

The Great Grid Upgrade

Sea Link

Sea Link

Volume 9: Examination Submissions

Document 9.31: Agricultural Land Classification (ALC) Survey Results - Kent

Planning Inspectorate Reference: EN020026

**Version: A
March 2026**

nationalgrid

Page intentionally blank

Contents

Executive Summary	1
1. Introduction	2
1.1 Background	2
2. ALC Methodology	4
2.1 ALC Site Survey	4
2.2 Predictive ALC Grading Methodology	5
3. Baseline Information	7
3.1 Land Use	7
3.2 Topography and Relief	7
3.3 Flooding	7
3.4 Geology	7
3.5 Previous ALC	8
3.6 Soil Auger Bore Data	8
3.7 Climatological Data	8
4. ALC Assessment	10
4.1 Soil Type	10
4.2 Climatic Limitations	10
4.3 Site Limitations	10
4.4 Soil Limitations	10
4.5 Chemical Limitations	11
4.6 Interactive Limitations	11
4.7 Most Limiting Factors	11
5. ALC Grade Distribution	12
6. ALC Result Comparison	13
7. Conclusion	14
References	15

Appendix A Auger Bore Log and ALC Mapping	A.1
Appendix B Soil Pit Profile Descriptions	B.1
Appendix C Predictive ALC Methodology	C.1
Appendix D Laboratory Analyses	D.1
Appendix E Comparison and Reassessment of Likely Significant Effect	E.1

Table of Tables

Table 1 Auger Bore Survey Status	3
Table 2 Available Met Office climate data for land within the Order Limits	8
Table 3 Key to Table 2	9
Table 4 ALC Grade Distribution	12
Table 5 ALC Distribution Comparison for Kent Onshore	13
Table C.1 Data used in predictive ALC	C.1
Table E.1 Permanent and Temporary Land Take Per ALC Grades	E.2
Table E.2 Agricultural Land (BMV) Effect	E.3

Executive Summary

- Ex1.0.1 This report has been prepared to provide updated, site-specific Agricultural Land Classification (ALC) information in support of the Sea Link Project (hereafter referred to as the 'Proposed Project') in Kent (also known as the Kent Onshore Scheme). It is submitted during Examination to supplement and refine the assessment presented within **Application Document 6.2.3.6 (B) Part 3 Kent Chapter 6 Agriculture and Soils [PDA-023]** in the Environmental Statement submitted as part of the Application.
- Ex1.0.2 The ALC assessment originally submitted as part of the ES was informed by published available datasets and predictive modelling, including Defra Provisional ALC mapping, National Soil mapping, climatic data interpolation, purchased Cranfield University data, and professional judgment,
- Ex1.0.3 Since submission, site-specific soil surveys have been undertaken in line with the methodology set out in the Defra & Welsh Government (2025) Agricultural Land Classification for England and Wales: Guidelines for grading the quality of agricultural land. Field survey work comprised hand-auger borings and soil profile pit assessments to characterise soil texture, structure, depth, wetness characteristics, and other relevant limiting factors. Climatic limitations were assessed using standard ALC climatic datasets.
- Ex1.0.4 The purpose of this report is to:
- Present the findings of the detailed ALC surveys; and
 - Compare the extent of surveyed grades against the previously reported predictive assessment.
- Ex1.0.5 The detailed survey confirmed that 76.5 hectares (ha) of land within the Order Limits comprises Best and Most Versatile (Grades 1, 2 and Subgrade 3a) agricultural land. This is 8.5ha (5%) less than the predictive data indicated.
- Ex1.0.6 While localised differences between predictive mapping and field-verified grades have been identified, the overall distribution of land quality across the Order Limits is broadly consistent with that previously reported.
- Ex1.0.7 Accordingly, the conclusions of the ES in respect of the sensitivity, magnitude and significance of the effects on agricultural land remain unchanged.

1. Introduction

1.1 Background

- 1.1.1 This report sets out the updated assessment undertaken to assign grades to agricultural land in accordance with the Agricultural Land Classification (ALC) system associated with the Proposed Project (as described in **Application Document 6.2.1.4 (D) Part 1 Introduction Chapter 4 Description of the Proposed Project** submitted at Deadline 5). This report forms an update to **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [APP-174]**, which was prepared based on predictive modelling using available desk-based information.
- 1.1.2 This report presents the ALC survey methodology, the detailed ALC survey data, the ALC grades calculated from the survey data, the distribution of ALC grades, and a comparison between the results from the predictive modelling and the detailed survey. The ALC grades in this report confirm or supersede the previous grades derived from the predictive modelling. In addition, a reassessment of the impact on agricultural land has been undertaken using the survey results, which is presented in Appendix E.
- 1.1.3 This report should be read in conjunction with the following documents:
- **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [APP-174]; and**
 - **Application Document 6.3.3.6 Part 3 Kent Chapter 6 Agriculture and Soils [PDA-023].**
- 1.1.4 This report is supported by the following figure:
- **Auger Bore Location and Agricultural Land Classification Grade Distribution** (Appendix A) submitted at Deadline 5
- 1.1.5 The Agricultural Land Classification (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 categorized as Best and Most Versatile (BMV) (Defra & Welsh Government, 2025) (Natural England, 2012) . Further details of the ALC system and national planning policy implications are set out by Natural England (Natural England, 2021).
- 1.1.6 ALC surveys were undertaken between October 2025 and February 2026, with a total of 109 locations surveyed as identified in Appendix A: Auger Bore Location and ALC Grade Distribution.

Table 1 Auger Bore Survey Status

Auger Bore Status	No. Augers
Surveyed	109
Cranfield University Information	0
Scoped Out (design reasons)	64
Un-surveyed	3
Total	176

- 1.1.7 The ALC surveys were undertaken in line with the standards set out by the ALC Guidelines (Defra & Welsh Government, 2025). There were 3 survey locations where access wasn't possible. A total of 64 survey locations were scoped out, as the updated design indicates that land and soil in these areas will not be disturbed. For these areas the predictive assessment conducted in **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [APP-174]** has been used to cover this area as part of the assessment of the Proposed Project.
- 1.1.8 As only 3 proposed locations remained un-surveyed and 64 were scoped out due to no disturbance to soils and land, it is considered that no further ALC and soil surveys are required.

2. ALC Methodology

2.1 ALC Site Survey

2.1.1 The ALC survey and assessment was undertaken in accordance with:

- Soil Survey Field Handbook (Hodgson, 2022)
- ALC guidelines (Defra & Welsh Government, 2025); and
- Meteorological Office climatological data (Meteorological Office, 1989)

2.1.2 The survey points were set out at 100 m intervals along the Kent Onshore Scheme central alignment, and at a density of a 100 m grid within wider working areas such as the converter station and substation site. The survey density meets the requirements of one auger bore examination per hectare from the ALC guidelines where practicable.

2.1.3 Auger bore examinations were conducted where land access permitted and the condition of the land and soil were suitable for the survey (e.g. very dry ground can prevent the full depth of the soil profile being exposed).

2.1.4 A total of 176 auger bores (see Appendix A) were plotted in ArcGIS prior to the survey and were loaded using the FieldMaps app into smart devices to locate the auger bores in the field.

2.1.5 The survey examined 109 soil profiles through the use of a hand auger and 2 soil pits/profiles.

2.1.6 Soil profiles were examined up to a depth of 120 cm using a 50 mm insulated Dutch soil auger, or to a depth of 100 cm for soil pits using hand-held insulated spades.

2.1.7 The following soil properties and site conditions were observed, examined and recorded:

- Texture;
- Horizon depths;
- Stoniness;
- Carbonate; presence and quantity;
- Colour;
- Mottling; presence, abundance, size and colour;
- Soil structure;
- Slope and topography; and
- Land use.

2.1.8 10% hydrochloric acid was used to determine the presence and quantity of carbonate in the soil.

2.1.9 A Munsell Soil Colour Chart (Munsell, 2022) was used to describe soil and mottle colours.

- 2.1.10 A small number of soil samples were collected and sent to NRM Laboratory (UKAS accredited) for particle size distribution analysis to confirm the hand texturing undertaken during the surveys (see Appendix D).
- 2.1.11 A Cable Avoidance Tool and Signal Generator (CAT and Genny) was used to scan each auger bore and soil pit prior to breaking ground to ensure buried services were avoided. Soils from each auger bore and soil pit were reinstated immediately following examination and record of description.
- 2.1.12 In areas where a medium or higher UXO risk had been identified through a detailed desk study, a UXO specialist was present on site to undertake scanning prior to augering. No UXO were found.
- 2.1.13 The observed and recorded soil data from the field surveys were collated, analysed and used to determine the following limitations to ALC Grades:
- Climatic limitations
 - Site limitations
 - Gradient
 - Microrelief
 - Flooding
 - Soil limitations
 - Texture and structure
 - Depth
 - Stoniness
 - Chemical
 - Interactive limitations
 - Soil wetness
 - Droughtiness
 - Erosion
- 2.1.14 Based on the most limiting factor, the final ALC Grades and their distribution were subsequently determined and mapped.
- 2.1.15 Where the ALC surveys were not were not conducted, the original desk based predictive assessment (as presented in **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [APP-174]**) was utilised.

