

APPENDIX 13.1
AGRICULTURAL LAND CLASSIFICATION AND SOIL RESOURCE
PLAN



Agricultural Land Classification and Soil Resource Plan Ford Airfield

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1 Executive Summary

The Agricultural Land Classification of approximately 86.63ha of land on the old Ford Airfield, was assessed by ADAS in August 2018.

The Site, which is proposed for development, is almost level and the land lies at an altitude of approximately 5m AOD. At the time of the survey, the Site supported arable crops including wheat, peas and oilseed rape all of which had recently been harvested. Parts of the Site, especially in the north, had been disturbed by the previous use as an airfield and industrial units were located on and around the runways in the centre of the area.

The Site is underlain by chalk deposits with river terrace material overlying the solid geology and the soils were mainly moderately well drained. The fieldwork undertaken for this report indicates that the Site is Agricultural Land Classification Grade 2 and Subgrade 3a due to the limitations imposed on crop growth by soil wetness and workability or by disturbance which has increased the stone content or sealed the ground below a restored topsoil.

A Soil Resource Plan has been developed which takes account of the soils on Site and provides a suitable soil handling strategy which will preserve the soils on Site, during and after Site works.

The fieldwork undertaken for this report indicates that the Site has uniform soils which can be stripped and stored together. However on parts of the site patchy disturbance when used as an airfield has led to manmade material being found either in a layer at the base of the topsoil or mixed into the topsoil and these areas have been delimited on the Soil Resource Plan.

2 Introduction

ADAS was instructed by Barton Wilmore, on behalf of the Applicant, to undertake an Agricultural Land Classification (ALC) on a Site situated east of Yapton on the disused Ford Airfield, to inform a planning application for residential development.

The land was classified using the system outlined in the Ministry of Agriculture, Fisheries and Food (MAFF now Defra) publication: 'Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land' (October 1988).

3 Methodology

3.1 Fieldwork

A desk study of soils and climatic information was undertaken using reference material held by ADAS, followed by detailed fieldwork to study soil and site limitations.

Fieldwork was undertaken with a hand held 50mm diameter "Dutch" auger and/or spade to a depth of up to 1.2m. In addition, soil pits were excavated to determine subsoil characteristics which could not be identified from the auger sample.

A total of 88 auger borings and 7 soil pits were examined within the Site to determine the classification of the land and the results are shown on the plan at **Appendix 1**. A brief description of the soil pits and auger profiles are given in **Appendix 2**, the results of laboratory analysis for topsoil particle size distribution are shown at **Appendix 3**, a full description of the ALC grades at **Appendix 4** and a map of soil resources at **Appendix 5**.

The fieldwork was carried out between 13 - 22nd August 2018 in dry and sunny conditions. The ground was dry and difficult to auger and as a consequence much of the Site has been classified based on the deeper soil information gathered from the soil pits. Areas with historic disturbance have been included in the main grading where the pits did not reveal a significant limitation to land quality but a more detailed survey when the soils are in a wetter condition may locate areas of poorer quality land mixed in with the undisturbed soils.

3.2 The Agricultural Land Classification System

The Agricultural Land Classification System (ALC) provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principal ways.

They may affect:

- *the range of crops which can be grown*
- *the level of yield*
- *the consistency of yield*
- *the cost of obtaining the crop*

The classification system gives considerable weight to flexibility of cropping, whether actual or potential, the ability of some land to produce consistently high yields of a somewhat narrower range of crops is also taken into account.

The principal physical factors influencing agricultural production are climate, site (including relief) and soil. By assessing these factors, it is possible to assign land into one of five land classification grades, Grade 1 land being the highest quality and Grade 5 the lowest quality land. Grade 3 is sub-divided into Subgrades 3a and 3b, to identify good quality agricultural land from moderate quality land (see **Appendix 4** for a description of the grades used in the ALC system). By considering site specific climate, site and soil factors the land can be classified into 1 of 5 agricultural grades or certain non-agricultural grades, the results of which are detailed in sections 6.4 and 6.5.

4 Geology, Soils and Present Land Use

4.1 Geology

The geology mapⁱ shows the Site to be underlain by a grouping of chalk deposits including the Nodular, Seaford, Newhaven and Culver Chalk Formations, which are sedimentary bedrocks laid down in warm chalk seas, 71-94 million years ago in the Cretaceous Period. Overlying the solid geology are superficial deposits of River Terrace material and Aeolian silts laid down up to three million years ago in the Quaternary Period. A very small area of raised beach deposits occur at the northern end of the Site. The resulting soils are mapped on the soil mapsⁱⁱ of the area as Hamble 2 Association, which typically includes well drained silty soils.

4.2 Soils

The survey undertaken for this report confirmed the presence of the Hamble 2 Association soil type. The topsoils are typically silt loam to medium silty clay loam overlying medium silty clay loam subsoils. The topsoils are not calcareous. The heavier soils show signs of impeded drainage in the form of gley colours and mottling in the deeper subsoil but most are well drained. They can be affected by groundwater but with drainage fall into Wetness Class 1 (WC 1) and WC 2 (i.e. well to moderately well drained). The natural soils contain few stones throughout the profile but in areas of historic disturbance the soils were often more stony and contained blocks of concrete and brick or clinker fragments.

Limited but wide spread areas of historic disturbance occur in the north of the Site (as shown on the plan at Appendix 1) when the area was used as an airfield. Historic photographs show more extensive

runaways, parking areas, roads and buildings which are now within the area of farmland. This historic use has disturbed the soils and introduced rubble into the topsoil but generally the soils below the topsoil were undisturbed; two of the nine pits described contained a manmade layer below the topsoil. A more detailed survey of the potentially disturbed areas, when the soils are less dry and therefore easier to auger, may locate areas of lower quality land; the affected areas have been delimited by a purple hatch on the map at Appendix 1.

4.3 Present Land Use

At the time of survey in August 2018, the agricultural land supported stubbles after the recent harvest. A mix of wheat, peas and oilseed rape had been grown in summer 2018. Within the boundary of the Site the disused runways and hangers were in industrial use or used as car parks and a sports ground.

5 Previous Land Classification Surveys

The Provisional Land Classification Maps show the Site as an area of Grade 1 land. The Provisional maps are not accurate for use on small sites and do not classify land into Subgrade 3a and Subgrade 3b, to differentiate between better quality (Subgrade 3a) and lower quality (Subgrade 3b) land.

The post-1988 ALC data on the Magic websiteⁱⁱⁱ indicates that the southern and eastern parts of the Site have been classified by Natural England as Grade 2 land with small areas of Subgrade 3a and Subgrade 3b in areas of disturbance. Fieldwork to inform the current development has confirmed the presence of these grades.

6 Results of the Agricultural Land Classification Survey

The sections below illustrate the main considerations and limitations to the grading of the land.

