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**Canterbury Local Plan  
CAN 15: Saint Dunstons,  
Agricultural Land Classification,  
ALC Map and Report.  
April 1995**

# AGRICULTURAL LAND CLASSIFICATION REPORT

## CANTERBURY LOCAL PLAN CAN 15: SAINT DUNSTANS.

### 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 The site comprises 3.9 hectares of land to the north of Harbledown near Canterbury in Kent. An Agricultural Land Classification (ALC) survey was carried out during March 1995. The survey was undertaken at a detailed level of approximately 1.5 borings per hectare of agricultural land surveyed. A total of 6 borings were described in accordance with 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 a long term limitation on its use for agriculture.
- 1.4 At the time of the survey the land was under permanent grass. The Woodland shown on the site is partly mature and deciduous to the north east and young deciduous to the south west. The area shown as Non-agricultural is bramble scrub.
- 1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas and extent 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                 | 2.4        | 61.5       | 70.6                   |
| 3b                 | 1.0        | 25.6       | <u>29.4</u>            |
| Non-Agricultural   | 0.2        | 5.2        | 100.0 (3.4ha)          |
| Woodland           | <u>0.3</u> | <u>7.7</u> |                        |
| Total area of site | 3.9ha      | 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 land at this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The land has been classified on the basis of soil wetness and soil droughtiness limitations. The soils observed during survey work were found to be variable over short distances.

- 1.8 The land shown as Subgrade 3a is commonly limited by soil droughtiness, due to the presence of impenetrable stony or sandy soils which restrict profile water availability. Occasional observations in this area were of slightly better quality but, due to the variable nature of the unit, the lowest common grade is shown.
- 1.9 The area of Subgrade 3b to the west of the site is primarily limited by soil wetness due to impeded drainage. Towards the north of the site, shallow slowly permeable clay horizons occur. To the south of this unit the soils have been disturbed. The soils encountered here contained a shallow clay horizon considered to be very slowly permeable. An area towards the centre of the unit has been classified on the basis of slope, the gradient of which precludes the safe and efficient use of certain types of farm machinery.

## 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 No local climatic factors such as exposure or frost risk are believed to affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations.

**Table 2: Climatic Interpolation**

|  |          |
|--|----------|
| Grid Reference   | TR131584 |
| Altitude, (m, AOD)                                     | 55       |
| Accumulated Temperature<br>(day degrees C., Jan.-June) | 1434     |
| Average Annual Rainfall (mm)                           | 661      |
| Field Capacity Days                                    | 138      |
| Moisture deficit, wheat (mm)                           | 117      |
| Moisture deficit, potatoes (mm)                        | 112      |
| Overall Climatic Grade                                 | 1        |

### 3. Relief

- 3.1 The site lies between approximately 50 and 60m AOD. Overall the agricultural area of the site slopes from south to north, gently in the south quite sharply across the centre, and gently again towards the north.

### 4. Geology and Soils

- 4.1 The published geological information (BGS, 1982), shows the site to be underlain by Eocene Oldhaven Beds.
- 4.2 The most recent published soils information (SSEW, 1983), shows the site to be underlain by soils of the Hamble 1 Association. The legend accompanying the map describes these as, 'deep well drained often stoneless fine silty soils. Some similar soils affected by groundwater and some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging.' (SSEW, 1983). Some of the soils encountered at this site were of this broad type.

### 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 Good quality land has been mapped over the majority of the site to the east, where soil properties and climatic factors combine to give rise to soil wetness and/or droughtiness limitations.
- 5.4 Soil droughtiness affects the majority of this area with soil wetness being equally limiting in a number of cases. Profiles were variable over the site, falling into three separate groups. The first, located towards the north west of the mapping unit, comprises a very slightly stony (5% total flints) medium clay loam topsoil, passing to a gleyed slightly stony (10% total flints) medium silty clay loam upper subsoil. This overlies a similarly stony, gleyed, medium silty clay loam horizon and a similarly textured, stone free, lower subsoil horizon. Soils of this nature equate with Wetness Class II and subsequent Grade 2, as well as being Grade 2 on soil droughtiness in the local climate. However as the distribution of soils of this nature is very limited they have been included in this map unit. Soil wetness causes a reduction in crop growth and yield and restricts the opportunities for cultivation and/or grazing without the possibility of structural damage occurring in the profile.
- 5.5 The second soil type occurs towards the north east of the mapping unit and comprises a very slightly stony (2% total flints), gleyed, medium clay loam topsoil, passing to a similarly stony, slightly gleyed, sandy clay loam upper subsoil. The lower subsoil horizons become less stony and more sandy, passing through medium

sandy loam, loamy medium sand and medium sand by 120cm. These soils are limited to Subgrade 3a on the basis of soil droughtiness in the local climatic conditions.

- 5.6 The third soil type occurs towards the south of the mapping unit and comprises slightly to moderately stony (up to 30% total flints) occasionally impenetrable (to the soil auger) medium clay loams which show no evidence of soil wetness. The soil droughtiness that either the stones or the sandy textures cause leads to insufficient profile water to be available for the maximum crop yields in the prevailing climatic conditions.

