MOR BROOK, BRIDGNORTH, SHROPSHIRE

STATEMENT OF PHYSICAL CHARACTERISTICS

FOR THE APPLICATION AREA

1. INTRODUCTION

The site was visited by the Resource Planning Team in February and March 1993. 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 Land" (MAFF 1988).

2. LOCATION

The site is situated to the South West of Bridgnorth and centred upon Mor Brook at Grid Reference SO 686924. It is bounded to the North by Telegraph Lane and to the South by a lane to Underton. Land surrounding this site is predominantly in agricultural use.

3. CLIMATE

Assessment of climatic limitation is based upon average annual rainfall (AAR) and accumulated temperature above 0°C January to June (ATO). For this site the figures are 711mm and 1400° days respectively.

Field capacity days (FCD) are 171 with a moisture deficit wheat of 96mm and a moisture deficit potatoes of 84mm.

There is no overall climatic limitation to the agricultural use of this land.

4. GEOLOGY AND SOILS

The drift geology of this site comprises mainly of sand and gravel deposits and deposits of Marland Micaceous sandstone.

These deposits have given rise to free draining sandy soils with stony or gravelly subsoils. Alluvium has been deposited along the Mor Brook flood plain and the associated soils include silty clay loams over silty clay.

5. SITE

The site rises to the North and South of the Mor Brook valley which trends North West - South East with a variation in altitude from 74m to 92m.

Gradient is a limiting factor at the break of slope between the flood plain and the terraces.

6. LAND USE

At the time of the survey the site was in potatoes, fallow or in permanent pasture with a small area of woodland and open water.

7. AGRICULTURAL LAND CLASSIFICATION

7.1 **Grade 2** - occupies 11.21 ha and 31.1% of the site. It is located to the south of Mor Brook. The soils of this grade are typified by a medium clay loam topsoil over a subsoil of sandy silt loam and, or sandy loam to depth. There are few topsoil stones within this unit but in the lower subsoil stone content varies from very slightly stony to very stony. Generally, the very stony subsoil is nearer to the surface (within 50cm) towards the southern extreme of this unit.

These soils are prone to problems of slight droughtiness due to stony subsoil conditions reducing the amount of available water. These soils fall into wetness Class I with no evidence of gleying in the profile to at least 75 cms.

7.2 **Sub Grade 3a** - occupies 10.77 ha and 29.8% of the site. It is located to the North of Mor Brook with a minor area also being located at the Southern boundary of the site near Harpswood.

Typically, these soils are of a well bodied sandy loam topsoil with common stones over a coarse textured sandy loam to sand subsoil which has abundant stones. Due to the variable nature of topsoil stones (stoneless to common) and the coarse textured subsoil, these soils are limited both by topsoil stones greater than 2cm and droughtiness. Within this area mapped as sub grade 3a, profiles of grade 2 and 3b do occur, but they are of an insufficient areal extent to be mapped separately.

The minor area of sub grade 3a soil near Harpswood is mapped to include a silty clay loam topsoil over a silty clay loam and a silty clay lower subsoil which acts as a slowly permeable layer. These soils are of wetness class III and are thus limited by wetness.

7.3 **Sub grade 3b** - occupies 12.42 ha and 34.4% of the site. This grade is mapped over the valley floor of Mor Brook.

These soils typically have a medium or heavy silty clay loam topsoil over a subsoil of silty clay or heavy silty clay loam. This subsoil is of a slowly permeable nature, thus these soils are of wetness Class IV and are limited by wetness. However, it should be stressed that at the break in slope point between the valley floor and river terraces North and South of Mor Brook, gradient is the most limiting factor.

Summary of Land in each grade

Grade	Area in hectares	% of Total area	% of agricultural area
2	11.21	31.1	32.6
3a	10.77	29.8	31.3
3b	12.42	34.4	36.1
Woodland	1.49	4.1	-
Non-agricultural	0.16	0.5	-
Open water	0.05	0.1	-
Totals	36.10	100.0	100.0

8. SOIL RESOURCES

The soils were examined using a Dutch soil auger, with borings on a 100m x 100m grid. Borings were to a depth of 110 cm unless prevented by stony layers. Soil pits were dug to obtain further details on subsoil structure, depth and stone volumes.

8.1 **Type 1** - This soil unit covers 9.8 ha and 27.1% of the site. It is found to the North of Mor Brook.

Typical profiles have 35cm of well bodied sandy loam topsoil over loamy sand or sandy loam to 60cm and coarse loamy sand or sand at depth. Topsoils have few to common stones, but subsoil stone content varies from few to abundant stones. The size of these subsoil stones vary from very small to large. A typical profile for this soil is described below.

