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Maidstone Borough Local Plan
Objector Site 222: Land West of Chart Hill, Chart Sutton, Kent
Agricultural Land Classification Report
November 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

MAIDSTONE BOROUGH LOCAL PLAN
OBJECTOR SITE 222: LAND WEST OF CHART HILL ROAD, CHART SUTTON, KENT

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on approximately 8 hectares of land to the west of Chart Hill Road, Chart Sutton, near Maidstone in Kent. The survey was carried out during November 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 Maidstone 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 all of the agricultural land was in arable use.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. 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	Area (hectares)	% Total Site Area
1	1.5	19.0
3a	6.3	81.0
Total Site Area	7.8	100.0

7. The fieldwork was conducted at an average density of approximately one boring per hectare. A total of 9 borings and two soil pits were described.

8. A narrow strip of land in a small dry valley, towards the west of the site, has been classified as Grade 1 (excellent quality). The remainder of the site has been classified as Subgrade 3a (good quality) due to a moderate soil wetness and/or soil droughtiness limitation.

9. Land classified as Grade 1 comprises deep, well drained, clay loams with only a very slight stone content. In this local climatic regime such land will pose little or no significant restriction to agricultural use. It is very flexible and capable of growing a wide range of crops, normally with high yields.

10. Land classified as Subgrade 3a generally comprises medium and heavy clay loams over poorly structured clays. These clay subsoils impede drainage through the profile, resulting in seasonal waterlogging which will limit the timing and flexibility of cultivations. All of these soil profiles contain hard sandstone which causes the profile to become impenetrable to the soil auger at moderate depths. In this locally dry climatic regime the combination of soil textures, structures and stone contents results in a reduction in the amount of water which is available for uptake by crop roots. Consequently this land is limited to Subgrade 3a due to soil droughtiness restrictions in addition to soil wetness.

FACTORS INFLUENCING ALC GRADE

Climate

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

12. 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).

13. 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.

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TQ 793 501
Altitude	m, AOD	105
Accumulated Temperature	day°C (Jan-June)	1389
Average Annual Rainfall	mm	690
Field Capacity Days	days	143
Moisture Deficit, Wheat	mm	110
Moisture Deficit, Potatoes	mm	103

14. 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.

15. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. However, climatic factors can interact with soil properties to influence soil wetness and droughtiness. At this locality the slightly high crop adjusted soil moisture deficits may increase the likelihood of soil droughtiness while the correspondingly low field capacity day values may reduce the likelihood of soil wetness limitations.

16. Local climatic factors such as frost risk and exposure are unlikely to adversely affect agricultural land use on this site. The site is climatically Grade 1.

Site

17. The land on this site is relatively flat, lying at approximately 108m AOD. The small valley feature is slightly lower lying at 105m AOD.

18. Gradient, microrelief and flooding do not affect land quality in this area.

Geology and soils

19. The relevant geological sheet (BGS, 1974) maps head drift deposits across the whole of the site.

20. The most recently published soils information for this area (SSEW, 1983) maps the Marlow association over all of the site. These soils are described as 'Well drained fine loamy over clayey and clayey soils. Some coarse and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging'SSEW, 1983).

21. Detailed field examination broadly confirmed the existence of soils similar to those described above, particularly in the small dry valley. In general, however, the soils were more stony.

AGRICULTURAL LAND CLASSIFICATION

22. 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.

23. 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.

Grade 1

24. The land which has been classified as excellent quality is typified by soil inspection Pit 1 (Appendix III). These profiles are non-calcareous and comprise a very slightly to slightly stony (1-10% Ragstone) medium clay loam topsoil which overlies a similar upper subsoil. At 55-65cm depth, a moderately well structured, heavy clay loam lower subsoil begins, containing 5% Ragstone. Occasional profiles became impenetrable to the soil auger at approximately 80cm but in Pit 1 these are shown to continue to depth. In this locally cool climatic regime, the combination of soil textures, structures and low stone content means that sufficient reserves of water are held in the profile for most crops. The profile is also well

drained with only occasional signs of mottling. This land is therefore consistent with Wetness Class I (Appendix II) and can be classified as Grade 1. As such, this land will experience little or no limitation to agricultural land use.

