

AGRICULTURAL LAND CLASSIFICATION

York to Malton, North Yorkshire

Proposed dualling/widening of the A64 Trunk Road

Report prepared for the  
DEPARTMENT OF TRANSPORT  
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CONTENTS

Section 1 Introduction and site characteristics.

Section 2 Agricultural Land Classification.

Maps

## Agricultural Land Classification Report:-

### A64 York - Malton Proposed Dualling and route modifications

#### 1. Introduction and Site Characteristics

##### 1.1 Location

The alternative routes for the proposed dualling and re-routing run from the York ring road at its junction with the A1036 north east of York to the junction with the B1248 to the south west of Malton. Although these alternatives are around 22 km in length, the "purple" route utilises more of the existing road line and is thus likely to require a smaller amount of agricultural land.

##### 1.2 Survey Methods

Survey work was carried out in March 1991 along a hundred metre corridor centred over the alternative routes. Soils were examined by hand auger borings to a depth of 1 m at 100 m intervals staggered across the width of each corridor.

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

##### 1.3 Land Use

Agricultural land is in both arable and grassland use. Arable land is most widespread near to York and grassland more common on the heavier soils often associated with the 'strongly' sloping land south west of Malton. Woodland is also widespread especially in the Sand Hutton area.

#### 1.4 Climate and Relief

To take account of variations in climate in the 22 km between York and Malton and their possible effect on ALC grade, climatic data was compiled at 3 points along the route. The salient parameters are tabulated below:-

	Average Annual Rainfall (mm)	Accumulated Temperature above 0°C (Jan-June day °C)	Field Capacity Days	Moisture (mm) (wheat)	Moisture (mm) (potatoes)
South- Western End (SE670 585)	630	1370	146	108	99
Higher- Central Area (SE730 670)	686	1314	167	93	81
North- Eastern End (SE 758 695)	672	1346	165	98	87

The combinations of rainfall and accumulated temperature show that whilst there is no climatic limitation on ALC grade at the northern and southern ends of the route, the higher central area is limited to Grade 2 by climate.

The relatively low rainfall along with the indicated soil moisture deficits are likely to make droughtiness a limiting factor on the lighter sandy soils common at the southern end of the routes.

Altitude varies considerably from 15 m aod to the North of York to 80 m aod at Whitwell Hill. At various locations around Barton Hill slopes of between 15° and 27° restricted some land to Grades 4 and 5.

## 1.5 Geology and Soils

The geology of the route can be divided into four areas. The south west end between York and Claxton is formed from glaciolacustrine clays interspersed with glaciofluvial and aeolian sands which are common in the Vale of York. Between Claxton and Barton Hill are heavier stony boulder clays. The area around Barton Hill shows a return to the stoneless lacustrine clay whilst the final section in the north east between Barton Hill and Malton consists largely of Jurassic clays and oolitic limestones.

As a result soils show considerable variation along the routes. In the SW the majority of soils consist of light freely draining loamy fine sands overlying sand or silty clay at depth. (Wetness Class 1). The lighter sandy soils are subject to some droughtiness and liability to wind erosion. On the heavier boulder clays and Jurassic clays between Barton Hill and Malton soils consist of heavy clay loam topsoils over gleyed slowly permeable clay subsoils, most of which are imperfectly or poorly drained and fall within Wetness Classes III and IV. Shallow loamy stony soils over limestone are also common in this area.

## 2. Agricultural Land Classification

The ALC grades occurring on the land to be taken by the proposed routes are as shown below. (The 1-10,000 scale maps produced with this report show land grades along the entire 100 m<sup>+</sup> survey corridor which covers a larger area.) Maps showing these land grades imposed onto the road "bandwidth", have been produced at a scale of 1-2,500 and supplied separately to the Department of Transport agricultural consultants. The statistics produced overleaf relate to the 1/2,500 maps only.

Table 1

ALC grades of land requires for A64 and associated roadworks

Grade	Hectares			Percentage of Road Bandwith		
	Purple Route	Orange Route	Green Route	Purple Route	Orange Route	Green Route
2	8.14	9.79	5.28	8.3%	10.5%	8.3%
3a	14.13	14.70	16.19	14.3%	15.7%	25.5%
3b	15.31	19.33	15.96	15.5%	20.7%	25.2%
4	0.78	0.71	0.81	0.8%	0.8%	1.3%
5	Nil	0.41	Nil	-	0.4%	-
Non Agricultural	6.47	6.90	5.80	6.6%	7.4%	9.1%
Agricultural Bldgs	0.22	0.16	Nil	0.2%	0.2%	-
Urban	<u>53.55</u>	<u>41.34</u>	<u>19.42</u>	<u>54.3%</u>	<u>44.3%</u>	<u>30.6%</u>
Totals	98.60	93.34	63.46	100%	100%	100%

## Grade 2

Land of this grade occurs throughout the proposed routes and consists of sandy loam/loamy sand topsoils overlying sand or clay at depths of more than 70 cm. These soils are well drained (Wetness Classes I or II) and are limited to this grade by slight droughtiness, which without irrigation, will restrict crop yields in most years.

## Subgrade 3a

This subgrade of land is most common on the southern part of the routes and is made up either of sandy loams overlying slowly permeable silty clay and heavy clay loams (Wetness Class III and IV), limited by wetness, or free draining loamy fine sand topsoils overlying loamy fine sand and medium sand subsoils to depth. Land of the latter type is subject to wind erosion in early spring and to slight droughtiness in summer and is limited to subgrade 3a for those reasons.

### Subgrade 3b

This subgrade predominates in the higher central and northern parts of the route. Medium and heavy clay loam topsoils overlie slowly permeable and gleyed silty Jurassic clays at depths from 15 cm to 40 cm (Wetness Class IV). These soils are limited to subgrade 3b by wetness and workability problems. Also included within this subgrade are some areas of stony shallow soil overlying Jurassic limestone where the main limitations are stoniness and shallow depth.

### Grade 4

These areas near High Sutton are limited to this grade by slopes of between 14-17°.

### Grade 5

Two small areas around High Sutton are limited to Grade 5 by gradients of around 25°.

### Non Agricultural

Land in this category includes woodland and derelict land.

### Agricultural Buildings

Buildings used for agricultural purposes fall within this category.

### Urban

This category consist of roads associated with the route along with buildings and other areas of urbanised land.

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