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1. Introduction

1.1 Background

1.1.1 This report has been produced as an appendix to Chapter 8: Ecology and Biodiversity (document reference 6.8) (Revision C) of the Environment Statement (ES) (Volume 6 of the Development Consent Order (DCO) application) for Norwich to Tilbury (the 'Project').

1.1.2 The ecological background and the scope for this report is set out in the Environmental Impact Assessment (EIA) Scoping Report (document reference 6.19) and agreed within the EIA Scoping Opinion received from the Planning Inspectorate in December 2022 (document reference 6.20).

1.1.3 The EIA Scoping Report (document reference 6.19), issued to the Planning Inspectorate in November 2022, identified the need for further assessment of aquatic flora and fauna that may be impacted by the Project.

1.2 Brief and Objectives

1.2.1 This report aims to present the overall baseline information for aquatic species in respect to the Order Limits, including a review of macrophyte, macroinvertebrate and fish survey data available from the Environment Agency Ecology and Catchment Data Explorer (Environment Agency, 2024a and 2024b).

1.2.2 A desk study was undertaken in January 2024, to identify the baseline ecological conditions for the watercourses potentially impacted by the Project and key biological receptors at risk of being affected by the Project to inform best practice advice for mitigation and the scope for further aquatic ecology surveys. The desk study identified the need for fish surveys in watercourses where baseline data were lacking and where effects to fish had the potential to be significant due to open cut cable installation. These watercourses comprise the 'Survey Area' referred to in this report.

1.2.3 Fish habitat suitability assessments and environmental deoxyribonucleic acid (eDNA)[1] sampling were undertaken to establish the likely presence of sensitive/protected fish species within the Survey Area and to determine the potential of fish habitats to support protected and migratory fish species. This report presents an evaluation of the habitat quality of the watercourses in the Survey Area as well as a review of the associated eDNA data.

1.3 Study Area

1.3.1 The Project interacts with 199 watercourse sections, hereafter referred to by their specific 'watercourse ID' as shown on Figure A8.4.1: Aquatic Ecology Baseline in Annex A. These watercourse IDs refer to a specific area within a watercourse that

[1] eDNA refers to the genetic material shed by organisms into their environment. This can include cells, tissues, or waste products left in soil, water, and air. For further details on how samples were collected see Section 3.4.

has been identified as potentially at risk of being impacted by the Project. In some instances where the Project is likely to affect multiple points on the same watercourse (i.e., multiple access road crossing points along the same stretch of river), multiple watercourse IDs are associated with that watercourse.

1.3.2 To characterise the ecological baseline conditions at watercourses potentially affected by the Project, each section of watercourse that has been identified as potentially impacted has been assigned a 'watercourse ID' number and divided into groups based on their geographic location within a Water Framework Directive (WFD) River Waterbody Catchment. A full list of impacted watercourses sections (Watercourse IDs) and a summary of desk study and field survey results is provided in Annex C.

1.3.3 WFD River Waterbody Catchments are defined as areas of land from which all surface water run-off flows through a series of streams, rivers, or lakes to a specific point in a watercourse, such as a river confluence. Therefore, all major watercourses within the same River Waterbody Catchment are hydrologically linked. This is important as fish, aquatic invertebrates, and macrophytes are capable of dispersal along river corridors. Therefore, if a species is recorded anywhere within a particular River Waterbody Catchment, then it is possible that it could be found throughout that catchment.

1.3.4 Similarly with any notable species, including Invasive Non-Native Species (INNS) and species of conservation importance, a precautionary assumption is that if they are recorded within the catchment at any point then they could be present throughout the catchment unless further surveys rule out their presence.

1.3.5 The Project has also been sub-divided into eight geographical sections for reader accessibility, based largely on Local Planning Authority boundaries. These are shown on Figure A8.4.1: Aquatic Ecology Baseline in Annex A, and comprise:

- Section A – South Norfolk Council
- Section B – Mid-Suffolk District Council
- Section C – Babergh District Council, Colchester City Council and Tendring District Council
- Section D – Colchester City Council
- Section E – Braintree District Council
- Section F – Chelmsford City Council and Brentwood District Council
- Section G – Basildon Borough Council and Brentwood Borough Council (and part of Chelmsford City Council)
- Section H – Thurrock Council.

1.3.6 Each River Waterbody Catchment as described above has been grouped into the Project Sections they are located in. Where WFD catchments cross over multiple sections, they have been included in the assessment for both.

1.3.7 The Study Area for the desk study data was 10 km from the Order Limits for Environment Agency data and 5 km for Statutory Designated Sites.

1.4 Survey Area

1.4.1 The desk study and gap analysis of historic data for aquatic receptors including fish, invertebrates and macrophytes reviewed data for watercourses potentially at risk of being impacted by the Project. The initial desk study identified 15 WFD River Waterbody Catchments for which no baseline data on freshwater fish ecology were available. Nine of those were scoped out of further surveys, either because the affected watercourse sections were too shallow to support fish, or the effects of proposed works in those catchments are to be mitigated through design to reduce effects to non-significant levels. The Survey Area for targeted surveys comprise watercourse sections within the Order Limits for six WFD catchments containing 14 watercourse sections affected by open cut channel works. These watercourses are listed in Table A8.4.1 and shown on Figure A8.4.1: Aquatic Ecology Baseline in Annex A.

Table A8.4.1 Surveyed watercourses

Project Section(s)	Watercourse ID	WFD Waterbody	Environment Agency WFD Waterbody ID	National Grid Reference
A	123	Waveney U/S[2] Frenze Beck	GB105034045820	TM 09197 80416
A	125	Waveney U/S Frenze Beck	GB105034045820	TM 09863 79453
A	126	Waveney U/S Frenze Beck	GB105034045820	TM 09752 79637
B	32	Wattisham Watercourse	GB105035040350	TM 07451 55480
B	128a	Tributary Upper Waveney	GB105034045750	TM 09204 74846
B	128b	Tributary Upper Waveney	GB105034045750	TM 09217 74680
B	137	Somersham Watercourse	GB105035040310	TM 07148 49286
B	136	Somersham Watercourse	GB105035040310	TM 06713 49724
B	37	Somersham Watercourse	GB105035040310	TM 08987 47246
B	175	Somersham Watercourse	GB105035040310	TM 09169 47310

[2] U/S denotes upstream

Project Section(s)	Watercourse ID	WFD Waterbody	Environment Agency WFD Waterbody ID	National Grid Reference
C	45	Stour (D/S[3] River Brett)	GB105036041000	TM 03144 32436
H	163	Mardyke (East Tributary)	GB106037028070	TQ 65884 88537
H	164	Mardyke (East Tributary)	GB106037028070	TQ 65742 88254
H	165	Mardyke (East Tributary)	GB106037028070	TQ 65790 87966

[3] D/S denotes downstream

2. Legislation

2.1 Summary of Key Legislation

2.1.1 Surveys and assessments have been undertaken in accordance with current legislation and planning policy in the context of the Project. A summary of the relevant legislation is provided in Table A8.4.2.

Table A8.4.2 Key legislation

Legislation	Details
Conservation of Habitats and Species Regulations 2017, as amended in 2019 ('Habitat Regulations')	The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Species listed under Annex II of the Habitats Directive are afforded protection by the establishment of core areas of habitat known as Special Areas of Conservation. This means these species are a relevant consideration for assessment.
Natural Environment and Rural Communities (NERC) Act 2006	Species and Habitats of Principal Importance in England are listed under Section 41. These are habitats and species that are of principal importance for the conservation of biodiversity in England and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006.
Salmon and Freshwater Fisheries Act 1975 (SAFFA)	This Act covers regulation of fisheries in England and Wales and includes legislation that covers the introduction of polluting effluents, the obstruction of fish passage (screens, dams, weirs, culverts etc.) illegal means of fishing, permitted times of legal fishing and fishing licencing (which covers electric fishing). Under this Act any person who causes or knowingly permits to flow, or puts or knowingly permits to be put, into any waters containing fish or into any tributaries of waters containing fish, any liquid or solid matter to such an extent as to cause the waters to be poisonous or injurious to fish or the spawning grounds, spawn, or food of fish, shall be guilty of an offence. The Act also requires that fish passes are installed on new and rebuilt barriers that affect waters frequented by salmon *Salmo salar* or migratory trout *Salmo trutta morpha trutta*. In the future, it is likely that fish passage facilities will need to be designed to accommodate all fish species and life stages.
Eels (England and Wales) Regulations 2009	The Eels (England and Wales) Regulations 2009 implement Council Regulation (EC) No 1100/2007 of the Council of the European Union, which required Member States to establish measures for the recovery

Legislation	Details
	of the stock of European eel. The regulations apply to England and Wales. The Regulations give powers to the regulators (the Environment Agency and Natural Resources Wales) to implement recovery measures in all freshwater and estuarine waters in England and Wales. The aim of the regulations is to achieve 40 per cent escapement of adult European eels relative to escapement levels under pristine conditions. The measures, as set out in the legislation, by which this is to be achieved is to reduce fishing pressures, improve access and habitat quality and reduce the impact of impingement and entrainment. Under the Regulations, the regulators can serve notice to companies detailing their legal obligation to screen intakes and outfalls for European eel and/or to remove or modify obstructions to eel migration.
Invasive Alien Species (Enforecment and Permitting) Order 2019	This order strengthens the legislation in relation to widely spread species of European Union concern, requiring effective management measures to be put in place to minimise their impacts. A person who plants or otherwise causes to grow in the wild any specimen which is of a species of plant which is included in Part 2 of Schedule 2 is guilty of an offence.
The Wildlife and Countryside Act 1981 (WCA), as amended	The Act is the main mechanism for legislative protection of wildlife in England. It gives protection to native species (particularly threatened species), their resting places and places of shelter by making it an offence to kill, injure, take, damage, destroy, sell, or possess them (with exceptions). The Act gives protection to certain species of wild plants and safeguards important habitats by making it an offence to damage or destroy certain types of designated habitats, such as Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR). This Act also prohibits the spread and release of certain non-native species into the wild.
Countryside and Rights of Way Act 2000	The Act places a duty on government departments to have regard to the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity (this duty was strengthened in the NERC Act). It also strengthens legal protection for species considered to be threatened under the WCA and increases powers for the protection and management of SSSIs.

2.2 Planning Policy

2.2.1 Chapter 8: Ecology and Biodiversity (document reference 6.8) (Revision C) provides further details of relevant planning policy.

3. Methodology

3.1 Nomenclature

3.1.1 All species scientific and common names referred to in this report were referenced using the National Biodiversity Network (NBN) Atlas (National Biodiversity Network 2025).

3.1.2 Scientific names are provided on first occurrence within the report, thereafter species are referred to using their common name unless one does not exist.

3.2 Desk Study

3.2.1 Environment Agency desk study data was obtained from within 10 km of the Order Limits and Statutory Designated Sites referencing aquatic flora and fauna were obtained from within 5 km of the Order Limits. Data obtained from the last 10 years within the Study Area were used to inform the baseline aquatic ecological conditions of watercourses impacted by the Project, see Table A8.4.3.

Table A8.4.3 Sources of information

Data Source	Information Obtained
Environment Agency's Ecology and Fish Data Explorer (Environment Agency, 2024a).	Fish, aquatic invertebrate and macrophyte survey data within 10 km of the Order Limits.
Environment Agency's Catchment Data Explorer website (Environment Agency, 2024b).	The current WFD status for the affected WFD waterbodies.
Natural England's Multi-Agency Geographic Information for the Countryside (MAGIC) (Natural England, 2025).	Statutory Designated Sites

3.3 Fish and Habitat Surveys

3.3.1 As identified in Section 1.4, 14 watercourses listed in Table A8.4.1 would be directly affected by the Project these were subject to aquatic habitat surveys between 16 and 20 September 2024. Where land access was possible, the surveys were conducted 50 m upstream and 50 m downstream of the proposed watercourse crossing.

3.3.2 The potential for aquatic habitats to support legally protected and/or notable fish species was assessed through field observations of various channel and bank characteristics including substrate type, water depth, flow type, riparian vegetation, large wood habitat, artificial modifications, and notable features.

Photographs were taken to assess the character of these watercourses, see Annex B: Survey Photographs.

3.3.3 The field-based assessments are based on standard guidance on habitat suitability for sensitive fish species, including salmonid fish (Scottish Fisheries Coordination Centre (2007) (SFCC); Hendry and Cragg-Hine, 1997), and European eel (Tesch, 2003), supplemented by professional experience and judgement. Habitat types are summarised in Table A8.4.4.

Table A8.4.4 Species/habitat type and classification

Species/Habitat Type	Description
Salmon spawning gravel	Stable gravel up to 30 cm deep that is not compacted or contains excessive silt. Substrate size predominantly pebbles (16 to 64 mm diameter) and smaller cobbles (64 to 256 mm diameter) depending on fish size.
Trout spawning gravel	Stable gravel up to 30 cm deep that is not compacted or contains excessive silt. Substrate size predominantly pebbles and smaller cobbles depending on fish size.
Salmon fry habitat	Shallow (<0.2 m) and fast flowing water indicative of riffles and runs with a substrate dominated by pebbles and smaller cobbles.
Salmon parr habitat	Riffle/run habitat that is generally faster and deeper than fry habitat (0.2 to 0.4 m). Substrate size from large pebbles/smaller cobbles to boulder (>256 mm diameter).
Trout fry habitat	Slow to medium flowing shallow water with a substrate dominated by pebbles and smaller cobbles, often concentrated at stream margins.
Trout parr habitat	Variety of substrate sizes including pebble, cobble, and boulder, undercut banks, tree roots, big rocks; deeper, slower water.
Lamprey spawning habitat	Stable gravel up to 30 cm deep that is not compacted or contains excessive silt (but may contain some sand). Substrate size varies from gravels (2 to 16 mm diameter) to pebbles.
Lamprey ammocoete (larvae) habitat	Optimal: stable fine sediment or sand >15 cm deep with low water velocity and the presence of organic detritus/plant material. Sub optimal: Shallow sediment (<15 cm deep), often patchy and interspersed among coarser substrates.
European eel habitat	Frequently burrow into mud and utilise cover from larger instream substrate such as cobble and boulder, and bankside crevices (e.g., gaps in bank modifications such as walls and log revetments).
Glides	Smooth laminar flow with little surface turbulence. Shallow glide <0.3 m, deep glide >0.3 m.

Species/Habitat Type	Description
Pools	No perceptible flow. Shallow pool <0.3 m, deep pool>0.3 m
Flow constriction	Where flows are accelerated between narrow banksides (usually combined with deep fast flows and bedrock substrates).

Definitions taken from (SFCC, 2007; Hendry and Cragg-Hine, 1997; and Tesch, 2003).

3.4 eDNA Sampling

3.4.1 eDNA samples were collected from locations within the Survey Area. Where multiple watercourses in a WFD River Waterbody Catchment were close, these were combined into a single sample. Seven eDNA samples in total were planned for the following Watercourse IDs/River Waterbody Catchments:

- Waveney Upstream of Frenze Beck (Section A) – Watercourse ID 125/126 combined
- Wattisham Watercourse (Section B) – Watercourse ID 32
- Tributary of Upper Waveney (Section B) – Watercourse ID 128(a)
- Somersham Watercourse (Section B) – Watercourse IDs 136/137 combined
- Somersham Watercourse (Section B) – Watercourse IDs 37/175 combined
- Stour Downstream of River Brett (Section C) – Watercourse ID 45
- Mardyke (East Tributary) (Section H) – Watercourse ID 165.

3.4.2 At the time of survey, the sampling locations for two of the samples were dry (Tributary of Upper Waveney Watercourse ID 128(a), and Somersham Watercourse ID 37/175) and one was inaccessible (Mardyke (East Tributary) Watercourse ID 165) (refer to Table A8.4.6).

3.4.3 Out of the initial seven planned eDNA samples, only four were collected. Samples were taken at Waveney Upstream of Frenze Beck Watercourse ID 125/126 combined, Wattisham Watercourse ID 32, Somersham Watercourse ID 136/137 combined and Stour D/S River Brett Watercourse ID 45.

3.4.4 For each eDNA sample, at least two litres of water was collected by sub-sampling different habitat and flow types present within each of the watercourses sampled. Surveyors entered the watercourse and collected water upstream of their position. Surveyors wore nitrile gloves while taking the sample, collecting as little sediment as possible to avoid contamination. The water collected from the sub-samples was mixed and passed through an eDNA collection filter to concentrate the DNA. The sample was filtered to the point where no more liquid could be pushed through the filter, maximising eDNA collection from the watercourse. The amount of liquid filtered was recorded. The filter was removed, a preservative added and capped before being returned to the laboratory for analysis. This methodology follows NatureMetrics standard operating procedure, which is consistent with the current draft of the British Standard (BS) EN17805: Water sampling for capture of macrobial environmental DNA in aquatic environments (British Standards Institution, 2023).

3.4.5 The sample analysis was conducted in two phases. The sample first went through an extraction process where the filter was incubated to obtain any DNA within the sample. The extracted sample was then tested via real time polymerase chain reaction (PCR) (also called qPCR) for each of the species selected in the analysis. This process amplifies a selected part of DNA, allowing it to be detected and measured in 'real time' as the analytical process develops. qPCR combines amplification and detection of target DNA into a single step.

3.4.6 Consensus taxonomic assignments were made for each taxon using sequence similarity searches against the National Centre for Biotechnology Information (NCBI) GenBank reference database. Assignments were made to the lowest possible taxonomic level where there was consistency in the matches. Conflicts were flagged and resolved manually. Minimum similarity thresholds of 99%, 97%, and 95% were used for species, genus and higher-level assignments respectively. In cases where there were equally good matches to multiple species, public records from the Global Biodiversity Information Facility (GBIF) were used to assess which were most likely to be present in the United Kingdom. Higher-level taxonomic identifications or multiple potential identifications were reported in cases that could not be resolved in this way.

3.5 Notes and Limitations

3.5.1 At the time of survey, eight of the 14 watercourses identified for survey in Table A8.4.1 Surveyed Watercourses were dry. Consequently, details such as flow type, flow speed, water depth, and level of bankside cover (which relates to bankside cover [online] Available at the water level observed during survey) could not be recorded. These watercourses are drainage ditches that do not contain water at all times of the year. When wet they may connect to other watercourses and offer a corridor for fish passage, but they are considered unsuitable for supporting a permanent fish population. For a list of these watercourses see Table A8.4.5.

3.5.2 Mardyke East Tributary Watercourse ID 165 (Section H) could not be surveyed due to land access constraints. An assessment of habitat quality for this location could not be made and no photographs were taken (see Table A8.4.5).

3.5.3 One eDNA sample (Somersham Watercourse ID 136/137 (Section B)) contained no amplifiable DNA. This was due to either a low concentration of DNA or PCR inhibition. Low concentration of DNA usually occurs because there are no individuals of the target species in the sampled area. However, no amplifiable DNA can also result from DNA degradation within the sample. PCR inhibition occurs when substances are present that limit PCR. Target groups that are rare, or at very low abundance, will often not be detected. (NatureMetrics, 2024).

Table A8.4.5 Watercourses that were either dry or had access restrictions

Project Section (s)	Watercourse ID	WFD Waterbody	Watercourse Status
A	123	Waveney U/S Frenze Beck	Dry
B	128a	Tributary Upper Waveney	Dry
B	128b	Tributary Upper Waveney	Dry

Project Section (s)	Watercourse ID	WFD Waterbody	Watercourse Status
B	37	Somersham Watercourse	Dry
B	175	Somersham Watercourse	Dry
H	163	Mardyke	Dry
H	164	Mardyke	Dry
H	165	Mardyke	Land access was not available

3.6 Survey Details and Personnel

3.6.1 All surveys were led by an experienced aquatic ecologist with over five years' experience. Both surveyors regularly assist with the delivery of aquatic ecology surveys, including macrophyte and aquatic macroinvertebrate surveys, and freshwater scoping and habitat assessments.

4. Results

4.1 Desk Study Results

Water Framework Directive Classifications

4.1.1 The Project spans 38 WFD River Waterbody Catchments (Environment Agency, 2024b). The WFD ecological status of these waterbodies is detailed in Table A8.4.6

4.1.2 Two of these catchments are coastal, one adjacent to the mouth of the Thames and the other adjacent to the mouth of the Stour, and do not have comparable freshwater WFD classifications.

Table A8.4.6 WFD status of WFD waterbodies likely to be impacted

Project Section	WFD Waterbody	Ecological Status	Fish	Invertebrate	Macrophyte and Phytobenthos combined	Macrophyte quality sub element
A	Tas (Tasburgh to R. Yare)	Moderate	Moderate	High	Not Assessed by the Environment Agency	Good
A	Tributary of Tas	Moderate	Moderate	High	Good	Good
A	Tas (Head to Tasburgh)	Moderate	Moderate	Good	Good	Good
A	Frenze Beck	Moderate	Not Assessed	Moderate	Moderate	Moderate
A and B	Waveney (U/S Frenze Beck)	Moderate	Not Assessed	Good	Not Assessed by the Environment Agency	Not Assessed by the Environment Agency
B	Tributary of Upper Waveney	Moderate	Not Assessed	Good	Not Assessed by the Environment Agency	Not Assessed by the Environment Agency
B	Little Ouse (Upstream (U/S) Thelnetham)	Bad	Bad	High	Moderate	Moderate
B	Dove Tributary - Finningham	Moderate	Not Assessed	Good	Good	Not Assessed by the Environment Agency
B	Mendlesham Stream	Moderate	Not Assessed	Good	Good	Not Assessed by the Environment Agency
B	Gipping (U/S Stowmarket)	Moderate	Not Assessed	Good	Moderate	Not Assessed by the Environment Agency
B	Gipping (D/S Stowmarket)	Poor	High	Good	Poor	Poor
B	Wattisham Watercourse	Moderate	Not Assessed	High	Moderate	Not Assessed by the Environment Agency

Project Section	WFD Waterbody	Ecological Status	Fish	Invertebrate	Macrophyte and Phytobenthos combined	Macrophyte quality sub element
B	Somersham Watercourse	Moderate	Not Assessed	Not Assessed	Not Assessed	Not Assessed by the Environment Agency
B and C	Belstead Brook	Poor	Poor	Good	Moderate	Moderate
C	Brett	Moderate	Good	Good	Moderate	Moderate
C	Coastal Catchment (Stour)	N/A	-	-	-	-
C	Stutton Brook	Poor	Poor	Good	High	Not Assessed by the Environment Agency
C	Tenpenny Brook	Moderate	Poor	Moderate	Good	Not Assessed by the Environment Agency
C and D	Stour (D/S R. Brett)	Moderate	High	High	High	Poor
C and D	Salary Brook	Moderate	Poor	Poor	Good	Not Assessed by the Environment Agency
D	Stour (Lamarsh - R. Brett)	Moderate	High	Good	Not Assessed by the Environment Agency	Not Assessed by the Environment Agency
D	Colne (D/S Doe's Corner)	Moderate	Good	Good	Moderate	Moderate
D	Roman River	Moderate	Moderate	Good	Moderate	Moderate
E	Blackwater (Combined Essex)	Moderate	High	High	Moderate	Moderate
E	Brain	Moderate	Not Assessed	Good	Poor	Poor
E and F	Ter	Moderate	Not Assessed	High	Moderate	Moderate
F	Chelmer (Gt. Easton - R. Can)	Moderate	Good	High	Not Assessed by the Environment Agency	Poor

Project Section	WFD Waterbody	Ecological Status	Fish	Invertebrate	Macrophyte and Phytobenthos combined	Macrophyte quality sub element
F	Chignall Brook	Moderate	Not Assessed	Moderate	Good	Not Assessed by the Environment Agency
F	Can	Poor	Good	Moderate	Poor	Poor
F	Roxwell Brook	Poor	Poor	High	Moderate	Moderate
F	Wid (Margaretting Hall - R. Can)	Poor	Not Assessed	Good	Poor	Poor
F and G	Wid (Ingatestone Hall - Margaretting Hall)	Moderate	Not Assessed	Good	Good	Not Assessed by the Environment Agency
G	Wid (Shenfield STW - Ingatestone Hall)	Moderate	High	Moderate	High	Not Assessed by the Environment Agency
G	Haverings Grove Brook	Moderate	Not Assessed	Moderate	Not Assessed by the Environment Agency	Not Assessed by the Environment Agency
G	Crouch (Upper) – Upstream (U/S) A129	Moderate	Not Assessed	Moderate	Good	Not Assessed by the Environment Agency
H	Mardyke (East Tributary)	Moderate	High	Good	Not Assessed by the Environment Agency	Not Assessed by the Environment Agency
H	Mardyke	Moderate	Moderate	Good	High	Poor
H	Coastal Catchment (Thames)	N/A	-	-	-	-

Statutory Designated Sites

4.1.3 The desk study identified seven statutory designated sites that were designated for or mention aquatic flora and fauna within 5 km of the Order Limits. These sites comprise six SSSIs and one Special Protected Area (SPA). Details are provided within Table A8.4.7.

Table A8.4.7 Statutory designated sites

Project Section (s)	Site Name and Distance and Direction to Order Limits	Summary
A/B	Redgrave and Lopham Fens SSSI – 3.68 km west	This site consists of an extensive area of spring-fed valley fen at the headwaters of the River Waveney. Small pools exist within the fen areas forming the habitat of the nationally rare Fen Raft Spider *Dolomedes plantarius* which is listed in Schedule 5 of the *Wildlife and Countryside Act 1981*.
C	Stour Estuary SSSI – 5 km east	Estuary site of national importance for two scarce marine invertebrates: starlet sea anemone *Nematostella vectensis* and tentacled lagoon worm *Alkmaria romijni*.
F	River Ter SSSI - 0.18 km south-west (geological SSSI)	A lowland stream described as flashy with high flood peaks. The citation does not note the presence of any aquatic species, but does mention pool-riffle sequences. This channel type could potentially provide habitat for salmonid fish.
G	Hanningfield Reservoir SSSI – 5 km East	Chalk sludge lagoon important for wintering wildfowl. Supports an interesting plant community including several uncommon Essex plants, such as golden dock *Rumex maritimus,* marsh dock *Rumex palustris*, and sea aster *Aster tripolium*. The site is also known to support the rare liverwort *Riccia cavernosa* and the rare Essex moss *Brachythecium mildeanum*.
H	Vange and Fobbing Marshes SSSI – 4.68 km east	These marshes lie on the alluvial plain of the lower River Thames and support a diversity of maritime grasses and herbs, many of which are nationally uncommon or rare. The uncommon brackish water-crowfoot *Ranunculus baudotii* and fine-leaved water dropwort *Oenanthe aquatica*, a declining species in Essex occur in brackish ditches. The scarce emerald damselfly *Lestes dryas,* a species with very restricted national distribution is also present at this site.

Project Section (s)	Site Name and Distance and Direction to Order Limits	Summary
H	South Thames Estuary and Marshes SSSI/ Thames Estuary and Marshes SPA – 2 km east	The diverse habitats within the site support a number of nationally rare and scarce invertebrate species and an assemblage of nationally scarce plants. Brackish water dykes support nationally scarce species such as brackish water-crowfoot whereas freshwater dykes further inland support soft hornwort *Ceratophyllum submersum* and water soldier *Stratiotes aloides.* 100 nationally scarce invertebrate species have been recorded including the scarce emerald damselfly and a particularly high-quality water beetle community.

Environment Agency Records

4.1.4 A search of the Environment Agency's Ecology and Fish Data Explorer returned results from surveys conducted on 31 of the potentially impacted WFD waterbody defined catchments within the Study Area. No results were returned for the Dove Trib – Finningham, Tenpenny Brook and coastal catchments (Stour and Thames). The results of this desk study are summarised in Table A8.4.8

4.1.5 Species denoted with an asterisk are non-native.

Table A8.4.8 Summary of Environment Agency records

Project Section (s)	WFD Waterbody	Notable Fish Species	Notable Invertebrate Species	Notable Plant Species
A	Tas (Tasburgh to R. Yare)	Brown trout *Salmo trutta* Brook lamprey *Lampetra planeri* Bullhead *Cottus gobio* European eel *Anguilla anguilla*	Smooth ramshorn *Gyraulus laevis* New Zealand mud snail *Potamopyrgus antipodarum**	No notable species
	Tributary of Tas	Brown trout European eel Bullhead	New Zealand mud snail	No data
	Tas (Head to Tasburgh)	Bullhead	No notable species	No notable species
	Frenze Beck	No data	New Zealand mud snail*	Canadian waterweed *Elodea canadensis**
A/B	Waveney (U/S Frenze Beck)	No data	*Dytiscus circumcinctus* *Crangonyx pseudogracilis**	No data
B	Tributary of Upper Waveney	No data	New Zealand mud snail*	No notable species
	Little Ouse (U/S Thelnetham)	Bullhead	New Zealand mud snail * *Crangonyx sp.**	Canadian waterweed* Least duckweed *Lemna minuta**
	Dove Tributary - Finningham	No data	No data	No data
	Mendlesham Stream	No data	No notable species	No data

Project Section (s)	WFD Waterbody	Notable Fish Species	Notable Invertebrate Species	Notable Plant Species
	Gipping (U/S Stowmarket)	No notable species	No notable species	No data
	Gipping (D/S Stowmarket)	Bullhead European eel	Scarce chaser dragonfly *Libellula fulva* *Limnephilis politus* *Crangonyx pseudogracilis** New Zealand mud snail*	Nuttall's waterweed *Elodea nuttallii* * Canadian waterweed * Himalayan balsam *Impatiens glandulifera* *
	Wattisham Watercourse	No data	New Zealand mud snail*	No data
	Somersham Watercourse	No data	No notable species	No data
B/C	Belstead Brook	Brown trout	No notable species	No data
C	Coastal Catchment (Stour)	No data	No data	No data
	Stutton Brook	Brown trout European eel	New Zealand mud snail*	No data
	Tenpenny Brook	No data	No data	No data
	Brett	Lamprey Bullhead European eel Spined loach *Cobitis taenia*	Smooth ramshorn *Notidobia cilliaris* *Crangonyx pseudogracilis/floridanus** New Zealand mud snail*	Canadian waterweed* Himalayan balsam*
C/D	Stour (D/S R. Brett)	Brook lamprey Bullhead Spined loach	Scarce chaser dragonfly. *Crangonyx pseudogracilis** New Zealand mud snail*	Canadian waterweed* Nuttall's waterweed*

Project Section (s)	WFD Waterbody	Notable Fish Species	Notable Invertebrate Species	Notable Plant Species
		European eel		
	Salary Brook	Brown trout Bullhead European eel	New Zealand mud snail*	No data
	Stour (Lamarsh - R. Brett)	Brown trout Brook lamprey Bullhead Spined loach European eel	*Paraleptophlebia cincta* *Crangonyx psuedogracilis** New Zealand mud snail*	No notable species
D	Colne (D/S Doe's Corner)	Bullhead European eel	*Athripsodes commutatus* *Corixa affinis* Signal crayfish *Pacifastacus leniusculus** New Zealand mud snail*	No notable species
D/C	Roman River	Brown trout Bullhead European eel	New Zealand mud snail*	No data
E	Blackwater (Combined Essex)	Brown trout Brook lamprey Bullhead European eel	*Crangonyx pseudogracilis/ floridanum** New Zealand mud snail*	Nuttall's waterweed* Himalayan balsam*
	Brain	Brook lamprey Bullhead	*Crangonyx pseudogracilis/ floridanum** New Zealand mud snail*	Himalayan balsam*
F	Ter	Brook lamprey Bullhead European eel	*Crangonyx psuedogracilis** New Zealand mud snail*	No notable species

Project Section (s)	WFD Waterbody	Notable Fish Species	Notable Invertebrate Species	Notable Plant Species
	Chelmer (Gt. Easton - R. Can)	Brown trout Brook lamprey Bullhead European eel	New Zealand mud snail* *Crangonyx pseudogracilis/floridanum**	No notable species
	Chignall Brook	No data	New Zealand mud snail*	No data
	Can	Brook lamprey Bullhead European eel	New Zealand mud snail*	Himalayan balsam*
	Roxwell Brook	Bullhead	Signal crayfish* *Crangonyx pseudogracilis** *Physella acuta** New Zealand mud snail*	Galingale (*Cyperus longus)*
	Wid (Margaretting Hall - R. Can)	No notable species	New Zealand mud snail* *Physella sp.**	Himalayan balsam* Least Duckweed*
G	Wid (Ingatestone Hall - Margaretting Hall)	Bullhead	No data	No data
	Wid (Shenfield STW - Ingatestone Hall)	Bullhead	No notable species	No data
	Haverings Grove Brook	Bullhead	*Crangonyx pseudogracilis** New Zealand mud snail* *Physella sp.**	No data
	Crouch (Upper) – U/S A129	No data	New Zealand mud snail* *Physella sp.**	No data
H	Mardyke (East Tributary)	No data	*Physella sp.**	No data

Project Section (s)	WFD Waterbody	Notable Fish Species	Notable Invertebrate Species	Notable Plant Species
	Mardyke	European eel Feral goldfish (*Carassius auratus*) * 	*Crangonyx sp.** New Zealand mud snail* Scarce chaser dragonfly	No notable species
	Coastal Catchment (Thames)	No data	No data	No data

Conservation Importance of Notable Species

4.1.6 A list of notable species identified in the desk study and summary of conservation importance is presented in Table A8.4.9, relevant legislation relates to their legal protection as explained in Table A8.4.2.