6.1 Climate

The Site climatic variables have been interpolated from grid point data surrounding the Site, as follows:

Table 1: Climatic Variables

Grid Reference (mid-point of Site)	SU990036	SU992025
Altitude (m)	5	5
Accumulated Temperature (day °C)	1542	1542
Average Annual Rainfall (mm)	753	744
Overall Climatic Grade	1	1
Field Capacity Days	155	152
Moisture deficit (mm): Wheat	120	121
Moisture deficit (mm): Potatoes	117	118

The Site lies close to the coast in southern England and so has a warm moist climate. Accumulated Temperature (January–June), a measure of the relative warmth of the area, is 1542°C and the average annual rainfall is 744-753mm.

This combination of rainfall and temperature indicates that the area is warm and moist, making it good for crop growth so long as the soils hold sufficient water to protect crops against drought and the soils are freely drained. There is no overriding climatic limitation to the classification of the land.

6.2 Site Limitations

Slope: The Site is almost level but contains very shallow depressions and ridges especially in areas of historic disturbance possibly from bomb craters or the removal of structures. Slope and microrelief do not affect land quality on this Site.

Flooding: The Site lies in a Flood Zone 1, lying above the floodplain of the River Arun and so is not prone to flooding from rivers and sea^{iv}. A tributary of the River Arun is shown as Flood Zone 3 as far as the northern edge of the Site to the east of the house on Ford Lane, but this affects only a very small part of the Site and has not affected the grading of the land.

6.3 Soil and Interactive Limitations

The soils show signs of slight seasonal wetness in the form of mottling in the lower subsoils, but the soils are not slowly permeable near the surface and the majority of the Site falls into WC 1 and 2.

The main factors affecting land quality in this area are:

- *Soil texture and soil moisture deficit, which mainly affect the ALC grade due to a droughtiness limitation.*
- *Soil wetness and workability due to seasonally wet subsoils.*
- *Soil pattern in areas where the ground has been disturbed by historic uses.*

All other limitations such as gradient and stone content are less severe and have not affected the final grading of the land.

6.4 Land Quality

The land quality of the Site is shown on the attached plan (**Appendix 1**).

Grade 1

No land has been placed in this grade but occasional profiles were located where the soils were well drained and held sufficient moisture to protect crops against drought.

Grade 2

This Grade is mapped extensively and accounts for 77.1% of the survey area. The land is level and the soils are deep and only very slightly stony, they have:

- *A silt loam to light textured medium silty clay loam topsoil over similar or heavier subsoils giving a slight susceptibility to drought in dry years; they have a moisture balance of between +5mm to +30mm for wheat and -10mm to +10mm for potatoes.*
- *A light textured medium silty clay loam or silt loam topsoil and similar or heavier subsoils which are mottled at variable depths between 400-700mm. A slowly permeable layer starts at depths below 530mm of the soil surface and so the soils fall into WC 2.*
- *The potentially disturbed areas are mainly included in this Grade as there was insufficient evidence to down grade them, due to the dry field conditions.*

This land is capable of producing high yields of a wide range of crops including horticultural crops but yields can be more variable than on Grade 1 land.

Grade 3, Subgrade 3a

This Grade accounts for 8.9% of the survey area. The land is almost level and the soils are deep and slightly stony, they have either:

- *A medium clay loam to sandy silt loam topsoil over similar and heavier textured subsoils. They are gleyed and mottled within 400mm and have a slowly permeable layer starting at depths between 410 - 690mm of the soil surface and so fall into WC 3.*
- *Slightly stony silty clay loam topsoil over a compact man made layer, over natural subsoil. These disturbed areas are generally prone to a significant drought limitation but they have natural soils surrounding them and the area has been mapped to reflect the mixed soils.*

Soil wetness and workability and soil pattern are the main limitations to the classification of this land. This land is capable of producing moderate to high yields of a narrower range of crops.

Grade 3, Subgrade 3b

No land has been placed in this grade but isolated profiles occur where the land has been affected by disturbance leading to a significant drought limitation.

Grade 4

No land has been placed in this grade but isolated profiles occur where the land has been affected by disturbance leading to a severe drought limitation.

Grade 5

No land has been placed in this grade.

Other Land

This classification has been placed over the runways, tracks, industrial areas, woodland strips and playing fields and accounts for 14.0% of the area.

6.5 Summary of Land Quality in the Survey Area

Table 2: Agricultural Land Classification Measurements

Grade	Total Area (ha)	Agricultural Land Area (ha)	% of Total Area
1	-	-	
2	66.78	66.78	77.1
3a	7.69	7.69	8.9
3b	-	-	-
4	-	-	-
5	-	-	-
Other land	12.16	-	14.0
Total	86.63	74.47	100.0

6.6 Conclusions

- *The Provisional ALC maps, produced in the 1970s, classified the Site as Grade 1 land. However the provisional mapping exercise was not meant to give a detailed grading of small parcels of land and so the Site has been classified again, using the current ALC guidelines.*
- *A detailed survey was undertaken by Natural England of part of the Site, which classified the land as Grade 2 with small areas of Subgrade 3a and Subgrade 3b.*
- *Fieldwork undertaken for this ADAS report located soils which were medium textured and land quality was limited by a drought limitation or by soil wetness and workability limitations to Grade 2.*
- *Isolated areas of poorer quality disturbed land, which are prone to drought, could not be mapped separately based on the data collected to date. A more detailed survey would be required, undertaken in moist soil conditions to determine if the impenetrable layer encountered in the auger survey was of manmade or natural origin.*

7 Soil Resource Plan

Based on the findings of the survey described above a Soil Resource Plan was produced (**Appendix 5**) to show the location of the different soils types on Site. Using the information a generalised soil management plan has been devised to guide soil handling during Site construction and restoration.

7.1 Aim of the Soil Resource Plan

The aims of this Soil Resource Plan are to:

- *Identify the different soil resources on Site which will require separate handling.*
- *Devise a working method designed for the protection and conservation of all soil resources on Site.*
- *Maintain the physical and chemical properties of the soils on Site.*
- *Retain soil function during and after restoration.*
- *Provide suitable mitigation measures appropriate to the soil types on Site.*
- *Provide on-site reference on soil management for site operators.*

7.2 Soils Present

Soils were found to be fairly uniform across the Site and for the purposes of soil stripping, storage and reinstatement can be considered as one main soil unit with a subdivision of Unit 1 to cover areas of potential disturbance. A second soil unit is mapped over areas of hardstanding. Details of individual auger borings are listed in Appendix 2 and the position of each investigation point is shown at Appendix 1.

7.2.1 Unit 1

This unit accounts for approximately 60.6% of the Site and is mapped to include soils on the boundary between light and medium soil textures. They typically have brown silt loam to medium silty clay loam, with occasional profiles of sandy silt loam topsoil, over similar and slightly heavier subsoils. Topsoils ranged in thickness from 250 – 350mm, with an average thickness of 290mm. The topsoil contained few stones.

