaeological work carried out by Rob Atkins and Jon House.

## 2 AIMS AND METHODOLOGY

### 2.1 Aims

- 2.1.1 The general aim of the evaluation was to elucidate the character, distribution, extent, importance and state of preservation of any archaeological remains within the impact areas of the development proposals, in the first instance to support the application process. Should consent for the scheme be obtained, the results will enable the formulation of appropriate mitigation strategies as necessary.
- 2.1.2 The project design identified that the results from the evaluation may enable the formulation of a below-ground model of deposits of archaeological interest. This model of deposits would aid site prediction in relation to the development footprint; and determine the potential for the preservation of organic and palaeo-environmental evidence at depth through long-term waterlogging.

### 2.2 Methodology

- 2.2.1 The evaluation comprised nine 15m long trenches within, one at each of the nine proposed tower locations. The scope of the archaeological work was agreed between the client (National Grid), its consultant (Brigitte Buss for RSK Environment) and Norfolk County Council development control archaeologist (Ken Hamilton). The trenches were machined to a maximum of 0.5m below ground level (National Grid Health and Safety regulations). Any features within the trench were sampled up to an additional 0.5m depth. All trenches were hand augered to aid understanding of the underlying deposits within the trenches.
- 2.2.2 Machine excavation was carried out by a 360° tracked excavator using a toothless ditching bucket under constant archaeological supervision. The site survey was carried out using a leica GPS with Leica Smartnet on board. All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Colour and digital photographs were taken of all relevant features and deposits. The work took place in dry conditions.

### 3 RESULTS

#### 3.1 Results by Trench

3.1.1 The results are presented by trench and the borehole results have been included (Table 2). The height of the ground level at each trench has been included in the table. topsoil (1), c.0.4m thick in all nine trenches, was a mid to dark grey brown sandy clay. All trenches were excavated to expose the upper surface of silt and clay drift geology deposits. Each of the trenches was augered by hand to a maximum depth of 4m.

Trench /Borehole	Description
Trench 1 /borehole 1; 1.37m aOD; NGR (560875 316900)	The 0.5m deep trench was machined to a light brown/blue grey clay. A 1.1m wide modern wall footings (3) was found on the eastern side of the trench aligned roughly north to south. The wall survived up to 0.1m deep. In the footings there were many different reused bricks presumably derived from several different former buildings. The bricks included poorly mixed yellow/red clay examples as well as deep red types. There were no complete bricks and their thickness's ranged from c.40mm to c.60mm . The part bricks date from the c.18th to mid 19th centuries. There were also rare iron stone fragments up to 0.15m by 0.11m by 30mm thick. Lime mortar was attached to the brick and stone fragments. The auger hole within the trench was similar to the borehole results. A dry brown peat was found below the 0.9m thick clay. The borehole 1 log comprised a firm to stiff blue grey slightly silty clay is between 7.2m to 25m below ground level. This is sealed by a soft grey to dark grey silty slightly organic clay between 1.8m to 7.2m below ground level. A thin, 0.4m thick, black pseudo-fibrous peat overlaid this clay. The peat is sealed by a firm to stiff friable laminated light brown silty clay with fine sand and silt on lamination surfaces at between 0.4m and 1.4m below ground level. A topsoil, 0.4m thick, overlays this clay.
Trench 2 /borehole 3; 1.72m aOD; NGR (561246 316891)	No archaeological features were within the trench. Hand auger results similar to borehole 3. This comprised a stiff/very stiff laminated dark grey clay is between 10m and 25m below ground level. This is sealed by a soft grey and brown slightly gravelly clay between 7m and 10m below ground level. Overlaying this layer is a very soft/soft blue grey, locally slightly sandy clay with pockets of peat between 2.5m and 7m below ground level. A brown amorphous peat, 0.7m thick, sealed this deposit. This peat is sealed by a firm brown mottled orange grey clay between 1.3m and 1.8m below ground level. This layer is in turn sealed by a stiff brown mottled grey clay between 0.45m and 1.3m below ground level. There was a 0.45m topsoil deposit.
Trench 3 /borehole 5; 2.28m aOD; NGR (561506 316710)	No archaeological features were within the trench. Hand auger results similar to borehole 5. A stiff/very stiff grey laminated clay is between 6.3m and 25m below ground level. This is sealed by a medium dense brown and grey clayey slightly gravelly sand between 5.5m and 6.3m below ground level. Overlay this deposit is a 1m thick, brown and grey sandy slightly gravelly clay. Sealing this layer is a soft/very soft grey and brown clay with pockets of peat between 3.2m and 4.5m below ground level. This is overlaid by a 0.7m thick brown amorphous peat. Sealing this deposit is a 0.4m thick deposit comprising soft grey and brown slightly sandy clay with peat inclusions. This in turn is sealed by a firm to stiff brown mottled orange grey slightly sandy clay between 0.5m and 2.1m below ground level. There was a 0.5m thick topsoil deposit.
Trench 4 /borehole 24; 1.83m aOD; NGR (561606 315098)	No archaeological features were within the trench. Hand auger results similar to borehole 24. A very stiff dark grey slightly sandy clay is between 6m and 25m below ground level. This is sealed by a 1.2m thick dense grey clayey slightly sandy gravel. Between 2.8m and 4.8m below ground level is a soft to firm brown mottled light brown slightly gravelly clay with pockets of peat. This deposit is sealed by a 1.7m thick soft brown laminated clay with inclusions of peat. This in turn is sealed by a stiff brown slightly sandy clay between 0.4m and 1.7m below ground level. There was a 0.4m thick topsoil deposit.
Trench 5 /borehole 25; 1.60m aOD; NGR (561418)	No archaeological features were within the trench. Hand auger results similar to borehole 25. A stiff dark grey poorly laminated clay is between 10m and 25m below ground level. This deposit is sealed by a firm becoming stiff grey clay between 3.75m and 10m below ground level. Overlaying this deposit is a 2.55m thick brown amorphous peat with some inclusions of soft grey clay. This is sealed by a firm brown

