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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) 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 ancient woodland, ancient/veteran trees, Habitat of Principal Importance (HPI) in England and other notable/protected species/habitats that may be affected by the Project. The following points support the basis of this reasoning:
 - It was known there was potential for the presence of terrestrial notable vascular and non-vascular plants, with the presence of these requiring appropriate mitigation to avoid adverse effects. In this instance, the Project would seek to avoid habitats with the potential to support protected/notable species
 - Ancient woodlands would be avoided as far as practicable, but there is potential for habitat damage/modification caused by construction traffic and corresponding deterioration of air quality
 - There was anticipation that the Project would pass through or near HPI, causing direct and indirect effects through construction
 - The EIA Scoping Report anticipated potential habitat loss through construction, with no perceivable pathways to effect from operation (and maintenance).
 Permanent habitat loss would be limited to permanent infrastructure, with all other habitats being reinstated on completion of construction as far as practical.
 Additional areas of planting and habitat creation to deliver a net gain in biodiversity would be implemented.
- 1.1.4 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 Figures 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 Borough Council
- Section G Basildon Borough Council and Brentwood Borough Council (and part of Chelmsford City Council)
- Section H Thurrock Council
- 1.1.5 Results reported in this document reference the Project Section that the habitat is located within.

1.2 Brief and Objectives

- 1.2.1 The brief of the survey work was to obtain baseline data to inform the ES (Volume 6 of the DCO application) for the Project; to provide an indication of the type and condition of habitats that would be affected by the Project; to provide detailed assessment of these habitats; and outline requirements for further survey work to inform detailed design.
- 1.2.2 Overall, the Project approach aims to deliver at least 10% Biodiversity Net Gain (BNG) with wider environmental and societal benefits. This will be achieved through a combination of reinstatement of habitats to equal or better quality than the baseline value at areas of temporary loss and habitat creation or enhancement of existing habitats around areas of permanent loss (Environmental Areas). An accurate baseline value is needed to inform the above, this was achieved by undertaking the following:
 - Detailed desk studies of the survey area
 - Field surveys such as UK Habitat (UKHab) and National Vegetation Classification (NVC) surveys to establish the habitats present within the Order Limits and their condition
 - Characterise habitats within the Order Limits.
- 1.2.3 The following technical reports should be read in conjunction with this report and serve to provide more in-depth assessment of habitats present within the Order Limits:
 - Appendix 8.2: National Vegetation Classification Report (document reference: 6.8.A2)
 - Appendix 8.3: Habitat Regulations Report (document reference 6.8.A3)
 - Appendix 8.4: Aquatic Report (document reference 6.8.A4)
 - Appendix 8.13: Otter and Water Vole Report (document reference 6.8.A13)
 - Appendix 8.16: Designated Sites (document reference 6.8.A16)
 - BNG Report (document reference 7.1) which includes Modular River Physical Survey (MoRPh) (Appendix B)
 - Appendix 13.6: Arboricultural Impact Assessment (document reference 6.13.A6).

1.3 Study and Survey Area

1.3.1 The Study Areas for the Project varies with the different biodiversity receptors based on the Chartered Institute of Ecology and Environmental Management (CIEEM)

Guidelines for Ecological Impact Assessment (CIEEM, 2018) and defined in Table A8.1.1.

Table A8.1.1 Study Area

Biodiversity Receptor	Study Area
Ancient woodlands	Order Limits and a buffer of 200 m
Habitats of Principal Importance	Order Limits and a buffer of 200 m
Groundwater Dependant Terrestrial Ecosystem (GWDTE)	Order Limits and a buffer of 2 km
Protected/Notable Plant and Fungi Species and Invasive Non-Native Plant Species	Order Limits and a buffer of 2 km

1.3.2 The Survey Areas outlined in Table A8.1.2 are based on the results of the desk study, best practice guidance and the Zone of Influence for the Project i.e., the Survey Area encompassed habitats that were within the Order Limits and those within 50 m where there was the potential for indirect effects.

Table A8.1.2 Survey area

Type of Survey	Survey Area
UK Habitat (UKHAB) Survey	Order Limits and a buffer of 50 m.
Modular River Survey	All watercourses classified as 'Priority Rivers', and 'Other Rivers and Streams' within the Order Limits that are affected by proposed underground cabling, Cable Sealing End (CSE) compounds, substation works (the extension of existing Bramford Substation, and construction of new East Anglia Connection Node (EACN) and Tilbury North Substations), or rivers crossed by the proposed haul road or Public Right of Way (PRoW) diversions.
Hedgerows Regulations Assessment	Hedgerows which, at the time of site selection, were proposed to be permanently or temporarily removed to facilitate the Project.
Invasive Plants	Within or intersecting the Order Limits.
National Vegetation Classification	Targeted locations within the Order Limits which have either been confirmed or queried as HPI during the desk study.

2. Relevant Legislation and Policy

2.1 Legal Compliance

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 A8.1.3.

Table A8.1.3 Legal compliance

Table Ac. 1.3 Legal compliance					
Legislation	Details				
Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971	An international treaty created to ensure the conservation and sustainable management of wetlands, through the designation of Ramsar sites and international cooperation between contracting parties such as the UK Government. The Contracting Party responsible for the site must ensure the protection of wintering bird populations, implementing appropriate measures, such as controlling invasive species and maintain suitable water levels.				
Conservation of Habitats and Species Regulations 2017 (as amended in 2019) ('Habitat Regulations')	The Regulations require authorities on behalf of the Secretary of State to maintain a list of sites which are important for either habitats or species (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)) and to provide protection for these sites through designation, planning, and other controls. The Regulations make it an offence (subject to exceptions) to deliberately, kill, injure, disturb, capture, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5. However, these actions can be made lawful through the granting of licences by the appropriate authorities (Natural England in England). Licences may be granted for several purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the favourable conservation status of the species concerned.				
The Wildlife and Countryside Act 1981, as amended (hereafter referred to as WCA)	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.

Legislation	Details
The Hedgerows Regulations 1997	The Hedgerows Regulations 1997 aims to protect important hedgerows, defined as lines of trees or shrubs acting as barriers or boundaries in the rural landscape. The regulations prohibit the removal of certain hedgerows without permission from the Local Planning Authority.
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.
The Natural Environment and Rural Communities (NERC) Act 2006	The NERC Act places a duty upon public bodies to maintain Section 41 (s41) lists of flora, fauna, and habitats and to consider these ecological features as a material consideration in planning. It also requires decision-makers to have regard to the conservation of biodiversity in England, when carrying out their normal functions. A total of 387 species of bryophyte, lichen, fungi, and vascular plants are included under s41, these are Species of Principal Importance in England (referred to as SPI in this report). Twenty-eight habitats that have the potential to occur within the Project boundary are included under s41, these are Habitats of Principal Importance in England (referred to as HPIs in this report), s41 does include more than 28 habitats but those that are coastal, upland or with a restricted distribution have no potential to be affected by the Project.
The Invasive Alien Species (Enforcement 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 Environment Act 2021	In line with the 25 Year Plan for the Environment (HM Government, 2018), new development should identify and pursue opportunities for securing measurable net gains for biodiversity and for the wider environment. The Environment Act 2021 introduces a requirement for biodiversity net gain which is expected to become mandatory for Nationally Significant Infrastructure Projects in May 2026.

2.2 Planning Policy

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

3. Methodology

3.1 Nomenclature

- 3.1.1 Common and scientific names of species recorded follow The New Flora for the British Isles (Stace, C. A, 2019). Capital letters have not been used for the common names in keeping with guidance used for the compilation for the Environmental Statement whereby capital letters are only to be used for proper nouns. Scientific names are provided at first occurrence within the main body of the text.
- 3.1.2 This report uses the UKHab system (UKHab, 2023) to identify and describe habitat types consistently across the survey area, these are identified with unique codes. The codes are alphanumeric identifiers that correspond to specific habitat categories within a hierarchical framework, allowing for both broad and fine-scale ecological classification. Codes are always lower case (for example: lowland mixed deciduous woodland is code 'w1f'). Secondary and essential codes are listed after the primary code (for example: ancient woodland sites are assigned the secondary code 28, so would be referenced as 'UKHab code: w1f, 28'). The use of UKHab codes supports standardised ecological reporting and facilitates comparison with other surveys and datasets. Codes are only referenced on first occurrence within this report and not repeated thereafter to maintain readability.

3.2 Desk Study

3.2.1 A desk study was completed in September 2023 and was updated as necessary in March 2025.

Ancient Woodland and Habitats of Principal Importance

- 3.2.2 The Multi-Agency Geographic Information for the Countryside website (Natural England, 2025) was used to identify the location of HPI within 2 km of the Order Limits and ancient woodland within 200 m of the Order Limits.
- 3.2.3 Aerial photography from Google Earth (google, 2025) was used to assess habitats within the Study Area in a wider context and allowed the identification of potential wildlife corridors or barriers to species movement. Information from Google Earth allowed a review of changes to habitats over time so that an assessment of reliability/longevity could be made.
- 3.2.4 APEM aerial imagery, commissioned by the Project, from 2022 was also used to provide Digital Surface Model (DSM) tiles, Digital Terrain Model (DTM) tiles, Orthomosaic tiles, and tree crown mapping for the Scoping Report Corridor (see Phase 1 Habitat Survey below for further details). Imagery at a resolution of 3 cm Ground Sampling Distance was captured using fixed-wing aircraft.

Protected/Notable Plant and Fungi Species

3.2.5 Data requests were made to Local Environmental Record Centres (LERCs) to provide information on protected/notable species of plants (including bryophytes and

fungi) within the Order Limits and a 2 km search area extending from the boundary of the Scoping Report Corridor. The following LERCs were contacted:

- Norfolk Biodiversity Information Service (NBIS)
- Suffolk Biodiversity Information Service (SBIS)
- Essex Field Club (EFC).

3.3 Field Survey Methodology

Data Collection

3.3.1 All field data that relates to habitats and plant species was captured digitally on GIS enabled tablets that were updated in real time to ensure that field surveyors had access to data collected by their colleagues. This ensured that data was reviewed as it was captured. All surveyors had access to a field layer that enabled them to record incidental records of notable or invasive species whilst out on survey which meant that species data was captured throughout the 2023, 2024 and 2025 survey season.

Phase 1 Habitat Survey

- 3.3.2 Habitats were digitally mapped using Project commissioned high-resolution imagery captured using fixed-wing aircraft, conducted by APEM in April and May 2022. The habitats were classified as per the definitions outlined in the Joint Nature Conservation Committee (JNCC) Phase 1 Handbook (JNCC, 2010).
- 3.3.3 In 2023, ground-truthing surveys were conducted between May and October within the Order Limits, these surveys continued in April 2024 until November 2024 to cover areas that were not surveyed in 2023. Ground-truthing surveys recommenced in March 2025.
- 3.3.4 Given the size and scale of the Project, some ecology and biodiversity surveys have continued in 2025 for completeness to strengthen the robust baseline survey information gathered in 2023 and 2024. This report includes data obtained up to the end of March 2025 and covers approximately 87.5% of the Order Limits, surveys conducted beyond the end of March 2025 will be included in a further information report as reported in Chapter 8: Ecology and Biodiversity (document reference 6.8).
- 3.3.5 The ground-truthing survey involved competent surveyors walking the land within the Order Limits to confirm the APEM data. Where it was apparent that the fixed-wing survey mapping was not correct, or land had not been subject to fixed-wing survey, the Phase 1 habitat mapping was amended.

UK Habitat Survey and Biodiversity Net Gain (BNG) Condition Assessment

3.3.6 In parallel with the Phase 1 habitat ground-truthing survey, land within the Order Limits was mapped using the UK Habitat Classification (UKHab Ltd., 2023) and the habitat condition assessed using the criteria provided in the technical guidance that accompanies the Statutory Biodiversity Metric (Defra, 2024). This data was collected to establish baseline conditions, identify HPI and facilitate a BNG calculation and hereafter are referred to as the 'UKHab' survey(s).

3.3.7 Habitat condition assessments were carried out to provide data for the BNG assessment with notes taken to provide further information on the UKHab Classification.

Hedgerows Regulations Assessment

3.3.8 In early 2024, desk study data that was collected for the Project and reviewed to identify hedgerows that may potentially be classified as important under the Hedgerows Regulations 1997. Targeted surveys were undertaken in 2024 of selected hedgerows that would be affected by the Project, for more details see Appendix 8.3: *Hedgerows Regulations* Report (document reference 6.8.A3).

National Vegetation Classification

3.3.9 In early 2024, the UKHab data and desk study data that was collected for the Project was reviewed to identify HPI that may potentially be directly affected by the Project. Forty-two locations were identified as potentially being HPI and targeted botanical surveys commenced in April 2024 to assess whether these sites supported HPI. Where it was clear from desk study and/or the UKHab data that an area was HPI, or no effects were predicted, NVC surveys were not undertaken. For more details see Appendix 8.2: National Vegetation Classification Report (document reference 6.8.A2).

Groundwater Dependent Terrestrial Ecosystems

3.3.10 Desk study data was reviewed to identify the HPI, statutory and non-statutory designated sites that support habitats associated with GWDTE that have the potential to be affected by the Project due to the potential for the disruption of hydrological links, where the Project is located underground for the underground cabling or where large above ground installations are proposed. The results of the UKHab and NVC surveys were also used to identify areas where there is the potential for effects on GWDTE, additionally a desk-study of designated sites that support wet habitats. If the site was connected to a watercourse, this was followed to confirm or rule out hydrological linkage to the Project. The Study Area was 2 km for the Order Limits, the distances reported in the results with respect to GWDTE relate to the upstream or downstream distance along the watercourse between the GWDTE and elements of the Project that interact with the watercourse.

Modular River Survey

- 3.3.11 Digital online mapping was used to identify watercourses that may be crossed by the Project. Field surveys were conducted to assess whether these watercourses meet the criteria for a River Condition Assessment for Biodiversity (A.M. Gurnell et. al, 2020), focusing on flowing water conditions. The surveys evaluated the quality of physical habitat and the functionality of river systems, aligning with the latest survey requirements for River Condition Assessment for Biodiversity (A.M. Gurnell et. al, 2020).
- 3.3.12 The scope of the survey encompassed all impacted watercourses classified as Priority Rivers and Other Rivers and Streams within the Order Limits to ensure a thorough understanding of the potential environmental effects. 'Impacted watercourses' are defined as any watercourses proposed for underground cabling,

CSE compounds, substation works (connection works to the existing Norwich Main Substation, the extension of existing Bramford Substation, and construction of the new EACN and Tilbury North Substations), or rivers crossed by the proposed haul road or PRoW diversions.

3.3.13 Surveys took place between April and October 2024, to fully consider seasonal variations and distinct habitat characteristics. For more details see Biodiversity Net Gain Report (document reference 7.1).

Invasive Plant Survey

- 3.3.14 Invasive plant species were identified and recorded during the UKHab surveys and other targeted ecological surveys that took place within the Order Limits to provide a baseline for the impact assessment in Chapter 8: Ecology and Biodiversity (document reference 6.8).
- 3.3.15 Surveyors systematically identified and digitally recorded the invasive plant species encountered during the surveys, recording specific locations and density of these invasive plant species within the Order Limits. The locations of invasive plants were recorded in parallel with other ecological surveys, as outlined above under data collection.

Ancient and Veteran Trees

3.3.16 Ancient and veteran trees were identified by an arboriculturist as part of the comprehensive tree survey. The assessment of these notable trees is integrated into the broader tree survey, providing insights into their distribution, unique characteristics, historical significance, and overall condition within the defined survey area. The results of this survey are presented in Appendix 13.6: Arboricultural Impact Assessment (document reference 6.13.A6) and are not replicated in this report.

Incidental Records

3.3.17 Locations of protected or otherwise notable plant species such as species of principal importance (SPI) were digitally captured as incidental records during the UKHab surveys and other targeted ecological surveys that took place within the Order Limits to provide a baseline for the impact assessment. The locations of these plants are provided in this report.

3.4 Dates of Survey and Personnel

3.4.1 All lead surveyors were trained ecologists that hold membership of CIEEM. Botanical surveys were undertaken by ecologists with over 5 years of experience in undertaking the respective habitat surveys, with a Field Identification Skills Certificate (FISC) level of at least four. The surveys have taken in the survey season as outlined in Table A8.1.4.

Table A8.1.4 Survey timings

Type of Survey	Survey Dates
Phase 1 Habitat ground truthing survey, UKHab and BNG Survey	May to October 2023; April to November 2024, March to end of March 2025
Hedgerow Regulations Assessment	May to October 2023; April to October 2024
Invasive Plant Survey	May to October 2023; April to October 2024
NVC Survey	April to August 2024
Modular River Survey	April to October 2024

3.5 Notes and Limitations

- 3.5.1 Records held by LERCs are collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage. The data collection is not exhaustive and can be biased towards areas with public access or where surveys have taken place to inform other development projects. It is therefore possible that there are protected/notable species of plants present within/adjacent to the Order Limits that are not identified during the data searches.
- 3.5.2 LERC data relies on contributions from multiple sources, including citizen scientists, volunteers, and professionals. This can result in variations in data quality and accuracy. Errors in species identification, misinterpretation of data, or inconsistent sampling methodologies can affect the reliability of the data. This also means there is a lack of standardisation in collecting data.
- 3.5.3 LERC data may not always be regularly updated or maintained, leading to potential gaps in recent data or changes in ecological conditions. This can limit the accuracy and relevance of the data. Collecting bespoke field survey data overcomes any gaps in desk study data coverage. This data is used to inform the assessment, but the baseline is created using a combination of desk study and field surveys and so the partial nature of desk study records is not a limiting factor in the assessment.
- 3.5.4 Using aerial imagery may result in inaccuracies from misidentification of certain habitats due to unclear images. Undertaking ground truthing surveys has overcome this limitation.
- 3.5.5 This report is based on desk study and field survey information that was available up to and including the end of March 2025. Every effort has been made to obtain land access to the full Order Limits, however where access was not available a combination of the high-definition aerial imagery, past aerial imagery data available on Google (Google Earth, 2023) and surveys from vantage points have overcome this limitation. Approximately 87.5% of the Order Limits have been subject to an on the ground UKHAB condition assessments, as of the end of March 2025. Surveys conducted beyond the end of March 2025 will be included in a further information report as reported in Chapter 8: Ecology and Biodiversity (document reference 6.8). For the purpose of the ES (Volume 6 of the DCO application), a precautionary approach to the ecological value of habitats has been taken, where the value of a habitat is uncertain, a reasonable worst-case approach has been assumed.

3.5.6 There is the potential that some areas of invasive plant species have been missed during the surveys, however the survey data is considered sufficient to inform the impact assessment and the Outline Code of Construction Practice (CoCP) (document reference 7.2). Pre-construction surveys will provide a detailed picture of the location of invasive plant species to ensure that appropriate mitigation is implemented as set out in the Outline CoCP (document reference 7.2).

4. Results

4.1 Overview

- 4.1.1 This section provides the results of the desk study as well as the UKHab surveys undertaken across the Project with respect to ancient woodland (UKHab code: w1f, 28), HPI and other protected/notable plant and fungi species. Some areas of HPI have undergone NVC surveys, results of NVC surveys are referred to briefly, but more comprehensive results from these surveys can be found in Appendix 8.2: National Vegetation Classification Report (document reference 6.8.A2).
- 4.1.2 The following figures illustrate the field survey and desk study findings and can be found in Annex A:
 - Figure A8.1.1: UK Habitat Map
 - Figure A8.1.2: Habitat of Principal Importance
 - Figure A8.1.3: Ancient Woodland Locations
 - Figure A8.1.4: Groundwater Dependent Terrestrial Ecosystems
 - Figure A8.1.5: Protected/ Notable Plant Species
 - Figure A8.1.6: Invasive Plant Species
 - Figure A8.1.7: Linear Habitat Survey Results.
- 4.1.3 The surveys found that most of the land within the Order Limits comprised cropped arable farmland (cropland), with pockets of woodland, improved grassland fields (modified grassland) and fields supporting semi-improved neutral grassland (other neutral grassland). Table A8.1.5 provides a summary of broad habitat types present within the Order Limits.

Table A8.1.5 UKHab areas

Habitat	Area (ha)	Percentage of Order Limits covered by Habitat type
Cropland	2946.5 ha	78.5%
Grassland	562.6 ha	15%
Wetland	0.3 ha	< 0.1%
Heathland and shrub	34.2 ha	< 1%
Lakes	4.1 ha	0.1%
Sparsely vegetated land	16.1 ha	0.4%
Urban	116.6 ha	3.1%
Woodland and forest	82.8 ha	2.2%

- 4.1.4 The following HPI were identified within the Order Limits:
 - Cropland (UKHab code: c1a):
 - Arable field margins: tussocky (< 0.1 ha) (UKHab code: c1a5)
 - Arable field margins: pollen and nectar (0.3 ha) (UKHab code: c1a6)
 - Arable field margins: cultivated annually (1.9 ha) (UKHab code: c1a7)
 - Arable field margins: game bird mix (14.8 ha) (UKHab code: c1a8)
 - Grassland:
 - Lowland dry acid grassland (9.5 ha) (UKHab code: g1a)
 - Lowland meadows (0.9 ha) (UKHab code: g3a)
 - Floodplain wetland mosaic and coastal floodplain grazing marsh (UKHab code: g: 19; 55) (9.3 ha)
 - Woodland:
 - Lowland mixed deciduous woodland (60.9 ha) (w1f)
 - Wet woodland (0.2 ha) (UKHab code: w1d)
 - Wetland:
 - Reedbeds (0.3 ha) (UKHab code: f2e)
 - Lakes:
 - Ponds (priority habitat) (1 ha) (UKHab code: r1g: 40)
 - Watercourses:
 - Rivers and streams (priority habitat) (7.1 km) (UKHab code: r2a)
 - Hedgerows:
 - Native hedgerows (141.5 km) (UKHab Code: h2a), of these:
 - Species-rich native hedgerows (30 km) (UKHab Code: h2a5)
 - Lines of trees:
 - Ecologically valuable line of trees (4.7 km) (UKHab Code: w, 34)
 - Urban:
 - Open mosaic habitat on previously developed land (0.6 ha) (UKHab code: g, 80).
- 4.1.5 In total approximately 1.7 ha of ancient woodland and 77 veteran trees are located within the Order Limits. Ancient woodland and veteran and / or ancient trees have been identified by the UK Government as irreplaceable habitats. An Ancient Woodland and Veteran Tree Management Strategy is presented in Appendix B of the Outline Landscape and Ecological Management Plan (LEMP) (document reference 7.4) which details the mitigations proposed to either avoid or minimise impact to these ecological features.

4.2 Desk Study Results

Ancient Woodland

- 4.2.1 Ancient woodlands that are illustrated on the Ancient Woodland Inventory are woodlands that cover more than 2 ha that are shown on maps on, or before, the year 1600 (Natural England, 2025). Small woodlands less than 2 ha and linear features are not shown on the inventory. 11 Local Wildlife Sites (LWS) within 200 m of the Order Limits are not identified as ancient woodland on the Ancient Woodland Inventory, the description of each site as provided by the LERCs indicates that these woodlands support ancient woodland features. These woodlands have been included in the impact assessment as supporting ancient woodland. These LWS are:
 - Stonefield Strip (Section D)
 - Harrow Wood (Section D)
 - Upney Wood (Section E)
 - Border Wood (Section F)
 - Primstock (Section G)
 - Round Wood (Section G)
 - Spring Wood (Brentwood) (Section G)
 - St Margarets Wood and Lane (Section G)
 - Botneyhill Woods (Section G)
 - Little Bladen's Wood (Section G)
 - Rainbow Wood and Ashen Shaw (Section H).
- 4.2.2 Using data taken from the Ancient Woodland Inventory on MAGIC (Natural England, 2025) and the LWS data, 51 blocks of ancient woodland have been identified within 200 m of the Order Limits across Norfolk, Suffolk, and Essex. These are listed in Table A8.1.6 and shown on Figure A8.1.3: Ancient Woodland Locations in Annex A. Of these 51 woodlands, six are partially located within the Order Limits.
- 4.2.3 Habitat descriptions of the six ancient woodlands within the Order Limits are provided below as supplied by the LERC, supplemented by data gathered by the Project.

Round Wood (Section B)

4.2.4 Round Wood is a County Wildlife Site (CWS) and ancient woodland of approximately 3.87 ha in size, 0.6 ha are within the Order Limits. The woodland is bordered by a medieval bank, ditch and hedgerows. Dominant trees included pedunculate oak *Quercus robur* and ash *Fraxinus excelsior* with frequent hazel *Corylus avellana* coppice. It supports a good diversity of uncommon woody species including midland hawthorn *Crataegus laevigata*, guelder-rose *Viburnum opulus*, crab apple *Malus sylvestris*, spindle *Euonymus europaeus*, wood anemone *Anemone nemorosa*, early dog-violet *Viola reichenbachiana*, sanicle *Sanicula europaea* and stinking iris *Iris foetidissima*.

Miller's Wood (Section B)

4.2.5 Miller's Wood is a CWS and ancient woodland of approximately 7.36 ha in size, the Order Limits intersects at the southern edge totalling 0.01 ha. The woodland is enclosed by a wood bank, parts of which were probably of medieval origin. Ditches divide the wood into compartments. The northern section of the wood is typical of ancient woodland and consist of hazel and field maple *Acer campestre* coppice with pedunculate oak standards forming the tree layer. Further south, coppiced horse-chestnut *Aesculus hippocastanum* and sweet chestnut *Castanea sativa* are abundant. In contrast the remainder of the wood is a recent plantation consisting mainly of sycamore *Acer pseudoplatanus* with some beech *Fagus sylvatica*. The ground flora is reasonably varied, sanicle, wood spurge and hairy St John's-wort *Hypericum hirsutum* are amongst the more uncommon plants on the species list.

Rivenhall Thicks (Section E)

4.2.6 Rivenhall Thicks is a LWS and ancient woodland which has an exceptionally rich flora. The structure of the wood is primarily old, coppiced hazel and ash with standards of pedunculate oak. The ground flora is noted to be diverse. Only 0.03 ha of this woodland intersects the Order Limits.

Writtle - Writtlepark Wood (Section F)

- 4.2.7 The Writtlepark complex is a group of ancient woodlands approximately 46.5 ha in size and consists of Writtlepark Wood, Bosmore Wood, Baker's Wood and Chatterbox Wood. 0.03 ha of Writtlepark Woods intersects the Order Limits.
- 4.2.8 Writtlepark Wood is dominated by coppiced sweet chestnut *Castanea sativa* and hornbeam *Carpinus betulus*. Pedunculate oak standards are found throughout. The field surveys undertaken for the Project revealed that the areas within the Order Limits supported few ground flora species with the ground flora dominated by bramble *Rubus fruticosus* agg. and common nettle *Urica dioica*. Large parts of the woodland are one age and one storey, with the presence of rhododendron *Rhododendron ponticum* recorded to represent 50% of the understorey.

Little Bladen's Wood LWS (Section G)

4.2.9 Little Bladen's Wood LWS is approximately 5 ha in area, it is not listed in the English Nature's Ancient Woodland Inventory however their LWS citation indicated ancient woodland features. 0.3 ha of Little Bladen's Wood LWS is within the Order Limits. This LWS comprised a large but partially grubbed out wood and a detached section to the south. The main wood was almost pure hornbeam coppice with very little shrub layer or ground flora beneath. The ground flora contains plant species indicative of ancient woodland such as bluebell and wood meadowgrass *Poa nemoralis*. The structure and floral composition suggested that this is largely, if not completely, ancient woodland.

Rainbow Wood and Ashen Shaw LWS (Section H)

4.2.10 Rainbow Wood and Ashen Shaw combine to form one LWS. The woodlands are within the Order Limits and appear to be small ancient woodland fragments. Neither of these are listed in the English Nature's Ancient Woodland Inventory likely due to their small size (Rainbow Wood is 2.2 ha and Ashen Shaw is a small 0.5 ha

- fragment), however, surveys undertaken for the Lower Thames Crossing project determined that these woodlands were ancient woodland.
- 4.2.11 Rainbow Wood is an overgrown coppice of sweet chestnut, with hazel, field maple and a canopy of pedunculate oak, wild cherry *Prunus avium* and ash. 0.3 ha of Rainbow Wood is within the Order Limits.
- 4.2.12 Ashen Shaw had a canopy mainly comprising pedunculate oak, ash and field maple. Hornbeam coppice found on the edge of the wood had old coppice stools that suggested the woodland is ancient in origin. 0.19 ha of Ashen Shaw is within the Order Limits.

Table A8.1.6 List of ancient woodlands within the Study Area

Project Section(s)	Ancient Woodland ¹	Distance from Order Limits (m)	Direction
A	Bunwell Wood	106.3	North-west
В	Round Wood	0.0	Within the Order Limits
В	Elm's Grove	40.3	South-west
В	Keyfield Groves	120.8	North-west
В	Middle Wood (Offton)	15.0	North-east
В	Somersham Park	0.0	Adjacent to the Order Limits
В	Bullen Wood	0.0	Adjacent to the Order Limits
В	Lower Wood	4.0	North-west
В	Miller's Wood	0.0	Within the Order Limits
В	Great Newton Wood	0.0	Adjacent to the Order Limits
В	Little Newton Wood	2.7	North-west
B and C	Burstall Long Wood	3.3	North-east
С	Wenham Thicks	5.0	South-east
С	Squires Wood	148.7	North-west
С	Brimlin Wood	2.0	West
D	Fiddler's Wood	0.0	Adjacent to the Order Limits
D	Aldhamhall Wood	11.9	South-east

¹ Ancient woodland's in bold denote those which are within the Order Limits.