The subsoils were typically silt loam to silty clay loam which became slightly heavier with depth and showed signs of slightly impeded drainage in the lower subsoil. The soils shown in this unit are the highest quality soils and should be used in the gardens, allotments and for landscaping in preference to Unit 1a or Unit 2 soils where possible. Although the soils are free draining they will become very sticky in wet conditions due to their high silt content.

Table 3: Summary of Soils on Site

Bottom Depth of Horizon (mm)	Texture	Drainage	Stones
Unit 1			
290	Dark brown silt loam to silty clay loam	-	Few
Range 250-350			
290 – 600/700	Brown silt loam to silty clay loam	-	Few
600/700 - 1000	Brown to red brown silty clay loam to medium clay loam	Slightly impeded	Few
Unit 1a			
280	Dark brown silt loam to silty clay loam	-	0- 10% concrete and brick
Range 200-350			
Potential for a discontinuous manmade layer of rubble and sand or thin layer of tarmac chippings. Very variable in depth and texture.			Up to 80%
280 – 600/700	Brown silt loam to silty clay loam	-	Few
600/700 - 1000	Brown to red brown silty clay loam to medium clay loam	Slightly impeded	Few
Unit 2			
Concrete surface from runways and industrial units and unsurveyed sports pitches			Subsoil likely to be available

7.2.2 Unit 1a

The soils in this unit account for approximately 25.3% of the Site. The area has similar topsoils which contain some rubble and similar subsoil to the rest of Unit 1 soil, but they contain patchy areas of manmade materials across the Site, associated with the former buildings / structures on the airfield. An infilled canal may also lie within the Site boundary but this was not proven during fieldwork. It is unknown whether the made ground contains potentially deleterious materials without further investigation, but it is anticipated that the made ground if present is likely to largely comprise construction type materials^v at the base of the topsoil. This soil is suitable for landscaping the Site so long as any manmade layers which are located during the construction phase are removed.

7.2.3 Unit 2

The soils in this unit account for approximately 14.0% of the Site. There are generally no soils at the surface in areas of Unit 2 but a relatively undisturbed subsoil is likely to underlie the concrete. The existing sports pitches were not surveyed but are likely to consist of a topsoil similar to that in Unit 1 due to the uniformity of the soils in the area.

7.3 Site Preparation

The Site will be constructed with the aim of keeping the soils in store for as short a time as possible whilst minimising damage to the soil or Site.

- *Areas to be used as allotments and playing fields will where possible be left in an undisturbed condition and fenced off to prevent trafficking.*
- *Existing utilities will be clearly signed and protected by 'no dig' areas.*
- *Haul routes and the surface of the construction areas will be stripped of topsoil, with topsoil stored in defined areas.*
- *Any vegetative growth higher than 150mm will be cut and removed from Site prior to topsoil stripping.*
- *The location of drains - any drains located during soil stripping will be recorded and diverted to a new perimeter ditch to prevent the Site becoming waterlogged during construction.*
- *Dust control measures – haul roads will be sprayed with water when required during dry weather conditions to reduce dust.*

7.4 Soil Stripping

Soil stripping is designed to keep topsoil and subsoil separate at all times. 360° excavators and dump trucks will be used to move soils to store. Topsoil depths are typically 250/300mm. Soils from 300 – 1000mm will be treated as subsoil and soils from below 1000m will be treated as overburden and kept separate from the subsoil.

- *Topsoil stripping should only occur when the soils are as dry as reasonably practicable and only when they are below the plastic limit and never within 24hr of significant rain (>10mm in 24hr).*
- *Topsoils should be stripped as deep as the base of the darker topsoil layer which is typically to a depth of between 250/300mm (as shown in Table 4).*
- *The stripped topsoil will be stored in designated bunds at locations to be agreed. Mounds will not exceed 3m, unless required to be higher for landscaping and should be set back from the stripped area by at least 0.5m to prevent the loss of topsoil into the excavation. Bunds should be fenced off from the rest of the Site to prevent materials being stored on the sides of the mounds.*
- *Topsoil will be stored on topsoil from which any excess vegetation has been removed.*

Table 4: Recommended Average Topsoil Stripping Depth

Unit Number	Average Topsoil Depth (mm)	Predominant Topsoil Texture	Stripping Depth (mm)
Unit 1	290	Silt loam to medium silty clay loam	300
Unit 1a	280	Silt loam to medium silty clay loam	250
Unit 2	0	No topsoil	0

- Any subsoil which needs to be stripped will be stored separately from the topsoil and should be clearly labelled as subsoil. Subsoil will be stripped to a maximum depth of 1000mm with any deeper soils treated as overburden.

7.5 Drainage and Utilities

A record of ground conditions during construction works will be kept.

- Any unmarked utilities located during the work will be recorded and protected.
- A tracksheet should record any existing drainage features located during soil stripping, including their type, depth, size, angle and condition. This detail will then be available to aid a review of the requirements for water management.
- Any existing field drains which are cut off/damaged by the works should be diverted into local drainage ditches through silt traps, to minimise sediment release.

7.6 Soil Storage

Soil stores should be placed in defined areas for screening and final restoration of the Site and adjacent to but set back by more than 0.5m from the excavation to prevent soils slumping into the cut. All bunds should be labelled with their volume and soil type (e.g. ***m³; Unit 1 topsoil). Topsoil should be stored over topsoil and subsoil should be stored on subsoil.

Soil should be placed into store by tracked equipment where possible, in a loose condition and bunds lightly firmed to consolidate the surface. A low maintenance grass mix should be sown on bunds that will be in place for more than six months at a rate of 5g/m². The grass should be kept weed free by mowing or spraying weeds before they set seed.

Table 5: Soil Bunds Height

Soil Type	Bund	Height (up to**m)
Unit 1 -Topsoil	Bund A	3m
Unit 1 - Subsoil if stripped to install services	Bund B	5m or higher for screening
Unit 1a - Topsoil	Bund C	3m
Unit 1a - Manmade layer	Discard	-
Unit 1a - Subsoil	Bund B	5m or higher for screening
Overburden from any soil unit	Bund D	as required

7.7 Soil Reinstatement

It is essential to minimise and repair any soil damage caused during soil handling. The following guidance is provided to reduce/remediate soil damage:

- *Ideally the soil should only be reinstated between mid-April and the end of October when they are at their driest. Soil replacement should only take place when the soils are below their plastic limit and not within 24hrs of significant rainfall (i.e. >10mm in 24hrs) so that the soils have a full day of drying before work recommences.*
- *10 days prior to soil reinstatement soil stores will be sprayed off if vegetated.*
- *The surface of the in-situ subsoil will be inspected to ensure that all construction material has been removed and that the Site is in a fit state to receive the topsoil.*
- *Subsoil compaction will be removed prior to replacing the topsoil, by subsoiling with a winged tine subsoiler set 20mm below the bottom depth of the compact layer, but only outside 'no dig' areas to protect utilities. If compaction is less than 200mm deep a cultivator will be used in preference.*
- *Soils will be replaced with minimum vehicular movements to avoid re-compacting the loosened surface. Restoration should start at the furthest point from the exit to ensure that soils once deposited are not run on by earth moving machinery.*
- *Particular care should be taken to minimise re-compaction of the subsoil by carefully controlling traffic movement along defined routes and working only in dry conditions*
- *Replace 300mm of topsoil over the prepared subsoil and lightly blade out to level the surface.*

