63/95

West Dorset Local Plan
Objector Sites

Agricultural Land Classification

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Land Use Planning Unit

MAFF

WEST DORSET LOCAL PLAN

OBJECTOR SITES

AGRICULTURAL LAND CLASSIFICATION

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WEST DORSET LOCAL PLAN OBJECTOR SITES

AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

The survey was carried out by ADAS on behalf of MAFF as part of its statutory role in the preparation of the West Dorset Local plan The fieldwork covered sites at Beaminster Longburton and Thornford and was completed in September 1995 at a scale of 1 10 000 Data on climate soils geology and from previous Agricultural Land Classification (ALC) Surveys was used and is presented in the report The distribution of grades is shown on the accompanying ALC map and summarised below Information is correct at this scale but could be misleading if enlarged

Distribution of ALC grades Cockroad Farm, Beaminster

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (6 2 ha)
4	6 2	91 2	100 0
Urban	0 2	3 0	0 0
Agricultural Buildings	0 4	5 8	0 0
TOTAL	6 8	100 0	100 0

None of the agricultural land in the survey at Cockroad Farm is best and most versatile The site has heavy clay loam topsoils over gleyed slowly permeable clays which cause a severe wetness limitation All of the agricultural land was therefore mapped as Grade 4

Distribution of ALC grades Longburton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (13 9 ha)
3a	2 8	19 3	20 1
3b	11 1	76 6	79 9
Non Agricultural	0 6	4 1	0 0
TOTAL	14 5	100 0	100 0

20% of the agricultural land surveyed at Longburton is best and most versatile This Subgrade 3a mapping unit consisted of shallow well drained clay loams over weathered lenticular limestone which suffer from a moderate drought limitation and in places a moderate depth limitation The rest of the site was mapped as Subgrade 3b due to a moderate wetness limitation The profiles in this mapping unit have heavy clay loam topsoils over gleyed clay subsoils The clay horizons are slowly permeable layers

Distribution of ALC grades Thornford

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (2 2 ha)
4	2 2	100 0	100 0
TOTAL	2 2	100 0	100 0

None of the site is best and most versatile The site has heavy clay loam topsoils over clay subsoils The subsoils are gleyed and slowly permeable causing a severe wetness limitation

1 INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in September 1995 at Beaminster Longburton and Thornford on behalf of MAFF as part of its statutory role in the preparation of the West Dorset Local Plan The fieldwork covering 23 5 ha of land was conducted by ADAS at a scale of 1 10 000 with approximately one boring per two hectares of agricultural land A total of 27 auger borings were examined and four soil profile pits used to assess subsoil conditions

The recent surveys supersede any previous surveys having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988) The survey at Beaminster expands upon the area covered by two previous surveys The Revised Guidelines and Criteria provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long term limitations on agricultural use The grading takes account of the top 120 cm of the soil profile A description of the grades used in the ALC system can be found in Appendix 2

2 CLIMATE

The grade of the land is determined by the most limiting factor present The overall climate is considered first because it can have an overriding influence on restricting land to a lower grade despite other favourable conditions

Estimates of climatic variables were interpolated from the published agricultural climate dataset (Meteorological Office 1989) The parameters used for assessing overall climate are accumulated temperature a measure of the relative warmth of a locality and average annual rainfall a measure of overall wetness The results shown in Table 1 indicate there is no overall limitation due to climate

Table 1 Climatic Interpolations

Cockroad Farm Beaminster

Grid Reference	ST 472 018
Altitude (m)	83
Accumulated Temperature (day)	1488
Average Annual Rainfall (mm)	988
Overall Climatic Grade	1
Field Capacity Days	198
Moisture deficit (mm) Wheat	92
Potatoes	80

Longburton

Grid Reference	ST 651 127	ST 649 132
Altitude (m)	85	95
Accumulated Temperature (day)	1477	1465
Average Annual Rainfall (mm)	897	886
Overall Climatic Grade	1	1
Field Capacity Days	188	186
Moisture deficit (mm) Wheat	98	97
Potatoes	89	86

Thornford

Grid Reference	ST 606 136
Altitude (m)	55
Accumulated Temperature (day)	1512
Average Annual Rainfall (mm)	853
Overall Climatic Grade	1
Field Capacity Days	180
Moisture deficit (mm) Wheat	101
Potatoes	93

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat and potatoes are also shown These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections

3 COCKROAD FARM BEAMINSTER

3 1 An area of 6 8 ha at Cockroad Farm Beaminster Dorset was surveyed in September 1995 A total of eight auger borings were examined and one soil profile pit was used to assess subsoil conditions The published provisional one inch to the mile ALC map of the area (MAFF 1974a) shows the grade of the site at a reconnaissance scale to be Grade 3

3 2 RELIEF AND LANDCOVER

The site occupies two fields on the north west edge of Beaminster The area is relatively flat with all gradients being less than 7° The altitude drops from 85 m above ordnance datum (AOD) in the north east of the site to 75 m in the southern part of the site At the time of survey the whole area was under permanent pasture

