

Lower Thames Crossing  
6.3 Environmental Statement  
Appendices  
Appendix 10.4 – Agricultural  
Land Classification Factual  
Report  
(Tracked changes version)

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# Lower Thames Crossing

## 6.3 Environmental Statement Appendices

### Appendix 10.4 – Agricultural Land Classification Factual Report (Tracked changes version)

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# 1 Introduction

## 1.1 Background

- 1.1.1 This report assesses the quality of agricultural land within the Order Limits of the A122 Lower Thames Crossing. The assessment was made in accordance with the Agricultural Land Classification (ALC) system for England and Wales (see 'Methodology' below).
- 1.1.2 The A122 Lower Thames Crossing (the Project) would provide a connection between the A2 and M2 in Kent and the M25 south of junction 29, crossing under the River Thames through a tunnel.
- 1.1.3 The A122 would be approximately 23km long, 4.25km of which would be in tunnel. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, it would link to the A13, M25 junction 29 and the M25 south of junction 29. The tunnel portals would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side.
- 1.1.4 Junctions are proposed at the following locations:
- New junction with the A2 to the south-east of Gravesend
  - Modified junction with the A13/A1089 in Thurrock
  - New junction with the M25 between junctions 29 and 30
- 1.1.5 To align with National Policy Statement for National Networks (Department for Transport, 2014) policy and to help the Project meet the Scheme Objectives, it is proposed that road user charges would be levied in line with the Dartford Crossing. Vehicles would be charged for using the new tunnel.
- 1.1.6 The Project route would be three lanes in both directions, except for:
- link roads
  - stretches of the carriageway through junctions
  - the southbound carriageway from the M25 to the junction with the A13/A1089, which would be two lanes
- 1.1.7 In common with most A-roads, the A122 would operate with no hard shoulder but would feature a 1m hard strip on either side of the carriageway. It would also feature technology including stopped vehicle and incident detection, lane control, variable speed limits and electronic signage and signalling. The A122 design outside the tunnel would include emergency areas. The tunnel would include a range of enhanced systems and response measures instead of emergency areas.
- 1.1.8 The A122 would be classified as an 'all-purpose trunk road' with green signs. For safety reasons, walkers, cyclists, horse riders and slow-moving vehicles would be prohibited from using it.

- 1.1.9 The Project would include adjustment to a number of local roads. There would also be changes to a number of Public Rights of Way, used by walkers, cyclists and horse riders. Construction of the Project would also require the installation and diversion of a number of utilities, including gas pipelines, overhead electricity powerlines and underground electricity cables, as well as water supplies and telecommunications assets and associated infrastructure.
- 1.1.10 The Project has been developed to avoid or minimise significant effects on the environment. The measures adopted include landscaping, noise mitigation, green bridges, floodplain compensation, new areas of ecological habitat and two new parks.
- 1.1.11 In line with the standards of Design Manual for Roads and Bridges LA 109 Geology and Soils (Highways England, 2019), this report presents the findings of the detailed ALC surveys carried out within the Order Limits which have been used to inform the baseline scenario and assessment conclusions of Chapter 10: Geology and Soils (Application Document 6.1). It was not possible to undertake detailed ALC surveys across the entire area within the Order Limits due to constraints relating to the presence/likely presence of contamination land, UXO, landowner access and delays caused by the COVID 19 pandemic. In agreement with Natural England, a predictive approach was taken to fill the gaps; this approach is also fully detailed in this report.
- 1.1.12 For the purpose of this report, the assessment is divided into two parts: (i) land to the north of the River Thames in Greater London and Essex, and (ii) land to the south of the River Thames in Kent. The area within the Order Limits which comprises the River Thames has been excluded from the area calculations presented in this report. A footnote to the summary table is provided to confirm the actual total area, including the River Thames, within the Order Limits.

## 1.2 Competency

- 1.2.1 The work has been carried out by a Chartered Scientist (CSci), who is a Fellow (FI SoilSci) of the British Society of Soil Science (BSSS). The soil surveyor meets the requirements of the BSSS Professional Competency Standard (PCS) scheme for ALC (see BSSS PCS Document 2 'Agricultural Land Classification of England and Wales'<sup>1</sup>). The BSSS PCS Scheme is endorsed by, amongst others, the Department for Environment, Food and Rural Affairs (Defra), Natural England, the Science Council, and the Institute of Environmental Management and Assessment.

## 1.3 Methodology

- 1.3.1 This ALC assessment of all agricultural land within the Order Limits of the Project is two-fold, involving the following:
- a. A detailed ALC survey of 475ha of land to the north and south of the River Thames in 2019, and a further 91ha to the north of the River Thames in 2022. Soil profiles were examined with a hand-held soil auger and a spade

<sup>1</sup> British Society of Soil Science (2022). Professional Competency Standard Scheme Document 2 'Agricultural Land Classification of England and Wales'. Accessed July 2022. <https://soils.org.uk/wp-content/uploads/2022/02/Assessing-Agricultural-Land-Jan-2022.pdf><https://www.soils.org.uk/sites/default/files/events/flyers/ipss-competency-doc2.pdf>.

at a total of 566 auger bore locations, i.e. a sampling density of one auger bore per hectare. The coordinates of the 566 auger bore locations are listed in the soil profile log given in Annex B. For practical surveying purposes, the ALC survey area was divided up into ALC Survey Parcels (SPs) which comprise approximately 20 auger bores per SP. The ALC survey was conducted at a rate of approximately 20 auger bores per SP per ALC surveyor per day.

- b. A predictive ALC grading at 650 locations to the north and south of the River Thames in 2020, and a further 343 locations in 2022. The sample points were placed in un-surveyed areas on a 100m grid pattern at a density of approximately one sample point per hectare. The coordinates of the predictive ALC grading locations are listed in Annex C. Following the predictive mapping, some changes were made to the design and Order Limits; the ALC mapping has been extended to cover these areas based on expert judgement.

1.3.2 Predictive ALC grading was carried out on areas where it was not possible to carry out a detailed ALC survey due to (i) access to land not being permitted by the landowner, (ii) areas of potential contamination land (red) determined separately by the Project (Environmental Statement Figure 10.5: Refined Conceptual Site Model - Credible Contamination Sources (Application Document 6.2)) (iii) medium risk of unexploded ordnance as determined by Zetica (Application Document 6.3, Appendix 10.10), and (iv) restrictions due to the Coronavirus (COVID-19) pandemic outbreak in March 2020 and ongoing.

1.3.3 The predictive ALC grading comprised an assessment of the likely soil types present and the factors affecting soils at given locations to assess the potential land grade (using the Ministry of Agriculture, Fisheries and Food (MAFF)<sup>2</sup> Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land<sup>3</sup> (henceforth referred to as the 'ALC Guidelines'), as set out in Sections 2.8 and 3.8 of this report. It is noted that this approach has limitations when compared to ALC surveys, with the outcome for each point assessed being a modelled prediction and not definitive, albeit based on the best available data. The method adopted, however, has been used to supplement the available provisional ALC mapping at a scale of 1:250,000 (which is not considered suitable for use at a project level) to provide a greater level of refinement than using the provisional ALC 1:250,000 mapping alone. This predictive data has been used to support the data obtained via the detailed ALC surveys and the subsequent assessment of effects. Whilst the prediction may underreport individual grades of land, given the extent of land covered by detailed ALC surveys (566ha) within the Order Limits and the extent of Best and Most Versatile (BMV) land confirmed through these surveys, it is considered that the available information is sufficient to ensure that the overall assessment of significance and conclusions are robust.

<sup>2</sup> The Ministry of Agriculture, Fisheries and Food (MAFF) was incorporated within the Department for Environment, Food and Rural Affairs (Defra) in June 2001

<sup>3</sup> Ministry of Agriculture, Fisheries and Food (1988). Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land. Accessed July 2022. <http://publications.naturalengland.org.uk/publication/6257050620264448>.

- 1.3.4 The alternative approach to use predictive mapping to determine ALC grade of un-surveyed areas of the Order Limits was presented to and agreed with Natural England on 13 May 2020.
- 1.3.5 The ALC system 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 ALC system divides agricultural land into five grades (Grade 1 'excellent' to Grade 5 'very poor'), with Grade 3 subdivided into Subgrade 3a 'good' and Subgrade 3b 'moderate'. Agricultural land classified as Grades 1, 2 and Subgrade 3a are categorised as BMV in Annex 2 'Glossary' of the National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021, p.65). Further details of the ALC system and national planning policy implications are set out by Natural England<sup>4</sup>.

### Detailed ALC survey

- 1.3.6 The detailed ALC survey involved examination of the soil's physical properties at 475 auger-bore locations in 2019, and 91 auger-bore locations in 2022. The auger-bore locations are on an approximate 100m grid pattern, at a sampling density of approximately one soil profile per hectare. The soil profile was examined at each sample location to a maximum depth of approximately 1.2m by hand with the use of a 5cm diameter Dutch (Edelman) soil auger. A total of eight soil pits, Soil Pits 1 to 8, were excavated by hand with a spade to examine certain soil physical properties, such as stone content and the structural condition of the subsoil, more closely. A description of the soil profiles at each auger bore is given in Annex C, and a description of the soil pits is given in Annex D.
- 1.3.7 The auger bores were located using a handheld Garmin eTrec Global Positioning System (GPS) device to enable the sample locations to be relocated for verification, if necessary. Where auger locations on a 100m grid pattern fell on headland, tramlines, or within 3m of a hedgerow or tree, they were relocated on agricultural land close by, to avoid compacted ground or land affected by tree roots for example.
- 1.3.8 The soil profile at each sample location was described using the Soil Survey Field Handbook: Describing and Sampling Soil Profiles (Hodgson, 1997). Each soil profile was ascribed an ALC grade following the ALC Guidelines (MAFF, 1988).
- 1.3.9 A sample of topsoil was collected at 33 auger bore locations in 2019 (Reference 1-33), and 6 auger-bore locations in 2022 (Reference 34-39), as identified in Table 1.1. The samples were sent to an accredited laboratory for particle size distribution (PSD) analysis, assessing the proportions of sand, silt and clay. This determined the definitive texture class of the topsoil, especially regarding distinguishing between medium clay loams (i.e. <27% clay) and heavy clay loams (27% to 35% clay). The results for topsoil samples collected to the north of the River Thames are given in Table 2.2 in Section 2, and those for south of the river are given in Table 3.2 in Section 4. Certificates of Analysis are given in Annex E.

<sup>4</sup> Natural England (2021). Guide to assessing development proposals on agricultural land. <https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land>. Accessed July 2022

**Table 1.1 Sample locations for topsoil particle size distribution (PSD)**

Reference	Sample UID	Easting	Northing
1	2-012	567032	170123
2	2-046	567032	170523
3	2-061	567132	171023
4	3-061	567932	172723
5	4-038	568032	172423
6	6-045	568032	173323
7	4-047	567532	172523
8	6-052	567932	173723
9	12-078	563332	180423
10	12-174	562932	181323
11	12-067	563932	180323
12	12-088	563932	180623
13	12-100	564032	180723
14	12-111	564332	180823
15	13-009	562732	182523
16	13-027	562232	183623
17	12-133	564333	180949
18	4-048	567432	172523
19	11-003	566932	178323
20	11-029	566232	179423
21	11-060	565332	179923
22	10-059	567032	177323
23	13-065	559332	183923
24	13-075	560232	184023
25	13-035	559732	183723
26	12-033	564332	180123
27	14-003	559032	183923
28	14-041	558632	184423
29	14-064	558232	184823
30	14-081	558232	185423
31	14-082	558132	185423
32	14-051	558432	184523
33	12-019	564632	180023
34	SP23 13-102	561128	184723

Reference	Sample UID	Easting	Northing
35	SP25 13-186	561828	183123
36	SP26 – 11-173	567328	179123
37	SP27 – 11-155	567328	178323
38	SP38 – 15-051	558718	187124

### Predictive ALC

1.3.10 Until such time a predictive ALC methodology is developed for England, the predictive ALC for the Project follows the approach of the Welsh Government's Predictive ALC Map online<sup>5</sup> which in turn is based on the ALC, October 198. An ALC grade has been determined for 650 points across un-surveyed areas where reliable desk-based information was available. In areas of extensive made ground such as Goshems Farm landfill area and Tilbury Ash Disposal landfills, reliable information on the characteristics of the soil profiles present is not available; here, an assumption of land grade has been made based on professional judgement. Following the predictive mapping, some changes were made to the design and Order Limits; the ALC mapping has been extended to cover these areas. There are 785 sample points to the north of the River Thames and 208 sample points to the south. The predictive ALC has utilised published information on climate, topography, flood risk, geology, soil, MAFF Provisional ALC (1:250,000) and Defra's Table 1.2. The data used in the predictive ALC, and the ALC grade per sample point, is shown in Annex C. The data table in Annex C is structured to follow the sequential approach of the ALC Guidelines (MAFF, 1988) which considers a number of Table 1.2.

**Table 1.2 Data used in predictive ALC (see findings given as Annex C)**

Data (column reference in predictive ALC table (Annex C))	Description of data and source
<b>Auger bore location – using the Ordnance Survey (OS) National Grid</b>	
10km Grid (A)	This identifies the OS 10km Grid Square in which the sample point is located, e.g. TQ19 (far north of the Project). See OS (2020) Factsheet 'Using the National Grid'. See Annex A
1km Grid (B)	This identifies the OS 1km Grid Square in which the sample point is located, e.g. TQ9057 (far north of the Project). See OS (2020) Factsheet 'Using the National Grid'. See Annex A.
UID (C)	UID = Unique identification for sample point, e.g. 15-051.
Easting (D)	This is a six-figure coordinate representing eastward distance on a map. The easting and northing figures are used to locate the sample point with precision and is especially useful when using a GPS.

<sup>5</sup> Welsh Government (2020). Predictive Agricultural Land Classification. Accessed July 2022. <https://gov.wales/agricultural-land-classification>

Data (column reference in predictive ALC table (Annex C))	Description of data and source
Northing (E)	This is a six-figure coordinate representing northward distance on a map. The easting and northing figures are used to locate the sample point with precision and is especially useful when using a GIS.
Land use (F)	<p>These are the terms and abbreviations used for soil pit and auger boring information collected during ALC surveys. These conform to definitions contained in the Soil Survey Field Handbook (Hodgson, 1997), and are available from Natural England (2016).</p> <p>For the purpose of this predictive ALC, the land use for each sample point was recorded from the latest available aerial imagery on Google Earth (Google, 2020).</p>
<p><b>Climate limitations:</b> The climate data listed below are interpolated from climatic data required for the assessment of ALC. The climatic data are provided as a grid dataset with 5km spacings. The datasets are derived from data supplied by the Meteorological Office (1989), Bracknell, which were compiled and validated in collaboration with the Soil Survey and Land Research Centre (now National Soil Resources Institute) and the MAFF Agricultural Development and Advisory Service.</p> <p>For this predictive ALC, the representative climate for ALC has been interpolated for 50no. 1km grid squares covering the Order Limits, as listed in Table 1.3 (below) and shown in Annex A. The ALC climate data used for determining (i) overall climate limitation, (ii) soil wetness and (iii) soil droughtiness for each predictive ALC sample point corresponds with the climate data for the 1km grid square in which it is located. For example, UID 1 uses ALC climate data representing 1km grid square TQ9057. The ALC climate data used for each predictive ALC sample point is shown in columns G to L in Annex C. A key to the ALC climate data headings is given below.</p>	
AAR (G)	AAR = Average Annual Rainfall (mm)
AT0 (H)	AT0 = Accumulated Temperature above 0°C between January and June (day °C)
MDW (I)	MDW = Moisture Deficit for Wheat (mm)
MDP (J)	MDP = Moisture Deficit for Potatoes (mm)
FCD (K)	FCD = Field Capacity Days (days). This is a meteorological parameter which estimates when the soil moisture deficit is zero.
Climate grade (L)	This is the overall climate limitation. This can be read from the graph (X-axis is AAR and Y-axis is AT0) given as Figure 1 of the ALC Guidelines (MAFF, 1988).
<b>Site limitations</b>	
Elevation (M)	This is altitude (m) above ordnance datum (AOD). For this predictive ALC, the altitude per sample location (located using six-figure easting and northing coordinates) has been derived from the 'Elevation' function on UK Grid Reference Finder (2022).
Gradient (N)	This is the angle of slope in degrees (°). This predictive ALC estimated the angle of slope at each sample point from contours on OS maps (1:25,000).



Data (column reference in predictive ALC table (Annex C))	Description of data and source
ALC grade according to gradient (O)	The angle of slope at all 650 sample points were predicted to be equal to, or less than, 7°. As such, the ALC grade at every sample point could achieve Grades 1, 2 and Subgrade 3a according to gradient. The gradient of such land is considered to be suitable for most kinds of agricultural machinery, including precision seeding and harvesting equipment, as per Table 1 of the ALC Guidelines (MAFF, 1988).
ALC grade according to micro-relief (P)	Following the ALC Guidelines (MAFF, 1988), a micro-relief limitation to agricultural land quality exists where complex changes in slope angle and direction over short distances, or where the presence of boulders or rock outcrops, even on level or gentle slopes, can severely limit the use of agricultural machinery.  For the purpose of this predictive ALC, an assessment of potential micro-relief limitations was made for each sample location using OS maps (1:25,000) and aerial imagery on Google Earth (Google, 2022).
Flood zone (Q)	This identifies the flood zone for each sample point. This information is available on the Environment Agency's (2020) Flood Map for Planning website.  Flood zones refer to the probability of river and sea flooding, ignoring the presence of defences, as follows: <ul style="list-style-type: none"> <li>• Zone 1 Low Probability – Land having a less than 1 in 1,000 annual probability of river or sea flooding.</li> <li>• Zone 2 Medium Probability – Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.</li> <li>• Zone 3a High Probability – Land having a 1 in 100 or greater annual probability of river flooding; or land having a 1 in 200 or greater annual probability of sea flooding.</li> <li>• Zone 3b The Functional Floodplain – This zone comprises land where water must flow or be stored in times of flood.</li> </ul>
Predicted grade according to flood risk in summer (R)	This is the grade according to flood risk in summer, as per Table 2 of the ALC Guidelines (MAFF, 1988).  No data were available to be able to assess flood risk in summer. For this assessment, the grade according to flood risk in summer was predicted to be Grade 1 (i.e. no limitation) at all 993 sample points.
Predicted grade according to flood risk in winter (S)	This is the grade according to flood risk in winter, as per Table 3 of the ALC Guidelines (MAFF, 1988).  No data were available to be able to assess flood risk in winter. For this assessment, the grade according to flood risk in winter was predicted to be Grade 1 (i.e. no limitation) at most sample points. Where the sample point was in Flood Zone 2 or 3, it was

Data (column reference in predictive ALC table (Annex C))	Description of data and source
	noted in column S of Annex C there is a 'possible risk' of flooding in winter.
<b>Soil and interactive limitations</b>	
Bedrock (T)	This is the bedrock underlying each predictive ALC sample point identified from British Geological Survey (BGS) information at a scale of 1:50,000. This information was provided per sample point using GIS. This information is also publicly available on the BGS (2022) Geology of Britain viewer.
Superficial Deposits (U)	This is a superficial deposit (where present) which covers the bedrock. This information was determined for each predictive ALC sample point identified from BGS information at a scale of 1:50,000. This information was provided per sample point using GIS. This information is also publicly available on the BGS (2022) Geology of Britain viewer.
Soil association (V)	The whole of England and Wales is covered by the National Soil Map, comprising six soil maps at a scale of 1:250,000 with accompanying Regional Bulletins. The National Soil Map shows the location and extent of soil associations, which are groupings of spatially related soil types. There are eight soil associations within the Order Limits. The soil association per predictive ALC sample point was determined using GIS and is reported in column V, Annex C. Data and information on soil associations can be obtained from the Land Information System (LandIS) webpage (Cranfield University, 2022a).
Soil series (W)	Each soil association consists of a group of soil series. Each soil series is based on precisely defined particle-size subgroups, parent material (substrate) type, colour and mineralogical characteristics. For this predictive ALC, the predominant soil series in each soil association has been used to represent certain soil physical characteristics, such as soil texture, stone content and Wetness Class (WC). The soil series per predictive ALC sample point was determined using GIS and is reported in column W, Annex C. The Soil Survey of England and Wales (SSEW) description of soil series is available on the Land Information System (LandIS) 'Soils Guide' (Cranfield University, 2022b).
Topsoil texture (X)	This is the texture of the topsoil used to represent each predictive ALC sample point (see column X, Annex C). It is derived from the SSEW description of the predominant soil series used to represent the soil at each predictive ALC sample point, as described in 'soil series' above and identified in column W, Annex C. The SSEW description of soil series is available on the Land Information System (LandIS) 'Soils Guide' (Cranfield University, 2022b).
Wetness Class (Y)	The Wetness Class (WC) of a soil is classified according to the depth and duration of waterlogging in the soil profile and has six categories from WC I, which is well drained, to WC VI, which is

Data (column reference in predictive ALC table (Annex C))	Description of data and source
	very poorly drained. The procedure for assessing WC for ALC purposes is described in Appendix 3 of the ALC Guidelines (MAFF, 1988). For the purpose of this predictive ALC, the WC used to represent each sample point is the WC for the predominant soil series (see column W, Annex C), as determined from the SSEW description of soil associations (see column V, Annex C). The SSEW description of soil associations is available on the Land Information System (LandIS) 'Soils Guide' (Cranfield University, 2022b).
Topsoil stoniness (Z)	This is the indicative stone content in the topsoil at each predictive ALC sample point. It does not provide a predictive ALC grade according to stone content, as per Table 5, ALC Guidelines (MAFF, 1988), as insufficient data regarding stone size and content are available from published sources. The indicative information is derived from the SSEW description of the soil profile for the predominant soil series used to represent each sample point (see column W, Annex C). The SSEW description of soil series is available on the Land Information System (LandIS) 'Soils Guide' (Cranfield University, 2022b).
Predicted grade according to soil depth (AA)	This is a prediction of the ALC grade according to soil depth, as per Table 4 of the ALC Guidelines (MAFF, 1988). It utilises the depth of topsoil per predominant soil series used to represent the soil at each predictive ALC sample point (see column W, Annex C). The SSEW description of soil series is available on the Land Information System (LandIS) 'Soils Guide' (Cranfield University, 2022b).
Predicted grade according to soil wetness (AB)	This is the predictive ALC grade according to soil wetness, as per Table 6 of the ALC Guidelines (MAFF, 1988). It utilises (i) topsoil texture (see 'Topsoil Texture' above and column X, Annex C), (ii) WC (see 'Wetness Class' above and column Y, Annex C) and (iii) Field Capacity Days (see 'Climate Limitations' above and column K, Annex C).
Calculated moisture balance – wheat (AC)	The Moisture Balance (MB) value for wheat is calculated in accordance with the ALC Guidelines (MAFF, 1988) as follows: Moisture Balance (MB) for wheat = Crop Adjusted Available Water Capacity (AP) – Moisture Deficit (MD) for wheat. For the purpose of this predictive ALC, the MB value for wheat for each predictive ALC sample point (column AC, Annex C) is derived from calculated data using (i) soil profile data for the predominant soil series (see 'Soil Series' above and column W, Annex C), and (ii) relevant climate data for the respective 1km square (see 'Climate Limitations' above and columns G to L, Annex C).
Predicted grade according to soil droughtiness – wheat (AD)	This is the predicted ALC grade according to droughtiness for wheat per sample point, following Table 8 of the ALC Guidelines (MAFF, 1988). It is determined from the Moisture Balance (MB) value for wheat, as described in 'Calculated Moisture Balance – Wheat' above and column AC, Annex C.

Data (column reference in predictive ALC table (Annex C))	Description of data and source
Calculated moisture balance – potatoes (AE)	<p>The Moisture Balance (MB) value for potatoes is calculated in accordance with the ALC Guidelines (MAFF, 1988) as follows: Moisture Balance (MB) for potatoes = Crop Adjusted Available Water Capacity (AP) – Moisture Deficit (MD) for potatoes.</p> <p>For the purpose of this predictive ALC, the MB value for potatoes for each predictive ALC sample point (column AE, Annex C) is derived from calculated data using (i) soil profile data for the predominant soil series (see 'Soil Series' above and column W, Annex C), and (ii) relevant climate data for the respective 1km square (see 'Climate Limitations' above and columns G to L, Annex C).</p>
Predicted grade according to soil droughtiness – potatoes (AF)	<p>This is the predicted ALC grade according to droughtiness for potatoes per sample point, following Table 8 of the ALC Guidelines (MAFF, 1988). It is determined from the Moisture Balance (MB) value for potatoes, as described in 'Calculated Moisture Balance – Potatoes' above and column AE, Annex C.</p>
Predicted grade according to erosion (AG)	<p>This is the predicted ALC grade according to erosion, as per pages 28 and 29 of the ALC Guidelines (MAFF, 1988). It is an estimate derived from gradient (column N, Annex C) and topsoil texture of representative soil series (column W, Annex C).</p>
Predicted ALC according to most limiting factor (AH)	<p>This is the final predictive ALC grade for each of the 650 sample points. It represents the most limiting (worst) grade(s) according to the climate, site, soil and interactive limitations assessed in Annex C.</p>
MAFF provisional ALC grade (AI)	<p>This is the Provisional ALC grade per sample point derived from MAFF Provisional (Pre-1988) ALC maps at a scale of 1:250,000. The Provisional ALC grade per sample point was determined using GIS, but the Provisional ALC information is available via Landscape/Landscape Classifications/Post-1988 ALC on the MAGIC website (Natural England, 2020). Pdf versions of the 1:250,000 Provisional ALC maps are available for download from Natural England (2010).</p>
Defra likelihood of encountering BMV (AJ)	<p>This is a prediction made by Defra of the likelihood of encountering BMV agricultural land, i.e. ALC Grade 1, Grade 2 and Subgrade 3a. As a key to the categories reported in column AJ, Annex C: high likelihood of BMV land (&gt;60% area BMV); moderate likelihood of BMV land (20–60% area BMV); low likelihood of BMV land (&lt;=20% area BMV); non-agricultural use; urban/industrial.</p> <p>The likelihood of encountering BMV at each sample point was derived using GIS information. A pdf version of the Likelihood of Encountering BMV maps is available from Natural England (2019).</p>
Comments (AK)	<p>This is additional information which is relevant to the predictive ALC grade per sample point.</p>

- 1.3.11 The Interpolated Climate Data for ALC which have been used to represent 1km Grid Squares (1 to 100) covering the Order Limits are shown in Table 1.3.

**Table 1.3 Interpolated climate data for ALC representative of 50No. 1km grid squares covering the Order Limits**

Climate data point	1km grid	Height (m)	AAR	ATO	FCD	MDW	MDP	Grade according to climate only <sup>6</sup>
1	TQ5688	43	601	1448	110	119	114	1
2	TQ5790	82	610	1402	114	114	108	1
3	TQ5789	68	605	1419	111	116	111	1
4	TQ5788	32	598	1460	110	120	116	1
5	TQ5785	17	593	1479	107	122	119	1
6	TQ5890	90	608	1393	113	114	107	1
7	TQ5889	40	599	1450	110	119	115	1
8	TQ5888	31	598	1461	110	120	117	1
9	TQ5887	20	595	1474	108	122	119	1
10	TQ5886	8	593	1488	107	124	121	1
11	TQ5885	24	596	1470	107	122	119	1
12	TQ5884	23	591	1472	105	123	120	1
13	TQ5883	19	584	1477	104	123	121	1
14	TQ5990	81	604	1403	112	115	109	1
15	TQ5989	47	604	1394	111	114	108	1
16	TQ5988	29	597	1463	110	121	117	1
17	TQ5987	8	594	1488	108	123	121	1
18	TQ5986	6	593	1491	106	124	122	1
19	TQ5985	33	598	1460	106	121	118	1
20	TQ5984	30	596	1464	106	122	119	1

<sup>6</sup> This is the grade according to climate only, excluding any other limiting factor, i.e. site, soil and/or interactive limitations

Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only <sup>6</sup>
21	TQ5983	24	590	1471	105	123	120	1
22	TQ5990	81	604	1403	112	115	109	1
23	TQ6085	10	593	1486	106	124	122	1
24	TQ6084	9	591	1488	105	124	122	1
25	TQ6083	-7	579	1506	104	127	125	1
26	TQ6185	5	589	1491	106	124	122	1
27	TQ6184	5	583	1492	106	125	123	1
28	TQ6183	6	577	1491	104	125	123	1
29	TQ6182	3	567	1495	102	126	124	1
30	TQ6181	8	562	1490	102	126	124	1
31	TQ6284	4	575	1493	103	125	123	1
32	TQ6283	3	570	1494	103	126	124	1
33	TQ6282	7	565	1490	102	126	124	1
34	TQ6281	16	563	1480	102	125	123	1
35	TQ6280	26	564	1469	102	124	121	1
36	TQ6383	12	570	1483	103	124	122	1
37	TQ6382	8	562	1489	102	126	124	1
38	TQ6381	20	560	1475	102	125	123	1
39	TQ6380	26	558	1469	101	125	122	1
40	TQ6379	28	557	1467	101	125	122	1
41	TQ6376	0	555	1501	102	128	126	1
42	TQ6375	2	560	1499	103	127	126	1
43	TQ6483	6	568	1490	102	125	122	1

Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only <sup>6</sup>
44	TQ6482	14	562	1481	102	125	123	1
45	TQ6481	30	561	1464	102	124	121	1
46	TQ6480	23	551	1472	100	126	124	1
47	TQ6479	27	553	1468	101	125	123	1
48	TQ6476	1	559	1500	103	127	126	1
49	TQ6475	2	565	1499	104	127	126	1
50	TQ6581	30	559	1463	101	124	122	1
51	TQ6580	32	555	1462	101	125	122	1
52	TQ6579	21	549	1474	100	126	124	1
53	TQ6576	-2	558	1503	103	128	127	1
54	TQ6570	69	620	1424	121	116	111	1
55	TQ6569	65	621	1429	122	116	111	1
56	TQ6681	31	562	1462	102	124	121	1
57	TQ6680	24	555	1470	101	126	123	1
58	TQ6679	13	549	1484	100	127	126	1
59	TQ6678	14	556	1479	102	126	125	1
60	TQ6677	5	556	1495	102	128	127	1
61	TQ6676	1	558	1500	103	128	127	1
62	TQ6675	8	564	1495	104	127	126	1
63	TQ6671	69	619	1423	119	116	112	1
64	TQ6670	72	618	1432	112	120	117	1
65	TQ6669	77	634	1415	109	124	114	1
66	TQ6781	29	564	1464	102	124	122	1



Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only <sup>6</sup>
67	TQ6780	24	559	1470	102	126	123	1
68	TQ6779	6	550	1492	101	128	127	1
69	TQ6778	5	552	1493	102	128	127	1
70	TQ6777	5	555	1494	102	128	126	1
71	TQ6776	2	559	1497	103	128	127	1
72	TQ6775	0	560	1500	103	128	127	1
73	TQ6774	0	572	1501	107	127	126	1
74	TQ6773	2	577	1499	109	126	125	1
75	TQ6772	45	605	1450	115	120	116	1
76	TQ6771	60	617	1433	118	118	113	1
77	TQ6770	77	636	1392	107	122	113	1
78	TQ6769	123	657	1376	103	129	110	1
79	TQ6878	2	552	1496	102	129	128	1
80	TQ6877	11	561	1487	103	127	125	1
81	TQ6876	1	559	1498	101	128	127	1
82	TQ6875	0	561	1500	105	128	126	1
83	TQ6873	1	575	1499	107	127	125	1
84	TQ6872	33	600	1463	115	122	119	1
85	TQ6871	48	615	1447	119	119	115	1
86	TQ6870	79	635	1411	110	123	115	1
87	TQ6869	114	663	1372	102	129	127	1
88	TQ6977	0	556	1499	103	129	127	1
89	TQ6971	52	621	1442	115	120	119	1

Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only <sup>6</sup>
90	TQ6970	98	650	1390	126	112	106	1
91	TQ6969	75	641	1416	125	115	110	1
92	TQ7071	57	627	1436	114	122	118	1
93	TQ7070	71	638	1420	111	124	116	1
94	TQ7069	84	647	1406	126	114	108	1
95	TQ7170	48	626	1446	122	119	115	1
96	TQ7171	74	637	1416	123	116	111	1
97	TQ7561	189	701	1289	141	98	87	2
98	TQ7560	108	674	1382	138	108	101	1
99	TQ7661	179	699	1300	141	99	89	2
100	TQ7660	173	699	1307	142	100	89	2
101	TQ7761	167	696	1314	141	101	90	2
102	TQ7760	173	699	1307	142	100	89	2

**Key to Table 1.3:**

AT0	Accumulated Temperature above 0°C (January – June)
AAR	Average Annual Rainfall (mm)
FCD	Field Capacity Days
MDW	Moisture Deficit (mm) Wheat
MDP	Moisture Deficit (mm) Potatoes
Climate grade	Best ALC Grade According to Climate Limitation

## 1.4 Structure of the remainder of this report

- 1.4.1 The remainder of this report is structured as follows:
- a. Section 2 – ALC to the north of the River Thames
  - b. Section 3 – ALC to the south of the River Thames
  - c. Section 4 – ALC grading route-wide

## 2 ALC to the north of the River Thames

### 2.1 Background

- 2.1.1 This section of the report sets out the findings of the ALC assessment to the north of the River Thames. It is based on a desk-based study of relevant published information on climate, topography, geology and soil in conjunction with detailed ALC surveys carried out between 18 March and 5 April 2019, and 20<sup>th</sup> and 21<sup>st</sup> June 2022 (see ‘Methodology’ in Section 2). This involved the examination of 342 auger-bore locations in ALC SP areas 11, 12, 13, 13a–13J, 14, 15, 16, 17, 18, 19 and 20 in 2019, and 91 auger-bore ALC SP areas 23, 24, 25, 26, 27 and 38 in 2022. A total of five soil pits (Soil Pits 1 to 5) were hand-dug with a spade to examine certain soil physical properties, such as stone content and the structural condition of the subsoil, more closely. A log of the soil profiles recorded at each auger bore is given in Annex B, and the soil pits are described in Annex D.
- 2.1.2 In addition, a predictive ALC grade has been ascribed by a comprehensive, desk-based study to 785 UID locations (i.e. 1 to 785) as shown in column C on the predictive ALC table given in Annex C.
- 2.1.3 Overall, an ALC grade has been given to 1218 locations (433 detailed ALC locations and 785 predictive ALC locations) on land within the Order Limits to the north of the River Thames.

### 2.2 Physical factors influencing agricultural land quality

- 2.2.1 As described in the ALC Guidelines (MAFF, 1988), the main physical factors influencing agricultural land quality are:
- climate
  - site
  - soil
  - interactive limitations
- 2.2.2 These factors are considered in turn below.

### 2.3 Climate

- 2.3.1 Interpolated climate data per SP relevant to the determination of the grade of land within the Order Limits to the north of the River Thames is given in Table 2.1.