Project Section(s)	Ancient Woodland ¹	Distance from Order Limits (m)	Direction
D	Church House Wood	3.8	North-west
D	Harrow Wood LWS	0.0	Adjacent to the Order Limits
D	Stonefield Strip LWS	8.2	South-east
Е	Sandy Wood	6.9	South-west
E	Troys Wood	146.6	South-east
Е	Upney Wood LWS	194.9	North-west
Е	Hallhook Row	0.00	Adjacent to the Order Limits
Е	Galleycable Wood	148.6	South-east
Е	Rivenhall Thicks	0.0	Within the Order Limits
E and F	Mann/Parson's Woods	0.1	Adjacent to Order Limits ²
F	Lyonshall Wood	16.5	South
F	Border Wood LWS	9.0	North-west
F	Bushy Wood	0.4	South-west
F	Bushey Wood	21.6	North-east
F	Writtle - Writtlepark Woods	0.0	Within the Order Limits
F	Writtle-James Spring	3.7	West
F	Lady Grove	191.1	South-east
F	Chapel Wood	37.1	East
F	Sparrowhawk Wood	12.2	North-west
F	Sheepcotes Wood	3.9	South-east
F	Osbornes Wood	5.1	South-east
G	Clapgate Wood	1.7	North
G	Harespring Wood	60.2	North-west
G	Cock Wood/ Collins Shaw	198.5	South-west
G	Park Hill Wood	196.6	North-west

² This ancient woodland GIS layer shows a very small part of the designation within the Order Limits, however this appears to be a mapping/scale error, as the small part of the designation within the Order Limits is an arable field.

Project Section(s)	Ancient Woodland ¹	Distance from Order Limits (m)	Direction
G	Friern Manor Wood	44.6	North-east
G	Primstock LWS	0.3	North
G	Spring Wood (Brentwood) LWS	32.4	South
G	St Margarets Wood and Lane LWS	0.0	LWS is within the Order Limits, but woodland is 30 m west
G	Round Wood LWS	4.0	North-west
G	Botneyhill Woods LWS	8.4	South
G	James's Wood	177.7	South
G	Little Bladen's Wood	0.0	Within the Order Limits
Н	Ashen Shaw & Rainbow Wood	0.0	Within the Order Limits

Habitats of Principal Importance in England

- 4.2.13 The following habitats are shown on the Priority Habitats Inventory (Natural England, 2023) on land within the Order Limits:
 - Deciduous woodland
 - Good quality semi-improved grassland
 - Coastal and floodplain grazing marsh
 - No main habitat but additional habitats present (this represents the HPI open mosaic habitat on previously developed land; OMHPDL).
- 4.2.14 The following habitats shown on the Priority Habitats Inventory (Natural England, 2023) are present outside the Order Limits but within the Study Area (200 m from the Order Limits):
 - Lowland dry acid grassland
 - Lowland meadows
 - Lowland fens
 - Lowland calcareous grassland
 - Lowland heathland
 - Traditional Orchard
 - Purple moor-grass and rush pastures.

- 4.2.15 The Priority Habitat Inventory identifies that there are likely inaccuracies in the habitat mapping which was primarily completed through historical and aerial map assessment rather than physical survey.
- 4.2.16 It is apparent from a review of the data collected for the Project that many of the areas identified as Priority Habitat such as coastal and floodplain grazing marsh support arable cropland, the extent of Priority Habitat within the Order Limits has been verified as part of the UKHab surveys.

Protected/Notable Plant and Fungi Species

- 4.2.17 There was one record of a protected/notable fungi (sandy stilt puffball *Battarrea phalloides*) within 2 km of the Order Limits, a SPI and a species specially protected under Schedule 8 of the WCA. This record was in Norfolk and not within the Order Limits. This fungus is associated with sandy soils and mostly recorded on roadsides and adjacent to hedgerows.
- 4.2.18 As discussed below, the desk study returned records of protected/notable plants and bryophytes. The locations of records within the Order Limits are shown on Figure A8.1.5: Protected/Notable Plant Species in Annex A, with the plants listed within the 2 km Study Area in Annex B.
- 4.2.19 Records for 78 protected/notable plant species were returned from the LERCs under the following designations: England Red Listed Species by Botanical Society of Britain and Ireland (BSBI, 2014) (near threatened to endangered), nationally scarce and nationally rare excluding red listed taxa (JNCC, 2023), s41 of the NERC Act 2006 and Schedule 8 of the WCA 1981. These species are associated with diverse or valuable habitats that have declined in area in recent years, species of least concern are not currently considered to be in danger of extinction but are likely to indicate that an area supports a valuable habitat.
- 4.2.20 Only one species of notable bryophyte *Tortula schimperi*, a woodland moss was reported within 2 km of the Order Limits, listed as nationally rare (O.L. Prescott, 2016). It was recorded at five locations, two of those being within the Order Limits, however both records within the Order Limits were dated the year 2016 and no sightings were identified during field surveys.

Invasive Non-native Plant Species

- 4.2.21 The desk study returned records of invasive plant species including those listed on Schedule 9 of the WCA. The locations of records within the Order Limits are shown on Figure A8.1.6: Invasive Plant Species in Annex A, with the plants listed within the 2 km Study Area in Annex B.
- 4.2.22 Nine invasive plant species listed under Schedule 9 of the WCA 1981 were identified by desk study within the Study Area. These were:
 - Canadian waterweed Elodea canadensis associated with waterbodies
 - New Zealand pigmyweed Crassula helmsii associated with still waterbodies
 - Giant rhubarb Gunnera tinctoria associated with waterbodies and wetlands
 - Giant hogweed *Heracleum mantegazzianum* associated with riparian habitats, disturbed ground, and semi-natural areas.

- Japanese knotweed Fallopia/Reynoutria japonica associated with former industrial sites, areas where garden waste has been deposited on road verges and by waterways
- Japanese rose Rosa rugosa found in hedgerows, scrubland, and road verges.
- Rhododendron Rhododendron ponticum associated with woodlands and heathland sites
- Three-cornered garlic *Allium triquetrum* associated with areas where garden waste has been deposited typically on trackways and hedgerows
- Alexanders *Smyrnium perfoliatum* associated with woodland edges, shaded areas, and disturbed ground.
- 4.2.23 19 other invasive species that are not listed under Schedule 9 of the WCA 1981 have been identified by desk study within the Study Area. These plants were introduced to the UK as exotic species and have subsequently been found to have a detrimental effect on biodiversity. Their locations are also shown on Figure A8.1.6: Invasive Plant Species in Annex A.

4.3 Field Survey Results

Cropland

- 4.3.1 Cropland was the most abundant habitat within the Order Limits, covering 2946.54 ha (78.5%). Majority of this was cereal crops (UKHab code: c1c) covering 2450.8 ha (65.3 %), followed by:
 - 399.5 ha of non-cereal crops (UKHab code: c1d)
 - 56.3 ha of winter stubble (UKHab code: c1c5)
 - 18.2 ha of temporary grass and clover leys (UKHab code: c1b)
 - 0.5 ha of horticulture (UKHab code: c1f)
 - 4.3 ha of intensive orchards (UKHab code: c1e).
- 4.3.2 A small portion was categorised as arable field margins, covering 17 ha (0.5% of the Order Limits). Whereby they are managed for wildlife, arable field margins are classified as HPI. Table A8.1.7 provides more detail.

Table A8.1.7 Arable field margins identified within the Order Limits

Project Section(s)	Habitat	UKHab Code	Area (ha)	Percentage of Order Limits	Irreplaceable Habitat
D	Tussocky	c1a5	0.07 ha	< 0.00 %	No
D	Pollen and nectar	c1a6	0.3 ha	0.01 %	No
B, E, F and G	Cultivated annually	c1a7	1.9 ha	0.05 %	No

Project Section(s)	Habitat	UKHab Code	Area (ha)	Percentage of Order Limits	Irreplaceable Habitat
A, B, C, D, E, F	Game bird mix	c1a8	14.8 ha	0.4 %	No

Grassland and Reedbeds

- 4.3.3 Grassland covered a total of 562.6 ha of the Order Limits (15%). 542.8 ha of grassland habitat was not HPI and sub-classified as:
 - 279.4 ha of modified grassland (UKHab code: g4)
 - 262.9 ha of other neutral grassland (UKHab code: g3c)
 - < 0.1 ha of bracken Pterdium aquilinum (UKHab code: g1c)
 - 0.4 ha of other lowland acid grassland (UKHab code: g1d)
- 4.3.4 The following grassland HPI was present:
 - 9.5 ha of lowland dry acid grassland
 - 0.9 ha of lowland meadow
 - 9.3 ha of Floodplain Wetland Mosaic and Coastal Floodplain Grazing Marsh.
- 4.3.5 Reedbed habitat covered approximately 0.3 ha of the Project and was largely present in conjunction with a mosaic of other habitats as detailed below.

Lowland Dry Acid Grassland HPI

4.3.6 Lowland dry acid grassland constituted 0.3% of the Order Limits and was recorded in Section C and H. Precise locations are shown on Figure A8.1.1: UK Habitat Map and Figure A8.1.2: Habitats of Principle Importance, in Annex A.

Section C

- 4.3.7 3.7 ha of lowland dry acid grassland HPI was recorded in Section C across three locations, this habitat formed part of a much larger area of semi-natural habitat comprising other lowland acid grassland, swamp, Black Brook stream and lowland mixed deciduous woodland HPI. Survey results are summarised below:
 - One area of grassland is directly north of a block of lowland mixed deciduous woodland HPI and is approximately 600 m south-west of temporary construction compound Land south of Dedham Road, north of Langham (JC-CC03) in the underground cable portion of the Project. It was a short, grazed grassland with abundant acid grassland indicator species and minor bramble encroachment. There was abundant common bent Agrostis capillaris, sheep's-fescue Festuca ovina, sheep's sorrel Rumex acetosella, Polytrichum sp. moss, early forget-menot Myosotis ramosissima and common stork's-bill Erodium cicutarium. Small cudweed Logfia minima, a declining species of acid grasslands, was recorded in the south of the grassland. The grassland gradually decreased in quality towards the west, with grasses, bramble and ruderal species (i.e., common nettle and thistles Cirsium spp.) dominant to the west of the woodland plantation. Within this

- more neutral grassland there were patches where the acid character was retained.
- One small area (20 m x 5 m) of lowland dry acid grassland HPI is situated to the south of the lowland mixed deciduous woodland HP and approximately 600 m south of the above grassland, at the top of a slope surrounded by other neutral grassland. The species composition was like that described above.
- One area of grassland was 400 m further east of the first grassland and is approximately 280 m south of temporary construction compound Land south of Dedham Road, north of Langham (JC-CC03). It was located on a slope with minor impact from rabbit *Oryctolagus cuniculus* burrowing. The lower part of the slope at the southern end was dominated by grasses with a patch of rush. To the north there was a flat top which supported acid grassland indicator species but also a high incidence of thistle, musk thistle *Carduus nutans* and common nettle. Typical species were rat's-tail fescue *Vulpia myuros*, sheep's-fescue *Festuca ovina*, creeping bent *Agrostis stolonifera*, soft-brome *Bromus hordaceus* and meadow fescue *Schedonorus pratensis*. There were also patches of perennial rye-grass *Lolium perenne* and rough meadow-grass *Poa trivialis* at the northern boundary of the field.

Section H

- 4.3.8 5.7 ha of lowland dry acid grassland was recorded across two locations in Section H which formed part of a larger area of open mosaic habitat on previously developed land (OMH PDL). OMH PDL is characterised by a patchwork of bare ground and other habitats, such as flower-rich meadows, scrub, and wet areas. The individual habitats may not be notable on their own, but together they can create areas of OMH of high biodiversity value. The location of this OMH PDL are shown on Figure A8.1.1: UK Habitat Map and Figure A8.1.2: Habitats of Principle Importance, in Annex A.
- 4.3.9 Within this OMH, the other habitats identified were:
 - Lowland meadow
 - Mixed scrub (UKHab code: h3h)
 - Hawthorn scrub (UKHab code: h3f)
 - Lowland mixed deciduous woodland
 - Other neutral grassland
 - Developed land; sealed surface (UKHab code: u1b)
 - Actively worked sand pit quarry or open mine.
- 4.3.10 One area of lowland dry acid grassland is located to the east of Buckingham Hill Road and forms part of Buckingham Hill LWS, which has been identified in the designated site description as a site of high importance for invertebrates that are associated with a brownfield quarry site. The other area is part of a larger parcel of horse-grazed land to the west of Buckingham Hill Road with large amounts of scattered hawthorn scrub and a large amount of the non-native plant species goat's rue *Galega officinalis*.

Lowland Meadows HPI

4.3.11 Lowland meadow HPI constituted < 0.1% of the Order Limits and was recorded in Section H only, four pockets formed part of the larger OMH PDL as described above. These areas supported an abundance of flowering plants such as oxeye daisy Leucanthemum vulgare, lady's bedstraw Galium verum, common knapweed Centaurea nigra, as well as frequent wild carrot Daucus carota, hare's-foot clover Trifolium arvense and bladder campion Silene vulgaris. The meadows are surrounded by other neutral grassland with patches of mixed scrub and lowland mixed deciduous woodland scattered throughout the area. The locations of the lowland meadow are shown on Figure A8.1.1: UK Habitat Map and Figure A8.1.2: Habitats of Principle Importance, in Annex A.

Floodplain Wetland Mosaic and Coastal Floodplain Grazing Marsh HPI

4.3.12 Floodplain Wetland Mosaic and Coastal Floodplain Grazing Marsh (CFGM) constituted 0.3% of the Order Limits and was recorded in Section A, B and C. The location of all CFGM habitat outlined below are shown on Figure A8.1.1: UK Habitat Map and Figure A8.1.2: Habitats of Principle Importance in Annex A.

Section A

4.3.13 2.5 ha of CFGM was recorded in Section A. This habitat is adjacent to Roydon Fen Local Nature Reserve (LNR and CWS). The River Waveney crossed this habitat flowing eastward. Whilst the grassland and swamp plant communities that were sampled in this site do not qualify individually as HPI, they are located within an area that appears to receive regular flood water, it contains ditches and hollows. Consequently, these individual communities form a habitat that would be classified as the HPI CFGM based on JNCC guidelines (JNCC, 2016).

Section B

4.3.14 0.8 ha of CFGM was recorded in Section B. This habitat is just south of the CFGM identified in Section A; it was a poor semi-improved grassland of moderate condition. The water table was at, or near, surface throughout the year with open water or saturation of soil at the surface. The appearance and composition of the vegetation closely matches the characteristics of the specific wetland habitat type, therefore meeting the criteria of HPI CFGM based on JNCC guidelines (JNCC, 2016).

Section C

- 4.3.15 6 ha of CFGM was recorded in Section C at two locations. Reedbed HPI (UKHab code: f2e) covered approximately 0.3 ha of Section C and was largely present in conjunction with the habitats summarised below:
 - The first location is an area of CFGM which comprised a large area of swamp around a drying lagoon (not within the Order Limits) with large areas of greater pond-sedge, some reedbed, stands of yellow iris *Iris pseudacorus*, extensive water mint *Mentha aquatica*, gypsywort *Lycopus europaeus* and purple-loosestrife *Lythrum salicaria*. Drier areas were covered by dead vegetation, leaf litter and patches of hawthorn, blackthorn *Prunus spinosa* and bramble scrub, creating a mosaic habitat. The River Stour runs through the habitat, where patches of reedbed were recorded on its banks with stands of common reed *Phragmites*

- australis and reed canary grass *Phalaris arundinacea* both being criteria to qualify as reedbed HPI.
- Directly east of the above location, separated by the River Stour, is an area of CFGM which comprised grazed grassland, pools and ditches. The grassland was modified and not considered to be sufficiently diverse to be a valuable grassland habitat. A small community, located in damp soil on the edge of a grazed field alongside a ditch, had abundant greater pond-sedge Carex riparia and creeping bent with frequent curled dock Rumex crispa and redshank Persicaria maculosa. On balance it was determined that most of the site would not conform to the definition of CFGM as it was too heavily modified, but that the area of swamp habitat was in an area with pools, ditches and grassland that may receive flood water and could be classified as CFGM HPI, it has therefore been classified as such on a precautionary basis.
- Reedbed HPI was recorded within the Black Brook LWS. Fluctuating water levels
 were associated with the adjacent lake. This habitat was classified as reedbed as
 it was the closest fit to the wetland habitats available in the Statutory Metric but
 was not classic reedbed as it was dominated by bulrush *Typha latifolia* and
 branched bur-reed *Sparganium erectum*, with transition to rushes *Juncus* species.

Heathland and Shrub

- 4.3.16 21.7 ha of dense scrub habitat (UKHab code: h3) was identified across the Order Limits equating to 0.6% of total habitat surveyed. These comprised:
 - 0.5 ha of blackthorn scrub (UKHab code: h3a)
 - 4.8 ha of bramble scrub (UKHab code: h3d)
 - 0.1 ha of gorse *Ulex* spp. scrub (UKHab code: h3e)
 - 5.6 ha of hawthorn scrub
 - 10.6 ha of mixed scrub
 - 0.3 ha of willow Salix spp. scrub (UKHab code: h3j).

Ponds and Lakes

- 4.3.17 78 waterbodies were identified within the Order Limits, these comprised:
 - Four ornamental ponds (UKHab code: r1g: 46)
 - 64 ponds which were HPI
 - Ten reservoirs (UKHab code: r1a6).
- 4.3.18 HPI pond habitat is defined as habitat that supports species of high conservation importance, exceptional assemblage of key biotic groups or their high ecological quality. One pond was confirmed to be a priority habitat due to the presence of great crested newt *Triturus cristatus* eggs, a species that is protected under the WCA and the Habitats Regulations. The pond is in Section D, is surrounded by cropland and is approximately 100 m south-west of pylon TB62's proposed position. The other 63 ponds within the Order Limits have been classified as HPI on the precautionary basis that they may also support valuable fauna.

- 4.3.19 Ornamental ponds / lakes are man-made or artificially constructed, designed primarily for aesthetic or decorative purposes. Unlike natural ponds, ornamental ponds are typically maintained to control water quality and appearance and therefore may not necessarily support the same range of biodiversity as natural aquatic habitats. The four ornamental ponds identified within the Order Limits were in Sections C and D, they did not meet the criteria for 'other eutrophic standing water' (UKHab code: r1a6) due to being less than 2 ha in size.
- 4.3.20 The Order Limits (Section C) cross Ardleigh Reservoir which is a large man-made reservoir owned by Anglia Water that supplies drinking water. The remaining nine 'reservoirs' are classified as such due to being man-made, too big to be classified as a pond (>2 ha), and not HPI. They likely supply water for agricultural purposes. The locations of all ponds within the Order Limits are shown on Figure A8.1.1: UK Habitat Map and Figure A8.1.2: Habitats of Principle Importance, and the location of reservoirs are shown on Figure A8.1.1: UK Habitat Map in Annex A.

Watercourses

- 4.3.21 There are a total of 555 watercourses which have the potential to be affected by the Project, they include:
 - Rivers (Priority Habitat)
 - Culverts (UKHab code: u1, 851)
 - Ditches (UKHab code: r, 50).

Rivers and Streams

- 4.3.22 35 distinct watercourses were identified within or intersecting the Order Limits, this consisted of 45 distinct sections (subreaches) of watercourses as summarised in Table A8.1.8. The locations of all river and streams within the Order Limits are shown on Figure A8.1.7: Linear Habitats Survey Results and Figure A8.1.2: Habitats of Principle Importance in Annex A.
- 4.3.23 According to UKHab (UKHab Ltd, 2023), to qualify as a Priority River Habitat, a watercourse must meet one or more of seven criteria, two of those being:
 - Chalk rivers; and/or
 - The river contains species included under Annex II of the European *Habitats Directive* 1992, Biodiversity Action Plan (BAP) priority species (JNCC, 1995 2019), and/or invertebrate species that are strongly indicative of river shingle.
- 4.3.24 There are two chalk rivers (UKHab code: r2a, 51) located within the Order Limits, crossed by the Project at three sections, these are the River Tas (Section A) and River Waveney (Section A / B). Chalk rivers are an Annex I Priority Habitat under the Habitats Directive 1992 and were listed as a Priority Habitat under the UK BAP (JNCC, 1995 2019). The total length of river habitat within the Order Limits totalled 2.8 km, of which 0.5 km was chalk river.
- 4.3.25 46 rivers and streams which are crossed by the Project had confirmed/ potential presence of either otter *Lutra lutra*, water vole *Arvicola amphibius*, or fish species of principal importance in England (SPI) (see below, Table A8.1.8). Otter and water vole are both priority species identified as of principal importance in England, in accordance with requirements of the NERC Act 2006. These are based on the UK

Biodiversity Action Plan Priority Species. Additionally, otter is listed as an Annex II species under the *Habitats Directive* 1992. Some of these watercourses also supported fish species that are priority species identified as of principal importance in England, in accordance with requirements of the NERC Act 2006.

- 4.3.26 The remaining eight rivers and streams which are crossed by the Project are also categorised as a Priority River Habitat, this is on a precautionary basis that they may also support protected or priority species.
- 4.3.27 All impacted rivers and streams have been condition assessed as part of MoRPh surveys; these results can be found in the respective report (see Appendix B of the Biodiversity Net Gain Report, document reference 7.1).

Table A8.1.8 Rivers and streams crossed by the Project

Project Section(s)	Watercourse ID	Watercourse Name	Watercourse Type	UKHab Category	Justification for Classification as Priority Habitat
A	182	Tributary of River Tas 2	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence and SPI fish species - brown trout Salmo trutta, European eel Anguilla anguilla
A	3	Tributary of River Tas 1	Stream	Priority River (UKHab code: r2a)	SPI fish species - brown trout, European eel
A	120	River Tas	Priority River	Priority River (UKHab code: r2a)	Chalk River and confirmed otter presence
A	16	Frenze Beck	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and potential water vole presence
A	124	Tributary of River Waveney 1	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence
A/B	125	River Waveney	Priority River	Priority River (UKHab code: r2a)	Chalk River, confirmed otter presence and potential water vole presence
A	126	River Waveney	Priority River	Priority River (UKHab code: r2a)	Chalk River, confirmed otter presence and confirmed water vole presence
В	556	Tributary of River Waveney 2	Stream	Priority River (UKHab code: r2a)	Precautionary measure
В	251	Tributary of River Waveney 2	Stream	Priority River (UKHab code: r2a)	Precautionary measure

Project Section(s)	Watercourse ID	Watercourse Name	Watercourse Type	UKHab Category	Justification for Classification as Priority Habitat
В	128 (a and b)	Tributary of River Waveney 2	Stream	Priority River (UKHab code: r2a)	Confirmed water vole presence
В	25	Tributary of River Dove	Stream	Priority River (UKHab code: r2a)	Confirmed water vole presence
В	N/A	Tributary of River Dove 2	Stream	Priority River (UKHab code: r2a)	Precautionary measure
В	27	River Dove	Other River	Priority River (UKHab code: r2a)	SPI fish species - European Eel
В	30	River Gipping	Other River	Priority River (UKHab code: r2a)	Confirmed water vole presence and SPI fish species - European Eel
В	559	River Gipping	Other River	Priority River (UKHab code: r2a	Precautionary measure, not yet surveyed
В	134	Tributary of River Gipping	Stream	Priority River (UKHab code: r2a)	Confirmed water vole presence and SPI fish species - European Eel
В	32	Wattisham Watercourse	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence and SPI fish species - European Eel
С	139	Belstead Brook	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence and SPI fish species – brown trout
С	140	Spring Brook	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence

Project Section(s)	Watercourse ID	Watercourse Name	Watercourse Type	UKHab Category	Justification for Classification as Priority Habitat	
С	145	Tributary of River Brett	Stream	Priority River (UKHab code: r2a)	Potential otter field signs and SPI fish species – brown trout, spined loach <i>Cobitis</i> taenia	
С	146	Tributary of River Stour	Stream	Priority River (UKHab code: r2a)	SPI fish species – brown trout, spined loach	
С	41(a)	River Stour	Navigable River	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence	
С	42	River Stour	Navigable River	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence	
С	45	Black Brook	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence	
С	46	Tributary of Black Brook	Stream	Priority River (UKHab code: r2a)	Precautionary measure	
D	55	Tributary of River Colne	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and SPI fish species – European eel	
D	183	River Colne	Other River	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence and SPI fish species – European eel	
D	60	Roman River	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and potential water vole presence and SPI fish species – brown trout, European eel	
Е	62	River Blackwater	Other River	Priority River	Confirmed otter presence and potential	

Project Section(s)	Watercourse ID	Watercourse Name	Watercourse Type	UKHab Category	Justification for Classification as Priority Habitat
				(UKHab code: r2a)	water vole presence and SPI fish species – brown trout, European eel
Е	67	Tributary of River Blackwater	Stream	Priority River (UKHab code: r2a)	Potential otter field signs and SPI fish species – brown trout, European eel
E	157	River Brain	Other River	Priority River (UKHab code: r2a)	Confirmed otter presence
E	68	River Brain	Other River	Priority River (UKHab code: r2a)	Potential otter field signs
E	71	Tributary of River Ter	Stream	Priority River (UKHab code: r2a)	Potential water vole presence
F	73	River Ter	Other River	Priority River (UKHab code: r2a)	Potential water vole presence and SPI fish species – European eel
F	398	River Chelmer	Other River	Priority River (UKHab code: r2a)	SPI fish species – brown trout, European eel
F	78	River Can	Other River	Priority River (UKHab code: r2a)	Confirmed otter presence, SPI fish species – European eel
F	79	Roxwell Brook	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and confirmed water vole presence
F	89	Tributary of River Wid	Stream	Priority River (UKHab code: r2a)	Precautionary measure

Project Section(s)	Watercourse ID	Watercourse Name	Watercourse Type	UKHab Category	Justification for Classification as Priority Habitat
F	81	Tributary of Roxwell Brook	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence and potential water vole presence
F	N/A	Unnamed, touches Order Limits	Stream	Priority River (UKHab code: r2a)	Precautionary measure
G	93	River Wid	Other River	Priority River (UKHab code: r2a)	Precautionary measure
G	94	Stock Brook	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence
G	95	River Wid	Other River	Priority River (UKHab code: r2a)	Potential water vole presence
G	97	River Wid	Other River	Priority River (UKHab code: r2a)	Confirmed otter presence
G	98	Havering's Grove Brook	Stream	Priority River (UKHab code: r2a)	Confirmed otter presence
G	100	Havering's Grove Brook	Stream	Priority River (UKHab code: r2a)	Potential water vole presence

Ditches

- 4.3.28 There were 39.7 km of ditch within the Order Limits, 0.2 km of these were culverts.
- 4.3.29 There were 59.2 km of ditch that formed part of the structure of a hedgerow (UKHab code: h2a, 50), of these, 11.7 km were also associated with trees.
- 4.3.30 3.4 km of ditch were associated with a line of trees, of these, 1.3 km were ecologically valuable.
- 4.3.31 Ditches which are flowing streams as tributaries to a larger river body are listed in Table A8.1.8 above, these constituted approximately 4.4 km of the Order Limits.

4.3.32 The locations of ditches are shown on Figure A8.1.7: Linear Habitat Survey Results in Annex A.

Sparsely Vegetated Land

- 4.3.33 16.1 ha of habitat within the Order Limits was tall forbs (UKHab code: g, 16) and ruderal/ephemeral herbs (UKHab code: g, 81). The majority being ruderal/ephemeral (12.2 ha), whilst tall forbs covered a total of 3.9 ha.
- 4.3.34 The UKHab code g, 16 mostly relates to grassland that contain patches of common nettle. The UKHab code g, 81 relates to unmanaged weedy areas in arable land, mineral extraction sites and the built environment. The latter habitat type largely comprises early successional communities consisting of stress tolerant species or species tolerant of high nutrient levels.

Urban

- 4.3.35 This broad habitat type was the third most abundant of the Order Limits, covering 116.6 ha of land (3.1%), it was present in all Project Sections. This comprised the following UKHab codes:
 - 3.6 ha of actively worked sand pit quarry or open mine (UKHab code: u1, 85)
 - < 0.1 of allotments (UKHab code: u1, 616)
 - 4.8 ha of artificial unvegetated, unsealed surface (UKHab code: u1c)
 - 8.1 ha of bare ground (UKHab code: u1, 510)
 - 5.7 ha of built linear features (UKHab code: u1e)
 - 90.6 ha of developed land, sealed surface
 - < 0.1 ha of introduced shrub (UKHab code: u1, 847)
 - 1.5 ha of vacant or derelict land (UKHab code: u1, 82)
 - 2.8 ha of vegetated garden (UKHab code: u1, 828)
 - 0.6 ha of open mosaic habitat on previously developed land.
- 4.3.36 The UKHab code: u1b was the most abundant urban habitat type which is the result of the soil surface becoming sealed with impervious materials because of urban development and infrastructure.
- 4.3.37 UKHab code: u1, 85 habitat refers to one quarry pit which is partially situated in Section A. The other quarry is the previously discussed OMH PDL habitat in Section H, which forms a part of the Buckingham Hill LWS and is a large, deep quarry with an associated sandy, lowland dry acid grassland.

Woodland and Forest

4.3.38 82.8 ha of woodland is within the Order Limits which equates to 2.2% of surveyed habitat, spread across all Project Sections. Table A8.1.9 provides an overview of the woodland habitat types present within the Order Limits and their respective total area. Targeted arboricultural surveys provide a more comprehensive assessment of all impacted trees and woodland such as the presence of ancient and/or veteran

trees, as detailed in Appendix 13.6: Arboricultural Impact Assessment (document reference 6.13.A6).

Table A8.1.9 UKHab woodland habitats identified within the Project

UKHab Level 4 Name	UKHab Level 4 Code	Total Area (ha)	Percentage of Order Limits	HPI
Lowland Mixed Deciduous	w1f	60.9 ha	1.6%	Yes
Other Coniferous Woodland	w2c	0.5 ha	< 0.1%	No
Other Scots Pine Woodland	w2b	< 0.1 ha	< 0.01%	No
Other Woodland (Broadleaved)	w1g	19.8 ha	0.5%	No
Other Woodland (Mixed)	w1h	1.4 ha	< 0.1%	No
Wet Woodland	w1d	0.2 ha	< 0.1%	Yes

Lowland Mixed Deciduous Woodland HPI

- 4.3.39 As detailed in Table A8.1.9, most of the woodland habitat present within the Order Limits has been classified as the HPI lowland mixed deciduous woodland (UKHab code: w1f). This woodland is associated with a wide spectrum of soil conditions, from highly acidic to base-rich, and is predominantly found within enclosed wet and dry landscapes. Most of the lowland mixed deciduous woodland scored moderate to good in the condition assessment, with only a handful scoring poorly.
- 4.3.40 Lowland mixed deciduous woodland HPI was found in all Project Sections. Some woodlands required NVC surveys to better inform whether the woodland supported HPI, detailed results of these surveys can be found in Appendix 8.2: National Vegetation Classification Report (document reference: 6.8.A2).

