

AGRICULTURAL LAND CLASSIFICATION

PROPOSED NORMANTON BYPASS

WEST YORKSHIRE

SEPTEMBER 1992

ADAS

Leeds Statutory Group

Job No:- 93/92

MAFF Ref:-

2FC16080

ALCNORM.BYP

NORMANTON BYPASS

SUMMARY

The soils along the route of the proposed Normanton Bypass and associated area proposed for opencasting are formed in weathering Coal Measure shales and sandstones. The soils formed in sandstone are well drained and light-textured but generally limited to Subgrade 3a by soil droughtiness. Land in this subgrade covers approximately 43% of the agricultural land on the proposed route and 24% of the proposed opencast site.

The soils formed over shale are generally poorly drained with medium or heavy-textured topsoils and heavy-textured subsoils. The subsoils are generally slowly permeable so the land is limited to Subgrade 3b by soil wetness. Land in this subgrade makes up approximately 57% of the agricultural land on the route and 76% of the agricultural land of the proposed opencast site.

The predominant ALC grades, based on a desk study of the proposed route and 1983 ALC report of the area proposed for opencasting are as follows:-

<u>Grade/Subgrade</u>	<u>Proposed Bypass</u>		<u>Area proposed for Opencast</u>	
	<u>Hectares</u>	<u>% of route</u>	<u>Hectares</u>	<u>% of opencast area</u>
3a	16.3	32	14.1	23
3b	21.6	42	43.5	72
(Subtotal)	(37.9)	(74)	(57.6)	(95)
Urban	12.1	24	0.75	1
Non-Agricultural	0.85	1	2.4	4
TOTAL	50.85	100	60.75	100

PROPOSED NORMANTON BYPASS

INTRODUCTION

This report contains information on the climate, geology, soils and agricultural land quality of the route of the proposed Normanton Bypass and associated area proposed for opencasting. The proposed route runs from Woodhouse Common in the south (Grid Reference SE378213) to Junction 31 of the M62 in the north (Grid Reference SE398236). The proposed opencast area lies to the south of the route and forms part of the proposed Pineapple opencast site.

The soils information in the report was obtained from the Soil Survey of England and Wales publications "Soils and their Use in Northern England and the accompanying 1:250,000 scale map, and "Soils of the Castleford Area of Yorkshire" and the accompanying 1:25,000 map.

Some detailed Agricultural Land Classification information for the area proposed for opencasting has been obtained from a report on the proposed Pineapple opencast coal site. This site was surveyed by ADAS in 1983 when soils were examined by auger borings at 100 m intervals predetermined by the National Grid.

Climate

Due to the only slight variability in climate over the survey area one central climatic datapoint has been used for this exercise.

Site Name:	Normanton Bypass (Church Lane).
Grid Reference:	SE397216
Altitude (m)	40
Accumulated Temperature	
(January - June) Above 0°C:	1376
Annual Average Rainfall (mm):	623
Climatic Grade:	1
Field Capacity Days:	137
Moisture Deficit Wheat (mm):	104
Moisture Deficit Potatoes (mm):	95

Relief

The proposed road route falls from approximately 70 m A.O.D. in the south (at Woodhouse Common) to 20 m A.O.D. in the north. Slopes are slight in the north and south but gentle to moderate in the central part of the proposed route. Some slopes in this central area are between 8 and 11° thus limiting the land to Subgrade 3b. However, most of this land will also be limited to Subgrade 3b by soil wetness.

The area proposed for open casting varies from approximately 70 m A.O.D. at Woodhouse Common and Mill Hill to 53 m A.O.D. in the south-eastern corner. Slopes are slight to moderate in this area but do not limit the A.L.C. grade of the land.

Geology and Soils

The entire length of the proposed bypass and the associated area proposed for open casting are underlain by Carboniferous Coal Measures consisting of interbedded sandstones and shales. Drift deposits are absent.

The soils in the area closely reflect the underlying geology. Soils formed over outcrops of sandstone (Rivington Series in the classification used by the Soil Survey of England and Wales) are light-textured and well drained, falling in Wetness Class I. Depth to sandstone varies between 25 and 80 cm (but is usually more than 50 cm) and typically a sandy loam topsoil overlies a loamy sand subsoil.

