TOWN AND COUNTRY PLANNING ACT 1990

FULL PLANNING PERMISSION

NORTH LINCOLNSHIRE COUNCIL

APPLICATION NO: MIN/2007/1129

Applicant: Singleton Birch Ltd

Address/Agent: Mr S Lenton
SLR Consulting Ltd
SLR House
Meadowbank Way
Eastwood
NOTTINGHAM
NG16 3SR

North Lincolnshire Council hereby give notice that the application received on 06/07/2007 for:

the extension of a quarry with restoration to agriculture, woodland and nature conservation – land to the north and east of Melton Ross Quarries, north side of the A18, Croxton

and the environmental assessment which accompanied it, have been considered and permission for this development in accordance with the plans and written particulars submitted has been granted subject to the following conditions and reasons:

1.
The development must be begun before the expiration of three years from the date of this permission.

Reason
To comply with section 91 of the Town and Country Planning Act 1990.

2.
The development hereby permitted shall be carried out strictly in accordance with the application, plans and accompanying statement as amended dated 21 November 2007 unless otherwise agreed in writing by the Local Planning Authority.

Reason
To ensure that the development is carried out in accordance with the details as submitted and to comply with policy M1 of the North Lincolnshire Local Plan.

3.
Prior to the commencement of development, a scheme for the provision and implementation of surface water drainage, to include attenuation and associated discharge rates, shall be submitted to and agreed in writing by the Local Planning Authority. The scheme shall be implemented in accordance with the approved plans.

Reason
To prevent the increased risk of flooding through the provision of a satisfactory method of surface water drainage and to comply with policy DS13 of the North Lincolnshire Local Plan.

4.
The works/scheme shall be constructed and completed in accordance with the approved plans in respect of existing and restored land levels and shall include the softening of the margins of the low-level restoration.

Reason
To prevent the increased risk of flooding and to comply with policy DS16 of the North Lincolnshire Local Plan.

5.
All machinery and vehicles employed on site shall be fitted with effective silencers of a type appropriate to their specification and at all times the best practicable means shall be employed to prevent the undue emission of dust from the site, plant and tipping areas, and all surfaces used by vehicular traffic shall be maintained to a high standard to minimise dust emissions.

Reason
In the interests of amenity and to comply with policy DS1 of the North Lincolnshire Local Plan.

6.
Throughout the period of working, restoration and aftercare, the company shall take all reasonable steps to ensure that the drainage from the areas adjoining the site is not impaired or rendered less efficient by the permitted operations. The company shall take all reasonable steps, including the provision of any necessary to prevent damage by erosion, silting or flooding, and make proper provision for the disposal of all water entering, arising on or leaving the site during the permitted operations.

Reason
To ensure proper drainage of the site and to comply with policy DS13 of the North Lincolnshire Local Plan.

7.
At all times the best practicable means shall be used by the operator to prevent the pollution or silting up of any adjoining watercourses or pollution of the underlying strata arising from operations on site. In particular, any fixed oil or fuel supply tanks shall be surrounded by bund walls of sufficient height so as to contain the contents of the tanks and any associated pipework, pumps and valves in the event of spillage. The floor and walls of the bund must be impervious to water and oil to the satisfaction of the Local Planning Authority.

Reason
To ensure that the development does not give rise to the pollution of the underlying aquifer or other problems for the surrounding land and watercourses and to comply with policy DS13 of the North Lincolnshire Local Plan.

8.
Any facilities for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bunded compound shall be at least equivalent to the capacity of the tank plus 10%. If there is multiple tankage then the compound shall be at least equivalent to the capacity of the largest tank or the combined capacity of interconnected tanks plus 10%. All filling points, vents, gauges and sight glasses must be located within the bund. The drainage system of the bund shall be located above ground and prevented from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.

Reason
To prevent pollution of the water environment and to comply with policy DS13 of the North Lincolnshire Local Plan.

9.
There shall be no discharge of foul or contaminated drainage from the site into either groundwater or any surface waters, whether direct or via soakaways.

Reason
To prevent pollution of the water environment and to comply with policy DS13 of the North Lincolnshire Local Plan.

10.
Upon the satisfactory completion of restoration, each phase shall be managed for a period of five years in accordance with an aftercare programme to be submitted to and agreed in writing with the Local Planning Authority.

Reason
To ensure the satisfactory restoration and aftercare of the site and to comply with policy M1 of the North Lincolnshire Local Plan.

11.
In the event of premature cessation of operations on the site for any reason, then within six months of such cessation an amended scheme for the restoration of the site shall be submitted to and agreed in writing by the Local Planning Authority. Restoration shall thereafter proceed in accordance with the revised scheme.

Reason
To ensure the satisfactory restoration and aftercare of the site and to comply with policy M1 of the North Lincolnshire Local Plan.

12.
No advanced planting or landscaping shall take place until a scheme of archaeological work has been undertaken in accordance with the archaeological written scheme of investigation, and approved in writing by the Local Planning Authority.

Reason
To comply with policy HE9 of the North Lincolnshire Local Plan as tree roots and landscaping may damage archaeological remains of importance.

13.
The developer shall, at all times, maintain access to both underpasses for the purpose of inspection and/or maintenance by the Highways Agency or any other Agency with responsibility for the A180 in that location.

Reason
In the interests of highway safety.

14.
No structure, plant or equipment, whether temporary or permanent, shall be fixed or connected to either the structure of or the ground beneath either underpass without prior written technical approval from the Highways Agency.

Reason
In the interests of highway safety.

15.
All external lighting shall be of flat glass, full cut-off design with horizontal mountings, and shall ensure that there is no light spill above the horizontal.

Reason
In the interests of airport safety.

16.
No element of the proposed planting shall be permitted to grow above a maximum height of 60 metres AOD unless otherwise agreed in writing by the Local Planning Authority.

Reason
In the interests of airport safety.

17.
No development shall take place until proposals for landscaping have been submitted to and approved by the Local Planning Authority. The proposals shall include indications of all existing trees and hedgerows on the site, and details of any to be retained, together with measures for their protection during the course of development.

Reason
To enhance the appearance of the development in the interests of amenity.

18.
All the approved landscaping shall be carried out within twelve months of development being commenced (unless a longer period is agreed in writing by the Local Planning Authority). Any trees or plants which die, are removed or become seriously damaged or diseased within five years from the date of planting shall be replaced in the next planting season with others of similar size and species to those originally required to be planted, unless the Local Planning Authority agrees in writing to any variation.

Reason
To ensure the implementation and maintenance of the submitted scheme of landscaping for the proposed development.

Dated: 3rd October, 2008 Signed:

M Welton
Head of Planning

This application must be read in conjunction with the relevant Section 106 Agreement.

This decision (based on the plans and information submitted with and contained in the application) has, where appropriate, been considered against and meets the provisions of the following policy/policies contained in:

1. North Lincolnshire Local Plan: M1, M4, M5, HE8, HE9, DS1

2. Regional Spatial Strategy for Yorkshire and the Humber: R4

WARNING:

THIS DOCUMENT DOES NOT CONSTITUTE ANY
APPROVAL UNDER THE BUILDING REGULATIONS 1985

WARNING

1. This is a PLANNING PERMISSION ONLY. It does NOT convey any approval or consent required under any enactment, byelaw, order or regulation other than those referred to in the heading of this notice. It is IMPORTANT that you should read the notes concerning APPEALS below.

2. If the applicant is aggrieved by the decision of the Local Planning Authority to refuse permission or approval for the proposed development, or to grant permission or approval subject to conditions, he may appeal to the Planning Inspectorate, in accordance with Section 78 of the Town and Country Planning Act 1990, within six months of the date of this notice. Appeals must be made on a form which is obtainable from The Planning Inspectorate, Room 304A Kite Wing, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN .

   The Planning Inspectorate has power to allow a longer period for the giving of a notice of appeal but he will not normally be prepared to exercise this power unless there are special circumstances which excuse the delay in giving notice of appeal. The Planning Inspectorate is not required to entertain an appeal if it appears to him that permission for the proposed development could not have been granted by the Local Planning Authority, or could not have been so granted otherwise than subject to the conditions imposed by them, having regard to the statutory requirements, to the provision of the development order, and to any directions given under the order. He does not in practice refuse to entertain appeals solely because the decision of the Local Planning Authority was based on a direction given by him.

3. If permission to develop land is refused, or granted subject to conditions, whether by the Local Planning Authority or by the Planning Inspectorate, and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted, he may serve on the council in whose area the land is situated a purchase notice requiring that council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.

4. In certain circumstances a claim may be made against the Local Planning Authority for compensation, where permission is refused or granted subject to conditions by the Planning Inspectorate on appeal or on a reference of the application to him. The circumstances in which such compensation is payable are set out in Section 114 of the Town and Country Planning Act 1990.

DATED ~ 15th ~ August ~ 2008

(1) NORTH LINCOLNSHIRE COUNCIL

(2) SINGLETON BIRCH LIMITED

(3) THE TRUSTEES OF THE YARBOROUGH 1961 SETTLEMENT, THE TRUSTEES OF THE WILL OF THE SEVENTH EARL OF YARBOROUGH, THE TRUSTEES OF THE GEORGE PELHAM FUND & THE EARL OF YARBOROUGH

PLANNING OBLIGATION

(Relating to Land at Melton Ross Quarry, Barnetby North Lincolnshire)

Mike Wood LL.B
Service Director: Legal & Democratic
Pittwood House
Ashby Road
SCUNTHORPE
North Lincolnshire
DN16 1AB

THIS PLANNING OBLIGATION is made the ~ 15th ~ day of ~ August ~ Two Thousand and eight

BETWEEN:

NORTH LINCOLNSHIRE COUNCIL of Pittwood House Ashby Road Scunthorpe in the District and County of North Lincolnshire ("the Council") of the first part **SINGLETON BIRCH LIMITED** whose registered office is at Melton Ross Quarries, Barnetby in the said County of North Lincolnshire ("the Developer") of the second part and **THE TRUSTEES OF THE YARBOROUGH 1961 SETTLEMENT, THE TRUSTEES OF THE WILL OF THE SEVENTH EARL OF YARBOROUGH, THE TRUSTEES OF THE GEORGE PELHAM FUND & THE EARL OF YARBOROUGH** whose registered office is at Brocklesby Estate Estate Office Brocklesby Park Grimsby ("the Owner") of the third part

WHEREAS:

(1) The Council is the Local Planning Authority for the purposes of the Town and Country Planning Act 1990 and the Highways Authority for the purposes of the Highways Act 1980 for the area within which the site hereinafter referred to is situate

(2) The Owner is the Owner in fee simple in possession free from incumbrances of the Site

