Tween Bridge Solar Farm

Environmental Statement
Appendix 10.2: Water Framework Directive Assessment

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

APFP Regulation 5(2)(a)

Document Reference: 6.3.10.2

August 2025

Revision 1

RWE Renewables UK Solar and Storage Limited

Tween Bridge Solar Farm

Water Framework Directive Assessment

681850-R1(02)-WFD
August 2025

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RSK GENERAL NOTES

Project No.: 681850-R1(01)-WFD

Site: Tween Bridge Solar Farm

Title: Water Framework Directive Assessment

Client: RWE Renewables UK Solar and Storage Limited

Date: August 2025

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK LDE Ltd.

CONTENTS

EXECUTIVE SUMMARY

ES.1 This Water Framework Directive (WFD) Assessment has been prepared to support the Development Consent Order (DCO) application for the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MW, and a battery energy storage facility with an export/import connection.

ES.2 The assessment has been undertaken in accordance with guidance issued by the Planning Inspectorate and the Environment Agency, and in consultation with the Environment Agency, the Lead Local Flood Authorities, Doncaster East Internal Drainage Board, Isle of Axholme and North Nottinghamshire Water Level Management Board, Yorkshire Water (water supply authority) and the Canal and River Trust.

ES.3 WFD waterbodies with potential hydrological connectivity to the Order Limits have been identified as the Stainforth and Keadby Canal, the North Soak Drain, the Hatfield Waste Drain and the River Torne, all of which fall at least partially within the Order Limits. WFD classified groundwater bodies of relevance to the assessment were identified as the Idle Torne Permo-Triassic Sandstone water body, the Idle Torne Secondary Mudrocks water body and the Lower Trent Erewash Secondary Combined Water Body. A number of statutory designated sites (e.g. Sites of Special Scientific Interest, Ramsar Sites and Special Areas of Conservation) were identified as protected areas with potential hydrological connectivity to the Order Limits.

ES.4 The baseline characteristics of the identified WFD water bodies were established, together with the WFD objectives as described within the Humber River Basin District River Basin Management Plan. The key challenges to the water environment were established, as defined within the River Basin Management Plan, and an assessment was made of how the Scheme could result in both detriment and benefit to the achievement of WFD objectives. The assessment considered whether there was the potential for deterioration of WFD water bodies as a result of the Scheme during construction, operational and decommissioning phases, taking account of mitigation that has been committed to within the Scheme. Impacts on hydrologically connected protected areas were also considered.

ES.5 Overall, the assessment concluded that none of the activities associated with the Scheme have the potential to cause a deterioration in status of WFD surface water bodies or groundwater bodies or impact hydrologically connected protected areas. The Scheme was not considered to jeopardise the attainment of ‘good’ overall status of WFD water bodies.

ES.6 A positive effect on River Basin Management Plan objectives was identified within this assessment. The cessation of agricultural activities was considered to have an overall benefit to the status of WFD water bodies, and a positive improvement in biodiversity was identified through the proposed creation of species-rich grassland in place of cultivated land. The avoidance and management of riparian zones of all watercourses was considered to promote biodiversity. Additionally, the Scheme was considered to help combat climate change by helping reduce reliance on fossil fuels.

1 INTRODUCTION

1.1 RSK Land and Development Engineering Ltd were commissioned by RWE Renewables UK Solar and Storage Limited (the Applicant) to provide a Water Framework Directive (WFD) Assessment to support the Development Consent Order (DCO) application for the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MW, and a battery energy storage facility with an export/import connection.

1.2 Full details of the DCO application, including proposed activities during the construction, operational and decommissioning stages can be found in **Chapter 2** of the Environmental Statement, **Scheme Description [Document Reference 6.1.2]**. An assessment of the effects of the Scheme on the water environment can be found in **Chapter 10** of the Environmental Statement **[Document Reference 6.2.10]** and has been undertaken in consultation with the Environment Agency, Doncaster Council and North Lincolnshire Council in their role as Lead Local Flood Authorities, Doncaster East Internal Drainage Board, and the Isle of Axholme and North Nottinghamshire Water Level Management Board. This WFD Assessment builds on the assessment of water impacts within the ES but focuses on the potential effects of the Scheme with specific reference to impacts on WFD water bodies in the context of the WFD. It considers how the Scheme could result in both detriment and benefit to the achievement of WFD objectives.

1.3 In line with The Planning Inspectorate's guidance "*Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive*[1]*"* and the Environment Agency's guidance "*Water Framework Directive assessment: estuarine and coastal waters*[2]*"*, a staged approach has been taken to the assessment of effects. The assessment identifies the location of WFD waterbodies, describes their baseline characteristics and considers whether any proposed activities could result in a deterioration of status of the identified water bodies. Where receptors are identified that are potentially at risk from proposed activities, an assessment is undertaken of the potential for deterioration of WFD water bodies, taking account of mitigation that has been committed to within the Scheme.

1.4 The report aims to identify whether aspects of the Scheme could impact WFD status or the objectives of the Humber River Basin District River Basin Management Plan.

[1] https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-the-water-framework-directive

[2] https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters

1.5 The comments given in this report and opinions expressed are subject to RSK Group Service Constraints provided in **Appendix A**.

2 POLICY & GUIDANCE

2.1 Policy

2.1.1 The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 implemented the Water Framework Directive 2000/60/EC. This directive will be referred to throughout this report as the WFD. The WFD was retained in UK law after the UK's exit from the EU via the EU Withdrawal Act 2018. It aims to achieve good qualitative and quantitative health for water bodies by reducing and removing pollution and by ensuring that there is sufficient water to support wildlife at the same time as human needs. The WFD requires a 6-yearly cycle of river basin management, with the next comprehensive update of classifications for all water bodies due in 2025.

2.1.2 For surface waters, WFD status is assessed with reference to both the ecological and chemical status of the water body. For groundwater, the overall status is dependent on the quantitative and chemical status.

2.1.3 The WFD introduced River Basin Districts and established a requirement for the preparation of River Basin Management Plans which set objectives within each River Basin District in order to achieve WFD targets within the prescribed timeframes.

2.2 Guidance

Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive

2.2.1 The Planning Inspectorate published "*Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive*"[3] on 20th September 2024. This advice summarises the requirements of the WFD Regulations in relation to Nationally Significant Infrastructure Projects (NSIP) applications.

2.2.2 The advice lists the aims of the WFD Regulations as follows:

- "*to enhance the status and prevent further deterioration of surface water bodies, groundwater bodies and their ecosystem;*
- *to ensure progressive reduction of groundwater pollution;*

[3] https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-the-water-framework-directive

- *to reduce water pollution, especially by Priority Substances and Certain Other Pollutants under Annex II of the Environmental Quality Standards Directive 2008/105/EC;*
- *to support mitigating the effects of floods and droughts;*
- *to achieve at least good surface water status for all surface water bodies and good chemical status in groundwater bodies by 2015 (Article 4), or good ecological potential for artificial or heavily modified water bodies; and*
- *to support sustainable water use*."

2.2.3 Under the WFD Regulations, the Environment Agency is required to prepare a River Basin Management Plan for each river basin district. River Basin Management Plans describe:

- "*the current state of the water environment for each river basin district;*
- *the pressures affecting the water environment;*
- *the objectives for protecting and improving it; and*
- *the programme of measures needed to achieve the statutory environmental objectives of the WFD"*

2.2.4 When deciding NSIP applications, the Secretary of State will need to consider the potential effects of any Scheme on:

- *"the environmental objectives and measures within River Basin Management Plan and any supplementary plans; and*
- *the ability of the UK to comply with the WFD, including (if applicable) the derogation provisions of Article 4.7"*

2.2.5 The Planning Inspectorate's advice includes advice on the information to be included within a WFD assessment and how that information should be presented. This guidance has been taken into account during the preparation of this WFD Assessment.

Overarching National Policy Statement (NPS) for Energy (NPS EN-1)

2.2.6 Paragraph 5.16.2 of NPS EN-1[4] states "*during the construction, operation, and decommissioning phases, development can lead to increased demand for water, involve discharges to water, and cause adverse ecological effects*

[4] https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1

resulting from physical modifications to the water environment. There may also be an increased risk of spills and leaks of pollutants to the water environment. These effects could lead to adverse impacts on health or on protected species and habitats and could result in surface waters, groundwaters or protected areas failing to meet environmental objectives established under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 and the Marine Strategy Regulations 2010".

2.2.7 Paragraph 5.16.12 states: "*The Secretary of State will need to give impacts on the water environment more weight where a project would have an adverse effect on the achievement of the environmental objectives established under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017*."

2.2.8 Paragraph 5.16.14 states: "*The Secretary of State should be satisfied that a proposal has regard to current River Basin Management Plans and meets the requirements of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (including regulation 19)*."

2.2.9 This WFD Assessment takes account of the requirements of NPS EN-1 with respect to the WFD.

Water Framework Directive assessment: estuarine and coastal waters

2.2.10 The "*Water Framework Directive assessment: estuarine and coastal waters*"[5] guidance was published by the Environment Agency in December 2016 and describes how to assess the impact of a development on estuarine (transitional) and coastal waters. Although this focuses on estuarine and coastal waters, as noted above within the *Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive,* the guidance sets out general principles and a staged approach to assessment that The Planning Inspectorate considers can be used for other water bodies such as rivers, lakes and groundwater in England and Wales.

2.2.11 The Environment Agency guidance states that a WFD assessment must show if proposed activities will:

- Cause or contribute to deterioration of status; or
- Jeopardise the water body achieving good status.

[5] https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters

2.2.12 An approach of up to three stages is described in the Environment Agency guidance:

- Screening – excludes any activities that do not need to go through the scoping or impact assessment stages
- Scoping – identifies the receptors that are potentially at risk from your activity and need impact assessment
- Impact assessment – considers the potential impacts of your activity, identifies ways to avoid or minimise impacts, and shows if your activity may cause deterioration or jeopardise the water body achieving good status

2.2.13 The guidance advises that all proposed activities should be considered, and all stages of the activity should be assessed (e.g. construction, operation, decommissioning).

2.2.14 This document contains advice on how assessment should be undertaken at each stage of the process. This has been taken into account in the preparation of this WFD Assessment.

3 CONSULTATION

3.1 Planning Inspectorate

3.1.1 As part of their Scoping Opinion (13 March 2023), the Planning Inspectorate noted "*The Scoping Report identifies the potential for contamination of surface water and groundwater bodies. Given the geographic location of the Proposed Development, the ES should consider the potential impacts on WFD water bodies. The Applicant's attention is drawn to the Inspectorate's Advice Note Eighteen: The WFD in this regard. The ES should explain the relationship between the Proposed Development and any relevant water bodies in relation to the current relevant River Basin Management Plan*".

3.2 Environment Agency

3.2.1 The Environment Agency's Scoping Response (Ref. AN/2023/134016/01-L01, 1 March 2023) states "*New development must be able to demonstrate that it will not cause deterioration and, where possible, should support measures to improve water bodies (both surface and ground waters) as set out in the Humber River Basin Management Plan. We recommend that a Water Framework Directive (WFD) Assessment be carried out and, where necessary, mitigation or other measures identified to meet WFD requirements"*.

3.2.2 The Statutory Consultation response confirmed that further consideration of the potential impact on water quality and geomorphological disturbances was required and that a WFD assessment is expected to be submitted with the ES.

3.2.3 The Environment Agency were consulted on a WFD assessment (Agreement Number ENVPAC/1/LNA/00238) for a previous scheme based on a wider Order Limit assessment. The consultation response **(Appendix B)** noted the following points:

- We have reviewed the WFD Assessment dated 17 July 2025, ref: '681850-R1(01)- WFD', prepared by RSK LDE Ltd. We are satisfied that your approach to the scoping in/out of waterbodies and activities is appropriate.
- We agree with the plan to have a 9m easement either side of the WFD watercourses. The rivers in the area are not significantly erosive and therefore an easement of 9m should mitigate any channel migration over the lifetime of the development and mitigate any need for further physical modification by erosion protection.

- We note that the WFD Assessment outlines that Horizontal Directional Drilling (HDD) could impact the WFD watercourses. The Assessment states that an HDD Method Statement will form part of the final Construction Environmental Management Plan. We support this proposal to ensure that all appropriate mitigation measures can be secured as part of the DCO.
- Therefore, we are satisfied that the WFD Assessment is adequate and that the potential impacts on WFD should be minimal if silt management guidance and best practice within Construction Environmental Management Plans (to be agreed under the DCO) are followed.

3.3 Environmental Impact Assessment (EIA) statutory and non-statutory consultation responses

3.3.1 Consultation responses received throughout the EIA process with respect to impacts on the water environment and River Basin Management Plan objectives have been reviewed and taken into account in the preparation of this WFD Assessment. This includes responses from Lead Local Flood Authorities, Doncaster East Internal Drainage Board (IDB), Isle of Axholme and North Nottinghamshire Water Level Management Board, Yorkshire Water and the Canal and River Trust. Copies of these responses can be found in the **Consultation Report Appendices [Document reference 5.2].**

4 METHODOLOGY

4.1 The proposed methodology is based on the advice within the Planning Inspectorate's guidance "*Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive*" and the Environment Agency guidance "*Water Framework Directive assessment: estuarine and coastal waters*" as well as taking into account consultation responses received from the Planning Inspectorate and the Environment Agency during the assessment period.

4.2 A staged approach is proposed as advocated within the Environment Agency and Planning Inspectorate guidance. The Planning Inspectorate guidance states that "*screening should identify the extent to which the proposed development is likely to affect water bodies. Where impacts are 'screened out' from further assessment, this should be clearly justified*."

4.3 In line with the Planning Inspectorate advice, the screening assessment will:

- Show relevant WFD water bodies on a map or plan;
- Describe the baseline characteristics of identified water bodies, including classification and sensitivity of that water body to change;
- Identify the zone or zones of influence based on specific activities and/or characteristics of the Scheme that could affect the identified water bodies; and
- Identify any specific activities and/or characteristics of the Scheme that have been screened out and why.

4.4 Following the screening stage, where any activities or characteristics have been identified that could affect the identified water bodies, an assessment will be made of the risk of deterioration of a WFD element. The assessment will take into account the location and nature of activities, whether they are temporary or permanent and the potential pathways between activities and receptors. It is intended to consult the Environment Agency post-acceptance during the pre-Examination period to agree the water bodies and activities to be screened into the assessment.

4.5 The following data sources will be considered in the preparation of this assessment:

- Humber River Basin District River Basin Management Plan[6]
- Environment Agency catchment data explorer website[7]

[6] https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022

[7] https://environment.data.gov.uk/catchment-planning/

- Defra's MAGIC interactive mapping[8]
- British Geological Survey GeoIndex Onshore[9]

4.6 Mitigation measures committed to by the Applicant will be taken into account and the mechanisms for securing this mitigation will be stated. Construction, operational and decommissioning phases of the Scheme will be considered. The assessment will be undertaken based on professional judgement and experience of similar projects.

4.7 Any enhancements or positive contributions to the River Basin Management Plan objectives will be identified together with details of how their implementation would be secured.

4.8 The report will provide a clear conclusion as to the extent to which the Scheme is likely to affect water bodies and whether any impacts require further assessment.

[8] https://magic.defra.gov.uk/

[9] https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.15207478.1054941605.1660058459-1946525719.1660058459

5 ENVIRONMENTAL SETTING AND IDENTIFICATION OF WATER BODIES

5.1 Order Limits location

5.1.1 The Order Limits broadly lie between the settlements of Thorne and Crowle, occupying separate parcels of land within a relatively flat agricultural landscape predominantly in arable use for the cultivation of cereal crops with some areas of modified grassland and short rotation coppice. Many of the field boundaries are subdivided into rectilinear parcels by long linear drainage ditches, some with partial or sporadic hedgerows. The Scheme's development parcels are dissected by several major roads and routes, including the M180 motorway, the A18, the South Humberside Main Line railway route and Stainforth & Keadby Canal. An Order Limits plan is included as **Appendix B**.

5.1.2 Numerous other minor roads cross the landscape connecting scattered residential properties and farmsteads, many of which lie adjacent or in proximity to the Order Limits. Overhead power lines and lattice pylons runs across the northern part of the Order Limits which create other vertical elements within the landscape. There are wooden pole lines and masts within the Order Limits.

5.1.3 Bar the two areas of significant woodland to the north and south of the Order Limits associated with former peat extraction at Hatfield Moors and Thorn Moors respectively, the landscape contains relatively limited areas of vegetation, largely limited to field boundaries in the form of hedgerows, of which many are incomplete and gappy. There are occasional scattered trees or groups of trees and some small woodland copses.

5.2 Topography

5.2.1 A topographic survey was carried out and shows that land within the Order Limits is currently generally situated between 1m and 4m above ordnance datum and exhibits very low or negligible gradients.

5.3 Surface watercourses

5.3.1 This section identifies water bodies that are classified under the WFD within a 5km radius of the Order Limits. This radius is larger than the anticipated zone of influence of Scheme activities (taken as 2km within **Chapter 10** of the ES **[Document Reference 6.2.10]**) and has been chosen as a precautionary

approach to ensure all relevant water bodies that may be in hydrological continuity with the Order Limits are assessed and screened in or out for further assessment. Each WFD water body within a 5km radius of the Order Limits has been assessed to determine whether it is hydrologically linked to the Order Limits and therefore whether activities associated with the Scheme could impact that water body. Water bodies that are not hydrologically linked to the Order Limits have been screened out and are not assessed further. Any water bodies that could feasibly be hydrologically linked to the Order Limits have been taken forward for assessment, with baseline details provided in the following sections. These water bodies are shown in **Appendix C** and considered further below.

