STOLFORD FLOOD DEFENCE SCHEME, SOMERSET

(NGR ST 2334 4586)

Results of Archaeological Monitoring of Geotechnical Ground Investigation Works – Additional Works

Prepared by:
Simon Hughes

On behalf of:
Royal HaskoningDHV

Report No: ACD1764/2/2

Date: February 2018

AC archaeology

STOLFORD FLOOD DEFENCE SCHEME, SOMERSET

NGR ST 2334 4586

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Checked by	Paul Rainbird
Approved by	Simon Hughes

Acknowledgements

The archaeological work was commissioned by Sarah Mounce, Heritage Consultant, Royal HaskoningDHV. The fieldwork was carried out by Chris Blatchford with the illustrations for this report prepared by Leon Cauchois.

The views and recommendations expressed in this report are those of AC archaeology and are presented in good faith on the basis of professional judgement and on information currently available.

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Summary

Archaeological monitoring and recording at Stolford, Somerset (ST 2334 4586) was undertaken by AC archaeology during January 2018. The work comprised the monitoring of three geotechnical trial pits associated with a proposed flood defence scheme and represented a second stage of investigations. The site is located close to an area previously identified as containing prehistoric submerged forest and peat deposits.

The geotechnical investigations exposed an approximately 3m thick series of alluvial deposits above the mudstone geology. Although these deposits contained some limited preserved organic content, there was no evidence for peat formation in the area investigated. These were then sealed by made ground deposits that were probably associated with the existing flood defences.

1. INTRODUCTION

1.1 This report sets out the results of archaeological monitoring and recording during a second stage of geotechnical investigations associated with a proposed flood defence scheme at Stolford, Somerset (ST 2334 4586). The work was required following consultation with the Senior Historic Environment Officer, Somerset County Council.

1.2 The site lies on the northeast side of Stolford and incorporates a coastal embankment, which is set back from the seafront and separates agricultural land from marshland. The area investigated was positioned on the flat marshland to the northeast of the existing embankment, which lies at around 5m aOD (above Ordnance Datum). The underlying solid geology comprises mudstone of the Langport Member, Blue Lias Formation and Charmouth Mudstone Formation, with these overlain by clay, silt and sand Tidal Flat Deposits (British Geological Society Online Viewer).

2. ARCHAEOLOGICAL BACKGROUND

2.1 The principal archaeological interest in the site was its proximity to a previously-identified submerged forest located to the northeast of the site (RHDHV 2018). During work carried out in the Bristol Channel looking at sea level change, four phases of peat formation were identified, with the inclusion of tree remains at its lowest level. These deposits, which were separated by alluvial clays, were radiocarbon dated as ranging between the Mesolithic and Neolithic periods.

2.2 The previous stage of geotechnical investigations, which were located on or adjacent to the existing embankment and consisted of two trial pits and two boreholes (Trial Pits 1 and 2 and Boreholes 1 and 2 on Fig. 2), had identified the intermittent presence of a peat-like deposit principally located in the southeast of the area investigated (Hughes 2016). Where present, the peat-like deposit overlay the mudstone or siltstone geology, with this then overlain by alluvial clays and/or storm gravels. These were then sealed by dumps associated with the existing flood defence embankment.

3. AIMS

3.1 The aims of the archaeological monitoring and recording were to identify any significant buried archaeological deposits exposed by the geotechnical work. This information will be used to determine whether a geoarchaeological assessment was appropriate.

4. METHODOLOGY

4.1 The archaeological monitoring and recording was carried out in accordance with a Written Scheme of Investigation prepared by Royal HaskoningDHV (RHDHV 2018) (Appendix 1) and with reference to the Chartered Institute for Archaeologists' *Standard and Guidance for an Archaeological Watching Brief* (2014). It comprised the machine-excavation of three trial pits (Trial Pits 3, 5 and 6 on Fig.1). Trial pit 4 was not excavated. Each trial pit measured 1.2m wide and was approximately 3m long. They were excavated to a maximum depth of 4m below existing levels.

4.2 All deposits exposed were recorded using the standard AC archaeology pro-forma recording system, comprising written and photographic records, and in accordance with AC archaeology's General Site Recording Manual, Version 2 (revised August 2012).

5. RESULTS

5.1 The results from the geotechnical trial pits were broadly consistent. These are set out in tabulated form in Appendix 2. Mudstone geology was exposed at a depth of between 3.3m to the northwest (Trial Pit 6) and 4m to the southeast (Trial Pit 3).

5.2 In Trial Pits 5 and 6 the mudstone was overlain by three alluvial silty-clays, which were present from a depth of between 0.6m and 0.8m below existing levels. In Trial Pit 3 an alluvial deposit was exposed from a depth of 1.6m below existing levels. Above this were deposits that contained plastic sheeting (contexts 301 to 303).

5.3 The alluvial deposits contained some preserved traces of organic plant material, but no clear peat formation. In Trial Pits 5 and 6, the upper and lower alluvial deposits were separated by a layer that contained gravel inclusions and lenses (504 and 603), which suggested more rapid deposition as a variation to more gradual accumulation of homogeneous silty-clays.

5.4 In Trial Pits 5 and 6, the alluvial deposits were sealed by probable dumps of made ground (201, 202 and 101), with these then overlain by topsoil (500 and 600).

