



SEQUENTIAL TEST ANALYSIS

**SUTTON BRIDGE SOLAR DEVELOPMENT
SUTTON BRIDGE, LINCOLNSHIRE**

FOR EDF RENEWABLES

NOVEMBER 2020



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1 INTRODUCTION

1.1 Background

Arcus Consultancy Services Limited ('Arcus') has been commissioned by EDF Renewables ('EDF') to undertake a Sequential Test Analysis for a potential Solar PV Development, including associated infrastructure ('the Development') on agricultural land adjacent to the Sutton Bridge gas-fired Power Station, approximately 1 km southeast of the village of Sutton Bridge, Lincolnshire ('the Application Boundary').

The Application Boundary covers an area of approximately 118 hectares (ha).

The Sequential Test Analysis was requested by EDF in order to contribute to pre-application discussions with South Holland District Council ('the Council') and to support a planning application, as the Application Boundary lies within Agricultural Land Classification (ALC) Grades 1 & 2 and Flood Zones 2 and 3a.

This Report is supported by the following figures and appendices:

- Figure 1 – Constraints;
- Figure 2 - Potentially Developable Areas (PDA); and
- Appendix A: Agricultural Land Classification Survey.

1.2 Purpose of this Report

This report presents the findings of a Sequential Test Analysis which outlines the process through which the location of the proposed Development has been determined as suitable.

1.2.1 Agricultural Land Classification

This analysis determines whether or not there is potentially lower quality land by reference to its ALC grade, on which to locate the Development when considered against the requirements of the revised National Planning Policy Framework (NPPF)¹ and Planning Practice Guidance (PPG)².

The NPPF, which was revised in February 2019, states the following at paragraph 170:

"Planning policies and decisions should contribute to and enhance the natural and local environment by: ...

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;"

with the following relevant definition:

"Best and most versatile agricultural land: Land in grades 1, 2 and 3a of the Agricultural Land Classification."

PPG on "Renewable and Low Carbon Energy" still, at the time of writing, reflects the 2012 version of the NPPF, which required a sequential test to address the factors a local planning authority needs to consider, including:

¹ Ministry of Housing, Communities and Local Government (2019). National Planning Policy Framework. February 2019. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/807247/NPPF_Feb_2019_revised.pdf [accessed on 03/12/2019].

² Ministry of Housing, Communities and Local Government (2015). Guidance: Renewable and Low Carbon Energy. Paragraph: 013 Reference ID: 5-013-20150327. Available at: <https://www.gov.uk/guidance/renewable-and-low-carbon-energy#active-solar-technology> [accessed on 03/12/2019]

"- encouraging the effective use of land by focussing large scale solar farms on previously developed and non-agricultural land, provided that it is not of high environmental value;

- where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays."

As such, there is no prohibition on the use of good quality agricultural land for solar outlined in the NPPF and PPG. The requirements as detailed in the Minister's statement of 2015³, stated that it would need to be justified by *'the most compelling evidence'*.

An ALC survey was undertaken in March 2020, a copy of which can be found in Appendix A, which confirmed that 33.3% of the site lies within grade 1 described as "excellent quality agricultural land" with the remaining 66.7% of the site within grade 2, described as "very good quality agricultural land".

This report seeks to demonstrate that the Site meets the requirements of both PPG and NPPF with regard to the siting of the Development on ALC grade 1 and grade 2.

1.2.2 Flood Risk

This analysis determines whether or not there is land at a lower risk of flooding that is suitable to locate the Development based on the DEFRA and Environment Agency Guidance⁴.

The Guidance states that a sequential test is required if *"the development is in Flood Zone 2 or 3"*.

If the sequential test proves that it is not possible to locate the site in an area with a lower risk of flooding, an exception test must be undertaken. The Guidance states that the exception test *"shows how Flood Risk will be managed on the proposed site"*.

The South East Lincolnshire Strategic Flood Risk Assessment⁵ reflects this guidance and provides further advice on how the test should be applied for planning applications in the region.

This report seeks to demonstrate that the Site meets the requirements of both the DEFRA and Environment Agency Guidance and the South East Lincolnshire Strategic Flood Risk Assessment with regard to the siting of the proposed Development in Flood Risk Zones 2 and 3a.

1.3 Need for Renewable Development

In order to meet the emission targets, set by the Paris Agreement⁶ in 2015 and the EU 2020 renewable energy targets set by the Renewable Energy Directive 2009/28/EC⁷, the UK has a responsibility to increase the amount of renewable energy generated power available and reduce the dependence on fossil fuels for UK energy needs. In 2017, the UK

³ Department for Communities and Local Government, Written Statement – HCWS488 (2015). Available at <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2015-03-25/HCWS488/> (Accessed 16/10/2019).

⁴ DEFRA and Environment Agency (2017). Flood Risk Assessment: the sequential test for applicants. [Online] Available at <https://www.gov.uk/guidance/flood-risk-assessment-the-sequential-test-for-applicants> [Accessed 03/12/2019].

⁵ South East Lincolnshire Joint Strategic Planning Committee (2017). South East Lincolnshire Strategic Flood Risk Assessment. [Online]. Available at <https://www.sholland.gov.uk/article/5307/Planning-Policy> [Accessed 03/12/2019].

⁶ United Nations Climate Change (2018). The Paris Agreement | UNFCCC. [online] Unfccc.int. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement> [Accessed 11/06/2019].

⁷ European Commission (2018). EUR-Lex - 32009L0028 - EN - EUR-Lex. [online] Energy Directive. Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0028> [Accessed 03/12/2019].

government introduced the Clean Growth Strategy⁸, a document which outlines plans to phase out the use of coal generated electricity and cut 1990 greenhouse gas levels by 80% before the year 2050. Through the closure of these power stations, an energy deficit will be created, therefore renewable energy installations will be needed to meet the shortage while also providing a low-carbon alternative to fossil fuels that can help achieve the emission targets. In May 2019, the UK Government introduced the Net Zero⁹ document, which sets the UK target to reduce Greenhouse Gases to 'net zero' by 2050. The document recommends changes to policies in order to deliver emission reductions across all areas of the UK economy including the energy sector.