(3) The Developer's interest in the Site is by way of a lease dated 21 May 2001 made between the Trustees of the Yarborough 1961 Settlement (1) the Trustees of the Will of the Seventh Earl of Yarborough (2) the Owner (3) the Earl of Yarborough (4) and the Developer (5) demising to the Developer the Site for the purpose of quarrying for the term of 71 years from 1 April 1999 subject to the terms and conditions therein contained

(4) By a written application dated the twenty second day of June 2007 and bearing the application number 2007/1129 the Developer applied to the Council for permission to develop the Site by extending the existing quarry

(5) Subject to the completion of the Planning Obligation the Council is minded to grant the Permission

NOW THIS DEED WITNESSETH as follows:

1. **THIS DEED** is made in pursuance of section 106 of the Town and Country Planning Act 1990 and is a Planning Obligation for the purposes of that section

2. **THE COUNCIL** is the Local Planning Authority by whom the provisions of this Planning Obligation are intended to be enforceable. For the avoidance of doubt, a person who is not a party to this Deed shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any of its terms

3. **THE FOLLOWING** terms shall have the following meanings:

"The Council" shall mean North Lincolnshire Council and shall include any statutory successor local planning authority exercising powers under the Town & Country Planning Act 1990 (as amended)

"Development" means the development of the Site by the extension of the existing quarry including proposed restoration to agricultural land and woodland pursuant to the Permission;

"Commencement of the Development" means the date upon which the Development is begun by the carrying out of a material operation (as defined by Section 56 of the Town and Country Planning Act 1990) pursuant to the implementation of the Development with the exception of any works carried out in connection with any archaeological investigation of the Site or trial holes or other operations to establish ground conditions of the Site or any other preliminary investigations;

"Permission" means the planning permission referred to in Recital (4) above;

"Site" means the area of land at Melton Ross Quarry Barnetby aforesaid shown outlined in red on the plan annexed hereto;

"Written Scheme of Investigation" means the written scheme of investigation for archaeological mitigation prepared for the Developer by Archaeological Project Services

in March 2008 annexed hereto;

Words of the masculine gender shall incorporate the feminine and neuter genders and words denoting natural persons include companies corporations and firms and all such words shall be construed interchangeably in that manner;

Words importing the singular meaning shall where the context so admits import the plural meaning and vice versa

4. **THE DEVELOPER** and **THE OWNER** hereby covenant with the Council to the intent that these covenants shall be enforceable against any person deriving title from either of them to their said interest or any lesser interest in all or part of the site as follows-

4.1 No Development shall take place on the Site until

4.1.1 the Developer has applied for and obtained an order under section 261 of the Town & Country Planning Act 1990to temporarily close the section of bridleway 34 at Kirmington shown coloured orange on the drawing marked "Appendix 1" annexed hereto and

4.1.2 new bridleways have been provided to the satisfaction of the Council in the positions shown on the drawing marked "Appendix 3" annexed hereto and in accordance with the specification contained in the Schedule to this Deed

4.2 To fully comply and procure compliance with the Written Scheme of Investigation prior to the commencement of and throughout the duration of the Development and to ensure that appropriate financial provision is made so to do

4.3 Not enter into any agreement with any third party relating to any part of the Site the effect of which would be to preclude the carrying out of any of the obligations contained in this Deed.

5. **IT IS HEREBY AGREED AND DECLARED** as follows:

5.1 No person shall be liable for any breach of the covenants restrictions or

obligations contained in this Planning Obligation occurring after he has parted with his interest in the land or the part in respect of which such breach occurs;

5.2 The provisions of this Planning Obligation shall come into effect upon its execution and shall enure for the term of the perpetuity period which for the purposes of this Planning Obligation shall be the period of eighty years from the date hereof;

5.3 If the Permission shall expire before the Commencement of the Development or shall at any time be revoked or quashed this Planning Obligation shall forthwith determine and cease to have effect;

5.4 This Planning Obligation is a Local Land Charge and shall be registered as such

5.5 Nothing in this agreement shall prohibit or limit the right to develop any part of the Site in accordance with a planning permission (other than one relating to the Development) granted (whether or not on appeal) by the Council.

6. **THE DEVELOPER** hereby covenants to pay the Council's legal costs reasonably incurred in the preparation and execution of this Planning Obligation.

7. **THE COUNCIL** shall upon the written request of the Developer or the Owner or any of their successors in title at any time after the obligations of the Developer hereunder have been performed or otherwise discharged issue written confirmation thereof.

8. **THE DEVELOPER** and the Owner hereby warrant that no other person has any interest in the Site.

9. **THE DEVELOPER** hereby covenants with the Owner that with effect from the date hereof it will at all times indemnify the Owner and keep it indemnified from and against all actions proceedings claims demands and loss of any kind whatsoever that the Owner may have or sustain or from which the Owner may become liable either directly or indirectly as a result of having entered into this agreement.

IN WITNESS whereof these presents have been duly executed as a deed by the parties hereto the day and year first before written

SCHEDULE

Specification for new bridleways

The width of routes following existing farm tracks shall be the full width of such farm track. The width of routes following a field edge shall be a minimum of 3 metres at all times.

Scrub shall be cleared to increase visibility for a distance of 310 metres along the B1211 from the point marked X on the drawing marked Appendix 1 to the point marked Y thereon. A ramp to a gradient of 1:20 shall be created between the points marked Y and Z thereon.

All new routes shall be way-marked and signposted in accordance with the details shown on the drawing marked Appendix 1. All signposts (including the two existing road-side signposts) shall have positive fingers depicting location and distance.

Warning signs to the relevant British Standard shall be erected at the two locations on the B1211 identified on the drawing marked Appendix 1 to indicate the presence of accompanied horses or ponies.

All new routes must be well-screened from quarrying activities to minimise the impact on the amenity of walkers and riders. Schemes to landscape the routes must be agreed by the Council. Signs giving advance warning of any blasting activity in the area shall be erected as and when required.

All of the above works shall be carried out at the cost of the Developer.

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Figures

Appendix 1: Guidelines for production of a model scheme, used for preparation of a detailed PD in the event of a PIS strategy being proposed for archaeological remains on the application site. *Andy Hammon, English Heritage Regional Science Advisor*

Appendix 2: Outline Strategy for Environmental Sampling. *Val Fryer*

Abbreviations/Definitions

APS	Archaeological Project Services
EHRSA	English Heritage Regional Science Advisor
NLSMR	North Lincolnshire Sites and Monuments Record
SMS	Strip, Map and Sample – a staged approach with the stripping of the topsoil under archaeological supervision followed by mapping of all the features present. Depending on the nature and density of features an appropriate sampling strategy can be devised based on the full archaeological information
SMS (Intensive)	Intensive SMS is where significant forms or concentrations of features are present. The percentage sample investigated on Intensive SMS will be less than on full open area excavation, but would still be a relatively high percentage.
SMS (Extensive)	Extensive level recording is confined to areas containing only minor features, or features that are of lesser significance, isolated or outside 'site' concentrations. The percentage sample on Extensive SMS is less than on Intensive SMS.
WSI	Written Scheme of Investigation. This is the document which sets out the detail of the archaeological investigations to be undertaken and the precise methodology and procedures to be used.

1 SUMMARY

1.1 *A programme of archaeological work is required as a condition of planning consent for an extension to quarrying at the Melton Ross Quarry at Croxton, North Lincolnshire.*

1.2 *Archaeological evaluation of the site (Hall 2005) has identified remains of prehistoric and Roman date within the area of proposed extensions including a large enclosure of apparent prehistoric date within the centre of the quarry area and a sinuous ditch on a similar alignment some way to the west.*

1.3 *The archaeological work will comprise a phased programme of intensive and extensive monitoring (Strip, Map and Sample) and open area excavation in specified areas of the site.*

1.4 *On completion of each identified phase of fieldwork an assessment report will be prepared outlining the results of the investigations and setting out priorities for a future programme of analysis leading to publication.*

2 INTRODUCTION

2.1 This document comprises a method statement for archaeological excavations in advance of proposed extension to the Melton Ross Quarry at Croxton, North Lincolnshire. The site is located at National Grid Reference TA 080 125.

2.2 This document contains the following parts:

2.2.1 Overview.

2.2.2 Stages of work and methodologies.

2.2.3 List of specialists.

2.2.4 Programme of works and staffing structure of the project

3 SITE LOCATION

3.1 The proposed quarry extension is located 20km east of Scunthorpe, between the villages of Croxton and Melton Ross, North Lincolnshire (Fig. 1). The Application Area is situated 1km west of Croxton and 2km northeast of Melton Ross, located on the north side of the A180 and centred at NGR TA 080 125 (Fig 2). The site, which lies predominantly in the parish of Croxton, but extending into Melton Ross, encompasses some 88ha and lies at a height of around 50m OD.

4 PLANNING BACKGROUND

4.1 Application has been made for extension to the existing quarry. Permission will involve provision for a programme of archaeological work on the site comprising archaeological monitoring (Strip, Map and Sample) and open area excavation. These are the subject of this Written Scheme of Investigation.

5 SOILS AND TOPOGRAPHY

5.1 The proposed quarry site is dominated by soils of the Hunstanton Association, typically well-drained and coarse loamy soils developed on chalk and chalky till (Hodge et al. 1984, 225). The local topography has the site lying on a spur of land that slopes down to the east and south. The highest part is located on the western edge of the proposed extension, south of Melton High Wood, where heights reach c.62m OD, dropping to heights of 35m in the eastern parts of the site.

6 ARCHAEOLOGICAL BACKGROUND

6.1 Much of the area of the proposed quarry extension had been fieldwalked during the evaluation (Lane 2004) and previously as part of the Brocklesby Survey in 1998/9 (Cope-Faulkner and Lane 1999). No sites were noted in these surveys in the proposed quarry extension but finds of lithics, Roman and Medieval pottery were recorded across the area.

Detailed geophysical survey followed by trenching has been undertaken over the proposed extension area (Donaldson 2004a, b). This located geophysical anomalies of possible archaeological origin in various areas of the site. These were further investigated in a programme of trial trenching (Hall 2005, rev. 2007).

The main focus of archaeological interest within the proposed extension area, lies in the Prehistoric remains within the proposed Phase 5, although Romano-British (in Trenches 20 and 47) and undated remains were also noted.

6.2 Undated deposits

A small number of features remained undated after hand excavation. Within Phase 7 two trenches contained sections through a large northwest-southeast aligned curvilinear ditch identified in the geophysical survey. The function of the ditch is uncertain, with its continuation southwards not confirmed by the trenches located at its southern end. It is of note that the undated ditch does follow a similar alignment to the believed Prehistoric ditch 55m to the south (and rectilinear enclosure 250m to the east in Phase 5).