Ancient Woodland (Irreplaceable Habitat)

4.3.41 A total of six ancient woodland sites are present within, or partially within, the Order Limits, with habitat descriptions provided in Section 4.2. This totals approximately 1.6 ha; however, no loss of ancient woodland is proposed to facilitate the Project. Detailed and bespoke mitigation design has aimed to avoid effects to irreplaceable habitat, the Ancient Woodland and Veteran Tree Management Strategy is presented in Appendix B of the Outline LEMP (document reference 7.4).

Wet Woodland HPI

4.3.42 Wet woodlands are semi-natural woodlands which thrive in poorly drained or seasonally flooded soils, species such as willow, birch *Betula sp.*, and alder *Alnus* sp. are common. 0.2 ha of wet woodland was identified within the Order Limits, found in Section A, B and G.

Section A

4.3.43 <0.1 ha of wet woodland was identified in Section A, it was just south of Westbrook Green and Frenze Beck stream, approximately 120 m south-west of pylon RG73.

The woodland showed significant inundation, with numerous trees in standing water, but also raised sub sections. Willow and alder dominated, with hazel and individual ash trees where it was drier. Most trees were mature with numerous veteranising crack willow *Salix x fragilis* trees. The ground layer was dominated by common nettle with lord's-and-ladies *Arum maculatum* and cleavers *Galium aparine* occasional. Only the northeastern corner of this woodland is within the Order Limits.

Section B

4.3.44 0.1 ha of wet woodland was identified in Section B, two small parcels sat south of the River Gipping between Pylon RG165 and RG166. The woodland/carr were entirely dominated by young dense stands of alder with no understorey present. Ground flora was dominated by common nettle and areas of bare ground due to shading. Livestock grazing was evident. No NVC survey was undertaken as it was considered to be a poor example of wet woodland due to the young age of the trees, homogeneity of the habitat and the lack of valuable woodland ground flora species. Nevertheless, this woodland is wet woodland HPI.

Section G

4.3.45 < 0.1 ha of wet woodland was identified in Section G, comprising two woodland blocks immediately north-west of the River Wid and Pylon TB202 and TB203. They were not particularly species rich and mainly consisted of a young willow canopy, no distinct understorey with common nettle and thistle Cirsium sp. forming the field layer; with a large non-veteran pedunculate oak in the centre of one of the woodlands. It was identified as wet woodland HPI but constituted a poor example of this habitat.</p>

Parkland, Scattered and Lines of Trees

- 4.3.46 There were 10.8 km of lines of trees (UKHab code: w, 33) identified within the Order Limits, of these:
 - 4.7 km were ecologically valuable³, of which 1.3 km were associated with a bank or ditch
 - 6.1 km were not ecologically valuable, of which 2.1 km were associated with a bank or ditch.
- 4.3.47 Appendix 13.6: Arboricultural Impact Assessment (document reference 6.13.A6) identifies the trees that are within the Order Limits. An Ancient Woodland and Veteran Tree Management Strategy is presented in Appendix B of the Outline LEMP (document reference 7.4)

Hedgerows

4.3.48 466 hedgerows were identified as potentially meeting the criteria of an 'important' hedgerow under the *Hedgerows Regulations* 1997 within the selected Study Area (hedgerows proposed for either temporary or permanent removal).

³ Lines of trees are classified as ecologically valuable if there is at least one mature, veteran, or ancient tree per 30 m of length (UKHab Ltd., 2023).

- 4.3.49 Of the potentially important hedgerows, 77 were initially chosen for a targeted Hedgerows Regulations survey as these would be impacted by the construction works. 34 hedgerows within the Order Limits were identified as 'important' in terms of the biodiversity criteria under the Regulations (the Wildlife and Landscape Criteria in the regulations). The locations of these hedgerows are presented in Appendix 8.3: Hedgerows Regulations Report (document reference 6.8.A3).
- 4.3.50 Whilst the Hedgerows Regulations Assessment looked at a subset of hedgerows, all hedgerows within the Order Limits were classified and condition assessed under UKHab (UKHab Ltd, 2023). Results found 144.7 km of hedgerow within the Order Limits, of these:

Native hedgerows:

- 141.5 km of hedgerows were native of these
- 17.5 km were native and associated with a bank or ditch,
- 31.7 km were native with trees, and 22.9 km were native with trees but also associated with a bank or ditch.

Species rich native hedgerows:

- 3.5 km of hedgerows were exceptionally species rich⁴
- 7.1 km were associated with a bank or ditch and exceptionally species rich
- 7.2 km were exceptionally species rich and had trees, and 2.1 km were exceptionally species rich, had trees, and were also associated with a bank or ditch.

Non-native hedgerows

0.6 km were non-native and ornamental hedgerows (UKHab Code: h2b).

Invasive Species

- 4.3.51 There were 51 findings of invasive, non-native species listed under Schedule 9 of the WCA throughout the ecological surveys within and surrounding the Order Limits. Of the 51 findings, 15 were within the Order Limits. Figure A8.1.6: Invasive Plant Species in Annex A, shows the locations of sightings within the Order Limits.
- 4.3.52 The most recorded and abundant species within the Order Limits was Himalayan balsam *Impatiens glandulifera* (eight sightings), followed by rhododendron (one sighting), Japanese knotweed (two sightings), giant hogweed *Heracleum mantegazzianum* (one sighting), and Australian swamp stonecrop *Crassula helmsii* (three sightings). Although common ragwort *Jacobaea vulgaris* is not listed on Schedule 9 it is a threat to livestock and was recorded in one location, it is likely that this species is present elsewhere in the Order Limits and was not recorded by surveyors as it is not a Schedule 9 species.

⁴ Species rich, native hedgerows are defined as having five or more UK-native or archaeophyte woody species in a 30 m section (UKHab Ltd., 2023).

Groundwater Dependent Terrestrial Ecosystems

- 4.3.53 GWDTE are ecosystems that rely on groundwater for their water requirements, with respect to this Project they include the following HPI:
 - Rivers
 - Wet woodland
 - Lowland fens
 - Reedbeds
 - Coastal and floodplain grazing marsh
 - Eutrophic standing water (reservoirs)
 - Ponds.
- 4.3.54 There are five SSSIs that support GWDTE that are within 2 km of the Order Limits, these are listed in Annex C. Of these, four are hydrologically linked to the Project, namely Aslacton Parish Land (Section A), Forncett Meadows (Section A), Flordon Common (also part of the Norfolk Valley Fens SAC) (Section A), and Shelfanger Meadows (Section A), shown on Figure A8.1.4: Groundwater Dependent Terrestrial Ecosystems in Annex A.
- 4.3.55 There are seven LNRs that support GWDTE that are within 2 km of the Order Limits as listed in Annex D. Of these, six are hydrologically linked to the Project, namely Roydon Fen (also a CWS, in Section A), Bramford Meadows (also CWS in Section B), Needham Lake (Section B), Brockwell Meadows (Section E), Chelmer Valley Riverside (Section F) and Hutton Country Park (also a LWS, in Section G)
- 4.3.56 There are 52 CWSs that support GWDTE that are within 2 km of the Order Limits as listed in Annex E. Of these, 28 are hydrologically linked to the Project. These are listed in Table A8.1.10 and shown on Figure A8.1.4: Groundwater Dependent Terrestrial Ecosystems in Annex A.

Table A8.1.10 CWS that support GWDTE with hydrological linkage to the Project

Project Section	Site Name	GWDTE	Location in Relation to Project
A	Roydon Fen	Wet woodland and lowland fen	0.2 km downstream of where River Waveney is crossed by overhead line [also LNR]
В	Bramford Meadows	Grassland and scrub alongside river	More than 4.5 km downstream of location where the haul road and overhead line cross the watercourse [also LNR].
A	Bressingham Fen	Wet woodland	3 km upstream of location where overhead line crosses the River Waveney.
A	Brick Kiln Lane, Bunwell Hill	Ponds and marshy grassland	0.6 km downstream of location where overhead line and haul road

Project Section	Site Name	GWDTE	Location in Relation to Project
			crosses the River Tas that feeds this CWS.
A	Brock's Watering	Wet grassland and stream	0.4 km downstream of location where overhead line and haul road crosses the watercourse which feeds this CWS.
A	Bunwell Fen	Wet woodland	2.3 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Carlton Rode Fen	Marshy grassland and fishing ponds	0.3 km upstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Dunston Common	Small pond	Over 15 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Flordon Meadow (East)	Marshy grassland	0.5 km upstream of location where overhead line crosses a watercourse which is tributary to the River Tas.
A	Flordon Meadow (West)	Marshy grassland	0.3 km upstream of location where overhead line crosses a watercourse which is tributary to the River Tas.
A	Hapton Common	Marshy grassland and fast-flowing stream	1.6 km downstream of location where overhead line crosses a watercourse which is tributary to the River Tas.
A	Horseford Meadow	Seasonally flooded grassland during winter	More than 7 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Muir Lane Meadow	Small area of marshy grassland	4 km upstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Tas Pond	Pond	3 km downstream of location where overhead line and haul road crosses the River Tas which may feed this CWS.

Project Section	Site Name	GWDTE	Location in Relation to Project
A	Tas Valley	Marshy Grassland	5.7 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS. There is also a tributary watercourse of the River Tas which the Project crosses 4.3 km downstream of this CWS.
A	The Carr	Damp grassland and swamp	2.8 km and 3.6 km (respectively) downstream of locations where overhead line and haul road crosses two watercourses which confluence and feed this CWS.
A	The Grange, Wreningham	Large pond	1.6 km upstream of location where overhead line crosses a watercourse which is a tributary to the River Tas.
Α	Wreningham Marsh	Marshy grassland and wet meadow	2 km upstream of location where overhead line crosses a watercourse which is a tributary to the River Tas.
В	Hall Farm Meadow	Wet meadow	2 km upstream of location where overhead line crosses the River Waveney.
В	Horse Fen	Wet grassland	2.7 km upstream of location where overhead line crosses the River Waveney.
В	River Gipping (Sections)	River	The Project directly crosses the River Gipping with an overhead line.
В	River Waveney (Sections)	River	The Project directly crosses the River Waveney at two sections via a single span bridge for the haul road.
В	Thrandeston Marsh	Marshy grassland	New underground cable centreline would cross through this CWS as part of the UKPN overhead line mitigation works (PKF route).
В	Topcroft Farm Meadows	Wet woodland and marshy grassland	3 km upstream of location where overhead line crosses a watercourse which feeds this CWS.
С	Higham Meadow	Wet meadow and stream	Drainage outfall (reference WC_2011) into a stream which is

Project Section	Site Name	GWDTE	Location in Relation to Project
			Tributary of the River Brett, situated within this CWS.
С	River Brett (Sections)	River	The River Brett is a tributary to the River Stour and they confluence prior to the Project crossing the River Stour at two locations via directional drilling for underground cabling.
С	Springhill Meadows	Stream	2.8 km downstream of location where overhead line crosses a watercourse which feeds this CWS.
С	Wasses Marshes	Grazing marsh	0.4 km upstream of location where the Project crosses the River Stour via directional drilling for underground cabling.

4.3.57 There are 45 LWS that support GWDTE that are within 2 km of the Order Limits as listed in Annex F. Of these, 26 are hydrologically linked to the Project and are listed in Table A8.1.11 and shown on Figure A8.1.4: Groundwater Dependent Terrestrial Ecosystems in Annex A.

Table A8.1.11 LWS that support GWDTE with hydrological linkage to the Project

Project Section	Site Name	GWDTE	Location in Relation to Project
С	Ardleigh Reservoir Grassland	Reservoir edge and wet woodland species	1.5 km away along reservoir edge from location where overhead line crosses Ardleigh Reservoir.
С	Black Brook	Wet woodland	West section of LWS 0.1 km upstream of location where underground cable and haul road crosses the Black Brook and east section of LWS is 0.2km downstream. East section is also the location of two surface water and attenuation drainage lines.
С	Bridges Farm	Alluvial floodplain pastures	2.2 km downstream of location where the underground cable crosses the River Stour that feeds this LWS via trenchless crossing.
С	Langham Water Works	Wet woodland, lakes and water courses	2 km upstream of location where the underground cable crosses the River Stour, via trenchless crossing methodology.

Project Section	Site Name	GWDTE	Location in Relation to Project
С	The Coombs	Wet stream valley and wet woodland	1 km downstream of location where the underground cable crosses the River Stour, via trenchless crossing methodology.
С	Wall's Wood	Wet woodland and Salary Brook	2.2 km upstream of location where overhead line crosses Ardleigh Reservoir.
D	Fordham Bridge Meadow	River floodplain with swamp habitat	0.9 km downstream of location where overhead line crosses the River Colne.
D	Marks Tey Brick Pit	Wet woodland, marsh, open water habitats	0.4 km downstream of location where haul road and overhead line crosses the Roman River.
D	West Bergholt Alderwoods	Wet woodland	0.7 km downstream along a tributary of the River Colne from where haul road and overhead line cross the waterbody.
Е	Blackwater Plantation	Marsh and river	3.2 km upstream of location where overhead line and haul road cross the River Blackwater.
Е	Buckler's Farm Wood	Stream	4.3 km upstream of location where overhead line and haul road cross the Roman River.
Е	Coggeshall Hall Farm	Lowland fen vegetation and complex riverine habitat	LWS intersected in the middle by overhead line and haul road where they cross the River Blackwater.
Е	Feering Marsh	Marshy grassland	1.2 km downstream of location where overhead line and haul road cross the River Blackwater.
Е	Hoo Hall Meadows	Wet marshy grassland and stream	1.7 km downstream of location where overhead line and haul road cross a River Blackwater tributary.
E	Tilkey Road, Coggeshall	Tall-herb marsh and brook	4.1 km upstream (on tributary) of location where overhead line and haul road cross the River Blackwater.
E	Witham Marsh	Sedge-beds, rough marshy grassland, springs, river	1.9 km downstream of location where haul road crosses the River Brain.2.5 km downstream of location where overhead line crosses the River Brain.
F	Border Wood Lake	Lake and wet woodland	0.3 km stream connecting the LWS to where the overhead line passes.

Project Section	Site Name	GWDTE	Location in Relation to Project
F	Broomfield – Little Waltham Chelmer	Riverine habitat	0.9 km downstream of location where overhead line crosses the River Chelmer.
F	Langleys Deer Park	Coastal and Floodplain Grazing Marsh and River	0.1 km upstream of location where overhead line crosses the River Chelmer.
F	Little Waltham Village Meadows	Floodplain Grazing Marsh	0.5 km downstream of location where overhead line crosses the River Chelmer.
F	Lowley's Farm Meadow	Coastal floodplains	0.06 km upstream of location where haul road crosses River Ter, and 0.2 km upstream of location where overhead line crosses River Ter.
F	Writtle Bridge Meadow	Floodplain meadow	3.3 km downstream of location where overhead line crosses the River Can.
G	Hutton Country Park	Marshy and wetland habitat	2 km upstream of location where haul road crosses the River Wid.
G	Little Burstead Wood	Stream	3.6 km downstream of location where overhead line crosses the River Crouch.
G	Stock Brook Meadow	Damp meadow	1.8 km upstream of location where overhead line and haul road crosses Stock Brook.
G	The Wilderness	Wet woodland and stream	3.4 km downstream of tributary of the River Crouch and then 2.4 km upstream of location where haul road and overhead line crosses.

4.4 Incidental Records

4.4.1 There were five incidental sightings of protected plant species within the Order Limits, these are summarised in Table A8.1.12. All relate to Jersey Cudweed *Luphangium luteoalbum*, a plant that is often associated with waste ground and is spreading in the UK potentially because of climate change and is no longer considered to be native to the UK. It should be noted that all plant species are protected from picking and uprooting without the landowner's permission under Section 13 of the WCA, but it is illegal to pick or uproot species like Jersey Cudweed that are listed under Schedule 8 of the WCA. As mentioned, no sightings of *Tortula schimperi* were recorded within the Order Limits during field surveys.

Table A8.1.12 Protected species identified during surveys

Project Section	Number of Sightings and Ordnance Survey Grid Reference (OSGR)	Species
A	OSGR: TG 21901 02274	Jersey Cudweed
В	OSGR: TM 09663 45927	
С	OSGR: TM 06054 29385	
С	OSGR: TM 05962 29443 (over 20 plants seen)	
С	OSGR: TM 06726 29191 (hundreds of plants)	

5. Conclusion

- 5.1.1 The most dominant habitat across the Project was cropland (78.5%), followed by grassland (15%), urban (3.1%), woodland and forest (2.2%), heathland and shrub (0.6%), tall forbs and ruderal/ ephemerals (0.4%), ponds and lakes (0.1%), and finally wetland (reedbeds: < 0.1%).
- 5.1.2 A total of 13 HPIs were identified during the UKHab surveys on land within the Order Limits. In terms of UKHab classification, these were:
 - Arable field margins
 - Sown with tussocky grasses (UKHab code: c1a5)
 - Pollen and nectar (UKHab code: c1a6)
 - Cultivated for annual flora (UKHab code: c1a7)
 - Game bird mix strips and corners (UKHab code: c1a8)
 - Rivers which are Annex I priority habitat (UKHab code: r2a)
 - Lowland dry acid grassland (UKHab code: g1a)
 - Lowland meadows (UKHab code: g3a)
 - Open mosaic habitats on previously developed land (UKHab code: g, 80)
 - Reedbeds (UKHab code: f2e)
 - Coastal and floodplain grazing marsh
 - Floodplain wetland mosaic and coastal floodplain grazing marsh (UKHab code: g, 19 and 55)
 - Lowland mixed deciduous woodland (UKHab code: w1f)
 - Wet woodland (UKHab code: w1d)
 - Ponds which support HPI (UKHab code: r1g, 40)
 - Native hedgerows (UKHab code: h2a)
 - Species rich hedgerows (UKHab code: h2a5)
 - Ecologically valuable line of trees (UKHab code: w, 34).
- 5.1.3 On the ground UKHAB and condition surveys across the remaining approximately 12.5% of the Order Limits are to be completed in 2025. Based on aerial imagery and habitats mapped from vantage points, it is not expected that any additional HPI or additional 'other terrestrial habitat' type will be identified in these areas. Habitat type and condition values have been assigned across the full Order Limits, with any areas not yet subject to full survey attributed a precautionary value based on professional judgement. The results of the habitat surveys undertaken in 2025, will be included in a further environmental information report, as detailed in Chapter 8: Ecology and Biodiversity (document reference 6.8).

- 5.1.4 64 priority ponds are present within the Order Limits. One of these had a confirmed sighting of great crested newt, the others have been categorised as HPI on a precautionary basis that they contain protected or valuable fauna.
- 5.1.5 45 rivers and streams are present within or intersecting the Order Limits. Two of these are chalk rivers, the River Tas (Section A) and River Waveney (Section A / B), which are Priority Habitat under the UK Biodiversity Action Plan (JNCC, 2011) and an Annex I Habitat under the *Habitats Directive* 1992. The other rivers and streams have been identified as priority habitat either on the basis that they support SPI or on the precautionary basis that they have the potential to support SPI.
- 5.1.6 Six blocks of ancient woodland (irreplaceable habitat) are located within or partially intersecting the Order Limits, these are:
 - Round Wood (Section B)
 - Miller's Wood (Section B)
 - Rivenhall Thicks (Section E)
 - Writtle Writtlepark Woods (Section F)
 - Little Bladen's Wood (Section G)
 - Ashen Shaw & Rainbow Wood (Section H).
- 5.1.7 All ancient woodland sites within 15 m of the Order Limits standard and / or additional (if appropriate) mitigations to avoid or minimise impact, these are described Appendix B of the Outline LEMP (document reference 7.4).
- 5.1.8 Open mosaic habitat on previously developed land (HPI) was recorded in Buckingham Hill LWS in Section H, this LWS also supported lowland meadow and lowland dry acid grassland HPI.
- 5.1.9 Of the 142.1 km of hedgerows surveyed within the Order Limits, 141.5 km were HPI due to being dominated by one or more native species.
- 5.1.10 Of the 10.8 km of lines of trees surveyed within the Order Limits, 4.7 km were ecologically valuable HPI due to the presence of one or more mature, veteran or ancient trees within a 30 m section. These have all be surveyed as part of Appendix 13.6: Arboricultural Impact Assessment (document reference 6.13.A6), which has informed the veteran tree strategy as described in Appendix B of the Outline LEMP (document reference 7.4).
- 5.1.11 Hydrological linkage to designated sites which support GWDTE were analysed, of these:
 - Five SSSIs within 2 km of the Order Limits were identified to support GWDTE. Of these, four are hydrologically linked to the Project
 - Six LNRs within 2 km of the Order Limits were identified to support GWDTE. Of these, five hydrologically linked to the Project
 - 52 CWSs within 2 km of the Order Limits were identified to support GWDTE. Of these, 26 are hydrologically linked to the Project
 - 45 LWSs within 2 km of the Order Limits were identified to support GWDTE. Of these, 25 are hydrologically linked to the Project.

- 5.1.12 86 species of protected/notable plant species were returned from the LERCs under the following designations: England Red Listed Species by Botanical Society of Britain and Ireland (BSBI, 2014) (near threatened to endangered), nationally scarce and nationally rare excluding red listed taxa (JNCC, 2023), s41 of the NERC Act 2006 and Schedule 8 of the WCA 1981. However, there were only five incidental sightings of protected plant species all related to Jersey cudweed within the Order Limits during field surveys. Jersey cudweed was recorded in Section A, B and C with most plants recorded in Section C.
- 5.1.13 The desk study identified nine invasive plant species designated under Schedule 9 of the WCA 1981 recorded within the Study Area. During field surveys, six of these were not identified in the Survey Area, namely giant rhubarb, giant hogweed, Canadian waterweed, New Zealand pigmyweed, alexanders, and Japanese Rose.
- 5.1.14 The five invasive species which were identified within the Order Limits during field surveys were:
 - Himalayan balsam
 - Rhododendron
 - Japanese knotweed
 - Giant hogweed
 - Australian swamp stonecrop.
- 5.1.15 Common ragwort is not listed on Schedule 9 but is a threat to livestock and was recorded in one location, it is likely that this species is present elsewhere in the Order Limits and was not recorded by surveyors as it is not a Schedule 9 species.

Abbreviations

Abbreviation	Full Reference
BAP	Biodiversity Action Plan
BNG	Biodiversity Net Gain
BSBI	Botanical Society of Britain and Ireland
CFGM	Coastal Floodplain Grazing Marsh
CIEEM	Chartered Institute of Ecology and Environmental Management
CoCP	Code of Construction Practice
CSE	Cable Sealing End (compound)
CWS	County Wildlife Sites
DCO	Development Consent Order
DSM	Digital Surface Model
DTM	Digital Terrain Model
EACN	East Anglia Connection Node
EFC	Essex Field Club
EIA	Environmental Impact Assessment
ES	Environmental Statement
FISC	Field Identification Skills Certificate
GWDTE	Ground Water Dependent Terrestrial Ecosystems
ha	Hectares
HPI	Habitat of Principal Importance
JNCC	Joint Nature Conservation Committee
LEMP	Landscape and Ecological Management Plan
LERC	Local Environmental Record Centres
LNR	Local Nature Reserve
LWS	Local Wildlife Sites
MAGIC	Multi-Agency Geographic Information for the Countryside
MoRPh	Modular River Physical Survey
NBIS	Norfolk Biodiversity Information Service

Abbreviation	Full Reference
NERC	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NVC	National Vegetation Classification
OMH	Open Mosaic Habitat
OMH PDL	Open Mosaic Habitat on Previously Developed Land
OSGR	Ordnance Survey Grid Reference
PRoW	Public Rights of Way
SAC	Special Areas of Conservation
SBIS	Suffolk Biodiversity Information Service
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site of Special Scientific Interest
UKHab	UK Habitat Survey
WCA	The Wildlife and Countryside Act 1981

Glossary

Term	Description
Ancient Woodland	Land that has been continually wooded since at least 1600 in England. Regarded as 'irreplaceable habitat' in national planning guidance. Ancient woodland greater than 2 ha is recorded on the Natural England Ancient Woodland Inventory.
Ancient Woodland Inventory	A dataset managed by Natural England to identify and record information about Ancient Woodland sites in England.
Annex I Priority habitat	Annex I habitats are natural habitats identified by the European Union's <i>Habitats Directive</i> 1992 as needing special conservation efforts. These habitats are either at risk of disappearing, have a limited natural range, or are outstanding examples of their <i>Natural Environment</i> .
Archaeophyte	Archaeophytes are species that have been recorded as naturalised in the wild before the year 1500.
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.
Cable Sealing End Compound	Electrical infrastructure used as the transition point between overhead lines and underground cables. A compound on the ground acts as the principal transition point.
County Wildlife Site	Non-designated areas of land important for their wildlife and nature conservation value.
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 <i>Habitats Directive</i> and protected under the <i>Conservation of Habitats and Species</i> Regulations 2017, as amended in 2019.
Fauna	All the animals in a given area.
Flora	The plants within a particular habitat or region.
Groundwater	Water that is in the ground, this is usually referring to water in the saturated zone below the water table.
Groundwater dependent terrestrial ecosystems	Wetlands which critically rely on groundwater flows and/or chemistries.
Habitat	The natural home or environment of an animal, plant, or other organism.

Term	Description
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 <i>Natural Environment</i> and Rural Communities Act 2006, formerly listed in the UK Biodiversity Action Plan.
Habitat Regulations Assessment	The process by which plans and projects are assessed as to whether they are likely to have a significant effect on a European site either alone or in combination with other plans or projects, under the <i>Conservation of Habitats and Species</i> Regulations 2017 (as amended).
Haul Roads	A route used by construction traffic within the Order Limits to access a working area from a site access point.
Horizontal Directional Drilling	Trenchless method for the installation of pipes, in a shallow arc using a surface-launched drilling rig. In particular, it applies to large-scale crossings in which a fluid filled pilot bore is drilled without rotating the drill string, and this is then enlarged by a washover pipe and back reamer to the size required for the product pipe.
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.
Local Nature Reserve	Sites dedicated by the Local Planning Authority under Section 21 of the National Parks and Access to the Countryside Act 1949 for nature conservation which have wildlife or geological features that are of special interest locally.
Local Planning Authority	The public authority whose duty it is to carry out specific planning functions for a particular area.
Local Wildlife Site	Non-designated areas of land important for their wildlife and nature conservation value.
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 as per the mitigation hierarchy.
National Vegetation Classification	A system of classifying natural habitat types in Great Britain according to their vegetation types.
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.
Priority species	Species identified as of principal importance in England, in accordance with requirements of the <i>Natural Environment</i> 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 <i>Wildlife and Countryside</i> Act 1981. They are important because they support rare or endangered fauna and

Term	Description
	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.
Substation	Substations are used to control the flow of power through the electricity system. They are also used to change (or transform) the voltage from a higher to lower voltage to allow it to be transmitted to local homes and businesses.
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.
UK Power Networks	UK Power Networks (Operations) Limited (registered company number 03870728) and/or its affiliate Eastern Power Networks plc (registered company number 02366906) as applicable.
Underground cabling	An insulated conductor carrying electric current designed for underground installation. Underground cables link together two Cable Sealing End compounds.
Zone of Influence	The defined geographic area within which the project's environmental receptors are located.