The UK Government has set out the Integrated National Energy and Climate Plan¹⁰ which sets out five ambitious energy dimensions:

- Improving energy security;
- Improving energy efficiency;
- Decarbonisation of the energy sector;
- Improving the internal energy market; and
- Improving our research into the low carbon technologies to become a world leader in this sector.

The proposed Development will generate electricity with a very low carbon footprint and would be capable of operating without financial support from the Government or elsewhere, *i.e.*, income derived from sales of the electricity exported from the scheme, at wholesale prices.

The ability to generate low carbon, low cost electricity is constrained by grid connection opportunities. It is known that the existing substation at Walpole has capacity to accept electrical input from the proposed Development. The scope of this assessment is therefore limited to consideration of alternative sites that could viably connect to Walpole substation.

1.4 Planning Background

As outlined within Section 1.3 of this report, there is a growing need to produce low carbon electricity. Solar developments can contribute to this low carbon electricity. However, there are challenges associated with locating solar farms on poorer quality ALC land in certain areas. In order to ensure that solar developments are kept viable, the distance between the development and grid connection point needs to be kept relatively short. As a result, there is a growing need for solar developments to be granted planning permission on better quality agricultural land if that is the only available land surrounding the available point of connection to the grid.

The operational Rose and Crown solar farm, located 3.4 km southeast of the Application Boundary was refused by King's Lynn and West Norfolk Borough Council. Following an appeal decision by the Planning Inspector in 2015, planning permission was granted¹¹. The Inspector recognised that there was very little low-quality land within the local area, and

⁸ HM Government (2017). The Clean Growth Strategy: Leading the way to a low carbon future. [online] Assets.publishing.service.gov.uk. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf [Accessed 03/12/2019].

⁹ Committee on Climate Change (2019). Net Zero The UK's contribution to stopping global warming. [Online]. Available at <https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf> [Accessed 03/12/2019].

¹⁰ Department for Business, Energy and Industrial Strategy (2019). The UK's Draft Integrated National Energy and Climate Plan. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/774235/national_energy_and_climate_plan.pdf [Accessed 03/12/2019].

¹¹ Paul Jackson (2015). Appeal Decision. [Online] Available at <https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=12475820>. [Accessed 04/12/2019]

understood that there was a “*need to limit the distance between generation capacity and the grid*”.

The Inspector went on to conclude that “*this high-quality agricultural land would not be lost to agriculture ... and would be restored to arable use, most likely in a better condition than the intensive use it is currently put to*”.

2 METHODOLOGY

There is no guidance relating to the preparation of a Sequential Test Analysis of potentially developable land for solar PV development. The methodology has therefore been informed by current practice for similar solar development types.

2.1 Study Area

The size of a suitable study area depends on the size of the electricity generating station. The cost of connection to the electrical grid increases substantially with distance from the connection point. Therefore, the maximum viable distance from the site to the point of electrical connection to the grid has been determined to be no more than 5 km.

The study area, a 5 km radius from the Walpole substation, is shown in Figure 1.

2.2 Constraints

Land within the search area was examined and constrained and designated areas where large scale solar development is unlikely to be viable were excluded. These areas are shown on Figure 1¹² and include:

- Local Wildlife Sites;
- Cumulative Renewable Energy Developments;
- Listed Buildings;
- Land within a 250 m buffer of settlements; and
- Public Rights of Way.

No statutory ecological/ornithological or landscape designations were found within the 5 km study area. All land within the study area is located in Flood Zones 2 and 3¹³ and ALC Grades 1 or 2¹².

The remaining land was examined to identify any contiguous Potentially Developable Areas (PDAs). These areas are shown on Figure 2.

3 SEQUENTIAL TEST ANALYSIS

Figure 1 shows an overview of the search area with constraints. Remaining land, after excluding the constraints, is shown on Figure 2. Within the remaining unconstrained land, PDA's for solar farms of approximately 50 MW were identified based on professional experience.

No suitable non-agricultural or brownfield sites were identified within the study area, principally given the area required for a financially viable solar development with a generation capacity of approximately 50 MW.

All the remaining land within the search area lies within ALC grade 1. A survey would be required to confirm this. During the operational lifespan of the proposed solar

¹² GIS datasets used to create Figure 1 are sourced from publicly available data on Natural England's website (http://www.gis.naturalengland.org.uk/pubs/gis/GIS_Selection.asp?Type=2) was used to aid the production of this report and associated figures. The validity of this information has not been independently verified by Arcus, unless otherwise stated.

¹³ Flood Risk Zone datasets used to create Figure 1 are sourced from publicly available data on the UK Government website (<https://data.gov.uk/dataset/cf494c44-05cd-4060-a029-35937970c9c6/flood-map-for-planning-rivers-and-sea-flood-zone-2>) and was used to aid the production of this report and associated figure. The validity of this information has not been independently verified by Arcus, unless otherwise stated.

Development, there will be an absence of intensive agriculture which will help the soil to recover and increase fertility. Continued agricultural use in the form of sheep grazing is able to take place and would likely be the preferred method of managing the land within any of the PDA's. In addition, the proposed Development will be temporary and fully reversible. As a result, the potential Development will not lead to an indefinite loss of good quality agricultural land.

3.1 Potential Developable Areas

3.1.1 PDA 1

PDA 1 is not within EDF's existing landownership, separate agreements would need to be produced and agreed to by the landowners to allow development to proceed on this land.

PDA 1 has an area of approximately 219 ha, large enough for the proposed scale of the Development. However, this PDA is located further away from the point of connection to the north of the A17 and as a result, the grid connection route would have to cross the A17; this has the potential to cause significant disruption and impact. Additionally, there is no certainty that the relevant licenses and consents would be granted for a grid connection to cross the A17 and reach the substation at Walpole.