2.2 Predictive ALC Grading Methodology

- 2.2.1 This site-based ALC assessment of agricultural land within the Order Limits for the Kent Onshore development is supported by predictive modelling of agricultural grades for 3 auger bore locations where access was not feasible.
- 2.2.2 These predictive modelling locations were arranged on a 100 m grid pattern at a density of approximately one sample point per hectare. The coordinates for all predictive ALC

grading locations are listed in Annex A of **Application Document 6.3.3.6. A ES Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [APP-174]**.

- 2.2.3 The predictive ALC grading comprised an assessment of the likely soil types present and the factors affecting soils at the given locations to assess the potential land grades as detailed in **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent APP-174]**.
- 2.2.4 A summary of the methodology for the predictive assessment is detailed in Appendix C.

3. Baseline Information

3.1 Land Use

- 3.1.1 Aerial imagery indicates that the land use across the Kent Onshore Scheme is predominately a mixture of arable land and seasonal grazing land. This has been confirmed through detailed site surveys.

3.2 Topography and Relief

- 3.2.1 Using available desk-based information the land within the Order Limits across the Kent Onshore Scheme is shown as relatively level and with an average gradient of 2.84°. On average, the quality of agricultural land is generally not limited by gradient as the angle of slope does not exceed 7° (See Table 1 of the ALC Guidelines; (Defra & Welsh Government, 2025)).
- 3.2.2 As part of the original predictive assessment there were 17 locations (as identified in **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [APP-174]**) where calculated gradient exceeded 7°. Following the site surveys there were no grade-limiting gradients recorded. This discrepancy is likely due to the level of granularity available in the original GIS data set.
- 3.2.3 Following the site survey, it is concluded that the quality of land within the Order Limits is not limited by microrelief.

3.3 Flooding

- 3.3.1 From the Environment Agency Flood Map for Planning website (Environment Agency, 2021) the land within the Order Limits for the Kent Onshore Scheme contains significant areas of land classified as being in Flood Zone 3, as well as further areas in Flood Zone 2. For Flood Zone 3 this means that there is a high probability of flooding in these areas, quantified as a 1% or more chance of flooding from rivers, or a 0.5% or more chance of flooding by sea. For Flood Zone 2 these risks are noted as a 0.1% risk of flooding from rivers and a 0.05%-0.1% chance of flooding from the sea.
- 3.3.2 These flood zones primarily follow the coastal strip and the southern bank of the River Stour.
- 3.3.3 Land within areas identified as Flood Zone 3 would be limited to Grade 3b.

3.4 Geology

- 3.4.1 The solid geology underlying the study area is described as comprising Thanet Formation. This comprises sand, silt, and clay sedimentary rocks formed approximately 56 to 59 million years ago in the Palaeogene Period.
- 3.4.2 This solid geology is in the main overlain by tidal flat deposits within the study area. This material comprises clay and silt and was deposited around two million years ago in the

Quaternary Period. Along the alignment of Richborough Way these superficial deposits are absent.

3.5 Previous ALC

- 3.5.1 Provisional 1:250,000 scale ALC mapping showed the land within the Kent Onshore Scheme to be indicatively mapped as predominately Grade 2 land to the north of the Stour River, with the land to the south of the river mapped as Provisional Grade 3 land.
- 3.5.2 There is no existing published detailed ALC mapping available for the Kent Onshore Scheme Order Limits.

3.6 Soil Auger Bore Data

- 3.6.1 Local auger bore data was purchased from Cranfield University to support in the original development of the predictive modelling (**Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [APP-174]**).

3.7 Climatological Data

- 3.7.1 The available climate data for ALC which have been used to represent 5 km grid squares covering the Order Limits are shown in Table 1. These are the values that have been used to calculate interpolated values for each of the auger locations.

Table 2 Available Met Office climate data for land within the Order Limits

5 km grid reference	Height (m)	AAR	AT0	FCD	MDW	MDP	Grade according to climate only ¹
TR300550	23	685	1468	141	122	119	1
TR300600	5	660	1487	134	128	127	1
TR300650	16	614	1472	123	125	123	1
TR350550	4	675	1489	138	126	125	1
TR350600	4	649	1487	133	131	130	1
TR350650	33	617	1452	125	125	123	1
TR350700	10	590	1476	117	131	131	1
TR400650	0	619	1488	124	131	131	1
TR400700	13	600	1471	119	130	129	1

¹ This is the grade according to climate only, excluding any other limiting factor, i.e., site, soil and/or interactive limitations.

Table 3 Key to Table 2

Parameter	Definition
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

- 3.7.2 With reference to Figure 1 ‘*Grade according to climate*’ of the ALC Guidelines (Defra & Welsh Government, 2025), there is no overall climatic limitation to the quality of agricultural land within the Order Limits for the Kent Onshore Scheme. 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.
- 3.7.3 The climatic data presented in Table 2 was used to calculate interpolated climatic values for each of the predicted auger locations, based upon the proximity of each location to the surrounding climatic points. The interpolated climatic values for each location are detailed in Appendix A.
- 3.7.4 Agricultural land within the Order Limits for the Kent Onshore Scheme is predicted to be at field capacity (i.e., near saturation point) for between 125 and 134 days (average 128) per year (see Appendix A). In combination with topsoil texture and wetness class, this will cause an interactive limitation to agricultural land quality, i.e., soil wetness and/or soil droughtiness.

4. ALC Assessment

4.1 Soil Type

- 4.1.1 The ALC survey indicated that the primary soils identified were deep silty and clayey soils predominantly over clayey subsoils.

4.2 Climatic Limitations

- 4.2.1 Prior to the commencement of the surveys, the climatic data shown in Table 2 were analysed to assess potential limitations to land grade based on the climate parameters. The climatic Grade, as detailed in Section 3.7, is identified as Grade 1. As such, climatic conditions do not present a limitation across the Kent Onshore Scheme.

4.3 Site Limitations

Gradient and Microrelief

- 4.3.1 As stated in Section 3.2, the Kent Onshore Scheme is predominantly flat. Field surveys confirmed this general topography within the Order Limits with land noted as predominately being level (0-1 degrees), with gently sloping (2-3 degrees) land in places. No complex microrelief was identified during the field surveys. As such, gradient and microrelief are not considered to represent a limitation to land grade.

Flooding

- 4.3.2 Auger points K2-K35 and N13-N15 are noted as being situated within the Flood Zone 3 area, as such they are limited to Grade 3b.

4.4 Soil Limitations

Soil Depth and Stoniness

- 4.4.1 The surveys, geological maps/data and national soil maps/data indicate that all the soils within the Order Limits are deeper than 1.2 m, as such soil depth is not a limiting factor.
- 4.4.2 The topsoils mostly contain few hard stones (1-5%) with large areas of stoneless soils also observed. Details regarding stone content for each auger bore are provided in Appendix A.

Soil Texture

- 4.4.3 Topsoil texture is not a direct limiting factor, as the topsoils are predominantly medium to heavy loams and clays, with light silts occurring in a small area. Details of the topsoil textures are provided in the Soil Log in Appendix A.

4.5 Chemical Limitations

- 4.5.1 No chemical limitations on soil physical conditions, crop yields or crop growth were observed during the surveys.

4.6 Interactive Limitations

- 4.6.1 Gleying was identified in 73 of the 109 surveyed locations within the Kent Onshore Scheme. The wetness class for these soils is typically II or III depending on the depth of the gleying layer and slowly permeable layer (SPL). Details regarding gleying depth, wetness class, grade and SPL are provided in the Auger Bore Log (Appendix A).
- 4.6.2 The majority of auger points south of the River Stour are noted as having observed gleying layers and heavy clay topsoils.
- 4.6.3 Moisture Balance (MB) values for wheat and potato were calculated for each of the surveyed locations and are presented in the Auger Bore Log (Appendix A).

4.7 Most Limiting Factors

- 4.7.1 Droughtiness, wetness, and flooding were the most common limiting factors for the agricultural land within the Order Limits, with Droughtiness being the dominant across the route, with flooding limitations occurring only south of the River Stour.