4.1.7 Species described as nationally scarce have been recorded as present in between 16 and 100 hectads in the UK (i.e., the species has been recorded within between 16 and 100, areas that measure 10 km by 10 km in the UK).

Table A8.4.9 Conservation importance of notable species

Common Name and Scientific Name	Description	Conservation Importance and Relevant Legislation
Brown trout Salmo trutta	Salmonid fish found in lakes and moderate flowing rivers. Can undertake migrations to sea in their sea trout form (Salmo trutta morpha trutta).	Section 41 priority species (NERC Act, 2006) Protected under the *Salmon and Freshwater Fisheries Act 1975* (SAFFA)
River lamprey Lampetra fluviatilis	Migratory jawless fish, spawns in rivers and spends its adult life in estuaries and around the coast. The larvae (ammocoetes) require silt or sand substrate to hide and feed. Difficult to determine species from brook lamprey in the field.	Section 41 priority species. Listed on Annex III of the Bern Convention and Annex II of the European Commission Habitats Directive. Protected under the *Salmon and Freshwater Fisheries Act 1975* (SAFFA) Listed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species as 'near threatened'.
Brook lamprey Lampetra planeri	Small jawless fish that exclusively inhabits freshwater environments unlike other lamprey species found in the UK. The larvae (ammocoetes) require silt or sand substrate to hide and feed. Difficult to determine species from river lamprey in the field.	Listed on Annex III of the Bern Convention and on Annex II of the Habitats Directive (The *Conservation of Habitats and Species* Regulations, 2019).
Bullhead Cottus gobio	Small freshwater fish that inhabits cold, clear, fast-flowing streams or river.	Listed on Annex II of the Habitats Directive.
European eel Anguilla anguilla	Critically endangered eel species that spends most of their lives in freshwater habitats before undertaking a spawning migration to the Sargasso Sea.	Section 41 priority species. Protected under The *Eels (England and Wales) Regulations 2009*

Common Name and Scientific Name	Description	Conservation Importance and Relevant Legislation
Spined loach Cobitis taenia	Small freshwater fish with a preference for clear oxygen rich water. Distribution in the UK is restricted to five river systems in eastern England: The Rivers Trent, Welland, Witham, Nene, and Great Ouse.	Section 41 priority species. Listed on Appendix III of the Bern Convention and Annex II of the European Commission Habitats and Species Directive.
Smooth ramshorn Gyraulus laevis	Freshwater snail that lives on freshwater plants. The species favours clean, shallow water zones with moderately rich vegetation.	Nationally scarce species.
- Notidobia cilliaris	Caddisfly of the family Sericostomatidae.	Nationally scarce species.
- Athripsodes commutatus	Caddisfly of the family Leptoceridae.	Nationally scarce species.
- Corixa affinis	The smallest species of water boatman found in the UK. Member of the family Corixidae.	Nationally scarce species.
Scarce chaser dragonfly Libellula fulva	Medium sized dragonfly with a preference for slow flowing, meandering rivers and large dykes. Indicative of good water quality.	Listed on the IUCN Red List of Threatened Species as 'near threatened'.
- Limnephilus politus	Caddisfly of the family Limnephilidae.	Nationally scarce species.
- Helophorus stigifrons	Water beetle of the family Helophoridae.	Nationally scarce species.
- Paraleptophlebia cincta	Mayfly of the Leptophlebiidae family.	Nationally scarce species.
- Dytiscus circumcinctus	Water beetle of the Dytiscidae family.	Nationally scarce species.
Galingale Cyperus longus	Species of sedge generally found growing in shallow water or damp ground.	Listed on the IUCN Red List of Threatened Species as 'near threatened'. Nationally scarce species.

Invasive Non-Native Species

4.1.8 Data supplied by the Environment Agency revealed the presence of INNS within 10 km of the Order Limits. These comprise five species of macro invertebrates and three aquatic plant species that are as listed below.

4.1.9 Demon shrimp, an invasive freshwater amphipod was recorded on the River Chelmer downstream of Chelmsford. The sites where demon shrimp have been recorded are outside the Study Area. However, the Chelmer is connected to several watercourses within the Order Limits, notably the River Can and River Blackwater and their tributaries thus this INNS is potentially present within the Order Limits.

4.1.10 Signal crayfish *w*ere recorded throughout the Study Area and in several watercourses within the wider area, notably the River Colne, Wid, Blackwater, Tas, Gipping and Roxwell Brook. Due to the widespread extent of these records this species is potentially present within all the watercourses within the Order Limits.

4.1.11 *Crangonyx sp.* is a genus of freshwater amphipods. The most common non-native *Crangonyx* species in the UK is the North American *C. pseudogracilis* which is recorded throughout the Study Area. It is extremely widespread in the UK. Some observations report replacement of native amphipod species e.g. *Gammarus pulex*, however there is also considerable evidence for their co-existence. *Crangonyx* species are confirmed present on the following 11 waterbodies within the Study Area: Waveney (u/s Frenze Beck), Little Ouse (U/S Thelnetham), Gipping (D/S Stowmarket), Brett, Stour (D/S R. Brett), Stour (Lamarsh - R. Brett), Blackwater (Combined Essex), Chelmer (Gt. Easton - R. Can), Roxwell Brook, Haverings Grove Brook, and Mardyke.

4.1.12 New Zealand mud snail is now one of the most common aquatic snails in the UK. While it is non-native, it has an extremely widespread distribution and is generally considered naturalised and is therefore not a particular concern. This species is confirmed present on the following 25 waterbodies within the Study Area: Tas (Tasburgh to R. Yare), Tributary of Tas, Frenze Beck, Tributary of Upper Waveney, Little Ouse (U/S Thelnetham), Gipping (D/S Stowmarket), Wattisham Watercourse, Stutton Brook, Brett, Stour (D/S R. Brett), Salary Brook, Stour (Lamarsh - R. Brett), Colne (D/S Doe's Corner), Roman River, Blackwater (Combined Essex), Brain, Ter, Chelmer (Gt. Easton - R. Can), Chignall Brook, Can, Roxwell Brook, Wid (Margaretting Hall - R. Can), Haverings Grove Brook, Crouch (Upper) – U/S A129, and Mardyke.

4.1.13 *Physella acuta* is another widespread invasive snail species found in most waterbody types, particularly in harsh or polluted conditions. Its presence may facilitate the spread of non-native macrophytes such as Canadian and Nuttall's waterweeds *(*see below). *Physella* species are confirmed present on the following five waterbodies within the Study Area: Roxwell Brook, Wid (Margaretting Hall - R. Can), Haverings Grove Brook, Crouch (Upper) – U/S A129, and Mardyke (East Tributary).

4.1.14 Canadian waterweed and Nuttall's waterweed are widely spread invasive plant species found as perennial submerged waterweeds. Nuttall's waterweed is listed as a species of special concern in England and Wales (UK Government, 2024). Both species dominate native macrophyte communities often leading to local extinctions and negative effects on invertebrate communities. Canadian waterweed is confirmed present on five waterbodies within the Study Area: Frenze Beck, Little Ouse (U/S Thelnetham), Gipping (D/S Stowmarket), Brett, and Stour (D/S R. Brett), Nuttall's waterweed is confirmed present on three waterbodies within the Study Area: Gipping (D/S Stowmarket), Stour (D/S R. Brett), Blackwater (Combined Essex)

4.1.15 Least duckweed is an invasive free-floating plant widespread in the UK. Its high reproductive rate allows rapid formation of dense mats that can block light and limit the exchange of gases across the water surface. These mats can negatively affect macroinvertebrates and native macrophytes. Least duckweed is confirmed present

on two waterbodies within the Study Area: Little Ouse (U/S Thelnetham), and Wid (Margaretting Hall - R. Can).

4.1.16 While generally considered a terrestrial species, Himalayan balsam is spread rapidly through watercourses and so works near water should consider its presence to avoid unnecessary spread. The species is listed as being of special concern by the UK government (UK Government, 2024). Himalayan Balsam is confirmed present on six waterbodies within the Study Area: Gipping (D/S Stowmarket), Brett, Blackwater (Combined Essex), Brain, Can, Wid (Margaretting Hall - R. Can).

River Waterbody Catchments

4.1.17 A review of the data held by the environment agency revealed the following information about the WFD catchments that would be affected by the Project. The locations of the Waterbody Catchments, the watercourse ID numbers and the Environment Agency sampling points (Sites) referred to below are shown on Figure 8.4.1: Aquatic Ecology Baseline in Annex A.

River Tas (Tasburgh – R. Yare) (Section A)

Overview

4.1.18 The Tas (Tasburgh – R. Yare) River Waterbody Catchment (WFD Waterbody ID: GB105034051230) is situated within Section A and contains three impacted watercourse sections as identified in Table A8.4.10. The Order Limits do not directly cross the River Tas within this catchment and instead intersect a series of ditches to the west of the river, as shown on Figure A8.4.1: Aquatic Ecology Baseline in Annex A. The connectivity of these watercourses to the River Tas is unclear.

4.1.19 As of 2022, the overall WFD status for ecology for this waterbody is moderate with the fish, invertebrate and macrophyte quality elements scored as moderate, high and good respectively (Environment Agency, 2024b). This is unchanged since the previous round of WFD assessment in 2019.

Table A8.4.10 Tas (Tasburgh to River Yare) Impacted Watercourse Sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
A	116	Ditch	TG 21384 01321
A	117	Ditch	TM 20696 99817
A	179	Ditch	TM 20592 99449

Fish

4.1.20 The desk study identified results from six Environment Agency electrofishing surveys carried out between 2016 and 2022 at three sites on the main stem of the River Tas: Site 1568 (National Grid Reference (NGR) TM 22136 99083), approximately 2 km upstream of the confluence of the River Tas and the tributary downstream of Watercourse ID 179. The two remaining sites (Sites 1569 and 1570) are located at NGR TG 23128 01973 / TG 23164 01958 and NGR TG 23200 04000 / TG 23229 04011, approximately 3.5 and 6 km downstream of the Order Limits at Watercourse

ID 179. It should be noted that sites 1569 and 1570 have had different locations recorded in various survey years.

4.1.21 A total of 13 species were recorded in the surveys, with minnow *Phoxinus phoxinus* the most abundant. Species of conservation importance include brown trout, brook lamprey, bullhead, and European eel. Migratory coarse fish species such as dace *Leuciscus leuciscus* and chub *Squalius cephalus* are found within this catchment.

Macroinvertebrates

4.1.22 The desk study identified results from ten Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2019 on the main stem of the River Tas at Site 149967 (NGR TM 22600 99400). The site is located approximately 1.5 km upstream of the confluence of the River Tas and the tributary downstream of Watercourse ID 179.

4.1.23 The only notable nationally scarce species recorded during the surveys was the smooth ramshorn snail. New Zealand mud snail was the only INNS recorded.

Macrophytes

4.1.24 The desk study identified results from one Environment Agency aquatic macrophyte survey carried out in 2014 at site 54909 (NGR TG 22600 00400) on the main stem of the River Tas, at the confluence of the River Tas and the tributary downstream of Watercourse ID 179.

4.1.25 No INNS or protected species were recorded during the survey.

Tributary of Tas (Section A)

Overview

4.1.26 The Tributary of Tas River Waterbody Catchment (WFD Waterbody ID: GB105034050950) is situated within Section A and contains two impacted watercourse sections as identified in Table A8.4.11. The Order Limits intersect the main stem of the Tributary of Tas at Watercourse ID 182.

4.1.27 As of 2022, the overall WFD status for ecology for this waterbody is moderate with fish, invertebrate and macrophyte quality elements scored as moderate, high and good respectively (Environment Agency, 2024b). The fish quality element has improved from poor to moderate since the previous round of WFD assessment in 2019. All other scores remain unchanged.

Table A8.4.11 Tributary of Tas impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
A	182	Stream (Tributary of Tas)	TM 15782 95250
A	201	Ditch	TM 15392 93832

Fish

4.1.28 The desk study identified results from six Environment Agency electrofishing surveys carried out between 2014 and 2022 at Site 1572 (NGR TM 18090 97179), approximately 0.5 km downstream of the Order Limits.

4.1.29 A total of five species were recorded in the surveys, with bullhead the most abundant recorded. Species of conservation importance present include bullhead, brown trout, and European eel.

4.1.30 Brown trout and European eel were recorded in Environment Agency electrofishing surveys in the River Waterbody Catchment immediately downstream: Tas (Tasburgh-R. Yare).

Macroinvertebrates

4.1.31 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on the Tributary of Tas in 2014 at Site 154294 (TM 18009 97258), approximately 0.5 km downstream of the Order Limits.

4.1.32 No protected invertebrate species were recorded. The only INNS identified was New Zealand mud snail.

Macrophytes

4.1.33 No Environment Agency macrophyte surveys have been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Tas (Head to Tasburgh) (Section A)

Overview

4.1.34 The Tas (Head to Tasburgh) River Waterbody Catchment (WFD Waterbody ID: GB105034045730) is situated within Section A and contains 18 impacted watercourse sections as identified in Table A8.4.12. The Order Limits intersect the main stem of the River Tas at the head of the watercourse (Watercourse ID 120). Watercourse ID 118 and 119 are directly connected to the River Tas immediately downstream of watercourse 120. The remaining impacted watercourses are a series of ditches/small streams to the east of the river.

4.1.35 As of 2022, the overall WFD status for ecology is moderate with fish, invertebrate and macrophyte quality elements scored as moderate, good and good respectively (Environment Agency, 2024b). This is unchanged since the previous round of WFD assessment in 2019.

Table A8.4.12 Tas (Head to Tasburgh) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
A	1	Ditch	TM 15782 95250
A	2	Ditch	TM 15392 93832
A	3	Ditch/Stream (Tributary of River Tas)	TM 14151 92792

Project Section	Watercourse ID	Watercourse Description	Grid Reference
A	4	Ditch	TM 12481 89926
A	5	Ditch	TM 12572 89899
A	6	Ditch	TM 12356 89580
A	7	Ditch	TM 12285 89333
A	8	Ditch	TM 12248 89096
A	9	Ditch	TM 11939 87975
A	10	Ditch	TM 11937 87937
A	11	Ditch	TM 11835 87714
A	12	Ditch	TM 11749 87388
A	118	Ditch	TM 12882 90952
A	119	Ditch	TM 12860 90855
A	120	River Tas	TM 12712 90770
A	178	Ditch	TM 16211 96255
A	212	Ditch	TM 15362 93508
A	224	Ditch	TM 13312 91849

Fish

4.1.36 The desk study identified results from two Environment Agency electrofishing surveys carried out between 2016 and 2022 at Site 1564 (NGR TM 16605 93569 / TM 16500 93500), approximately 5 km downstream of the Order Limits at Watercourse ID 120. It should be noted that Site 1564 has had two different grid references recorded in different survey years.

4.1.37 A total of seven species were recorded in the surveys, with three-spined stickleback *Gasterosteus aculeatus* the most abundant recorded. Bullhead were the only species of conservation importance present at the site. Migratory coarse fish species such as dace are found within this catchment.

4.1.38 Brown trout and European eel were in a downstream River Waterbody catchment: Tas (Tasburgh-R. Yare).

Macroinvertebrates

4.1.39 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out in 2014 at two sites on the River Tas: Site 156830 (NGR TM 12600 90700) and Site 54906 (TM 16500 93400).

4.1.40 No protected or INNS were recorded within this catchment.

Macrophytes

4.1.41 The desk study identified results from six Environment Agency aquatic macrophyte surveys carried out between 2015 and 2023 at three sites: Site 202622 (NGR TM 12650 90744), situated within the Order Limits at Watercourse ID 120, Site 54906 (NGR TM 16500 93400), and Site 202621 (NGR TM 16699 93575), approximately 5 km and 5.5 km downstream of the Order Limits at Watercourse ID 120.

4.1.42 INNS recorded include Himalayan balsam and Nuttall's waterweed. No protected macrophyte species were identified.

Frenze Beck (Section A)

Overview

4.1.43 The Frenze Beck River Waterbody Catchment (WFD Waterbody ID: GB105034045840) is situated within Section A and contains eight impacted watercourse sections as identified in Table A8.4.13. The Order Limits cross the main stem of Frenze Beck at Watercourse ID 16 and cross a short tributary of Frenze Beck at Watercourse ID 17. The remaining impacted watercourse sections in this catchment are a series of ditches.

4.1.44 As of 2022, the overall WFD status for ecology for this waterbody is moderate with the invertebrate and macrophyte quality elements both scored as moderate (Environment Agency, 2024b). These scores have remained unchanged since the previous round of WFD assessment in 2019. The fish quality element has not been assessed for this waterbody.

Table A8.4.13 Frenze Beck impacted watercourse section

Project Section	Watercourse ID	Watercourse Description	Grid Reference
A	13	Ditch	TM 11559 86551
A	14	Ditch	TM 11653 85324
A	15	Ditch	TM 11482 83678
A	16	Frenze Beck	TM 11395 82408
A	17	Ditch/ Stream (Tributary of Frenze Beck)	TM 10273 81653
A	18	Ditch	TM 09543 81511
A	19	Ditch	TM 09403 81477
A	240	Ditch	TM 11053 81867

4.1.45 No Environment Agency electrofishing data was recorded within this River Waterbody Catchment in the Study Area in the past ten years.

Macroinvertebrates

4.1.46 The desk study identified results from 14 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2022 at two sites: Site 54925 (NGR TM 12100 81600) and Site 54947 (NGR TM 13500 80500), approximately 1 km and 5 km downstream of the Order Limits.

4.1.47 New Zealand mud snail was the only INNS recorded. No protected species were identified during the surveys.

Macrophytes

4.1.48 The desk study identified results from one Environment Agency aquatic macrophyte survey carried out in 2016 at Site 161088 (NGR TM 13421 80369), approximately 5.5 km downstream of the Order Limits.

4.1.49 Canadian waterweed was the only INNS recorded. No protected macrophyte species were recorded in this catchment.

Waveney (U/S Frenze Beck) (Section A and B)

Overview

4.1.50 The Waveney (U/S Frenze Beck) River Waterbody Catchment (WFD Catchment ID: GB105034045820) is situated across Section A and B and contains seven impacted watercourse sections as identified in Table A8.4.14. The Order Limits intersect the main stem of the River Waveney at Watercourse IDs 125 and 126. Watercourse ID 127 and 124 are short tributaries running directly into the River Waveney at Watercourse ID 125. The remaining impacted watercourse sections are a series of ditches.

4.1.51 As of 2022, the overall WFD status for ecology for this waterbody is good with the invertebrate quality element also scored as good (Environment Agency, 2024b). This score has remained unchanged since the previous WFD assessment in 2019. The fish and macrophyte quality elements have not been assessed for this watercourse.

Table A8.4.14 Waveney upstream of Frenze Beck impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
A	22	Ditch	TM 09161 81108
A	124	Stream (Tributary of River Waveney)	TM 09911 79559
A	126	River Waveney	TM 09744 79634
A	123	Ditch	TM 09200 80426
A	125	River Waveney	TM 09851 79448
B	127	Ditch (Tributary of River Waveney)	TM 09793 79337
B	249	Ditch	TM 10119 77948

Fish

4.1.52 No Environment Agency electrofishing surveys have been recorded in this catchment within the past ten years.

4.1.53 Migratory rheophilic fish including dace and chub were recorded 7 km further downstream of the Order Limits, on the main stem of the River Waveney.

Macroinvertebrates

4.1.54 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on the main stem of the River Waveney in 2015 at Site 54923 (NGR TM 08900 80000), approximately 1 km upstream of the Order Limits.

4.1.55 *Dytiscus circumcinctus*, a nationally scarce species of dytiscid beetle was recorded in this catchment. The only INNS present was *Crangonyx pseudogracilis*.

Macrophytes

4.1.56 No macrophyte surveys have been recorded in this catchment within the past ten years.

Tributary of the Upper Waveney (Section B)

Overview

4.1.57 The Tributary of the Upper Waveney River Waterbody Catchment (WFD Waterbody ID: GB105034045750) is situated within Section B and contains seven impacted watercourse sections as identified in Table A8.4.15. The Order Limits intersect the Tributary of the Upper Waveney in two places at Watercourse IDs 251 and 556.

4.1.58 As of 2022, the overall WFD ecology status of this waterbody is moderate, with the invertebrate quality element scoring as good. This has remained unchanged since the previous WFD assessment in 2019. The fish and macrophyte quality elements have not been assessed for this waterbody (Environment Agency, 2024b).

Table A8.4.15 Tributary of Upper Waveney impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	128(a)	Ditch	TM 09213 74971
B	128(b)	Ditch	TM 09211 74778
B	129	Ditch	TM 08154 74737
B	130	Ditch	TM 07933 74633
B	455	Ditch	TM 10223 76661
B	251	Stream (Tributary of Upper Waveney)	TM 10243 76470
B	556	Stream (Tributary of Upper Waveney)	TM 11101 77424

Fish

4.1.59 There are no recorded Environment Agency electrofishing surveys in this River Waterbody Catchment within the Study Area in the past ten years.

Macroinvertebrates

4.1.60 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on the main stem of the Tributary of Upper Waveney at Site 161096 in 2014 (NGR TM 12076 78152). The site is approximately 1.5 km downstream of the Order Limits.

4.1.61 The only INNS recorded was New Zealand mud snail. No protected species were identified.

Macrophytes

4.1.62 The desk study identified results from one Environment Agency aquatic macrophyte survey carried out in 2016 at Site 161097 (NGR TM 12163 78175), approximately 1.5 km downstream of the Order Limits.

4.1.63 No INNS or protected species were recorded during this survey.

Little Ouse (U/S Thelnetham) (Section B)

Overview

4.1.64 The Little Ouse (U/S Thelnetham) River Waterbody Catchment (WFD Waterbody ID: GB105033043060) is situated in Section B and contains three impacted watercourse sections as identified in Table A8.4.16. The Order Limits do not intersect the Little Ouse waterbody and instead cross a series of ditches to the east of the watercourse.

4.1.65 As of 2022, the overall WFD status for ecology for this waterbody is bad with fish, invertebrate, and macrophyte quality elements scored as bad, high, and moderate respectively (Environment Agency, 2024b). This score has remained unchanged since the previous WFD assessment in 2019.

Table A8.4.16 Little Ouse (U/S Thelnetham) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	257	Ditch	TM 07421 74258
B	258	Ditch	TM 07039 73562
B	457	Ditch	TM 07306 72952

Fish

4.1.66 The desk study identified results from two Environment Agency electrofishing surveys carried out between 2015 and 2018 at Site 32969 (TM 02506 78825), approximately 9 km downstream of the Order Limits.

4.1.67 The only species recorded during the fish surveys was three-spined stickleback. Bullhead were noted present during the macroinvertebrate surveys detailed below.

Macroinvertebrates

4.1.68 The desk study identified results from 13 Environment Agency aquatic macroinvertebrate surveys carried out on the main stem of the Little Ouse between 2014-2023 at two sites: Site 55901 (TM 03300 78300), and Site 161105 (TM 03005 78726) approximately 8 km and 8.5 km downstream of the Order Limits respectively.

4.1.69 INNS present were New Zealand mud snail and *Crangonyx sp*. No protected invertebrate species were recorded.

Macrophytes

4.1.70 No macrophyte surveys have been recorded in this catchment within the past ten years. Two INNS were noted present within the invertebrate surveys: Least duckweed and Canadian waterweed.

Dove Tributary – Finningham (Section B)

Overview

4.1.71 The Dove Tributary – Finningham River Waterbody Catchment (WFD Waterbody ID: GB105034045660) is situated within Section G and contains five impacted watercourse sections as identified in Table A8.4.17. The Order Limits intersect a tributary of the Dove Tributary at Watercourse ID 25 and the main stem of the Dove Tributary at Watercourse ID 27.

4.1.72 As of 2022, the overall WFD ecological status of this waterbody is moderate, with the invertebrate quality element scoring as good. The macrophyte and phytobenthos combined quality element is also assessed as good although only the phytobenthos quality element has been independently assessed. These scores have remained unchanged since the previous WFD assessment in 2019. The fish and macrophyte quality elements have not been assessed for this waterbody (Environment Agency, 2024b).

Table A8.4.17 Dove Tributary – Finningham impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	25	Ditch/Stream Tributary of Dove Tributary)	TM 08026 72032
B	27	Dove Tributary	TM 07912 69496
B	131	Ditch	TM 07300 72975
B	458	Ditch	TM 07821 72352
B	459	Ditch	TM 07802 72313

4.1.73 No Environment Agency fish, invertebrate or macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past tenyears.

Mendlesham Stream (Section B)

Overview

4.1.74 The Mendlesham Stream River Waterbody Catchment (WFD Waterbody ID: GB105034045650) is situated within Section B and contains one impacted watercourse section as identified in Table A8.4.18. The Order Limits do not intersect the Mendlesham Stream in this catchment and instead cross a ditch located upstream of the waterbody.

4.1.75 As of 2022, the overall WFD ecological status of this waterbody is moderate, with the invertebrate quality element scoring as good. The macrophyte and phytobenthos combined quality element is also assessed as good although only the phytobenthos quality sub element has been independently assessed. These scores have remained unchanged since the previous WFD assessment in 2019. The fish and macrophyte quality elements have not been assessed for this waterbody (Environment Agency, 2024b).

Table A8.4.18 Mendlesham Stream impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	28	Ditch	TM 08555 65656

Fish

4.1.76 No Environment Agency electrofishing data has been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Macroinvertebrates

4.1.77 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out in 2015 at Site 160489 (NGR TM 12240 69374), approximately 6.5 km downstream of the Order Limits.

4.1.78 No INNS or protected species were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Macrophytes

4.1.79 No macrophyte data has been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Gipping (U/S Stowmarket) (Section B)

Overview

4.1.80 The Gipping (U/S Stowmarket) River Waterbody Catchment (WFD Waterbody ID: GB105035046180) is situated within Section B and contains three impacted watercourse sections as identified in Table A8.4.19. The Order Limits intersect the main stem of the River Gipping at its upstream end at Watercourse ID 30 and a tributary of the River Gipping at Watercourse ID 31 and 133.

4.1.81 As of 2022, the overall WFD ecological status of this waterbody is moderate, with the invertebrate quality element scored as good and the macrophyte and phytobenthos combined element assessed as moderate. Only the phytobenthos sub element has been assessed for this waterbody. The fish and macrophyte quality elements have not been assessed for this waterbody. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.19 Gipping Upstream of Stowmarket impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	30	River Gipping	TM 08648 63130
B	31	Ditch/Stream off River Gipping	TM 08885 62503
B	133	Ditch off River Gipping	TM 08711 62565

Fish

4.1.82 The desk study identified results from two Environment Agency electrofishing surveys carried out in 2017 at two sites: Site 638 on the main stem of the River Gipping (NGR TM 06900 61600) and Site 639 on a tributary of the River Gipping not crossed by the Order Limits (NGR TM 05800 62300), approximately 2.5 km and 4 km downstream of the Order Limits respectively.

4.1.83 Ten-spined stickleback *Pungitius pungitius* was the only species recorded. No species of conservation importance were recorded in this catchment.

4.1.84 European eel and migratory coarse fish such as dace, roach and chub were recorded in EA electrofishing data in the immediate downstream River Waterbody Catchment, the River Gipping downstream of Stowmarket (see below).

Macroinvertebrates

4.1.85 The desk study identified results from one Environment Agency aquatic macroinvertebrate survey carried out in 2016 at Site 54852, on the main stem of the River Gipping (NGR TM 04700 60300), approximately 5 km downstream of the Order Limits.

4.1.86 No INNS or protected species were recorded.

Macrophytes

4.1.87 No Environment Agency macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Gipping (D/S Stowmarket) (Section B)

Overview

4.1.88 The Gipping (D/S Stowmarket) River Waterbody Catchment (WFD Waterbody ID: GB105035046280) is situated within Section B and contains five impacted watercourse sections as identified in Table A8.4.20. The Order Limits intersect a tributary of the River Gipping at Watercourse ID 134 and the main stem of the River

Gipping directly upstream of Watercourse ID 135. The character of the watercourse at Watercourse ID 138 was not presented in the Environment Agency data.

4.1.89 As of 2022, the overall WFD ecological status of this waterbody is poor, with fish, invertebrate, and macrophyte quality elements scored as high, good, and poor respectively. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.20 Gipping Downstream of Stowmarket impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	134	Stream/ditch (Tributary of River Gipping)	TM 08197 56729
B	135	Ditch (Tributary of River Gipping)	TM 05534 56357
B	138	Ditch	TM 10609 46202
B	468	Ditch	TM 07854 56520
B	480	Ditch	TM 10714 45785

Fish

4.1.90 The desk study identified results from 11 Environment Agency electrofishing surveys carried out between 2016 and 2022 at four sites (Sites 55, 57, 59, 61 and 227). The furthest upstream point of survey was at Site 55 (NGR TM 06354 57157), approximately 2 km upstream of the Order Limits at Watercourse ID 134. The furthest downstream survey location was at Site 427 (NGR TM 13000 44500), approximately 2.5 km downstream of the Order Limits at Watercourse ID 38. It should be noted that Sites 55, 59, and 61 have had different locations recorded in different survey years.

4.1.91 A total of 15 species were recorded in the surveys, with roach *Rutilus rutilus* the most abundant recorded. Species of conservation importance in this catchment include bullhead, and European eel. Migratory coarse fish species such as dace, roach, and chub are prevalent in this catchment.

Macroinvertebrates

4.1.92 The desk study identified results from 32 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2023 at five sites on the main stem of the River Gipping (Sites 54857, 214731, 54862, 168044, 54866, and 168045). The furthest upstream point of survey was at NGR TM 06200 57500, approximately 2.5 km upstream of the Order Limits at impacted Watercourse ID 134. The furthest downstream survey location was at NGR TM 13277 44437, approximately 2.5 km downstream of the Order Limits at Watercourse ID 38.

4.1.93 Notable species in this catchment include the scarce chaser dragonfly listed as near threatened by the IUCN and *Limnephilis potilus*, a nationally scarce species of caddisfly (present in fewer than between 16-100 hectads in the UK (i.e., the species has been recorded within between 16 and 100, areas that measure 10 km by 10 km in the UK). *Crangonyx pseudogracilis* and New Zealand mud snail were the only INNS recorded.

