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Basingstoke and Deane Borough Local Plan
Sites 15 & 16
Land to the east of Basingstoke
Agricultural Land Classification Report
Reconnaissance Survey
June 1996.

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT
BASINGSTOKE AND DEANE BOROUGH LOCAL PLAN
SITES 15 & 16, LAND EAST OF BASINGSTOKE

Introduction

1. This report presents the findings of a reconnaissance Agricultural Land Classification (ALC) survey on 78 hectares of land. This is mainly situated between the A30 and the M3 with a small area of land to the north west of Water End Lane, to the east of Basingstoke in Hampshire. The survey was carried out during June 1996.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) from its Land Use Planning Unit, in Reading, in connection with the Basingstoke and Deane Borough Local Plan. The results of this survey supersede any previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey the agricultural land on this site was either in permanent grassland or under barley. The areas shown as 'Other Land' comprise areas of woodland, trackways, a car park, and agricultural and urban buildings including a garden centre and caravan park.

Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:15,000. It is accurate at this scale, but any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% site area	% surveyed area
3a	18.1	23.2	43.0
3b	24.0	30.8	57.0
Other Land	35.9	46.0	-
<hr/>			
Total surveyed area	42.1	-	100.0
Total site area	78.0	100.0	-

7. The fieldwork was conducted at an average density of about 1 boring every two hectares. A total of 25 borings and two soil pits were described.

8. The majority of the agricultural land on this site has been classified as Subgrade 3b (moderate quality) with some Subgrade 3a land (good quality) mapped towards the north east of the site. The key limitation here is soil droughtiness with some soil wetness through the centre of the site.

9. To the west of the site the soil profiles are believed to be disturbed comprising shallow loamy soils over chalk which was impenetrable to roots. In this local climatic regime these soils have been classified as Subgrade 3b due to soil droughtiness. The shallow depth of soil over chalk along with restricted rooting reduces the amount of profile available water for crops. Crop growth and yields will therefore be adversely affected.

10. Through the centre of the site the soil profiles generally comprise moderately to poorly drained clay loams over clays. The profiles are generally slowly permeable from the upper subsoil but, occasionally, these poorly structured horizons occur at a slightly greater depth. The resultant wet soils restrict seed germination and root development as well as affecting the timing of cultivations. This land has therefore been assigned to either Subgrade 3b or 3a depending on the degree of drainage impedance.

11. To the north and east of the site the profiles are mainly limited to Subgrade 3a by a soil droughtiness limitation. Here they comprise slightly to moderately stony (8-34% total flints by volume) medium clay loams over very flinty (43-50% flints by volume) sandy clay loams. In this local climatic regime the combination of soil textures and stone content acts to reduce the amount of profile available water for crops. As a result crop growth and yields may be slightly diminished. Occasional borings of better quality also occur in this mapping unit but these were too limited in number and extent to map separately.

FACTORS INFLUENCING ALC GRADE

Climate

12. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

13. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

14. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

15. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (ATO, January to June), as a measure of the relative warmth of a locality.

Table 2: Climatic and altitude data

Factor	Units	Values	Values
Grid reference	N/A	SU 694 533	SU 682 524
Altitude	m, AOD	65	75
Accumulated Temperature	day°C (Jan-June)	1458	1447
Average Annual Rainfall	mm	722	745
Field Capacity Days	days	155	161
Moisture Deficit, Wheat	mm	107	105
Moisture Deficit, Potatoes	mm	100	97

16. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation (Climatic Grade 1). However, climatic factors can interact with soil properties to influence soil wetness and droughtiness.

17. Local climatic factors such as frost risk and exposure are not thought likely to adversely affect agricultural land use on this site.

Site

18. The land on this site is generally flat, lying at 73m AOD. However, towards the west the land is believed to have been disturbed. It lies at 75m AOD, and is surrounded by a steep bank. It is possible that the level of the land has been artificially raised in order to improve drainage.

19. The extreme west of the site may be subject to slight infrequent flooding from the River Lyde. However this is not likely to affect land quality in this area.

Geology and soils

20. The relevant geological sheet (BGS, 1981) maps alluvium and lower level terrace deposits over Upper Chalk in the south west, Reading Beds in the centre, and London Clay in the north east of the site.