5.3.2 The Order Limits are crossed by an extensive network of field drain ditches and rhynes managed by two Internal Drainage Boards: the Isle of Axholme and North Nottinghamshire Water Level Management Board and the Doncaster East Internal Drainage Board. These authorities use pumping stations to control water levels in the area. Some of the Internal Drainage Board watercourses are shown as culverted on the Internal Drainage Boards' network mapping.

5.3.3 Main Rivers noted by the Environment Agency within the Order Limits comprise two drains running adjacent to the canal crossing the midsection of the Order Limits (the North Soak Drain and South Soak Drain); the Hatfield Waste Drain which crosses the southeastern part of the Order Limits; and the River Torne which also crosses the southeastern part of the Order Limits. The North Engine Drain and South Engine Drain run along the boundary in the southeastern part of the Order Limits.

5.3.4 The Order Limits include part of the Isle of Axholme. This is an area of land (the historic floodplain of the River Trent) that has been artificially drained, with water levels managed by a network of pumping stations.

5.3.5 The Stainforth and Keadby Canal (part of the Sheffield and South Yorkshire Navigation) runs through the centre of the Order Limits, roughly in line with the South Humberside Main Railway Line.

5.3.6 All watercourses within the Order Limits fall within the Humber River Basin District.

5.3.7 The WFD classified surface watercourses within 5km of the Order Limits are identified and discussed below.

Stainforth and Keadby Canal (Sheffield and South Yorkshire Navigation)

5.3.8 The Stainforth and Keadby Canal runs in an east – west orientation through the northern part of the Order Limits. To the west of the Order Limits, it passes through Thorne and continues in a southwesterly direction (as the River Don Navigation) towards Doncaster. To the east of the Order Limits, it passes to the south of Crowle, eventually discharging into the River Trent. This watercourse is managed by the Canal and River Trust. As this watercourse flows through the Order Limits, it is possible it could be impacted by Scheme activities although it is likely to be protected to a degree from overland flows by the North and Soak South Drains which run immediately either side of the canal.

5.3.9 Baseline characteristics are given in **Table 5.1** below. In summary, it is an artificial canal that did not require assessment for chemical or ecological status under Cycle 3 of the WFD in 2022.

5.3.10 Reasons for not achieving 'good' status are listed on the Catchment Data Explorer website as:

- Awaiting recovery following measures to address polybrominated diphenyl ethers (PBDE) and mercury and its compounds.

5.3.11 Objectives under the WFD are given in **Table 5.2** below. An ecological target of 'good' was set for 2015 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

North Soak Drain

5.3.12 The North Soak Drain is an Environment Agency Main River that flows immediately to the north of the Stainforth and Keadby Canal. It flows from Thorne in an easterly direction towards the Order Limits, passing through the northern part of the Order Limits, and continuing downstream of the Order Limits to eventually discharge into the River Trent.

5.3.13 As this watercourse flows through the Order Limits, it is possible it could be impacted by Scheme activities.

5.3.14 Baseline characteristics are given in **Table 5.1** below. In summary, it is classified as an 'artificial' watercourse. It was classified as 'moderate' overall ecological status under Cycle 3 of the WFD in 2022. Chemical quality status did not require assessment.

5.3.15 Reasons for not achieving 'good' status are listed on the Catchment Data Explorer website as:

- Awaiting recovery following measures to address polybrominated diphenyl ethers (PBDE) and mercury and its compounds; and
- Physical modification for agriculture / rural land management.

5.3.16 Objectives under the WFD are given in **Table 5.2** below. An ecological target of 'moderate' was set for 2015 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

Hatfield Waste Drain

5.3.17 The Hatfield Waste Drain is an Environment Agency Main River that flows from west to east through the southern part of the Order Limits. It continues in an easterly direction, eventually discharging to the River Trent.

5.3.18 As the watercourse passes through the Order Limits, it is possible it could be impacted by Scheme activities.

5.3.19 Baseline characteristics are given in **Table 5.1** below. In summary, it is classified as an 'artificial' watercourse. It was classified as 'moderate' overall ecological status under Cycle 3 of the WFD in 2022. Chemical quality status did not require assessment.

5.3.20 Numerous reasons were recorded for not achieving 'good' status on the Catchment Data Explorer website, these included:

- Poor soil management, physical modification (land drainage) and surface water abstraction (agriculture and rural land management);
- Diffuse pollution (transport drainage); and
- Groundwater abstraction and sewage discharges (water industry).

5.3.21 Objectives under the WFD are given in **Table 5.2** below. An ecological target of 'moderate' was set for 2027 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

River Torne / Three Rivers

5.3.22 The River Torne is an Environment Agency Main River that crosses the south eastern extent of the Order Limits. It flows in an easterly direction, with the section downstream of the A18 being known as the Three Rivers (the watercourse splits into three channels at this point) or the New Idle River. As the watercourse passes adjacent to the Order Limits. The area of the DCO within this catchment is limited and has been set aside for BNG, it is therefore unlikely to be impacted by Scheme activities, however as this area of the DCO falls within the Catchment area, it is considered for further consideration.

5.3.23 Baseline characteristics are given in **Table 5.1** below. In summary, it is classified as an 'artificial' watercourse. It was classified as 'moderate' overall ecological status under Cycle 3 of the WFD in 2022. Chemical quality status did not require assessment.

5.3.24 Numerous reasons were recorded for not achieving 'good' status on the Catchment Data Explorer website, these included:

- Physical modification – land drainage and poor nutrient management (agriculture and rural land management);
- Awaiting recovery following measures to address polybrominated diphenyl ethers (PBDE) and mercury and its compounds;
- Diffuse pollution (transport drainage); and
- Sewage discharges (water industry).

5.3.25 Objectives under the WFD are given in **Table 5.2** below. An ecological target of 'moderate' was set for 2027 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

Paupers Drain

5.3.26 The Paupers Drain lies approximately 500m to the east of the Order Limits. It flows in an easterly direction, discharging into the River Trent. No part of the Scheme falls within its catchment. Therefore, impacts on this watercourse have been screened out. No further assessment is proposed.

River Don

5.3.27 This watercourse lies approximately 3.5km west of the Order Limits, to the west of Thorne. No part of the Scheme falls within its catchment. Therefore,

impacts on this watercourse have been screened out. No further assessment is proposed.

Earnshaw's Warping Drain

5.3.28 This watercourse lies approximately 3.7km north of the Order Limits. No part of the Scheme falls within its catchment. Therefore, impacts on this watercourse have been screened out. No further assessment is proposed.

Table 5.1: Watercourse baseline information (2022) – watercourses screened in

Water body name & ID	Water body type	Artificial or heavily modified?	Overall ecological status	Biological quality	General chemical and physico-chemical quality	Hydromor-phological quality	Specific pollutants with UK EQS	Overall chemical status	Priority hazardous substances	Priority substances
Stainforth and Keadby Canal GB70410281	Canal	Artificial	Good	N/A	N/A	N/A	N/A	Does not require assessment	Does not require assessment	Does not require assessment
North Soak Drain GB104028064350	River	Artificial	Moderate	Moderate	Moderate	Not High	Moderate	Does not require assessment	Does not require assessment	Does not require assessment
Hatfield Waste Drain GB104028064330	River	Artificial	Moderate	Poor	Moderate	Not High	N/A	Does not require assessment	Does not require assessment	Does not require assessment

Water body name & ID	Water body type	Artificial or heavily modified?	Overall ecological status	Biological quality	General chemical and physico-chemical quality	Hydromor-phological quality	Specific pollutants with UK EQS	Overall chemical status	Priority hazardous substances	Priority substances
Torne / Three Rivers GB104028 064340	River	Artificial	Moderate	Moderate	Moderate	Not High	High	Does not require assessment	Does not require assessment	Does not require assessment

Table 5.2: Watercourse objectives – watercourses screened in

Water body name & ID	Water body type	Artificial or heavily modified?	Overall ecological status objective	Biological quality	General chemical and physico-chemical quality	Hydromor-phological quality	Specific pollutants with UK EQS	Overall chemical status	Priority hazardous substances	Priority substances
Stainforth and Keadby Canal	Canal	Artificial	Good 2015	N/A	N/A	N/A	N/A	Good 2063	Good 2063	Good 2015

Water body name & ID	Water body type	Artificial or heavily modified?	Overall ecological status objective	Biological quality	General chemical and physico-chemical quality	Hydromor-phological quality	Specific pollutants with UK EQS	Overall chemical status	Priority hazardous substances	Priority substances
GB704102 81										
North Soak Drain GB104028 064350	River	Artificial	Moderate 2015	Good 2015	Moderate 2015	Not High 2015	High 2027 (low confidence)	Good 2063	Good 2063	Good 2015
Hatfield Waste Drain GB104028 064330	River	Artificial	Moderate 2027 (low confidence)	Moderate 2027 (low confidence)	Good 2027 (low confidenc e)	Not High 2015	N/A	Good 2063	Good 2063	Good 2015
Torne / Three Rivers GB104028 064340	River	Artificial	Good 2027 (low confidence)	Good 2021	Good 2027 (low confidenc e)	Not High 2015	High 2015	Good 2063	Good 2063	Good 2015

5.4 Geology

5.4.1 Geological data from the British Geological Survey shows that the bedrock geology beneath the Order Limits is split between 'Sherwood Sandstone Group – Sandstone' in the west and 'Mercia Mudstone Group – Mudstone' in the east. The British Geological Survey also record a wide range of superficial deposits beneath the Order Limits. These deposits include: 'Alluvium – Clay, Silt, Sand and Gravel', 'Hemingbrough Glaciolacustrine Formation - Clay, Silty', 'Warp – Clay and Silt', 'Peat', 'Glaciofluvial Deposits, Devensian - Sand and Gravel', 'Breighton Sand Formation - Sand, Silty' and 'Sutton Sand Formation – Sand'.

5.4.2 The **Phase 1 Ground Conditions Desk Study [Document Reference 6.3.9.1 – 6.3.9.2]** provides further clarification of the underlying geology based on the findings of the **Tween Bridge Wind Farm Factual Site Investigation Report, Donaldson Associates 2009 & Headland Archaeology Report 2015 [Document Reference 6.3.9.2]** and analysis of available BGS borehole logs. This confirms the presence of Mercia Mudstone bedrock geology beneath the eastern half of the Order Limits and the Sherwood Sandstone Group beneath the western part of the Order Limits. The Hemingbrough Glaciolacustrine Formation deposits and Alluvium were recorded across the majority of the Order Limits. Other superficial deposits, comprising Peat, Sands and Gravels, were recorded beneath parts of the Order Limits.

5.5 Hydrogeology

5.5.1 Hydrogeological information was obtained from Defra's online MAGIC Maps service. These maps indicate that the superficial alluvial deposits are classified as a Secondary A aquifer, with the peat and laminated silt/clay deposits classified as Unproductive. The bedrock strata are classified as a Principal Aquifer (Sherwood Sandstone beneath western half of Order Limits) and a Secondary B Aquifer (Mercia Mudstone beneath eastern half of Order Limits).

5.5.2 The hydrogeology aquifer classification defines the western half of the Order Limits (where sandstone is generally the underlying bedrock) as a highly productive aquifer, whilst the eastern half (generally underlain by mudstone) is defined as a low productivity aquifer. Having two different bedrocks, there is potential for groundwater emergence where these two aquifer types meet.

5.5.3 As referenced within the **Phase 1 Ground Conditions Desk Study [Document Reference 6.3.9.1-6.3.9.2],** according to the available logs

groundwater elevations across the Order Limits vary between 0.5m and 8.0m below ground level. Groundwater elevations are likely to vary with seasonal and temporal changes and are likely to be at shallower depths in proximity to drainage ditches. Within 1-10m of drainage ditches, groundwater may be maintained at 1m-2m below ground level for much of the year and 0.5m–1m below ground level in winter. Beyond this distance from the drainage ditches, groundwater is more likely to be 0.5m-2m below ground level most of the year in most areas. In some areas groundwater will stand at less than 0.5m below ground level in winter, potentially at ground level during the worst periods. Overall, groundwater is expected to flow west to east across the Order Limits.

5.6 Groundwater bodies

5.6.1 Groundwater bodies are classified as either ‘good’ or ‘poor’ under the WFD. They must achieve good quantitative status and good chemical status by the objective year. Groundwater bodies within and close to the Order Limits that have been classified under the WFD have been identified via the Catchment Data Explorer website. These are described below.

Idle Torne – Permo-Triassic Sandstone, Nottinghamshire and Doncaster

5.6.2 This groundwater body relates to the Sherwood Sandstone Group and underlies the western half of the Order Limits. The Idle Torne aquifer contains a Drinking Water Protected Area (relating to surface water). Due to its presence beneath the Order Limits, this groundwater body has been screened in for further assessment. Baseline water quality classifications for this groundwater body were ‘poor’ for both quantitative and chemical status under the Cycle 3 2019 WFD classifications, as shown in **Table 5.3**.

5.6.3 Reasons for not achieving ‘good’ status were listed on the Catchment Data Explorer website. These include:

- Poor nutrient and livestock management (agriculture and rural land management); and
- Groundwater abstraction (water industry, industry and agriculture and rural land management.

Idle Torne - Secondary Mudrocks Water Body

5.6.4 This groundwater body relates to the mudstones of the Mercia Mudstone Group. This water body underlies the eastern section of the Order Limits. The

Secondary Mudrocks are classified as within a Drinking Water Protected Area (relating to surface water). Due to its presence beneath the Order Limits, this groundwater body has been screened in for further assessment. Baseline water quality classifications for this groundwater body were 'good' for both quantitative and chemical status under the Cycle 3 2019 WFD classifications, as shown in **Table 5.3**.

Lower Trent Erewash (Secondary Combined)

5.6.5 This groundwater body underlies a very small area in the very east of the Order Limits. The Lower Trent Erewash Secondary Combined Water Body is classified as within a Drinking Water Protected Area (relating to surface water). Although only a small area falls within the Order Limits, due to the location of parts of this aquifer to the east (down gradient) of the Order Limits, there is considered to be the potential for groundwater flow from the Order Limits in the direction of this aquifer. It has therefore been screened in for further assessment. Baseline water quality classifications for this groundwater body were 'good' for both quantitative and chemical status under the Cycle 3 2019 WFD classifications, as shown in **Table 5.3**.

Aire and Don Sherwood Sandstone

5.6.6 This groundwater body lies approximately 1.2km to the northwest of the Order Limits. Given the distance of this water body from the Order Limits and the likely flow of groundwater in an easterly direction (towards the River Trent), it is considered unlikely that any activities occurring within the Order Limits could feasibly impact this aquifer, therefore it has been screened out for further assessment.

Table 5.3: Groundwater baseline information (2019) – groundwater screened in

Water body name & ID	Water body type	Overall water body	Quantitative status element	Chemical status element
Idle Torne – Sandstone GB40401G301500	Groundwater body	Poor	Poor	Poor
Idle Torne - Secondary Mudrocks GB40402G992200	Groundwater body	Good	Good	Good
Lower Trent Erewash (Secondary Combined) GB40402G990300	Groundwater body	Good	Good	Good

5.6.7 The WFD objectives for the Idle Torne Sandstone, Idle Torne Secondary Mudrocks and Lower Trent Erewash (Secondary Combined) Water Bodies are given in **Table 5.4**.

Table 5.4: Groundwater objectives – groundwater screened in

Water body name & ID	Water body type	Overall water body	Quantitative status element	Chemical status element
Idle Torne – Sandstone GB40401G301500	Groundwater body	Poor 2015	Poor 2015	Good 2050
Idle Torne - Secondary Mudrocks GB40402G992200	Groundwater body	Good 2015	Good 2015	Good 2015
Lower Trent Erewash (Secondary Combined) GB40402G990300	Groundwater body	Good 2015	Good 2015	Good 2015

5.7 Groundwater Designations

5.7.1 Defra's MAGIC maps confirm that the western part of the Order Limits falls within a groundwater Source Protection Zone 3 (total catchment). A Zone 2 Source Protection Zone (outer catchment) lies adjacent to the west of the Order Limits associated with a groundwater abstraction for potable water supply approximately 830m west of the Order Limits.

5.7.2 The Order Limits are not within 2km of a Drinking Water Safeguard Zone (surface water or groundwater) or a Drinking Water Protected Area relating to surface water.

5.8 Abstractions

5.8.1 The **Phase 1 Ground Conditions Desk Study [Document Reference 6.3.9.1 – 6.3.9.2]** contains records of licensed groundwater and surface water abstractions of more than 20m^3/day. No active licensed groundwater abstractions are recorded within the Order Limits. Five licensed groundwater abstractions are recorded within a 2km radius of the Order Limits, of which four are for industrial use (process water for colliery and poultry activities, dust suppression, mineral washing and dewatering) and one is for potable water supply. The potable groundwater abstraction is the abstraction approximately 830m west of the Order Limits referenced above. This potable abstraction increases the sensitivity of the underlying groundwater to any impacts from the Proposed Development.

5.8.2 There are 28 recorded licensed surface water abstractions within the Order Limits, 27 of which are for spray irrigation. The remaining abstraction is used by the Environment Agency for transfer between sources. A further 77 surface water abstractions are recorded within 2km of the Order Limits, all of which are for spray irrigation with the exception of two used for transfer between sources and two used for boiler feed, make-up or top up water and evaporative cooling.