Pit 3

0-30cm 75 YR 43/44 medium sandy loam, weakly developed medium sub angular blocky structure, friable, porous, common stones.

30-60cm 75 YR 44 medium sandy loam, moderately developed medium sub angular blocky structure, friable, porous, abundant stones.

60-79cm 75YR 44 loamy medium sand, weakly developed fine sub angular blocky to granular structure, very friable, porous, many stones.

79-120cm 75 YR 56/46 coarse sand weakly developed fine sub angular blocky to granular structure, very friable, porous, few stones.

8.2 **Type 2** - this soil unit covers 13.7 ha and 38% of the site. It is located at the centre of the site within the valley floor of Mor Brook and at the southern periphery near Harpswood.

Typical profiles have 25cm of medium to heavy silty clay topsoils over a subsoil of silty clay or heavy silty clay loam to depth. These profiles have few or no stones within them.

A typical profile is given below.

Pit 5

0-23cm 5YR 43 heavy silty clay loam, moderately developed medium sub-angular blocky structure, porous , few stones.

23-39cm 5YR 54 silty clay, moderately developed medium sub angular blocky structure,firm, low porosity, no stones.

39-120cm 5YR 54, common mottles 10YR 72 silty clay, moderately developed medium angular blocky structure, very firm, low porosity, no stones.

Type 2A - This soil unit covers 1.5 ha and 4.2% of the site. It is found adjacent to soil Type 2 and is covered by deciduous/mixed woodland. This variable unit is mapped over similar soils to those in unit 2 except they have an organic layer at the surface having farmed under woodland. They should be treated in the same manner as Type 2.

8.3 **Type 3** - This soil unit covers 7.6 ha and 21.1% of the site. It is located to the south of Mor Brook.

Typical profiles have 32cm of medium clay loam topsoil over medium sandy silt loam to 85cm and medium to coarse sandy loam or sandy silt loam subsoils to depth. These profiles have few stones in the topsoil but subsoil stones increase dramatically becoming abundant with depth. This very stony subsoil is nearer to the surface at the south eastern extreme of this soil type.

A typical profile is described below.

Pit 7

0-32cm 75YR44 medium clay loam, moderately developed medium subangular blocky structure, porous, few stones

32-86cm 5YR 42/44 medium sandy silt loam, moderately developed medium subangular blocky structure, very friable, porous, common stones

86-120cm 5YR 42 medium sandy loam, moderately developed medium granular structure, very friable, porous, abundant stones

Type 3A - This soil unit covers 3.1 ha and 8.6% of the site. It is located to the south of Mor Brook and is immediately south of Soil Type 3.

Typical profiles have a topsoil of 30cm of medium clay loam over a medium sandy silt loam subsoil. There are few or no stones throughout this profile which is the only distinguishing physical characteristic between this and a Type 3 profile.

A typical profile is given below.

Pit 6

0-29cm 5YR 44/46 medium clay loam, indeterminable structure, (platy to massive), friable, porous, few stones

29-76cm 75YR44, 5YR44, medium sandy silty loam, moderately well developed subangular blocky structure, friable, porous, few stones.

76-120 cm 5YR 44 few to common manganese concretions medium sandy silt loam, moderately well developed subangular blocky structure, friable, porous, few stones

8.4 **Type 4** - This soil unit covers 0.4 ha and 1% of the site. It is located along the proposed access road to the north west of the site.

Typically these soils have 30cm of well bodied sandy loam or sandy clay loam topsoil with common stones over an upper subsoil of medium sandy silt loam to 70cm over coarse sandy loam to depth. Topsoil stones are less than 10% whilst subsoil stones may become abundant and very small to small in size.

A typical profile is described below

Pit 4

0-27 cm 75YR43 sandy clay loam, moderately developed sub angular blocky structure, friable, porous, common stones

27-42cm 75YR44 medium sandy silt loam, moderately developed medium sub angular blocky structure, friable, porous, common stones

42-59cm 75YR54 medium sandy silt loam, moderately developed fine subangular blocky structure, very friable, common stones

59-120 5YR 54 coarse sandy loam, weakly developed fine granular structure, very friable, porous, abundant stones.

9. SUMMARY

The majority of this site is typified by best and most versatile land, with 61% being of very good or good quality agricultural land (2 and 3A) . These soils are typified by well bodied sandy loams, overlying sandy loams, loamy sand and sand on the Northern terrace and medium clay loam overlying medium sandy silt loam and coarse sandy loam on the southern terrace. All subsoils have abundant stones.

The remaining 34% of agricultural land in the valley floor being of moderate quality (3B)

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