

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Lake Lothing
**THIRD
CROSSING**

Document 6.3: Environmental Statement Volume 3 Appendices

Appendix 9D

Watching Brief Report (Quay Wall ties)

**ARCHAEOLOGICAL MONITORING AND
RECORDING AT
SOUTH QUAY
LOWESTOFT
SUFFOLK
(LWST17)**

Work Undertaken For
Mouchel Ltd

March 2017

Report produced by
Neil Parker (MA)

National Grid Reference: TM 5387 9269
OASIS Record No: archaeol1-278267

APS Report No: **12/17**

**ARCHAEOLOGICAL
PROJECT
SERVICES**



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1. SUMMARY

A programme of archaeological monitoring and recording was undertaken during investigative work on land adjacent to the waterfront on South Quay, Riverside Road, Lowestoft, Suffolk.

A single trench was excavated by machine in order to determine how the concrete quay frontage was attached and stabilised prior to the construction of a new bridge spanning the stretch of water known as Lake Lothing, between the south and north quays.

The trench revealed concrete building footings in the northeast corner. Also revealed were sheet pile anchors driven into the silt and iron tie rods that held the quay frontage in place. An iron water pipe was also exposed and was probably a drain or outflow.

Other deposits represented backfilling episodes, levelling and the construction of the concrete hardstanding of the Site.

2. INTRODUCTION

2.1 Project Background

A new bridge, the Lake Lothing Third Crossing Project, is intended to join the North and South Quays to the west of the Inner Harbour at Lowestoft, Suffolk.

In advance of the engineering works, an investigation into the mechanism by which the quayside is secured was required and Suffolk County Council advised that archaeological monitoring should take place on the necessary groundworks for the project. Archaeological Project Services was commissioned by Mouchel Limited to undertake the archaeological monitoring of the project. The works were carried out on the 16th and 17th January 2017.

2.2 Topography and Geology

Lowestoft is located in the northeast corner of Suffolk, in the administrative area of Waveney (Fig. 1).

The site is situated on the south shore of Lake Lothing, close to where it meets the Inner Harbour, at National Grid Reference TM 5387 9269 (Fig. 2). The site lies to the north of Riverside Road at a height of 5m OD.

The area has been built up and lies over a drift geology of marine alluvium and glaciofluvial drift (BGS 2016).

2.3 Archaeological Setting

Lowestoft is first mentioned the Domesday Survey of 1086 where it is referred to as *Lothu Wistoft* and derives from the homestead of *hloðvér* an Old English or Viking personal name (Ekwall 1974).

The body of water known as Lake Lothing and Oulton Broad to the east are thought to derive from peat cutting activity in the medieval period.

During the post-medieval period this area to the south of the water was agricultural and mainly used for raising sheep.

Lake Lothing, a remnant of medieval peat cutting, was open to the sea at its eastern end by the 14th century. Lowestoft has always had a strong fishing heritage, and prior to the construction of the harbour in 1831 all fishing had been done from the beach. In 1847 the harbour was purchased by Sir Samuel Peto and a rail link established on the north side. Following this connection with inland trade links, Lowestoft surpassed the nearby Great Yarmouth as a major fishing port.

The First Edition Ordnance Survey Map of 1882 shows the site as unoccupied lying to the west of a boat-builder's yard. It lies on

a small promontory with marshland to the west and mudflats adjacent to the water at the north. By the time of the 1906 Ordnance Survey publication, the site is occupied by an ice works with an associated wharf.

3. AIMS AND OBJECTIVES

The aim of the investigation was to record and interpret the deposits and any archaeological features exposed during the groundwork.

The objectives of the investigation were to determine the form and function of the archaeological remains encountered and their spatial arrangement; to, as far as practicable, recover dating evidence from the archaeological remains and deposits, and to establish the sequence of archaeological remains present on the site.

4. METHODS

A scheme of archaeological monitoring was undertaken on a proposed T-shaped trench for initial investigation ahead of more extensive groundworks. The aim was to uncover and analyse the method by which the quayside was anchored in place. During the investigation, sufficient evidence was gathered by the engineers so that only a short east – west aligned trench was required (Fig. 3).

The trench was excavated under archaeological supervision to the depth required by the engineering investigation.