3 3 GEOLOGY AND SOILS

The geology of the site is shown on the published 1 50 000 scale solid geology map sheet 327 (Institute of Geological Sciences 1977) This shows that most of the site is underlain by Fuller's Earth Clay although there is a small area of Inferior Oolite Limestone mapped along the Southern edge of the site

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 This shows the site to consist of soils from the Wickham 2 Association They are described as being slowly permeable seasonally waterlogged fine loamy over clayey fine silty over clayey and clayey soils There may also be a small area of slowly permeable calcareous soils on the steep slopes

The soils found during the recent survey were all heavy clay loams over slowly permeable clays as described by the Wickham 2 Association

3 4 AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades is shown in Table 2 and on the accompanying ALC map This information could be misleading if shown at a larger scale

Table 2 Distribution of ALC grades Cockroad Farm, Beaminster

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (6 2 ha)
4	6 2	91 2	100 0
Urban	0 2	3 0	0 0
Agricultural Buildings	0 4	5 8	0 0
TOTAL	6 8	100 0	100 0

Grade 4

The land in this mapping unit has a severe wetness limitation the profiles typically have a heavy clay loam topsoil over a grey clay subsoil The subsoils are gleyed and are slowly permeable layers The depth to the clay varies between 20 cm and 30 cm over the site so the profiles were assessed as Wetness Class IV (see Appendix 3) In places there are patches of flints at the top of the subsoil but these do not affect the overall grade and limitation

Other land

The farmstead and buildings are mapped as such while two bungalows are mapped as urban land

4 LONGBURTON

4 1 An area of 6 8ha at Longburton was surveyed in September 1995 A total of sixteen auger borings were examined and two soil profile pits were used to assess subsoil conditions the published provisional one inch to the mile ALC map of the area (MAFF 1974b) shows the grade of the site at a reconnaissance scale to be all Grade 3

4 2 RELIEF AND LANDCOVER

The site occupies land around the village of Longburton Dorset The area is relatively flat with all gradients less than 7° and falls from 105 m AOD along the western edge to 90 m AOD in the east At the time of survey all the fields were under permanent pasture

4 3 GEOLOGY AND SOILS

The geology of the site is shown on the published 1 50 000 scale solid and drift geology map sheet 312 (Institute of Geological Sciences 1973) This shows that the geology has a north south trend with most of the site being underlain by Forest Marble clay and lenticular limestone Near the stream in the north east part of the site the geology is Combrash (nodular limestone)

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 This shows that the whole site consists of soils from the Sherborne Association They are described as being shallow well drained brashy calcareous clayey soils over limestone They are associated with slowly permeable calcareous clayey soils

The soils found during the recent survey were very similar to those described above The fields adjacent to Long Burton Farm in the east and west have shallow well drained soils over limestone The rest of the site has heavy clay loam topsoils over slowly permeable clayey subsoils

4 4 AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades is shown in Table 2 and on the accompanying ALC map This information could be misleading if shown at a larger scale

Table 3 Distribution of ALC grades Longburton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (13 9ha)
3a	2 8	19 3	20 1
3b	11 1	76 6	79 9
Non agricultural	0 6	4 1	0 0
TOTAL	14 5	100 0	100 0

Subgrade 3a

The land in this mapping unit has a moderate drought limitation and in places a moderate depth limitation The profiles are typically shallow well drained medium clay loam topsoils over heavy clay loam subsoils The weathered Forest Marble bedrock was found in subsoil horizons with stone contents ranging from 60% to 90% hard rock by volume The depth at which these horizons started at varied from 20 cm to 50 cm across the unit It is these high stone contents that cause the drought limitation and where the horizon is closer to the surface the depth limitation The profiles were assessed as Wetness Class I

Subgrade 3b

Most of the site has been mapped as Subgrade 3b with a moderate wetness limitation The profiles in this mapping unit typically have a shallow heavy clay loam topsoil over a gleyed slowly permeable clay subsoil and were assessed as Wetness Class III Some areas had gleying starting higher up the profile and were therefore assessed as Wetness Class Iv but these profiles also had medium clay loam topsoils and were therefore still also mapped as Subgrade 3b

Other land

A small area of woodland is mapped as non agricultural land

5 THORNFORD

5 1 An area of 2 2 ha at Thornford was surveyed in September 1995 A total of three auger borings were examined and one soil profile pit was used to assess subsoil conditions the published provisional one inch to the mile ALC map of the area (MAFF 1974b) shows the grade of the site at a reconnaissance scale to be all Grade 3

5 2 RELIEF AND LANDCOVER

The site occupies one field on the northern edge of the village of Thornford Dorset The area is relatively flat at an altitude of 55 m AOD At the time of the survey the site was under rough grassland

5 3 GEOLOGY AND SOILS

The geology of the site is shown on the published 1 50 000 scale solid geology map sheet 312 (Institute of Geological Sciences 1973) This shows that the whole of the site is underlain by Fuller's Earth (earth limestone)

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 as belonging to the Sherborne Association They are described as being shallow well drained brashy calcareous clayey soils over limestone They are associated with slowly permeable calcareous clayey soils

