APPENDIX A

Explanation of Phased Approach to Archaeological Investigation and Mitigation

EXPLANATION OF PHASED APPROACH TO ARCHAEOLOGICAL INVESTIGATION AND MITIGATION

Stage 1: Route Corridor Investigation Study

An appraisal of archaeological potential

Stage 2: Desk-based Assessment

A thorough desk based synthesis of available information

Aerial photographic study:

Identification and mapping of palaeochannels from aerial photographs should be undertaken as part of the desk-based assessment.

Stage 3: Field Surveys

Field reconnaissance survey

This is a visual inspection of the proposed pipeline route, in order to:

- locate and characterise archaeology represented by above ground remains (e.g. earthworks and structures); and
- record the nature and condition of existing field boundaries crossed by the route, to establish their potential antiquity.
- A walkover of the entire pipeline route should normally take place.

Fieldwalking survey

The distribution of finds found by fieldwalking can indicate areas of archaeological activity, which are not represented by above ground remains.

A programme of structured fieldwalking should normally take place across all available arable land to recover archaeological artefacts. A minimum of five transects at 10m separation based upon the centreline of the proposed pipeline should normally be walked.

Geophysical survey

Geophysical survey methods are non-intrusive and can detect and precisely locate buried archaeological features.

Magnetometry is the most cost-effective technique for large scale surveys. *Recorded* magnetometer survey, supplemented by background magnetic susceptibility survey is normally recommended.

Unrecorded magnetometer scanning is not recommended because it requires spontaneous, subjective interpretation as the unrecorded scanning survey progresses. This method does not therefore provide a secure basis for eliminating areas that produce negative results from further consideration.

Auger survey

Geotechnical borehole survey supplemented by hand auger survey could:

- generate stratigraphic profiles and establish the depth of alluvium;
- look for 'islands' of solid geology which are elevated in comparison with their contemporary landscape;
- look for former river channels:
- look for evidence of buried land surfaces;
- assess the viability of using targeted magnetometer survey on the floodplain.

Ideally, an environmental archaeologist would consult with the geotechnical team in order to develop a strategy which would enable the opportunistic and immediate examination of the geotechnical team's soil cores, in conjunction with a *hand auger survey* tailored to meet archaeological objectives listed above.

Radiocarbon dating and palaeo-environmental assessment

Soil samples recovered may require radiocarbon dating and assessment of potential for preservation of palaeo-environmental important remains.

Stage 4: Evaluation

Field evaluation should normally take place at the sites of positive findings made during earlier stages of archaeological assessment and field survey, which it may not be possible or desirable to avoid. Evaluation might involve machine-excavated trenches, hand-dug test-pits and/or hand auguring. The objectives are to confirm the presence or absence of archaeological remains, to determine their character, extent, date and state of preservation, and to produce a report on the findings. The choice of technique(s) will depend upon site-specific factors.

Stage 5: Mitigation

Excavation

It may not be possible or desirable to avoid significant archaeological sites identified by previous survey work and/or evaluation. Ideally, *excavation* of such sites should take place in advance of construction. Excavation would involve machine-stripping of limited, open areas, followed by archaeological investigation. The objectives would be to obtain a full record of the archaeological remains prior to construction, and to produce a report on the findings.

Earthwork survey

This work is undertaken to produce a topographic record of extant earthworks. These sites might include known earthworks identified by the Desk based Assessment, or previously unknown earthworks found during the Field Reconnaissance Survey. The sites may include settlement earthworks or agricultural earthworks (such as, ridge and furrow and lynchets).

Two methods are commonly employed; plane table survey which obtains a hachure survey, or total-station theodolite survey which produces a close contour plot.

Stage 6: Watching Brief

A permanent-presence watching brief will be required during all ground disturbing activities of the construction phase of the project, to record unexpected discoveries, and known sites which did not merit investigation in advance of construction. The main phases of monitoring for the pipeline will be topsoil stripping, trench excavation and the opportunistic observation of the pre-construction drainage. The objectives are to obtain a thorough record of any archaeological remains found during construction, and to produce a report on the findings.