**Table 2.1 Interpolated climate data for ALC to the north of the River Thames**

Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only
1	TQ5688	43	601	1448	110	119	114	1
2	TQ5790	82	610	1402	114	114	108	1
3	TQ5789	68	605	1419	111	116	111	1
4	TQ5788	32	598	1460	110	120	116	1
5	TQ5785	17	593	1479	107	122	119	1
6	TQ5890	90	608	1393	113	114	107	1
7	TQ5889	40	599	1450	110	119	115	1
8	TQ5888	31	598	1461	110	120	117	1
9	TQ5887	20	595	1474	108	122	119	1
10	TQ5886	8	593	1488	107	124	121	1
11	TQ5885	24	596	1470	107	122	119	1
12	TQ5884	23	591	1472	105	123	120	1
13	TQ5883	19	584	1477	104	123	121	1
14	TQ5990	81	604	1403	112	115	109	1
15	TQ5989	47	604	1394	111	114	108	1
16	TQ5988	29	597	1463	110	121	117	1
17	TQ5987	8	594	1488	108	123	121	1
18	TQ5986	6	593	1491	106	124	122	1
19	TQ5985	33	598	1460	106	121	118	1
20	TQ5984	30	596	1464	106	122	119	1
21	TQ5983	24	590	1471	105	123	120	1
22	TQ5990	81	604	1403	112	115	109	1
23	TQ6085	10	593	1486	106	124	122	1
24	TQ6084	9	591	1488	105	124	122	1
25	TQ6083	-7	579	1506	104	127	125	1
26	TQ6185	5	589	1491	106	124	122	1
27	TQ6184	5	583	1492	106	125	123	1
28	TQ6183	6	577	1491	104	125	123	1
29	TQ6182	3	567	1495	102	126	124	1
30	TQ6181	8	562	1490	102	126	124	1
31	TQ6284	4	575	1493	103	125	123	1
32	TQ6283	3	570	1494	103	126	124	1
33	TQ6282	7	565	1490	102	126	124	1
34	TQ6281	16	563	1480	102	125	123	1

Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only
35	TQ6280	26	564	1469	102	124	121	1
36	TQ6383	12	570	1483	103	124	122	1
37	TQ6382	8	562	1489	102	126	124	1
38	TQ6381	20	560	1475	102	125	123	1
39	TQ6380	26	558	1469	101	125	122	1
40	TQ6379	28	557	1467	101	125	122	1
41	TQ6376	0	555	1501	102	128	126	1
42	TQ6375	2	560	1499	103	127	126	1
43	TQ6483	6	568	1490	102	125	122	1
44	TQ6482	14	562	1481	102	125	123	1
45	TQ6481	30	561	1464	102	124	121	1
46	TQ6480	23	551	1472	100	126	124	1
47	TQ6479	27	553	1468	101	125	123	1
48	TQ6476	1	559	1500	103	127	126	1
49	TQ6475	2	565	1499	104	127	126	1
50	TQ6581	30	559	1463	101	124	122	1
51	TQ6580	32	555	1462	101	125	122	1
52	TQ6579	21	549	1474	100	126	124	1
53	TQ6576	-2	558	1503	103	128	127	1
54	TQ6570	69	620	1424	121	116	111	1
55	TQ6569	65	621	1429	122	116	111	1
56	TQ6681	31	562	1462	102	124	121	1
57	TQ6680	24	555	1470	101	126	123	1
58	TQ6679	13	549	1484	100	127	126	1
59	TQ6678	14	556	1479	102	126	125	1
60	TQ6677	5	556	1495	102	128	127	1
61	TQ6676	1	558	1500	103	128	127	1
62	TQ6675	8	564	1495	104	127	126	1
63	TQ6671	69	619	1423	119	116	112	1
64	TQ6670	72	618	1432	112	120	117	1
65	TQ6669	77	634	1415	109	124	114	1
66	TQ6781	29	564	1464	102	124	122	1
67	TQ6780	24	559	1470	102	126	123	1
68	TQ6779	6	550	1492	101	128	127	1
69	TQ6778	5	552	1493	102	128	127	1

Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only
70	TQ6777	5	555	1494	102	128	126	1
71	TQ6776	2	559	1497	103	128	127	1
72	TQ6775	0	560	1500	103	128	127	1
73	TQ6774	0	572	1501	107	127	126	1
MIN		-7	549	1393	100	114	107	1
MAX		90	634	1506	122	128	127	1
AVERAGE		24	578	1471	105	124	121	1

Key to Table 2.1:

ALT	Average Altitude mAOD
AT0	Accumulated Temperature above 0°C (January – June)
AAR	Average Annual Rainfall (mm)
FCD	Field Capacity Days (FCD)
MDW	Moisture Deficit (mm) Wheat
MDP	Moisture Deficit (mm) Potatoes
Climate grade	Best ALC Grade According to Climate Limitation

2.3.2 With reference to Figure 1 'Grade according to climate' on page 6 of the ALC Guidelines (MAFF, 1988), there is no overall climatic limitation to the quality of agricultural land within the Order Limits to the north of the River Thames. This means that agricultural land could be graded as ALC Grade 1 in overall climatic terms, in the absence of any other limiting factor, i.e. site, soil and/or interactive limitations.

2.3.3 Agricultural land within the Order Limits to the north of the River Thames is predicted to be at field capacity (i.e. near saturation point) for between 100 to 122 (average 105) days per year, mainly over the late autumn, winter and early spring. In combination with topsoil texture and WC, this will cause an 'interactive limitation' to agricultural land quality, i.e. soil wetness and/or soil droughtiness (see Section 2.6 below).

## 2.4 Site

- 2.4.1 From north to south, the study area assessed in this section extends from the M25 in Havering to the A13 in Thurrock. The Project then extends to the River Thames, at the tunnel portal to the west of East Tilbury.
- 2.4.2 Regarding the ALC Guidelines, agricultural land quality can be limited by one or more of three main site factors as follows:
- Gradient
  - Micro-relief (i.e. complex change in slope angle over short distances)
  - Risk of flooding

### Gradient and micro-relief

- 2.4.3 The land within the Order Limits to the north of the River Thames is undulated. The altitude is approximately 39mAOD at the highest point to the north-east of Cranham/M25 junction 29. The lowest elevation (approximately 1mAOD) occurs to the north of the River Thames, near the East Tilbury marshes. The quality of agricultural land is not limited by gradient as the angle of slope does not exceed 7° (see Table 1 of the ALC Guidelines). Likewise, the quality of agricultural land within the Order Limits to the north of the River Thames is not limited by micro-relief.

### Risk of flooding

- 2.4.4 From the Environment Agency Flood Map for Planning website<sup>7</sup>, the land within the Order Limits to the north of the River Thames is located in Flood Zone 1, at low risk of flooding by rivers or the sea. The Tilbury area benefits from flood defences. Agricultural land quality is not limited by flood risk in the summer or winter, following Tables 2 and 3 of the ALC Guidelines (MAFF, 1988), respectively.

## 2.5 Soil

### Geology/soil parent material

- 2.5.1 BGS information available online<sup>8</sup> has been utilised to identify the bedrock and any Superficial (Drift) Deposits over the bedrock. This information helps to determine the parent material from which the soil has formed.
- 2.5.2 The BGS information (1:50,000) indicates that the land within the Order Limits to the north of the River Thames is underlain mainly by Thames Group (clay, silt, sand and gravel) at the northern end, with smaller regions of White Chalk

<sup>7</sup> Environment Agency (2020). Flood Map for Planning. Accessed May 2020. <https://flood-map-for-planning.service.gov.uk/>.

<sup>8</sup> British Geological Survey (2020). Geology of Britain viewer. Accessed May 2020. <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>.



Subgroup (chalk), the Thanet Formation (sand, silt and clay) and the Lambeth Group (clay, silt, sand and gravel) in the south.

- 2.5.3 The BGS information (1:50,000) shows that the bedrock within the Project to the north of the River Thames is covered by Head (clay, silt, sand and gravel) and Alluvium (clay, silt, sand and gravel) to the north of Orsett. The Boyn Hill Gravel Member (sand and gravel) is common over the land around Chadwell St Mary, with a limited extent of the Black Park Gravel Member (sand and gravel) to the north-east of the town. Alluvium (clay, silt, sand, and peat) is widespread at the southern end, close to the River Thames.

### Published information on soil

- 2.5.4 The SSEW soil map of South East England (Sheet 5) at a scale of 1:250,000 and accompanying bulletin<sup>9</sup> reports that agricultural land within the Order Limits to the north of the River Thames is covered by soils in (from north to south) the Windsor, Fladbury 3, Shabbington, Fyfield 4, Hucklesbrook, and Wallasea 1 associations. From SSEW information, the soils in each association may be described as follows.
- 2.5.5 Windsor Association: Soils in this association are present to the north of Orsett. This association consists of slowly permeable clayey soils occurring in Eocene clays and associated thin drifts in south Essex and Hertfordshire, and in north Surrey, Kent, Berkshire, and south Hampshire. The Windsor series, pelo-stagnogley soils, is the most extensive. These soils have grey and ochreous mottled clayey subsurface horizons that become increasingly brown with depth. These soils remain waterlogged for long periods in winter (WC IV), and they need effective underdrainage to achieve good yields of grass and cereals.
- 2.5.6 Fladbury 3 Association: This association occurs between South Ockendon and Orsett. It comprises clayey alluvial soils on river floodplains. Fladbury series, grey clayey pelo-alluvial gley soils, usually cover two-thirds of the ground and subsidiary silty or loamy soils the remainder, often where tributaries join the main valley. The principal soils are affected by high groundwater and are waterlogged for long periods in winter (WC IV). Fladbury soils are often slowly permeable, even within 40cm depth. Winter flooding is common, but when protected by embankments and improved by field drainage measures the soils are only seasonally waterlogged (WC III) in the dry south-east of the region.
- 2.5.7 Shabbington Association: This association is in a small region in the north Ockendon area. It is developed on River Terrace Deposits and Head which are commonly adjacent to, or just above, river floodplains; these deposits are usually underlain at depth by clayey formations. The soils are developed in fine loamy drifts which vary in stoniness and commonly rest on bedded sandy or gravelly material. Shabbington soils are typical argillic gleys, usually mottled

<sup>9</sup> Jarvis, M.G., Allen, R.H., Fordham, S.J., Hazelden, J., Moffat, A.J. and Sturdy, R.G. (1984). Bulletin No. 15 'Soils and their Use in South East England', in Findlay, D.C. (ed.) Soil Survey of England and Wales. Harpenden: Rothamsted Experimental Station.

- grey and brown immediately below the topsoil. These soils are affected by high groundwater levels and are seasonally waterlogged (WC II or III).
- 2.5.8 **Fyfield 4 Association:** This association occurs in a small area to the south of Orsett. The main Fyfield soils are brown coarse, loamy, typical argillic brown earths which pass down to sand or sandstone, as do the associated Frilford and Standhill soils, which are brown, medium and fine sandy argillic brown sands, respectively. There are some Wickham and Kingston soils, mottled fine loamy over clayey typical stagnogley soils. Bursledon soils, slightly mottled fine loamy, stagnogley argillic brown earths over interbedded sands and clays, occur in places. On Tertiary beds in London and north-west Kent, Fyfield and Standhill soils are the most common on Thanet Beds with finer-textured Bursledon, Kingston and Wickham soils on the overlying Woolwich and Reading Beds. Fyfield, Frilford and Standhill soils are permeable, well drained (WC I) and readily absorb excess winter rain.
- 2.5.9 **Hucklesbrook Association:** soils in this association are found to the north and north-east of Chadwell St Mary. It consists mainly of well-drained non-calcareous coarse loamy and sandy soils on river terraces adjacent to and slightly above floodplains along the lower Thames valley in Essex. The most extensive soils, Hucklesbrook and Maplestead series, are coarse loamy typical argillic brown earths. Hucklesbrook soils have gravel at moderate depth, but Maplestead soils are deeper. Ebstree soils, argillic brown sands in sandy drift, also occur. The principal soils are developed in loamy or sandy drift over flint gravel. Their distribution is related to depth to gravel, which is particularly variable in south Essex, and to groundwater level. Hucklesbrook, Maplestead and Ebstree soils are permeable and well drained (WC I) so readily accept winter rain. Where the land is used intensively, surface soil structure breaks down and becomes compacted which reduces infiltration.
- 2.5.10 **Wallasea 1 Association.** Soils in this association are located between West Tilbury and the River Thames. The soils in this association are developed in marine alluvium of the coastal marshes of north Kent, Essex, and Suffolk. Sea walls, river embankments and other works protect the land from daily flooding as much is below high tide level. The soil pattern is simple with non-calcareous clayey Wallasea pelo-alluvial gley soils, and clayey Newchurch pelo-calcareous alluvial gley soils occupying almost all the land. High groundwater levels cause severe waterlogging (WC V). Some drainage improvement can be achieved by a close network of ditches as subsoils are relatively permeable but, since most land is in grass, water levels are kept high to contain stock. With pipe drainage, the soils may be only seasonally waterlogged (WC IV). In Eastern England, the water regimes depend mainly on arterial drainage systems. Without adequate control of groundwater, Wallasea and Newchurch soils are waterlogged for long periods in winter (WC IV). Subsoils are relatively permeable, and waterlogging is mainly caused by groundwater. After pipe drains have been installed, pumped catchments or areas with efficient tidal sluices are occasionally or seasonally waterlogged (WCs II or III).

## Soil survey

- 2.5.11 The detailed soil surveys carried out between 18 March and 5 April 2019, and 20 to 21 June 2022, determined the presence of a range of soils which are comparable with the soil associations described above.
- 2.5.12 A log of the 433 soil profiles recorded during the auger survey is given in Annex B. A description of the soil profile recorded at Soil Pits 1 to 5 is given in Annex D.
- 2.5.13 A sample of topsoil was collected at 24 auger bore locations and the samples were sent to an accredited laboratory for analysis of PSD, based on the British Standard Institution particle size grades. The certificate of analysis is provided as Annex E. The texture of the topsoil per auger bore/sample, along with the corresponding soil association as mapped by the SSEW, is shown in Table 2.2.

**Table 2.2 Topsoil texture – north of the River Thames (Appendix 2, ALC Guidelines)**

Reference	Sample UID	Easting	Northing	Topsoil texture	Soil association
1	12-078	563332	180423	mSL	Hucklesbrook
2	12-174	562932	181323	mSZL/mSL	Hucklesbrook
3	12-067	563932	180323	mSZL	Hucklesbrook
4	12-088	563932	180623	mSZL	Hucklesbrook
5	12-100	564032	180723	MCL/mSZL	Hucklesbrook
6	12-111	564332	180823	mSZL	Hucklesbrook
7	13-009	562732	182523	HCL	Windsor
8	13-027	562232	183623	C	Windsor
9	12-133	564333	180949	MCL	Hucklesbrook
10	11-003	566932	178323	mSL	Hucklesbrook
11	11-029	566232	179423	mSZL	Hucklesbrook
12	11-060	565332	179923	mSZL	Hucklesbrook
13	10-059	567032	177323	C	Wallasea 1
14	13-065	559332	183923	MCL	Shabbington
15	13-075	560232	184023	C	Windsor
16	13-035	559732	183723	mSZL	Hucklesbrook
17	12-033	564332	180123	mSL	Hucklesbrook
18	14-003	559032	183923	SCL/MCL	Shabbington
19	14-041	558632	184423	mSL	Shabbington
20	14-064	558232	184823	mSL	Shabbington
21	14-081	558232	185423	mSL	Shabbington
22	14-082	558132	185423	MCL/mSZL	Shabbington
23	14-051	558432	184523	mSL	Shabbington
24	12-019	564632	180023	mSZL	Hucklesbrook

Reference	Sample UID	Easting	Northing	Topsoil texture	Soil association
34	SP23 13-102	561128	184723	hZCL	Windsor
35	SP25 13-186	561828	183123	hZCL	Windsor
36	SP26 – 11-173	567328	179123	hZCL	Windsor
37	SP27 – 11-155	567328	178323	mSZL	Hucklesbrook
38	SP38 – 15-051	558718	187124	ZC	Windsor

**Key to Table 2.2: Topsoil texture**

mSL	Medium Sandy Loam
mSZL	Medium Sandy Silt Loam
MCL	Medium Clay Loam
SCL	Sandy Clay Loam
HCL	Heavy Clay Loam
hZCL	Heavy Silty Clay Loam
C	Clay
ZC	Silty Clay

## 2.6 Interactive limitations

2.6.1 From the published information and the results of the detailed ALC surveys, it has been determined that the quality of agricultural land within the Order Limits to the north of the River Thames is limited by (i) soil droughtiness and/or (ii) soil wetness, as described below.

### Soil droughtiness

2.6.2 Moisture balance (MB) calculations for the ALC reference crops (winter wheat and maincrop potatoes) have been carried out for the soil profiles examined on site. The MB values per auger bore are given in Annex B. The ALC grade according to soil droughtiness is determined per auger bore in Annex B, following Table 8 ‘Grade according to droughtiness’ of the ALC Guidelines (MAFF, 1988), as shown in Table 2.3.

**Table 2.3 Grade according to soil droughtiness (Table 8 of the ALC Guidelines)**

Grade/subgrade	Moisture Balance limits (mm)	
	Wheat	Potatoes
1	+30	+10
2	+5	-10
3a	-20	-30
3b	-50	-55
4	<-50	<-55

- 2.6.3 The soil associations to the north of the River Thames where the main limitation to agricultural land quality is soil droughtiness are as follows:
- Shabbington: agricultural land is limited mainly by soil droughtiness to Grade 2, Subgrade 3a or Subgrade 3b.
  - Fyfield 4: agricultural land is limited mainly by soil droughtiness to Grade 2, Subgrade 3a or Subgrade 3b.
  - Hucklesbrook: agricultural land is limited mainly by soil droughtiness to Grade 2, Subgrade 3a, Subgrade 3b or Grade 4 where the subsoil is very stony (gravelly).

### Soil wetness

- 2.6.4 From the ALC Guidelines, a soil wetness limitation exists where '*the soil water regime adversely affects plant growth or imposes restrictions on cultivations or grazing by livestock*'. The ALC grade according to soil wetness within the Order Limits to the north of the River Thames is given in Table 2.4 (based on Table 6 'Grade According to Soil Wetness – Mineral Soils' in the ALC Guidelines (MAFF, 1988)).

**Table 2.4 ALC grade according to soil wetness**

WC	Texture of the top 25cm	<126 Field Capacity Days
I	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	1
	Heavy Clay Loam**	2
	Sandy Clay/Silty Clay/Clay	3a(2)
II	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	2
	Heavy Clay Loam**	3a(2)
	Sandy Clay/Silty Clay/Clay	3a(2)
III	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	2
	Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	3a(2)
	Heavy Clay Loam**	3b(3a)
	Sandy Clay/Silty Clay/Clay	3b(3a)
IV	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	3a
	Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	3b
	Heavy Clay Loam**	3b
	Sandy Clay/Silty Clay/Clay	3b
Key		
* <27% clay; and ** >27% clay		

- 2.6.5 The soil associations to the north of the River Thames where soil wetness is the main limitation to agricultural land quality are as follows:
- a. Windsor: agricultural land quality is limited by soil wetness to Subgrade 3a or Subgrade 3b.
  - b. Fladbury 3: agricultural land quality is limited by soil wetness to predominantly Subgrade 3b.
  - c. Wallasea 1: agricultural land quality is limited by soil wetness to predominantly Subgrade 3b.

## 2.7 Detailed ALC to the north of the River Thames

- 2.7.1 From a detailed ALC survey to the north of the River Thames, it has been determined that the quality of agricultural land is limited mainly by soil droughtiness and/or soil wetness to Grade 2, Subgrade 3a and Subgrade 3b. Some well-drained soils with sandy loam or sandy clay loam topsoil over well-drained sandy clay loam subsoil (c.f. Shabington association) have no significant limitations and are mapped as Grade 1. Conversely, some well-drained soil profiles with very stony (gravelly) subsoil (c.f. Hucklesbrook association) are limited by soil droughtiness to Grade 4.
- 2.7.2 The area (ha) and proportion of land in each grade has been measured from an ALC map given as Figure 1. The area measurements are given in Table 2.5.

## 2.8 ALC grading to the north of the River Thames

- 2.8.1 The findings of the detailed ALC survey and the predictive ALC have been combined to produce an ALC map (Figure 1) to show the ALC grades on agricultural land to the north of the River Thames. The area (ha) and proportion (%) of land in each grade have been determined from the ALC map (Figure 1). The area measurements are given in Table 2.5. The map is accurate to a scale of 1:10,000, any further enlargement would lead to inaccuracies. As set out in the ALC Guidelines (1988), the grade or subgrade of land is determined by the most limiting factor present. When classifying land, the overall climate and site limitations should be considered first as these can have an overriding influence on the grade. Land is graded and mapped without regard to present field boundaries, except where they coincide with permanent physical features. A degree of variability in physical characteristics within a discrete area is to be expected. If the area includes a small proportion of land of different quality, the variability can be considered as a function of the mapping scale. Thus, small, discrete areas of a different ALC grade may be identified on large scale maps, whereas on smaller scale maps it may only be feasible to show the predominant grade.

**Table 2.5 Project to the north of the River Thames – ALC**

ALC grade	Area (ha)	Area (%)
Grade 1 (excellent)	7.40	0.4
Grade 2 (very good)	71.02	4.2
Subgrade 3a (good)	<del>343.85</del>	<del>20.4</del>
<i>BMV</i>	<del>422.26</del>	<del>25.0</del>
Subgrade 3b (moderate)	<del>670.13</del>	<del>39.7</del>
Grade 4 (poor)	26.63	1.6
Grade 5 (very poor)	0.00	0.0
Non-agricultural	<del>567.61</del>	<del>33.7</del>
<b>Total</b>	<del>1686.63</del>	100.0

\* Please note, all numbers here are rounded to 2 decimal points and are displayed true for the whole number. \*

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2.8.2 The total areas of each ALC grade within the Order Limits along the entire Project route, i.e. both north and south of the River Thames, are given in Section 4.

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## 3 ALC to the south of the river Thames

### 3.1 Background

- 3.1.1 This section of the report sets out the findings of the ALC assessment to the south of the River Thames. It is based on a desk-based study of relevant published information on climate, topography, geology and soil in conjunction with detailed soil surveys carried out between 18 March and 5 April 2019 (see 'Methodology' in Section 2). There were no detailed ALC surveys carried out to the south of the River Thames in 2022. The 2019 ALC surveys involved the examination of 133 auger bore locations in ALC SP areas 1 to 8, as shown on the soil profile log given in Annex B. A total of three soil pits (Soil Pits 5 to 8) were hand-dug with a spade to examine certain soil physical properties, such as stone content and the structural condition of the subsoil, more closely. A log of the soil profiles recorded at each auger bore is given in Annex B, and the soil pits are described in Annex D.
- 3.1.2 In addition, a predictive ALC grade has been ascribed by a comprehensive, desk-based study to 124 UID locations (527 to 650) as shown in column C on the predictive ALC table given in Annex C.
- 3.1.3 Overall, an ALC grade has been given to 257 locations (133 detailed ALC locations and 124 predictive ALC locations) on land within the Order Limits to the south of the River Thames, at a density of approximately one sample location per hectare.

### 3.2 Physical factors influencing agricultural land quality

- 3.2.1 As described in the ALC Guidelines (MAFF, 1988), the main physical factors influencing agricultural land quality are:
- a. climate
  - b. site
  - c. soil
  - d. interactive limitations
- 3.2.2 These factors are considered in turn below.

### 3.3 Climate

- 3.3.1 Interpolated climate data per SP relevant to the determination of the grade of land within the Project to the south of the River Thames is given in Table 3.1.



**Table 3.1 Interpolated climate data for ALC to the south of the River Thames**

Climate data point	1km grid	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only
74	TQ6773	2	577	1499	109	126	125	1
75	TQ6772	45	605	1450	115	120	116	1
76	TQ6771	60	617	1433	118	118	113	1
77	TQ6770	77	636	1392	107	122	113	1
78	TQ6769	123	657	1376	103	129	110	1
79	TQ6878	2	552	1496	102	129	128	1
80	TQ6877	11	561	1487	103	127	125	1
81	TQ6876	1	559	1498	101	128	127	1
82	TQ6875	0	561	1500	105	128	126	1
83	TQ6873	1	575	1499	107	127	125	1
84	TQ6872	33	600	1463	115	122	119	1
85	TQ6871	48	615	1447	119	119	115	1
86	TQ6870	79	635	1411	110	123	115	1
87	TQ6869	114	663	1372	102	129	127	1
88	TQ6977	0	556	1499	103	129	127	1
89	TQ6971	52	621	1442	115	120	119	1
90	TQ6970	98	650	1390	126	112	106	1
91	TQ6969	75	641	1416	125	115	110	1
92	TQ7071	57	627	1436	114	122	118	1
93	TQ7070	71	638	1420	111	124	116	1
94	TQ7069	84	647	1406	126	114	108	1
95	TQ7170	48	626	1446	122	119	115	1
96	TQ7171	74	637	1416	123	116	111	1
97	TQ7561	189	701	1289	141	98	87	2
98	TQ7560	108	674	1382	138	108	101	1
99	TQ7661	179	699	1300	141	99	89	2
100	TQ7660	173	699	1307	142	100	89	2
101	TQ7761	167	696	1314	141	101	90	2
102	TQ7760	173	699	1307	142	100	89	2
MIN		0	552	1289	101	98	87	1
MAX		189	701	1500	142	129	128	2
AVERAGE		74	628	1417	118	118	112	1

**Key to Table 3.1:**

ALT	Average Altitude (m)
AT0	Accumulated Temperature above 0°C (January – June)
AAR	Average Annual Rainfall (mm)
FCD	Field Capacity Days (FCD)
MDW	Moisture Deficit (mm) Wheat
MDP	Moisture Deficit (mm) Potatoes
Climate grade	Best ALC Grade According to Climate Limitation

- 3.3.2 With reference to Figure 1 ‘Grade according to climate’ on page 6 of the ALC Guidelines, there is no overall climatic limitation to the quality of agricultural land at the Site. This means that agricultural land across the route could be graded as ALC Grade 1 in overall climatic terms, in the absence of any other limiting factor, i.e. site, soil and/or interactive limitations.
- 3.3.3 Agricultural land across the route is predicted to be at field capacity (i.e. near saturation point) for 101 to 142 days per year (i.e. average 118), mainly over the late autumn, winter and early spring. In combination with topsoil texture, this will cause an ‘interactive limitation’ to agricultural land quality at the Site, i.e. soil wetness and/or soil droughtiness (see Section 3.6 below).

### 3.4 Site

- 3.4.1 A detailed description of the whole Project is given in Section 1. From north to south, the ALC study area assessed in this section extends from the south of the River Thames to the east of Gravesend to Thong, and then beyond to connect with the A2 and the M2 motorway near Strood/Rochester.
- 3.4.2 Regarding the ALC Guidelines, agricultural land quality can be limited by one or more of three main site factors as follows:
- a. Gradient
  - b. Micro-relief
  - c. Risk of flooding

#### Gradient and micro-relief

- 3.4.3 The Project route to the south of the River Thames passes over the floodplain of the river which lies at an elevation of 0–1mAOD towards Lower Higham Road at 2mAOD. The land rises over a north-facing slope to Graves End Road (A266) at an elevation of 26mAOD. From here, the land continues to rise-up a north-facing slope to an elevation of approximately 75mAOD at Thong.
- 3.4.4 The quality of agricultural land is not limited by gradient, as the angle of slope does not exceed 7° (see Table 1 of the ALC Guidelines). Likewise, the quality of agricultural land at the Site is not limited by micro-relief.

## Risk of flooding

- 3.4.5 From the Environment Agency Flood Map for Planning website<sup>10</sup>, the route to the south of the River Thames is located mainly in Flood Zone 1, at low risk of flooding by rivers or the sea. The Filborough Marshes on the floodplain off the River Thames benefit from flood defences. Agricultural land quality is not limited by flood risk in the summer or winter, following Tables 2 and 3 of the ALC Guidelines (MAFF, 1988), respectively.

## 3.5 Soil

### Geology/soil parent material

- 3.5.1 BGS information available online<sup>11</sup> has been used to identify the bedrock underlying the Site and any Superficial (Drift) Deposits over the bedrock. This information helps to determine the parent material from which the soil has formed.
- 3.5.2 The BGS information (1:50,000) indicates that the Project route to the south of the River Thames is underlain predominately by Chalk in the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated, chalk), with small areas of the Thanet Formation (sand, silt and clay) near Filborough Farm/Lower Higham Road and around Thong.
- 3.5.3 The BGS information (1:50,000) shows that most of the bedrock is not covered by any superficial deposits, except for some Head (clay, silt, sand and gravel) in valley bottoms.

### Published information on soil

- 3.5.4 The SSEW soil map of South East England (Sheet 5) at a scale of 1:250,000 and accompanying Bulletin No. 15 'Soils and their Use in South East England' (Jarvis *et al.*, 1984) show that agricultural land along the Project route to the south of the River Thames is covered by soils (from north to south) in the following soil associations: Wallasea 1, Frilsham, Coombe 1 and Fyfield 4. From SSEW information, the soils in each association may be described as follows.
- 3.5.5 Wallasea 1 association: Soils in this association are located on the floodplain of the River Thames, from the south of the river to Lower Higham Road. The soils in this association are developed in marine alluvium of the coastal marshes of north Kent, Essex and Suffolk. Sea walls, river embankments and other works protect the land from daily flooding as much is below high tide level. The soil pattern is simple with non-calcareous clayey Wallasea pelo-alluvial gley soils, and clayey Newchurch pelo-calcareous alluvial gley soils occupying almost all the land. High groundwater levels cause severe waterlogging (WC V). Some drainage improvement can be achieved by a close network of ditches as subsoils are relatively permeable but, since most land is in grass, water levels are kept high to contain stock. With pipe drainage the soils may be only seasonally waterlogged (WC IV). In eastern England, the water regimes depend

<sup>10</sup> Environment Agency (2020). Flood Map for Planning. Accessed May 2020. <https://flood-map-for-planning.service.gov.uk/>.

<sup>11</sup> British Geological Survey (2020). Geology of Britain viewer. Accessed May 2020. <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>.

- mainly on arterial drainage systems. Without adequate control of groundwater, Wallasea and Newchurch soils are waterlogged for long periods in winter (WC IV). Subsoils are relatively permeable, and waterlogging is mainly caused by groundwater. After pipe drains have been installed, pumped catchments or areas with efficient tidal sluices are occasionally or seasonally waterlogged (WCs II or III).
- 3.5.6 Frilsham association: The soils in this association occur in a small area to the north of Lower Higham Road, but are mainly present in the eastern part of the Order Limits to the south of the River Thames between Gravesend Road (A226) and Shorne Ifield Road. It consists of fine, loamy, typical argillic brown earths over Chalk at moderate depth. The soil is developed in mainly fine, loamy drift over Chalk on gently and moderately sloping ground below hills and ridges capped by either Tertiary beds or Plateau Drift. The soils are permeable and well drained (WC I), and on gentle slopes excess winter rain is rapidly absorbed into the soil.
- 3.5.7 Coombe 1 association: This association extends from the south of Gravesend Road (A226) around the eastern edge of Gravesend to Watling Street (A2) in the far south-west of the Project. It consists of well-drained, calcareous, fine silty, and often very stony soils. They are often deep in the valley bottoms, but there are shallow soils on the valley sides. This association is developed in flinty, chalky drift in broad valleys and on the lower dip slope of the Chalk in southern England. The soils are well drained (WC I), and surplus winter rain passes easily downwards through the soil and the underlying Chalk.
- 3.5.8 Fyfield 4 association: This association occurs in the eastern part of the Project from the south of Shorne Ifield Road, around Thong and to Watling Street (A2) in the far south-east. The main Fyfield soils are brown, coarse, loamy, typical argillic brown earths which pass down to sand or sandstone, as do the associated Frilford and Standhill soils, which are brown medium and fine sandy argillic brown sands, respectively. There are some Wickham and Kingston soils, mottled fine loamy over clayey typical stagnogley soils. Bursledon soils, slightly mottled fine loamy, stagnogleyic argillic brown earths over interbedded sands and clays occur in places. On Tertiary beds in London and north-west Kent, Fyfield and Standhill soils are the most common on Thanet Beds with finer-textured Bursledon, Kingston and Wickham soils on the overlying Woolwich and Reading Beds. Fyfield, Frilford and Standhill soils are permeable, well drained (WC I) and readily absorb excess winter rain.
- 3.5.9 Batcombe: Batcombe association: This association is developed in a superficial deposit of Plateau Drift and Clay-With-Flints over Seaford Chalk bedrock to the south of the M2 motorway, and east of the A229 between the villages of Kit's Coty and Westfield Sole. Variably flinty fine silty and fine loamy over clayey Batcombe and Hornbeam soils, stagnogleyic paleo-argillic brown earths, with grey mottled subsoils dominate the association. The ancillary Carstens soils, typical paleo-argillic brown earths, are fine silty over clayey and are less mottled in the subsoil with no greyish colours. The local proportions of Batcombe, Carstens and Hornbeam soils depend on the relative influences of silty aeolian drift and remnants of Tertiary (Neogene and Palaeogene) deposits on the composition of the Plateau Drift. Batcombe and Hornbeam soils have moderately permeable clayey subsoils and, where underlain at no great depth by chalk, are only occasionally waterlogged (Wetness Class II). Most excess

winter rain drains vertically down to the unsaturated Chalk and any water moving laterally over the clay enters the Chalk at the margins of the Plateau Drift.

### Soil survey

- 3.5.10 The detailed soil surveys carried between 18 March and 5 April 2019 determined the presence of a range of soils which are comparable with the soil associations described above.
- 3.5.11 A log of the 133 soil profiles recorded during the auger survey is given in Annex B. A description of the soil profile recorded at Soil Pits 5 to 8 is given in Annex D.
- 3.5.12 A sample of topsoil was collected at nine auger bore locations and the samples were sent to an accredited laboratory for analysis of PSD, based on the British Standard Institution particle size grades. The certificate of analysis is provided in Annex E. The texture of the topsoil per auger bore/sample, along with the corresponding soil association as mapped by the SSEW, is shown in Table 3.2.

**Table 3.2 Topsoil texture – south of the River Thames (Appendix 2, ALC Guidelines)**

Reference	Sample UID	Easting	Northing	Topsoil texture	Soil association
1	2-012	567032	170123	fSL	Fyfield 4
2	2-046	567032	170523	SCL	Coombe 1
3	2-061	567132	171023	HCL	Coombe 1
4	3-061	567932	172723	HCL	Coombe 1
5	4-038	568032	172423	HCL	Coombe 1
6	6-045	568032	173323	C	Wallasea 1
7	4-047	567532	172523	HCL	Coombe 1
8	6-052	567932	173723	C	Wallasea 1
9	4-048	567432	172523	MCL	Coombe 1

**Key to Table 3.2: Topsoil texture**

fSL	Fine Sandy Loam
SCL	Sandy Clay Loam
MCL	Medium Clay Loam
HCL	Heavy Clay Loam
C	Clay

## 3.6 Interactive limitations

3.6.1 From the published information and the results of the surveys, it has been determined that the quality of agricultural land within the Order Limits to the south of the River Thames is limited by (i) soil droughtiness and/or (ii) soil wetness, as described below.

### Soil droughtiness

3.6.2 Moisture balance (MB) calculations for the ALC reference crops (winter wheat and maincrop potatoes) have been carried out for the soil profiles examined on site. The MB values per auger bore are given in Annex B. The ALC grade according to soil droughtiness is determined per auger bore in Annex B, following Table 8 'Grade according to droughtiness' of the ALC Guidelines, as shown in Table 3.3.

**Table 3.3 Grade according to soil droughtiness (Table 8 of the ALC Guidelines)**

Grade/Subgrade	Moisture Balance limits (mm)	
	Wheat	Potatoes
1	+30	+10
2	+5	-10
3a	-20	-30
3b	-50	-55
4	<-50	<-55

3.6.3 The soil associations to the south of the River Thames where soil droughtiness is the main limitation to agricultural land quality are as follows:

- a. Coombe 1: agricultural land is limited mainly by soil droughtiness to Grade 2, Subgrade 3a or Subgrade 3b. Most of the Subgrade 3b occurs on north-facing slopes to the north of Gravesend Road (A226), where the Coombe soils are shallow over chalk.
- b. Fyfield 4: Most of the agricultural land with soil in the Fyfield 4 association to the south of the River Thames near Thong has fine sandy loam topsoil (see Table 3.2). This land has no significant limitation and is mainly classified as Grade 1. Some Fyfield 4 profiles are slightly limited by soil droughtiness to Grade 2 or Subgrade 3a.

### Soil Wetness

3.6.4 From the ALC Guidelines, a soil wetness limitation exists where '*the soil water regime adversely affects plant growth or imposes restrictions on cultivations or grazing by livestock*'. The ALC grade according to soil wetness at the Site is given in Table 3.4 (based on Table 6 'Grade According to Soil Wetness – Mineral Soils' in the ALC Guidelines (MAFF, 1988)).

**Table 3.4 ALC grade according to soil wetness**

WC	Texture of the top 25cm	<126 Field Capacity Days
I	• Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	• Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	1 2
	• Heavy Clay Loam**	3a(2)
	• Sandy Clay/Silty Clay/Clay	
II	• Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	• Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	2 3a(2)
	• Heavy Clay Loam**	3a(2)
	• Sandy Clay/Silty Clay/Clay	
III	• Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	2
	• Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	3a(2) 3b(3a)
	• Heavy Clay Loam**	3b(3a)
	• Sandy Clay/Silty Clay/Clay	
IV	• Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	3a
	• Sandy Clay Loam/Medium Silty Clay Loam/Medium Clay Loam*	3b 3b
	• Heavy Clay Loam**	3b
	• Sandy Clay/Silty Clay/Clay	
Key * <27% clay; and ** >27% clay		

3.6.5 The soil associations to the south of the River Thames where soil wetness is the main limitation to agricultural land quality are as follows:

- a. Wallasea 1: agricultural land quality on the Filborough Marshes, i.e. the floodplain to the south the River Thames, is limited by soil wetness to predominantly Grade 4.

### 3.7 Detailed ALC to the south of the River Thames

3.7.1 From a detailed ALC survey to the south of the River Thames, it has been determined that the quality of agricultural land is limited mainly by soil droughtiness and/or soil wetness to Grade 2, Subgrade 3a and Subgrade 3b. Some well-drained soils with fine sandy loam topsoil (c.f. Fyfield association) to the south of Thong have no significant limitations and are mapped as Grade 1. Conversely, some profiles on the Filborough Marshes have clay topsoil over slowly permeable clay subsoil, which is waterlogged for long periods over the winter (WC IV), which is limited by soil wetness to Grade 4.

3.7.2 The area (ha) and proportion of land in each grade has been measured from an ALC map given as Figure 1. The area measurements are given in Table 3.5.

### 3.8 ALC grading to the south of the River Thames

3.8.1 The findings of the detailed ALC survey and the predictive ALC have been combined to produce an ALC map (Figure 1) to show the ALC grade of agricultural land to the south of the River Thames. The area (ha) and proportion (%) of land in each grade have been determined from the ALC map (Figure 1). The area measurements are given in Table 3.5. The map is accurate to a scale of 1:10,000, but any further enlargement would lead to inaccuracies. As set out in the ALC Guidelines (1988), the grade or subgrade of land is determined by the most limiting factor present. When classifying land the overall climate and site limitations should be considered first as these can have an overriding influence on the grade. Land is graded and mapped without regard to present field boundaries, except where they coincide with permanent physical features. A degree of variability in physical characteristics within a discrete area is to be expected. If the area includes a small proportion of land of different quality, the variability can be considered as a function of the mapping scale. Thus, small, discrete areas of a different ALC grade may be identified on large scale maps, whereas on smaller scale maps it may only be feasible to show the predominant grade.