- *Surplus topsoil from Unit 1 can be used to surcharge the allotment area with additional topsoil up to a maximum topsoil depth of 400mm, or used for landscaping or improving off site areas which are short of soil.*

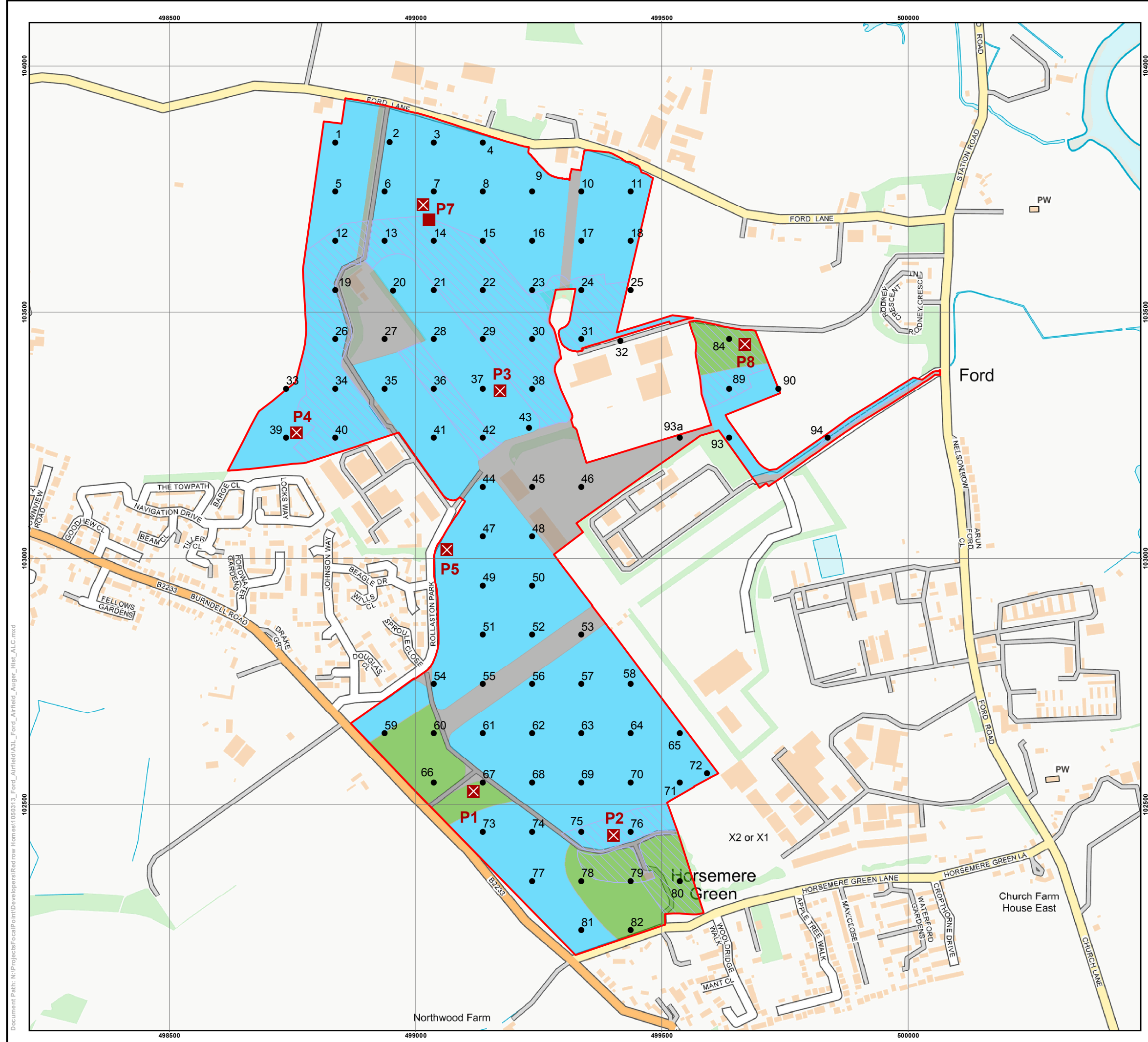
8 Remediation

Once the soils have been placed in their original sequence the restoration will be completed by undertaking the following works:

- *Thoroughly cultivate the topsoil to a depth of 250mm, but only in dry conditions to prepare the ground for seeding.*
- *Litter picked to remove any remaining construction waste and large stones prior to sowing species suitable for the intended end use of the area.*

Appendix 1: Agricultural Land Classification Map and Location Plan

See following page



Appendix 2: Soil Descriptions

PIT AND BORING DESCRIPTIONS

SITE: Ford Airfield

Keys common to all tables

Texture Key

S = sand	F = fine
Z = silt	M = medium
C = clay	C = coarse
L(y) = loam(y)	Pt(y) = peat(y)

Structure Key

(V)Wk = (very)weak	M = moderate	S = strong
F = fine	M = medium	C = coarse
SG = single grain	GR = Granular	SAB = subangular blocky
AB = angular blocky	PR = prismatic	Fri = friable
Fm = firm		

Colour Key

Br = brown	Bl = black	Yl = yellow
Rd = red	Or = orange	pl = pale
Ol = olive		

Main Limitation

DR = Drought	WE = Wetness	CL = Climate
GR = Gradient	MR = Microrelief	TX = Texture

Land Use

Wh = wheat	perm past = permanent pasture	Osr = oil seed rape
WC = winter cereals	Ley = grass ley	WBC = wild bird cover
Bar = barley	r&f = ridge and furrow	fal = fallow

Others abbreviations

ab = abundant	cons = concretions	imp = impenetrable
MB = moisture balance	Mn = manganese	mot = mottles
occ = occasional/ly	och = ochreous	pok = pockets
pot = potatoes	sat = saturated	
SPL = slowly permeable layer	na = not applicable	CBC = chalky boulder clay
OM = organic matter	rrm = rusty root mottles	

Site: Ford

PIT DESCRIPTIONS

Pit	Depth (mm)	Colour	Texture	Structure	Drainage/P orosity (0.5% pores)	Total %	Stone
1	200	10YR43 dk br	MZCL replaced topsoil	MMSAB	-/> fri	<5	
	520	10YR46 dk yl br	LMS	MCSAB	-/> fm	<5	
	650	Bl br	Brick, tarmac and concrete rubble	massive	-/< compact	80	
	1200	Dk yl br	MZCL	VCPR subsoil	original Och few/< fri	<2	
	Gleyed at: -	SPL at: -	Wetness class: 1	Wetness grade: 1	Comments: Disturbed no roots below disturbed horizon		
		MB wheat: -11 MB pot: -35	DR Grade: 3b	Main limitation. DR		ALC grade 3b	