314856)	mottled grey slightly sandy clay at between 0.3m and 1.2m below ground level. There was a 0.3m thick topsoil deposit.
Trench 6 /borehole 15; 2.31m aOD; NGR (561802 315723)	No archaeological features were within the trench. Hand auger results similar to borehole 15. A stiff dark grey laminated clay lies between 8.9m and 24.81m below ground level. This is sealed by a 0.6m thick dense gravel deposit. Between 5.7m and 8.3m below ground level there is a firm grey slightly sandy clay. Overlaying this deposit is a soft grey slightly sandy clay between 3.1m and 5.7m below ground level. This deposit is sealed by a 1.1m thick brown amorphous peat with inclusions of very soft grey clay. Overlaying the peat is a soft brown friable very sandy clay between 0.3m and 2m below ground level. There was a 0.3m thick topsoil deposit.
Trench 7 /borehole 12; 1.1m aOD; NGR (561809 316146)	A 1.5m wide modern field boundary ditch (5) aligned east to west cut the natural subsoil. The ditch was up to 0.45m deep and contained a modern 19th/20th century piece of pottery. Hand auger results similar to borehole 12. A stiff grey laminated, locally slightly sandy, clay is between 7m and 25m below ground level. This is sealed by a 0.9m this dense sandy gravel. A firm grey laminated clay is between 4.95m and 6.1m below ground level. This is overlaid by a 0.75m this grey brown slightly sandy and gravelly clay. This is sealed by a 0.2m thick sand deposit. Between 3.2m and 4m below ground level is a soft grey and brown slightly sandy clay with pockets of peat. A brown amorphous peat with some inclusions of soft grey clay is between 1m and 3.2m below ground level. This was sealed by a 0.7m thick stiff brown mottled orange clay. There was a 0.3m thick topsoil deposit.
Trench 8 /borehole 11; 1.41m aOD; NGR (561815 316495)	No archaeological features were within the trench. Hand auger results similar to borehole 11. A very stiff grey laminated clay lies between 7.2m and 10m below ground level. This is sealed by a 1.7m thick brown clayey slightly gravelly sand. Overlaying this deposit is a very soft grey slightly sandy clay with pockets of peat between 4.9m and 5.5m below ground level. From 2.2m and 4.9m below ground level is a brown amorphous peat with inclusions of very soft brown clay. This is sealed by a 1.9m thick firm becoming soft brown slightly sandy clay with occasional pockets of peat. There was a 0.3m thick topsoil deposit.
Trench 9 /borehole 17; 1.51m aOD; NGR (561795 315340)	No archaeological features were within the trench. Hand auger results similar to borehole 17. A stiff/very stiff grey, locally poorly laminated, slightly silty clay lies between 4.2m and 25m below ground level. This is sealed by a 0.6m thick medium dense light orange brown silty slightly gravelly fine to coarse sand with pockets of soft grey silty clay. There is a soft grey slightly fine sandy silt clay between 3m and 3.6m below ground level. This is sealed by a 2.2m thick soft brown silty clay. Between 0.3m and 0.8m below ground level there is a firm to stiff friable light brown silty clay. There was a 0.3m thick topsoil deposit.