Macrophytes

4.1.94 The desk study identified results from two Environment Agency aquatic macrophyte surveys carried out between 2014 and 2016 at two sites on the River Gipping: Site 157806 (NGR TM 05936 57901), approximately 3 km upstream of the Order Limits at Watercourse ID 134 and Site 85893 (NGR TM 09400 54970), approximately 2 km downstream of Watercourse ID 134.

4.1.95 Macrophyte INNS recorded in this catchment include Nuttall's waterweed and Canadian waterweed. A terrestrial INNS, Himalayan balsam, was also recorded. No protected species were recorded.

Wattisham Watercourse (Section B)

Overview

4.1.96 The Wattisham Watercourse River Waterbody Catchment (WFD Waterbody ID: GB105035040350) is situated within Section B and contains three impacted watercourse sections as identified in Table A8.4.21. The Order Limits intersect the Wattisham Watercourse at Watercourse ID 32 and a short tributary of the Wattisham Watercourse at Watercourse ID 33.

4.1.97 As of 2022, the overall WFD ecological status of the waterbody is moderate. The invertebrate quality element scored as high and the macrophyte and phytobenthos quality element scored as moderate although only the phytobenthos sub element has been assessed for this catchment. The fish and macrophyte quality elements have not previously been assessed. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.21 Wattisham Watercourse impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	32	Stream (Wattisham Watercourse)	TM 07338 55452
B	33	Ditch (Tributary of Wattisham Watercourse)	TM 06101 53146
B	297	Ditch	TM 05595 51705

Fish

4.1.98 No Environment Agency electrofishing surveys have been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Macroinvertebrates

4.1.99 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on the Wattisham Watercourse in 2014 at Site 54780 (NGR TM 0801 055850), approximately 0.5 km downstream of the Order Limits.

4.1.100 The only INNS recorded was New Zealand mud snail an invasive freshwater snail. No protected species were recorded during the surveys.

Macrophytes

4.1.101 No macrophyte surveys have been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Somersham Watercourse (Section B)

Overview

4.1.102 The Somersham Watercourse River Waterbody Catchment (WFD Waterbody ID: GB105035040310) is situated within Section B and contains four impacted watercourse sections as identified in Table A8.4.22. The Order Limits intersect the Somersham Watercourse at Watercourse ID 34, 136, and 137. Watercourse ID 37 is located on a ditch to the south of the watercourse.

4.1.103 As of 2022, the overall WFD ecological status of the waterbody is moderate although no status assessments have been made for the invertebrate, fish or macrophyte quality elements. This score has remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.22 Somersham Watercourse impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	34	Somersham Watercourse	TM 05525 49681
B	37	Ditch	TM 08939 47235
B	136	Somersham Watercourse	TM 06727 49718
B	137	Somersham Watercourse	TM 07139 49294

Fish

4.1.104 No Environment Agency electrofishing data has been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Macroinvertebrates

4.1.105 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on the Somersham Watercourse between 2015 and 2022 at Site 161795 (NGR TM 08486 48907), approximately 1 km downstream of the Order Limits.

4.1.106 No protected species or INNS were recorded during these surveys.

Macrophytes

4.1.107 No Environment Agency macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Belstead Brook (Section B and C)

Overview

4.1.108 The Belstead Brook River Waterbody Catchment (WFD Waterbody ID: GB105035040440) spans Section B and C and contains five impacted watercourse sections as identified in Table A8.4.23. The Order Limits intersect a tributary of the Belstead Brook (Spring Brook) at Watercourse ID 140. The remaining impacted watercourse sections in this catchment are ditches.

4.1.109 The current WFD status for the catchment is poor for overall ecology, poor for fish, good for invertebrates and moderate for macrophytes and phytobenthos (Environment Agency, 2024b). The invertebrate quality status went down from high to good between the 2019 and 2022 WFD assessments.

Table A8.4.23 Belstead Brook impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
B	35	Ditch	TM 06305 48680
B	36	Ditch	TM 06414 48591
B	479	Ditch	TM 07673 47939
C	38	Ditch	TM 10806 44905
C	140	Spring Brook	TM 10343 42559

Fish

4.1.110 The desk study identified results from one Environment Agency electrofishing survey carried out on the Belstead Brook in 2016 at Site 65 (NGR TM 09168 44375), approximately 2.2 km upstream of the Order Limits.

4.1.111 A total of three species were recorded in the survey, with three-spined stickleback the most abundant recorded. Brown trout are the only species of conservation importance recorded in this catchment.

Macroinvertebrates

4.1.112 The desk study identified results from three Environment Agency aquatic macroinvertebrate surveys carried out on the Belstead Brook in 2016 at three sites: Site 54786 (NGR TM 14300 41900), Site 54783 (NGR TM 10400 43500) and Site 161794 (NGR TM 06128 47336). These sites are located approximately 4 km downstream, 0.5 and 6 km upstream of the Order Limits, respectively.

4.1.113 New Zealand mud snail, the New Zealand mud snail, was the only INNS recorded. No protected species were identified.

Macrophytes

4.1.114 No macrophyte data have been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Brett (Section C)

Overview

4.1.115 The Brett River Waterbody Catchment (WFD Waterbody ID: GB105036040930) is situated within Section C and contains one impacted watercourse section as identified in Table A8.4.24. The Order Limits do not intersect the River Brett in this catchment, instead crossing a ditch to the east of the river.

4.1.116 As of 2022, the overall ecological status of this waterbody is moderate, with the fish, invertebrate and macrophyte quality elements scored as good, good, and moderate respectively. The fish quality element was upgraded from moderate to good between the 2019 and 2022 WFD assessments (Environment Agency, 2024b).

Table A8.4.24 Brett impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
C	145	Stream (Tributary of River Brett)	TM 04511 36846

Fish

4.1.117 The desk study identified results from 21 Environment Agency electrofishing surveys carried out between 2014 and 2023 at seven sites, six on the River Brett (Sites 743, 740, 738, 736, 733, and 693) and one on a tributary of the River Brett (Site 515). The furthest upstream point of survey was at Site 743 (NGR TL 97800 47900), approximately 15 km upstream of the Order Limits at Watercourse ID 145, and the furthest downstream survey was undertaken at Site 693 (NGR TM 03500 35100), approximately 5 km downstream of Watercourse ID 145. Sites 693 and 736 have had multiple different locations recorded throughout different survey years.

4.1.118 A total of 19 species were recorded in the surveys, with roach the most abundant recorded. Species of conservation importance in this catchment include lamprey, bullhead, European eel, and spined loach. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.119 The desk study identified results from 37 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2023 at seven sites on the River Brett (Sites 81003, 216094, 216093 54599, 216092, 54601, 54478). The furthest upstream point of survey was at Site 54478 (NGR TM 00230 46790), approximately 12 km upstream of Watercourse ID 145 and the furthest downstream survey was undertaken at Site 81003 (NGR TM 03200 35500), approximately 5 km downstream of that Watercourse ID 145.

4.1.120 Notable species in this catchment include smooth ramshorn, a small species of freshwater snail and *Notidobia cilliaris*, a species of caddisfly, both of which are considered nationally scarce (present in fewer than between 16 and 100 hectads in the UK (i.e., the species has been recorded within between 16 and 100, areas that measure 10 km by 10 km in the UK). *Crangonyx pseudogracilis/ floridanus* and New Zealand mud snail were the only INNS recorded.

Macrophytes

4.1.121 The desk study identified results from three Environment Agency aquatic macrophyte surveys carried out between 2014 and 2023 at two sites on the River Brett: Site 149946 (NGR TM 03190 38441) and Site 214212 (NGR TM 03136 37834) both between 2 and 2.5 km downstream of Watercourse ID 145.

4.1.122 The invasive macrophyte species: Canadian waterweed and Himalayan balsam were identified in this catchment. No protected species were recorded.

Coastal Catchment (Stour) (Section C)

Overview

4.1.123 This coastal catchment is situated around the mouth of the River Stour near Manningtree. The catchment is situated within Section C and contains two impacted watercourse sections as identified in Table A8.4.25.

Table A8.4.25 Coastal Catchment (Stour) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
C	39	Ditch	TM 08646 41008
C	322	Ditch	TM 08827 41342

Fish, Macroinvertebrates and Macrophytes

4.1.124 No Environment Agency fish, invertebrate or macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Stutton Brook (Section C)

Overview

4.1.125 The Stutton Brook River Waterbody Catchment (WFD Waterbody ID: GB105036040890) is situated within Section C and contains four impacted watercourse sections as identified in Table A8.4.26. The Order Limits intersect Stutton Brook at Watercourse ID 141 and a short tributary of Stutton Brook at Watercourse ID 142. The remaining impacted watercourse sections are ditches.

4.1.126 As of 2022, the overall ecological status of the waterbody is poor, with the fish, invertebrate, and macrophyte and phytobenthos combined quality elements scored as poor, good, and high respectively. Only the phytobenthos sub element has been assessed for this catchment. These scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.26 Stutton Brook impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference

C	142	Ditch (Runs into Stutton Brook)	TM 06768 40239
C	141	Ditch/Stutton Brook	TM 07129 40501
C	143	Ditch	TM 06120 39650
C	144	Ditch	TM 05933 39066

Fish

4.1.127 The desk study identified results from two Environment Agency electrofishing surveys carried out between 2017 at two sites on the Stutton Brook: Site 504 (NGR TM 11400 35400) and Site 503 (NGR TM 13300 34400), approximately 8 km and 10.5 km downstream of the Order Limits.

4.1.128 A total of five species were recorded in the surveys, with brown trout the most abundant recorded. Species of conservation importance in this catchment include brown trout and European eel.

Macroinvertebrates

4.1.129 The desk study identified results from eight Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2021 at Site 81000 (NGR: TM1340034500), approximately 10km downstream of the Order Limits.

4.1.130 New Zealand mud snail was the only INNS recorded. No protected species were identified.

Macrophytes

4.1.131 No Environment Agency macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Tenpenny Brook (Section C)

Overview

4.1.132 The Tenpenny Brook River Waterbody Catchment (WFD Waterbody ID: GB105037041310) is situated in Section C and contains one impacted watercourse section as identified in Table A8.4.27. The Order Limits do not intersect Tenpenny Brook and instead cross a ditch to the north of the waterbody.

4.1.133 As of 2022, the overall WFD ecological status for this waterbody is moderate, with the fish, invertebrate and macrophyte and phytobenthos combined quality elements scored as poor, moderate, and good respectively. Only the phytobenthos sub element has been assessed for this waterbody. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.27 Tenpenny Brook impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
C	326	Ditch	TM 08140 28347

Fish, Macroinvertebrates and Macrophytes

4.1.134 No Environment Agency fish, invertebrate or macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Stour (D/S R. Brett) (Section C and D)

Overview

4.1.135 The Stour (D/S R. Brett) River Waterbody Catchment (WFD Waterbody ID: GB105036041000) is situated across Section C and D and contains 14 impacted watercourse sections as identified in Table A8.4.28. The Order Limits intersect the River Stour at Watercourse ID 41(a) and 42 and a tributary of the River Stour (Black Brook) at Watercourse ID 45. The remainder of the impacted watercourse sections are located on ditches or minor tributaries.

4.1.136 As of 2022, the overall WFD ecological status for this waterbody is moderate, with the fish, invertebrate and macrophyte and phytobenthos combined quality elements all scored as high. The macrophyte sub element was assessed as poor. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.28 Stour Downstream of River Brett impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
C	483	Ditch	TM 04594 35974
C	41(a)	River Stour	TM 03668 34980
C	41(b)	Ditch into lake connected to River Stour	TM 03868 34702
C	42	River Stour	TM 03742 34574
C	45	Black Brook (Tributary of River Stour)	TM 03129 32433
C	46	Ditch	TM 03638 31926
C	146	Stream (Tributary of River Stour)	TM 04424 35484
C	147	Ditch into lake connected to River Stour	TM 03836 34755
C	148	Ditch	TM 03864 34363
C	150	Ditch (Short watercourse into Black Brook)	TM 03496 32692
C	151	Black Brook	TM 03495 32593
D	48	Ditch/Stream (Tributary of Black Brook)	TL 99797 30393

Project Section	Watercourse ID	Watercourse Description	Grid Reference
D	49	Ditch/Stream (Tributary of Black Brook)	TL 99491 30555
D	338	Ditch	TL 99198 30558

Fish

4.1.137 The desk study identified results from 27 Environment Agency electrofishing surveys carried out between 2014 and 2023 at six sites on the River Stour (Sites 693, 692, 691, 690, 689 and 687), and one site on a tributary of the River Stour (Site 687). The furthest upstream point of survey was at Site 693 (NGR TM 03534 35113), approximately 0.5 km upstream of the Order Limits at Watercourse ID 41(a). The furthest downstream survey location was at Site 687 (NGR TM 07700 33000), approximately 5 km downstream of the Order Limits.

4.1.138 A total of 19 species were recorded in the surveys, with roach the most abundant recorded. Species of conservation importance in this catchment include brook lamprey, bullhead, spined loach, and European eel. Lamprey ammocoetes were recorded, indicating the presence of suitable spawning habitat in the area. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.139 The desk study identified results from 15 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2022 at two sites on the River Stour: Site 54717 (NGR TM 04200 34040) and Site 54714 (NGR TM 07550 33270), approximately 0.5 km and 4 km downstream of the Order Limits respectively.

4.1.140 Notable species in this catchment include scarce chaser dragonfly, an IUCN near threatened species. *Crangonyx pseudogracilis* and New Zealand mud snail were the only INNS recorded.

Macrophytes

4.1.141 The desk study identified results from one Environment Agency aquatic macrophyte survey carried out on the River Stour in 2016 at Site 146502 (NGR TM 05853 33673), approximately 2 km downstream of the Order Limits.

4.1.142 Canadian and Nuttall's waterweed were the only INNS recorded. No protected macrophyte species were recorded in this catchment.

Salary Brook (Section C and D)

Overview

4.1.143 The Salary Brook River Waterbody Catchment (WFD Waterbody ID: GB105037041320) is situated across Section C and D and contains five impacted watercourse sections as identified in Table A8.4.29. The Order Limits intersect the Salary Brook at Ardleigh Reservoir (downstream of Watercourse ID 152).

4.1.144 As of 2022, the overall WFD ecological status of this waterbody is moderate, with the fish, invertebrate and macrophyte and phytobenthos combined elements scored as poor, poor, and good respectively. For the latter, only the phytobenthos sub element

was assessed for this watercourse. These scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.29 Salary Brook impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
C	328	Ditch	TM 05242 30139
C	331	Ditch	TM 04174 29920
C	332	Stream (Tributary of Salary Brook)	TM 03879 30034
C	152	Ditch (Short watercourse running into Ardleigh Reservoir)	TM 04009 30778
D	47	Ditch	TM 00465 30180

Fish

4.1.145 The desk study identified results from two Environment Agency electrofishing surveys carried out in 2015 at two sites: Site 550 (NGR TM 03762 27603) and Site 548 (NGR TM 02289 24559), approximately 2.5 km and 6 km downstream of the Order Limits.

4.1.146 A total of eight species were recorded in the surveys, with three-spined stickleback the most abundant recorded. Brown trout, bullhead and European eel are the only species of conservation importance recorded. Migratory coarse fish species such as dace are present in this catchment.

Macroinvertebrates

4.1.147 The desk study identified results from eight Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2018 at Site 160523 (NGR TM 02940 26200), approximately 4 km downstream of the Order Limits.

4.1.148 The only INNS recorded in this catchment was New Zealand mud snail. No protected species were recorded for this catchment.

Macrophytes

4.1.149 No Environment Agency macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Stour (Lamarsh – R. Brett) (Section C and D)

Overview

4.1.150 The Stour (Lamarsh – R. Brett) River Waterbody Catchment (WFD Waterbody ID: GB105036040942) is situated across Sections C and D and contains six impacted watercourse sections as identified in Table A8.4.30. The Order Limits do not intersect the River Stour within this catchment and instead crosses a series of ditches/minor watercourses to the south of the river.

4.1.151 As of 2022, the overall WFD ecological status for this waterbody is moderate, with the fish and invertebrate quality elements scored as high and good respectively. The macrophyte quality element has not been assessed for this catchment (Environment Agency, 2024b).

Table A8.4.30 Stour Lamarsh to River Brett impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
C	43	Ditch	TM 02487 33962
C	484	Ditch	TM 02649 33924
C	486	Ditch	TM 02563 33695
D	50	Ditch/Stream	TL 96707 30421
D	51	Ditch	TL 96446 30550
D	52	Ditch/Stream	TL 96138 30433

Fish

4.1.152 The desk study identified results from 50 Environment Agency electrofishing surveys carried out between 2014 and 2023 at nine sites on the River Stour (Sites 704, 703, 702, 701, 699, 698, 697, 695, and 745). The furthest upstream point of survey was at Site 704 (NGR TL 90619 34042), approximately 10 km upstream of the Order Limits at Watercourse ID 52(b). The furthest downstream survey location was at Site 745 (NGR TM 02400 34500), at the confluence of the River Box and Stour, approximately 9 km downstream of the Order Limits.

4.1.153 A total of 21 species were recorded in the surveys, with roach the most abundant recorded. Species of conservation importance in this catchment include brown trout, brook lamprey, bullhead, spined loach, and European eel. Lamprey ammocoetes were recorded, indicating the presence of suitable spawning habitat in the area. Migratory coarse fish species such as dace and chub are abundant in this catchment.

Macroinvertebrates

4.1.154 The desk study identified results from 22 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2019 at three sites: Site 54722 (NGR TL 92350 33550) approximately 8 km upstream on a tributary of the Stour, Site 54562 (NGR TL 98570 35500) approximately 8 km downstream of the Order Limits on a separate tributary of the River Stour and Site 54718 (NGR TM 01250 34420) on the River Stour approximately 8.5 km downstream of the Order Limits.

4.1.155 Notable species in this catchment include *Paraleptophlebia cincta*, a nationally scarce species of mayfly. *Crangonyx pseudogracilis* and New Zealand mud snail were the only INNS recorded.

Macrophytes

4.1.156 The desk study identified results from one Environment Agency aquatic macrophyte survey carried out in 2022 at Site 208751 (NGR TL 92327 33623), approximately 8 km downstream of the Order Limits on a tributary of the River Stour.

4.1.157 No protected species or INNS were recorded during the survey.

Colne (D/S Doe's Corner) (Section D)

Overview

4.1.158 The Colne (D/S Doe's Corner) River Waterbody Catchment (WFD Waterbody ID: GB105037041330) is situated within Section D and contains 17 impacted watercourse sections as identified in Table A8.4.31. The Order Limits intersect a series of ditches and minor tributaries of the River Colne before crossing the river. No direct impacts are expected on the main stem of the River Colne.

4.1.159 As of 2022, the overall WFD ecological status of the waterbody is moderate, with the fish invertebrate and macrophyte and phytobenthos combined quality elements scoring as good, good, and moderate respectively. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.31 Colne (D/S Doe's Corner) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
D	53	Ditch (Tributary of River Colne)	TL 94684 29474
D	55	Stream (Tributary of River Colne)	TL 94609 29287
D	54	Ditch (Tributary of River Colne)	TL 94633 29442
D	56	Ditch (Tributary of River Colne)	TL 93653 28278
D	57	Ditch (Tributary of River Colne)	TL 93097 27692
D	153	Ditch	TL 98450 30407
D	154	Ditch (Tributary of River Colne)	TL 98293 30571
D	155	Ditch	TL 95157 30424
D	183	River Colne	TL 93134 27269
D	341	Ditch	TL 94412 29081
D	349	Ditch	TL 92400 26754
D	352	Ditch	TL 92047 26173

Project Section	Watercourse ID	Watercourse Description	Grid Reference
D	353	Ditch	TL 91932 26030
D	498	Ditch	TL 97739 30892
D	500	Ditch	TL 97319 30587
D	504	Ditch	TL 94841 29977
D	507	Ditch	TL 92447 27412

Fish

4.1.160 The desk study identified results from 31 Environment Agency electrofishing surveys carried out between 2014 and 2023 at 12 sites on the River Colne (Sites 788, 785, 783, 781, 779, 778, 777, 774, 773, 771, 769, and 768). The furthest upstream point of survey was at Site 788 (NGR TL 80949 31062), approximately 12.5 km upstream of Order Limits. The furthest downstream survey location was at Site 768 (NGR TM 00000 25800), approximately 8 km downstream of the Order Limits.

4.1.161 A total of 15 species were recorded in the surveys, with roach the most abundant recorded. Species of conservation importance in this catchment include bullhead, and European eel. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.162 The desk study identified results from 43 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2023 at five sites on the River Colne (Sites 171443, 54641, 54637, 54636, and 54645). The furthest upstream point of survey was at Site 171443 (NGR TL 84625 29661), approximately 10 km upstream of the Order Limits. The furthest downstream survey location was at Site 54636 (NGR TL 99700 25600), approximately 7.5 km downstream of the Order Limits.

4.1.163 Notable species in this catchment include *Athripsodes commutatus* and *Corixa affinis*, both of which are considered nationally scarce. Signal crayfish and New Zealand mud snail were the only INNS recorded.

Macrophytes

4.1.164 The desk study identified results from five Environment Agency aquatic macrophyte surveys carried out between 2015 and 2018 at three sites on the River Colne: Sites 54645 (NGR TL 82600 29800), 146522 (NGR TL 86707 28871), and 149947 (TL 99781 25672), and approximately 11 km upstream, 7 km upstream, and 7.5 km downstream of the Order Limits respectively.

4.1.165 No INNS or protected species were recorded in this catchment.

Roman River (Section D and E)

Overview

4.1.166 The Roman River Waterbody Catchment (WFD Waterbody ID: GB105037034150) is situated within Section D and E and contains eight impacted watercourse sections as identified in Table A8.4.32. The Order Limits intersect a short tributary of the Roman River at Watercourse ID 59 and the Roman River itself at Watercourse ID 60. The remaining impacted section (Watercourse ID 58) is a ditch to the north of the river.

4.1.167 As of 2022, the overall WFD ecological status of the waterbody is moderate, with the fish, invertebrate, and macrophyte quality elements scoring as moderate, good, and moderate respectively. These scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.32 Roman River impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
D	58	Ditch	TL 92056 25777
D	59	Ditch/Stream (Tributary of Roman River)	TL 90848 24713
D	60	Roman River	TL 90631 24739
D	357	Ditch	TL 89883 24400
D	358	Ditch	TL 89387 24304
D	364	Ditch	TL 87928 23541
D	509	Ditch	TL 91265 24876
E	366	Ditch	TL 87347 23093

Fish

4.1.168 The desk study identified results from eight Environment Agency electrofishing surveys carried out on the Roman River between 2015 and 2023 at two sites: Site 546 (NGR TL 93417 24208), and Site 544 (NGR TL 94650 21786), approximately 2.5 and 5.5 km downstream of the Order Limits. Site 544 has had several locations recorded in various survey years.

4.1.169 A total of nine species were recorded in the surveys, with minnow the most abundant recorded. Species of conservation importance in this catchment include brown trout, bullhead, and European eel. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.170 The desk study identified results from 11 Environment Agency aquatic macroinvertebrate surveys carried out on the Roman River between 2014 and 2019 at Site 54706 (NGR TL 93400 24100), approximately 2.5 km downstream of the Order Limits.

4.1.171 The only INNS recorded was New Zealand mud snail. No protected species were recorded.

Macrophytes

4.1.172 No Environment Agency macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Blackwater (Combined Essex) (Section E)

Overview

4.1.173 The Blackwater (Combined Essex) River Waterbody Catchment (WFD Waterbody ID: GB105037041160) is situated within Section E and contains nine impacted watercourse sections as identified in Table A8.4.33. The Order Limits intersect a series of ditches/minor tributaries of the River Blackwater before crossing the River Blackwater at Watercourse ID 62.

4.1.174 As of 2022, the overall WFD ecological status of the waterbody is moderate, with the fish, invertebrate, and macrophyte quality elements scored as high, high, and moderate respectively. These scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.33 Blackwater (Combined Essex) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
E	61	Ditch	TL 86683 21363
E	62	River Blackwater	TL 86463 21195
E	64	Ditch/Stream Tributary of River Blackwater)	TL 86159 21066
E	67	Ditch/Stream (Tributary of River Blackwater)	TL 82681 18752
E	156	Ditch (Possible side channel of River Blackwater)	TL 86423 21177
E	369	Ditch	TL 86632 21968
E	510	Ditch	TL 86965 22331
E	511	Ditch	TL 87146 21825
E	513	Ditch	TL 83314 19041

Fish

4.1.175 The desk study identified results from 38 surveys undertaken at 14 Environment Agency electrofishing sites on the River Blackwater in the period between 2014 and

2023 (Sites 823, 819, 817, 815, 814, 812, 811, 810, 809, 807, 806, 804, 803, and 802). These surveys are well dispersed throughout the catchment with the furthest upstream point at Site 823 (NGR TL 76000 24900), approximately 13 km upstream of the Order Limits and the furthest downstream survey at Site 802 (NGR TL 83100 09900), approximately 13 km downstream of the Order Limits.

4.1.176 A total of 16 species were recorded in the surveys, with roach the most abundant recorded. Species of conservation importance in this catchment include brown trout, brook lamprey, bullhead and European eel.

Macroinvertebrates

4.1.177 The desk study identified results from 18 Environment Agency aquatic macroinvertebrate surveys carried out on the River Blackwater between 2014 and 2022 at three sites: Site 208712 (TL 79001 24510), Site 54569 (NGR TL 86110 18210), and Site 54567 (TL 82263 11639), approximately 9 km upstream, 3.5 km downstream, and 10 km downstream of the Order Limits respectively.

4.1.178 The invasive freshwater amphipod *Crangonyx pseudogracilis/floridanus* and New Zealand mud snail were the only INNS recorded. No protected species were identified.

Macrophytes

4.1.179 The desk study identified results from three macrophyte surveys carried out on the River Blackwater between 2016 and 2023 at two sites: Site 149942 (NGR TL 86110 18210) and Site 208712 (NGR TL 79001 24510), approximately 9 km upstream and 3.5 km downstream of the Order Limits respectively.

4.1.180 The INNS Nuttall's waterweed and Himalayan balsam were recorded. No protected species were recorded.

Brain (Section E)

Overview

4.1.181 The Brain River Waterbody Catchment (WFD Waterbody ID: GB105037041140) is situated within Section E and contains four impacted watercourse sections as identified in Table A8.4.34. The Order Limits intersect the River Brain at Watercourse ID 68 and 157 with the remaining impacted watercourse sections located on minor watercourses or ditches.

4.1.182 The overall WFD ecological status of the waterbody is moderate, with the invertebrate and macrophyte quality elements scored as good and poor respectively. These scores have remained unchanged since the previous round of WFD assessment in 2019. The fish quality element has not been assessed for this catchment (Environment Agency, 2024b).

Table A8.4.34 Brain impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
E	68	River Brain	TL 80047 17345

Project Section	Watercourse ID	Watercourse Description	Grid Reference
E	69	Ditch running into River Brain	TL 79808 17828
E	157	River Brain	TL 79588 17694
E	158	Ditch near River Brain.	TL 79484 17695

Fish

4.1.183 The desk study identified results from a single Environment Agency electrofishing survey carried out on the River Brain in 2015 at Site 564 (NGR TL 73970 22955), approximately 8.5 km upstream of the Order Limits near Braintree.

4.1.184 A total of six species were recorded in the surveys, with minnow the most abundant recorded. Species of conservation importance in this catchment include brook lamprey and bullhead.

Macroinvertebrates

4.1.185 The desk study identified results from eight Environment Agency aquatic macroinvertebrate surveys carried out on the River Brain between 2014 and 2018 at three sites: Site 54598 (NGR TL 73200 23520), Site 56511 (NGR TL 77320 20320), and Site 54587 (NGR TL 81880 14960). These sites are approximately 10 km upstream, 3.5 km upstream, and 2.8 km downstream of the Order Limits, respectively.

4.1.186 *Crangonyx pseudogracilis/floridanus* and New Zealand mud snail were the only INNS recorded. No protected species were recorded.

Macrophytes

4.1.187 The desk study identified results from two Environment Agency aquatic macrophyte surveys carried out at two sites on the River Brain in 2015: Site 152574 (NGR TL 73072 23643) and Site 149944 (NGR TL 79973 17426) approximately 10 km upstream and 0.5 km downstream of the Order Limits respectively.

4.1.188 The INNS Himalayan balsam was the only notable species recorded. No protected species were identified.

Ter (Section E and F)

Overview

4.1.189 The Ter River Waterbody Catchment (WFD Waterbody ID: GB105037033940) is situated across Section E and F and contains six impacted watercourse sections as identified in Table A8.4.35. The Order Limits intersect tributaries of the River Ter at Watercourse ID 71 and 72 before crossing the River Ter at Watercourse ID 73.

4.1.190 As of 2022, the overall WFD ecological status for this waterbody is moderate, with the invertebrate and macrophyte quality elements scoring high and moderate respectively. These scores have remained unchanged since the previous WFD assessment in 2019. The fish quality element has not previously been assessed for this catchment (Environment Agency, 2024b).

Table A8.4.35 Ter impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
E	383	Ditch	TL 75267 17172
E	71	Stream (Tributary of River Ter)	TL 76504 17734
E	72	Ditch (Tributary of River Ter)	TL 74531 16707
F	73	River Ter	TL 72890 15835
F	74	Ditch	TL 72022 15009
F	519	Ditch	TL 74447 16209

Fish

4.1.191 The desk study identified results from one Environment Agency electrofishing survey carried out on the River Ter in 2019 at Site 884 (NGR TL 79590 10156), approximately 8.5 km downstream of the Order Limits.

4.1.192 A total of ten species were recorded in the surveys, with roach the most abundant recorded. Species of conservation importance include brook lamprey, bullhead, and European eel. Migratory coarse fish species such as dace and chub were recorded in this catchment.

Macroinvertebrates

4.1.193 The desk study identified results from 11 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2023 at three sites on the River Ter: Site 54748 (NGR TL 72420 16630), Site 20264 (TL 75531 15354), and Site 54746 (NGR TL 78870 10700) approximately 0.5 km upstream, 1 km downstream, and 7.5 km downstream of the Order Limits respectively.

4.1.194 INNS recorded for this catchment include *Crangonyx pseudogracilis* and New Zealand mud snail. No protected invertebrate species were recorded during the surveys.

Macrophytes

4.1.195 The desk study identified results from three Environment Agency aquatic macrophyte surveys carried out on the River Ter between 2015 and 2022 at two sites: Site 202624 (NGR TL 75531 15354) and Site 160911 (NGR TL 78730 10750), approximately 2 km and 9 km downstream of the Order Limits, respectively.

4.1.196 No protected species or INNS were recorded during the surveys.

Chelmer (G. Easton – R. Can) (Section F)

Overview

4.1.197 The Chelmer (G. Easton – R. Can) River Waterbody Catchment (WFD Waterbody ID: GB105037033950) is situated within Section F and contains seven impacted

watercourse sections as identified in Table A8.4.36. The Order Limits intersect a series of ditches/ minor watercourses before crossing the River Chelmer at Watercourse ID 398.

4.1.198 As of 2022, the overall WFD ecological status of this waterbody is moderate, with the fish, invertebrate, and macrophyte quality elements assessed as good, high, and poor respectively. These scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.36 Chelmer (G. Easton – R. Can) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
F	75	Ditch	TL 71854 14401
F	160	Ditch (Tributary of River Chelmer)	TL 71171 14093
F	161	Ditch (Tributary of River Chelmer)	TL 70941 13922
F	397	Ditch	TL 70624 13292
F	398	River Chelmer	TL 70481 13025
F	399	Stream (Tributary of River Chelmer)	TL 70309 13130
F	523	Ditch	TL 71158 14303

Fish

4.1.199 The desk study identified results from 11 Environment Agency electrofishing surveys carried out on the River Chelmer between 2016 and 2022 at six sites (Sites 2602, 877, 876, 874, 873, and 869). The furthest upstream point of survey was at Site 2602 (NGR TL 68035 17610), approximately 6 km upstream of the Order Limits.
The furthest downstream survey location was at Site 869 (NGR TL 71300 07400), approximately 6.5 km downstream of the Order Limits.

