STATEMENT OF PHYSICAL CHARACTERISTICS
AND
AGRICULTURAL LAND CLASSIFICATION
ALLERTON GRANGE, FLAXBY,
KNARESBOROUGH, NORTH YORKS
PROPOSED SAND AND GRAVEL EXTRACTION
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ADAS
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SUMMARY

A Statement of Physical Characteristics and a verification of the Agricultural Land Classification of land previously surveyed in September 1990 was carried out on 39.6 ha of land west of Allerton Grange in June 1993.

At the time of the survey, all of this land was in agricultural use of which 10.3 ha falls within Grade 2. Soils within this grade consist of deep well drained (Wetness Class I) stoneless to very slightly stony medium sandy loam or sandy clay loam topsoils and subsoils. Slight soil droughtiness limits this land to Grade 2.

Subgrade 3a land covers 27.6 ha. Soils are well drained (Wetness Class I) and consist of light to medium textured topsoils and subsoils similar to the Grade 2 land. Topsoils, however, contain 5-15% stones and subsoils anything from 15-50% stones. As a result a combination of topsoil stoniness and droughtiness limits these soils to Subgrade 3a.

Subgrade 3b land covers 1.7 ha. Soils are well drained (Wetness Class I) and consist of moderately stony medium sandy loam topsoils overlying sandy upper subsoils over gravelly material. Droughtiness and topsoil stoniness limit these soils to Subgrade 3b.

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STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED GRAVEL PIT AT ALLERTON GRANGE, FLAXBY, NORTH YORKSHIRE

1. INTRODUCTION AND STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 Location and Survey Methods

The site is located around Grid Reference SE 405580 approximately 5½ km east of Knaresborough. It covers a total of 39.6 ha, all of which was in agricultural use at the time of survey.

Survey work was originally carried out in September 1990 when soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. A further detailed soil pit was dug in June 1993 to verify the physical characteristics determined in 1990. The assessment of land quality was made 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

Altitude varies between 38m and 61m AOD and gradients are level to moderately sloping (0-4°). At the time of the survey all land was in arable use.

1.3 Climate

Grid Reference	: SE405580
Altitude (m)	: 50m
Accumulated Temperature above 0°C (January-June)	: 1359 day°C
Average Annual Rainfall (mm)	: 644
Climatic Grade	: 1
Field Capacity Days	: 157
Moisture Deficit (mm) Wheat	: 102
Moisture Deficit (mm) Potatoes	: 92

1.4 Geology, Soils and Drainage

The site is underlain by the Triassic Sherwood Sandstone Group. Solid strata, however, do not occur within 1m of the surface and soils are developed on drift deposits consisting of light textured till, glacial lake deposits of silt and clay and glaciofluvial sand and gravel. Light drift covers much of the site and soils formed on this are predominantly coarse loamy in texture. Topsoils are usually of medium sandy loam or occasionally sandy clay loam. Subsoils are generally similar, but can be lighter with loamy medium or more rarely sand at depth. Profiles are well drained falling into Wetness Class (I) although relic gleying can be found, indicating poor drainage in the past. Topsoils are mainly very slightly to slightly stony, with subsoils being slightly to moderately stony.

1.5 Soil Properties

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

a) Soil Type 1: Light/Medium textured soils (Unit T1/S1)
(Full Profile Description, Table 1)

This soil formed on drift deposits occurs over the whole of the site. It is characterised by light to medium textured, stoneless to moderately stony subsoils.

1.6 Soil Resources

(i) Topsoils

Unit T1 occurs over the whole site. It is light to medium textured and typically consists of medium sandy loam with occasional sandy clay loam and medium clay loam patches. The soils are stoneless to moderately stony, containing 0-20% small to medium rounded and subangular hard stones. The topsoil has a moderately developed medium angular blocky structure and a median thickness of 30 cm.

(ii) Subsoils

Unit S1 occurs over the whole of the site. It is light to medium textured and consists mainly of sandy clay loam and medium sandy loam. Occasional layers or lenses of silty clay occur at depth. Areas of very light sandy material also occur in places. Stone content varies from slightly to very stony, (15-50% small medium and large rounded subrounded and subangular hard stones). Structure is moderately developed medium subangular blocky. Mean thickness is 90 cm.

2. SOIL PROFILE DESCRIPTIONS

Table 1 light/medium textured soil, T1/S1

Profile Pit 1 (Near auger boring 35)

Slope: 1°
Land Use: Arable
Weather: Sunny

Depth cm	Horizon Description
0-20	Dark brown 10YR3/3 medium sandy loam; no mottles very slightly stony (approximately 5% small and medium angular, subangular and subrounded hard stones); moist; moderately developed medium and coarse subangular blocky structure; from soil strength; moderately porous; slightly sticky; slightly plastic; many fine and medium fibrous roots; non calcareous; abrupt smooth boundary.
20-75	Yellowish brown 10YR5/8 sandy clay loam; no mottles; slightly stony (approximately 15% small, medium and large subangular and subrounded hard stones); moist; moderately developed medium sub angular blocky structure; firm soil strength; moderately porous; slightly sticky; slightly plastic; common fine and medium fibrous roots; non calcareous; abrupt smooth boundary.
75-90	Dark grey 10YR4/1 silty clay; many distinct diffuse dark yellowish brown 10YR4/6 mottles; very slightly stony (approximately 5% small and medium subangular blocky hard stones); weakly developed medium to coarse prismatic structure; moist; very firm soil strength; slightly porous; very sticky; very plastic; few fine roots; non cancareous; abrupt smooth boundary.
90-120	Strong brown 75YR4/6 medium sand; no mottles; slightly stony (approximately 10% hard stones); no roots.

3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	10.3	26.0
3a	27.6	69.7
3b	1.7	4.3
4		
5		
(subtotal)	(39.6)	(100)
Urban		
Non Agricultural		
Woodland - Farm		
Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(subtotal)		
	39.6	100

3.1 Grade 2

Land in this grade occurs over the central part of the site and in a small area along the eastern edge. Topsoils vary in texture from stoneless to very slightly stony medium and fine sandy loam, sandy clay loam or medium clay loam, but are predominantly sandy loam. Subsoils consist of very slightly stony well drained (Wetness class I) medium sandy loams with occasional horizons of loamy sand and sand at depth.

These soils are limited to Grade 2 by slight soil droughtiness.

3.2 Subgrade 3a

Land in this Subgrade occurs over the majority of the remaining land and is the predominant grade. Topsoils are similar to the Grade 2 soils but are stonier containing 5-15% stones. Subsoils are well drained (Wetness class I) and consist of moderately to very stony (15-50%), medium sandy loam and loamy sand with pockets of sand and gravel at depth. Small areas and lenses of silty clay also occur in places.

A combination of topsoils stoniness and soil droughtiness limit these soils to Subgrade 3a.

3.3 Subgrade 3b

The small area of Subgrade 3b land is located around the woodland, just south of the 'Old' York to Harrogate Road. Soils here consist of medium sandy loam topsoils overlying moderately stony, sandy upper subsoils over gravelly material. Topsoils stone content ranges from 20% to 30%. Profiles are well drained (Wetness Class I).

Droughtiness and topsoil stoniness are the overriding restrictions on ALC grade in this area.

MAPS