5.8.3 Abstractions of less than 20m^3/day would not be licensed by the Environment Agency. Records of private water supplies within a 2km radius of the Order Limits were requested from Doncaster Council and North Lincolnshire Council. Doncaster Council have advised that they hold records of two private water supplies within 2km of the Order Limits within their area of jurisdiction. The first is situated at Several Farm, Tree Bank, Thorne (NGR 470957, 409683), adjacent to the southwestern Order Limits and is a groundwater abstraction used for domestic use at a single residential property. The second is at Moorends Hotel, 156 Marchlands Road, Moorends (NGR 469405, 415219)

approximately 450m northwest of the Order Limits and is a groundwater abstraction serving a hotel, mews and apartments. These abstractions are for a potentially sensitive use and increase the sensitivity of the underlying aquifer to any impacts from the Proposed Development. North Lincolnshire Council have confirmed that there are no private surface water or groundwater abstractions recorded within 2km of the Order Limits within their area of jurisdiction.

5.9 Sensitive habitats

5.9.1 The following statutory designated sites have been identified within close proximity to the Order Limits:

Table 5.5: Statutory designated sites

Name and Designation	Location in relation to Order Limits
International and Nationally Designated Sites	
Thorne and Hatfield Moors Special Protection Area (SPA)	Within the site on the northern boundary; located 0.1km south
Thorne Moors Special Area of Conservation (SAC)	Within the site on the northern boundary
Hatfield Moors SAC	0.1km south
Humber Estuary SPA	7.7km north
Humber Estuary Ramsar	5.6km east
Humber Estuary SAC	5.6km east
Lower Derwent Valley SPA	17.2km north
Lower Derwent Valley Ramsar	17.1km north
Lower Derwent Valley SAC	17.1km north
Skipworth Common SAC	22.2km north
River Derwent SAC	13.8km north
Sites of Special Scientific Interest (SSSI)	

Name and Designation	Location in relation to Order Limits
Humber Estuary SSSI	5.6km east
Hatfield Moors SSSI	0.1km south
Thorne, Crowle and Goole Moors SSSI	Within the site on the northern boundary; adjacent to the northern site boundary
Crowle Borrow Pits SSSI	1.0km east
Eastoft Meadow SSSI	1.9km east
Hatfield Chase Ditches SSSI	Within the site on the northern boundary; adjacent to the site boundary
Belshaw SSSI	2.9km south of the site
Epworth Turbary SSSI	4.8km south
National Nature Reserve (NNR)	
Humberhead Peatlands NNR	Adjacent to the northern site boundary
Local Nature Reserves (LNR)	
Brumby Wood LNR	9.5km east
Buntings Wood, Thorne LNR	1.6km west
Quarry Park LNR	3.8km west
Silica Lodge LNR	9..3km east
Local Wildlife Sites	
Stainforth and Keadby Canal Corridor	Adjacent to site boundary

5.9.2 Due to the extensive network of drainage ditches within the Order Limits and in the wider area, a theoretical pathway exists between the Order Limits and the above sensitive habitats. They have therefore all been screened in for further assessment.

5.9.3 The Humberhead Peatlands NNR, Thorne Moors SAC, Thorne, Crowle and Goole Moors SSSI, Thorne and Hatfield Moors SPA, Hatfield Moors SAC and Hatfield Moors SSSI immediately to the north and south of the Order Limits

are also classified as Groundwater Dependent Terrestrial Ecosystems, increasing their sensitivity to any water quality or quantity impacts resulting from the Scheme.

5.10 Water bodies screened in – summary

5.10.1 The following WFD water bodies and associated sensitive habitats have been screened in for further assessment due to potential hydrological links between them and the Order Limits:

- Stainforth and Keadby Canal
- North Soak Drain
- Hatfield Waste Drain
- River Torne
- Idle Torne – Permo-Triassic Sandstone, Nottinghamshire and Doncaster
- Idle Torne – Secondary Mudrocks
- Lower Trent Erewash (Secondary Combined)
- All Statutory Designated Sites identified in **Table 5.6**

6 ASSESSMENT OF EFFECTS OF PROPOSED ACTIVITIES

6.1 This section considers the activities and infrastructure associated with the Scheme and assesses their potential effects on the WFD water bodies identified within **Section 5**. The assessment considers the Humber River Basin Management Plan objectives and considers whether the Scheme could be detrimental to those objectives or whether a deterioration of WFD status could occur as a result of the Scheme. The potential for beneficial effects is also assessed.

6.1 Description of development

6.1.1 The main element of the proposal is the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MWp (megawatts peak), and a battery energy storage facility with an export/import connection. Based on a wattage output of 610Wp (watt power) panel, the potential maximum range for energy generation is around 1250 MWp of direct current (DC) capacity. This would equate to around 800 MW of alternating current (AC) capacity. Flexibility in panel layout design would be required to accommodate expected future technology developments as technology continues to evolve and become more efficient. The Scheme is shown in **Appendix D**, and further details are included in **Chapter 2** of the ES **[Document Reference 6.1.2]**.

6.1.2 The Scheme may be constructed through a single continuous phase or in multiple phases. If the Scheme is constructed in a single continuous phase, then an operational period of 40 years would be sought and the entire Scheme would be decommissioned after an operational lifespan of 40 years. If the Scheme is constructed in phases, then each phase would be decommissioned after achieving its 40 years operational lifespan. The exception to this would be the RWE on-site 400kV Substation and its associated infrastructure whereby it would be built as part of the first phase of works and its decommissioning would be linked to the decommissioning of the final phase of the Scheme.

6.1.3 Fully operational, the Scheme would have the potential to provide enough low-carbon energy to meet the equivalent annual needs of approximately 413,416 homes.

6.1.4 The Scheme falls within the definition of a ‘nationally significant infrastructure project’ (NSIP) under Section 14(1)(a) and 15(2) of the Planning Act 2008 (the

"Act") as the construction of a generating station in England with a capacity of more than 50MW.

6.1.5 Key components of the Scheme are anticipated to include:

- Ground-mounted solar PV generating station and associated mounting structures,
- On-site supporting equipment including inverters, transformers and switchgear,
- A BESS including batteries and associated enclosures, monitoring systems, air conditioning, electrical cable and fire safety infrastructure. The BESS is indicatively split into four separate 100MW compounds. Each 100MW compound would be located next to and connected to one of the seven on-site 132kV Substations,
- Seven on-site 132kV Substation compounds, including transformers, switchgear, circuit breakers, control equipment buildings, control functions, material storage, parking, as well as wider monitoring and maintenance equipment,
- Low voltage and 33kV interconnecting cabling to connect and transmit electricity from the solar PV modules and BESS to one of the seven on-site 132kV Substations,
- RWE on-site 400kV Substation,
- Underground 132kV interconnecting cabling to connect the seven on-site 132kV Substations to RWE on-site 400kV Substation,
- Underground 400kV interconnecting cabling from the RWE on-site 400kV substation to edge of Order Limits Associated infrastructure including access tracks, parking, CCTV, gates and fencing, lighting, drainage infrastructure, storage containers, earthworks, culverts, surface water management, maintenance and welfare facilities, security cabins and any other works identified as necessary to enable the development,
- Horizontal Directional Drilling for selected cable works where trenching or culvert is not possible or appropriate, including the canal, railway and the M180,
- Highways works to facilitate access for construction vehicles, comprising passing places where necessary to ensure that heavy goods vehicles (HGVs) can be safely accommodated amongst existing traffic, new or improved site accesses and visibility splays,
- Environmental mitigation and enhancement measures, including landscaping, habitat management and biodiversity enhancement,
- Permissive pathways and bird viewing gallery, and

- Temporary development during the construction phase of the Scheme including construction compounds, parking, temporary diversions of Public Rights of Way, and temporary access roadways to facilitate access to all parts of the Order Limits.

6.1.6 During the construction phase, a number of temporary construction compounds will be required as well as roadways to facilitate access to all parts of the Order Limits.

6.1.7 The Scheme will be decommissioned at the end of its approved operational phase. The decommissioning period for each phase of development is expected to take up to 2 years. All PV modules, mounting poles, cabling above 1m below ground (on and off site) (any cabling buried 1m+ below ground will not be removed at decommissioning), substations, energy storage equipment, inverters, transformers etc would be removed from the Order Limits. These items would be recycled or disposed of in accordance with good practice and market conditions at the time.

6.2 Key challenges for the water environment

6.2.1 The Humber River Basin Management Plan[10] has been reviewed to identify the key challenges affecting the water environment. Each of the challenges identified in the River Basin Management Plan is considered below, with an initial assessment as to whether the Scheme could exacerbate these challenges and consequently result in impacts for local water bodies. Specific impacts for each water body are discussed in detail following this initial screening exercise.

[10] https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022

Table 6.1: Key challenges for the water environment (Humber River Basin Management Plan)

Key challenge	How impacts arise	Potential impacts from Scheme without Mitigation	Explanation	Challenge discussed further
Climate emergency	Climate change results in raised temperatures and reduced flows in watercourses, impacting habitats and species. Droughts place increased demand on water resources. Less water is available for dilution and dispersion of pollutants. Increased flooding can cause release of polluted runoff and storm overflows from combined sewerage systems.	Yes - beneficial	The Scheme will help combat climate change because it is a clean and renewable energy source that generates no greenhouse emissions and helps reduce reliance on fossil fuels which are major contributors to climate change.	Yes
Biodiversity crisis	Habitats and species face pressures due to loss or degradation of habitat, lack of quality water to sustain them, invasive non-native species, and loss of connectedness.	Yes - adverse	Without mitigation, construction and operation activities could adversely impact habitats and species.	Yes
Physical modifications	Diversion, culverting and straightening of watercourses can damage habitats and reduce resilience to flooding, erosion and drought.	Yes - adverse	During construction without careful design / mitigation, physical disturbance could result from laying of cables beneath watercourses and creation of crossings over watercourses. Siltation could also impact river morphology.	Yes

Key challenge	How impacts arise	Potential impacts from Scheme without Mitigation	Explanation	Challenge discussed further
Pollution from agriculture and rural areas	Management of land, livestock and use of fertilisers and pesticides can result in river and groundwater pollution.	Yes - beneficial	Intensive farming practices are not proposed as part of the Scheme. Cessation of agricultural activities could reduce inputs of agricultural chemicals and farming by-products to surface water and groundwater	Yes
Pollution from water industry waste water	Untreated sewage can be released to watercourses, particularly from storm overflows from combined sewerage systems	No	Scheme does not relate to the water industry	No
Invasive non-native species	Introduction of non-native species through spread of animals or plants can damage water environment	Yes - adverse	Without mitigation, construction activities could facilitate the spread of material e.g. attached to equipment or vehicles.	Yes
Pollution from towns, cities and transport	Pollution from urbanisation and transport in urban areas can damage water quality	No	Scheme not within urban environment	No

Key challenge	How impacts arise	Potential impacts from Scheme without Mitigation	Explanation	Challenge discussed further
Changes to water levels and flows	Over-abstraction of surface / groundwater can result in damage to rivers, springs, aquifers, lakes and wetlands	Yes - adverse	Construction and operational phases have an associated water demand, inappropriate abstraction could result in degradation of water supplies from surface water and groundwater	Yes
Chemicals in the water environment	Release of chemicals to the water environment could impact aquatic life, human health and surface / groundwater water supplies	Yes - adverse	Without mitigation, chemicals could be released to surface water or groundwater through leaks / spills of substances during construction and decommissioning works, within contaminated runoff or as a result of releases through accident or emergency during the operational phase.	Yes
Pollution from abandoned mines	Pollution from abandoned mines impacts surface water and groundwater quality and habitats	No	No activities relating to abandoned mines	No
Plastics pollution	Input of plastics and micro-plastics to water environment	No	No activities considered to contribute to release of plastics or micro-plastics	No

6.2.2 **Table 6.1** identifies that without mitigation the Scheme could result in adverse effects through exacerbation of the following key River Basin Management Plan challenges:

- Biodiversity crisis;
- Physical modifications;
- Invasive non-native species;
- Changes to water levels and flows; and
- Chemicals in the water environment.

6.2.3 The Scheme is also considered to offer beneficial effects with respect to the following key River Basin Management Plan challenges:

- Climate emergency; and
- Pollution from agriculture and rural areas.

6.2.4 The Scheme activities identified in **Table 6.1** as potentially impacting key River Basin Management Plan challenges are assessed further below with specific reference to any anticipated impacts on the identified relevant WFD water bodies. Mitigation measures committed to as part of the Scheme are considered, and details are provided of how these mitigation measures will be secured.

6.2.5 Although not considered directly relevant to River Basin Management Plan objectives, a **Flood Risk Assessment [Document Reference 6.3.10.1]** has been prepared to support the DCO application and confirms that there will be no increase in flood risk as a result of the Scheme. This document should be referred to for full details of flood risk to and from the development.

6.3 Activities scoped out

6.3.1 The following activities have been scoped out of further assessment, on the basis they are not considered to result in impacts to the 'key challenges for the water environment' as identified in the River Basin Management Plans and are unlikely to result in a deterioration of WFD status of surface or groundwater bodies.

Operational phase

6.3.2 Activities scoped out comprise:

- Fencing and security measures,
- Permissive pathways and bird viewing gallery, and

- Access tracks and site entrances.

6.3.3 All other aspects of the Scheme during the operational phase have been scoped in, so that further assessment can be made of any impact on natural river dynamics or water quality.

Construction and Decommissioning phases

6.3.4 All activities have been scoped in due to the associated potential use and transport of materials; excavation works; use and storage of fuels and oils associated construction equipment; and water usage during the proposed works. Ecological mitigation and enhancement measures works have been scoped in due to their proximity to existing watercourses and their potential for enhancement / benefit to RBMP objectives.

6.4 Assessment of Activities Scoped In

6.4.1 Activities that have been scoped in for further assessment are considered further below. Activities with a potential adverse effect are considered in **Section 6.4.2**, and activities making a positive contribution to River Basin Management Plan objectives are discussed in **Section 6.4.3**.

Mitigation commitments

6.4.2 As part of the Scheme, the following mitigation measures have been committed to with respect to protection of the water environment:

- A Construction Environmental Management Plan (CEMP) will be prepared for the construction phase to ensure best practice is followed to minimise the risk of release of pollution or sediment (**Outline CEMP [Document Reference 7.1]** submitted with application, final CEMP to be secured post-planning).
- Surface water runoff from proposed equipment will be directed towards sustainable drainage systems (SuDS) features that will provide water quality treatment to mitigate the risk of water pollution and to ensure there is no increase in runoff rates from the Order Limits;
- A temporary construction drainage system will be developed to prevent silt-laden runoff from entering surface water drains, watercourses and ponds without treatment (e.g. earth bunds, silt fences, straw bales, or proprietary treatment) under any circumstances. Construction SuDS (such as temporary attenuation) may also be used during construction if necessary;
- Trenchless directional drilling methods to be used for laying cables beneath all Internal Drainage Board and Main River water bodies (as

shown in **Figure 2.4, document ref 6.4.2.4**), and will be supported by an HDD Method Statement (secured within the **Outline CEMP [Document Reference 7.1]**);

- Specific risk assessments, method statements and environmental management plans, based on location specific topography, ground and groundwater conditions, will be undertaken and agreed with consultees, stakeholders and regulators prior to commencement.
- A Flood Management Plan (secured within the **Outline CEMP [Document Reference 7.1]**) will be prepared for the construction and decommissioning phases to ensure the works are scheduled to avoid periods of increased flood risk;
- Any applicable consents or permits for works within or near watercourses will be applied for and adhered to;
- Existing watercourse crossings will be re-used where possible;
- Any new bridges or culverts will be designed to ensure flow capacity is maintained and access is retained to the watercourse for maintenance;
- The drainage strategy for the BESS area will include provision for the retention of any contaminated fire-fighting runoff in the event of a fire;
- A minimum 9m development-free easement has been allowed for either side of the Internal Drainage Board watercourses and Environment Agency Main Rivers, and a minimum 5m easement either side of the Ordinary Watercourses, as stipulated by the Internal Drainage Boards and Lead Local Flood Authorities (some access tracks fall within 5m of the Ordinary Watercourses but will not restrict access for maintenance of the watercourse);
- Cable crossing depths will take account of potential deepening of watercourse channels over the lifetime of the Scheme;
- A Soil Management Plan / Battery Safety Management Plan / Operational Environmental Management Plan will be prepared detailing how potentially harmful materials will be controlled and how emergency releases will be managed. **Outline Soil Management Plan [Document Reference 7.8], Outline Battery Safety Management Plan [Document Reference 7.4]** and **Outline Operational Environmental Management Plan [Document Reference 7.2]** submitted with the application, final versions to be secured post-planning;

- A ground investigation will be undertaken (with remedial works where necessary) and any unexpected contamination identified during construction will be remediated where appropriate with advice from a suitably qualified geo-environmental consultant;
- A Decommissioning Environmental Management Plan will be prepared prior to the decommissioning phase (**Outline Decommissioning Environmental Management Plan [Reference 7.3]** submitted with application) to ensure best practice is followed to minimise the risk of release of pollution or sediment; and
- An **Outline Ecological Construction Management Plan [Document Reference 7.5]** is submitted with the application (final version to be secured post-planning) to ensure measures to minimise impacts to sensitive habitats and species are followed during construction works.

Risk of deterioration

6.4.3 Activities not scoped out associated with the construction, operational and decommissioning stages of the Scheme have been assessed to determine whether they could cause a risk of deterioration of status of the identified water bodies. The assessment takes into account the mitigation measures that have been incorporated into the Scheme for the protection of the water environment as outlined above.

6.4.4 The assessment considers potential pathways between activities and receptors. Where there is no pathway for an activity to impact a receptor, there will be no impact on that receptor. As described within **Chapter 10 (Water Resources)** of the Environmental Statement **[Document Reference 6.2.10]**, a 2km zone of influence has generally been applied for effects on the water environment within the Environmental Impact Assessment. A similar approach has been taken to the assessment of effects on WFD water bodies, although each activity has been assessed on an individual basis.

