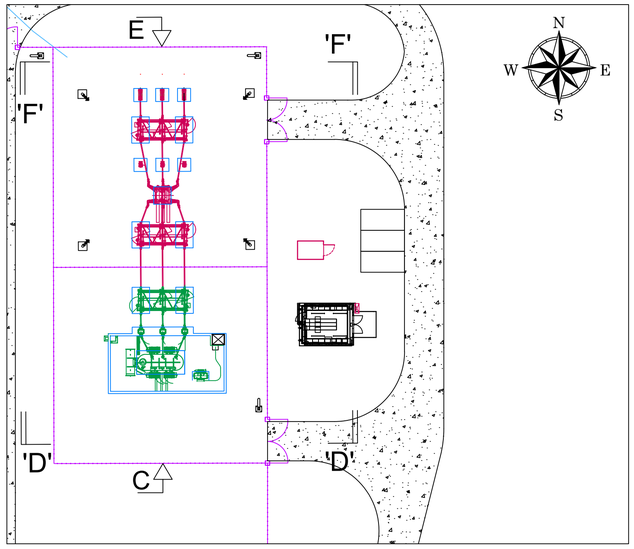

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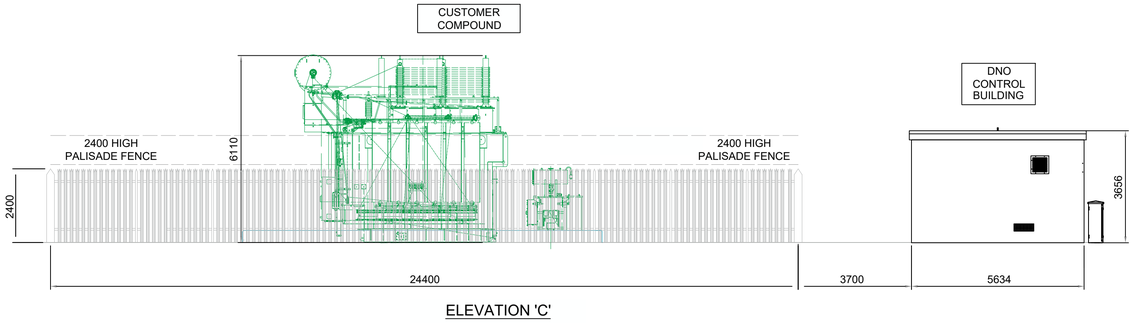

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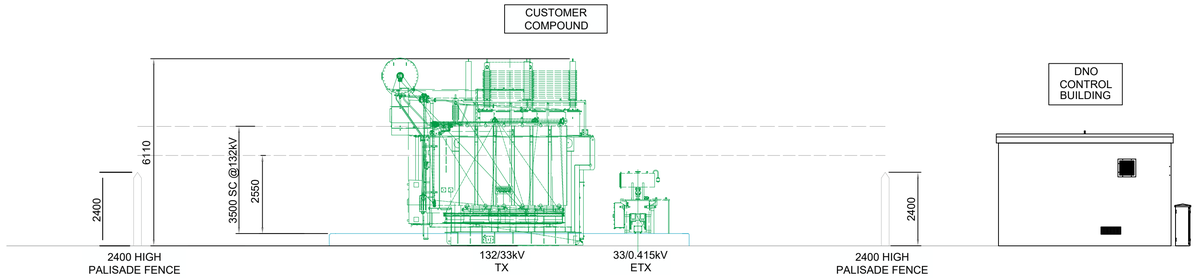

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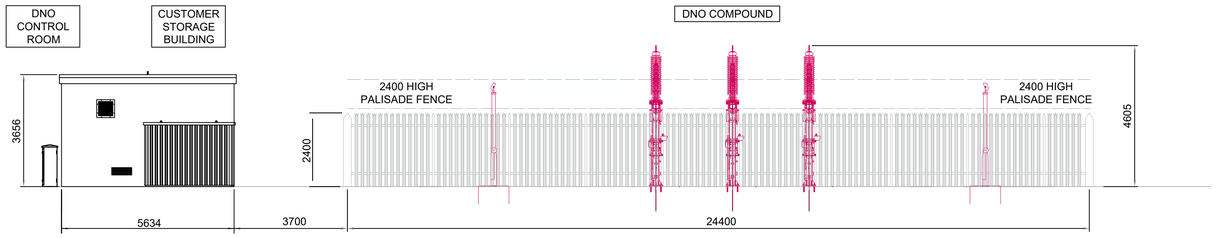

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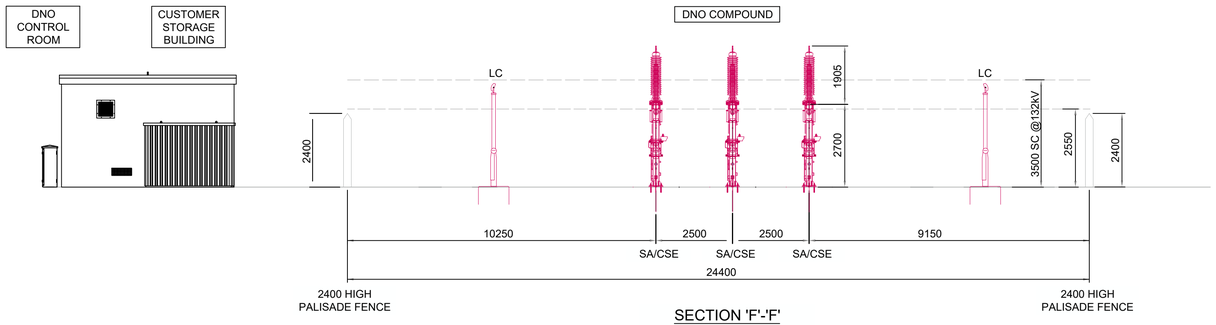

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CLEARANCES FOR BUSBARS AND CONNECTIONS IN ACCORDANCE WITH WPD SAFETY RULES AND BS EN 61936-1:2010

1	VOLTAGE BETWEEN PHASES	132kV
2	MINIMUM CLEARANCE BETWEEN LIVE METAL AND EARTH	1300mm
3	MINIMUM CLEARANCE BETWEEN LIVE METAL OF DIFFERENT PHASES	1300mm
4	MINIMUM TOTAL AIR GAP BETWEEN TERMINALS OF THE SAME POLE OF ISOLATORS	1400mm
5	GAP BETWEEN LIVE AND EARTHED ARCING HORNS OR RINGS	990mm
6	MINIMUM SAFETY CLEARANCE (VERTICAL) BETWEEN LIVE METAL AND POSITIONS TO WHICH ACCESS IS PERMISSIBLE WITH OTHER EQUIPMENT LIVE	3500mm
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8	MINIMUM CLEARANCE BETWEEN ANY SUBSTATION EQUIPMENT AND THE SUBSTATION FENCE	2000mm
9	MINIMUM INSULATION HEIGHT (PEDESTRIAN CLEARANCE)	2550mm

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5. ALL DIMENSIONS TO BE ±3mm UNLESS SPECIFIED OTHERWISE.

6. A RECESSIVE COLOUR SUCH AS GREY IS PROPOSED, BUT CAN BE AGREED WITH OFFICERS.

LEGEND:

	NEW DNO EQUIPMENT
	NEW CUSTOMER EQUIPMENT
	NEW FOUNDATIONS
LC	LC LIGHTING COLUMN - 3m MID HINGED

0 1000 5000 10000

milimetres

Project: Newfields Farm BESS

Drawing name: Elevations and Sections of 132kV Metering Substation

ID: 88-10-05-PL-SS-ELV-02 | Drawn: REN

Revision	Description	Date
R.05	Acoustic Fence Removed	19.02.2025
R.04	Acoustic Fence Added	12.04.2024
R.03	Text Related to Scaling Modified	19.01.2024
R.02	Sections Modified	13.03.2023
R.01	Scale Bar Added	05.10.2022
R.00	First Issue	21.03.2022

Discipline: Electrical | Phase: FOR PLANNING | Format: A1 | Scale: 1:100 | Sheet №: 02 / 03

Client: RE Project Development Limited

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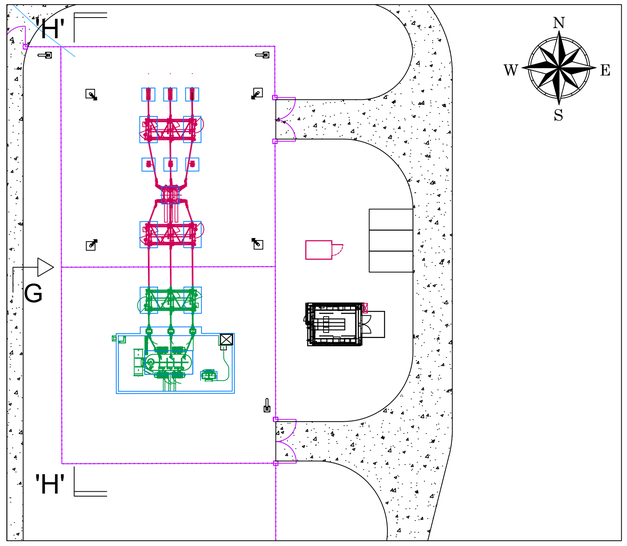

KEY PLAN

Scale - 1:350

CLEARANCES FOR BUSBARS AND CONNECTIONS IN ACCORDANCE WITH WPD SAFETY RULES AND BS EN 61936-1:2010

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LEGEND:

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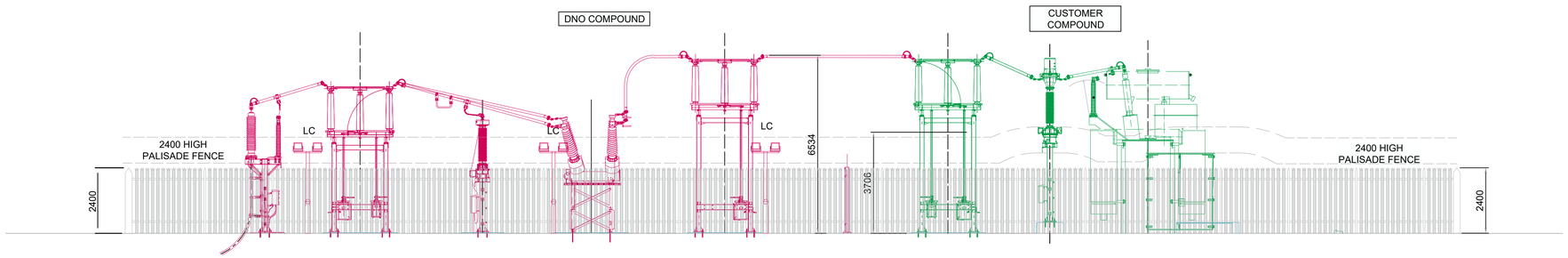
	NEW CUSTOMER EQUIPMENT
	NEW FOUNDATIONS
LC	LC LIGHTING COLUMN - 3m MID HINGED



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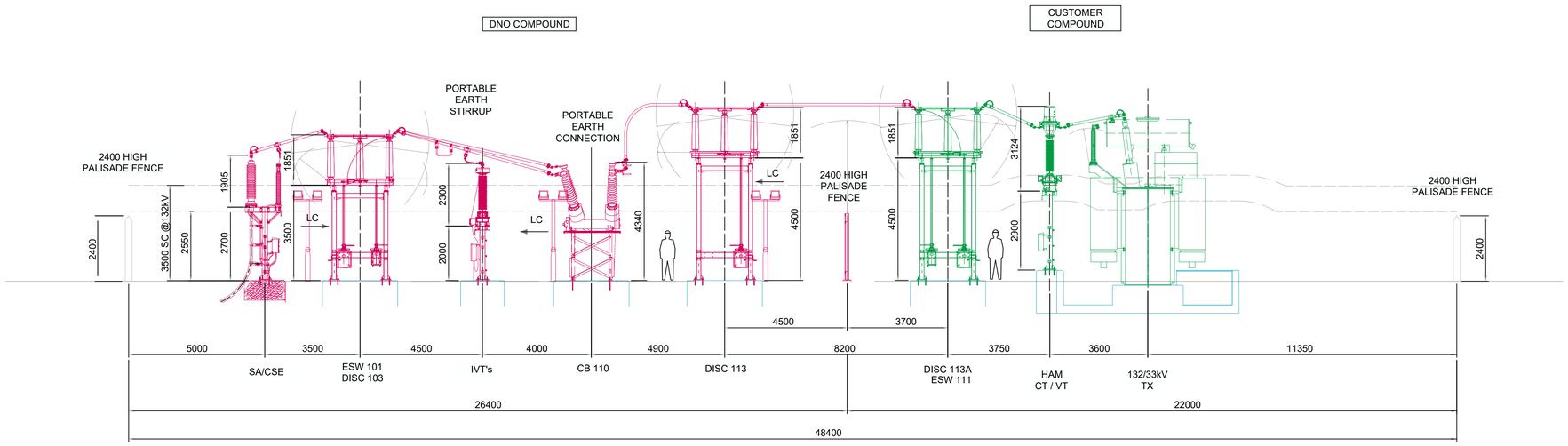

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Drawing name: Elevations and Sections of 132kV Metering Substation		
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R.05	Acoustic Fence Removed	19.02.2025
R.04	Acoustic Fence Added	12.04.2024
R.03	Text Related to Scaling Modified	19.01.2024
R.02	Sections Modified	13.03.2023
R.01	Scale Bar Added	05.10.2022
R.00	First Issue	21.03.2022
Revision	Description	Date

Discipline:	Phase:	Format:	Scale:	Sheet №:
Electrical	FOR PLANNING	A1	1:100	03 / 03

Client: RE Project Development Limited

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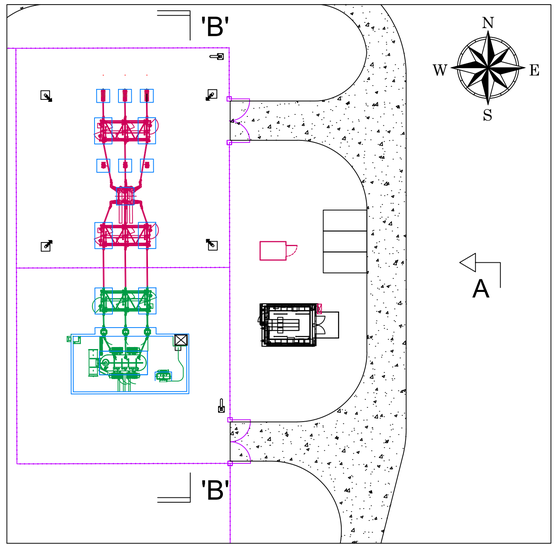

KEY PLAN

Scale - 1:350

CLEARANCES FOR BUSBARS AND CONNECTIONS IN ACCORDANCE WITH WPD SAFETY RULES AND BS EN 61936-1:2010

1	VOLTAGE BETWEEN PHASES	132kV
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LEGEND:

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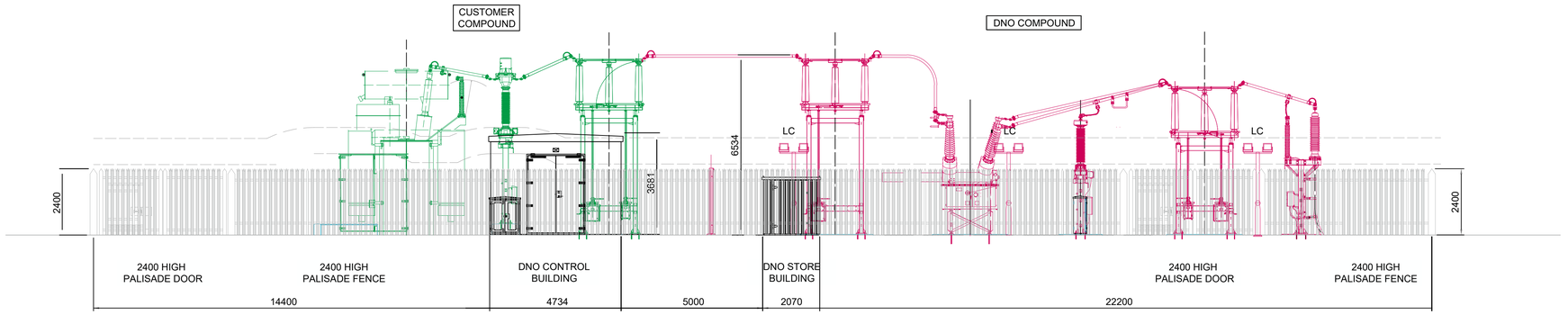
- NEW CUSTOMER EQUIPMENT
- NEW FOUNDATIONS
- LC — LC LIGHTING COLUMN - 3m MID HINGED



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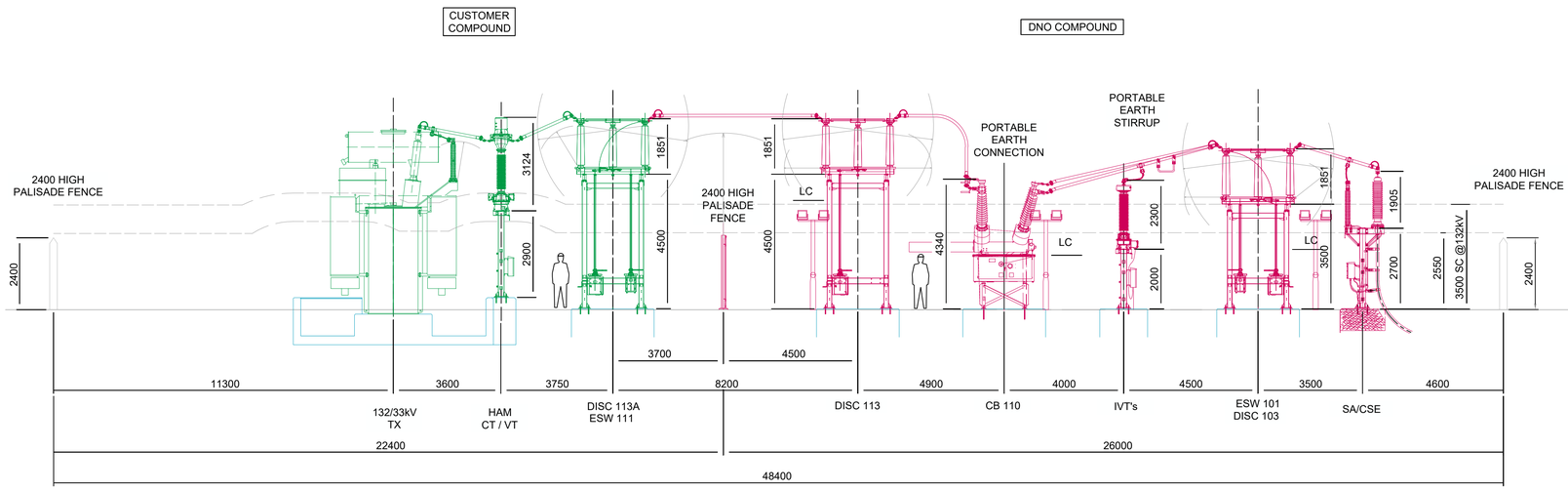

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R.05	DNO Building Elevation	26.04.2024
R.04	Acoustic Fence Added	12.04.2024
R.03	Text Related to Scaling Modified	19.01.2024
R.02	Sections Modified	13.03.2023
R.01	Scale Bar Added	05.10.2022
R.00	First Issue	21.03.2022
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Discipline:	Phase:	Format:	Scale:	Sheet No:
Electrical	FOR PLANNING	A1	1:100	01 / 03

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APPENDIX 3 – SEQUENTIAL ASSESSMENT FOR BESS SCHEME AT STAYTHORPE, NEWARK

ARCUS

SEQUENTIAL TEST ANALYSIS/SITE SELECTION REPORT

STAYTHORPE BATTERY ENERGY STORAGE SYSTEM

SEPTEMBER 2022

Prepared By:

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1 INTRODUCTION

1.1 Background

Arcus Consultancy Services Limited ('Arcus') has been commissioned by Ecap Staythorpe BESS Ltd to undertake a Sequential Test Analysis for a Battery Energy Storage System (BESS) Development ('the Development') on agricultural land off Staythorpe Road, Staythorpe, Nottinghamshire, NG23 5RG ('the Site').