4.1.200 A total of 15 species were recorded in the surveys, with minnow the most abundant recorded. Species of conservation importance in this catchment include brown trout, brook lamprey, bullhead, and European eel. Lamprey ammocoetes were recorded in this catchment indicating suitable spawning habitat in the area. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.201 The desk study identified results from 12 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2022 at two sites: Site 54629 (NGR TL 67000 19000), approximately 7 km upstream of the Order Limits and Site 54625 (NGR TL 71300 07100), approximately 7.5 km downstream of the Order Limits.

4.1.202 New Zealand mud snail and *Crangonyx pseudogracilis* were the only INNS recorded. No protected species were identified.

Macrophytes

4.1.203 The desk study identified results from one Environment Agency aquatic macrophyte survey carried out in 2015 at Site 147839 (NGR TL 70730 12700), approximately 0.5 km downstream of the Order Limits.

4.1.204 No INNS or protected species were recorded for this catchment.

Chignall Brook (Section F)

Overview

4.1.205 The Chignall Brook River Waterbody Catchment (WFD Waterbody ID: GB105037033650) is situated within Section F and contains two impacted watercourse sections as identified in Table A8.4.37. Both impacted watercourses are ditches.

4.1.206 As of 2022, the overall WFD ecological status of this waterbody is moderate, with the invertebrate and macrophyte and phytobenthos combined quality elements scoring as moderate and good respectively. Only the phytobenthos sub element has been assessed for this waterbody. The fish quality element has not been assessed. All scores have remained unchanged since the previous round of WFD assessments in 2019 (Environment Agency, 2024b).

Table A8.4.37 Chignall Brook impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
F	76	Ditch	TL 71854 14401
F	409	Ditch	TL 68917 10365

Fish

4.1.207 No Environment Agency fish data was recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Macroinvertebrates

4.1.208 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on Chignall Brook in 2014 at Site 160579 (NGR TL 68690 07492), approximately 2.5 km downstream of the Order Limits.

4.1.209 The only INNS recorded was New Zealand mud snail. No protected species were recorded.

Macrophytes

4.1.210 No macrophyte data was recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Can (Section F)

Overview

4.1.211 The Can River Waterbody Catchment (WFD Waterbody ID: GB105037033840) is situated within Section F and contains four impacted watercourse sections as identified in Table A8.4.38. The Order Limits intersect the River Can at Watercourse ID 78 followed by a series of ditches / minor watercourses.

4.1.212 As of 2022, the overall WFD ecological status of this waterbody is poor, with the fish, invertebrate, and macrophyte quality elements scoring as good, moderate, and poor respectively. These scores have remained unchanged since the previous round of WFD assessments in 2019 (Environment Agency, 2024b).

Table A8.4.38 Can impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
F	78	River Can	TL 66801 08873
F	82	Ditch	TL 65510 05803
F	83	Ditch	TL 65476 05806
F	84	Ditch/Stream (Tributary of River Can)	TL 65817 05593

Fish

4.1.213 The desk study identified results from one Environment Agency electrofishing survey carried out on the River Can in 2019 at Site 893 (TL 69474 07238), approximately 3 km downstream of the Order Limits.

4.1.214 A total of ten species were recorded in the surveys, with roach the most abundant recorded. Species of conservation importance in this catchment include brook lamprey, bullhead, and European eel. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.215 The desk study identified results from 20 Environment Agency aquatic macroinvertebrate surveys carried out on the River Can between 2014 and 2023 at three sites: Site 54611 (NGR TL 62800 11300), Site 202616 (NGR TL 64438 11028), and Site 54607 (NGR TL 69030 07180) approximately 5.5 km upstream, 4 km upstream, and 3.5 km downstream of the Order Limits respectively.

4.1.216 New Zealand mud snail was the only INNS recorded. No protected species were identified.

Macrophytes

4.1.217 The desk study identified results from two Environment Agency aquatic macrophyte surveys carried out between 2015 and 2021 at two sites: Site 202616 (NGR TL 64438) 11028 and Site 179125 (NGR TL 62815 11312), approximately 4 km and 5.5 km upstream of the Order Limits respectively.

4.1.218 Himalayan balsam was the only INNS recorded in this catchment. No protected species were recorded.

Roxwell Brook (Section F)

Overview

4.1.219 The Roxwell Brook River Waterbody Catchment (WFD Waterbody ID: GB105037033540) is situated within Section F and contains five impacted watercourse sections as identified in Table A8.4.39. The Order Limits intersect the Roxwell Brook at Watercourse ID 79 followed by tributaries of the brook at Watercourse ID 80 and 81.

4.1.220 As of 2022, the overall WFD ecological status of the waterbody is poor, with the fish, invertebrate, and macrophyte quality elements scoring poor, high, and moderate respectively. These scores have remained unchanged since the previous round of WFD assessments in 2019 (Environment Agency, 2024b).

Table A8.4.39 Roxwell Brook impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
F	79	Roxwell Brook	TL 65900 08168
F	80	Ditch (Tributary of Roxwell Brook)	TL 65969 07686
F	81	Stream (Tributary of Roxwell Brook)	TL 65943 06933
F	181	Ditch	TL 65914 07829
F	526	Ditch	TL 65571 08172

Fish

4.1.221 The desk study identified results from six Environment Agency electrofishing surveys carried out between 2018 and 2021 at two sites: Site 75284 (NGR TL 64799 09194) on a tributary of the Roxwell Brook, and Site 75285 (NGR TL 64246 08635) on the Roxwell Brook itself. Both sites are approximately 2 km upstream of the Order Limits.

4.1.222 A total of eight species were recorded in the surveys, with minnow the most abundant recorded. Bullhead was the only species of conservation importance. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.223 The desk study identified results from 11 Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2020 at three sites: Sites 54610 and 198079 (TL 65000 08620 TL6454308617and NGR TL 65000 08620, NGR TL 64543 08617 and NGR TL 64818 09079, approximately 1 km, 1.5 km and 2 km upstream of the Order Limits, respectively.

4.1.224 INNS recorded include signal crayfish, *Crangonyx pseudogracilis*, *Physella acuta* and New Zealand mud snail. No protected species were identified.

Macrophytes

4.1.225 The desk study identified results from one Environment Agency aquatic macrophyte survey carried out in 2018 at Site 160588 (NGR TL 65970 08200), situated within the Order Limits.

4.1.226 The only notable macrophyte recorded was galingale, a nationally scarce and IUCN near-threatened species. No INNS were recorded in this catchment.

Wid (Margaretting Hall – R. Can) (Section F)

Overview

4.1.227 The Wid (Margaretting Hall – R. Can) River Waterbody Catchment (WFD Waterbody ID: GB105037033900) is situated within Section F and contains eight impacted watercourse sections as identified in Table A8.4.40. The Order Limits intersect the several tributaries of the River Wid to the east of the river.

4.1.228 As of 2022, the overall WFD ecological status of the waterbody is poor, with the invertebrate and macrophyte quality elements scored as good and poor respectively. The fish quality element has not been assessed for this waterbody. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.40 Wid (Margaretting Hall to River Can) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
F	85	Ditch	TL 66088 05342
F	86	Brook (Sandy Brook)	TL 66474 04979
F	87	Ditch/Stream (Tributary of Sandy Brook)	TL 66907 04513
F	88	Ditch	TL 65958 01456
F	89	Stream (Tributary of River Wid)	TL 66276 02108
F	90	Ditch/Stream (Tributary of River Wid)	TL 65967 01445
F	527	Ditch	TL 66477 05207
F	528	Ditch	TL 66124 04749

Fish

4.1.229 The desk study identified results from one Environment Agency electrofishing survey carried out on the River Wid in 2019 at Site 899 NGR TL 68799 01818, approximately 3 km downstream of the Order Limits at impacted Watercourse ID 90.

4.1.230 A total of eight species were recorded in the surveys, with chub the most abundant recorded. No species of conservation importance were recorded. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.231 The desk study identified results from seven Environment Agency aquatic macroinvertebrate surveys carried out between 2014 and 2022 at three sites on the River Wid: Site 54753 (NGR TL 68170 06210), Site 208731 (NGR TL 68305 06018) and Site 54755 (NGR TL 68870 02070), approximately 3 km upstream, 2.5 km upstream and 3 km downstream of the Order Limits respectively.

4.1.232 INNS recorded during the surveys include *Crangonyx pseudogracilis*, New Zealand mud snail and an unspecified physid snail. No protected species were recorded.

Macrophytes

4.1.233 The desk study identified results from two Environment Agency aquatic macrophyte survey carried out between 2015 and 2022 at two sites on the River Wid: Site 208731 (NGR TL 68305 06018) and Site 159534 (NGR TL 68800 02100), approximately 2.5 km upstream and 3 km downstream of the Order Limits respectively.

4.1.234 INNS recorded include least duckweed and Himalayan balsam. No protected species were recorded.

Wid (Ingatestone Hall – Margaretting Hall) (Section F and G)

Overview

4.1.235 The Wid (Ingatestone Hall – Margaretting Hall) River Waterbody Catchment (WFD Waterbody ID: GB105037028690) is situated across Section F and G and contains three impacted watercourse sections as identified in Table A8.4.41. The Order Limits intersect the River Wid at Watercourse ID 93.

4.1.236 As of 2022, the overall WFD ecological status for the waterbody is moderate, with the invertebrate and macrophyte and phytobenthos combined quality elements both scored as good although only the phytobenthos sub element has been assessed. These scores have remained unchanged since the previous WFD assessment in 2019. No assessment of the fish quality element has been made for this catchment (Environment Agency, 2024b).

Table A8.4.41 Wid (Ingatestone Hall to Margaretting Hall) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
F	91	Ditch	TL 65801 00774
G	92	Ditch	TL 66000 00561
G	93	River Wid	TQ 66533 99292

Fish

4.1.237 The desk study identified results from one Environment Agency electrofishing survey carried out in 2017 at Site 901 on the River Wid (NGR TQ 66300 98900), approximately 0.5 km upstream of the Order Limits.

4.1.238 A total of nine species were recorded in the surveys, with chub the most abundant recorded. Bullhead was the only species of conservation importance recorded in the area. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates and Macrophytes

4.1.239 No invertebrate or macrophyte surveys have been recorded in this catchment within the past ten years.

Wid (Shenfield STW – Ingatestone Hall) (Section G)

Overview

4.1.240 The Wid (Shenfield STW – Ingatestone Hall) River Waterbody Catchment (WFD Waterbody ID: GB105037028670) is situated within Section G and contains four impacted watercourse sections as identified in Table A8.4.42. The Order Limits intersect a tributary of the River Wid (Stock Brook) at Watercourse ID 94 and the River Wid at Watercourse ID 95 and 97.

4.1.241 As of 2022, the overall WFD ecological status of the waterbody is moderate, with the fish, invertebrate, and macrophyte and phytobenthos combined quality elements scored as high, moderate, and high respectively although only the phytobenthos sub element has been assessed. These scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.42 Wid (Shenfield STW to Ingatestone Hall) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
G	94	Stock Brook (Tributary of River Wid)	TQ 66596 97720
G	95	River Wid	TQ 66290 97404
G	96	Ditch	TQ 65523 96149
G	97	River Wid	TQ 65296 95992

Fish

4.1.242 The desk study identified results from two Environment Agency electrofishing surveys carried out between 2014 and 2017 at Site 902 (NGR TQ 66103 97691), approximately 0.3 km downstream of the Order Limits at impacted Watercourse ID 94. Site 902 has had two different locations recorded in different survey years.

4.1.243 A total of nine species were recorded in the surveys, with minnow the most abundant recorded. Bullhead was the only species of conservation importance recorded. Migratory coarse fish species such as dace and chub are prevalent in this catchment.

Macroinvertebrates

4.1.244 The desk study identified results from five Environment Agency aquatic macroinvertebrate surveys carried out between 2016 and 2018 at Site 54757 (NGR TQ 65750 96290), situated within the Order Limits.

4.1.245 No INNS or protected invertebrate species were recorded during the survey.

Macrophytes

4.1.246 No macrophyte surveys have been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Haverings Grove Brook (Section G)

Overview

4.1.247 The Haverings Grove Brook River Waterbody Catchment (WFD Waterbody ID: GB105037028650) is situated within Section G and contains three impacted watercourse sections as identified in Table A8.4.43. The Order Limits intersect Haverings Grove Brook at Watercourse ID 98 and 100.

4.1.248 As of 2022, the overall WFD ecological status of the waterbody is moderate, with the invertebrate quality element scored as moderate. The fish and macrophyte quality elements have not been assessed for this catchment. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.43 Haverings Grove Brook impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
G	98	Haverings Grove Brook (Tributary of River Wid)	TQ 65289 95724
G	99	Ditch	TQ 64676 94026
G	100	Haverings Grove Brook (Tributary of River Wid)	TQ 64611 93447

Fish

4.1.249 The desk study identified results from one Environment Agency electrofishing survey carried out on Haverings Grove Brook in 2017 at Site 594 (NGR TQ 65300 94800), approximately 0.5 km upstream of the Order Limits at impacted Watercourse ID 98.

4.1.250 A total of four species were recorded in the surveys, with minnow the most abundant species recorded. Bullhead was the only species of conservation importance recorded.

Macroinvertebrates

4.1.251 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on Haverings Grove Brook in 2015 at Site

54760 (NGR TQ 65300 94800), approximately 0.5 km upstream of the Order Limits at impacted Watercourse ID 98.

4.1.252 INNS recorded include *Crangonyx pseudogracilis*, New Zealand mud snail and an unspecified non-native physid snail. No protected species were recorded.

Macrophytes

4.1.253 No Environment Agency macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Crouch (Upper) – Upstream (U/S) A129 (Section G)

Overview

4.1.254 The Crouch (Upper) – Upstream (U/S) A129 River Waterbody Catchment (WFD Waterbody ID: GB105037028500) is situated within Section G and contains three impacted watercourse sections as identified in Table A8.4.44. The Order Limits intersect the upstream end of the River Crouch at Watercourse ID 103.

4.1.255 As of 2022, the overall WFD ecological status for this waterbody is moderate, with the invertebrate and macrophyte and phytobenthos combined quality elements assessed as moderate, and good respectively although only the phytobenthos sub element has been assessed. The fish quality element has not been assessed for this catchment. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.44 Crouch (Upper) – Upstream (U/S) A129 impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
G	102	Ditch	TQ 65301 90708
G	103	River Crouch	TQ 65332 90380
G	538	Ditch	TQ 65428 90028

Fish

4.1.256 No Environment Agency electrofishing data was recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Macroinvertebrates

4.1.257 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on the River Crouch in 2016 at Site 54663 (NGR TQ 68400 91100), approximately 3.5 km downstream of the Order Limits.

4.1.258 INNS recorded in this catchment include New Zealand mud snail and an unspecified non-native physid snail. No protected macroinvertebrate species were recorded.

Macrophytes

4.1.259 No macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Mardyke (East Tributary) (Section H)

Overview

4.1.260 The Mardyke (East Tributary) River Waterbody Catchment (WFD Waterbody ID: GB106037028200) is situated in Project Section H and contains four impacted watercourse sections as identified in Table A8.4.45. The Order Limits intersect a series of ditches at the upstream end of the Mardyke East Tributary.

4.1.261 As of 2022, the overall WFD ecological status for this watercourse is moderate, with the fish and invertebrate quality elements scored as high and good, respectively. No assessment of macrophyte status has been made for this catchment. All scores have remained unchanged since the previous WFD assessment in 2019 (Environment Agency, 2024b).

Table A8.4.45 Mardyke East Tributary impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
H	105	Ditch	TQ 65457 87842
H	106	Ditch	TQ 62207 87090
H	107	Ditch	TQ 65651 86655
H	165	Ditch	TQ 65794 87966

Fish

4.1.262 No Environment Agency electrofishing data has been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

4.1.263 European eel were recorded in an adjacent catchment, on the main stem of the Mardyke, approximately 11 km downstream of the Order Limits.

Macroinvertebrates

4.1.264 The desk study identified results from two Environment Agency aquatic macroinvertebrate surveys carried out on the Mardyke East Tributary in 2015 at Site 54684 (NGR TQ 62200 85240), approximately 4 km downstream of the Order Limits.

4.1.265 Notable species in this catchment include *Helophorus stigifrons*, a nationally scarce aquatic beetle. A physid snail was the only INNS recorded.

Macrophytes

4.1.266 No macrophyte data has been recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

Mardyke (Section H)

Overview

4.1.267 The Mardyke River Waterbody Catchment (WFD Waterbody ID: GB106037028200) is situated within Section H and contains two impacted watercourse sections as identified in Table A8.4.46. The Order Limits do not intersect the Mardyke waterbody and instead cross a series of ditches to the east of the Mardyke.

4.1.268 As of 2022, the overall WFD ecological status of the waterbody is moderate, with fish, invertebrate, and macrophyte and phytobenthos combined quality elements scored as moderate, good, and high respectively. The macrophyte quality sub element was assessed as poor. The fish quality element has been downgraded from high to moderate since the last WFD assessment in 2019. All other scores have remained unchanged (Environment Agency, 2024b).

Table A8.4.46 Mardyke impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
H	446	Ditch	TQ 65714 85166
H	447	Ditch	TQ 65380 83926

Fish

4.1.269 The desk study identified results from two Environment Agency electrofishing surveys carried out on the Mardyke 2019 at two sites: Site 931 (TQ 60232 80492), and Site 930 (TQ 59357 80398) approximately 6 km and 7.5 km downstream of the Order Limits at impacted Watercourse ID 447.

4.1.270 A total of 12 species were recorded in the surveys, with gudgeon *Gobio gobio* the most abundant species present. European Eel was the only protected fish species recorded in this catchment. One INNS was recorded: feral goldfish *Carassius auratus*.

Macroinvertebrates

4.1.271 The desk study identified results from four Environment Agency aquatic macroinvertebrate surveys carried out on the Mardyke between 2015 and 2018 at Site 54683 (TQ 59700 80390), approximately 7 km downstream of the Order Limits at impacted Watercourse ID 447.

4.1.272 INNS recorded include *Crangonyx sp*. and New Zealand mud snail. Scarce chaser dragonfly, an IUCN near threatened species was the only species of conservation importance recorded.

Macrophytes

4.1.273 The desk study identified results from one Environment Agency macrophyte survey carried out on the Mardyke in 2016 at Site 149950 (TQ 59730 80390), approximately 7 km downstream of the Order Limits at impacted Watercourse ID 447. No protected or INNS species were recorded during the survey.

Coastal Catchments (Thames) (Section H)

Overview

4.1.274 This coastal catchment is situated around the mouth of the River Thames near Tilbury. The catchment is situated within Section H and contains three impacted watercourse sections as identified in Table A8.4.47. The Order Limits intersect a series of ditches out with any major watercourse in the catchment.

Table A8.4.47 Coastal Catchment (Thames) impacted watercourse sections

Project Section	Watercourse ID	Watercourse Description	Grid Reference
H	108	Ditch	TQ 67193 81100
H	166	Unknown	TQ 65859 79964
H	545	Ditch	TQ 66648 82649

Fish, Macroinvertebrates and Macrophytes

4.1.275 No Environment Agency fish, invertebrate or macrophyte surveys were recorded within the desk study parameters for this River Waterbody Catchment in the past ten years.

4.2 Fish Habitat Surveys

4.2.1 As illustrated in Table A8.4.48, six of the 14 surveyed watercourses contained water at the time of survey. The results of the fish habitat surveys are detailed below.

Table A8.4.48 Status of watercourses

Project Section (s)	Watercourse ID	WFD Waterbody	Watercourse Status
A	123	Waveney U/S Frenze Beck	Dry
A	125	Waveney U/S Frenze Beck	Contained water
A	126	Waveney U/S Frenze Beck	Contained water
B	128a	Tributary Upper Waveney	Dry
B	128b	Tributary Upper Waveney	Dry
B	32	Wattisham Watercourse	Contained water
B	137	Somersham Watercourse	Contained water
B	136	Somersham Watercourse	Contained water
B	37	Somersham Watercourse	Dry
B	175	Somersham Watercourse	Dry
C	45	Stour (D/S River Brett)	Contained water

Project Section (s)	Watercourse ID	WFD Waterbody	Watercourse Status
H	163	Mardyke (East Tributary)	Dry
H	164	Mardyke (East Tributary)	Dry
H	165	Mardyke (East Tributary)	No Access

Waveney U/S Frenze Beck (Section A)

Watercourse 125

4.2.2 The average bank width was 11 m, average bed/wet width was 4.5 m, and average depth was 30 cm. Water levels were moderate at the time of survey with poor water clarity due to suspended silt. Pool flow type dominated, with deep pool comprising 75% of the surveyed area and shallow pool comprising 25%.

4.2.3 Substrate within the Survey Area comprised entirely of silt (100%). Instream cover was poor and there was no bankside cover for fish at the time of survey.

4.2.4 The surrounding land use was broadleaved woodland providing 70% canopy cover to the watercourse.

4.2.5 This watercourse is largely unsuitable for salmonids due to excessive silt levels, lack of suitable substrate, low flow and absence of cover. Low availability of instream and bankside cover limits suitability for European eel. This level of silt and lack of cover also limits the suitability for a general coarse fish community. The presence of silt substrate provided potential habitat for lamprey ammocoetes, but no lamprey spawning habitat was identified in this section. Site photographs are provided in Annex B.

Watercourse 126

4.2.6 The average bank width was 8 m, average bed/wet width was 4 m, and average depth was 40 cm. Water levels appeared low at the time of survey with poor water clarity due to suspended silt. Pool flow type dominated, with deep pool comprising 80% of the surveyed area and shallow pool comprising 20%.

4.2.7 Substrate within the Survey Area was primarily silt (90%), with the remainder consisting of organic matter (10%). The level of instream cover could not be assessed due to poor water clarity. Approximately 20% of the bankside provided cover for fish through marginal vegetation and tree roots.

4.2.8 The surrounding land use was parkland and broadleaved woodland, with riparian trees providing 80% canopy cover to the watercourse.

4.2.9 This watercourse was largely unsuitable for salmonids due to excessive silt levels, lack of appropriate substrate and low flow. Silt substrate is not considered optimal for European eel, although the stable silt beds could provide potential habitat for lamprey ammocoetes. High levels of silt and lack of substrate variety and flow type limits the suitability for a general coarse fish community. Lamprey spawning habitat was not recorded in this section. Site photographs are provided in Annex B.

Wattisham Watercourse (Section B)

Watercourse 32

4.2.10 The average bank width was 3 m, average bed/wet width was 1.5 m, and average depth was 40 cm. Water levels were low at the time of survey with poor water clarity due to suspended silt. Flow type through the surveyed section was primarily deep pool (90%) with the remainder consisting of shallow glide (10%).

4.2.11 The substrate was partly compacted by silt and consisted of silt (40%), organic matter (20%), gravel (10%) and pebble (30%). Instream cover was moderate, primarily from availability of tree roots and woody debris. Approximately 20% of the bankside provided cover for fish consisting largely of tree roots, although at higher flows there is likely to be more fish cover amongst tree roots higher on the banks.

4.2.12 The surrounding land use was broadleaved woodland providing 70% canopy cover to the watercourse.

4.2.13 This watercourse was largely unsuitable for salmonids due to excessive silt levels and slow flows. Moderate levels of instream cover including tree roots provides habitat for European eel. The variety of substrate types and moderate instream cover provides moderately suitable habitat for a general coarse fish community although. The presence of silt substrate could provide potential holding habitat for lamprey ammocoetes, but no lamprey spawning habitat was identified in this section. Site photographs are provided in Annex B.

Somersham Watercourse (Section B)

Watercourse 136

4.2.14 The average bank width was 15 m, average bed/wet width was 2 m, and average depth was 10 cm. Water levels were low at the time of survey with high water clarity. Flow type through the surveyed section was primarily shallow pool (70%) with the remainder consisting of deep pool (30%).

4.2.15 The substrate of Watercourse 136 within the Survey Area comprised pebble (55%), organic matter (25%), silt (10%) and cobble (10%). The substrate was partly compacted with silt. Instream cover was poor and there was no bankside cover for fish at the time of survey. The watercourse was blocked by roots/debris.

4.2.16 The downstream end of the survey section had been artificially modified with vertical concrete walls and the surrounding land use was broadleaved woodland and suburban development. Both bank tops were heavily planted with trees providing 95% canopy cover to the watercourse.

4.2.17 This watercourse is largely unsuitable for fish due to low water depth and flow as well as excessive siltation. Site photographs are provided in Annex B.

Watercourse 137

4.2.18 The average bank width was 5 m, average bed/wet width was 1 m, and average depth was 20 cm. The clarity of the water was high although water levels appeared low at the time of survey with some sections of the watercourse almost entirely dry, creating an impassable section for fish. Flow type through the surveyed section was primarily shallow pool (80%) with the remainder consisting of still marginal (20%).

4.2.19 The substrate of Watercourse 137 within the Survey Area was primarily pebble (70%), with the remainder consisting of organic matter (10%), silt (10%) and gravel (10%). The substrate was silted and partly compacted. Instream cover was poor and approximately 20% of the bankside provided cover for fish through draped vegetation and tree roots.

4.2.20 The predominant surrounding land use was cropped land and broadleaved woodland, with riparian trees providing 100% canopy cover to the watercourse.

4.2.21 This watercourse is largely unsuitable for salmonids due to excessive silt levels, shallow depth and slow flows. The presence of silt substrate could provide potential habitat for lamprey ammocoetes but the lack of depth in some sections of the watercourse limits its overall suitability. The prevalence of silt, slow flows and low levels of fish cover limit the suitability for a general coarse fish community. Site photographs are provided in Annex B.

Stour D/S River Brett (Section C)

Watercourse 45

4.2.22 The average bank width was 5 m, average bed/wet width was 1.5 m, and average depth was 20 cm. Water levels were low at the time of survey with high water clarity. The overall flow was slow and flow type throughout the surveyed section consisted of shallow glide (60%), shallow pool (20%) and still marginal (20%).

4.2.23 The substrate of Watercourse 45 within the Survey Area was predominantly silt (80%) with the remainder made up of organic matter (20%). The bank side of the watercourse provided a high level of cover for smaller fish with approximately 75% of the overall length providing cover in the form of roots. Instream cover was moderate with scattered wood detritus present instream.

4.2.24 The surrounding land use was broadleaved woodland providing 100% canopy cover to the watercourse.

4.2.25 This watercourse is largely unsuitable for salmonid fry and for spawning due to the lack of suitable substrate and excessive silt levels, while the shallow average depth indicates low suitability for salmonid parr. The presence of silt substrate could provide potential habitat for lamprey ammocoetes but there is no suitable lamprey spawning habitat in this section. Moderate availability of instream cover and the availability of bankside tree root cover could provide potential habitat for European eel and for a general coarse fish community. Site photographs are provided in Annex B.

4.3 eDNA Surveys

4.3.1 Four eDNA samples were taken across the Project. Three of the samples contained amplifiable DNA that could be reported, but the sample taken for Watercourse 125/126 did not contain amplifiable DNA. Lack of amplifiable DNA in the sample does not definitively indicate fish are absent from the watercourse. Given the poor-quality habitat present at the site, it's possible that fish numbers were too low to be detected at this site.

4.3.2 Four fish species were recorded: European eel, three-spined stickleback, stone loach *Barbatula barbatula* and bullhead. Stickleback was present in all three samples,

European eel and bullhead were recorded for Watercourse 32 and stone loach recorded for Watercourse 136/137.

Table A8.4.49 eDNA sample results

Project Section	Watercourse(s) Sampled	European eel	Stickleback	Stone loach	Bullhead
A	125/126 Waveney U/S Frenze Beck	No amplifiable DNA in sample.	-	-	-
B	32 Wattisham Watercourse	Present	Present	-	Present
B	136/137 Somersham Watercourse	-	Present	Present	-
C	45 Stour D/S River Brett	-	Present	-	-

5. Conclusions

5.1 Desk Study - Fish

5.1.1 Fish survey data within the Study Area was available for 26 of the 38 WFD River Waterbody Catchments crossed by the Project. Catchments for which no survey data was available include:

- Frenze Beck (Section A)
- Waveney (U/S Frenze Beck) (Section A)
- Tributary of Upper Waveney (Section B)
- Dove Tributary- Finningham (Section B)
- Mendlesham Stream (Section B)
- Wattisham Watercourse (Section B)
- Somersham Watercourse (Section B
- Coastal Catchment (Stour) (Section C)
- Tenpenny Brook (Section C)
- Chignall Brook (Section F)
- Crouch (Upper) - u/s A129 (Section G)
- Mardyke (East Tributary) (Section H)
- Coastal catchment (Thames) (Section H).

5.1.2 The conservation importance of notable fish species is outlined in Table A8.4.10 and a summary of notable species recorded in each catchment is presented in Table A8.4.9. A full list of impacted watercourses sections (Watercourse ID) and a summary of desk study and field survey results is provided in Annex C. Five notable fish species of conservation importance were identified within the Study Area. These include:

- Brown trout – present in nine catchments across Section A to F
- European eel – present in 16 catchments across Section A to H (15 catchments identified in the desk study (Table A8.4.9) and present within the eDNA sample taken at Watercourse ID 32 - Wattisham Watercourse)
- Lamprey (brook/river) – present in 10 catchments in Section A, C, D and F
- Spined loach – present in two catchments in Section C and D
- Bullhead – present in 21 catchments across Section A to G.

5.1.3 Brown trout, European eel, river lamprey and spined loach are Section 41 priority fish species and so are an important consideration for the Project. Additionally, brown trout in their sea trout form and river lamprey are protected under the *Salmon and Freshwater Fisheries Act 1975*. Similarly, European eel is protected under the *Eels*

(England and Wales) Regulations 2009. Catchments where these species have been recorded should therefore be considered particularly sensitive.

5.1.4 River lamprey is not confirmed present in any of the Environment Agency survey data reviewed in this document. Lamprey sp. is recorded for the Brett River Waterbody Catchment and lamprey ammocoetes are recorded in three Catchments: Chelmer (G.Easton – R. Can), Stour (Downstream of River Brett), and Stour (Lamarsh to River Brett). Due to the difficulty in determining the species of lamprey ammocoetes, particularly between river and brook lamprey any mention of lamprey sp. or lamprey ammocoetes could include either species.

5.1.5 Brook lamprey, river lamprey, bullhead and spined loach are all protected under Annex II of the Habitats Directive 1992,, which is transposed into English law by The *Conservation of Habitats and Species* Regulations 2017. Species listed under Annex II are of community interest and whose conservation requires the designation of an SAC. No SACs for these species were identified within 5 km of the Order Limits.

5.2 Desk Study - Macroinvertebrates

5.2.1 Macroinvertebrate survey data within the Study Area was not available for five of the 38 WFD River Waterbody Catchments crossed by the Project. Catchments for which no survey data was available include Section B Dove Tributary – Finningham, Section C Tenpenny Brook, Coastal catchment (Stour), Section F Wid (Ingatestone Hall - Margaretting Hall), and Section H Coastal catchment (Thames).

5.2.2 Details on the conservation importance of notable invertebrate species are provided in Table A8.4.10. A full list of impacted watercourses sections (Watercourse ID) and a summary of desk study and field survey results is provided in Annex C. None of the species identified in the desk study Environment Agency records are protected under conservation legislation.