Table 2: *Trench and the nearest borehole records with height and NGR centre coordinates for tower locations*

## 4 DISCUSSION AND CONCLUSIONS

### 4.1 Overview

- 4.1.1 The results of the evaluation, borehole survey and desk-based assessment have aided an understanding of the past events within the assessment area. No pre-modern archaeological features or artefacts were found although part of a 19th century structure and a modern field boundary were exposed in two of the trenches. As a supplement to the trenches and in order to test the underlying peat and silt sequence, each of the trenches was augered by hand to a maximum depth of 4m. Together with the results of a previous borehole survey it is possible to reconstruct the deposit sequence with reference to work previously undertaken in the area (see Sections 1.3.12 to 1.3.15 above).
- 4.1.2 Solid geology (Kimmeridge clay) was recorded at between c.4.2m to 10m depth below ground level. No peat deposit was found directly sealing this deposit in any of the boreholes. Sylvester recorded that this peat layer was only found intermittently in this Marshland area and so this non appearance is not surprising (see Section 1.3.13 above). In the boreholes, the Kimmeridge Clay was sealed by slightly organic clays or gravelly or sandy clays. Waller has described certain pre-Flandrian sediments nearby as "grey clayey and silty sands with gravel" although elsewhere blue-grey, silty clays and clays (found from -5.03m to -0.2m OD) were the deepest Flandrian sediments recorded (Waller 1994, 257). The layer in the boreholes are almost certainly the fen clay deposit recorded by Sylvester which he recorded as being laid down from c.8000 -7000 BP to about 3000 BP (see Section 1.3.13).
- 4.1.3 Sealing these deposits was a layer of peat and/or pockets of peat found within the clay. Peat deposits were recorded in eight of the surveyed locations but not in Trench 9 (borehole 17). The deposits containing peat start at between 1.4m and were found up to a maximum of 7m below ground level; Table 2), although the depth of the peat was variable with the thinnest band only 0.4m thick. These peat deposits were formed by rising water levels and were recorded across the Marshland area by Sylvester (see Section 1.3.13). The peat layers are now desiccated - certainly the upper levels - although in Trench 1 (borehole 1) the peat is described as black and fibrous. The drying out of some of the peat suggests that the medieval to modern drainage of the area has affected these deposits.
- 4.1.4 Sealing the peat are clay and silt deposits directly below the topsoil and sealing peat deposits at between 1m and 2.2m below the present ground level within the site. These clays and silts were therefore up to 1.8m thick, and are likely to have continued to be deposited into the medieval period. Sylvester has dated this layer as Iron Age and post-Roman (see Section 1.3.13). The silting layers largely stop due to construct of sea defences post-Conquest (see Section 1.3.14), thus allowing the land adjacent to the river Nar to be brought into agricultural use.
- 4.1.5 A suspected up-standing medieval salt making area (saltern) near Trench 2, and objects of this period have been found during investigations within a few hundred metres of the site (aerial photographs, excavations, field walking and metal detecting). The medieval artefacts were only found in small quantities and it is likely they were deposited within manure scatters. By contrast no definite features or artefacts of earlier (prehistoric, Roman or Saxon) date have been recovered in the same area. This is by contrast to six prehistoric and five Roman sites recorded in the desk-based assessment on land well beyond the river Nar on higher ground and these were situated more than

0.5km from the site. It is therefore extremely unlikely the postulated cropmark of a possible Bronze Age ring ditch (site 5) near the trenches is correct. Post-medieval furrows are recorded close by showing that the reclaiming of the land was successfully maintained.