The Development would connect via an underground cable to the adjacent 400 kV Staythorpe Substation, east of the Site.

The Development Site covers an area of 10 ha and is currently used for agricultural purposes.

The Sequential Test Analysis was requested by Ecap Staythorpe BESS Ltd to support a planning application as the Site lies within Agricultural Land Classification Grades 3a and 3b and Flood Zones 2 and 3, and following a pre-application consultation request from Newark and Sherwood Council planning department.

This Report is accompanied by the following figures and appendices:

- Figure 1 – Agricultural Land Classification of Site and Search Area
- Figure 2 – Outline Flood Risk of Site and Search Area
- Figure 3 – Constraints Plan;
- Figure 4 - Potentially Developable Areas (PDA) and constrained Land
- Figure 5 – Potentially Developable Areas with ALC
- Figure 6 - Potentially Developable Areas with Flood Zone
- Figure 7 – Potentially Developable Areas and Receptors; and
- Appendix A: Agricultural Land Classification Surveys of the Development Site.

1.2 Policy Overview

1.2.1 Agricultural Land

This analysis determines whether 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 ALC grade of the Site and surrounding area is seen on Figure 1.

The NPPF, which was revised in July 2021, states the following at paragraph 174:

"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."

[1] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. July 2021. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf [Accessed 03/08/2022].

[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 03/08/2022].

As there is an absence of national policy for battery development on good quality agricultural land, other policy could be considered that is applicable to other types of renewable development, such as solar. This is relevant as a BESS development enables renewable energy to be more efficient and stabilises the grid.

Therefore, it may be relevant to mention that PPG on "Renewable and Low Carbon Energy" still, at the time of writing, reflects the 2019 version of the NPPF, which required a sequential test to address the factors a local planning authority needs to consider, including:

- 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."

The policy is applicable for solar, but the principles of the policy can still be applied to help assess this Development in terms of its position on Best and Most Versatile land.

1.2.2 Flood Risk

This analysis determines whether there is land at a lower risk of flooding that is suitable to locate the Development based on the DEFRA and Environment Agency Guidance[3]. The outline flood risk map and search area is seen on Figure 2.

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 Newark and Sherwood District Council Strategic Flood Risk Assessment[4] 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 Newark and Sherwood District Council Strategic Flood Risk Assessment with regard to the siting of the proposed Development in Flood Risk Zones 2 and 3.

1.3 Need for Development to Enable Renewables

The Development will contribute to a reduction in the use of non-renewable natural resources, such as fossil fuels, as the technology complements the production and use of renewable energy technologies, such as wind and solar, which can be intermittent. The Site will be restored to its former use when the Development is decommissioned after 40 years.

The UK Government published the British Energy Security Strategy[5] in April 2022 which outlined the need for both a decarbonised and secure energy supply. A BESS not only provides more security to the grid by storing back-up energy for times when electrical supply drops, but it also specifically supports low-carbon energy such as wind and solar by ensuring that their energy can be more reliably and consistently supplied. Specific to

[3] 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 02/08/2022].

[4] Newark and Sherwood District Council (2016). Strategic Flood Risk Assessment. [Online]. Available at Strategic Flood Risk Assessment Level 1 | Newark & Sherwood District Council (newark-sherwooddc.gov.uk) [Accessed 02/08/2022].

[5] UK Government (2022) British Energy Security Strategy [Online] Available at: https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy [Accessed 17/08/2022].

electricity generation, the Energy Security Strategy highlights that by 2030 95% of the electricity could be-low carbon, and by 2035 the UK will have a decarbonised electricity system, subject to a security of supply. Accelerating the supply of clean and affordable domestic energy requires upgrades to the connecting network infrastructure needed to support it. Energy storage is one of the key components of that infrastructure. In their Future Energy Scenarios 2022 Outlook, National Grid have indicated that at least 10 Gigawatt hours (GWh) of 2-hour duration energy storage is needed in order to adequately balance a net-zero energy system[6]

In order to meet the emissions targets, set by the Paris Agreement[7] in 2015 and the EU 2020 renewable energy targets set by the Renewable Energy Directive 2009/28/EC[8], the UK has a responsibility to increase the amount of renewable energy generated power available and reduce the UK's dependence on fossil fuels.

The UK Clean Growth Strategy (2017)[9] conveys the Government's objective of achieving clean growth, whilst ensuring an affordable energy supply for businesses and consumers. The strategy is in-line with the 2015 Paris Agreement where 195 countries agreed to stretch national targets to keep the global temperature rise below 2°C. Therefore, further actions and investment will be needed to ensure the shift to clean growth in the coming years, where the clean growth plays a central role in the UK's Industrial Strategy.

To meet the fourth, fifth and sixth carbon budgets (2023-2027, 2028-2032 and 2033-2037), there will be a need for a significant acceleration in the pace of decarbonisation, while ensuring a secure energy supply at minimum cost to both industry and domestic consumers.

On 9th December 2020, the Climate Change Committee (CCC) released The Sixth Carbon Budget which updates intermediary targets for the UK's progress to net zero[10].

"Our recommended pathway requires a 78% reduction in UK territorial emissions between 1990 and 2035. In effect, it brings forward the UK's previous 80% target by nearly 15 years. There is no clearer indication of the increased ambition implied by the Net Zero target than this."

These recommended targets must be considered as a factor in the determination of applications for Developments that enable renewables, such as BESS sites. In establishing intermediary targets towards net zero, the context exists for Local Authorities to recognise the action that must be taken sooner rather than later. As concluded in the Sixth Carbon Budget:

"The implication of this path is clear: the utmost focus is required from government over the next ten years. If policy is not scaled up across every sector; if business is not encouraged to invest; if the people of the UK are not engaged in this challenge – the UK will not deliver Net Zero by 2050."

Chapter 3, Section 4 of the report addresses electricity generation specifically. Reducing carbon emissions to net zero will require significant expansion of low carbon generation, in particular low-cost renewables and decarbonised back up generation. A BESS is specifically

[6] National Grid ESO (2022) Future Energy Scenarios [Online]. Available at: https://www.nationalgrideso.com/document/263951/download [Accessed 24/08/2022]

[7] 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 04/08/2022].

[8] 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 04/08/2022].

[9] UK Government (2017) Government reaffirms commitment to lead the world in cost-effective clean growth [Online] Available at: https://www.gov.uk/government/news/government-reaffirms-commitment-to-lead-the-world-in-cost-effective-clean-growth [Accessed 04/08/2022].

[10] Climate Change Committee - The Sixth Carbon Budget: The UK's path to Net Zero (2020). Page 134/135 [Online] Available at https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf [Accessed 04/08/2022].

designed to provide back-up support to the grid as it allows additional electrical capacity to be stored for times when renewable generation may drop, ensuring that a consistent supply is provided to consumers.

The report sees renewables as forming the 'backbone of the electricity system', providing 80% of all generation by 2050. This will require at least 3 GW per year of new renewable capacity, which needs to be supported by appropriate grid infrastructure.

The Development includes BESS technology to provide stability services to the grid, allowing for a more uniform, less peaky, export of electricity from the Development and allows for more intermittent renewable generation to be exported onto the grid network from sources such as solar and wind.

The ability to generate low carbon, low-cost electricity is constrained by grid connection opportunities. Installation of a battery energy storage system near to the Staythorpe substation will allow the storage of any excess energy which can be utilised at times during the day where electricity generation dips. The scope of this assessment is therefore limited to consideration of alternative sites that could viably connect to Staythorpe substation via an underground cable. The Study Area is set out in Section 2.1, below.

1.4 Purpose of this Report

This report presents the findings of a Sequential Test Analysis which outlines the process through which the location of the Development has been determined as suitable. It seeks to demonstrate that the Development Site meets the requirements of both the PPG and NPPF with regards to the siting of the Development partially on land classed as Best and Most Versatile (BMV: ALC Grade 1, Grade 2 and Grade 3a) and within a Flood Risk Zones 2 and 3.

2 METHODOLOGY

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

2.1 Study Area

2.1.1 Substation Selection

Ecap Staythorpe BESS Ltd reviewed the possible grid connection points within the Nottinghamshire area within a 50 km radius of the Staythorpe Substation. No other substations presented suitable connection options due to a lack of demand or export headroom availability on the existing transmission network, without wider system reinforcement works. Therefore, Staythorpe Substation was the only suitable option.

Staythorpe Substation is also a Main Interconnected Transmission System (MITS) which means that over 4 transmission circuits connect through this supply point. This positively supports any connected energy storage scheme as the scheme would help support any of the circuits when necessary. This increases the geographical reach of the support that a connected BESS could offer as any one of the connected circuits could experience dips in electrical supply. Several green energy projects in the wider area would be optimised because of a placement of a BESS on this MITS point, therefore making this scheme very efficient compared to it being connected to an alternative substation.

2.1.2 BESS Location

In order to ensure minimal losses and greater efficiency, BESS sites are often located in very close proximity to the substation that they connect to. This benefits the Transmission Operator (TO) and Distribution Network Operator (DNO) networks, as it ensures the circuits

and infrastructure carrying this capacity do not become congested or constrained. This allows optimisation of existing generation capacity and allows additional renewable generation to be connected.

The cost of connection to the electrical grid also increases substantially with distance from the connection point as the length of cabling required increases. Due to the high voltage of the scheme the cost of additional cabling is also considerably higher in comparison to lower voltages.

Battery operators also often partake in National Grid Schemes which aim to promote a sustainable supply of electricity. Operators are compensated for this which increases the viability of the project. To take part in this, the BESS site must be in close enough proximity to the point of connection to receive a signal from the grid operator, process it and respond by exporting energy, all instantaneously. If the Site was located too far from the point of connection, then it would make these requirements harder to adhere to and decrease viability of the scheme.

This means that to have a financially viable scheme, the maximum viable distance from the site to the point of electrical connection to the grid has been determined to be no more than 1 km from the 400 kV Staythorpe Substation. A search distance of 1.5 km from the Staythorpe Substation has also been included to represent the furthest away point of the Development boundary.

The study area, as described above, is shown in Figure 3[11].

2.2 Constraints

Land within the search area was examined and all constrained and designated areas where a BESS development is unlikely to be viable or acceptable were excluded. These areas are shown on Figure 3 and include:

- Land within 100 m of Listed Buildings;
- Conservation Areas;
- Local Nature Reserves;
- The Staythorpe Power Station;
- Land within 10 m of permanent surface water;
- Land within 100 m of Scheduled Monuments;
- Land within 10 m of Roads;
- Land within 10 m of woodland;
- Land within 10 m of railway lines;
- Land within 6 m of 33 kV Overhead Line;
- Land within 9 m of 132 kV Overhead Line;
- Land within 14 m of 400 kV Overhead Line; and
- Sites of Interest in Nature Conservation.

The Council's Brownfield Register was reviewed first for potentially suitable alternative sites, although none were within the search area. The remaining 'unconstrained' land was examined to identify any contiguous Potentially Developable Areas (PDAs) of a similar area to the Development Site (10 ha). These areas are shown on Figure 4.

3 SEQUENTIAL TEST ANALYSIS

Figure 3 shows an overview of the search area with constraints. Remaining land, after excluding the constraints, is shown on Figure 4. Figure 5 shows the PDAs with ALC whilst Figure 6 shows the PDAs with Flood Zones. Finally, Figure 7 shows the PDAs with relevant

[11] GIS datasets used to determine percentage ALC and 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.

receptors. Most unconstrained land within the study area is located in ALC Grade 2 and 3 and Flood Zone 2 and 3. Within the remaining unconstrained land, PDAs with an area of approximately 10 ha or greater were identified based on professional experience (broadly, contiguous sites without excessive complexity of boundary shape, internal obstacles or existing development).

3.1 Brownfield Sites

No suitable non-agricultural or brownfield sites were identified within the study area.

3.2 Potentially Developable Areas

3.2.1 The Development Site

Ecap Staythorpe BESS Ltd have a grid connection agreement offer from National Grid and a willing landowner of a potential Development Site. The Development Site has an area of approximately 10 ha, large enough for the proposed scale of the Development. The BESS site would be connected via a short underground cable to the nearby 400 kV Staythorpe Substation which is directly adjacent to the Site. This makes the connection relatively easy and cost effective, with limited disruption to the surrounding area.

This location would also help the Development to appear as a natural extension to the National Grid substation, within an already urbanised area, rather than in a more open and rural setting.

Preliminary desk-based assessment suggested that the Development Site is located on predominantly Grade 3 agricultural land with an area of Grade 2 to the west of the Site. To verify this, an ALC survey of the whole Development Site was undertaken in April 2022, a copy of which can be found in Appendix A, which confirmed that:

- 73.3% lies within Grade 3a, described as "good quality agricultural land".
- 26% lies within Grade 3b, described as "moderate quality agricultural land".
- A small section of the PRoW to the northeast of the Site was not sampled, according to datasets this is Grade 2 land and makes up 0.7% of the Site, described as "very good agricultural land", but this area would not be used as part of the PDA for the Development.

The whole Site lies within Flood Zone 2 and a section of the site lies within Flood Zone 3 and so a Flood Risk Assessment has been submitted with this planning application to confirm the predicted flood levels and inform the layout and design of the site. As part of the design of the Development Sustainable Drainage Systems (SuDS) have been incorporated in order to ensure that the site can remain operational during times of flooding. This is later discussed in section 3.2.1.1.

There are few localised constraints onsite, these being limited to drainage ditches and an overhead line. There is also a PRoW onsite, but this has been considered within the design of the Development and suitable planting has been suggested to help mitigate views of the infrastructure from users of this PRoW. The Site is also in close proximity to Staythorpe, however there is already established existing screening and additional planting and setbacks have been considered in the design process in order to mitigate any potential views from surrounding residents. The Site would also likely be viewed in the context of the neighbouring substation so this Development would not be the only man-made feature in the landscape. Impacts on residents and landscape receptors have been assessed in more details within the Landscape Visual Assessment which has been submitted alongside this report.

There are a range of heritage assets within nearby proximity of the Development Site including Listed Buildings, a Scheduled Monument and Conservation Area. However, these are predominantly located behind the existing substation and so the Development would

not be visible from these assets or visibility would be seen in the context of the substation. Impacts on heritage assets have been assessed with a Heritage Impact Assessment which has been submitted alongside this report.

There are no other operational cumulative sites within the search area.

3.2.1.1 Exception Test

The proposed Development is classed as Essential Infrastructure[12] (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 a 50% climate change allowance has been applied to flood depths as part of the Flood Risk Assessment which has been submitted as part of the Planning Application.

The BESS units and ancillary infrastructure in the southern field will be raised 1 m above ground level and 0.9 m above ground level in the northern field. This incorporates a +300 mm allowance above the 1 in 100-year (+50 %) event maximum flood depths in the location of the infrastructure.

The substation compound is located outside of the 1 in 100-year (+50%) flood extents.

These measures ensure that electrically sensitive infrastructure can still remain operational during times of flooding with the option to remotely shut down if required.

3.2.2 PDA 1

PDA 1 is located on predominantly Grade 3 agricultural land, with a small area of Grade 2 agricultural land to the south of the PDA. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not differentiated on available datasets. It may be likely that PDA 1 has an equal classification of agricultural land to the Development.

The majority of the PDA is located in both Flood Zones 2 and 3. Approximately 19% is in FZ1, 2% in FZ2 and 79% in FZ3. The area in FZ1 is smaller than the Development Site so could not be used solely for development. Therefore, PDA 1 would not be considered more suitable in terms of flood risk than the Development Site as infrastructure would still need to be located within Flood Zone 3.

PDA 1 is flat with some existing screening; however, this site is in close proximity to Upton Conservation Area which may increase potential views of any Development on this Site. PDA is fragmented by High Voltage Over Head power lines and does not benefit from a direct access from the public highway.

PDA 1 has an area of approximately 25.4 ha, large enough for the proposed scale of the Development. However, the PDA is further from Staythorpe National Grid Substation which means that connection via underground cable would incur additional cost, compared to the Development Site.