Each deposit exposed during the investigation was allocated a unique reference number (context number) with an individual written description. A list of all contexts and their interpretations appears as Appendix 1. A photographic record was also compiled and Sections were drawn at a scale of 1:10 and plans at

1:20. Recording of deposits encountered was undertaken according to standard Archaeological Project Services practice.

Following excavation, the records were checked and a stratigraphic matrix produced.

5. RESULTS

(Figs. 4 & 5, Plates 1 – 7)

The earliest deposit encountered at the site comprised soft, dark grey silt with organic inclusions (010), identified as the naturally occurring river silt.

Two upper portions of steel pile sheeting were exposed, both driven into the river silt (010). The eastern sheet (005) was approximately 2m wide with a 1.5m height exposed. On the south side (rear) of the pile sheet was a metal plate with two bolts connecting the tie rods (Plate 4). The top of the pile sheet was 2.04m below the level of the concrete slab. The western sheet (008) was not fully exposed, although approximately 4m of its length was uncovered.

Extending from the front (north) of each of the pile sheets were metal tie rods. Two were attached to sheet (005), but only the eastern (006) was uncovered. A single rod (009) was also exposed attached to sheet (008).

To the south of the steel sheets was a soft, mixed grey and brown sand, silt and clay with inclusions of gravel, CBM, charcoal and concrete (002). This measured 1.8m thick and identified as a deliberate backfill/made ground around the pile sheet anchors. Redeposited natural sand (003) was present within this deposit as was a preserved fallen timber (015).

Cut into the made ground (002) was a brick structure (011) protecting an iron drain pipe.

Located at the northeast corner of the trench was a building footing (004). The overall exposed dimensions were 4.5m north-south and 5m east-west. The footings comprised poured concrete with an average width of 0.25m and a depth of 1.5m.

Towards the southwest corner of the trench a 0.12m thick layer of crushed cinder and tarmac had been used as a levelling layer (007). It was also present on the east side of the structure (011). On the northwest side, a similar levelling layer comprised hard, pale blue grey mortared pebbles up to 0.45m thick (014).

A layer of hard, pale grey mixed concrete and mortar provided a hardcore base (013) that sealed the underlying deposits. Above this was a 0.15m thick concrete slab sat (001).

6. DISCUSSION

The earliest deposit encountered in the investigation trench was river silt, exposed at the lower limit of the excavation. Driven into this silt were the pile sheets and tie rods that anchored the front of the quayside in place.

The area was then backfilled with an approximately 1.8m thick deposit of made ground into which the footings for a building were cut at the northeast corner of the trench. Examination of historic maps shows that several buildings have previously occupied the site from its time as an ice works and beyond. However, none appear to correlate with the location of the footings as recorded. As they were concrete and cut into the made ground, it is likely that they post-date the ice works and may be of 20th century date. The brick casing that surrounds the iron water/drain pipe also appears to be of this date. The site was later consolidated and covered in the hard standing present today.

No archaeological features that pre-date the insertion of the pile sheet anchors were revealed during the investigation.

7. CONCLUSIONS

Archaeological monitoring and recording was undertaken at the South Quay, Lowestoft, at the proposed location of a new bridge that will span the inner harbour.

A single, T-shaped trench was planned in order to understand the mechanism by which the quayside was anchored in place. During the excavation, enough evidence was gathered in a small, roughly square trench to satisfy the requirements of the engineers associated with the bridging works.

No archaeological features pre-dating the construction of the quayside were revealed.

8. ACKNOWLEDGEMENTS

Archaeological Project Services wishes to acknowledge Mr A Hancock of Mouchel Ltd for commissioning the fieldwork and post-excavation analysis. The work was coordinated by Paul Cope-Faulkner who also edited this report.

9. PERSONNEL

Project Coordinator: Paul Cope-Faulkner
 Site Supervisor: Neil Parker
 Archiving: Denise Buckley
 Photographic reproduction: Neil Parker
 Illustration: Neil Parker
 Post-excavation Analyst: Neil Parker