6.4.5 “Deterioration of status” refers to at least one of the quality elements falling by one class. This is even if the change does not result in a fall in classification of the water body as a whole. This applies unless the water body is already in the lowest status class, in which case any deterioration is deterioration in status under the WFD.

Table 6.2: Assessment of impact of activities on WFD surface water bodies and associated sensitive habitats

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
Biodiversity crisis	Works to watercourses during construction, which, in the absence of mitigation, may lead to: Temporary loss / damage of riparian habitat or small amounts of permanent habitat loss. Temporary impediment to fish and mammal passage. Potential mortality of notable invertebrates. Potential disturbance or mortality of fish.	No	No	No	No	Works directly within the WFD watercourses are limited to the installation of outfalls for the discharge of surface water runoff, and upgrade / replacement of an existing bridge on the Hatfield Waste Drain. Measures to minimise the impact of these works will be detailed within an Ecological Construction Management Plan and Decommissioning Environmental Management Plan, and will include methods such as avoiding times at which species are particularly sensitive (such as fish spawning/migration), protected species licensing, silt and pollution control measures (discussed further	**Outline Ecological Construction Management Plan [Document Reference 7.5]** / **Outline Decommissioning Environmental Management Plan [Document Reference 7.3]** submitted with application, final versions	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
	Potential disturbance or mortality of riparian mammals.					below), pre-commencement surveys, or ecological watching briefs.	to be secured post-planning via DCO requirement	
Biodiversity crisis	Presence of construction/ decommissioning machinery and operational infrastructure that may introduce changes such as: Potential spillages, leakages and pollutants affecting protected sites of nature conservation. Potential changes to hydrology affecting protected sites of nature conservation.	No	No	No	No	A significant number of statutory designated sensitive sites have been identified within the Order Limits and within close proximity. Although potentially hydrologically linked to the watercourses within the Order Limits, any input of pollutant or sediment during the construction/decommissioning phase will be controlled via measures within the Ecological Construction Management Plan/Decommissioning Environmental Management Plan. Similarly, appropriate management plans will be in place during the	**Outline Ecological Construction Management Plan [Document Reference 7.5]** / **Outline Decommissioning Environmental Management Plan [Document Reference 7.3]** submitted	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						operational phase to control any accidental releases of pollutants. The magnitude of impact on water quality within the Order Limits or to the nearby sensitive sites is considered to be low. A full assessment of the effects to designated sites of nature conservation is provided in the ES and the Information to Inform Habitats Regulations Assessment (IIHRA).	with application, final versions to be secured post-planning via DCO requirement	
Physical modifications	Laying of cables beneath watercourses during construction phase	No	No	No	No	Any cables laid beneath the WFD watercourses will be via directional drilling. Cables will be laid to the depth specified by the corresponding authority to ensure no future impact on watercourse maintenance / function.	The DCO will include protective provisions for the benefit of the Environment Agency and	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						There will be no physical impact on the WFD waterbodies as a result of this activity.	Canal and River Trust to ensure protection of their assets. See **Other Consents and Licences [Document Reference 5.7]**	
Physical modifications	Creation of river crossings for access (construction phase) and the retention of the physical crossing structures during the operational phase. Installation of structures close to watercourse channels.	No	No	No	No	No new crossings are proposed over the Stainforth and Keadby Canal, the North Soak Drain or the River Torne. One existing crossing on the Hatfield Waste Drain is proposed for upgrade or replacement, the existing flow capacity will be maintained and the works will all appropriate Environment Agency consents will be obtained and adhered to.	The DCO will include protective provisions for the benefit of the Environment Agency for the protection of their assets.	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						A 9m development-free easement has been allowed either side of the WFD watercourses. The potential for lateral geomorphological changes over the 40 year lifetime of the Scheme is limited therefore the 9m easement is considered appropriate to avoid impacts on natural fluvial processes.	See **Other Consents and Licences [Document Reference 5.7]**	
Physical modifications	Disturbance of soils during construction / decommissioning resulting in release of silt to watercourses	No	No	No	No	Without mitigation, the identified WFD watercourses could be impacted due to migration of silt from construction / decommissioning works via on-site watercourses. Mitigation measures to minimise silt input will be committed to via the Construction Environmental Management Plan (CEMP) and Decommissioning Plan. There will be no impact on the hydromorphology of WFD	**Outline Construction Environmental Management Plan [Document Reference 7.1]** / **Outline Decommissioning Environmental Management**	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						watercourses as a result of this activity.	**Plan [Document Reference 7.3]** submitted with application, final versions to be secured post-planning via DCO requirement	
Invasive non-native species	Movement of equipment and vehicles during construction and decommissioning could result in spread of non-native species, particularly during works close to watercourses (e.g. crossing creation)	No	No	No	No	The records search identified a number of plant species listed within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) within the search area including Nuttall's waterweed, curly waterweed, water fern, giant hogweed and Japanese knotweed. In addition, during the extended habitat survey water fern was identified in the South Soak Drain which is	**Outline Ecological Construction Management Plan [Document Reference 7.5]** / **Outline Decommissioning Environmental**	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						located on the Order Limits boundary. Records of invasive mammal species included American mink. Measures to prevent the spread of invasive non-native species during construction and decommissioning will be specified in the Ecological Construction Management Plan and Decommissioning Environmental Management Plan respectively. Throughout operation, monitoring of invasive plant species will be undertaken as specified in the Landscape Ecological Management Plan (LEMP), and corrective actions taken if invasive plants are found to spread.	**Management Plan [Document Reference 7.3]** submitted with application, final versions to be secured post-planning via DCO requirement and **Outline LEMP [Document Reference 7.6].**	

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
Changes to water levels and flows	Water usage during construction and operational phases	No	No	No	No	Water demand during the construction and operational phases will be minimal. Water will be brought onto site from external sources; no abstractions or new connections to the mains water supply will be required. There will therefore be no impact on the WFD watercourses. The Applicant will explore the possibility of rainwater harvesting for greywater use in order to minimise water usage.	N/A	No
Chemicals in the water environment	Storage and use of fuels, oils and chemicals during construction and decommissioning works	No	No	No	No	Without mitigation, the WFD watercourses could be impacted due to migration of pollutants from construction works via on-site watercourses. Appropriate best practice measures will be stipulated within the CEMP / Decommissioning Environmental Management Plan to ensure	**Outline Construction Environmental Management Plan [Document Reference 7.1]** / **Outline**	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						construction compounds are located away from watercourses (with the applicable easements observed i.e. 9m for Main Rivers and Internal Drainage Board watercourses and 5m for Ordinary Watercourses) and spills / leaks are minimised with a plan in place for dealing with accidental releases. The residual risk associated with release of pollutants during construction and decommissioning is considered to be low.	**Decommissioning Environmental Management Plan [Document Reference 7.3]** submitted with application, final versions to be secured post-planning via DCO requirement	
Chemicals in the water environment	HDD operations during construction works (drilling fluid breakout)	No	No	No	No	Without mitigation, the WFD watercourses could be impacted due to migration of pollutants from	**Outline Construction Environmental Management**	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						construction works via on-site watercourses. An HDD Method Statement will form part of the final CEMP (submitted post-consent) and will specify measures to minimise any risk of release of fluids. The residual risk is considered to be low.	**Plan [Document Reference 7.1]** submitted with application, final version to be secured post-planning via DCO requirement and will include HDD Method Statement.	
Chemicals in the water environment	Release of contaminated fire water in the event of fire during operation	No	No	No	No	Without mitigation, the WFD watercourses could be impacted due to migration of pollutants in the event of a fire via on-site watercourses. The drainage strategy for the BESS area will include provision for the	Drainage strategy detailed within **Flood Risk Assessment [Document**	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						retention of any contaminated fire-fighting runoff in the event of a fire. Attenuation features will be suitably sized to contain a worse-case event (fire water combined with rainfall runoff). The Battery Safety Management Plan and Operational Environmental Management Plan will also contain measures for controlling the risk of release of contaminants to the water environment.	**Reference 6.3.10.1]** **Outline Battery Safety Management Plan [Document Reference 7.4]** and **Outline Operational Environmental Management Plan [Document Reference 7.2]** submitted with application,	

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
							final versions to be secured post-planning via DCO requirement	
Chemicals in the water environment	Accidental release of chemicals or release of contaminated surface water runoff during operational phase	No	No	No	No	Without mitigation, the WFD watercourses could be impacted due to migration of pollutants via on-site watercourses. The risk is relatively low due to the nature of the proposed use. To mitigate the risk, a Soil Management Plan / Battery Safety Management Plan / Operational Environmental Management Plan will be prepared detailing how potentially harmful materials will be controlled and how emergency releases will be managed.	**Outline Soil Management Plan [Document Reference 7.8]**, **Outline Battery Safety Management Plan [Document Reference 7.4]** and **Outline Operational Environment**	No

Key challenge	Activity	Deterioration of status				Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Stainforth and Keadby Canal	North Soak Drain	Hatfield Waste Drain	River Torne			
						The drainage system will include appropriate stages of treatment to ensure discharged runoff does not impact the quality of the receiving watercourse.	**al Management Plan [Document Reference 7.2]** submitted with application, final versions to be secured post-planning via DCO requirement Drainage strategy detailed within **Flood Risk Assessment [Document Reference 6.3.10.1]**	

Table 6.3: Assessment of impact of activities on WFD groundwater bodies

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
Changes to water levels and flows	Abstraction of water and installation of subsurface structures	No	No	No	No groundwater abstractions are proposed during the construction / decommissioning or operational phases. The Applicant will explore the possibility of rainwater harvesting for greywater use in order to minimise water usage. Subsurface structures to be installed as part of the Scheme are not considered to obstruct subsurface flows or reduce the quantity of groundwater within underlying aquifers due to their typical size and length.	N/A	No

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
Chemicals in the water environment	Storage and use of fuels, oils and chemicals during construction and decommissioning works	No	No	No	Without mitigation, underlying groundwater quality could be impacted due to downward migration of pollutants from construction works into the underlying WFD groundwater bodies. Appropriate best practices measures will be stipulated within the CEMP / Decommissioning Plan to ensure construction compounds are located away from watercourses (with the applicable easements observed i.e. 9m for Main Rivers and Internal Drainage Board watercourses and 5m for Ordinary Watercourses) and spills / leaks are minimised with a plan in place	**Outline Construction Environmental Management Plan [Document Reference 7.1]** / **Outline Decommissioning Environmental Management Plan [Document Reference**	No

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
					for dealing with accidental releases.	**7.3]** submitted with application, final versions to be secured post-planning via DCO requirement	
Chemicals in the water environment	HDD operations during construction works (drilling fluid breakout)	No	No	No	Without mitigation, underlying groundwater quality could be impacted due to release of drilling fluid and migration through shallow soils into the underlying WFD water bodies.	**Outline Construction Environmental Management Plan**	No

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
					An HDD Method Statement will form part of the final CEMP (to be submitted post-consent) and will specify measures to minimise any risk of release of fluids.	**[Document Reference 7.1]** submitted with application, final version to be secured post-planning via DCO requirement and will include an HDD Method Statement	

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
Chemicals in the water environment	Release of contaminated fire water in the event of fire during operation	No	No	No	Without mitigation, contaminated fire water could infiltrate into the underlying WFD groundwater bodies. The drainage strategy for the BESS area described within the **Flood Risk Assessment [Document Reference 6.3.10.1]** includes provision for the retention of any contaminated fire-fighting runoff in the event of a fire. The drainage system will be sealed / lined to prevent infiltration. No infiltration SuDS methods are proposed. The Battery Safety Management Plan and Operational Environmental Management Plan will also contain measures for	**Outline Battery Safety Management Plan [Document Reference 7.4]** and **Outline Operational Environmental Management Plan [Document Reference 7.2]** submitted with	No

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
					controlling the risk of release of contaminants to the water environment.	application, final versions to be secured post-planning via DCO requirement Drainage strategy detailed within **Flood Risk Assessment [Document Reference 6.3.10.1]**	

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
Chemicals in the water environment	Accidental release of chemicals during operational phase	No	No	No	The nature of the Scheme is generally low risk with respect to ground / groundwater pollution. However, without mitigation, there is the minor potential for accidental releases of pollutants to impact the underlying WFD groundwater bodies. To mitigate this, a Soil Management Plan / Battery Safety Management Plan / Operational Environmental Management Plan will be prepared detailing how potentially harmful materials will be controlled and how emergency releases will be managed.	**Outline Soil Management Plan [Document Reference 7.8]**, **Outline Battery Safety Management Plan [Document Reference 7.4]** and **Outline Operational Environmental Management Plan**	No

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
						[Document Reference 7.2] submitted with application, final versions to be secured post-planning via DCO requirement	
Chemicals in the water environment	Installation of below ground structures e.g underground cables, solar panel supports, directional	No	No	No	As noted within the **Phase 1 Ground Conditions Desk Study [Document Reference 6.3.9.1 – 6.9.3.2]** potential sources of contamination beneath or in close	Phase II Ground Investigation secured via	No

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
	drilling, installation of boreholes				proximity to the Order Limits include small areas of backfilling of historical pits, recent agricultural activities, former airfield activities and bomb store, recent recorded pollution incidents and off-site landfills. The Environment Agency has also noted records of a Contaminated Land Special Site just outside the south west Order Limits, in and adjacent to the Yorkshire Water public water supply compound, with the designation relating to groundwater contamination from a former petrol station. There is the potential for excavations to encounter historical ground contamination	DCO requirement	

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
					and enable the mobilisation of those contaminants. To mitigate this, a Phase II Ground Investigation will be undertaken prior to works commencing (scope and location to be agreed with regulators), targeting areas such as the location of proposed directional drilling. Any appropriate remedial works undertaken prior to construction. Any unexpected contamination encountered during ground works will be assessed and remediated where appropriate under the advice of a suitably qualified geoenvironmental consultant. Should dewatering be required, this will be undertaken in		

Key challenge	Activity	Deterioration of status			Discussion taking into account mitigation committed to by applicant	How mitigation secured	Further assessment required?
		Idle Torne – PT Sandstone Water Body	Idle Torne - Secondary Mudrocks Water Body	Lower Trent Erewash (Secondary Combined) Water Body			
					accordance with best practice, with testing undertaken of any water suspected to be contaminated (e.g. unusual colour, smell or oily sheen) prior to discharge. Any consents required for discharge of water will be obtained and any associated requirements adhered to.		

6.4.6 Overall, the assessment within **Table 6.2** shows that taking into account the proposed mitigation, no aspects of the Scheme have the potential to cause a deterioration in status of WFD surface water bodies or groundwater bodies or prevent River Basin Management Plan objectives being met.

6.4.7 No further assessment is considered necessary in relation to the effects on WFD water bodies.

Positive contributions to River Basin Management Plan objectives

6.4.8 In addition to ensuring no deterioration of status of water bodies, the Scheme would have a positive effect on the 'key challenges for the water environment' as identified within the River Basin Management Plans. The cessation of agricultural activities would have an overall benefit to the status of WFD water bodies, and a positive improvement in biodiversity will be achieved through the proposed creation of species-rich grassland in place of cultivated land, which is anticipated to result in an enhancement for aquatic invertebrates, macrophytes and phytobenthos through the creation of this more diverse habitat type and the reduction of nutrient inputs and pesticides. The riparian zones of all watercourses will be avoided and managed as detailed in the **Outline Landscape Ecological Management Plan (LEMP) [Document Reference 7.6]** to promote biodiversity where possible.

6.4.9 Additionally, the Scheme as a whole will help combat climate change by helping reduce reliance on fossil fuels which are major contributors to climate change. These enhancements are intrinsic within the Scheme and therefore do not require an external mechanism to secure their implementation.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 In line with Planning Inspectorate and Environment Agency guidance, this assessment has identified WFD water bodies that could be hydrologically linked to the Order Limits. For each relevant water body, baseline characteristics have been identified together with WFD targets, and pressures facing those water bodies have been recorded.

7.2 Activities associated with all stages of the Scheme have been considered, with any activities considered to have the potential to impact 'key challenges of the water environment' taken forward for more detailed assessment. This included both activities with a potential adverse effect and those that may be beneficial to River Basin Management Plan objectives.

7.3 Activities were assessed to determine whether they could result in a deterioration of status i.e. at least one of the quality elements falling by one class. This assessment took into account the zone of influence of activities, pathways between activities and receptors, mitigation that has been committed to by the Applicant and the characteristics of the watercourses under consideration.

7.4 Overall, the assessment concluded that none of the activities associated with the Scheme have the potential to cause a deterioration in status of WFD surface water bodies or groundwater bodies. The Scheme is not considered to jeopardise the attainment of 'good' overall status of WFD water bodies. No further assessment is required in relation to the WFD.

7.5 Notably, the Scheme will have a positive effect on the 'key challenges for the water environment' as identified within the River Basin Management Plans. The cessation of agricultural activities will have an overall benefit to the status of WFD water bodies, and a positive improvement in biodiversity will be achieved through the proposed species-rich grassland creation and watercourse avoidance buffers. Additionally, the scheme will help combat climate change by helping reduce reliance on fossil fuels.

7.6 As the Scheme is not considered to cause the deterioration of the status of a body of water, a derogation under Article 4.7 is not required.

APPENDIX A
RSK GROUP SERVICE CONSTRAINTS

1. This report and the drainage design carried out in connection with the report (together the "Services") were compiled and carried out by RSK LDE Ltd (RSK) for RWE Renewables UK Solar and Storage Limited (the "client") in accordance with the terms of a contract between RSK and the "client" dated June 2025. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable civil engineer at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services, which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The phase II or intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are

not drawn to scale but are centred over the appropriate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
ENVIRONMENT AGENCY CONSULATION RESPONSE

FAO: Alison Cage
RSK LDE Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Our ref: AN/2025/136893/01-L01
Your ref: ENVPAC/1/LNA/00238

Date: 13 August 2025

Dear Alison Cage

WFD Assessment review - Tween Bridge Solar Farm: solar farm capable of generating over 50MW of alternating current (AC) electricity with a co-located battery energy storage system
10km to the northeast of Doncaster and 14km to the west of Scunthorpe

Thank you for submitting your Water Framework Directive (WFD) Assessment for our review in connection with the above proposed development.