The PDA is located on Grade 1 agricultural land.

The majority of PDA 1 is located within Flood Zone 3, with a small section in the east located within Flood Zone 2 and so would need to be subject to a detailed Flood Risk Assessment to confirm the predicted flood levels which could affect the layout and design of a solar farm.

As shown on Figure 7-3: *Breach Extent* and Appendix A: *Flood Risk Mapping – Tiles 41 and 42 of the King's Lynn and West Norfolk Strategic Flood Risk Assessment Final Report: Level 1 (JBA - November 2018)*, PDA 1 is located within the modelled extent of a tidal breach on the Great River Ouse. The Site is also located within the modelled extent of a tidal breach on the Great River Ouse.

Given the small extent of Flood Zone 2 within the PDA, it presents no material benefit, in terms of sequential site selection, to the Site.

PDA 1 is flat and unscreened leading to long distance views of any potential development. Properties in the villages of Sutton Bridge to the west and Walpole Cross Keys to the east will likely have extensive and significant views of any solar development located within PDA 1.

A Public Right of Way runs north – south through this PDA. The visual amenity of users of this footpath could potentially be impacted by any potential solar development during construction and operation. In addition, this footpath may have to be temporarily diverted or closed during the construction phase in the interests of health and safety.

PDA 1 is located across two Council boundaries – South Holland Council to the northwest and Kings Lynn and West Norfolk Council to the southeast. This increases the complexity of the planning process and potentially increases the planning risk and timescales.

PDA 1 is not more suitable for large-scale solar PV development than the Site.

3.1.2 PDA 2

PDA 2 is not within EDF's existing landownership, separate agreements would need to be produced and agreed to by the landowners to allow development to proceed on this land.

PDA 2 has an area of approximately 330 ha, large enough for the proposed scale of the Development. This PDA is located to the east of the point of connection, and east of Walpole St Andrew and Walpole St Peter. As a result, the grid connection route may have

to pass through or close to these towns which has the potential to cause significant disruption and impact, and likely require negotiation with a greater number of landowners and utilities.

The PDA is located on Grade 1 agricultural land.

This PDA is located entirely within Flood Zone 3 and is therefore not sequentially preferable to the Site. This PDA would need to be subject to a detailed Flood Risk Assessment to confirm the predicted flood levels which could affect the layout and design of a solar farm.

As shown on Figure 7-3: *Breach Extent* and Appendix A: *Flood Risk Mapping* – Tile 51 of the King's Lynn and West Norfolk Strategic Flood Risk Assessment Final Report: Level 1 (JBA - November 2018), PDA 2 is located within the modelled extent of a tidal breach on the Great River Ouse. The Site is also located within the modelled extent of a tidal breach on the Great River Ouse.

Public rights of way cross through this PDA, north – south and east - west. The visual amenity of users of these access routes could potentially be impacted by any potential solar development during construction and operation. In addition, these access routes may have to be temporarily diverted or closed during the construction phase in the interests of health and safety.

This PDA is flat and unscreened leading to long distance views of any potential development. Properties in the villages of Walpole St Peter and Walpole St Andrew to the west will likely have extensive and significant views of any solar development located within PDA 2.

There are two overhead power lines which cross the Site and connect into the Walpole substation. These provide a potential grid connection opportunity for any proposed solar development onsite.

PDA 2 is not more suitable for large-scale solar PV development than the Site.

3.1.3 PDA 3

PDA 3 is not within EDF's existing landownership, separate agreements would need to be produced and agreed to by the landowners to allow development to proceed on this land.

PDA 3 has an area of approximately 164 ha, large enough for the proposed scale of the Development. This PDA is located to the north of the point of connection.

The PDA is located on Grade 1 agricultural land.

The majority of PDA 3 is located within Flood Zone 3, with isolated areas in the central section of the PDA being located within Flood Zone 2 and a development would need to be subject to a detailed Flood Risk Assessment to confirm the predicted flood levels which could affect the layout and design of a solar farm.

As the areas of Flood Zone 2 are in relatively small isolated areas across the PDA a Development would still need to address development in Flood Zone 3 (e.g, in terms of infrastructure design), and therefore presents no advantage, in terms of sequential site design, to the Site.

As shown on Figure 7-3: *Breach Extent* and Appendix A: *Flood Risk Mapping* – Tile 42 of the King's Lynn and West Norfolk Strategic Flood Risk Assessment Final Report: Level 1 (JBA - November 2018), PDA 3 is partially located within the modelled extent of a tidal breach on the Great River Ouse. The Site is also located within the modelled extent of a tidal breach on the Great River Ouse.

PDA 3 is flat and unscreened to the west leading to long distance views of any potential development. Residents in the properties along the western boundary would likely have extensive views of any solar development located within PDA 3.

A public right of way crosses through this PDA, north – south. The visual amenity of users of this access route could potentially be impacted by any potential solar development during construction and operation. In addition, this access route may have to be temporarily diverted or closed during the construction phase in the interests of health and safety.

PDA 3 is not more suitable for large-scale solar PV development than the Site.

3.1.4 The Application Boundary

The Application Boundary is within EDF's existing landownership and therefore EDF can develop the land without the need for additional agreements with other landowners.

The Application Boundary has an area of approximately 118 ha, large enough for the proposed scale of the Development. The Application Boundary is located to the north of the point of connection.

The Application Boundary is located on Grades 1 and 2 agricultural land, as confirmed by the information outlined in Appendix A.

It is located within Flood Zones 2 and 3 and so would need to be subject to a Flood Risk Assessment (which has been submitted with this planning application) to confirm the predicted flood levels which could affect the layout and design of a solar farm.

The Development is located beyond 500 m from the village of Sutton Bridge. Consideration of local topography was also a factor in the location of the Development, with the land benefiting from flat land and significant screening from existing woodland areas and the Power Station which acts to reduce the visual extent of the Application Boundary.