Subgrade 3a

25. The remaining land has been classified as good quality. The soil profiles comprise a similar, though slightly-stonier (5-10% Ragstone), topsoil to that described above. The upper subsoil comprises a slightly to moderately stony (5-25% total Ragstone), medium, heavy or sandy clay loam over a clay lower subsoil, with 10-25% Ragstone. The profiles are moderately well structured throughout and are gleyed or slightly gleyed from 30-50cm depth. Soil inspection Pit 2 (Appendix III) revealed that the clay lower subsoils are slowly permeable from between 45-65cm depth and thus restrict drainage through the profile. This results in relatively prolonged seasonal waterlogging and therefore this land is consistent with Wetness Class II-III (Appendix II). With these medium textured topsoil textures and this drainage status, trafficking by agricultural machinery or grazing livestock will cause structural damage. As a result the timing and flexibility of cultivations is reduced. This land is, therefore, limited to Subgrade 3a or Grade 2 by a moderate soil wetness and workability restriction. The combination soil structures, textures and stone contents in this local climatic regime also reduces the amount of profile available water for crops. Soil droughtiness is therefore the key limitation restricting most of this land to Subgrade 3a.

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SOURCES OF REFERENCE

British Geological Survey (1974) Sh*eet No. 288, Maidstone*. 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:

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. **GLEY/SPL**: 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. **GLEY:** 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 **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**S** : single grain **GR**: granular **SAB**: sub-angular blocky **PL**: platy	**M**: massive **AB**: angular blocky **PR**: prismatic

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 appropiate 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 : MAIDSTONE BLP,CHARTHILL Pit Number : 1P

Grid Reference: TQ79325037 Average Annual Rainfall : 690 mm
Accumulated Temperature : 1389 degree days
Field Capacity Level : 143 days
Land Use : Ploughed
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MCL	10YR43 00	0	2	HR					
28- 61	MCL	10YR54 00	0	2	HR		MDCSAB	FR	M	
61-120	HCL	10YR54 00	0	1	HR	F	MVCSAB	FM	M	

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

Drought Grade : 1 APW : 153mm MBW : 43 mm
APP : 116mm MBP : 13 mm

FINAL ALC GRADE : 1
MAIN LIMITATION :

SOIL PIT DESCRIPTION

Site Name : MAIDSTONE BLP,CHARTHILL Pit Number : 2P

Grid Reference: TQ79505010
Average Annual Rainfall : 690 mm
Accumulated Temperature : 1389 degree days
Field Capacity Level : 143 days
Land Use : Ploughed
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 29	MCL	10YR43 00	3	8	HR					
29- 48	HCL	10YR54 00	0	10	HR	M	MDCSAB	FR	M	
48-100	C	10YR64 00	0	10	HR	M	WKCSAB	FR	M	

Wetness Grade : 3A
Wetness Class : III
Gleying :048 cm
SPL :048 cm

Drought Grade : 2
APW : 115mm MBW : 5 mm
APP : 108mm MBP : 5 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ79305020	ARA			S45	045	3	3A	117	7	98	-5	2				WE	3A	
1P	TQ79325037	PLO					1	1	153	43	116	13	1					1	Dry Valley
2	TQ79405020	ARA			S30		1	1	152	42	116	13	1					1	Dry Valley
2P	TQ79505010	PLO			048	048	3	3A	115	5	108	5	2				WE	3A	I100 Border 2
3	TQ79505020	STB	N	01	058	---	1	1	98	-12	108	5	3A			--	DR	3A	I68 Sst
4	TQ79205010	ARA			025	055	3	3A	110	0	93	-10	3A				WD	3A	
5	TQ79305010	ARA	N	01			1	1	108	-2	110	7	3A					1	I80 See 1P
6	TQ79405010	ARA			030	065	2	2	89	-21	98	-5	3B				DR	3A	I70 Sst
7	TQ79505010	STB	N	01	S35	048	3	3A	99	-11	102	-1	3A				WE	3A	I80 See 2P
8	TQ79605010	STB			S45	060	2	2	109	-1	108	5	3A				DR	3A	I88 Border 2
9	TQ79605000	STB			S50	060	2	2	104	-6	109	6	3A				DR	3A	I80 Border 2