6. DISCUSSION

6.1 The results from the geotechnical investigations have suggested that peat deposits were not present within the areas investigated. In each of the trial pits, the broadly consistent sequence of alluvial deposition over the solid geology, which although contained some limited organic content, was likely to represent estuarine deposition laid down in largely stable conditions.

6.2 The approximately 0.7m of overlying made ground dumps were probably associated with the establishment of the existing flood defences, and although were undated, were of possible post-medieval date. These deposits were broadly consistent between Trial Pits 5 and 6, while deeper modern deposits exposed in Trial Pit 3 were likely to represent modern intrusion.

6.3 These results are generally consistent with those recorded during much of the previous phase of geotechnical investigations. However, the organic content was perhaps lower than had been previously exposed. This was certainly the case when compared with

Borehole 1, where the previously-identified 1.6m thick peat-like deposit was present from 4.2m below the top of the existing embankment.

7. CONCLUSIONS

7.1 The second stage of geotechnical investigations have exposed an approximately 3m thick series of alluvial deposits above the mudstone geology. Although these deposits contained some limited preserved organic content, there was no evidence for peat formation in the area investigated. It is therefore considered that there is only limited palaeo-environmental and geoarchaeological potential in the area investigated.

7.2 Based on the results from the two phases of investigation, there is the potential for a peat or peat-like deposit present in the southeast portion of the scheme (Hughes 2016). However, as had been discussed in the previous report, the current proposed design for the flood defence scheme is unlikely to be of a sufficient depth to impact on it.

8. ARCHIVE AND OASIS

8.1 The paper and digital archive is currently held at the offices of AC archaeology Ltd, at 4 Halthaies Workshops, near Exeter, Devon, EX5 4LQ. The digital archive will be deposited with the Somerset Heritage Centre.

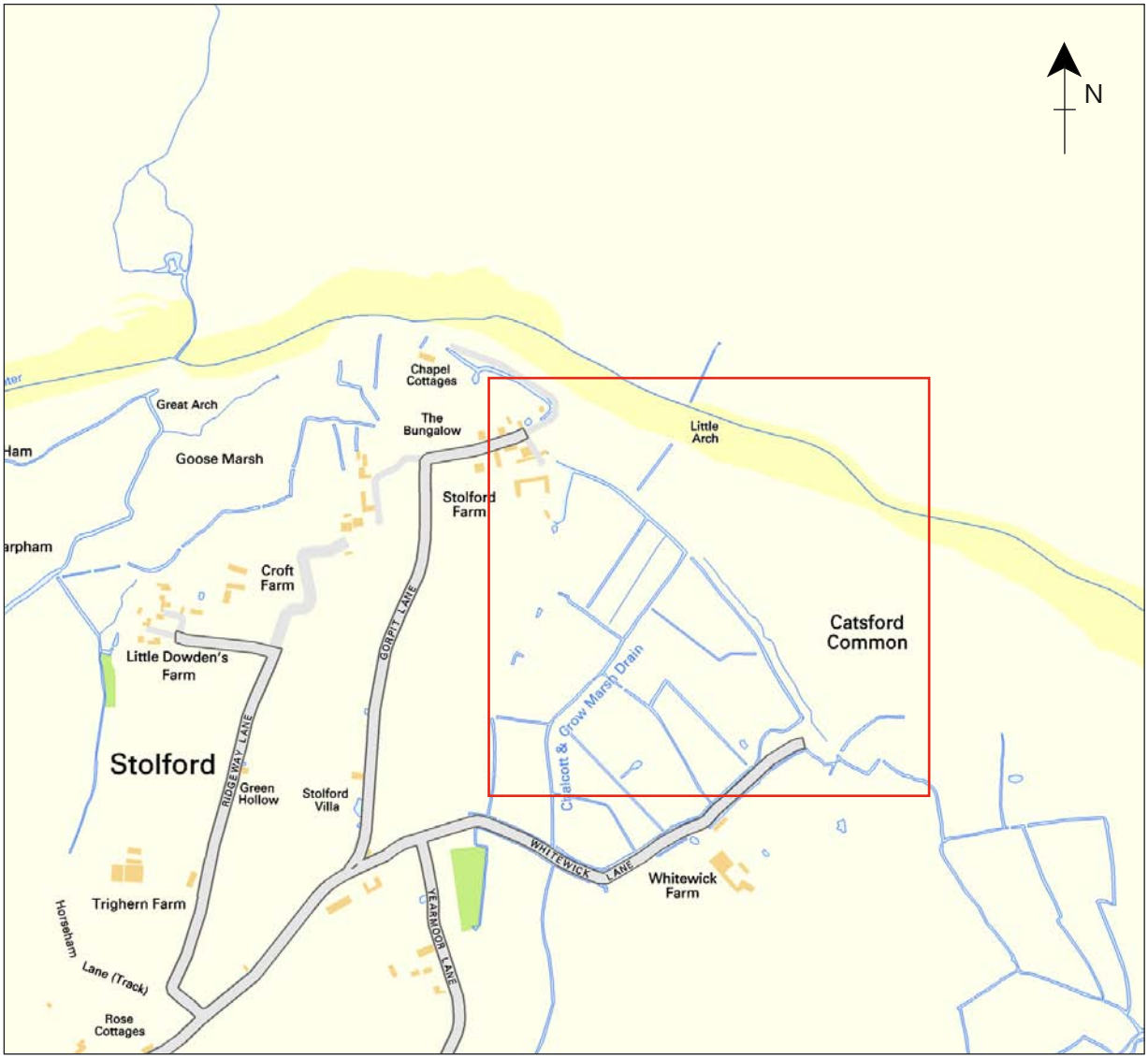
8.2 An online OASIS entry has been completed, using the unique identifier **259902**, which includes a digital copy of this report.