Soils formed over shales (Dale Series) are medium to heavy-textured and poorly drained (Wetness Class IV). Typically topsoils consist of medium or heavy clay loams which overlie clay or silty clay subsoils.

AGRICULTURAL LAND CLASSIFICATION GRADES

The predominant A.L.C. grades occurring along the proposed road route are as follows:-

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Total Area</u>
3a	16.3	32.0
3b	21.6	42.5
(Subtotal)	(37.9)	(74.5)
Non Agricultural	0.85	1.7
Urban	12.10	23.8
Total	50.85	100
Subgrade 3a		

Land predominantly in this subgrade occurs around Woodhouse Common in the south and in two small areas in the north. Topsoils are predominantly sandy loams and overlie sandy loam or loamy sand subsoils. Soil depth varies in these soils between 25 cm and 80 cm, but is probably between 50 cm and 70 cm in most cases. The soils are well drained, falling in Wetness Class I, but moderate soil droughtiness will in most cases limit the land to Subgrade 3a. Where soil depth is less than 50 cm or greater than 70 cm small areas of Subgrade 3b and Grade 2 land respectively may occur.

Subgrade 3b

Predominantly Subgrade 3b land occurs in the centre of the proposed route. Topsoils are medium or heavy-textured (typically medium clay loam or heavy clay loam) and overlie clay or silty clay subsoils. These soils are generally poorly drained (Wetness Class IV) with slowly permeable subsoils starting at around 35 cm depth. This land is generally limited to Subgrade 3b by soil wetness and workability but where slowly permeable subsoils begin at 40 cm depth or more, there may be small areas of Subgrade 3a land.

Non Agricultural

This category includes a small area of woodland off Havertop Lane in the north.

Urban

This category includes part of the A655 in the south (at Woodhouse Common), Church Lane and part of a disused railway line in the centre, and Loscoe Lane and an industrial estate in the north of the proposed route.

The predominant A.L.C. grades occurring in the area proposed for opencasting are as follows:-

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Total Area</u>
3a	14.1	23.2
3b	43.5	71.6
(Subtotal)	(57.6)	(94.8)
Non Agricultural	2.40	4.0
Urban	0.75	1.2
TOTAL	60.75	100
Subgrade 3a		

Land predominantly in this subgrade occurs in the west of the area proposed for opencasting. North of Elsicker Lane and Butcher's Gap Lane soils typically consist of a fine sandy loam or medium clay loam topsoil overlying either a loamy sand upper subsoil and sand lower subsoil or a fine sandy loam upper subsoil and a sandy clay loam, heavy clay loam or clay lower subsoil. Where the subsoil is light-textured these soils are well drained (falling in Wetness Class I) but where a medium or heavy-textured subsoil occurs profiles are likely to be imperfectly drained, falling in Wetness Class III.

South of Elsicker Lane and Butcher's Gap Lane soils generally consist of a medium clay loam or fine sandy loam topsoil overlying a heavy clay loam or clay subsoil. Profiles here are likely to be imperfectly or poorly drained, falling in Wetness Class III or IV.

The land north of Elsicker and Butcher's Gap Lanes is limited to Subgrade 3a either by soil droughtiness, where light-textured subsoils occur, or soil wetness where profiles are imperfectly drained. The land south of these lanes is limited to this subgrade by soil wetness.

Subgrade 3b

Land predominantly in this subgrade occurs in the east of the area proposed for opencasting. Soils typically consist of a medium clay loam or heavy clay loam topsoil overlying a heavy clay loam or clay subsoil. Profiles are poorly drained, falling in Wetness Class IV and the land is thus restricted to Subgrade 3b by soil wetness and workability restrictions.

Non Agricultural

This occurs in the south of the area proposed for opencasting where there is an area of waste ground or scrub.

Urban

This refers to a short length of Boundary Lane and the A655 at Woodhouse Common, and Warmfield.

ADAS File: 2FCS 6080