

**Lower Thames Crossing
6.3 Environmental Statement
Appendices
Appendix 10.4 – Agricultural
Land Classification Factual
Report**

APFP Regulation 5(2)(a)

Infrastructure Planning (Applications:
Prescribed Forms and Procedure)
Regulations 2009

Volume 6

DATE: October 2022

Planning Inspectorate Scheme Ref: TR010032
Application Document Ref: TR010032/APP/6.3

VERSION: 1.0

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:
- a. Shabbington: agricultural land is limited mainly by soil droughtiness to Grade 2, Subgrade 3a or Subgrade 3b.
 - b. Fyfield 4: agricultural land is limited mainly by soil droughtiness to Grade 2, Subgrade 3a or Subgrade 3b.
 - c. 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. Shabbington 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.

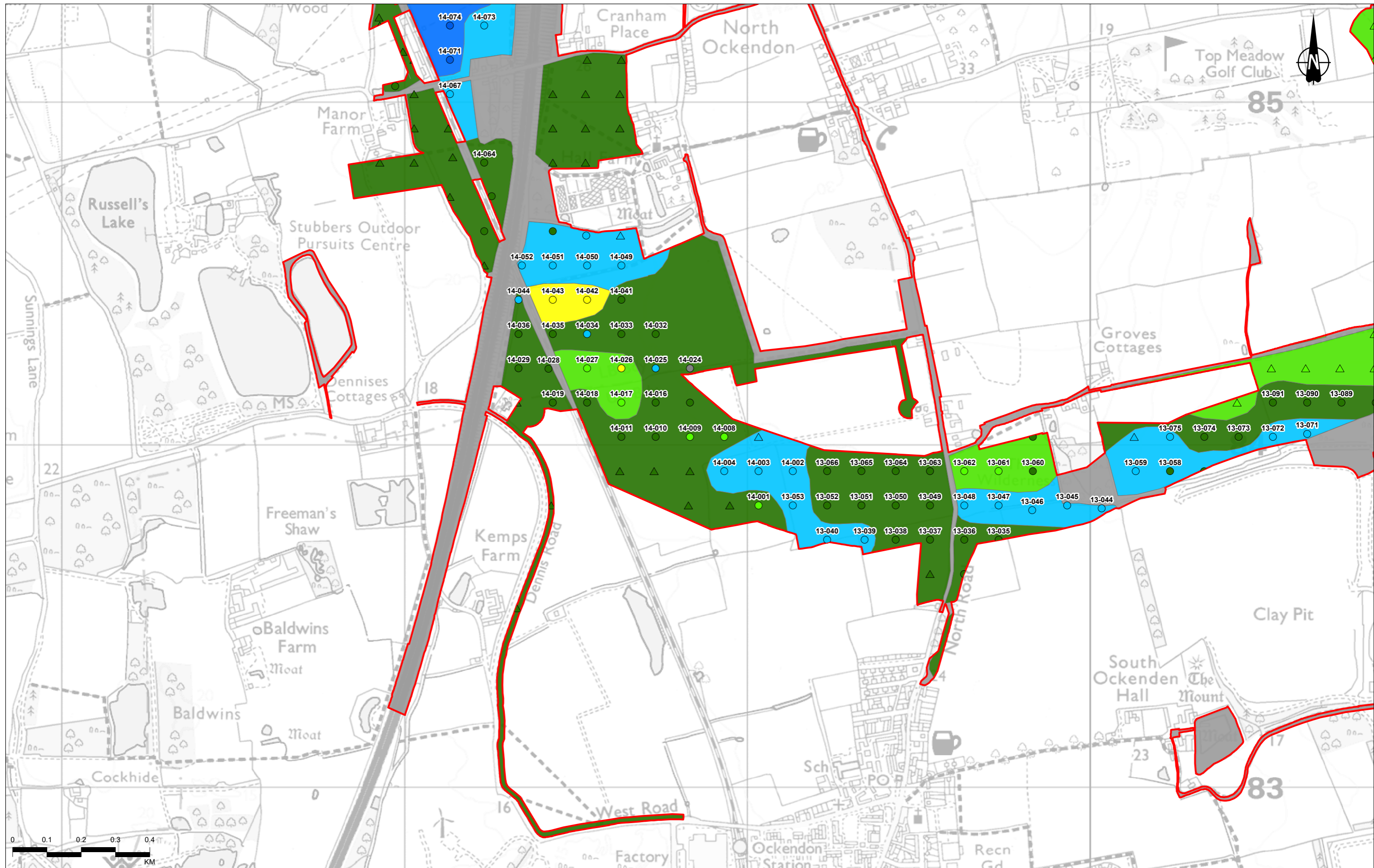
2.8 ALC grading to the north of the River Thames

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)	358.72	21.0
<i>BMV</i>	<i>437.13</i>	<i>25.6</i>
Subgrade 3b (moderate)	672.73	39.4
Grade 4 (poor)	26.63	1.6
Grade 5 (very poor)	0.00	0.0
Non-agricultural	571.13	33.4
Total	1707.63	100.0

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 1.4.