5. ALC Grade Distribution

- 5.1.1 The final ALC grade, soil properties, moisture balance, and limiting factors for each auger bore are presented in Appendix A. The ALC grade distribution for the Kent Onshore Scheme is presented in Table 4 below.
- 5.1.2 ALC grades per auger are provided in Appendix A. Maps showing the grade distribution can be found in Appendix A. The map is accurate to a scale of 1:10,000, any further enlargement could lead to inaccuracies.
- 5.1.3 As described in the ALC Guidelines, the grade or subgrade of the 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.
- 5.1.4 The land has been graded and mapped without regard to present land boundaries, except where they coincide with permanent physical features. A degree of variability in physical characteristics within a discrete area is to be expected.

Table 4 ALC Grade Distribution

ALC Grade	Area (ha)	Percentage (%)
Grade 1	11	6.5
Grade 2	5.5	3.3
Grade 3a	60	35.3
<i>BMV land</i>	<i>76.5</i>	<i>45.1</i>
Grade 3b	76.9	45.3
Grade 4	1.7	1
Grade 5	0	0
Non-Agricultural	14.6	8.6
Total	169.7	100

6. ALC Result Comparison

6.1.1 Table 5 summarises and compares the area and percentage of each ALC grade based on the Predictive Modelling and the detailed Site Survey.

Table 5 ALC Distribution Comparison for Kent Onshore

ALC Grade	Predictive Modelling		Detailed Site Survey		Comparison
	Area (ha)	Area (%)	Area (ha)	Area (%)	Change
Grade 1	0.00	0.00	11	6	+11ha, +6%
Grade 2	31.6	18.7	5.5	3	-26.1ha, -15.7%
Grade 3a	53.4	31.5	60	35	+6.6ha, +3.5%
<i>BMV Land</i>	<i>85.0</i>	<i>50.1</i>	<i>76.5</i>	<i>45.1</i>	<i>-8.5ha, -5%</i>
Grade 3b	71.1	41.8	76.9	45	+5.8ha, +3.2%
Grade 4	0.00	0.00	1.7	1	+1.7ha, +1%
Grade 5	0.00	0.00	0	0	No change
Non-Agricultural	14.6	8.02	13.6	9	1.0ha, +1%
Total	169.7 ha	100	169.7	100	0

*0.9ha of the 5.5ha of ALC Grade 2 land and 13.1ha of the 76.9ha ALC Grade 3b land were derived from predictive modelling due to inaccessibility for survey or scope-out.

6.1.2 The detailed ALC results indicate that the area of BMV land identified through the survey is largely consistent with the predicted area and distribution. The total area of BMV land identified in the survey is 8.5ha lower, representing a reduction of approximately 5%.

6.1.3 The areas of ALC Grades 3a, 3b and 4 identified in the detailed ALC survey are also broadly consistent with the results of predictive modelling, with changes ranging from 1% to 3.5%. ALC Grade 1 land was not identified in the Predictive Modelling; however, 11ha of Grade 1 land was identified in the detailed ALC survey. This discrepancy likely arises due to the predictive modelling for the Kent area being based on limited soil auger bore data and the coarse resolution of the National Soil Map (1:250,000 scale).

6.1.4 ALC Grade 2 land was overestimated in the Predictive Modelling, 26.1ha more compared to the detailed ALC.

6.1.5 A comparison of the ALC grade distributions between the detailed ALC survey map and the Predictive Modelling ALC map indicates that they are largely consistent and match.

7. Conclusion

- 7.1.1 The detailed ALC survey has identified the ALC grades and distribution as follows:
- ALC Grade 1: 11ha, accounting for 6%;
 - ALC Grade 2: 5.5ha, accounting for 3%;
 - ALC Grade 3a: 60ha, accounting for 35%;
 - ALC Grade 3b: 76.5ha, accounting for 45.1%;
 - ALC Grade 4: 1.7ha, accounting for 1%; and
 - BMV land: 76.5 ha, accounting for 45.1%.
- 7.1.2 The outcome of the detailed ALC survey is largely in line with the Predictive Modelling, particularly for ALC Grades 3a, 3b and 4, which together account for approximately 71% (prediction) and 80% (survey) of the total area.
- 7.1.3 The predicted extent of BMV land is also broadly in line with the results of the detailed ALC survey, with 50.1% predicted compared with 45.1% identified in the survey.
- 7.1.4 The ALC grade distributions in the detailed ALC survey map and the Predictive Modelling ALC map mostly match as well.
- 7.1.5 ALC Grades 1 and 2 were not accurately predicted, with differences of 6% and 15.7% respectively. However, this is not unexpected given the limited soil auger bore data (only two samples) and the absence of a localised soil series maps for this area. Nevertheless, predictive modelling provided a robust basis for the assessment of the likely impact on agricultural land.
- 7.1.6 The reassessment of the likely significant effects on BMV land and the comparison of the outcome of the reassessment with the ES conclusion confirms that there is no change in the significance of likely significant effects on BMV land. Therefore, the conclusions of the ES regarding the sensitivity, magnitude and significance of effects on BMV land remain unchanged and valid.

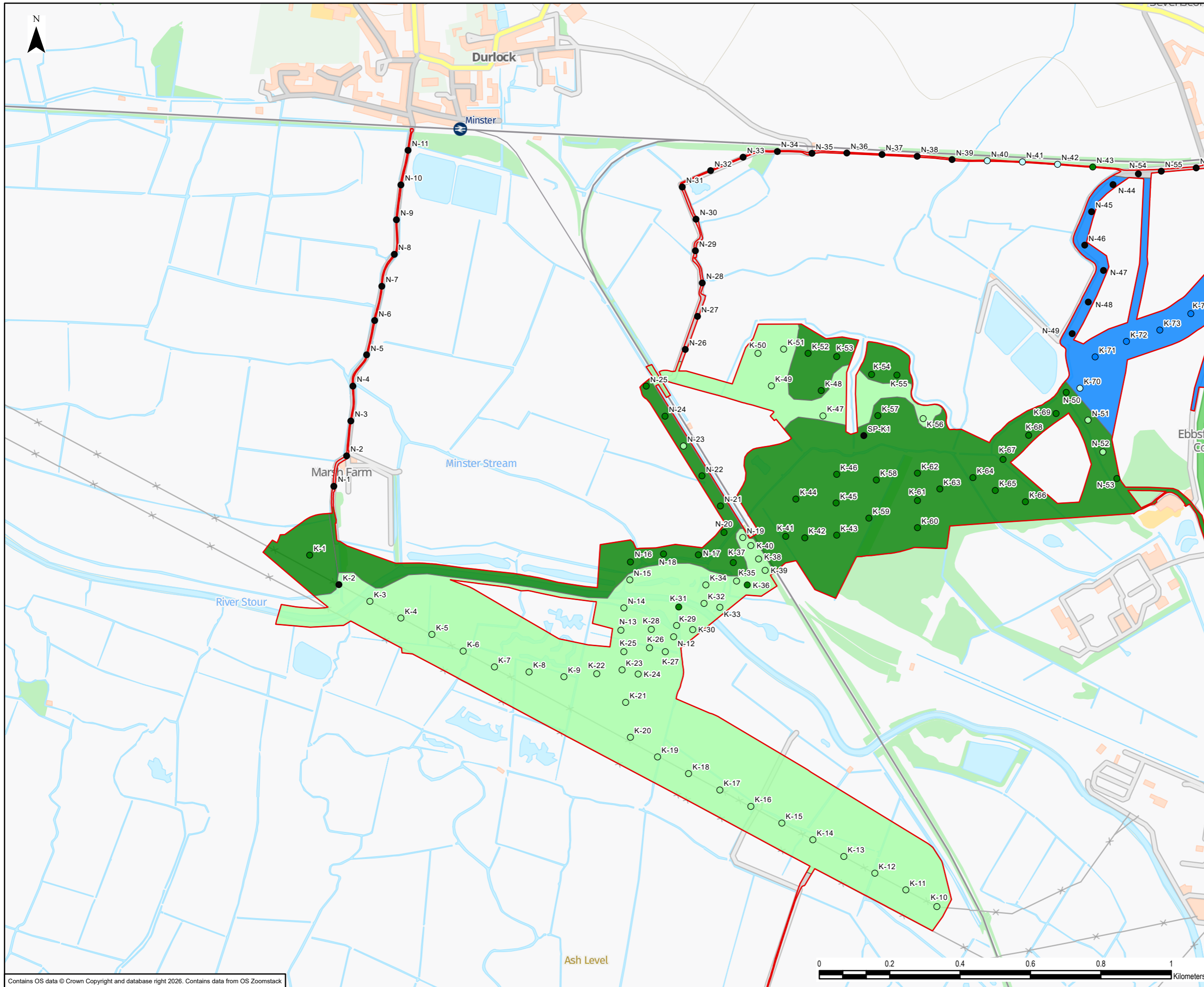
References

- Defra & Welsh Government. (2025). Agricultural Land Classification for England and Wales. Guidelines for grading the quality of agricultural land (JP069). Retrieved from <https://publications.naturalengland.org.uk/publication/6257050620264448>
- Environment Agency. (2021). *Get flood risk information for planning in England*. Retrieved from Flood Map for Planning: <https://flood-map-for-planning.service.gov.uk/>
- Hodgson, J. M. (2022). *The Soil Survey Handbook*. Soil Technical Monograph No.5. Cranfield University.
- Meteorological Office. (1989). *Climatological Data for Agricultural Land Classification*. London: The Meteorological Office.
- Ministry of Agriculture, Fisheries and Food. (1988). *Agricultural Land Classification of England and Wales*.
- Munsell. (2022). *Munsell Soil Colour Charts: with genuine Munsell colour chips*.
- Natural England. (2012). *Technical Information Note 049. ALC: Protecting the Best and Most Versatile Agricultural Land*. Retrieved May 21, 2024, from <https://www.gov.uk/government/organisations/natural-england>
- Natural England. (2021). *Guide to assessing development proposals on agricultural land*. Retrieved May 21, 2024, from <https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-proposals-on-agricultural-land>