We are providing our planning advice to you under the agreement number ENVPAC/1/LNA/00238 as follows.

We have reviewed the WFD Assessment dated 17 July 2025, ref: '681850-R1(01)-WFD', prepared by RSK LDE Ltd.

We are satisfied that your approach to the scoping in/out of waterbodies and activities is appropriate.

We agree with the plan to have a 9m easement either side of the WFD watercourses. The rivers in the area are not significantly erosive and therefore an easement of 9m should mitigate any channel migration over the lifetime of the development and mitigate any need for further physical modification by erosion protection.

We note that the WFD Assessment outlines that Horizontal Directional Drilling (HDD) could impact the WFD watercourses. The Assessment states that an HDD Method Statement will form part of the final Construction Environmental Management Plan. We support this proposal to ensure that all appropriate mitigation measures can be secured as part of the DCO.

Therefore, we are satisfied that the WFD Assessment is adequate and that the potential impacts on WFD should be minimal if silt management guidance and best practice within Construction Environmental Management Plans (to be agreed under the DCO)

are followed.

Please note this response is based on the information you have made available and our best available datasets at the time of this response. It is based on current national planning policy, associated legislation and environmental data/information. If any of these elements change, we may need to reconsider our position.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me on the number below.

Yours sincerely

Danielle Maclean-Spencer
Sustainable Places Planning Advisor

Direct dial: [redacted]
Direct e-mail: [redacted]@environment-agency.gov.uk
Team e-mail: LNplanning@environment-agency.gov.uk

APPENDIX C
ORDER LIMITS

Legend

DCO Order Limits

APFP regulations 5(2)(a)
Map Contributions:
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LDE
CIVILS | STRUCTURES | HYDROLOGY
an RSK company

Title:

DCO Order Limits

Drawn	Checked	Approved	Date
LS	AC	CW	21/08/25

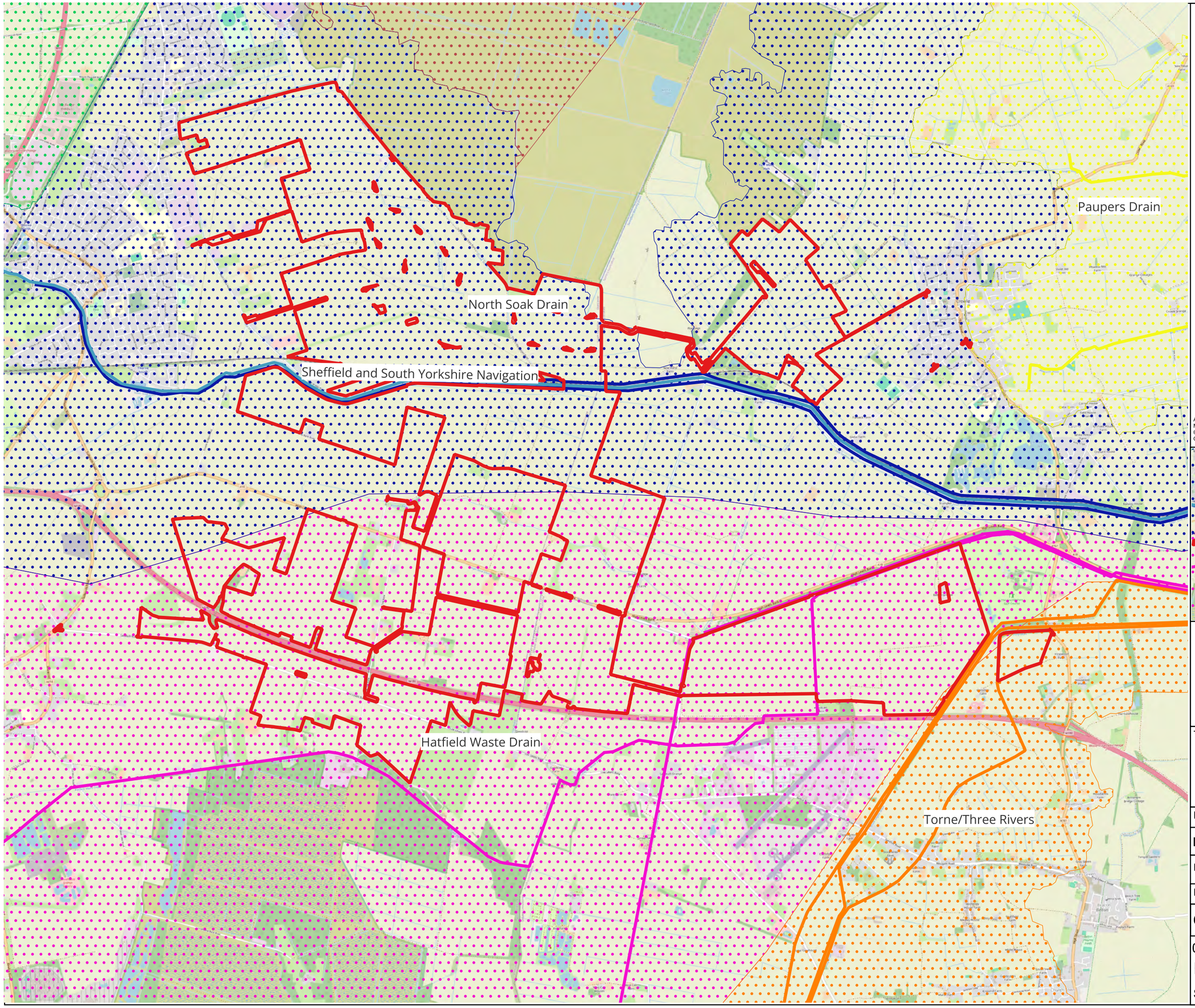
Project: Tween Bridge Solar Farm

Project No.	Originator	Number	Revision	Orig Size
681850	LDE-GIS	01	01	A3

0 1,000 2,000 m

Scale: 1:50,000 @A3

APPENDIX D
RELEVANT WFD WATER BODIES



Legend

- Don from Mill Dyke to River Ouse Water Body
- Don from Mill Dyke to River Ouse Catchment
- Earnshaws Warping Drain Water Body
- Earnshaws Warping Drain Catchment
- Paupers Drain Water Body
- Paupers Drain Catchment
- Sheffield and South Yorkshire Navigation Water Body
- Torne/Three Rivers from Mother Drain to Trent Water Body
- Torne/Three Rivers from Mother Drain to Trent Catchment
- North Soak Drain Water Body
- North Soak Drain Catchment
- Hatfield Waste Drain Water Body
- Hatfield Waste Drain Catchment
- DCO Order Limits

APFP regulations 5(2)(a)
Map Contributions:
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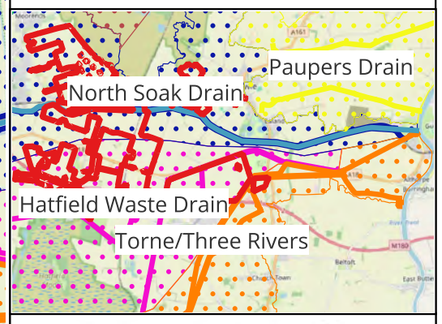

LDE
CIVILS | STRUCTURES | HYDROLOGY
an RSK company

Title:
WFD Surface Water Bodies and Catchments

Drawn	Checked	Approved	Date
LS	AC	CW	21/08/25

Project: Tween Bridge Solar Farm

Project No.	Originator	Number	Revision	Orig Size
681850	LDE-GIS	01	01	A3

0 700 1,400 m

Scale: 1:50,000 @A3

Legend

- Aire & Don Sherwood Sandstone
- Idle Torne - PT Sandstone Nottinghamshire & Doncaster
- Idle Torne - Secondary Mudrocks
- Lower Trent Erewash
- DCO Order Limits

APFP regulations 5(2)(a)
Map Contributions:
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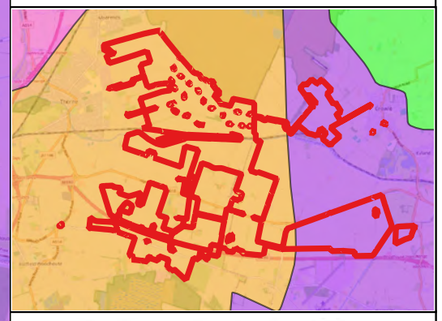
OpenStreetMap® under the Open Data Commons Open Database License



LDE
CIVILS | STRUCTURES | HYDROLOGY
an RSK company

Title:
WFD Groundwater Bodies

Drawn	Checked	Approved	Date
LS	AC	CW	21/08/25

Project: Tween Bridge Solar Farm

Project No.	Originator	Number	Revision	Orig Size
681850	LDE-GIS	01	01	A3

0 700 1,400 m

Scale: 1:50,000 @A3

APPENDIX E
PROPOSED LAYOUT

N

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11a A11b A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 A22 A23

B1 B2 B3 B4 B5 B6 B7 B8

C1 C2 C3 C4 C5 C6 C7 C8 C9

D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17

E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18 E19 E20

M1(A) M2(A) M3(A) M4(C) M5(C) M7(C) M8(C) M8(C) M11(D) M12(D) M13(D) M13(D) M15(E)

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
- 132kV Substation
- BESS
- Permissive Path
- Fencing
- Indicative Areas for Mitigation, Enhancement and/or Retained Agricultural Land
- Solar PV Modules
- A1 Field Reference

Notes
1. The drawing is for illustrative purposes only
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3. The indicative layout demonstrates one way that the Scheme could be undertaken within the parameters of the DCO, consent is not being sought for this layout

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 195 390 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936		© Crown copyright and database rights 2025. Ordnance Survey AC0000809122
Scale: 1:11,000	Paper Size: A0	Sheet: 1 of 1

RWE

Document Reference: 6.4.2.2			Revision: 1
PINS Number EN010148		Drawing Status: DCO Application	
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Path: C:\Users\317424\RWE\RWE - UK Subsidy Fund 12. GIS\Projects\06 JBM Solar Projects\Tweenbridge\343 Tweenbridge - Overview Plans\343 Tweenbridge_Overview Plans_MainTemplate.aprx

N

A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11b

B

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
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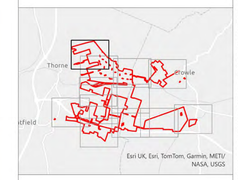

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936		© Crown copyright and database rights 2025. Ordnance Survey AC0000809122
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Document Reference: 6.4.2.2			Revision: 1
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Drawn: NAM	Checked: EH	Approved: AD	Date: 20/08/2025

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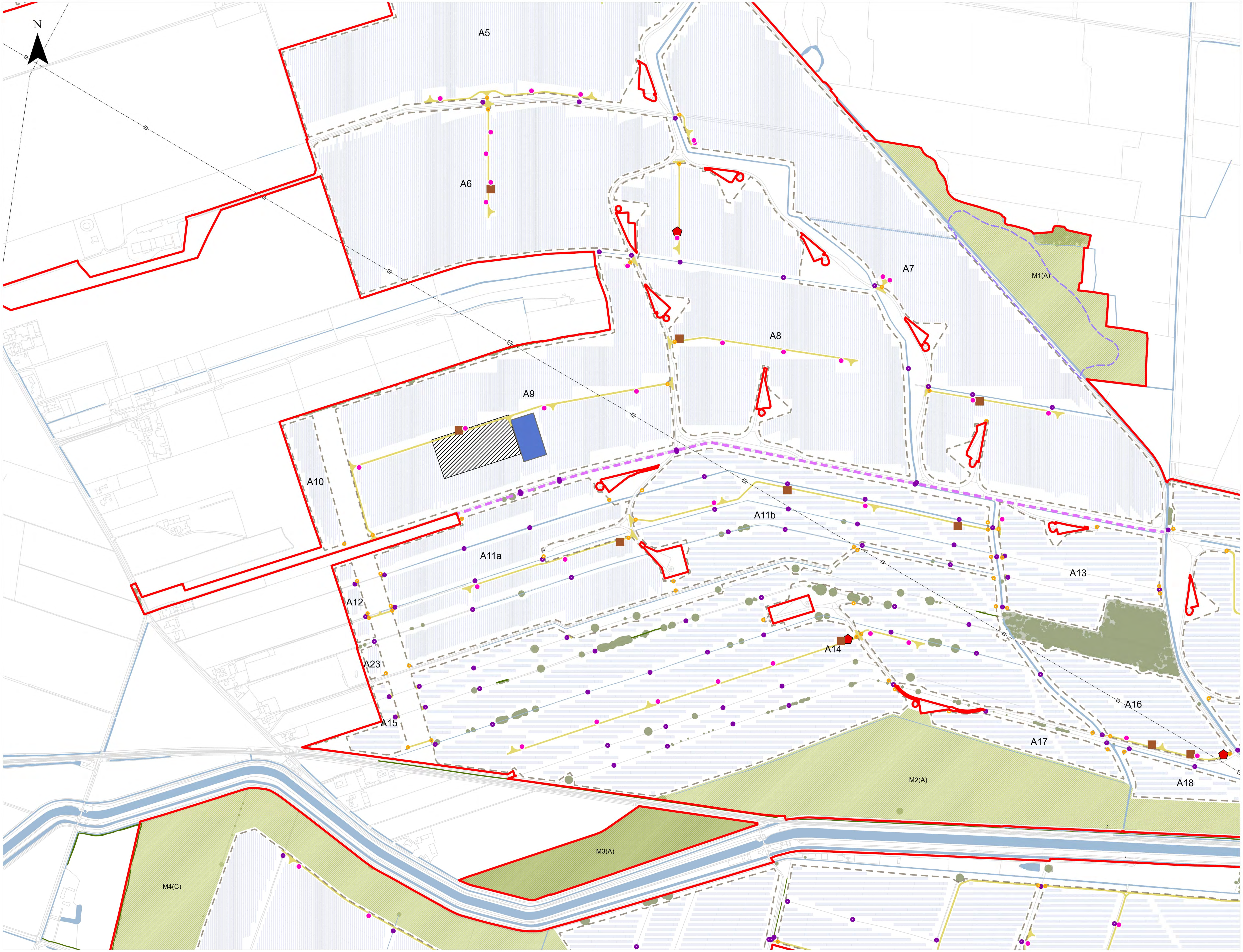

LEGEND

Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
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- Indicative Areas for Mitigation, Enhancement and/ or Retained Agricultural Land
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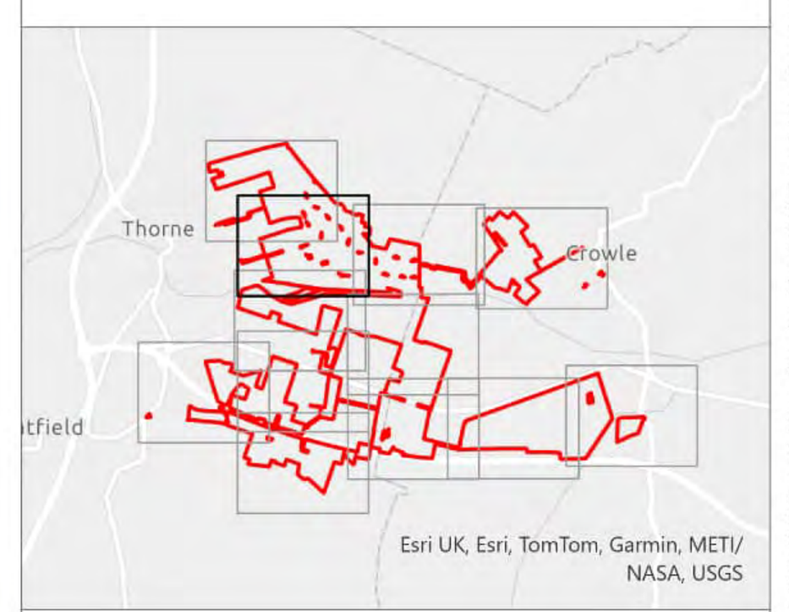

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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Document Reference: 6.4.2.2	Revision: 1
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N

M1(A)

A19

A13

A20

A16

A22

A17

A18

A21

12(A)

C1

M5(C)

B1

B7

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
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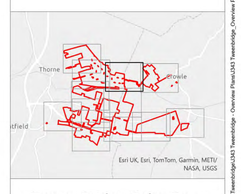