10. BIBLIOGRAPHY

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11. ABBREVIATIONS

APS Archaeological Project Services

BGS British Geological Survey

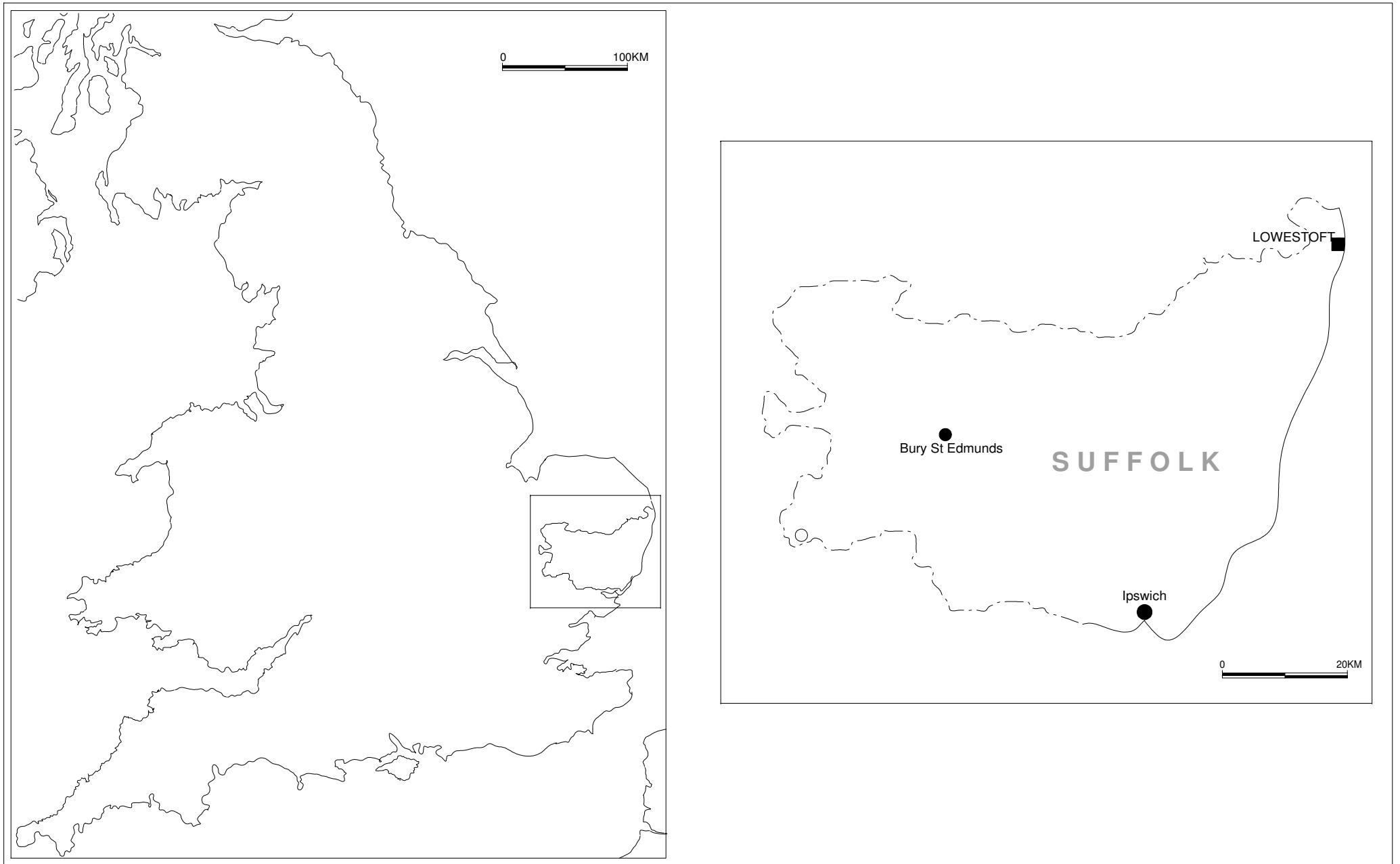
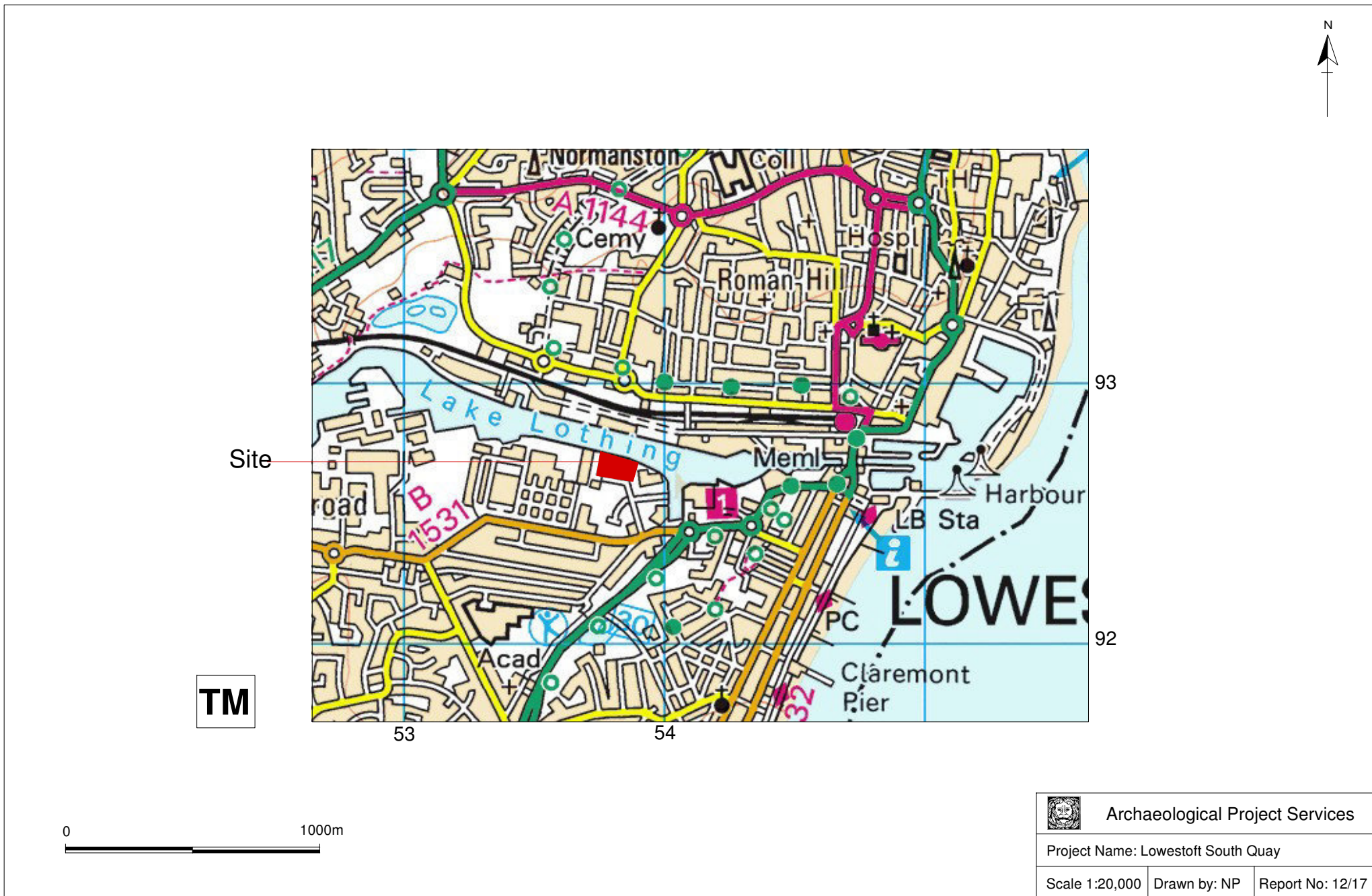