9. REFERENCES

British Geological Survey Online Viewer, www.bgs.ac.uk.

Hughes, S., 2016, *Coastal Flood Defences, Stolford, Somerset: Results of archaeological of geotechnical ground investigations*. Unpublished AC archaeology report, ref. ACD1373/2/3

RHDHV, 2018, Stolford FDS, *Somerset: Written Scheme of Investigation for Archaeological Monitoring and Assessment of Ground Investigation Works – Additional Works*. Unpublished Roayal HaskoningDHV document, ref. IMSW002037-TVO-XX-ZZ-RP-Y-3027



0 500m

Scale 1:10,000@A4

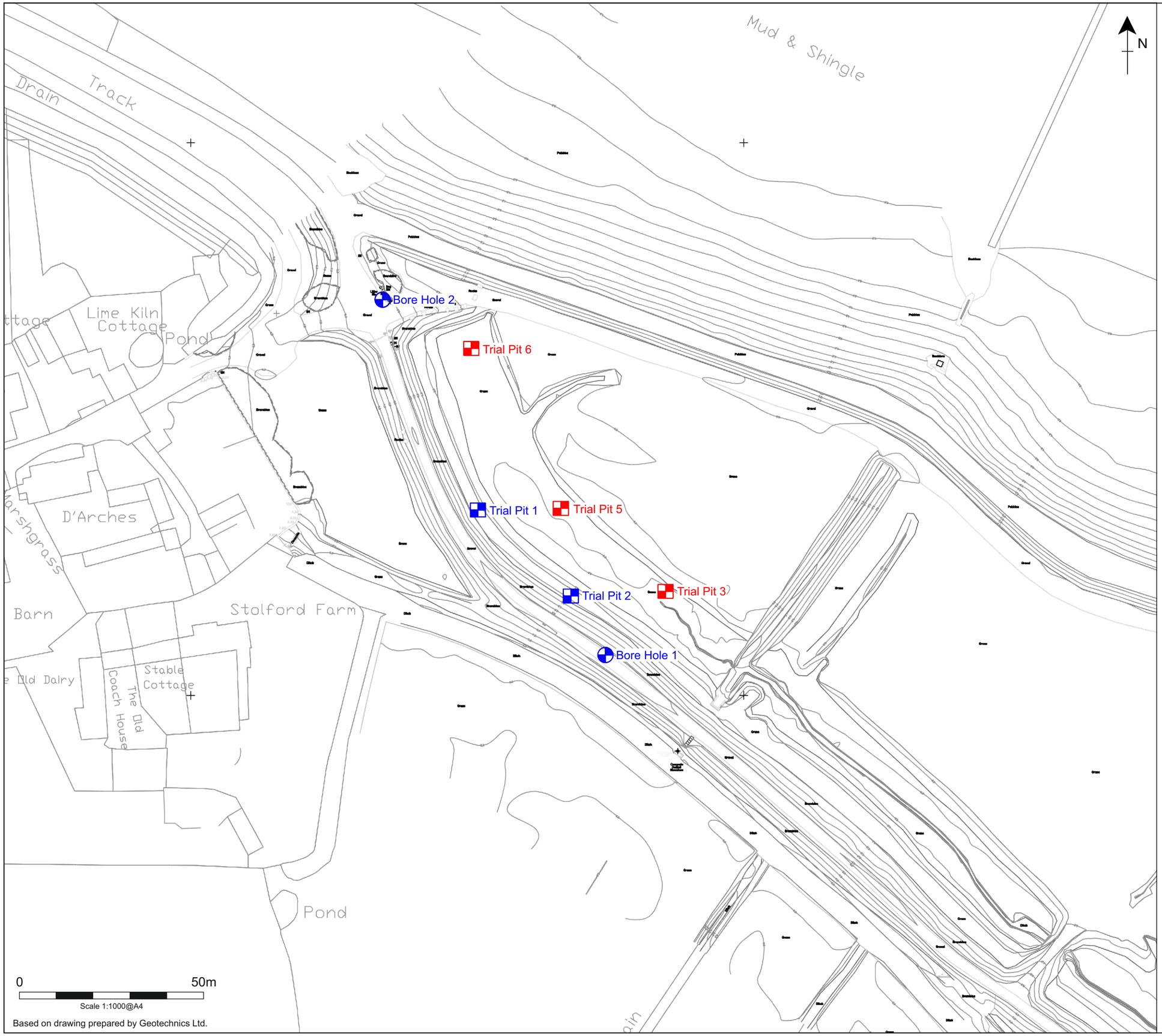
PROJECT

Stolford Flood Defence Scheme, Somerset

TITLE

Fig. 1: Site location

AC archaeology



Based on drawing prepared by Geotechnics Ltd.

