

**AGRICULTURAL LAND CLASSIFICATION
REMOVAL OF EMBANKMENT AT BANKS**

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AGRICULTURAL LAND CLASSIFICATION REPORT FOR REMOVAL OF EMBANKMENT AT BANKS

1 SUMMARY

1.1 The Agricultural Land Classification (ALC) Survey for this site shows that the following proportions of ALC grades are present:

Grade/Subgrade	ha	% of site
3a	1.2	22
3b	4.2	78

1.2 The main limitation to the agricultural use of land in Subgrades 3a and 3b is soil wetness.

2 INTRODUCTION

2.1 The site was surveyed by the Resource Planning Team in September 1995. An Agricultural Land Classification survey was undertaken according to the guidelines laid down in the "Agricultural Land Classification of England and Wales - Revised Guidelines and Criteria for Grading the Quality of Agricultural Land" (MAFF 1988).

2.2 The 5.2 hectare site is situated to the west of Banks and is bounded to the south by Station Road. The land immediately to the north and east of the site is predominantly in agricultural use.

2.3 The survey was requested by MAFF in connection with a proposal to spread soil from an embankment onto the site.

2.4 At MAFF Land Use Planning Unit's request this was a detailed grid survey at 1:10000 with a minimum auger boring density of 1 per hectare. The attached map is only accurate at the base map scale and any enlargement would be misleading.

2.5 At the time of the survey the site was under ley grass and fallow following the harvesting of cereals.

3 CLIMATE

3.1 The following interpolated data are relevant for the site (SD 385205) :

Average Annual Rainfall (mm)	857
Accumulated Temperature above 0°C January to June (day °C)	1440

3.2 There is no overall climatic limitation on the site

3.3 Other relevant data for classifying land include:

Field Capacity Days (days)	196
Moisture Deficit Wheat (mm)	87
Moisture Deficit Potatoes (mm)	74

4 SITE

4.1 Three site factors of gradient, micro relief and flooding are considered when classifying land.

4.2 These factors do not impose any limitations on the agricultural use of the land.

5 GEOLOGY AND SOILS

5.1 The solid geology of the area is comprised of Mercia Mudstone - British Geological Survey Sheet 74 Southport 1:50,000. This is overlain by deposits of Boulder Clay.

5.2 The underlying geology influences the soils which have a clay loam texture.

6 AGRICULTURAL LAND CLASSIFICATION

6.1 Subgrade 3a occupies 1.2 hectare (22%) of the survey area.

6.1.1 These soils typically have a clay loam texture overlying clay loam and clay. Observations of gleying and the depth to the slowly permeable layer place these soils in Wetness Class III.

6.1.2 The main limitation to the agricultural use of this land is soil wetness.

6.2. Subgrade 3b occupies 4.2 hectares (78%) of the survey area.

6.2.1 The soil has a clay loam texture over clay loam or sandy loam and clay. Observations of gleying and the depth to the slowly permeable layer place these soils in Wetness Class IV.

6.2.2. The main limitation to the agricultural use of this land is soil wetness.

6.3. SUMMARY OF AGRICULTURAL LAND CLASSIFICATION GRADES

Grade/Sub-grade	Area in Hectares	% of Survey Area	% of Agricultural Land
3a	1.2	22	22
3b	4.2	78	78
Totals	5.4	100	100

**Removal of Sea Defence Embankment, New Lane Pace/ George's Lane/
Charnleys Lane, Banks**

EL 21/11002

1. An ALC survey has been carried out on land at Station Road, Banks where it is proposed to spread material from the Sea Defence Embankment. The results of the survey are presented in the ALC report and accompanying map and are summarised here.
2. The land comprises 1.2 ha (22 %) Subgrade 3a and 4.2 ha (78 %) Subgrade 3b. The soils consist of an organic medium clay loam texture over sandy loam or sandy clay loam and clay. The soils within Subgrade 3b are gleyed within 40 cm of the surface and have a slowly permeable layer starting at about 50 cm.
3. The material comprising the Embankment was examined near Cross Bank Cottage and was found to consist of fine sandy loam and loamy fine sand with some inclusions of clay and peaty material. Mixing of this material is likely to give a soil of a loamy fine sand texture.
4. The proposal to spread the material from the embankment on the land at Station Road would have the following effect on the ALC grade: The soil profile would comprise loamy fine sand over clay loam, sandy loam or sandy clay loam and clay. The soil would not be gleyed within 70 cm and there would be no slowly permeable layer. This would place the soil in Wetness Class I and Drought Class I, giving an ALC grade of 2, as a loamy sand topsoil cannot be placed in Grade 1.
5. Whilst it is theoretically possible for this land to become Grade 2, this can only happen if great care is taken with the handling and management of the embankment material. When observed in place in the embankment the loamy fine sand was found to have a granular structure; it had not formed major structural units. Movement of this material will break down any existing structure and unless there is careful management compaction will occur, leading to reduced hydraulic conductivity and root penetration. Compaction may also result in the formation of a slowly permeable layer within the loamy fine sand. Such conditions would result in a lower agricultural productivity than would be expected from Grade 2 land.
6. It is also possible that if the embankment material were to be spread on the site without proper care and management, compaction of the medium clay loam would occur, resulting in impeded drainage. If a slowly permeable layer were to form in the medium clay loam, with consequent gleying above, then this would result in a soil profile of Wetness Class III, Subgrade 3a, reflecting the reduced productivity of the land.
7. It would be preferable though if, instead of spreading the embankment material on top of the existing topsoil the topsoil was stripped, the embankment material spread and the original topsoil replaced. This would have the effect of maintaining the original topsoil, a valuable resource in terms of organic matter. This is important for

plant nutrition and also for maintaining soil structure and in reducing susceptibility to wind blow, which may be a problem in this exposed coastal area. A soil profile comprising a medium clay loam topsoil over loamy fine sand and clay, not gleyed and with no slowly permeable layer would be placed in Wetness Class I and Grade 2.

8. Any soil handling should only take place when the soils are below Field Capacity and trafficking of the loamy fine sand should be avoided. Thus this material should be thrown out and spread by backacter rather than using a bulldozer; the use of low ground pressure vehicles is advisable. Following reinstatement the land should be sown to grass for a minimum of three years to allow soil structure to develop.

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