Figure 1 - General Location Plan



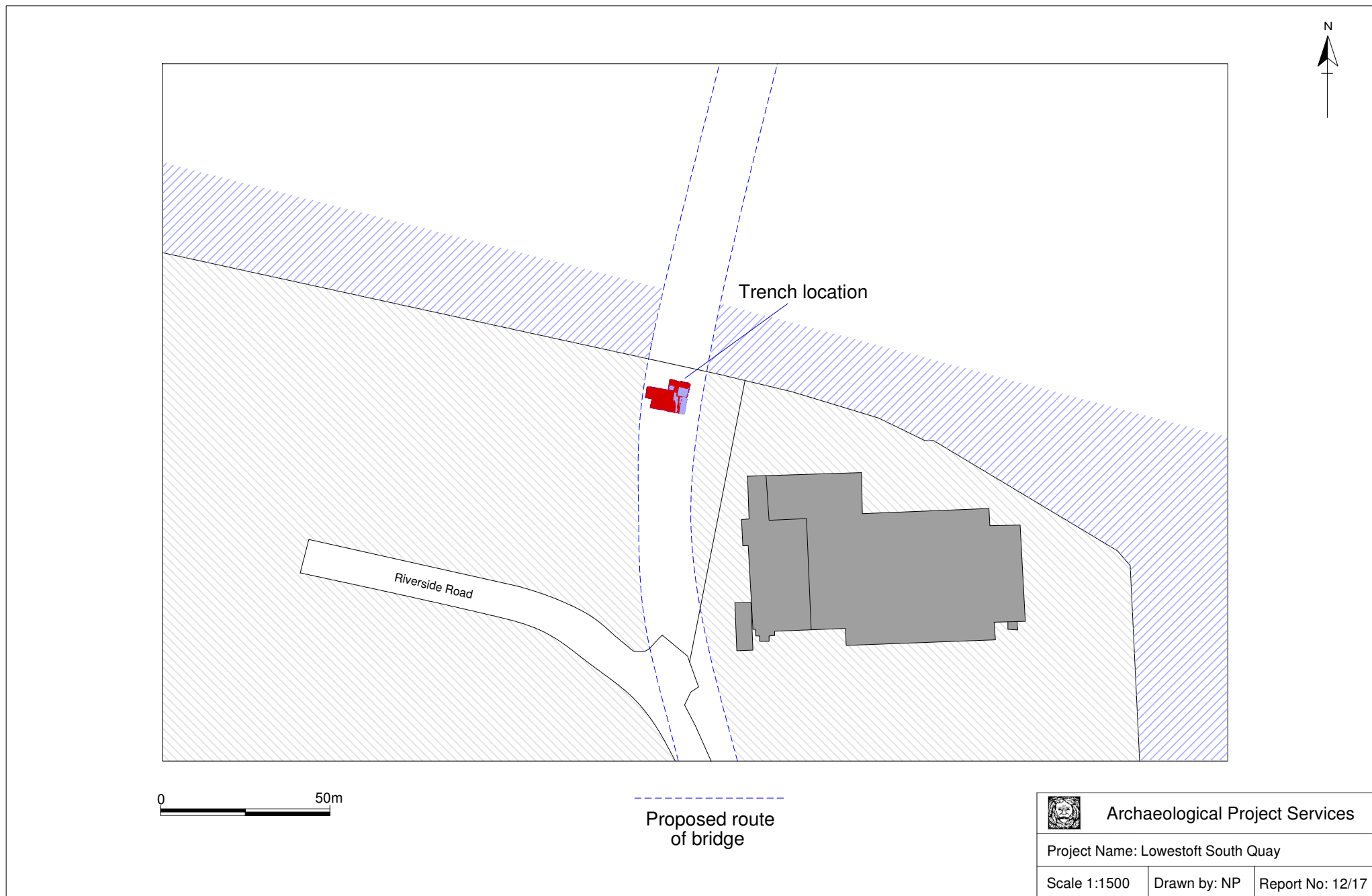