Placing a BESS development here within a more rural setting may also increase visual implications to surrounding residents. The Development Site is directly adjacent to the existing substation which means that it would likely be considered in the context of this.

[12]Government (2021) Flood risk and coastal change Guidance. Available online at https://www.gov.uk/guidance/flood-risk-and-coastal-change#Table-2-Flood-Risk-Vulnerability-Classification (Accessed 08/08/2022)

PDA 1 does have areas which are within Flood Zone 1, but these are not large enough to support the scale of the development. Therefore, given that the agricultural land and constraints are similar to that of the Development, PDA 1 is not considered more suitable for a BESS development that then Development Site.

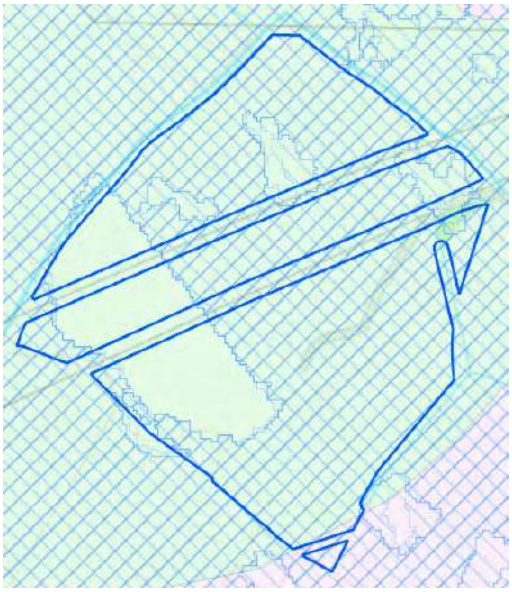


Plate 1- PDA 1 with ALC grades 2 and 3 and Flood Zones 1, 2 and 3

3.2.3 PDA 2

PDA 2 is located on Grade 3 agricultural land. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not differentiated on available datasets. It may be likely that PDA 2 has an equal classification of agricultural land to the Development.

The whole PDA is located Flood Zone 3. Compared to the Development Site a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

Plate 2 – PDA 2 with ALC grade 3 and Flood Zone 3

3.2.4 PDA 3

PDA 3 is located on Grade 3 agricultural land. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not

differentiated on available datasets. It may be likely that PDA 3 has an equal classification of agricultural land to the Development.

The whole PDA is located within Flood Zone 3. Compared to the Development Site, this means that a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

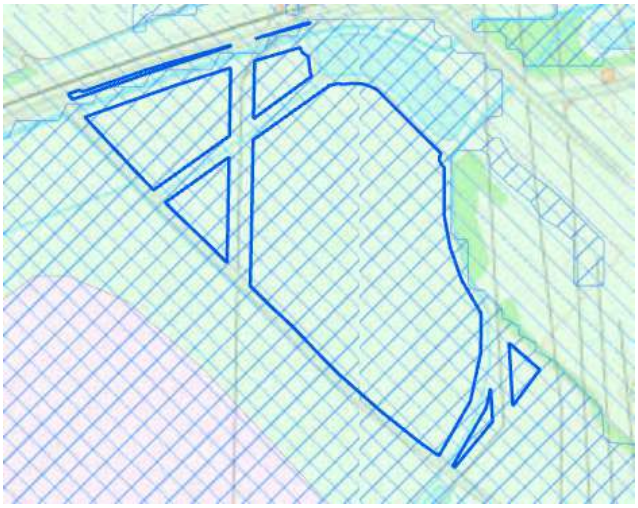


Plate 3 – PDA 3 with ALC grade 3 and Flood Zone 3

3.2.5 PDA 4

Most of PDA 4 is located in Grade 2 agricultural land with a portion of Grade 3 to the northwest of the site, meaning that this PDA has a higher quality ALC than that of the Development. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

PDA 4 is less constrained by Flood Zone, however a majority of the PDA that falls outside the flood zone is Grade 2 ALC land, which is of a higher quality than that of the Development. Given that the agricultural land classification is higher than that of the Development Site and the PDA is in closer proximity to heritage assets, PDA 4 is not considered more suitable than the Development Site for BESS development.

Plate 4 – PDA 4 with ALC grades 2 and 3 and Flood Zone 1 and 2

3.2.6 PDA 5

PDA 5 is nearly equally distributed on both ALC grade 2 and 3 land with no grade 3 land falling with the 1 km search area. This means that the PDA has a higher proportion of higher quality agricultural land compared to the Development Site. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

A large portion of the PDA is in both Flood Zones 2 and 3 with a section to the north of the Site being in Flood Zone 1. This FZ1 area is not large enough to support the whole development and this area is within a majority of Grade 2 ALC land. Given that the agricultural land classification is higher than that of the Development Site, PDA 5 is not considered more suitable than the Development Site for BESS development.

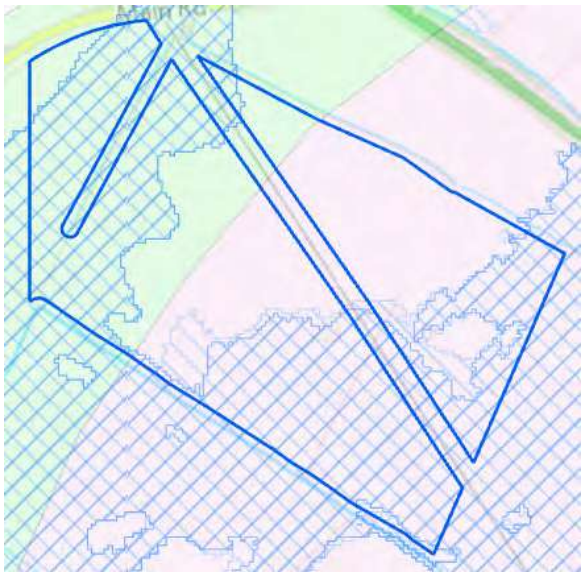


Plate 5 – PDA 5 with ALC grades 2 and 3 and Flood Zones 1, 2 and 3

3.2.7 PDA 6

PDA 6 is located on Grade 3 agricultural land. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not differentiated on available datasets. It may be likely that PDA 6 has an equal classification of agricultural land to the Development.

The whole PDA is located within Flood Zone 3. Compared to the Development Site, this means that a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

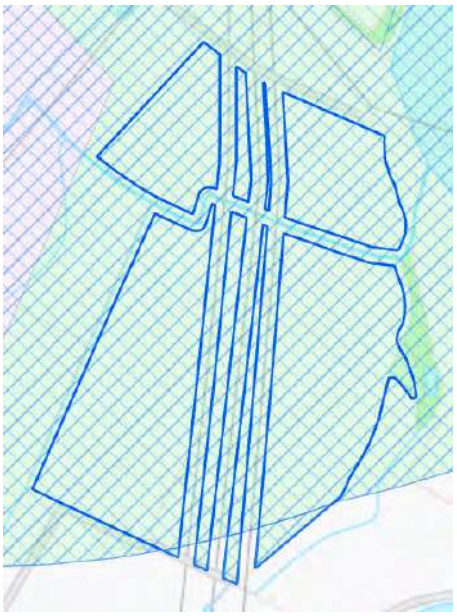


Plate 6 – PDA 6 with ALC grade 3 and Flood Zone 3

3.2.8 PDA 7

All of PDA 7 is located in Grade 2 agricultural land, meaning that this PDA has a higher quality ALC than that of the Development. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

Nearly the whole PDA is located within Flood Zone 3 with a very small section to the west of the PDA being within Flood Zone 2. Compared to the Development Site, a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

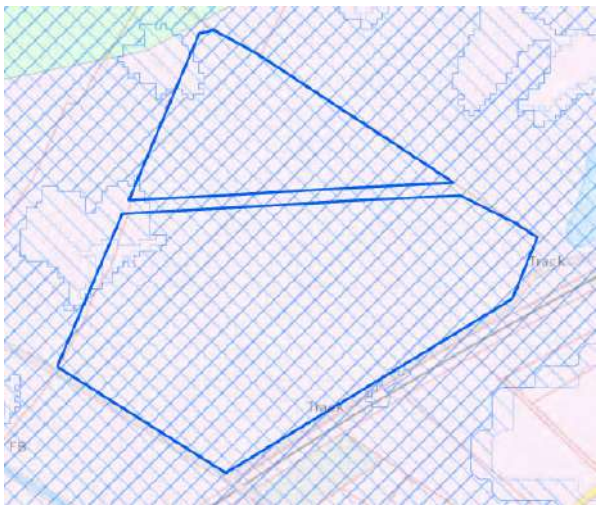


Plate 7 – PDA 7 with ALC grade 2 and Flood Zones 2 and 3

3.2.9 PDA 8

Most of PDA 8 is located in Grade 2 agricultural land with a portion of Grade 3 to the west of the site, meaning that this PDA has a higher quality ALC than that of the Development. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

A majority of the PDA is located in Flood Zone 3 with sections of the PDA being in Flood Zone 1 and 2, however, these areas are not large enough alone to support a development. Overall, compared to the Development Site, a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

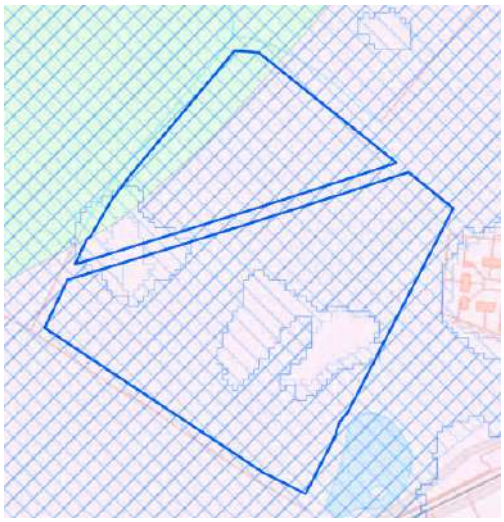


Plate 8 – PDA 8 with ALC grade 2 and 3 and Flood Zones 1, 2 and 3

3.2.10 PDA 9

All of PDA 9 is located in Grade 2 agricultural land, meaning that this PDA has a higher quality ALC than that of the Development. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

The edges of PDA 9 are in Flood Zone 3 however, there is a large area to the centre of the site which is Flood Zone 1, however this area is not large enough to support a development. Therefore, PDA 9 would not be considered more suitable in terms of flood risk than the Development Site as infrastructure would still need to be located within Flood Zone 3.

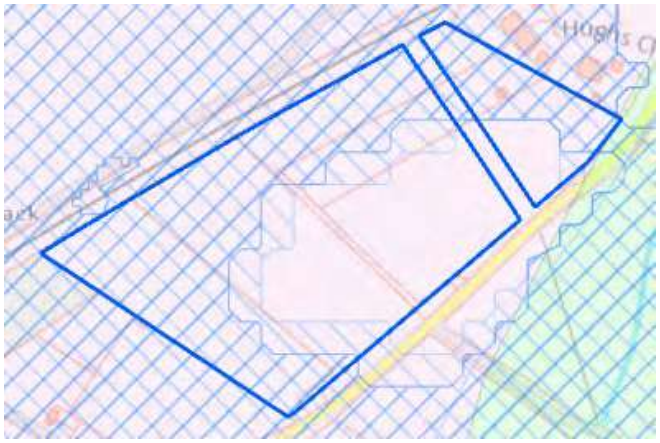


Plate 9 – PDA 9 with ALC grade 2 and Flood Zones 1, 2 and 3

3.2.11 PDA 10

PDA 10 is located on Grade 3 agricultural land. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not differentiated on available datasets. It may be likely that PDA 10 has an equal classification of agricultural land to the Development.

The whole PDA is located within Flood Zone 3. Compared to the Development Site, this means that a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

PDA 10 would also be considered too small for a BESS development.

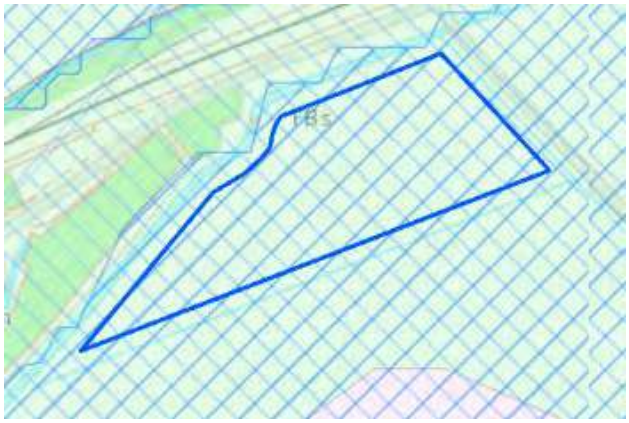


Plate 10- PDA 10 with ALC grade 3 and Flood Zone 3

3.2.12 PDA 11

PDA 11 is located in near equal parts on Grade 2 and Grade 3 agricultural land. This means that this PDA has a higher quality ALC than that of the Development. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

The whole PDA is located within Flood Zone 3. Compared to the Development Site, this means that a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

Plate 11- PDA 11 with ALC grade 2 and 3 and Flood Zone 3

3.2.13 PDA 12

PDA 12 is located on Grade 3 agricultural land. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not differentiated on available datasets. It may be likely that PDA 12 has an equal classification of agricultural land to the Development.

Approximately 70% of PDA 12 is within Flood Zone 2 with 30% being within Flood Zone 3, however the area of Flood Zone 2 is not considered large enough to support a BESS development so infrastructure would still need to be located within Flood Zone 3. Therefore, PDA 12 would not be considered more suitable in terms of flood risk than the Development Site as infrastructure would still need to be located within Flood Zone 3.

PDA 12 would also be considered too small for a BESS development.

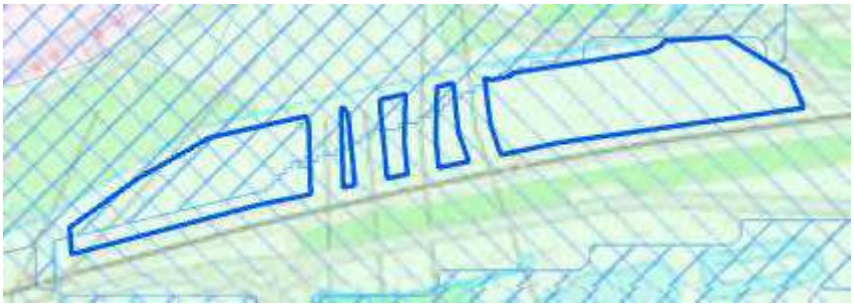


Plate 12- PDA 12 with ALC grade 3 and Flood Zones 2 and 3

3.2.14 PDA 13

PDA 13 is not featured on the figures as this PDA falls within the Staythorpe Power Station which is identified as 'constrained land' on figures 3 and 4. PDA 13 was considered unsuitable as there is existing infrastructure present and was considered too small for BESS development, therefore there was no part of the PDA worth considering further.

Plate 13 – PDA 13 with ALC grade 3 and Flood Zone 2. This PDA is not shown on any Figure attached to this document as the entire PDA was ruled out as its entire area sits within the Staythorpe Power Station.

3.2.15 PDA 14

PDA 14 is located on Grade 3 agricultural land. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not differentiated on available datasets. It may be likely that PDA 14 has an equal classification of agricultural land to the Development.

The whole PDA is located within Flood Zone 3. Compared to the Development Site, this means that a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

Plate 14- PDA 14 with ALC grade 3 and Flood Zone 3

3.2.16 PDA 15

PDA 15 is located on Grade 3 agricultural land. Without an ALC survey it is difficult to determine whether the PDA contains 3a and/or 3b agricultural land as these are not differentiated on available datasets. It may be likely that PDA 15 has an equal classification of agricultural land to the Development.

The whole PDA is located within Flood Zone 3. Compared to the Development Site, this means that a higher portion of the PDA is located in Flood Zone 3, meaning that more of the PDA is at risk of a 1 in 100-year flood event. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of Flood Risk.

Plate 15- PDA 15 with ALC grade 3 and Flood Zone 3

3.2.17 PDA 16

All of PDA 16 is located in Grade 2 agricultural land, meaning that this PDA has a higher quality ALC than that of the Development. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

PDA 16 is less constrained by Flood Zone, however a majority of the PDA that falls outside the flood zone is Grade 2 ALC land, which is of a higher quality than that of the Development. Given that the agricultural land classification is higher than that of the Development Site and the PDA is in closer proximity to heritage assets, PDA 16 is not considered more suitable than the Development Site for BESS development.

Plate 16- PDA 16 with ALC grade 2 and Flood Zones 1, 2 and 3

3.2.18 PDA 17

Approximately one third of PDA 17 is located on Grade 2 agricultural land with the other two-thirds being Grade 3 land. This means that this PDA has a higher quality ALC than that of the Development. Therefore, for this sequential test analysis, this PDA would be considered a worse choice than the Development Site in terms of ALC land.

PDA 17 has some small sections of Flood 1 and 2 but these are not large enough to support a development. Compared to the Development Site it has an equal portion of Flood Zone 3. Therefore, PDA 17 would not be considered more suitable in terms of flood risk than the Development Site as it has a similar portion of area at risk of flooding in a 1 in 100-year Flood event.

Plate 17- PDA 17 with ALC grade 2 and 3 and Flood Zones 1, 2 and 3

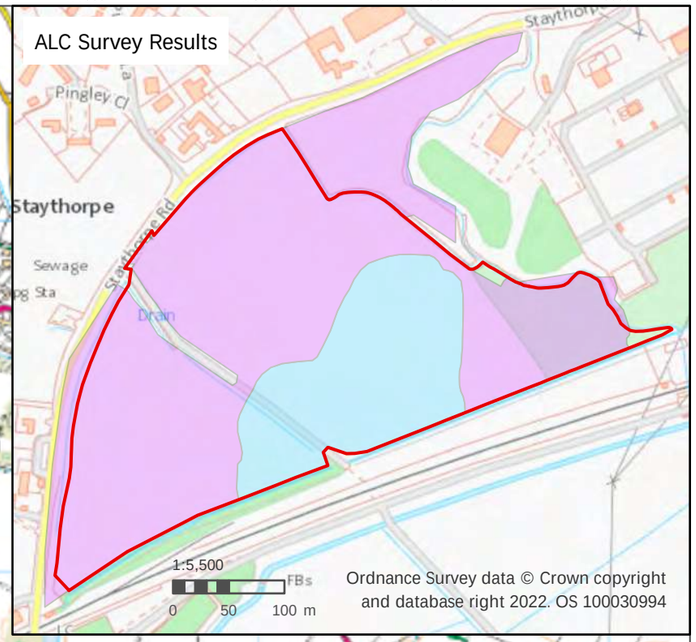
4 CONCLUSION

As noted in Section 3 above, no other sites have been identified that would be preferred to the Development site in terms of ALC, flood risk or other relevant environmental and site selection factors.