There are no public rights of way running through the Application Boundary.

There are two overhead power lines which cross the land and connect into the Walpole substation. These provide a potential grid connection opportunity for any proposed solar development onsite.

3.1.4.1 Exception Test

As the proposed Development is classed as Essential Infrastructure¹⁴ (Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood) a freeboard allowance of 300 millimetres (mm) and an appropriate allowance for climate change has been applied to flood depths as part of the Flood Risk Assessment which has been submitted as part of the Planning Application.

The electrically sensitive infrastructure, such as the switchgear substation, within the proposed Development has been designed to be flood resistant to a 1:200-year flood defence breach event plus an allowance for climate change. Design measures will elevate the critical infrastructure above the flood depths plus 300 mm freeboard to ensure the electrically sensitive infrastructure (such as inverters and substations) is at low risk from flooding.

4 CONCLUSION

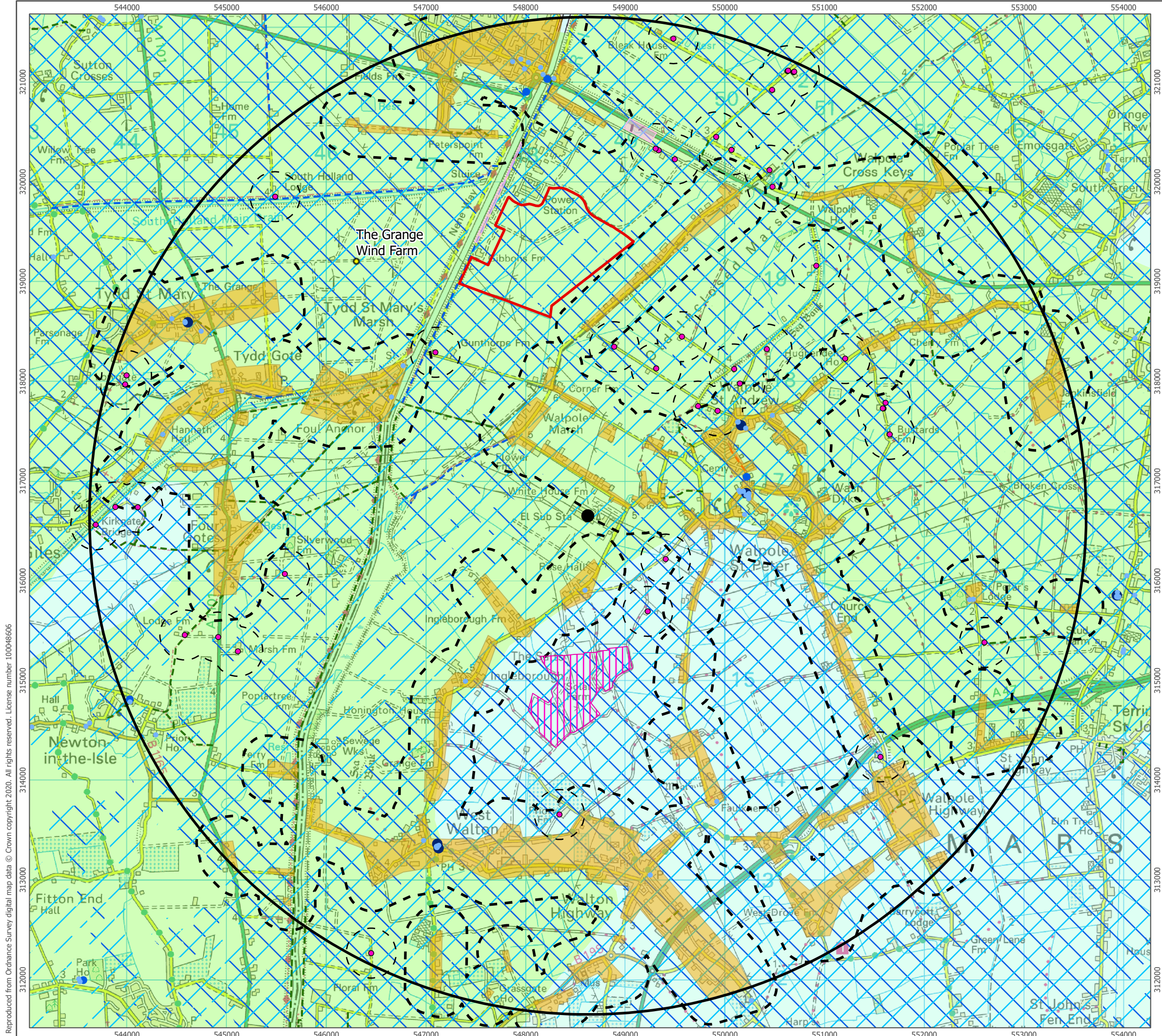
The Sequential Test Analysis described in this report has identified that the selection of the Application Boundary meets the requirements of the NPPF and PPG for the following reasons:

¹⁴ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#Table-2-Flood-Risk-Vulnerability-Classification>

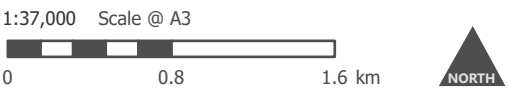
- There are no suitable PDAs comprising land that is of a lower ALC grade than the Site (*i.e.*, ALC grade 3b, 4 or 5, or non-agricultural/ brownfield land). The study area comprises predominantly Grade 1 and Grade 2 agricultural land.
- There are no suitable PDAs comprising land that is of a lower level of flood risk than the site (*i.e.*, located within Flood Zone 1 or substantial areas of Flood Zone 2). The study area comprises predominantly Flood Zones 2 and 3.
- A Flood Risk Assessment has been submitted as part of the Planning Application which has informed the design of the proposed Development. A freeboard allowance of 300 millimetres (mm) has been applied to flood depths to ensure that all electrically sensitive infrastructure will be designed to be at low risk of flooding.
- The land within the Application Boundary benefits from being flat and has a small number of potentially sensitive receptors nearby. There is also significant screening from existing woodland and the adjacent existing Power Station acts to reduce the visual extent of the proposed Development.