Contingencies should allow for salvage excavation of significant, unexpected archaeological sites found during construction.

Stage 7: Archive, Report and Publication

On completion of all archaeological fieldwork associated with the pipeline scheme, a comprehensive programme of post-excavation assessment, analysis, reporting and publication will be implemented. The post-excavation programme will be subject to a written scheme of investigation to be agreed in advance with the Senior Planning Archaeologists and will be in line with 'The Management of Archaeological Projects', English Heritage 1991.

APPENDIX B

Statutory and Non-Statutory Protection of Archaeological Sites

STATUTORY AND NON-STATUTORY PROTECTION OF ARCHAEOLOGICAL SITES

Legislation

Ancient Monuments and Archaeological Areas Act 1979 (as amended by the National Heritage Act of 1983)

Under this Act, the Secretary of State, in consultation with English Heritage, maintains a schedule of monuments deemed to be of national importance. In practice, most Scheduled Monuments fall into the category of Scheduled Ancient Monuments (SAMs), defined as 'any Scheduled Monument and any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it' (Section 61 [12]). Scheduled Monuments also includes Areas of Archaeological Importance (AAIs). Only portable items are beyond the protection of scheduling.

The present schedule of just over 13,000 sites has been compiled since the first statutory protection of monuments began in 1882. The criteria for scheduling have been published but there are many sites of schedulable quality, which have not yet received this status.

Any action which affects the physical nature of a monument requires Scheduled Monument Consent, which must be sought from the Secretary of State. Consent may be granted after a detailed application to the Secretary of State. Failure to obtain Scheduled Monument Consent for any works is an offence, the penalty for which may be a fine, which may be unlimited.

The National Heritage Act 2002

This enables English Heritage to assume responsibilities for maritime achaeology in English coastal waters, modifying the agency's functions to include securing the preservation of ancient monuments in, on, or under the seabed, and promoting the public's enjoyment of, and advancing their knowledge of ancient monuments, in, on, or under seabed. Initial duties will include those formerly undertaken by the Government's Department of Culture, Media and Sport (DCMS), in respect to the administration of The Protection of Wrecks Act 1973.

http://accessibility.english-heritage.org.uk/default.asp?WCI=Node&WCE=8197

Planning (Listed Buildings and Conservation Areas) Act, 1990

Listed Buildings and Conservation areas benefit from statutory protection under this Act.

Listed buildings

Under this Act, the Secretary of State, in consultation with English Heritage, is responsible for the compilation of the List of Buildings (and other structures) of Special Architectural or Historic Interest. Listing gives buildings important statutory protection.

Buildings are classified in grades to show their relative importance as follows:

- Grade I Buildings of exceptional interest
- Grade II* Particularly important buildings of more than special interest
- Grade II Buildings of special interest, which warrant every effort being made to preserve them

The grading of listed buildings is non-statutory; the awarding of grades is simply a tool to assist in the administration of grants and consents. The list is used by local planning authorities in conjunction with PPG 15 Planning and the Historic Environment as the basis upon which decisions on the impact of development are made on historically and architecturally significant buildings and their settings.

Any work that involves the demolition, alteration or extension of a listed building (or its curtilage) requires listed building consent, which must be sought from the Secretary of State, usually via the local planning authority. Consent may be granted after a detailed application to local planning authority or the Secretary of State. Carrying out work on a listed building (or its curtilage) without consent is an offence and can be punishable by an unlimited fine.

Conservation Areas

There are activities that may be considered inappropriate within or adjacent to Conservation Areas; for example by disrupting important views, or generating excess traffic. Development within a Conservation Area is likely to be resisted if considered inappropriate in terms of scale, setting, massing, siting, and detailed appearance in relation to surrounding buildings and the Conservation Area as a whole. High standards of design are expected in all Conservation Areas, whether for new or replacement buildings, extensions, alterations or small scale development. Planning permission is normally resisted for small scale development which could lead to a number of similar applications, the cumulative effect of which would be detrimental to the character and appearance of the area. Demolition of unlisted structures within Conservation Areas is usually only permitted where removal or replacement would preserve or enhance the character and appearance of the area, or where the structure is beyond economic repair. Development which would adversely affect the character or appearance of buildings of local interest is likely to be resisted. Demolition would almost certainly only be permitted in exceptional circumstances.