FIGURE 1 AGRICULTURAL LAND CLASSIFICATION OF SITE AND SEARCH AREA

Publicly available ALC dataset

ALC Survey Results



474000 474500 475000 475500 476000 476500 477000 477500 478000 478500 479000

356500 356000 355500 355000 354500 354000 353500 353000 352500 352000

AVERHAM CP

STAYTHORPE CP

ROLLESTON CP

Kelham Hills
Frog Abbey
Ash Trees
Kelham
Nursery
Flash Farm
Spring Wood
Micklebarrow Hill
Oak Plantation
Playing Field
Cottage Plantation
Battle Bridge
Rectory Farm
Averham
Ricdot
Pingley Bridge
Rundell Dyke
Manor Farm
Staythorpe House Farm
Staythorpe
Behzy Gardens
Power Station
Trent Valley Way
Averham Weir
Upper Water Mouth
Sconce & Devon Park
Ropewalk Farm
Marina
Caravan Site
Sandhills Stables
The Rovings
Earthwork
Civil War Redoubt
Cricket Ground
Old Trent Dyke
Farndon Harbour
Wayside Nursery
Farndon Fields
Fosseway Farm
Top Farm
Farndon
Mill Farm
Fish Ponds
Bramble Cottage
Greenaway
Rolleston Glebe
Rolleston
Nurseries
Rolleston Field
Field Farm
Norwood Farm
New Manor Farm
Orchard Farm
Saxterley Rack
A617
A46

ARCUS
An ERM Group Company

- Site Boundary
- 1 km Buffer of Staythorpe 400 kV Substation
- 1.5 km Buffer of Staythorpe 400 kV Substation

Agricultural Land Classification

Publicly Available Dataset

- Grade 2
- Grade 3

Survey Results

- Grade 3a
- Grade 3b

1:17,500 Scale @ A3

0 200 400 m

NORTH

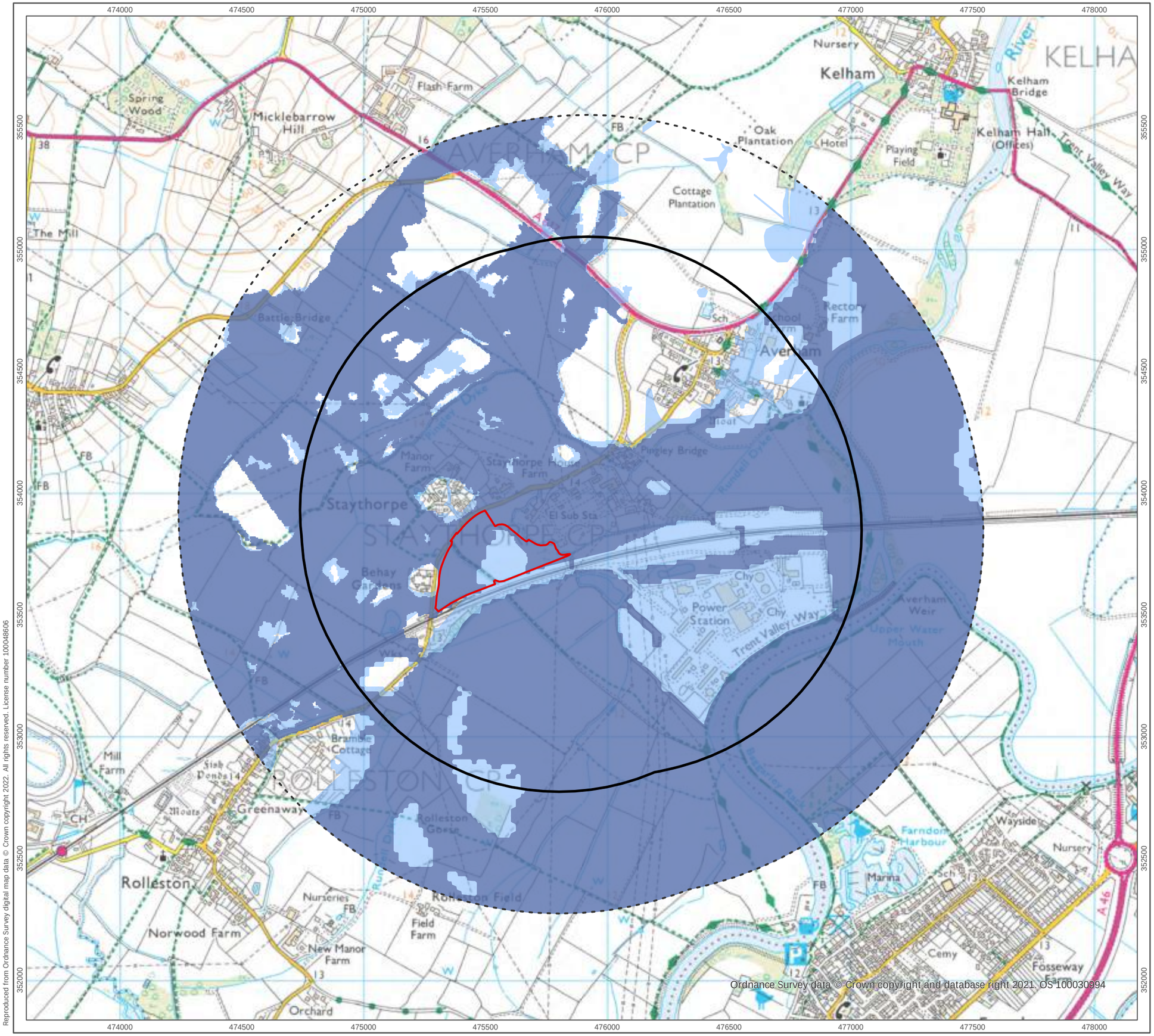
Produced By: BL	Ref: 4951-REP-044
Checked By: SC	Date: 06/09/2022

Agricultural Land Classification of Site and Study Area
Figure 1

Staythorpe BESS
Sequential Test Analysis

Y:\GIS\Environment\4951 Staythorpe BESS\4951 Staythorpe BESS.aprx\4951-REP-044 Fig01 ALC of Site and Study Area

FIGURE 2 OUTLINE FLOOD RISK OF SITE AND SEARCH AREA



ARCUS
An ERM Group Company

- Site Boundary
- 1 km Buffer of Staythorpe 400 kV Substation
- 1.5 km Buffer of Staythorpe 400 kV Substation
- Flood Zone 3
- Flood Zone 2

1:15,000 Scale @ A3

0 200 400 m

NORTH

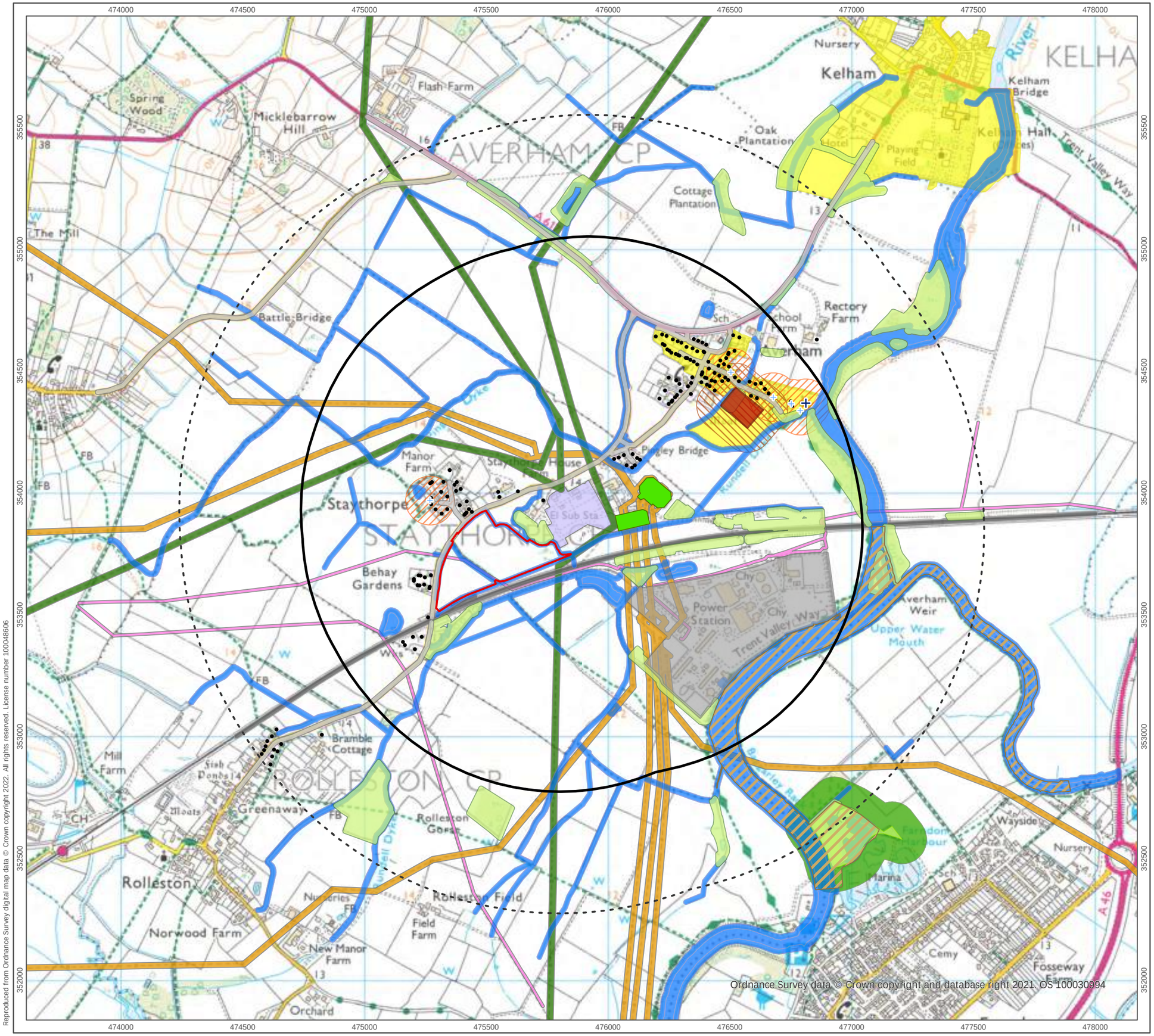
Produced By: BL	Ref: 4951-REP-047
Checked By: SC	Date: 12/09/2022

Flood Risk of Site and Study Area
Figure 2

Staythorpe BESS
Sequential Test Analysis

Y:\GIS\Environment\4951 Staythorpe BESS\4951 Staythorpe BESS.aprx\4951-REP-047 Fig02 Flood Risk of Site and Study Area

FIGURE 3 – CONSTRAINTS PLAN



ARCUS
An ERM Group Company

- Site Boundary
- 1 km Buffer of Staythorpe 400 kV Substation
- 1.5 km Buffer of Staythorpe 400 kV Substation
- Conservation Area
- Farndon Ponds Local Nature Reserve
- 132 kV Substation
- 10 m Buffer of Surface Water
- Scheduled Monument
- Site of Interest in Nature Conservation
- 10 m Buffer of Road
- 10 m Buffer of Woodland
- 10 m Buffer of Railway
- 14 m Buffer of 400 kV OHL
- 6 m buffer of 33 kV OHL
- 9 m Buffer of 132 kV OHL
- Staythorpe 400 kV Substation
- Staythorpe Power Station
- 100 m Buffer of LNR
- 100 m Buffer of Listed Buildings
- 100 m Buffer of Scheduled Monument
- \+ Grade I Listed Building
- \+ Grade II Listed Building
- • Residential Dwelling

1:15,000 Scale @ A3

0 200 400 m

NORTH

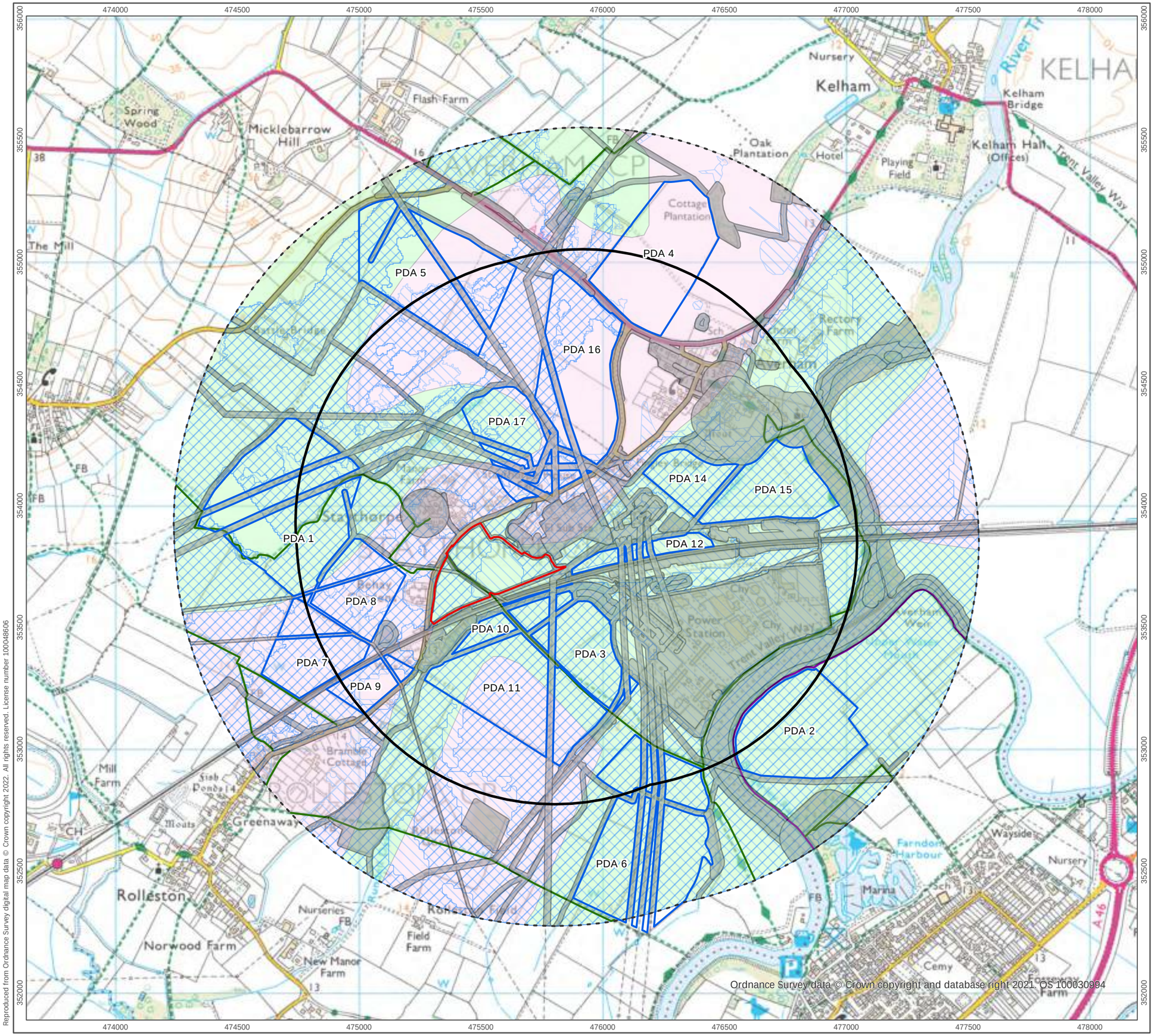
Produced By: BL	Ref: 4951-REP-032
Checked By: PP	Date: 13/09/2022

Constraints Plan
Figure 3

Staythorpe BESS
Sequential Test Analysis

Y:\GIS\Environment\4951 Staythorpe BESS\4951 Staythorpe BESS.aprx\4951-REP-032 Fig03 Constraints Plan

FIGURE 4 – POTENTIALLY DEVELOPABLE AREAS AND CONSTRAINED LAND



ARCUS
An ERM Group Company

- Site Boundary
- 1 km Buffer of Staythorpe 400 kV Substation
- 1.5 km Buffer of Staythorpe 400 kV Substation
- PDA
- Constrained Area
- Flood Zone 3
- Flood Zone 2