6.3 Later Prehistoric Deposits

There was a near absence of archaeology of Romano-British date within the

application area, with almost all of the dated archaeological remains attributed to the First Millennium BC. The finds are sparse and concentrated largely in the centre of the area. Fieldwalking identified a background scatter of worked flint across all phases, with a concentration over the large rectilinear enclosure identified in Phase 5. The northwest-southeast aligned enclosure (Enclosure 1) was identified during geophysical survey and was later confirmed by the trenches targeted over the enclosure boundary. The excavations exposed well-preserved sections of the Enclosure ditch, from which a sherd of Early Bronze Age pottery was retrieved in Trench 45 and several small fragments of First Millennium BC pottery in Trench 47, along with a single sherd identified as 'Conquest period'. From the geophysical survey plots the boundaries of the enclosure appear to have been constructed from long linear segments, with occasional breaks, perhaps allowing access into the enclosure. The northern boundary appears to be slightly offset from the western boundary. Its extent to the northeast is unclear as it was not identified in Trench 14.

Although there is no evidence of a man-made eastern boundary to the enclosure the ditches appear to respect the sinuous natural linear depression identified in the geophysics and investigated in Trench 12. It seems likely that this was an obvious landscape feature at the time the ditches were excavated and marked the eastern extent of the enclosure. If this depression was utilised as the eastern boundary the interior would have been in the region of 2.8ha (225m x 125m).

The excavated sections of the enclosure showed the ditches to have a maximum depth of 1.35m and maximum width of 2.70m. The densely packed chalk fill tipping from the interior of the ditch indicates an internal bank to the enclosure.

Only one internal feature within Enclosure 1 was identified during the geophysical survey. The trial trenching confirmed the presence of this linear feature. The only artefactual evidence contained within the feature was a single sherd of Bronze Age pottery. In Trench 45, a pit containing a cremation was also identified within the interior of the enclosure. The cremation lies 11m into the interior of the enclosure. Although not firmly dated, the highly fired nature of the bones suggests an Iron Age to Roman date and it is possible that the cremation is contemporary with the enclosure. Any possible further cremations might not have shown up on the geophysical survey, neither might other small discrete features such as postholes. The presence of post built structures such as buildings or internal divisions like fences cannot perhaps be ruled out, although the sparse nature of the artefact assemblage would not seem to suggest settlement.

To the south of the enclosure within Trenches 10 and 47, several gullies containing small sherds of First Millennium BC pottery were identified.

Ring ditches have been identified within the vicinity on air photographs (e.g. Howe Hill bowl barrow), together with the cremation and early Bronze Age pottery from within the enclosure, this might suggest potential for further features associated with the wider Bronze Age landscape.

6.4 Roman deposits

A ditch located in the southeastern corner of Trench 20, Phase 1, contained several fragments of water worn pottery of mid 2nd-mid 3rd century date. Though undated the parallel ditch 2.5m the west is likely to be contemporary. A copper leaf shaped Roman mount was also found within the vicinity of Trench 20. It is possible that one or other of these features represents a continuation of ditches detected in works to the south of the A180 which were dated to 3rd-4th century. A single sherd of Conquest-period pottery was also recovered from a small pit in Trench 47.

During trenching evidence for a Roman road aligned along the parish boundary between Croxton and Melton Ross was sought. Such evidence was absent in both Trench 8, to the east of boundary and Trench 44 to the west.

7 TREATMENT BY PHASE

All groundwork associated with quarrying operations will be undertaken under continuous archaeological supervision and control. This will include site preparation and landscaping works, soil stripping, earthmoving for conveyor etc. Visible artefacts within overburden identified during stripping will be recovered and recorded where possible. The level of archaeological response will be determined following the soil strip and pre-excavation mapping by the Project Manager in consultation with and subject to the approval of the NLSMR prior to implementation (see 10.2 below). Should it be deemed that a different level of monitoring might be appropriate at any stage in advance of the completion of all specified groundwork, this will be reviewed through on-site meetings with NLSMR prior to any changes.

7.1 Conveyor

Trench 8	Natural sequence, no archaeological deposits
Trench 10	Prehistoric features comprising two gullies and a pit
Trench 20	Two 2nd-3rd century AD ditches

The area around Trench 20 was not subject to geophysical survey. Geophysics around Trenches 8 and 10 yielded no obvious anomalies with archaeological origin. However, two prehistoric gullies and a pit were excavated in Trench 10 and two 2nd-3rd century AD ditches in Trench 20. While still described as a background scatter the area around Trench 10 yielded a relatively high number of sherds of Roman date (Cope-Faulkner and Lane 1999, 10; Lane 2004) observation/monitoring/recording by means of Strip Map and Sample. The route follows the southern edge of Phase 5 where open area excavation is proposed. Increased archaeological activity is to be expected in this area, for example around evaluation trench 10. Accordingly, the archaeological recording may require up-grading to excavation level in specified sections of the route.

7.2 Phase 1

Trench 17	Natural Sequence, no archaeological deposits
Trench 18	Natural sequence-infilled natural hollow, no archaeological deposits
Trench 20	Two 2nd-3rd century ditches

Trench 46	Natural hollow - identified on geophysical survey

Investigation of geophysical anomalies within the Phase 1 area revealed only features of natural origin. However, Trench 20 picked up the apparent continuation of Roman period ditched boundaries identified south of the A180. It is probable that the further continuation of these features, and perhaps other ditched boundaries of the same period, will be present within this area. No evidence for settlement was identified, the closest such evidence lying 250m from the southwestern boundary. Archaeological monitoring by means of Strip Map and Sample is deemed appropriate.

7.3 Phase 2

Trench 23	Natural sequence, no archaeological deposits
Trench 24	Natural sequence, no archaeological deposits
Trench 25	Natural sequence, no archaeological deposits

No archaeological features or deposits were identified: Archaeological monitoring by means of Strip Map and Sample is deemed appropriate.

7.4 Phase 3

Trench 21	Natural sequence, no archaeological deposits
Trench 22	Natural sequence of deposits and solution holes

No archaeological features or deposits were identified: Archaeological monitoring by means of Strip Map and Sample is deemed appropriate.

7.5 Phase 4

Trench 15	Natural hollow identified
Trench 16	Natural Sequence, no archaeological deposits
Trench 54	Natural Sequence, no archaeological deposits
Trench 55	Natural Sequence, no archaeological deposits
Trench 56	Natural Sequence, no archaeological deposits
Trench 57	Natural Sequence, no archaeological deposits

No archaeological features or deposits were identified during evaluation. A sparse scatter of flints and a few Romano-British pottery sherds [illegible] found during fieldwalking, although none of these were clustered: Archaeological monitoring by means of Strip Map and Sample is deemed appropriate. The western edge approaches the zone of greater archaeological interest within Phase 5.

7.6 Phase 5

Trench 8	Natural Sequence: no archaeological remains
Trench 9	Eastern ditch of rectilinear enclosure 1
Trench 10	Prehistoric features comprising two gullies and a pit
Trench 11	Undated gully within interior rectilinear enclosure 1 containing EBA-MBA pot
Trench 12	[illegible] enclosure 1

Trench 13	Natural Sequence, no archaeological remains
Trench 14	Natural Sequence, no archaeological remains
Trench 45	Ditch segment of rectilinear enclosure 1 containing EBA pot, human cremation from small pit
Trench 47	Southern boundary ditch segment of enclosure 1, prehistoric ditches and gullies

Geophysical survey identified the ditch (apparently discontinuous) of a rectilinear enclosure at least 100m x 250m. Trial trenching confirmed the survival of a substantial ditch from which a sherd of Early Bronze Age pottery and several small fragments of First Millennium BC pottery were retrieved. Stripping of this area is likely to allow significant insights into the morphology of the enclosure and its apparent entrances and to establish the nature of the eastern boundary, currently unclear. Internal features were noted and it is to be expected that more will survive with potential for elucidating the nature of activity within the interior. Remains of a human cremation were identified in the northwest of the enclosure. It is unclear if this is related to the use of the enclosure, but the possibility of further cremation burials within this area remains. Further late prehistoric activity was evident south of the enclosure. During the fieldwalking finds were made of prehistoric flints and romano-British and medieval pottery sherds in the southern part of the Phase 5 area. None appeared to form site clusters.

Open area excavation will be appropriate within this phase. Provision will be made for stripping a minimum 50% sample area, forming a block in the north or south of the enclosure (depending of sub-phasing and intended direction of working) to allow more extensive investigation of the nature of the enclosure and any internal features. A minimum lead-in time of 3 months prior to the area being required by the extractors will be required. Intensity of subsequent works may be varied depending on the nature of the results.

7.7 Phase 6

Trench 7	Natural Sequence: no archaeological remains
Trench 44	Natural Sequence, no archaeological deposits

No archaeological features or deposits were identified: Archaeological monitoring by means of Strip Map and Sample is deemed appropriate. The western and eastern edges approach zones of greater archaeological interest within Phases 5 and 7. The possible line on a Roman road runs along the junction of Phases 5 and 6, although this line was not confirmed during evaluation. Only a limited number of finds were made during fieldwalking.

7.8 Phase 7

Trench 3	Large undated ditch correlating to the geophysical survey identified
Trench 4	Natural Sequence: no archaeological remains
Trench 5	Natural Sequence: no archaeological remains
Trench 42	Undated segment of ditch, probable continuation of ditch identified in Trench 3 to north and seen on geophysical survey
Trench 43	Prehistoric ditch segment

Sinuous ditch of prehistoric date identified. This is seen on geophysical survey to extend from the northern boundary to at least half-way down the field. Only a limited number of finds were made during fieldwalking. Archaeological monitoring by means of Strip Map and Sample is deemed appropriate.

7.9 **Phase 8**

Trench 2	Natural Sequence; no archaeological remains
Trench 6	Natural Sequence; no archaeological remains

No archaeological features or deposits were identified. Only a limited number of finds were made during fieldwalking: Archaeological monitoring by means of Strip Map and Sample is deemed appropriate.

7.10 **Phase 9**

Trench 1	Natural Sequence; no archaeological remains
Trench 41	Natural Sequence, no archaeological deposits

No archaeological features or deposits were identified. Only a limited number of finds were made during fieldwalking: Archaeological monitoring by means of Strip Map and Sample is deemed appropriate.

8 AIMS AND OBJECTIVES

8.1 The aims of the archaeological excavations will be to record and interpret the archaeological features likely to be damaged or destroyed by quarrying, associated works and landscaping on the site (preservation, or replacement, by record).

8.2 The archaeological works will comprise a programme of full excavation (Level 1) of the enclosure in Phase 5. Strip Map and Sample will be the method of investigation of the remaining area. This has been sub-divided into 'Intensive' SMS (Level 2) and 'Extensive' SMS (Level 3), according to the level of archaeological response and sampling. The level of archaeological response and sampling will be determined on the basis of the results of the soil strip and pre-excavation mapping by the Project Manager in consultation with the NLSMR and subject to its approval. Intensive is where significant forms or concentrations of features are present. The percentage sample investigated on Intensive SMS will be less than on full open area excavation, but would still be a relatively high percentage. Extensive level recording would be confined to minor features that are of lesser significance, isolated or outside 'site' concentrations. The percentage sample on Extensive SMS would be reduced still farther, although the stripping would still be controlled by archaeologists. Level 4 represents Preservation *in-situ*.