The Protection of Military Remains Act 1986

This Act makes it an offence to interfere with the wreckage of any crashed, sunken or stranded military aircraft or designated vessel without a licence. This is irrespective of loss of life or whether the loss occurred during peacetime or wartime. All crashed military aircraft receive automatic protection, but vessels must be individually designated. Currently, there are 21 vessels protected under this Act, both in UK waters and abroad, and it is likely that the Ministry of Defence will designate more vessels in the future.

There are two levels of protection offered by this Act, designation as a Protected Place or as a Controlled Site.

Protected Places include the remains of any aircraft which crashed while in military service or any vessel designated (by name, not location) which sank or stranded in military service after 4th August 1914. Although crashed military aircraft receive automatic status as a Protected Place, vessels need to be specifically designated by name. The location of the vessel does not need to be known for it to be designated as a Protected Place.

Diving is not prohibited on an aircraft or vessel designated as a Protected Place. However, it is an offence to conduct unlicensed diving or salvage operations to tamper with, damage, remove or unearth any remains or enter any hatch or other opening. Essentially, diving is permitted on a 'look but don't touch' basis only.

Controlled Sites are specifically designated areas which encompass the remains of a military aircraft or a vessel sunk or stranded in military service within the last two hundred years. Within the controlled site it is an offence to tamper with, damage, move or unearth any

remains, enter any hatch or opening or conduct diving, salvage or excavation operations for the purposes of investigating or recording the remains, unless authorised by licence. The effectively makes diving operations prohibited on these sites without a specific licence.

The Protection of Wrecks Act 1973

The Protection of Wrecks Act is in two sections. Section 1 provides protection for designated wrecks which are deemed to be important by virtue of their historical, archaeological or artistic value. Approximately 56 wrecks around the coast of the UK have been designated under this section of the Act. Each wreck has an exclusion zone around it and it is an offence to tamper with, damage or remove any objects or part of the vessel or to carry out any diving or salvage operation within this exclusion zone. Any activities within this exclusion zone can only be carried out under a licence granted by the Secretary of State, who receives advice from the Advisory Committee on Historic Wreck Sites (ACHWS). There are four levels of licences: a visitor licence, a survey licence, a surface recovery licence and an excavation licence.

Administration of this Act and associated licenses is the responsibility of English Heritage in England, Historic Scotland in Scotland, Cadw: Welsh Historic Monuments in Wales and the Environment and Heritage Service in Northern Ireland. Any of these organisations will be able to provide more in depth information (see useful addresses).

Section 2 of the Protection of Wrecks Act provides protection for wrecks that are designated as dangerous by virtue of their contents. Diving on these wrecks is strictly prohibited. This section of the Act is administered by the Maritime and Coastguard Agency through the Receiver of Wreck.

The Town and Country Planning Act 1990

Section 54a of the Act requires planning decisions to be taken in accordance with policies contained in the appropriate Local Development Plan. Material considerations, including national guidelines, should also be taken into account as they provide an overall context for the consideration of planning applications and set out Government policy.

Regulations

Hedgerow Regulations 1997 (Section 97 of the Environment Act 1995)

Under these Regulations, prior to work, which may damage or remove hedgerows, it is required to categorise the hedgerows according to a number of historical and ecological criteria which are laid out in the Regulations. District Councils are required to administer the Regulations and to maintain a map of hedgerows deemed to be 'important' under the criteria of the Regulations.

Under the regulations, a hedgerow is regarded as 'important' on archaeological or historical grounds if it:

- marks a pre-1850 parish or township boundary;
- incorporates an archaeological feature;
- is part of, or associated with, an archaeological site
- marks the boundary of, or is associated with, a pre-1600 estate or manor; or
- forms an integral part of a pre-Parliamentary enclosure field system (DOE, 1997).