Appendix A Auger Bore Log and ALC Mapping

Auger Bore No	BNG	Horizon Top (cm)	Horizon Bottom (cm)	Texture	Matrix Colour	Mottle Colour	Mottle %	Mottle Range	Gley	Depth to Gley	CaCo3 %	Slope	Hard Stone Content % >2mm	Hard Stone Content %>2cm	Hard Stone content %>6cm	Soft Stone Content % >2mm	Wetness Class	Wetness Grade	Droughtiness - MB Wheat	Droughtiness - MB Potato	Droughtiness Grade Converted	Droughtiness Grade	Grade by Depth	Grade by Topsoil Texture	Grade by Topsoil Stoniness	Limiting Factor 1 Droughtiness	Limiting Factor 2 Wetness	Limiting Factor 3	Final ALC Grade						
K1	TR307629	0	32	ZC	2.5Y4/2				Yes	45	very calcareous	level	1				II	3a	-3.3	-27.1	3.1	3a	1	1	1				3a						
		32	42	ZC	2.5Y4/2																														
		42	120	ZC	2.5Y5/2	.5Y6/1,10YR5/	40	many																											
K2 Pylon Footing	TR309627	0	18	mCL	7.5YR3/1						very calcareous	level											1	1	1	Flood Risk				3b					
		18	32	mCL	7.5YR3/2																														
		32	52	mCL	7.5YR6/4																														
K3	TR310627	52	120	C	7.5YR6/3	7.5YR6/1	5	common	Yes	22	very calcareous	level						III	2	2.2	-21.6	3.1	3a	1	1	1	Flood Risk				3b				
		0	22	mCL	7.5YR3/1																														
		22	38	mCL	7.5YR6/4	5YR6/1, 5YR5	30	many																											
K4	TR310626	38	120	ZC	7.5YR6/2	5YR6/1, 5YR5	5	common	Yes	23	very calcareous	level							III	2	-0.4	-24.3	3.1	3a	1	1	1	Flood Risk				3b			
		0	23	mCL	7.5YR3/2																														
		23	35	mCL	7.5YR4/1	5YR6/1, 5YR5	30	many																											
K5	TR310626	35	120	ZC	7.5YR6/2	5YR6/1, 5YR5	10	common			very calcareous	level											1	1	1	Flood Risk				3b					
		0	23	mCL	7.5YR3/2																														
		23	35	mCL	7.5YR4/1	5YR6/1, 5YR5	30	many																											
K6 UXO high	TR312625	0	22	hCL	7.5YR3/1				Yes	40	very calcareous	level											1	1	1	Flood Risk				3b					
		22	36	hCL	7.5YR3/2																														
		36	55	hCL	7.5YR6/4	5YR6/1, 7.5YR6/1	10	common																											
K7	TR313625	55	120	C	7.5YR6/2	5YR6/1, 7.5YR6/1	10	common			very calcareous	level											1	1	1	Flood Risk				3b					
		0	18	hCL	7.5YR6/2																														
		18	29	hCL	7.5YR6/2																														
K8	TR314625	29	60	hCL	7.5YR6/2				Yes	45	very calcareous	level											II	2	26.8	-10.1	3.1	3a	1	1	1	Flood Risk			3b
		60	120	C	7.5YR3/1																														
		0	25	hCL	7.5YR3/2																														
K9	TR325619	38	120	hCL	7.5YR6/2				Yes		very calcareous	level											I	2	-5.5	-29.5	3.1	3a	1	1	1	Flood Risk			3b
		0	29	ZC	7.5YR4/1																														
		29	50	ZC	7.5YR4/1																														
K10	TR324619	50	120	ZC	7.5YR6/2	5YR6/1, 7.5YR6/1	20	common	Yes	55	very calcareous	level	1										II	2	-1.5	-25.5	3.1	3a	1	1	1	Flood Risk			3b
		0	27	mCL	7.5YR4/2																														
		27	55	ZC	7.5YR6/3	5YR6/1, 7.5YR6/1	15	common																											
K11	TR323620	55	120	ZC	7.5YR6/2	5YR6/1, 7.5YR6/1	20	common	Yes	46	very calcareous	level	1										II	2	4.0	-20.0	3.1	3a	1	1	1	Flood Risk			3b
		0	35	hZCL	7.5YR4/1																														
		35	46	ZC	7.5YR5/2	5YR6/1, 5YR5	20	common																											
K12	TR322620	46	120	ZC	7.5YR6/2	5YR6/1, 5YR5	15	common	Yes	37	very calcareous	level	1										III	3a	0.0	-24.0	3.1	3a	1	1	1	Flood Risk			3b
		0	29	hZCL	7.5YR4/2																														
		29	60	ZC	7.5YR5/2	5YR6/1, 5YR5	20	common																											
K13	TR321621	60	120	ZC	7.5YR6/2	5YR6/1, 5YR5	20	common	Yes	55	very calcareous	level											II	2	5.3	-18.7	3.1	3a	1	1	1	Flood Risk			3b
		0	27	hZCL	10YR4/2																														
		27	39	hZCL	10YR4/2	5YR6/1, 7.5YR6/1	5	common																											
K14	TR320621	39	55	ZC	10YR6/4	5YR6/1, 7.5YR6/1	15	common	Yes	55	very calcareous	level											II	2	5.7	-18.2	3.1	3a	1	1	1	Flood Risk			3b
		55	120	ZC	10YR6/2	5YR6/1, 7.5YR6/1	30	many																											
		0	29	hZCL	10YR4/2																														
K15	TR319621	29	39	hZCL	10YR4/2	5YR6/1, 7.5YR6/1	5	common	Yes	39	very calcareous	level											III	3a	-7.1	-31.0	3.2	3b	1	1	1	Flood Risk			3b
		39	58	ZC	10YR6/4	5YR6/1, 7.5YR6/1	30	many																											
		58	120	ZC	10YR6/2	5YR6/1, 5YR5	20	common																											
K16	TR319622	0	25	ZC	10YR4/2				Yes	46	very calcareous	level											II	3a	-6.1	-30.0	3.2	3b	1	1	1	Flood Risk			3b
		25	39	ZC	10YR4/2																														
		39	120	ZC	10YR6/2	5YR6/1, 7.5YR6/1	20	common																											
K17	TR318622	0	32	ZC	7.5YR4/3				Yes	65	very calcareous	level											II	3a	-3.5	-27.5	3.1	3a	1	1	1	Flood Risk			3b
		32	65	ZC	7.5YR5/2	5YR6/1, 7.5YR6/1	5	common																											
		65	120	ZC	7.5YR6/3	5YR6/1, 7.5YR6/1	10	common																											
K18	TR317623	0	29	ZC	7.5YR4/4				Yes	66	very calcareous	level	1										II	3a	-5.4	-29.3	3.1	3a	1	1	1	Flood Risk			3b
		29	66	ZC	7.5YR5/4	5YR6/1, 7.5YR6/1	5	common																											
		66	120	ZC	7.5YR6/4	5YR6/1, 7.5YR6/1	10	common																											
K19	TR316623	0	35	ZC	7.5YR4/4						very calcareous	level											I	2	-1.9	-25.8	3.1	3a	1	1	1	Flood Risk			3b
		35	58	ZC	7.5YR5/4	5YR6/1, 7.5YR6/1	5	common																											
		58	120	ZC	7.5YR6/4	5YR6/1, 7.5YR6/1	10	common																											
K20	TR316624	0	32	ZC	7.5YR4/3				Yes	35	very calcareous	level	1										III	3a	-4.5	-28.2	3.1	3a	1	1	1	Flood Risk			3b
		32	120	ZC	7.5YR6/4	5YR6/1, 7.5YR6/1	30	many																											
		0	33	ZC	7.5YR4/1																														
K21	TR315625	33	120	ZC	7.5YR5/2	5YR6/1, 5YR5	15	common	Yes	40	very calcareous	level	0										III	3a	-2.7	-26.7	3.1	3a	1	1	1	Flood Risk			3b
		60	120	ZC	7.5YR6/3	5YR6/1, 5YR5	40	many																											
		0	27	hZCL	7.5YR3/3																														
K22	TR316625	27	36	hZCL	7.5YR3/4						very calcareous	level	0										I	2	32.1	-2.8	2	2	1	1	1	Flood Risk			3b
		36	120	hZCL	7.5YR6/4																														
		0	26	hZCL	7.5YR3/3																														
K23	TR316625	26	42	hZCL	7.5YR3/4				Yes	50	very calcareous	level	0										I	2	31.9	-3.0	2	2	1	1	1	Flood Risk			3b
		42	120	hZCL	7.5YR6/4																														
		0	27	hZCL	7.5YR6/4																														
K24 Scoped Out	TR316626	0	35	hZCL	7.5YR3/4						very calcareous	level	0										I	2	-128.2	-127.1	4	4	1	1	1	Flood Risk			3b
		35	120	hCL	10YR6/4	5YR5/8	2	common																											
		0	30	hZCL	7.5YR3/4																														
K25	TR317626	0	30	hCL	10YR6/4	5YR5/8	2	common			very calcareous	level	0										I	2	30.8	-6.1	2	2	1	1	1	Flood Risk			3b
		30	120	hCL	10YR6/4	5YR5/8	2	common																											
		0	22	mCL	7.5YR3/1																														