**Table 3.5 Project to the south of the River Thames – ALC**

ALC grade	Area (ha)	Area (%)
Grade 1 (excellent)	17.22	2.7
Grade 2 (very good)	263.34	40.6
Subgrade 3a (good)	68.11	10.5
BMV <sup>12</sup>	348.67	53.7
Subgrade 3b (moderate)	47.06	7.2
Grade 4 (poor)	19.75	3.0
Grade 5 (very poor)	0.00	0.0
Non-agricultural	233.80	36.0
<b>Total</b>	<b>649.29</b>	<b>100.0</b>

\* Please note, all numbers here are rounded to 2 decimal points and are displayed true for the whole number.\*

3.8.2 The total areas of each ALC grade within the Order Limits along the entire Project route, i.e. both north and south of the River Thames, are given in Section 4.

- Deleted: 5
- Deleted: 272.92
- Deleted: 39.7
- Deleted: 89.35
- Deleted: 13.0
- Deleted: 379.49
- Deleted: 55.2
- Deleted: 53.96
- Deleted: 8
- Deleted: 2.9
- Deleted: 234.40
- Deleted: 34.1
- Deleted: 687.60

Deleted: 1.4

<sup>12</sup> BMV agricultural land is ALC Grade 1, Grade 2 and Subgrade 3a as per the National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021).



## 4 ALC grading route-wide

4.1.1 The findings of the detailed ALC survey and the predictive ALC for land to the north of the River Thames (see Section 2) and south of the River Thames (see Section 3) have been combined to produce an ALC map (Figure 1) to show the location and extent of the land in each ALC grade. The area (ha) and proportion (%) of land in each grade along the entire Project route (i.e. north and south of the River Thames) have been determined from the ALC map (Figure 1). The area measurements are given in Table 4.1. The map is accurate to a scale of 1:10,000, any further enlargement would lead to inaccuracies. As set out in the ALC Guidelines (1988), the grade or subgrade of land is determined by the most limiting factor present. When classifying land the overall climate and site limitations should be considered first as these can have an overriding influence on the grade. Land is graded and mapped without regard to present field boundaries, except where they coincide with permanent physical features. A degree of variability in physical characteristics within a discrete area is to be expected. If the area includes a small proportion of land of different quality, the variability can be considered as a function of the mapping scale. Thus, small, discrete areas of a different ALC grade may be identified on large scale maps, whereas on smaller scale maps it may only be feasible to show the predominant grade.

Table 4.1 Project: route-wide ALC

ALC grade	North of River Thames	South of River Thames	Route-wide: agricultural land		Route-wide: total land	
	Area (ha)	Area (ha)	Area (ha)	Agricultural land area (%)	Total land area (ha)	Total land area (%)
1	7.40	17.22	24.61	1.6	24.61	1.1
2	71.02	263.34	334.36	21.8	334.36	14.3
3a	343.85	68.11	411.96	26.8	411.96	17.6
BMV	422.26	348.67	770.94	50.2	770.9	33.0
3b	670.13	47.06	717.20	46.7	717.20	30.7
4	26.63	19.75	46.37	3.0	46.37	2.0
5	0.00	0.00	0.00	0.0	0.00	0.0
Non-agricultural/ other land	567.61	233.80	-	-	801.41	34.3
<b>Total</b>	<b>1686.63</b>	<b>649.29</b>	<b>1534.51</b>	<b>100.0</b>	<b>2335.92</b>	<b>100.0</b>

\* Please note, all numbers here are rounded to 2 decimal points and are displayed true for the whole number.

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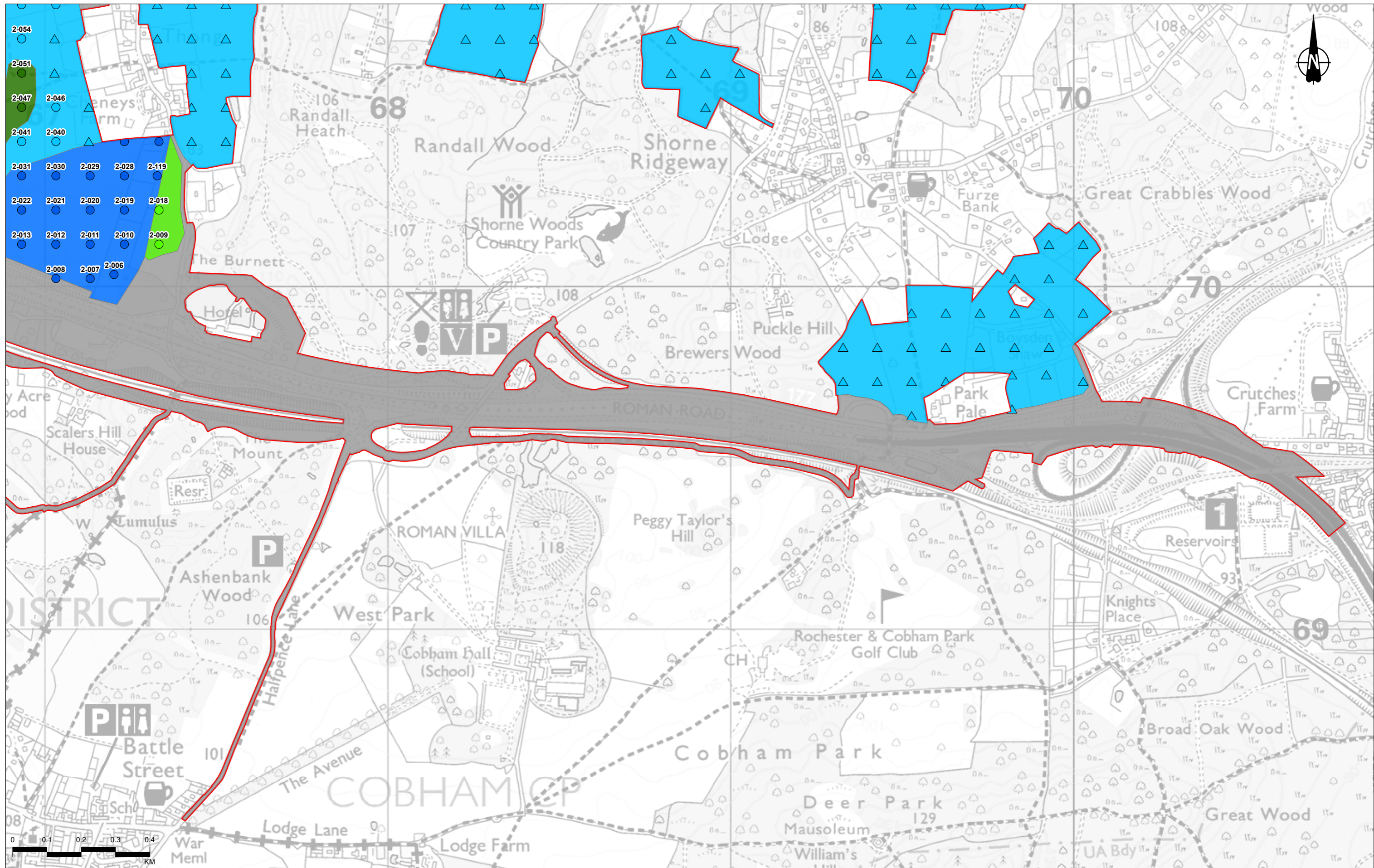
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## Figures

Figure 1: Agricultural Land Classification





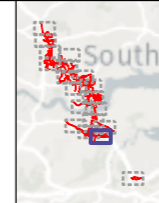
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Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

**Legend**

Order Limits	Non-agricultural	Predicted ALC Grade
<b>Agricultural Land Classification</b>	<b>Surveyed ALC Grade</b>	<b>Grade 2</b>
Grade 1	Grade 1	
Grade 2	Grade 2	
Grade 3a	Grade 3a	
Grade 3b	Grade 3b	
Grade 4		

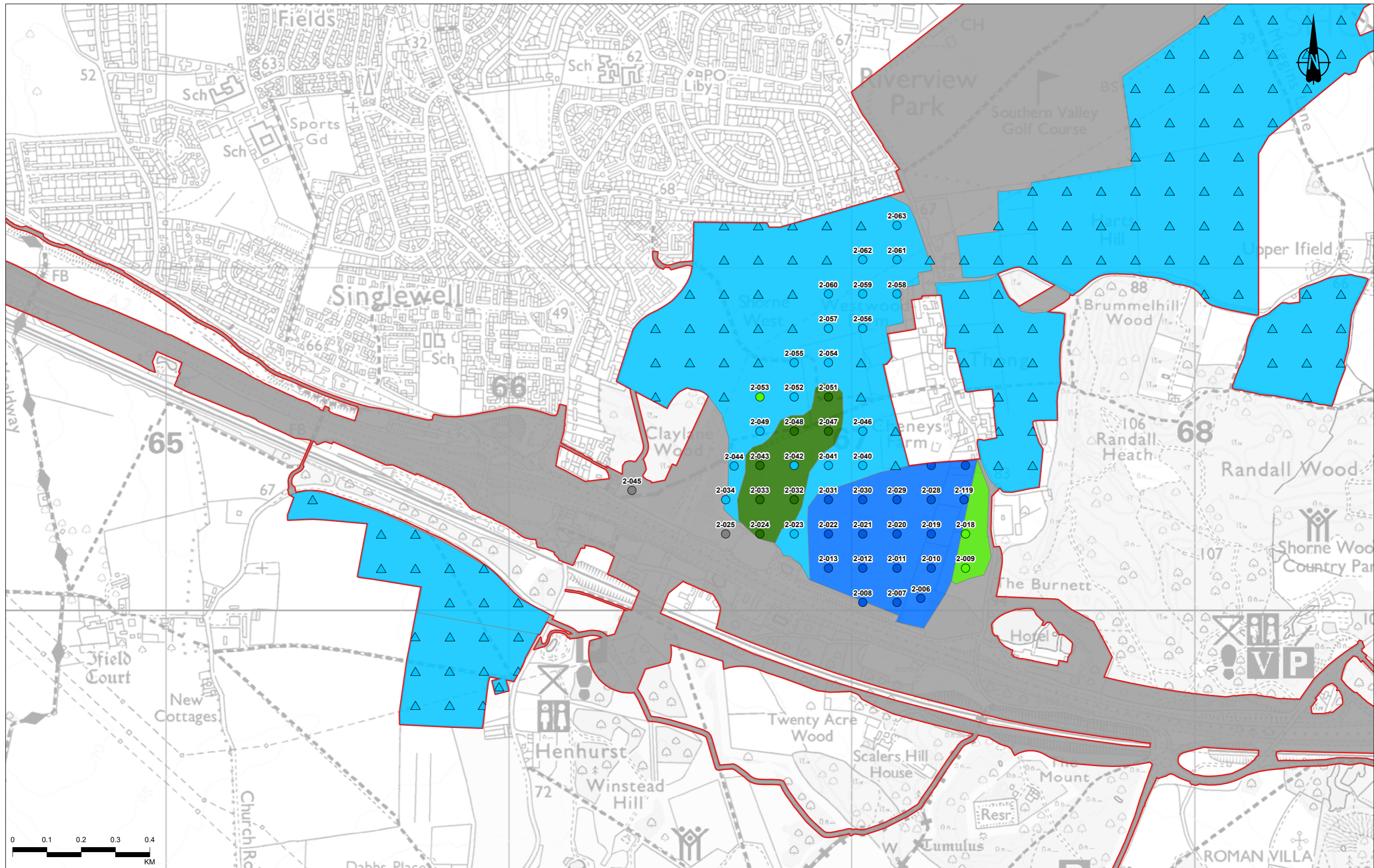


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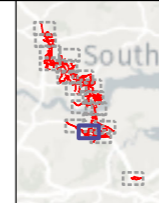
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Legend		Predicted ALC Grade	
	Order Limits		Non-agricultural
	Agricultural Land Classification Grade 1		Grade 1
	Grade 2		Grade 2
	Grade 3a		Grade 3a
	Grade 3b		Grade 3b
	Grade 4		Non-agricultural

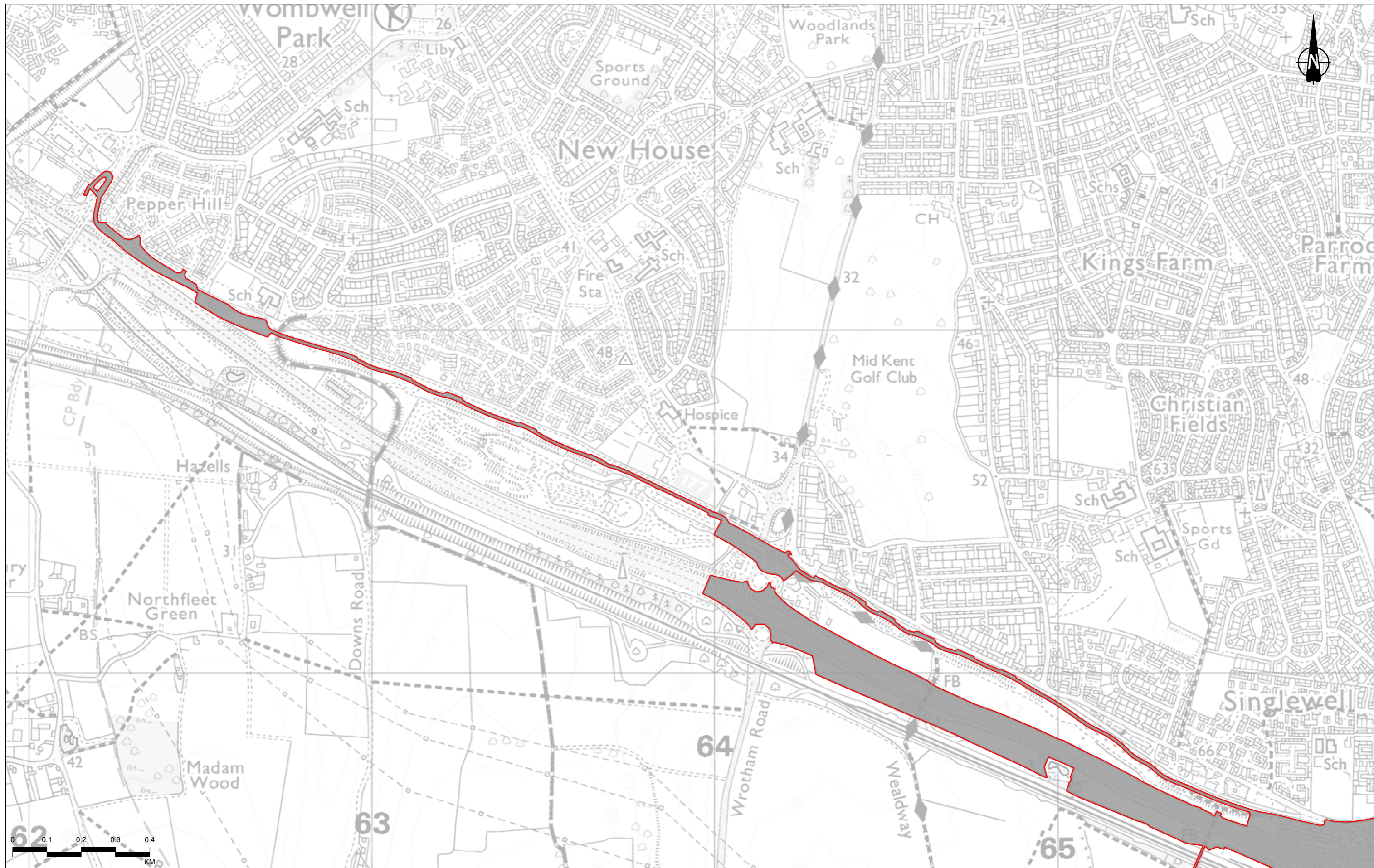


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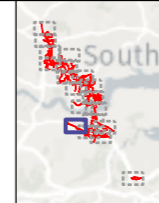
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**Legend**

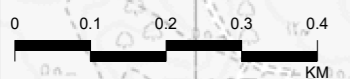
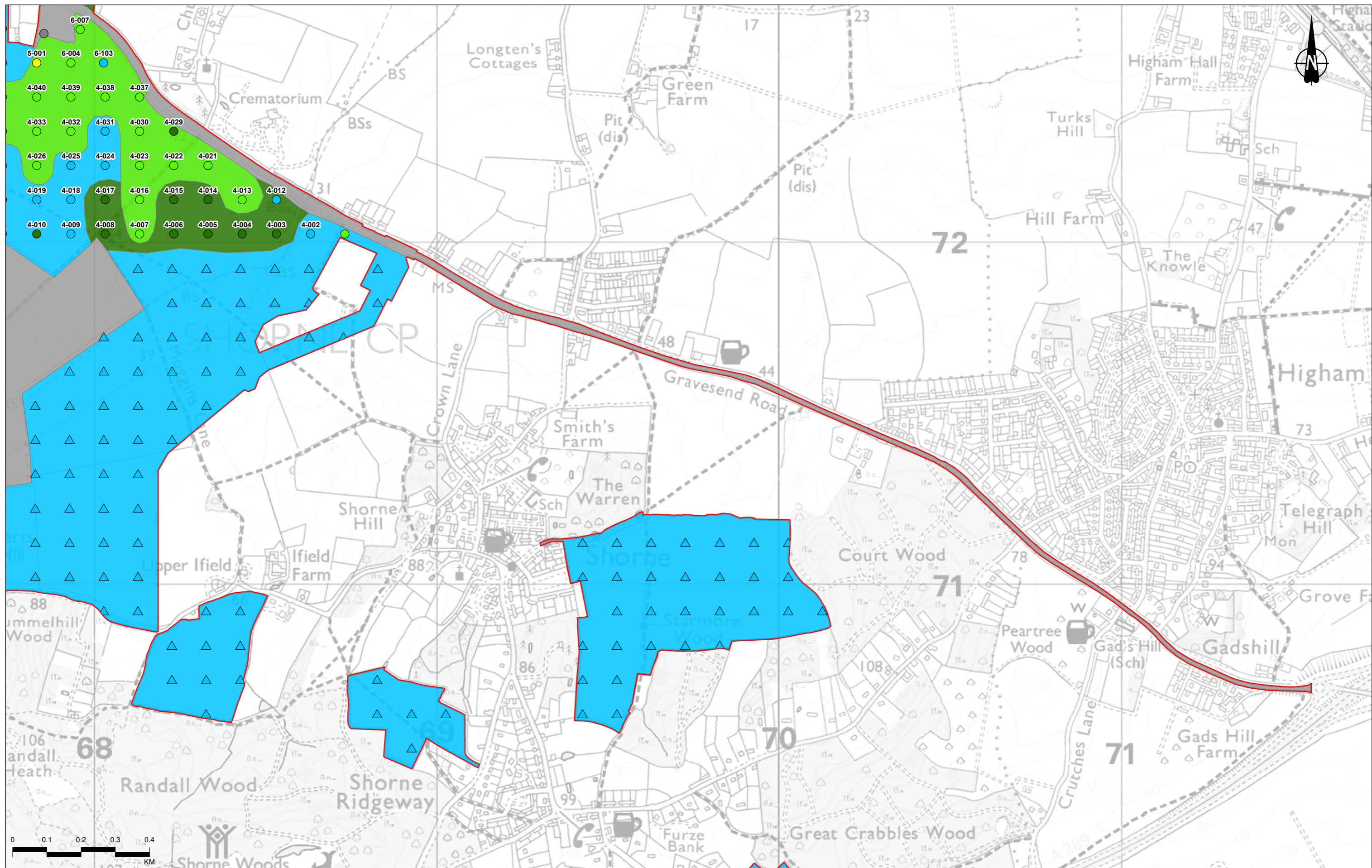
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Grade 2	Non-agricultural



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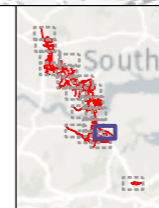


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Legend		Predicted ALC Grade	
Order Limits	Non-agricultural	Grade 2	Grade 2
Agricultural Land Classification Grade 1	Agricultural Land Classification Grade 2	Grade 3a	Grade 3b
Grade 2	Grade 3a	Grade 3b	Grade 4
Grade 3a	Grade 3b	Grade 4	Non-agricultural
Grade 3b	Grade 4		
Grade 4			

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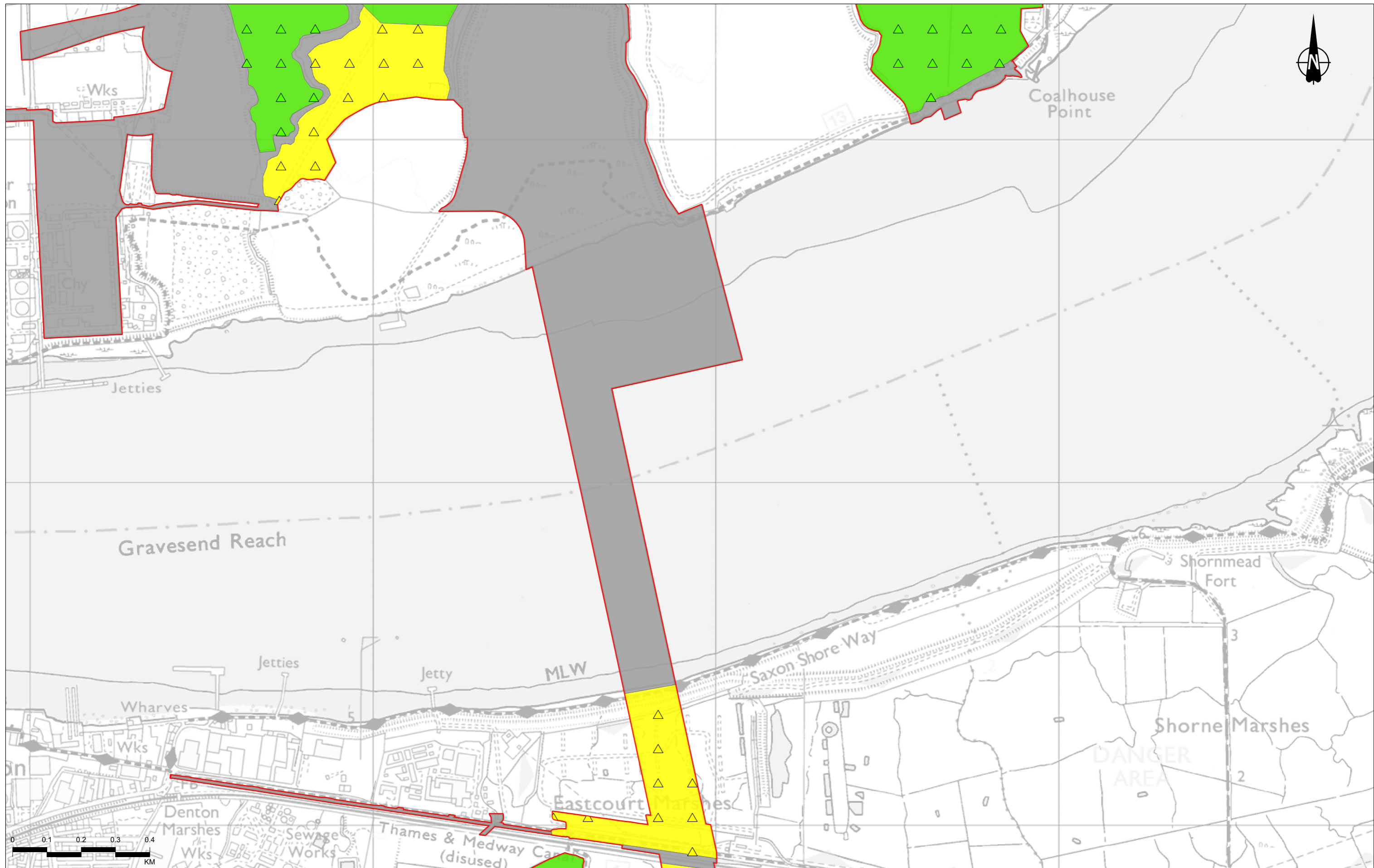
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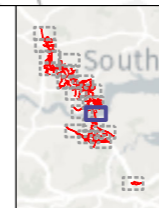


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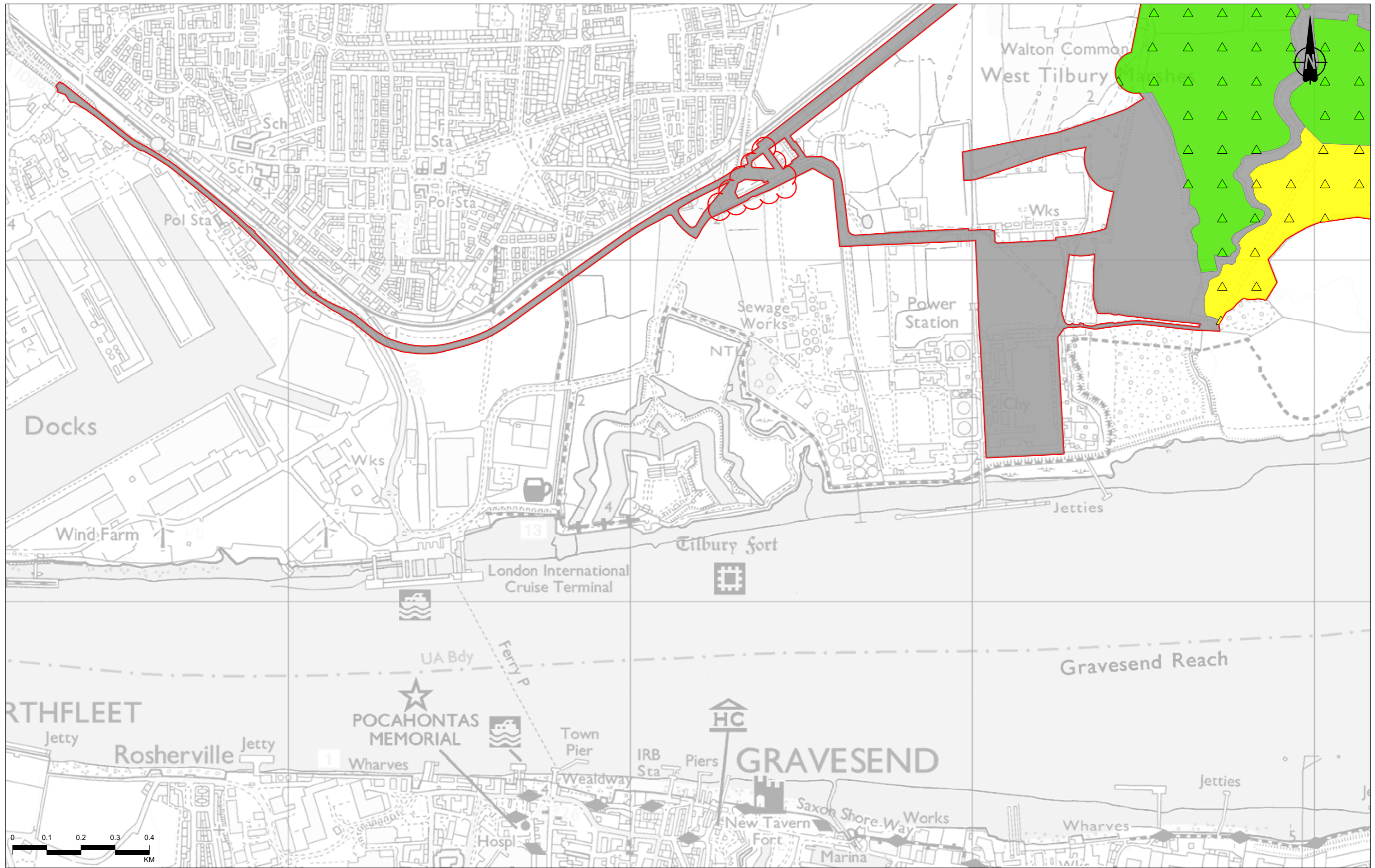
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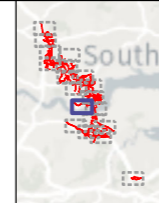


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			Grade 4

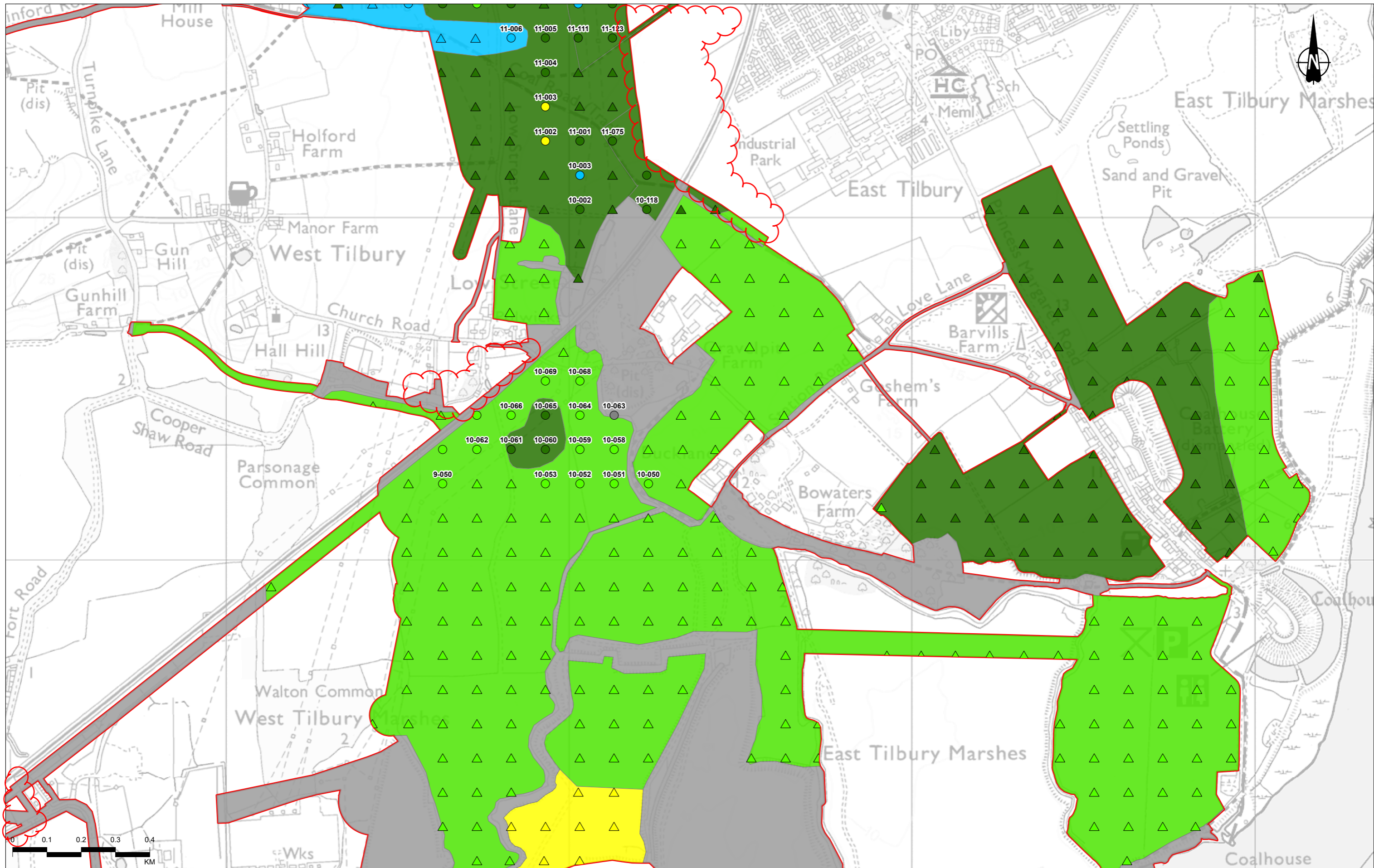


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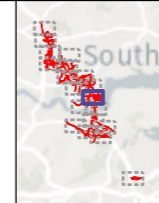
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[Light green square symbol] Grade 3b  
 [Yellow square symbol] Grade 4  
 [Grey square symbol] Non-agricultural

**Surveyed ALC Grade**  
 [Blue circle symbol] Grade 2  
 [Dark green circle symbol] Grade 3a  
 [Light green circle symbol] Grade 3b  
 [Yellow circle symbol] Grade 4  
 [Grey circle symbol] Non-agricultural

**Predicted ALC Grade**  
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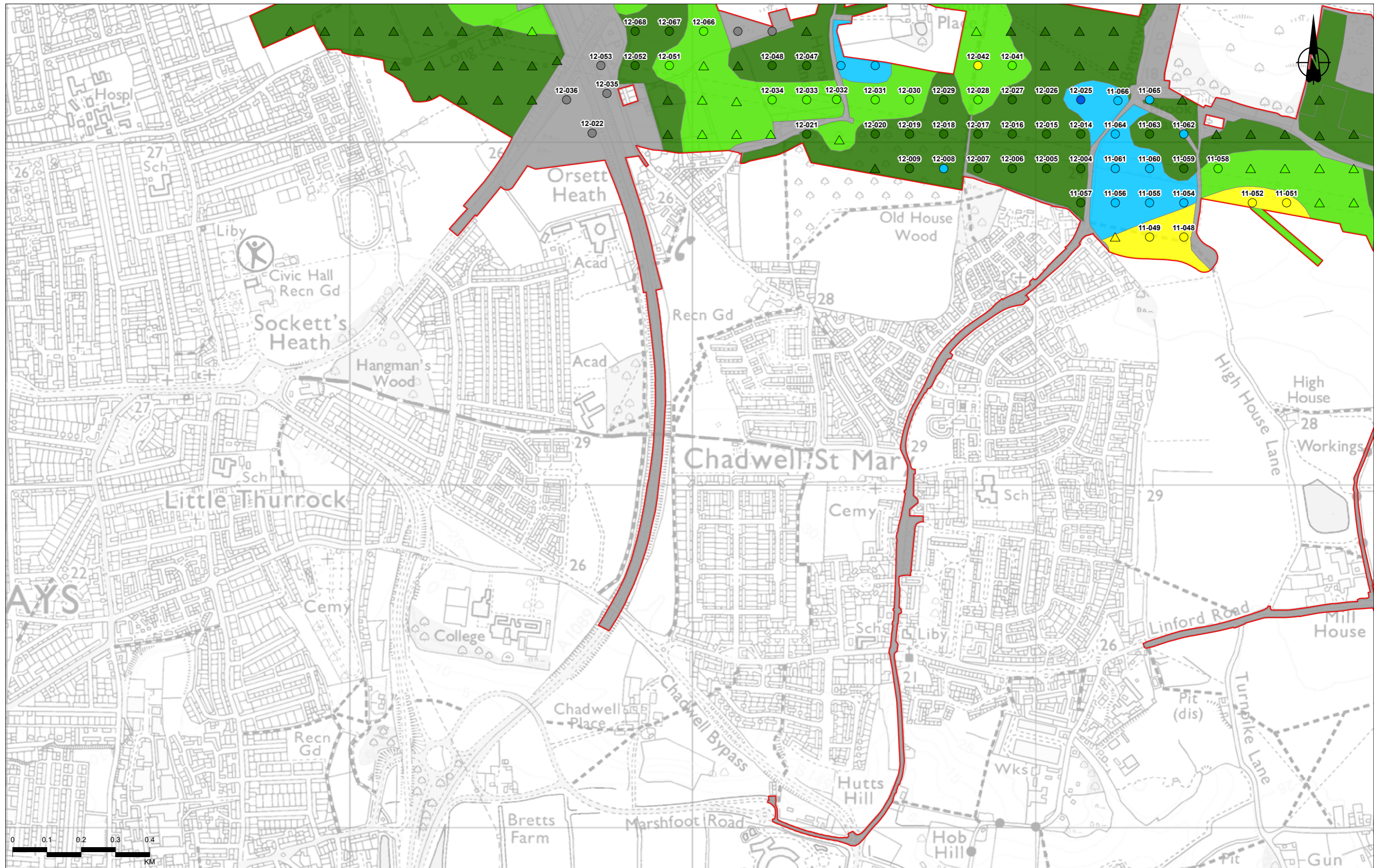


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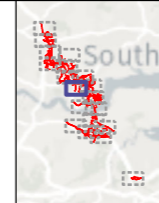
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 [Blue square symbol] Grade 1  
 [Light blue square symbol] Grade 2  
 [Green square symbol] Grade 3a  
 [Yellow square symbol] Grade 3b  
 [Light green square symbol] Grade 4  
 [Grey square symbol] Non-agricultural

**Surveyed ALC Grade**  
 [Blue circle symbol] Grade 1  
 [Light blue circle symbol] Grade 2  
 [Green circle symbol] Grade 3a  
 [Light green circle symbol] Grade 3b  
 [Yellow circle symbol] Grade 4  
 [Grey circle symbol] Non-agricultural

**Predicted ALC Grade**  
 [Green triangle symbol] Grade 3a  
 [Light green triangle symbol] Grade 3b  
 [Yellow triangle symbol] Grade 4