21. The most recently published soils information for this area (SSEW, 1983) maps the Adventurers 3 soil association across the majority of the site with a very small area of Wickham 4 soils in the north east. The Adventurers 3 soils are described as 'deep peat soils with associated extremely calcareous mineral soils. Some deep stoneless silty and clayey soils with humose surface horizons in places. High groundwater levels.' (SSEW, 1983). The Wickham 4 soils are described as 'slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils associated with similar clayey soils, often with brown subsoils.' (SSEW, 1983).

22. Detailed field examination revealed soils similar to the Wickham 4 association across much of the site. Occasional profiles similar to those described as the Adventurers soil association were also noted. Across the west of the site, the soils were found to be shallow over chalk. Such soils have not been sampled by the Soil Survey, further evidence that the land may have been disturbed.

Agricultural Land Classification

23. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

24. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix III.

Subgrade 3a

25. Good quality agricultural land (Subgrade 3a) has been mapped in the north and east of the site. The soil profiles are typically well drained (Wetness Class I) though some show signs of slight soil wetness (Wetness Class II) in the upper subsoil. Generally slightly stony (6-10% total flint) medium clay loam topsoils overlie moderately structured, medium clay loam upper subsoils with slightly more flint (12-15%). These profiles tend to become impenetrable to the soil auger at 40-45cm depth. However, soil inspection Pit 2 shows that the profile continues to 120cm depth. The lower subsoils are moderately structured throughout, comprising a moderately stony (34% flint) medium clay loam over two very stony (43-50% flint) sandy clay loam lower subsoil horizons. In this local climatic regime the combination of soil textures, structures and stone contents acts to reduce the amount of profile available water form crops. As a result the level and consistency of crop yields will be restricted by soil droughtiness.

26. Around Priory Farm the profiles are limited by soil wetness to Subgrade 3a. Here very slightly to slightly flinty (2-10%) medium clay loam topsoils overlie moderately structured, very slightly stony (2% flint) or stoneless medium and heavy clay loam upper subsoils. The lower subsoils comprise moderately or poorly structured, slowly permeable heavy clay loams or clays with a similar stone content to the upper subsoil. Common ochreous mottles in the topsoil or upper subsoil show that these slowly permeable horizons impede drainage through the profile causing prolonged waterlogging. In this local climatic regime this land has therefore been classified as Wetness Class III, Subgrade 3a (Appendix III) as wet soils can impede seed germination and growth.

27. Occasional borings of higher or lower quality also occur within this mapping unit but these were too limited in number and extent to map here.

Subgrade 3b

28. The majority of the site has been classified as moderate quality agricultural land (Subgrade 3b) due to soil droughtiness restrictions and disturbance. The topsoils comprise calcareous medium clay loams or medium silty clay loams with 10% chalk fragments. The soil profiles tend to become impenetrable to the soil auger at approximately 30cm depth due to hard, compacted chalk. Soil inspection Pit 1 revealed the chalk to be hard and compact, possibly as a result of disturbance and only rootable to 50cm depth. In this local climatic regime the combination of stone content and shallow rooting depth acts to significantly reduce the amount of profile moisture for crops.

29. Occasional borings were limited to Subgrade 3b due to a soil wetness limitation. The majority of these profiles are very similar in composition to the wetter profiles in the Subgrade 3a mapping unit. However, the slowly permeable heavy clay loam and clay lower subsoils

occur from 30-36cm depth thus increasing the drainage impedance to Wetness Class IV (Appendix III). Other profiles comprise stoneless loamy peat topsoils and peaty loam upper subsoils over slightly stony (15% flint) peaty loam lower subsoils which become impenetrable over flints at 60cm depth. These profiles are considered to be consistent with Wetness V, Grade 4 (Appendix III) as such wet soils can restrict seed development and crop growth. However, these were not mapped separately due to their limited distribution across the site.

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SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No. 284, Basingstoke*. 1:50,000 Series. Solid & Drift.
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land*.

MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification*.

Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 6, Soils of South East England*.

SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England*

SSEW: Harpenden

DESCRIPTIONS OF THE 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 includes 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 or horticultural crops can usually be grown but on some land of this 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 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When 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 the 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 moist 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 severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging ¹
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. ²
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 only wet within 40 cm depth for 30 days in most years.
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 present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

¹ The number of days is not necessarily a continuous period.

² 'In most years' is defined as more than 10 out of 20 years.

APPENDIX III

SOIL DATA

Contents:

Sample location map

Soil abbreviations - Explanatory Note

Soil Pit Descriptions

Soil boring descriptions (boring and horizon levels)

Database Printout - Horizon Level Information

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF:** national 100 km grid square and 8 figure grid reference.
2. **USE:** Land use at the time of survey. The following abbreviations are used.

