

AGRICULTURAL LAND CLASSIFICATION

PROPOSED M1-A1 LINK ROAD:

Survey of land between
Robin Hood and Bramham Crossroads

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1. AGRICULTURAL LAND CLASSIFICATION

AGRICULTURAL LAND CLASSIFICATION REPORT ON LAND AFFECTED BY THE PROPOSED
A1-M1 LINK ROAD BETWEEN ROBIN HOOD AND BRAMHAM CROSSROADS

SECTION 1: INTRODUCTION AND SITE CHARACTERISTICS

1.1 LOCATION

The proposed line of the M1-A1 link road was surveyed during June and July 1990. The route runs from the M1 at Robin Hood on the southern outskirts of Leeds (NGR 320284) north eastwards and north of Garforth to the A1 at Hook Moor. It then runs parallel with and to the east of the present A1, to terminate a little to the north of A1/A64 crossroads at Bramham (NGR 431410).

1.2 SURVEY METHODS

Survey work was carried out along a 100 metre wide corridor centred over the route. Borings were made at 100 metre intervals in 2 parallel traverses along the corridor using a 1 metre hand auger. Soil profile pits were also dug where necessary to assess stoniness, soil structural conditions and gley morphology.

All land quality assessments were made using the methods described in "Agricultural Land Classification of England and Wales: Revised Guidelines for Grading the Quality of Agricultural Land (MAFF 1988).

1.3 LAND USE

Most agricultural land is in arable production or grass ley. Cereals and oilseed rape are the main crops grown with grassland uses common on restored and disturbed land between Garforth and Rothwell. Potatoes and combine peas are also grown particularly around Garforth.

1.4 CLIMATE

Average Annual Rainfall (AAR) varies between 655 and 685 mm, depending upon altitude and location along the route. Accumulated temperatures above 0°C (between January and June) are 1335 to 1361 day °C and the field capacity period along the route as a whole is about 155 days per year.

Although the combination of rainfall and temperature along the route shows that there is no overall climatic limitation on ALC grade, summer moisture deficits of 97-101 mm for winter wheat and 91-98 mm for potatoes result in a slight to moderate drought limitation on fine loamy soils overlying limestone and sandy profiles derived from weathering carboniferous sandstone (see section 1.5)

1.5 SOILS AND GEOLOGY

Carboniferous, Coal Measures consisting of weathering shales and mud stones interbedded with medium to fine grained sandstones occur along the route between Robin Hood and the Aberford Road, East Garforth (NGR SE 420344). East and north of this point the route passes over the Permian Magnesian Limestone.

Soils derived from the shales and mudstones consist typically of heavy clay loam topsoils and upper subsoils over clayey lower subsoils. Open cast coal mining has been prevalent in these areas and where restored these soils have mixed and highly compacted subsoil horizons that often pass into a grey shaly overburden with 1 metre of the surface.

Sandstone derived soils are widespread around Robin Hood, Rothwell and Barrowby and typically consist of slightly stony sandy loam topsoils and upper subsoils which become lighter with depth. Flaggy weathering sandstone is usually encountered within 1 metre of the surface.

Soils formed from the Lower Magnesian Limestone predominate along the route between Aberford Road and the Bramham Crossroads. These usually consist of between 30 and 70 cm of fine to coarse textured topsoils and subsoils over slightly weathered limestone. These soils are slightly stony and where deeper sometimes contain thin bands of marl in the lower subsoil.

SECTION 2: AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring along the proposed route (100 m wide corridor) are as follows:

Grade	Hectares (within 100 m corridor)	Percentage of total area (within 100 metre corridor)
2	39.2	16
3a	57.0	23
3b	64.2	26
4	0.8	
Urban	57.7	24
Non Agricultural	21.1	9
Open Water	4.3	2
Total	<hr/> 244.3	<hr/> 100%

2.1 GRADE 2

The main areas of grade 2 land occur near Barrowby Hall (NGR SE 385338) and between the Aberford Road and Bramham Crossroads.

Soils around Barrowby Hall consist of slightly stony fine sandy loam topsoils over sandy loam and loamy sand which occasionally overlies flaggy weathering sandstone within 1 metre of the surface. Soil droughtiness is slightly restricting, particularly in summer months, and is the overriding restriction on ALC grade.

Between Aberford Road and Bramham crossroads soils typically consist of medium clay loam or sandy clay loam topsoils and subsoils that pass into weathering limestone at depth. Soil droughtiness is, again, slightly limiting and is the main restriction on ALC grade.

2.2 SUBGRADE 3A

Most subgrade 3A land also occurs between Aberford Road and Bramham where soils, although texturally similar to those above, tend to be thinner. Soil droughtiness is therefore more restricting than on the adjacent grade 2 land and forms the overriding restriction on ALC grade.

Subgrade 3a land is also widespread between the M1 motorway and the A639. Here fine sandy loam topsoil textures occur over similar or slightly lighter subsoils which pass into flaggy weathering sandstone at about 50 cm depth. Soil droughtiness is more limiting than on similar but deeper soils around Barrowby and is the main factor limiting this area to subgrade 3a.

2.3 SUBGRADE 3B

Most soils in this subgrade occur on restored land between Rothwell and Garforth. They usually consist of medium to heavy clay loam topsoils over mixed and highly compacted subsoils which pass into grey shaly overburden at depth. All such profiles fall within wetnesses class IV and are limited to subgrade 3b by topsoil wetness and workability problems.

A few small areas of land on Magnesian Limestone between Aberford and Bramham also fall within this subgrade. These contain soils consisting typically of stony medium clay loam topsoils over shattered weathering limestone. Soil droughtiness and stoniness are moderately to severely limiting and are the main restrictions on ALC grade.

2.4 GRADE 4

Land in this grade is confined to localised patches of restored land north of Newsam Green. Soil profiles are highly compacted and usually consist of heavy clay loam or clay subsoil material to the surface. Severe disturbance and the lack of an overlying topsoil are the main restrictions on ALC grade.

2.5 NON AGRICULTURAL

Most non agricultural land occurs south of Temple Newsam Park where soil material has been compacted or removed in preparation for road construction. Other non agricultural land uses along the route include woodland, vacant land, playing fields and a caravan park.

2.6 URBAN

Land in this category includes existing roads and railways along with the sludge beds and derelict land south east of Skelton Grange Power Station.

2.7 OPEN WATER

This consists of the River Aire, the Aire Calder Navigation Canal and lagoons near Skelton Grange Power Station.

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