Key

Trial Pit

Previous Site Investigation, 2016

Borehole

Trial Pit

PROJECT

Stolford Flood Defence Scheme, Somerset

TITLE

Fig. 2: Trial pit locations

AC archaeology

Plate 1: General working view of site looking northeast

Plate 2. Trial Pit 3, view to northwest (scale 2m)

Plate 3: Trial Pit 5, view to southwest (scale 1m)

Plate 4: Trial Pit 6, view to southeast (scale 2m)

Appendix 1

Written Scheme of Investigation

REPORT

Stolford FDS, Somerset

Written Scheme of Investigation (WSI) for Archaeological Monitoring and Assessment of Ground Investigation (GI) Works – Additional Works

Client: Environment Agency

Reference: IMSW002037-TVO-XX-ZZ-RP-Y-3027

Revision: 01/Draft

Date: 10 January 2018

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Document title:	Stolford FDS, Somerset
Document short title:	Written Scheme of Investigation
Reference:	IMSW002037-TVO-XX-ZZ-RP-Y-3027
Revision:	01/Draft
Date:	10 January 2018
Project name:	Stolford FDS
Project number:	PB4311-105-102
Author(s):	Sarah Mounce
Drafted by:	Sarah Mounce
Checked by:	Freddie Scadgell
Date / initials:	16/01/2018 / FS
Approved by:	Richard Samphier
Date / initials:	

Classification
Stolford FDS

Royal HaskoningDHV

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1 Introduction

1.1 General Project Background

Royal HaskoningDHV (RHDHV) have commissioned AC archaeology to undertake an archaeological watching brief during the excavation of an additional four ground investigation (GI) trial pits within the area of the proposed embankment works at Stolford, Somerset (**Figure 1**). AC archaeology previously undertook an archaeological watching brief on two GI trial pits and a geoarchaeological assessment of three borehole data logs in May 2016 (**AC archaeology, 2016**).

The additional GI works are being undertaken to inform the design of the toe of the new flood embankment.

The archaeological watching brief on the additional GI trial pits was recommended and requested in consultation with Steven Membery (Senior Historic Environment Officer at Somerset County Council). This Written Scheme of Investigation (WSI), therefore, sets out the requirement for an archaeological watching brief on four GI trial pits (in addition to the work undertaken in 2016) and reporting in order to provide information on the presence or absence of buried archaeological remains and, where applicable, the geoarchaeological potential of deposits.

This WSI has been prepared in accordance with the relevant standards and guidance issued by the Chartered Institute for Archaeologists (CIfA, 2014a to c) and Somerset County Council's *Heritage Service Archaeological Handbook* (SCC, 2011). This WSI has been submitted to the Senior Historic Environment Officer for approval prior to the commencement of the archaeological monitoring of GI works.

1.2 Site Description

The site incorporates the existing embankment located immediately to the north-east of the village of Stolford in Somerset, and is centred on National Grid Reference 323318 (easting) 145849 (northing). The site is located approximately 11km to the north-west of Bridgwater and approximately 2km to the east of Hinkley Point.

The length of existing embankment which is subject to improvement works measures approximately 200m in length.

The site is relatively flat at approximately 5m above Ordnance Datum. The bedrock geology is mapped as Langport Member, Blue Lias Formation and Charmouth Mudstone Formation which formed approximately 183 to 204 million years ago in the Jurassic and Triassic Periods. The local environment would have been dominated by shallow seas. Superficial deposits of Storm Beach Gravel are recorded across the location of the embankment with Tidal Flat Deposits recorded to the south, and Beach and Tidal Flat Deposits recorded to the north (BGS, 2016).

1.3 Archaeological and Historical Background

An Archaeological Desk Based Assessment was prepared to inform the Archaeology and Cultural Heritage Environmental Statement Chapter in support of the planning application for improvement works to the existing flood embankment at Stolford. The information below is a summary of the archaeological and historical background collated for the purposes of the Archaeological Desk Based Assessment (RHDHV, 2016).

The village of Stolford is the located along the Bristol Channel in the Parish of Stogursey. The existing flood embankment is located within an area mapped as Catsford Common on the 1841 Tithe Map. The 1st Edition Ordnance Survey (OS) map dated 1886 records an embankment to the south-west (landward) side of the current embankment which separates at the point where Gorpit Lane meets the marshland and forms a track leading down to the beach via Little Arch. The northern extent of the present embankment is recorded as a 'Track' on the 1970s Ordnance Survey map and connects to the existing footpath leading from Gorpit Lane down to the beach. The full length of the present embankment does not appear on the Ordnance Survey maps until the 1990s with its alignment marked as a footpath.

The earliest recorded heritage asset is located to the north-east of the site, within an area described as a 'Submarine Forest' on the 1961 Ordnance Survey map. This area of interest within the Bristol Channel has formed part of a long term research project into sea level change. The sequence as observed from borehole surveys on the modern beach show four bands of peat separated by bands of blue silty clay containing abundant macroscopic remains of phragmites (reed) in the upper levels. Tree remains were mostly found in the lowest peats however their relative absence higher up may be due to erosion. Pollen diagrams show that the peats accumulated behind a shingle ridge. A number of radiocarbon dates have been obtained ranging from 7000-3500 BP (Heyworth, A. and Kidson, C., 1982). Undated flint flakes and cores have also been discovered along the beach in the mid-20th century.

Within the village, there are three Grade II Listed Buildings dated to the late 16th and 17th centuries, and the remains of a limekiln located immediately to the west of the site.

Medieval / post-medieval ridge and furrow is recorded within the fields to the south of the eastern extent of the existing embankment and post-medieval / 20th century groynes are recorded along the beach to the north-east.