Pit 1



Pit 2

Pit	Depth (mm)	Colour	Texture/	Structure	Drainage/P orosity (0.5% pores)	Total %	Stone
2	300	10YR43 dk br	SZL (psd)	MMSAB	-/> fri	<1	
	550	10YR54 yl br	MCL	MCSAB	Och few /> fri	<1	
	1000	7.5YR66 rd yl, gr ped faces	HZCL	wkCPR to massive	Och many/>	<1	
	Gleyed at: 550	SPL at: -	Wetness class: 2	Wetness grade: 1	Comments:		
		MB wheat: +10 MB pot: -5	DR Grade: 2	Main limitation. DR		ALC grade 2	

Pit	Depth (mm)	Colour	Texture/	Structure	Drainage/Porosity (0.5% pores)	Total Stone %
3	300	10YR43 dk br	MZCL/ZL (psd)	MMSAB	-/> fri	<1
	380	10YR54 yl br	MZCL	massive	-/> fm	<1
	650	7.5YR54 br	MZCL	MCSAB	Och many/>	
	1000	7.5YR66 rd yl, gr ped faces	HZCL	WkCPR massive	to Och many/>	<1

	Gleyed at: 650	SPL at: -	Wetness class: 1	Wetness grade: 1	Comments:	
		MB wheat: +19 MB pot: +5	DR Grade: 2	Main limitation. DR		ALC grade 2



Pit 3



Pit 4

Pit	Depth (mm)	Colour	Texture/	Structure	Drainage/Porosity (0.5% pores)	Total Stone %
4	270	10YR43 dk br	ZL	MMSAB	-/> fri	<2
	350	10YR43 dk br	MZCL/ZL	Platy, compact	-/< fm	<2
	1000	7.5YR66 rd yl	MZCL	MCAB	Och com by 800 /> fri	<2

	Gleyed at: 800	SPL at: -	Wetness class: 1	Wetness grade: 1	Comments: compact layer sufficiently shallow to remove.	
		MB wheat: +43 MB pot: +9	DR Grade: 2/1	Main limitation. DR		ALC grade <u>2/1</u>

Pit	Depth (mm)	Colour	Texture/	Structure	Drainage/ Porosity (0.5% pores)	Total Stone %
5	280	10YR43 dk br	ZL (psd)	MMSAB	-/> fri	<2
	450	7.5YR54 br	ZL	Massive to 380mm, WkCAB below	-/< fm	<2
	650	7.5YR54 br	MZCL	WkMPR to WkCAB	Och com/> fri	
	1000	7.5YR64 lt br	MZCL	WkVCPR	Och many /> fri	<2
	Gleyed at: 650	SPL at: -	Wetness class: 1	Wetness grade: 1	Comments: many vertical channels in lower subsoil	
		MB wheat: +17 MB pot: +4	DR Grade: 2	Main limitation. DR		ALC grade 2
						

Pit 5

Pit 7

Pit	Depth (mm)	Colour	Texture/	Structure	Drainage/ Porosity (0.5% pores)	Total Stone %
7	260	10YR44 dk yl br	MZCL/ZL (psd)	Gr to MMSAB	-/> fri	<2
	690	10YR56 yl br	MZCL	MCAB	-/> fri	<2
	1000	10YR56 yl br	MZCL	WkCAB	-/> fri	<2
	Gleyed at: -	SPL at: -	Wetness class: 1	Wetness grade: 1	Comments:	
		MB wheat: +37 MB pot: +7	DR Grade: 2	Main limitation. Dr		ALC grade 2

Pit	Depth (mm)	Colour	Texture/	Structure	Drainage/ Porosity (0.5% pores)	Total %	Stone
8	300	10YR43 dk br	MZCL/ZL	MMSAB	-/> fri	<2	
	350	7.5YR20 bl	Ash/tarmac	massive	-/< fm		
	580	7.5YR46 st br	MZCL/ZL	massive	-/> fm	<2	
	1000	7.5YR46 st br	MZCL	massive	Och com /> fri	<2	
	Gleyed at: 580	SPL at: -	Wetness class: 1	Wetness grade: 1	Comments:		
		MB wheat: -5 MB pot: -20	DR Grade: 3a	Main limitation. DR		ALC grade 3a	
							
Pit 8 Man made layer throughout pit				Pit 9 Deep natural soil			

AUGER BORING DESCRIPTIONS

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limit-ation	Grade
1	300	FSZL/MCL	Br	-	<2			
	600	MCL/FSZL	Dk yl br	-	<2			
	600+	Too dry to auger				1	Dr	2
2	260	ZL	Br	-	<1			
	380	ZCL/ZL	Br becoming st br	Och few	<1			
	650	MZCL	St br	-	<1			
	1000	MZCL heavier with depth	St br	Och few	<1	1	Dr	1/2
3	300	ZL	Br	-	<2			
	500	ZCL	St br	-	<2			
	500	Too dry to auger				1	Dr	2
4	330	ZL/ZCL	Br	-	<2			
	450	ZCL	St br	-	<2			
	1000	ZCL	St br	Och few	<2	1	Dr	2
5	270	ZL	Br	-	<2			
	600	ZL	Yl br	Och few by 450	<2			
	1000	MZCL	St br	Och com	<2	1	Dr	1
6	260	ZL	Br	-	<1			
	380	ZCL	Br becoming st br	Och few	<1			
	650	MZCL	St br	-	<1			
	1000	MZCL heavier with depth	St br	Och few	<1	1/2	Dr	2
7	300	ZL	Br	-	<2			
	450	ZL/ZCL	St br	-	<2			
	450+	Too dry and compact to auger					Dr	2
8	320	ZL/ZCL	Br	-	<2			
	480	MZCL	St br	-	<2			

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limitation	Grade
	1000	MZCL sl heavier with depth	St br	Och few	<2	1	Dr	2
9	280	ZL	Br	-	<2			
	400	ZCL	St br	-	<2			
	450	ZCL	St br	-	5	1	Dr	2
	450	Too dry to auger						
10	280	ZL topsoil +ZCL subsoil	Br + st br	-	5/12			
	350	MZCL	St br	Och few	<15			
	450	SCL	St br	-	<15			
	520	MSL	St br	-	<15			
	630	LMS	St br	Och com				
	700	MZCL +LMS poks	St br	Och few	Flint and chalk stones			
	700+	Too stony to auger				1	MR	3a
Area of disturbance. Topsoil mixed with 20% subsoil								
11	280	ZL/ZCL	Br	-	<2			
	450	MZCL	St br	-	<2			
	450+	Too stony to auger				1	Dr	2
12	280	FSZL	Br	-	<2			
	330	FSZL	Yl br	-	<2			
	330+	Too dry to auger			<2	1	Dr	2
Nr gateway very compact or disturbed								
13	260	ZL	Br	-	<1			
	400	ZL/ZCL	Br becoming st br	Faint och few	<1			
	500	ZCL	St br	Och few	<1	1/2	Dr	2
14	280	ZL/ZCL	Br	-	<1			
	350	ZL/ZCL	St br	Faint och few	<1			
	500	MZCL	St br	-	<1			
	800	M/HZCL	St br	Och com				
	800+	Too dry to auger			<1	2	Dr/We	2
15	280	ZL/ZCL	Br	-	<1			
	350	ZL/ZCL	St br	Faint och few	<1			