An archaeological site is defined as a Scheduled Ancient Monument (SAM) or a site recorded in a County Sites and Monuments Record (SMR);

The Hedgerow Regulations define a pre-Parliamentary enclosure field system as any field boundary predating the *General Enclosure Act of 1845*.

The implication of this legislation is that virtually all hedgerows can be classified as being 'important' for historical purposes under the Hedgerows Regulations 1997.

The historical criteria, however, are presently under review.

Guidance Notes

Central government guidance on archaeological remains and the built historic environment include:

- Planning Policy Guidance Note 15 (PPG 15): Planning and the Historic Environment (1994)
- Planning Policy Guidance Note 16 (PPG 16): Archaeology and Planning (1990).

The key policy statements in PPG16 are that "where nationally important archaeological remains, whether Scheduled or not, and their settings, are affected by proposed development there should be a presumption in favour of their physical preservation".

For less important sites, PPG16 states that, "the desirability of preserving a scheduled monument and its setting is a material consideration in determining planning applications whether that monument is scheduled or unscheduled".

The County Sites and Monuments Record is used in conjunction with PPG 15 and PPG 16, as the basis upon which decisions on the archaeological impact of development are made. The basic premise of the Guidance is that archaeological deposits are a finite non-renewable resource that must be protected. It also points out the unknown nature of archaeological deposits and allows Planning Authorities to include within planning conditions, archaeological evaluation, to determine the full impact on the archaeological resource. The evaluation can be required prior to determination of the planning decision. This evaluation may detail any measures that can be implemented to mitigate the damage and help to decide whether excavation is required of the threatened archaeological remains.

Structure Plan and Local Plan Protection

Scheduled and non-scheduled sites of archaeological importance, listed buildings, and historic parks and gardens and their settings are also protected under policies contained within the relevant Structure Plan and Local Plans for the area:

- Norfolk Structure Plan (Adopted October 1999)
- East of Englad Structure Plan, draft

Guidance for sites having no statutory protection

The Register of Parks and Gardens of Special Historic Interest in England

This register was compiled by English Heritage between 1984 and 1988 and is maintained by them. Parks and gardens of special historic interest have no statutory protection.

Listed parks and gardens are classified in grades to show their relative importance as follows:

- Grade I –international historic interest
- Grade II* exceptional historic interest

• Grade II –national historic interest

The listing and grading process is designed to draw attention to important historic parks and gardens as an essential part of the nation's heritage for use by planners, developers, statutory bodies and all those concerned with protecting the heritage. However, no new controls apply to parks and gardens in the register, nor are existing planning controls to listed building affected in any way. It follows that structures such as fountains, gates, grottos and follies within gardens can also be listed as 'Listed Buildings' and whole parks and gardens can also be scheduled as Ancient Monuments.

Any work that affects the physical nature of registered parks and gardens requires consultation with the Garden History Society. English Heritage should be consulted in the case of those designated as Grade I or Grade II*.

The Register of Historic Battlefields

This register is maintained by English Heritage and currently includes forty sites. Registered battlefields have no statutory protection. Planning Policy Guidance note 15, however, offers a degree of protection to many of the known battle sites within England.

APPENDIX C

Archaeological Constraints Gazetteer

ARCHAEOLOGICAL CONSTRAINTS GAZETTEER

Reference	Source	XRef	Description	Period	Importance	Impact	Significance	NGR	Figures
DBA:AA	T. 1838		Lake	Post-medieval	D	none	n/a	567848 313445	3
DBA:AB	T. 1838		Field boundary	Post-medieval	D	none	n/a	568116 314111	3
DBA:AC	T. 1838		Field boundary	Post-medieval	D	none	n/a	568249 314188	3
DBA:AD	T. 1838		Field boundary	Post-medieval	D	none	n/a	568327 314233	3
DBA:AE	T. 1838		Field boundary	Post-medieval	D	none	n/a	568466 314356	3
DBA:AF	T. 1838		Field boundary	Post-medieval	D	none	n/a	568584 314466	3
DBA:AG	T. 1838		Field boundary	Post-medieval	D	none	n/a	568822 314540	3
DBA:AH	T. 1838		Field boundary	Post-medieval	D	none	n/a	569037 314557	3
DBA:AI	T. 1838	Т. 1838	Middleton and Wormegay parish boundary	Undetermined	D	none	n/a	566429 313872	3
DBA:AJ	T. 1838	T. 1838	Middleton and East Winch parish boundary	Undetermined	D	none	n/a	567909 314322	3
DBA:AK	FRS	T. 1838, T. 1838	East Winch and Wormegay historic parish boundary	Undetermined	D	-d min	low	568578 313655	3
DBA:AL	FRS	Т. 1838	East Winch and Pentney historic parish boundary	Undetermined	D	-d min	low	572521 316788	2, 3