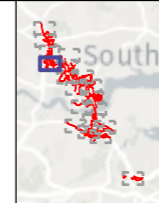
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P02	S8	30/09/2022	DCO Application	SW	TA	BF
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

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

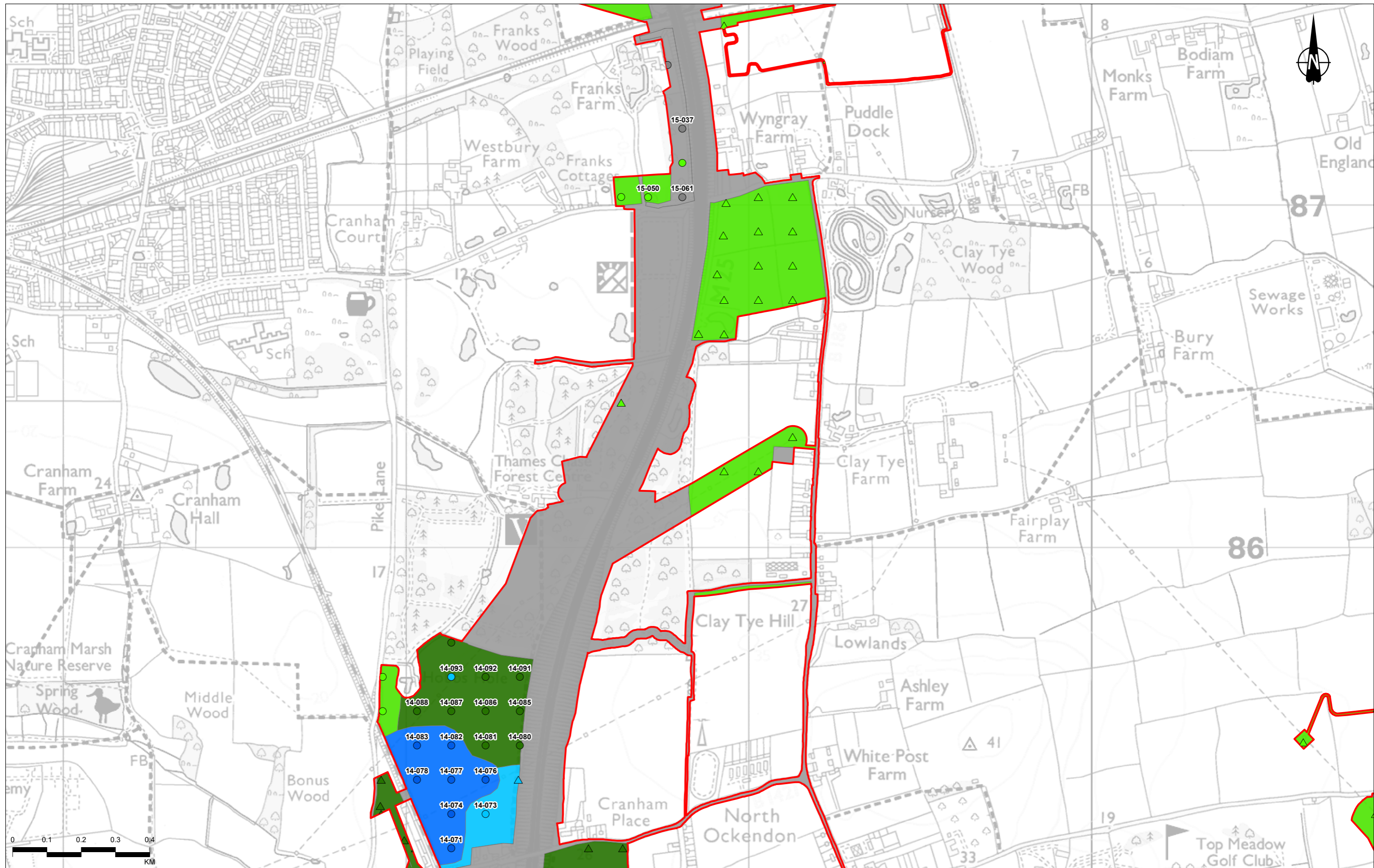


Client: national highways

Project: LOWER THAMES CROSSING

Status	DCO APPLICATION	Original Size	A3	Revision	P02
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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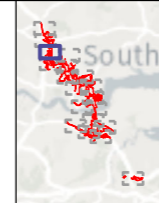
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Notes:

1. For ALC survey data, please see Annex B (Application Document 6.3, Appendix 10.2)
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Legend	
Order Limits	Agricultural Land Classification
Grade 1	Surveyed ALC Grade
Grade 2	Predicted ALC Grade
Grade 3a	Grade 3a
Grade 3b	Grade 3b
Grade 4	Non-agricultural
Non-agricultural	



Client
 national highways
 Project
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