8.3 Archaeological remains at the site have potential to provide data to address a number of areas of research or 'gaps in knowledge' as defined in the regional and national research agendas (English Heritage 1998; Cooper 2006). The site has the potential to contribute to the understanding of prehistoric and later settlement on the

chalk wolds, and of the multi-period complex of occupation and settlement related to the Kirmington Gap.

8.4 It is anticipated that data collected in the course of excavation will contribute to a number of specific research themes, including:

- *The nature and extent of any prehistoric activity on the chalk wolds*

8.5 Sites of later prehistoric date have been frequently recorded in the wolds. Flint implements, including Neolithic tools, have previously been noted within the area. Bronze Age finds and features are also known. The enigmatic Yarborough Camp lies just to the south. Features of possible Early Bronze Age and middle-late Iron Age date were identified during the evaluation.

Relevant research topics for the Early-Middle Bronze Age include the development of ceremonial monuments and their environs, and the nature of Bronze Age societies (Clay 2006); for the later Bronze Age and Iron Age research topics include the development of farming, settlement change and economic and social change during the late Iron Age and Iron Age/Roman transition (Willis 2006).

- *Evidence for the character of Roman land-use and occupation in the hinterland of the settlements around the Kirmington gap.*

Although the main focus of occupation in the Roman period appears to lie to the south, Roman remains recorded immediately south of the A180 may suggest wider activity in the area. A number of relevant topics are identified within research frameworks including investigation into rural settlement, landscape and society (Taylor 2006 157-8).

8.6 Specific narrower objectives of the excavation will be to:

8.6.1 Determine the form and function of the archaeological features encountered;

8.6.2 Determine the spatial arrangement of the archaeological features encountered;

8.6.3 As far as practicable, recover dating evidence from the archaeological features;

8.6.4 Establish the sequence of the archaeological remains present on the site; and

8.6.5 Determine the extent to which surrounding archaeological features extend into the investigation area and how the remains identified fit into the pattern of occupation and land-use known in the surrounding landscape.

9 FIELDWORK METHODOLOGY

9.1 General considerations

9.1.1 All work will be undertaken following statutory Health and Safety requirements in operation at the time of the archaeological monitoring and in accordance with the requirement of the main contractors.

9.1.2 The work will be undertaken according to the relevant guidelines and codes of practice issued by English Heritage (EH) and the Institute of Field Archaeologists (IFA), under the management of a Member of the institute (MIFA).

9.1.3 Any and all artefacts found during the investigation and thought to be 'treasure', as defined by the Treasure Act 1996, will be removed from site to a secure store and promptly reported to the appropriate coroner's office. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

9.1.4 The archaeological features encountered will be recorded on pro-forma context record sheets. The system used is the single context method by which individual archaeological units of stratigraphy are assigned a unique record number and are individually described and drawn. Where stratified deposits are encountered a Harris Matrix will be compiled during the course of the investigation. Registers of plans, sections, photographs, samples, registered finds etc will be kept and cross-referenced to the context system.

9.1.5 Plans of features will be drawn at a scale of 1:50 or 1:20 (as appropriate) and sections at a scale of 1:10. Burials will be drawn at 1:10 and should individual features merit it, they may also be drawn at a larger scale. If required, long sections to demonstrate overall site stratigraphy may be drawn at a smaller scale. Plans and sections will be annotated with absolute heights related to OS benchmarks.

9.1.6 Throughout the duration of the fieldwork a photographic record consisting of black and white prints (reproduced as contact sheets) and colour prints in a 35mm format will be compiled. Supplementary digital photography will be used for general or presentational purposes only. The photographic record will consist of:

- the site before the commencement of field operations.
- the site during work to show specific stages of work, and the layout of the archaeology within individual trenches.
- individual features and, where appropriate, their sections.

- groups of features where their relationship is important.
- the site on completion of field work

Site photography will also take into account possible publicity/educational use including general views and shots of excavation work in progress and possible high level or air photographic recording where there may be large open areas under excavation.

9.1.7 Finds collected during the fieldwork will be bagged and labelled according to the individual deposit from which they were recovered ready for later washing and analysis. All finds will be retained from hand-excavated contexts unless of recent origin or of limited intrinsic interest (in which case a sample may be retained). Spoil will be monitored in order to recover artefacts to assist in the spatial distribution of finds; a metal detector will be used to assist in the recovery of artefacts on both excavation surfaces and excavated spoil. Registered finds will be recorded in relation to the site grid and their height above OD.

9.1.8 Work within stripping phases will be arranged so as to prevent plant, vehicle or machinery from crossing newly stripped surfaces.

9.1.9 In the case of important structured archaeological remains being intersected by the margin of one phase of groundworks and being reasonably suspected to continue into a later neighbouring phase, the stripped area may be enlarged to encompass more or all of the remains in question. If this is not feasible the lead-in time to the neighbouring phase will be adjusted, such that initial stripping stages occur early enough to address the archaeological potential of the continuation of the remains in question prior to mineral extraction. In certain circumstances it may be appropriate to undertake additional survey or sampling (eg geophysical survey, phosphate analysis etc) prior to soil stripping, to inform the recording strategy. The lead-in time will be adjusted accordingly.

9.1.10 The lead-in time for stripping the area required for full excavation will be a matter for discussion between the client, contractor and NLSMR. The client has agreed that a sufficient lead-in period will be allowed to undertake the excavation thoroughly. A sufficient timescale is regarded as one day per 20sq m and/or multiples thereof, undertaken in a single phase (see above 7.6). The timescale of the lead-in period will be subject to the approval of the NLSMR, with scope to review that if necessary.

9.2 Open Area Excavation

9.2.1 The locations of excavation areas and any site grid will be established using EDM or Differential GPS as appropriate and related to Ordnance Survey National Grid.

9.2.2 Modern deposits and overburden from the excavation area will be

mechanically stripped using a tracked 360° excavator or similar, with a toothless ditching bucket. This will be undertaken under close archaeological supervision down to the first significant archaeological horizon. Machinery will not cross the stripped area.

9.2.3 The area will be cleaned as necessary to allow the identification of archaeological features which will be investigated to establish their date, nature, function, relationship and significance. The complete excavation of all identified archaeological features is not intended, but all will be recorded in such a manner as to fulfil the aims of the excavation. Features will be recorded in plan and/or section in order to obtain the full stratigraphic sequence with a sufficient sample being excavated to provide evidence to date the sequence with confidence. Sampling of cut features shall include feature intersections to establish relative chronologies. Sufficient features shall be sampled in order to prove whether they are of anthropogenic or natural origin.

9.2.4 All structures and all zones of specialised activity (e.g. industrial, agricultural processing, ceremonial, funerary) are to be fully or extensively excavated, and all relationships recorded. Where there is evidence for industrial activity, large technological residues will be collected by hand. Separate samples (c. 10ml) will be collected for micro-slags (hammer-scale and spherical droplets) in accordance with recommendations of *Archaeometallurgy in archaeological projects* (English Heritage/Historical Metallurgy Society 2001).

9.2.5 Linear features not directly associated with settlement will be sampled at 10m intervals in 1m wide sections (or sufficiently wide to allow their full depth to be explored) to allow an informed interpretation of their date and function with consideration given to possible recutting of ditches which may not have taken place over their length. Should specialised deposits (eg localised refuse dumping, industrial wastes) be present, then more extensive excavation will be undertaken. Junctions of linears and other features will also be excavated to determine stratigraphic relationships. The excavation of linear features associated with settlement will be a minimum of 25%; this may increase depending on the nature of the physical evidence. Sufficient of the linear features will be excavated to determine the character of each individual linear feature over its entire course with consideration given to the possible re-cutting of ditches which may not have taken place over the entire length. Structural remains such as eaves drip gullies, beam slots and post-holes demonstrated to be part of a buildings construction will require total excavation. All industrial features including "domestic" ovens and hearths will be 100% excavated and sampled for analysis.

9.2.6 Pits will be generally half-sectioned. Some pits may be fully excavated in the light of information gained in half-sectioning. Pits containing significant structural traces or important artefactual or environmental material to be fully excavated. Post holes and stake holes (where not

clearly forming a structure) will be half-sectioned ensuring that relationships are investigated. Other features such as working hollows and quarry pits will be investigated to define their extent, date and function. All relationships to be defined.

9.2.7 Contingency provision will be made for visits by the relevant specialists in the event of exceptional or large quantities of artefacts or ecofacts, where advice on *in situ* excavation techniques, recovery, conservation, and sampling strategies etc may be necessary, and to aid the understanding of the burial environment of the material. Allowance will also be made for the preliminary conservation and stabilisation of all objects.

9.2.8 Samples will be taken for scientific dating (principally radiocarbon dating), where dating by artefacts is insecure. Provision will be made for other scientific dating techniques, e.g. archaeo-magnetic dating, should suitable deposits be encountered and other means of dating insufficient.

9.2.9 Sampling of deposits with environmental potential will be undertaken in accordance with the general environmental strategy (Appendix 2) and in line with the environmental guidelines set out in *Environmental Archaeology* (English Heritage 2002). Should revisions be necessary in the light of particular circumstances or discoveries, these shall be formulated in consultation with NLSMR together with the EH RSA and the relevant specialists, subject to the approval of the NLSMR. Provision will be made for the specialist to visit the site and discuss the sampling strategy, if necessary. Any samples taken will come from appropriately cleaned surfaces, be collected with clean tools and be placed in clean containers. They will be adequately recorded and labelled and a register of all samples will be kept.

9.2.10 Provision will be made for buried soils and significant sediment sequences to be inspected and recorded on site by a recognised geoarchaeologist, since field inspection may provide sufficient data for understanding site formation processes. Samples for laboratory assessment will be collected where appropriate following discussion with the geoarchaeologist and the NLSMR. Procedures and techniques will have regard to *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record* (English Heritage 2007).

9.2.11 Environmental samples will be processed at intervals during the excavation period in order to inform the potential state of preservation on the site in order that the sample retrieval policy can be reviewed and the number of samples taken adjusted up or down accordingly.

9.2.12 Should further human remains be located the appropriate licences will be sought from the Ministry of Justice before their removal. If appropriate, the Local Environmental Health Department and the police will also be

informed.

9.2.13 A post-excavation Assessment report will be submitted to the client, the NLSMR and the EH RSA within one year of the completion of site work for approval by the NLSMR (see 11.3.10 below). A publication report will be submitted two years after the approval of the Assessment report (11.4.1).