Reference	Source	XRef	Description	Period	Importance	Impact	Significance	NGR	Figures
DBA:BC	OS. 1906		Building	Post-medieval	D	none	n/a	569016 314370	3
DBA:BD	AP. 03		Possible vegetable garden	Post-medieval	D	none	n/a	570241 314215	2
DBA:BE	AP. 03		Pits	Undetermined	D	none	n/a	570186 314317	2
DBA:BF	AP. 04		Possible enclosures	Undetermined	D	none	n/a	570975 315167	2
DBA:BG	AP. 05	AP. 04, AP. 15	Field boundaries and possible drains	Undetermined	D	none	n/a	571292 315249	2
DBA:BH	AP. 05		Ditch	Undetermined	D	none	n/a	571274 315402	2
DBA:BI	AP. 04	AP. 15	Maculars	Undetermined	D	none	n/a	571254 315451	2
DBA:BJ	AP. 07		Pit	Undetermined	D	none	n/a	571567 315356	2
DBA:BK	AP. 08	AP. 09	Field boundaries	Undetermined	D	-d min	low	568949 314117	3
DBA:BL	AP. 08	AP. 09, SP. 10	Flooding, palaeochannels	Undetermined	U	-d min	n/a	568591 314133	3
DBA:BM	AP. 08		Field boundaries	Undetermined	D	-d min	low	568663 313799	3
DBA:BN	AP. 08	FSU:012	Flooding, palaeochannels	Undetermined	U	-d min	n/a	567851 313926	3
DBA:BO	AP. 08		Trackway and two buildings	Undetermined	D	-d maj	low	568532 313889	3
DBA:BP	AP. 08		Field boundaries or drains	Undetermined	D	-d min	low	568748 313716	3

Reference	Source	XRef	Description	Period	Importance	Impact	Significance	NGR	Figures
DBA:BQ	AP. 08		Enclosure	Undetermined	D	none	n/a	568418 313790	3
DBA:BR	AP. 10		Enclosure	Undetermined	D	none	n/a	568099 313898	3
DBA:BS	AP. 11		Possible ditch	Undetermined	D	none	n/a	568038 313716	3
DBA:BT	AP. 11		Pits	Undetermined	D	none	n/a	568677 313463	3
DBA:BU	AP. 12		Possible ring ditch and defences	Undetermined	D	none	n/a	568945 314281	3
DBA:BV	AP. 09		Ring ditch	Undetermined	D	none	n/a	568592 314378	3
DBA:BW	AP. 13		Possible pit or pond	Undetermined	D	none	n/a	569354 314499	3
DBA:BX	AP. 08		Flooding and drainage channels	Undetermined	D	-d min	low	569605 314252	3
DBA:BY	AP. 08		Enclosure	Undetermined	D	none	n/a	569429 314331	3
DBA:BZ	AP. 08		Possible enclosure	Undetermined	D	none	n/a	569424 314130	3
DBA:CA	AP. 08		Circular enclosure	Undetermined	D	none	n/a	569417 314131	3
DBA:CB	OS. 1891		Quarry	Post-medieval	D	-unc	unknown	569824 314397	3
DBA:CC	AP. 13		Pits	Undetermined	D	none	n/a	570064 314760	2, 3
DBA:CD	AP. 08		Pond	Undetermined	D	-d sev	medium	570425 314648	2
DBA:CE	AP. 08		Field boundary	Undetermined	D	-d maj	low	570299 314594	2