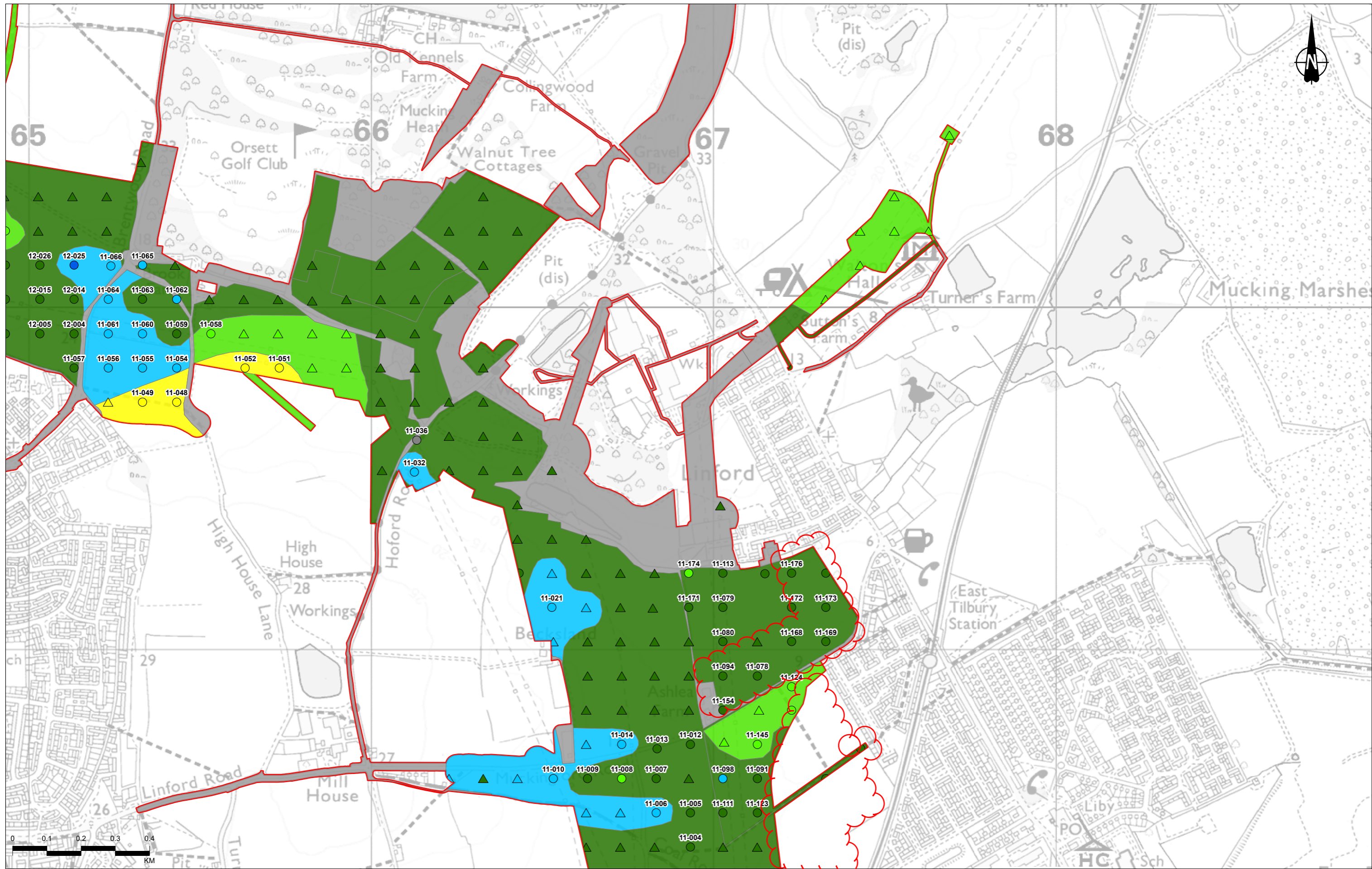


Client: **national highways**

Project: **LOWER THAMES CROSSING**

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification				
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P03	S9	22/11/2023	Deadline 9	SW	TA	BF
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Appr'd

Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

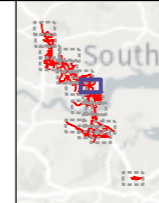
**Legend**

**Order Limits**  
 - Red outline

**Agricultural Land Classification**  
 - Grade 1: Dark blue circle  
 - Grade 2: Light blue circle  
 - Grade 3a: Green circle  
 - Grade 3b: Light green circle  
 - Grade 4: Yellow circle  
 - Non-agricultural: Grey circle

**Surveyed ALC Grade**  
 - Grade 1: Blue circle  
 - Grade 2: Light blue circle  
 - Grade 3a: Green circle  
 - Grade 3b: Light green circle  
 - Grade 4: Yellow circle  
 - Non-agricultural: Grey circle

**Predicted ALC Grade**  
 - Grade 2: Blue triangle  
 - Grade 3a: Green triangle  
 - Grade 3b: Light green triangle  
 - Grade 4: Yellow triangle

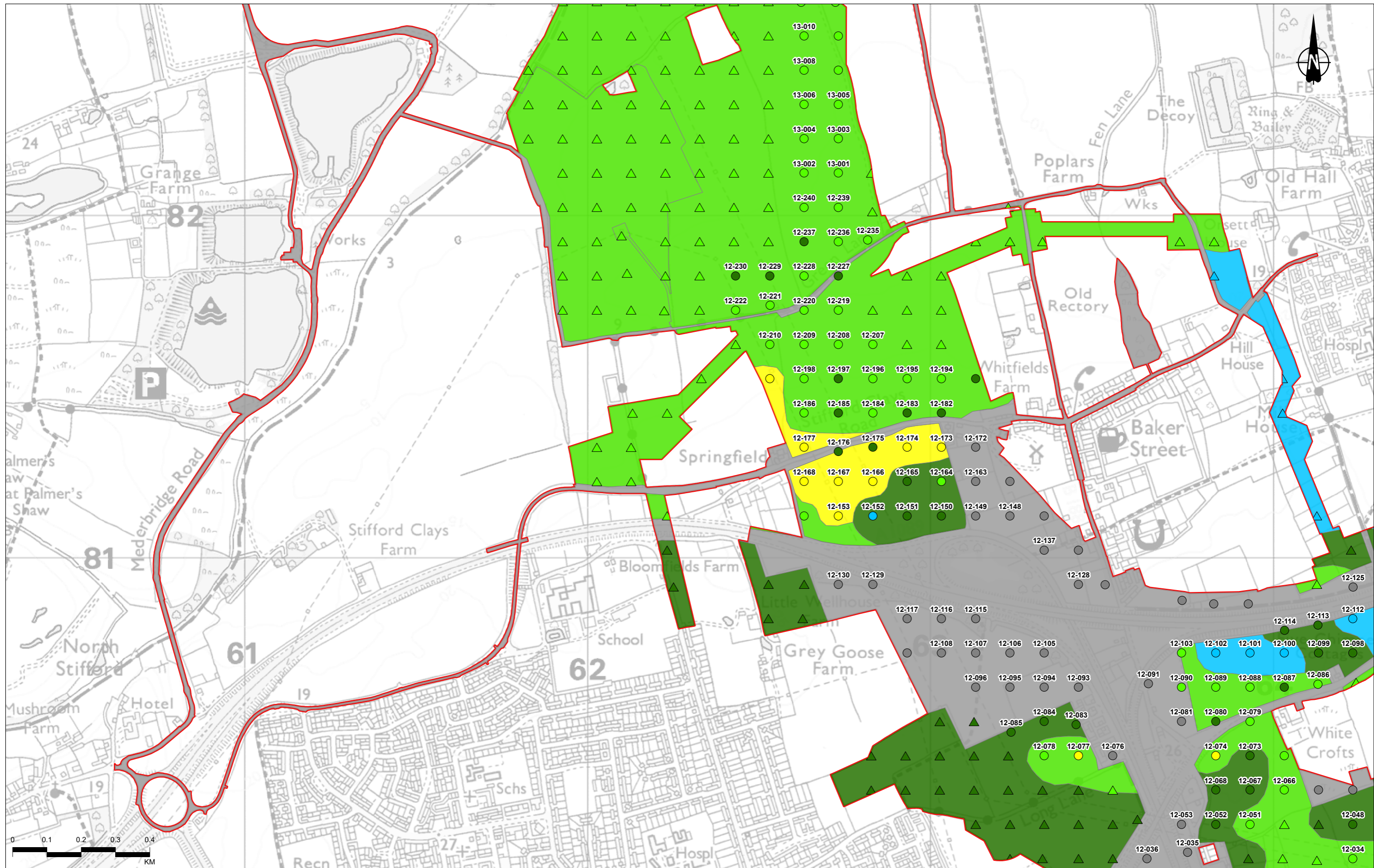


Client: national highways

Project: LOWER THAMES CROSSING

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
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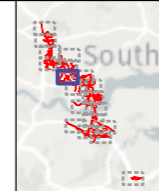
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P02	S8	30/09/2022	DCO Application	SW	TA	BF
P03	S9	22/11/2023	Deadline 9	SW	TA	BF
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

Notes:

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- For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

Legend		Surveyed ALC Grade		Predicted ALC Grade	
	Order Limits		Grade 3b		Grade 2
	Agricultural Land Classification		Grade 4		Grade 3a
	Grade 1		Non-agricultural		Grade 3b
	Grade 2		Grade 3a		Grade 4
	Grade 3a		Non-agricultural		Grade 3b

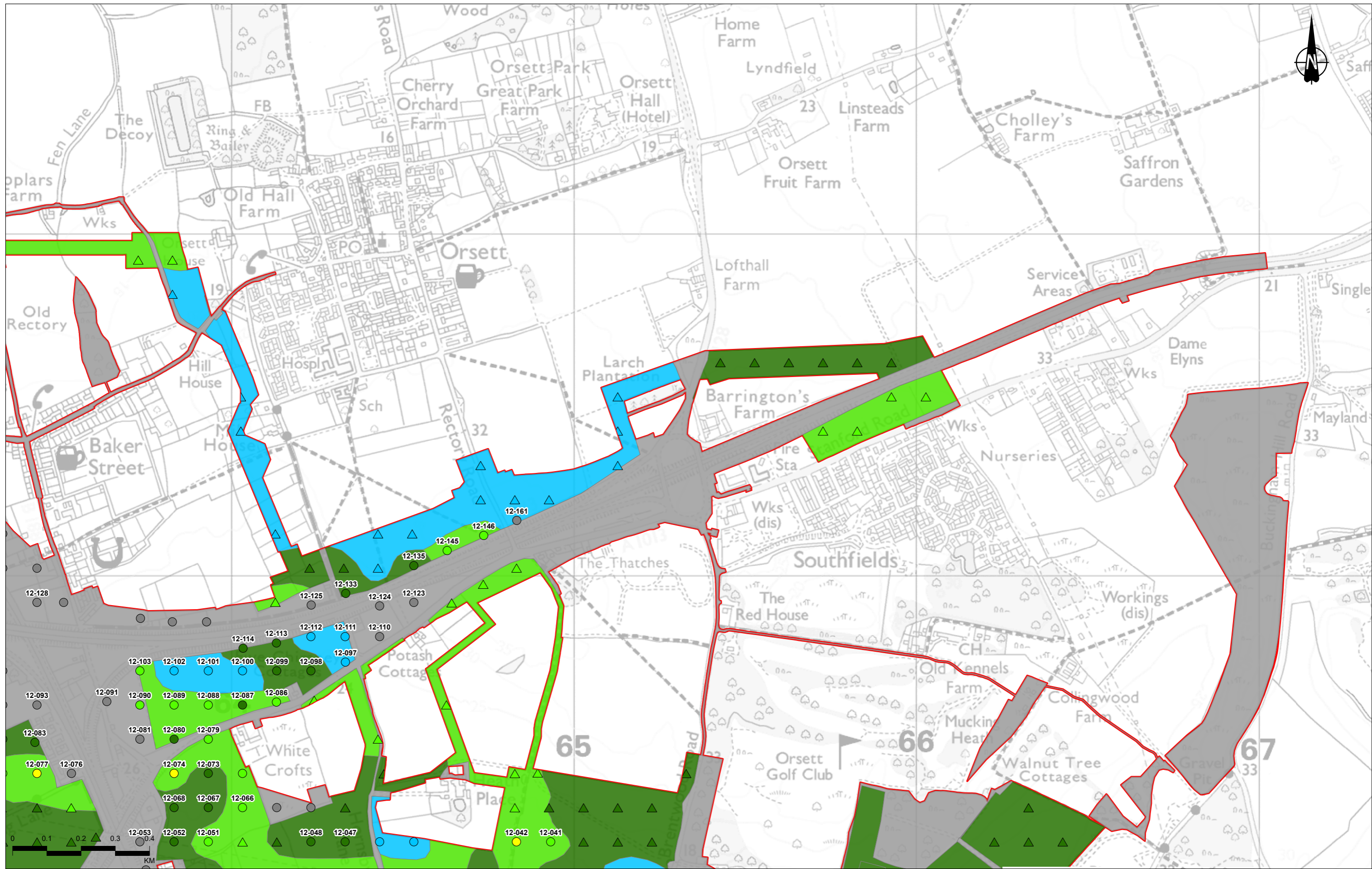


Client: national highways

Project: LOWER THAMES CROSSING

Status	PINS SUBMISSION		Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3		Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification					
Drawing Number	HE540039-CJV-EGT-SZP_EGNE0000000-DR-LE-50153					





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Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

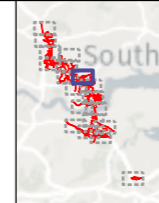
**Legend**

**Order Limits**  
 [Red outline] Order Limits

**Agricultural Land Classification**  
 [Blue] Grade 1  
 [Light Blue] Grade 2  
 [Green] Grade 3a  
 [Light Green] Grade 3b  
 [Yellow] Grade 4  
 [Grey] Non-agricultural

**Surveyed ALC Grade**  
 [Blue circle] Grade 2  
 [Green circle] Grade 3a  
 [Light Green circle] Grade 3b  
 [Yellow circle] Grade 4  
 [Grey circle] Non-agricultural

**Predicted ALC Grade**  
 [Blue triangle] Grade 2  
 [Green triangle] Grade 3a  
 [Light Green triangle] Grade 3b

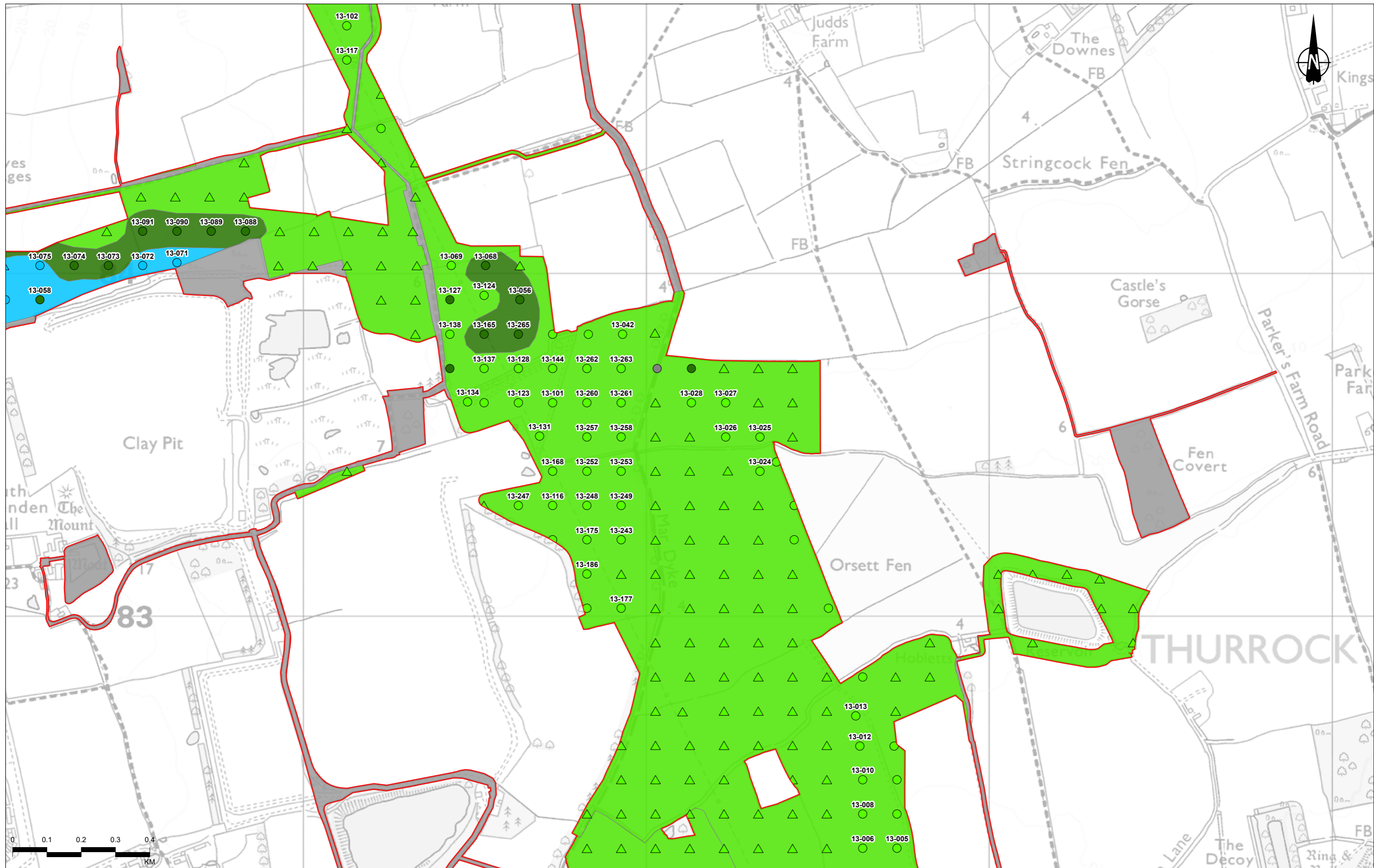


Client: **national highways**

Project: **LOWER THAMES CROSSING**

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification				
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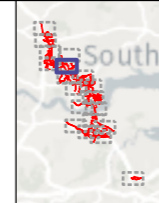
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P02	S8	30/09/2022	DCO Application	SW	TA	BF
P03	S9	22/11/2023	Deadline 9	SW	TA	BF
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

**Legend**

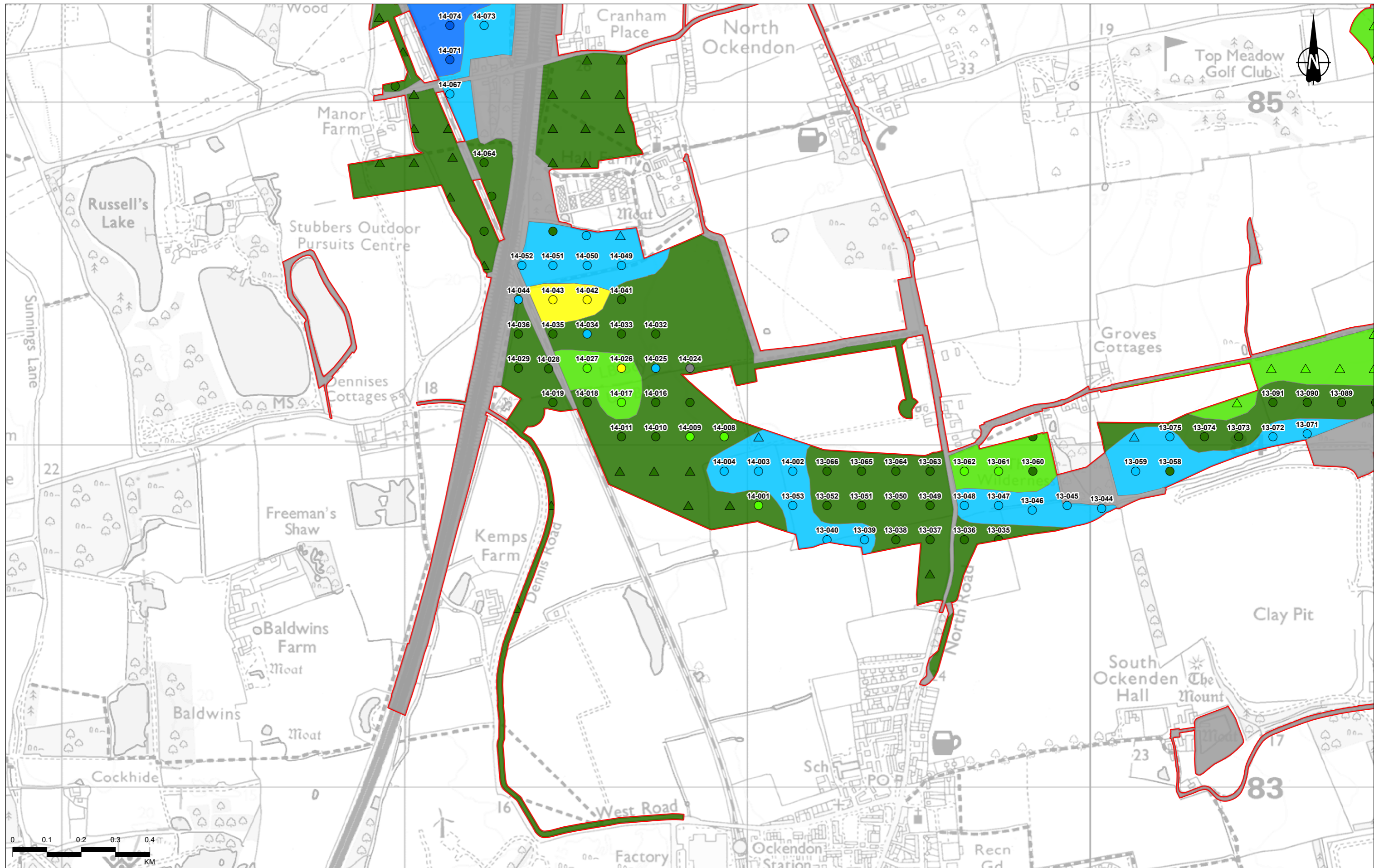
Order Limits	Non-agricultural	Predicted ALC Grade
Agricultural Land Classification	Surveyed ALC Grade	Grade 3b
Grade 1	Grade 2	
Grade 2	Grade 3a	
Grade 3a	Grade 3b	
Grade 3b	Non-agricultural	
Grade 4		



Client: national highways  
 Project: LOWER THAMES CROSSING

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
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Drawing Title	Figure 1 - Agricultural Land Classification				
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Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

Notes:

1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)
2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

**Legend**

**Order Limits**  
 Order Limits

**Agricultural Land Classification**

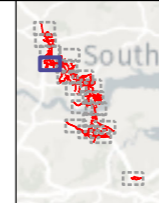
- Grade 1
- Grade 2
- Grade 3a
- Grade 3b
- Grade 4
- Non-agricultural

**Surveyed ALC Grade**

- Grade 1
- Grade 2
- Grade 3a
- Grade 3b
- Grade 4
- Non-agricultural

**Predicted ALC Grade**

- ▲ Grade 2
- ▲ Grade 3a
- ▲ Grade 3b



Client: **national highways**

Project: **LOWER THAMES CROSSING**

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
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Drawing Title	Figure 1 - Agricultural Land Classification				
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Drawing Number	HE540039-CJV-EGT-SZP_EGNE0000000-DR-LE-50153				

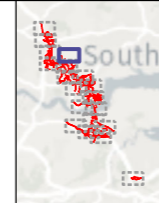


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P03	S9	22/11/2023	Deadline 9	SW	TA	BF
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

Legend		Surveyed ALC Grade	
<span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> Order Limits	<span style="background-color: #008000; display: inline-block; width: 10px; height: 10px;"></span> Grade 3a	<span style="background-color: #008000; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> Grade 3b	<span style="background-color: #008000; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> Grade 3b
<b>Agricultural Land Classification</b>	<span style="background-color: #008000; display: inline-block; width: 10px; height: 10px;"></span> Grade 3	<span style="background-color: #ffff00; display: inline-block; width: 10px; height: 10px;"></span> Grade 4	<b>Predicted ALC Grade</b>
<span style="background-color: #0000ff; display: inline-block; width: 10px; height: 10px;"></span> Grade 1	<span style="background-color: #808080; display: inline-block; width: 10px; height: 10px;"></span> Non-agricultural	<span style="background-color: #0000ff; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> Grade 2	<span style="color: green;">▲</span> Grade 3b

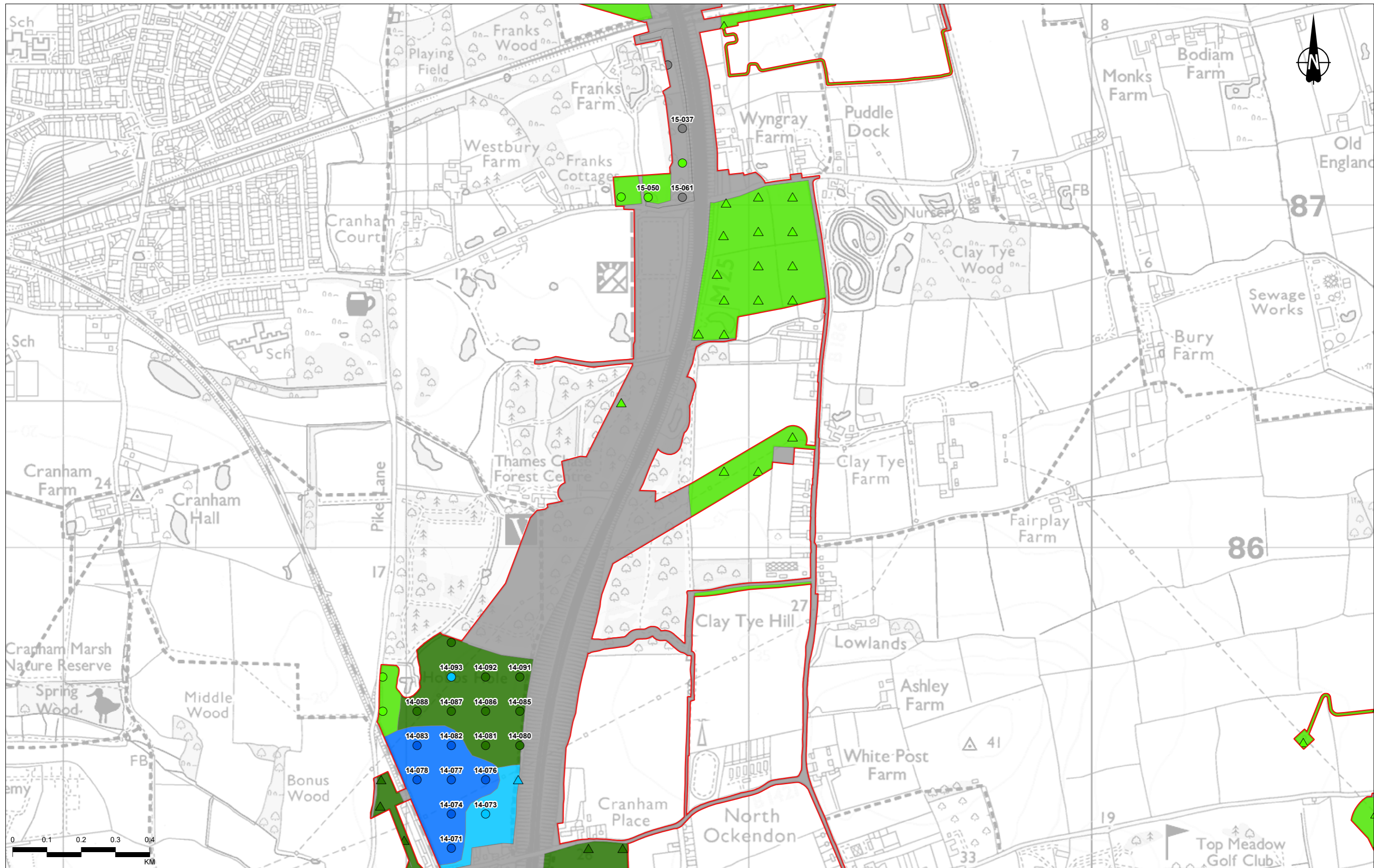


Client  
**national highways**

Project  
**LOWER THAMES CROSSING**

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification				
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Drawing Number	HE540039-CJV-EGT-SZP_EGNE0000000-DR-LE-50153				





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Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv

Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

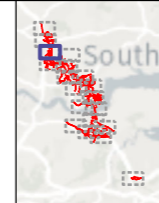
**Legend**

**Order Limits**  
 [Red outline symbol] Order Limits

**Agricultural Land Classification**  
 [Blue circle symbol] Grade 1  
 [Light blue circle symbol] Grade 2  
 [Dark green circle symbol] Grade 3a  
 [Light green circle symbol] Grade 3b  
 [Yellow circle symbol] Grade 4  
 [Grey circle symbol] Non-agricultural

**Surveyed ALC Grade**  
 [Blue circle symbol] Grade 1  
 [Light blue circle symbol] Grade 2  
 [Dark green circle symbol] Grade 3a  
 [Light green circle symbol] Grade 3b  
 [Grey circle symbol] Non-agricultural

**Predicted ALC Grade**  
 [Blue triangle symbol] Grade 2  
 [Light blue triangle symbol] Grade 3a  
 [Dark green triangle symbol] Grade 3b

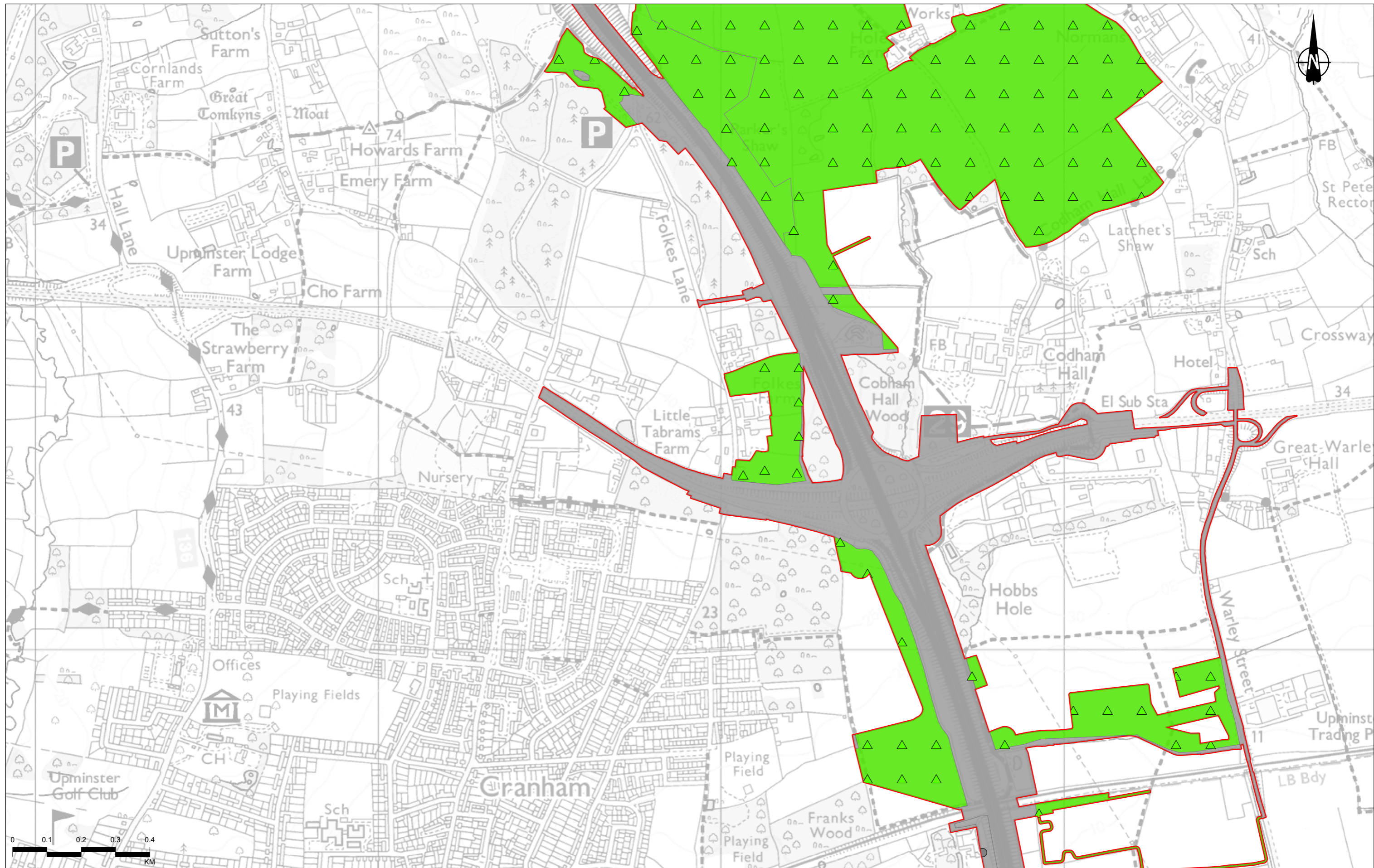


Client: national highways

Project: LOWER THAMES CROSSING

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification				
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Drawing Number	HE540039-CJV-EGT-SZP_EGNE0000000-DR-LE-50153				



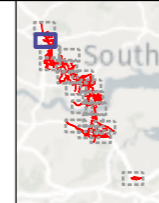


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P03	S9	22/11/2023	Deadline 9	SW	TA	BF
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

Legend		Surveyed ALC Grade	
<span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> Order Limits	<span style="background-color: #006400; display: inline-block; width: 10px; height: 10px;"></span> Grade 3a	<span style="background-color: #90EE90; display: inline-block; width: 10px; height: 10px;"></span> Grade 3b	<span style="background-color: #cccccc; display: inline-block; width: 10px; height: 10px;"></span> Non-agricultural
<span style="background-color: #00b0f0; display: inline-block; width: 10px; height: 10px;"></span> Grade 1	<span style="background-color: #ffff00; display: inline-block; width: 10px; height: 10px;"></span> Grade 4	<span style="background-color: #cccccc; display: inline-block; width: 10px; height: 10px;"></span> Non-agricultural	<span style="background-color: #cccccc; display: inline-block; width: 10px; height: 10px;"></span> Predicted ALC Grade
<span style="background-color: #00b0f0; display: inline-block; width: 10px; height: 10px;"></span> Grade 2	<span style="background-color: #cccccc; display: inline-block; width: 10px; height: 10px;"></span> Non-agricultural	<span style="color: green;">▲</span> Grade 3b	

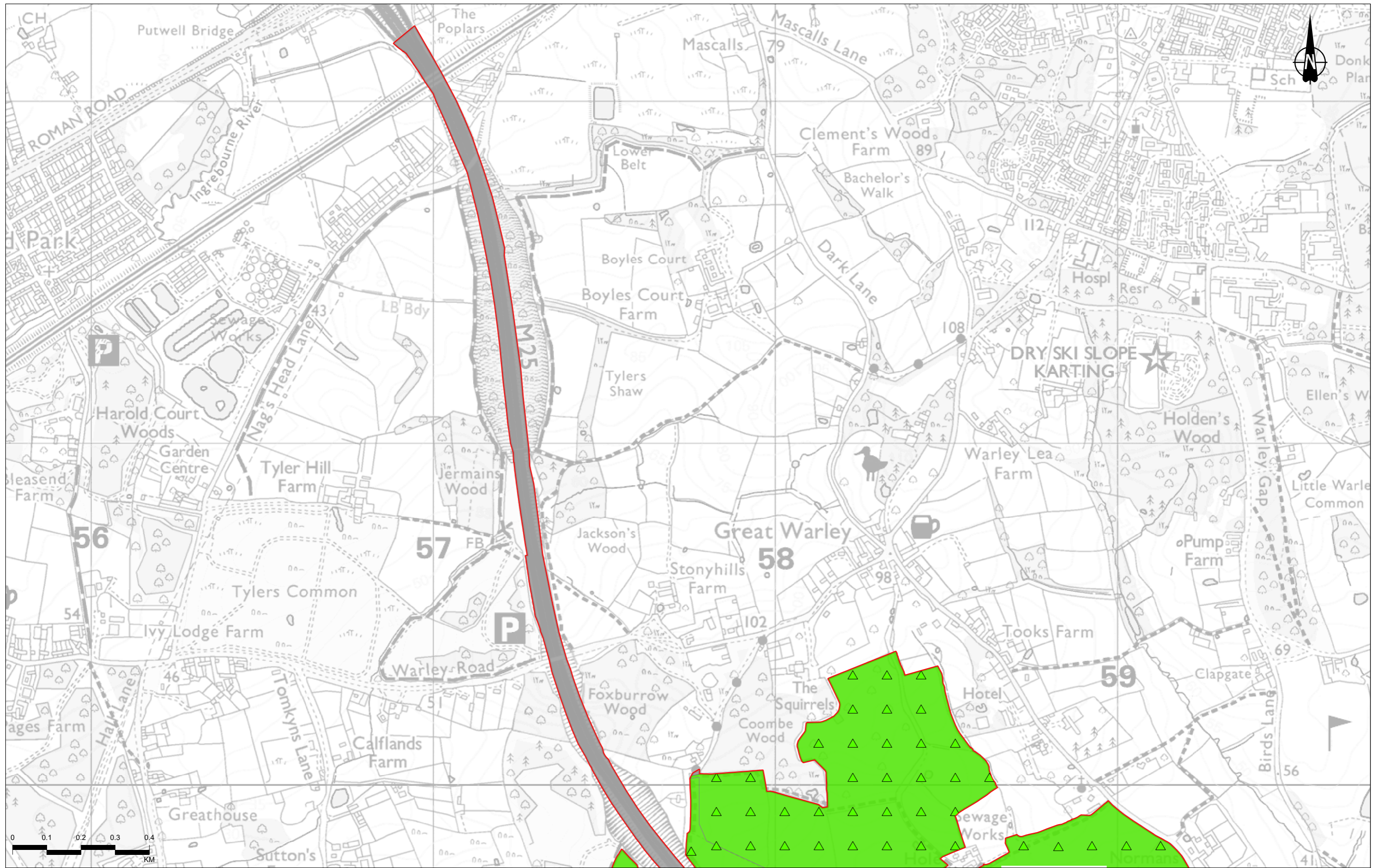


Client: national highways

Project: LOWER THAMES CROSSING

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification				
				Page 17 of 19	
Drawing Number	HE540039-CJV-EGT-SZP_EGNE0000000-DR-LE-50153				