K29	TR317627	0	20	mCL	7.5YR3/1				very calcareo	level	0			I	1	25.8	-11.1	3.1	3a	1	1	1	Flood Risk	3b		
		20	35	mCL	7.5YR3/2				very calcareous																	
		35	50	hCL	7.5YR5/4				very calcareous																	
K30	TR318627	50	120	hCL	10YR6/4	YR6/1, 7.5YR6/1	1	few	very calcareous		0			I	2	-5.4	-27.3	3.1	3a	1	1	1	Flood Risk	3b		
		0	22	C	7.5YR4/3				very calcareous																	
		22	36	C	7.5YR6/4				very calcareous																	
K31	TR317627	36	120	C	7.5YR6/3	7.5YR6/1	2	common	very calcareous					I	2	5.2	-16.7	3.1	3a	1	1	1	Flood Risk	3b		
		0	20	hCL	7.5YR3/4				very calcareo	level	0															
		20	35	hCL	7.5YR4/3				very calcareous																	
K32	TR318627	35	51	hCL	7.5YR6/4				very calcareous																	
		51	120	C	7.5YR6/3	7.5YR6/1	2	common	very calcareous																	
		0	22	mZCL	10YR3/2				very calcareo	level	5	3	1	I	1	26.4	-7.7	2	2	1	1	1	Flood Risk	3b		
K33	TR319627	22	88	mZCL	10YR4/2				very calcareous		2															
		88	120	hZCL	10YR4/3				very calcareous		1															
		0	25	ZC	10YR4/2			Yes	55	very calcareo	level	1			II	3a	0.8	-22.1	3.1	3a	1	1	1	Flood Risk	3b	
K34	TR318628	25	55	ZC	2.5Y4/2				very calcareous																	
		55	120	ZC	2.5Y5/2	1.5Y5/1, 2.5Y5/1	35	many	very calcareous																	
		0	22	ZC	10YR3/2			Yes	22	very calcareo	level	1			III	3a	-8.6	-32.5	3.2	3b	1	1	1	Droughtiness	Flood Risk	3b
K35	TR319628	22	120	ZC	2.5Y5/2	1.5Y5/1, 2.5Y5/1	35	many	very calcareous																	
		0	25	hZCL	10YR3/2			Yes	45	moderately ca	level	0			II	2	5.7	-18.2	3.1	3a	1	1	1	Flood Risk	3b	
		25	40	hZCL	10YR3/3					moderately calcareous																
K36	TR319628	40	90	ZC	2.5Y5/2	1.5Y5/1, 2.5Y5/1	30	many	very calcareous																	
		90	120	ZC	GLE15/10Y	10YR5/8	30	many	very calcareous																	
		0	30	hZCL	10YR3/2					non-calcareo	level	0			I	2	3.7	-18.2	3.1	3a	1	1	1	Droughtiness	3a	
K37	TR319628	30	80	C	2.5Y5/3	YR5/1, 10YR5	35	many	non-calcareous																	
		80	120	ZC	10YR5/3	YR5/1, 10YR5	30	many	very calcareous																	
		0	22	hZCL	10YR3/2			Yes	45	moderately ca	level	1			II	2	5.7	-18.2	3.1	3a	1	1	1	Droughtiness	3a	
K38	TR320629	22	42	hZCL	10YR3/3				moderately calcareous																	
		42	120	ZC	2.5Y5/2	1.5Y5/1, 2.5Y5/1	25	many	very calcareous																	
		0	25	ZC	10YR3/3			Yes	55	non-calcareo	level	0			II	3b	-6.8	-30.7	3.2	3b	1	1	1	Droughtiness	Wetness	3b
K39	TR320628	25	45	ZC	10YR3/3				non-calcareous																	
		45	78	ZC	10YR5/3	YR5/1, 10YR5	30	many	moderately calcareous																	
		78	120	ZC	GLE15/10Y	10YR5/8	30	many	very calcareous																	
K40	TR320629	0	30	ZC	10YR3/2			Yes	35	non-calcareo	level	0			III	3b	-2.4	-24.3	3.1	3a	1	1	1	Wetness	3b	
		30	90	C	2.5Y5/3	YR5/1, 10YR5	35	many	non-calcareous																	
		90	120	ZC	10YR5/3	YR5/1, 10YR5	30	many	non-calcareous																	
K41	TR320629	0	32	ZC	10YR3/2			Yes	50	non-calcareo	level	0			II	3b	1.1	-20.9	3.1	3a	1	1	1	Wetness	3b	
		32	45	ZC	10YR3/3					non-calcareous																
		45	90	C	10YR5/3	YR5/1, 10YR5	35	many	moderately calcareous																	
K42	TR321629	90	120	ZC	GLE15/10Y	10YR5/8	30	many	very calcareous																	
		0	37	ZC	10YR4/2			Yes	45	very calcareo	level	1	1	II	3a	-0.3	-22.2	3.1	3a	1	1	1	Droughtiness	Wetness	3a	
		37	78	C	10YR5/3	YR5/1, 10YR5	18	common	very calcareous																	
K43	TR321629	78	120	C	GLE15/10Y	10YR5/8, Mn	25	many	very calcareous																	
		0	30	hZCL	10YR4/2			Yes	45	very slightly c	level	3	2	1	II	3a	7.0	-15.0	3.1	3a	1	1	1	Droughtiness	Wetness	3a
		30	43	hZCL	10YR4/2					very slightly calcareous																
K44	TR321630	43	120	C	GLE15/10Y	10YR5/8	40	many	very slightly calcareous																	
		0	38	ZC	10YR4/2			Yes	40	very calcareo	level	4	2	2	III	3a	-2.2	-24.3	3.1	3a	1	1	1	Droughtiness	Wetness	3a
		38	65	C	10YR5/3	YR5/1, 10YR5	35	many	very calcareous																	
K45	TR322630	65	120	C	GLE15/10Y	10YR5/8	35	many	very calcareous																	
		0	38	ZC	10YR4/2			Yes	45	very calcareo	level	2	2	2	II	3a	-0.9	-22.9	3.1	3a	1	1	1	Droughtiness	Wetness	3a
		38	80	C	10YR5/3	YR5/1, 10YR5	40	many	very calcareous																	
K46	TR322631	80	120	C	GLE15/10Y	10YR5/8	30	many	very calcareous																	
		0	42	ZC	10YR4/2			Yes	52	very calcareo	level	1	1	1	II	3a	1.5	-20.4	3.1	3a	1	1	1	Droughtiness	Wetness	3a
		42	70	C	10YR5/3	YR5/1, 10YR5	18	common	very calcareous																	
K47	TR322633	70	120	C	GLE15/10Y	10YR5/8	25	many	very calcareous																	
		0	38	hZCL	10YR4/2			Yes	40	very calcareo	level	1	1	1	III	3a	7.5	-14.4	3.1	3a	1	1	1	Droughtiness	Wetness	3a
		38	72	C	10YR5/3	YR5/1, 10YR5	25	many	very calcareous																	
K48	TR321633	72	120	C	10YR5/3	YR5/1, 10YR5	25	many	very calcareous																	
		0	38	ZC	10YR4/2			Yes	45	non-calcareo	level	1			II	3b	0.4	-21.5	3.1	3a	1	1	1	Wetness	3b	
		38	72	C	10YR5/3	YR5/1, 10YR5	40	many	non-calcareous																	
K49	TR321633	72	120	C	GLE15/10Y	10YR5/8	30	many	very calcareous																	
		0	30	ZC	10YR4/2			Yes	30	very calcareo	level	1			III	3a	-2.6	-24.5	3.1	3a	1	1	1	Droughtiness	Wetness	3a
		30	72	C	10YR5/3	YR5/1, 10YR5	45	very many	very calcareous																	
UXO high	TR320633	72	120	C	GLE15/10Y	10YR5/8	25	many	very calcareous																	
		0	37	ZC	10YR4/2			Yes	38	non-calcareo	level	1	1	1	III	3b	-0.2	-22.1	3.1	3a	1	1	1	Wetness	3b	
		37	78	C	10YR5/4	5YR5/8, 10YR6	45	very many	very calcareous																	
K50	TR320634	78	120	C	GLE15/10Y	7.5YR5/8	50	very many	very calcareous																	
		0	38	ZC	10YR4/																					