ARA: Arable	WHT: Wheat	BAR: Barley
CER: Cereals	OAT: Oats	MZE: Maize
OSR: Oilseed rape	BEN: Field Beans	BRA: Brassicae
POT: Potatoes	SBT: Sugar Beet	FCD: Fodder Crops
LIN: Linseed	FRT: Soft and Top Fruit	FLW: Fallow
PGR: Permanent Pasture	LEY: Ley Grass	RGR: Rough Grazing
SCR: Scrub	CFW: Coniferous Woodland	DCW: Deciduous Wood
HTH: Heathland	BOG: Bog or Marsh	FLW: Fallow
PLO: Ploughed	SAS: Set aside	OTH: Other
HRT: Horticultural Crops		

3. **GRDNT:** Gradient as estimated or measured by a hand-held optical clinometer.
4. **GLEYSPL:** Depth in centimetres (cm) to gleying and/or slowly permeable layers.
5. **AP (WHEAT/POTS):** Crop-adjusted available water capacity.
6. **MB (WHEAT/POTS):** Moisture Balance. (Crop adjusted AP - crop adjusted MD)
7. **DRT:** Best grade according to soil droughtiness.
8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

MREL: Microrelief limitation	FLOOD: Flood risk	EROSN: Soil erosion risk
EXP: Exposure limitation	FROST: Frost prone	DIST: Disturbed land
CHEM: Chemical limitation		

9. **LIMIT:** The main limitation to land quality. The following abbreviations are used.

OC: Overall Climate	AE: Aspect	EX: Exposure
FR: Frost Risk	GR: Gradient	MR: Microrelief
FL: Flood Risk	TX: Topsoil Texture	DP: Soil Depth
CH: Chemical	WE: Wetness	WK: Workability
DR: Drought	ER: Erosion Risk	WD: Soil Wetness/Droughtiness
ST: Topsoil Stoniness		

Soil Pits and Auger Borings

1. **TEXTURE:** soil texture classes are denoted by the following abbreviations.

S: Sand	LS: Loamy Sand	SL: Sandy Loam
SZL: Sandy Silt Loam	CL: Clay Loam	ZCL: Silty Clay Loam
ZL: Silt Loam	SCL: Sandy Clay Loam	C: Clay
SC: Sandy Clay	ZC: Silty Clay	OL: Organic Loam
P: Peat	SP: Sandy Peat	LP: Loamy Peat
PL: Peaty Loam	PS: Peaty Sand	MZ: Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M:** Medium (<27% clay) **H:** Heavy (27-35% clay)

2. **MOTTLE COL:** Mottle colour using Munsell notation.
3. **MOTTLE ABUN:** Mottle abundance, expressed as a percentage of the matrix or surface described.

F: few <2% **C:** common 2-20% **M:** many 20-40% **VM:** very many 40% +

4. **MOTTLE CONT:** Mottle contrast

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL:** Ped face colour using Munsell notation.
6. **GLEYS:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.
7. **STONE LITH:** Stone Lithology - One of the following is used.

HR: all hard rocks and stones	SLST: soft oolitic or dolimitic limestone
CH: chalk	FSST: soft, fine grained sandstone
ZR: soft, argillaceous, or silty rocks	GH: gravel with non-porous (hard) stones
MSST: soft, medium grained sandstone	GS: gravel with porous (soft) stones
SI: soft weathered igneous/metamorphic rock	

Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

degree of development **WK**: weakly developed **MD**: moderately developed
 ST: strongly developed

ped size **F**: fine **M**: medium
 C: coarse **VC**: very coarse

ped shape **S** : single grain **M**: massive
 GR: granular **AB**: angular blocky
 SAB: sub-angular blocky **PR**: prismatic
 PL: platy

9. **CONSIST**: Soil consistence is described using the following notation:

L: loose **VF**: very friable **FR**: friable **FM**: firm **VM**: very firm
EM: extremely firm **EH**: extremely hard

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor
11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.
12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.
13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.
14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.
15. Other notations
APW: available water capacity (in mm) adjusted for wheat
APP: available water capacity (in mm) adjusted for potatoes
MBW: moisture balance, wheat
MBP: moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : BASINGSTOKE LP S 15 & 16 Pit Number : 1P