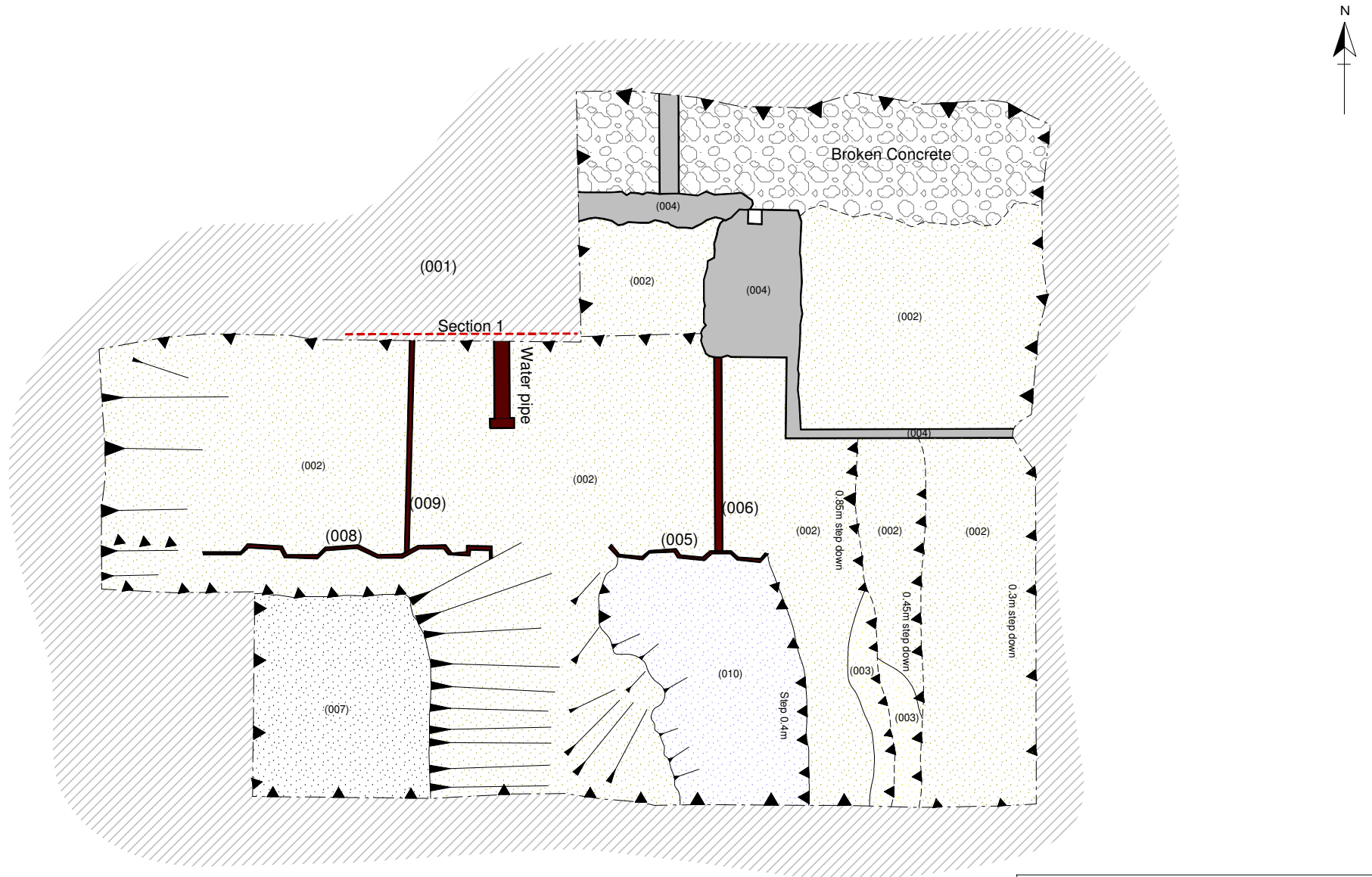