Agricultural Land Classification

- Grade 2
- Grade 3
- Bridleway
- Footpath

1:15,000 Scale @ A3

0 200 400 m

NORTH

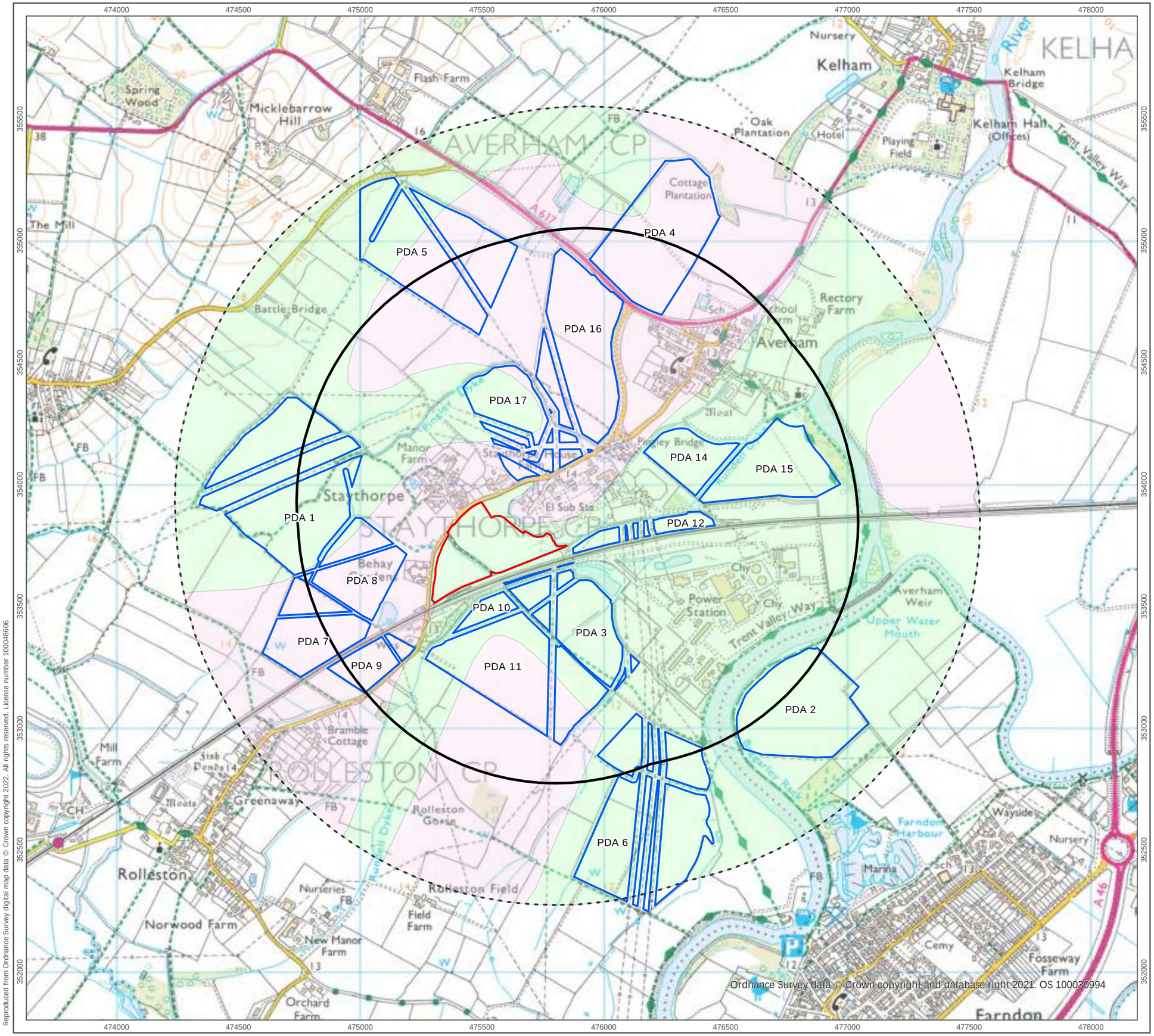
Produced By: BL	Ref: 4951-REP-033
Checked By: PP	Date: 13/09/2022

Potentially Developable Areas and Constrained Land
Figure 4

Staythorpe BESS
Sequential Test Analysis

Y:\GIS\Environment\4951 Staythorpe BESS\4951 Staythorpe BESS.aprx\4951-REP-033 Fig04 Potentially Developable Area and Constrained Land

FIGURE 5- POTENTIALLY DEVELOPLABLE AREA WITH ALC



ARCUS
An ERM Group Company

- Site Boundary
- 1 km Buffer of Staythorpe 400 kV Substation
- 1.5 km Buffer of Staythorpe 400 kV Substation
- PDA

Agricultural Land Classification

- Grade 2
- Grade 3

1:15,000 Scale @ A3

0 200 400 m

NORTH

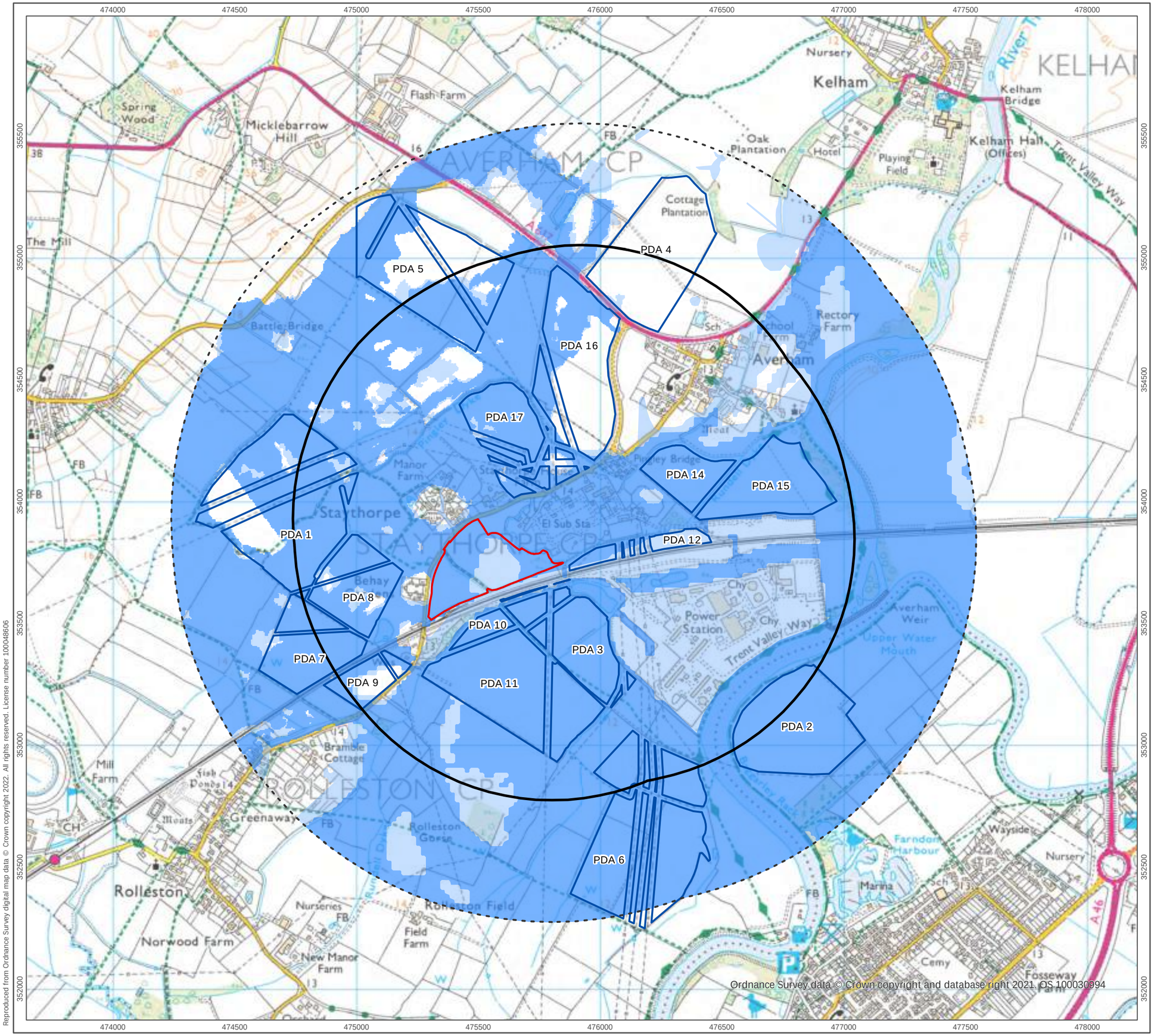
Produced By: BL	Ref: 4951-REP-045
Checked By: PP	Date: 13/09/2022

Potentially Developable Areas with ALC
Figure 5

Staythorpe BESS
Sequential Test Analysis

Y:\GIS\Environment\4951 Staythorpe BESS\4951 Staythorpe BESS.aprx\4591-REP-045 Fig05 PDAs with ALC

FIGURE 6 – POTENTIALLY DEVELOPABLE AREA WITH FLOOD ZONE



ARCUS
An ERM Group Company

- Site Boundary
- 1 km Buffer of Staythorpe 400 kV Substation
- 1.5 km Buffer of Staythorpe 400 kV Substation
- PDA
- Flood Zone 3
- Flood Zone 2

1:15,000 Scale @ A3

0 200 400 m

NORTH

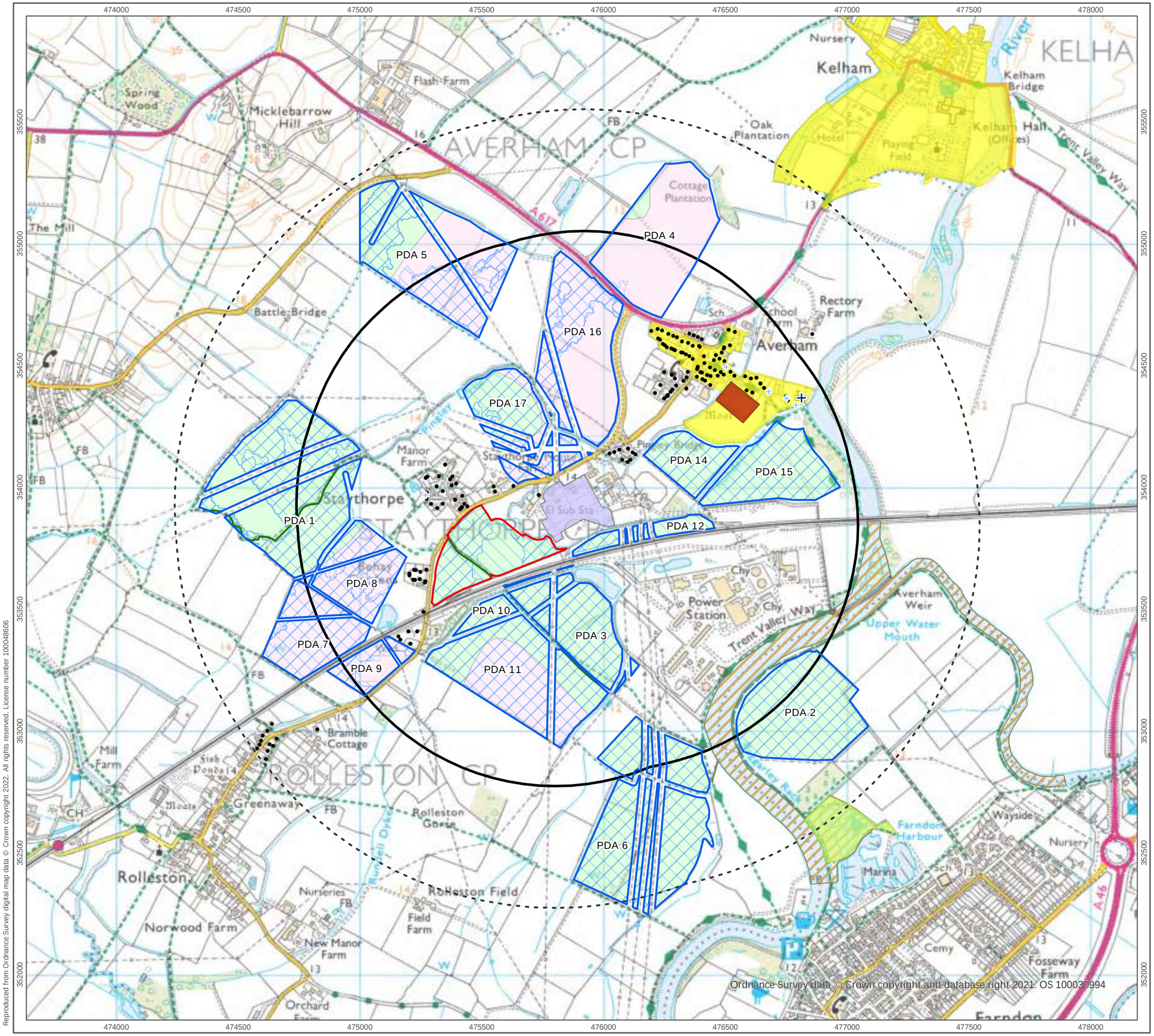
Produced By: BL	Ref: 4951-REP-046
Checked By: PP	Date: 13/09/2022

Potentially Developable Areas and Flood Zone
Figure 6

Staythorpe BESS
Sequential Test Analysis

Y:\GIS\Environment\4951 Staythorpe BESS\4951 Staythorpe BESS.aprx\4591-REP-046 Fig06 PDAs with Flood Zone

FIGURE 7 – POTENTIALLY DEVELOPABLE AREAS AND RECEPTORS



ARCUS
An ERM Group Company

- Site Boundary
- 1 km Buffer of Staythorpe 400 kV Substation
- 1.5 km Buffer of Staythorpe 400 kV Substation
- PDA
- Flood Zone 2
- Flood Zone 3
- Staythorpe 400 kV Substation
- Scheduled Monument
- Conservation Area
- Farndon Ponds Local Nature Reserve
- Site of Interest in Nature Conservation

Agricultural Land Classification

- Grade 2
- Grade 3
- Footpath
- Grade I Listed Building
- Grade II Listed Building
- Residential Dwelling

1:15,000 Scale @ A3

0 200 400 m

NORTH

Produced By: BL	Ref: 4951-REP-039
Checked By: PP	Date: 13/09/2022

Potentially Developable Areas and Receptors
Figure 7

Staythorpe BESS
Sequential Test Analysis

Y:\GIS\Environment\4951 Staythorpe BESS\4951 Staythorpe BESS.aprx\4951-REP-039 Fig07 Potentially Developable Areas and Receptors

Appendix A: Agricultural Land Classification Survey

Soil Environment Services Ltd

AGRICULTURAL LAND CLASSIFICATION

Arcus Consulting Services Ltd

Land at Staythorpe Road

Soil Environment Services Ltd
May 2022

Our Ref: SES/AC/ST/#1 **Date: 4th May2022**

Client:

Arcus Consulting Services Ltd
1c Swinegate Court East
3 Swinegate
York
YO1 8AJ

AGRICULTURAL LAND CLASSIFICATION

Land at Staythorpe Road

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

Louise Tavasso BSc (Hons) M.I.SoilSci
Environmental Consultant

Approved by:

Dr Robin S Davies BSc PhD F.I.SoilSci PGC *Contaminated Land Management*
Managing Director

Soil Environment Services
Agricultural Land Classification, Contaminated Land Risk Assessment, Mineral Extraction Soil Planning
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www.soilenvironmentservices.co.uk

CONTENTS

1. INTRODUCTION

An Agricultural Land Classification (ALC) has been carried out on 13 ha of land off Staythorpe Road, Newark-on-Trent (Drawing 1). The site is centred on OS Grid Ref. 475519, 353715.

The survey was conducted on the 21st April 2022 and classified the land into one or more of the below grades (see Drawing 1). On the survey date, the site was in agricultural use.

1.1 Methodology

Agricultural land is classified into the following grades according to the 1988 guidelines[1].

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 3b	**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. **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 classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology followed by the field survey consisting of auger borings at one every 100 m in general and a pit excavated in each of the main soil types to confirm the structures and stone content if needed. Laboratory analysis of soil textures is undertaken if needed in order to confirm textures such the *heavy/medium* clay and *medium/fine* sand categories or stone content. All site survey profile data is listed in Appendix A.

All of the potential limitations are assessed and then the most limiting factor dictating the ALC grade was determined for this site and is detailed in Table 2.

1.2 Previous ALC gradings

Grading on the MAFF (1983) 1: 250 000 provisional map indicated the site is mapped as Grade 2 and 3 land. No former detailed surveys have been undertaken for the site.

2. CLIMATIC LIMITATIONS

2.1 Overall climate

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

Table 1
Climatological information[3]

Factor	Units	Value
Altitude AOD	m	12
Accumulated temperature	day°C (Jan-June)	1429.0
Average Annual Rainfall	mm	570.9
Field Capacity Days	days	110.7
Moisture Deficit Wheat	mm	117.7
Moisture Deficit Potatoes	mm	112.5
Overall climate ALC Grade	Grade 1	

Climate will not result in the most significant limiting factor for the site.

2.2. Local climate

Local climate will not result in a significant limiting factor for this site.

3 SITE LIMITATIONS

3.1 Gradient

The gradient will not result in a significant limiting factor for this site.

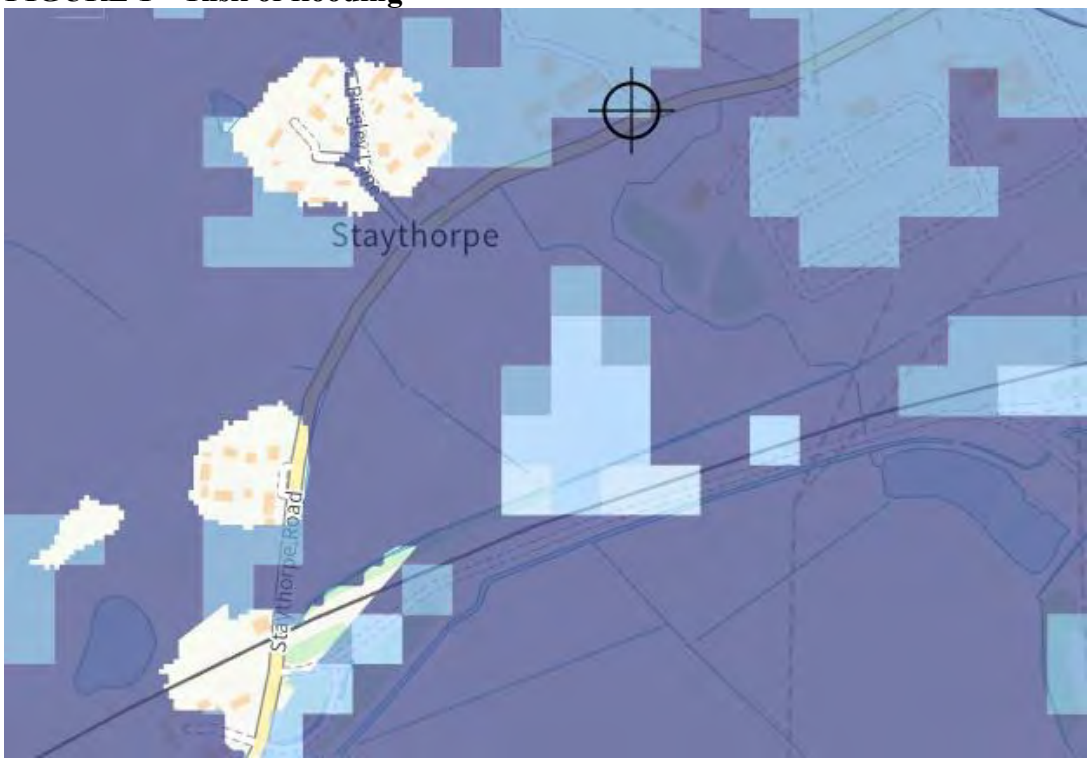
3.2 Microrelief

The microrelief will not result in a significant limiting factor for this site.