9.3 Strip Map and Sample (Intensive)

9.3.1 Other than the areas specified for full excavation (see above) all groundworks will be investigated using Strip, Map and Sample (SMS). This has been sub-divided as Intensive SMS and Extensive SMS. The differences between Intensive and Extensive relate chiefly to how the resultant archaeology is dealt with. It should be noted that in both cases (Intensive and Extensive) each machine in use will be monitored by an archaeologist. The only exception to this will be if two machines are working in close proximity to each other and their monitoring can be effectively and safely undertaken by one archaeologist.

9.3.2 Modern deposits and overburden from the Strip Map and Sample areas will be mechanically stripped using a tracked 360° excavator or similar, fitted with a toothless ditching bucket. This will be undertaken under close archaeological supervision down to the first significant archaeological horizon. Machinery will not cross the stripped area.

9.3.3 In both Intensive and Extensive SMS the archaeologist monitoring the machining will place waterproof white tags in features as they are revealed. Any clusters of features will be cleaned (by the monitoring archaeologist if time is available or by a team brought in) to enable surveying.

9.3.4 As soon as is practical a pre-excavation plan of the site area and location of features will be produced using a differential GPS system and related to Ordnance Survey National Grid. Copies will be forwarded to the NLSMR Officer and an on-site meeting convened to agree levels of further work.

9.3.5 Any significant forms or concentrations of features that are revealed during the SMS will be subject to the following levels of investigation:-

9.3.6 The area will be cleaned as necessary to allow the identification of archaeological features which will be investigated to establish their date, nature, function, relationship and significance. The complete excavation of all identified archaeological features is not intended, but all will be recorded in such a manner as to fulfil the aims of the excavation. Features will be recorded in plan and/or section in order to obtain the full stratigraphic sequence with a sufficient sample being excavated to provide evidence to date the sequence with confidence. Sampling of cut features shall include feature intersections to establish relative chronologies. Sufficient features shall be sampled in order to prove whether they are of anthropogenic or natural origin.

9.3.7 All structures and all zones of specialised activity (e.g. industrial,

agricultural processing, ceremonial, funerary) are to be fully or extensively excavated, and all relationships recorded. Where there is evidence for industrial activity, large technological residues will be collected by hand. Separate samples (c. 10ml) will be collected for micro-slags (hammer-scale and spherical droplets) in accordance with recommendations of *Archaeometallurgy in archaeological projects* (English Heritage/Historical Metallurgy Society 2001).

9.3.8 Linear features will be sampled as necessary to allow an informed interpretation of their date and function. Generally this will mean sampling at 10m intervals in 1m wide sections (or sufficiently wide to allow their full depth to be explored). Consideration will be given to possible recutting of ditches, which may not have taken place over their length. Should specialised deposits (e.g. localised refuse dumping, industrial wastes) be present, then more extensive excavation will be undertaken. Junctions of linears and other features will also be excavated to determine stratigraphic relationships. Linear features up to 5m in length will have a minimum 20% sample excavated.

9.3.9 Structural remains such as eaves drip gullies, beam slots and post-holes demonstrated to be part of a buildings construction will require total excavation. All industrial features including "domestic" ovens and hearths will be 100% excavated and sampled for analysis.

9.3.10 Pits will be generally half-sectioned. Some pits may be fully excavated in the light of information gained in half-sectioning. Pits containing significant structural traces or important artefactual or environmental material to be fully excavated. The majority of post holes and stake holes (where not clearly forming a structure) will be half-sectioned ensuring that relationships are investigated. Other features such as working hollows and quarry pits will be investigated to define their extent, date and function. All relationships to be defined.

9.3.11 Adequate contingency provision will be made for visits by the relevant specialists in the event of exceptional or large quantities of artefacts or ecofacts, where advice on *in situ* excavation techniques, recovery, conservation, and sampling strategies etc may be necessary, and to aid the understanding of the burial environment of the material. Allowance will also be made for the preliminary conservation and stabilisation of all objects.

9.3.12 Samples may be taken for scientific dating (principally radiocarbon dating), where dating by artefacts is insecure. Provision will be made for other scientific dating techniques, e.g. archaeo-magnetic dating, should suitable deposits be encountered and other means of dating prove insufficient.

9.3.13 Sampling of deposits with environmental potential will be undertaken in accordance with the general environmental strategy (Appendix 2) and in

line with the environmental guidelines set out in *Environmental Archaeology* (English Heritage 2002). Should revisions be necessary in the light of particular circumstances or discoveries, these shall be formulated in consultation with NLSMR together with the EH RSA and the relevant specialists, and approved by NLSMR. Provision will be made for the specialist to visit the site and discuss the sampling strategy, if necessary. Any samples taken will come from appropriately cleaned surfaces, be collected with clean tools and be placed in clean containers. They will be adequately recorded and labelled and a register of all samples will be kept.

9.3.14 Provision will be made for buried soils and significant sediment sequences to be inspected and recorded on site by a recognised geoarchaeologist, since field inspection may provide sufficient data for understanding site formation processes. Samples for laboratory assessment will be collected where appropriate following discussion with the geoarchaeologist and the NLSMR. Procedures and techniques will have regard to *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record* (English Heritage 2007).

9.3.15 Should human remains be located the appropriate licences will be sought from the Ministry of Justice before their removal. If appropriate, the Local Environmental Health Department and the police will also be informed.

9.3.16 In addition to excavation of the quarry areas a conveyer will be installed and will run in an east-west direction. Construction of the conveyer will require the stripping of a c.6m wide linear band immediately north of and parallel with the A180. This work will be undertaken in advance of quarrying and under a Strip, Map and Sample regime. The conveyer will extend from the planned extraction Phase 6 to the eastern boundary of the application area. The route follows the southern edge of Phase 5 where open area excavation is proposed. Increased archaeological activity is to be expected in this area, for example around evaluation Trench 10. Where appropriate, the archaeological recording will be up-graded to excavation level along the route.

9.3.17 A post-excavation assessment report will be submitted to the client, the NLSMR and the EH RSA within one year of the completion of site work on each phase, for approval by the NLSMR (see 11.3.10 below). A publication report will be submitted two years after the approval of the Assessment report (11.4.1).

9.4 Strip Map and Sample (Extensive)

9.4.1 Extensive SMS is the term used here to describe the procedures to be used away from 'site' concentrations. There are likely to be isolated

features and linear features discovered that are not in 'site' concentrations. These will be investigated as described below.

9.4.2 Each machine in use will be monitored by an archaeologist. The only exception to this will be if two machines are working in close proximity to each other and their monitoring can be effectively and safely undertaken by one archaeologist.

9.4.3 Modern deposits and overburden from the Strip Map and Sample areas will be mechanically stripped using a tracked 360° excavator or similar, fitted with a toothless ditching bucket. This will be undertaken under close archaeological supervision down to the first significant archaeological horizon. Machinery will not cross the stripped area

9.4.4 The archaeologist monitoring the machining will place waterproof white tags in features as they are revealed. Any clusters of features will be cleaned (by the monitoring archaeologist if time is available or by a team brought in) to enable surveying.

9.4.5 As soon as is practical a pre-excavation plan of the area and location of features will be produced using a differential GPS system and related to Ordnance Survey National Grid. Copies will be forwarded to the NLSMR Officer and an on-site meeting convened to agree levels of further work.

9.4.6 The area will be cleaned as necessary to allow the identification of archaeological features which will be investigated to establish their date, nature, function, relationship and significance. The complete excavation of all identified archaeological features is not intended, but all will be recorded in such a manner as to fulfil the aims of the excavation. Features will be recorded in plan and/or section in order to obtain the full stratigraphic sequence with a sufficient sample being excavated to provide evidence to date the sequence with confidence. Sampling of cut features shall include feature intersections to establish relative chronologies. Sufficient features shall be sampled in order to prove whether they are of anthropogenic or natural origin.

9.4.7 Linear features will be sampled as necessary to allow an informed interpretation of their date and function. Generally this will mean sampling at 15m intervals in 1m wide sections (or sufficiently wide to allow their full depth to be explored). Consideration will be given to possible recutting of ditches which may not have taken place over their length. Should specialised deposits (e.g. localised refuse dumping, industrial wastes) be present, then more extensive excavation will be undertaken. Junctions of linears and other features will also be excavated to determine stratigraphic relationships. Linear features up to 5m in length will have a minimum 20% sample excavated.

9.4.8 Isolated pits will be generally half-sectioned. Some pits may be fully excavated in the light of information gained in half-sectioning. Pits containing significant structural traces or important artefactual or environmental material to be fully excavated. Other isolated features such as working hollows and quarry pits will be investigated to define

their extent, date and function. All relationships will be defined.

9.4.9 Adequate contingency provision will be made for visits by the relevant specialists in the event of exceptional or large quantities of artefacts or ecofacts, where advice on *in situ* excavation techniques, recovery, conservation, and sampling strategies etc may be necessary, and to aid the understanding of the burial environment of the material. Allowance will also be made for the preliminary conservation and stabilisation of all objects.

9.4.10 Samples may be taken for scientific dating (principally radiocarbon dating), where dating by artefacts is insecure. Provision will be made, if appropriate for other scientific dating techniques, e.g. archaeo-magnetic dating, should suitable deposits be encountered and other means of dating prove insufficient.

9.4.11 Sampling of deposits with environmental potential will be undertaken in accordance with the general environmental strategy (Appendix 2) and in line with the environmental guidelines set out in *Environmental Archaeology* (English Heritage 2002). Should revisions be necessary in the light of particular circumstances or discoveries, these shall be formulated in consultation with NLSMR together with the EH RSA and the relevant specialists, and approval by NLSMR. Provision will be made for the specialist to visit the site and discuss the sampling strategy, if necessary. Any samples taken will come from appropriately cleaned surfaces, be collected with clean tools and be placed in clean containers. They will be adequately recorded and labelled and a register of all samples will be kept.

9.4.12 Provision will be made for buried soils and significant sediment sequences to be inspected and recorded on site by a recognised geoarchaeologist, since field inspection may provide sufficient data for understanding site formation processes. Samples for laboratory assessment will be collected where appropriate following discussion with the geoarchaeologist and the NLSMR. Procedures and techniques will have regard to *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record* (English Heritage 2007).

9.4.13 Should human remains be located the appropriate licences will be sought from the Ministry of Justice before their removal. If appropriate, the Local Environmental Health Department and the police will also be informed.

9.4.14 For areas subject to Extensive Strip, Map and Sample the resultant Assessment reports will be compiled within 6 months of the completion of fieldwork for each phase, with any Analytical reports being completed one year after the date the Assessment report was approved by NLSMR.