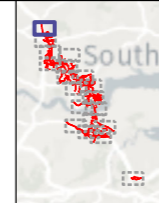


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Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

Notes:  
 1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)  
 2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

Legend		Predicted ALC Grade	
<span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span>	Order Limits	<span style="background-color: #008000; display: inline-block; width: 10px; height: 10px;"></span>	Grade 3a
<span style="background-color: #008000; display: inline-block; width: 10px; height: 10px;"></span>	Grade 1	<span style="background-color: #00ff00; display: inline-block; width: 10px; height: 10px;"></span>	Grade 3b
<span style="background-color: #0000ff; display: inline-block; width: 10px; height: 10px;"></span>	Grade 2	<span style="background-color: #ffff00; display: inline-block; width: 10px; height: 10px;"></span>	Grade 4
<span style="background-color: #cccccc; display: inline-block; width: 10px; height: 10px;"></span>	Non-agricultural	<span style="color: green;">▲</span>	Grade 3b

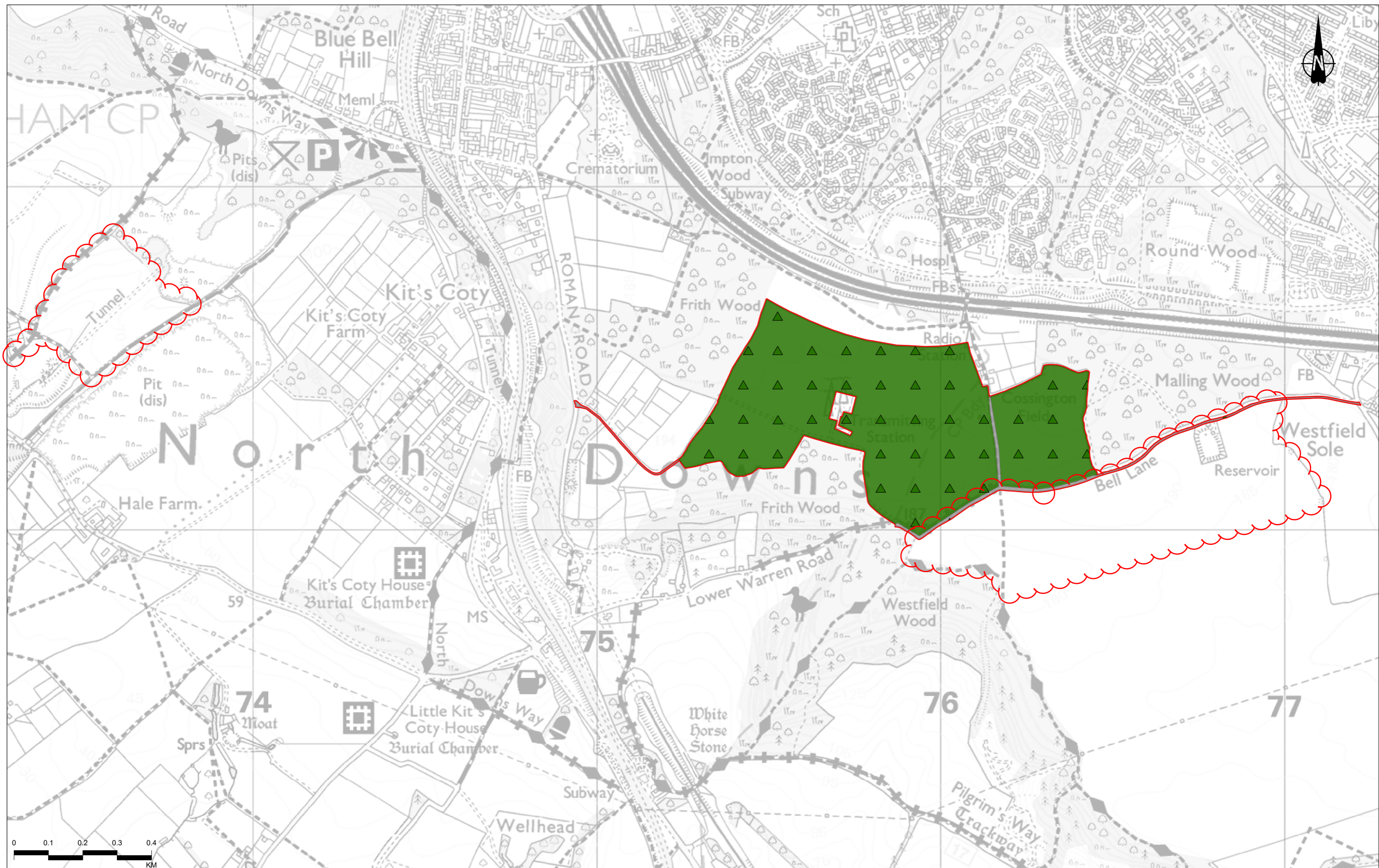


Client: **national highways**

Project: **LOWER THAMES CROSSING**

Status	PINS SUBMISSION	Original Size	A3	Revision	P03
Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification				
			Page 18 of 19		
Drawing Number	HE540039-CJV-EGT-SZP_EGNE0000000-DR-LE-50153				





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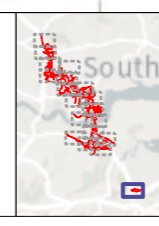
P02	S8	30/09/2022	DCO Application	SW	TA	BF
P03	S9	22/11/2023	Deadline 9	SW	TA	BF
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Notes:**

1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)
2. For predictive ALC data, please see Annex C (Application Document 6.3, Appendix 10.2)

**Legend**

Order Limits	Grade 3a	<b>Predicted ALC Grade</b>
<b>Agricultural Land Classification</b>	Grade 3b	
Grade 1	Grade 4	Grade 3a
Grade 2	Non-agricultural	



Client: national highways

Project: LOWER THAMES CROSSING

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Application Document Number	TR010032/APP/6.3	Scale	1:10,000		
Drawing Title	Figure 1 - Agricultural Land Classification				
				Page 19 of 19	
Drawing Number	HE540039-CJV-EGT-SZP_EGNE0000000-DR-LE-50153				

## Annexes



## Annex A Ordnance Survey Grid Squares



## Annex B Soil Profile Logs

Project Number	Project Name	Parcel
C629	Lower Thames Crossing ALC Survey	ALCSP1

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66837022	DA123BH	69	26

MAFF prov	MAFF detailed	Flooding
Grade 1	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
622	1423	116	111	120	1

Bedrock	Superficial deposits
Thanet Formation	None/Head

Soil association(s) 1:250,000	Detailed soil information
Fyfield 4	None

Revision Number	Date Revised
2	26/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1				Stones - type 2				Ped			SUBS STR	CaCO3	Mn C	SPI	Drought		Wet		Final ALC			Profile notes	Client Ref.								
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size	Shape	Not Applic					Moderate	Non - H	Non - cal	No	No	No	MBw			MBp	Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade
1	TQ66831	70223	566832	170223	69	s7		0	25	25	2.5Y4/2				No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	No	No	34	13	1	WC III	2	Wetness				2	Gley below 25cm, possible SPL in ZC below 40cm.	2-023													
2	TQ67131	70023	567132	170023	77	s7		0	25	25	10YR4/3				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	No	93	36	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-007														
3	TQ67031	70023	567032	170023	77	s7		0	28	28	10YR4/3				No	FSZL - Fir3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	91	35	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-008															
4	TQ67201	70035	567202	170035	80	s7		0	20	20	10YR3/2				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	66	33	1	WC I	1	Droughtiness Wetness				1		2-006															
5	TQ67331	70123	567332	170123	92	s7		0	28	28	10YR4/3				No	FSZL - Fir5	GH - Gravel with non-porous (hard) stones	Not Applic	NON - H	Non - cal	No	No	No	50	27	1	WC I	1	Gradient				3b	Subgrade 3b due to gradient/microrelief	2-009															
6	TQ67231	70122	567232	170123	80	s7		0	18	18	10YR3/2				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	67	33	1	WC I	1	Droughtiness Wetness				1		2-010															
7	TQ67131	70123	567132	170123	77	s7		0	25	25	10YR4/2				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	73	37	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-011															
8	TQ67031	70122	567032	170123	77	s7		0	25	25	10YR4/3				No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	87	37	1	WC I	1	Droughtiness Wetness				1	Gley 50-80cm. WCI, probably Grade 1	2-012															
9	TQ66931	70123	566932	170123	74	s7		0	28	28	10YR4/2				No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	60	37	1	WC II	1	Droughtiness Wetness				1	Gley and possible SPL in ZC LSS, but still probably Grade 1	2-013															
10	TQ67331	70222	567332	170223	82	s7		0	28	28	10YR4/3				No	FSZL - Fir5	GH - Gravel with non-porous (hard) stones	Not Applic	NON - H	Non - cal	No	No	No	50	27	1	WC I	1	Gradient				3b	Subgrade 3b due to gradient/microrelief	2-018															
11	TQ67231	70223	567232	170223	73	s7		0	23	23	10YR4/2				No	FSZL - Fir3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	65	31	1	WC I	1	Droughtiness Wetness				1		2-019															
12	TQ67131	70222	567132	170223	74	s7		0	25	25	10YR4/2				No	FSZL - Fir3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - H	Non - cal	No	No	No	65	31	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-020															



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam

FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable

Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V

WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP2

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019		RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67037042	DA124AA	74	23.5

MAFF prov	MAFF detailed	Flooding
Grade 1/2	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
624	1418	116	111	120	1

Bedrock	Superficial deposits
Thanet Formation	None

Soil association(s) 1:250,000	Detailed soil information
Fyfield 4	None

Revision Number	Date Revised
2	26/03/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP3

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019		RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66357034	DA125UD	76	39

MAFF prov	MAFF detailed	Flooding
Grade 1	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
623	1416	115	110	121	1

Bedrock	Superficial deposits
Thanet Formation/Lewes Nodular/Seaford/Newhav	None/Head

Soil association(s) 1:250,000	Detailed soil information
Fyfield 4	None

Revision Number	Date Revised
2	26/03/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP4

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ68037202	DA123HF	54	22.29999924

MAFF prov	MAFF detailed	Flooding
Grade 1/2	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
613	1440	119	115	117	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation	None

Soil association(s) 1:250,000	Detailed soil information
Frilsham	None

Revision Number	Date Revised
2	26/03/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP5

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67637222	DA124LG	51	28.8

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	ATO	MDw	MDp	FCD	Climate grade
610	1443	119	115	116	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation	None/Head

Soil association(s) 1:250,000	Detailed soil information
Coombe 1	None

Revision Number	Date Revised
2	26/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.									
	NGR	X	Y					Top	Btm	Thick		Munsell colour	Form	Munsell colour	Form			Munsell colour	%	>2cm	>6cm	Type	%	>2cm	>6cm	Type					Strength	Size	Shape	Not Applic	SC - Slig	No	No	No			No	No	No	No	No	No	No	No	No
1	TQ 67631 72222	567632	172223	51	≤7			0	30	30	10YR4/2				No	MZCL - Sil	10	6	3	HR - All h	5			CH - Chalk or chalk stones	Not Applic	SC - Slig	No	No	7	-1	2	WC I	1	Droughtiness	2	Agered to 80cm where IMP, assume root to 100cm in >70% chalk.	4-028												
								30	48	18	10YR4/4				No	MZCL - Silty clay loam (medium)					5			CH - Chalk or chalk stones	Moderate	MC - M	No	No																					
								48	75	27	10YR6/4				No	MZCL - Silty clay loam (medium)					25			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								75	80	5	10YR6/4				No	MZCL - Silty clay loam (medium)					50			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								80	100	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
2	TQ 67632 72322	567632	172323	39	≤7			0	30	30	10YR4/2				No	MZCL - Sil	8	5	3	HR - All h	5			CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	-36	-28	3b	WC I	1	Droughtiness	3b	Agered to 40cm where IMP, assume root to 60cm in >70% chalk.	4-035												
								30	40	10	10YR7/3				No	MZCL - Silty clay loam (medium)					70			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								40	60	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
3	TQ 67731 72023	567732	172023	59	≤7			0	35	35	10YR4/2				No	MZCL - Sil	6	4	2	HR - All hard rocks or stones (i.e. those which cannot be scratched with C - Clay	1			HR - All hard rocks or stones (i.e. those which cannot be scratched with HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	31	3	2	WC I	1	Droughtiness	2	Agered to 100cm, assume same to 120cm	4-011												
								35	80	45	10YR4/4				No	C - Clay					1			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	NON - N	No	No																					
								80	120	40	10YR4/4				No	HZCL - Sil					1			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	NON - N	No	No																					
4	TQ 67731 72122	567732	172123	51	≤7			0	30	30	10YR4/2				No	MZCL - Sil	8	4	0	HR - All hard rocks or stones (i.e. CH - Chalk or chalk stones				HR - All hard rocks or stones (i.e. CH - Chalk or chalk stones	Not Applic	VSC - V	No	No	-13	-8	3a	WC I	1	Droughtiness	3a	Agered to 60cm where IMP, assume root to 80cm in >70% chalk.	4-020												
								30	38	8	10YR4/4				No	HZCL - Sil					5			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	MC - M	No	No																					
								38	60	22	10YR5/4				No	MZCL - Silty clay loam (medium)					50			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								60	80	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
5	TQ 67731 72223	567732	172223	51	≤7			0	28	28	10YR4/2				No	MZCL - Sil	6	4	0	HR - All hard rocks or stones (i.e. CH - Chalk or chalk stones				HR - All hard rocks or stones (i.e. CH - Chalk or chalk stones	Not Applic	MC - M	No	No	13	6	2	WC I	1	Droughtiness	2	Agered to 80cm where IMP, assume root to 100cm in >70% chalk.	4-027												
								28	55	27	10YR4/4				No	MZCL - Silty clay loam (medium)					1			CH - Chalk or chalk stones	Moderate	MC - M	No	No																					
								55	75	20	10YR4/5				No	MZCL - Silty clay loam (medium)					5			CH - Chalk or chalk stones	Moderate	MC - M	No	No																					
								75	80	5	10YR6/4				No	MZCL - Silty clay loam (medium)					70			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								80	100	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
6	TQ 67731 72323	567732	172323	37	≤7			0	34	34	10YR4/2				No	MZCL - Sil	5	2	0	HR - All h	5			CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	-10	-4	3a	WC I	1	Droughtiness	3a	Agered to 60cm where IMP, assume root to 80cm in >70% chalk.	4-034												
								34	55	21	10YR6/4				No	MZCL - Silty clay loam (medium)					20			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								55	60	5	10YR6/4				No	MZCL - Silty clay loam (medium)					50			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								60	80	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
7	TQ 67831 72022	567832	172023	59	≤7			0	30	30	10YR4/2				No	MZCL - Sil	15	11	6	HR - All hard rocks or stones (i.e. those which cannot be scratched with				HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	VSC - V	No	No	-4	-9	3a	WC I	1	Droughtiness	3a	Agered to 75cm where IMP, assume root to 95cm in >70% chalk.	4-010												
								30	50	20	10YR5/4				No	MZCL - Silty clay loam (medium)					30			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								50	75	25	10YR6/4				No	MZCL - Silty clay loam (medium)					50			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								75	95	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
8	TQ 67831 72123	567832	172123	48	≤7			0	30	30	10YR4/2				No	MZCL - Sil	12	9	6	HR - All h	5			CH - Chalk or chalk stones	Not Applic	NON - N	No	No	13	-3	2	WC I	1	Droughtiness	2	Agered to 90cm where IMP, assume root to 110cm in >70% chalk.	4-019												
								30	55	25	10YR4/4				No	C - Clay					5			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	SC - Slig	No	No																					
								55	85	30	10YR5/4				No	MZCL - Silty clay loam (medium)					10			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								85	90	5	10YR6/4				No	MZCL - Silty clay loam (medium)					50			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								90	110	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
9	TQ 67831 72223	567832	172223	48	≤7			0	28	28	10YR4/3				No	MZCL - Sil	6	3	0	HR - All h	10			CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	-35	-27	3b	WC I	1	Droughtiness	3b	Agered to 40cm where IMP, assume root to 60cm in >70% chalk.	4-026												
								28	38	10	10YR6/4				No	MZCL - Silty clay loam (medium)					40			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								38	40	2	10YR6/3				No	MZCL - Silty clay loam (medium)					60			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								40	60	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
10	TQ 67831 72322	567832	172323	38	≤7			0	30	30	10YR4/2				No	MZCL - Sil	5	2	0	HR - All h	10			CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	-28	-18	3b	WC I	1	Droughtiness	3b	Agered to 45cm where IMP, assume root to 65cm in >70% chalk.	4-033												
								30	40	10	10YR6/3				No	MZCL - Silty clay loam (medium)					20			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								40	45	5	10YR6/4				No	MZCL - Silty clay loam (medium)					50			CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					
								45	65	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75																												





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A



Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP6

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67437252	DA124TB	45	19.39999962

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
605	1450	120	116	115	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation	None/Head

Soil association(s) 1:250,000	Detailed soil information
Coombe 1	None

Revision Number	Date Revised
2	26/03/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP7

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019		RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67937272	DA124TB	30	12.10000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
597	1467	122	119	113	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation/Thanet Formation	None/Taplow Gravel/Lynch Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Coombe 1	None

Revision Number	Date Revised
2	26/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.									
	NGR	X	Y					Top	Btm	Thick		Munsell colour	Form	Munsell colour	Form			Munsell colour	%	>2cm	>6cm	Type	%	>2cm	>6cm	Type					Strength	Size	Shape	Not Applic	MC - M	No	No	No			MBw	MBp	Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade
1	TQ 67931 72722	567932	172723	30	≤7		CER	0	40	40	10YR5/3				Yes	MZCL - Si	1	0	0	HR - All H	1	0	0	CH - Chalk or chalk stones	Not Applic	MC - M	No	No	No	-19	-10	3a	WC I	1	Droughtiness		3b		3-061										
2	TQ 67931 72823	567932	172823	14	≤7		CER	0	38	38	10YR4/2				Yes	MZCL - Si	1	0	0	HR - All H	No	1	0	0	CH - Chalk or chalk stones	Not Applic	SC - Sli	No	No	No	-19	-10	3a	WC I	1	Droughtiness	3a	Difficult to auger 55cm+ chalky rubble	6-023										
3	TQ 67931 72923	567932	172923	14	≤7		CER	0	38	38	10YR4/2				No	MZCL - Si	1	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	SC - Sli	No	No	No	No	24	6	2	WC II	2	Droughtiness	Wetness	2	Red soil at 70cm fig 8 used ALC guidelines	6-029													
4	TQ 67931 73022	567932	173023	6	≤7		CER	0	38	38	10YR4/2				Yes	MZCL - Si	1	0	0	HR - All H	5	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	9	1	2	WC I	1	Droughtiness	2	At 80cm chalk present impenetrable to auger	6-035												
5	TQ 67931 73123	567932	173123	6	≤7		CER	0	38	38	10YR4/3				No	MZCL - Si	1	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	No	25	19	2	WC II	2	Droughtiness	Wetness	2	SPI assumed in red soil; ALC guidelines fig 8	6-041														
6	TQ 68131 72623	568132	172623	20	≤7		OTH	0	35	35	10YR4/3				No	MZCL - Si	1	0	0	HR - All H	2	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	13	1	2	WC I	1	Droughtiness	2	scrub area	6-006												
7	TQ 68131 72723	568132	172723	20	≤7		CER	0	35	35	10YR4/2				Yes	MZCL - Si	1	0	0	HR - All H	2	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	-15	1	3a	WC I	1	Droughtiness	3a		6-016												
8	TQ 68031 72723	568032	172723	24	≤7		CER	0	35	35	10YR4/2				Yes	MZCL - Si	1	0	0	HR - All H	5	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	2	1	3a	WC I	1	Droughtiness	3a	Difficult to auger 70cm + chalky stones present	6-017												
9	TQ 68131 72822	568132	172823	13	≤7		CER	0	38	38	7.5YR4/2				Yes	MSZL - M	1	0	0	HR - All H	2	0	0	CH - Chalk or chalk stones	Not Applic	MC - M	No	No	33	15	1	WC I	1	Droughtiness	Wetness	1	Difficult to auger 80cm -chalk	6-021											
10	TQ 68031 72823	568032	172823	15	≤7		CER	0	35	35	10YR4/2				No	MZCL - Si	5	2	0	HR - All H	1			CH - Chalk or chalk stones	Not Applic	MC - M	No	No	-14	-5	3a	WC I	1	Droughtiness	3a	Augered to 55cm where IMP chalk, assume roots to 75cm in >70% chalk then stop rooting.	6-022												
11	TQ 68031 72922	568032	172923	15	≤7		CER	0	30	30	10YR4/3				No	SCL - San	8	5	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	No	14	-17	3a	WC I	1	Droughtiness	3a	Augered to 100cm, assume continues same to 120cm.	6-028															
12	TQ 68031 73023	568032	173023	5	≤7		CER	0	30	30	10YR4/3				No	SCL - San	8	5	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	No	20	-13	3a	WC I	1	Droughtiness	3a	Augered to 100cm, assume continues same to 120cm	6-034															





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
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 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing ALC Survey	ALCSP1

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66837022	DA123BH	69	26

MAFF prov	MAFF detailed	Flooding
Grade 1	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
622	1423	116	111	120	1

Bedrock	Superficial deposits
Thanet Formation	None/Head

Soil association(s) 1:250,000	Detailed soil information
Fyfield 4	None

Revision Number	Date Revised
2	26/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1				Stones - type 2				Ped			SUBS STR	CaCO3	Mn C	SPI	Drought		Wet		Final ALC			Profile notes	Client Ref.								
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size	Shape	Not Applic					Moderate	Non - H	Non - cal	No	No	No	MBw			MBp	Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade
1	TQ66831	70223	566832	170223	69	s7		0	25	25	2.5Y4/2				No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	No	No	34	13	1	WC III	2	Wetness				2	Gley below 25cm, possible SPL in ZC below 40cm.	2-023													
2	TQ67131	70023	567132	170023	77	s7		0	25	25	10YR4/3				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	No	93	36	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-007														
3	TQ67031	70023	567032	170023	77	s7		0	28	28	10YR4/3				No	FSZL - Fir3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	No	91	35	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-008														
4	TQ67201	70035	567202	170035	80	s7		0	20	20	10YR3/2				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	66	33	1	WC I	1	Droughtiness Wetness				1		2-006															
5	TQ67331	70123	567332	170123	92	s7		0	28	28	10YR4/3				No	FSZL - Fir5	GH - Gravel with non-porous (hard) stones	Moderate	NON - H	Non - cal	No	No	No	50	27	1	WC I	1	Gradient				3b	Subgrade 3b due to gradient/microrelief	2-009															
6	TQ67231	70122	567232	170123	80	s7		0	18	18	10YR3/2				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	67	33	1	WC I	1	Droughtiness Wetness				1		2-010															
7	TQ67131	70123	567132	170123	77	s7		0	25	25	10YR4/2				No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	73	37	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-011															
8	TQ67031	70122	567032	170123	77	s7		0	25	25	10YR4/3				No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	87	37	1	WC I	1	Droughtiness Wetness				1	Gley 50-80cm. WCI, probably Grade 1	2-012															
9	TQ66931	70123	566932	170123	74	s7		0	28	28	10YR4/2				No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	60	37	1	WC II	1	Droughtiness Wetness				1	Gley and possible SPL in ZC LSS, but still probably Grade 1	2-013															
10	TQ67331	70222	567332	170223	82	s7		0	28	28	10YR4/3				No	FSZL - Fir5	GH - Gravel with non-porous (hard) stones	Moderate	NON - H	Non - cal	No	No	No	50	27	1	WC I	1	Gradient				3b	Subgrade 3b due to gradient/microrelief	2-018															
11	TQ67231	70223	567232	170223	73	s7		0	23	23	10YR4/2				No	FSZL - Fir3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	65	31	1	WC I	1	Droughtiness Wetness				1		2-019															
12	TQ67131	70222	567132	170223	74	s7		0	25	25	10YR4/2				No	FSZL - Fir3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - H	Non - cal	No	No	No	65	31	1	WC I	1	Droughtiness Wetness				1	Probably Grade 1	2-020															



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.						
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	NON	Non-cal	No	MBw	MBp	Gd			WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade
																		No	MZCL - S	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	77	19					1	WC I	1	Droughtiness	Wetness	1	Probably Grade 1	2-021								
13	TQ67031	70223	567032	170223	74	s7		0	25	25	10YR4/2			No	MZCL - S2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	No	77	19	1	WC I	1	Droughtiness	Wetness	1	Probably Grade 1	2-021															
							25	50	25	10YR5/4			No	MZCL - S1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
							50	120	70	10YR5/4			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
14	TQ66931	70222	566932	170223	72	s7		0	30	30	10YR4/2			No	MZCL - S3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	75	18	1	WC I	1	Droughtiness	Wetness	1	Gley in SS, but no SPL	2-022																
							30	55	25	2.5Y5/3	FP - Fe10YR5/8			Yes	MZCL - S1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																										
							55	120	65	2.5Y6/3	CP - Cr7.5YR5/8			Yes	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																										
15	TQ67331	70323	567332	170323	82	s7		0	30	30	10YR4/3			No	FSZL - Fir5	GH - Gravel with non-porous (hard) stones	Not Applic	NON - N	No	No	50	26	1	WC I	1	Droughtiness	Wetness	1		2-027																
							30	40	10	10YR4/4			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
							40	60	20	10YR4/4			No	FSL - Fine1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
							60	100	40	10YR4/4			No	FSL - Fine1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
16	TQ67231	70322	567232	170323	73	s7		0	25	25	10YR4/2			No	FSZL - Fir10	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	58	24	1	WC I	1	Droughtiness	Wetness	1	Probably Grade 1	2-028																	
							25	80	55	10YR5/4			No	FSZL - Fir10	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
							80	120	40	10YR5/4			No	MZCL - S10	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
17	TQ67131	70323	567132	170323	74	s7		0	28	28	10YR4/2			No	FSZL - Fir3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	94	36	1	WC I	1	Droughtiness	Wetness	1	Probably Grade 1	2-029																	
							28	120	92	10YR5/4			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
18	TQ67031	70322	567032	170323	74	s7		0	25	25	10YR4/2			No	MZCL - S4	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	SC - Sli	No	76	20	1	WC I	1	Droughtiness	Wetness	1	Probably Grade 1	2-030																	
							25	45	20	10YR4/3			No	MZCL - S2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	SC - Sli	No	No																											
							45	120	75	10YR4/4			No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	SC - Sli	No	No																											
19	TQ66931	70323	566932	170323	72	s7		0	25	25	10YR4/2			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	77	37	1	WC I	1	Droughtiness	Wetness	1	Probably Grade 1	2-031																	
							25	35	10	10YR4/3			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	SC - Sli	No	No																											
							35	85	50	10YR5/4			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	SC - Sli	No	No																											
							85	120	35	10YR5/3			No	MZCL - S1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
20	TQ67331	70422	567332	170423	82	s7		0	25	25	10YR4/2			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	77	37	1	WC I	1	Droughtiness	Wetness	1		2-038																	
							25	35	10	10YR4/3			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	SC - Sli	No	No																											
							35	85	50	10YR5/4			No	FSZL - Fir1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	SC - Sli	No	No																											
							85	120	35	10YR5/3			No	MZCL - S1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
21	TQ67231	70423	567232	170423	73	s7		0	25	25	10YR4/2			No	FSZL - Fir2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	95	37	1	WC I	1	Droughtiness		1	Auger to 100cm. Probably grade 1	2-039																	
							25	120	95	10YR5/4			No	FSZL - Fir0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																											
END																																														

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam

FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable

Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V

WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP2

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019		RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67037042	DA124AA	74	23.5

MAFF prov	MAFF detailed	Flooding
Grade 1/2	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
624	1418	116	111	120	1

Bedrock	Superficial deposits
Thanet Formation	None

Soil association(s) 1:250,000	Detailed soil information
Fyfield 4	None

Revision Number	Date Revised
2	26/03/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP3

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019		RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66357034	DA125UD	76	39

MAFF prov	MAFF detailed	Flooding
Grade 1	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
623	1416	115	110	121	1

Bedrock	Superficial deposits
Thanet Formation/Lewes Nodular/Seaford/Newhav	None/Head

Soil association(s) 1:250,000	Detailed soil information
Fyfield 4	None

Revision Number	Date Revised
2	26/03/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A



Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP4

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ68037202	DA123HF	54	22.29999924

MAFF prov	MAFF detailed	Flooding
Grade 1/2	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
613	1440	119	115	117	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation	None

Soil association(s) 1:250,000	Detailed soil information
Frilsham	None

Revision Number	Date Revised
2	26/03/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
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 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
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 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
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 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP5

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67637222	DA124LG	51	28.8

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	ATO	MDw	MDp	FCD	Climate grade
610	1443	119	115	116	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation	None/Head

Soil association(s) 1:250,000	Detailed soil information
Coombe 1	None

Revision Number	Date Revised
2	26/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.								
	NGR	X	Y					Top	Btm	Thick		Munsell colour	Form	Munsell colour	Form			Munsell colour	% >2cm	% >6cm	Type	% >2cm	% >6cm	Type	Strength	Size					Shape	Not Applic	SC - Slig	No	No	No	No	No			No	No	No	No	No	No	No	No
1	TQ 67631 72222	567632	172223	51	≤7			0	30	30	10YR4/2				No	MZCL - Sil	10	6	3	HR - All H	5	5	CH - Chalk or chalk stones	Not Applic	SC - Slig	No	No	No	No	No	No	No	No	No	No	No	No	2	Agered to 80cm where IMP, assume root to 100cm in >70% chalk.	4-028								
								30	48	18	10YR4/4				No	MZCL - Silty clay loam (medium)					5	5	CH - Chalk or chalk stones	Moderate	VC - M	No	No	No	No	No	No	No	No	No	No	No	No	No										
								48	75	27	10YR6/4				No	MZCL - Silty clay loam (medium)					25	25	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								75	80	5	10YR6/4				No	MZCL - Silty clay loam (medium)					50	50	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								80	100	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
2	TQ 67632 72322	567632	172323	39	≤7			0	30	30	10YR4/2				No	MZCL - Sil	8	5	3	HR - All H	5	5	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No	3b	Agered to 40cm where IMP, assume root to 60cm in >70% chalk.	4-035							
								30	40	10	10YR7/3				No	MZCL - Silty clay loam (medium)					70	70	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								40	60	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
3	TQ 67731 72023	567732	172023	59	≤7			0	35	35	10YR4/2				No	MZCL - Sil	6	4	2	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2	Agered to 100cm, assume same to 120cm	4-011							
								35	80	45	10YR4/4				No	C - Clay	1			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	NON - N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No										
								80	120	40	10YR4/4				No	HZCL - Sil	1			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	NON - N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No										
4	TQ 67731 72122	567732	172123	51	≤7			0	30	30	10YR4/2				No	MZCL - Sil	8	4	0	HR - All hard rocks or stones (i.e. CH - Chalk or chalk stones	Not Applic	VSC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3a	Agered to 60cm where IMP, assume root to 80cm in >70% chalk.	4-020							
								30	38	8	10YR4/4				No	HZCL - Sil	5			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	VC - M	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No										
								38	60	22	10YR5/4				No	MZCL - Silty clay loam (medium)					50	50	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								60	80	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
5	TQ 67731 72223	567732	172223	51	≤7			0	28	28	10YR4/2				No	MZCL - Sil	6	4	0	HR - All hard rocks or stones (i.e. CH - Chalk or chalk stones	Not Applic	MC - M	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2	Agered to 80cm where IMP, assume root to 100cm in >70% chalk.	4-027								
								28	55	27	10YR4/4				No	MZCL - Silty clay loam (medium)					1	1	CH - Chalk or chalk stones	Moderate	MC - M	No	No	No	No	No	No	No	No	No	No	No	No	No										
								55	75	20	10YR4/5				No	MZCL - Silty clay loam (medium)					5	5	CH - Chalk or chalk stones	Moderate	MC - M	No	No	No	No	No	No	No	No	No	No	No	No	No										
								75	80	5	10YR6/4				No	MZCL - Silty clay loam (medium)					70	70	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								80	100	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
6	TQ 67731 72323	567732	172323	37	≤7			0	34	34	10YR4/2				No	MZCL - Sil	5	2	0	HR - All H	5	5	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No	3a	Agered to 60cm where IMP, assume root to 80cm in >70% chalk.	4-034							
								34	55	21	10YR6/4				No	MZCL - Silty clay loam (medium)					20	20	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								55	60	5	10YR6/4				No	MZCL - Silty clay loam (medium)					50	50	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No											
								60	80	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
7	TQ 67831 72022	567832	172023	59	≤7			0	30	30	10YR4/2				No	MZCL - Sil	15	11	6	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	VSC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3a	Agered to 75cm where IMP, assume root to 95cm in >70% chalk.	4-010							
								30	50	20	10YR5/4				No	MZCL - Silty clay loam (medium)					30	30	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								50	75	25	10YR6/4				No	MZCL - Silty clay loam (medium)					50	50	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								75	95	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
8	TQ 67831 72123	567832	172123	48	≤7			0	30	30	10YR4/2				No	MZCL - Sil	12	9	6	HR - All H	5	5	CH - Chalk or chalk stones	Not Applic	NON - N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2	Agered to 90cm where IMP, assume root to 110cm in >70% chalk.	4-019						
								30	55	25	10YR4/4				No	C - Clay	5			HR - All hard rocks or stones (i.e. those which cannot be scratched with	Moderate	SC - Slig	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No										
								55	85	30	10YR5/4				No	MZCL - Silty clay loam (medium)					10	10	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								85	90	5	10YR6/4				No	MZCL - Silty clay loam (medium)					50	50	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								90	110	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
9	TQ 67831 72223	567832	172223	48	≤7			0	28	28	10YR4/3				No	MZCL - Sil	6	3	0	HR - All H	10	10	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3b	Agered to 40cm where IMP, assume root to 60cm in >70% chalk.	4-026						
								28	38	10	10YR6/4				No	MZCL - Silty clay loam (medium)					40	40	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								38	40	2	10YR6/3				No	MZCL - Silty clay loam (medium)					60	60	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
								40	60	20	10YR8/1				No	MZCL - Silty clay loam (medium)					75	75	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No										
10	TQ 67831 72322	567832	172323	38	≤7			0	30	30	10YR4/2				No	MZCL - Sil	5	2	0	HR - All H	10	10	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3b	Agered to 45cm where IMP, assume root to 65cm in >70% chalk.	4-033						
								30	40	10	10YR6/3				No	MZCL - Silty clay loam (medium)					20	20	CH - Chalk or chalk stones	Moderate	VC - Vel	No	No																					





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP6

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67437252	DA124TB	45	19.39999962

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
605	1450	120	116	115	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation	None/Head

Soil association(s) 1:250,000	Detailed soil information
Coombe 1	None

Revision Number	Date Revised
2	26/03/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	Lower Thames Crossing	ALCSP7

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019		RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67937272	DA124TB	30	12.10000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
597	1467	122	119	113	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation/Thanet Formation	None/Taplow Gravel/Lynch Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Coombe 1	None