3.3 Flooding

A high risk of flooding from surface waters and rivers has been identified for the majority of the site which indicates that each year this area has a chance of flooding of greater than 3.3% and thus can generally be assigned an ALC Grading no higher than 3b. (https://flood-warning-information.service.gov.uk/long-term-flood-risk).

FIGURE 1 – Risk of flooding



High risk means that each year this area has a chance of flooding of greater than 3.3%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding

4 SOIL LIMITATIONS

4.1 Texture and structure

The textures noted across the site were mainly silty clay or clay to the north and east and silty or sandy loam to the south and west. Subsoil structure was mainly weak medium angular blocky and moderate coarse prismatic in the clay subsoils or weak medium angular blocky and weak coarse angular blocky in the loamy subsoils.

The site has previously been mapped as having soils of the following Associations.
The Arrow Association soils to the south are mapped as: *Deep permeable coarse loamy soils affected by groundwater* (www.landis.org.uk).
The Compton Association soils to the north are mapped as: *Stoneless mostly reddish clayey soils affected by groundwater* (www.landis.org.uk).

Superficial Geology 1:50 000 scale superficial deposits description:
Holme Pierrepont Sand and Gravel Member - Sand and Gravel (south of the site)
Alluvium - Clay, Silt, Sand and Gravel (north of the site)

Bedrock Geology 1:50 000 scale bedrock geology description:
Gunthorpe Member – Mudstone

4.2 Depth

Soil depth will not result in a significant limiting factor for this site.

4.3 Stoniness

Stoniness is not a direct significant limiting factor for soils noted on site.

4.4 Chemical

Chemical contamination will not result in a significant limiting factor for this site.

5. INTERACTIVE LIMITATIONS

5.1 Wetness

Mottling and gleying was noted within soils from around 25 cm depth in the clayey soils.

The combination of a Wetness Class of III for the more clayey soils (see Appendix A) with Field Capacity Days of 110.7 and a topsoil texture of non-calcareous silty clay loam or silty clay results in an ALC Grade of 3a.

5.2. Droughtiness

The Available Water Capacity which subsequently when considered with respect to the Moisture Deficit for wheat and potatoes resulted in a droughtiness limitation of Grade 3a for soils on the south of the site.

5.3 Erosion

Erosion will not result in a significant limiting factor for this site.

6. AGRICULTURAL LAND CLASSIFICATION

6.1 Most limiting factors

Grade 3a land – Droughtiness Limitation

The Available Water Capacity which subsequently when considered with respect to the Moisture Deficit for wheat and potatoes resulted in a droughtiness limitation of Grade 3a for soils on south of the site.

Grade 3b land – Flooding Limitation

A high risk of flooding areas from surface waters and rivers has been identified for the majority of the site which indicates that each year this area has a chance of flooding of greater than 3.3% and thus can generally be assigned an ALC Grading no higher than 3b.

6.2 Current grading

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

Table 2. ALC gradings and limitations

Grade	ha	%	Limitation
1			
2			
3a	9	69.23	Droughtiness
3b	4	30.77	Flooding
4			
5			
Non-agricultural land			
Total	13	100%	

DRAWING 1

ALC Grade

Key

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

- Boring
- Pit

Soil Environment Services

Drawing Title: ALC Grade	Drawing No.:
Scale: 1:7500	Date: 04/05/2022

APPENDIX A

Soil profile data

Notes

1 All abbreviations relating to soil parameters are standard and derived from the guidance documents:

Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land. MAFF. 1988.
Soil Survey Field Handbook. Technical Monograph No.5. Soil Survey of England and Wales.1976.

2 The pit data is detailed in this table and information on structure and stone content copied to the appropriate boring profiles.

3 Any blanks or zeros in the cells indicate the data is not needed or appropriate for that cell.

4 If 'NA' is inserted in a cell the information is not appropriate on this occasion.

5. Boring or pit locations are directly (within 2 m accuracy) on the grid reference corresponding to the points on the map unless otherwise stated.

6 A point directly marked on a track, boundary or other feature will be moved 2-3 m off the point or omitted if surrounding points and soil types allow.

7. Borings that are potentially within 15 m of a gas pipeline are limited to 0.4 m depth and the strata description in the data table below this depth will be extrapolated from nearby borings and upper strata characteristics.

8. The *Observation Density* is 1 per ha on a 100 m grid using a semi *Free Survey* method if appropriate*. The letter 'B' in the second column of the data table refers to an observation point at which a boring may have been undertaken. In some situations it is not possible to visit the location due to for example crop status or animals in a field. In some cases the location is visited and observation of the soils at the surface is sufficient. In all cases the soil, geology, topography, flood risk and aerial crop patterns are assessed from published sources and the soils will be subject to a full 120 cm depth boring either side of a non-visited or non-bored point. If all data sources are agreeable, a soil pattern can be established.

* British Society of Soil Science. Working With Soil – The Professional Competency Scheme. Agricultural Land Classification: England and Wales. How2 sheet 4.2.4. 2018.

9. For moisture balance calculations, *strongly, moderately* and *well developed* structure will equate to *good, moderate* or *poor* structure terms respectively in Table 14 of the guidelines.

10. Pit information in addition to that listed in the table below will be detailed in Section 4.1 and 4.3 if needed.

Obs point	Grid ref. if off intersection	Boring or Pit	Grad. (deg)	Base Depth (cm)		Text.	Calc	Matrix colour	Motts / black ferro. conc. %/ depth	Mott colour or FC if ferro. conc.	Ped face colour	Stns %	Stns type	Porosity	Struct (/F=firm consistence)	Degree of development	SPL depth (cm)	Gleying depth (cm)	SWC	Grade (wetness)	TAv	EAv	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
1		B	≤7	25		MZCL	N	7.5YR42				5	HR				25	25	III	3a	19		1		6.91	2	-13.87	3a
				60	#	ZC		7.5YR42	15/25	10YR56		10	HR	P	MAB	WK					12	7	1	0.5				
				120	#	C		10YR41	25/60	10YR56		5	HR	P	CPR	MD					16	8	1	0.5				
				120	0							0									0	0	0	0				
2		P	≤7	25		MZCL	N	7.5YR42				0					25	25	III	3a	19		1		11.33	2	-7.80	2
				55	#	ZC		7.5YR41	15/25	10YR56		5	HR	P	MAB	WK					12	7	1	0.5				
				120	#	C		10YR41	20/55	10YR56		5	HR	P	CPR	MD					16	8	1	0.5				
				120	0							0									0	0	0	0				
3		B	≤7	25		SCL	N	10YR43				5	HR				55	55	III	2	17		1		12.41	2	-13.37	3a
				55	#	MSZL		10YR41				5	HR	P	MAB	WK					15	9	1	0.5				
				120	#	MSL		10YR42	5/55	10YR56		5	HR	P	CAB	WK					11	8	1	0.5				
				120	0							0									0	0	0	0				
4		B	≤7	25		ZC	N	7.5YR42				0	HR				25	25	III	3a	17		1		21.06	2	-11.37	3a
				55	#	C		10YR42	10/25	10YR56		5	HR	P	MAB	WK					13	7	1	0.5				
				120	#	SC		10YR41	20/55	10YR56	7.5YR53	5	HR	P	CPR	MD					15	10	1	0.5				
				120	0							0									0	0	0	0				
5		B	≤7	30		MCL	N	10YR42				0					55	55	III	2	18		1		8.02	2	-8.12	2
				55	#	MSZL		7.5YR43				0		P	MAB	WK					15	9	1	0.5				
				120	#	LMS		10YR42	5/55	10YR56		5	HR	P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				
6		B	≤7	30		MSL	N	10YR42				0					55	55	III	2	17		1		5.02	2	-11.12	3a
				55	#	MSZL		7.5YR43				0		P	MAB	WK					15	9	1	0.5				
				120	#	LMS		7.5YR42	2/55	10YR56		5	HR	P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				
7		B	≤7	28		MSL	N	10YR42				0					55	55	III	2	17		1		4.62	3a	-11.52	3a
				55	#	MSZL		7.5YR43				0		P	MAB	WK					15	9	1	0.5				
				120	#	LMS		7.5YR42	2/55	10YR56		5	HR	P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				
8		B	≤7	25		ZC	N	7.5YR42				5	HR				25	25	III	3a	17		1		17.63	2	-14.32	3a
				60	#	C		10YR42	15/25	10YR56		5	HR	P	MAB	WK					13	7	1	0.5				
				120	#	C		10YR41	20/60	10YR56	7.5YR53	5	HR	P	CPR	MD					15	10	1	0.5				
				120	0							0									0	0	0	0				
9		B	≤7	25		ZC	N	7.5YR42				5	HR				25	25	III	3a	17		1		17.40	2	-15.17	3a
				55	#	C		10YR42	15/25	10YR56		10	HR	P	MAB	WK					13	7	1	0.5				
				120	#	SC		10YR41	20/55	10YR56	7.5YR53	5	HR	P	CPR	MD					15	10	1	0.5				
				120	0							0									0	0	0	0				
10		B	≤7	25		MSL	N	10YR42				0					58	58	III	2	17		1		5.00	2	-10.20	3a
				58	#	MSZL		7.5YR43				0		P	MAB	WK					15	9	1	0.5				
				120	#	LMS		7.5YR42	5/58	10YR56		5	HR	P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				
11		P	≤7	28		MSL	N	10YR42				0					55	55	III	2	17		1		4.62	3a	-11.52	3a
				55	#	MSZL		7.5YR43				0		P	MAB	WK					15	9	1	0.5				
				120	#	LMS		7.5YR42	2/55	10YR56		5	HR	P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				
12		B	≤7	25		MSL	N	10YR41				0					55	55	II	2	17		1		1.31	3a	-11.52	3a
				55	#	MSZL		7.5YR43				0		P	MAB	WK					15	9	1	0.5				
				120	#	LMS		7.5YR42	2/55	10YR56		0		P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				
13		B	≤7	28		ZL	N	10YR42				0					50	50	III	3a	17		1		1.44	3a	-16.26	3a
				50	#	SZL		10YR53				5	HR	P	MAB	WK					15	9	1	0.5				
				120	#	SZL		10YR41	2/50	10YR56		5	HR	P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				
14		B	≤7	25		MSL	N	10YR42				0					55	55	III	2	17		1		4.02	3a	-12.12	3a
				55	#	MSZL		7.5YR43				0		P	MAB	WK					15	9	1	0.5				
				120	#	LMS		7.5YR43	5/55	10YR56		5	HR	P	CAB	WK					9	6	1	0.5				
				120	0							0									0	0	0	0				

Statement of competence - Agricultural land Classification

SES Ltd undertake several dozen Agricultural Land Classification (ALC) or Land Capability Classifications for Agriculture (LCCA-Scotland) surveys a year and have worked on sites up to 1000 ha including housing, roads, solar farm and mineral extraction developments.. We have been undertaking ALC surveys for 25 years and have won many contracts to supply Land Classification reports to local authorities as part of their strategic development plans. A number of our staff have attended the training course Agricultural Land Classification: England and Wales. Working with Soil – The IPSS Professional Competency Scheme. BSSS & DEFRA.

DR ROBIN DAVIES BSc PhD F.I.SoilSci. (Managing Director)

- Fellow of The British Society of Soil Science
- Council Member of The Institute of Professional Soil Scientists for 4 years.
- PhD Soil Physics - Agricultural land drainage - University of Newcastle upon Tyne
- Founder and Managing Director of Soil Environment Services Limited for 25 years.

Selected peer reviewed scientific papers:

* **Soil nitrogen depletion - the threat from soil stockpiling**. Environmental Scientist: Journal of The Institution of Environmental Sciences, 1997.

* **Nitrogen loss from a soil, restored after surface-mining**. Journal of Environmental Quality, 1995

* **The influence of soil factors on the growth of a grass/clover sward on a restored site in Northumberland.** Grass & Forage Science, 1994.

* **The effect of post-restoration cropping regime on some physical properties of a restored soil.** Soil Use & Management, 1994

* **Water availability in a restored soil.** Soil Use & Management, 1992.

* **A laboratory Method for Investigating the Stabilisation of Mole** Channels.J.Agric.Eng.Res.1991.

Louise Tavasso BSc (Hons). (Soil surveyor/ Environmental Consultant)

Member of British Society of Soil Science

Postgraduate short course Contaminated Land Risk assessment – LQM Nottingham University

Worked for Soil Environment Services Limited for 16 years. Environmental consultant with initial work in contaminated land risk assessment and since 2011 as assistant soil surveyor with last three years as lead consultant on agricultural land classification surveys. All work areas have required field survey and identification and description of soils combined with an understanding of soil processes for reporting.

Completed the BSSS Agricultural Land Classification Course – 2021.

Main areas of specialisation

1 **Agricultural Land Classification**

Soil survey and Agricultural Land Classification for planning applications –, roads, housing, solar parks. Fully conversant with the procedures of the *Agricultural Land Classification of England and Wales, Guidelines and criteria for grading the quality of agricultural land*, 1988, MAFF, London.

2 **Soil survey for habitat restoration**

Soil survey and nutrient analysis assessment for conversion of farmland to species rich grassland.

3 **Contaminated land risk assessment**

Phase 1 site survey risk assessment of contaminated land; site investigation, on-site monitoring; risk analysis, modelling and communication; recommendations for Phase 2 and remediation options.

Examples of Agricultural Land Classification (ALC or LCCA Scotland) consultancy work

Kier Mining. Greenburn Opencast Coal Site. Soils and deep peat survey for LCCA report soil resources planning. 2011

Newcastle International Airport Ltd. ALC survey for solar park development. 2021.

Examples of soil survey habitat creation consultancy work

BSG Ecology. Backwork Estate – farmland conversion to wildflower meadow. 2020.

Private garden owner. Soil survey and recommendation for drainage system design. 2021

Examples of contaminated land consultancy work

Numerous risk assessments on petrol stations for hydrocarbon leakages (2006-2019)

Farm building risk assessments for conversion to residential housing (2006-2019)

GENERAL INFORMATION SOURCES

1. ***Agricultural Land Classification of England and Wales***. Revised guidelines and criteria for grading the quality of agricultural land. MAFF. 1988.

2. ***Soil Survey Field Handbook.*** Technical Monograph No.5. Soil Survey of England and Wales.1976.

3. ***Climatological Data for Agricultural Land Classification***, The Met. Office 1989

4. ***Soil Map of England and Wales: 1:250 000***. Soil Survey of England and Wales, Harpenden.

5. ***Soils and Their Use in Eastern England.*** Soil Survey of England and Wales,

6. ***Agricultural Land Classification Map*** 1:250 000. MAFF 1983.

7. ***Risk of Flooding:*** https://flood-warning-information.service.gov.uk/long-term-flood-risk

8. ***Geology of Britain Viewer.*** *Reproduced with the permission of the British Geological Survey ©NERC. All rights Reserved*

9. ***Butler, B E.*** *Soil Classification for Soil Survey Monographs on Soil Survey (1980) Clarendon Press, Oxford*

10. ***Munsell Soil Colour Charts****, Munsell Colour, Grand Rapids* ***1994.***

GLOSSARY

ABBREVIATIONS AND TERMS USED IN SURVEY DATA

Soil pit and auger boring information collected during ALC survey is held on a computer database and is reproduced in this report. Terms used and abbreviations are set out below. These conform to definitions contained in the Soil Survey Field Handbook (Hodgson, 1997).

1. Terms used on computer database, in order of occurrence.

GRID REF: National 100 km grid square and 8 figure grid reference.

LAND USE: At the time of survey

WHT:	Wheat	**SBT:**	Sugar Beet	**HTH:**	Heathland
BAR:	Barley	**BRA:**	Brassicas	**BOG:**	Bog or Marsh
OAT:	Oats	**FCD:**	Fodder Crops	**DCW:**	Deciduous Wood
CER:	Cereals	**FRT:**	Soft and Top Fruit	**CFW:**	Coniferous Woodland
MZE:	Maize	**HRT:**	Horticultural Crops	**PLO:**	Ploughed
OSR:	Oilseed Rape	**LEY:**	Ley Grass	**FLW:**	Fallow (inc. Set aside)
POT:	Potatoes	**PGR:**	Permanent Pasture	**SAS:**	Set Aside (where known)
LIN:	Linseed	**RGR:**	Rough Grazing	**OTH:**	Other
BEN:	Field Beans	**SCR:**	Scrub		

GRDNT: Gradient as estimated or measured by hand-held optical clinometer.

GLEY, SPL: Depth in centimetres to gleying or slowly permeable layer.

AP (WHEAT/POTS): Crop-adjusted available water capacity.

MB (WHEAT/POTS): Moisture Balance. (Crop adjusted AP - crop potential MD)

DRT: Best grade according to soil droughtiness.

If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

MREL:	Microrelief limitation	**FLOOD:**	Flood risk	**EROSN:**	Soil erosion risk
EXP:	Exposure limitation	**FROST:**	Frost prone	**DIST:**	Disturbed land
CHEM:	Chemical limitation				

LIMIT: The main limitation to land quality: The following abbreviations are used.

OC:	Overall Climate	**AE:**	Aspect	**EX:**	Exposure
FR:	Frost Risk	**GR:**	Gradient	**MR:**	Microrelief
FL:	Flood Risk	**TX:**	Topsoil Texture	**DP:**	Soil Depth
CH:	Chemical	**WE:**	Wetness	**WK:**	Workability
DR:	Drought	**ER:**	Erosion Risk	**WD:**	Soil Wetness/Droughtiness

ST: Topsoil Stoniness

TEXTURE: Soil texture classes are denoted by the following abbreviations:-

S:	Sand	**LS:**	Loamy Sand	**SL:**	Sandy Loam
SZL:	Sandy Silt Loam	**CL:**	Clay Loam	**ZCL**	Silty Clay Loam
ZL:	Silt Loam	**SCL:**	Sandy Clay Loam	**C:**	Clay
SC:	Sandy clay	**ZC:**	Silty clay	**OL:**	Organic Loam
P:	Peat	**SP:**	Sandy Peat	**LP:**	Loamy Peat
PL:	Peaty Loam	**PS:**	Peaty Sand	**MZ:**	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:-

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M:** Medium (< 27% clay) **H:** heavy (27 - 35% clay)

MOTTLE COL: Mottle colour using Munsell notation.