Legend

Order Limits

Augur Survey Result

- 1
- 2
- 3a
- 3b
- Not Surveyed

Surveyed Agricultural Land Classification

- 1
- 3a
- 3b
- Non-Agricultural

01	03/03/2026	INITIAL ISSUE	RE	ZL	BL
Rev	Date	Description	GIS	Chk	App

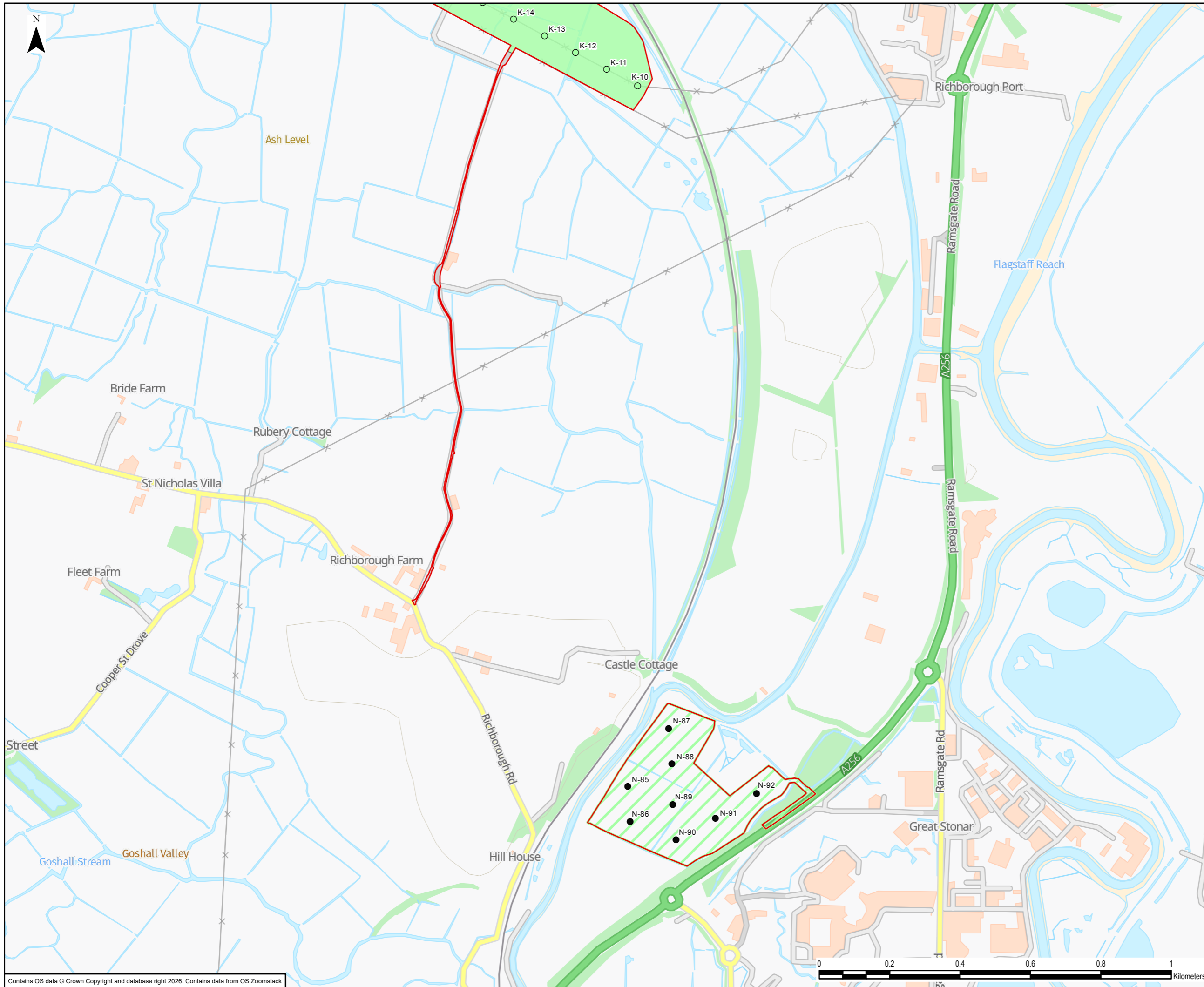
nationalgrid

Scheme: SEA LINK

Document Title:
Auger Bore Location and Agricultural Land Classification Grade Distribution - Kent

Creator: RE	Date: 03/03/2026	Checker: ZL	Date: 03/03/2026	Approver: BL	Date: 03/03/2026
Document Ref: FIGURE XXX	Scale: 1:10,000	Format: A3	Sheets: 3	Rev: 01	

Contains OS data © Crown Copyright and database right 2026. Contains data from OS Zoomstack



Legend

- Order Limits
- Augur Survey Result**
- 3b
- Not Surveyed
- Surveyed Agricultural Land Classification**
- 3b
- Non-Agricultural
- Predicted Agricultural Land Classification**
- 3b