Additionally, the Application Boundary is located to the northwest of the Walpole substation which is the point of connection to the grid, and the Development is sufficiently far from settlements and free from internal public rights of way and public roads.

FIGURE 1 – CONSTRAINTS



- Planning Application Boundary
- Substation
- 5 km Buffer of Substation
- Settlements
- 250 m Buffer of settlements
- Local Wildlife Site
- Operational Solar Farm
- 250 m Buffer of Residential Dwellings
- Flood Zone 2
- Flood Zone 3
- Agricultural Land Classification
 - Grade 1
 - Grade 2
- Public Rights of Way
 - Footpath
 - Bridleway
 - Restricted Byway
- Residential Dwelling
- Wind Farm
- Listed Buildings
 - Grade I
 - Grade II*
 - Grade II



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Checked By: SC	Date: 14/10/2020

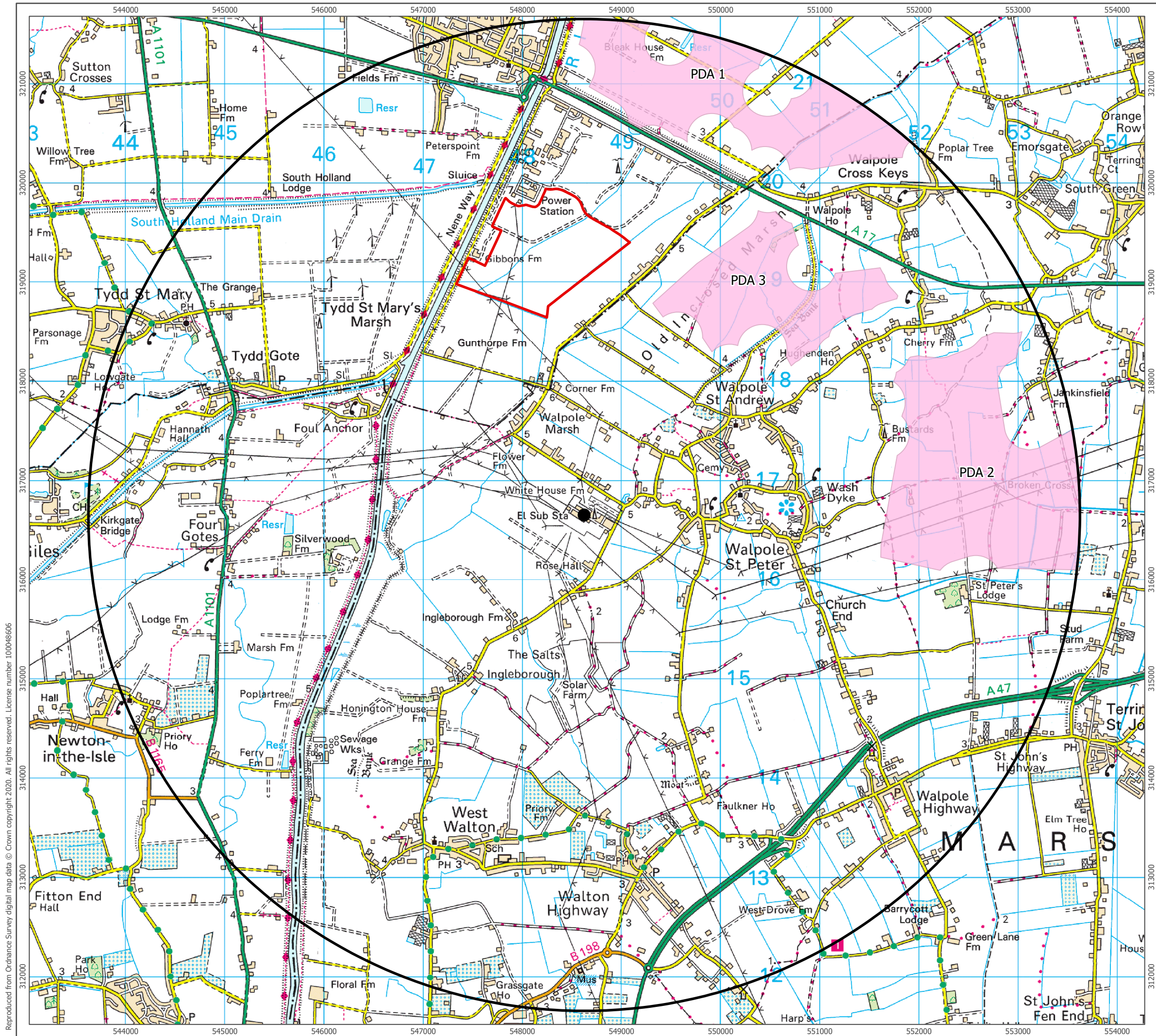
Constraints

Figure 1

Sutton Bridge Solar Development

Sequential Test Report

FIGURE 2 – POTENTIALLY DEVELOPABLE AREAS



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- Planning Application Boundary
- Substation
- 5 km Buffer of Substation
- Potential Developable Areas



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Checked By: KE	Date: 14/10/2020

Potential Developable Areas
Figure 2

Sutton Bridge
Sequential Test Report

Appendix A Agricultural Land Classification Survey

AGRICULTURAL LAND CLASSIFICATION

ARCUS CONSULTANCY SERVICES

Sutton Bridge



Our Ref: SES/ACS/SB/#2

Date: 3rd April 2020

Client:

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AGRICULTURAL LAND CLASSIFICATION

Sutton Bridge

A report prepared on behalf of ***Soil Environment Services*** by:

Robin S Davies BSc PhD MISOilSci

This report has been prepared by Soil Environment Services with all reasonable skill, care and diligence, within the terms of The Contract with The Client. The report is the property of The Client who can assign this report to any third party who will then be afforded the same assurances as detailed within the terms of the original Contract with The Client.