### **Subgrade 3b**

- 5.7 Moderate quality land is mapped towards the west of the site. Principal limitations include soil wetness and slope. Towards the north of the mapping unit soil wetness occurs where slowly permeable clay exists directly beneath a very slightly stony (2% total flints) medium clay loam topsoil. The depth to the slowly permeable layer is such that Wetness Class IV is applied equating with Subgrade 3b given the topsoil texture and prevailing local climate.
- 5.8 Towards the south of the mapping unit the soils are disturbed. A feeder road to the Canterbury by-pass runs in a cutting adjacent to the site. When this was built some of the excess soil was dumped in this area, and landscaped to produce a flat grassed area and a steeply sloping area of young woodland as shown on the accompanying map. The observed profile in this area comprises a slightly stony (5% total flints) medium silty clay loam topsoil, over a wet, gleyed, slightly stony (10% total flints) medium clay loam upper subsoil. This suddenly passed to a shallow (20cm) horizon of stone free dry gleyed clay, this was considered to be anaerobic and very slowly permeable. Beyond this horizon, the soil remained dry, becoming a gleyed stoneless heavy silty clay loam lower subsoil to depth. The depth to the slowly permeable horizon is such that in undisturbed soils Wetness Class III and subsequent Subgrade 3a would be applied however, as the clay horizon is very slowly permeable, this area has been downgraded by one subgrade to Subgrade 3b. Soil wetness affects crop growth and yield as well as restricting the opportunities for cultivations and/or grazing to occur without causing structural damage to the soil.
- 5.9 Towards the centre of the Subgrade 3b mapping unit there is an area where slopes were in the range 7° - 11°. This precludes the use of certain types of farm machinery on the basis of safety and efficiency.
- 5.10 A soil inspection pit was not dug at this site given the local variability of the soils.

## **SOURCES OF REFERENCE**

British Geological Survey (1982), Sheet 289, Canterbury, 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 (1989), Climatic datasets 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 (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.

**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 (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, e.g. 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

### DEFINITION OF SOIL WETNESS CLASS

#### **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 180 days, but only wet within 40 cm depth for 31-90 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 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.

#### **Wetness Class 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.

#### **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.

**APPENDIX III**  
**SOIL PIT AND SOIL BORING DESCRIPTIONS**

**Contents :**

**Sample Point Map**

**Soil Abbreviations - explanatory note**

**Database Printout - soil pit information**

**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 database. This has commonly used notations and abbreviations as set out below.

### Boring Header Information

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

|                                  |                                  |                             |
|----------------------------------|----------------------------------|-----------------------------|
| <b>ARA</b> : Arable              | <b>WHT</b> : Wheat               | <b>BAR</b> : Barley         |
| <b>CER</b> : Cereals             | <b>OAT</b> : Oats                | <b>MZE</b> : Maize          |
| <b>OSR</b> : Oilseed rape        | <b>BEN</b> : Field Beans         | <b>BRA</b> : Brassicae      |
| <b>POT</b> : Potatoes            | <b>SBT</b> : Sugar Beet          | <b>FCD</b> : Fodder Crops   |
| <b>LIN</b> : Linseed             | <b>FRT</b> : Soft and Top Fruit  | <b>FLW</b> : Fallow         |
| <b>PGR</b> : Permanent Pasture   | <b>LEY</b> : Ley Grass           | <b>RGR</b> : Rough Grazing  |
| <b>SCR</b> : Scrub               | <b>CFW</b> : Coniferous Woodland | <b>DCW</b> : Deciduous Wood |
| <b>HTH</b> : Heathland           | <b>BOG</b> : Bog or Marsh        | <b>FLW</b> : Fallow         |
| <b>PLO</b> : Ploughed            | <b>SAS</b> : Set aside           | <b>OTH</b> : Other          |
| <b>HRT</b> : Horticultural Crops |                                  |                             |
3. **GRDNT** : Gradient as measured by a hand-held optical clinometer.
4. **GLEYSPL** : Depth in cm to gleying or slowly permeable layers.
5. **AP (WHEAT/POTS)** : Crop-adjusted available water capacity.
6. **MB (WHEAT/POTS)** : Moisture Balance.
7. **DRT** : Best grade according to soil droughtiness.
8. *If any of the following factors are considered significant, an entry of 'Y' will be entered in the relevant column.*

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

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

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

## 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      **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 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
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

6. **STONE LITH** : 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    **GH** : gravel with non-porous (hard) stones  
**SI** : soft weathered igneous/metamorphic rock  
Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

7. **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

8. **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

9. **SUBS STR** : Subsoil structural condition recorded for the purpose of calculating profile droughtiness : **G** : good    **M** : moderate    **P** : poor

10. **POR** : Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

11. **IMP** : If the profile is impenetrable a 'Y' will appear in this column at the appropriate horizon.

12. **SPL** : Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

13. **CALC** : If the soil horizon is calcareous, a 'Y' will appear in this column.