01	03/03/2026	INITIAL ISSUE	RE	ZL	BL
Rev	Date	Description	GIS	Chk	App



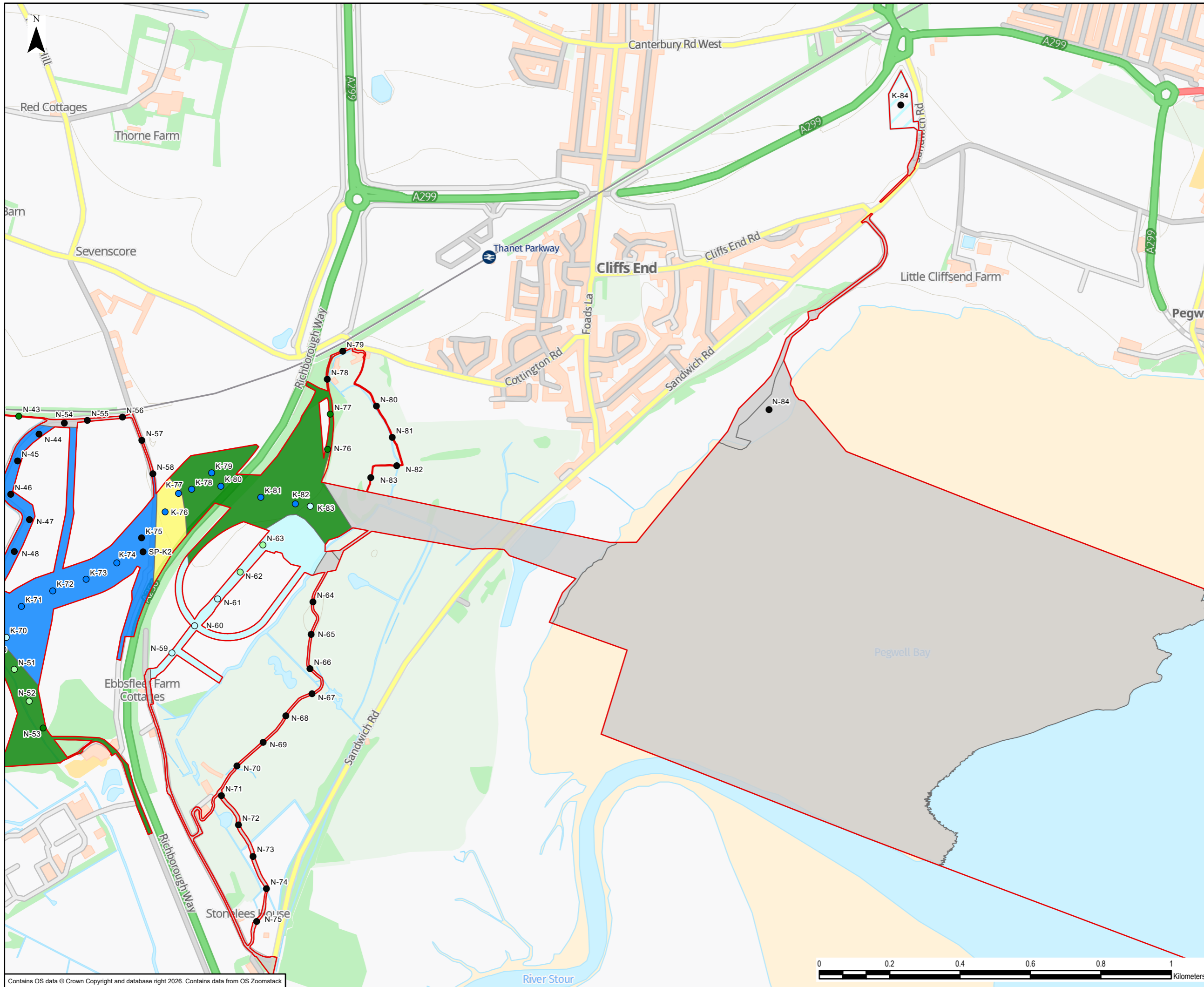
Scheme: SEA LINK

Document Title: Auger Bore Location and Agricultural Land Classification Grade Distribution - Kent

Creator: RE	Date: 03/03/2026	Checker: ZL	Date: 03/03/2026	Approver: BL	Date: 03/03/2026
-------------	------------------	-------------	------------------	--------------	------------------

Document Ref: FIGURE XXX	Scale: 1:10,000	Format: A3	Sheets: 3	Rev: 01
--------------------------	-----------------	------------	-----------	---------

Contains OS data © Crown Copyright and database right 2026. Contains data from OS Zoomstack



Legend

- Order Limits
- Augur Survey Result
 - 1
 - 2
 - 3a
 - 3b
 - Not Surveyed
- Surveyed Agricultural Land Classification
 - 1
 - 2
 - 3a
 - 4
 - Non-Agricultural
- Predicted Agricultural Land Classification
 - 2

01	03/03/2026	INITIAL ISSUE	RE	ZL	BL
Rev	Date	Description	GIS	Chk	App

nationalgrid

Scheme: SEA LINK

Document Title:
Auger Bore Location and Agricultural Land Classification Grade Distribution - Kent

Creator: RE	Date: 03/03/2026	Checker: ZL	Date: 03/03/2026	Approver: BL	Date: 03/03/2026
Document Ref: FIGURE XXX	Scale: 1:10,000	Format: A3	Sheets: 3	Rev: 01	



Contains OS data © Crown Copyright and database right 2026. Contains data from OS Zoomstack

Appendix B Soil Pit Profile Descriptions

B.1 Soil Pit 01



- Slightly calcareous stoneless dark greyish brown silty clay topsoil over very calcareous yellowish brown silty clay to clay subsoil.
- Moderately weak coarse subangular blocky upper subsoil structure over weak firm coarse angular blocky lower subsoil structure.
- Gleying was observed from 35 cm, with very many distinct ochreous and grey mottles identified throughout the subsoil layers.
- A SPL was identified at 40 cm

B.2 Soil Pit 02



- Slightly stony dark greyish brown medium silty clay loam topsoil over dark yellowish brown medium to heavy silty clay loam subsoils.
- Very weak medium subangular blocky upper subsoil structure over very weak coarse subangular blocky lower subsoil structure.
- No calcareous soils were identified
- No gleying or SPL were identified

Appendix C Predictive ALC Methodology

- c.1.1 The predictive ALC mapping has utilised published information on climate, topography, flood risk, geology, soil types and associations, MAFF Provisional ALC (1:250,000) and Defra's Likelihood of BMV map (Defra, 2017) (Defra, 2024).
- c.1.2 The data table in Table C.1. is structured to follow the sequential approach of the ALC Guidelines accounting for the data featured in Annex A of **Application Document 6.3.3 .6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent [AP P-174]**.

Table C.1 Data used in predictive ALC

Data	Description of data and source
Auger bore location- using the Ordnance Survey (OS) National Grid	
UID (A)	UID = Unique identification for sample point.
Easting (B)	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.
Northing (C)	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 (D)	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). 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.

Climate limitations: 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 5 km 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.

For this predictive ALC, the representative climate for ALC has been interpolated for every predicted auger location covering the Order Limits, as shown in Annex A. The ALC climate

Data	Description of data and source
<p>data used for determining (i) overall climate limitation, (ii) soil wetness and (iii) soil droughtiness for each predictive ALC sample point depends upon the interpolated climate data from the available 5km dataset. Table 2 details the initial climatic data set from which the modelled values were interpolated. A key to the ALC climate data headings is given below.</p>	
AAR (E)	AAR = Average Annual Rainfall (mm)
AT0 (F)	AT0 = Accumulated Temperature above 0°C between January and June (day °C)
MDW (G)	MDW = Moisture Deficit for Wheat (mm)
MDP (H)	MDP = Moisture Deficit for Potatoes (mm)
FCD (I)	FCD = Field Capacity Days (days). This is a meteorological parameter which estimates when the soil moisture deficit is zero.
Climate grade (J)	This is the overall climate limitation. This can be read from the graph (X-axis is AAR and Y-axis is ATO) given as Figure 1 of the ALC Guidelines (MAFF, 1988).
Site Limitations	
Elevation (K)	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 National LiDAR programmes 2022 composite DTM model.
Gradient (L)	This is the angle of slope in degrees (°). For this predictive ALC model, this was calculated using the slope geoprocessing tool to calculate from the DTM elevation model.
ALC grade according to gradient (M)	Where the angle of slope at a predictive auger point was calculated to be equal to, or less than, 7° the ALC grade at this location could be 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). All but 27 predictive auger locations were found to have a gradient less than or equal to 7°.
ALC grade according to micro-relief (N)	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.

Data	Description of data and source
	<p>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).</p>
Flood zone (O)	<p>This identifies the flood zone for each sample point. This information is available on the Environment Agency’s (2020) Flood Map for Planning website.</p> <p>Flood zones refer to the probability of river and sea flooding, ignoring the presence of defences, as follows:</p> <ul style="list-style-type: none"> • Zone 1 Low Probability – Land having a less than 1 in 1,000 annual probability of river or sea flooding. • 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. • 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. • Zone 3b The Functional Floodplain – This zone comprises land where water must flow or be stored in times of flood.
Predicted grade according to flood risk in summer (P)	<p>This is the grade according to flood risk in summer, as per Table 2 of the ALC Guidelines (MAFF, 1988).</p> <p>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 sample points.</p>
Predicted grade according to flood risk in winter (Q)	<p>This is the grade according to flood risk in winter, as per Table 3 of the ALC Guidelines (MAFF, 1988).</p> <p>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 3 the point was limited to Grade 3b.</p>
Soil and Interactive Limitations	
Bedrock (R)	<p>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.</p>

Data	Description of data and source
Superficial Deposits (S)	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 (T)	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. Data and information on soil associations can be obtained from the Land Information System (LandIS) webpage.
Topsoil texture (U)	This is the texture of the topsoil used to represent each predictive ALC sample point. 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. The SSEW description of soil series is available on the Land Information System (LandIS) 'Soils Guide'.
Wetness Class (V)	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 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 as shown in the Wetness Mapping available from Cranfield University.
Topsoil stoniness (W)	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 available auger logs for land within the Order Limits that has been purchased from Cranfield University. This auger bore information was used in conjunction with the Soil Association information available through LandIS.
Predicted grade according to soil depth (X)	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 average depth of topsoil as per the auger logs purchased from Cranfield University. This auger bore information was used in conjunction with the Soil Association information available through LandIS.