Grid Reference: SU68105240 Average Annual Rainfall : 722 mm
 Accumulated Temperature : 1458 degree days
 Field Capacity Level : 155 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MZCL	10YR52 00	0	10	CH					Y
28- 50	CH	10YR81 00	0	3	HR				P	Y

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : No SPL

Drought Grade : 3B APW : 72 mm MBW : -35 mm
 APP : 72 mm MBP : -28 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : BASINGSTOKE LP S 15 & 16 Pit Number : 2P

Grid Reference: SU69105200 Average Annual Rainfall : 722 mm
 Accumulated Temperature : 1458 degree days
 Field Capacity Level : 155 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MCL	10YR42 00	4	8	HR					
25- 40	MCL	10YR42 00	0	15	HR	C			M	
40- 50	MCL	10YR53 00	0	34	HR	C			M	
50- 70	SCL	10YR54 00	0	43	HR				M	
70-120	SCL	10YR66 00	0	50	HR				M	

Wetness Grade : 2 Wetness Class : II
 Gleying : 025 cm
 SPL : No SPL

Drought Grade : 3A APW : 111mm MBW : 4 mm
 APP : 91 mm MBP : -9 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	
1	SU69305330	BAR	030		2	2	64	-43	64	-36	3B			DR 3A	I40 SEE2P
1P	SU68105240	PGR			1	1	72	-35	72	-28	3B			DR 3B	AT BORING 17
2	SU69155328	PGR	028		2	2	117	10	121	21	2			WD 2	I80 FLINTY
2P	SU69105200	PGR	025		2	2	111	4	91	-9	3A			DR 3A	AT BORING 4
3	SU69305320	BAR	030		2	2	64	-43	64	-36	3B			DR 3A	I40 SEE2P
4	SU69105300	PGR	030		2	2	59	-48	59	-41	3B			DR 3A	I38 SEE 2P
5	SU69305300	PGR			1	1	33	-74	33	-67	4			DR 3A	I20 SEE 2P
6	SU68905280	PGR	0		5	4	166	59	174	74	1			WE 4	RUSHES/PEATY
7	SU69105280	PGR	0		2	2	87	-20	92	-8	3A			DR 3A	I60 SEE 2P
8	SU68905270	PGR			1	1	114	7	116	16	2			DR 2	I80 FLINTY
9	SU68105260	PGR	028		2	2	54	-53	54	-46	4			DR 3B	I30 FLINTY/C
10	SU68505264	PGR	025 030		4	3B	93	-14	105	5	3A			WE 3B	
11	SU68705260	PGR	030 065		3	3A	135	28	117	17	2			WE 3A	
12	SU68905260	PGR			1	1	156	49	114	14	1			1	CALC
13	SU69005260	PGR	0 045		3	3A	111	4	103	3	3A			WE 3A	
14	SU68105250	PGR			1	1	52	-55	52	-48	4			DR 3B	I30 SEE1P
15	SU68205250	PGR			1	1	52	-55	52	-48	4			DR 3B	I30 SEE1P
16	SU68005240	PGR			1	1	34	-73	34	-66	4			DR 3B	I20 SEE1P
17	SU68105240	PGR			1	1	34	-73	34	-66	4			DR 3B	I20 SEE1P
18	SU68305240	PGR			1	1	52	-55	52	-48	4			DR 3B	I30 SEE1P
19	SU68705240	PGR	025 035		4	3B	95	-12	107	7	3A			WE 3B	CALC
20	SU68905240	PGR			2	2	41	-66	41	-59	4			DR 4	I25 Q LIKE 2P
21	SU68105230	PGR			1	1	34	-73	34	-66	4			DR 3B	I20 SEE1P
22	SU68205230	PGR			1	1	54	-53	54	-46	4			DR 3B	I30 SEE1P
23	SU68305230	PGR			1	1	54	-53	54	-46	4			DR 3B	I30 SEE1P
24	SU68005220	CER			1	1	52	-55	52	-48	4			DR 3B	I30 SEE1P
25	SU68105220	PGR			1	1	52	-55	52	-48	4			DR 3B	I30 SEE1P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----				STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT		STR	POR	IMP		SPL