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
1	0-28	mcl	10YR43 00						1	0	HR	5							
	28-45	mcl	10YR43 53	75YR56 00	F				0	0	HR	15		M					
	45-120	c	75YR54 56	05YR56 00	C		00MN00 00	S	0	0	HR	20		M			Y		
1P	0-28	mcl	10YR43 00						0	0	HR	2							
	28-61	mcl	10YR54 00						0	0	HR	2	MDCSAB	FR	M				
	61-120	hcl	10YR54 00	10YR66 00	F				0	0	HR	1	MVCSAB	FM	M				
2	0-30	mcl	10YR43 00						0	0	HR	1							
	30-65	mcl	10YR54 44	10YR56 00	C		00MN00 00	S	0	0	HR	2		M					
	65-120	hcl	10YR54 52	10YR58 00	C		00MN00 00	S	0	0	HR	5		M					
2P	0-29	mcl	10YR43 00						3	0	HR	8							At Boring 7
	29-48	hcl	10YR54 00	75YR58 00	M			S	0	0	HR	10	MDCSAB	FR	M				
	48-100	c	10YR64 00	05YR58 00	M		10YR63 00	Y	0	0	HR	10	WKCSAB	FR	M	Y		Y	
3	0-32	mcl	10YR42 00	10YR58 00	F				3	0	HR	5							
	32-58	mcl	10YR54 00						0	0	HR	5		M					
	58-68	hcl	10YR64 00	75YR58 68	M			Y	0	0	HR	20		M					Imp Sst
4	0-25	mcl	10RY42 43						2	0	HR	10							
	25-55	hcl	10YR53 00	75YR66 00	C		00MN00 00	Y	0	0	HR	25		M					Sl. Sandy
	55-120	c	10YR52 53	75YR66 00	M		05YR56 00	Y	0	0	HR	25		M			Y		
5	0-28	mcl	10YR42 43						2	0	HR	10							
	28-55	mcl	10YR54 00	10YR56 00	F		00MN00 00		0	0	HR	5		M					
	55-80	hcl	10YR54 64	10YR56 66	F		00MN00 00		0	0	HR	5		M					Imp Q1 large ST
6	0-30	mcl	10YR42 43						2	0	HR	10							
	30-45	mcl	10YR44 54	10YR56 00	C			S	0	0	HR	20		M					
	45-65	scl	75YR54 53	75YR56 00	C			Y	0	0	HR	20		M					
	65-70	c	75YR53 00	05YR56 00	C		75YR56 00	Y	0	0	HR	25		M			Y		Imp Dry/Stony
7	0-35	mcl	10YR43 00						3	0	HR	6							
	35-48	c	10YR54 00	75YR58 00	M			S	0	0	HR	15		M					Friable
	48-68	hcl	75YR54 00	05YR58 00	M			S	0	0	HR	10		M			Y		Firm
	68-80	c	75YR54 00	05YR58 00	M			S	0	0	HR	20		M					Too stony for SPL
8	0-35	mcl	10YR43 00						3	0	HR	6							
	35-45	mcl	10YR54 00						0	0	HR	6		M					
	45-60	hcl	10YR54 00	75YR58 00	M			S	0	0	HR	10		M					Friable
	60-88	c	75YR54 00	05YR58 00	M			S	0	0	HR	10		M			Y		Imp Sst
9	0-35	mcl	10YR43 00						3	0	HR	6							
	35-50	mcl	10YR54 00	10YR58 00	F				0	0	HR	6		M					
	50-60	hcl	10YR54 00	75YR58 00	M			S	0	0	HR	6		M					Soft
	60-80	c	75YR54 00	05YR58 00	M			S	0	0	HR	10		M			Y		Imp Sst