Revision Number	Date Revised
2	26/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.						
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			>2cm	>6cm	Type	%	>2cm	>6cm	Type	Strength	Size					Shape	Not Applic	MC - M	No	No	MBw	MBp	Gd			WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade
1	TQ 67931	72722	567932	172723	30	≤7	CER	0	40	40	10YR5/3							1	0	0	HR - All H	1	0	0	CH - Chalk or chalk stones	Not Applic	MC - M	No	No	No	-31	-26	3b	WC I	1	Droughtiness				3b							
2	TQ 67931	72823	567932	172823	14	≤7	CER	0	38	38	10YR4/2							1	0	0	HR - All H	No	1	0	0	CH - Chalk or chalk stones	Not Applic	SC - Sli	No	No	No	-19	-10	3a	WC I	1	Droughtiness	3a	Difficult to auger 55cm+ chalky rubble	6-023							
3	TQ 67931	72923	567932	172923	14	≤7	CER	0	38	38	10YR4/2							1	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	SC - Sli	No	No	No	24	6	2	WC II	2	Droughtiness	Wetness	2	Red soil at 70cm fig 8 used ALC guidelines	6-029											
4	TQ 67931	73022	567932	173023	6	≤7	CER	0	38	38	10YR4/2							1	0	0	HR - All H	5	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	9	1	2	WC I	1	Droughtiness	2	At 80cm chalk present impenetrable to auger	6-035								
5	TQ 67931	73123	567932	173123	6	≤7	CER	0	38	38	10YR4/3							1	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	No	25	19	2	WC II	2	Droughtiness	Wetness	2	SPI assumed in red soil; ALC guidelines fig 8	6-041											
6	TQ 68131	72623	568132	172623	20	≤7	OTH	0	35	35	10YR4/3							1	0	0	HR - All H	2	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	13	1	2	WC I	1	Droughtiness	2	scrub area	6-006								
7	TQ 68131	72723	568132	172723	20	≤7	CER	0	35	35	10YR4/2							1	0	0	HR - All H	2	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	-15	1	3a	WC I	1	Droughtiness	3a		6-016								
8	TQ 68031	72723	568032	172723	24	≤7	CER	0	35	35	10YR4/2							1	0	0	HR - All H	5	0	0	CH - Chalk or chalk stones	Not Applic	VC - Vel	No	No	No	2	1	3a	WC I	1	Droughtiness	3a	Difficult to auger 70cm + chalky stones present	6-017								
9	TQ 68131	72822	568132	172823	13	≤7	CER	0	38	38	7.5YR4/2							1	0	0	HR - All H	2	0	0	CH - Chalk or chalk stones	Not Applic	MC - M	No	No	No	33	15	1	WC I	1	Droughtiness	Wetness	1	Difficult to auger 80cm -chalk	6-021							
10	TQ 68031	72823	568032	172823	15	≤7	CER	0	35	35	10YR4/2							5	2	0	HR - All H	1			CH - Chalk or chalk stones	Not Applic	MC - M	No	No	No	-14	-5	3a	WC I	1	Droughtiness	3a	Augered to 55cm where IMP chalk, assume roots to 75cm in >70% chalk then stop rooting.	6-022								
11	TQ 68031	72922	568032	172923	15	≤7	CER	0	30	30	10YR4/3							8	5	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	No	14	-17	3a	WC I	1	Droughtiness	3a	Augered to 100cm, assume continues same to 120cm.	6-028												
12	TQ 68031	73023	568032	173023	5	≤7	CER	0	30	30	10YR4/3							8	5	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with	Not Applic	NON - N	No	No	No	20	-13	3a	WC I	1	Droughtiness	3a	Augered to 100cm, assume continues same to 120cm	6-034												





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
C629	C629 LTC ALCSP8	ALCSP8

Date of Survey	Survey Type	Surveyor(s)	Company
18-20/03/2019	ALC	RA/AR/RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ68037322	DA122NZ	5	11.69999981

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
580	1495	126	124	110	1

Bedrock	Superficial deposits
Lewes Nodular Chalk Formation	Alluvium

Soil association(s) 1:250,000	Detailed soil information
Wallasea 1/Coombe 1	None

Revision Number	Date Revised
2	26/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC				Profile notes	Client Ref.	
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	MBw	MBp	Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3			Grade
1	TQ 68032 73223	568032	173223	5	≤7		0	25	25	2.5Y5/2	MD - h 5YR4/6	MD - h 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-4	-28	3a	WC V	4	Wetness				4	Note - surface water/high water-table. Risk of Flooding (Grade 4)	6-044									
2	TQ 68032 73223	568032	173223	1	≤7		0	22	22	2.5Y5/2	MD - h 5YR4/6	MD - h 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-6	-29	3a	WC V	4	Wetness				4	Note - surface water/high water-table. Risk of Flooding (Grade 4)	6-045									
3	TQ 68032 73223	568032	173223	1	≤7		0	22	22	2.5Y4/2	CD - C 5YR4/6	CD - C 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-6	-29	3a	WC V	4	Wetness				4		6-046									
4	TQ 68032 73223	568032	173223	0	≤7		0	24	24	2.5Y5/2	MD - h 5YR4/6	MD - h 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-5	-28	3a	WC V	4	Wetness				4		6-047									
5	TQ 67932 73523	567932	173523	0	≤7		0	22	22	2.5Y5/2	MD - h 5YR4/6	MD - h 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-6	-29	3a	WC V	4	Wetness				4		6-048									
6	TQ 68032 73623	568032	173623	0	≤7		0	22	22	2.5Y4/2	CD - C 5YR4/6	CD - C 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-6	-29	3a	WC V	4	Wetness				4		6-049									
7	TQ 67932 73623	567932	173623	0	≤7		0	22	22	2.5Y5/2	CD - C 5YR4/6	CD - C 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-6	-29	3a	WC V	4	Wetness				4		6-050									
8	TQ 68032 73723	568032	173723	2	≤7		0	23	23	2.5Y5/2	MD - h 5YR4/6	MD - h 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-6	-28	3a	WC V	4	Wetness				4		6-051									
9	TQ 67932 73723	567932	173723	2	≤7		0	24	24	2.5Y5/2	MD - h 5YR4/6	MD - h 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-5	-28	3a	WC V	4	Wetness				4		6-052									
10	TQ 67932 73823	567932	173823	2	≤7		0	20	20	2.5Y4/2	CD - C 5YR4/6	CD - C 5Y6/1	Yes	ZC - Silty	0	0	0	HR - All hard rocks or stones (i.e. those which cannot be scratched with a 5mm steel nail)	Not Applic	NON - N	No	No	-7	-30	3a	WC V	4	Wetness				4		6-053									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP11	C629 LTC ALCSP11	ALCSP11

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		RWA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67237722	RM188QP	6	26.5

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
558	1493	128	126	103	1

Bedrock	Superficial deposits
Lewes Nodular Chalk/Seaford Chalk/Newhaven Chalk	Alluvium

Soil association(s) 1:250,000	Detailed soil information
Wallasea 1	None

Revision Number	Date Revised
1	06/02/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
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 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP12	C629 LTC ALCSP12	ALCSP12

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67037802	RM188QU	3	26.60000038

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
552	1496	122	127	102	1

Bedrock	Superficial deposits
Thanet Formation	Taplow Gravel Member/Head

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	06/02/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.				
	NGR	X	Y					Top	Btm	Thick		Form	Munsell colour	Form	Munsell colour			% > 2cm	> 6cm	Type	% > 2cm	> 6cm	Type	Strength	Size	Shape					No	Non-cal	No	MBw	IMBp	Gd	WC	Gw			Limitation 1	Limitation 2	Limitation 3	Grade
1	TQ 67031	78022	567032	178023	3	s7		0 30 30	10YR4/2				No	FSL - Fine12	8	2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	9	-29	3a	WC I	3a	Wetness	Droughtiness				3a	Drought	10-002										
2	TQ 67031	78123	567032	178123	8	s7		0 27 27	10YR4/2				No	FSL - Fine10	6	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	61	-4	2	WC I	1	Droughtiness				2	2?	10-003											
3	TQ 67031	78223	567032	178223	8	s7		0 30 30	10YR4/2				No	FSL - Fine12	8	2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	9	-29	3a	WC I	3a	Wetness	Droughtiness				3a	Drought?	11-001										
4	TQ 66931	78222	566932	178223	8	s7		0 28 28	5YR5/6				No	MSL - Md24	16	5	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-46	-67	4	WC I	3b	Droughtiness				4	Stones/drought?	11-002											
5	TQ 66931	78323	566932	178323	11	s7		0 25 25	7.5YR3/2				No	MSL - Md18	11	4	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	No	-46	-67	4	WC I	3a	Droughtiness				4	Droughtiness and stoniness?	11-003											
6	TQ 66931	78422	566932	178423	11	s7		0 30 30	7.5YR4/2				No	FSL - Fine3			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-4	-16	3a	WC I	1	Droughtiness				3a		11-004											
7	TQ 66931	78522	566932	178523	11	s7		0 35 35	7.5YR4/2				No	FSL - Fine3			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-1	-15	3a	WC I	1	Droughtiness				3a		11-005											
8	TQ 66831	78523	566832	178523	11	s7		0 30 30	10YR4/2				No	FSL - Fine5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	No	9	-6	2	WC I	1	Droughtiness				2		11-006											
9	TQ 66831	78622	566832	178623	11	s7		0 35 35	10YR4/2				No	FSL - Fine5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	No	-11	-23	3a	WC I	1	Droughtiness				3a		11-007											
10	TQ 66731	78623	566732	178623	14	s7		0 30 30	7.5YR4/2				No	FSL - Fine8			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	No	-22	-42	3b	WC I	1	Droughtiness				3b		11-008											
11	TQ 66631	78622	566632	178623	14	s7		0 30 30	7.5YR4/2				No	SCL - San5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	No	0	-29	3a	WC II	2	Droughtiness				3a		11-009											
12	TQ 66531	78623	566532	178623	17	s7		0 30 30	10YR4/2				No	FSL - Fine10	6	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	62	-3	2	WC I	1	Droughtiness				2		11-010											
13	TQ 66834	78710	566835	178710	11	s7		0 42 42	7.5YR4/2				No	FSL - Fine3			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	No	-6	-17	3a	WC I	1	Droughtiness				3a		11-013											
14	TQ 66931	78722	566932	178723	9	s7		0 30 30	7.5YR4/2				No	FSL - Fine5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	No	3	-8	3a	WC I	1	Droughtiness				3a		11-012											

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPI	Drought			Wet		Final ALC			Profile notes	Client Ref.	
	NGR	X	Y					Top	Bttm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	Moderate	NON - N	No	No	MBw	IMbp			Gd
								60	70	10	7.5YR4/4				No	SCL - San 2								Moderate	NON - N	No	No														
								70	75	5	7.5YR4/4				No	SCL - San 50								Moderate	NON - N	No	No														
								75	120	45					No	SCL - San 75								Moderate	NON - N	No	No														
15	TQ67030	78730	567031	178730	9	s7																																	11-011		
16	TQ66731	78722	566732	178723	14	s7		0	28	28	10YR4/2				No	FSL - Fin 10	6	1					HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	62	-3	2	WC 1	1			Droughtiness		2				11-014
								28	46	18	10YR5/4				No	FSL - Fin 8							HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No														
								46	120	74	10YR5/3		CD - C.5YR5/6		Yes	FSZL - Fin 5							HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	Yes	No														
END																																									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A



Project Number	Project Name	Parcel
ALCSP13	C629 LTC ALCSP13	ALCSP13

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66237932	RM16 3LT	16	26.1000038

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
550	1480	127	125	100	1

Bedrock	Superficial deposits
Thanet Formation	Head/None

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook/Fyfield 4	None

Revision Number	Date Revised
1	06/02/2019



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
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 SC - Sandy clay  
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 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
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 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
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**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13A	C629 LTC ALCSP13A	13A

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ65537962	RM18 8TL	21	26.29999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
549	1474	126	124	100	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1		Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Btm	Thick		Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type					Strength	Size	Shape	MBw	MBp	Gd	WC	Gw		
1	TQ 65532	79623	565532	179623	21			0	30	30	10YR4/2					No	MSL - M4	25		HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-43	-65	4	WC	I	1							4	11-041		
2	TQ 65532	79723	565532	179723	24			0	30	30	10YR4/2					No	MSL - M4	25	16	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-43	-54	3b	WC	I	1							3b	11-047		
3	TQ 65432	79723	565432	179723	24			0	30	30	10YR3/1					No	MSL - M4	50	30	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-66	-77	4	WC	I	1							4	11-048		
4	TQ 65332	79723	565332	179723	25			0	35	35	10YR3/1					No	MSL - M4	50	30	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-64	-75	4	WC	I	1							4	11-049		
5	TQ 65732	79823	565732	179823	21			0	30	30	10YR4/2					No	MSL - M4	40	20	5	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-61	-72	4	WC	I	1							4	11-051	
6	TQ 65632	79823	565632	179823	22			0	30	30	10YR4/2					No	MSL - M4	60	36	12	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-77	-83	4	WC	I	1							4	11-052	
7	TQ 65532	79823	565532	179823	24			0	30	30	10YR4/2					No	MSL - M4	40	20	12	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-60	-71	4	WC	I	1							4	11-053	
8	TQ 65432	79823	565432	179823	24			0	22	22	10YR4/2					No	FSL - Fin	6	2	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	33	-7	2	WC	I	1						2	11-054		
9	TQ 65332	79823	565332	179823	25			0	20	20	10YR4/2					No	FSL - Fin	5	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	33	-7	2	WC	I	1						2	11-055		
10	TQ 65232	79823	565232	179823	26			0	22	22	10YR4/2					No	FSL - Fin	5	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	34	-7	2	WC	I	1						2	11-056		
11	TQ 65532	79923	565532	179923	21			0	30	30	10YR4/2					No	SCL - San	25	11		HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-35	-49	3b	WC	I	1						3b	11-058		
12	TQ 65432	79923	565432	179923	21			0	22	22	10YR4/2					No	FSL - Fin	10	6	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	27	-14	3a	WC	I	1						3a	11-059		
13	TQ 65332	79923	565332	179923	21			0	20	20	10YR4/2					No	FSL - Fin	5	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	33	-7	2	WC	I	1						2	11-060		
14	TQ 65232	79923	565232	179923	21			0	22	22	10YR4/2					No	FSL - Fin	8	3	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	39	-6	2	WC	I	1						2	11-061		

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bttm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	MBw	MBp	Gd	WC	Gw	Limitation 1	Limitation 2		
15	TQ 65432 80023	565432	180023	21				0	25	25	10YR4/2					No	FSL - Fin6	2	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic			No	29	-6	2	WC1	1	Droughtiness				2		11-062					
								25	50	25	10YR5/4				No	SCL - San5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
								50	120	70	7.5YR5/6				No	HCL - Cla4			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
16	TQ 65332 80023	565332	180023	21				0	28	28	10YR4/2					No	FSL - Fin6	2	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic			No	20	-14	3a	WC1	1	Droughtiness				3a		11-063					
								28	50	22	10YR5/4				No	SCL - San5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
								50	120	70	7.5YR5/6				No	HCL - Cla4			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
17	TQ 65232 80023	565232	180023	21				0	25	25	10YR4/2					No	FSL - Fin6	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic			No	34	-7	2	WC1	1	Droughtiness				2		11-064					
								25	48	23	10YR5/4				No	FSL - Fin6			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
								48	70	22	7.5YR5/6				No	MCL - Cla1			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
								70	120	50	7.5YR6/3	FD - F1.5YR5/6		FD - F4.2.5YR5/2	Yes	MSZL - M1			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
18	TQ 65332 80123	565332	180123	22				0	30	30	10YR4/2					No	MCL - Cla2			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic			No	27	-7	2	WC1	1	Droughtiness				2		11-065					
								30	50	20	10YR4/1				No	MCL - Cla6			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
								50	120	70	7.5YR4/5				No	HZCL - Sil0			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
END																																									



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
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 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
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**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13B	C629 LTC ALSCP13B	13B

Date of Survey	Survey Type	Surveyor(s)	Company
16/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ65137982	RM16 4UB	26	22.79999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
551	1469	126	123	100	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.	
	NGR	X	Y					Top	Bttm	Thick		Form	Munsell colour	Form	Munsell colour			No	%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type					Strength	Size	Shape	Moderate	NON	No	No	MBw			MBp
								0	28	28	10YR4/2					No	MSL - M40							Moderate	NON	No	No														
								45	50	5	10YR4/4					No	MSL - M475							Moderate	NON	No	No														
								50	120	70													Moderate	NON	No	No															
15	TQ 64931 80222	564931	180222	20		s7		0	28	28	10YR4/2					MCL - Cla5							Not Applic	NON	Non-cal	No	-28	-35	3b	WC I	1			Droughtiness			3b		12-041		
								28	45	17	7.5YR4/4					HCL - Cla5							Moderate	NON	Non-cal	No															
								45	50	5	7.5YR4/5					HCL - Cla50							Moderate	NON	Non-cal	No															
								50	120	70						HCL - Cla75							Moderate	NON	Non-cal	No															
16	TQ 64831 80222	564831	180222	20		s7		0	25	25	10YR4/2					MSL - M48							Not Applic	NON	Non-cal	No	-49	-59	4	WC I	1			Droughtiness			4		12-042		
								25	35	10	10YR4/4					MSL - M40							Moderate	NON	Non-cal	No															
								35	120	85						MSL - M475							Moderate	NON	Non-cal	No															
END																																									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
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 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13C	C629 LTC ALCSP13C	13C

Date of Survey	Survey Type	Surveyor(s)	Company
16/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63737992	RM16 3AH	26	22.20000076

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
554	1469	125	123	101	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Memb

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019





Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bttm	Thick		Munsell colour	Form	Munsell colour	Form			Munsell colour	%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type					Strength	Size	Shape	Moderate	NON - Non-cal	No	MBw	IMBp		
15	TQ64332	80223	564332	180223	22	s7		0	22	22	7.5YR4/4				No	FSL - Fin	8	4	1	GH - Gravel with non-porous (hard) stones				Not Applic	NON - Non-cal	No	19	-16	3a	WC I	1	Droughtiness				3a		12-047		
								22	54	32	7.5YR5/4				No	FSL - Fin	15			GH - Gravel with non-porous (hard) stones				Moderate	NON - Non-cal	No														
								54	120	66	7.5YR5/6				No	MSL - Md	20			GH - Gravel with non-porous (hard) stones				Moderate	NON - Non-cal	No														
16	TQ64232	80223	564232	180223	23	s7		0	25	25	7.5YR4/4				No	FSL - Fin	8	4	1	GH - Gravel with non-porous (hard) stones				Not Applic	NON - Non-cal	No	20	-16	3a	WC I	1	Droughtiness				3a		12-048		
								25	55	30	7.5YR5/4				No	FSL - Fin	15			GH - Gravel with non-porous (hard) stones				Moderate	NON - Non-cal	No														
								55	120	65	7.5YR5/6				No	MSL - Md	20			GH - Gravel with non-porous (hard) stones				Moderate	NON - Non-cal	No														
17	TQ64432	80323	564432	180323	23	s7																																12-062		
END																																								

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13D	C629 LTC ALCSP13D	13D

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63737992	RM16 3AH	26	26.60000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
554	1469	125	123	101	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour Form	Ochreous Mottles		Grey Mottles		Gley No	Texture MSL - Me	Stones - type 1			Stones - type 2			Ped			SUBS STR Moderate	CaCO3 NON - N	Mn C No	SPL No	Drought			Wet		Final ALC			Profile notes	Client Ref.			
	NGR	X	Y					Top	Bttm	Thick		Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	IMBw	IMBp	Gd	WC	Gw	Limitation 1			Limitation 2	Limitation 3	Grade
	GH - Gravel with non-porous (hard) stones																																										
15	TQ64032	80422	564032	180423	25	s7		0	33	33	7.5YR3/4			No	MSZL - M5	4	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-24	-16	3b	WCI	1	Droughtiness				3b	gravel at 60cm difficult to auger 60cm+; 2 attempts to auger below 30cm	12-072										
							33	40	7	7.5YR3/2			No	MSZL - Medium sandy silt loam				Moderate	NON - N	No	No																						
							40	55	15	7.5YR3/3			No	FSL - Fine sandy loam				Moderate	SC - Slig	No	No																						
							55	60	5	5YR4/3			No	HCL - Clay loam (heavy)				Moderate	SC - Slig	No	No																						
16	TQ63932	80422	563932	180423	24	s7		0	30	30	10YR4/2			No	FSZL - Fir	6	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-3	1	3a	WCI	1	Droughtiness				3a	IMP: at 60cm, assume gravel, >70% HR and stop rooting at 80cm?	12-073										
							30	55	25	10YR4/4			No	FSZL - Fir	6	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							55	60	5	10YR4/4			No	FSZL - Fir	40	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							60	80	20				No	FSZL - Fir	75	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
17	TQ63832	80422	563832	180423	24	s7		0	30	30	10YR4/2			No	MSZL - M	25	12	3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-63	-59	4	WCI	1	Droughtiness				4	IMP: at 40cm, assume gravel, >70% HR and stop rooting at 60cm?	12-074								
							30	40	10	10YR4/3			No	MSZL - M	40	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							40	60	20				No	MSZL - M	75	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
18	TQ63931	80523	563932	180523	24	s7		0	30	30	10YR4/2			No	FSZL - Fir	10	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-27	-22	3b	WCI	1	Droughtiness				3b	IMP: at 55cm, assume gravel, >70% HR and stop rooting at 75cm?	12-079										
							30	50	20	7.5YR4/5			No	C - Clay	10	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							50	55	5	7.5YR4/5			No	MZCL - Si	40	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							55	75	20				No	MZCL - Si	75	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
END																																											

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A



Project Number	Project Name	Parcel
13F	C629 LTC ALCSP13F	13F

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	ASKEW LAND AND SOIL

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ6351804	RM16 3LP	25	39.40000153

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Floos Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
557	1470	125	123	101	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13G	C629 LTC ALCSP13G	13G

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66388052	RM16 3DB	24	22.79999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
555	1471	125	123	101	1

Bedrock	Superficial deposits
Lambeth Group	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.									
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	NON	-	No	No	No	No	No			No	No	No	No	No	No	No	No	No
1	TQ 63831	80523	563832	180523	24	s7		0 30 30	10YR3/2						No	SCL - San 5	4	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	No	No	No	4	-14	3a	WCI	1	Droughtiness				3a		12-080												
								30 40 10	7.5YR3/2						No	SCL - Sandy cl: 1			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								40 100 60	7.5YR3/3						No	SCL - Sandy ctr: 1			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	SC - Sil	No	No	No	No																									
2	TQ 63731	80523	563732	180523	25	s7		0 10 10										SCL - Sandy clay loam								-108	-106	4							Non-Ag			12-081												
3	TQ 64130	80630	564131	180631	24	s7		0 32 32	10YR3/3						No	SCL - San 5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	No	No	-29	-22	3b	WCI	1	Droughtiness				3b	IMP: at 68cm, assume gravel, >70% HR and stop rooting at 88cm?	12-086													
								32 50 18	7.5YR4/4						No	MZCL - Si 3			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								50 60 10	7.5YR4/6						No	C - Clay 2			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								60 68 8	7.5YR4/6						No	C - Clay 50			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								68 88 20							No	C - Clay 75			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
4	TQ 64031	80622	564032	180623	24	s7		0 30 30	10YR4/2						No	SCL - San 5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-ca	No	No	No	-16	-17	3a	WCI	1	Droughtiness				3a	IMP: at 85cm, assume gravel, >70% HR and stop rooting at 105cm?	12-087														
								30 55 25	10YR5/4						No	MZCL - Si 10			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								55 80 25	7.5YR4/5						No	C - Clay 2			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								80 85 5	7.5YR4/6						No	SC - Sand 30			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								85 105 20							No	SC - Sand 75			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
5	TQ 63931	80622	563932	180623	26	s7		0 32 32	10YR4/3						No	SCL - San 3			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-ca	No	No	No	-21	-14	3b	WCI	1	Droughtiness				3b	IMP: at 68cm, assume gravel, >70% HR and stop rooting at 88cm?	12-088														
								32 50 18	10YR4/4						No	FSZL - Fir 2			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								50 60 10	7.5YR4/6						No	C - Clay 1			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								60 68 8	7.5YR4/6						No	C - Clay 50			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								68 88 20							No	C - Clay 75			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
6	TQ 63831	80622	563832	180623	26	s7		0 30 30	10YR3/3						No	FSZL - Fir 3	3		HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	No	-22	-12	3b	WCI	1	Droughtiness				3b			12-089													
								30 40 10	10YR3/3						No	SCL - Sandy clay loam			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								40 50 10	7.5YR4/4						No	HCL - Clay loam (heavy)			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								50 60 10	7.5YR4/4						No	C - Clay			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - Non-ca	No	No	No	No																									
7	TQ 63731	80622	563732	180623	27	s7		0 30 30	10YR3/3						No	MSZL - M4	3	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	No	-22	-6	3b	WCI	1	Droughtiness				3b			12-090													
								30 45 15	7.5YR3/2						No	SCL - Sandy clay loam			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								45 60 15	7.5YR4/4						No	HCL - Clay loam (heavy)			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								60 70 10	5YR4/4						No	C - Clay			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - Non-ca	No	No	No	No																									
8	TQ 63635	80633	563636	180633	27	s7		0 10 10										MZCL - Silty clay loam (medium)							-106	-104	4							Non-Ag			12-091													
9	TQ 64332	80748	564333	180748	22	s7		0 28 28	10YR3/2						No	FSZL - Fir 6			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	No	24	-6	2	WCI	1	Droughtiness				2			12-097													
								28 50 22	10YR5/3						No	MCL - Cla 10			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								50 120 70	10YR5/3	CD - C 7.5YR5/6					No	HCL - Cla 16			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
10	TQ 64231	80723	564232	180723	22	s7		0 30 30	10YR4/3						No	SCL - San 5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-ca	No	No	No	-3	-17	3a	WCI	1	Droughtiness				3a	Augered to 95cm. Assume gravely clay to 120cm, with c. 50% flints? TS feels quite silty, sand fraction is mostly fine.	12-098														
								30 50 20	10YR4/5						No	MZCL - Si 5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								50 80 30	7.5YR5/5						No	C - Clay 3			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								80 95 15	7.5YR4/6						No	SC - Sand 5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								95 120 25							No	C - Clay 50			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
11	TQ 64131	80723	564132	180723	24	s7		0 36 36	10YR4/2						No	SCL - San 3			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-ca	No	No	No	11	-13	3a	WCI	1	Droughtiness				3a	Augered to 100cm, assume SC continues same to 120cm	12-099														
								36 55 19	10YR4/4						No	MZCL - Si 2			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No	No	No																									
								55 85 30	10YR5/4						No	C - Clay 2			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
								85 120 35	10YR6/8						No	SC - Sand 0			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No	No	No	No																									
12	TQ 64031	80723	564032	180723	24	s7		0 22 22	10YR4/2						No	FSL - Fine 5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	No	58	-3	2	WCI	1	Droughtiness				2			12-100													

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bttm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	Moderate	NON	N	No	Mbw	MBp		
15	TQ63731	80723	563732	180723	27	s7		0	30	30	10YR3/3				No	SCL - San 3 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	-30	-21	3b	WCI	1	Droughtiness				3b		12-103						
								30	45	15	10YR3/2				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								45	60	15	7.5YR4/4				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								60	70	10	7.5YR4/6				No	MS - Medium Sand		Moderate	NON	N	No	No																		
16	TQ64431	80823	564432	180823	29	s7		0	10	10					No	MSZL - Medium sandy silt loam									-106	-104	4						Non-Ag		12-110					
17	TQ64331	80823	564332	180823	28	s7		0	33	33	10YR3/3				No	MSZL - M2 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	14	-2	2	WCI	1	Droughtiness				2		12-111						
								33	42	9	10YR3/2				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
								42	100	58	5YR4/4				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
18	TQ64231	80823	564232	180823	28	s7		0	35	35	10YR3/3				No	MSZL - M2 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	14	-2	2	WCI	1	Droughtiness				2		12-112						
								35	40	5	10YR3/2				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
								40	100	60	5YR4/4				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
19	TQ64130	80804	564131	180804	26	s7		0	30	30	10YR4/2				No	SCL - San 4 2 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	-6	-11	3a	WCI	1	Droughtiness				3a		12-113						
								30	40	10	10YR4/3				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								40	78	38	7.5YR4/3				No	HCL - Clay loam (heavy)		Moderate	NON	N	No	No																		
								78	100	22	5YR4/4				No	MS - Medium Sand		Moderate	NON	N	No	No																		
20	TQ64032	80787	564033	180788	27	s7		0	40	40	10YR4/2				Yes	SCL - San 4 2 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	-7	-13	3a	WCI	1	Droughtiness				3a		12-114						
								40	60	20	7.5YR4/4				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								60	80	20	7.5YR4/4				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								80	90	10	7.5YR4/4				No	C - Clay		Moderate	NON	N	No	No																		
21	TQ64531	80922	564532	180923	31	s7		0	10	10					No	MSZL - Medium sandy silt loam									-106	-104	4						Non-Ag		12-123					
22	TQ64432	80911	564433	180912	29	s7		0	10	10					No	MSZL - Medium sandy silt loam									-106	-104	4						Non-Ag		12-124					
END																																								



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13H	C629 LTC ALCSP13H	13H

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63928086	RM16 3BA	27	31.10000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
557	1467	125	122	101	1

Bedrock	Superficial deposits
Lambeth Group	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
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 CSL - Coarse sandy loam  
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 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
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 SCL - Sandy clay loam  
 SP - Sandy peats  
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 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
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 SLST - Soft oolitic or dolomitic limestones  
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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
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 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13I	C629 LTC ALCSP13I	13I

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63038112	RM16 3NB	25	24.29999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
563	1470	124	122	102	1

Bedrock	Superficial deposits
London Clay Formation/Lambeth Group	Head/Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook/Windsor	None

Revision Number	Date Revised
1	15/03/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
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 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
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 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
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**Ped. Shape**

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 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13J	C629 LTC ALCSP13J	13J

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ62638132	RM16 3NB	25	29.39999962

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
566	1470	124	121	102	1

Bedrock	Superficial deposits
London Clay Formation	Head

Soil association(s) 1:250,000	Detailed soil information
Windsor/Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bottom	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	Not Applic	NON - N	NON - ca	No	MBw	MBp	Gd		
15	TQ 62631 81622 562632 181623	19	s7	0	30	30	10YR4/2										Yes	M2CL - S1 HCL - Cla1	4	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	-26	-12	3b	WC III	3a	Droughtiness				3b		12-209					
				30	38	8	10YR3/3									No						Moderate	VSC - V4	No	No																
				38	70	32	10YR5/6									No						Poor	NON - N	NON - ca	Yes	No															
				70	72	2	10YR4/2									Yes						Poor	NON - N	NON - ca	Yes	Yes															
16	TQ 62731 81722 562732 181723	14	s7	0	35	35	10YR4/2									Yes	C - Clay C - Clay C - Clay	5	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	-19	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120cm	12-219							
				35	50	15	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
				50	120	70	2.5Y6/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
17	TQ 62631 81723 562632 181723	14	s7	0	35	35	10YR4/2									Yes	C - Clay C - Clay	5	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	-19	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic clay continues to 120cm	12-220							
				35	120	85	2.5Y5/2									Yes						Poor	NON - N	NON - ca	Yes	Yes															
18	TQ 62731 81822 562732 181823	14	s7	0	38	38	10YR4/2										C - Clay C - Clay	3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	14	-7	2	WC I	3a	Wetness				3a	Augered to 70cm where IMP. Very dry and dense throughout. 3a T5 texture	12-227						
				38	120	82	10YR4/4															Moderate	VSC - Very slig	No	No																
19	TQ 62631 81822 562632 181823	14	s7	0	35	35	10YR4/2									Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	-17	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume clay continues to 120cm	12-228							
				35	120	85	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
20	TQ 62816 81926 562817 181927	12	s7	0	25	25	10YR4/2									Yes	C - Clay C - Clay	2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	-2	-21	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120cm	12-235						
				25	120	95	2.5Y6/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
21	TQ 62731 81923 562732 181923	10	s7	0	28	28	10YR4/2									Yes	C - Clay C - Clay	3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	-2	-21	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120cm	12-236						
				28	120	92	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
22	TQ 62631 81923 562632 181923	10	s7	0	35	35	10YR4/2									Yes	C - Clay C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	3	-17	3a	WC II	3a	Droughtiness Wetness				3a	Augered to 70cm, assume C continues to 120cm. Gley and SPL from 50cm.	12-237						
				35	50	15	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
				50	120	70	2.5Y6/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
23	TQ 62731 82022 562732 182023	12	s7	0	34	34	10YR4/2									Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	3	-17	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120cm	12-239						
				34	120	86	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
24	TQ 62631 82023 562632 182023	10	s7	0	28	28	10YR4/2									Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	1	-19	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120cm	12-240						
				28	120	92	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
25	TQ 62731 82123 562732 182123	11	s7	0	28	28	10YR4/2									Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	-19	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120cm	13-001							
				28	120	92	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
26	TQ 62631 82122 562632 182123	8	s7	0	28	28	10YR4/2									Yes	C - Clay C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - ca	No	1	-19	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume C continues to 120cm	13-002						
				28	50	22	2.5Y5/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
				50	120	70	2.5Y6/3									Yes						Poor	NON - N	NON - ca	Yes	Yes															
END																																									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP14	C629 LTC ALCSP14	ALCSP14

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		AR	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ62738222	RM16 3LT	11	37.40000153

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
564	1485	126	123	102	1

Bedrock	Superficial deposits
THAMES GROUP	None

Soil association(s) 1:250,000	Detailed soil information
Windsor/Fladbury 3	None

Revision Number	Date Revised
1	05/02/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	Not Applic	NON - N	NON - N	NON - N	MBw	MBp		
1	TQ 62731 82223	562732	182223	11	s7		LEY	0 32	32 120	32 88	10YR4/2 2.5Y5/3		CD - C 10YR5/6			Yes	C - Clay C - Clay	1 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N Yes	No Yes	0 -20		3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-003	
2	TQ 62631 82223	562632	182223	8	s7		LEY	0 26	26 120	26 94	10YR4/2 2.5Y5/3		CP - C 10YR5/6			Yes	C - Clay C - Clay	1 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N Yes	No Yes	-2 -22		3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-004	
3	TQ 62731 82322	562732	182323	11	s7		LEY	0 38	38 90	38 52	10YR4/2 10YR5/3		CD - C 10YR5/6			Yes Yes	C - Clay ZC - Silty clay	2 2		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	VSC - V VSC - V	NON - N No	No Yes	-20 -21		3b	WC III	3b	Wetness				3b	marginal calcareous for 3a	13-005	
4	TQ 62631 82322	562632	182323	8	s7		LEY	0 28	28 120	28 92	10YR4/2 2.5Y5/3		CP - C 10YR5/6			Yes	C - Clay C - Clay	1 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N No	No Yes	-1 -21		3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-006	
5	TQ 62731 82423	562732	182423	9	s7		LEY	0 35	35 80	35 45	10YR4/2 7.5YR5/3		MD - M 10YR5/6			Yes Yes	ZC - Silty ZC - Silty clay	2 2		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N No	No Yes	-29 -23		3b	WC III	3b	Wetness	Droughtiness			3b		13-007	
6	TQ 62631 82423	562632	182423	7	s7		LEY	0 28	28 120	28 92	10YR4/2 2.5Y5/3		CP - C 10YR5/6			Yes	C - Clay C - Clay	1 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N No	No Yes	-1 -21		3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120.	13-008	
7	TQ 62731 82522	562732	182523	9	s7		LEY	0 22	22 50	22 28	10YR4/2				No No	C - Clay C - Clay	1 1		HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Moderate	NON - N NON - N	NON - N No	No No	-45 -42		3b	WC III	3b	Wetness	Droughtiness			3b		13-009		
8	TQ 62631 82523	562632	182523	7	s7		LEY	0 28 60	28 60 120	28 32 60	10YR4/2 10YR5/3 10YR5/3		CD - C 10YR5/6 CP - C 7.5YR5/6	CD - C 2.5Y6/1		Yes Yes	C - Clay C - Clay C - Clay	2 0 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor Poor	NON - N NON - N NON - N	NON - N No No	No Yes Yes	-2 -22		3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120.	13-010	
9	TQ 62722 82620	562723	182621	6	s7		LEY	0 25	25 50	25 25	10YR4/2				No No	C - Clay C - Clay	1 1		HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Moderate	NON - N NON - N	NON - N No	No No	-44 -41		3b	WC III	3b	Wetness	Droughtiness			3b		13-011		
10	TQ 62622 82621	562623	182621	6	s7		LEY	0 28	28 120	28 92	10YR4/2 10YR5/3		CD - C 10YR5/6			Yes	C - Clay C - Clay	2 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N No	No Yes	-2 -22		3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-012	
11	TQ 62611 82709	562612	182709	6	s7		LEY	0 30	30 120	30 90	10YR3/2 10YR5/3		CD - C 10YR5/6			Yes	C - Clay C - Clay	2 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N No	No Yes	-1 -21		3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-013	
12	TQ 62631 82822	562632	182823	2	s7		LEY	0 30	30 120	30 90	10YR4/2 10YR5/2		MP - M 10YR5/8			Yes	C - Clay C - Clay	2 0		HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Poor	NON - N NON - N	NON - N No	No Yes	-1 -21		3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120.	13-014	
13	TQ 62631 82923	562632	182923	2	s7		LEY	0 22	22 50	22 28	10YR4/2				No No	C - Clay C - Clay	1 1		HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Moderate	NON - N NON - N	NON - N No	No No	-45 -42		3b	WC III	3b	Wetness	Droughtiness			3b		13-015		
14	TQ 62539 82924	562540	182924	1	s7		LEY	0 25	25 50	25 25	10YR4/2				No No	C - Clay C - Clay	1 1		HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w				Not Applic Moderate	NON - N NON - N	NON - N No	No No	-44 -41		3b	WC III	3b	Wetness	Droughtiness			3b		13-016		



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP15	C629 LTC ALCSP15	ALCSP15

Date of Survey	Survey Type	Surveyor(s)	Company
22/02/2019		RWA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ62338352	RM14 3RE	3	75

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
571	1494	126	124	103	1

Bedrock	Superficial deposits
THAMES GROUP	None

Soil association(s) 1:250,000	Detailed soil information
Windsor/Fladbury 3	None

Revision Number	Date Revised
1	05/02/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
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**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
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 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
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 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
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 SC - Sandy clay  
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**Stone Type**

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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
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**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A



Project Number	Project Name	Parcel
ALCSP16	C629 LTC ALCSP16	ALCSP16

Date of Survey	Survey Type	Surveyor(s)	Company
18/03/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ59638362	RM15 6SP	24	32.29999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
591	1471	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Fladbury 3	None

Revision Number	Date Revised
1	07/02/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
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**Texture**

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 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP17	C629 LTC ALCSP17	ALCSP17

Date of Survey	Survey Type	Surveyor(s)	Company
18/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	

Grid Reference	Postcode	Altitude	Area
TQ59538372	RM15 6SP	22	20

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
591	1473	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Shabbington	None