Figure 3. Trench location.




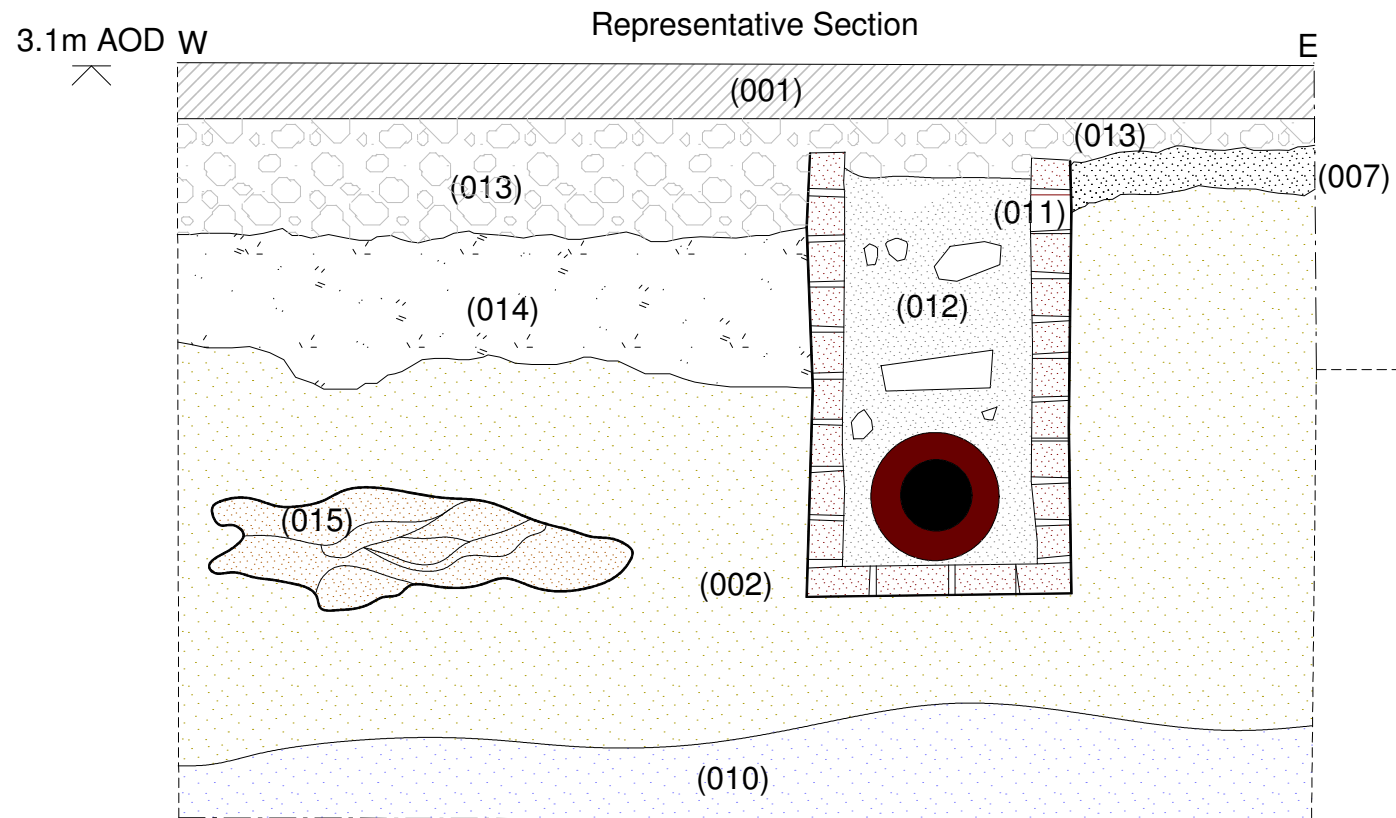
 Archaeological Project Services		
Project Name: Lowestoft South Quay		
Scale 1:75	Drawn by: NP	Report No: /04

Figure 4. Trench plan



0 1m



Archaeological Project Services

Project Name: Lowestoft South Quay

Scale 1:20

Drawn by: NP

Report No: /04

Figure 5. Representative section

The Plates



Plate 1

A view of the eastern side of the investigation trench showing the proximity to the eastern boundary of the Site



Plate 2

Looking south from the investigation trench, showing the current condition of the Site



Plate 3

The building footing (004) in the northeast corner of the trench



Plate 4

The eastern sheet pile anchor (005) showing the attachment at the rear for the two tie-rods



Plate 5 (top). Detail of the eastern tie-rod (006) at the front of (005). The western rod was not exposed.

Plate 6 (above). The exposed iron drainage pipe



Plate 7

The sequence of deposits as recorded in the representative section

Appendix 1

CONTEXT DESCRIPTIONS

Context	Description	Interpretation
001	Indurate, Pale yellow grey concrete. 0.15m thick	Hardstanding
002	Soft, mixed grey and brown (various hues) sand, silt and clay with some gravel with CBM, charcoal and concrete fragments. 1.8m thick	Made ground/backfill
003	Soft, pale yellow brown, coarse gravelly sand. 0.4m thick, localised	Re-deposited natural material
004	Poured concrete, average width 0.25m x 1.5m deep. Overall dimensions 4.5m N-S x 5m E-W exposed	Building footing
005	Iron sheeting, approx. 2m wide x 1.5m exposed height. Top 2.04m below slab level	Sheet pile anchor
006	Iron pole	Tie rod
007	Friable, black crushed Tarmac and cinder with occasional CBM, 0.12m thick	Ballast
008	Iron sheeting, approx. 4m width exposed, height undetermined. Top approx. 2.15m below slab level	Sheet pile anchor
009	Iron Pole	Tie rod
010	Soft, dark grey silt with organic inclusions. Thickness undetermined	River silt
011	Brick structure. Bricks in Stretcher bond, 110mm x 80mm x 220m	Brick case for water pipe
012	Loose, dark grey and brown rubble and silt containing bricks	Collapsed infill within (011)
013	Hard, pale grey, mixed concrete and mortar, 0.2m thick	Hardcore below slab
014	Hard, pale bluey grey mortared pebbles up to 0.45m thick	Ballast levelling layer
015	Fallen timber	Undetermined