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DRAWING 1 ALC Grade

APPENDIX A Survey profile data sheet

GENERAL INFORMATION SOURCES

1. INTRODUCTION & METHODOLOGY

An Agricultural Land Classification (ALC) has been carried out on ~144 ha of land at Sutton Bridge (Drawing 1). The site is centred on Grid Ref. 548450,319488.

Agricultural land is classified into the following grades according to the 1988 guidelines¹.

Grade	Description
1	Excellent quality agricultural land with no or very minor limitations to agricultural use.
2	Very good quality agricultural land with minor limitations which affect crop yield, cultivation or harvesting.
3a	Good quality agricultural land capable of producing moderate to high yields of a narrow range of arable crops or moderate yields of a wider range of crops.
3b	Moderate quality agricultural land capable of producing moderate yields of a narrow range of crops or lower yields of a wider range of crops.
4	Poor quality agricultural land with severe limitations which significantly restrict the range of crops and/or level of yields.
5	Very poor quality agricultural land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

The survey was conducted on the 10th and 11th March 2020 and classifies the land into one or more of the above grades.

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology. This included consultation from a number of maps and guidance documents (General Information Sources).

The field survey consisted of point observations on a 100 m grid in this instance and generally in line with the nation grid (~5 m accuracy) and hand auger borings to a depth of 1.2 m. Pit excavations are conducted to determine sub soil structure where necessary. This data was used to map the principal soil types for determining the ALC. The soil removed during augering and pit excavations was examined in accordance with the guidelines.

Climatological data³ was used to determine the overriding site limitation and for interaction with soil parameters. The ALC grade was then determined for this site and for the current survey and is detailed in Table 3.

Soil can vary considerably over short distances and hence some variation can exist in the soils not assessed between observation points compared with those at the observation points. Also, non-significant variation with horizon depths and other parameters can occur between observation points and may not necessarily be recorded for ALC purposes. Using all information available, every effort is made to assess and group soils into significantly different types for the purposes of ALC grading. Some generalisation therefore needs to take place in order to group, categorise and map the soil types at an appropriate resolution.

2. SITE CONDITIONS

2.1. Climate and flooding

The climatological data for the site centre is detailed in Table 1.

Table 1		
Climatological information³		
Factor	Units	Value
Altitude AOD	m	4
Accumulated temperature	day°C (Jan-June)	1520.8
Average Annual Rainfall	mm	605.0
Field Capacity Days	days	109.8
Moisture Deficit Wheat	mm	126.5
Moisture Deficit Potatoes	mm	124.4

The site is mapped as having some minor localised surface water flood risk and this is noted in small patches cross the site. In general a 1-3% Medium risk of flood is recorded but significant flood defences result in no significant risk with respect to ALC grading.

2.2. Geology and drift

No drift geology recorded for the site.

Bedrock geology

1:50 000 scale superficial deposits description: Tidal Flat Deposits - Clay And Silt. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by shorelines (U).

Bedrock geology

1:50 000 scale bedrock geology description: Amptill Clay Formation - Mudstone. Sedimentary Bedrock formed approximately 157 to 164 million years ago in the Jurassic Period. Local environment previously dominated by shallow seas.

2.3. Topography

The slope measured on site was minimal and gradient will not limit the ALC Grade for the site. No significant variation in microrelief was noted.

2.4. Current agriculture or other land use

On the survey dates the site had recently been ploughed in places and sown with a wheat crop or was being harvested for vegetables.

3 SOIL CHARACTERISTICS

3.1. Mapped soil types

The soils on site have previously been mapped⁶ as either the Greatstone or Wisbech series which are deep permeable stoneless soils with the Wisbech noted to have a more silty texture than the Greatstone.

3.2. Description of surveyed soil types

The soils noted on site, in general, very much match those previously mapped with the main difference being the topsoil texture. Slight variations existed within the soil types.

Photographs of the main profiles

Boring 10

Type 1



Boring 96

Type 2



Boring 117

Type 2



Profile data specifically significant for ALC grading is listed in Appendix A. A summary of the features of the soil type/s are listed in Table 2 and observation point locations are shown within Drawing 1.

Table 2. Soil Type descriptions			
Profile Description	Soil types		
	Type 1	Type 2	Type 3
Horizon 1 (topsoil)	0-35 cm Dark yellowish brown (10YR3/4) stoneless fine loamy sand, very calcareous.	0-40 cm Dark brown (7.5YR3/2) stoneless silt loam, very calcareous.	
Horizon 2 (subsoil 1)	35-100 cm Pale brown (10YR6/3) stoneless fine loamy sand, single grain, few faint mottles, very calcareous.	40-100 cm Brown (7.5YR5/3) stoneless fine loamy sand, single grain, common faint mottles, very calcareous.	
Horizon 3 (subsoil 2)	100-120 cm Brown (10YR5/3) stoneless fine loamy sand, single grain, common faint mottles, very calcareous.	100-120 cm Dark brown (7.5YR3/3) to grey (Gley15N) in places stoneless fine loamy sand, single grain, common faint mottles, very calcareous.	
Wetness Class	I	I	
Moisture Balance - Wheat	50.0	71.5	
Moisture Balance - Potatoes	-8.9	12.6	
Survey points (Drawing 1) and soil types: Borings/ Trial Pits Type 1 soil =  Type 2 soil = 			

4. AGRICULTURAL LAND CLASSIFICATION

4.1. National 1:250 000 map or previous survey ALC grading

Grading on the MAFF 1:250 000 map indicates the site is mapped as **ALC Grade 1**. Previous detailed surveys just north of the site have noted Grade 2 bordering the centre north of the site.