9.5 Preservation *in situ*

9.5.1 Under certain circumstances, preservation of archaeological remains in situ may be considered to be an appropriate option (for instance in the event of a change in the quarrying programme, or the discovery of remains of outstanding significance). In such circumstances consultation with English Heritage and NLSMR will be undertaken on the desirability and reasonable feasibility (within the terms of the Permission) of addressing all or part of the archaeological mitigation need by means of preservation *in situ* as a full or partial alternative to further archaeological works (leading to preservation by record). This will include consideration of any necessary stabilisation, soil reinstatement, burial environment monitoring, available remedial action and any other relevant conservation matters in line with EH Regional Science Advisor's guidelines (Appendix 1).

10 MONITORING, PROGRESS REPORTS AND MEETINGS

10.1 An annual, or such shorter/other period as appropriate, pre-fieldwork planning meeting will be held between the client, contractor and NLSMR to discuss all aspects of the forthcoming work, and to review the previous phase/sub-phase fieldwork and assessment report. At present it is expected that each phase of machine stripping will take place directly after harvest. In such cases a meeting will be held in the previous spring (February-March) time.

10.2 A series of regular monitoring meetings will be arranged with NLSMR as the detailed timetables for each phase are agreed allowing for on-site meetings and reviews of strategy in the light of developing circumstances. Any change to the methodology of soil stripping and mapping of features will need to be approved by NLSMR. Decisions regarding the appropriate level of archaeological response following the soil strip & mapping in each sub-phase, and any variations to that decision during the subseqent fieldwork will be made by the Project Manager in consultation with and subject to the approval of, NLSMR.

10.3 At 5 yearly intervals a major review meeting will be set up by the contractor and will be attended by the contractor, NLSMR, client and relevant specialists. The English Heritage Regional Science Advisor will also be invited. The 5-year review will consider the Assessment reports, updating of the project design, the application of new policies and guidelines to the project, the introduction of new archaeological techniques, publication requirements and timetable etc.

10.4 The quarry phases detailed in the attached figures will each be broken down into 3-4 sub-phases to enable efficient extraction. Each sub-phase will broadly

equate to one year's work. At the end of each full phase (eg Phase 1) an Assessment Report will be compiled. Short interim reports will be compiled at the end of each sub-phase and submitted to the NLSMR. To avoid potential deterioration of the Environmental samples these will be processed and catalogued at the end of each sub-phase (eg the first year's work on Phase 1). Artefacts will be submitted to the conservator after each sub-phase for preliminary assessment and any necessary stabilisation will be undertaken to avoid deterioration. Interim assessment reports will be prepared in certain circumstances, for instance if highly significant and vulnerable remains are encountered, or where significant features or deposits clearly extend beyond sub-phases (see 11.1). The requirement for such interim assessment reports will be decided by NLSMR in consultation with the Project Manager. Copies of interim assessment reports will be provided to the NLSMR and EHRSA within 6 months of completion of the fieldwork for the approval of the NLSMR.

10.5 In the event that unexpected archaeological remains are uncovered during intensive or extensive phases of Strip, Map and Sample that are considered to be 'sites', the contractor will immediately inform the NLSMR and a site meeting will be convened with the developer, the contractor and relevant specialists at the earliest possible opportunity. A decision regarding the treatment of the remains to ensure their preservation in situ or by record will be made by NLSMR in consultation with the developer.

10.6 Where such 'sites' are found within one or more sub-phases these may be regarded as a single entity and move forward to formal Assessment, Analysis and Publication as required by NLSMR.

11 POST-EXCAVATION

11.1 Archaeological work will be tied to quarry phases over a programme extending for some 25 years or longer. Assessment and reporting will be tied to major phase boundaries except where significant features or deposits clearly extend beyond phase boundaries. Where specific archaeological 'sites' can be identified, whether within or crossing phase boundaries, for example the enclosure in phase 5, these will be subject to individual assessment and, if appropriate, separate publication. Interim assessments reports will be prepared where highly significant and vulnerable remains are encountered or where significant features or deposits clearly extend beyond sub-phases, to inform annual review of methodologies and sampling strategies. An assessment report will be produced after the completion of the conveyor cutting operation. All assessment reports will be submitted within the specified timescales for the approval of the NLSMR.

11.2 Stage 1: Archive Preparation

11.2.1 Each phase or specific archaeological 'site', e.g. the enclosure in Phase 5, will be subject to an Archaeological Assessment as set out in

Management of Archaeological Projects II (English Heritage 1991). On completion of each phase of the site operations, or specific archaeological 'site', the records and schedules produced during the fieldwork will be checked and ordered to ensure that they form a uniform sequence constituting a site archive in accordance with MAP2, 5.4:Appendix 3. A preliminary stratigraphic matrix of the archaeological deposits and features present on the site will be prepared, along with a site summary and summary of the artefactual and ecofactual data.

11.2.2 When the archive is complete a review of the quality, character and significance of the data will be carried out in association with period and materials specialists allowing priorities to be set for material to proceed to formal assessment.

11.3 Stage 2: Post-Excavation Assessment and Analysis

11.3.1 Assessment allows decisions to be made about the potential of the data and the nature of any future programme of analysis leading to publication. The Assessment Report will be prepared in association with period and materials specialists and will comprise:

- A statement of the research aims and illustrated summary of the results of the fieldwork indicating to what extent the aims were fulfilled.
- A summary of the quantities and potential for analysis of each category of data.
- A list of the project aims as revised in the light of the results of the fieldwork and post-excavation assessment.
- A list of the methods to be used to achieve the research aims.
- A list of all the main tasks involved in achieving these aims, wherever possible linked to relevant method statements and indicating the personnel and person-days involved in each task.
- A provisional report synopsis giving detail of proposed chapters, section headings and sub-headings. The structure will reflect the research aims of the project.
- A list of the personnel involved indicating their qualifications for the tasks to be undertaken.
- A cascade or Gantt chart indicating tasks in sequence and relationships required to complete the project to publication.
- Provisional publication options indicating potential publishers and

report format.

11.3.2 The stratigraphic information, artefacts, soil samples and any technological residues shall be assessed as to their potential and significance for further analysis. Recognised local pottery reference collections and relevant codes will be used.

11.3.3 A specialist assessment of the artefacts recovered will be undertaken with a view to their potential and significance for further study. Allowance will be made for preliminary conservation and stabilization of all objects and an assessment of long-term conservation and storage needs, in accordance with Watkinson and Neal, 1998 *First Aid for Finds*. All pottery will be washed and marked prior to assessment. Other categories of artefact should also be marked, ie bone, flint etc. Once assessed, all material will be packed and stored in optimum conditions, as described in by Watkinson and Neal (ibid).

11.3.4 The specialist conservators and finds researchers will collaborate and undertake a rapid scan of all excavated material. Material considered vulnerable will be selected for stabilisation after specialist recording. Where intervention is necessary, consideration will be given to possible investigative procedures (e.g. glass composition studies, residues on or in pottery, and mineral-preserved organic material). A written assessment of long-term conservation and storage needs will be produced.

11.3.5 In accordance with the procedures outlined in MAP2, all archaeologically significant iron objects, a selection of non-ferrous artefacts (including all coins) and a sample of any industrial debris relating to metallurgy will be X-radiographed before assessment. Assessment will include inspection of all X-radiographs in accordance with English Heritage 2006 *Guidelines on the X-radiography of Archaeological Metalwork.*

11.3.6 Waterlogged organic materials will be dealt with in accordance with *Guidelines for the care of waterlogged archaeological leather* (English Heritage 1995a) and *Guidelines on the recording, sampling, conservation and curation of waterlogged wood* (English Heritage 1995b).

11.3.7 Processing of all samples collected for biological remains, or sub-samples of them, will be completed. The preservation state, density and significance of *material* retrieved will be assessed. Unprocessed sub-samples will be stored in conditions specified by appropriate specialists.

11.3.8 Samples for dating will be submitted to laboratories promptly, so as to ensure that results are available to inform the assessment.

11.3.9 Samples collected for geoarchaeological assessment will be processed

as deemed necessary by the specialist, particularly where storage for unprocessed samples is thought likely to result in deterioration. The material retrieved will be analysed and assessed as to their value for further study

11.3.10 Copies of the assessment report will be provided to the client, the NLSMR, the EH RSA, and the recipient museum within 6 months of the completion of the relevant phase of on-site works in the case of Strip, Map and Sample and within one year for full excavation and Intensive Strip, Map and Sample. The assessment report will be subject to the approval of the NLSMR.

11.3.11 The post-excavation assessment will inform a review of the project design which will require up-dating, as necessary. The up-dated project design will then form the basis for any subsequent post-excavation analysis, site report and publication. The up-dated project design will be devised in conjunction with the appropriate specialists and with the NLSMR, the EHRSA, the recipient museum and the developer, to be approved by the NLSMR in advance of the subsequent work commencing. A timetable for the completion of the remainder of the project through to the deposition of the archive will be included. The NLSMR will monitor the progress of the post-excavation programme through a series of pre-arranged meetings.

11.3.12 Post-excavation analysis will proceed in accordance with the updated project design and any alterations will be subject to the agreement of the NLSMR. All data generated as a result of the post-excavation analysis will be included in the project archive.

11.4 Stage 3: Site Reporting

11.4.1 A site report for each phase will be produced collating the results of the assessments and analysis of the site records, artefacts and environmental samples and will combine the results of the earlier evaluation. The site report will include the following:

- A non-technical summary of the results of the work, introduction and aims and objectives; the introduction will include the North Lincolnshire Museum Site Code, contractor's site code (if different), planning application reference, dates of fieldwork, and National Grid reference (centre of site)

- An account of the methods and results of the fieldwork including phasing and interpretation of the site sequence and dating evidence, supported by the use of drawings, including a plan accurately locating the site relative to current Ordnance Survey mapping data, and accurately geo-referenced to the National Grid; an overall plan/s of the site as excavated, indicating the location of archaeological features, and their sequence; sections detailing the stratigraphic

sequence of deposits including heights relative to Ordnance Datum; and photographs

- Assessment, analysis and research reports on the artefacts with reference to the relevant Lincolnshire reference collection codes for ceramic assemblages
- Assessment and analysis reports on the environmental remains
- Discussion of the archaeological significance of the deposits identified, in relation to other sites in the region
- Details of archive location and destination, including the timetable for deposition
- Appendices and figures, as appropriate
- References and bibliography of all sources used/consulted

- Oasis Reporting Form

11.5 Stage 4: Publication

11.5.1 It is intended that the results of the fieldwork be published either in the local archaeological journal or in the appropriate specialist academic journal. The appropriate level of publication will be dependent on the significance of the fieldwork results, and will be determined by the Project Manager in consultation with and subject to the approval of the NLSMR. Provision will be made for an overall synthesis on which to base the resultant publication. Details of the project will also be uploaded to the OASIS online database together with any unpublished archive reports.