MOTTLE ABUN: Mottle abundance, expressed as a percentage of the matrix or surface described.

F: few <2% **C:** common 2 - 20% **M:** many 20 - 40% **VM:** very many 40%+

MOTTLE CONT: Mottle contrast

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: Prominent - mottling is conspicuous and one of the outstanding features of the horizon.

PED. COL: Ped face colour using Munsell notation.

GLEY: If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

STONE LITH: Stone Lithology - One of the following is used.

HR:	All hard rocks and stones	**SLST:**	Soft oolitic or dolimitic limestone
CH:	Chalk	**FSST:**	Soft, fine grained sandstone
ZR:	Soft, argillaceous, or silty rocks	**GH:**	Gravel with non-porous (hard) stones
MSST:	Soft, medium grained sandstone	**GS:**	Gravel with porous (soft) stones
SI:	Soft weathered igneous or metamorphic rock		

Stone contents are given in % by volume for sizes >2cm, >6cm and total stone >2mm.

STRUCT: The degree of development, size and shape of soil peds are described using the following notation

Degree of development	**WA:**	Weakly developed Adherent	**WK:**	Weakly developed
	MD:	Moderately developed	**ST:**	Strongly developed
Ped size	**F:**	Fine	**M:**	Medium
	C:	Coarse	**VC:**	Very coarse
Ped Shape	**S:**	Single grain	**M:**	Massive
	GR:	Granular	**AB:**	Angular blocky
	SAB:	Sub-angular blocky	**PR:**	Prismatic
	PL:	Platy		

CONSIST: Soil consistence is described using the following notation:

L:	Loose	**VF:**	Very Friable	**FR:**	Friable	**FM:**	Firm
VM:	Very firm	**EM:**	Extremely firm			**EH:**	Extremely Hard

SUBS STR: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G:** Good **M:** Moderate **P:** Poor

POR: Soil porosity. If a soil horizon has poor porosity with less than 0.5% biopores >0.5mm, a 'Y' will appear in this column.

IMP: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

SPL: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

CALC: If the soil horizon is calcareous with naturally occurring calcium carbonate exceeding 1% a 'Y' will appear this column.

2. Additional terms and abbreviations used mainly in soil pit descriptions.

STONE ASSESSMENT:

V:	Visual	**S:**	Sieved	**D:**	Displacement

MOTTLE SIZE:

EF:	Extremely fine <1mm	**M:**	Medium 5-15mm
VF:	Very fine 1-2mm>	**C:**	Coarse >15mm
F:	Fine 2-5mm		

MOTTLE COLOUR: May be described by Munsell notation or as ochreous (OM) or grey (GM).

ROOT CHANNELS: In topsoil the presence of 'rusty root channels' might also be noted as RRC.

MANGANESE CONCRETIONS: Assessed by volume

N:	None		**M:**	Many	20-40%
F:	Few	<2%	**VM:**	Very Many	>40%
C:	Common	2-20%			

POROSITY:

P:	Poor	- less than 0.5% biopores at least 0.5mm in diameter
G:	Good	- more than 0.5% biopores at least 0.5mm in diameter

ROOT ABUNDANCE:

The number of roots per $100cm^2$:		Very Fine and Fine	Medium and Coarse
F:	Few	1-10	1 or 2
C:	Common	10.25	2 - 5
M:	Many	25-200	>5
A:	Abundant	>200	

ROOT SIZE

VF:	Very fine	<1mm	**M:**	Medium	2 - 5mm
F:	Fine	1-2mm	**C:**	Coarse	>5mm

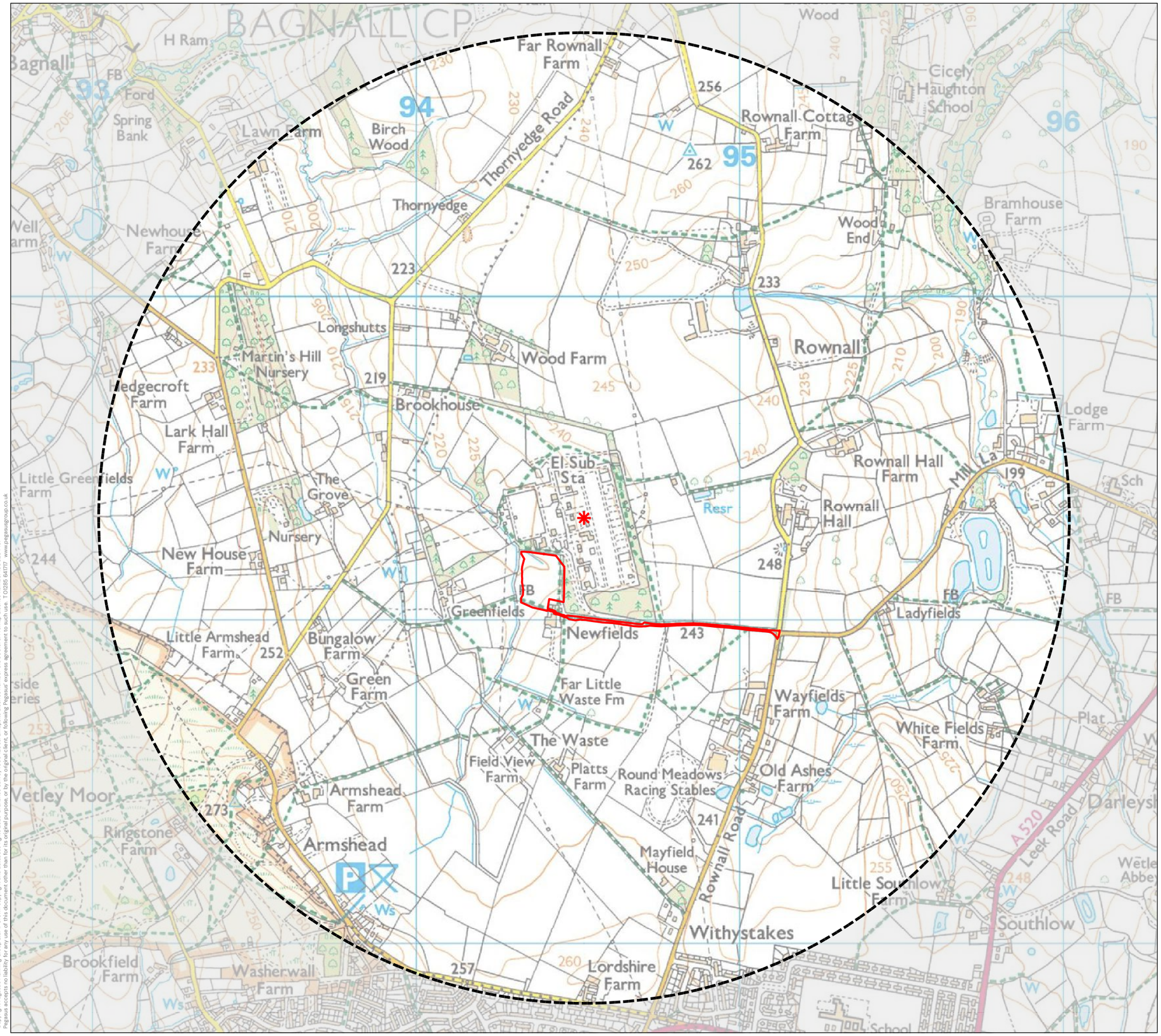
HORIZON BOUNDARY DISTINCTNESS:

Sharp:	<0.5cm	**Gradual:**	6 - 13cm
Abrupt:	0.5 - 2.5cm	**Diffuse:**	>13cm
Clear:	2.5 - 6cm		

HORIZON BOUNDARY FORM: Smooth, wavy, irregular or broken.*

* See Soil Survey Field Handbook (Hodgson, 1997) for details.

APPENDIX 4 – STUDY AREA



KEY

- Site Boundary
- Point of Connection
- 1.5km Point of Connection Buffer

SEQUENTIAL ASSESSMENT: BASELINE AREA OF SEARCH

NEWFIELDS FARM

CLIENT
Newfields BESS Ltd

0 — 0.5 km

DATE	SCALE	TEAM	APPROVED
19/03/2025	1:12,000@A3	EH	DP

SHEET	REVISION
-	**B**

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P23-0415_EN_03

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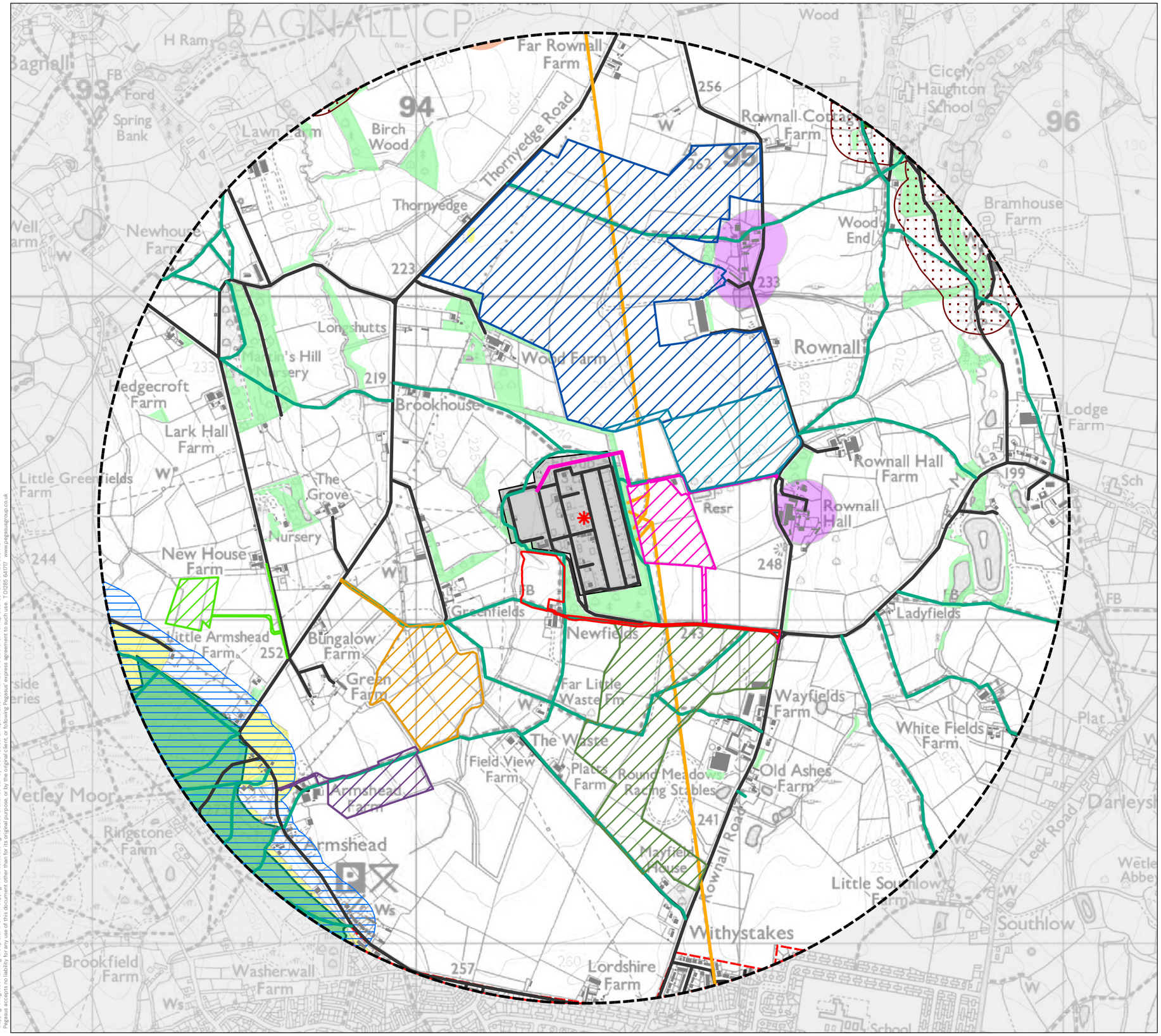
APPENDIX 5 – CONSTRAINTS PLAN



KEY

- Site Boundary
- Point of Connection
- District Boundary
- 1.5km Point of Connection Buffer
- Ordnance Survey Local Buildings
- Ordnance Survey Main Roads - 5m Buffer
- National Grid Overhead Line - 5m Buffer
- Scheduled Monuments
- Listed Buildings - 100m Buffer
- Sites of Special Scientific Interest - 100m Buffer
- Public Rights of Way - 5m Buffer
- Countryside Right of Way (CRoW) Access Land
- Ancient Woodland
- Ordnance Survey Open Woodland
- Cellarhead Substation

Staffordshire Moorlands Local Plan (Adopted September 2020)

- Development Boundary (SS2)
- Open Space (C2)
- Site of Biological Importance (SBI) (NE1) - 100m Buffer

Cumulative Sites

- SMD/2024/0055
- SMD/2023/0523
- SMD/2024/0639
- SMD/2022/0548
- SMD/2022/0444
- SMD/2024/0452
- SMD/2022/0574

SEQUENTIAL ASSESSMENT: CONSTRAINTS - UNSUITABLE LAND

NEWFIELDS FARM

CLIENT
Newfields BESS Ltd

0 0.5 km

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P23-0415_EN_02

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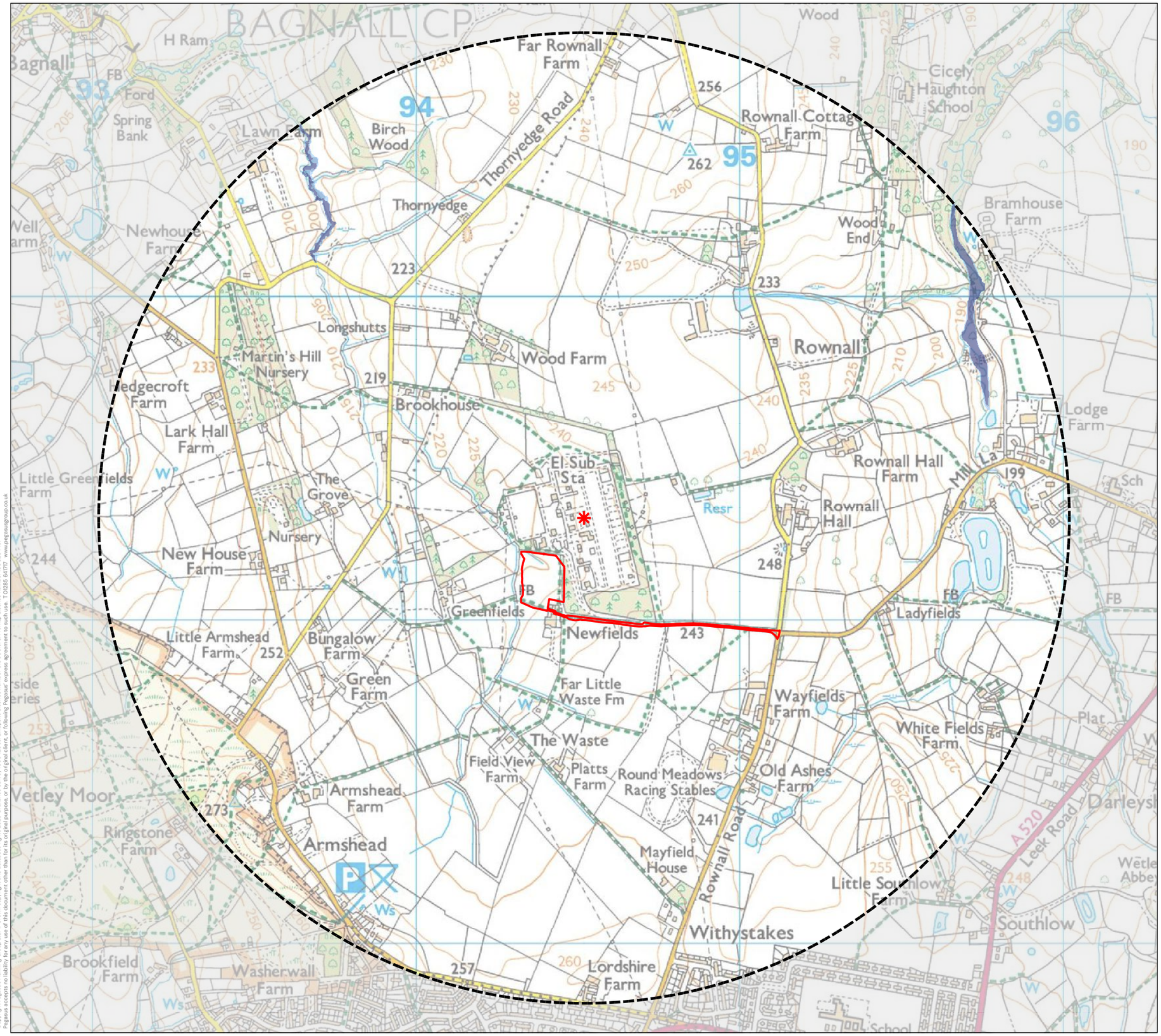
APPENDIX 6 – RISK OF FLOODING FROM RIVERS AND SEA



KEY

- Site Boundary
- Point of Connection
- 1.5km Point of Connection Buffer

Risk of Flooding from Rivers and Sea (Jan 2025) - Flood Likelihood Category:

- High - greater than 1 in 30 (3.3%)
- Low - 1 in 100 (1%) and 1 in 1000 (0.1%)
- Medium - between 1 in 30 (3.3%) and 1 in 100 (1%)

SEQUENTIAL ASSESSMENT:
RISK OF FLOODING FROM RIVERS AND SEA (ENVIRONMENT AGENCY - JAN 2025)