5.2.3 The desk study identified two notable invasive invertebrate species: Demon shrimp and signal crayfish. Demon shrimp are an invasive freshwater amphipod, recorded on the River Chelmer downstream of Chelmsford. The sites where demon shrimp have been recorded are outside the Study Area. However, the Chelmer is connected to several watercourses found within the Order Limits, notably the River Can and Blackwater and their associated tributaries. Thus, the presence of this species in these rivers cannot be ruled out. Signal crayfish were recorded throughout the Study Area and on several watercourses within the wider area, notably the River Colne, Wid, Blackwater, Tas, Gipping and Roxwell Brook. Due to their widespread extent, they are potentially present on all watercourses within the Order Limits.

5.3 Desk Study - Macrophytes

5.3.1 Macrophyte survey data within the Study Area were available for 18 of the 38 WFD River Waterbody Catchments crossed by the Project.

5.3.2 The conservation importance of notable macrophyte species is outlined in Table A8.4.10. A full list of impacted watercourses sections (Watercourse ID) and a summary of desk study and field survey results is provided in Annex C. Only one nationally scarce and near threatened species was identified, namely galingale, recorded in the Roxwell Brook WFD catchment, Section F.

5.3.3 The desk study identified three macrophyte INNS, Canadian waterweed, Nuttall's waterweed and least duckweed. A terrestrial INNS Himalayan balsam, which commonly grows on banksides and disperses its seeds via water, was also recorded.

5.4 Field Surveys

5.4.1 Out of the 14 watercourse sections put forward for further assessment in this report, seven were completely dry at the time of survey, as shown in Table A8.4.5. These watercourses are considered unsuitable for supporting a permanent fish population although may connect other watercourses or provide corridors for fish movement when wet.

5.4.2 Watercourse 165 (Mardyke (East Tributary, Section H) could not be assessed due to land access limitations and so presence of sensitive/ notable fish species should be considered a possibility until an assessment can be made. This watercourse would not be directly affected by the Project and so no further surveys are to be undertaken.

5.4.3 Six watercourses were confirmed to hold water, and an assessment of fish habitat suitability was made, as shown in Table A8.4.50. No salmonid habitat was identified at any of the sites, largely due to excessive siltation, lack of in-stream and bankside cover, and low flow conditions.

5.4.4 Two sites (Watercourse 32, Wattisham Watercourse Section B and Watercourse 45, Stour D/S River Brett Section C) are considered to have moderately suitable habitat for fish. This relates to moderate levels of instream cover at these locations providing suitable habitat for European eel, as shown in Table A8.4.50. European eel is listed as critically endangered on the global IUCN list of threatened species and protected under the *Eels (England and Wales) Regulations 2009*. The species is migratory and requires connectivity between freshwater and the marine environment. While European eel eDNA was only detected in the sample from Watercourse 32, Wattisham Watercourse Section B, its presence below the threshold of eDNA detection cannot be ruled out at Watercourse 45, Stour D/S River Brett Section C, based on the presence of suitable habitat.

5.4.5 Four sites (Watercourse ID 125/126, Waveney U/S Frenze Beck Section A and 137/136, Somersham Watercourse, Section B) are considered to have low suitability for fish due to a combination of excessive siltation, slow-imperceptible flows and lack of instream and bankside cover, as shown in Table A8.4.50. The presence of silt substrate at these locations does provide suitable habitat for lamprey ammocoetes. However, the excessive siltation in these watercourses suggests that suitable lamprey spawning habitat is likely to be rare. No notable fish species were detected in the eDNA samples taken at these sites. While the eDNA sample cannot completely rule out the presence of sensitive fish species at these locations, the low suitability of the habitat and absence within the eDNA sample is evidence that their presence is unlikely.

5.4.6 A summary of the results of the fish habitat and eDNA surveys per watercourse is provided by . This table draws on field survey data presented in section 4.2 and habitat definitions presented in Table A8.4.4.

Table A8.4.50 Summary of fish habitat and eDNA per watercourse surveyed

Project Section	Watercourse	Key Fish Habitat Present	Fish eDNA Detected	Overall Fish Suitability	Rationale
A	125 Waveney U/S Frenze Beck	Lamprey ammocoete habitat	No amplifiable DNA in eDNA sample	Low	Low levels of instream and bankside cover. High levels of silt and water turbidity at site. Slow flows.
A	126 Waveney U/S Frenze Beck	Lamprey ammocoete habitat	No amplifiable DNA in eDNA sample	Low	Low levels of bankside cover. High levels of silt and water turbidity at site. Slow flows.
B	32 Wattisham Watercourse	European eel habitat Lamprey ammocoete habitat	European eel Bullhead Stickleback	Moderate	Suitable habitat for eel and juvenile lamprey. Range of water depths suitable for a variety of fish species/ age classes (Average 40 cm depth). Confirmed presence of eel from eDNA sample. High levels of silt and slow flows limit suitability for salmonids.
B	137 Somersham Watercourse	Lamprey ammocoete habitat	Stickleback Stone loach	Low	Lack of depth (20 cm average but almost entirely dry at points). Silt layer covering substrate. Poor instream cover and no bankside cover. Slow flows.
B	136 Somersham Watercourse	Lamprey ammocoete habitat	Stickleback Stone loach	Low	Lack of depth (10 cm average). Silt layer covering substrate. Poor instream cover and no bankside cover. Watercourse blocked by debris. Slow flows.
C	45 Stour (D/S River Brett)	Lamprey ammocoete habitat	Stickleback	Moderate	Slow flows, moderate levels of instream cover and high levels of bankside cover provide

Project Section	Watercourse	Key Fish Habitat Present	Fish eDNA Detected	Overall Fish Suitability	Rationale
		European eel habitat.			eel habitat although low average depth (20 cm) limits overall suitability. Excessive silt levels.

Abbreviations

Abbreviation	Full Reference
BS	British Standard
DCO	Development Consent Order
D/S	Downstream
EC	European Commission
eDNA	Environmental Deoxyribonucleic Acid
EPS	European Protected Species
ES	Environmental Statement
GBIF	Global Biodiversity Information Facility
IUCN	International Union for Conservation of Nature
INNS	Invasive Non-Native Species
MAGIC	Multi Agency Geographical Information Systems
NBN	National Biodiversity Network
NCBI	National Centre for Biotechnology Information
NERC	Natural Environment and Rural Communities
NNR	National Nature Reserves
PCR	Polymerase chain reaction
SAC	Special Areas of Conservation
SAFFA	Salmon and Freshwater Fisheries Act
SFCC	Scottish Fisheries Coordination Centre
SSSI	Sites of Special Scientific Interest
U/S	Upstream
WCA	Wildlife and Countryside Act
WFD	Water Framework Directive

Glossary

Term	Description
Biodiversity	The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems
Cable	An insulated conductor designed for underground installation.
Confluence	The junction of two rivers.
Ecosystem	A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.
European Protected Species	Animals and plants listed under the Habitats Directive and protected under the Conservation of Habitats and Species Regulations 2017, as amended in 2019.
Fauna	All the animals in a given area.
Flora	The plants within a particular habitat or region.
Habitat	The natural home or environment of an animal, plant, or other organism.
Habitat of Principal Importance	A habitat which has been deemed to be of principal importance for the purpose of conserving biodiversity, currently adopted under Section 41 of the Natural Environment and Rural Communities Ac 2006, formerly listed in the UK Biodiversity Action Plan.
Hectad	A hectad is an area 10 km x 10 km square. The term has a particular use in connection with the British Ordnance Survey national grid
Invasive non-native species	An invasive non-native species is any non-native animal or plant that can spread, causing damage to the environment, the economy, health, and way of life.
Macrophyte	An aquatic plant large enough to be seen by eye.
Aquatic macroinvertebrate	Insects in their nymph and larval stages, aquatic beetles, snails, worms, crayfish, and clams that spend at least part of their lives in water.
Mitigation	The action of reducing the severity and magnitude of change (impact) to the environment. Measures to avoid, reduce, remedy or compensate for significant adverse effects.
Order Limits	The maximum extent of land within which the authorised development may take place.
Overhead Line	Conductor (wire) carrying electric current, strung from pylon to pylon.

Term	Description
Priority species	Species identified as of principal importance in England, in accordance with requirements of the Natural Environment and Rural Communities Act 2006. These are based on the UK Biodiversity Action Plan Priority Species.
Sites of Special Scientific Interest	SSSIs are protected by law under the *Wildlife and Countryside Act 1981*. They are important because they support rare or endangered fauna and flora, and they represent the United Kingdom's best wildlife and geological sites.
Species	A group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding.
Stream	A small, flowing waterbody.
Receptor	A receptor is any organism that is potentially affected by an impact.
River	A large, flowing waterbody.
Trenchless crossing	A crossing installation method that has limited above ground disturbance which is used to avoid a sensitive feature such as an environmental feature.
Tributary	A river or stream flowing into a larger river or lake.
Waterbody	A body of water forming a physiographical feature, for example a sea or a reservoir.
River Waterbody Catchment	Defined as an area of land from which all surface run-off flows through a series of streams, rivers and, possibly, lakes to a particular point in the water course such as a river confluence.
Watercourse	A stream of water such as a river or canal, or the channel along which it flows.

Bibliography

British Standards Institution (2023) *BS EN 17805:2023 Water quality. Sampling, capture and preservation of environmental DNA from water*

Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (No. 579). [online] Available at: https://www.legislation.gov.uk/uksi/2019/579/contents (Accessed: November 2024).

Countryside and Rights of Way Act 2000 (c.37). [online] Available at: https://www.legislation.gov.uk/ukpga/2000/37/contents (Accessed: 13 June 2025).

Eels (England and Wales) Regulations 2009 (No. 3344). [online] Available at: https://www.legislation.gov.uk/uksi/2009/3344/made (Accessed: November 2024).

Environment Agency (2024a) *Ecology and Fish Data Explorer.* [online] Available at: https://environment.data.gov.uk/ecology/explorer/ (Accessed: March 2024).

Environment Agency (2024b) *Catchment Data Explorer.* [online] Available at: https://environment.data.gov.uk/catchment-planning (Accessed: March 2024).

Google (2025) *Google Earth.* [online] Available at: https://earth.google.com/web/ (Accessed: 13 June 2025).

Habitats Directive (1992) *(Council Directive 92/43/EEC). Official Journal of the European Communities, L 206, pp. 7–50*. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043 (Accessed: April 2025).

Hendry, K., and Cragg-Hine, D. (1997) *Restoration of riverine salmonid habitats.* Fisheries Technical Manual 4. Environment Agency, Bristol.

Invasive Alien Species (Enforcement and Permitting) Order 2019 (SI 2019/527). [online] Available at: https://www.legislation.gov.uk/uksi/2019/527 (Accessed: 13 June 2025).

National Biodiversity Network (2025) *NBN Atlas.* [online] Available at: https://species.nbnatlas.org/species (Accessed: 21 January 2025).

Natural England (2025) *MAGIC: Multi-Agency Geographic Information for the Countryside*. [online] Available at: https://magic.defra.gov.uk (Accessed: 13 June 2025).

Natural Environment and Rural Communities Act 2006 (c.16). [online] Available at: https://www.legislation.gov.uk/ukpga/2006/16/contents (Accessed: 13 June 2025).

NatureMetrics (2024) *Report Interpretation Guide.* [online] Available at: https://www.naturemetrics.com/report-interpretation-guide (Accessed: 27 November 2024).

Salmon and Freshwater Fisheries Act 1975 (c.51). [online] Available at: https://www.legislation.gov.uk/ukpga/1975/51/contents (Accessed: 16 June 2025).

Scottish Fisheries Coordination Centre (2007) *Habitat Surveys Training Course Manual.*

Tesch, F. (2003) *Biology and Management of Anguillid Eels.* 5th Edition. Wiley-Blackwell.

UK Government (2024) *Invasive non-native (alien) plant species: rules in England and Wales*. [online] Available at: https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales (Accessed: 11 December 2024).

Wildlife and Countryside Act 1981 (c.69). [online] Available at: https://www.legislation.gov.uk/ukpga/1981/69 (Accessed: 16 June 2025).

Annex A
Figures

Appendix A Figures

Figure A.1 Aquatic Ecology Baseline

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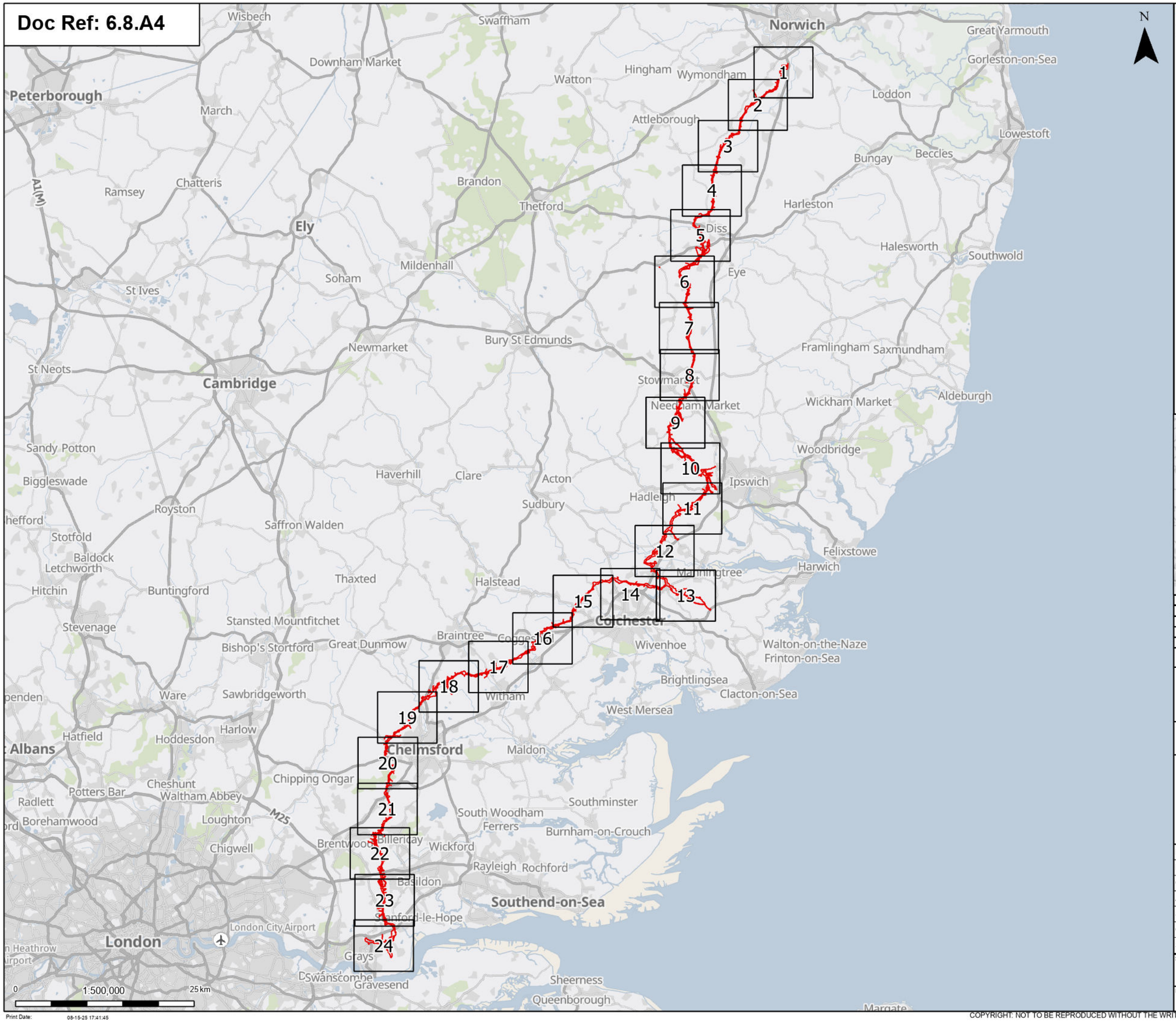

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Figure A8.4.1- Aquatic Ecology Baseline Overview

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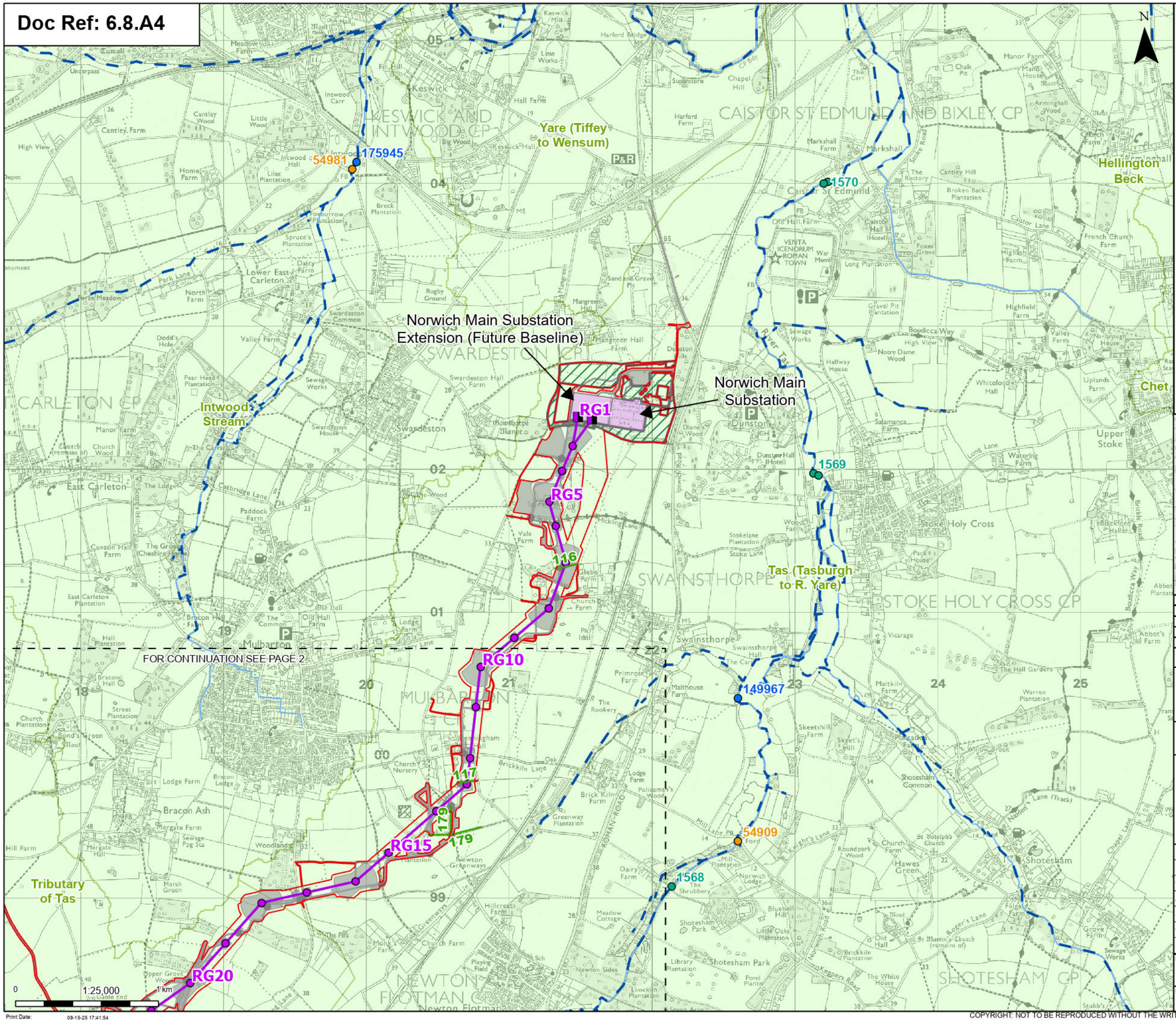

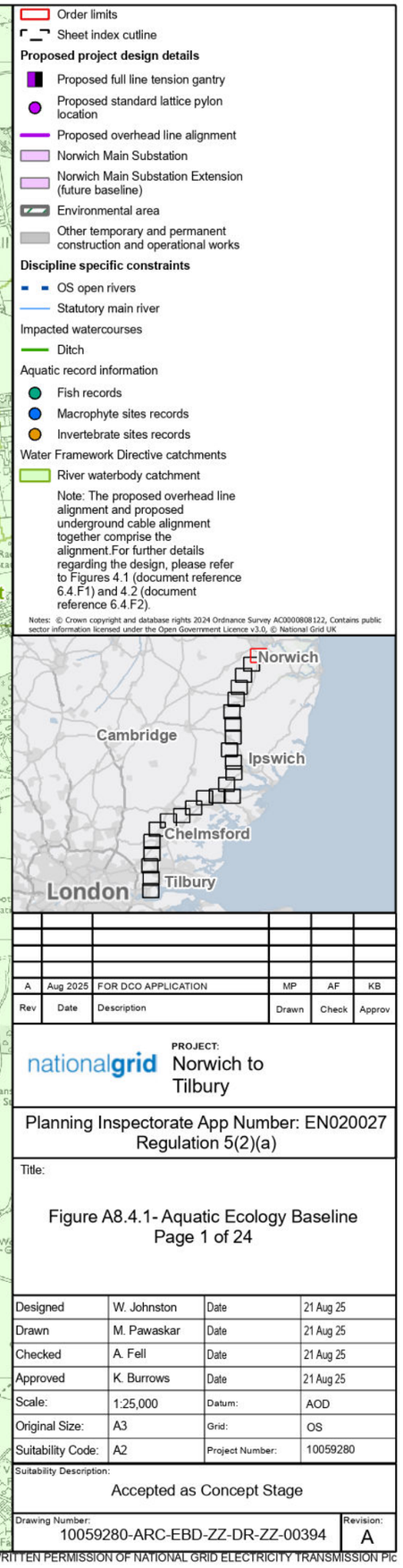

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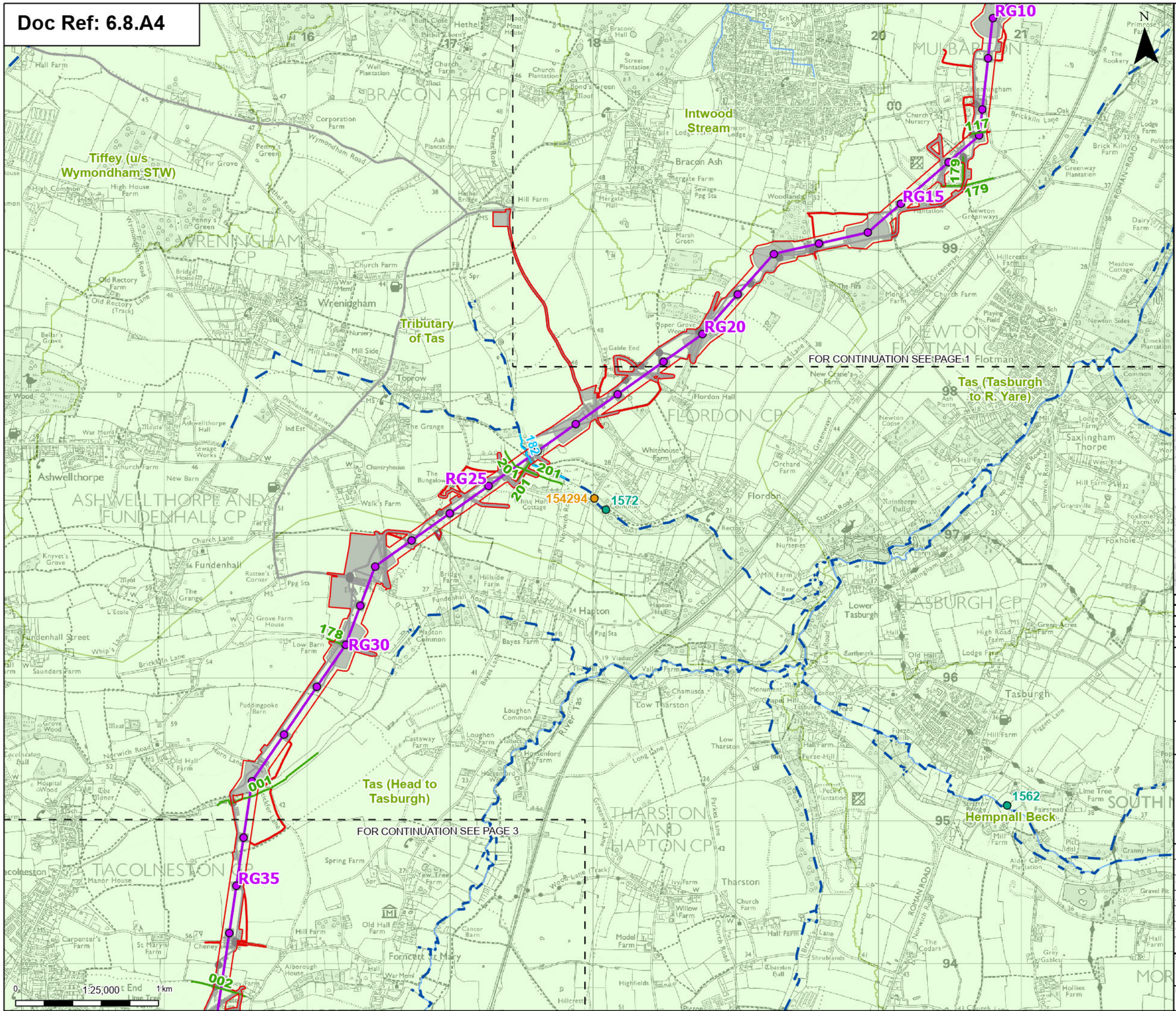

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- Invertebrate sites records

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- River waterbody catchment

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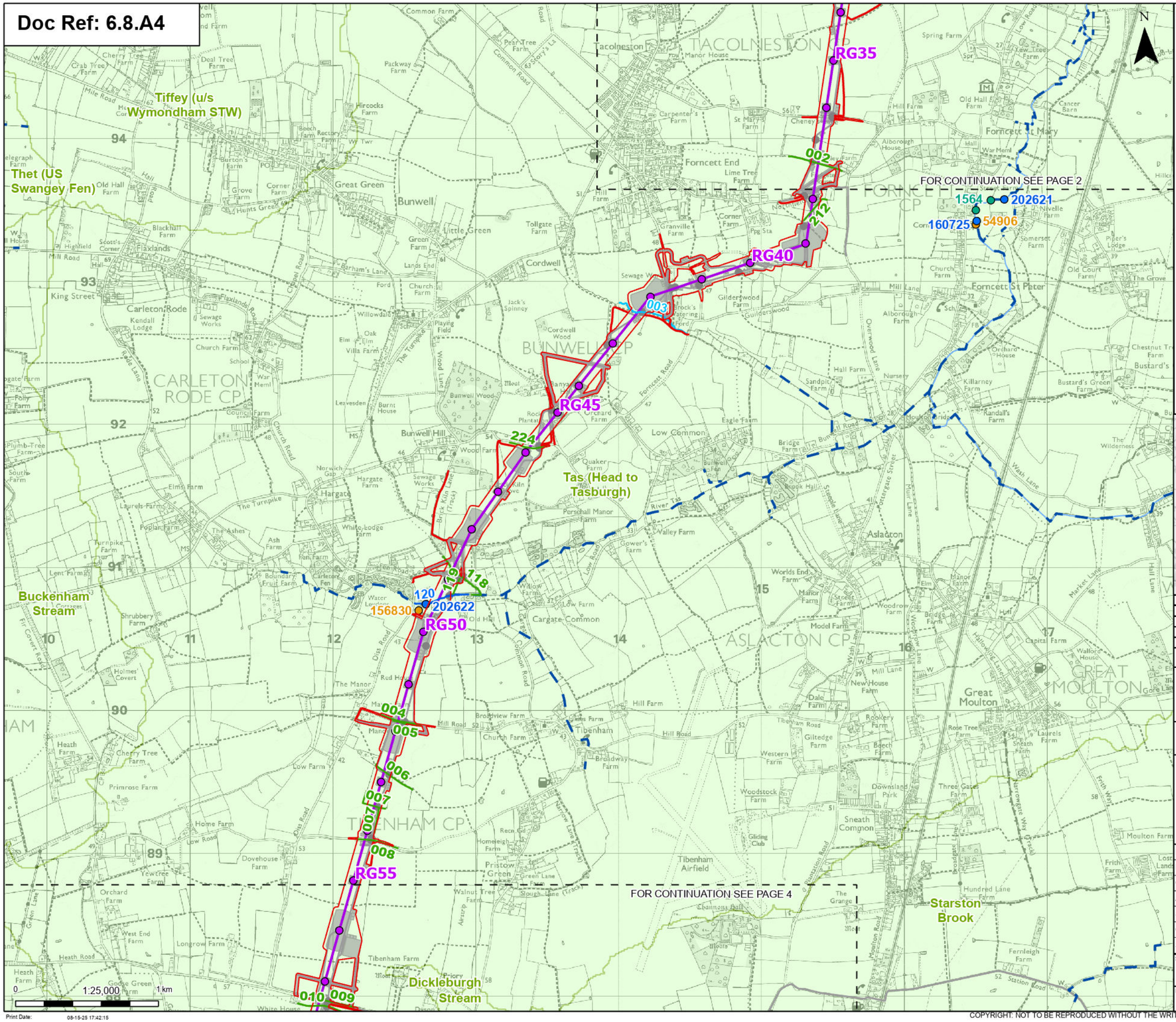
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Tas (Head to Tasburgh)
Buckenham Stream
Dickleburgh Stream
Starston Brook
Tacolneston
Forncett End
Forncett St Mary
Forncett St Peter
Bunwell
Carleton Rode
Tibenham
Aslacton
Great Moulton
Sneath Common
Tibenham Airfield
Cargate Common
Low Common
Bunwell Hill
Pristow Green
Great Green
Little Green
Cordwell
King Street
Flaxlands
Blackhall Farm
Tollgate Farm
Granville Farm
Gilderswood Farm
Sandpit Farm
Eagle Farm
Orchard Farm
Killarney Farm
Randall's Farm
Bustard's Green
Hall Farm
Nursery
Overwood Lane
Forncett Road
Bunwell Wood
Rod Plantation
Cordwell Wood
Jack's Spinney
Brock's Watering
Guilderswood
Mill Lane
Church Farm
Old Hall Farm
Spring Farm
Cancer Barn
Somerset Farm
Nivelle Farm
Piper's Lodge
Old Court Farm
The Grove
Chestnut Tree Farm
Alborough House
Alborough Farm
Hill Farm
Corner Farm
Ppg Sta
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St Mary's Farm
Carpenter's Farm
Manor House
Cheney
Packway Farm
Pear Tree Farm
Common Farm
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Tacolneston Common
Hall Lane
Low Road
Bridge Farm
Brook Hall
Steeple Lane
Porschall Manor Farm
Valley Farm
Gower's Farm
Worlds End Farm
Manor Farm
Steed Farm
Woodrow Farm
Model Farm
Bridge Farm
Capital Farm
Walford House
New House Farm
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Rookery Farm
Beech Farm
Giltedge Farm
Western Farm
Woodstock Farm
Downland Park
Three Gates Farm
Sneath Farm
Laurels Farm
Rose Tree Farm
Hundred Lane Farm
Fernleigh Farm
Frith Farm
Lost Lands Farm
Moulton Farm
Moulton Road
Fritton Road
Broadgate Lane
Narrowgate Way (Track)
Frith Way
Wash Lane
Market Lane
Hall Lane
Mill Lane
Tibenham Road
Hill Road
Broadview Farm
Church Farm
Hill Farm
Manor Farm
Red House
The Manor
Old Hall
Cargate Common
Common Road
Diss Road
Narrow Lane (Track)
Slough Lane (Track)
Green Lane
Homeleigh Farm
Recn Gd
Gliding Club
Chapmans Hall
The Grange
Moats
Priory
Tibenham Farm
Goose Green Farm
Heath Farm
Heath Road
Longrow Farm
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Yewtree Farm
Primrose Farm
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Low Farm
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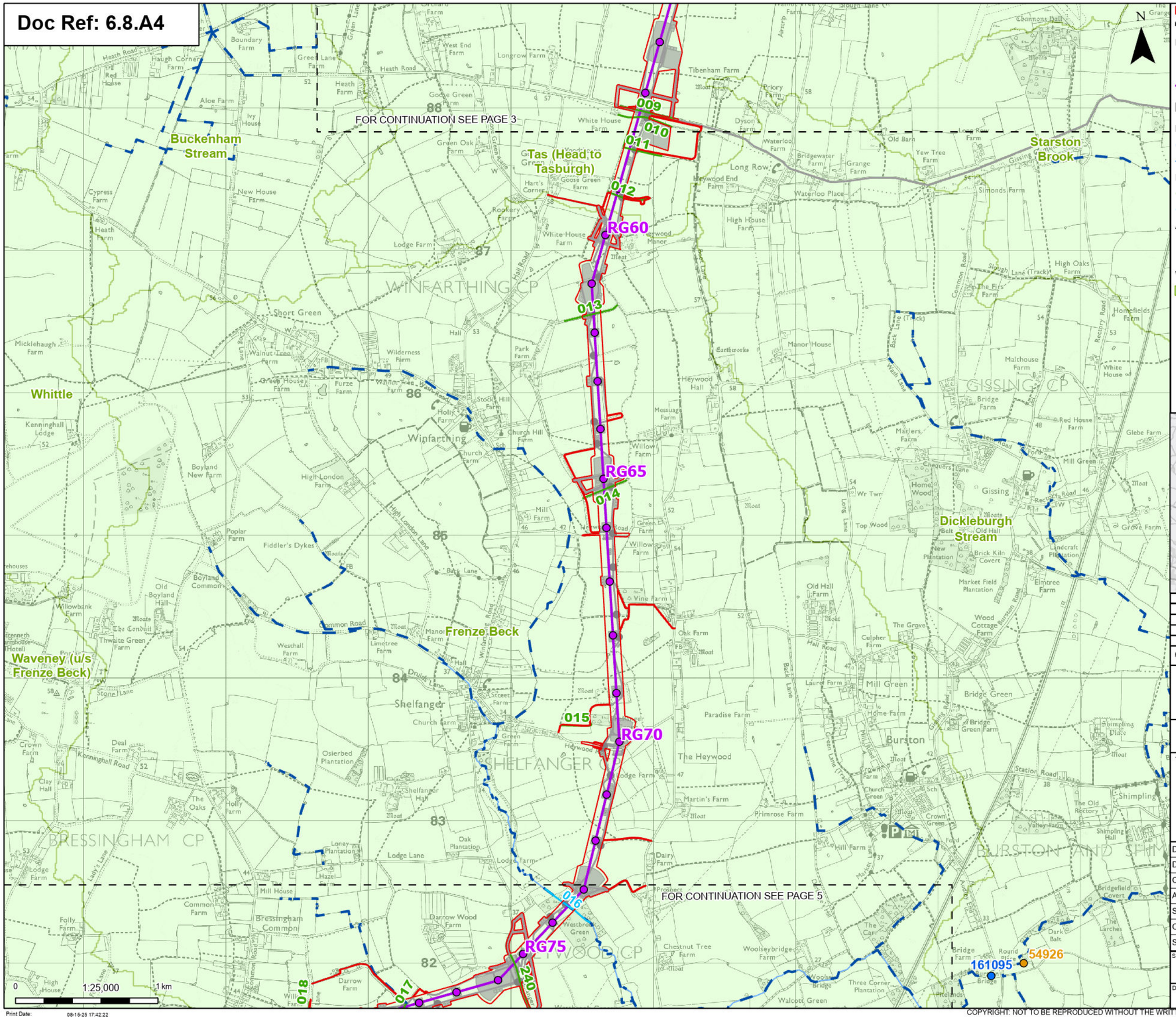