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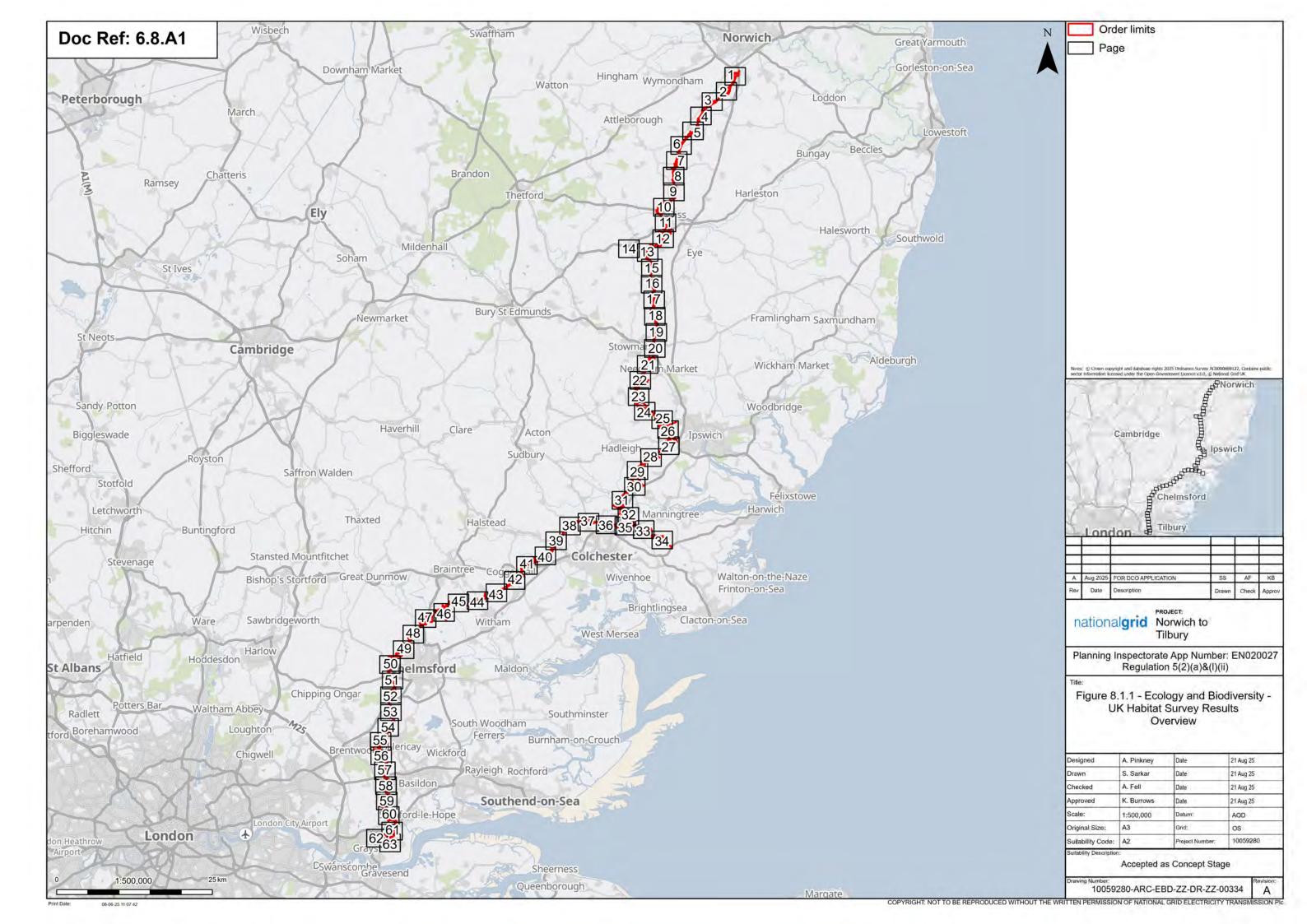
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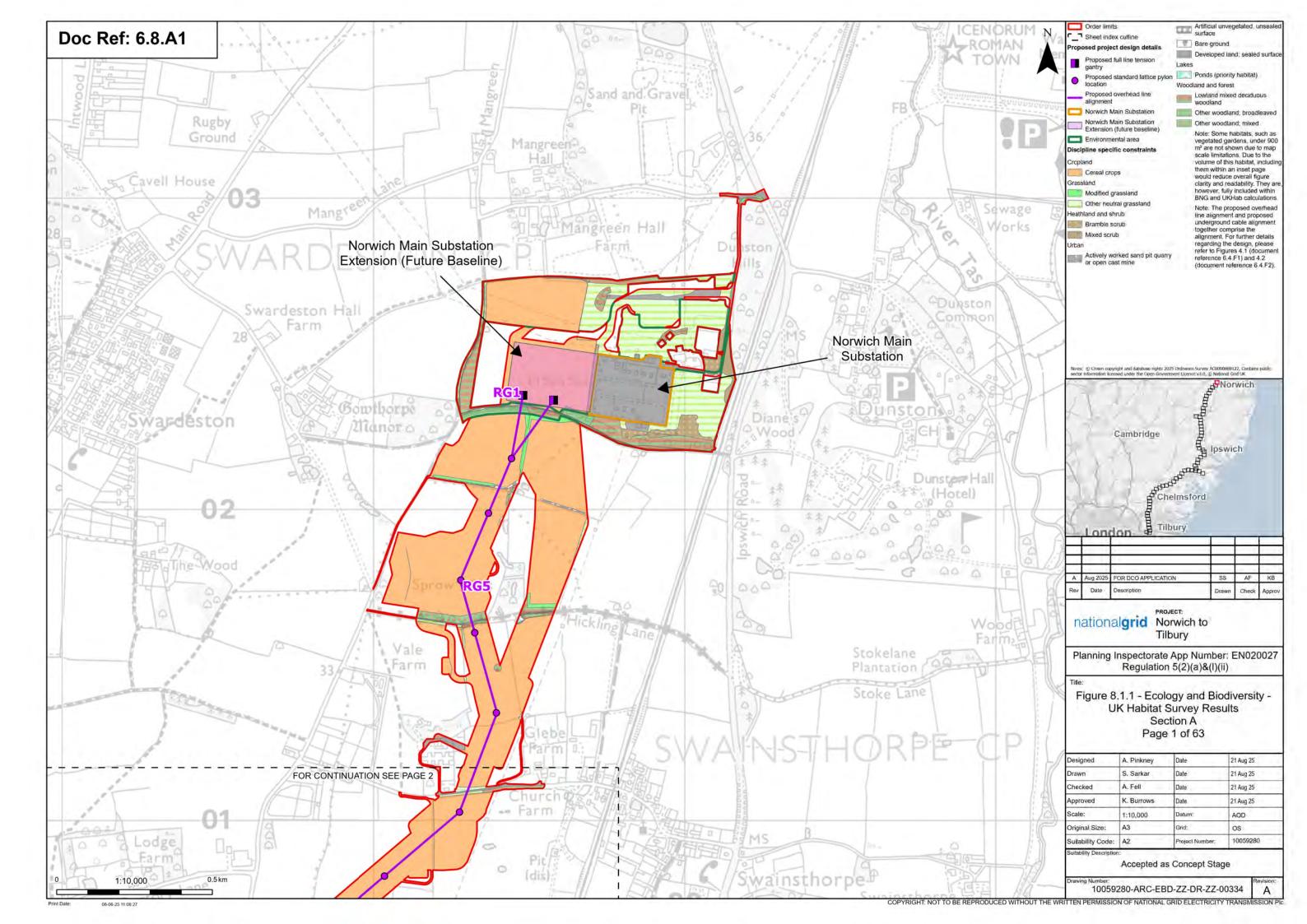
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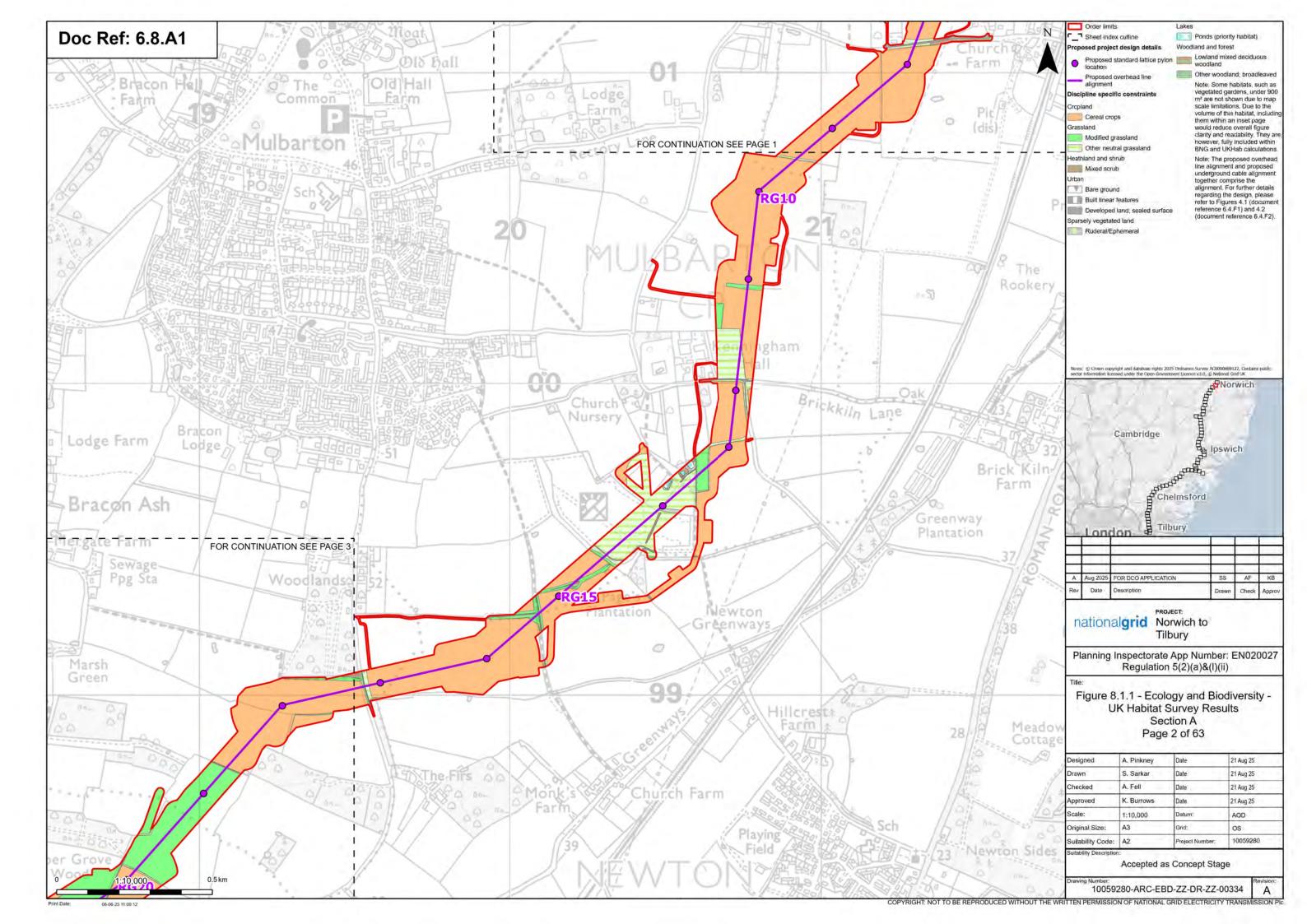
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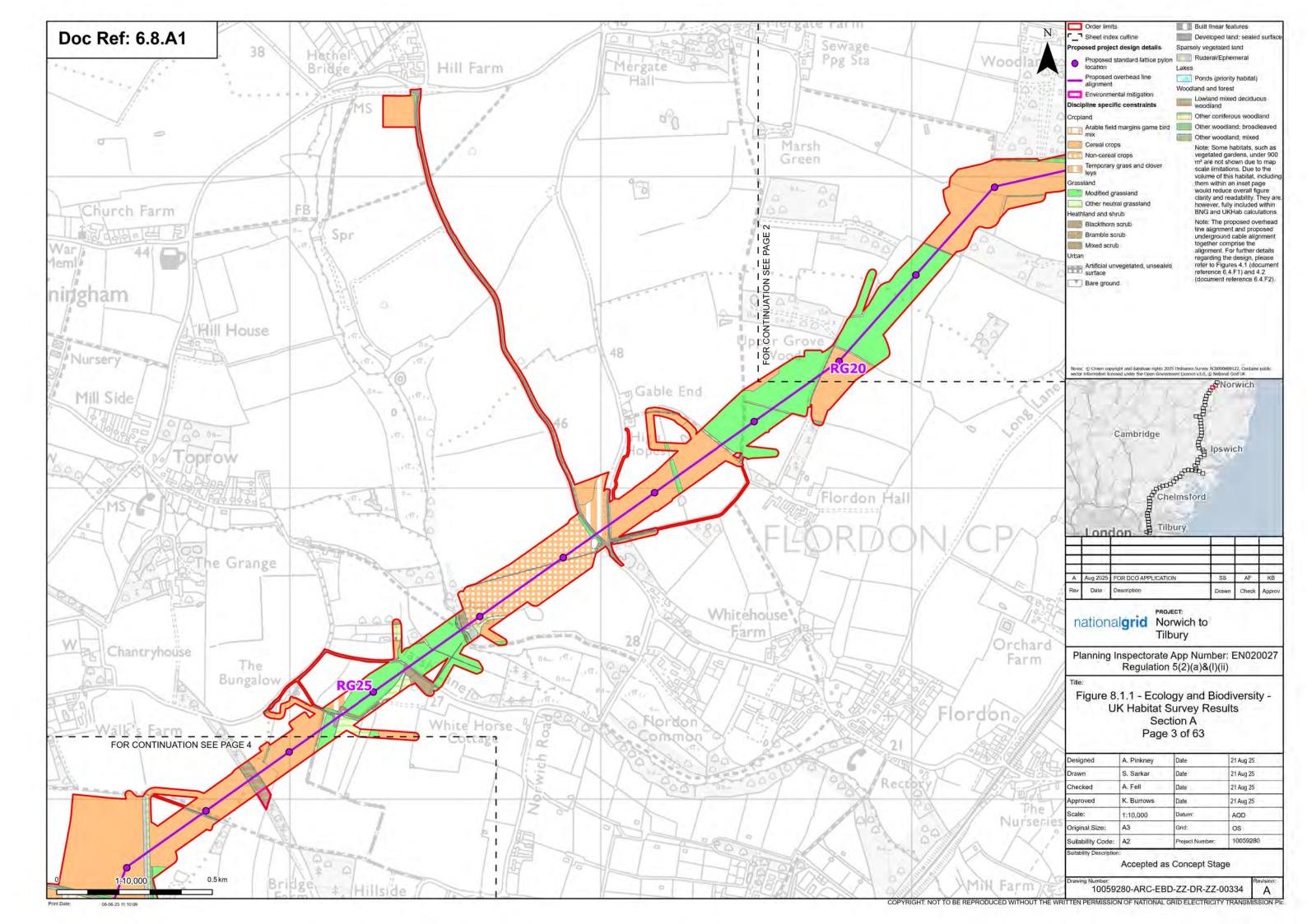
Annex A. Figures