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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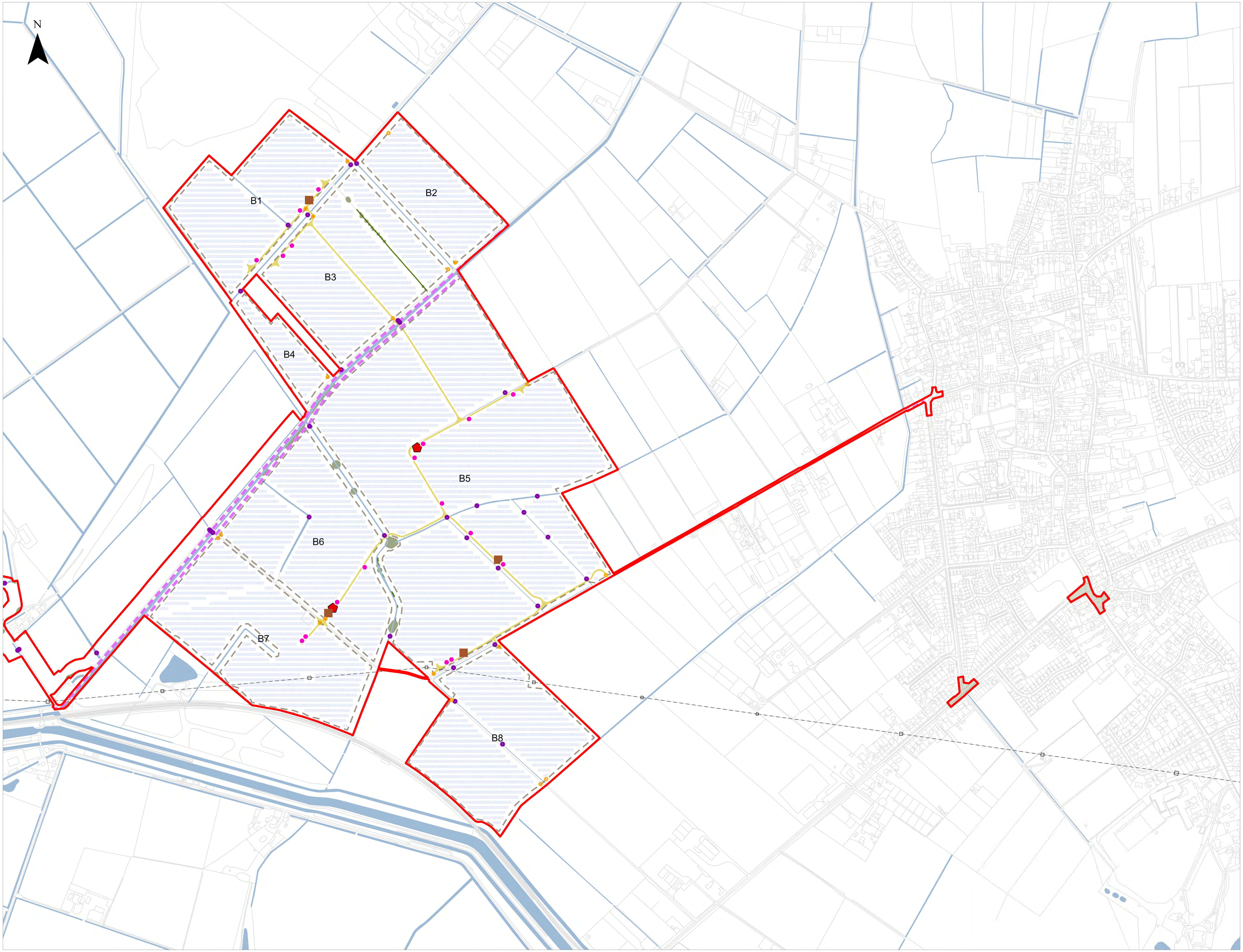

LEGEND

Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
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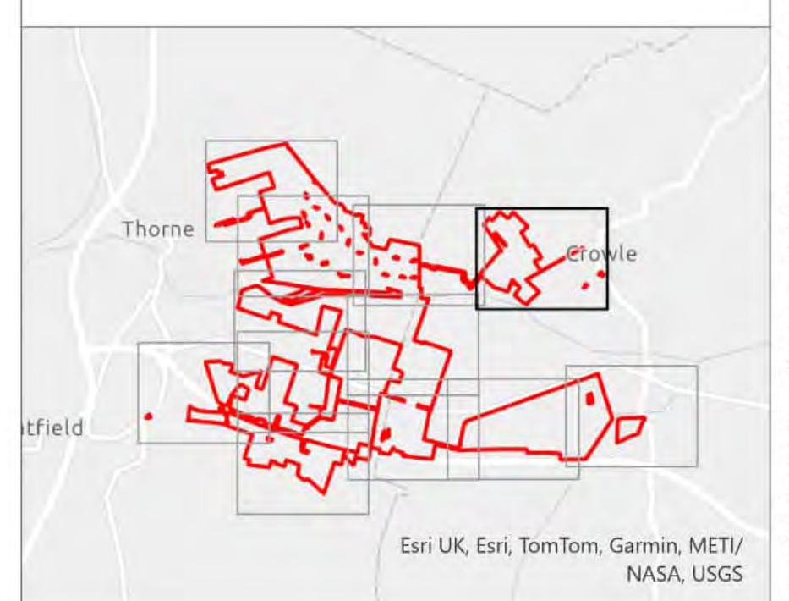

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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PINS Number EN010148	Drawing Status: DCO Application

Drawn: NAM	Checked: EH	Approved: AD	Date: 20/08/2025

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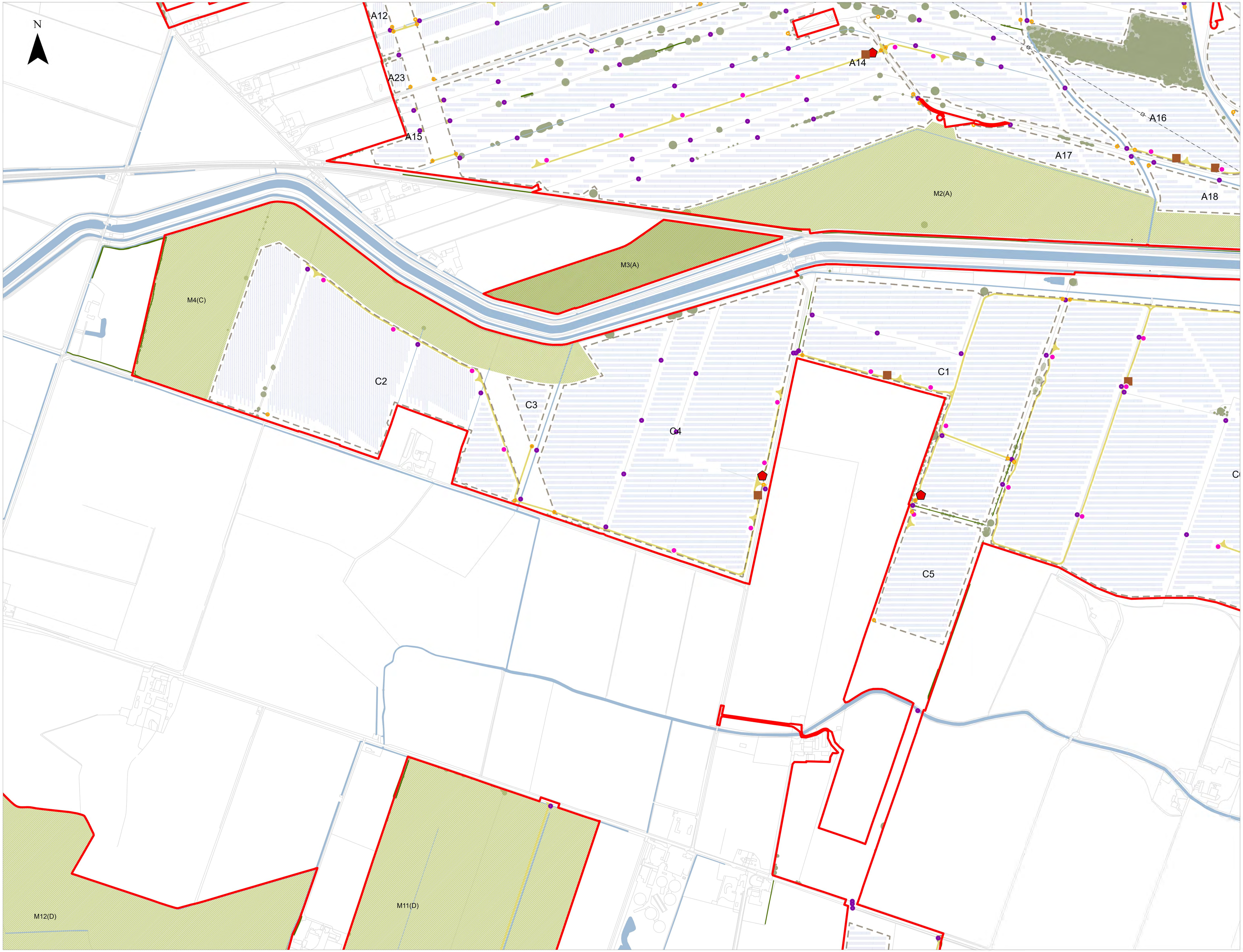

LEGEND

Order Limits

Existing Features
- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme
- Access Points
- Crossing Points
- Inverters
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- Spares Containers
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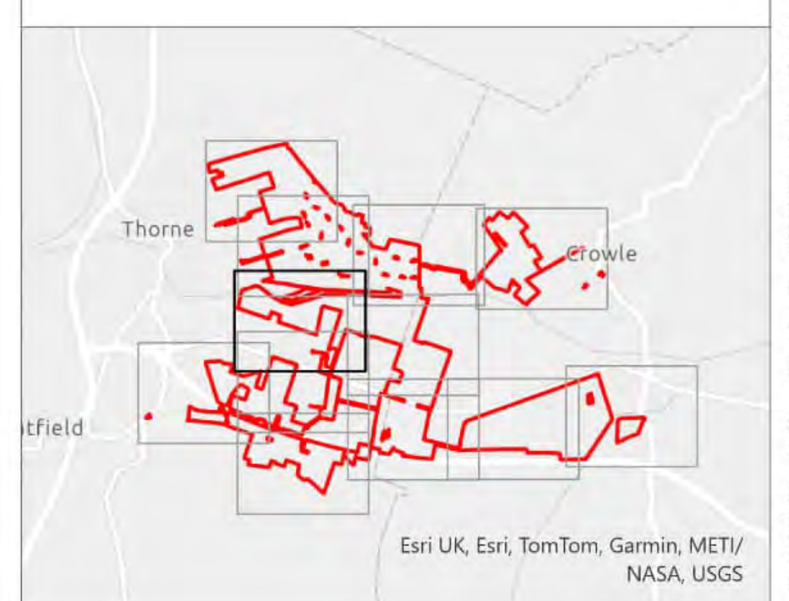

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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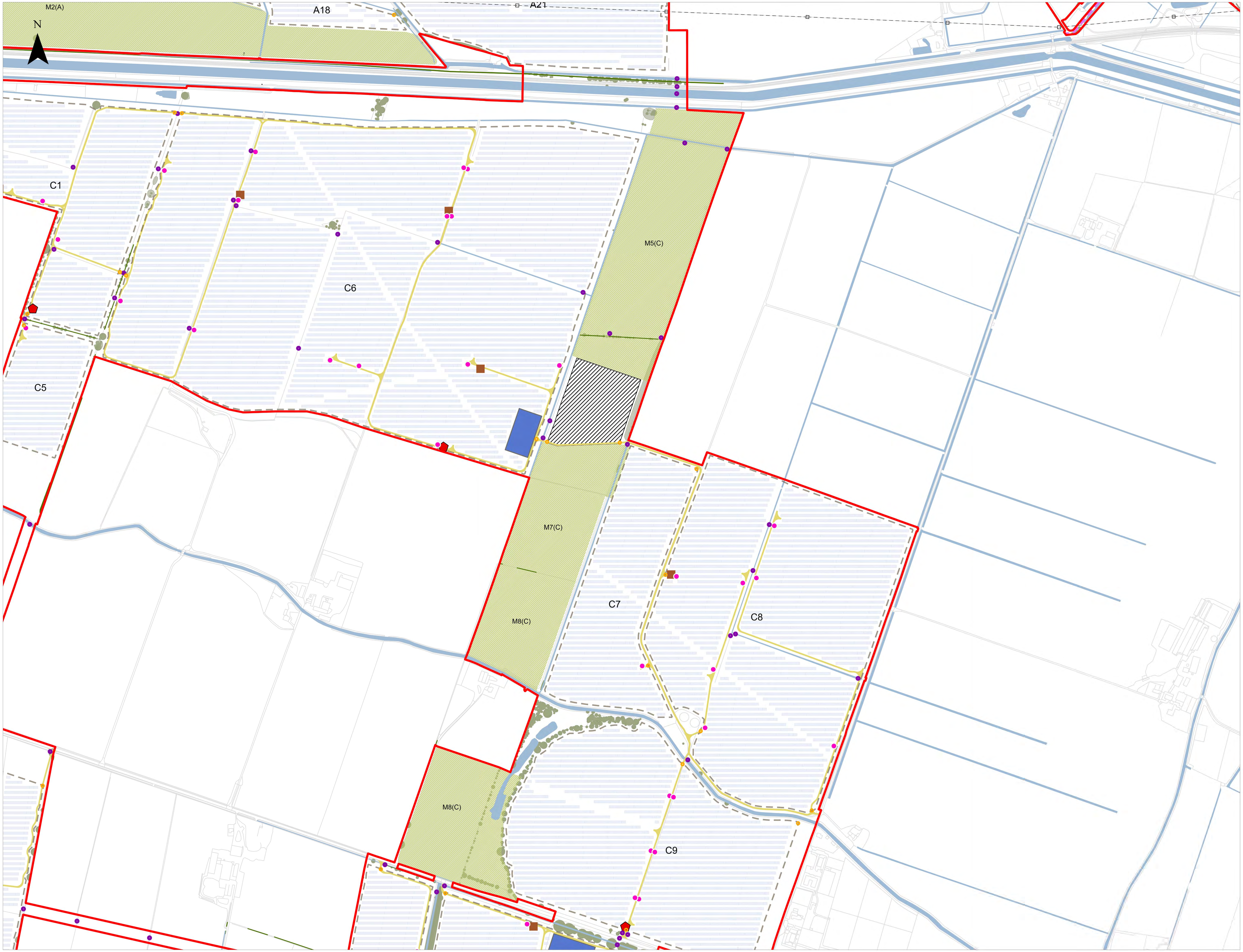

LEGEND

Order Limits

Existing Features
- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme
- Access Points
- Crossing Points
- Inverters
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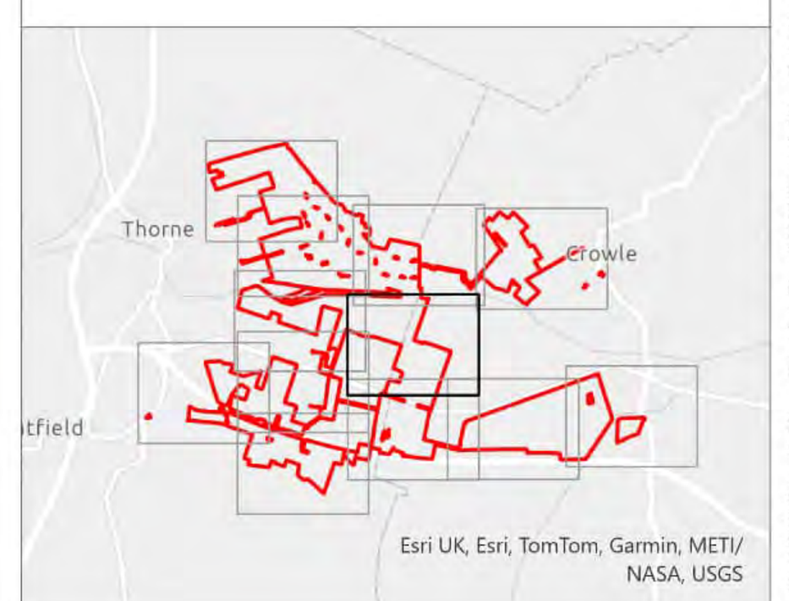

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	© Crown copyright and database rights 2025. Ordnance Survey AC0000808122

Scale: 1:3,000	Paper Size: A0	Sheet: 6 of 12

RWE

Document Reference: 6.4.2.2	Revision: 1
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Drawn: NAM	Checked: EH	Approved: AD	Date: 20/08/2025

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N

M12(D)

M11(D)

D2

D6

D3

M13

D10

D7

D11

D12

D15

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
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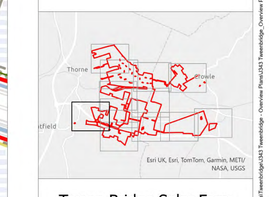

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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PINS Number: EN010148 | Drawing Status: DCO Application

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N

C5

M12(D)

M11(D)

M13(D)

M13(D)

M13(D)

D6

D3

D11

D12

D5

D4

D8

D9

D13

E19

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
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- Inverters
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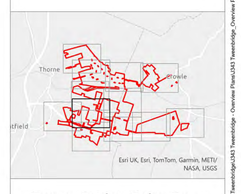

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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N

D6
D3
M13(D)
D5
D8
D9
D11
D12
D13
D14
D15
D16
D17
E19

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
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- Trees
- Hedgerows
- Waterbodies and Watercourses

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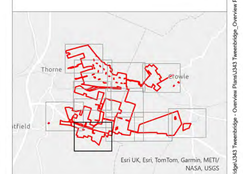

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 100 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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N

M8(C)

C9

E2

E1

E5

E19

E20

E3

E7

D17

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
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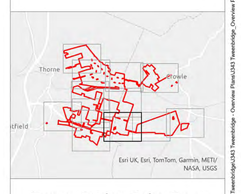