The soils found during the recent survey were similar to the calcareous clays described in the Sherborne Association They had heavy clay loam topsoils over grey slowly permeable clay subsoils

5 4 AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades is shown in Table 3 and on the accompanying ALC map This information could be misleading if shown at a larger scale

Table 4 Distribution of ALC grades Thornford

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (2 2 ha)
4	2 2	100 0	100 0
TOTAL	2 2	100 0	100 0

Grade 4

The whole of the site has been mapped as Grade 4 due to a severe wetness limitation The profiles consist of heavy clay loam topsoils over gleyed slowly permeable clay subsoils The depth to the clay varies between 20 cm and 35 cm over the site so the profiles were assessed as Wetness Class IV

Resource Planning Team
Taunton Statutory Unit
September 1995

APPENDIX 1

REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1973) Solid and Drift Edition Sheet 312 Yeovil 1 50 000

INSTITUTE OF GEOLOGICAL SCIENCES (1977) Solid Edition Sheet 327 Bridport 1 50 000

MAFF (1974a) Agricultural Land Classification Map Sheet 177 Provisional 1 63 360 scale

MAFF (1974b) Agricultural Land Classification Map Sheet 178 Provisional 1 63 360 scale

MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of agricultural land) Alnwick

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5 Soils of South West England 1 250 000 scale

APPENDIX 2

DESCRIPTION OF GRADES AND SUBGRADES

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use A very wide range of agricultural and horticultural crops can be grown and commonly include top fruit soft fruit salad crops and winter harvested vegetables Yields are high and less variable than on land of lower quality

Grade 2 - very good quality agricultural land

Land with minor limitations which affect crop yield cultivations or harvesting A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops The level of yield is generally high but may be lower or more variable than Grade 1

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops timing and type of cultivation harvesting or the level of yield Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2

Subgrade 3a good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops especially cereals or moderate yields of a wide range of crops including cereals grass oilseed rape potatoes sugar beet and the less demanding horticultural crops

Subgrade 3b moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year

Grade 4 poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields It is mainly suited to grass with occasional arable crops (e g cereals and forage crops) the yields of which are variable In most climates yields of grass may be moderate to high but there may be difficulties in utilisation The grade also includes very droughty arable land

Grade 5 - very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing except for occasional pioneer forage crops

Descriptions of other land categories used on ALC maps

Urban

Built up or hard uses with relatively little potential for a return to agriculture including housing industry commerce education transport religious buildings cemeteries Also hard surfaced sports facilities permanent caravan sites and vacant land all types of derelict land including mineral workings which are only likely to be reclaimed using derelict land grants

Non-agricultural

Soft uses where most of the land could be returned relatively easily to agriculture including private park land public open spaces sports fields allotments and soft surfaced areas on airports/airfields Also active mineral workings and refuse tips where restoration conditions to soft after uses may apply

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (e g polythene tunnels erected for lambing) may be ignored

Open water

Includes lakes ponds and rivers as map scale permits

Land not surveyed

Agricultural land which has not been surveyed

Where the land use includes more than one of the above landcover types e g buildings in large grounds and where may be shown separately Otherwise the most extensive cover type will usually be shown

Source MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for Grading the Quality of Agricultural Land) Alnwick

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years

Wetness Class II

The soil profile is wet within 70 cm depth for 31 90 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 90 days but not wet within 40 cm depth for more than 30 days in most years

Wetness Class III

The soil profile is wet within 70 cm depth for 91 180 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 180 days but only wet within 40 cm depth for between 31 and 90 days in most years

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 40 cm depth for 91 210 days in most years

Wetness Class V

The soil profile is wet within 40 cm depth for 211 335 days in most years

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years

Notes The number of days specified is not necessarily a continuous period In most years is defined as more than 10 out of 20 years

Source Hodgson J M (in preparation) Soil Survey Field Handbook (revised edition)

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Cock Road Farm Beaminster	Pit 1 (ASP7)	3° South	Permanent Grass	Av Rainfall 988 mm ATO 1488 day °C	Fuller s Earth Clay (Limestone)
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 198 Climatic Grade 1 Exposure Grade	SOIL SAMPLE REFERENCES
63/95	21/9/95	ST473 018	HLJ		None

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	24	HCL	10YR33	1 %HR TOTAL (VIS)	FFVFO (7 5YR58)	None				Good	CF+VF		Clear Smooth
2	50+	C	10YR62	1%HR TOTAL (VIS)	MDMO (10YR68)	None	WCAB	Firm	Poor	Poor	FF+VF		

Profile Gleyed From 24cm

Depth to Slowly Permeable Horizon 24cm

Wetness Class IV

Wetness Grade 4

Available Water Wheat 125 mm

Potatoes 102 mm

Moisture Deficit Wheat 92 mm

Potatoes 80 mm

Moisture Balance Wheat 33 mm

Potatoes 22 mm

Droughtiness Grade 1 (Calculated to 120 cm)

Final ALC Grade 4

Main Limiting Factor(s) Wetness

Remarks Augured to 100cm