## **4.2 Significance**

- 4.2.1 The evaluation found Flandrian deposits within the assessment area but the survival of these deposits may not be good with most of the peat recorded as amorphous. These deposits may be comparable with published palaeoenvironmental studies of the area close to the site by both Smith (1982; 1984 and 1985), Sylvester (1988) and Waller (1994).
- 4.2.2 The evaluation has shown that there are no medieval or post-medieval deposits surviving at the proposed nine pylon towers.

## **4.3 Recommendations**

- 4.3.1 Recommendations for any future work based upon this report will be made by the Norfolk County Council Historic Environment Services.

## APPENDIX A. BIBLIOGRAPHY

- Buss, B., 2011 *Project design for archaeological field evaluation King's Lynn Connection* RSK Environment report (unpublished)
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- Smith, M.V., 1982 *An investigation of Flandrian sediments in the Nar Valley, Norfolk* (unpubl. MSc thesis, Polytechnic of North London and City of London Polytechnic)
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## APPENDIX B. OASIS REPORT FORM

All fields are required unless they are not applicable.

### Project Details

OASIS Number	oxfordar3-120251		
Project Name	Kings Lynn Power Connection		
Project Dates (fieldwork) Start	14-02-2012	Finish	15-02-2012
Previous Work (by OA East)	No	Future Work	Unknown

### Project Reference Codes

Site Code	ENF 128379	Planning App. No.	N/A
HER No.	ENF 128379	Related HER/OASIS No.	-

### Type of Project/Techniques Used

Prompt	Electricity Act 1989 Section 36
Development Type	Pipelines/Cables

### Please select all techniques used:

<input type="checkbox"/> Aerial Photography - interpretation	<input type="checkbox"/> Grab-Sampling	<input type="checkbox"/> Remote Operated Vehicle Survey
<input type="checkbox"/> Aerial Photography - new	<input type="checkbox"/> Gravity-Core	<input type="checkbox"/> Sample Trenches
<input type="checkbox"/> Annotated Sketch	<input type="checkbox"/> Laser Scanning	<input type="checkbox"/> Survey/Recording Of Fabric/Structure
<input checked="" type="checkbox"/> Augering	<input type="checkbox"/> Measured Survey	<input checked="" type="checkbox"/> Targeted Trenches
<input type="checkbox"/> Dendrochronological Survey	<input type="checkbox"/> Metal Detectors	<input type="checkbox"/> Test Pits
<input type="checkbox"/> Documentary Search	<input type="checkbox"/> Phosphate Survey	<input type="checkbox"/> Topographic Survey
<input type="checkbox"/> Environmental Sampling	<input type="checkbox"/> Photogrammetric Survey	<input type="checkbox"/> Vibro-core
<input type="checkbox"/> Fieldwalking	<input type="checkbox"/> Photographic Survey	<input type="checkbox"/> Visual Inspection (Initial Site Visit)
<input type="checkbox"/> Geophysical Survey	<input type="checkbox"/> Rectified Photography	

### Monument Types/Significant Finds & Their Periods

List feature types using the [NMR Monument Type Thesaurus](#) and significant finds using the [MDA Object type Thesaurus](#) together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
Environment Deposits	Early Prehistoric -500k to -4k		Select period...
Environment Deposits	Late Prehistoric -4k to 43		Select period...
Wall and ditch	Post Medieval 1540 to 1901		Select period...

### Project Location

County	Norfolk	Site Address (including postcode if possible)
District	Kings Lynn + WNorf DC	
Parish	West Winch + Wigenhall S	
HER	Norfolk County Council	
Study Area	XXXX?	National Grid Reference 561598 315905

### Project Originators

Organisation	OA EAST
Project Brief Originator	-
Project Design Originator	Brigitte Buss of RSK Environment
Project Manager	Aileen Connor, Oxford Archaeology East
Supervisor	Rob Atkins, Oxford Archaeology East