NEWFIELDS FARM

CLIENT
Newfields BESS Ltd

0 0.5 km

DATE	SCALE	TEAM	APPROVED
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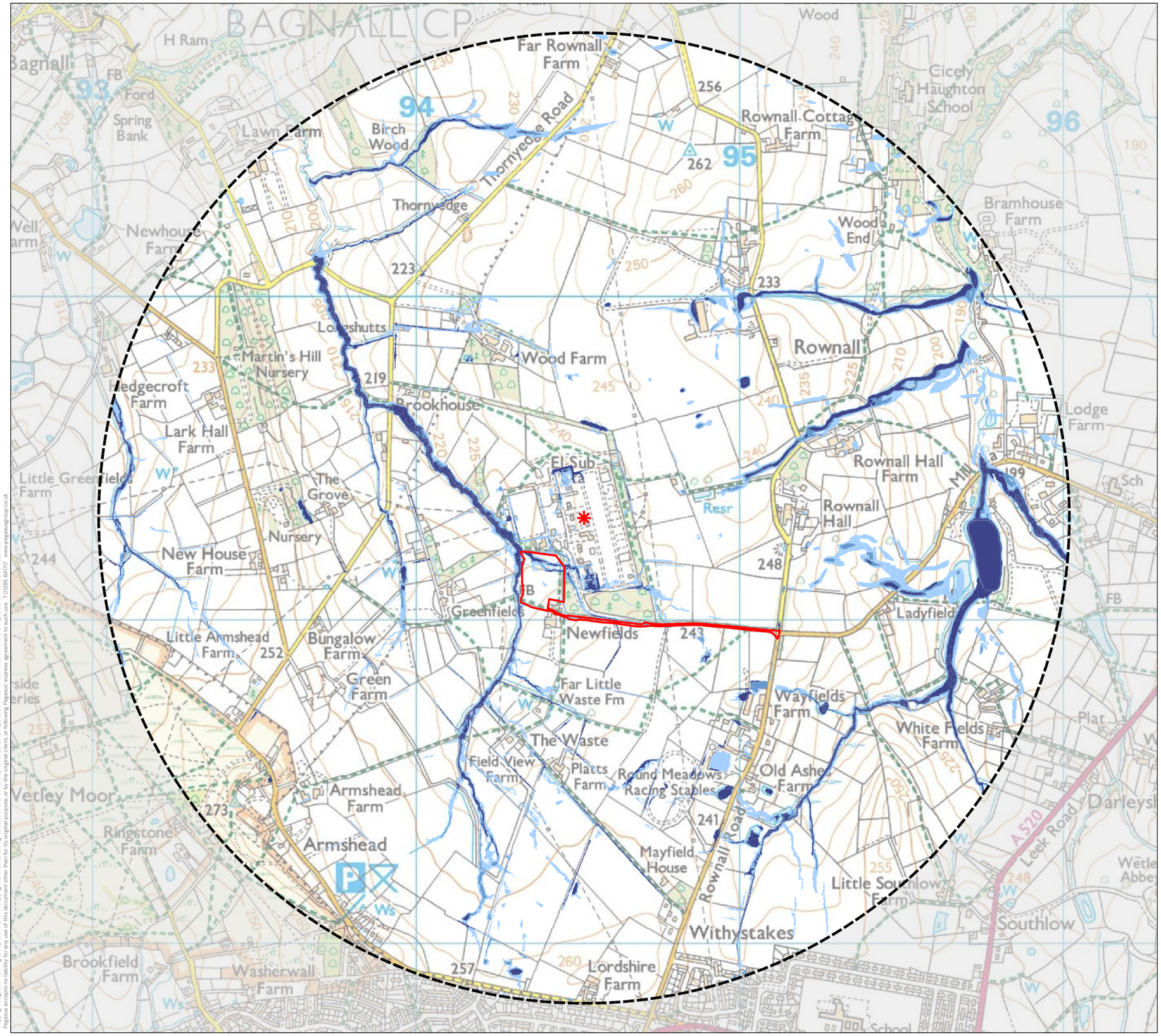
APPENDIX 7 – RISK OF SURFACE WATER FLOODING



KEY

- Site Boundary
- Point of Connection
- 1.5km Point of Connection Buffer

Risk of Surface Water Flooding - Likelihood Category:

- High - greater than or equal to 3.3% chance in any given year (1 in 30)
- Low - less than 1% (1 in 1000) chance in any given year
- Medium - less than 3.3% (1 in 30) but greater than or equal to 1% (1 in 100) chance in any given year

SEQUENTIAL ASSESSMENT:
RISK OF SURFACE WATER FLOODING
(ENVIRONMENT AGENCY - JAN 2025)

NEWFIELDS FARM

CLIENT
Newfields BESS Ltd

0 0.5 km

DATE	SCALE	TEAM	APPROVED
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SHEET	REVISION
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DRAWING NUMBER
P23-0415_EN_06

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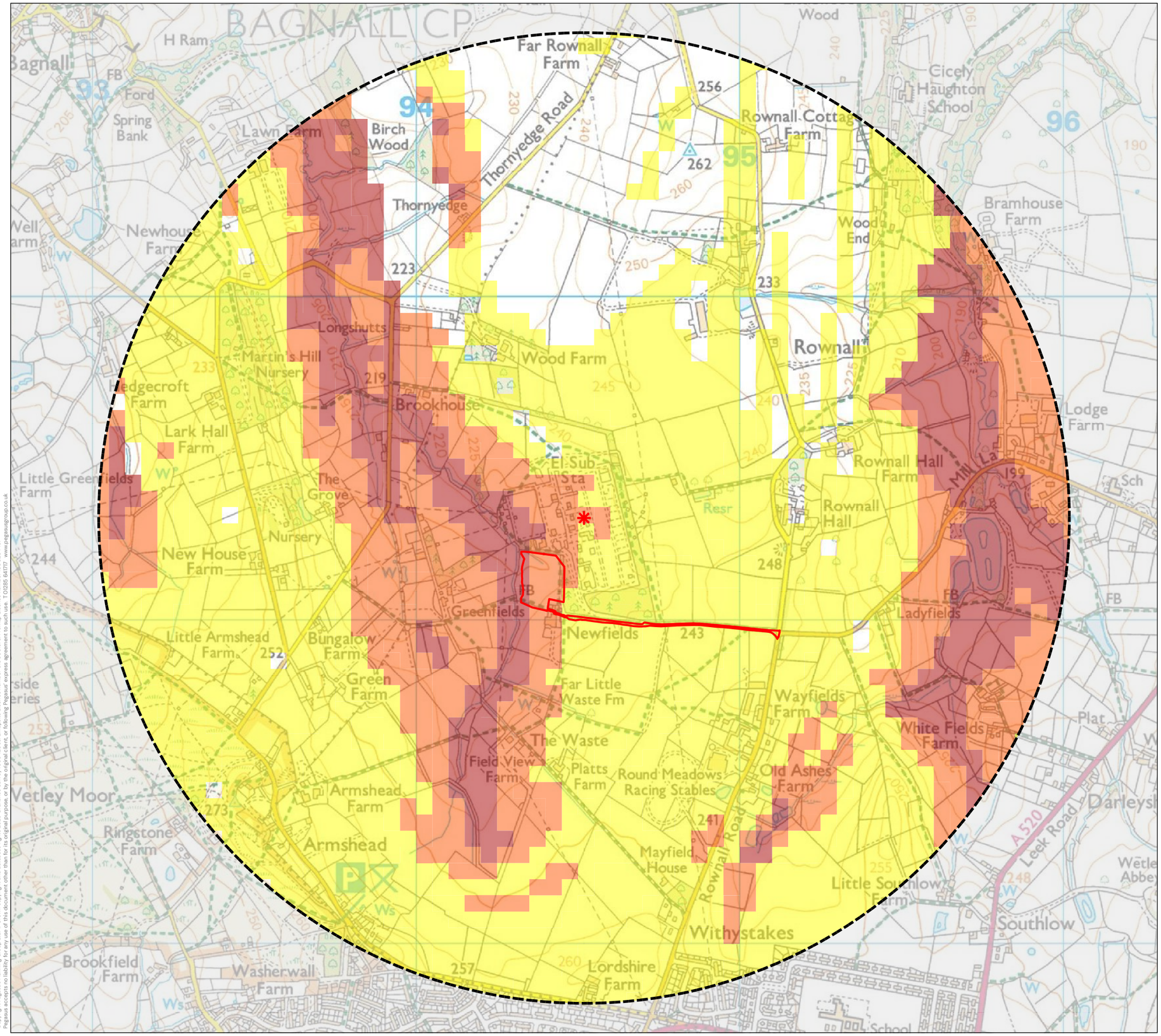
APPENDIX 8 – RISK OF GROUNDWATER FLOODING



KEY

- Site Boundary
- Point of Connection
- 1.5km Point of Connection Buffer

British Geological Survey - Susceptibility to Groundwater Flooding

- A - Limited potential for groundwater flooding to occur
- B - Potential for groundwater flooding of property situated below ground level
- C - Potential for groundwater flooding to occur at surface

SEQUENTIAL ASSESSMENT: GROUND WATER FLOOD RISK

NEWFIELDS FARM

CLIENT
Newfields BESS Ltd

0 0.5 km

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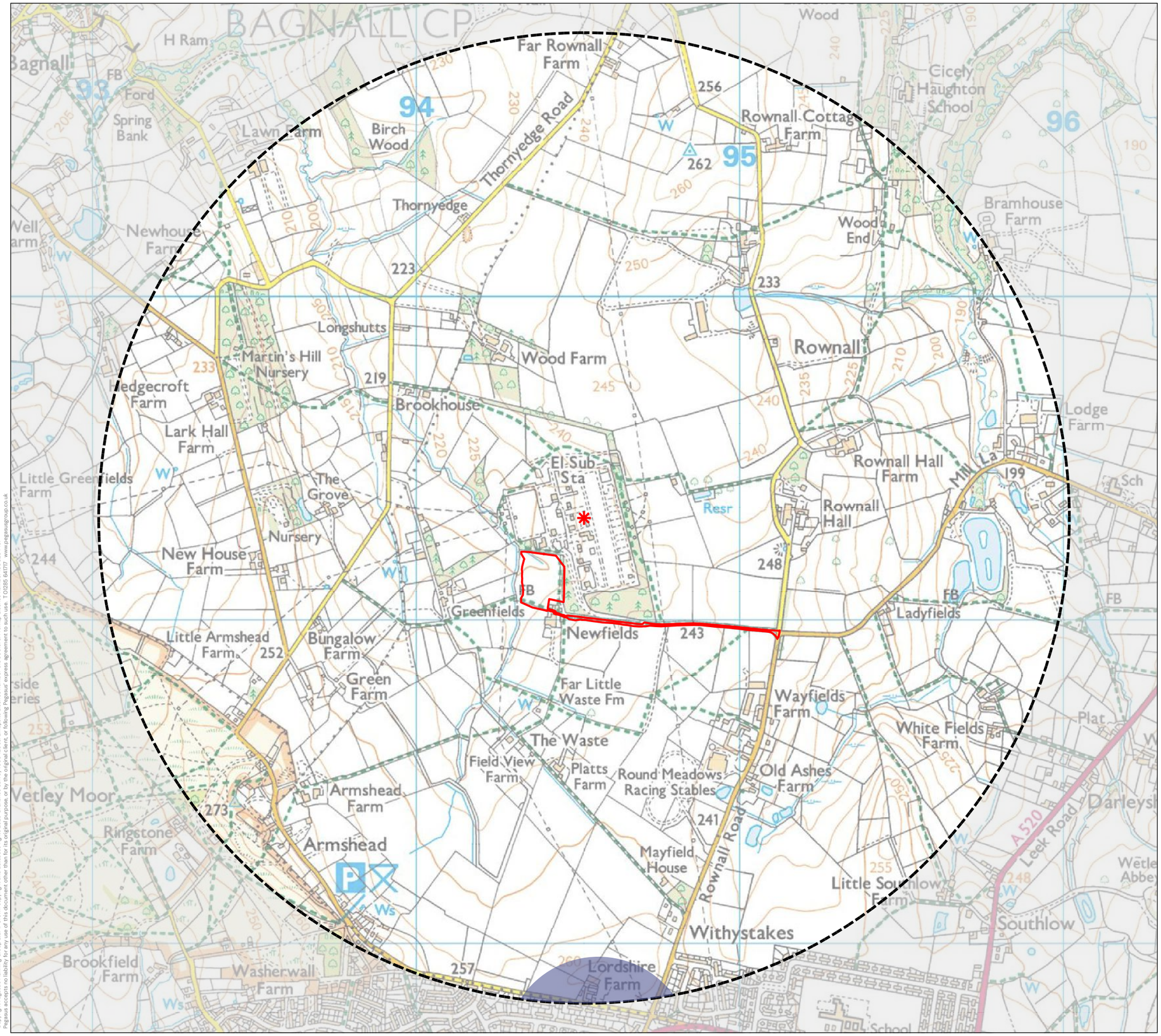
APPENDIX 9 – RISK OF FLOODING FROM SEWERS AND ARTIFICIAL WATERBODIES



KEY

- Point of Connection
- 1.5km Point of Connection Buffer
- Site Boundary
- Historic Sewer Flooding (ST DG5 External Records - 1 recorded event)

SEQUENTIAL ASSESSMENT:
SEWER & ARTIFICAL FLOODING

NEWFIELDS FARM

CLIENT
Newfields BESS Ltd

0 0.5 km

DATE	SCALE	TEAM	APPROVED
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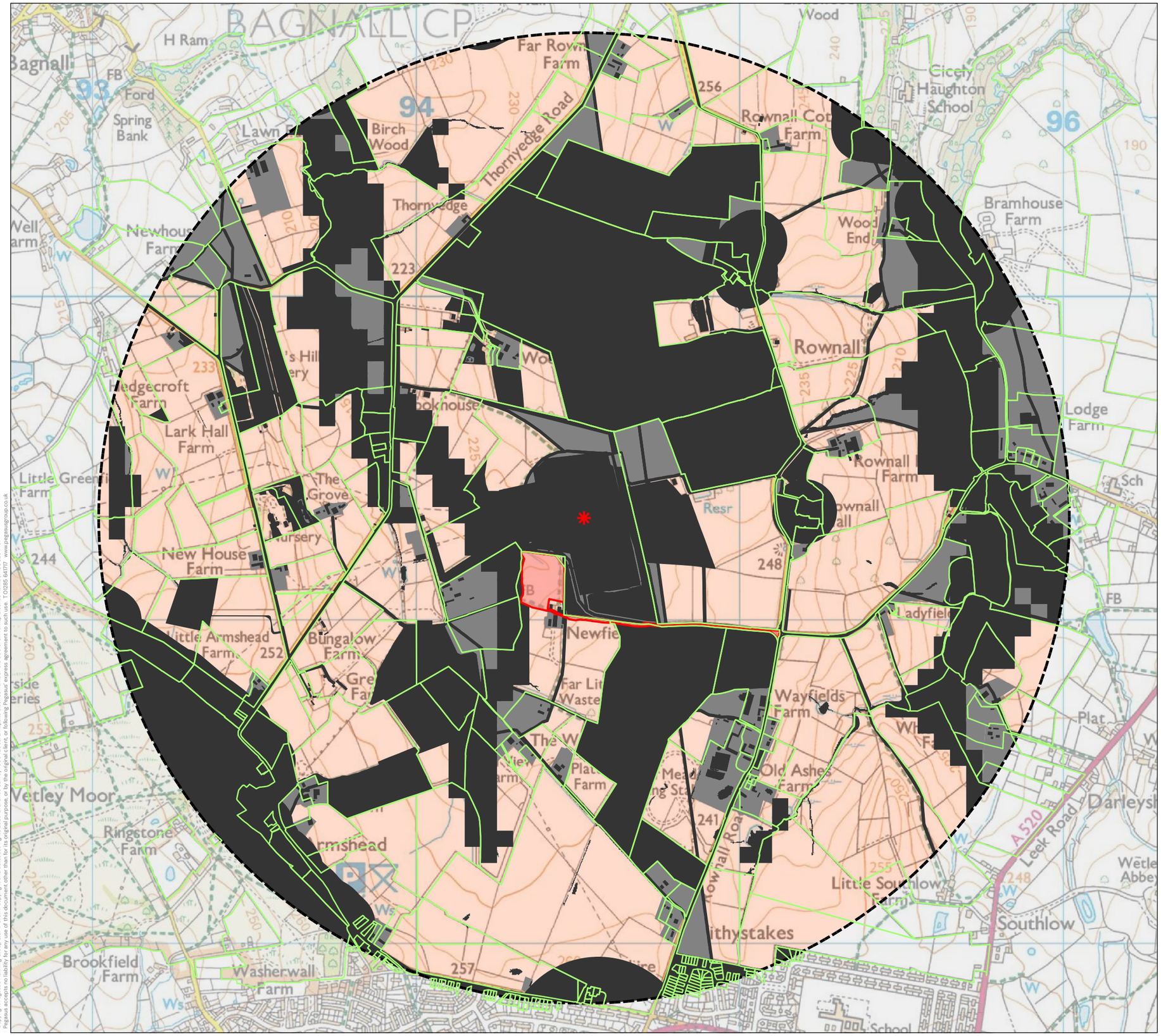
APPENDIX 10 – OTHER SITES



KEY

- Site Boundary
- Point of Connection
- 1.5km Point of Connection Buffer
- Land Ownership - HM Land Registry INSPIRE Index Polygons
- All constrained land or land of equivalent or higher flood risk
- Land Under 2ha and Residential Plots
- Unconstrained land that is of less flood risk

SEQUENTIAL ASSESSMENT: HM LAND REGISTRY INSPIRE INDEX POLYGONS

NEWFIELDS FARM

CLIENT
Newfields BESS Ltd

0 — 0.5 km

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P23-0415_EN_10

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Town & Country Planning Act 1990 (as amended)
Planning and Compulsory Purchase Act 2004

Expertly Done.

DESIGN | ECONOMICS | ENVIRONMENT | HERITAGE | LAND & PROPERTY | PLANNING | TRANSPORT & INFRASTRUCTURE

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