Revision Number	Date Revised
1	07/02/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
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 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A



Project Number	Project Name	Parcel
ALCSP18	C629 LTC ALCSP18	ALCSP18

Date of Survey	Survey Type	Surveyor(s)	Company
19/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	

Grid Reference	Postcode	Altitude	Area
TQ58938402	RM15 5EE	23	20.79999924

MAFF prov	MAFF detailed	Flooding
Grade 1/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
591	1472	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Shabbington	None

Revision Number	Date Revised
1	07/02/2019



Point	Grid ref.		Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X					Y	Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form			Munsell colour	%	> 2cm	> 6cm	Type	> 2cm	> 6cm	Type	Strength					Size	Shape	Poor	NON - N	No	MBw	MBp	Gd		
							45	70	25	10YR5/3	CP - C7.5YR5/6				Yes	SC - Sand 1							Moderate	NON - N	No	No													
15	TQ 58532 84323	558532	184323	23	s7		0	34	34	10YR4/2				No	MSL - M4 1							Not Applic	NON - Non-cal	No	30	-9	2	WC I	1	Droughtiness				2	14-034				
							34	70	36	10YR4/4				No	MSL - M4 0							Moderate	NON - N	No	No														
							70	120	50	7.5YR5/6				Yes	SCL - San 0							Moderate	NON - N	No	No														
16	TQ 58432 84323	558432	184323	21	s7		0	34	34	10YR4/2				No	MSL - M4 2							Not Applic	NON - Non-cal	No	13	-10	3a	WC II	1	Droughtiness				3a	14-035				
							34	70	36	10YR4/4				No	MSL - M4 2							Moderate	NON - N	No	No														
							70	120	50	10YR6/4	CD - C 10YR5/6			Yes	C - Clay 2							Poor	NON - Yes	No	No														
17	TQ 58632 84423	558632	184423	25	s7		0	24	24	7.5YR4/2				No	MSL - M4 8	4	1					Not Applic	NON - Non-cal	No	14	-19	3a	WC III	2	Droughtiness				3a	14-041				
							24	50	26	7.5YR5/2				No	MSL - M4 10							Moderate	NON - Non-cal	No															
							50	120	70	7.5YR5/3				No	SCL - San 10							Moderate	NON - Non-cal	No															
18	TQ 58532 84423	558532	184423	23	s7		0	22	22	10YR4/2				No	FS - Fine 4							Not Applic	NON - Non-cal	No	-55	-73	4	WC I	1	Droughtiness				4	14-042				
							22	35	13	10YR5/2				No	FS - Fine 4							Moderate	NON - Non-cal	No															
							35	50	15	10YR6/4				No	FS - Fine 50							Moderate	NON - Non-cal	No															
							50	120	70	7.5YR6/6				No	SCL - San 50							Moderate	NON - Non-cal	No															
19	TQ 58432 84423	558432	184423	21	s7		0	22	22	10YR4/2				No	FS - Fine 4							Not Applic	NON - Non-cal	No	-53	-74	4	WC I	1	Droughtiness				4	14-043				
							22	35	13	10YR5/2				No	FS - Fine 4							Moderate	NON - Non-cal	No															
							35	65	30	10YR6/4				No	FS - Fine 50							Moderate	NON - Non-cal	No															
							65	120	55	7.5YR6/6				No	SCL - San 50							Moderate	NON - Non-cal	No															
END																																							

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
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 LMS - Loamy medium sand  
 LP - Loamy peats  
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 MSZL - Medium sandy silt loam  
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**Stone Type**

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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
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 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
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**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
19	C629 LTC ALCSP19	19

Date of Survey	Survey Type	Surveyor(s)	Company
25/03/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ58438412	RM15 5SD	20	12.10000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
588	1476	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Shabbingdon	None

Revision Number	Date Revised
1	15/03/2019



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
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**Texture**

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 CHK - Chalk  
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 CSL - Coarse sandy loam  
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 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
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 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
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**Stone Type**

CH - Chalk or chalk stones  
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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
20	C629 LTC ALCSP20	20

Date of Survey	Survey Type	Surveyor(s)	Company
25/03/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ58238462	RM14 2TZ	22	33.90000153

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
794	1431	92	81	188	1

Bedrock	Superficial deposits
THAMES GROUP	None

Soil association(s) 1:250,000	Detailed soil information
Shabbington/Windsor	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes			
	NGR	x	y					Top	Bttm	Thick		Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	MbW	MBp	Gd	WC	Gw	Limitation 1		Limitation 2	Limitation 3	Grade
1	TQ58232	84623	558232	184623	22	s7		0 23 23	10YR4/2					No Yes Yes	MSL - M4 SCL - San C - Clay	10 1 1	6 2 1	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	39 27 1	WC III	3a	Wetness				3a									
2	TQ58254	84725	558254	184725	22	s7		0 25 22	10YR4/2 7.5YR5/6					No Yes Yes	MSL - M4 SCL - San C - Clay	10 1 1	6 2 1	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	40 27 1	WC III	3a	Wetness				3a									
3	TQ58232	84823	558232	184823	26	s7		0 26 24	10YR4/2 7.5YR5/6					No Yes Yes	MSL - M4 SCL - San C - Clay	10 1 1	6 2 1	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	39 27 1	WC III	3a	Wetness				3a									
4	TQ58132	85023	558132	185023	20	s7		0 28 58	10YR4/2 7.5YR5/6 7.5YR5/3					No Yes Yes	MSL - M4 SCL - San C - Clay	10 1 1	6 2 1	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	41 26 1	WC II	2	Wetness				2									
5	TQ57972	85046	557972	185046	20	s7		0 24 50	10YR4/2 7.5YR5/6 7.5YR5/3					No Yes Yes	MSL - M4 SCL - San C - Clay	10 1 1	6 2 1	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	39 27 1	WC III	3a	Wetness				3a									
6	TQ58132	85123	558132	185123	20	s7		0 30 55 55 60	10YR4/2 7.5YR5/3 7.5YR5/3 7.5YR5/3					No Yes Yes Yes	MSL - M4 SCL - San SCL - San SCL - San	5 5 5 75		HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail)				Not Applic Moderate Moderate Moderate	NON - NON - NON - NON -	NON - NON - NON - NON -	No No No No	10 12 2	WC II	1	Droughtiness				2									
7	TQ58232	85223	558232	185223	23	s7		0 22 54 54	10YR4/2 10YR5/4 10YR5/3					No Yes Yes	MSL - M4 SCL - San C - Clay	8 10 10	4 0 0	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	33 21 1	WC III	2	Wetness				2									
8	TQ58132	85223	558132	185223	20	s7		0 35 50 50 80	10YR4/2 10YR4/4 7.5YR5/3 7.5YR5/6					No No Yes Yes	MSL - M4 MSL - M4 HCL - Cla SCL - San	5 1 1 1		HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail)				Not Applic Moderate Moderate Moderate	NON - NON - NON - NON -	NON - NON - NON - NON -	No No No No	56 29 1	WC I	1				1	No limitations									
9	TQ58232	85323	558232	185323	23	s7		0 24 58	10YR4/2 10YR5/4 10YR5/4					No No Yes	MSL - M4 C - Clay C - Clay	4 4 4	2 0 0	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	42 29 1	WC I	1				1	No limitations									
10	TQ58132	85323	558132	185323	20	s7		0 30 50	10YR4/2 7.5YR5/4 7.5YR5/4					No No No	MSL - M4 HCL - Cla C - Clay	3 1 1		HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail)				Not Applic Moderate Poor	NON - NON - NON -	NON - NON - NON -	No No No	38 26 1	WC I	1				1	No limitations									
11	TQ58032	85323	558032	185323	20	s7		0 30 50	10YR4/2 7.5YR4/4 7.5YR5/4					No No No	SCL - San HCL - Cla C - Clay	3 0 0		HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail) HR - All hard rocks or stones (i.e. those which cannot be scratched with a 10mm steel nail)				Not Applic Moderate Poor	NON - NON - NON -	NON - NON - NON -	No No No	39 27 1	WC I	1				1	No limitations									
12	TQ58332	85423	558332	185423	21	s7		0 22 48 48	10YR4/2 7.5YR5/6 7.5YR5/3					No Yes Yes	MSL - M4 SCL - San SCL - San	6 6 1		GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	53 24 1	WC III	3a	Wetness				3a									
13	TQ58232	85423	558232	185423	23	s7		0 24 50	10YR4/2 7.5YR5/6 10YR6/3					No Yes Yes	MSL - M4 SCL - San C - Clay	6 5 4	2 0 0	GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones GH - Gravel with non-porous (hard) stones				Not Applic Moderate Moderate	NON - NON - NON -	NON - NON - NON -	No No No	38 26 1	WC III	3a	Wetness				3a									





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP11	C629 LTC ALCSP11	ALCSP11

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		RWA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67237722	RM188QP	6	26.5

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
558	1493	128	126	103	1

Bedrock	Superficial deposits
Lewes Nodular Chalk/Seaford Chalk/Newhaven Chalk	Alluvium

Soil association(s) 1:250,000	Detailed soil information
Wallasea 1	None

Revision Number	Date Revised
1	06/02/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Clay	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bottom	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	MBw	IMBp	Gd	WC	Gw	Limitation 1	Limitation 2		
1	TQ 67232	77223	567232	177223	6	s7		0	20	20	10YR4/2						No	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	-2	-22	3a	WC III	3b	Wetness				3b	10-050							
							20	35	15	2.5Y4/3						Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
							35	120	85	5Y6/2		CP - C1.7.5YR5/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	Yes																			
2	TQ 67132	77223	567132	177223	0	s7		0	22	22	10YR4/2						No	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	-5	-26	3a	WC III	3b	Wetness				3b	10-051							
							22	33	11	2.5YR5/2		MD - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	Yes																			
							33	120	87	2.5YR5/1		MP - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	Yes																			
3	TQ 67032	77223	567032	177223	2	s7		0	27	27	10YR4/2							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	-3	-24	3a	WC III	3b	Wetness				3b	10-052							
							27	120	93	2.5Y5/2		MP - N.7.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	Yes																			
4	TQ 66932	77223	566932	177223	2	s7		0	28	28	10YR4/2							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	-3	-24	3a	WC III	3b	Wetness				3b	10-053							
							28	120	92	2.5Y5/3		MP - N.7.5YR5/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	Yes																			
5	TQ 66632	77223	566632	177223	2	s7		0	20	20	10YR4/1							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	10	-12	3a	WC III	3b	Wetness				3b	9-050							
							20	35	15	10YR4/2		MD - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
							35	50	15	2.5YR5/1		MP - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
							50	120	70	2.5YR5/1		VP - Very many Prominent				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	cal	No																		
6	TQ 67332	77323	567332	177323	6	s7		0	10	10								C-Clay						-111	-109	4							Non-Ag	No Site Access (Mott)	10-056						
7	TQ 67232	77323	567232	177323	6	s7		0	10	10								C-Clay						-111	-109	4							Non-Ag	No Site Access (Mott)	10-057						
8	TQ 67132	77323	567132	177323	0	s7		0	18	18	10YR4/2							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	10	-12	3a	WC III	3b	Wetness				3b	10-058							
							18	30	12	2.5YR5/2		MD - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
							30	120	90	2.5YR5/1		MP - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
9	TQ 67032	77323	567032	177323	2	s7		0	20	20	10YR4/2							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	cal	-6	-27	3a	WC III	3b	Wetness				3b	10-059							
							20	40	20	10YR5/3		CD - C.10YR5/6		CD - C.2.5Y6/2		Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No																			
							40	120	80	5Y5/2		MP - N.7.5YR5/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No																			
10	TQ 66932	77323	566932	177323	2	s7		0	28	28	10YR4/2							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	cal	46	-7	2	WC II	3a	Wetness				3a	10-060							
							28	40	12	2.5Y5/3		CD - C.10YR5/6		CD - C.2.5Y6/1		Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	Yes																			
							40	60	20	2.5Y6/3		MP - N.10YR5/8				Yes	HZCL - Sil	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	MC - M	Yes	No																		
							60	120	60	2.5Y6/2		CP - C.10YR4/6				Yes	ZL - Silt lo	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	VC - Ver	No	No																		
11	TQ 66832	77323	566832	177323	2	s7		0	22	22	10YR4/2							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	6	-16	3a	WC II	3a	Wetness				3a	10-061							
							22	35	13	2.5YR5/2		MD - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No																			
							35	120	85	2.5YR5/1		MP - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
12	TQ 66732	77323	566732	177323	2	s7		0	25	25	10YR4/2							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	-4	-25	3a	WC III	3b	Wetness				3b	10-062							
							25	35	10	2.5Y4/3						No	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No																			
							35	120	85	5Y6/2		CP - C1.7.5YR5/8				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Poor	NON - N	No																			
13	TQ 66632	77323	566632	177323	2	s7		0	20	20	10YR4/1							C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	10	-12	3a	WC III	3b	Wetness				3b	9-052							
							20	38	18	10YR4/2		MD - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
							38	50	12	2.5YR5/1		MP - N.5YR4/6				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No																			
							50	120	70	2.5YR5/1		VP - Very many Prominent				Yes	C-Clay	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	cal	No																		
14	TQ 67132	77423	567132	177423	3	s7		0	10	10								C-Clay						-111	-109	4							Non-Ag	Non-agricultural	10-063						



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A



Project Number	Project Name	Parcel
ALCSP12	C629 LTC ALCSP12	ALCSP12

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ67037802	RM188QU	3	26.60000038

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
552	1496	122	127	102	1

Bedrock	Superficial deposits
Thanet Formation	Taplow Gravel Member/Head

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	06/02/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
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 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
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 LP - Loamy peats  
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**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

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Loose  
 Very friable  
 Friable  
 Firm  
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 Extremely firm  
 Extremely hard  
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NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
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**Ped. Size**

VF - Very Fine  
 F - Fine  
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**Degree of Ped. Development**

W - Weak  
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 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP13	C629 LTC ALCSP13	ALCSP13

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66237932	RM16 3LT	16	26.10000038

MAFF prov	MAFF detailed	Flooding
Grade 2/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
550	1480	127	125	100	1

Bedrock	Superficial deposits
Thanet Formation	Head/None

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook/Fyfield 4	None

Revision Number	Date Revised
1	06/02/2019



**Mottle form**

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 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13A	C629 LTC ALCSP13A	13A

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ65537962	RM18 8TL	21	26.29999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
549	1474	126	124	100	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1		Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Btm	Thick		Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type					Strength	Size	Shape	MBw	MBp	Gd	WC	Gw		
1	TQ 65532	79623	565532	179623	21			0	30	30	10YR4/2					No	MSL - M4	25		HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-43	-65	4	WC	I	1							4	11-041		
2	TQ 65532	79723	565532	179723	24			0	30	30	10YR4/2					No	MSL - M4	25	16	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-43	-54	3b	WC	I	1						3b	11-047			
3	TQ 65432	79723	565432	179723	24			0	30	30	10YR3/1					No	MSL - M4	50	30	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-66	-77	4	WC	I	1						4	11-048			
4	TQ 65332	79723	565332	179723	25			0	35	35	10YR3/1					No	MSL - M4	50	30	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-64	-75	4	WC	I	1						4	11-049			
5	TQ 65732	79823	565732	179823	21			0	30	30	10YR4/2					No	MSL - M4	40	20	5	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-61	-72	4	WC	I	1						4	11-051		
6	TQ 65632	79823	565632	179823	22			0	30	30	10YR4/2					No	MSL - M4	60	36	12	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-77	-83	4	WC	I	1						4	11-052		
7	TQ 65532	79823	565532	179823	24			0	30	30	10YR4/2					No	MSL - M4	40	20	12	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-60	-71	4	WC	I	1						4	11-053		
8	TQ 65432	79823	565432	179823	24			0	22	22	10YR4/2					No	FSL - Fin	6	2	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	33	-7	2	WC	I	1						2	11-054		
9	TQ 65332	79823	565332	179823	25			0	20	20	10YR4/2					No	FSL - Fin	5	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	33	-7	2	WC	I	1						2	11-055		
10	TQ 65232	79823	565232	179823	26			0	22	22	10YR4/2					No	FSL - Fin	5	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	34	-7	2	WC	I	1						2	11-056		
11	TQ 65532	79923	565532	179923	21			0	30	30	10YR4/2					No	SCL - San	25	11		HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	-35	-49	3b	WC	I	1						3b	11-058		
12	TQ 65432	79923	565432	179923	21			0	22	22	10YR4/2					No	FSL - Fin	10	6	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	27	-14	3a	WC	I	1						3a	11-059		
13	TQ 65332	79923	565332	179923	21			0	20	20	10YR4/2					No	FSL - Fin	5	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	33	-7	2	WC	I	1						2	11-060		
14	TQ 65232	79923	565232	179923	21			0	22	22	10YR4/2					No	FSL - Fin	8	3	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Non-cal	No	39	-6	2	WC	I	1						2	11-061		

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bttm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	Moderate	NON - Non-cal	No	MBw	MBp	Gd	WC		
15	TQ 65432 80023	565432	180023	21				0	25	25	10YR4/2					No	FSL - Fin6	2	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic			No	29	-6	2	WC1	1	Droughtiness				2		11-062					
								25	50	25	10YR5/4				No	SCL - San5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
								50	120	70	7.5YR5/6				No	HCL - Cla4			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate			No																		
16	TQ 65332 80023	565332	180023	21				0	28	28	10YR4/2					No	FSL - Fin6	2	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic		NON - Non-cal	No	20	-14	3a	WC1	1	Droughtiness				3a		11-063					
								28	50	22	10YR5/4				No	SCL - San5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate		NON - Non-cal	No																		
								50	120	70	7.5YR5/6				No	HCL - Cla4			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate		NON - Non-cal	No																		
17	TQ 65232 80023	565232	180023	21				0	25	25	10YR4/2					No	FSL - Fin5	1	0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic		NON - Non-cal	No	34	-7	2	WC1	1	Droughtiness				2		11-064					
								25	48	23	10YR5/4				No	FSL - Fin5			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate		NON - Non-cal	No																		
								48	70	22	7.5YR5/6				No	MCL - Cla1			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate		NON - Non-cal	No																		
								70	120	50	7.5YR6/3	FD - F1.5YR5/6		FD - F4.2.5YR5/2	Yes	MSZL - M1			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate		NON - Non-cal	No																		
18	TQ 65332 80123	565332	180123	22				0	30	30	10YR4/2					No	MCL - Cla2			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic		NON - Non-cal	No	27	-7	2	WC1	1	Droughtiness				2		11-065					
								30	50	20	10YR4/1				No	MCL - Cla6			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate		NON - Non-cal	No																		
								50	120	70	7.5YR4/5				No	HZCL - Sil0			HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate		NON - Non-cal	No																		
END																																									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13B	C629 LTC ALSCP13B	13B

Date of Survey	Survey Type	Surveyor(s)	Company
16/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ65137982	RM16 4UB	26	22.79999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
551	1469	126	123	100	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.	
	NGR	X	Y					Top	Bttm	Thick		Form	Munsell colour	Form	Munsell colour			No	%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type					Strength	Size	Shape	Moderate	NON	No	No	MBw			MBp
								0	28	28	10YR4/2					No	MSL - M40							Moderate	NON	No	No														
								45	50	5	10YR4/4					No	MSL - M475							Moderate	NON	No	No														
								50	120	70													Moderate	NON	No	No															
15	TQ 64931 80222	564931	180222	20		s7		0	28	28	10YR4/2					MCL - Cla5							Not Applic	NON	Non-cal	No	-28	-35	3b	WC I	1			Droughtiness			3b		12-041		
								28	45	17	7.5YR4/4					HCL - Cla5							Moderate	NON	Non-cal	No															
								45	50	5	7.5YR4/5					HCL - Cla50							Moderate	NON	Non-cal	No															
								50	120	70						HCL - Cla75							Moderate	NON	Non-cal	No															
16	TQ 64831 80222	564831	180222	20		s7		0	25	25	10YR4/2					MSL - M48							Not Applic	NON	Non-cal	No	-49	-59	4	WC I	1			Droughtiness			4		12-042		
								25	35	10	10YR4/4					MSL - M40							Moderate	NON	Non-cal	No															
								35	120	85						MSL - M475							Moderate	NON	Non-cal	No															
END																																									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
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 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
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 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13C	C629 LTC ALCSP13C	13C

Date of Survey	Survey Type	Surveyor(s)	Company
16/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63737992	RM16 3AH	26	22.20000076

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
554	1469	125	123	101	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Memb

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019





Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour	Ochreous Mottles		Grey Mottles		Gley No	Texture SCL - San	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.							
	NGR	X	Y					Top	Bttm	Thick		Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	Moderate	NON	Non-cal	No	MBw	IMBp			Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade
								52	120	68			10YR5/2					10																													
15	TQ64332	80223	564332	180223	22	s7		0	22	22	7.5YR4/4			No	FSL - Fin	8	4	1	GH - Gravel with non-porous (hard) stones				Not Applic	NON	Non-cal	No	19	-16	3a	WC I	1	Droughtiness			3a		12-047										
							22	54	32	7.5YR5/4			No	FSL - Fin	15			GH - Gravel with non-porous (hard) stones				Moderate	NON	Non-cal	No																						
							54	120	66	7.5YR5/6			No	MSL - Md	20			GH - Gravel with non-porous (hard) stones				Moderate	NON	Non-cal	No																						
16	TQ64232	80223	564232	180223	23	s7		0	25	25	7.5YR4/4			No	FSL - Fin	8	4	1	GH - Gravel with non-porous (hard) stones				Not Applic	NON	Non-cal	No	20	-16	3a	WC I	1	Droughtiness			3a		12-048										
							25	55	30	7.5YR5/4			No	FSL - Fin	15			GH - Gravel with non-porous (hard) stones				Moderate	NON	Non-cal	No																						
							55	120	65	7.5YR5/6			No	MSL - Md	20			GH - Gravel with non-porous (hard) stones				Moderate	NON	Non-cal	No																						
17	TQ64432	80323	564432	180323	23	s7																															12-062										
END																																															

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
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**Texture**

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 FS - Fine Sand  
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 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
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 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13D	C629 LTC ALCSP13D	13D

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63737992	RM16 3AH	26	26.60000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
554	1469	125	123	101	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix Munsell colour Form	Ochreous Mottles		Grey Mottles		Gley No	Texture MSL - Me	Stones - type 1			Stones - type 2			Ped			SUBS STR Moderate	CaCO3 NON - N	Mn C No	SPL No	Drought			Wet		Final ALC			Profile notes	Client Ref.			
	NGR	X	Y					Top	Bttm	Thick		Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	IMBw	IMBp	Gd	WC	Gw	Limitation 1			Limitation 2	Limitation 3	Grade
								60	120	60			7.5YR5/6					50																									
15	TQ64032	80422	564032	180423	25	s7		0	33	33	7.5YR3/4			No	MSZL - M5	4	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-24	-16	3b	WCI	1	Droughtiness				3b	gravel at 60cm difficult to auger 60cm+; 2 attempts to auger below 30cm	12-072										
							33	40	7	7.5YR3/2			No	MSZL - Medium sandy silt loam				Moderate	NON - N	No	No																						
							40	55	15	7.5YR3/3			No	FSL - Fine sandy loam				Moderate	SC - Slig	No	No																						
							55	60	5	5YR4/3			No	HCL - Clay loam (heavy)				Moderate	SC - Slig	No	No																						
16	TQ63932	80422	563932	180423	24	s7		0	30	30	10YR4/2			No	FSZL - Fir	6	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-3	1	3a	WCI	1	Droughtiness				3a	IMP: at 60cm, assume gravel, >70% HR and stop rooting at 80cm?	12-073										
							30	55	25	10YR4/4			No	FSZL - Fir	6	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							55	60	5	10YR4/4			No	FSZL - Fir	40	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							60	80	20				No	FSZL - Fir	75	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
17	TQ63832	80422	563832	180423	24	s7		0	30	30	10YR4/2			No	MSZL - M25	12	3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-63	-59	4	WCI	1	Droughtiness				4	IMP: at 40cm, assume gravel, >70% HR and stop rooting at 60cm?	12-074									
							30	40	10	10YR4/3			No	MSZL - M40				Moderate	NON - N	No	No																						
							40	60	20				No	MSZL - M75				Moderate	NON - N	No	No																						
18	TQ63931	80523	563932	180523	24	s7		0	30	30	10YR4/2			No	FSZL - Fir	10	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	No	No	-27	-22	3b	WCI	1	Droughtiness				3b	IMP: at 55cm, assume gravel, >70% HR and stop rooting at 75cm?	12-079										
							30	50	20	7.5YR4/5			No	C - Clay	10	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							50	55	5	7.5YR4/5			No	MZCL - Si	40	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
							55	75	20				No	MZCL - Si	75	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Moderate	NON - N	No	No																							
END																																											

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13F	C629 LTC ALCSP13F	13F

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	ASKEW LAND AND SOIL

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ6351804	RM16 3LP	25	39.40000153

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Floos Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
557	1470	125	123	101	1

Bedrock	Superficial deposits
Thanet Formation	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13G	C629 LTC ALCSP13G	13G

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ66388052	RM16 3DB	24	22.79999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
555	1471	125	123	101	1

Bedrock	Superficial deposits
Lambeth Group	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bttm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	Moderate	NON	N	No	MBw	MBp		
15	TQ63731	80723	563732	180723	27	s7		0	30	30	10YR3/3				No	SCL - San 3 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	-30	-21	3b	WCI	1	Droughtiness				3b		12-103						
								30	45	15	10YR3/2				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								45	60	15	7.5YR4/4				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								60	70	10	7.5YR4/6				No	MS - Medium Sand		Moderate	NON	N	No	No																		
16	TQ64431	80823	564432	180823	29	s7		0	10	10						MSZL - Medium sandy silt loam									-106	-104	4						Non-Ag		12-110					
17	TQ64331	80823	564332	180823	28	s7		0	33	33	10YR3/3				No	MSZL - M2 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	14	-2	2	WCI	1	Droughtiness				2		12-111						
								33	42	9	10YR3/2				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
								42	100	58	5YR4/4				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
18	TQ64231	80823	564232	180823	28	s7		0	35	35	10YR3/3				No	MSZL - M2 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	14	-2	2	WCI	1	Droughtiness				2		12-112						
								35	40	5	10YR3/2				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
								40	100	60	5YR4/4				No	MCL - Clay loam (medium)		Moderate	NON	N	No	No																		
19	TQ64130	80804	564131	180804	26	s7		0	30	30	10YR4/2				No	SCL - San 4 2 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	-6	-11	3a	WCI	1	Droughtiness				3a		12-113						
								30	40	10	10YR4/3				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								40	78	38	7.5YR4/3				No	HCL - Clay loam (heavy)		Moderate	NON	N	No	No																		
								78	100	22	5YR4/4				No	MS - Medium Sand		Moderate	NON	N	No	No																		
20	TQ64032	80787	564033	180788	27	s7		0	40	40	10YR4/2				Yes	SCL - San 4 2 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON	N	No	No	-7	-13	3a	WCI	1	Droughtiness				3a		12-114						
								40	60	20	7.5YR4/4				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								60	80	20	7.5YR4/4				No	SCL - Sandy clay loam		Moderate	NON	N	No	No																		
								80	90	10	7.5YR4/4				No	C - Clay		Moderate	NON	N	No	No																		
21	TQ64531	80922	564532	180923	31	s7		0	10	10						MSZL - Medium sandy silt loam									-106	-104	4						Non-Ag		12-123					
22	TQ64432	80911	564433	180912	29	s7		0	10	10						MSZL - Medium sandy silt loam																			Non-Ag		12-124			
END																																								

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
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**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13H	C629 LTC ALCSP13H	13H

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63928086	RM16 3BA	27	31.10000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
557	1467	125	122	101	1

Bedrock	Superficial deposits
Lambeth Group	Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
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 CF - Common Faint  
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 MF - Many Faint  
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**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
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 HCL - Clay loam (heavy)  
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 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
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 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
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**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13I	C629 LTC ALCSP13I	13I

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ63038112	RM16 3NB	25	24.29999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
563	1470	124	122	102	1

Bedrock	Superficial deposits
London Clay Formation/Lambeth Group	Head/Boyn Hill Gravel Member

Soil association(s) 1:250,000	Detailed soil information
Hucklesbrook/Windsor	None

Revision Number	Date Revised
1	15/03/2019



Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bttm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	Not Applic	NON - N	NON - N	No	MBw	MBp		
15	TQ62531	81422	562532	181423	16	s7		0	42	42	10YR3/2				No	HCL - Cla	6	5					HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	No	-52	-50	4	WC I	2				4	broad beans; difficult to auger 43cm due to stone : no gleying above 40cm and assume no spl above 70cm	12-187		
								42	43	1	10YR3/2			No	C - Clay	30							Moderate	NON - N	NON - N	No	No													
16	TQ62531	81523	562532	181523	16	s7		0	20	20	10YR4/2			Yes	C - Clay	3	2					HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	No	-52	-50	4	WC III	3b				4	broad beans; ditch recently cleared ; difficult to auger 50cm stone?	12-199			
								20	50	30	7.5YR5/3	CD - C 10YR5/6		Yes	C - Clay								Poor	NON - N	NON - N	No	Yes													
17	TQ62531	81622	562532	181623	16	s7		0	30	30	10YR4/2			Yes	C - Clay	3	2					HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	No	-17	-20	3a	WC III	3b				3b	broad beans	12-210			
								30	38	8	10YR4/2	CD - C 10YR5/6		Yes	C - Clay								Poor	NON - N	NON - N	No	Yes													
								38	90	52	10YR4/2	CD - C 10YR5/6		Yes	C - Clay								Poor	NON - N	NON - N	No	Yes													
								90	95	5	10YR4/2	CD - C 10YR5/6		Yes	C - Clay								Poor	NON - N	NON - N	Yes	Yes													
18	TQ62532	81736	562533	181737	14	s7		0	30	30	2.5Y4/2			Yes	C - Clay	1						HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	No	-19	-19	3a	WC III	3b				3b	broad beans; spl at 30cm; topsoil dry/cracked 27/03/2019	12-221			
								30	45	15	2.5Y4/2	CD - C 10YR5/6		Yes	C - Clay								Poor	NON - N	NON - N	Yes														
								45	90	45	10YR5/3	CD - C 10YR5/6		Yes	C - Clay										NON - N	NON - N	No	Yes												
19	TQ62431	81722	562432	181723	13	s7		0	20	20	10YR4/2			Yes	C - Clay	2						HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	No	-38	-24	3b	WC III	3b				3b	broad beans; difficult to auger 70cm + stone /drain?	12-222			
								20	50	30	10YR4/2	CD - C 10YR5/6		Yes	C - Clay								Poor	NON - N	NON - N	No	Yes													
								50	70	20	2.5Y5/2	MD - P10YR5/6		Yes	C - Clay										NON - N	NON - N	Yes													
20	TQ62531	81823	562532	181823	14	s7		0	30	30	10YR4/2			Yes	C - Clay	1	1					HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	No	-16	-16	3a	WC II	3a				3a	broad beans ;	12-229			
								30	40	10	10YR4/2	FF - Fe10YR5/6		Yes	C - Clay								Moderate	NON - N	NON - N	No	No													
								40	90	50	10YR5/2	MD - P10YR5/6		Yes	C - Clay								Poor	NON - N	NON - N	No	Yes													
21	TQ62431	81823	562432	181823	13	s7		0	20	20	10YR4/2			Yes	C - Clay	1	1					HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	No	-16	-23	3a	WC III	3b				3a	broad beans	12-230			
								20	100	80	10YR5/3	CD - C 10YR5/6		Yes	C - Clay									Poor	NON - N	NON - N	Yes													
END																																								

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
13J	C629 LTC ALCSP13J	13J

Date of Survey	Survey Type	Surveyor(s)	Company
15/04/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ62638132	RM16 3NB	25	29.39999962

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
566	1470	124	121	102	1

Bedrock	Superficial deposits
London Clay Formation	Head

Soil association(s) 1:250,000	Detailed soil information
Windsor/Hucklesbrook	None

Revision Number	Date Revised
1	15/03/2019





Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Bottom	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	MBw		
15	TQ 62631 81622	562632	181623	19	s7			0 30 30	10YR4/2								Yes	M2CL - S1 HCL - Cla1 C - Clay C - Clay	4	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	-26	-12	3b	WC III	3a	Droughtiness				3b		12-209			
16	TQ 62731 81722	562732	181723	14	s7			0 35 35	10YR4/2							Yes	C - Clay C - Clay C - Clay	5	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	-19	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120cm	12-219					
17	TQ 62631 81723	562632	181723	14	s7			0 35 35	10YR4/2							Yes	C - Clay C - Clay	5	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	-19	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic clay continues to 120cm	12-220					
18	TQ 62731 81822	562732	181823	14	s7			0 38 38	10YR4/2							Yes	C - Clay C - Clay	3	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	14	-7	2	WC I	3a	Wetness				3a	Augered to 70cm where IMP. Very dry and dense throughout. 3a T5 texture	12-227				
19	TQ 62631 81822	562632	181823	14	s7			0 35 35	10YR4/2							Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	-17	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume clay continues to 120cm	12-228					
20	TQ 62816 81926	562817	181927	12	s7			0 25 25	10YR4/2							Yes	C - Clay C - Clay	2 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	-2	-21	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120cm	12-235				
21	TQ 62731 81923	562732	181923	10	s7			0 28 28	10YR4/2							Yes	C - Clay C - Clay	3 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	-2	-21	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120cm	12-236				
22	TQ 62631 81923	562632	181923	10	s7			0 35 35	10YR4/2							Yes	C - Clay C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	3	-17	3a	WC II	3a	Droughtiness Wetness				3a	Augered to 70cm, assume C continues to 120cm. Gley and SPL from 50cm.	12-237				
23	TQ 62731 82022	562732	182023	12	s7			0 34 34	10YR4/2							Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	3	-17	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120cm	12-239				
24	TQ 62631 82023	562632	182023	10	s7			0 28 28	10YR4/2							Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	1	-19	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120cm	12-240				
25	TQ 62731 82123	562732	182123	11	s7			0 28 28	10YR4/2							Yes	C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	-19	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120cm	13-001					
26	TQ 62631 82122	562632	182123	8	s7			0 28 28	10YR4/2							Yes	C - Clay C - Clay C - Clay	1	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - Moderate	NON - Poor	Non-ca	Non-ca	No	1	-19	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume C continues to 120cm	13-002				
END																																									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP14	C629 LTC ALCSP14	ALCSP14

Date of Survey	Survey Type	Surveyor(s)	Company
21/02/2019		AR	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ62738222	RM16 3LT	11	37.40000153

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
564	1485	126	123	102	1

Bedrock	Superficial deposits
THAMES GROUP	None

Soil association(s) 1:250,000	Detailed soil information
Windsor/Fladbury 3	None

Revision Number	Date Revised
1	05/02/2019

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength					Size	Shape	Not Applic	NON - N	NON - N	NON - N	MBw	MBp		
1	TQ 62731 82223	562732	182223	11	s7	LEY	0 32	32 120	32 88	10YR4/2 2.5Y5/3	CD - C 10YR5/6				Yes	C - Clay C - Clay	1 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	Yes	Yes	0	-20	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-003				
2	TQ 62631 82223	562632	182223	8	s7	LEY	0 26	26 120	26 94	10YR4/2 2.5Y5/3	CP - C 10YR5/6			Yes	C - Clay C - Clay	1 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	Yes	Yes	-2	-22	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-004					
3	TQ 62731 82322	562732	182323	11	s7	LEY	0 38	38 90	38 52	10YR4/2 10YR5/3	CD - C 10YR5/6			Yes	C - Clay ZC - Silty clay	2 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	VSC - V	VSC - V	VSC - V	No	Yes	-20	-21	3b	WC III	3b	Wetness				3b	marginal calcareous for 3a	13-005					
4	TQ 62631 82322	562632	182323	8	s7	LEY	0 28	28 120	28 92	10YR4/2 2.5Y5/3	CP - C 10YR5/6			Yes	C - Clay C - Clay	1 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	Yes	Yes	-1	-21	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-006					
5	TQ 62731 82423	562732	182423	9	s7	LEY	0 35	35 80	35 45	10YR4/2 7.5YR5/3	MD - M 10YR5/6			Yes	ZC - Silty ZC - Silty clay	2 2	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Yes	-29	-23	3b	WC III	3b	Wetness	Droughtiness				3b		13-007				
6	TQ 62631 82423	562632	182423	7	s7	LEY	0 28	28 120	28 92	10YR4/2 2.5Y5/3	CP - C 10YR5/6			Yes	C - Clay C - Clay	1 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	Yes	Yes	-1	-21	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120.	13-008					
7	TQ 62731 82522	562732	182523	9	s7	LEY	0 22	22 50	22 28	10YR4/2				No	C - Clay C - Clay	1 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Moderate	-45	-42	3b	WC III	3b	Wetness	Droughtiness				3b		13-009				
8	TQ 62631 82523	562632	182523	7	s7	LEY	0 28 60	28 60 120	28 32 60	10YR4/2 10YR5/3 10YR5/3	CD - C 10YR5/6 CP - C 7.5YR5/6	CD - C 2.5Y6/1		Yes	C - Clay C - Clay C - Clay	2 0 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Yes	-2	-22	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120.	13-010					
9	TQ 62722 82620	562723	182621	6	s7	LEY	0 25	25 50	25 25	10YR4/2				No	C - Clay C - Clay	1 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Moderate	-44	-41	3b	WC III	3b	Wetness	Droughtiness				3b		13-011				
10	TQ 62622 82621	562623	182621	6	s7	LEY	0 28	28 120	28 92	10YR4/2 10YR5/3	CD - C 10YR5/6			Yes	C - Clay C - Clay	2 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	Yes	Yes	-2	-22	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-012					
11	TQ 62611 82709	562612	182709	6	s7	LEY	0 30	30 120	30 90	10YR3/2 10YR5/3	CD - C 10YR5/6			Yes	C - Clay C - Clay	2 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Yes	-1	-21	3a	WC III	3b	Wetness				3b	Augered to 60cm, assume plastic C continues to 120.	13-013					
12	TQ 62631 82822	562632	182823	2	s7	LEY	0 30	30 120	30 90	10YR4/2 10YR5/2	MP - M 10YR5/8			Yes	C - Clay C - Clay	2 0	HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Yes	-1	-21	3a	WC III	3b	Wetness				3b	Augered to 70cm, assume plastic C continues to 120.	13-014					
13	TQ 62631 82923	562632	182923	2	s7	LEY	0 22	22 50	22 28	10YR4/2				No	C - Clay C - Clay	1 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Moderate	-45	-42	3b	WC III	3b	Wetness	Droughtiness				3b		13-015				
14	TQ 62539 82924	562540	182924	1	s7	LEY	0 25	25 50	25 25	10YR4/2				No	C - Clay C - Clay	1 1	HR - All hard rocks or stones (i.e. those which cannot be scratched w HR - All hard rocks or stones (i.e. those which cannot be scratched w	Not Applic	NON - N	NON - N	NON - N	No	Moderate	-44	-41	3b	WC III	3b	Wetness	Droughtiness				3b		13-016				