### Project Archives

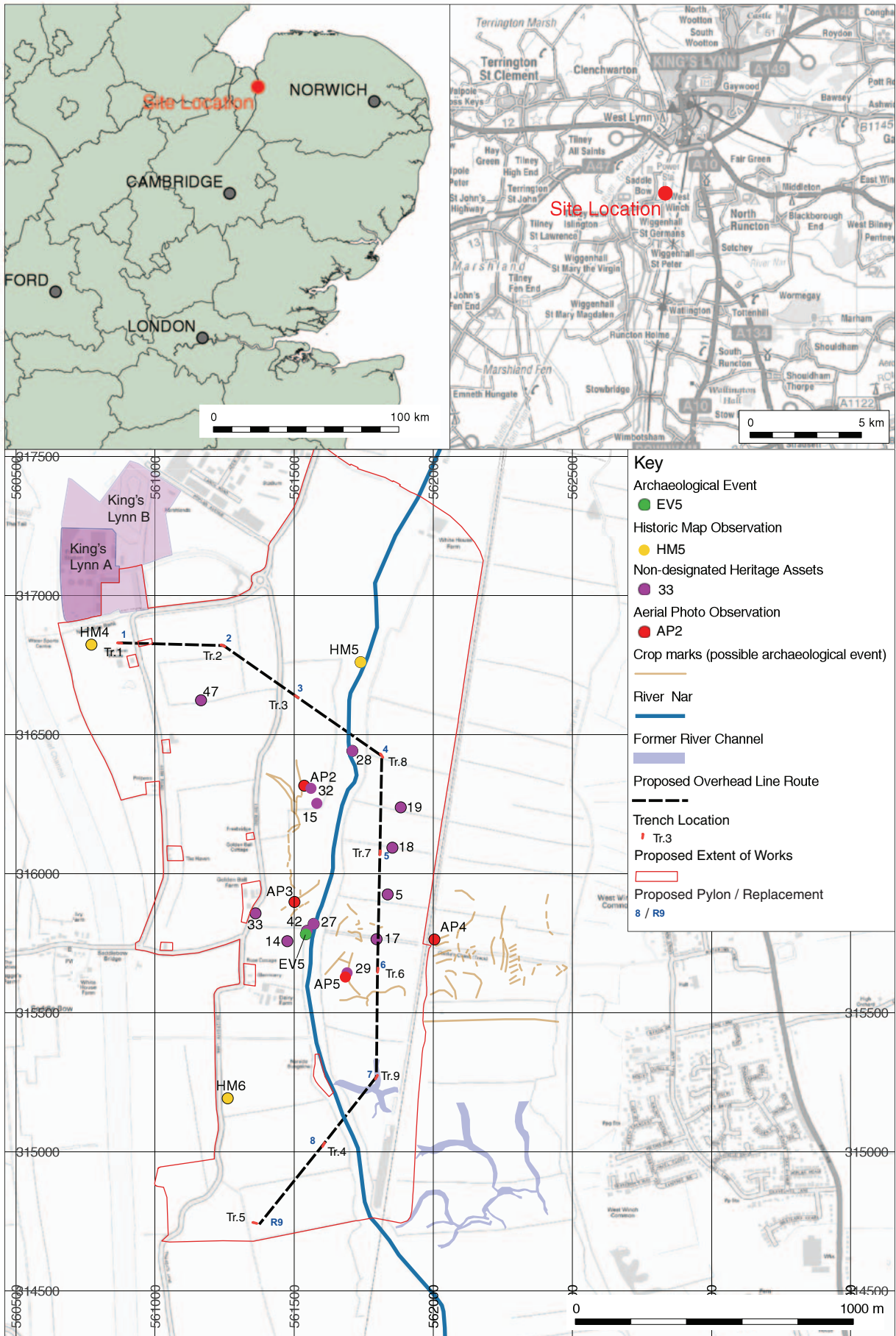
Physical Archive	Digital Archive	Paper Archive
-	OA East	OA East
-	ENF 128379	ENF 128379

### Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
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Ceramics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Survey		<input type="checkbox"/>	<input type="checkbox"/>
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Worked Stone/Lithic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Digital Media	Paper Media
<input type="checkbox"/> Database	<input type="checkbox"/> Aerial Photos
<input type="checkbox"/> GIS	<input checked="" type="checkbox"/> Context Sheet
<input type="checkbox"/> Geophysics	<input type="checkbox"/> Correspondence
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<input checked="" type="checkbox"/> Survey	<input type="checkbox"/> Matrices
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	<input checked="" type="checkbox"/> Photos
	<input type="checkbox"/> Plans
	<input checked="" type="checkbox"/> Report
	<input type="checkbox"/> Sections
	<input checked="" type="checkbox"/> Survey