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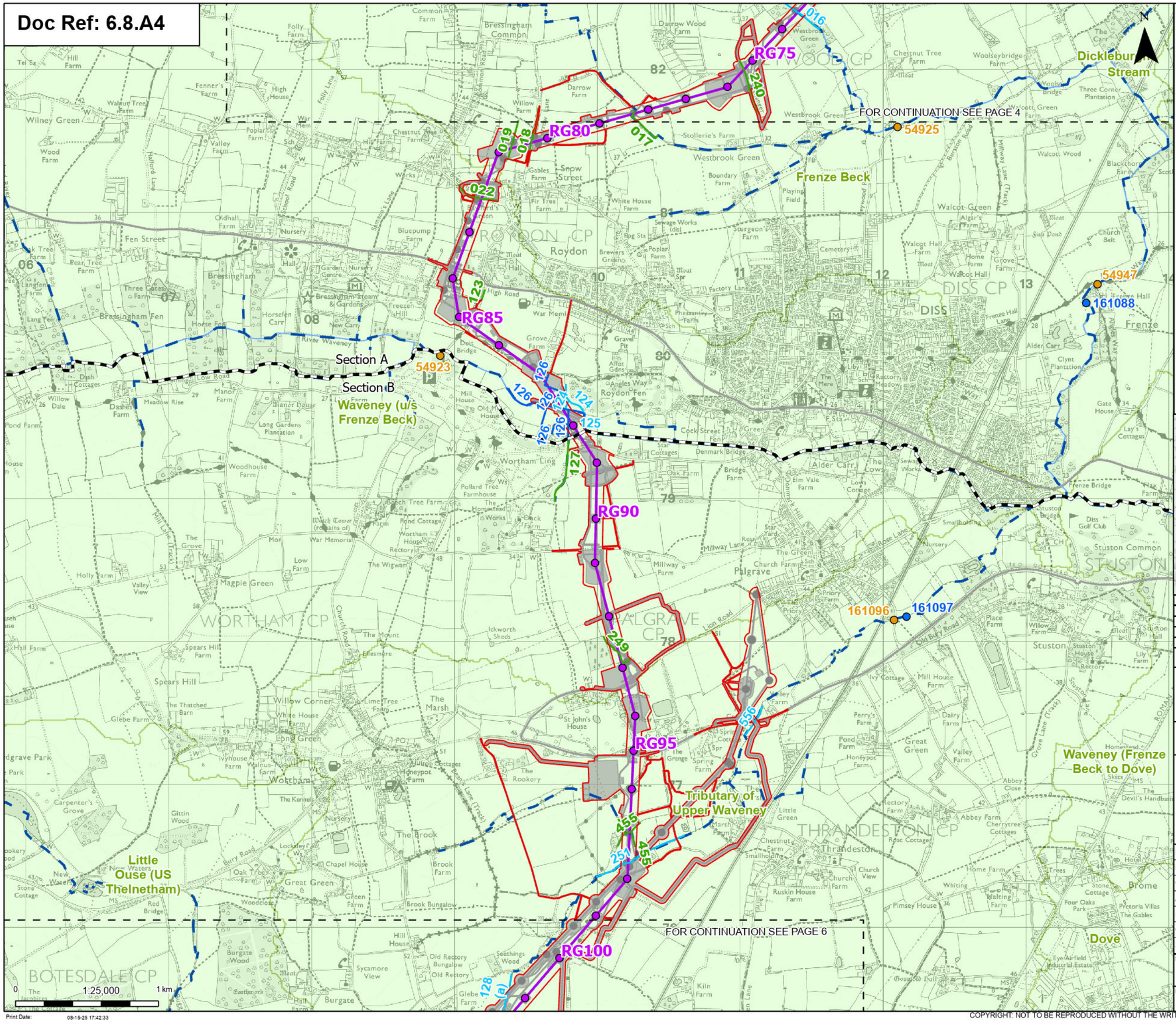

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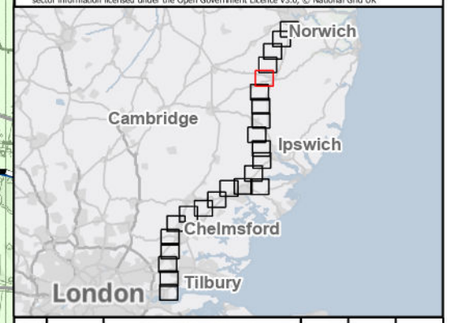

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Tributary of Upper Waveney

Little Ouse (US Thelnetham)

Dove trib - Eye

Dove trib - Finningham

Stowlangtoft Stream

Dove

Mendlesham Stream

BOTESDALE CP · RICKINGHALL SUPERIOR CP · BURGATE CP · MELLIS CP · YAXLEY CP · THORNHAM PARVA CP · GISLINGHAM CP · THORNHAM MAGNA CP · STOKE CP · FINNINGHAM CP · WESTHORPE CP

Rickinghall · Botesdale · Botesdale Green · Allwood Green · Mellis · Mellis Green · Yaxley · Thornham Parva · Gislingham · Thornham Magna · Finningham · Westhorpe · Wickham Skeith

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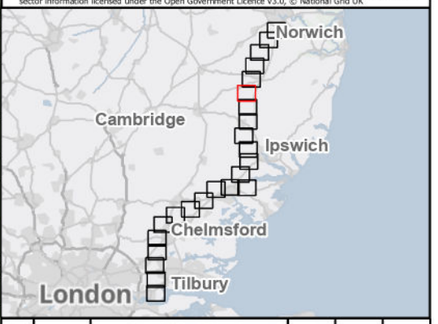

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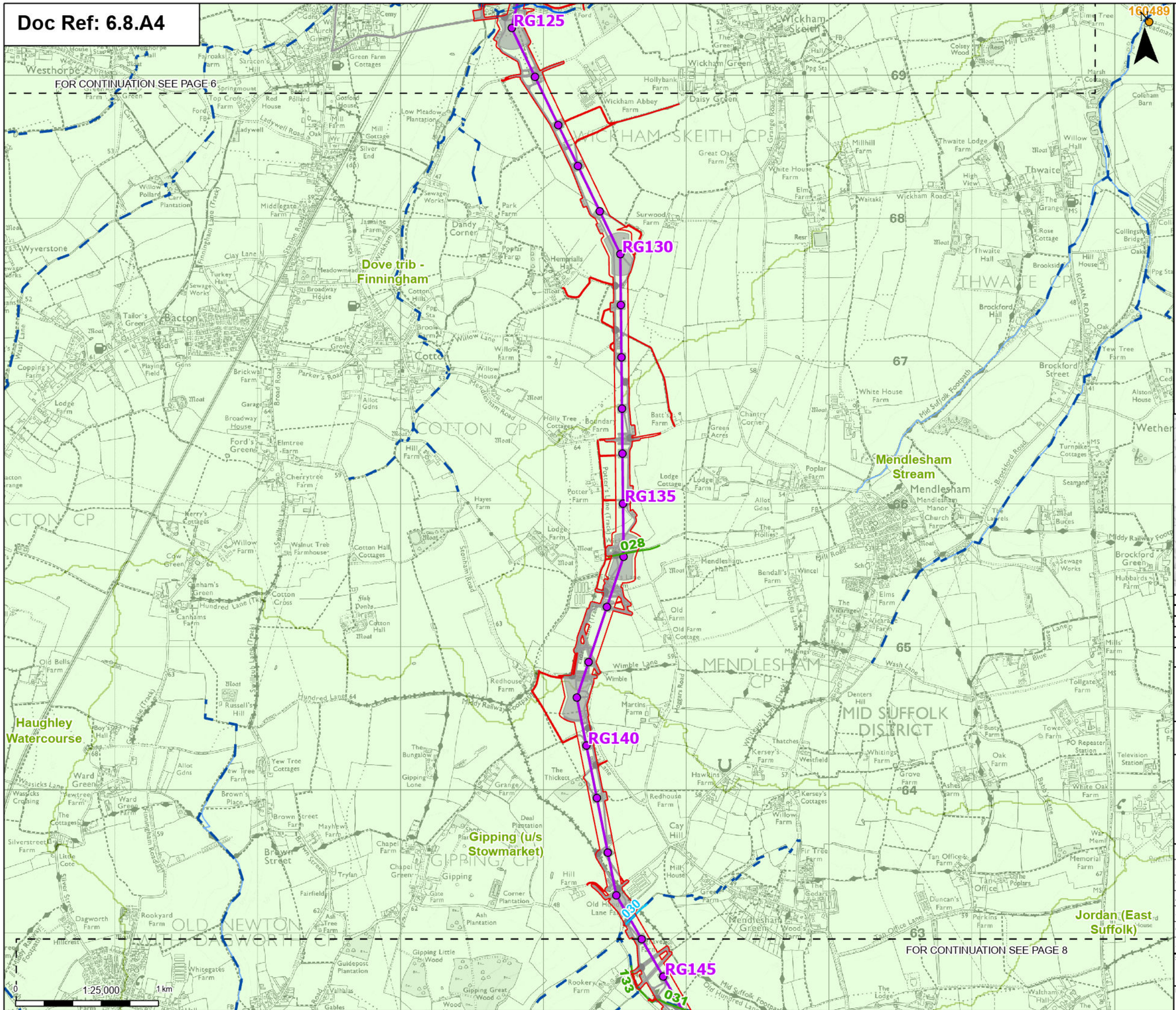
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Gipping (u/s Stowmarket)
Haughley Watercourse
Mendlesham Stream
Jordan (East Suffolk)
FOR CONTINUATION SEE PAGE 6
FOR CONTINUATION SEE PAGE 8
WICKHAM SKEITH CP
THWAITE CP
COTTON CP
MENDLESHAM CP
GIPPING CP
OLD NEWTON WITH DAGWORTH CP
MID SUFFOLK DISTRICT
Wickham Skeith
Wickham Green
Thwaite
Cotton
Mendlesham
Gipping
Bacton
Westhorpe
Wyverstone
Brockford Street
Wetheringsett
Hollybank Farm
Wickham Abbey Farm
Daisy Green
Millhill Farm
Thwaite Lodge Farm
Surwood Farm
Dandy Corner
Hemplalls Hall
Great Oak Farm
White House Farm
Elms Farm
Waitaki
Thwaite Hall
Brockford Hall
Chantry Corner
Green Acres
Batt's Farm
Boundary Farm
Holly Tree Cottages
Lodge Farm
Potter's Farm
Hayes Farm
Bendall's Farm
Wincel
Old Farm
Redhouse Farm
Martins Farm
Kersey's Farm
Hawkins Farm
Cay Hill
Mill House
Deal Plantation
Corner Plantation
Ash Plantation
Gipping Great Wood
Gipping Little Wood
Rookery Farm
Whitegates Farm
Guidepost Plantation
Cotton Hall Cottages
Walnut Tree Farmhouse
Cotton Cross
Canhams Farm
Canham's Green
Old Bells Farm
Ward Green
Brown's Place
Brown Street Farm
Mayhews Farm
Chapel Farm
Chapel Green
Tryfan
Rookyard Farm
Dagworth Farm
Silverstreet Farm
Little Cote
Yew Tree Cottages
Wassicks Crossing
Wassicks Lane
Gipping Lane
Brewer Street
Fairfield
Hillcrest
Valhalas
Gables
Tan Office
Tan Office Farm
Duncan's Farm
Perkins Farm
Memorial Farm
Mendlesham Green
Mendlesham Manor
Church Farm
The Hollies
The Laurels
Moat Buces
Bendall's Farm
Elms Farm
The Vicarage
Vicarage Farm
Old Farm Cottage
Malings
Denters Hill
Busty Farm
Tower Farm
PO Repeater Station
Television Station
Whitings Farm
Grove Farm
Ashes Farm
Oak Farm
White Oak Farm
Kersey's Cottages
Westfield
Thatches
The Thicket
Gipping Lone
The Bungalow
Alloc Gdns
Yew Tree Farm
Grange Farm
Redhouse Farm
Wimble
Wimble Lane
Redhouse Farm
Martins Farm
Middy Railway Footpath
Hundred Lane
Russell's Hill
Boy's Hall
Ward Green Farm
Newtree Farm
The Cottages
Playing Field
Lodge Farm
Broadway House
Ford's Green
Elmtree Farm
Cherrytree Farm
Brickwall Farm
Parker's Road
Broad Road
Willow Lane
Willow Farm
Willow House
Hendlesham Road
Holly Tree Cottages
Boundary Farm
Batt's Farm
Green Acres
Chantry Corner
Lodge Cottage
Poplar Farm
Potter's Farm
Hayes Farm
Allot Gdns
Moat
Hill Farm
Old Hall Farm
Mill Farm
Mill Cottage
Silver End
Low Meadow Plantation
Sewage Works
Park Farm
Poplar Farm
Jasmine Farm
Middlegate Farm
Willow Pollard
Clay Lane
Turkey Hall
Meadowmead
Broadway House
Cotton Hills
Brook Farm
Elm Grove
Tailor's Green
Copping's Farm
Lodge Farm
Garage
Allot Gdns
Playing Field
Brickwall Farm
Broadway House
Ford's Green
Elmtree Farm
Cherrytree Farm
Kerry's Cottages
Willow Farm
Walnut Tree Farmhouse
Cotton Hall Cottages
Cotton Cross
Canham's Green
Hundred Lane (Track)
Canhams Farm
Fish Ponds
Cotton Hall Moat
Old Bells Farm
Moat
Russell's Hill
Boy's Hall
Ward Green
Yew Tree Cottages
Alloc Gdns
Wassicks Lane
Wassicks Crossing
Newtree Farm
Ward Green Farm
The Cottages
Silverstreet Farm
Little Cote
Brown's Place
Brown Street Farm
Mayhews Farm
Chapel Farm
Chapel Green
Tryfan
Brewer Street
Fairfield
Rookyard Farm
Dagworth Farm
Hillcrest
Whitegates Farm
Guidepost Plantation
Valhalas
Gables
Gipping Lone
The Bungalow
Gipping Great Wood
Gipping Little Wood
Rookery Farm
Ash Plantation
Corner Plantation
Gate Farm
Gipping
Hill Farm
Old Hall Farm
Deal Plantation
Shop
Cay Hill
Mill House
Fir Tree Farm
Tan Office
Tan Office Farm
Duncan's Farm
Perkins Farm
Memorial Farm
The Cedars
The Poplars
Green Farm
Mendlesham Green
Mendlesham Wood's Farm
Mendlesham Manor
Church Farm
The Hollies
The Laurels
Moat Buces
Bendall's Farm
Wincel
Old Farm
Old Farm Cottage
The Vicarage
Vicarage Farm
Elms Farm
Malings
Denters Hill
Busty Farm
Tower Farm
PO Repeater Station
Television Station
Whitings Farm
Grove Farm
Ashes Farm
Oak Farm
White Oak Farm
Kersey's Cottages
Westfield
Thatches
The Thicket
Gipping Lone
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Redhouse Farm
Wimble
Wimble Lane
Martins Farm
Middy Railway Footpath
Hundred Lane
Russell's Hill
Boy's Hall
Ward Green Farm
Newtree Farm
The Cottages
Playing Field
Lodge

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FOR CONTINUATION SEE PAGE 7

FOR CONTINUATION SEE PAGE 9

RG145 RG150 RG155 RG160

133 031 135 468

639 638 54851 54852 157806 54857 214731 55 54858 179689

Haughley Watercourse

Gipping (u/s Stowmarket)

Deben (u/s Brandeston Bridge)

Gipping (through Stowmarket)

Jordan (East Suffolk)

Gipping (d/s Stowmarket)

Rattlesden River (d/s Gt. Finborough)

Wattisham Watercourse

Coddenham Watercourse

Old Newton · Stowupland · Saxham Street · Middlewood Green · Stonham Parva CP · Little Stonham · Forward Green · Earl Stonham · Stowmarket · Creeting St Peter CP · Creeting St Mary · Creeting St Mary CP · Badley CP · Badley Hill · Badleydbridge

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Order limits
Sheet index cutline

Proposed project design details

Proposed standard lattice pylon location
Proposed overhead line alignment
Environmental mitigation
Other temporary and permanent construction and operational works

Discipline specific constraints

OS open rivers
Statutory main river

Impacted watercourses

Ditch
Stream

Aquatic record information

Fish records
Macrophyte sites records
Invertebrate sites records

Water Framework Directive catchments

River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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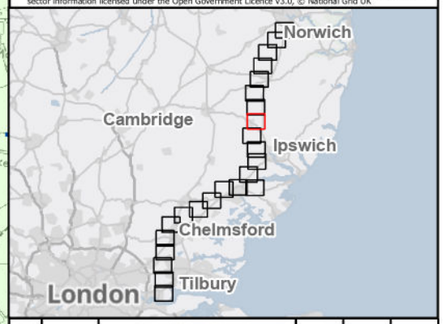

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A	Aug 2025	FOR DCO APPLICATION	MP	AF	KB

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PROJECT: Norwich to Tilbury

Planning Inspectorate App Number: EN020027
Regulation 5(2)(a)

Title:

Figure A8.4.1- Aquatic Ecology Baseline
Page 8 of 24

Designed	W. Johnston	Date	21 Aug 25
Drawn	M. Pawaskar	Date	21 Aug 25
Checked	A. Fell	Date	21 Aug 25
Approved	K. Burrows	Date	21 Aug 25
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Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00394

Revision: A

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FOR CONTINUATION SEE PAGE 10

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Print Date: 08-15-25 17:43:10

Order limits
- Project section line
- Sheet index cutline

Proposed project design details
- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints
- OS open rivers
- Statutory main river

Impacted watercourses
- Ditch
- Stream

Aquatic record information
- Fish records
- Macrophyte sites records
- Invertebrate sites records

Water Framework Directive catchments
- River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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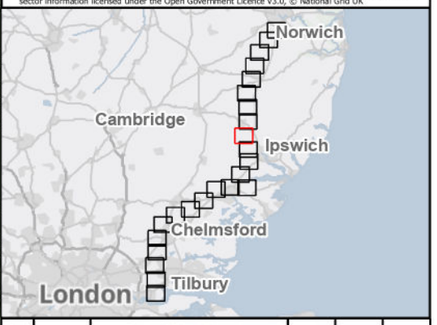

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PROJECT: Norwich to Tilbury

Planning Inspectorate App Number: EN020027
Regulation 5(2)(a)

Title:

Figure A8.4.1- Aquatic Ecology Baseline
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Suitability Description:
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Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00394

Revision: A

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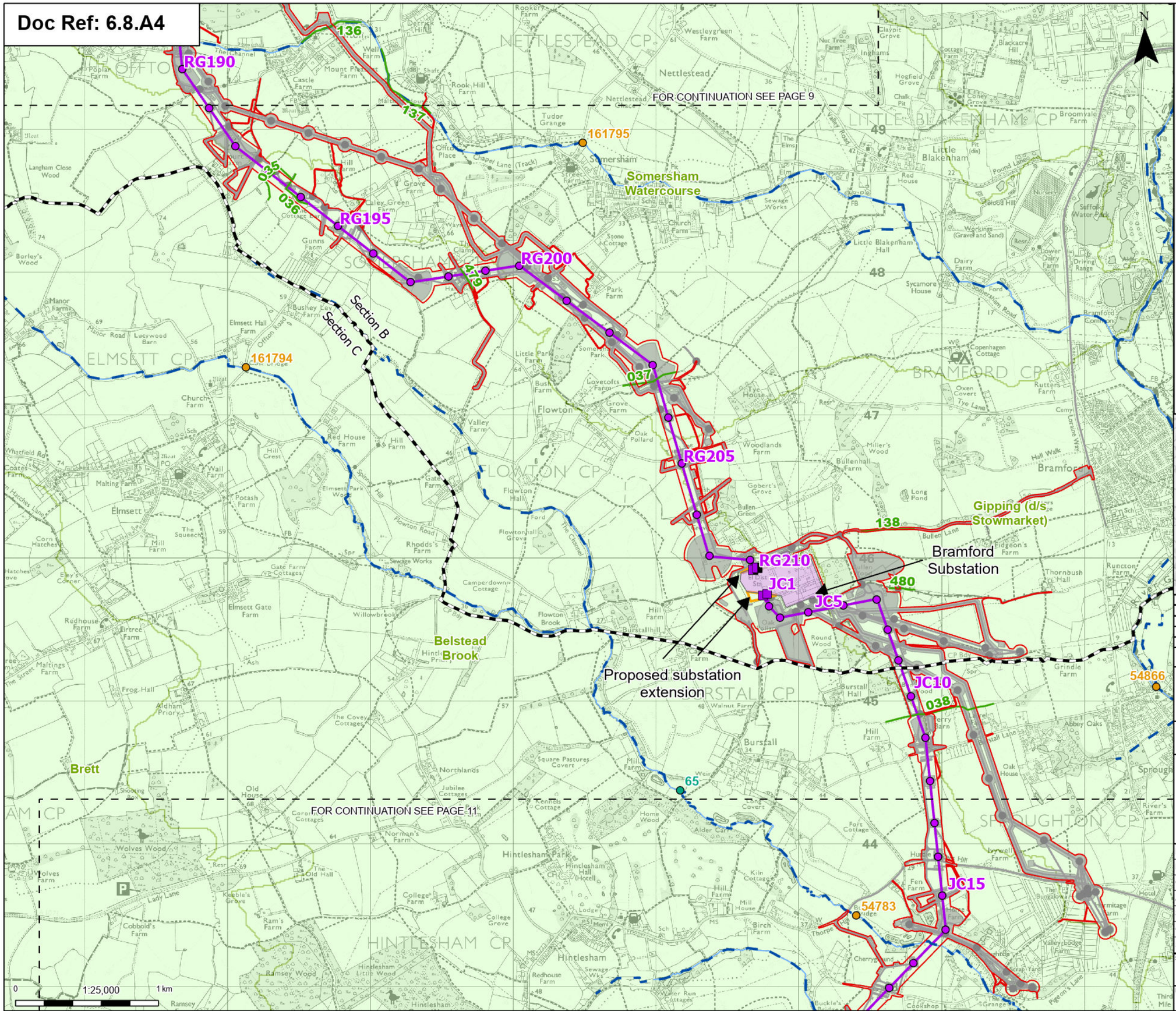

- Order limits
- Project section line
- Sheet index cutline

Proposed project design details

- Proposed full line tension gantry
- Proposed low duty gantry
- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Bramford Substation
- Bramford Substation Extension
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch

Aquatic record information

- Fish records
- Invertebrate sites records

Water Framework Directive catchments

- River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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PROJECT: Norwich to Tilbury

Planning Inspectorate App Number: EN020027
Regulation 5(2)(a)

Title:

Figure A8.4.1- Aquatic Ecology Baseline
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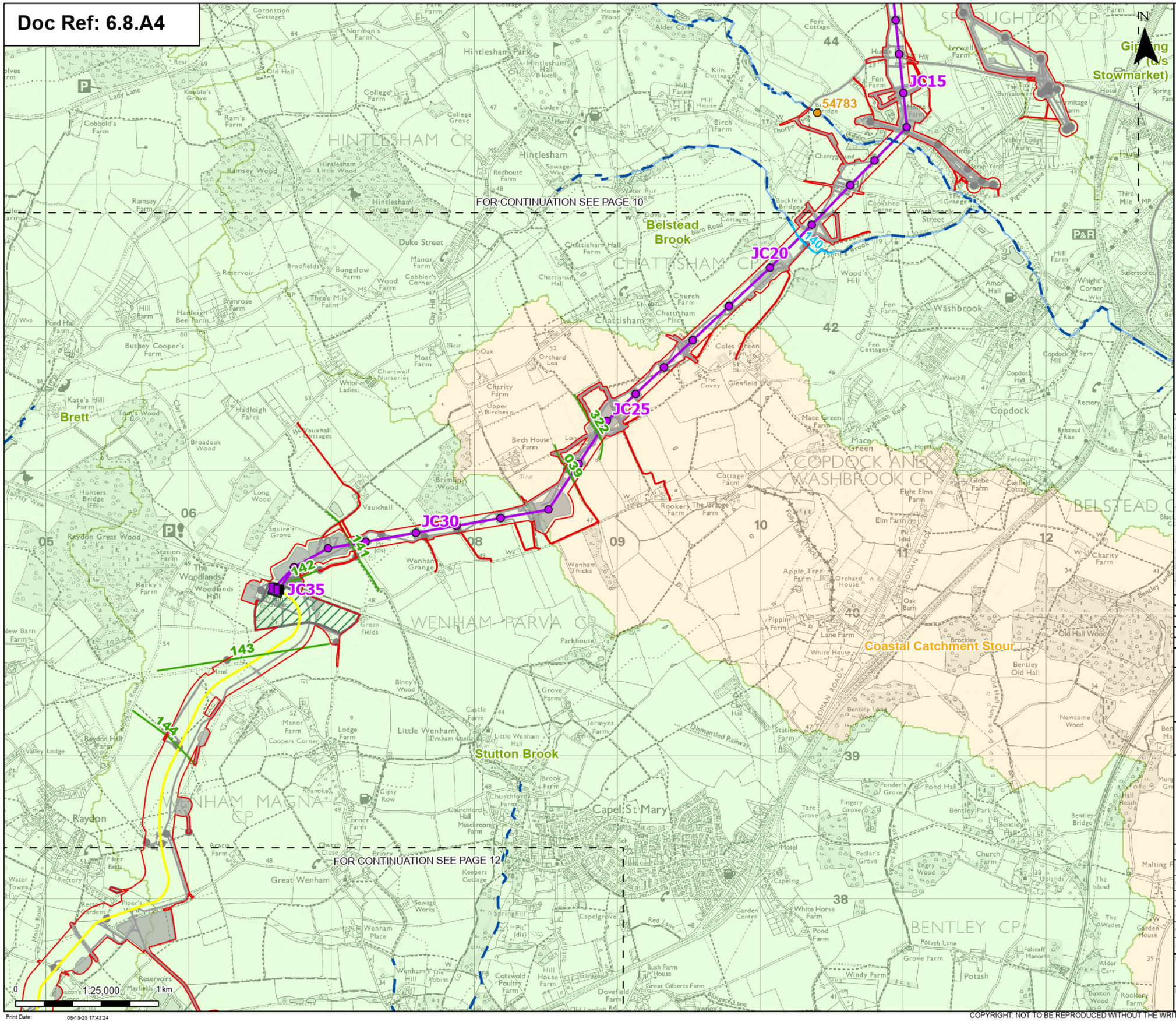
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JC25
JC30
JC35
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039
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144
Belstead Brook
Stutton Brook
Brett
Raydon
Great Wenham
Little Wenham
Capel St Mary
Chattisham
Washbrook
Copdock
Coastal Catchment Stour
HINTLESHAM CP
CHATTISHAM CP
COPDOCK AND WASHBROOK CP
WENHAM PARVA CP
WENHAM MAGNA CP
BENTLEY CP
SPROUGHTON CP
BELSTEAD
Gipping (d/s Stowmarket)
Hintlesham
Hintlesham Park
Hintlesham Hall (Hotel)
Chattisham Hall
Chattisham Place
Wenham Grange
Wenham Hall
Wenham Parva
Wenham Magna
Castle Farm
Little Wenham Hall
Jermyns Farm
Grove Farm
Churchford Hall
Churchford Farm
Mace Green
Coles Green
Glenfield
Bentley Old Hall
Bentley Park
Bentley Bridge
Bentley Long Wood
Old Hall Wood
Newcome Wood
Dismantled Railway
Old Hall Lane
ROMAN ROAD
Woodhouse Road
Nokes Road
Pond Lane
Potash Lane
Red Lane
Lady Lane
Duke Street
Barn Road
Clay Hill
Clay Lane
Church Lane
Withams Road
Westhill
Hadleigh Bee Farm
Bushey Cooper's Farm
Kate's Hill Farm
Pond Hall Farm
Hadleigh Farm
Three Mile Farm
Bungalow Farm
Manor Farm
Cobbler's Corner
Primrose Farm
Reservoir
Ramsey Wood
Hintlesham Little Wood
Hintlesham Great Wood
Ramsey Farm
Cobbold's Farm
College Farm
College Grove
Keeble's Grove
Ram's Farm
Redhouse Farm
Water Run Bridges
Buckle's Bridge
Cherry Land
Cookshop Corner
Waterbrook Street
The Grange
Pigeon's Lane
Third Mile
Hill Farm
Amor Hall
Wright's Corner
Superstores
Fen Farm
Fen Cottages
Fen Lane
Lywell Farm
Valley Lodge Farm
Hall Farm
Mill House
Birch Farm
Kiln Cottages
Fort Cottage
Alder Carr
Home Wood
Brimlin Wood
Long Wood
Raydon Great Wood
Woodlands Hall
Becky's Farm
Station Farm
Squire's Grove
Vauxhall
Vauxhall Cottages
Green Fields
Parkhouse
Binny's Wood
Manor Farm
Coopers Corner
Lodge Farm
Valley Lodge
Raydon Hall Farm
Roanoke
Gipsy Row
Corner Farm
Church Close
Priory
Abbey Farm
Keepers Cottage
Sewage Works
Springhill
Capelgrove
Capelrig
Wenham Place
Wenham Hill
Robins
Cotswold Poultry Farm
Hill House Farm
Garage
Dovefield Farm
Bush Farm
Great Gilberts Farm
Tawney's
Brickfield Lane
Rookery Farm
The Woodlands
Green Fields
Orchard Lea
Upper Birches
Charity Farm
Moat Farm
Chartwell Nurseries
White Ladies
Oak
Moat
Meat
Pit (dis)
Sch
Mill
Lodge
Memi
Water Works
Filter Beds
Reservoirs
Mayfields
Rectory Gardens
Piper's Wood
Tom's Wood
Hunters Bridge (FB)
Railway Walk
Orchard House
Oak Barn
Pippin Farm
Lane Farm
White House
Apple Tree Farm
Rookery Farm
The Grange Farm
Eight Elms Farm
Elm Farm
Glebe Farm
Oakfield Cottage
Felcourt
Hall Heath
Pond Hall
Ponder's Grove
Fingery Grove
Tare Grove
Pedlar's Grove
Engry Wood
Uplands
The Island
Motel
White Horse Farm
Pond Farm
Windy Farm
Grove Farm
Potash
Falstaff Manor
The Wades
Garden House
Alder Carr
Buxton Wood
Rookery Farm
Garden Centre
Hall Heath
Malting Farm
Rectory
Water Tower
Church Farm
Copdock Hall
Copdock Mill
Spring Farm
Hill Farm
Wood Hill
Chattisham Hall
Church Farm
Coles Green Farm
Mace Green Farm
Cottage Farm
Glebe Farm
Oakfield Cottage
Valley Lodge Farm
Lane Farm
Old Hall Wood
Bentley Old Hall
Bentley Long Wood
Newcome Wood
Bentley Park
Bentley Bridge
Bencich Hall
Church Farm