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limitation	Grade
	500	MZCL	St br	-	<1			
	600	M/HZCL	St br	Och com				
	600+	Too dry to auger			<1	2	Dr/We	2
16	300	ZL	Br	-	<1			
	450	ZL	St br	-	<1			
	750	MZCL	St br	-	<1	1	Dr	1
	750+	Hit stone						
17	280	ZL/MZCL	Br	-	<5			
	330	MZCL	Gr br	Och few	<5			
	1000	MZCL	St br	-	<5	1	Dr	2
Layer of compact anaerobic soil at 280. On edge of depression								
18	320	ZL/ZCL	Br	-	<2			
	1000	MZCL sl heavier with depth	St br	-	<2	1	Dr	2
19	350	ZL/ZCL	Br	-	<2			
	450	ZL/ZCL	St br	-	<2			
	650	MZCL	St br	Och com+ Mn				
	1000+	HZCL	Yl br	Och many + Mn	<2	2	We	2
20	290	ZL/ZCL	Br	-	10 flint with granite gravel			
	400	MZCL	Yl br	-	<2			
	400+	Too dry and compact to auger					Dr	2
Disturbed profile, brick fragments in topsoil. Urban to west								
21	290	ZL/ZCL	Br	-	10 flint + brick frags			
	350	MZCL	Yl br	-	<2			
	350+	Too dry and compact to auger					Dr	2?
Disturbed profile, brick fragments in topsoil								
22	300	ZL/ZCL	Br	-	<2			
	650	MZCL	St br	-	<2			
	1000	HZCL	Yl br + br gr ped faces	Och com + Mn cons	<2	2	We	2
23	280	ZL	Br	-	<2			

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limit-ation	Grade
	330	ZL	St br	-	<2			
	330+	Too dry or solid to auger					Dr	2?
In area of historic disturbance								
24	280	ZL	Br	-	<2			
	600	ZL	St br	-	<2			
	1000	MZCL	St br	Och few + Mn cons	<2	1	Dr	1
25	300	ZL/ZCL	Br	-	<2			
	500	ZCL/ZL	St br	-	<2			
	500+	Too dry to auger				1	Dr	2
Disturbed ground								
26	280	ZL	Br	-	10			
	450	ZL	St br	Och few by 350	<2			
	550	MZCL	St br	Och com	<2			
	550+	Too dry to auger				1/2	Dr	2
27							Other land	
28	260	FSZL /MCL	Br	-	<2			
	500	FSZL /MCL	Yl br	Och com by 480	<2			
	500+	To dry to auger			<2	1/2	Dr	2
29	280	ZL	Br	-	<2			
	400	ZL/ZCL	St br	-	<5			
	450+	Too compact and dry to auger					Dr	2
30	280	ZL	Br	-	<2			
	600	ZL	Yl br	-	<2			
	640	MZCL	Yl br	Och com				
	750	HZCL	St br	Och few + Mn cons	<2	2	We	2
	750+	Too dry to auger						
31	280	ZL	Br	-	<2			
	600	ZL	St br	-	<2			

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limitation	Grade
	1000	MZCL	St br	Och few + Mn cons	<2	1	Dr	1
32							Other land	
33	280	ZL	Br	-	<1			
	450	ZL/ZCL	Br becoming st br	-	<1			
	1000	MZCL	St br	Och few by 600	<1	1	Dr	2
34	270	FSZL /MCL	Br	-	<2			
	540	FSZL /MCL	Yl br	Och few by 450	<2			
	1000+	MCL	Yl br	Och many	<2	1	Dr	2
35	250	ZL/ZCL	Br	-	<2			
	550	MZCL	St br	-	<2			
	1000+	MZCL	St br	Och com	<2	1	Dr	2
36	260	FSZL /MCL	Br	-	<2			
	600	FSZL /MCL	Yl br	Och com by 480	<2			
	600+	Too dry to auger			<2	1	Dr	2
On edge of dismantled runway								
37	300	MZCL	Br	-	<2			
	450	MZCL	Yl br	Occ Mn	<2			
	1000+	MZCL, heavier with depth	Yl br	Och few, common by 600		1/2	Dr	2
38	280	ZL	Br	-	<2			
	450	ZL	St br	Och few by 450	<2			
	450+	Too dry to auger				1	Dr	2?
Line of raised disturbed ground adjacent								
39	270	ZL	Br	-	<2			
	1000	MZCL	Yl br more rd br with depth	Och few by 800	<2	1	Dr	2

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limitation	Grade
40	260	FSZL /MCL	Br	-	3/ 8% total flint and brick			
	350	FSZL /MCL	Yl br	-	10			
	350+	Too dry and stony to auger					Dr	2?
Area of historic disturbance								
41	260	MZCL /ZL	Br	-	<2			
	500	MZCL	Yl br	-	<2			
	1000	MZCL	Yl br	Och com by 600	<2	1	Dr	2
42	270	ZL	Br	-	<2			
	330	ZL	Yl br	-	<2			
	330+	Too dry to auger	Compact		Flint frags com		Dr	2
On line of dismantled runway								
43	280	MZCL	Br	-	<2			
	650	MZCL	Yl br	Och few by 450	<2			
	650+	Too dry to auger				1	Dr	2
44	300	ZL	Dk br	-	<1			
	550	ZL	St br	Och few	<1			
	1100+	MZCL	Dk yl br	Och com + Mn	<1	2	We	2
45-46							Other land	
47	330	ZL	Dk br	-	<2			
	450	ZL	Dk yl br	Och few	<2			
	450+	Too dry and stony to auger				2	We	2?
48	330	ZL	Dk br	-	<2			
	650	ZL	Dk yl br	Och few	<2			
	720	MZCL						
	1000	HZCL	St br	Och com	<2	2	We	2
49	230	MZCL/ZL	Dk br	-	<1			
	350	MZCL	Dk yl br	Och few	<1			
	1000	MZCL	St br	Och com by 650	<1	2	We /Dr	2