Reference	Source	XRef	Description	Period	Importance	Impact	Significance	NGR	Figures
FSU:005	GEO		Stream channel	Undetermined	U	none	n/a	571341 315097	2
FSU:006	GEO		2 parallel ditches	Undetermined	D	-d sev	medium	571101 314906	2
FSU:007	GEO		Ditches and pits	Undetermined	D	-d sev	medium	570634 314690	2
FSU:008	GEO		Ring ditch	Undetermined	D	-d sev	medium	568913 314006	3
FSU:009	GEO		Ridge and furrow	Medieval	D	-d sev	low	568725 313943	3
FSU:010	GEO		Ditch and pits	Undetermined	D	-d sev	medium	568309 313867	3
FSU:023	GEO		Probable CBM concentration	Undetermined	D	none	n/a	567678 314005	3
FSU:025	FRS	T. 1838, T. 1838	Historic field boundary	Post-medieval	D	none	n/a	568005 314019	3
FSU:097	MDS		Coin and pottery	Roman	D	none	n/a	571472 315406	2
FSU:098	MDS		Two brooches	Roman	D	-d min	low	570838 314761	2
HER MNF11760	NCC	AP. 06	Cropmark of rectangular enclosure, field boundaries and track or drain	Undetermined	D	none	n/a	571539 315446	2
HER MNF17283	NCC		Chipped flint adze	Neolithic	D	none	n/a	567980 313760	3
HER MNF17285	NCC		Drainage pump	Post-medieval	D	none	n/a	568592 313706	3

Reference	Source	XRef	Description	Period	Importance	Impact	Significance	NGR	Figures
HER MNF20180	NCC		Brooch, pottery, strap fitting and token	Roman, Saxon, Medieval, Post-medieval	D	-unc	unknown	571681 315203	2
HER MNF23279	NCC		West Bilney Hall and icehouse	Post-medieval	D	none	n/a	570130 314200	2
HER MNF30811	NCC		Flint arrowhead	Neolithic	D	none	n/a	569490 314680	3
HER MNF33417	NCC		Socketed axehead	Bronze Age	D	none	n/a	570070 314280	2, 3
HER MNF3430	EH	MON 356387	Original extent of Blackborough Priory	Medieval	В	none	n/a	567374 314032	3
HER MNF3434	NCC		Flint axehead	Palaeolithic	С	none	n/a	568290 314210	3
HER MNF3445	NCC	MON 356372	Bronze cauldron	Roman	D	none	n/a	567580 313900	3
HER MNF3784	NCC		Pottery	Roman	D	none	n/a	571928 314928	2
HER MNF3892	NCC		Cropmarks	Undetermined	D	none	n/a	570804 314396	2
HER MNF39604	GEO	NCC	Soilmarks of moat	Medieval	С	none	n/a	569768 314965	3
HER MNF42349	NCC		Handaxe and handaxe fragment	Palaeolithic	С	none	n/a	570100 314800	2, 3
HER MNF42350	NCC		Polished flint axehead	Neolithic	D	none	n/a	570350 314260	2
HER MNF48751a	NCC	APS 2006	Flints	Prehistoric	D	-d min	low	570195 314732	2, 3

Reference	Source	XRef	Description	Period	Importance	Impact	Significance	NGR	Figures
HER MNF48751b	NCC	APS 2006	Pot and tile	Post-medieval	D	none	n/a	571493 315422	2
HER MNF48751c	APS	APS 2006	Pot, tile and glass	Post-medieval	D	none	n/a	569419 314781	2, 3
LS 221946	ЕН		Limestone carved roof boss, grade II	Medieval	А	none	n/a	570166 314181	2
LS 221947	ЕН	SMR MNF3774, MON 868375	St Cecelia's Church, C14, grade II*	Medieval	A	none	n/a	571665 315281	2
MON 356390	EH		Acheulian flint handaxe	Palaeolithic	С	none	n/a	567700 313800	3
MON 357083	EH		Flints	Prehistoric	D	none	n/a	571660 315280	2

APPENDIX D

Figures 1 - 3