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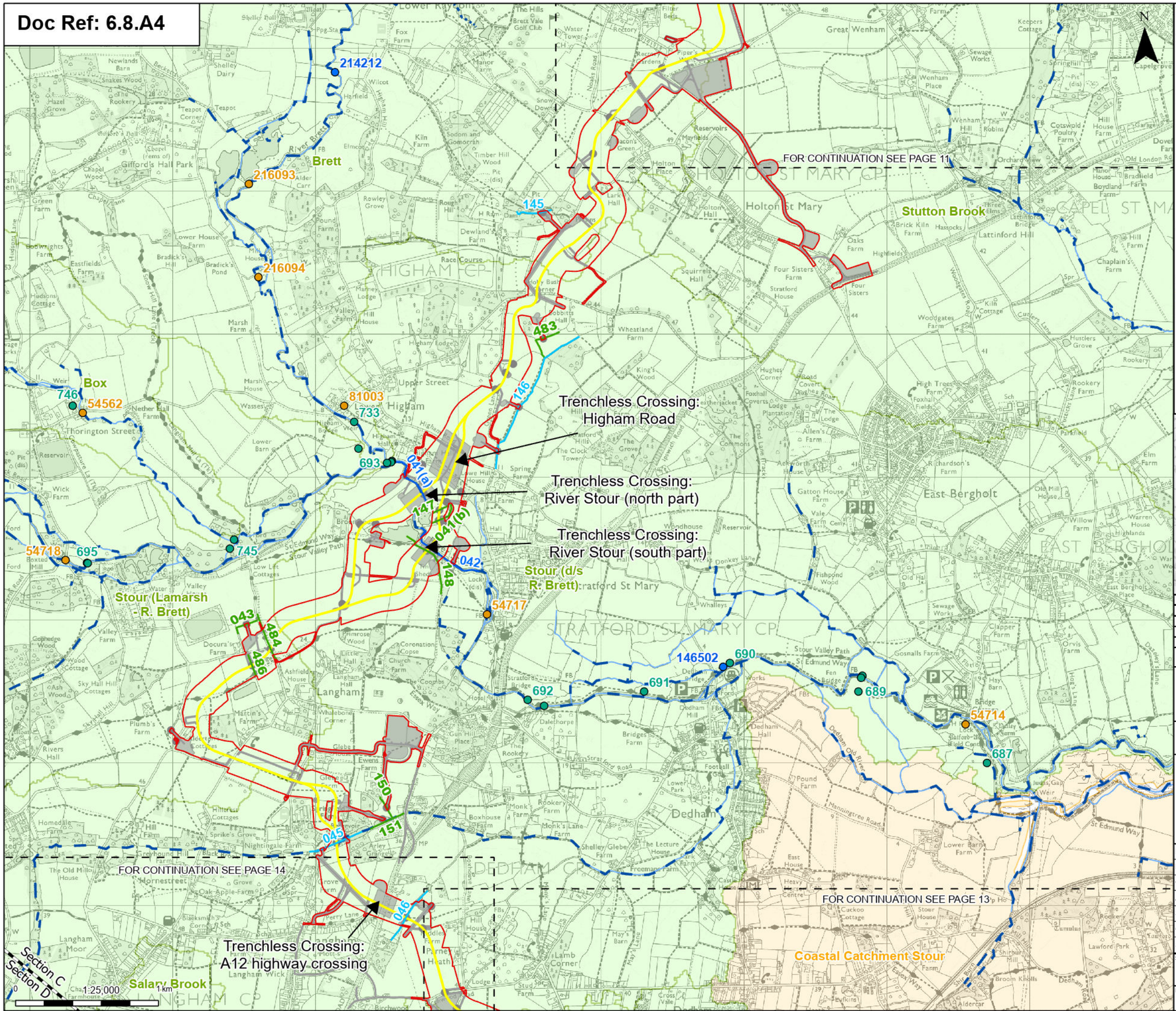

- Order limits
- Project section line
- Sheet index cutline

Proposed project design details

- Proposed underground cable alignment
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch
- Stream
- River

Aquatic record information

- Fish records
- Macrophyte sites records
- Invertebrate sites records

Water Framework Directive catchments

- Coastal catchment
- River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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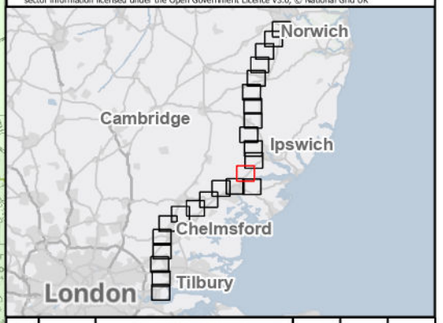

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PROJECT: Norwich to Tilbury

Planning Inspectorate App Number: EN020027
Regulation 5(2)(a)

Title:

Figure A8.4.1- Aquatic Ecology Baseline
Page 12 of 24

Designed	W. Johnston	Date	21 Aug 25
Drawn	M. Pawaskar	Date	21 Aug 25
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Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00394

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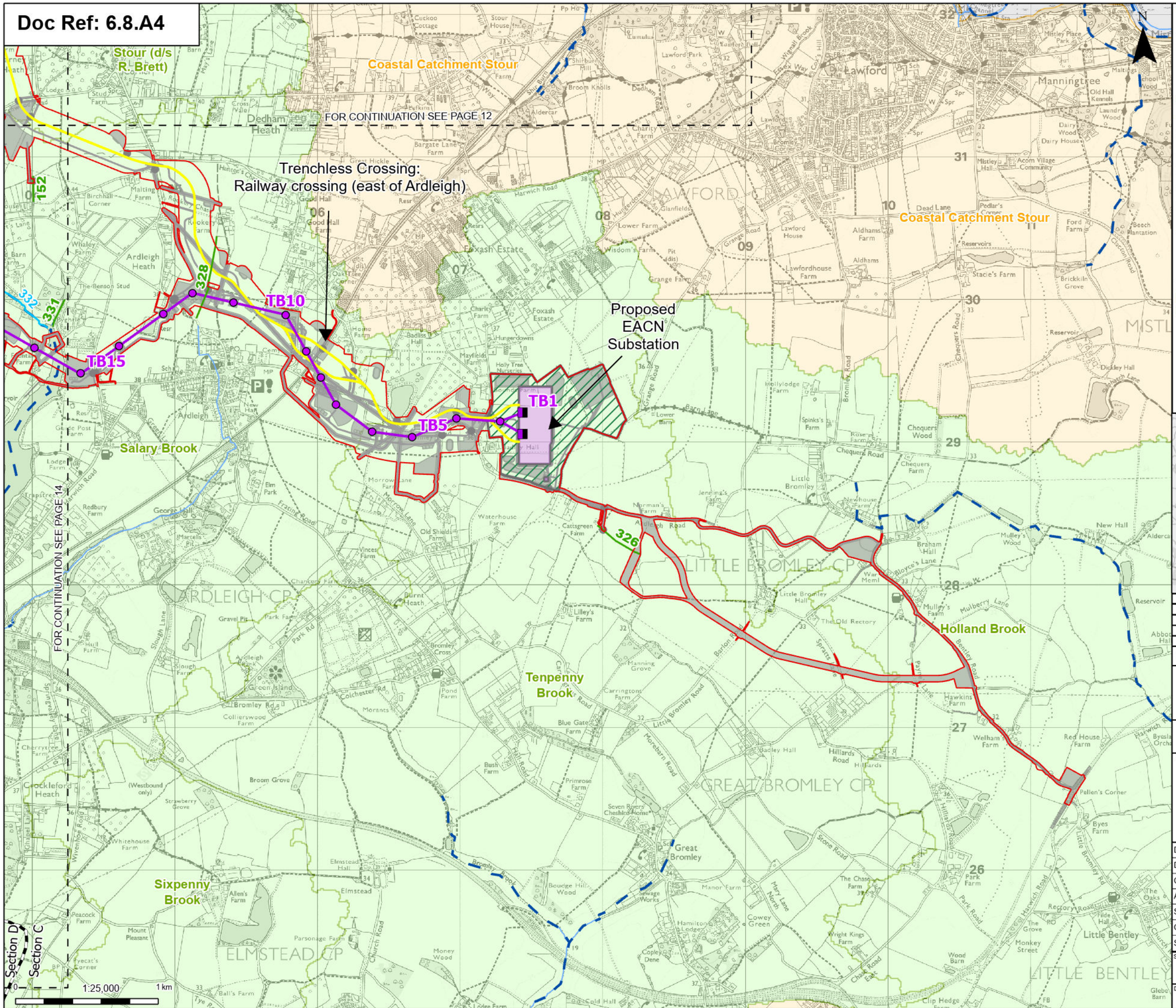

- Order limits
- Project section line
- Sheet index cutline

Proposed project design details

- Proposed full line tension gantry
- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Proposed underground cable alignment
- Proposed DNO Substation
- Proposed East Anglia Connection Node Substation(EACN)
- Environmental area
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch
- Stream

Water Framework Directive catchments

- Coastal catchment
- River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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PROJECT: Norwich to Tilbury

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Regulation 5(2)(a)

Title:

Figure A8.4.1- Aquatic Ecology Baseline
Page 13 of 24

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Stour (Lamarsh - R. Brett)

Stour (d/s R. Brett)

Colne (d/s Doe's Corner)

Salary Brook

Sixpenny Brook

Trenchless Crossing: A12 highway crossing

FOR CONTINUATION SEE PAGE 15

FOR CONTINUATION SEE PAGE 12

FOR CONTINUATION SEE PAGE 13

Section C

Section D

TB30

TB25

TB20

052 051 050 498 500 154 153 338 049 048 047 046 152 332 331 160523 550 54637 771 769 768 149947 54636

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Print Date: 08-15-25 17:43:53

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- Order limits
- Project section line
- Sheet index outline

Proposed project design details

- Proposed full line tension gantry
- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Proposed underground cable alignment
- Proposed cable sealing end compound(CSEC)
- Environmental area
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch
- Stream

Aquatic record information

- Fish records
- Macrophyte sites records
- Invertebrate sites records

Water Framework Directive catchments

- Coastal catchment
- River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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Figure A8.4.1- Aquatic Ecology Baseline
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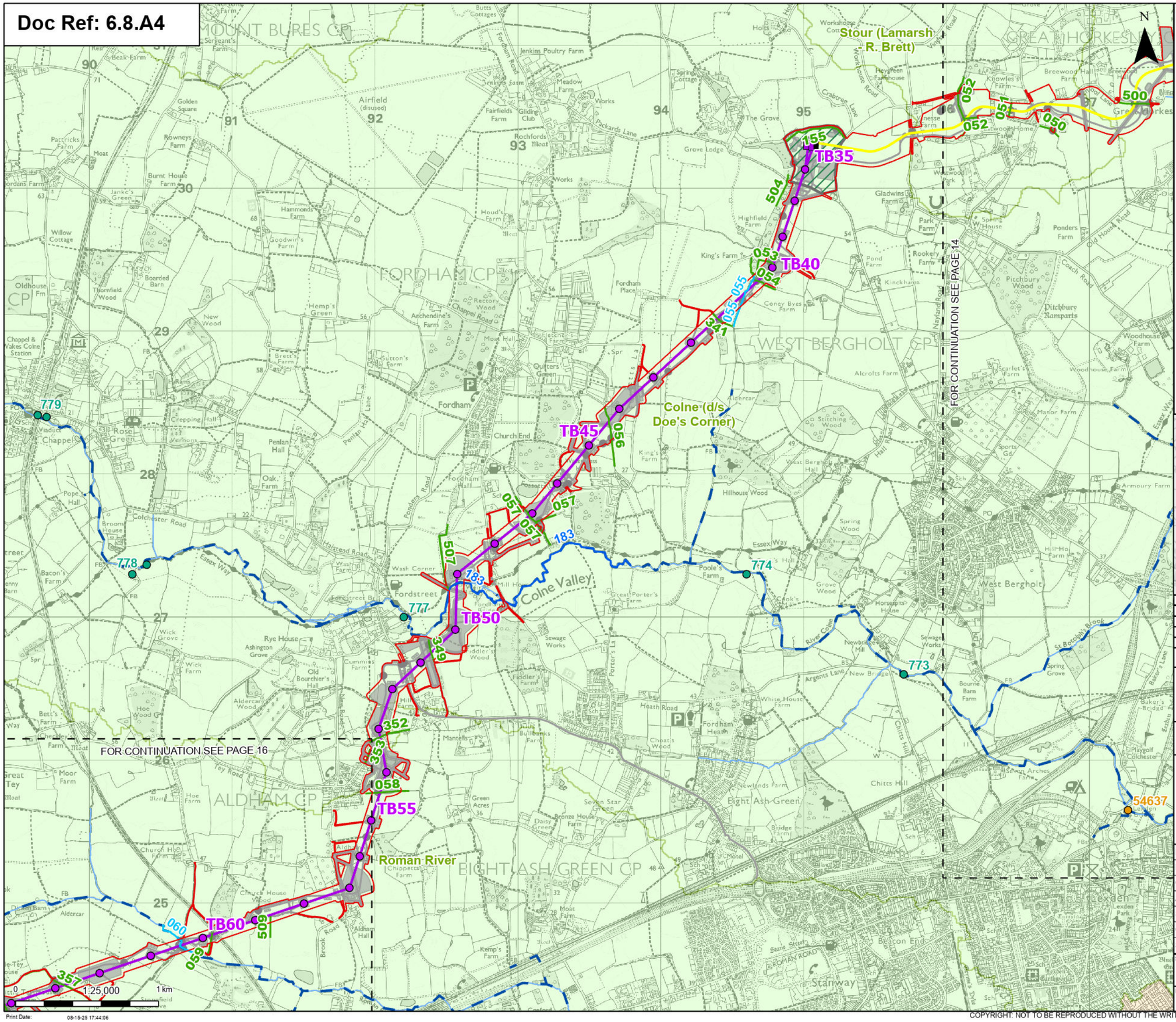

Order limits
Sheet index cutline

Proposed project design details

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- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Proposed underground cable alignment
- Proposed cable sealing end compound(CSEC)
- Environmental area
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch
- Stream
- River

Aquatic record information

- Fish records
- Invertebrate sites records

Water Framework Directive catchments

- Coastal catchment
- River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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PROJECT: Norwich to Tilbury

Planning Inspectorate App Number: EN020027
Regulation 5(2)(a)

Title:

Figure A8.4.1- Aquatic Ecology Baseline
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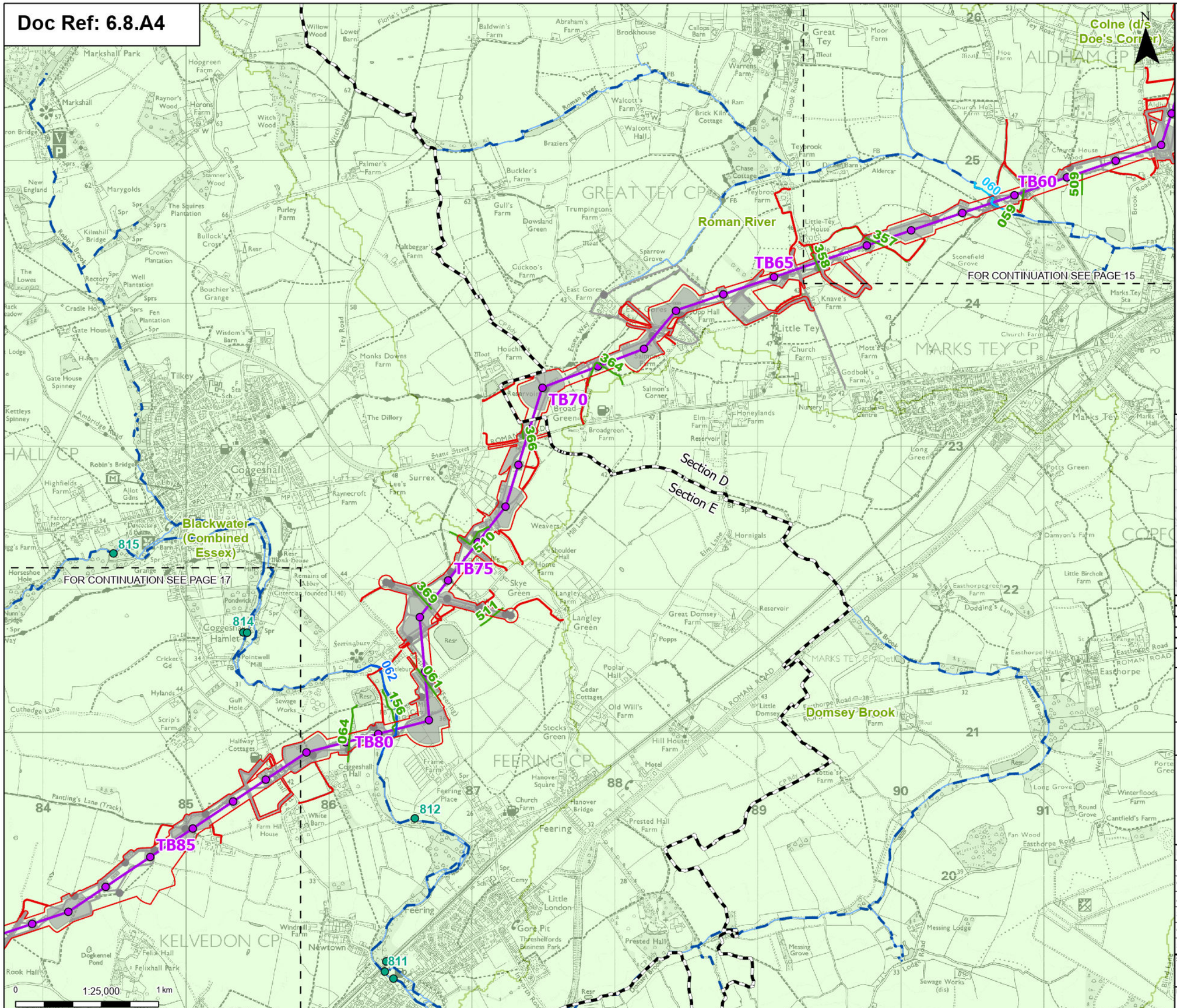

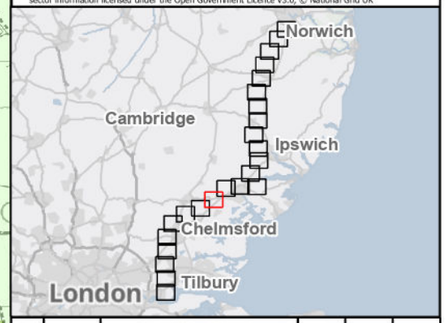

- Order limits
- Project section line
- Sheet index cutline

Proposed project design details

- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch
- Stream
- River

Aquatic record information

- Fish records

Water Framework Directive catchments

- River waterbody catchment

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Figure A8.4.1- Aquatic Ecology Baseline
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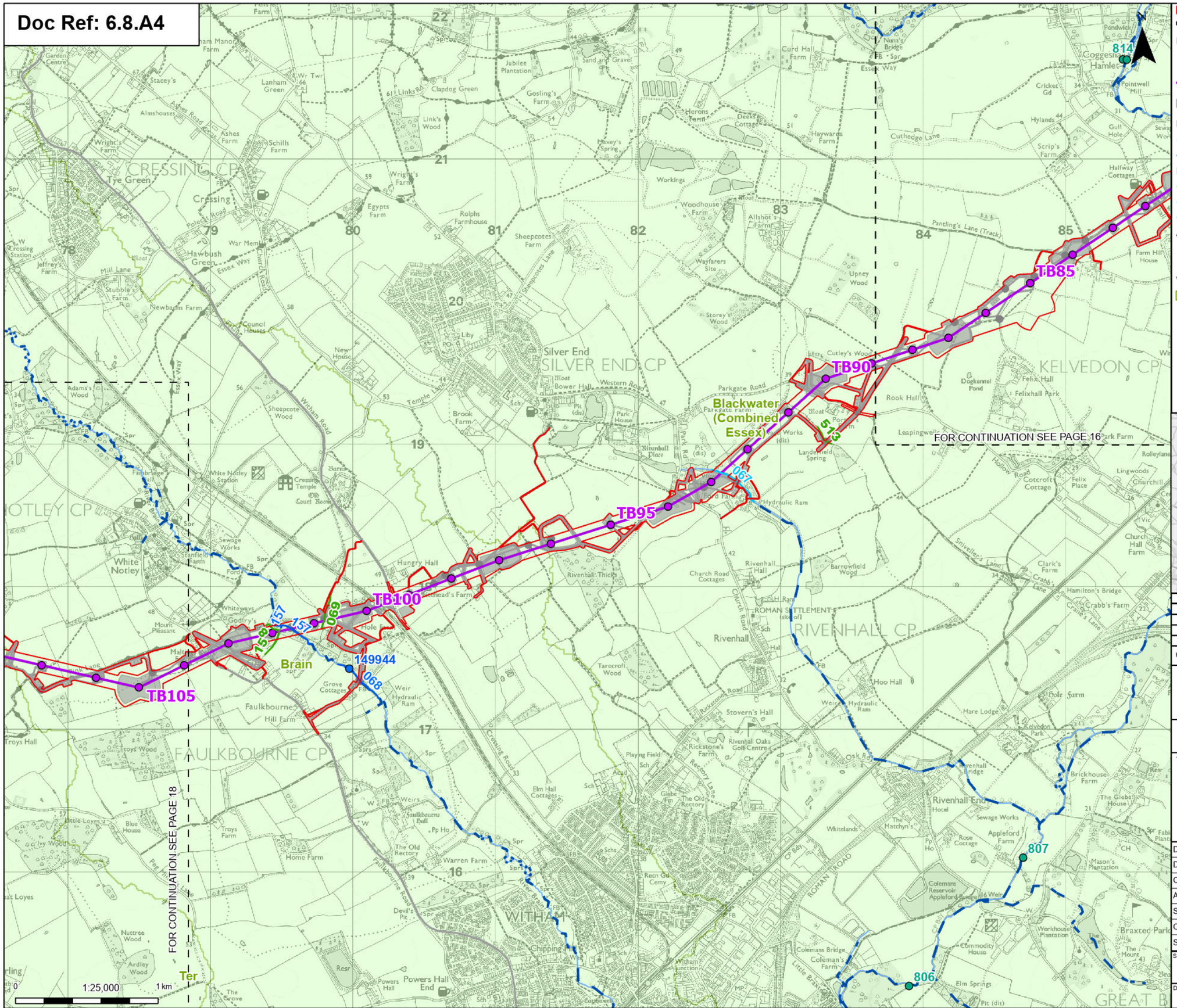

Order limits

Sheet index cutline

Proposed project design details

Proposed standard lattice pylon location

Proposed overhead line alignment

Other temporary and permanent construction and operational works

Discipline specific constraints

OS open rivers

Statutory main river

Impacted watercourses

Ditch

Stream

River

Aquatic record information

Fish records

Macrophyte sites records

Water Framework Directive catchments

River waterbody catchment

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Figure A8.4.1- Aquatic Ecology Baseline
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Brain
Chelmer (Gt. Easton - R. Can)
Boreham Tributary
Section E
Section F
Ter
WHITE NOTLEY CP
FAIRSTEAD CP
TERLING CP
LITTLE WALTHAM CP
GREAT LEIGHS CP
LITTLE LEIGHS CP
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FOR CONTINUATION SEE PAGE 17

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Order limits
Project section line
Sheet index outline

Proposed project design details

Proposed low duty gantry
Proposed low height pylon location
Proposed standard lattice pylon location
Proposed overhead line alignment
Proposed underground cable alignment
Proposed cable sealing end compound(CSEC)
Environmental area
Environmental mitigation
Other temporary and permanent construction and operational works

Discipline specific constraints

OS open rivers
Statutory main river

Impacted watercourses
Ditch
Stream
River

Aquatic record information
Fish records
Macrophyte sites records
Invertebrate sites records

Water Framework Directive catchments
River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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Norwich
Cambridge
Ipswich
Chelmsford
Tilbury
London

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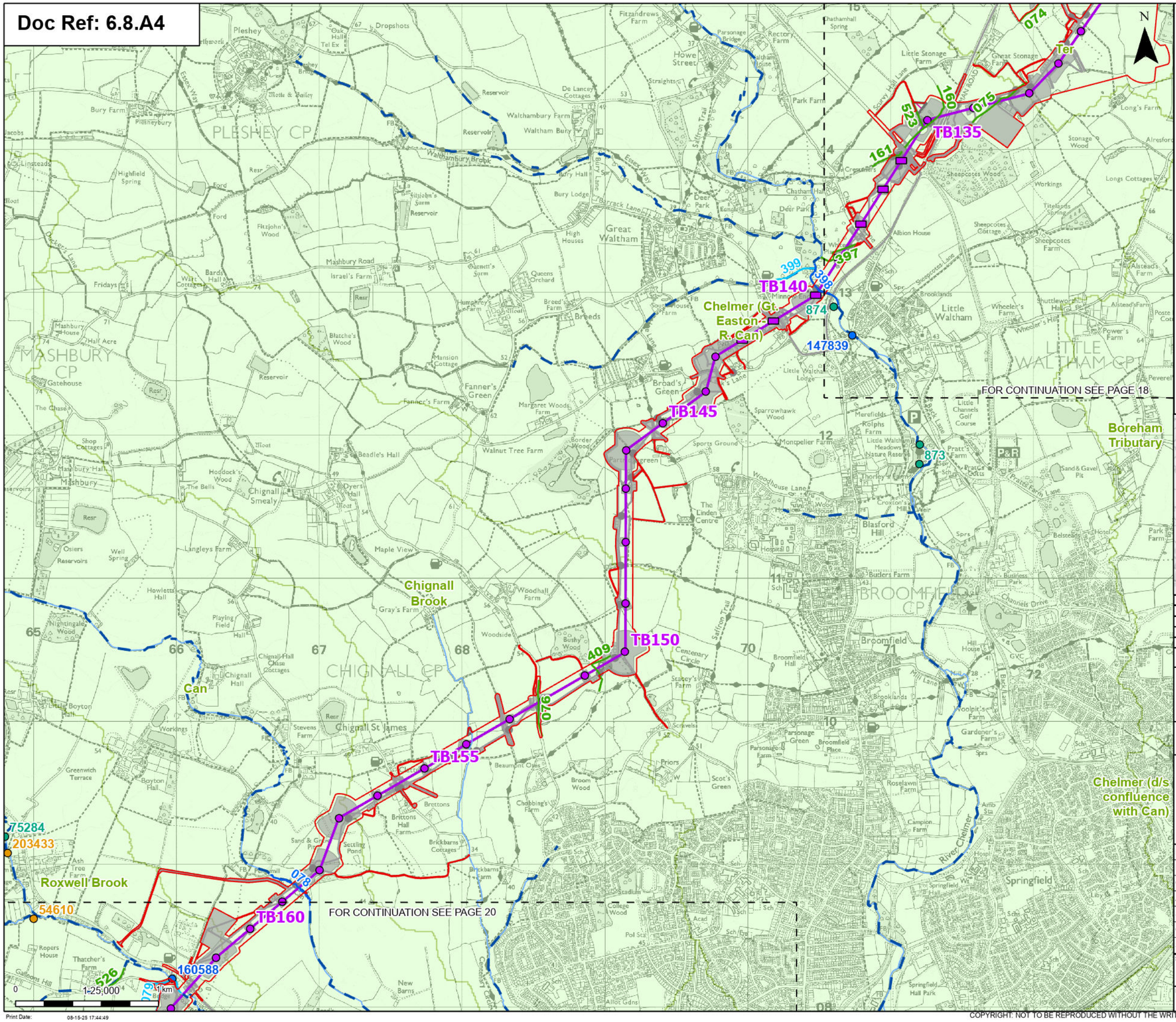

- Order limits
- Sheet index cutline

Proposed project design details

- Proposed low height pylon location
- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch
- Stream
- River

