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**Canterbury District Local Plan
WHT 12: Land At Highgrove Lodge,
Whitstable, Kent
Agricultural Land Classification
ALC Map and Report
June 1995**

AGRICULTURAL LAND CLASSIFICATION REPORT

CANTERBURY DISTRICT LOCAL PLAN

WHT 12: LAND AT HIGHGATE LODGE, WHITSTABLE

1. Summary

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the Canterbury District of Kent. The work forms part of MAFF's statutory input to the preparation of the Canterbury Local Plan.
- 1.2 WHT 12 comprises 16.8 hectares of land between South Tankerton and Chestfield near Whitstable in Kent. An Agricultural Land Classification (ALC) survey was carried out in May 1995. The survey was undertaken at a semi-detailed level of approximately one boring per 2 hectares. A total of 10 borings and one soil inspection pit were assessed according to MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture. Data from previous surveys (ADAS refs: 2002/24/81 and 2002/03/86), undertaken prior to the revision of the ALC system (MAFF, 1988), was used to assist in the final classification of this site. The current survey supersedes all previous ALC survey information for this site.
- 1.3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.
- 1.4 At the time of the survey the land comprised unmanaged permanent grass. The Non-Agricultural areas were bramble scrub and gardens.
- 1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.

Table 1: Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
3a	11.7	69.6	71.3
3b	4.7	28.0	<u>28.7</u>
Non-agricultural	<u>0.4</u>	<u>2.4</u>	100.0 (16.4ha)
Total area of site	16.8	100.0	

- 1.6 Appendix I gives a general description of the grades, subgrades and land use categories identified in the survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

1.7 The agricultural land at this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The principal limitation to land quality is soil wetness. Non-calcareous medium and heavy clay loam and silty clay loam topsoils overlie slowly permeable clay at shallow depths in the profile. The very dry climate regime of the site is an advantage for the agricultural potential of these clayey soils, as the wetness limitation is moderated. The difference in classification is based on topsoil workability status, ie where medium textured topsoils were encountered Subgrade 3a is mapped, and where the topsoils were heavy Subgrade 3b is shown. The slowly permeable horizons cause drainage to be impeded, so restricting land utilisation.

2. Climate

2.1 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.

2.2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office, 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site.

2.4 Un-published climate reports from the Meteorological Office (Met. Office, 1973) suggest that this area is rather exposed. However, at the time of survey exposure was not felt to have a significant impact on the site. No other local climatic factors such as frost risk are believed to affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations. The site is located in a very dry area, in a national context. This is reflected in the low field capacity days and high crop moisture deficits.

Table 2: Climatic Interpolation

Grid Reference	TR130662	TR128660
Altitude, (m, AOD)	10	15
Accumulated Temperature (day degrees C., Jan.-June)	1483	1477
Average Annual Rainfall (mm)	582	583
Field Capacity Days	118	118
Moisture deficit, wheat (mm)	128	127
Moisture deficit, potatoes (mm)	126	125
Overall Climatic Grade	1	1

3. Relief

3.1 The site lies between approximately 10 and 15m AOD. The highest land is towards the west of the site, falling gently towards the east. Nowhere in this area

does relief or gradient affect agricultural land quality. The lower lying land to the east of the site may be subject to occasional flooding from the stream which forms the eastern boundary of the site. No detailed information on flood risk were available at the time of survey.

4. Geology and Soils

4.1 The published geological information (BGS, 1974), shows the majority of the site to be underlain by London Clay. Towards the east of the site head brickearth is shown overlying the London Clay as a drift deposit.

4.2 The published soils information (SSEW 1980), shows the site to be underlain by soils from the Wickham and Windsor Series'. These are classified as pelo and typical stagnogley soils. The legend accompanying the map describes them as, 'clayey and loamy or silty over clayey soils in Tertiary clays and associated head; impeded drainage causing seasonal surface wetness' (SSEW, 1980). Soil of this broad type was found on the site.