Appendix 2

GLOSSARY

Context	An archaeological context represents a distinct archaeological event or process. For example, the action of digging a pit creates a context (the cut) as does the process of its subsequent backfill (the fill). Each context encountered during an archaeological investigation is allocated a unique number by the archaeologist and a record sheet detailing the description and interpretation of the context (the context sheet) is created and placed in the site archive. Context numbers are identified within the report text by brackets, e.g. [004].
Cut	A cut refers to the physical action of digging a posthole, pit, ditch, foundation trench, etc. Once the fills of these features are removed during an archaeological investigation the original 'cut' is therefore exposed and subsequently recorded.
Domesday Survey	A survey of property ownership in England compiled on the instruction of William I for taxation purposes in 1086 AD.
Layer	A layer is a term used to describe an accumulation of soil or other material that is not contained within a cut.
Medieval	The Middle Ages, dating from approximately AD 1066-1500.
Natural	Undisturbed deposit(s) of soil or rock which have accumulated without the influence of human activity
Old English	The language used by the Saxon (q.v.) occupants of Britain.
Post-medieval	The period following the Middle Ages, dating from approximately AD 1500-1800.

Appendix 3

THE ARCHIVE

The excavation archive consists of:

1	Context register sheets
15	Context sheets
2	Daily record sheets
1	Section record sheet
1	Photographic record sheets
2	Sheet of scale drawings

All primary records are currently kept at:

Archaeological Project Services
The Old School
Cameron Street
Heckington
Sleaford
Lincolnshire
NG34 9RW

The ultimate destination of the project archive is:

Suffolk County Council Archaeology Service

Archaeological Project Services Site Code:

LWST17

OASIS Record No:

archaeo11-278267

The discussion and comments provided in this report are based on the archaeology revealed during the site investigations. Other archaeological finds and features may exist on the development site but away from the areas exposed during the course of this fieldwork. *Archaeological Project Services* cannot confirm that those areas unexposed are free from archaeology nor that any archaeology present there is of a similar character to that revealed during the current investigation.

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OASIS ID: archaeol1-278267

Project details

Project name	Archaeological Monitoring and Recording at South Quay, Lowestoft, Suffolk
Short description of the project	Monitoring of an investigation trench prior to commencement of bridge building works as part of the third crossing project at the south quay of the inner harbour in lowestoft. The trench was excavated to understand how the quaf frontage was anchored in place. Two pile sheet anchors with tie rods were exposed. Footings for a building were also exposed within the trench. No archaeological features were recorded that pre-dated the insertion of the pile sheeting.
Project dates	Start: 16-01-2017 End: 17-01-2017
Previous/future work	No / Not known
Any associated project reference codes	LWST17 - Sitecode
Type of project	Recording project
Site status	None
Current Land use	Other 13 - Waste ground
Monument type	BUILDING FOOTING Modern
Monument type	PILE SHEETING Modern
Significant Finds	NONE None
Investigation type	"Field observation","Recorded Observation","Watching Brief"
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	SUFFOLK WAVENEY LOWESTOFT South Quay, Lowestoft
Postcode	NR33 OTU
Study area	20 Square metres
Site coordinates	TM 5387 9269 52.472381779543 1.738538989828 52 28 20 N 001 44 18 E Point
Height OD / Depth	Min: 2m Max: 5m

Project creators

Name of Organisation	Archaeological Project Services
Project brief originator	Suffolk County Council Archaeology Service

Project design originator	Archaeological Project Services
Project director/manager	Paul Cope-Faulkner
Type of sponsor/funding body	Developer

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Suffolk County Museums
Digital Contents	"none"
Digital Media available	"Images raster / digital photography"
Paper Archive recipient	Suffolk County Museums
Paper Contents	"none"
Paper Media available	"Context sheet", "Diary", "Drawing", "Photograph", "Plan", "Report", "Section"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Archaeological Monitoring and Recording at South Quay, Lowestoft, Suffolk
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