### Notes:



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Figure 1: Site location with numbers from desk-based assessment

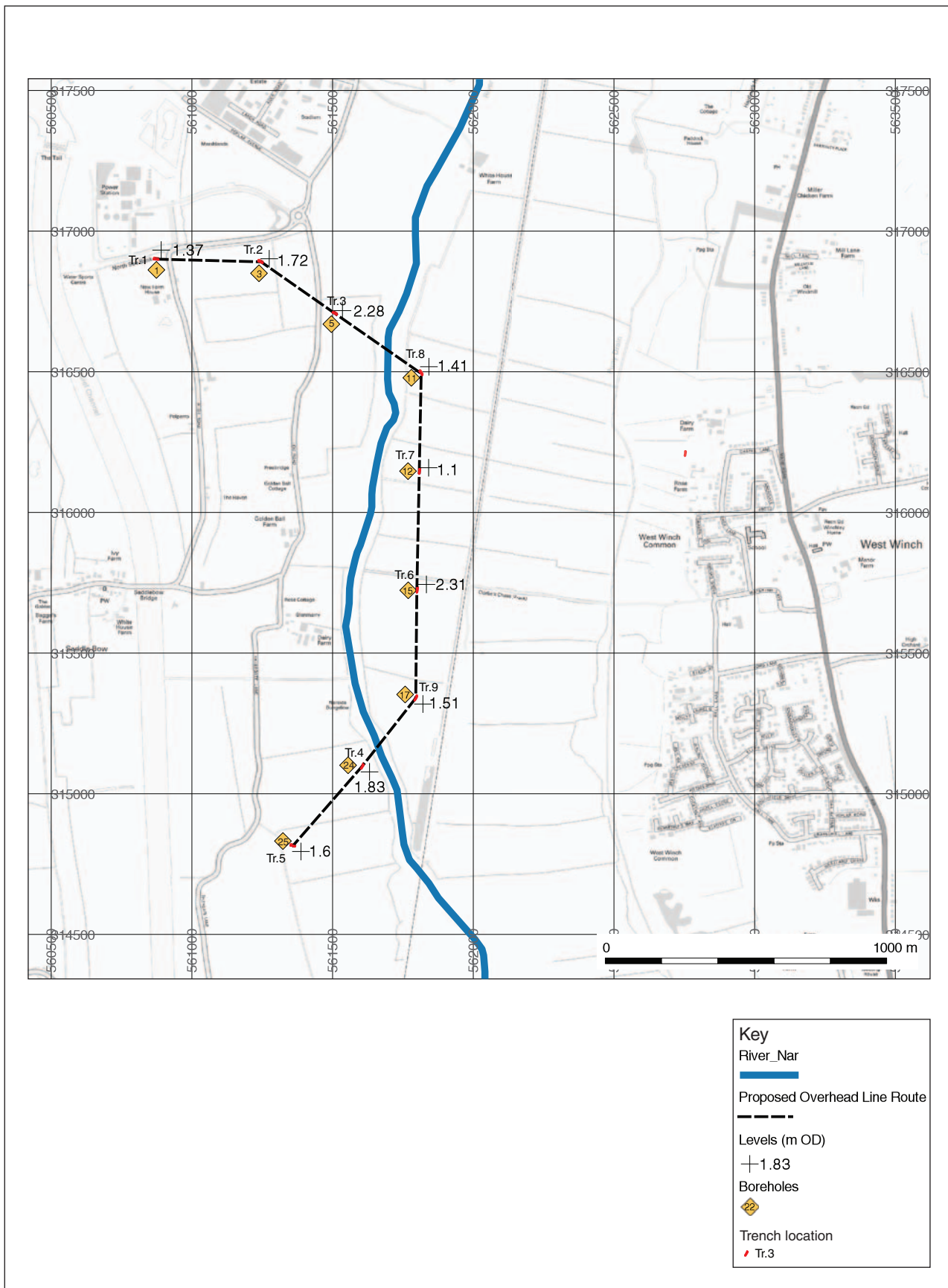


Figure 2: Trench locations with borehole numbers and levels



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