12 REPORT DEPOSITION

12.1 Bound hard copies of the MAP2 assessment and site reports will be submitted to the commissioning body, the Planning Authority and the NLSMR within an agreed timetable and subject to any contractual requirements on confidentiality. An electronic copy of the MAP2 assessment and site reports will also be sent to the EH RSA. An electronic copy of the full MAP2 assessment and site reports, including specialist assessment reports, will be provided to the NLSMR in either .pdf or .rtf and Microsoft Word format, on a CD or as an e-mail file. Digital images will also be provided in jpeg format. Any digital data captured in GIS format e.g. site plan will also be provided as either AutoCad Drawing (.DXF) or MapInfo (.TAB).

13 ARCHIVE

13.1 The site archive, including finds and environmental material, subject to the permission of the relevant landowners, will be labelled, conserved and stored according to *Guidelines for the Preparation of Excavation Archives for Long-term Storage United Kingdom Institute for Conservation (UKIC)* (Walker 1990), and *Standards in the Museum Care of Archaeological Collections* (Museums and Galleries Commission 1992). Provision will be made for the stable storage of paper records and their long-term storage on a suitable medium, such as microfiche or microfilm, a copy of which will be deposited with the NMR. An index to the contents of the archive, together with details of its date and place of deposition will be lodged with the NLSMR. Provision will be made for deposition of the electronic archive with a suitable repository such as the ADS, York.

13.2 Archive deposition will be arranged in consultation with the recipient museum and other repositories in line with completion of individual quarry phases or 'sites' and will take account of the requirements of the repositories and the relevant guidelines relating to the preparation and transfer of archives (e.g.. North Lincolnshire Museum 2007 *Guidelines for deposition of Archaeological Archives with North Lincolnshire Museum*). Deposition will include transfer of title in accordance with legal requirements. The timetable for deposition will be agreed on completion of the site archive and narrative. Provision will be made for an adequate contribution to the recipient museum towards the curation and storage of archive material.

14 CURATORIAL RESPONSIBILITY

14.1 Curatorial responsibility for the archaeological work undertaken on the site lies with NLSMR on behalf of the Local Planning Authority. A programme of monitoring visits will be agreed with the NLSMR before the commencement of each phase of the fieldwork. The NLSMR will also monitor the progress of the post-excavation assessment and analysis, and the publication programme. The archaeological science component of this project will also be monitored by the EH RSA.

15 VARIATIONS AND CONTINGENCIES

15.1 Variations to the proposed scheme of works will only be made following written confirmation of acceptance from the archaeological curator and after appropriate consultation.

16 STAFFING

16.1 The project will be carried out by a professional archaeological contractor, who will demonstrate that they or their sub-contractors possess the necessary levels of professional experience and technical expertise, to include familiarity will all periods

of artefactual and ceramic products of the region, and where appropriate, having access to adequate laboratory facilities and relevant reference collections. Owing to the longevity of the project it is likely that additional or replacement staff and specialists will have to be appointed during the life of the project. The contractor undertakes to ensure NLSMR will be notified well in advance of any proposed changes. Any such changes will be subject to approval by NLSMR.

(See Project Design below)

17 INSURANCES

17.1 The contractor will ensure that they are adequately insured, to cover all eventualities, including risks to third parties.

18 COPYRIGHT

18.1 The contractor shall retain full copyright of any commissioned reports under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it hereby provides an exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project as described in the Project Specification.

18.2 Licence will also be given to the archaeological curators to use the documentary archive for educational, public and research purposes.

18.3 In the case of non-satisfactory settlement of account then copyright will remain fully and exclusively with the contractor. In these circumstances it will be an infringement under the Copyright, Designs and Patents Act 1988 for the client to pass any report, partial report, or copy of same, to any third party. Reports submitted in good faith by the contractor to any Planning Authority or archaeological curator will be removed from said planning Authority and/or archaeological curator. The Planning Authority and/or archaeological curator will be notified by the contractor that the use of any such information previously supplied constitutes an infringement under the Copyright, Designs and Patents Act 1988 and may result in legal action.

18.4 The author of any report or specialist contribution to a report shall retain intellectual copyright of their work and may make use of their work for educational or research purposes or for further publication.

19 PROJECT DESIGN

19.1 In response to this WSI, the contractor will submit for the approval of the NLSMR in advance of the commencement of work on each sub-phase, written details covering the following aspects: confirmation of adherence to the WSI; evidence of consultation and agreement with the appropriate local museum including the issue of a site code or accession number; a timetable of the on-site works and monitoring

arrangements; a list of all staff (including site staff and any sub-contractors and/or specialists, their responsibilities and qualifications; health and safety policies and implementation; details of insurance.

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12th February 2008

Appendix 1: Guidelines for production of a model scheme, used for preparation of a detailed PD in the event of a PIS strategy being proposed for archaeological remains on the application site.
Andy Hammon, English Heritage Regional Science Advisor, September 2007

The following aspects should be considered and included in any PIS Project Design:

1) A summary, account of the aims and objectives, and justification of the PIS strategy.

2) Characterisation of archaeological features and deposits in the area under consideration (i.e. the area of proposed PIS and adjoining areas). The requirement for characterisation is as follows: to understand the nature of the archaeological remains, their significance and academic potential; to inform any future mitigation / research strategy; and more immediately to inform the nature of the PIS proposal and Project Design.

3) A detailed explanation of the future land use and activities during and after quarrying. This should include a consideration of projected levels of vehicular traffic, potential for the accumulation of contaminants, modifications to the established hydrological regime, ground disturbance, etc.

4) Assessment of the suitability of the archaeological deposits for PIS. Further archaeological investigation and recording will be necessary to evaluate remains that are damaged, vulnerable, or unsuitable for PIS. Baseline conditions should also be established in order to facilitate future monitoring, including an assessment of artefact types present (indices of fragility and projected survival rates in the burial environment, etc), geochemical indicators (i.e. redox potential, soil pH, etc) and peat viability (i.e. level of degradation), if present.

5) PIS design, including methodology for reburial, including construction techniques (i.e. use of machinery); type and quantities of materials to be employed; the degree of pressure exerted on underlying archaeological features and deposits.

6) An on-going programme to monitor the condition of archaeological deposits PIS, including compaction (vertical and lateral movement) and contamination levels based on the established baseline conditions (see point 4). Monitoring of adjacent areas may also be necessary.

7) Details of PIS and monitoring resourcing, including timetabling, and the resource implications in the context of the resourcing of other previous and future archaeological work conducted as part of the current project.

The variables mentioned under each point are not exclusive and expert advice should be taken regarding other relevant variables and considerations.

Note that works relating to the existing Project Design/WSI should continue until any PIS scheme has been fully justified and agreed by the relevant parties.

Appendix 2: Outline Strategy for Environmental Sampling

Val Fryer BA, MIFA, Church Farm, Sisland, Loddon, Norwich, Norfolk, NR14 6EF
October 2007

1.0 Introduction

1.1 At the request of Archaeological Project Services, this outline strategy has been compiled for inclusion with the project design for archaeological mitigation for the proposed quarry extension at Melton Ross, North Lincolnshire.

1.2 As the proposed span of the project is in excess of ten years, this strategy is an outline recommendation, which may be subject to periodic upgrading as the project progresses.

2.0 The Project

2.1 Work is to be confined to the northern area, which at present appears to contain features related to agricultural/pastoral activity of probable Roman date and some possible earlier (prehistoric) features, although the latter are possibly isolated within the landscape.

2.2 Excavations will focus on a large sub-rectangular area surrounded on three sides by interrupted ditch alignments. Otherwise, work will be largely confined to a strip, map and sample strategy.

3.0 Sampling strategy

3.1 For guidelines on sampling see 'Environmental Archaeology: A guide to the theory and practise of methods, from sampling and recovery to post-excavation', English Heritage Centre for Archaeology Guidelines, 2002/01.

3.2 Plant macrofossil samples of approximately 20 – 40 litres in volume (2 – 4 buckets full) should be taken from all well-sealed features, particularly those which are intrinsically dated or which can be dated stratigraphically. Special attention should be paid to pits and post holes, particularly if the latter are elements within clearly defined structures. Any domestic deposits, for example occupation horizons, hearths or structural features (including roundhouse gullies) should be fully sampled if possible. The sampling of ditch fills can be problematic, particularly where the features are solely of an agricultural or pastoral nature. It is, therefore, recommended that ditch samples are primarily taken from corners/angles, intersections and termini, with especial notice being taken of deposits on either side of identified entranceways.

3.3 All samples must be clearly labelled and placed within suitable containers (preferably stacking buckets). Samples must be accompanied at all times by the relevant documentation.

3.4 All samples should ideally be stored in cool, dark conditions prior to processing, and should be processed with a minimum of delay to prevent any deterioration of the macrofossils during storage.

3.5 If the excavator feels that material may be required for C14/AMS dating

determinations, the plant macrofossil specialist should be informed at the outset of the assessment phase of post-excavation.

3.6 If the soil conditions are conducive to the survival of mollusc shells (see Table 1 within the English Heritage guidelines – see above), analysis of the assemblages has the potential to provide valuable data about the nature and development of the local environment. If present, shells will normally be removed from the bulk plant macrofossil samples, although additional column samples through any deeper ditch deposits may be of value. More specific specialist advice can be sought at the time of excavation.

3.7 Until work commences, it is not possible to state whether any additional environmental analysis (for example soil micromorphology) will be required. However, should the need for such work arise, all relevant specialists should be informed immediately.

3.8 Wherever possible, contingency should be made for specialist visits to the excavation. As this will involve some financial outlay, specialist rates should be ascertained at the outset of each season's work.

4.0 Post-excavation

4.1 A written summary of the excavation, to include context data, spot dates, site plan and site matrix, should be forwarded to all specialists at the earliest possible opportunity.

