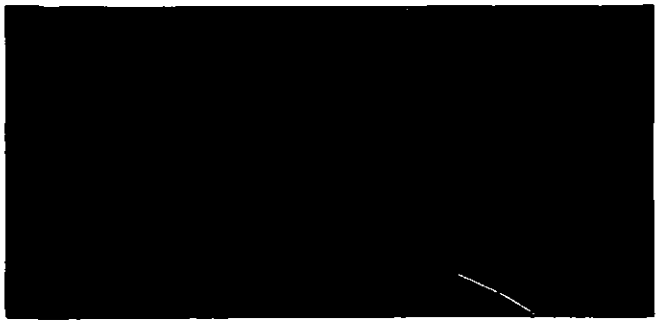

MAFF Ministry of Agriculture Fisheries and Food

STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION EXTENSION TO SAND AND GRAVEL QUARRY HIGH FARM, ROUTH, HUMBERSIDE OCTOBER 1995

ADAS
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SUMMARY

A detailed Agricultural Land Classification (ALC) and Statement of Physical Characteristics survey was carried out on 7.2 ha of land north of Routh ("Extension to Sand and Gravel Quarry, High Farm, Routh) in October 1995.

At the time of the survey 80% of the land was in agricultural use and all of this (5.8 ha) falls in Subgrade 3b. The soils are variable, although most are poorly drained, with medium-textured topsoils overlying gleyed and slowly permeable medium to heavy-textured subsoils at around 30 cm depth. In some places lighter-textured subsoil horizons occur at variable depths and in such cases the soils may be well or moderately well drained, but these areas cannot be mapped as a separate unit. The factors restricting the ALC grade of the land are, therefore, soil wetness and a pattern limitation. The remaining land on the site consists of Woodland (1.0 ha), Open Water (0.2 ha) and Urban land (0.2 ha).

In terms of soil resources a medium-textured topsoil (median depth 30 cm) with a weakly developed medium subangular blocky structure overlies a medium to heavy-textured subsoil consisting of sandy clay loam, heavy clay loam or clay in most cases. Subsoil horizons of sandy loam or loamy sand occur at varying depths and the subsoil structure varies from weakly developed subangular blocky to strongly developed prismatic. Mean subsoil depth is 90 cm.

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1. INTRODUCTION AND STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 Location and Survey Methods

The site lies 7km north-east of Beverley and 750m north of the village of Routh. Survey work was carried out in October 1995 when the soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. One soil pit was dug to allow a full profile description to be made. The land quality was assessed using the methods described in "Agricultural Land Classification of England and Wales: *Revised guidelines and criteria for grading the quality of agricultural land*" MAFF (1988).

1.2 Land Use and Relief

At the time of the survey 80% of the site was in agricultural use (permanent grass in the south and winter cereals in the north) while 20% consisted of open water, woodland and urban land.

The site lies at an altitude of approximately 6m AOD and the land is generally level, although the topography in the south is slightly more undulating and the field immediately north of High Farm is in rigg and furrow.

1.3 Climate

Grid Reference	: TA091436
Altitude (m)	: 6
Accumulated Temperature above 0°C (January - June)	: 1388 day °C
Average Annual Rainfall (mm)	: 644
Climatic Grade	: 1
Field Capacity Days	: 147
Moisture Deficit (mm) Wheat	: 105
Moisture Deficit (mm) Potatoes	: 97

1.4 Geology, Soils and Drainage

The area is underlain by Cretaceous Chalk over which lie deposits of till. The soils on the site are variable but in most cases medium clay loam topsoils overlie sandy clay loam, heavy clay loam or clay subsoils. However, in parts of the centre and east lighter-textured subsoil horizons, consisting of sandy loam or loamy sand, occur at variable depths. Equally, the drainage status of the soil profiles is variable - most fall in Wetness Class IV (poorly drained) but some are well or moderately well drained, falling in Wetness Class I and II. The soils correspond to the Holderness Association as mapped by the Soil Survey and Land Research Centre.

1.5 Soil Properties

One main soil type occurs on this site, a description of which is given below. Topsoil and subsoil resources are also shown on the accompanying maps along with soil thickness and volume information.

(a) Soil type 1:- Medium to heavy-textured soils (Unit T1/S1)
(Full Profile Description, Table 1).