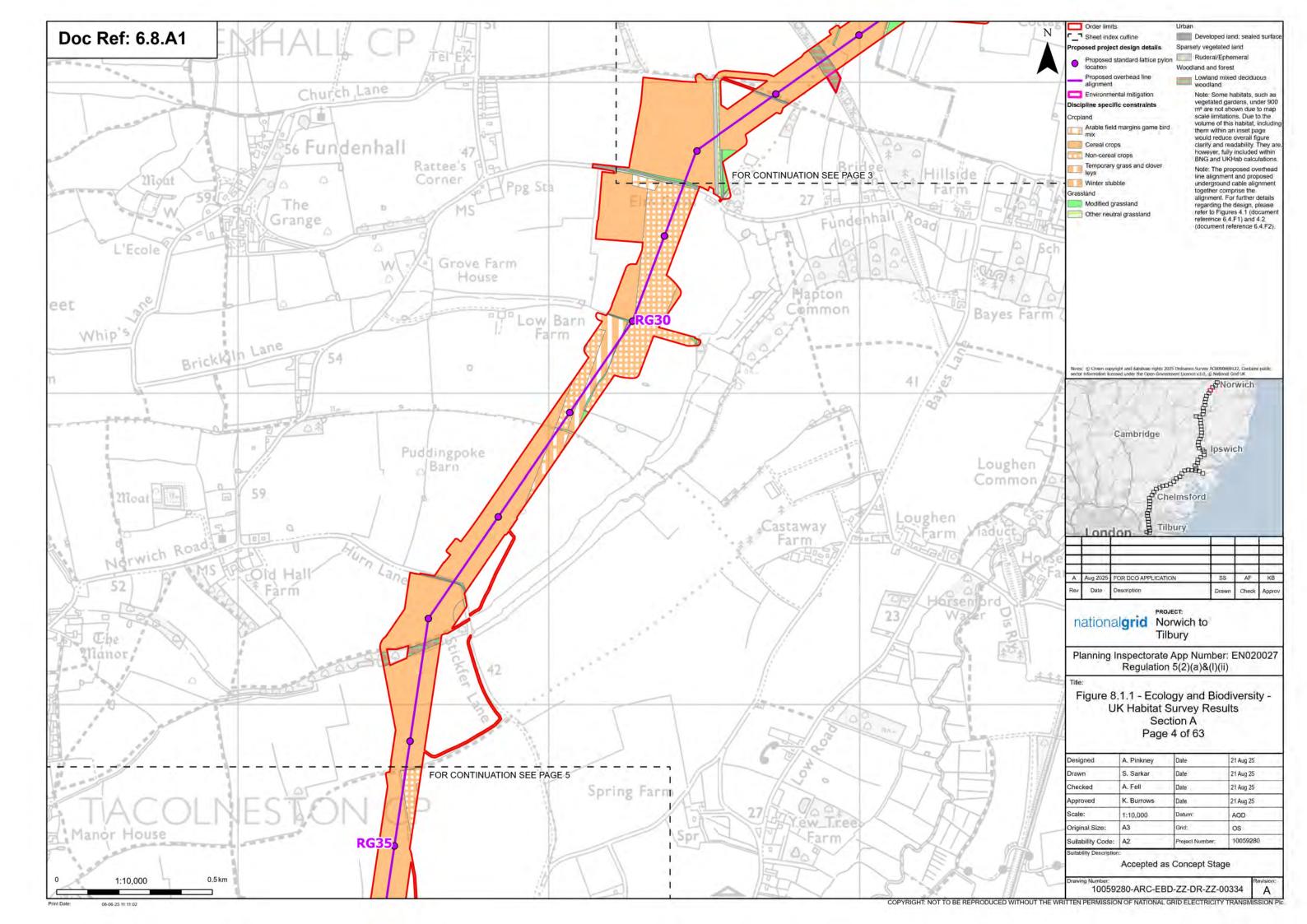
Figure A8.1.1 - UK Habitat Map

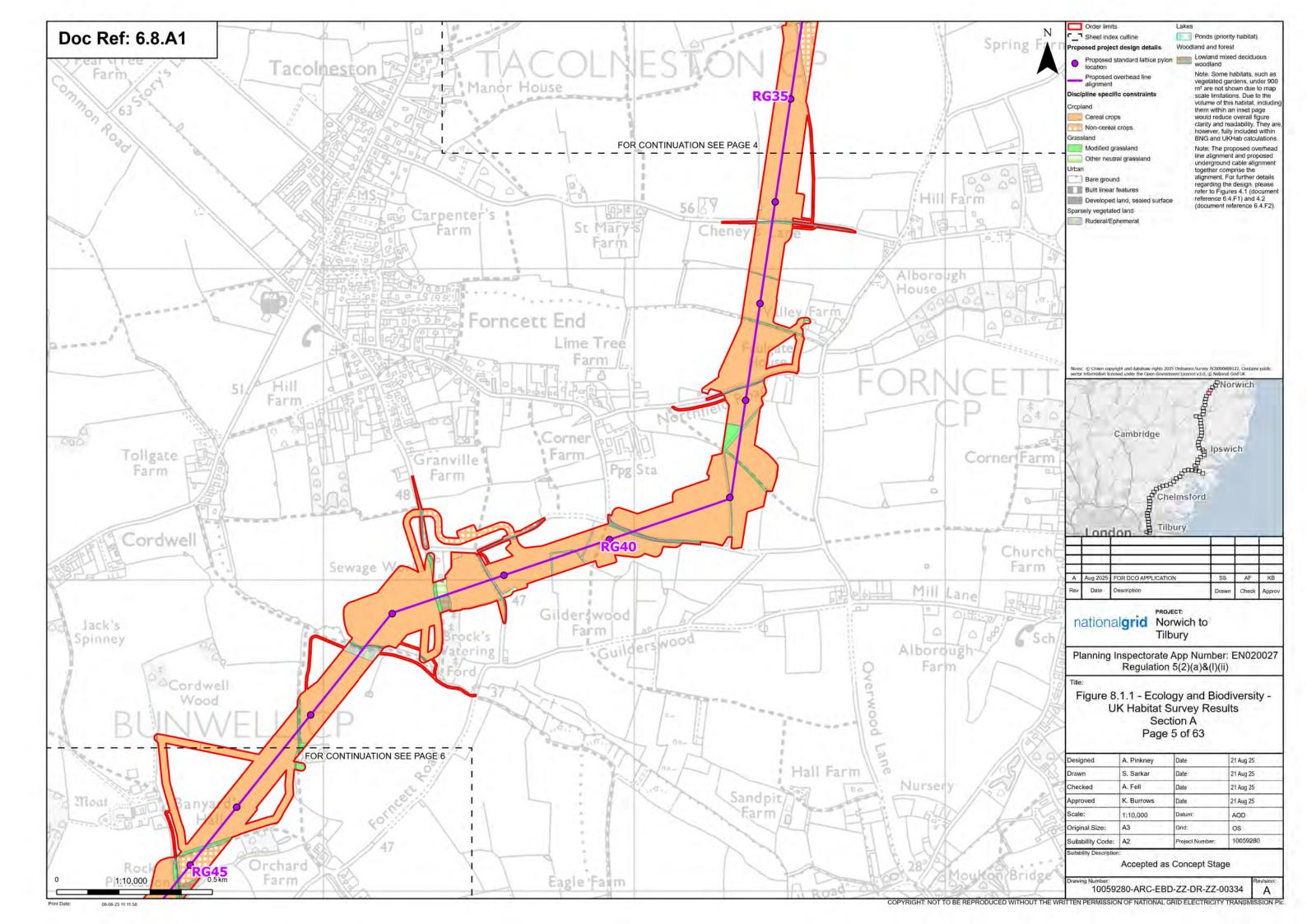


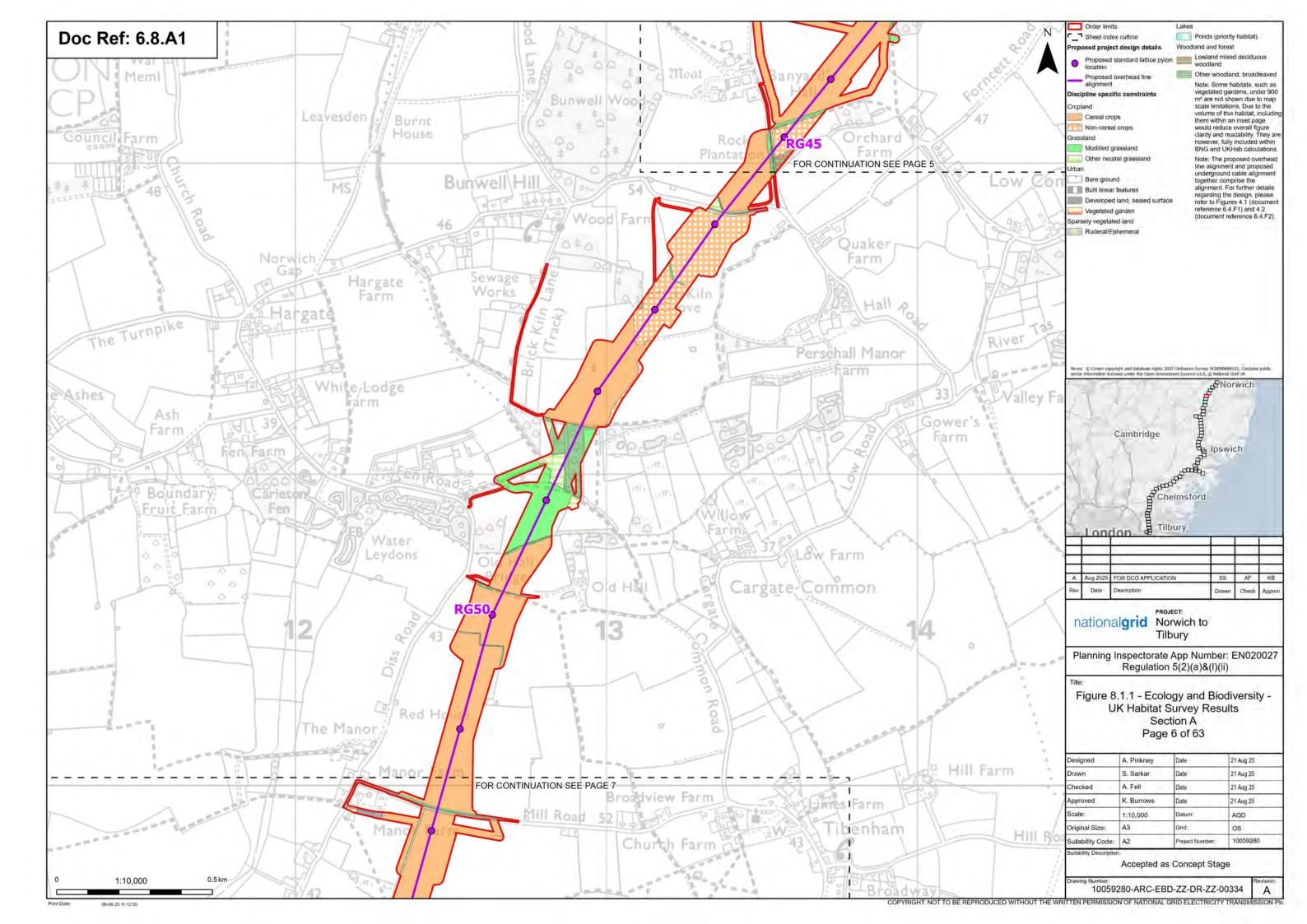


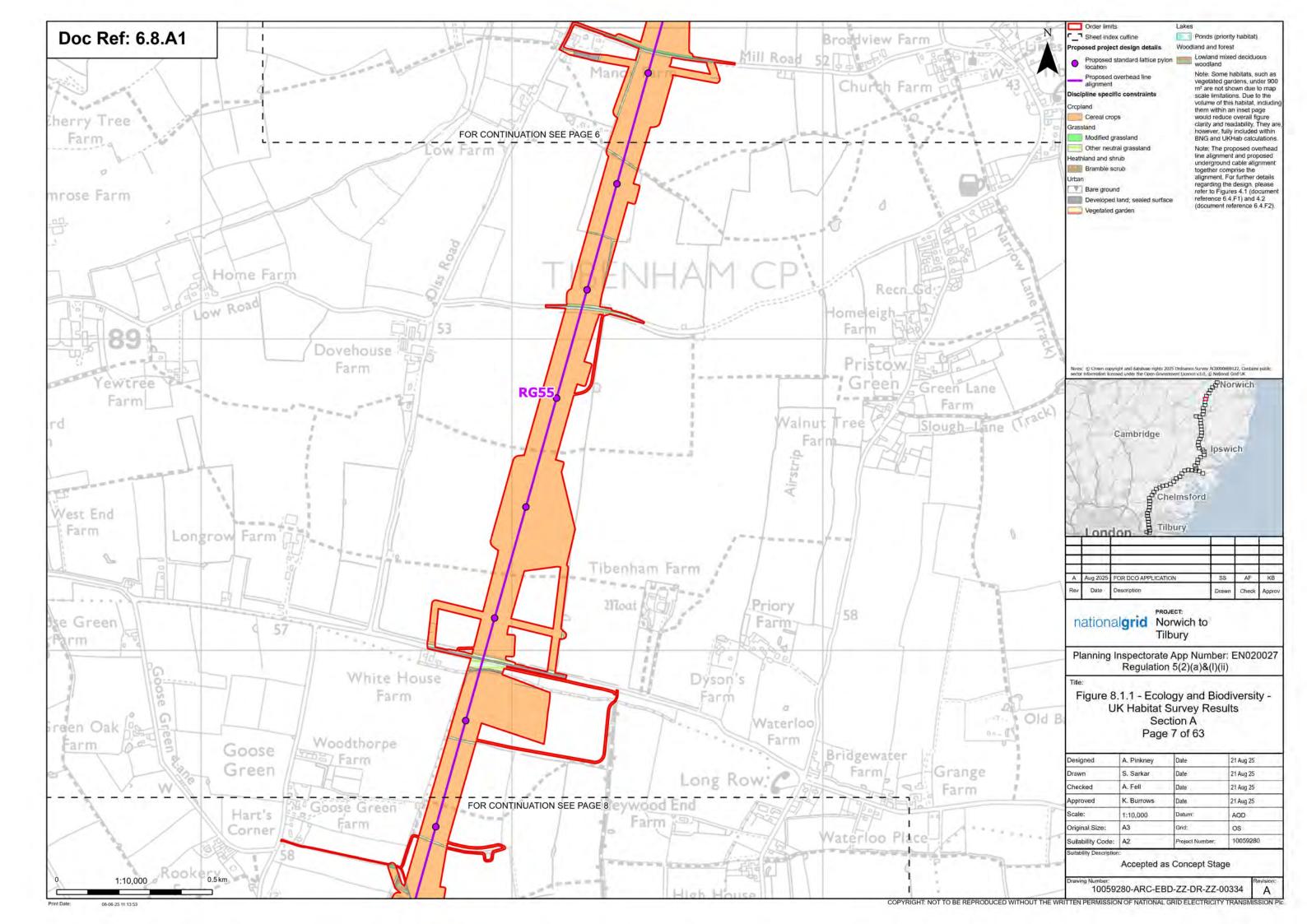


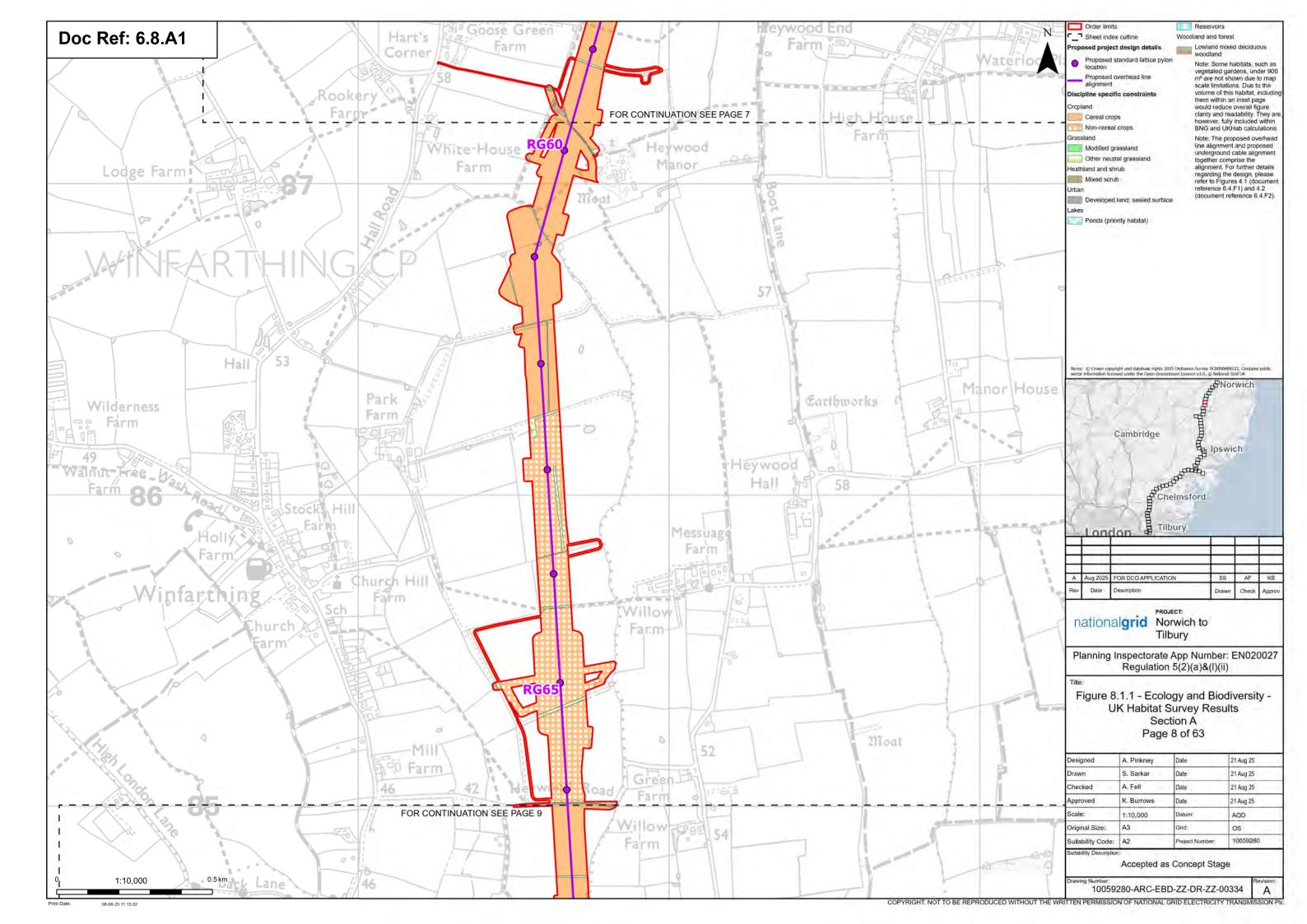


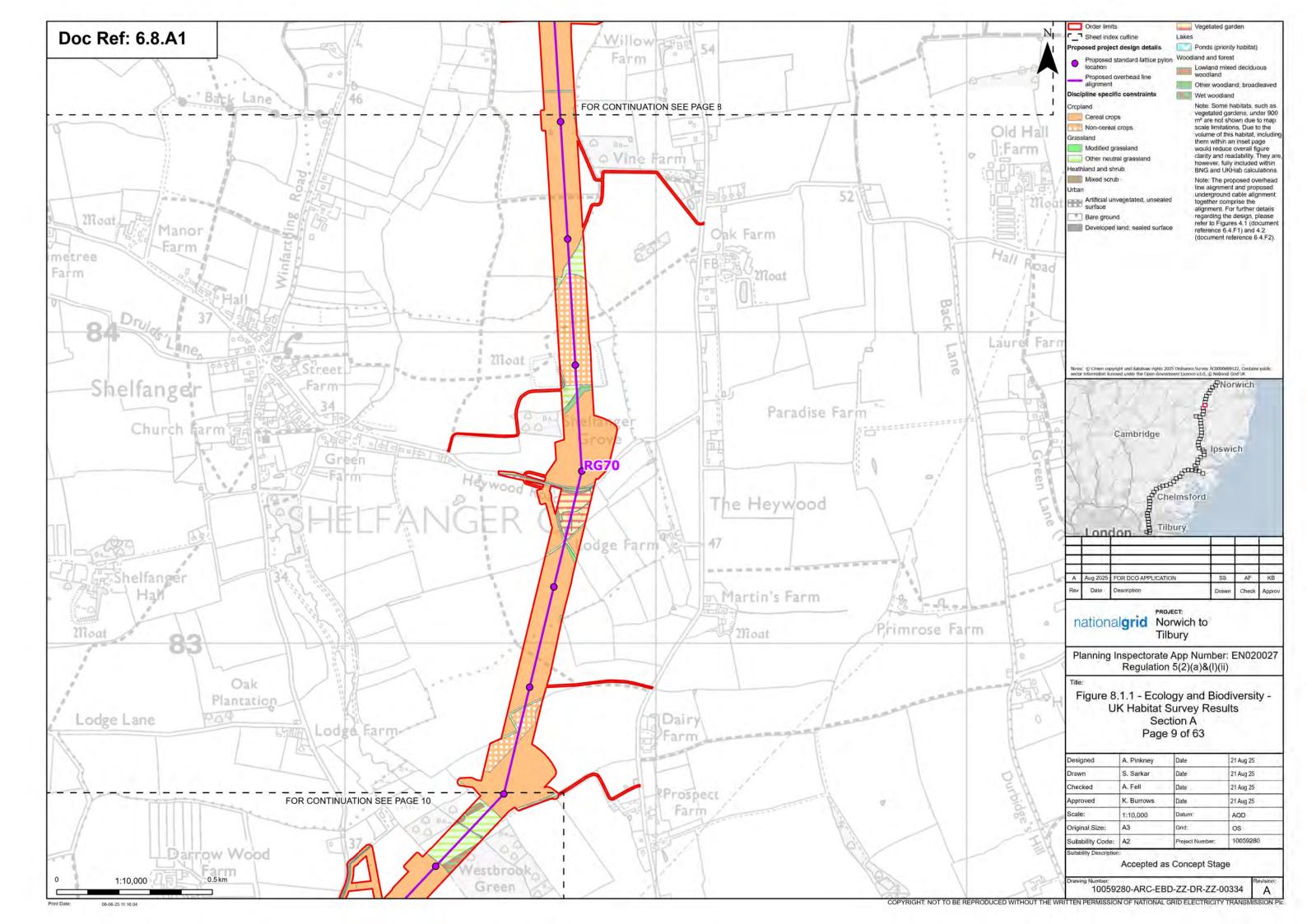


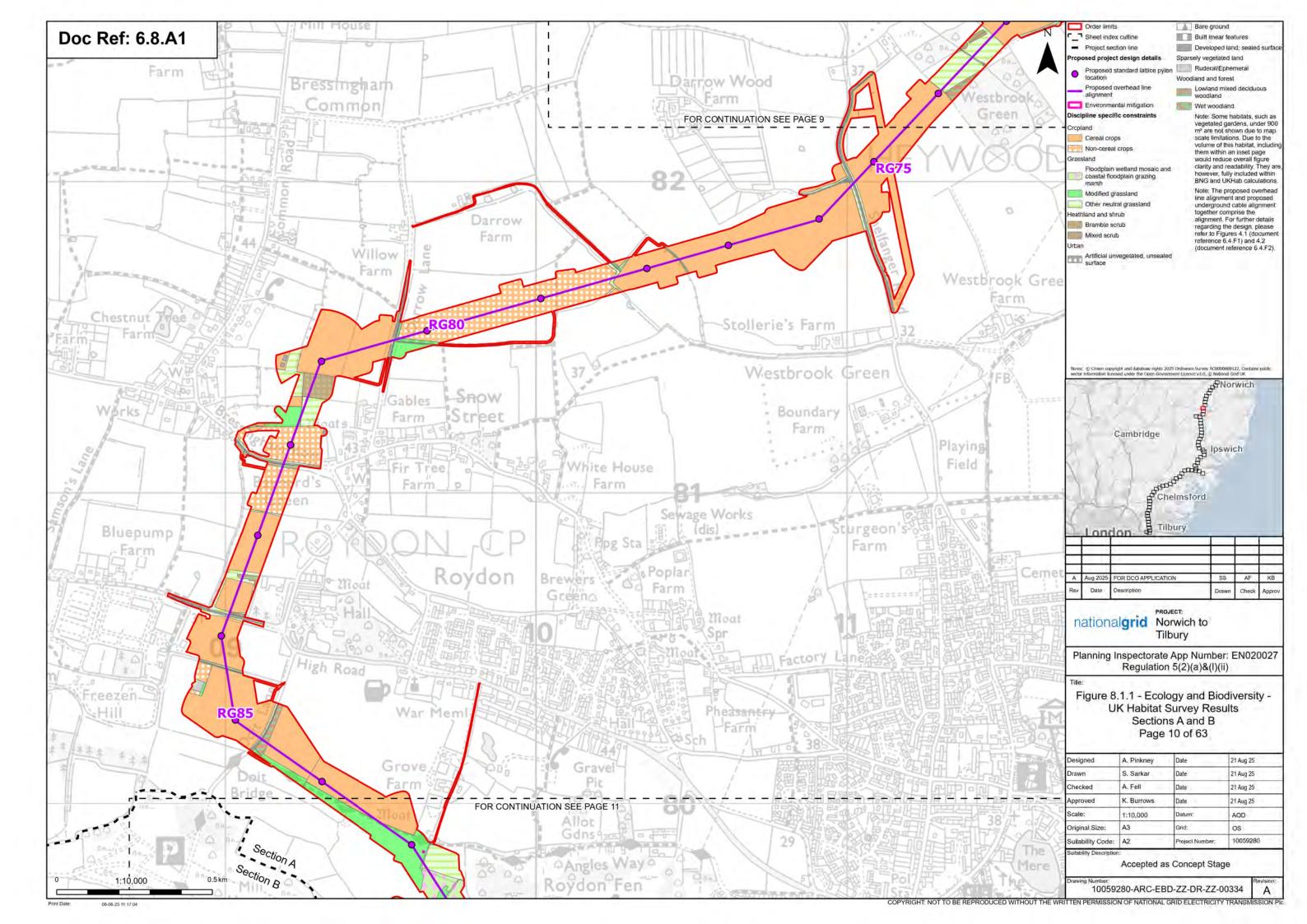


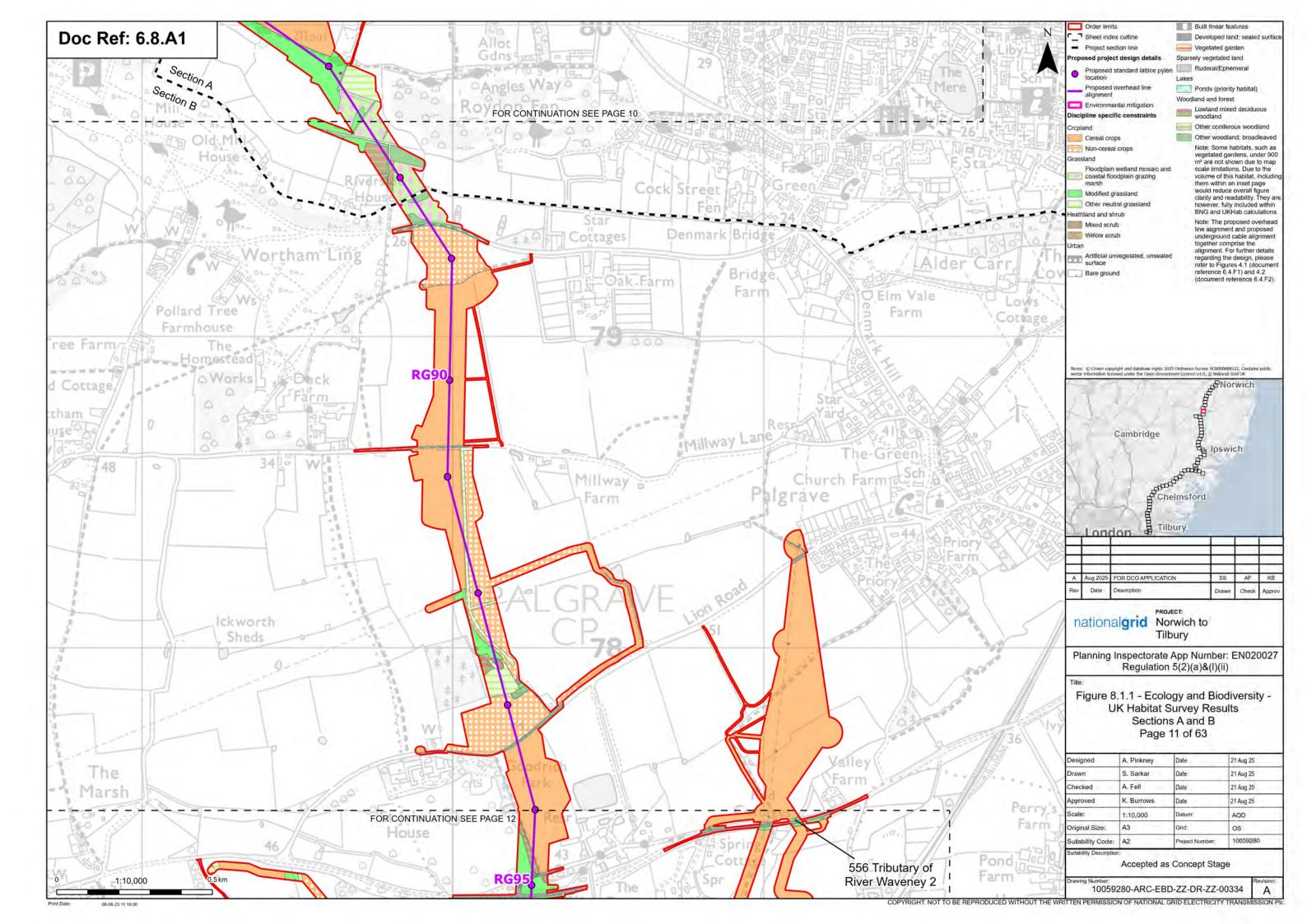


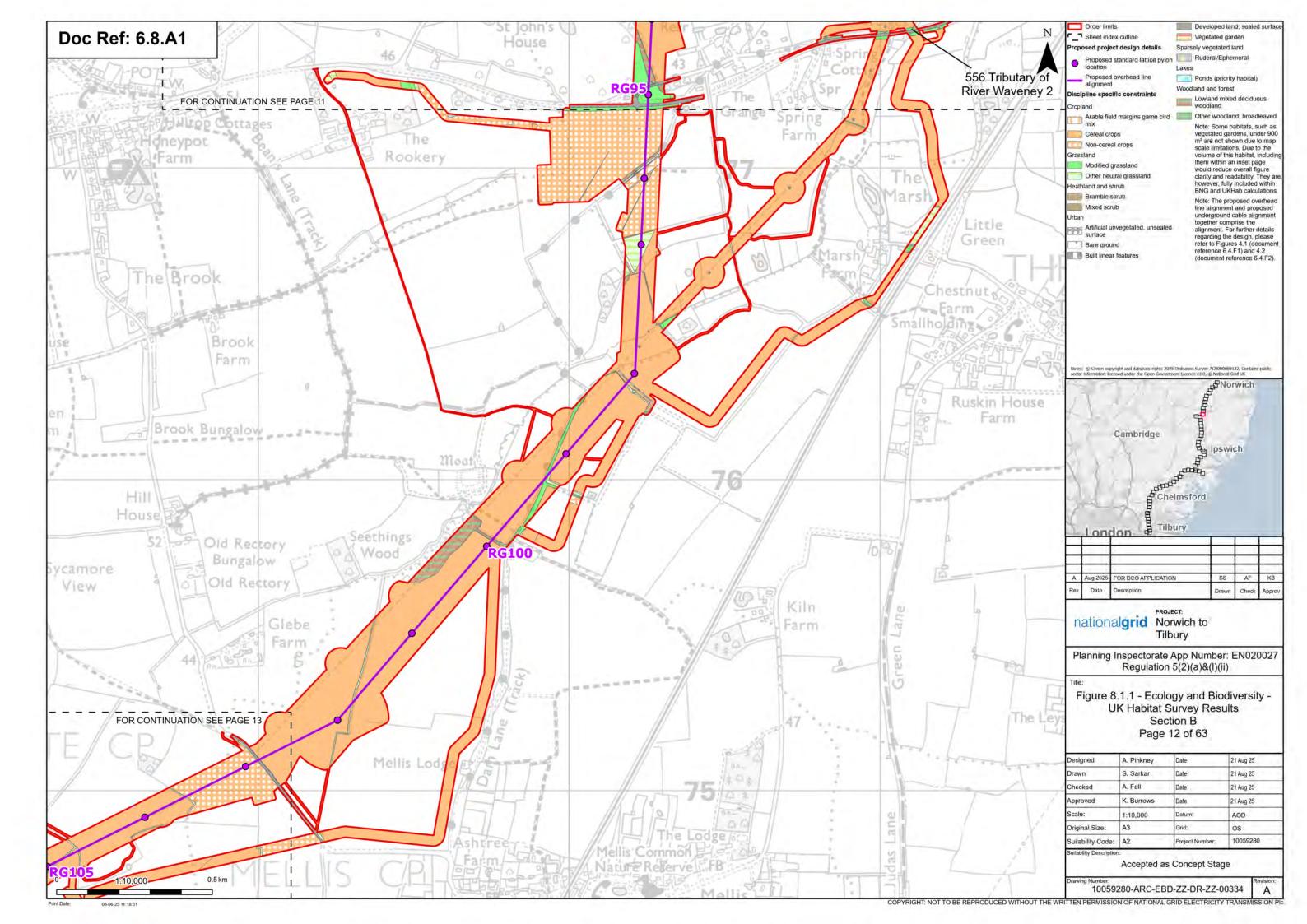