Previous ground investigations at the site comprised two trial pits located along the toe of the existing embankment which were monitored by an archaeologist, in addition a geoarchaeological assessment of two borehole data logs was also undertaken. Full details of the archaeological monitoring and assessment can be found in AC archaeology's technical report: *Coastal Flood Defences, Stolford, Somerset: Results of Archaeological Monitoring of Geotechnical Ground Investigations* (2016). The following information is a summary of the results.

Peat was most prevalent toward the southeast of the investigated area in borehole BH02, with it occurring as a less coherent and patchy presence elsewhere. The peat was sealed at c. 4.2m below ground level by alluvial clays typical of this environment.

The existing embankment material, as recorded within the boreholes, extended to a depth of c. 2.4m below existing levels. Within borehole BH01, this material sealed dark brown clay layer interpreted as a former topsoil horizon.

There is potential for geoarchaeological and palaeoenvironmental remains within the peat deposit recorded within borehole BH02; however at the depth at which it was recorded it will not be impacted by the proposed works. The archaeological / geoarchaeological potential within the alluvial strata and storm gravel deposits is considered to be low.

2 Project Objectives

The key objectives of this WSI and the archaeological monitoring outlined within it are:

- to monitor the excavation of a further four GI trial pits (ST-TP03 to ST-TP06), and to identify, investigate and record any significant buried archaeological deposits revealed at these locations along the embankment;
- to establish the presence of material/deposits of potential geoarchaeological significance and provide recommendation for any proportionate geoarchaeological assessment, if required and where fully justified;
- to produce an integrated archive for the project work and a report setting out the results of the monitoring and the archaeological conclusions that can be drawn from the recorded data; and
- to deposit the site archive with the Somerset County Museum Service and to provide information for accession to the Somerset Historic Environment Record (HER).

3 Methodology

3.1 General Approach

The archaeological watching brief of the four GI trial pits will be carried out in accordance with this WSI (see **Figure 1**), or via further instruction provided by the RHDHV Archaeologist, following consultation with the Senior Historic Environment Officer. It is proposed that this WSI will remain a live document throughout the archaeological watching brief on additional GI works.

This WSI has been prepared in accordance with the *Standard and guidance for an archaeological watching brief* (CIfA, 2014a).

The excavation of the four trial pits will be carried out with a long reach excavator fitted with a flat bladed bucket from the front face of the existing earth embankment, under the observation of a suitably qualified and experienced archaeologist.

3.2 Archaeological Recording

The project will be given a unique site code, as well as each trial pit a unique number, and this will be written on all records, drawings, as well as artefact bags and sample containers, as required. Event numbers will be obtained by the Archaeological Sub-contractor from the Somerset HER office prior to commencing work and will be used throughout the archive.

Where archaeological features or deposits are identified within the trial pits; these will be planned and recorded in accordance with relevant standards and guidance (CIfA, 2014a). A full written, drawn and photographic record will be made of any archaeological features and deposits (contexts) with each context given a unique number and described on the Archaeological Sub-contractor's standard pro-forma record sheets.

Wherever possible hand drawn plans and sections of principal deposits, and features, will be produced at an appropriate scale (normally 1:20 for plans and 1:10 for sections) with Ordnance Datum (OD) heights recorded in metres and accurately tied in to the OS National Grid. Each drawing will be given a unique

drawing number. A drawing register, with brief details, will be maintained throughout the archaeological works.

A digital photographic record will be maintained illustrating both the detail and the general context of principal deposits, and the site as a whole. A photographic register, with brief details, will also be maintained throughout the archaeological monitoring works.

Due care will be taken to identify deposits which may have environmental potential, and where appropriate, a programme of environmental sampling may be initiated in collaboration with a geoarchaeological specialist. Where appropriate, samples will be taken, processed and assessed for potential in accordance with *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (English Heritage, 2011).

In the event of archaeological deposits being found for which the resources allocated are not sufficient to support treatment to a satisfactory and proper standard or which are of sufficient significance to merit an alternative approach such as contingency investigation or physical preservation, the RHDHV Archaeologist and the Senior Historic Environment Officer will be contacted immediately. Destructive work in that area will cease until agreement has been reached on an appropriate archaeological response.

The Archaeological Sub-contractor will comply fully with the provisions of the Burials Act 1857 and the Treasure Act 1996, and the Codes of Practice referred to therein, where applicable.

Any variation to the above should be agreed with the RHDHV Archaeologist and the Senior Historic Environment Officer on site, or via other communication where a site visit is not possible, and shall be confirmed in writing.

3.3 Reporting Protocol

The reporting of the archaeological watching brief on the GI trial pits will be commensurate with the results, and will be produced in accordance with the Chartered Institute for Archaeologists' *Standard and guidance for an archaeological watching brief* (CIfA, 2014a).

The report will be available for review by the RHDHV Archaeologist within four working weeks of completing the archaeological watching brief. The report will then be submitted to the Senior Historic Environment Officer for review and approval.

As a minimum the final report will include:

- a non-technical summary;
- a brief discussion of the archaeological and planning background to the project;
- an outline description of the aims and objectives of the monitoring and the methodology used in order to achieve these;
- a descriptive text concerning the results of the monitoring;
- supporting figures at appropriate scales showing the location of the relevant trial pits, and any features / deposits located during the GI works;
- interpreted sections of any monitored intervention illustrating the locations of artefacts/ecofacts found and any sub-samples taken;
- summary tables showing deposit characteristics and depths within the relevant trial pits; and

- an interpretation and discussion of the results (where possible, indicating the location and extent of archaeological / geoarchaeological remains and deposits of archaeological / geoarchaeological potential). This will include recommendations for any subsequent stages of archaeological / geoarchaeological work, if required and justified (to be discussed and agreed between the RHDHV Archaeologist and the Senior Historic Environment Officer).