5. Agricultural Land Classification

5.1 Paragraph 1.5 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

5.2 The location of the soil observation points are shown on the attached sample point map.

Subgrade 3a

5.3 Land of good quality has been mapped over the majority of this site. The principal limitation to land quality is soil wetness, although soil droughtiness was equally limiting in a number of cases. Profiles typically comprise a stoneless to very slightly stony (up to 5% v/v total flints), non-calcareous medium silty clay loam or medium clay loam topsoil. This commonly rests directly on a gleyed, slowly permeable, stoneless to slightly stony (up to 10% v/v total flints), clay subsoil as in Pit 1. On occasion stoneless to slightly stony (up to 10% v/v total flints), gleyed and slowly permeable upper subsoil horizons of medium silty clay loam and/or heavy clay loam overlie the clay. Given the dry local climate and the depth at which slowly permeable horizons occur places these soils in Wetness Class III which, in combination with the generally workable nature of the medium textured topsoils leads to a Subgrade 3a classification being most appropriate. Soil wetness adversely affects crop growth and development as well as restricting land utilisation, however the dry local climate gives rise to a moderating effect. The dry local climate also gives rise to a soil droughtiness limitation, as although the soils are clayey and therefore moisture retentive, available water is limited, to the extent that Subgrade 3a is appropriate also.

Subgrade 3b

- 5.3 Land of moderate quality has been mapped for land to the east of this site. The principal limitation is soil wetness due to poor drainage. Profiles typically comprise a stoneless, heavy clay loam topsoil, which is commonly gleyed. This passes directly to a gleyed and slowly permeable, clay subsoil (see Pit 1). At depths below about 60cm, the profile may become increasingly stony. The relatively dry nature of the local climate and the depth to the slowly permeable layer leads to Wetness Class III being applied. The combination of Wetness Class III and the reduced workability status of the heavy topsoils leads to a Subgrade 3b classification being most appropriate. Occasional flooding may also cause a problem by reducing the versatility of the land. Soil wetness adversely affects crop growth and development and leads to restrictions on the opportunities for landwork and/or grazing by livestock.

ADAS Ref: 2002/076/95
MAFF Ref: EL20/642

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1974), Sheet 273, Faversham, Solid & Drift Edition. 1:50,000

MAFF (1988), Agricultural Land Classification of England and Wales : Revised guidelines and criteria for grading the quality of agricultural land.

Meteorological Office (1973), Unpublished Climate data relating to Sheet 173, 1:63,360.

Meteorological Office (1989), Climatological data for Agricultural Land Classification.

Soil Survey of England and Wales (1980), Bulletin No.9, Soils of Kent.

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England, 1:250,000, and Accompanying Legend.

Soil Survey of England and Wales (1984), Bulletin No.15, Soils and their use in South-East England.

APPENDIX I

DESCRIPTION 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 (eg. 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.

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 parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. 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, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

FIELD ASSESSMENT OF SOIL WETNESS CLASS

SOIL WETNESS CLASSIFICATION

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.

Definition of Soil Wetness Classes

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.

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.

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

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

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents :

Soil Abbreviations - Explanatory Note

Soil Pit Descriptions

Database Printout - Boring Level Information

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 : CANTERBURY LP WHT 12 Pit Number : 1P

Grid Reference: TR12906610 Average Annual Rainfall : 583 mm
 Accumulated Temperature : 1477 degree days
 Field Capacity Level : 118 days
 Land Use : Permanent Grass
 Slope and Aspect : 1 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	MZCL	10YR41 43	0	5	HR	F				
27- 52	C	25Y 51 52	0	10	HR	M	MDCAB	FM	P	
52- 75	C	10YR53 00	0	0		M	MDCAB	FM	P	

Wetness Grade : 3A Wetness Class : III
 Gleying : 27 cm
 SPL : 27 cm

Drought Grade : APW : mm MBW : 0 mm
 APP : mm MBP : 0 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
				GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT		
1	TR12806620	PGR SE	1	30	30	3	3A	97	-30	109	-16	3B				WE	3A	IMP FLINTS 70
1P	TR12906610	PGR SE	1	27	27	3	3A		0		0					WE	3A	PIT 75
1Q	TR12906610	PGR SE	1	27	27	3	3A		0		0					WE	3A	VARIATION INTP
3	TR13006620	PGR		25	25	3	3B	127	0	104	-21	3A				WE	3B	
6	TR12906610	PGR SE	1	30	30	3	3A		0		0					WE	3A	
8	TR13106610	PGR		25	25	3	3B	145	18	105	-20	3A				WD	3A	
9	TR12806600	PGR SE	1	0	30	3	3A		0		0					WE	3A	
11	TR13006600	PGR		30	30	3	3A		0		0					WE	3A	
13	TR13206600	PGR		25	25	3	3B	127	0	104	-21	3A				WD	3B	
14	TR12806590	PGR		25	25	3	3A		0		0					WE	3A	
15	TR12906590	PGR SE	1	30	30	3	3A		0		0					WD	3A	IMP FLINTS 90
16	TR13006590	PGR		0	25	3	3B		0		0					WE	3B	IMP FLINTS 70