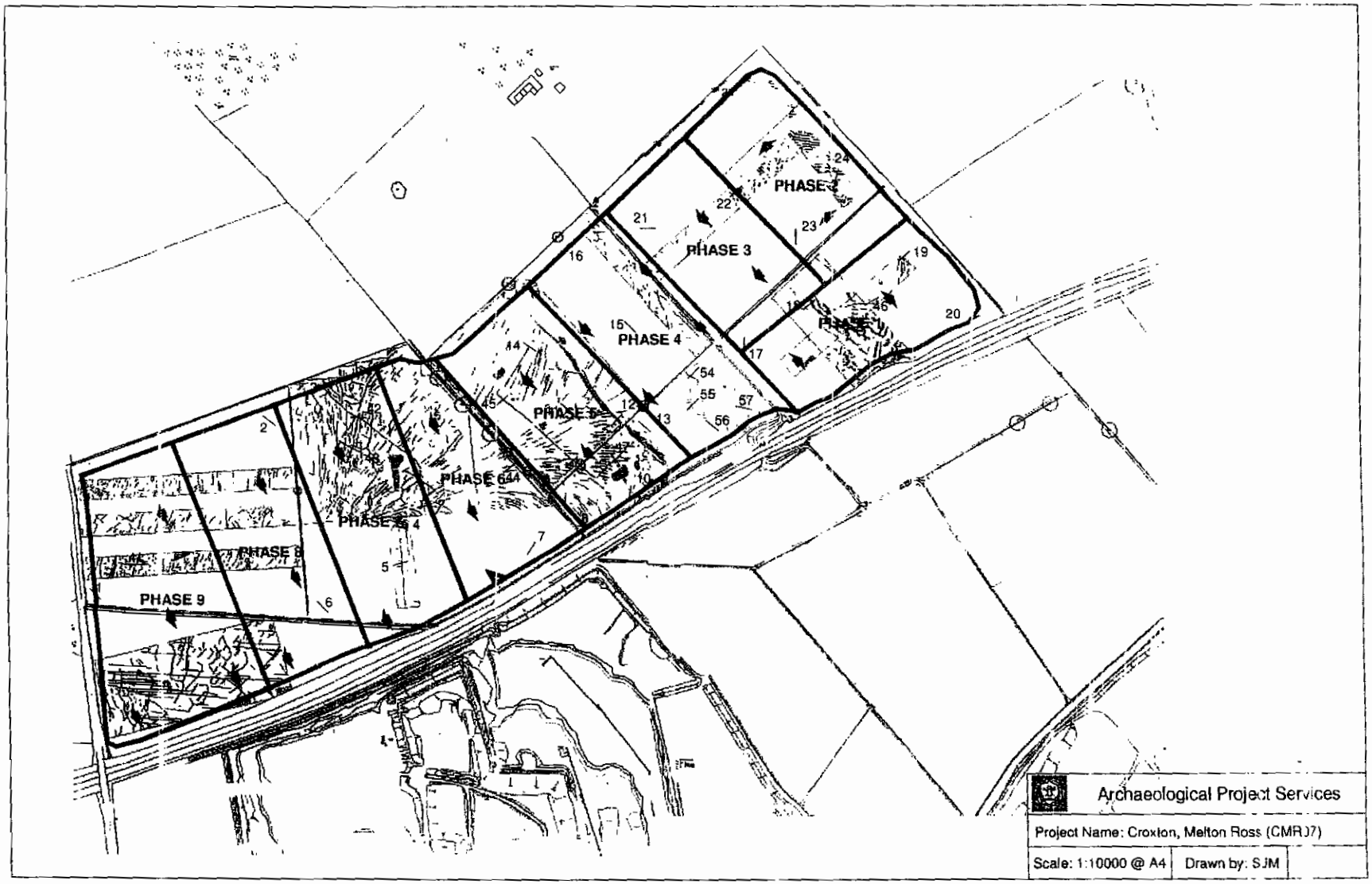
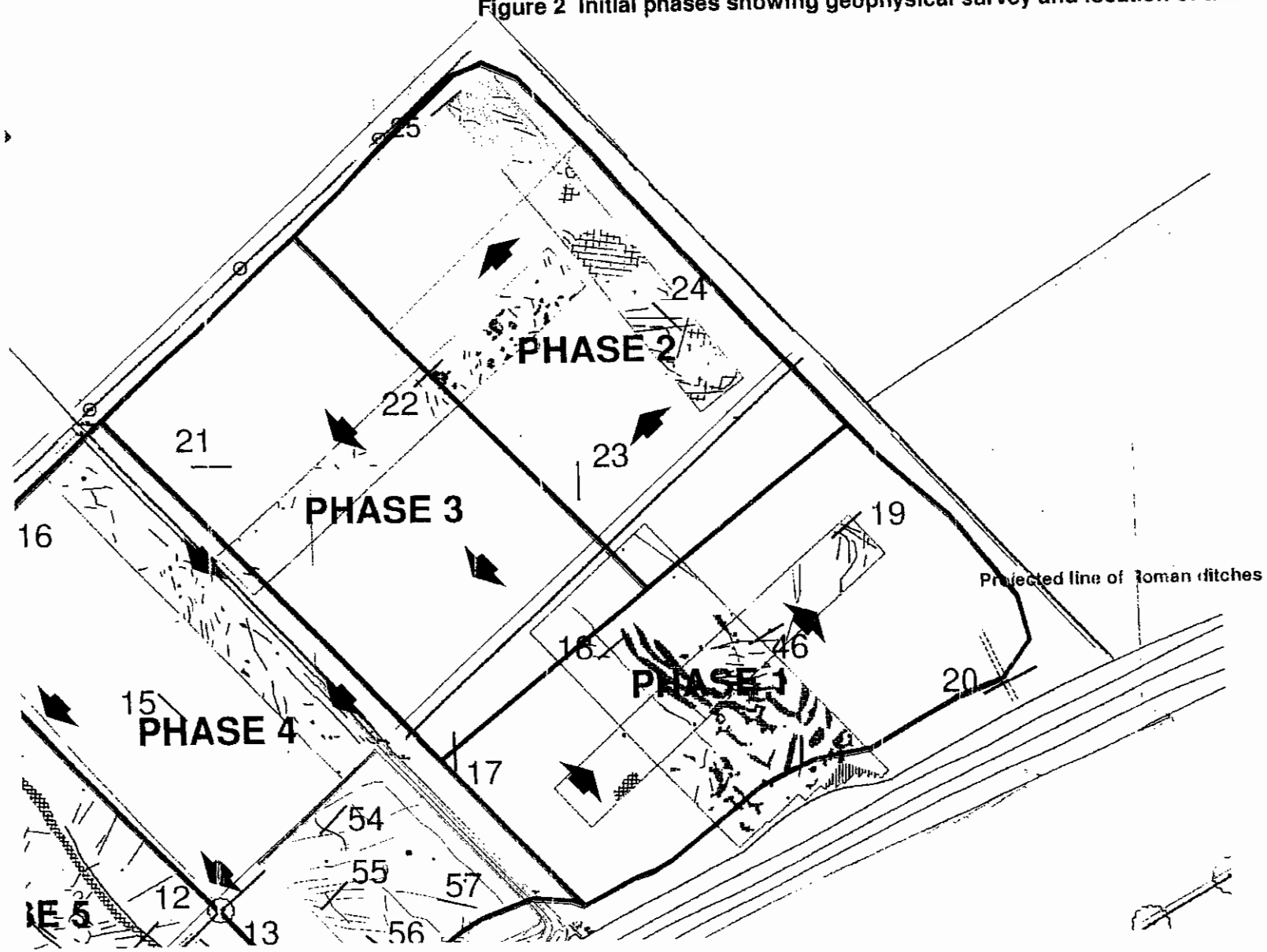


Figure 1 Proposed quarry phasing showing geophysical survey and location of trial trenches

Figure 2 Initial phases showing geophysical survey and location of trial trenches



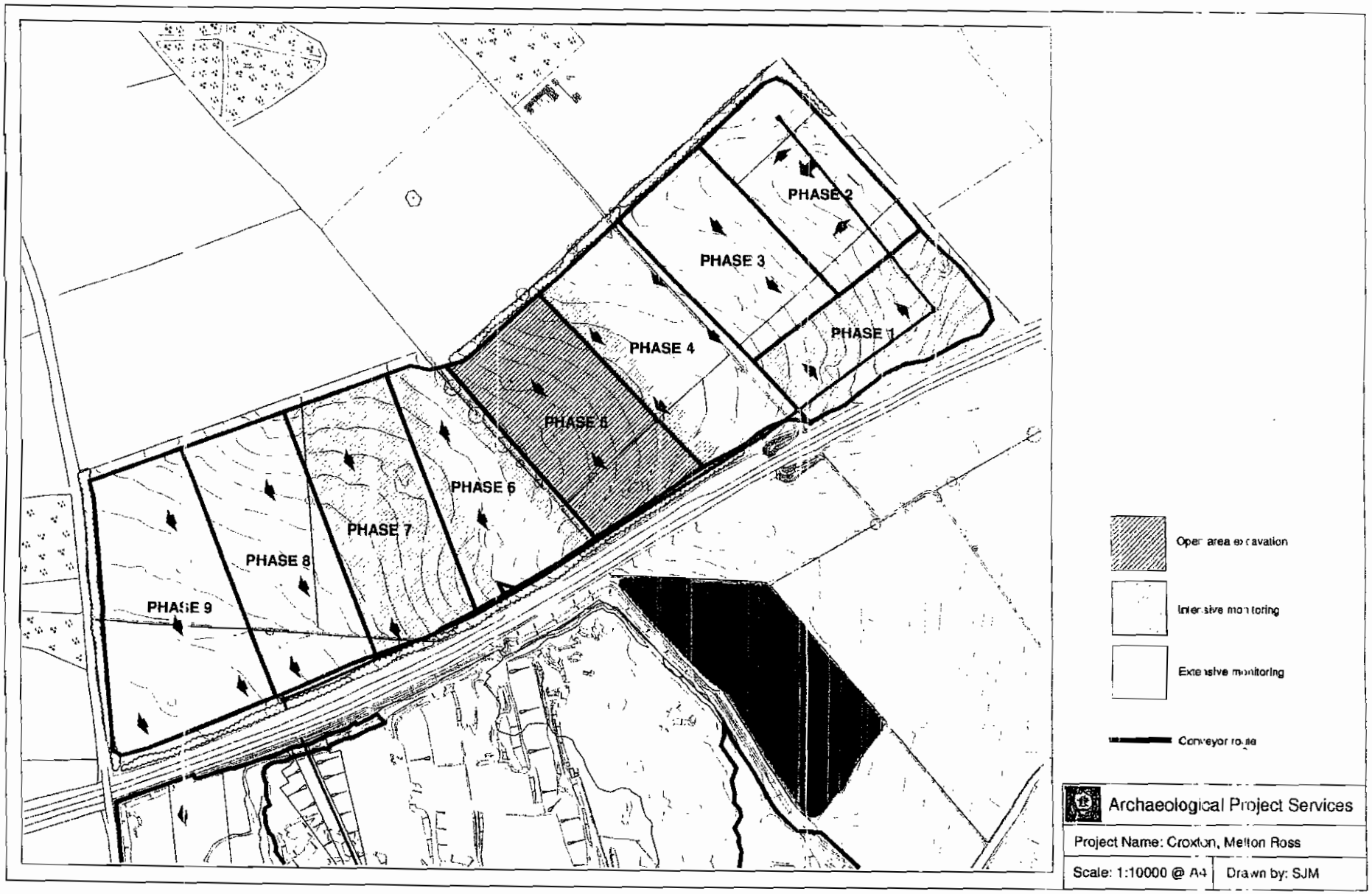


Figure 3 Proposed quarry phasing showing archaeological treatment