Data	Description of data and source
Predicted grade according to soil stoniness (Y)	This is a prediction of the ALC grade according to soil stoniness, as per Table 5 of the ALC Guidelines (MAFF, 1988). It utilises information from LandIS on Soil Associations, as well as accounting for average stoniness in the auger bore logs purchased from Cranfield University.
Predicted grade according to soil wetness (Z)	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, (ii) WC (see 'Wetness Class' and (iii) Field Capacity Days (see 'Climate Limitations' above).
Calculated moisture balance – wheat (AA)	<p>The MB value for wheat is calculated in accordance with the ALC Guidelines (MAFF, 1988) as follows: MB for wheat = Crop Adjusted Available Water Capacity (AP) – Moisture Deficit (MD) for wheat.</p> <p>For the purpose of this predictive ALC, the MB value for wheat for each predictive ALC sample point is derived from calculated data using (i) soil profile data for the predominant soil series, and (ii) relevant climate data for the respective 1km square (see 'Climate Limitations' above).</p>
Predicted grade according to soil droughtiness – wheat (AB)	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 MB value for wheat, as described in 'Calculated Moisture Balance – Wheat' above.
Calculated moisture balance – potatoes (AC)	<p>The MB value for potatoes is calculated in accordance with the ALC Guidelines (MAFF, 1988) as follows: 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 is derived from calculated data using (i) soil profile data for the predominant soil series (see 'Soil Series' above), and (ii) relevant climate data for the respective 1km square (see 'Climate Limitations' above).</p>
Predicted grade according to soil droughtiness – potatoes (AD)	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 MB value for potatoes, as described in 'Calculated Moisture Balance – Potatoes' above.
Predicted grade according to erosion (AE)	This is the predicted ALC grade according to erosion, as per pages 28 and 29 of the ALC Guidelines (MAFF, 1988). For the purpose of this predictive assessment we have assumed erosion to be a non-limiting factor; this is a factor that would be verified through site-specific surveys.

Data	Description of data and source
Predicted ALC according to most limiting factor (AF)	This is the final predictive ALC grade for each of the 448 sample points. It represents the most limiting (worst) grade(s) according to the climate, site, soil and interactive limitations.
MAFF provisional ALC grade (AG)	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).
Defra likelihood of encountering BMV (AH)	<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. 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 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 Defra, (2017).</p>
Comments (AI)	This is additional information which is relevant to the predictive ALC grade per sample point.

Appendix D Laboratory Analyses



ANALYTICAL REPORT

Report Number	33207-25	B106	ARCADIS HUMAN RESOURCES
Date Received	12-DEC-2025		LTD
Date Reported	22-DEC-2025		80 FENCHURCH STREET
Project	SOIL		LONDON
Reference	LIV HOYLAND		EC3M 4BY
Order Number	UK2512145		

Laboratory Reference		SOIL778090	SOIL778091	SOIL778092	SOIL778093	SOIL778094	SOIL778095
Sample Reference		K38 Topsoil	K44 Topsoil	K51 Topsoil	K61 Lower Subsoil	K63 Lower Subsoil	K64 Topsoil
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Coarse Sand 2.00-0.63mm	% w/w	0	0	0	0	0	0
Medium Sand 0.63-0.212mm	% w/w	1	1	0	1	6	6
Fine Sand 0.212-0.063mm	% w/w	4	3	5	2	6	9
Silt 0.063-0.002mm	% w/w	49	46	45	41	41	43
Clay <0.002mm	% w/w	46	50	50	56	47	42
Textural Class **		ZC	ZC	C/ZC	C	C	C

Notes

Analysis Notes The sample submitted was of adequate size to complete all analysis requested.
 The results as reported relate only to the item(s) submitted for testing.
 The results are presented on a dry matter basis unless otherwise stipulated.

Document Control **This test report shall not be reproduced, except in full, without the written approval of the laboratory.**

Reported by ***Teresa Clyne***
 Natural Resource Management, a trading division of Cawood Scientific Ltd.
 Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS
 Tel: 01344 886338
 Fax: 01344 890972
 email: enquiries@nrm.uk.com

** Please see the attached document for the definition of textural classes.

ANALYTICAL REPORT										
Report Number	35387-26		B106	ARCADIS HUMAN RESOURCES						
Date Received	12-JAN-2026			LTD						
Date Reported	20-JAN-2026			80 FENCHURCH STREET						
Project	SOIL			LONDON						
Reference	SEAL			EC3M 4BY						
Order Number	UK2512461									
Laboratory Reference			SOIL780225							
Sample Reference			K-30							
Determinand		Unit	SOIL							
Sand 2.00-0.063mm		% w/w	23							
Silt 0.063-0.002mm		% w/w	37							
Clay <0.002mm		% w/w	40							
Organic Matter LOI		% w/w	9.7							
Textural Class **			C							
Notes										
Analysis Notes		The sample submitted was of adequate size to complete all analysis requested. The results as reported relate only to the item(s) submitted for testing. The results are presented on a dry matter basis unless otherwise stipulated.								
Document Control		This test report shall not be reproduced, except in full, without the written approval of the laboratory.								
Reported by		<p>** Please see the attached document for the definition of textural classes.</p> <p><i>Gina Graham</i> Natural Resource Management, a trading division of Cawood Scientific Ltd. Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS Tel: 01344 886338 Fax: 01344 890972 email: enquiries@nrm.uk.com</p>								

Appendix E Comparison and Reassessment of Likely Significant Effect

- 7.1.8 The distribution of ALC grades in relation to the Kent Onshore Scheme was compared using both the Predictive Modelling data and the ALC survey data based on Table 5. This comparison was undertaken to assess differences and to reassess the reported likely significant effects on BMV land.
- 7.1.9 The ALC grades from the predictive modelling and the detailed ALC survey, in relation to the Kent Onshore Scheme, are presented in Table E.1. A summary of the original assessment of the likely significant effects on BMV land (based on the predictive modelling data) with the reassessment of the likely significant effects on BMV land using the detailed ALC survey data are presented in Table E.2.
- 7.1.10 The comparison between the two datasets indicates that the discrepancies in relation to the extent of BMV land affected are limited, and the reassessment confirms that there is no change in the significance of likely effects on BMV land. Therefore, the conclusions of the ES regarding the sensitivity, magnitude and significance of effects on BMV land remain unchanged and valid.

Table E.1 Permanent and Temporary Land Take Per ALC Grades

Project Aspect	Grade 1		Grade 2		Grade 3a		Grade 3b		Grade 4		Non-agricultural		Total land take – detailed survey	
	Predicted	Survey	Predicted	Survey	Predicted	Survey	Predicted	Survey	Predicted	Survey	Predicted	Survey		
Order Limits (temporary)		11	31.65	5.5	53.36	60	71.05	76.9			1.7	13.61	14.6	169.67
Access (permanent)		0.31	0.33		0.58	0.6								0.91
Substation and Converter Station (permanent)					9.06	9.06								9.06
Pylons (permanent)					0.04	0.01	0.06	0.09						0.1
Ecological change (permanent)		0.2	0.28		1.92	2.02					0.08			2.2
Total land required permanently		0.51	0.61		11.6	11.69	0.06	0.09			0.08			12.27
BMV land required permanently - predicted	12.21													
BMV land required Permanently – detailed survey	12.20													

Table E.2 Agricultural Land (BMV) Effect

Predictive Data source	Stage	Description of Impact	Likely Significant Effect			Additional Mitigation Measures	Residual Effect		
			Sensitivity	Magnitude	Significance of Effect		Sensitivity	Magnitude	Significance of Effect
(pre-examination assessment)									
	Construction	Temporary loss of BMV land	Very high and high	Small	Moderate to minor adverse - Significant	None - Impact is temporary and BMV land required temporarily will be reinstated by the end of the construction phase	Very high and high	Small	Minor adverse – Not Significant
	Operation		Very high and high	Small	Minor adverse - Not significant	None	Very high and high	Small	Minor adverse - Not significant
	Decommissioning		Very high and high	Small	Moderate to minor adverse - Significant	None - Impact is temporary and BMV land required temporarily will be reinstated by the end of the	Very high and high	Small	Minor adverse – Not Significant

						construction phase			
	Construction	Permanent loss of BMV land	Very high and high	Medium	Major to moderate adverse - Significant	None	Very high and high	Medium	Major to moderate adverse - Significant
	Decommissioning	Permanent reinstatement of BMV land	Very high and high	Medium	Moderate to major beneficial - Significant	None	Very high and high	Medium	Moderate to major beneficial - Significant
Surveyed (during examination)	Construction		Very high and high	Small	Moderate to minor adverse - Significant	None - Impact is temporary and BMV land required temporarily will be reinstated by the end of the construction phase	Very high and high	Small	Minor adverse – Not Significant
	Operation	Temporary loss of BMV land	Very high and high	Small	Minor adverse - Not significant	None	Very high and high	Small	Minor adverse - Not significant
	Decommissioning		Very high and high	Small	Moderate to minor adverse - Significant	None - Impact is temporary and BMV land required temporarily will be reinstated by the end of the	Very high and high	Small	Minor adverse – Not Significant

					construction phase			
Construction	Permanent loss of BMV land	Very high and high	Medium	Major to moderate adverse - Significant	None	Very high and high	Medium	Major to moderate adverse - Significant
Decommissioning	Permanent reinstatement of BMV land	Very high and high	Medium	Moderate to major beneficial - Significant	None	Very high and high	Medium	Moderate to major beneficial - Significant

National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
No. 4031152
nationalgrid.com