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/		SUBS		CALC			
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR		IMP	SPL	
1	0-30	mzc1	10YR42 00 10YR46 00 F						0	0	0								
	30-70	c	25Y 53 00 10YR58 00 M					Y	0	0	0		P		Y	IMP FLINTS 70			
1P	0-27	mzc1	10YR41 43 10YR46 00 F						0	0	HR	5				PROFILE OF			
	27-52	c	25Y 51 52 10YR58 68 M				00MN00	00	Y	0	0	HR	10	MDCAB	FM	P	Y	Y	MAJORITY OF PIT
	52-75	c	10YR53 00 10YR58 00 M					Y	0	0	0	0	MDCAB	FM	P	Y	Y		
1Q	0-27	mzc1	10YR42 43 10YR46 00 F						0	0	HR	5				ALTERNATIVE			
	27-47	mzc1	25Y 41 00 10YR46 58 C				00MN00	00	Y	0	0	HR	10	MDCAB	FR	M	Y	Y	PIT PROFILE EXPOSED
	47-75	c	25Y 51 00 10YR58 68 M					Y	0	0	0	0	MDCAB	FM	P	Y	Y	FOR 20% OF PIT FACE	
3	0-25	hc1	10YR42 00 10YR46 00 F				00MN00	00		0	0	0							
	25-120	c	10YR53 00 10YR58 00 M				00MN00	00	Y	0	0	0		P		Y			
6	0-30	mzc1	10YR43 00 10YR46 00 F						0	0	HR	3							
	30-45	mzc1	10YR53 51 10YR56 00 C				00MN00	00	Y	0	0	HR	3		M		Y		
	45-90	c	25Y 51 61 10YR58 00 M				00MN00	00	Y	0	0	0		P		Y			
8	0-25	mc1	10YR42 00						0	0	0								
	25-65	c	10YR53 00 10YR58 00 M				00MN00	00	Y	0	0	0		P		Y			
	65-100	sc1	25Y 62 61 10YR58 00 M					Y	0	0	0			M		Y			
	100-120	ms1	25Y 54 64 10YR58 00 M					Y	0	0	0			M		Y			
9	0-30	mzc1	10YR43 00 10YR56 00 C						Y	0	0	HR	2						
	30-50	mzc1	25Y 62 61 10YR46 58 C				00MN00	00	Y	0	0	HR	5		M		Y		
	50-80	c	25Y 51 00 10YR58 68 M				00MN00	00	Y	0	0	0		P		Y			
11	0-30	mc1	10YR43 00 10YR46 00 F						0	0	0								
	30-45	hc1	10YR52 00 10YR58 00 M				00MN00	00	Y	0	0	0		M		Y			
	45-80	c	10YR53 00 10YR58 00 M					Y	0	0	0			P		Y			
13	0-25	hc1	10YR41 42						0	0	0								
	25-120	c	10YR53 00 10YR58 00 M					Y	0	0	0			P		Y			
14	0-25	mzc1	10YR42 00						0	0	HR	2							
	25-45	mzc1	10YR53 00 10YR58 00 C					Y	0	0	0			M		Y			
	45-65	hc1	05Y 61 00 10YR58 00 M					Y	0	0	0			M		Y			
	65-100	c	05Y 61 00 10YR58 00 M					Y	0	0	0			P		Y			
15	0-30	z1	10YR43 00 10YR46 00 F						0	0	HR	3							
	30-50	mzc1	10YR53 00 10YR56 00 C					Y	0	0	HR	5		M		Y			
	50-65	mzc1	25Y 61 62 10YR58 00 M				00MN00	00	Y	0	0	HR	5		M		Y		
	65-90	c	25Y 51 52 10YR58 00 M					Y	0	0	0			P		Y			
16	0-25	hzc1	10YR42 00 10YR46 00 C				00MN00	00	Y	0	0	0							
	25-35	hc1	10YR42 53 10YR58 00 C					Y	0	0	0			M		Y			
	35-60	c	10YR53 00 10YR58 00 M					Y	0	0	0			P		Y			
	60-70	sc	10YR53 00 10YR58 00 M				00MN00	00	Y	0	0	HR	20		P		Y		