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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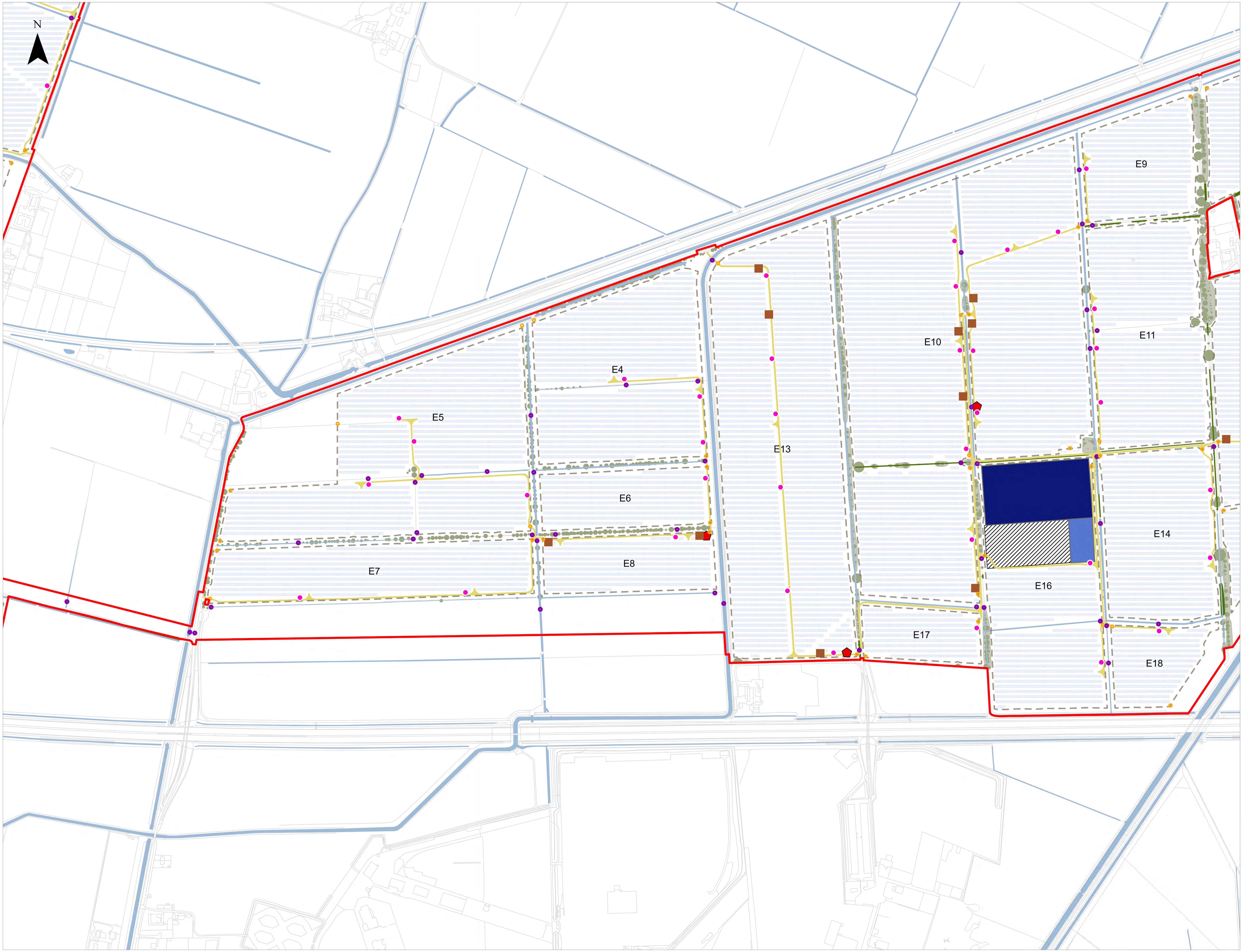

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
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- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

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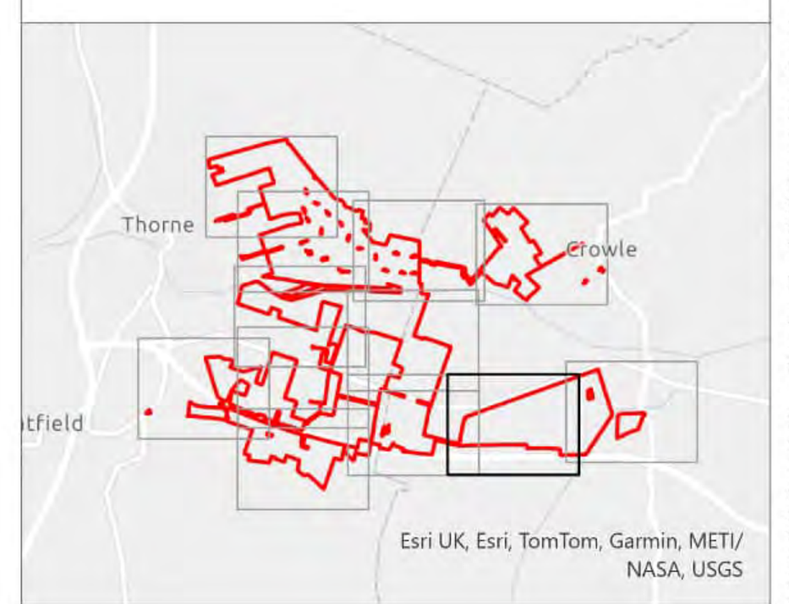

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

N W E S — 0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	© Crown copyright and database rights 2025. Ordnance Survey AC0000808122

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N

E9

E11

E12

10

E14

E15

E16

E18

M15(E)

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
- 132kV Substation
- BESS
- Permissive Path
- Fencing
- Indicative Areas for Mitigation, Enhancement and/ or Retained Agricultural Land
- Solar PV Modules
- A1 Field Reference

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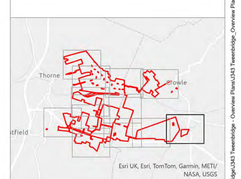

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	© Crown copyright and database rights 2025. Ordnance Survey AC0000809122
Scale: 1:3,000	Paper Size: A0
Sheet: 12 of 12	

RWE

Document Reference: 6.4.2.2	Revision: 1
PINS Number: EN010148	Drawing Status: DCO Application
Drawn: NAM / Checked: EH / Approved: AD	Date: 20/08/2025

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A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11a A11b A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 A22 A23

B1 B2 B3 B4 B5 B6 B7 B8

C1 C2 C3 C4 C5 C6 C7 C8 C9

D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17

E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18 E19 E20

M1(A) M2(A) M3(A) M4(C) M5(C) M7(C) M8(C) M8(C) M11(D) M12(D) M13(D) M13(D) M15(E)

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
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- Fencing
- Indicative Areas for Mitigation, Enhancement and/or Retained Agricultural Land
- Fixed Solar PV Modules
- A1 Field Reference

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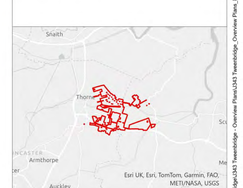

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 195 390 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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Scale: 1:11,000 | Paper Size: A0 | Sheet: 1 of 1

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Document Reference: 6.4.2.2 | Revision: 1

PINS Number EN010148 | Drawing Status: DCO Application

Drawn: NAM | Checked: EH | Approved: AD | Date: 20/08/2025

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N

A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11b

B

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
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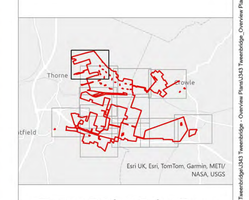

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936		© Crown copyright and database rights 2025. Ordnance Survey AC0000808122
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Document Reference: 6.4.2.2			Revision: 1
PINS Number EN010148		Drawing Status: DCO Application	
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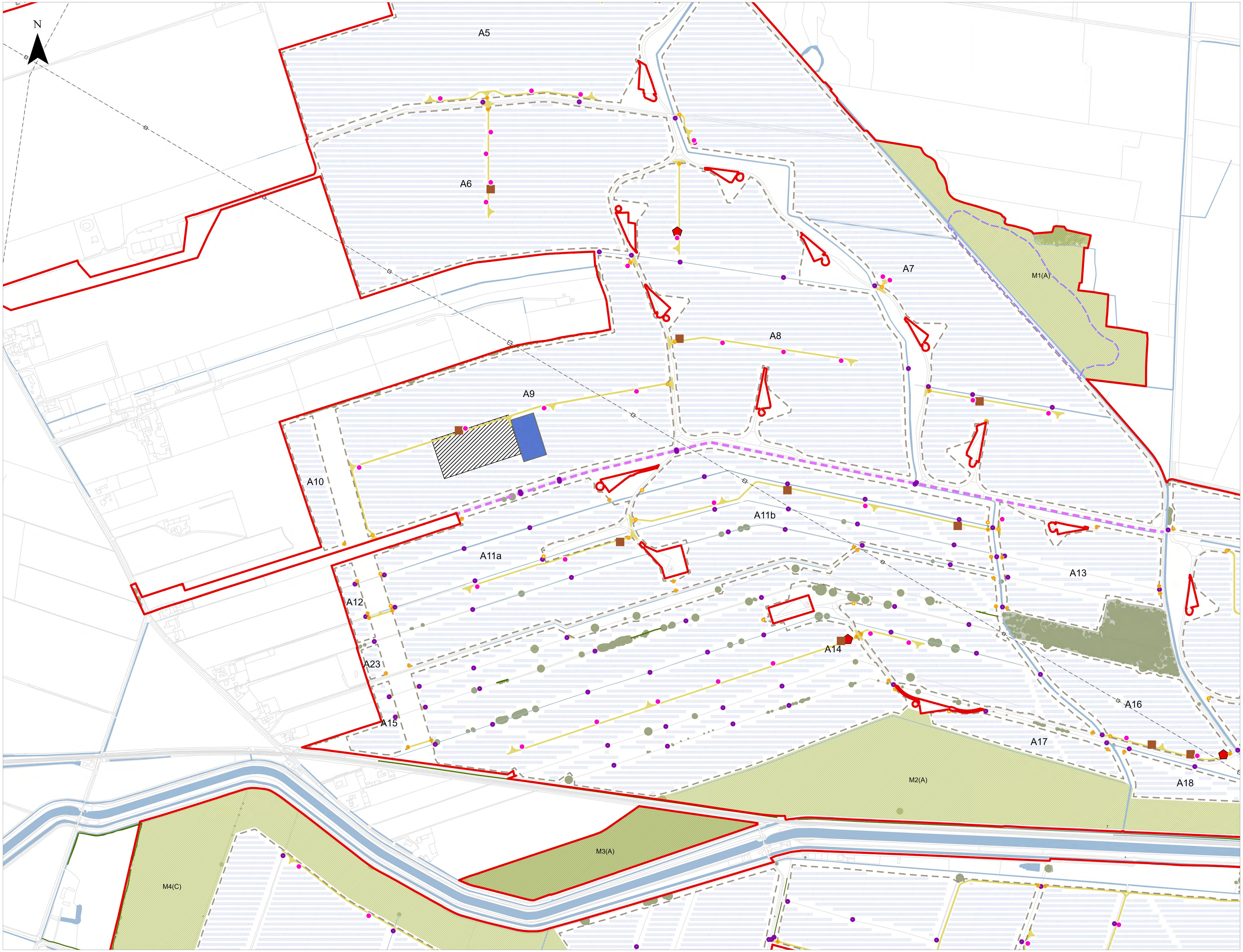

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
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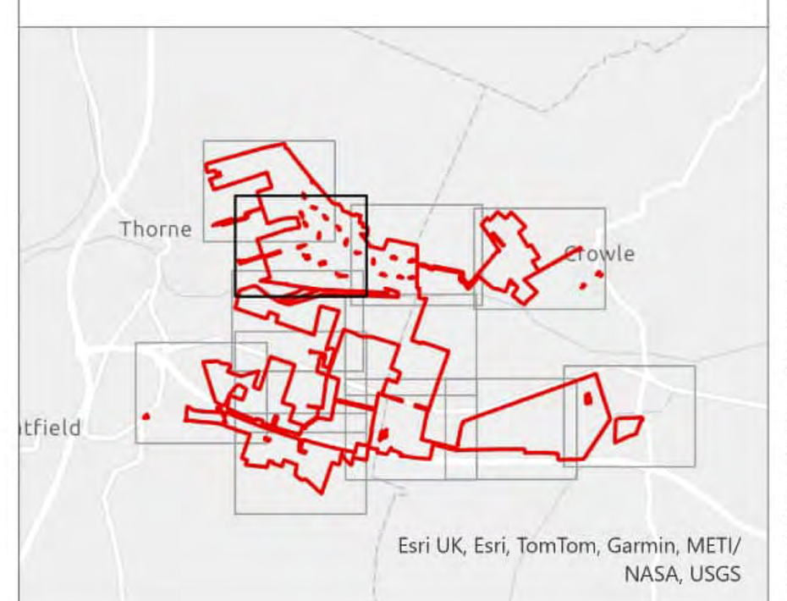

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	© Crown copyright and database rights 2025. Ordnance Survey AC0000808122

Scale: 1:3,000	Paper Size: A0	Sheet: 2 of 12

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Drawn: NAM	Checked: EH	Approved: AD	Date: 20/08/2025

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N

M1(A)

A19

A13

A20

A16

A22

A17

A18

A21

12(A)

C1

M5(C)

B1

B7

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
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- 400kV Substation
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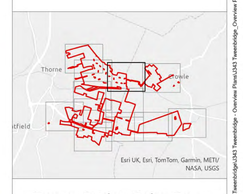

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936		© Crown copyright and database rights 2025. Ordnance Survey AC0000808122
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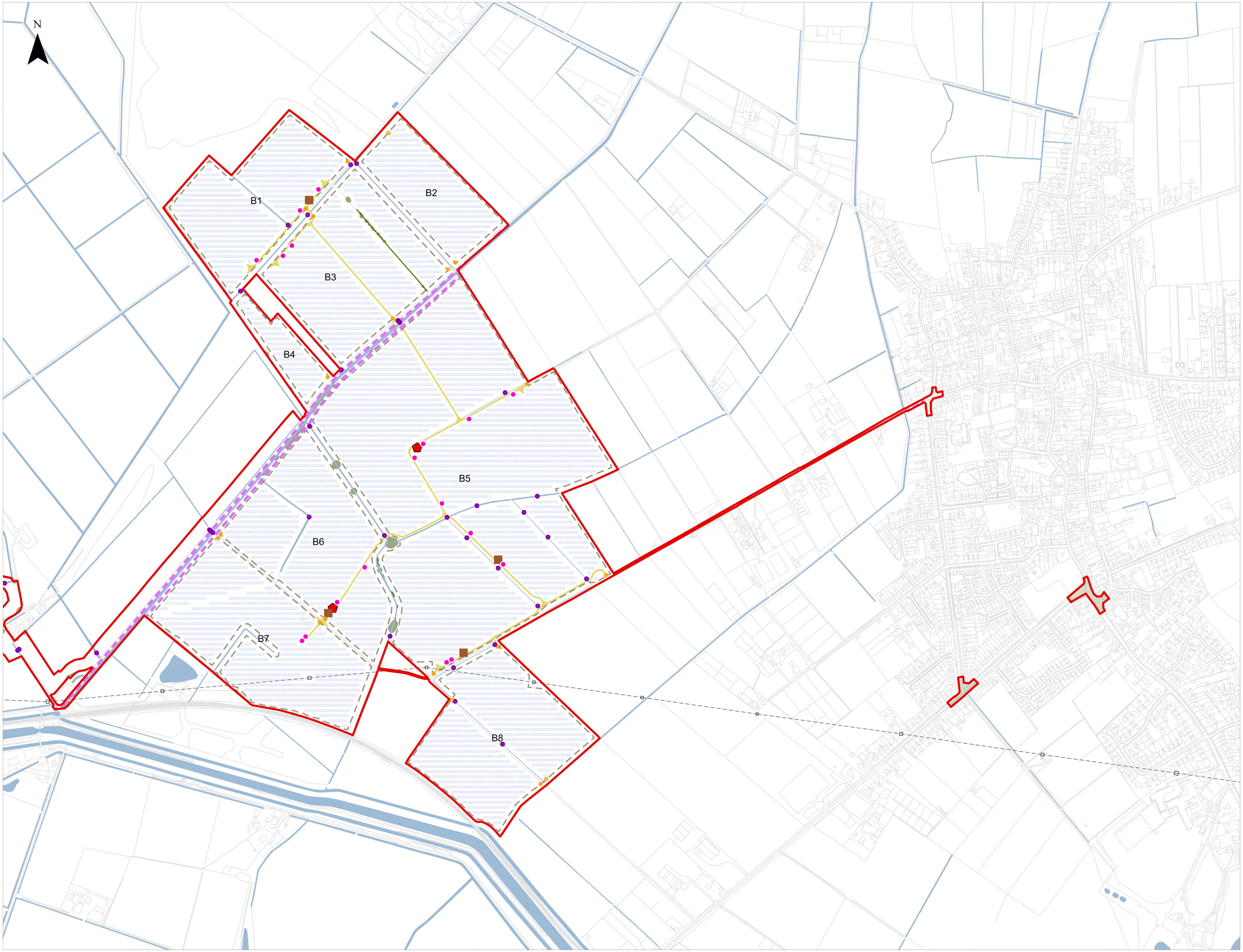

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
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- 400kV Substation
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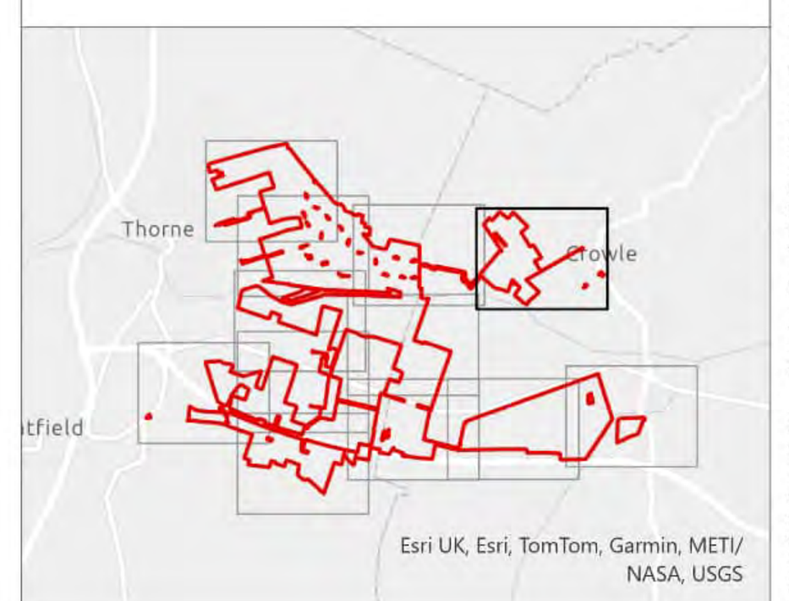