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limitation	Grade
50	230	MZCL/ZL	Dk br	-	<1			
	350	MZCL	Dk yl br	Och few	<1			
	1000	MZCL	St br	Och com by 650	<1	2	We/Dr	2
51	260	ZL	Dk br	-	<1			
	630	MZCL	Dk yl br	Och few	<1			
	1000	MZCL, heavier with depth	St br, gr ped faces	Och many, moist	<1	2	We/Dr	2
52	330	MZCL/ZL	Dk br	-	<1			
	450	MZCL	Dk yl br	Och few	<1			
	450+	To dry to auger				2	Dr	2
53	runway						Other land	
54	300	ZL	Dk br	-	<1			
	300	To dry and compact to auger						Map with 2
55	Runway						Other land	
56	320	ZL	Br	-	10/15			
	500	ZL	St br	-	<5			
	400+	Too dry to auger				1	Dr	2?
Disturbed ground by runway, flint and bricks common								
57	300	ZL/ZCL	Br	-	<2			
	650	ZCL/ZL	St br	-	<2			
	1000+	MZCL	St br	Och few		1	Dr	2
58	320	ZL	Br	-	<3			
	450	ZL/ZCL	St br	-	<3			
	450+	Too dry to auger				1	Dr	2
59	330	ZL	Br	-	10 rubble and ash			
	330	Imp man made?	Too dry to auger	-				
	330+						Dr	4
Site of removed runway, disturbed ground								
60	300	MCL	br	-	Chalk frags common			
	300	Imp man made?	-	-				

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total		Wetness Class	Main Limitation	Grade
	400+	Too dry to auger							
Site of removed runway, disturbed ground, probably imported soil								Dr	4
61	350	ZL/ZCL	Br	-	<2				
	600	ZL/ZCL	St br	-	<2				
	600+	To dry to auger					1	Dr	2
62	320	ZL/FSZL	Br	-	<2				
	400	ZL/FSZL	St br	-	<2				
	400+	To dry to auger						Dr	2
63	330	ZL	Br	-	<2				
	500	ZCL	St br	-	<2				
	500+	To dry to auger					1	Dr	2
64	300	ZL/FSZL	Br	-	<2				
	380	ZL/FSZL	Br	-	<2				
	400+	To dry to auger						Dr	2
65	300	ZL/FSZL	Br	-	<2				
	350	ZL/FSZL	Br	-	<2				
	550	MZCL/CL	St br	Och few by 450					
	550+	To dry to auger					1	Dr	2
66	280	ZL	Br	-	<5				
	400	ZL	St br	-	<5				
	400+	To dry to auger						Dr	3a?
Disturbed profile frags of tarmac/clinker									
67	200	MCL	Dk br	-	<2				
	520	LMS	Dk yl br	-	<2				
	650	rubble layer, imp to auger		-			Dr	1	3b
68	260	FSZL /MCL	Br	-	<2				
	400	FSZL /MCL	Yl br	Och com by 350	<2				
	400+	Too dry to auger			<2		2	We	2
69	300	FSZL /MCL	Br	-	<2				

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total		Wetness Class	Main Limitation	Grade
	350	/MCL	Yl br	Och few by 350	<2				
	350+	Too dry to auger			<2		2	We	2
70	300	FSZL/MCL	Br	-	<2				
	500	MCL	Yl br	Och few by 450	<2				
	1000+	HZCL	Yl br	Och many com, with depth	<2		3/2	We	2/3a
71	300	FSZL/MCL	Br	-	<2				
	500	MCL	Yl br	Och few by 450	<2				
	1000+	HZCL	Yl br	Och many com, with depth	<2		3/2	We	2/3a
72	300	FSZL/MCL	Br	-	<2				
	600	MCL	Yl br	-	<2				
	1000+	MZCL	Yl br	Och many	<2		1	Dr	2
73	300	ZL/FSZL	Br	-	<2				
	350	ZL/FSZL	Br	-	<2				
	400	FSZL/MCL	St br	Och few	<2				
	400+	To dry to auger					2	We	2
74	300	MCL/ZCL	br	-	10/15 flint and concrete				
	300+	Imp	Stone / manmade layer					Dr	3b/4
Disturbed, site of firing range									
75	260	FSZL	Br	-	<2				
	450	FSZL /MCL	Yl br	Och few by 450	<2				
	450+	To dry to auger	Compact				1	Dr	2
76	280	FSZL/MCL	Br	-	<2				
	450	FSZL /MCL	Yl br	Och few by 480	<2				
	520+	To dry to auger					1	Dr	2
77	280	ZL/ZCL	Br	-	<2				

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total		Wetness Class	Main Limitation	Grade
	550	MCL	St br	Och few by 450	<2				
	550+	To dry to auger					1	Dr	2
78	300	FSZL/MCL	Br	-	5				
	300+	To dry and stony to auger	Compact				2	We	3b
Disturbed ground									
79	260	FSZL	Br	-	<2				
	450	ZCL /MCL	Br (pl)	Och many	<2				
	1000	HZCL	St br	Och many	<2		2	We	2
80	330	FSZL/MCL	Br	-	5				
Set aside	330+	Imp	Compact					Dr	3b/4
Disturbed ground									
81	300	SCL	Br	-	<2				
	550	SCL	Yl br	Och com	<2				
	750	SCL/HCL	Yl br + gr	Och many	<2				
	1000	HZCL	St br	Och many	<2		3	We	3a
82	290	SCL	Br	-	<2				
	650	SCL	Yl br	Och com	<2				
	1000	HCL	Gr br	Och many	<2		3	We	3a
83	Outside of site boundary following change to site boundary								
84	300	ZL/ZCL	Br	-	<2				
	320	Ash/ tarmac layer	Bl	-	<2				
	320+	Imp layer						Dr	4
Man made layer on site of airfield structures									
85 - 88	Outside of site boundary following change to site boundary								
89	300	ZL/ZCL	Br	-	<2				
	400	ZL/ZCL	St br	-	<2				
	400+	Too dry to auger						Dr	2
90	300	ZL/ZCL	Dk br	-	<2				
	580	ZCL/ZL	St br	-	<2				
	1000	MZCL	St br	Och com	<2		1	Dr	1
91 - 92	Outside of site boundary following change to site boundary								
93	300	ZL/ZCL	Br	-	<2				

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total		Wetness Class	Main Limit-ation	Grade
	680	ZL/ZCL	St br	Och few by 450	<2				
	1000	MZCL	St br	Och com	<2		1	Dr	2
93a	Playing field								Other land
94	320	ZL/ZCL	Br	-	<2				
	550	ZL/ZCL	St br	-	<2				
	650	MZCL	St br	Och com	<2				
	1000	MZCL	St br	Och com + Mn	<2		1	Dr	2

Appendix 3: Laboratory Analysis

See following page



ANALYTICAL REPORT

Report Number	24273-18	X922	ROSEMARY PEEL
Date Received	21-AUG-2018		RSK ADAS LTD
Date Reported	29-AUG-2018		PARKFIELD COTTAGE
Project	1050313 FORD AIRFIELD		POLLARDS LANE
Reference	15 08 2018		SOUTHWELL
Order Number			NOTTS NG25 0TL

Laboratory Reference		SOIL400110	SOIL400111	SOIL400112	SOIL400113	SOIL400114	SOIL400115				
Sample Reference		PIT 2 0-250	PIT 3 0-250	PIT 4 0-250	PIT 5 0-250	PIT 6 0-250	PIT 7 0-250				
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sand 2.00-0.063mm	% w/w	32	13	11	10	11	10				
Silt 0.063-0.002mm	% w/w	53	69	73	73	73	72				
Clay <0.002mm	% w/w	15	18	16	17	16	18				
Textural Class **		SZL	MZCL/ZL	ZL	ZL	ZL	MZCL/ZL				

Notes	
Analysis Notes	The sample submitted was of adequate size to complete all analysis requested. The results as reported relate only to the item(s) submitted for testing. The results are presented on a dry matter basis unless otherwise stipulated.
Document Control	This test report shall not be reproduced, except in full, without the written approval of the laboratory.