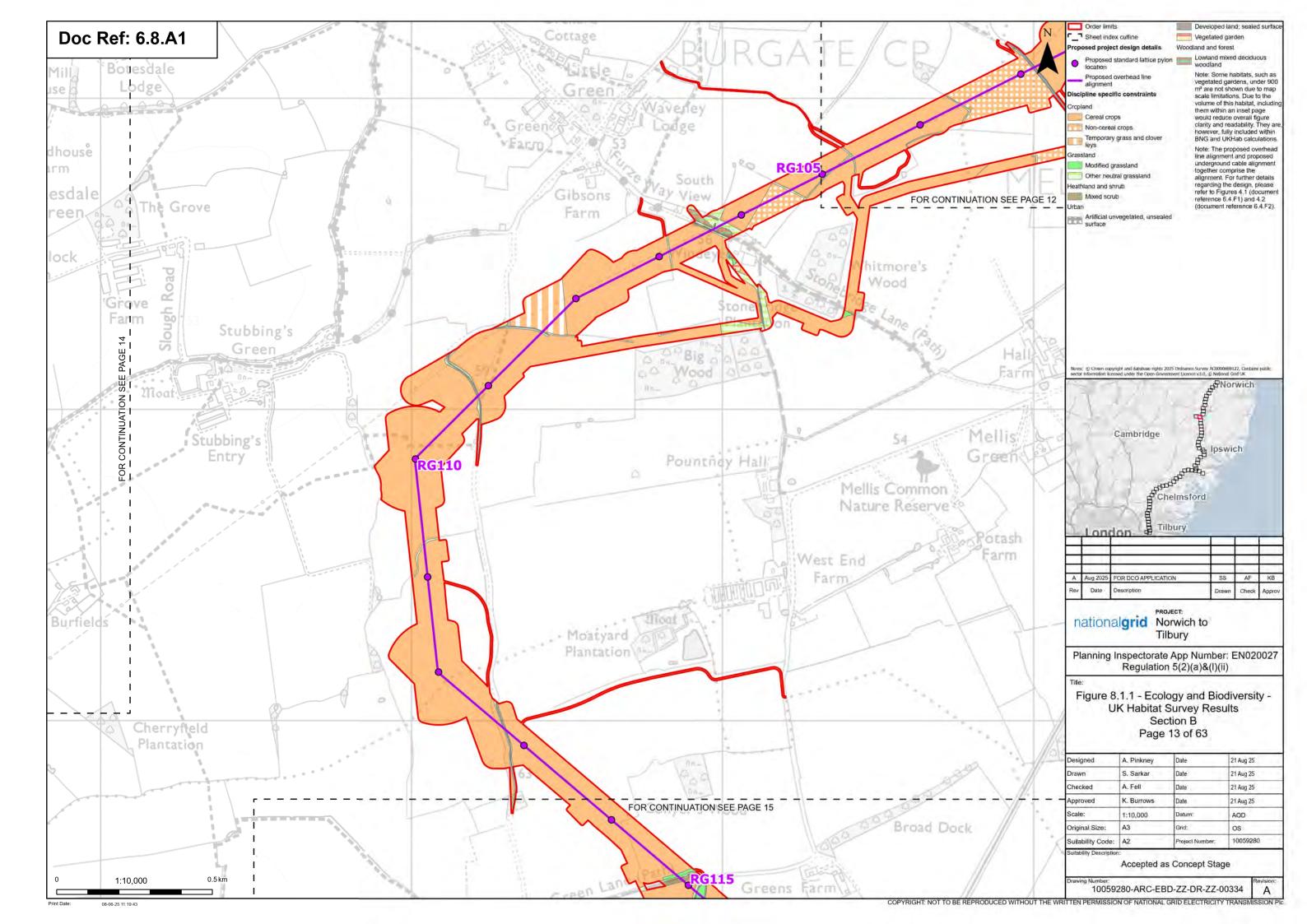


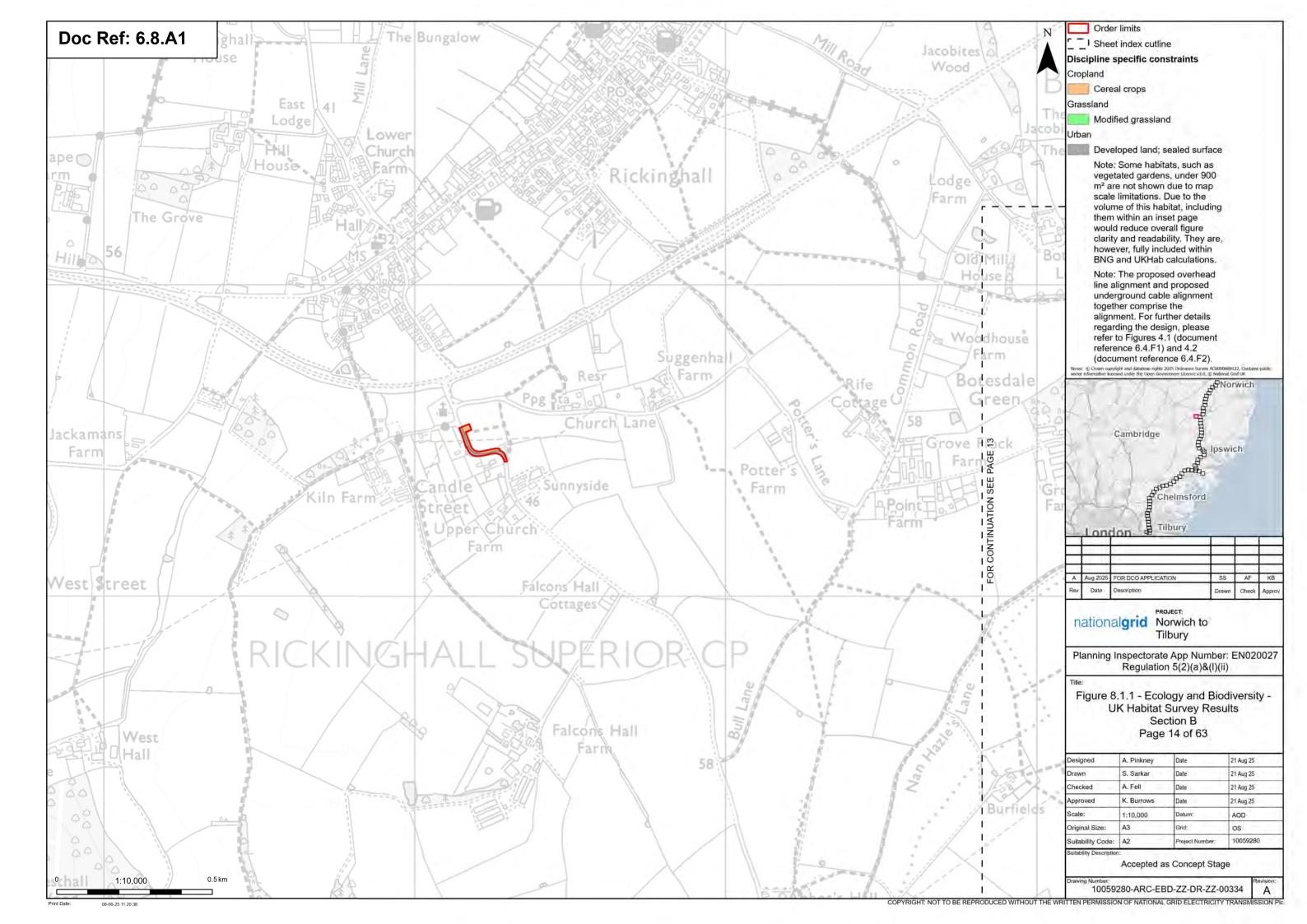


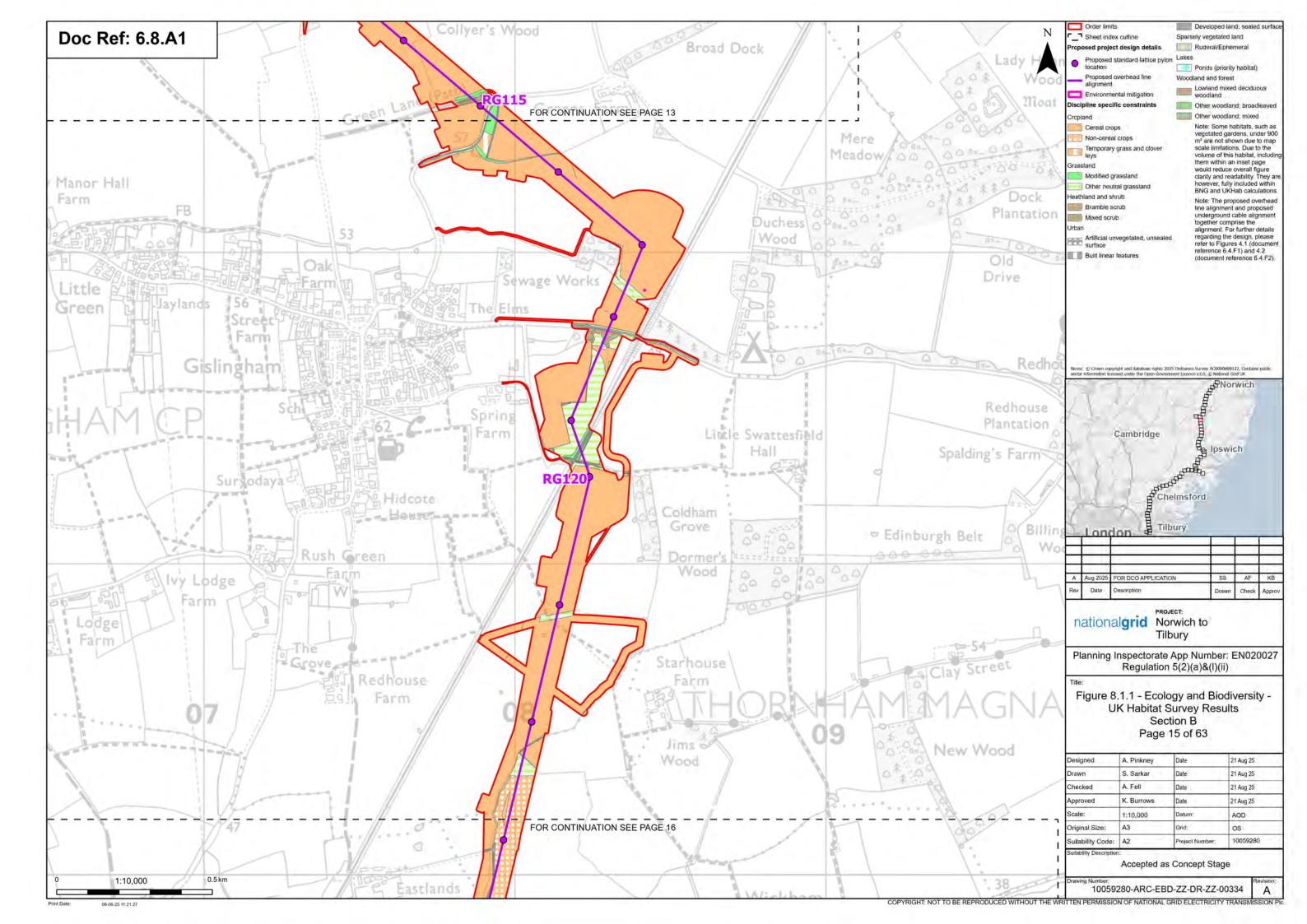


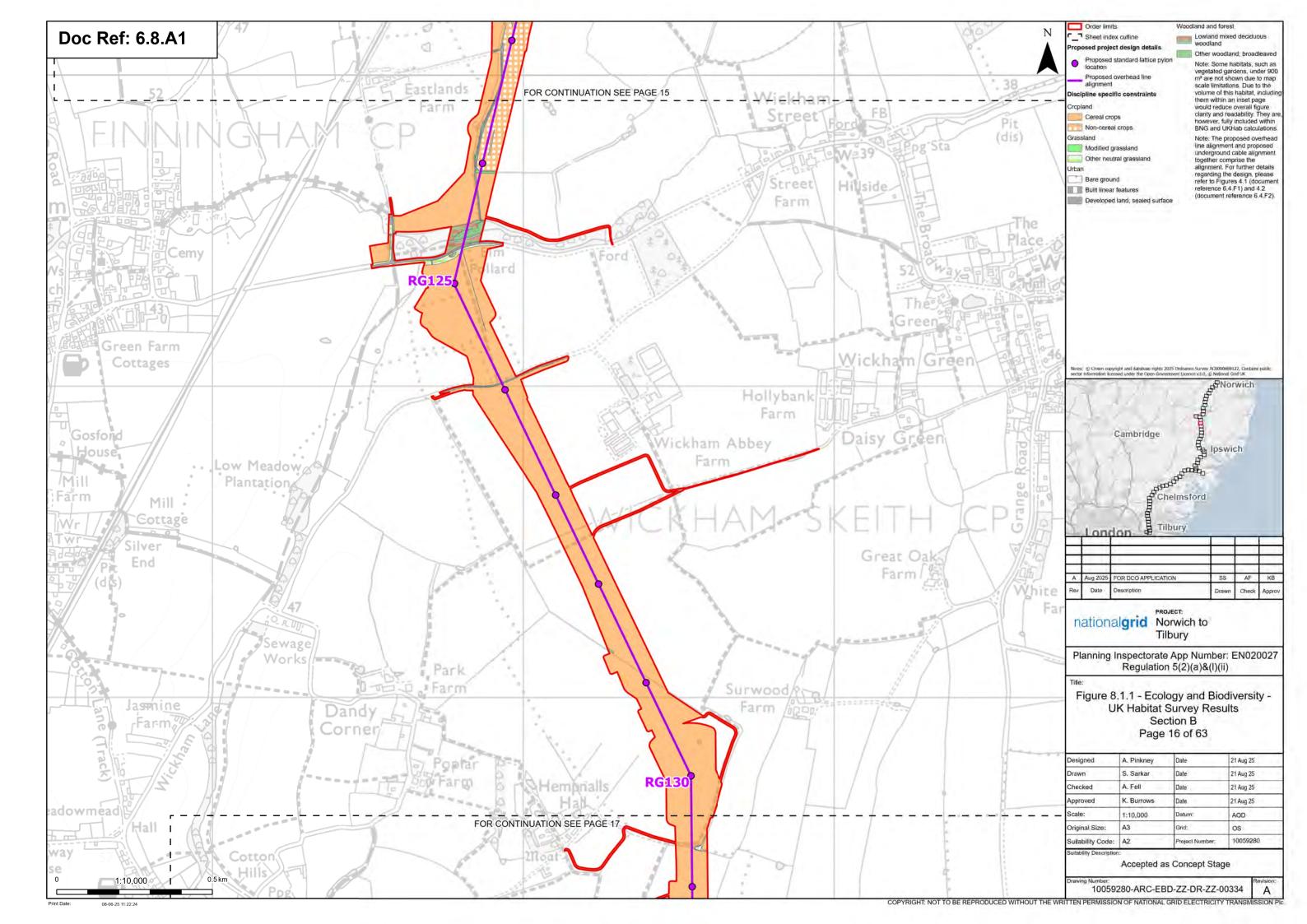


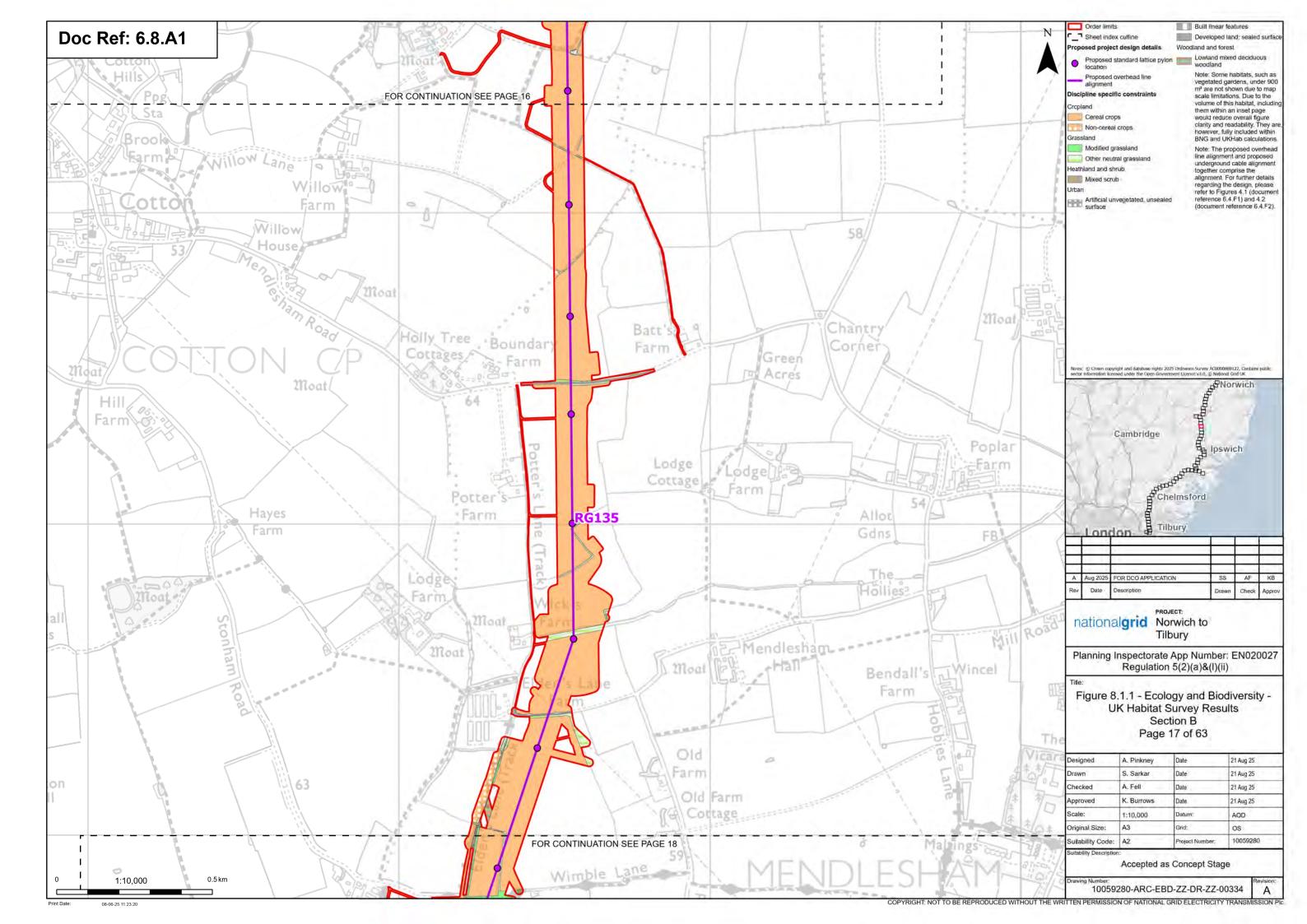


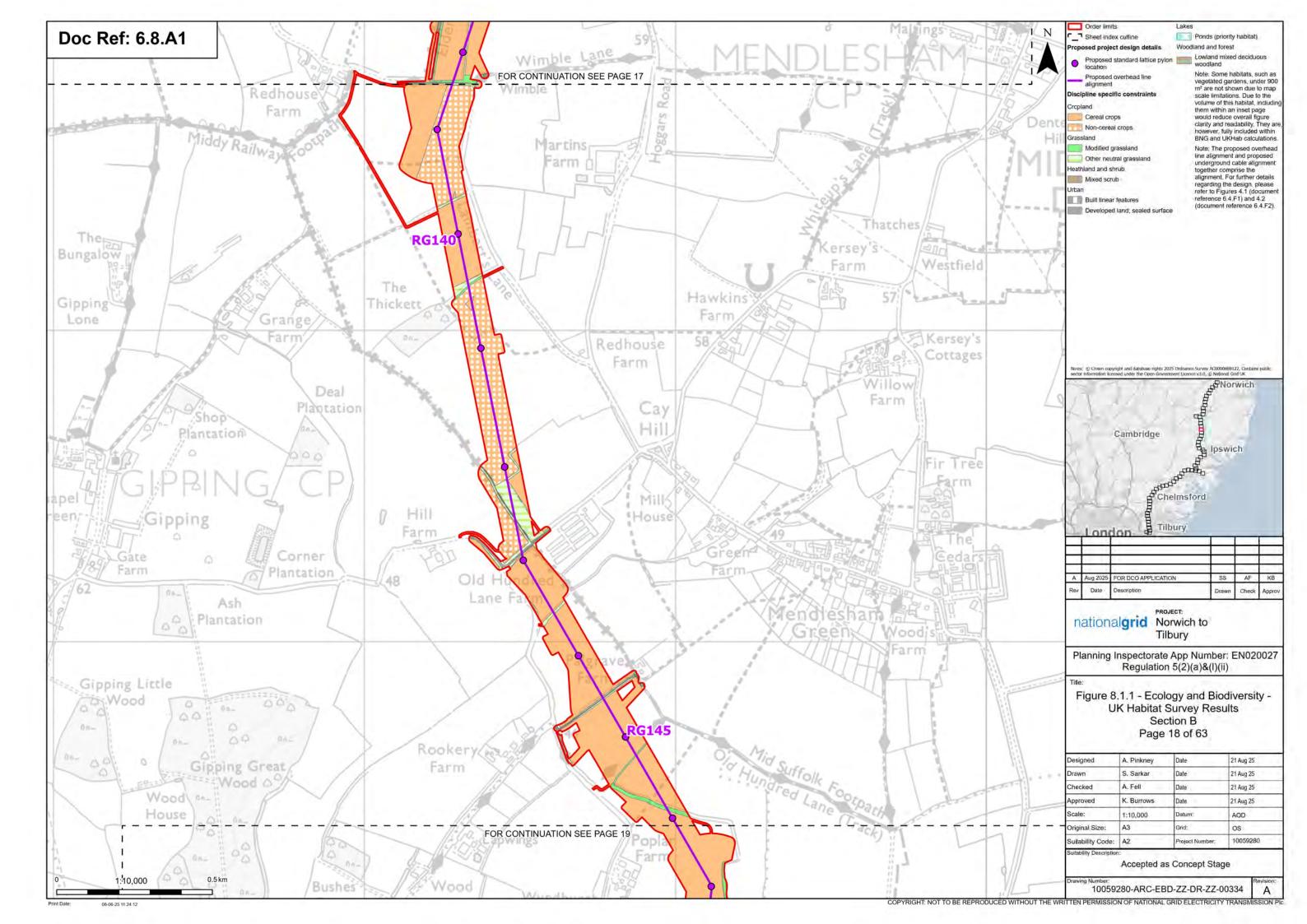


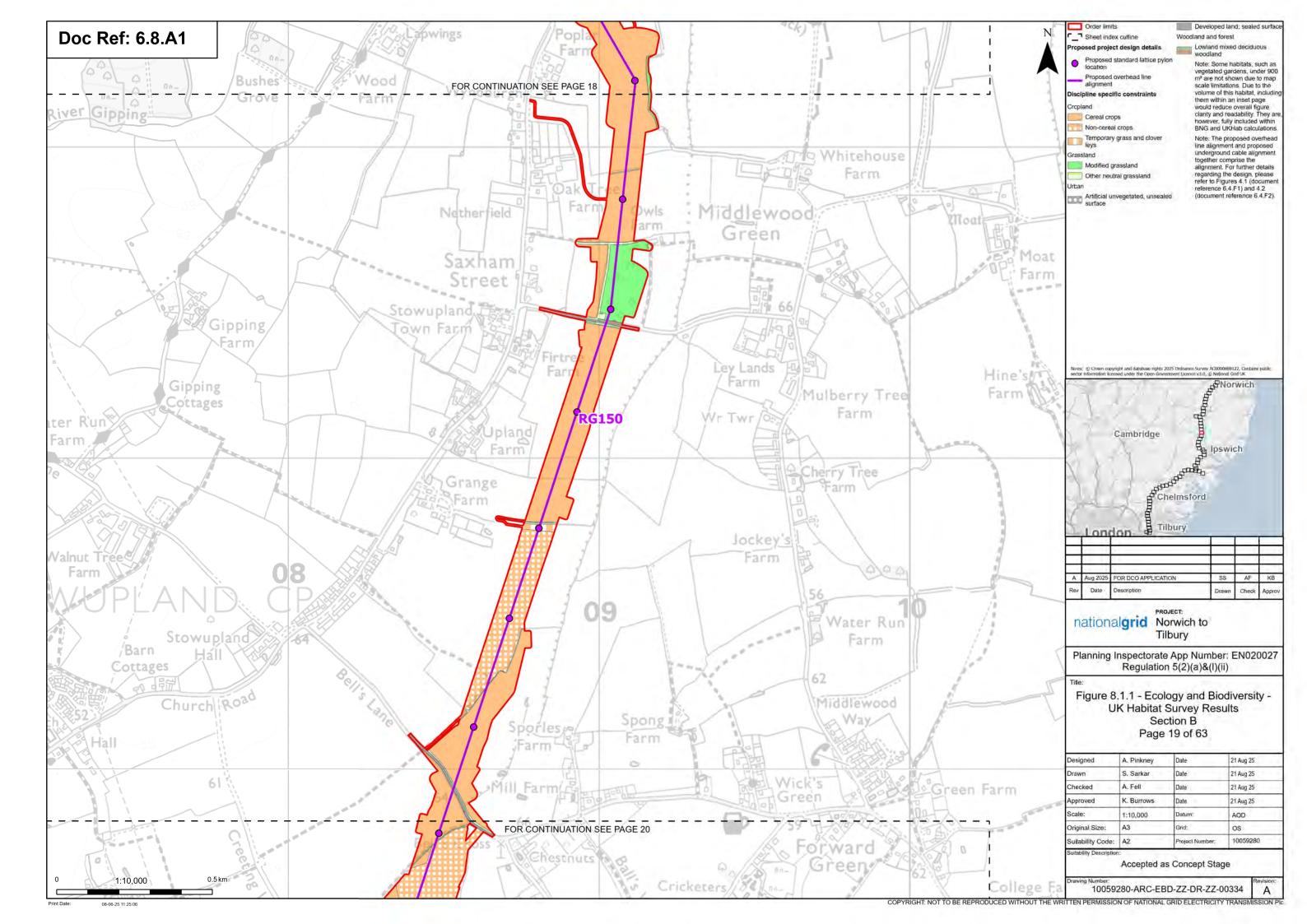


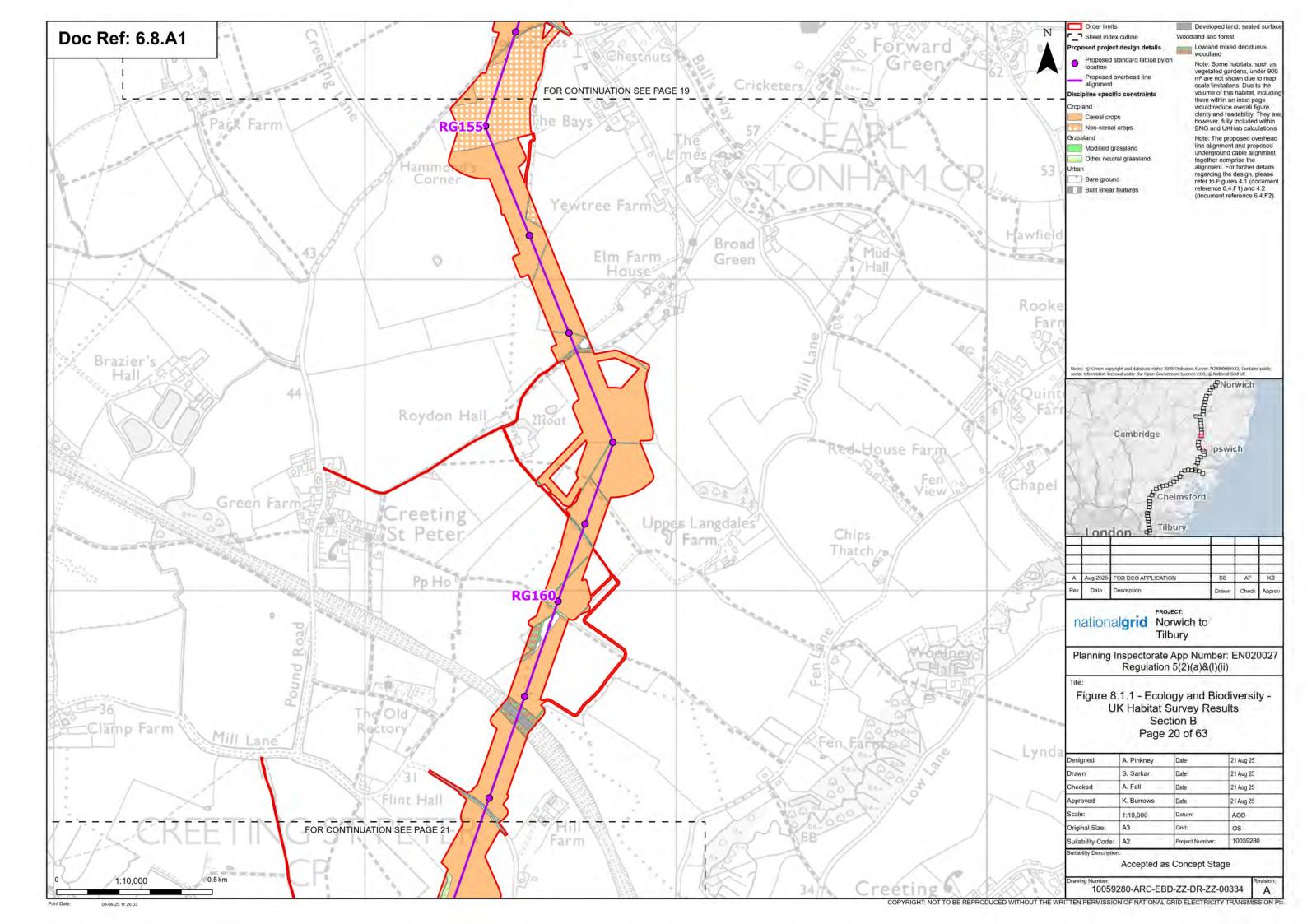


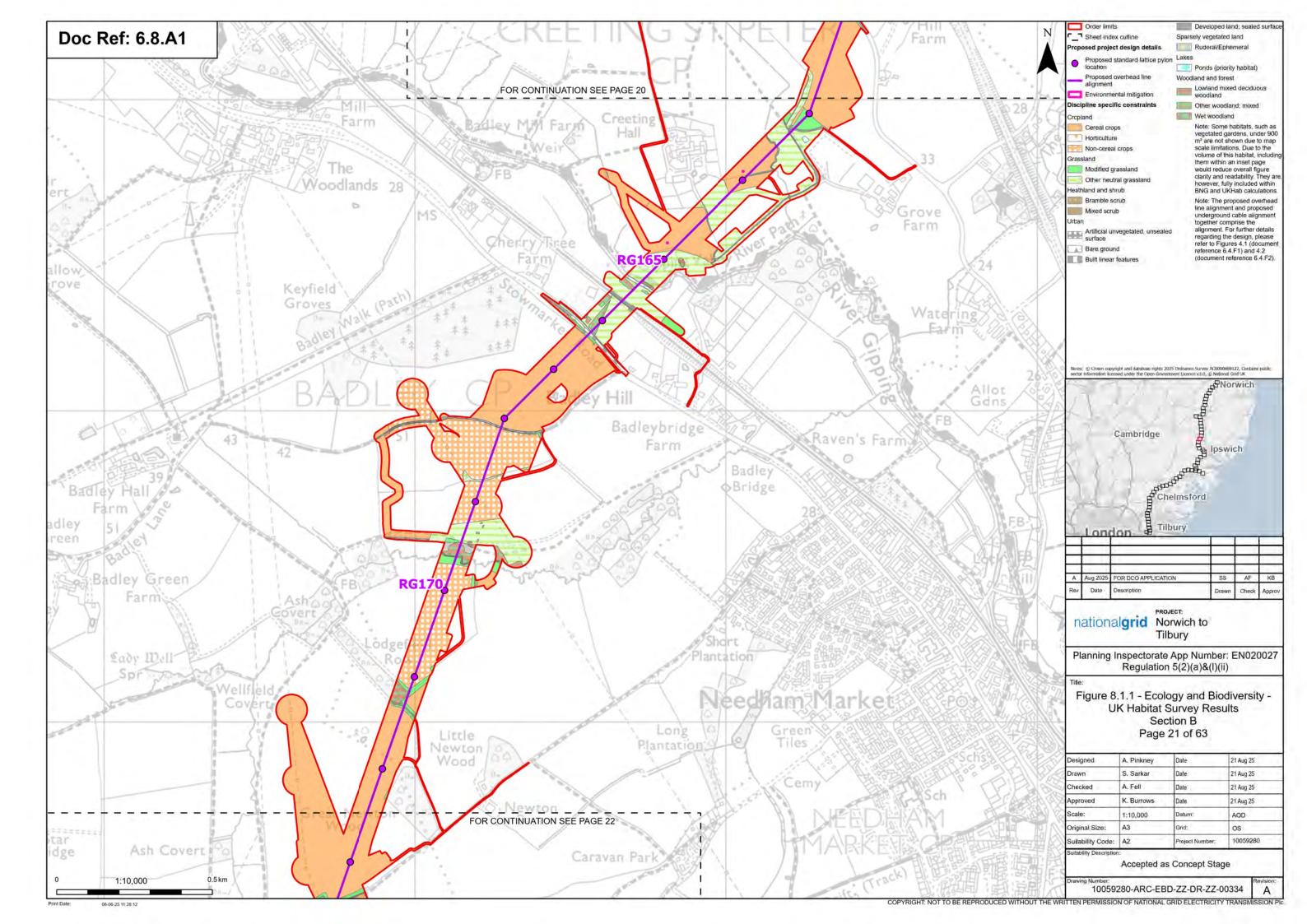