Aquatic record information

- Fish records
- Macrophyte sites records
- Invertebrate sites records

Water Framework Directive catchments

- River waterbody catchment

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Figure A8.4.1- Aquatic Ecology Baseline
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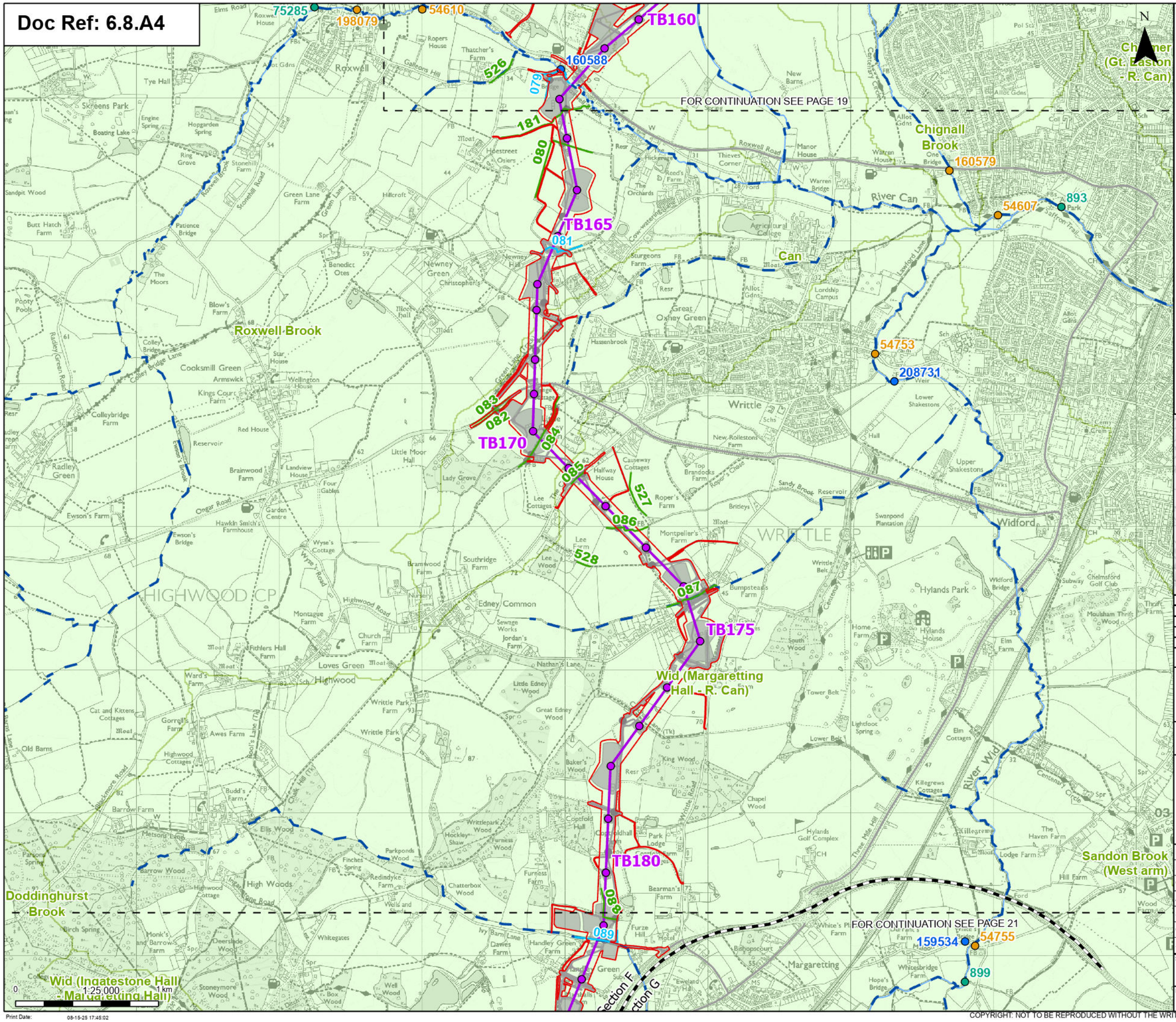

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Order limits
Project section line
Sheet index cutline

Proposed project design details

Proposed standard lattice pylon location
Proposed overhead line alignment
Environmental mitigation
Other temporary and permanent construction and operational works

Discipline specific constraints

OS open rivers
Statutory main river

Impacted watercourses

Ditch
Stream

Aquatic record information

Fish records
Macrophyte sites records
Invertebrate sites records

Water Framework Directive catchments

River waterbody catchment

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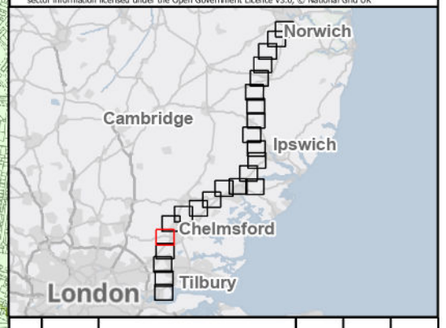

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PROJECT: Norwich to Tilbury

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Title:

Figure A8.4.1- Aquatic Ecology Baseline
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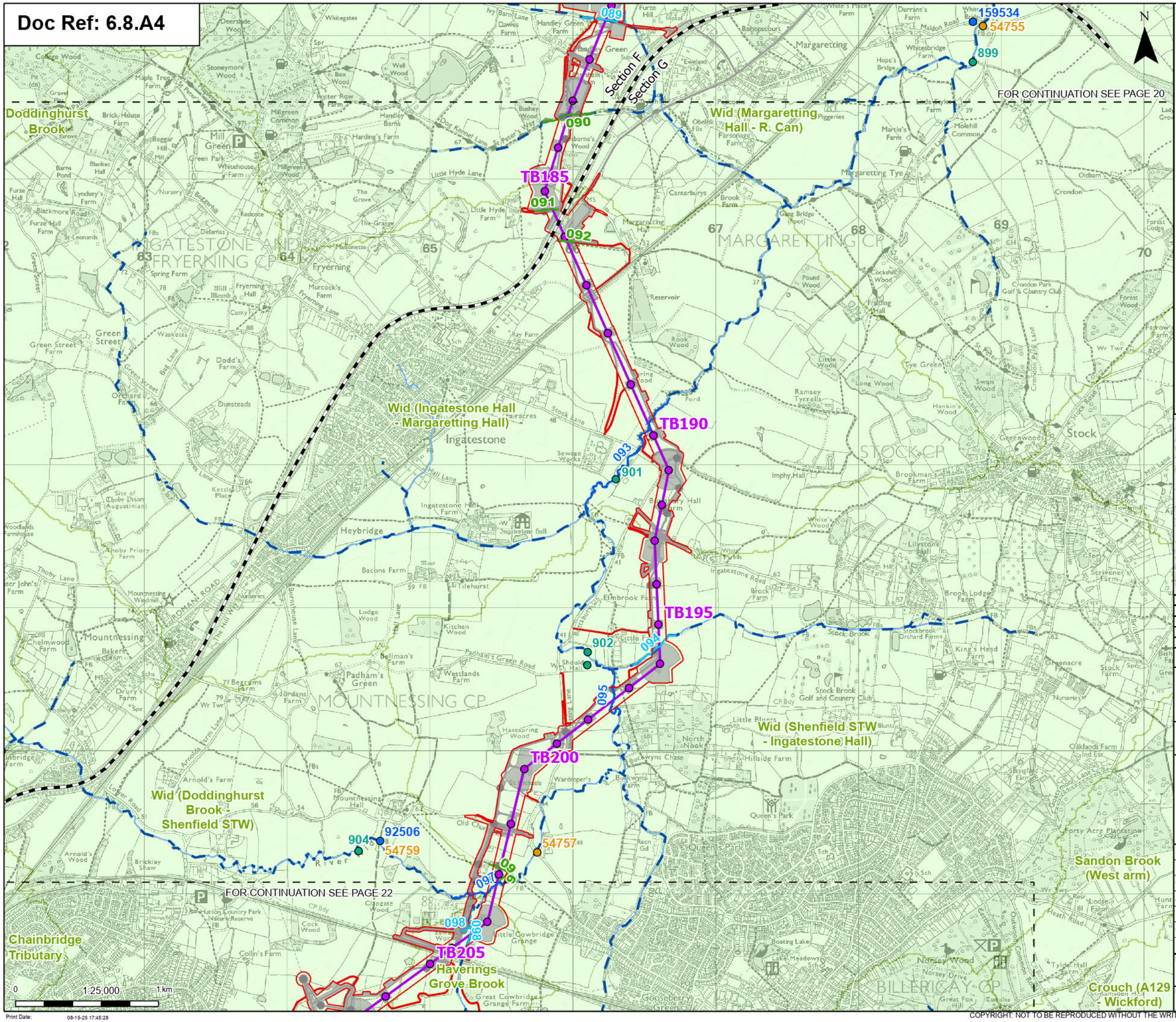
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Section F
Section G
FOR CONTINUATION SEE PAGE 20
FOR CONTINUATION SEE PAGE 22
Wid (Margaretting Hall - R. Can)
Wid (Ingatestone Hall - Margaretting Hall)
Wid (Shenfield STW - Ingatestone Hall)
Wid (Doddinghurst Brook - Shenfield STW)
Doddinghurst Brook
Chainbridge Tributary
Haverings Grove Brook
Sandon Brook (West arm)
Crouch (A129 - Wickford)
INGATESTONE AND FRYERNING CP
MARGARETTING CP
MOUNTNESSING CP
STOCK CP
BILLERICAY CP
Ingatestone
Fryerning
Margaretting
Mountnessing
Stock
Billericay
Heybridge
Margaretting Tye
Tye Green
Mill Green
Green Street
Ramsey Tyrrells
Imphy Hall
Queen's Park
Stock Brook Golf and Country Club
Crondon Park Golf & Country Club
Hutton Country Park Nature Reserve
Boating Lake
Lake Meadows
Norsey Wood
Little Cowbridge Grange
Great Cowbridge Grange Farm
Elmbrook Farm
Hillside Farm
Buckwyns Chase
Stock Brook
Crondon
Oldbarn
Molehill Common
Martin's Farm
Whitesbridge Farm
Hope's Bridge
Durrant's Farm
Bishopscourt
Margaretting Hall
Margaretting Tye
Ingatestone Hall
Ingatestone Hall Farm
Mountnessing Hall
Fryerning Hall
Stock Brook Orchard Farm
Brookman's Farm
Lillystone Hall
Tilehurst
Padham's Green
Haresprings Wood
Wardroper's
Queen's Park
Forty Acre Plantation
Norsey Drive
Heath Road
Outwood Common
Tylde Hall Farm
Great Fox Hill
Gooseberry Green
Ingatestone Road
Roman Road
Old Church Rd
Stock Lane
Hall Lane
Mill Lane
Swan Lane
Crondon Park Lane
Margaretting Tye
Little Hyde Lane
Padham's Green Road
Thoby Lane
Lower Road
Arnolds Farm Lane
Burnthouse Lane
Dog Kennel Lane
St Peter's Way
Green Street
Fryerning Lane
Bass Lane
Trueloves Lane
Kettle's Place
Site of Thoby Priory (Augustinian)
Thoby Priory Farm
Mountnessing Windmill
Collin's Farm
Bacons Farm
Brick House Farm
Harding's Farm
Millgreen Common
Millgreen Wood
Mill Green Park
Whitehouse Farm
Redcoce
Delamas
Masonette
Murcock's Farm
Fryerning Hall
Spring Farm
Dodd's Farm
Dunsteads
Orchard Farm
Green Street Farm
Brickley Shaw
Arnold's Wood
Arnold's Farm
Mountnessing Windmill
Chelmwood Farm
Bakers Farm
Drury's Farm
Jordans Farm
Westlands Farm
Bellman's Farm
Padham's Green
Kitchen Wood
Lodge Wood
Hall Lane
Burnthouse Lane
Ingatestone Hall
Ingatestone Hall Farm
Ingatestone Bell
Ray Farm
Sewage Works
Fairacres
Rook Wood
Pound Wood
Cockshill Wood
Long Wood
Swan Wood
Hankin's Wood
Greenwoods
Forest Lodge
Farrow Farm
Crondon Park Lane
Cock Wood
Clingate Wood
Collin's Farm
Nursery
Reservoir
Sewage Works
Recn Gd
Sch
Cemy
Obelisk
Piggeries
Parsonage Farm
Canterburys
Brook Farm
Little Hyde Farm
Gang Bridge (Foot)
Cockshill Wood
Fracting Hall
Little Wood
Rook Wood
Spring Wood
Ford
Ray Farm
Sewage Works
Fairacres

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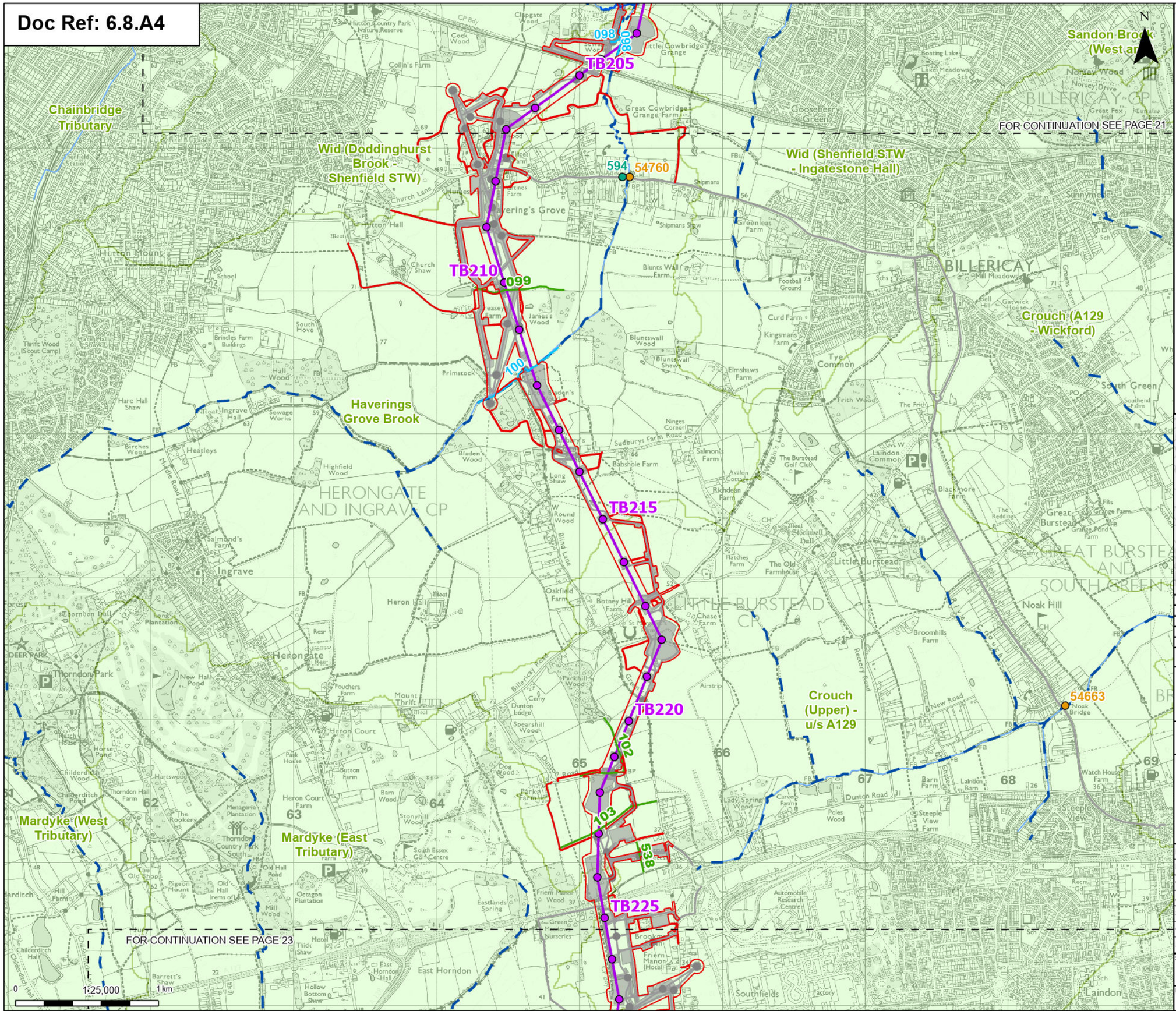

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PROJECT: Norwich to Tilbury

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Figure A8.4.1- Aquatic Ecology Baseline
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FOR CONTINUATION SEE PAGE 24

Crouch (Upper) - u/s A129

Crouch (A129 - Wickford)

Mardyke (East Tributary)

Mardyke (West Tributary)

Mardyke

Coastal Catchment Thames

TB230

TB235

TB240

TB245

TB250

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Section G

Section H

149951

54684

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WEST HORNDON CP

THURROCK

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Order limits

- Project section line
- Sheet index cutline

Proposed project design details

- Proposed low height pylon location
- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch

Aquatic record information

- Macrophyte sites records
- Invertebrate sites records

Water Framework Directive catchments

- Coastal catchment
- River waterbody catchment

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the alignment.For further details regarding the design, please refer to Figures 4.1 (document reference 6.4.F1) and 4.2 (document reference 6.4.F2).

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Figure A8.4.1- Aquatic Ecology Baseline
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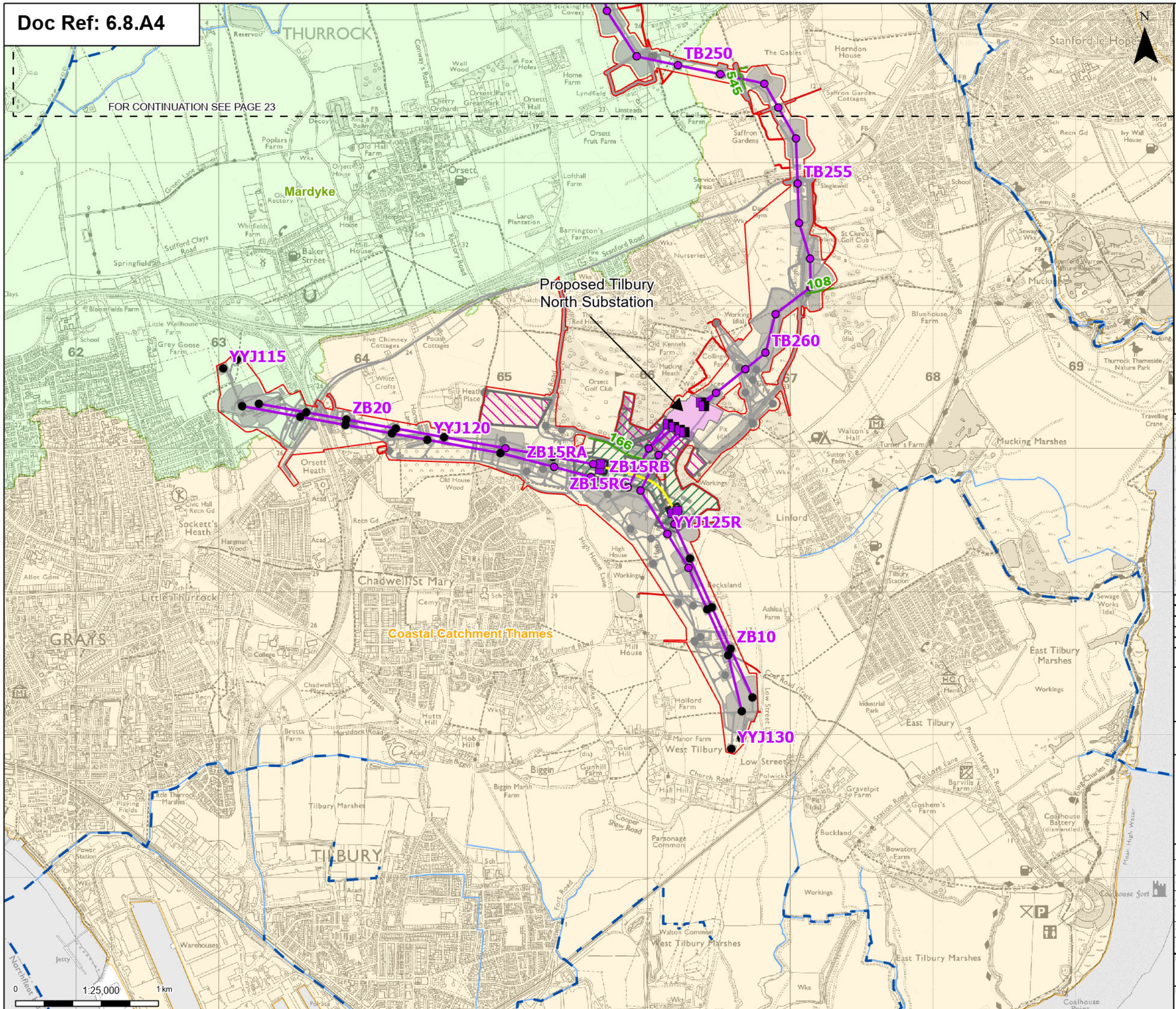

Order limits
Sheet index cutline

Proposed project design details

- Proposed full line tension gantry
- Proposed low duty gantry
- Existing pylon (modify)
- Proposed standard lattice pylon location
- Proposed overhead line alignment
- Proposed underground cable alignment
- Proposed Tilbury North Substation
- Proposed cable sealing end compound(CSEC)
- Environmental area
- Environmental mitigation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- OS open rivers
- Statutory main river

Impacted watercourses

- Ditch

Water Framework Directive catchments

- Coastal catchment
- River waterbody catchment

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Figure A8.4.1- Aquatic Ecology Baseline
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Appendix B
Survey Photographs

Appendix B Survey Photographs

Watercourse ID 125
Waveney U/S Frenze Beck (Section A)

Watercourse ID 125
Waveney U/S Frenze Beck (Section A)

Watercourse ID 126
Waveney U/S Frenze Beck (Section A)

Watercourse ID 126
Waveney U/S Frenze Beck (Section A)

Watercourse ID 126
Waveney U/S Frenze Beck (Section A)

Watercourse ID 123
Waveney U/S Frenze Beck (Section A)

Watercourse ID 32
Wattisham Watercourse (Section B)

Watercourse ID 32
Wattisham Watercourse (Section B)

Watercourse ID 32
Wattisham Watercourse (Section B)

Watercourse ID 32
Wattisham Watercourse (Section B)

Watercourse ID 128a
Tributary Upper Waveney (Section B)

Watercourse ID 128b
Tributary Upper Waveney (Section B)

Watercourse ID 128b
Tributary Upper Waveney (Section B)

Watercourse ID 137
Tributary Upper Waveney (Section B)

Watercourse ID 137
Somersham Watercourse (Section B)

Watercourse ID 137
Somersham Watercourse (Section B)

Watercourse ID 136
Somersham Watercourse (Section B)

Watercourse ID 136
Somersham Watercourse (Section B)

Watercourse ID 37/ 175
Somersham Watercourse (Section B)

Watercourse ID 37/ 175
Somersham Watercourse (Section B)

Watercourse ID 45
Stour D/S River Brett (Section C)

Watercourse ID 45
Stour D/S River Brett (Section C)

Watercourse ID 45
Stour D/S River Brett (Section C)

Watercourse ID 45
Stour D/S River Brett (Section C)

Watercourse ID 163
Mardyke (East Tributary) (Section H)

Watercourse ID 164
Mardyke (East Tributary) (Section H)

Watercourse ID 164
Mardyke (East Tributary) (Section H)

Annex C
Summary of Desk Study and Field Survey Data for Watercourse ID

Appendix C Summary of Desk Study and Field Survey Data for Watercourse ID

Table C.1 Summary table of desk study and field survey data for each watercourse ID

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
A	116	**Tas (Tasburgh to River Yare)**	• Brown trout • Bullhead • Brook Lamprey • European eel • Migratory coarse fish (dace and chub) • Smooth ramshorn snail • New Zealand mud snail*
	117		
	179		
A	182	**Tributary of Tas** No EA macrophyte survey records available for this catchment within the Study Area.	• Brown trout • Bullhead • European eel • New Zealand mud snail*
	201		
A	1	**Tas (Head to Tasburgh)**	• Bullhead • Himalayan balsam* • Nuttall's waterweed*
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	118		
	119		
	120		
	178		
	212		
	224		
A	13	**Frenze Beck** No EA Fish survey records available for this catchment within Study Area.	• New Zealand mud snail* • Canadian waterweed*
	14		
	15		
	16		
	17		
	18		
	19		
	240		
A/B	22	**Waveney Upstream of Frenze Beck** No EA fish survey records available for this catchment within Study Area. Fish habitat surveys were undertaken for Watercourse ID 123, 125 and 126. An eDNA sample was collected for Watercourse ID 125 and 126.	• Dytiscus circumcinctus • Crangonyx pseudogracilis* • Migratory coarse fish (dace and chub) recorded 7 km downstream in an adjacent River Waterbody Catchment. No notable species were recorded in the eDNA sample.
	124		
	126		
	123		
	125		
	127		
	249		
B	128(a)		• New Zealand mud snail*

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	128(b) 129 130 455 251 556	**Tributary of Upper Waveney** No EA fish survey records available for this catchment within the Study Area. Fish habitat surveys were undertaken for Watercourse ID 128(a) and 128(b).	
B	257 258 457	**Little Ouse (U/S Thelnetham)** No EA fish or macrophyte survey records available for this catchment within the Study Area.	• Bullhead (recorded in invertebrate samples) • New Zealand mud snail* • *Crangonyx sp.** • Least duckweed (recorded in invertebrate samples) * • Canadian waterweed (recorded in invertebrate samples) *
B	25 27 131 458 459	**Dove Tributary – Finningham** No EA fish, invertebrate or macrophyte survey records available for this catchment within the Study Area.	No desk study data available.
B	28	**Mendlesham Stream** No EA fish or macrophyte survey records available for this catchment within the Study Area.	No notable invertebrates recorded.
B	30 31 133	**Gipping (U/S Stowmarket)** No EA macrophyte survey records available for this catchment within the Study Area.	• European eel and migratory coarse fish (dace, roach and chub) recorded in the River Waterbody Catchment immediately downstream (Gipping D/S Stowmarket).

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
B	134 135 138 468 480	**Gipping (D/S Stowmarket)**	• Bullhead • European eel • Migratory coarse fish (dace, roach and chub) • Scarce chaser dragonfly • *Limnephilus politus* • *Crangonyx pseudogracilis** • New Zealand mud snail* • Nuttall's waterweed* • Canadian waterweed* • Himalayan balsam*
B	32 33 297	**Wattisham Watercourse** No EA fish or macrophyte survey records available for this catchment within the Study Area. A habitat survey and eDNA sampling was undertaken for Watercourse ID 32.	• New Zealand mud snail* • European eel (eDNA) • Bullhead (eDNA)
B	34 37 136 137 175	**Somersham Watercourse** No EA fish or macrophyte survey records available for this catchment within the Study Area. Fish habitat surveys were undertaken at Watercourse ID 137, 136, 37 and 175. An eDNA sample was collected for Watercourse ID 136/137.	No notable invertebrate species recorded. No notable fish species recorded in the eDNA sample.
B	35	**Belstead Brook**	• Brown trout

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	36	No EA macrophyte survey records available for this catchment within the Study Area.	• New Zealand mud snail*
	479		
C	38		
	140		
C	145	Brett	• Lamprey sp. • Bullhead • European eel • Spined loach • Smooth ramshorn snail • *Notidobia cilliaris* • *Crangonyx pseudogracilis** • New Zealand mud snail*
C	39	**Coastal Catchment (Stour)** No EA fish, invertebrate or macrophyte survey records available for this catchment within the Study Area.	No desk study data available.
	322		
C	141	**Stutton Brook** No EA macrophyte survey records available for this catchment within the Study Area.	• Brown trout • European eel • New Zealand mud snail*
	142		
	143		
	144		
C	326	**Tenpenny Brook** No EA fish, invertebrate or macrophyte survey records available for this catchment within the Study Area.	No desk study data available.
C	483	**Stour (D/S R. Brett)**	• Brook lamprey

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	41(a)	An eDNA sample was taken at Watercourse ID 45 (Black brook).	• Lamprey ammocoetes • Bullhead • Spined loach • European eel • Migratory coarse fish (dace and chub) • New Zealand mud snail* • Nuttall's waterweed* No notable species were recorded in the eDNA sample.
	41(b)		
	42		
	45		
	46		
	146		
	147		
	148		
	150		
	151		
D	48		
	49		
	338		
C	328	**Salary Brook** No EA macrophyte survey records available for this catchment within the Study Area.	• Brown trout • Bullhead • European eel • Migratory coarse fish (dace) • New Zealand mud snail*
	331		
	332		
	152		
D	47		
C	43	**Stour (Lamarsh – R. Brett)**	• Brown trout • Brook lamprey • Bullhead • Spined loach • European eel • Lamprey ammocoetes • Migratory coarse fish (dace and chub) • *Paraletophlebia cincta*
	484		
	486		
D	50		
	51		
	52		

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
			• *Crangonyx pseudogracilis** • New Zealand mud snail*
D	53	**Colne (D/S Doe's Corner)**	• Bullhead • European eel • Migratory coarse fish (dace and chub) • *Athripsodes commutatus* • *Corixa affinis* • Signal crayfish* • New Zealand mud snail*
	55		
	54		
	56		
	57		
	153		
	154		
	155		
	183		
	341		
	349		
	352		
	353		
	498		
	500		
	504		
	507		
D	58	**Roman River** No EA macrophyte survey records available for this catchment within the Study Area.	• Brown trout • Bullhead • European eel • Migratory coarse fish (dace and chub) • New Zealand mud snail*
	59		
	60		
	357		
	358		

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	364		
	509		
E	366		
E	61	**Blackwater (Combined Essex)**	• Brown trout • Brook lamprey • Bullhead • European eel • *Crangonyx pseudogracilis** • New Zealand mud snail* • Nuttall's waterweed* • Himalayan balsam*
	62		
	64		
	67		
	156		
	369		
	510		
	511		
	513		
E	68	**Brain**	• Brook lamprey • Bullhead • *Crangonyx pseudogracilis/floridanus** • New Zealand mud snail* • Himalayan balsam*
	69		
	157		
E	383	**Ter**	• Brook lamprey • Bullhead • European eel • Migratory coarse fish (dace and chub) • *Crangonyx pseudogracilis** • New Zealand mud snail*
	71		
	72		
	73		
	74		
F	519		
F	75	**Chelmer (G. Easton – R. Can)**	• Brown trout • Brook lamprey
	160		

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	161 397 398 399 523		• Bullhead • European eel • Lamprey ammocoetes • Migratory coarse fish (dace and chub) • New Zealand mud snail* • Crangonyx pseudogracilis*
F	76 409	**Chignall Brook** No EA fish or macrophyte survey records available for this catchment within the Study Area.	• New Zealand mud snail*
F	78 82 83 84	**Can**	• Brook lamprey • Bullhead • European eel • Migratory coarse fish (dace and chub) • New Zealand mud snail* • Himalayan balsam*
F	79 80 81 181 526	**Roxwell Brook**	• Bullhead • Migratory coarse fish (dace and chub) • Signal crayfish* • New Zealand mud snail* • *Physella acuta** • *Crangonyx pseudogracilis** • Galingale
F	85 86 87 88 89	**Wid (Margaretting Hall – R. Can)**	• Migratory coarse fish (dace and chub) • Physid snail* • New Zealand mud snail* • Crangonyx pseudogracilis* • Least duckweed* • Himalayan balsam*

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	90		
	527		
	528		
F	91	**Wid (Ingatestone Hall – Margaretting Hall)** No EA invertebrate or macrophyte survey records available for this catchment within the Study Area.	• Bullhead • Migratory coarse fish (dace and chub)
G	92		
G	93		
G	94	**Wid (Shenfield STW – Ingatestone Hall)** No EA macrophyte survey records available for this catchment within the Study Area.	• Bullhead • Migratory coarse fish (dace and chub)
	95		
	96		
	97		
G	98	**Haverings Grove Brook** No EA macrophyte survey records available for this catchment within the Study Area.	• Bullhead • New Zealand mud snail* • Physid snail* • *Crangonyx pseudogracilis**
	99		
	100		
G	102	**Crouch (Upper) – Upstream (U/S) A129** No EA fish or macrophyte survey records available for this catchment within the Study Area.	• New Zealand mud snail* • Physid snail*
	103		
	538		
H	105	**Mardyke (East Tributary)** No EA fish or macrophyte survey records available for	• European eel were recorded 11km downstream of the order limits on an adjacent River Waterbody Catchment: Mardyke • *Helophorus stigifrons*
	106		
	107		

Project Section	Watercourse ID	WFD Waterbody Name and Notes on Data Availability	Notable Species (* denotes INNS)
	165	this catchment within the Study Area. Fish habitat surveys were undertaken for watercourse ID 163 and 164.	• Physid snail*
H	446 447	**Mardyke**	• European eel • Feral goldfish* • Scarce chaser dragonfly • New Zealand mud snail* • Crangonyx pseudogracilis*
H	108 166 545	**Coastal catchment (Thames)** No EA fish, invertebrate or macrophyte survey records available for this catchment within the Study Area.	No desk study data available.

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