A fully collated and completed version of the report shall be included in PDF format and a digital copy of the report will be produced by the Archaeological Sub-contractor and submitted to the Senior Historic Environment Officer, via the RHDHV Archaeologist, for comment and approval. Both hard and digital version copies of the report will ultimately be lodged with the Somerset HER. Upon request, a project CD shall also be submitted containing image files in JPEG or TIFF format, digital text files shall be submitted in Microsoft Word format, and figures and drawings in recent/compatible version AutoCAD and/or ArcGIS format.

At the start of work (immediately before the GI works commence) an OASIS online record (http://ads.ahds.ac.uk/project/oasis/) must be initiated and main areas completed on details, location and creators forms by the Archaeological Sub-contractor. All parts of the OASIS online form must be completed for submission to the Somerset HER. This should include an uploaded .pdf version of the entire report (a paper copy should also be included with the archive).

3.4 Archive Preparation and Deposition

The archive will be prepared to the standards set out in *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (Historic England, 2016). The archive will consist of the documentary and digital records and any archaeological material generated during the archaeological watching brief.

The Archaeological Sub-contractor will be responsible for identifying any specific requirements or policies of the museum/records office in respect of the archive, and for adhering to those requirements. The site archive will be prepared for long-term storage, as appropriate, in accordance with *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation* (Archaeological Archives Forum, 2007) and *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (CIfA, 2014c). It is proposed that the entire archive (including any finds) will be deposited with the Somerset County Museum Services, to be agreed with the Senior Historic Environment Officer and the Client.

Any finds must be appropriately conserved and stored in accordance with UK Institute of Conservators Guidelines (Walker, 1990). The finds, as a permanent part of the site archive, should be deposited with the Somerset County Museum Services. If this is not possible for all or any part of the finds archive, then provision must be made for additional recording (e.g. photography, illustration, analysis), as appropriate. If necessary, the paper records of the site archive will be security microfilmed prior to deposition, this requirement would be confirmed with the Senior Historic Environment Officer and the Client.

The Archaeological Sub-contractor will liaise with the Client to address the transfer of ownership and any copyright issues.

4 Monitoring, Progress Reporting, Site Visits

If required, arrangements for the Senior Historic Environment Officer to visit the site and monitor the work will be made through the RHDHV Archaeologist. Notification of the start date will be made to the Senior Historic Environment Officer by the RHDHV Archaeologist.

The Principal GI Contractor and/or RHDHV will provide the Archaeological Sub-contractor with a minimum of one week's notice of the commencement of fieldwork.

The Archaeological Sub-contractor will only accept formal instruction on matters of an archaeological / geoarchaeological nature from RHDHV. If any problems are encountered during the watching brief these will be reported to RHDHV.

Any variations to the GI locations caused by ecological constraints, vegetation cover or ground conditions will be agreed and approved by RHDHV, and communicated to the Senior Historic Environment Officer.

5 Confidentiality and Publicity

In the event of any enquiries by the public, the Archaeological Sub-contractor will refer all enquiries to the Principal GI Contractor and RHDHV without making any unauthorised statements or comments.

The Archaeological Sub-contractor will not disseminate information or images associated with the project for publicity or information purposes, without the permission of RHDHV and ultimately the Environment Agency.

6 Copyright

The Archaeological Sub-contractor shall assign copyright in all reports and documentation/images produced as part of this project to RHDHV. The Archaeological Sub-contractor shall retain the right to be identified as the author/originator of the material.

The Archaeological Sub-contractor may apply in writing to use/disseminate any of the project archive or documentation (including images), and any such permission should not be unreasonably withheld.

7 Resources and Timetable

All archaeological personnel involved in the watching brief (monitoring activity) should be suitably qualified and experienced professionals.

It is currently anticipated that the archaeological watching brief on the GI trial pits will commence week beginning 22nd January 2018.

8 Health and Safety

The Archaeological Sub-contractor will adhere to risk assessments and any project specific health and safety plan prepared by RHDHV and/or the Principal GI Contractor. The Archaeological Sub-contractor will prepare and submit a task specific Risk Assessment prior to the commencement of fieldwork for approval by RHDHV and Principal GI Contractor.

As a minimum the following PPE will be worn at all times on site:

- High visibility vest / jacket;
- Approved work wear (e.g.: overalls/trousers/long-sleeved tops);
- Hard hat and;
- Safety boots with reinforced toes and mid-sole, with ankle support.

Where appropriate and necessary, additional PPE including safety glasses and gloves will be worn in accordance with any additional health and safety instructions given by RHDHV and/or the Principal GI Contractor.

In undertaking the monitoring work the Archaeological Sub-contractor is to abide by all statutory provisions and by-laws relating to the work in question, especially the Health and Safety at Work Act 1974.

The Principal GI Contractor shall be responsible for identifying any UXO, buried or overhead services and taking the necessary precautions to avoid damage to such services, prior to the commencement of the additional GI works.

No lone working will be permitted at any time.

9 General Provisions

No variation from, or changes to, the WSI will occur except by prior agreement with the RHDHV and Principal GI Contractor. The Senior Historic Environment Officer will be consulted with regards to any required archaeological changes of a 'significant' nature.