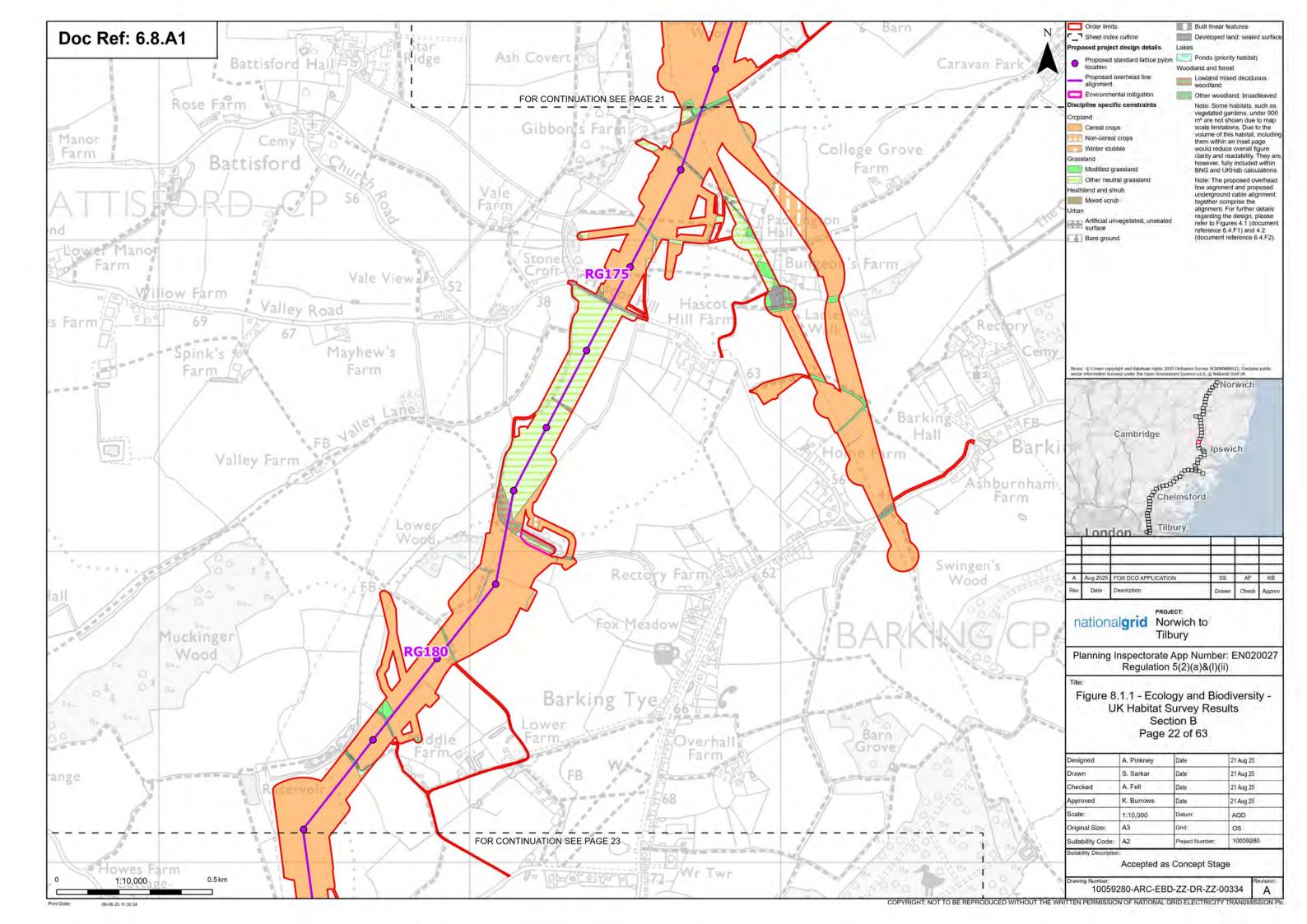


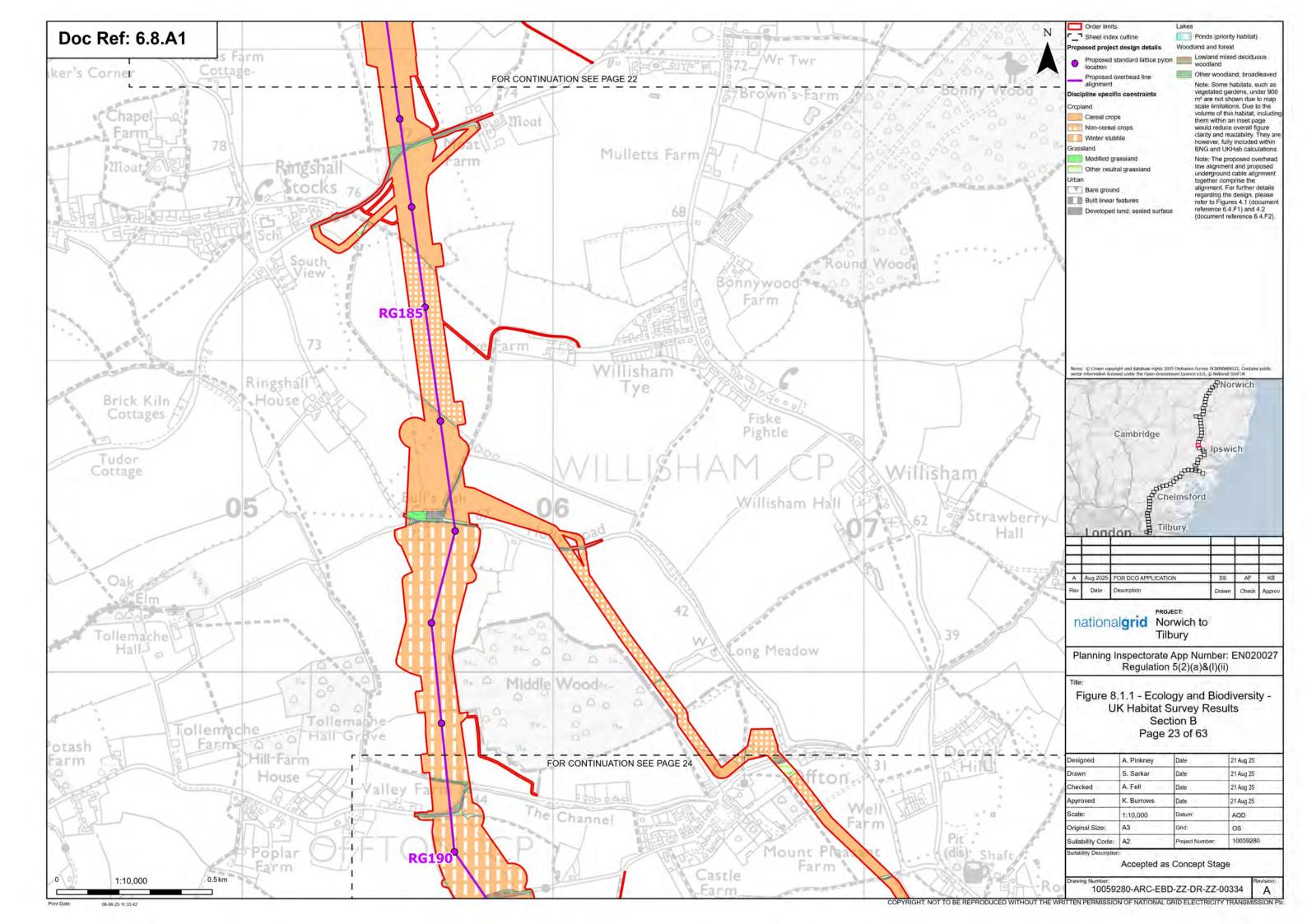


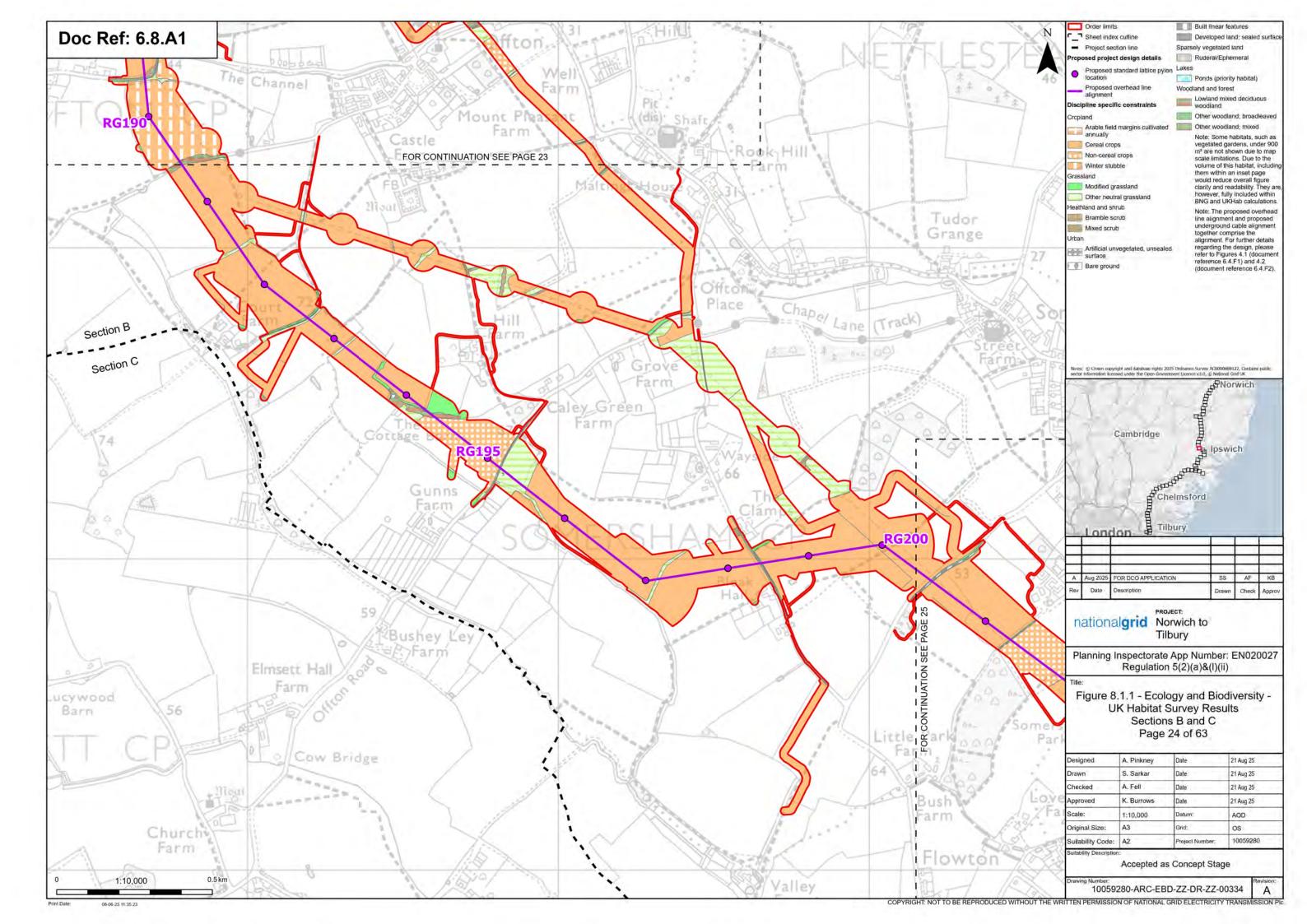


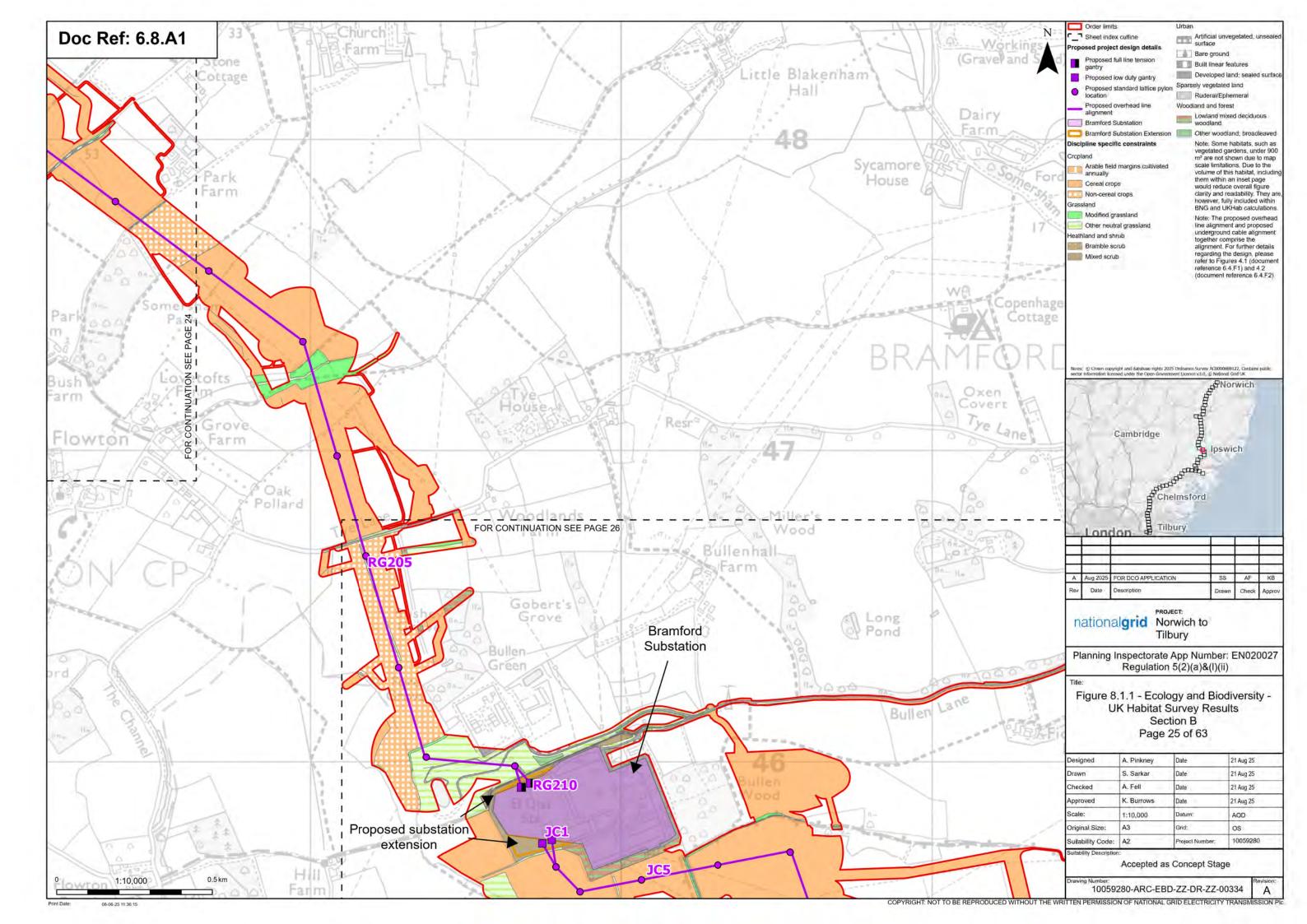


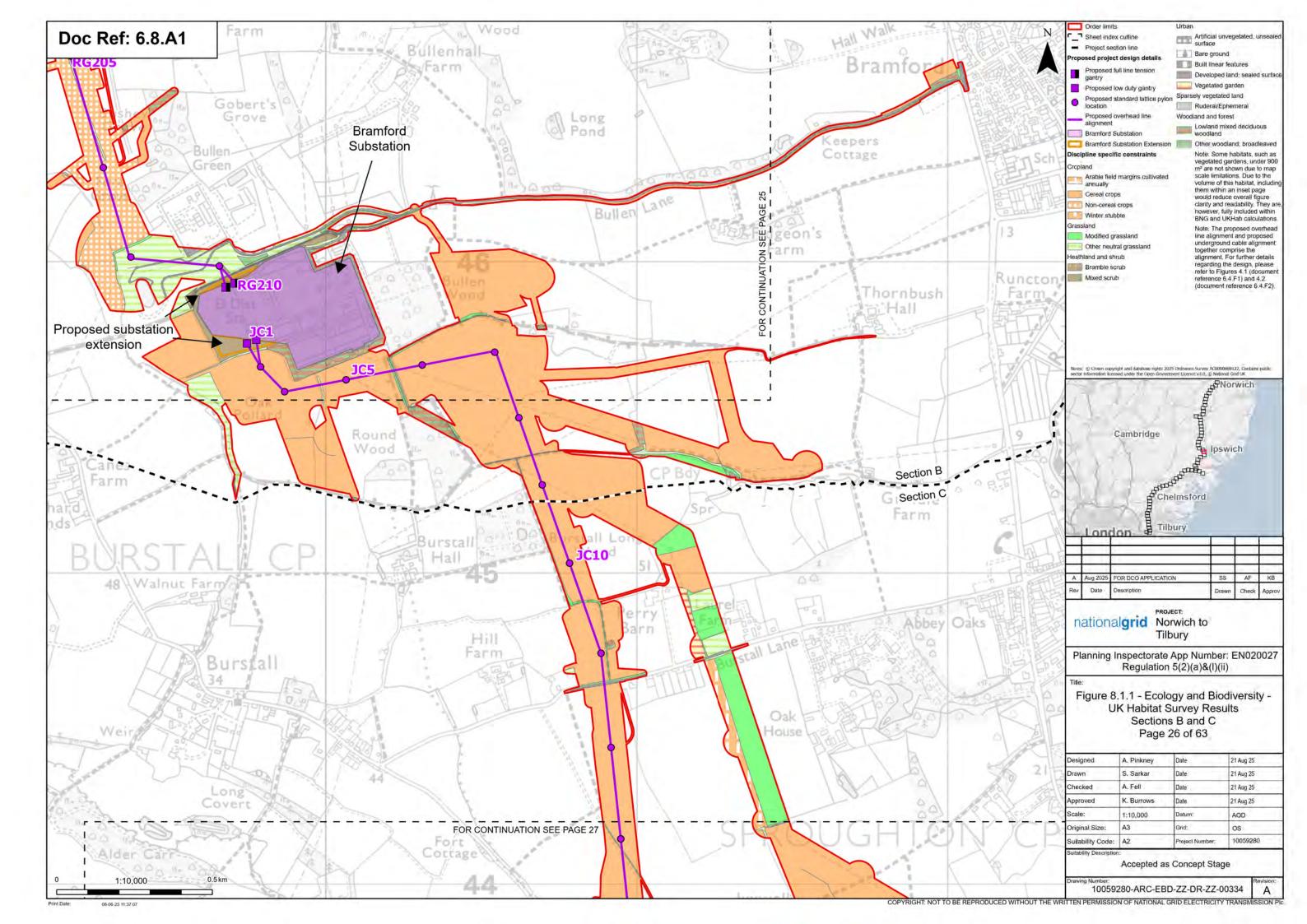


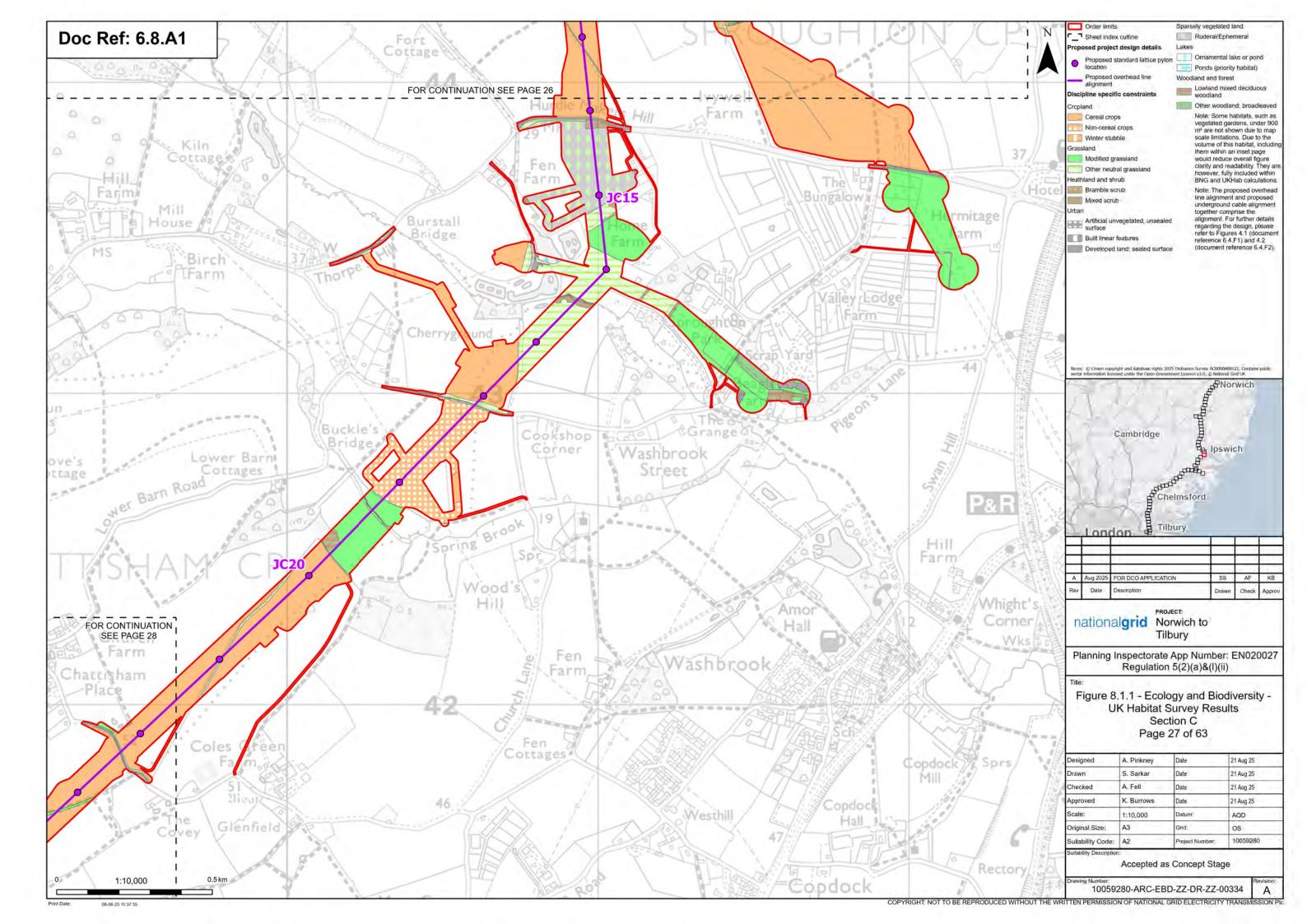


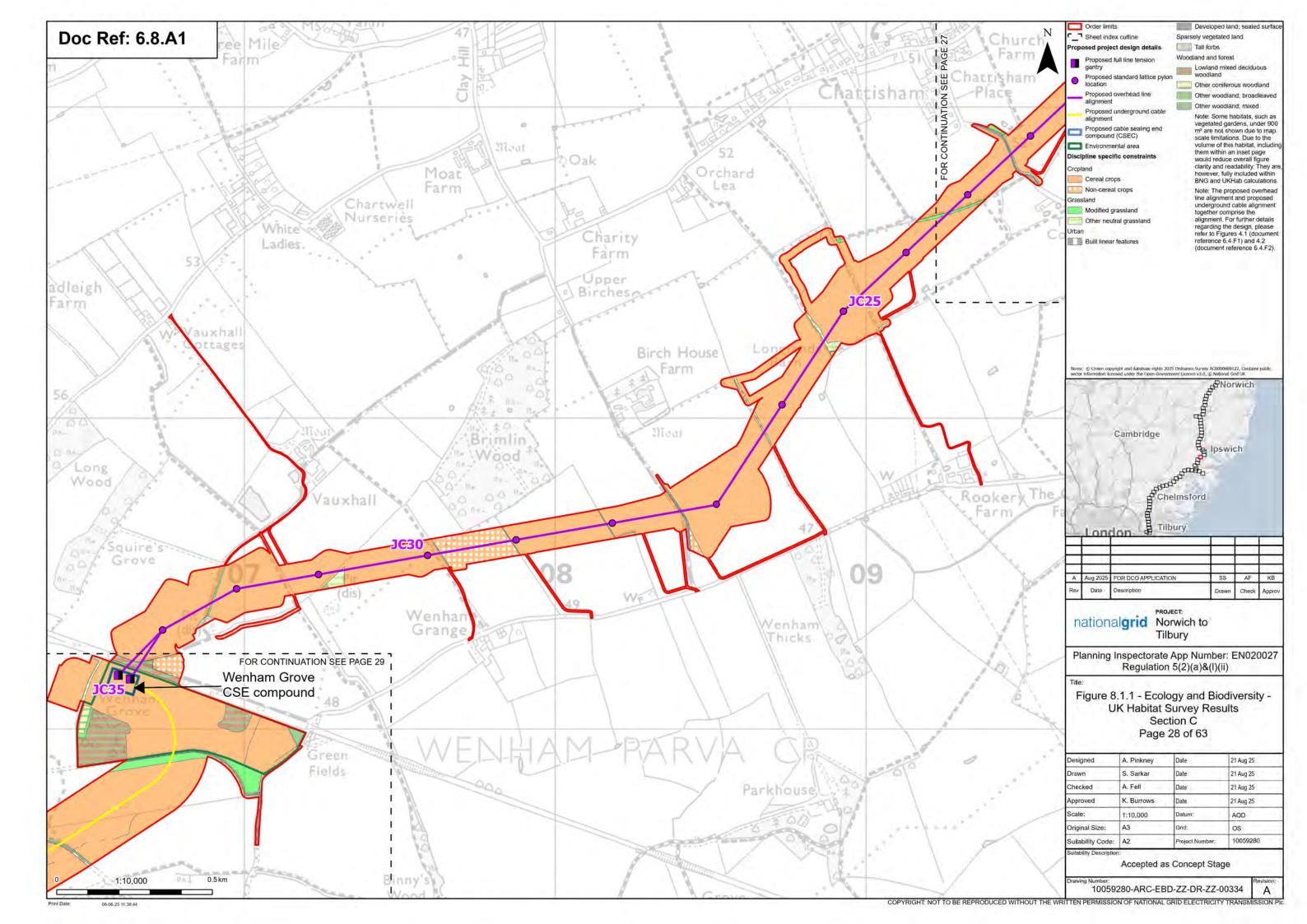


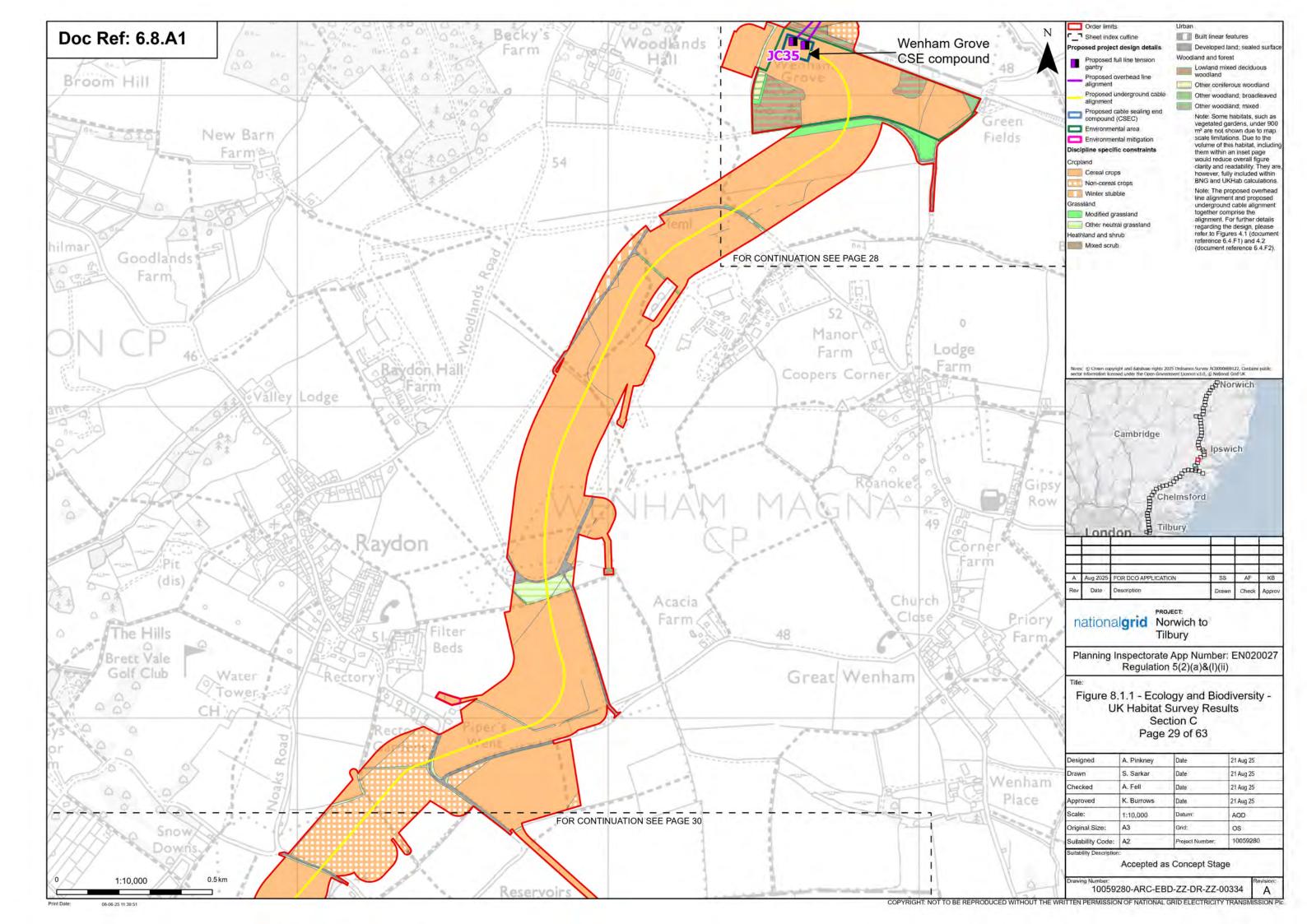


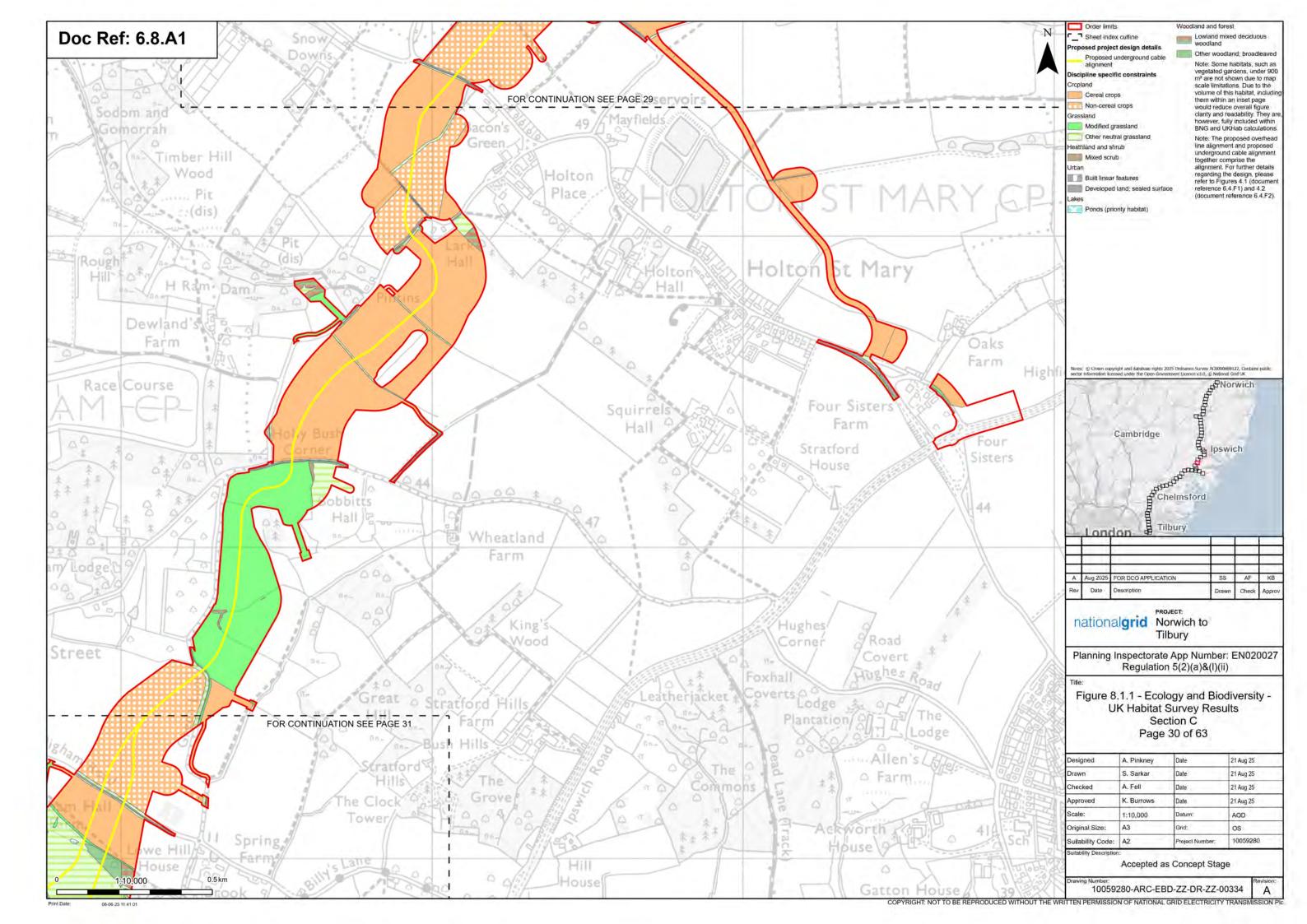


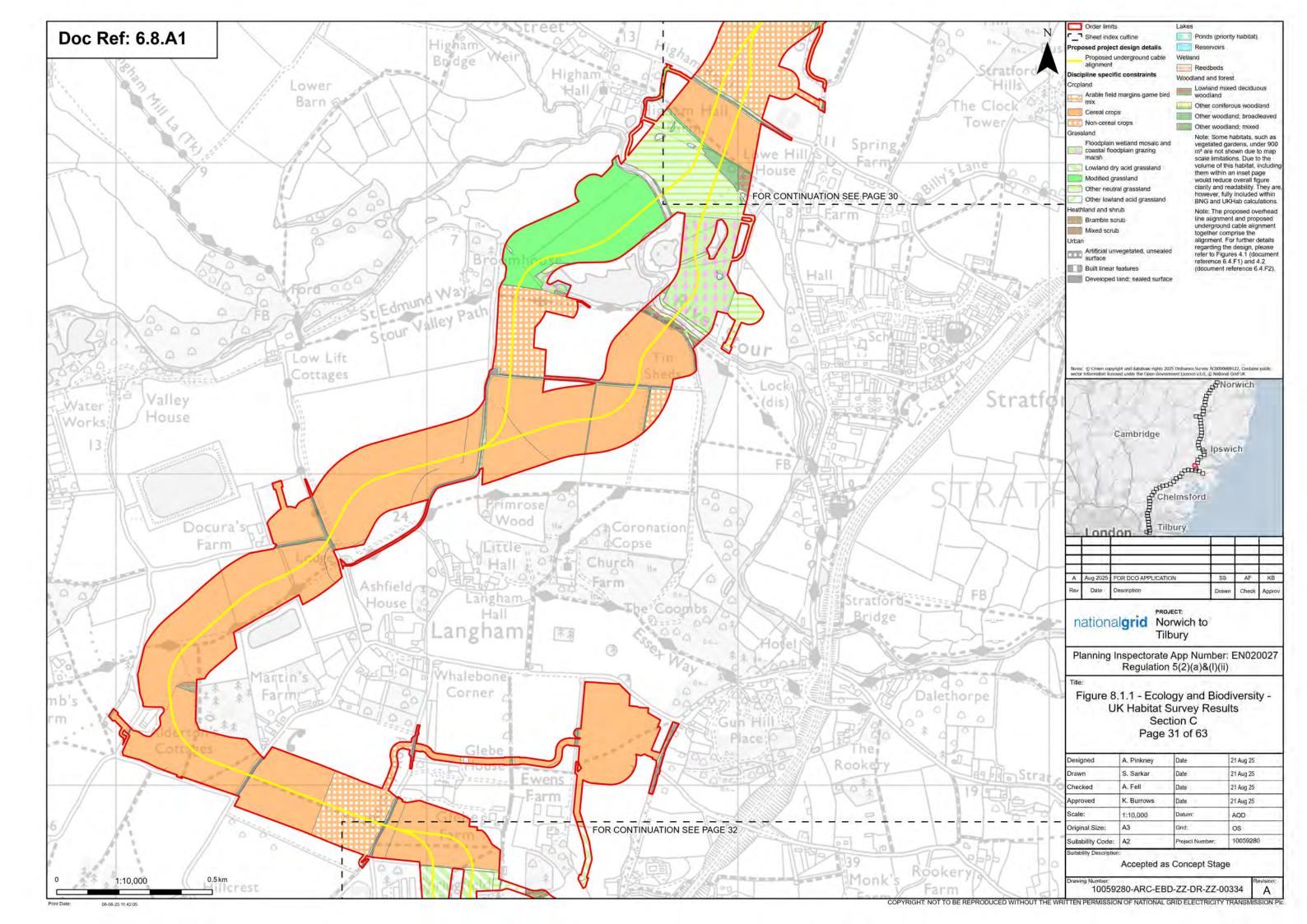