This soil, formed on glacial till, occurs over the whole of the site. It is characterised by a medium-textured topsoil overlying a medium to heavy-textured subsoil.

1.6 Soil Resources

(i) Topsoils

Unit T1 occurs over the whole site. It is medium-textured (generally medium clay loam) and stoneless to very slightly stony, containing up to 3% very small to medium-sized hard stones and flints. Unit T1 has a weakly developed medium subangular blocky structure and a median depth of 30 cm.

(ii) Subsoils

Unit S1 occurs over the whole site. In most cases it is medium to heavy-textured, consisting of sandy clay loam, heavy clay loam or clay, and it is stoneless to very slightly stony, containing up to 5% very small to medium hard stones and flints. However, in parts of the centre and east horizons of medium sandy loam or loamy

medium sand occur at variable depths. This variability means that they cannot be accurately mapped as a separate subsoil unit, but where horizons of sufficient thickness are found they should be stripped and stored separately. The structure of the subsoil varies between weakly developed subangular blocky and strongly developed prismatic.

2. SOIL PROFILE DESCRIPTION

Table 1 Medium to heavy-textured soil, T1/S1

Profile Pit 1 (Near auger boring 3)

Slope:- 0°

Land Use:- Winter Cereals

Weather:- Overcast, mild

Depth cm	Horizon Description
0-30	Dark brown (10YR3/3) medium clay loam; no mottles; very slightly stony, with around 2% very small to medium hard stones and flints; moist; weakly developed medium subangular blocky structure; firm; moderately porous; many very fine fibrous roots; moderately sticky; moderately plastic; non-calcareous; clear smooth boundary.
30-40	Dark brown (10YR4/3) heavy clay loam; common indistinct yellowish brown (10YR5/4) mottles; very slightly stony, with around 2% very small to medium hard stones and flints; moist; moderately developed medium and coarse subangular blocky structure; very firm; slightly porous; many very fine fibrous roots; moderately sticky; very plastic; non-calcareous; abrupt wavy boundary.
40-53	Greyish brown (10YR5/2) heavy clay loam; common indistinct yellowish brown (10YR5/6) mottles; very slightly stony, with around 2% very small to medium hard stones and flints; moist; weakly developed coarse subangular blocky structure; very firm; slightly porous (<0.5% pores >0.5mm); common very fine fibrous roots; moderately sticky; moderately plastic; non-calcareous; clear smooth boundary.

Depth (cm)	Horizon Description
53-85	Grey (N6/) clay; many distinct strong brown (7.5YR4/6) mottles; stoneless; moist; strongly developed medium and coarse prismatic structure; extremely firm; very slightly porous (<0.5% pores >0.5mm); common very fine fibrous roots; very sticky; very plastic; non-calcareous; abrupt wavy boundary.
85-120	Brown (7.5YR5/2) loamy medium sand; many distinct reddish yellow (7.5YR6/8) and common light grey (10YR7/2) mottles; very slightly stony, with around 2% very small to medium hard stones and flints; slightly moist; massive; very firm; moderately porous; common very fine fibrous roots; slightly sticky; slightly plastic; non-calcareous.

3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a		
3b	5.8	80.6
4		
5		
(Sub total)	(5.8)	(80.6)
Urban	0.2	2.8
Non Agricultural		
Woodland	1.0	13.8
Agricultural Buildings		
Open Water	0.2	2.8
Land not surveyed		
(Sub total)	(1.4)	(19.4)
TOTAL	7.2	100

3.1 Subgrade 3b

All of the agricultural land on the site has been mapped as Subgrade 3b. The soils are variable, although in most cases the profiles are poorly drained (Wetness Class IV) with medium clay loam topsoils overlying gleyed and slowly permeable sandy clay loam, heavy clay loam or clay subsoils at around 30 cm depth. In some places subsoil horizons of sandy loam or loamy sand occur at between 30 cm and 120 cm depth, but the thickness of these horizons is very variable. Where they do occur some profiles are well or moderately well drained, falling in Wetness Classes I and II, although a pattern limitation prevents them being mapped as a separate unit. The ALC grade is, therefore, limited to Subgrade 3b by soil wetness or a pattern restriction.

3.2 Urban

This consists of a track in the east of the site.

3.3 Woodland

A belt of newly planted deciduous woodland runs from east to west through the centre of the site.

3.4 Open Water

A recently constructed pond is found in the east of the block of woodland.

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MAPS