The Archaeological Sub-contractor shall, where under his/her direct control, leave work sites in a tidy and workmanlike condition and remove all materials brought onto the site specific to the archaeological monitoring, including any grid pegs or other markers.

Access for vehicles, parking and use of site welfare facilities shall be agreed between the Principal GI Contractor and the Archaeological Sub-contractor prior to entering the site.

10 References

AAF, (2007), *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation*, Archaeological Archives Forum.

AC archaeology (2016) *Coastal Flood Defences, Stolford, Somerset. Results of Archaeological Monitoring of Geotechnical Ground Investigations*. Unpublished report ref. ACD1373/2/3

BGS (2016) *Geology of Britain Viewer*. British Geological Survey Available at URL: http://mapapps.bgs.ac.uk/geologyofbritain/home.html. Accessed 19/02/2016.

Chartered Institute for Archaeologists, (2014a), *Standard and guidance for an archaeological watching brief*, CIfA.

Chartered Institute for Archaeologists, (2014b), *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*, CIfA.

Chartered Institute for Archaeologists, (2014c), *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, CIfA.

English Heritage, (2011), *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation (second edition)*, English Heritage (51644).

Heyworth, A and Kidson, C. (1982), Sea-level changes in southwest England and Wales. In *Proceedings of the Geologists' Association*, 93 (1), 91–111.

Historic England, (2016) *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide*, Historic England (HEAG024).

RHDHV, (2016), *Stolford Flood Defence Scheme, Somerset: Archaeological Desk Based Assessment*, Unpublished report ref. PB4311_SFDS_ADBA

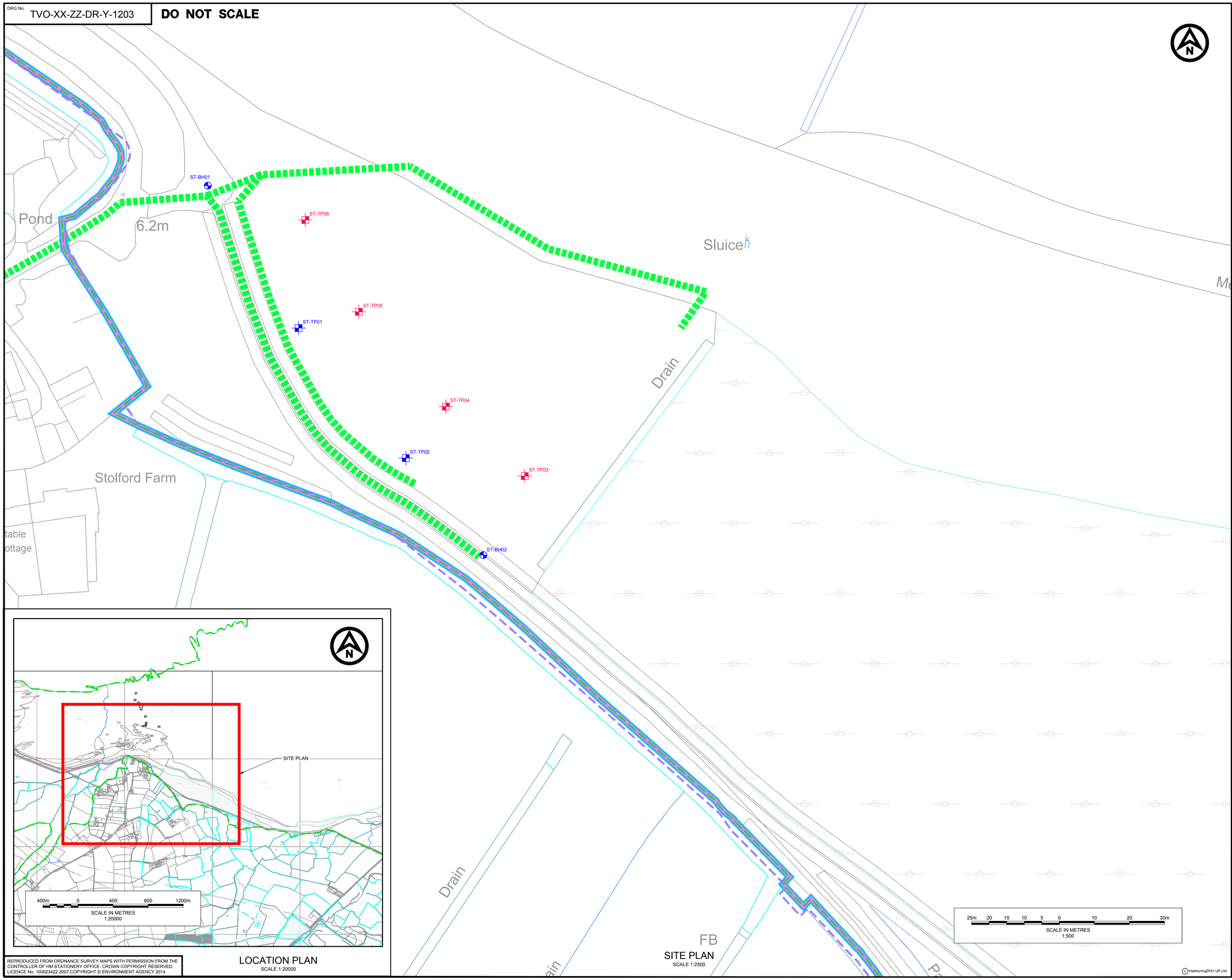
Somerset County Council, (2011), *Heritage Service Archaeological Handbook* (SCC).