1	0-30	mc1	10YR42 00						4	0	HR	8						
	30-40	mc1	10YR53 00	75YR46 00 C					Y	0	0	HR	12	M			IMP FLINTY	
1P	0-28	mzc1	10YR52 00						0	0	CH	10					Y	
	28-50	ch	10YR81 00						0	0	HR	3	P				Y	ROOTS TO 50CM
2	0-28	mzc1	10YR42 00						0	0	CH	2					Y	
	28-80	hzc1	10YR53 00	10YR56 00 C					Y	0	0	HR	5	M			IMP FLINTY	
2P	0-25	mc1	10YR42 00						4	0	HR	8						
	25-40	mc1	10YR42 00	10YR56 00 C					Y	0	0	HR	15	M				
	40-50	mc1	10YR53 00	10YR56 00 C					Y	0	0	HR	34	M				
	50-70	sc1	10YR54 00						0	0	HR	43	M					
	70-120	sc1	10YR66 00						0	0	HR	50	M					
3	0-30	mc1	10YR42 00						4	0	HR	8						
	30-40	mc1	10YR53 00	75YR46 00 C					Y	0	0	HR	12	M			IMP FLINTY	
4	0-30	mc1	10YR42 00						6	0	HR	10						
	30-38	mc1	10YR52 00	75YR46 00 C					Y	0	0	HR	20	M			IMP FLINTY	
5	0-20	mc1	10YR42 00						6	0	HR	10					IMP FLINTY	
6	0-20	lp	10YR21 00						0	0		0						
	20-50	p1	10YR32 00						0	0		0	M					
	50-60	p1	10YR31 00						0	0	HR	15	M				IMP FLINTY	
7	0-30	mc1	10YR42 52	75YR46 00 C					Y	4	0	HR	6					
	30-60	mc1	10YR53 00	10YR58 00 C					Y	0	0	HR	15	M			IMP FLINTY	
8	0-30	mc1	10YR43 00						0	0	HR	2						
	30-45	mc1	10YR44 00	10YR58 00 F					0	0	HR	2	M					
	45-80	hc1	10YR44 00	10YR58 00 F					0	0	HR	2	M				IMP FLINTY	
9	0-30	mc1	10YR42 00						0	0		0					IMP FLINTY	
10	0-25	mc1	10YR31 00						0	0		0						
	25-30	hc1	10YR52 00	75YR56 00 C					Y	0	0	HR	2	M				
	30-70	c	25 Y52 00	75YR56 00 C					Y	0	0		0	P			Y	
11	0-30	mc1	10YR43 00						2	0	HR	2						
	30-65	hc1	10YR53 00	75YR58 00 C					Y	0	0		0	M				
	65-100	hc1	10YR62 00	75YR58 00 M				00M00 00	Y	0	0		0	M			Y	
12	0-38	mc1	10YR42 00	10YR58 00 C					0	0	HR	5					Y	ROOT MOTTLES
	38-60	mc1	10YR42 00						0	0	HR	2	M				Y	
	60-120	ms1	10YR53 00						0	0	CH	15	M				Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR		POR
13	0-30	mc1	10YR42 00 75YR46 00 C					Y	6	0	HR	10				
	30-45	mc1	10YR42 52 10YR56 00 C					Y	0	0	HR	5	M			
	45-100	c	10YR62 00 75YR68 00 M					Y	0	0	HR	5	P		Y	
14	0-30	mc1	10YR52 00						0	0	CH	10			Y	IMP CHALK
15	0-30	mc1	10YR52 00						0	0	CH	10			Y	IMP CHALK
16	0-20	mc1	10YR52 00						0	0	CH	10			Y	IMP CHALK
17	0-20	mc1	10YR52 00						0	0	CH	10			Y	IMP CHALK
18	0-30	mc1	10YR52 00						0	0	CH	10			Y	IMP CHALK
19	0-25	mc1	10YR32 00						0	0		0			Y	
	25-35	hc1	10YR52 00 75YR58 00 M					Y	0	0		0	M		Y	
	35-70	c	25 Y52 00 75YR58 00 M					Y	0	0		0	P		Y	Y
20	0-25	mc1	10YR42 00 75YR46 00 C					Y	6	0	HR	10				IMP FLINTS
21	0-20	mc1	10YR52 00						0	0	CH	10			Y	IMP CHALK
22	0-30	mzc1	10YR52 00						0	0	CH	10			Y	IMP CHALK
23	0-30	mc1	10YR52 00						0	0	CH	10			Y	
	30-32	ch	10YR18 00						0	0	HR	2	P		Y	IMP HR/CH
24	0-30	mc1	10YR52 00						0	0	CH	10				IMP CHALK
25	0-30	mc1	10YR52 00						0	0	CH	10			Y	IMP CHALK