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

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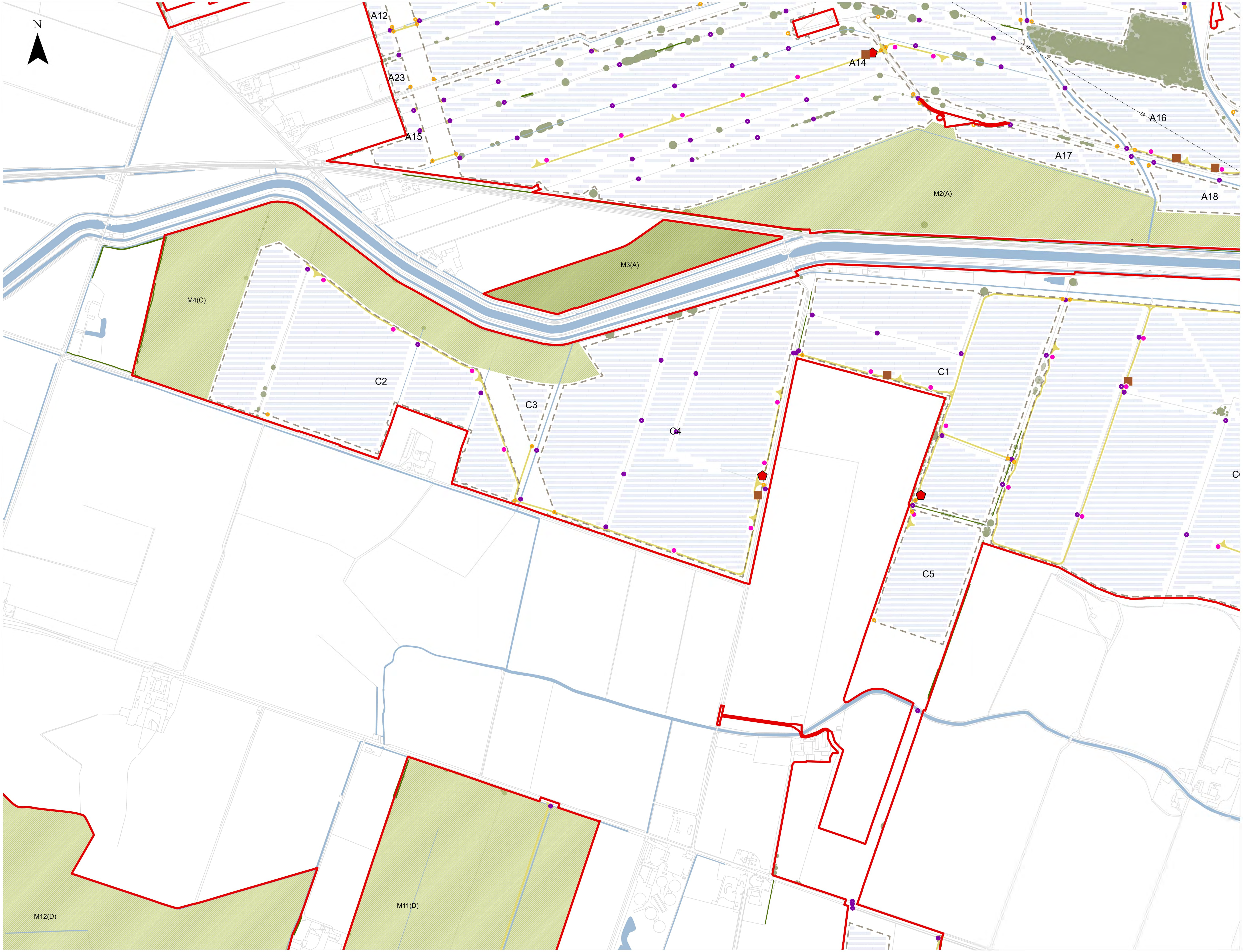

LEGEND

Order Limits

Existing Features
- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme
- Access Points
- Crossing Points
- Inverters
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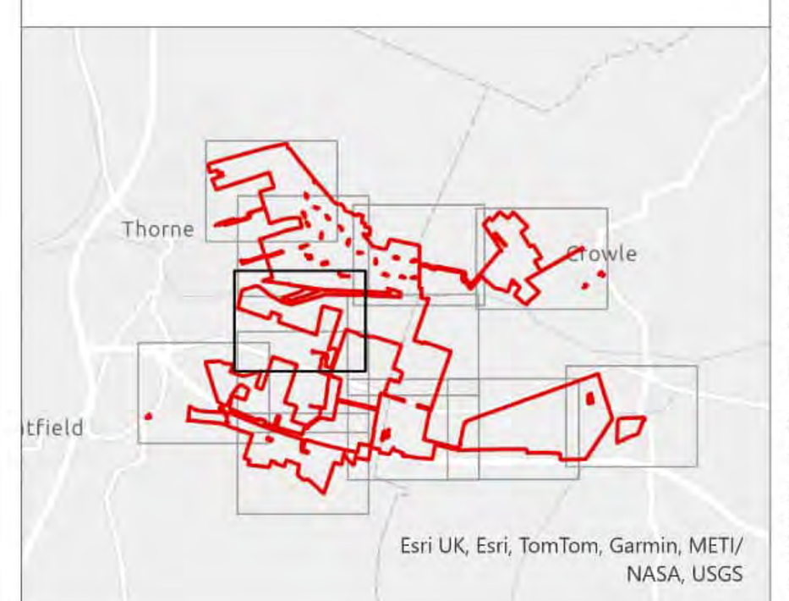

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	© Crown copyright and database rights 2025. Ordnance Survey AC0000808122

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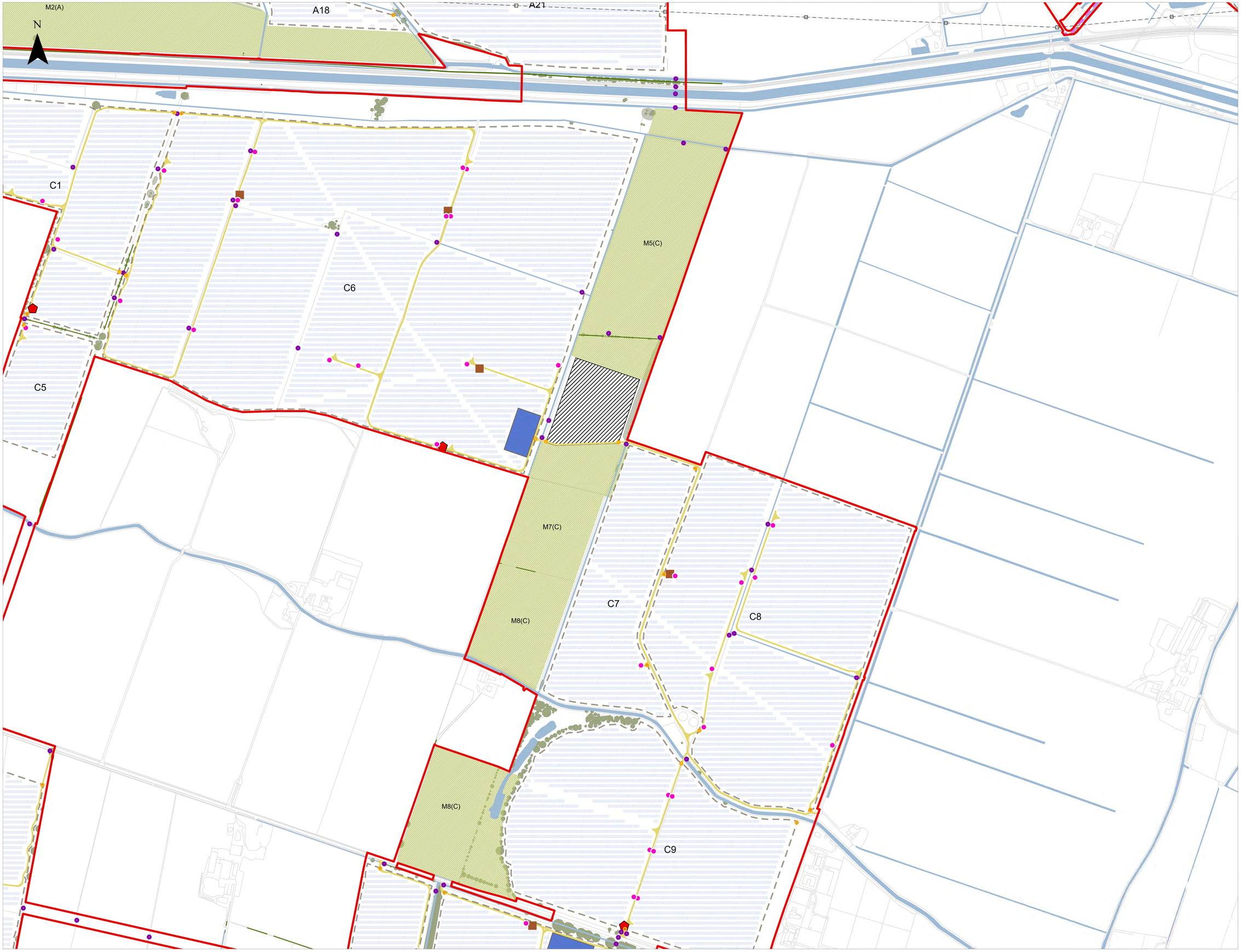

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
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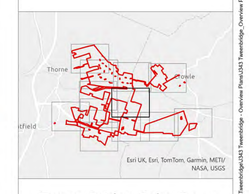

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150
Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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Document Reference: 6.4.2.2 | Revision: 1

PINS Number: EN010148 | Drawing Status: DCO Application

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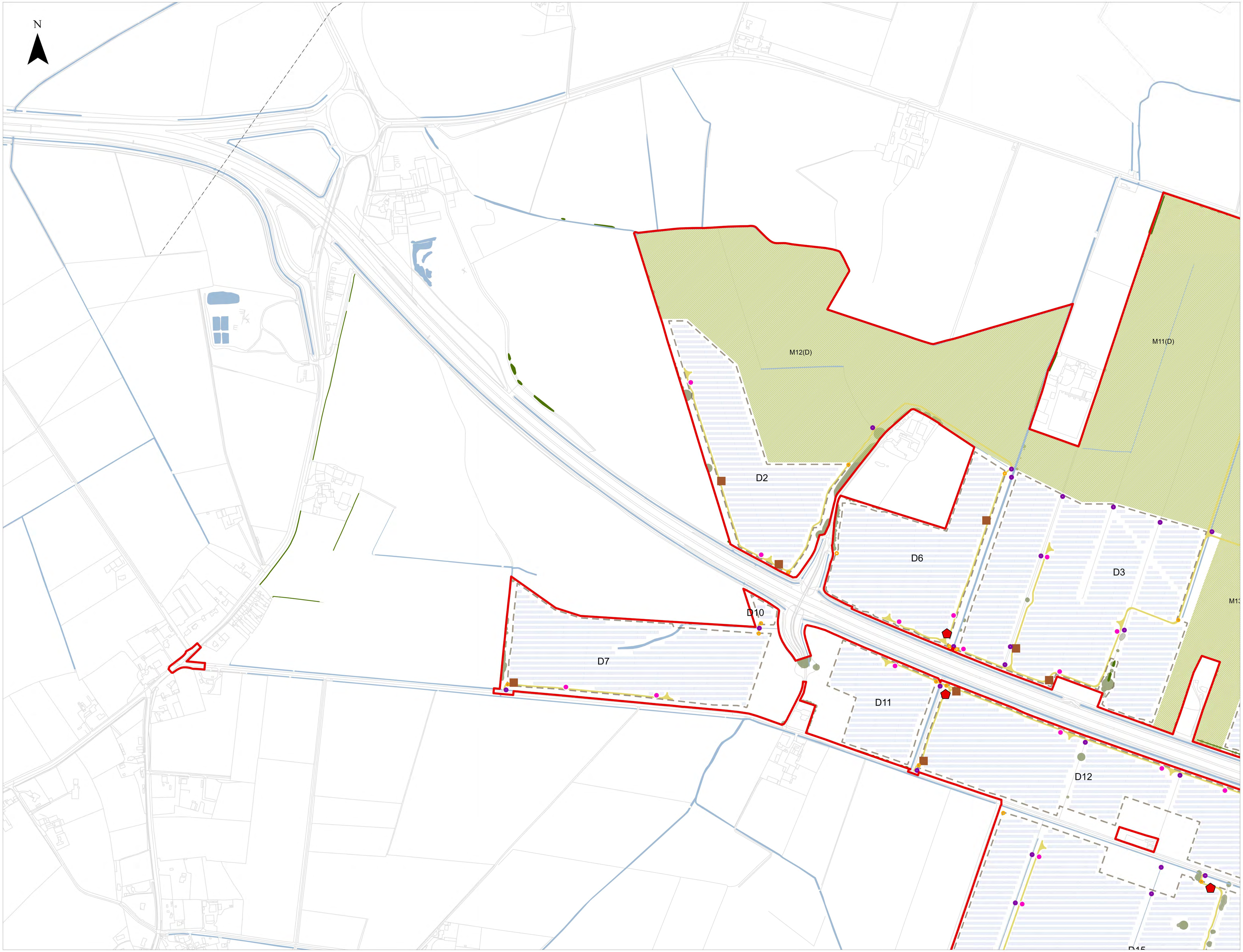

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
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- Waterbodies and Watercourses

Scheme

- Access Points
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Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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N

C5

M12(D)

M11(D)

M13(D)

M13(D)

M13(D)

D6

D3

D11

D12

D5

D4

D8

D9

D13

E19

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
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- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

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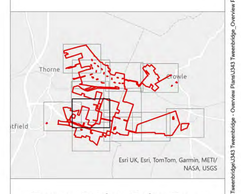

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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LEGEND

- Order Limits

Existing Features

- Public Rights of Way
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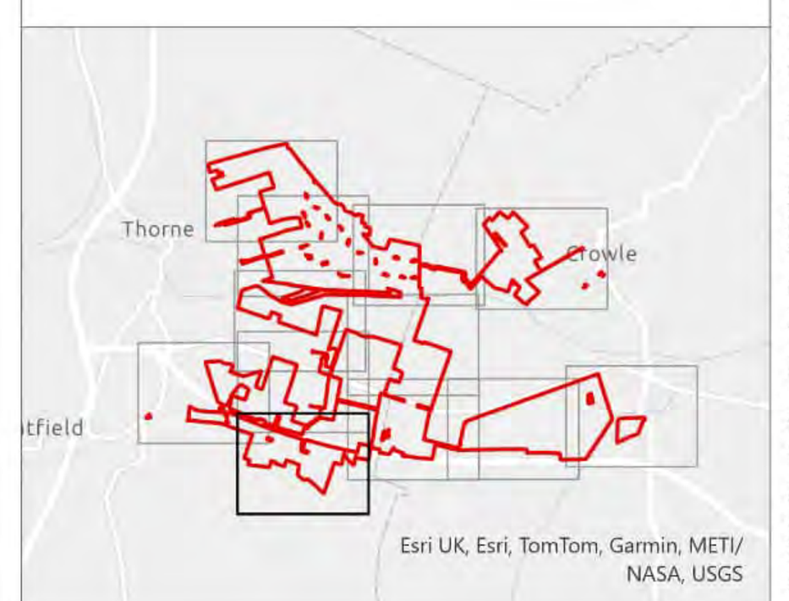

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

N W E S

0 37.5 75 150 Metres

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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N

M8(C)

C9

E2

E1

E5

E19

E20

E7

E3

D17

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
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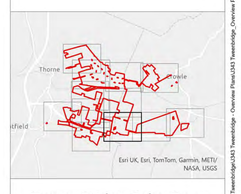

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936		© Crown copyright and database rights 2025. Ordnance Survey AC0000809122
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N

E4
E5
E6
E7
E8
E9
E10
E11
E13
E14
E16
E17
E18

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
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Scheme

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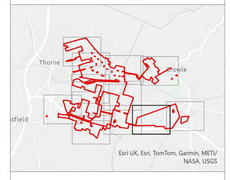
- Internal Access Tracks
- 400kV Substation
- 132kV Substation
- BESS
- Permissive Path
- Fencing
- Indicative Areas for Mitigation, Enhancement and/or Retained Agricultural Land
- Fixed Solar PV Modules
- A1 Field Reference

Notes
1. The drawing is for illustrative purposes only
2. The location of the features shown are indicative only to show the key features of Tween Bridge Solar Farm for which development is sought
3. The indicative layout demonstrates one way that the Scheme could be undertaken within the parameters of the DCO, consent is not being sought for this layout



Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	© Crown copyright and database rights 2025. Ordnance Survey AC0000808122
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PINS Number EN010148	Drawing Status: DCO Application
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E18

M15(E)

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
- 132kV Substation
- BESS
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- Fencing
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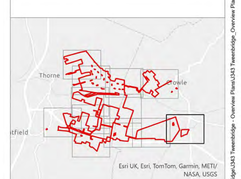

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 37.5 75 150 Metres

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