Reported by	** Please see the attached document for the definition of textural classes. <i>Darren Whitbread</i> Natural Resource Management, a trading division of Cawood Scientific Ltd. Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS Tel: 01344 886338 Fax: 01344 890972 email: enquiries@nrm.uk.com
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ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

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

vf	Very Fine (more than 2/3's of sand less than 0.106 mm)
f	Fine (more than 2/3's of sand less than 0.212 mm)
c	Coarse (more than 1/3 of sand greater than 0.6 mm)
m	Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam* classes according to clay content are indicated as follows:

M	medium (less than 27% clay)
H	heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

Appendix 4: Description of the Grades and Subgrades

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to the land's physical characteristics, for which the cut-offs are described in Section 3. The most productive and flexible land falls into Grades 1, 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is either of moderate quality (Subgrade 3b) or poor quality (Grade 4). Although less significant on a national scale, such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

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 and horticultural crops can usually be grown but on some land in 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.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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

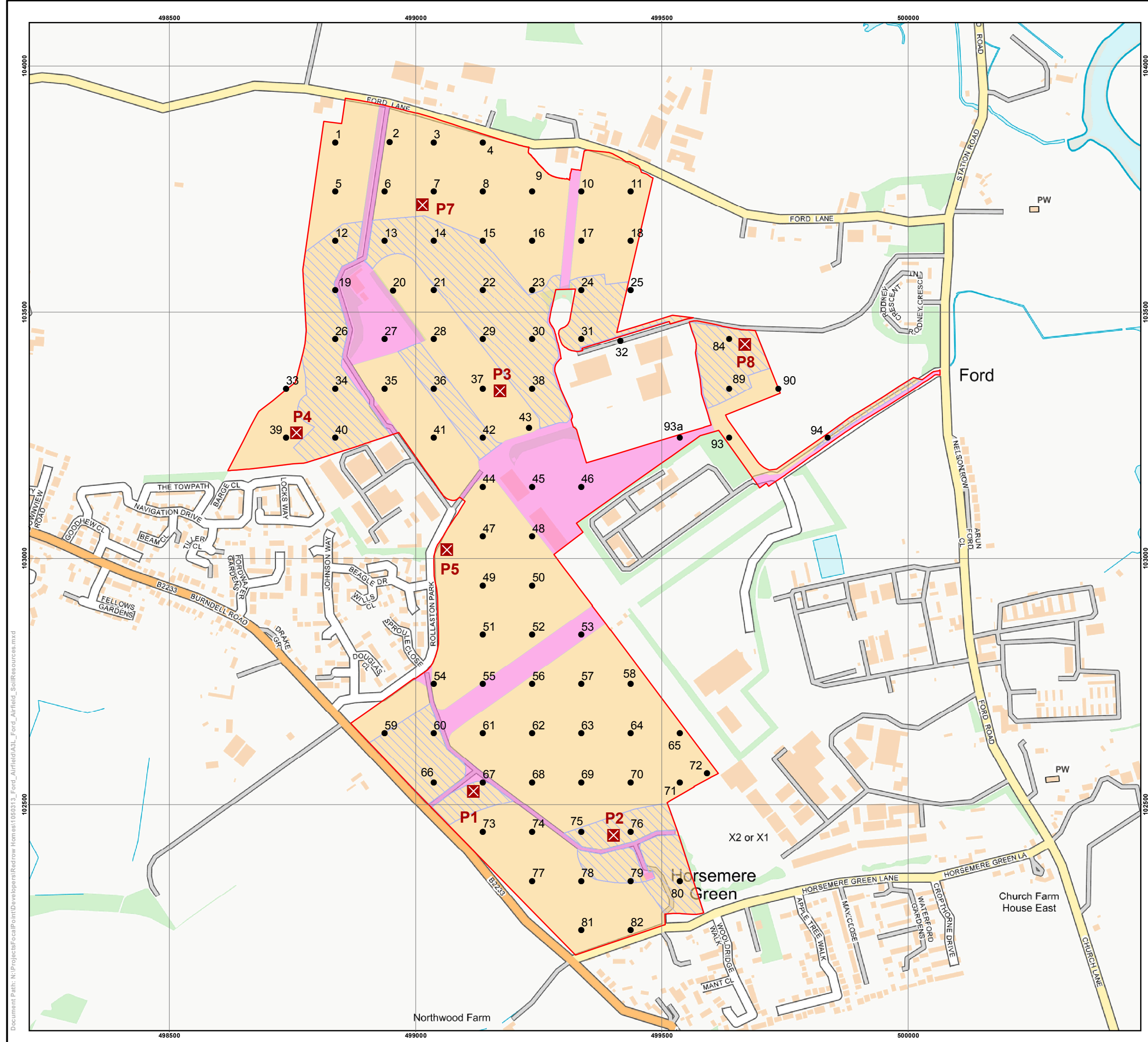
Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 - very poor quality agriculture land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Appendix 5: Soil Resource Plan

See following page



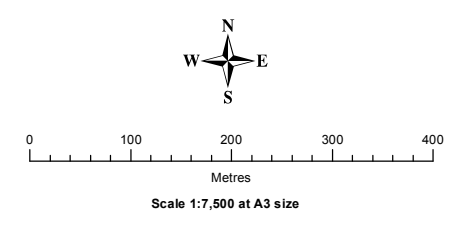
ADAS

Ford Airfield

Soil Resources Plan

- Site boundary
- Soil Resources Unit 1a
- Soil Resources Unit 1
- Soil Resources Unit 2
- Auger locations
- Soil pit

Drawn by Paul Taylor 19/12/2019, Verified by Nisha Rehm 19/12/2019



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Appendix 6: References

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- ⁱ British Geological Society 2018; Map Viewer at <http://www.bgs.ac.uk/data/mapViewers/>
 - ⁱⁱ SSEW 1983 Soils of South East England
 - ⁱⁱⁱ Defra, 2018 magic.defra.gov.uk/
 - ^{iv} Environment Agency 2018, <https://flood-map-for-planning.service.gov.uk/>
 - ^v RSK, Nov 2018, Geo-environmental and geotechnical site assessment