4.2. Current grading

This survey has resulted in an Agricultural Land Classification of the following grades (Drawing 1):

Table 3. ALC gradings and limitations			
Grade	Area		Limitation
	ha.	%	
1	48.0	33.3	No limitations
2	96.0	66.7	Slight droughtiness for potatoes
3a			
3b			
4			
5			
Non-agricultural land			
Total	144	100%	

Type 1 soils – No limitations

The lack of any significant limitations across the area results in **ALC Grade 1**.

Type 2 soils – Droughtiness Limitation

The combination of the profile textures combined with climatic factors results in **ALC Grade 2** for Type 2 soils due to the moisture balance of -8.9 and hence slight droughtiness for potatoes..

DRAWING 1

ALC Grade

Key

- ALC Grades
- Grade 1
 - Grade 2
 - Grade 3a
 - Grade 3b
 - Grade 4
 - Grade 5
 - Non agricultural land

● Observation point

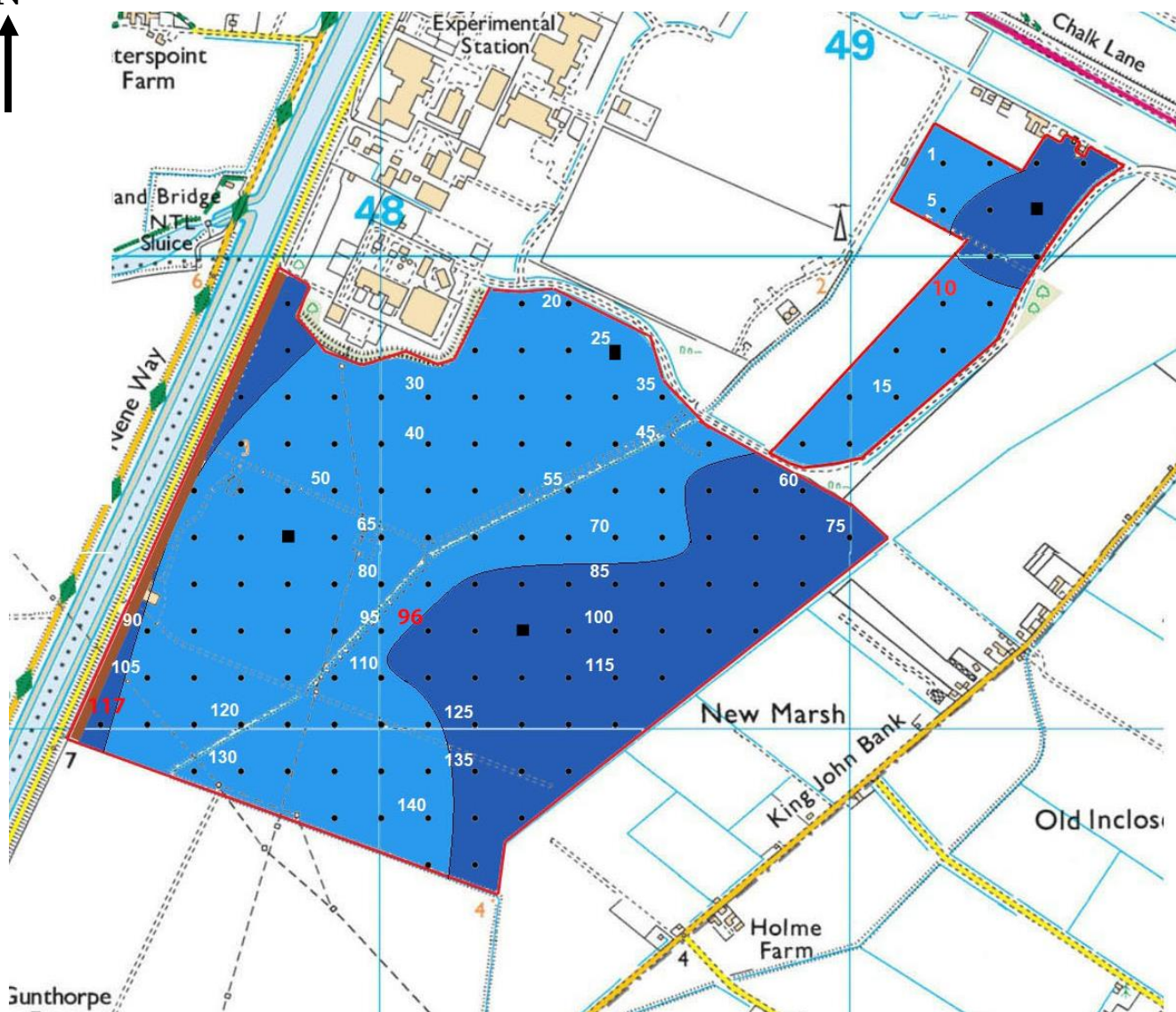
Soil Environment Services

Drawing Title: ALC Grade

Drawing No.: 1

Scale: NA

Date: 03/03/2020



APPENDIX A

Soil profile data

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
1	35	LFS	10YR44	0	0	na	V Calc	16	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
2	45	LFS	10YR44	0	0	na	V Calc	17	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
3	45	ZL	7.5YR32	0	0	na	V Calc	18	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
4	40	ZL	7.5YR32	0	0	na	V Calc	19	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
5	30	LFS	10YR44	0	0	na	V Calc	20	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
6	40	ZL	7.5YR32	0	0	na	V Calc	21	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
7	40	ZL	7.5YR32	0	0	na	V Calc	22	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
8	40	ZL	7.5YR32	0	0	na	V Calc	23	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
9	40	ZL	7.5YR32	0	0	na	V Calc	24	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
10	50	LFS	10YR44	0	0	na	V Calc	25	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
11	35	LFS	10YR44	0	0	na	V Calc	26	42	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
12	35	LFS	10YR44	0	0	na	V Calc	27	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
13	35	LFS	10YR44	0	0	na	V Calc	28	40	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
14	35	LFS	10YR44	0	0	na	V Calc	29	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
15	35	LFS	10YR44	0	0	na	V Calc	30	32	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
31	35	LFS	10YR44	0	0	na	V Calc	46	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
32	35	LFS	10YR44	0	0	na	V Calc	47	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
33	32	LFS	10YR44	0	0	na	V Calc	48	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
34	35	LFS	10YR44	0	0	na	V Calc	49	30	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
35	35	LFS	10YR44	0	0	na	V Calc	50	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
36	35	LFS	10YR44	0	0	na	V Calc	51	36	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
37	35	LFS	10YR44	0	0	na	V Calc	52	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
38	35	LFS	10YR44	0	0	na	V Calc	53	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
39	35	LFS	10YR44	0	0	na	V Calc	54	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
40	35	LFS	10YR44	0	0	na	V Calc	55	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
41	35	LFS	10YR44	0	0	na	V Calc	56	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
42	35	LFS	10YR44	0	0	na	V Calc	57	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
43	35	LFS	10YR44	0	0	na	V Calc	58	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
44	35	LFS	10YR44	0	0	na	V Calc	59	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
45	35	LFS	10YR44	0	0	na	V Calc	60	45	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	5/50	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
61	40	LFS	10YR44	0	0	na	V Calc	76	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
62	35	LFS	10YR44	0	0	na	V Calc	77	30	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
63	35	LFS	10YR44	0	0	na	V Calc	78	30	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
64	35	LFS	10YR44	0	0	na	V Calc	79	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
65	35	LFS	10YR44	0	0	na	V Calc	80	40	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
66	35	LFS	10YR44	0	0	na	V Calc	81	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