**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP15	C629 LTC ALCSP15	ALCSP15

Date of Survey	Survey Type	Surveyor(s)	Company
22/02/2019		RWA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ62338352	RM14 3RE	3	75

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
571	1494	126	124	103	1

Bedrock	Superficial deposits
THAMES GROUP	None

Soil association(s) 1:250,000	Detailed soil information
Windsor/Fladbury 3	None

Revision Number	Date Revised
1	05/02/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
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 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP16	C629 LTC ALCSP16	ALCSP16

Date of Survey	Survey Type	Surveyor(s)	Company
18/03/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ59638362	RM15 6SP	24	32.29999924

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
591	1471	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Fladbury 3	None

Revision Number	Date Revised
1	07/02/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
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 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
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 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
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 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP17	C629 LTC ALCSP17	ALCSP17

Date of Survey	Survey Type	Surveyor(s)	Company
18/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	

Grid Reference	Postcode	Altitude	Area
TQ59538372	RM15 6SP	22	20

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
591	1473	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Shabbington	None

Revision Number	Date Revised
1	07/02/2019







**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
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 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
ALCSP18	C629 LTC ALCSP18	ALCSP18

Date of Survey	Survey Type	Surveyor(s)	Company
19/02/2019		RM	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	

Grid Reference	Postcode	Altitude	Area
TQ58938402	RM15 5EE	23	20.79999924

MAFF prov	MAFF detailed	Flooding
Grade 1/3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
591	1472	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Shabbington	None

Revision Number	Date Revised
1	07/02/2019



Point	Grid ref.		Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			Profile notes	Client Ref.
	NGR	X					Y	Top	Bottom	Thick	Munsell colour	Form	Munsell colour	Form			Munsell colour	%	> 2cm	> 6cm	Type	> 2cm	> 6cm	Type	Strength					Size	Shape	Poor	Non - N	Non - cal	MBw	MBp	Gd		
							45	70	25	10YR5/3	CP - C7.5YR5/6				Yes	SC - Sand 1							Moderate	NON - N	NON - cal	No													
15	TQ 58532 84323	558532	184323	23	s7		0	34	34	10YR4/2				No	MSL - M4 1							Not Applic	NON - N	NON - cal	30	-9	2	WC I	1								14-034		
							34	70	36	10YR4/4				No	MSL - M4 0							Moderate	NON - N	NON - cal	No														
							70	120	50	7.5YR5/6				Yes	SCL - San 0							Moderate	NON - N	NON - cal	No														
16	TQ 58432 84323	558432	184323	21	s7		0	34	34	10YR4/2				No	MSL - M4 2							Not Applic	NON - N	NON - cal	13	-10	3a	WC II	1								14-035		
							34	70	36	10YR4/4				No	MSL - M4 2							Moderate	NON - N	NON - cal	No														
							70	120	50	10YR6/4	CD - C 10YR5/6			Yes	C - Clay 2							Poor	NON - N	NON - Yes	No														
17	TQ 58632 84423	558632	184423	25	s7		0	24	24	7.5YR4/2				No	MSL - M4 8	4	1					Not Applic	NON - N	NON - cal	14	-19	3a	WC III	2								14-041		
							24	50	26	7.5YR5/2				No	MSL - M4 10							Moderate	NON - N	NON - cal	No														
							50	120	70	7.5YR5/3				No	SCL - San 10							Moderate	NON - N	NON - cal	No														
18	TQ 58532 84423	558532	184423	23	s7		0	22	22	10YR4/2				No	FS - Fine 4							Not Applic	NON - N	NON - cal	-55	-73	4	WC I	1								14-042		
							22	35	13	10YR5/2				No	FS - Fine 4							Moderate	NON - N	NON - cal	No														
							35	50	15	10YR6/4				No	FS - Fine 50							Moderate	NON - N	NON - cal	No														
							50	120	70	7.5YR6/6				No	SCL - San 50							Moderate	NON - N	NON - cal	No														
19	TQ 58432 84423	558432	184423	21	s7		0	22	22	10YR4/2				No	FS - Fine 4							Not Applic	NON - N	NON - cal	-53	-74	4	WC I	1								14-043		
							22	35	13	10YR5/2				No	FS - Fine 4							Moderate	NON - N	NON - cal	No														
							35	65	30	10YR6/4				No	FS - Fine 50							Moderate	NON - N	NON - cal	No														
							65	120	55	7.5YR6/6				No	SCL - San 50							Moderate	NON - N	NON - cal	No														
END																																							

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
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**Texture**

C - Clay  
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**Stone Type**

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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
19	C629 LTC ALCSP19	19

Date of Survey	Survey Type	Surveyor(s)	Company
25/03/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ58438412	RM15 5SD	20	12.10000038

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
588	1476	123	120	105	1

Bedrock	Superficial deposits
Thames Group	None

Soil association(s) 1:250,000	Detailed soil information
Shabbingdon	None

Revision Number	Date Revised
1	15/03/2019





**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
 CF - Common Faint  
 CD - Common Distinct  
 CP - Common Prominent  
 MF - Many Faint  
 MD - Many Distinct  
 MP - Many Prominent  
 VF - Very many Faint  
 VD - Very many Distinct  
 VP - Very many Prominent

**Texture**

C - Clay  
 CHK - Chalk  
 CS - Coarse Sand  
 CSL - Coarse sandy loam  
 CSZL - Coarse sandy silt loam  
 FP - Fibrous and semifibrous peats  
 FS - Fine Sand  
 FSL - Fine sandy loam  
 FSZL - Fine sandy silt loam  
 HCL - Clay loam (heavy)  
 HP - Humified peats  
 HZCL - Silty clay loam (heavy)  
 IMP - Impenetrable to roots  
 LCS - Loamy Coarse Sand  
 LFS - Loamy fine sand  
 LMS - Loamy medium sand  
 LP - Loamy peats  
 MCL - Clay loam (medium)  
 MS - Medium Sand  
 MSL - Medium sandy loam  
 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
 MZCL - Silty clay loam (medium)  
 OC - Organic clays  
 OL - Organic loams  
 OS - Organic sands  
 PL - Peaty loams  
 PS - Peaty sands  
 SC - Sandy clay  
 SCL - Sandy clay loam  
 SP - Sandy peats  
 ZC - Silty clay  
 ZL - Silt loam

**Stone Type**

CH - Chalk or chalk stones  
 FSST - Soft fine grained sandstones  
 GH - Gravel with non-porous (hard) stones  
 GS - Gravel with porous stones (mainly soft stone types listed above)  
 HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)  
 MSST - Soft, medium or coarse grained sandstones  
 SI - Soft 'weathered' igneous or metamorphic rocks or stones  
 SLST - Soft oolitic or dolomitic limestones  
 ZR - Soft, argillaceous or silty rocks or stones

**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
 NA - N/A

**Subsoil Structure Condition**

Not Applicable  
 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
 VSC - Very slightly calcareous (0.5 - 1% CaCO<sub>3</sub>)  
 SC - Slightly calcareous (1 - 5% CaCO<sub>3</sub>)  
 MC - Moderately calcareous (5 - 10% CaCO<sub>3</sub>)  
 VC - Very calcareous (>10% CaCO<sub>3</sub>)

**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

Project Number	Project Name	Parcel
20	C629 LTC ALCSP20	20

Date of Survey	Survey Type	Surveyor(s)	Company
25/03/2019		RA	Askew Land and Soil

Weather	Relief	Land use and vegetation
Dry, Sunny	Level	LEY (Ley Grass)

Grid Reference	Postcode	Altitude	Area
TQ58238462	RM14 2TZ	22	33.90000153

MAFF prov	MAFF detailed	Flooding
Grade 3	None	Flood Zone 1

AAR	AT0	MDw	MDp	FCD	Climate grade
794	1431	92	81	188	1

Bedrock	Superficial deposits
THAMES GROUP	None

Soil association(s) 1:250,000	Detailed soil information
Shabbington/Windsor	None

Revision Number	Date Revised
1	15/03/2019





Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix		Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1			Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC				Profile notes
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour	%			> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	MBw	MBp	Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3	
END																																									

**Mottle form**

FF - Few Faint  
 FD - Few Distinct  
 FP - Few Prominent  
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 CD - Common Distinct  
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 MCL - Clay loam (medium)  
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 MSZL - Medium sandy silt loam  
 MZ - Marine Light Silts  
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**Ped. Shape**

SG - Single grain  
 GRA - Granular  
 SAB - Subangular Blocky  
 AB - Angular Blocky  
 PRIS - Prismatic  
 PLAT - Platy  
 MASS - Massive  
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**Subsoil Structure Condition**

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 Good  
 Moderate  
 Poor

**Soil or Ped. Strength**

Loose  
 Very friable  
 Friable  
 Firm  
 Very firm  
 Extremely firm  
 Extremely hard  
 N/A

**Calcareousness**

NON - Non-calcareous (<0.5% CaCO<sub>3</sub>)  
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**Ped. Size**

VF - Very Fine  
 F - Fine  
 M - Medium  
 C - Coarse  
 VC - Very Coarse  
 NA - N/A

**Degree of Ped. Development**

W - Weak  
 M - Moderate  
 S - Strong  
 NA - Not applicable

**Wetness Class**

WC I  
 WC II  
 WC III  
 WC IV  
 WC V  
 WC VI

**ALC Grades**

1  
 2  
 3a  
 3b  
 4  
 5  
 Non-Ag

**Gley**

None  
 Gley  
 N/A

## Annex C Predictive ALC





C690 - Lower Thames Crossing: ALC Climate data per 1km Gid Square

UID	1km Grid	X	Y	Height (m)	AAR	AT	MW	MP	FCD	GRADE
1	TQ9057	557511	190522	82	610	1402	114	108	114	1
2	TQ8958	558507	189502	68	605	1419	116	111	111	1
3	TQ8957	557533	189479	40	599	1450	119	115	110	1
4	TQ8858	558490	188490	31	598	1461	120	117	110	1
5	TQ8857	557485	188463	32	598	1460	120	116	110	1
6	TQ8758	558494	187461	20	595	1474	122	119	108	1
7	TQ8658	558530	186496	8	593	1488	124	121	107	1
8	TQ8558	558461	185517	24	596	1470	122	119	107	1
9	TQ8557	557491	185480	17	592	1479	122	119	107	1
10	TQ8461	561507	184502	5	583	1492	125	123	106	1
11	TQ8460	560500	184497	9	591	1488	124	122	105	1
12	TQ8459	559500	184473	30	596	1464	122	119	106	1
13	TQ8458	558488	184536	23	591	1472	123	120	105	1
14	TQ8362	562524	183476	3	570	1494	126	124	105	1
15	TQ8361	561498	183460	7	577	1490	125	123	104	1
16	TQ8360	560517	183529	-3	580	1501	126	124	104	1
17	TQ8359	559486	183453	23	589	1472	123	120	105	1
18	TQ8358	558505	183486	19	584	1477	123	121	104	1
19	TQ8262	562521	182496	7	656	1490	126	124	104	1
20	TQ8164	564498	181483	32	562	1462	124	121	102	1
21	TQ8163	563472	181467	20	560	1475	125	123	102	1
22	TQ8162	562507	181513	16	563	1480	125	123	103	1
23	TQ8065	565531	180495	32	556	1462	125	122	101	1
24	TQ8064	564502	180494	23	551	1472	126	124	100	1
25	TQ8063	563502	180494	25	557	1470	125	123	101	1
26	TQ8062	562522	180511	26	564	1469	124	121	102	1
27	TQ7966	566496	179496	13	549	1484	127	126	101	1
28	TQ7965	565502	179486	21	549	1474	126	124	102	1
29	TQ7964	564497	179512	27	553	1468	125	123	101	1
30	TQ7963	563468	179498	28	557	1467	125	122	102	1
31	TQ7867	567511	178497	5	552	1493	128	127	101	1
32	TQ7866	566514	178519	14	554	1483	127	125	100	1
33	TQ7767	567503	177489	4	556	1495	128	127	100	1
34	TQ7766	566538	177463	5	555	1494	128	126	102	1
35	TQ7668	568508	176524	1	559	1498	128	127	101	1
36	TQ7667	567502	176510	2	559	1497	128	127	102	1
37	TQ7666	566499	176513	1	559	1499	128	127	102	1
38	TQ7665	565497	176531	-2	558	1503	128	127	104	1
39	TQ7567	567513	175422	0	560	1500	128	127	103	1
40	TQ7566	566486	175467	8	566	1492	126	125	104	1
41	TQ7467	567501	174508	0	572	1501	127	126	104	1
42	TQ7368	568507	173506	1	575	1499	127	125	107	1
43	TQ7367	567521	173485	2	577	1499	126	125	109	1
44	TQ7268	568510	172532	33	600	1463	122	119	115	1
45	TQ7267	567499	172438	45	606	1450	120	116	109	1
46	TQ7167	567497	171488	60	617	1433	118	113	118	1
47	TQ7067	567492	170495	77	628	1414	115	110	121	1
48	TQ7066	566529	170513	72	622	1420	116	111	120	1
49	TQ7065	565518	170493	69	620	1424	116	111	121	1
50	TQ6967	567500	169494	123	662	1362	108	101	129	1

	AOD	AAR	AT	MW	MP	FCD	GRADE
Min	-3	549	1362	108	101	100	1
Max	123	662	1503	128	127	129	1
Mean	22	581	1473	124	121	106	1

Lower Thames Crossing (C690)

Predictive Agricultural Land Classification (ALC) Map

Last Updated 25/06/20 Version 9

Auger Bore Location		Land Use	Climate limitations		Site limitations				Soil and interactive limitations										Predicted ALC Grade	MAFF Pre-1988 ALC	BMV Likelihood	Comments												
Down Grid	Up Grid	DU	Bearing (°)	Northing (Y)	MAFF Land use codes	Elevation (m)	Gradient (°)	ALC grade according to gradient	ALC grade according to micro-relief	Flood zone (non flood map for planning)	Predicted ALC grade according to flood risk in summer	Predicted ALC grade according to flood risk in winter	Soil forming material: bedrock (BS2, BS30)	Soil forming material: superficial deposits (BS2, BS3)	Soil association (National Soil Map 1:250k)	Water soil series in association	Predominant topsoil texture from published soil series data	Predominant Wetness Class (WC) from published soil associations	Topsoil stoniness	Predicted grade according to soil depth	Calculated ALC grade according to soil wetness	Calculated Moisture Balance (MB): Wheat	Predicted ALC grade according to soil droughtiness: Wheat	Calculated Moisture Balance (MB): Potatoes	Predicted ALC grade according to soil droughtiness: Potatoes	Predicted ALC grade according to risk of erosion	Predicted ALC grade according to most limiting factor	Provisional (Pre 1988) ALC grade	Predictive BMV Land Assessment © Defra: High likelihood of BMV land (>60% area BMV); Moderate likelihood of BMV land (20-60% area BMV); Low likelihood of BMV land (<20% area BMV); Non-agricultural uses: Urban / Industrial	Notes				
TQ19	TQ8957	1	557621.68	190021.73	DCW	607	1398	114	108	112	1	85	<7°	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	3	3a	6	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	2	557632.55	189723.32	LEV	599	1450	119	115	110	1	78	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	3	3a	6	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	3	557637.55	189623.32	DCW	599	1450	119	115	110	1	72	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	3	3a	6	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	4	557934.38	189623.32	CER	599	1450	119	115	110	1	63	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	3	3a	6	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	5	557788.11	189525.87	DCW	599	1450	119	115	110	1	62	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	3	3a	6	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	6	558016.12	189521.73	CER	605	1419	116	111	111	1	58	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	6	2	12	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	7	557941.78	189324.38	DCW	599	1450	119	115	110	1	53	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	3	3a	6	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	8	558212.94	189223.32	DCW	605	1419	116	111	111	1	42	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	6	2	12	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	9	558058.78	189123.98	DCW	605	1419	116	111	111	1	43	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	6	2	12	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	10	558328.03	189023.32	CER	605	1419	116	111	111	1	36	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	6	2	12	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	11	558428.03	189023.32	CER	605	1419	116	111	111	1	34	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	6	2	12	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	12	558528.03	189023.32	CER	605	1419	116	111	111	1	31	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	6	2	12	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	13	558428.03	188923.32	SCR	598	1461	120	117	110	1	32	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	14	558528.03	188923.32	CER	598	1461	120	117	110	1	31	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	15	558128.03	188823.32	LEV	598	1461	120	117	110	1	39	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	16	558228.03	188823.32	LEV	598	1461	120	117	110	1	37	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	17	558228.03	188723.32	LEV	598	1461	120	117	110	1	37	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	18	558895.39	188658.37	LEV	598	1461	120	117	110	1	37	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	19	558761.65	188653.74	SCR	598	1461	120	117	110	1	37	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	20	558228.03	188623.32	LEV	598	1461	120	117	110	1	36	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	21	558632.55	188623.32	SCR	598	1461	120	117	110	1	34	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	22	557932.55	188423.32	DCW	598	1460	120	116	110	1	29	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	17	3a	1	Non Agricultural	Urban	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	23	557828.03	188323.32	DCW	598	1460	120	116	110	1	26	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	17	3a	1	Non Agricultural	Urban	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	24	558028.03	188323.32	DCW	598	1461	120	117	110	1	27	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	Urban	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	25	558907.92	188318.03	CER	598	1461	120	117	110	1	23	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	26	558228.03	188223.32	DCW	598	1461	120	117	110	1	26	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	27	558428.03	188223.32	CER	598	1461	120	117	110	1	28	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	28	558628.03	188223.32	LEV	598	1461	120	117	110	1	21	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8957	29	557928.03	188123.32	DCW	598	1460	120	116	110	1	23	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	17	3a	1	Non Agricultural	Urban	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	30	558428.03	188123.32	CER	598	1461	120	117	110	1	25	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	31	558728.03	188123.32	DCW	598	1461	120	117	110	1	19	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	32	558836.07	188120.57	CER	598	1461	120	117	110	1	25	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	33	558528.03	188023.32	CER	598	1461	120	117	110	1	28	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	34	558728.03	188023.32	DCW	598	1461	120	117	110	1	17	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a	1	Non Agricultural	3	Low (<= 20% BMV)	Deciduous woodland
TQ18	TQ8958	35	558828.03	188023.32	CER	598	1461	120	117	110	1	24	<7°	1-3a	1-3a	Flood Zone 1	1	1	Clay, Silt and Sand	None	Windsor	Windsor	Heavy Clay Loam III	Slightly s1	3b	2	3a	18	3a</					

















TQ27	TQ768	507	568228.03	177223.32	CER	556	1495	128	127	100	1	14	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Sand and Grav	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	508	568328.03	177223.32	CER	556	1495	128	127	100	1	14	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Sand and Grav	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	509	568428.03	177223.32	CER	556	1495	128	127	100	1	13	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Sand and Grav	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	510	568528.03	177223.32	CER	556	1495	128	127	100	1	12	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ767	511	567912.15	177153.74	CER	556	1495	128	127	100	1	9	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Sand and Grav	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	1	3a	33	3b	1	3b	2	High (>60% BMV)		
TQ27	TQ767	512	567342.58	177129.93	DCW	556	1495	128	127	100	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Chalk	Clay, Silty, Pea	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	1	3a	33	3b	1	Non Agricult	3	High (>60% BMV)	Deciduous woodland	
TQ27	TQ768	513	568028.03	177123.32	CER	556	1495	128	127	100	1	12	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Sand and Grav	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	514	568128.03	177123.32	CER	556	1495	128	127	100	1	11	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Sand and Grav	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	515	568228.03	177123.32	CER	556	1495	128	127	100	1	12	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Sand and Grav	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	516	568328.03	177123.32	CER	556	1495	128	127	100	1	12	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	517	568428.03	177123.32	CER	556	1495	128	127	100	1	11	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	518	568528.03	177123.32	CER	556	1495	128	127	100	1	10	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand	Clay, Silty, Sand	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	519	568628.03	177123.32	CER	556	1495	128	127	100	1	8	<7*	1-3a	1-3a	Flood Zone 1	1	1	Sand, Silt and	Clay, Silty, Sand	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	520	568228.03	177023.32	CER	556	1495	128	127	100	1	9	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	521	568328.03	177023.32	CER	556	1495	128	127	100	1	9	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silty, Sand	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	522	568428.03	177023.32	CER	556	1495	128	127	100	1	8	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silty, Sand	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	523	568528.03	177023.32	CER	556	1495	128	127	100	1	7	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silty, Sand	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ768	524	568628.03	177023.32	CER	556	1495	128	127	100	1	6	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silty, Sand	Hucklesbrook	Hucklesbrook	Sandy Loam	I	Moderat	1	1	9	2	25	3a	1	3a	2	High (>60% BMV)		
TQ27	TQ7666	525	566428.03	176623.32	CER	559	1499	128	127	102	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-7	3a	-31	3b	1	3b	3	Low (<= 20% BMV)	
TQ27	TQ7666	526	566428.03	176523.32	CER	559	1499	128	127	102	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-7	3a	-31	3b	1	3b	3	Low (<= 20% BMV)	
TQ27	TQ7467	527	567358.19	174316.97	LEY	572	1501	127	126	104	1	6	<7*	1-3a	1-3a	Flood Zone 2	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-6	3a	-30	3a	1	3b	4	Low (<= 20% BMV)	
TQ27	TQ7467	528	567338.34	174220.94	DCW	572	1501	127	126	104	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-6	3a	-30	3a	1	Non Agricult	4	Low (<= 20% BMV)	Deciduous woodland
TQ27	TQ7467	529	567328.03	174123.32	DCW	572	1501	127	126	104	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-6	3a	-30	3a	1	Non Agricult	4	Low (<= 20% BMV)	Deciduous woodland
TQ27	TQ7367	530	567228.03	173323.32	CER	577	1499	126	125	109	1	3	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	None	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-5	3a	-28	3a	1	3b	Urban	Low (<= 20% BMV)	
TQ27	TQ7367	531	567430.41	173308.24	CER	577	1499	126	125	109	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-5	3a	-28	3a	1	3b	4	Low (<= 20% BMV)	
TQ27	TQ7367	532	567530.41	173308.24	CER	577	1499	126	125	109	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-5	3a	-28	3a	1	3b	4	Low (<= 20% BMV)	
TQ27	TQ7367	533	567630.41	173308.24	CER	577	1499	126	125	109	1	2	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Sand and Grav	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-5	3a	-28	3a	1	3b	4	Low (<= 20% BMV)	
TQ27	TQ7367	534	567728.03	173297.52	SCR	577	1499	126	125	109	1	3	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Sand and Grav	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-5	3a	-28	3a	1	Non Agricult	4	Low (<= 20% BMV)	
TQ27	TQ7367	535	567826.7	173252.42	CER	577	1499	126	125	109	1	3	<7*	1-3a	1-3a	Flood Zone 3	1	1	Possib	Chalk	Clay, Silty, Pea	Wallasea 1	Wallasea	Silty Clay	III	Stoneles	1	3b	-5	3a	-28	3a	1	3b	4	Low (<= 20% BMV)	
TQ27	TQ7267	536	567401.83	172727.55	SCR	606	1450	120	116	109	1	29	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	28	2	-1	2	1	2	2	Urban	High (>60% BMV)		
TQ27	TQ7267	537	567232.55	17273.32	CER	606	1450	120	116	109	1	22	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	28	2	-1	2	1	2	2	Urban	High (>60% BMV)		
TQ27	TQ7267	538	567328.03	172523.32	CER	606	1450	120	116	109	1	41	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	28	2	-1	2	1	2	3	High (>60% BMV)			
TQ27	TQ7267	539	567440.73	172338.13	CER	606	1450	120	116	109	1	49	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	28	2	-1	2	1	2	3	High (>60% BMV)			
TQ27	TQ7267	540	567528.03	172233.32	CER	606	1450	120	116	109	1	51	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	28	2	-1	2	1	2	3	High (>60% BMV)			
TQ27	TQ7267	541	567440.73	172221.12	CER	606	1450	120	116	109	1	52	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	28	2	-1	2	1	2	3	High (>60% BMV)			
TQ27	TQ7267	542	567628.03	172123.32	CER	606	1450	120	116	109	1	53	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Frlsham	Frlsham	Sandy Heavy Cl	I	Slightly s	1	24	2	-8	2	1	2	3	High (>60% BMV)			
TQ27	TQ7168	543	568128.03	171923.32	CER	617	1433	118	113	118	1	35	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Frlsham	Frlsham	Sandy Heavy Cl	I	Slightly s	1	26	2	-5	2	1	2	2	High (>60% BMV)			
TQ27	TQ7168	544	568228.03	171923.32	CER	617	1433	118	113	118	1	31	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	31	1	2	2	1	2	2	High (>60% BMV)			
TQ27	TQ7168	545	568328.03	171923.32	CER	617	1433	118	113	118	1	46	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	31	1	2	2	1	2	2	High (>60% BMV)			
TQ27	TQ7168	546	568428.03	171923.32	CER	617	1433	118	113	118	1	41	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	31	1	2	2	1	2	2	High (>60% BMV)			
TQ27	TQ7168	547	568528.03	171923.32	CER	617	1433	118	113	118	1	32	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly s	1	31	1	2	2	1	2	2	High (>60% BMV)			
TQ27	TQ7168	548	568628.03	171923.32	CER	617	1433	118	113	118	1	30	<7*	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Frlsham	Frlsham	Sandy Heavy Cl	I	Slightly s	1	26	2	-5	2	1	2	2	High (>60% BMV)			
TQ27	TQ7168	549	568228.03	171823.																																	



TQ27	TQ7067	639	567528.03	170423.32	CER	620	1424	116	111	121	1	77	<7"	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Fyfield 4	Fyfield	Sandy Loam	I	Stoneless	1	1	18	2	7	2	1	2		Non Agriculture	High (>60% BMV)	
TQ27	TQ7066	640	566028.03	170123.32	SCR	622	1420	116	111	120	1	78	<7"	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Coombe 1	Coombe	Silty Clay loam	I	Slightly st	1	1	33	1	8	2	1		Non Agriculture	High (>60% BMV)	Scrub adjacent to railway	
TQ27	TQ7066	641	566128.03	170123.32	SCR	622	1420	116	111	120	1	72	<7"	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Fyfield 4	Fyfield	Sandy Loam	I	Stoneless	1	1	18	2	7	2	1		Non Agriculture	High (>60% BMV)	Scrub adjacent to railway	
TQ27	TQ7066	642	566128.03	170023.32	SCR	622	1420	116	111	120	1	82	<7"	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Fyfield 4	Fyfield	Sandy Loam	I	Stoneless	1	1	18	2	7	2	1		Non Agriculture	High (>60% BMV)	Scrub adjacent to railway	
TQ27	TQ6966	643	566628.03	169823.32	CER	662	1362	108	101	129	1	73	<7"	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silt, Sand	Coombe 1	Coombe	Silty Clay loam	I	Slightly st	1	1	41	1	14	1	1	1			High (>60% BMV)	
TQ27	TQ6971	644	569720.88	169743.16	CER	662	1362	108	101	129	1	71	<7"	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Fyfield 4	Fyfield	Sandy Loam	I	Stoneless	1	1	26	2	17	1	1	2			High (>60% BMV)	
TQ27	TQ6971	645	569820.88	169743.16	CER	662	1362	108	101	129	1	70	<7"	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Frilsham	Frilsham	Sandy Heavy Cl	I	Slightly st	1	1	36	1	7	2	1	2			High (>60% BMV)	
TQ27	TQ6971	646	569920.88	169743.16	CER	662	1362	108	101	129	1	71	<7"	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silt, Sand	Frilsham	Frilsham	Sandy Heavy Cl	I	Slightly st	1	1	36	1	7	2	1	2			High (>60% BMV)	
TQ27	TQ6966	647	566728.03	169723.32	CER	662	1362	108	101	129	1	74	<7"	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silt, Sand	Coombe 1	Coombe	Silty Clay loam	I	Slightly st	1	1	41	1	14	1	1	1			High (>60% BMV)	
TQ27	TQ6966	648	566828.03	169723.32	CER	662	1362	108	101	129	1	77	<7"	1-3a	1-3a	Flood Zone 1	1	1	Sand	None	Fyfield 4	Fyfield	Sandy Loam	I	Stoneless	1	1	26	2	17	1	1	2			High (>60% BMV)	
TQ27	TQ6971	649	569720.88	169643.16	CER	662	1362	108	101	129	1	72	<7"	1-3a	1-3a	Flood Zone 1	1	1	Chalk	None	Frilsham	Frilsham	Sandy Heavy Cl	I	Slightly st	1	1	36	1	7	2	1	2			High (>60% BMV)	
TQ27	TQ6971	650	569820.88	169643.16	CER	662	1362	108	101	129	1	75	<7"	1-3a	1-3a	Flood Zone 1	1	1	Chalk	Clay, Silt, Sand	Frilsham	Frilsham	Sandy Heavy Cl	I	Slightly st	1	1	36	1	7	2	1	2			High (>60% BMV)	

## Annex D Soil Pit Descriptions



















## Annex E Topsoil Particle Size Distribution (PSD) – Certificates of Analysis



**ANALYTICAL REPORT**

**Report Number** 49475-19 N717  
**Date Received** 26-MAR-2019  
**Date Reported** 01-APR-2019  
**Project** SOIL  
**Reference** LOWERTHAMES CROSSING  
**Order Number**

Laboratory Reference		SOIL429627	SOIL429628								
Sample Reference		2-046	2-012								
Determinand	Unit	SOIL	SOIL								
Coarse Sand 2.00-0.63mm	% w/w	2	1								
Medium Sand 0.63-0.212mm	% w/w	3	1								
Fine Sand 0.212-0.063mm	% w/w	48	66								
Silt 0.063-0.002mm	% w/w	25	17								
Clay <0.002mm	% w/w	22	15								
Textural Class **		SCL	fSL								

**Notes**

**Analysis Notes** The sample submitted was of adequate size to complete all analysis requested.  
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## ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

<b>Class</b>	<b>Code</b>
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.



**ANALYTICAL REPORT**

**Report Number** 49476-19 N717  
**Date Received** 26-MAR-2019  
**Date Reported** 01-APR-2019  
**Project** SOIL  
**Reference** LOWERTHAMES CROSSING  
**Order Number**

Laboratory Reference		SOIL429629	SOIL429630	SOIL429631	SOIL429632	SOIL429633	SOIL429634			
Sample Reference		2-061	3-061	4-038	6-045	4-047	6-052			
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sand 2.00-0.063mm	% w/w	42	44	40	6	39	17			
Silt 0.063-0.002mm	% w/w	30	29	32	33	34	31			
Clay <0.002mm	% w/w	28	27	28	61	27	52			
Textural Class **		HCL	HCL	HCL	O-C	HCL	C			

**Notes**

Analysis Notes      The sample submitted was of adequate size to complete all analysis requested.  
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<b>Class</b>	<b>Code</b>
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.

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**ANALYTICAL REPORT**

<b>Report Number</b>	<b>51443-19</b>	<b>N717</b>	<b>Client C629</b>
<b>Date Received</b>	<b>09-APR-2019</b>		<b>LOWER THAMES CROSSING</b>
<b>Date Reported</b>	<b>16-APR-2019</b>		
<b>Project</b>	<b>SOIL</b>		
<b>Reference</b>	<b>C629</b>		
<b>Order Number</b>			

Laboratory Reference		SOIL431615	SOIL431616	SOIL431617	SOIL431618	SOIL431619	SOIL431620			
Sample Reference		12-078	12-174	12-067	12-088	12-100	12-111			
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Coarse Sand 2.00-0.63mm	% w/w	2	3	3	2	2	2			
Medium Sand 0.63-0.212mm	% w/w	31	30	20	18	17	24			
Fine Sand 0.212-0.063mm	% w/w	19	17	17	16	19	17			
Silt 0.063-0.002mm	% w/w	35	33	46	49	44	42			
Clay <0.002mm	% w/w	13	17	14	15	18	15			
Textural Class **		mSL	mSZL/mSL	mSZL	mSZL	MCL/mSZL	mSZL			

**Notes**

Analysis Notes      The sample submitted was of adequate size to complete all analysis requested.  
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\*\* Please see the attached document for the definition of textural classes.

## ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

<b>Class</b>	<b>Code</b>
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.



**ANALYTICAL REPORT**

**Report Number** 51444-19 N717  
**Date Received** 09-APR-2019  
**Date Reported** 15-APR-2019  
**Project** SOIL  
**Reference** C629  
**Order Number**

Laboratory Reference		SOIL431621	SOIL431622	SOIL431623	SOIL431624						
Sample Reference		13-009	13-027	12-133	4-048						
Determinand	Unit	SOIL	SOIL	SOIL	SOIL						
Sand 2.00-0.063mm	% w/w	21	12	40	47						
Silt 0.063-0.002mm	% w/w	45	31	39	28						
Clay <0.002mm	% w/w	34	57	21	25						
Textural Class **		HCL	C	MCL	MCL						

**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.  
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## ADAS (UK) Textural Class Abbreviations

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<b>Class</b>	<b>Code</b>
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:

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**ANALYTICAL REPORT**

<b>Report Number</b>	<b>52156-19</b>	<b>N717</b>	<b>Client C629</b>
<b>Date Received</b>	<b>15-APR-2019</b>		<b>LOWER THAMES CROSSING</b>
<b>Date Reported</b>	<b>23-APR-2019</b>		
<b>Project</b>	<b>SOIL</b>		
<b>Reference</b>	<b>C629</b>		
<b>Order Number</b>			

Laboratory Reference		SOIL432443	SOIL432444	SOIL432445	SOIL432446	SOIL432447				
Sample Reference		11-003	11-029	11-060	10-059	13-065				
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL				
Sand 2.00-0.063mm	% w/w	57	34	40	3	45				
Silt 0.063-0.002mm	% w/w	29	51	47	36	35				
Clay <0.002mm	% w/w	14	15	13	61	20				
Textural Class **		SL	SZL	SZL	C	MCL				

**Notes**

Analysis Notes      The sample submitted was of adequate size to complete all analysis requested.  
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\*\* Please see the attached document for the definition of textural classes.



## ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

<b>Class</b>	<b>Code</b>
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:

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**ANALYTICAL REPORT**

<b>Report Number</b>	<b>52157-19</b>	<b>N717</b>	<b>Client C629</b>
<b>Date Received</b>	<b>15-APR-2019</b>		<b>LOWER THAMES CROSSING</b>
<b>Date Reported</b>	<b>23-APR-2019</b>		
<b>Project</b>	<b>SOIL</b>		
<b>Reference</b>	<b>C629</b>		
<b>Order Number</b>			

Laboratory Reference	SOIL432448	SOIL432449	SOIL432450	SOIL432451	SOIL432452	SOIL432453	SOIL432454	SOIL432455	SOIL432456	SOIL432457
<b>Sample Reference</b>	13-075	13-035	12-033	14-003	14-041	14-064	14-081	14-082	14-051	12-019
<b>Determinand</b>	<b>Unit</b>	<b>SOIL</b>	<b>SOIL</b>	<b>SOIL</b>	<b>SOIL</b>	<b>SOIL</b>	<b>SOIL</b>	<b>SOIL</b>	<b>SOIL</b>	<b>SOIL</b>
Coarse Sand 2.00-0.63mm	% w/w	3	6	3	3	3	2	2	3	2
Medium Sand 0.63-0.212mm	% w/w	8	31	27	33	26	24	21	13	23
Fine Sand 0.212-0.063mm	% w/w	9	11	27	14	29	35	32	24	18
Silt 0.063-0.002mm	% w/w	39	36	32	29	27	23	28	42	42
Clay <0.002mm	% w/w	41	16	11	21	15	16	17	18	15
Textural Class **		C	mSZL	mSL	SCL/MCL	mSL	mSL	mSL	MCL/mSZL	mSL

**Notes**

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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

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