14. 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

| 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          | TR13105849 | PGR SE     | 04          | 25      | 2       | 2     | 148    | 31  | 110   | -2  | 2     |       |      | WD   | 2                |
| 2          | TR13205849 | PGR S      | 03          | 0       | 1       | 1     | 120    | 3   | 105   | -7  | 3A    |       |      | DR   | 3A               |
| 3          | TR13105848 | PGR        |             | 18 40   | 4       | 3B    |        | 0   | 0     |     |       | Y     |      | WE   | 3B V SPL 40-60   |
| 4          | TR13205840 | PGR E      | 01          |         | 1       | 1     | 077    | -40 | 077   | -35 | 3B    |       |      | DR   | 3A IMP FLINTS 50 |
| 5          | TR13105845 | PGR S      | 02          | 0 25    | 4       | 3B    |        | 0   | 0     |     |       |       |      | WE   | 3B               |
| 6          | TR13255833 | PGR E      | 01          |         | 1       | 1     | 138    | 21  | 106   | -6  | 2     |       |      | DR   | 2                |

| SAMPLE | DEPTH  | TEXTURE | COLOUR    | ----MOTTLES---- |      |      | PED COL. | ----STONES---- |    |    | STRUCT/ CONSIST | SUBS     |     |     |     |                 |
|--------|--------|---------|-----------|-----------------|------|------|----------|----------------|----|----|-----------------|----------|-----|-----|-----|-----------------|
|        |        |         |           | COL             | ABUN | CONT |          | GLE            | >2 | >6 |                 | LITH TOT | STR | POR | IMP | SPL             |
| 1      | 0-25   | mc1     | 10YR42 00 |                 |      |      |          | 0              | 0  | HR | 5               |          |     |     |     |                 |
|        | 25-45  | mc1     | 10YR53 52 | 10YR58          | 00   | C    |          | Y              | 0  | 0  | HR              | 10       |     | M   |     |                 |
|        | 45-70  | mzc1    | 25Y 53 52 | 10YR58          | 00   | C    |          | Y              | 0  | 0  | HR              | 10       |     | M   |     |                 |
|        | 70-120 | mzc1    | 25Y 61 71 | 10YR68          | 00   | M    |          | Y              | 0  | 0  |                 | 0        |     | M   |     |                 |
| 2      | 0-25   | mc1     | 10YR42 32 | 75YR46          | 00   | C    |          | Y              | 0  | 0  | HR              | 2        |     |     |     | Q MSL V SANDY   |
|        | 25-40  | sc1     | 10YR54 00 | 10YR56          | 00   | C    |          | S              | 0  | 0  | HR              | 2        |     | M   |     |                 |
|        | 40-60  | ms1     | 10YR53 00 | 10YR56          | 00   | C    |          | Y              | 0  | 0  | HR              | 2        |     | M   |     |                 |
|        | 60-75  | lms     | 10YR52 53 | 10YR56          | 00   | M    |          | Y              | 0  | 0  | HR              | 1        |     | G   |     |                 |
|        | 75-120 | ms      | 25Y 53 00 | 25Y 56          | 00   | M    |          | Y              | 0  | 0  |                 | 0        |     | G   |     |                 |
| 3      | 0-18   | mzc1    | 10YR42 00 |                 |      |      |          | 0              | 0  | HR | 5               |          |     |     |     |                 |
|        | 18-40  | mc1     | 25Y 51 00 | 10YR46          | 00   | C    |          | Y              | 0  | 0  | HR              | 10       |     | M   |     |                 |
|        | 40-60  | c       | 05GY61 00 | 10YR68          | 00   | M    |          | Y              | 0  | 0  |                 | 0        |     | P   | Y   | V SPL HORIZON   |
|        | 60-90  | hzc1    | 10YR63 00 | 10YR58          | 00   | M    |          | Y              | 0  | 0  |                 | 0        |     | M   |     | IMP DRY SOIL 90 |
| 4      | 0-23   | mc1     | 10YR43 00 |                 |      |      |          | 0              | 0  | HR | 3               |          |     |     |     |                 |
|        | 23-40  | mc1     | 10YR54 00 |                 |      |      |          | 0              | 0  | HR | 8               |          | M   |     |     |                 |
|        | 40-50  | mc1     | 10YR54 00 |                 |      |      |          | 0              | 0  | HR | 30              |          | M   |     |     | IMP FLINTS 50   |
| 5      | 0-25   | mc1     | 10YR42 00 | 10YR46          | 00   | C    |          | Y              | 0  | 0  | HR              | 2        |     |     |     |                 |
|        | 25-60  | c       | 25Y 53 00 | 10YR58          | 00   | M    |          | Y              | 0  | 0  |                 | 0        |     | P   | Y   |                 |
| 6      | 0-25   | mc1     | 10YR43 00 |                 |      |      |          | 3              | 0  | HR | 8               |          |     |     |     |                 |
|        | 25-40  | mc1     | 10YR43 00 |                 |      |      |          | 0              | 0  | HR | 15              |          | M   |     |     |                 |
|        | 40-60  | mc1     | 10YR43 00 |                 |      |      |          | 0              | 0  | HR | 8               |          | M   |     |     |                 |
|        | 60-120 | mc1     | 10YR54 00 |                 |      |      |          | 0              | 0  | HR | 15              |          | M   |     |     |                 |