67	40	LFS	10YR44	0	0	na	V Calc	82	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	5/55	0		V Calc		100	LFS	7.5YR53	5/40	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	GLE1 5N	10/100	0		V Calc
68	35	LFS	10YR44	0	0	na	V Calc	83	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
69	35	LFS	10YR44	0	0	na	V Calc	84	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
70	35	LFS	10YR44	0	0	na	V Calc	85	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
71	35	LFS	10YR44	0	0	na	V Calc	86	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
72	40	ZL	7.5YR32	0	0	na	V Calc	87	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
73	40	ZL	7.5YR32	0	0	na	V Calc	88	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
74	40	ZL	7.5YR32	0	0	na	V Calc	89	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
75	40	ZL	7.5YR32	0	0	na	V Calc	90	40	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
91	35	LFS	10YR44	0	0	na	V Calc	106	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
92	35	LFS	10YR44	0	0	na	V Calc	107	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
93	35	LFS	10YR44	0	0	na	V Calc	108	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
94	35	LFS	10YR44	0	0	na	V Calc	109	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
95	35	LFS	10YR44	0	0	na	V Calc	110	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
96	40	ZL	7.5YR32	0	0	na	V Calc	111	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/40	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	GLE1 5N	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
97	40	ZL	7.5YR32	0	0	na	V Calc	112	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
98	40	ZL	7.5YR32	0	0	na	V Calc	113	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
99	40	ZL	7.5YR32	0	0	na	V Calc	114	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
100	40	ZL	7.5YR32	0	0	na	V Calc	115	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
101	40	ZL	7.5YR32	0	0	na	V Calc	116	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
102	40	ZL	7.5YR32	0	0	na	V Calc	117	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
103	40	ZL	7.5YR32	0	0	na	V Calc	118	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
104	40	ZL	7.5YR32	0	0	na	V Calc	119	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
105	40	ZL	7.5YR32	0	0	na	V Calc	120	40	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	5/50	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
121	35	LFS	10YR44	0	0	na	V Calc	136	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
122	35	LFS	10YR44	0	0	na	V Calc	137	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
123	35	LFS	10YR44	0	0	na	V Calc	138	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
124	35	LFS	10YR44	0	0	na	V Calc	139	35	LFS	10YR44	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
125	40	ZL	7.5YR32	0	0	na	V Calc	140	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
126	40	ZL	7.5YR32	0	0	na	V Calc	141	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
127	40	ZL	7.5YR32	0	0	na	V Calc	142	40	ZL	7.5YR32	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
128	40	ZL	7.5YR32	0	0	na	V Calc	143	35	LFS	10YR44	0	0	na	V Calc
	100	LFS	7.5YR53	5/60	0		V Calc		90	LFS	10YR63	0	0		V Calc
	120	LFS	7.5YR33	10/100	0		V Calc		120	LFS	10YR53	10/90	0		V Calc
129	35	LFS	10YR44	0	0	na	V Calc	144	40	ZL	7.5YR32	0	0	na	V Calc
	90	LFS	10YR63	0	0		V Calc		100	LFS	7.5YR53	5/60	0		V Calc
	120	LFS	10YR53	10/90	0		V Calc		120	LFS	7.5YR33	10/100	0		V Calc
130	35	LFS	10YR44	0	0	na	V Calc	145							
	90	LFS	10YR63	0	0		V Calc								
	120	LFS	10YR53	10/90	0		V Calc								
131	35	LFS	10YR44	0	0	na	V Calc	146							
	90	LFS	10YR63	0	0		V Calc								
	120	LFS	10YR53	10/90	0		V Calc								
132	35	LFS	10YR44	0	0	na	V Calc	147							
	90	LFS	10YR63	0	0		V Calc								
	120	LFS	10YR53	10/90	0		V Calc								
133	35	LFS	10YR44	0	0	na	V Calc	148							
	90	LFS	10YR63	0	0		V Calc								
	120	LFS	10YR53	10/90	0		V Calc								
134	35	LFS	10YR44	0	0	na	V Calc	149							
	90	LFS	10YR63	0	0		V Calc								
	120	LFS	10YR53	10/90	0		V Calc								
135	40	ZL	7.5YR32	0	0	na	V Calc	150							
	100	LFS	7.5YR53	5/60	0		V Calc								
	120	LFS	7.5YR33	10/100	0		V Calc								

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