Walker, K., (1990), *Guidelines for the Preparation of Excavation Archives for Long-term Storage*, UKIC, London.

11 Appendix – Figure 1

DRG No. TVO-XX-ZZ-DR-Y-1203

DO NOT SCALE



LOCATION PLAN
SCALE 1:20000

SITE PLAN
SCALE 1:2500

25m 20 15 10 5 0 10 20 30m
SCALE IN METRES
1:500

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO CHART DATUM (CD) UNLESS NOTED OTHERWISE.
3. ALL COORDINATES ARE IN METRES RELATIVE TO WORLD GEODETIC SYSTEM 1984 (WGS84) UNIVERSAL TRANSVERSE MERCATOR (UTM) ZONE XXX.
4. ALL MATERIALS AND WORKMANSHIP WILL BE AS DEFINED IN THE SPECIFICATION UNLESS NOTED OTHERWISE.

LEGEND

- ST-BH01 — PROPOSED BOREHOLE
- ST-TP01 — PROPOSED TRIAL PIT
- SSSI BOUNDARY
- SAC BOUNDARY
- SPA BOUNDARY
- RAMSAR BOUNDARY
- EXISTING BOREHOLE
- EXISTING TRIAL PIT

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS:

CONSTRUCTION:
- POOR OR WATERLOGGED GROUND CONDITIONS AT THE TOE OF THE EMBANKMENT
- EXPOSURE TO WAVE OVERTOPPING DURING EXTREME EVENTS
- NARROW ACCESS ALONG EMBANKMENT WITH LIMITED OPPORTUNITY FOR TURNING VEHICLES
- WORKING ON STEEP SHINGLE BANKS WITH SLOPE INTO WATER AT THE BOTTOM
- LIMITED AND DIFFICULT ACCESS TO COMMON LAND AT TOE OF EMBANKMENT
- INTERACTION WITH PUBLIC ALONG FOOTPATH OPERATIONS WITHIN AN SPA / SAC SALTMARSH

MAINTENANCE /OPERATION:
N/A AT THIS TIME (GROUND INVESTIGATION WORKS ONLY)

DEMOLITION:
N/A AT THIS TIME (GROUND INVESTIGATION WORKS ONLY)

REV	DATE	DESCRIPTION	BY	CHK	APP
T2	23-11-17	FIT FOR TENDER	ND	JHG	
W1.1	29-04-16	FIT FOR TENDER	GG	PT	
W1.0	10-03-16	FIT FOR TENDER	GG	RG	

REVISIONS

PROJECT
SOMERSET PACKAGE
STOLFORD FLOOD
DEFENCE SCHEME

CLIENT
Environment Agency

ENVIRONMENT AGENCY REF.
IMSW002037

TITLE
STOLFORD
FLOOD DEFENCE SCHEME
GROUND INVESTIGATION PLAN

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DRAWN	CHECKED	APPROVED
ND		

DATE	SCALE	ROLE	STATUS
NOV'17	AS SHOWN	Y	D2

DRAWING No.	REVISION
TVO-XX-ZZ-DR-Y-1203	T2

Appendix 2

Tabulated Context Descriptions by Trial Pit

APPENDIX 2: TABULATED CONTEXT DESCRIPTIONS BY TRIAL PIT

Trial Pit 3		**Length** 3m	**Width** 1.2m	**Alignment** NE-SW
Context	**Description**	**Depth**	**Interpretation**	
300	Mid greyish-brown silty-clay	0-0.2m	Topsoil	
301	Mid greyish-brown sandy-clay	0.2-0.4m	Made ground	
302	Dark greyish brown clay	0.4-0.9m	Made ground	
303	Light greyish-brown silty-clay	0.9-1.6m	Made ground	
304	Light grey silty-clay with occasional organic flecking	1.6-4m	Alluvium	
305	Mudstone	4m+	Bedrock	

Trial Pit 5		**Length** 3m	**Width** 1.2m	**Alignment** NE-SW
Context	**Description**	**Depth**	**Interpretation**	
500	Mid brown silty-clay	0-0.07m	Topsoil	
501	Dark grey silty-clay	0.07-0.6m	Made ground	
502	Mid greyish-brown sandy clay	0.6-0.8m	Made ground	
503	Dark greyish-brown silty-clay	0.8-1.6m	Alluvium	
504	Mid greyish-brown silty-clay with lenses of gravels and cobbles	1.6-2.2m	Alluvium	
505	Dark bluish-grey silty-clay with occasional organic flecking	2.2-3..8m	Alluvium	
506	Mudstone	3.8m+	Bedrock	

Trial Pit 6		**Length** 3m	**Width** 1.2m	**Alignment** NE-SW
Context	**Description**	**Depth**	**Interpretation**	
600	Mid brown silty-clay	0-0.2m	Topsoil	
601	Mid greyish-brown sandy clay with common large stone inclusions	0.2-0.6m	Made ground	
602	Mid greyish-brown silty-clay	0.6-0.8m	Alluvium	
603	Dark brownish-grey silty-clay with occasional gravels and cobbles	0.8-1.7m	Alluvium	
604	Dark bluish-grey silty-clay with occasional organic flecking	1.7-3.3m	Alluvium	
605	Mudstone	3.3m+	Bedrock	

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