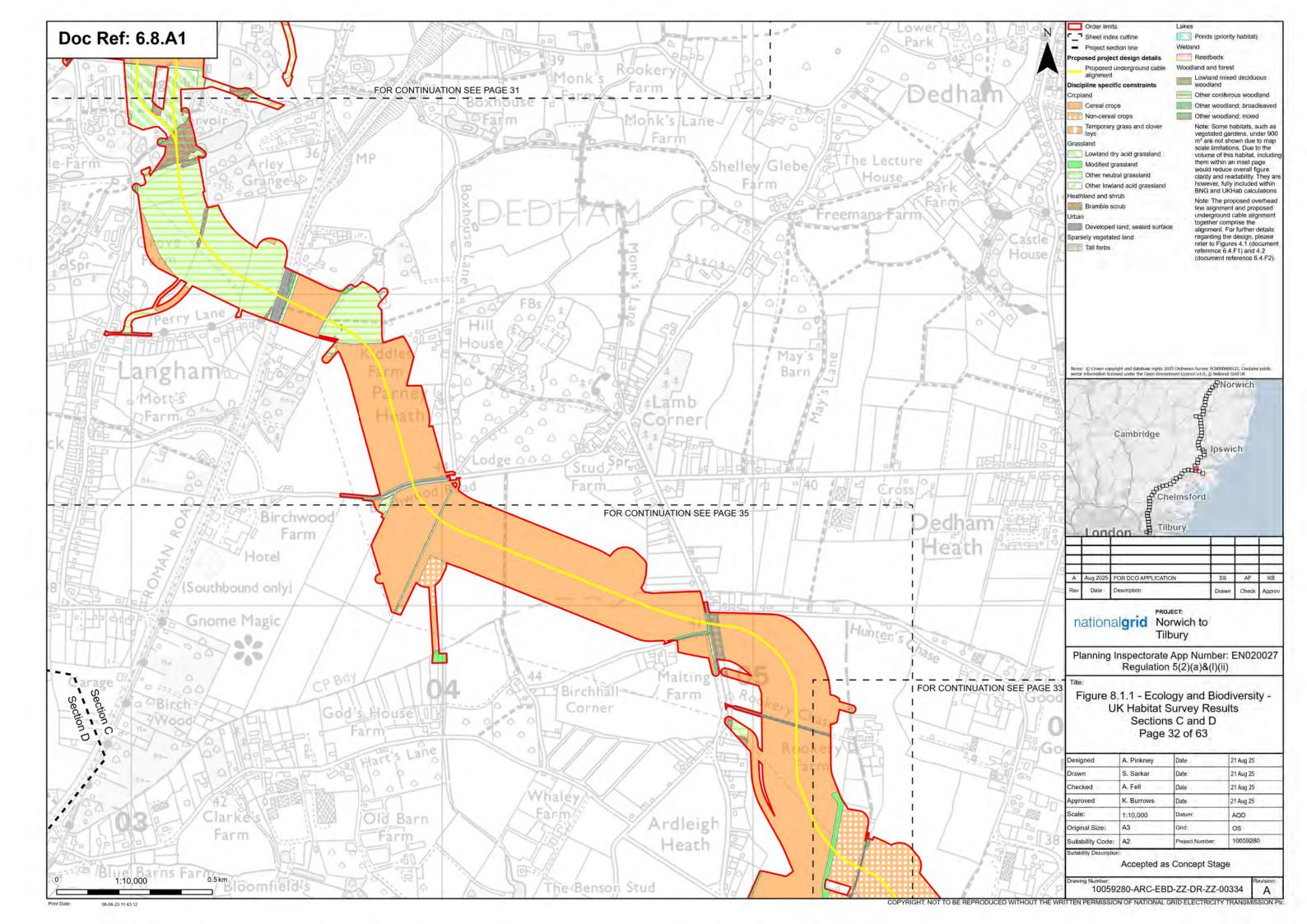


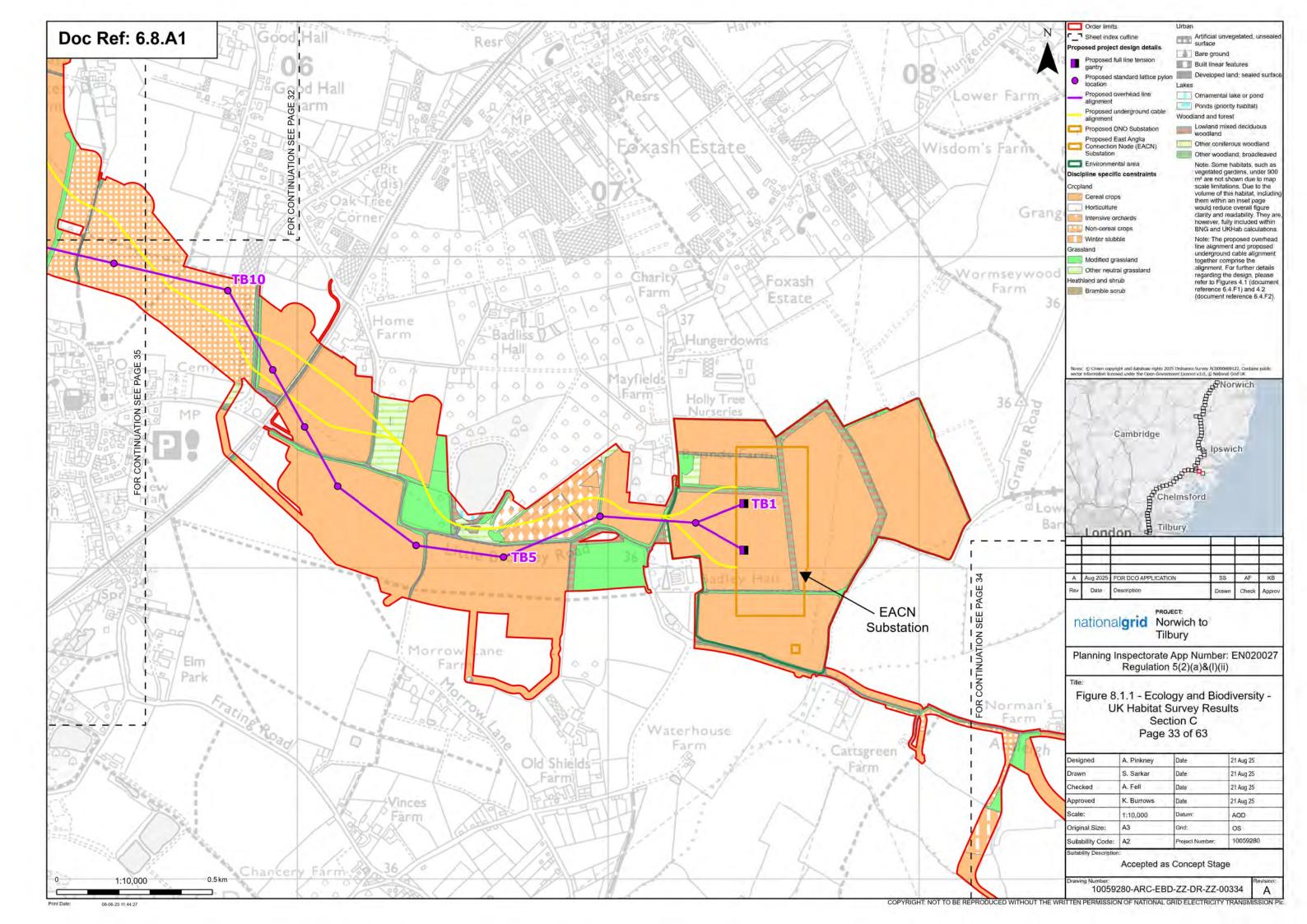


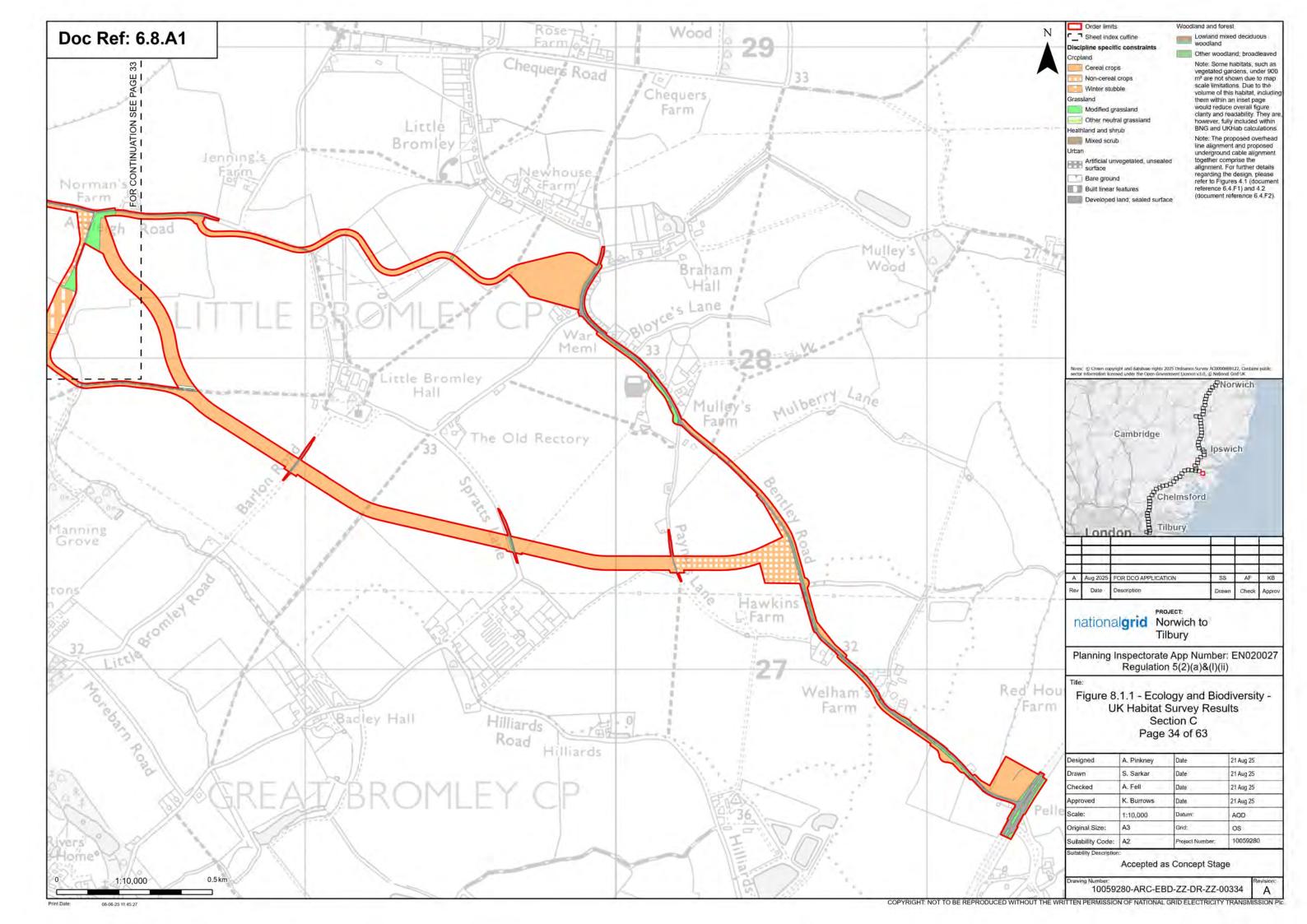


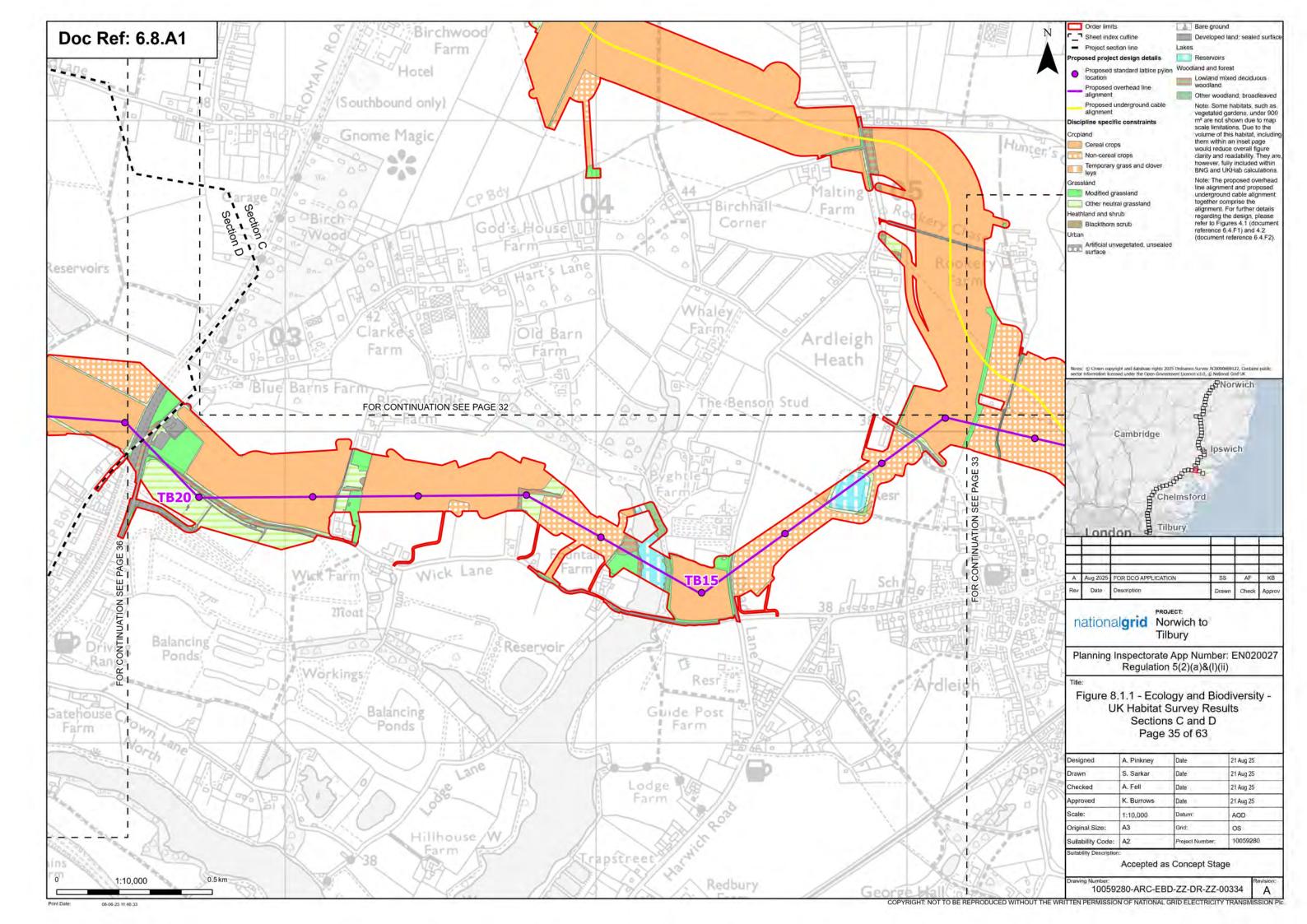


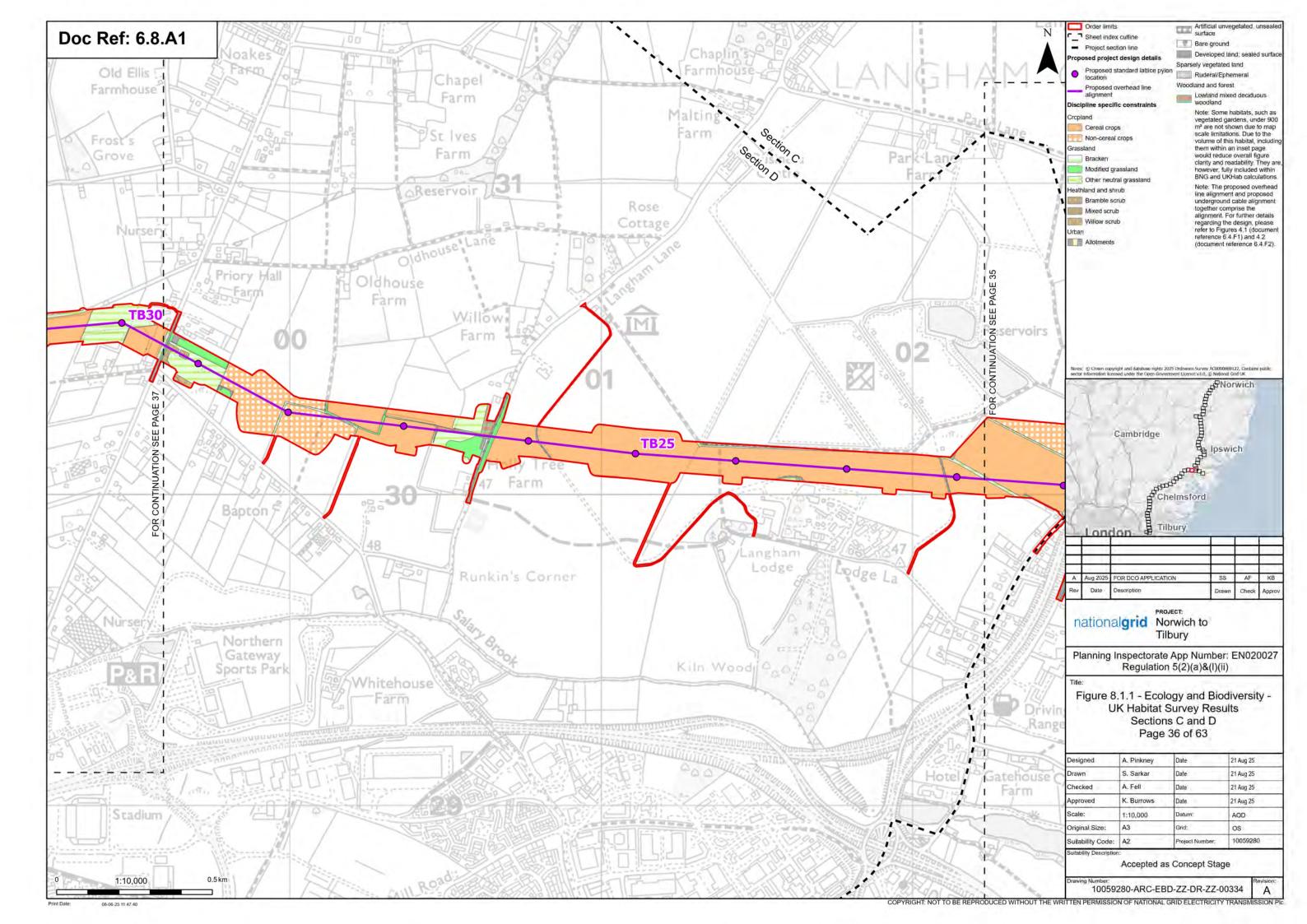


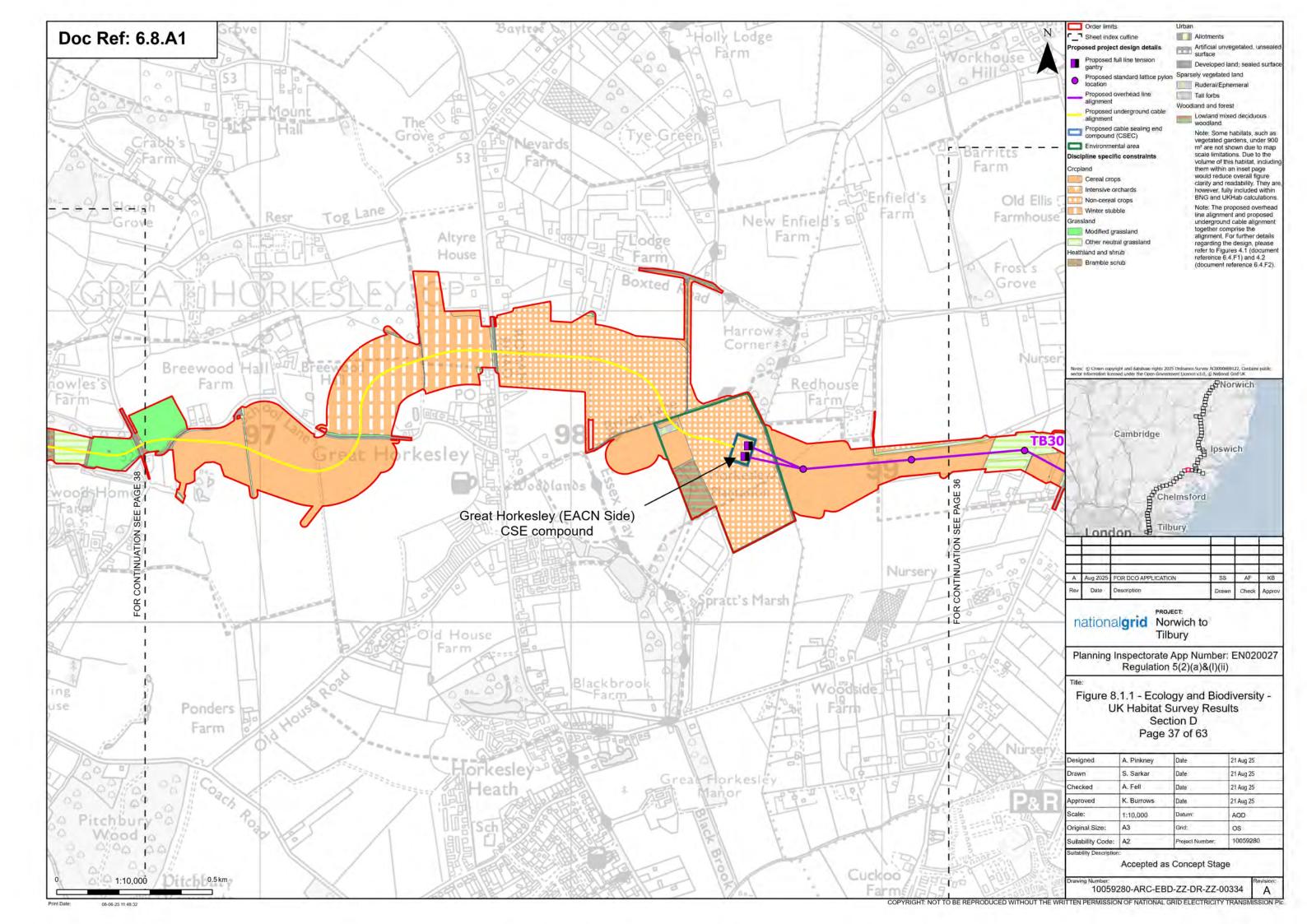


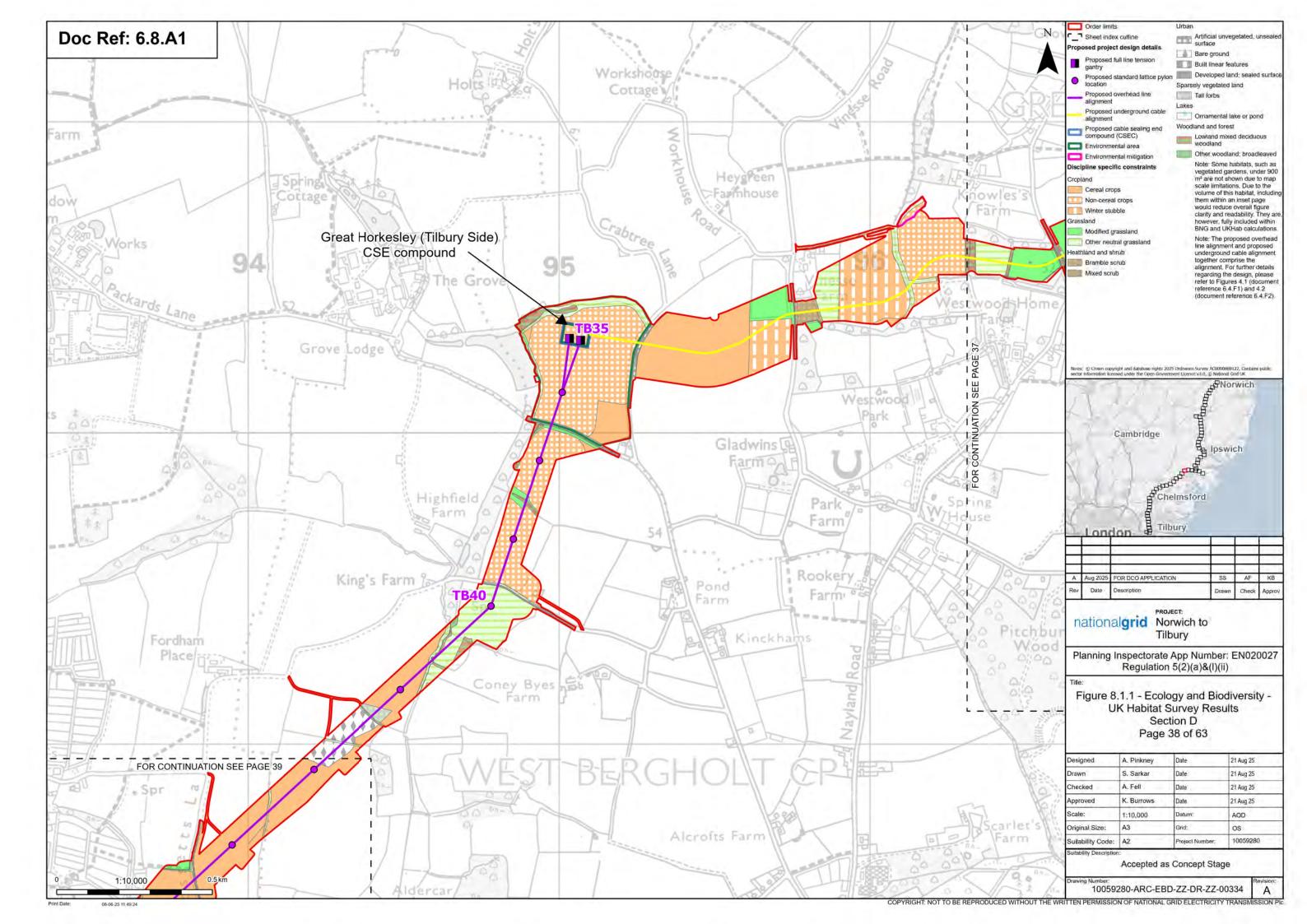


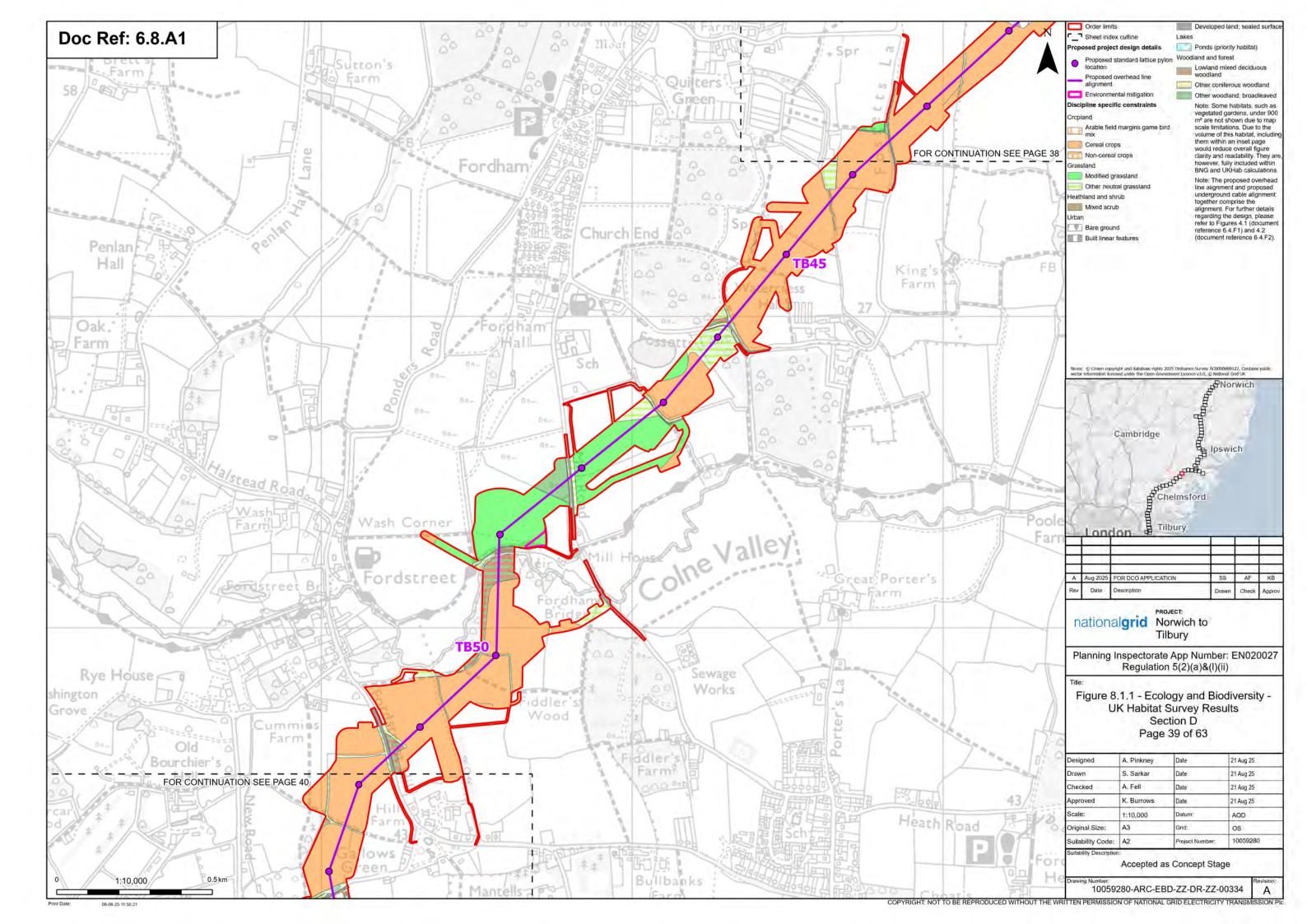


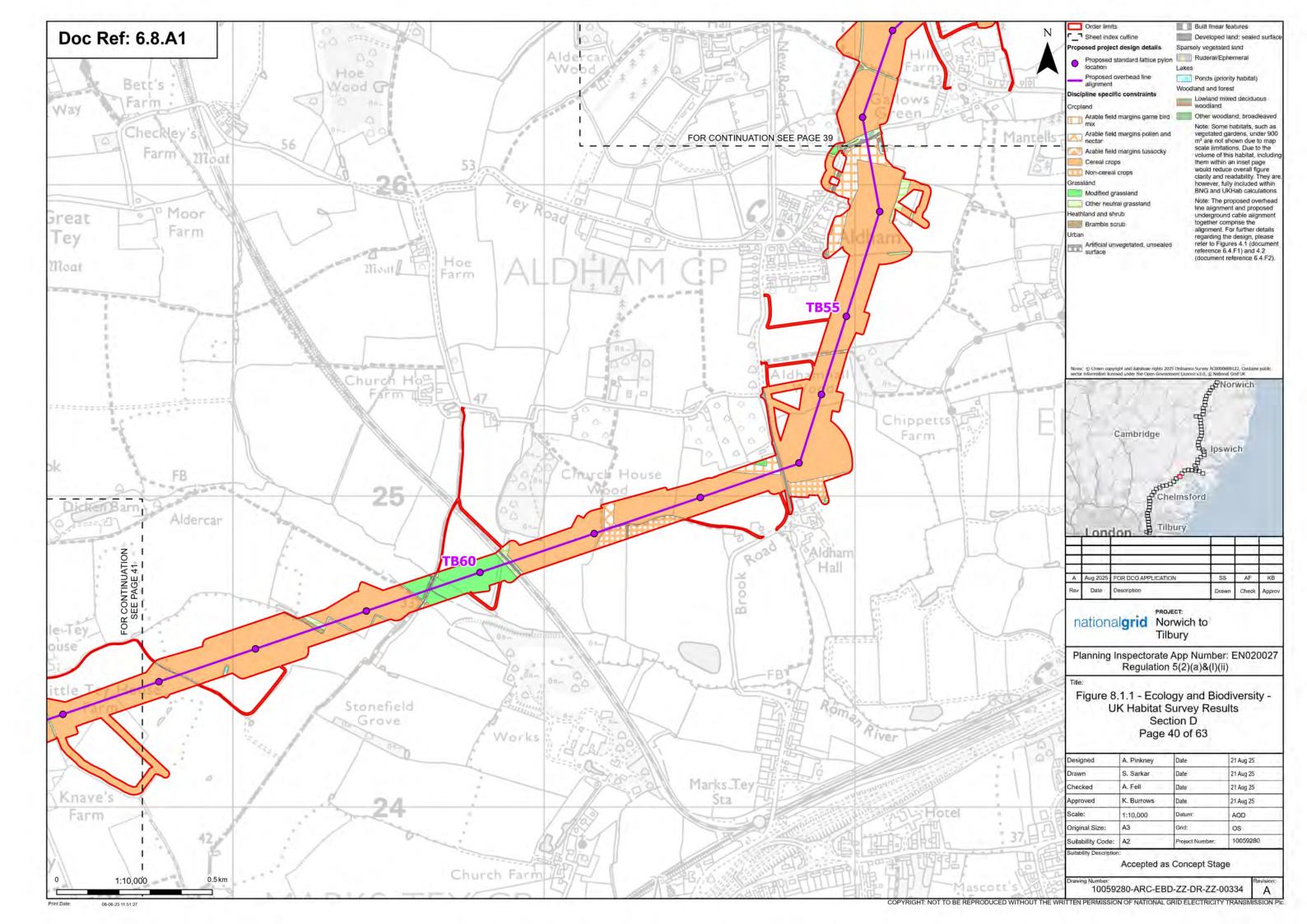


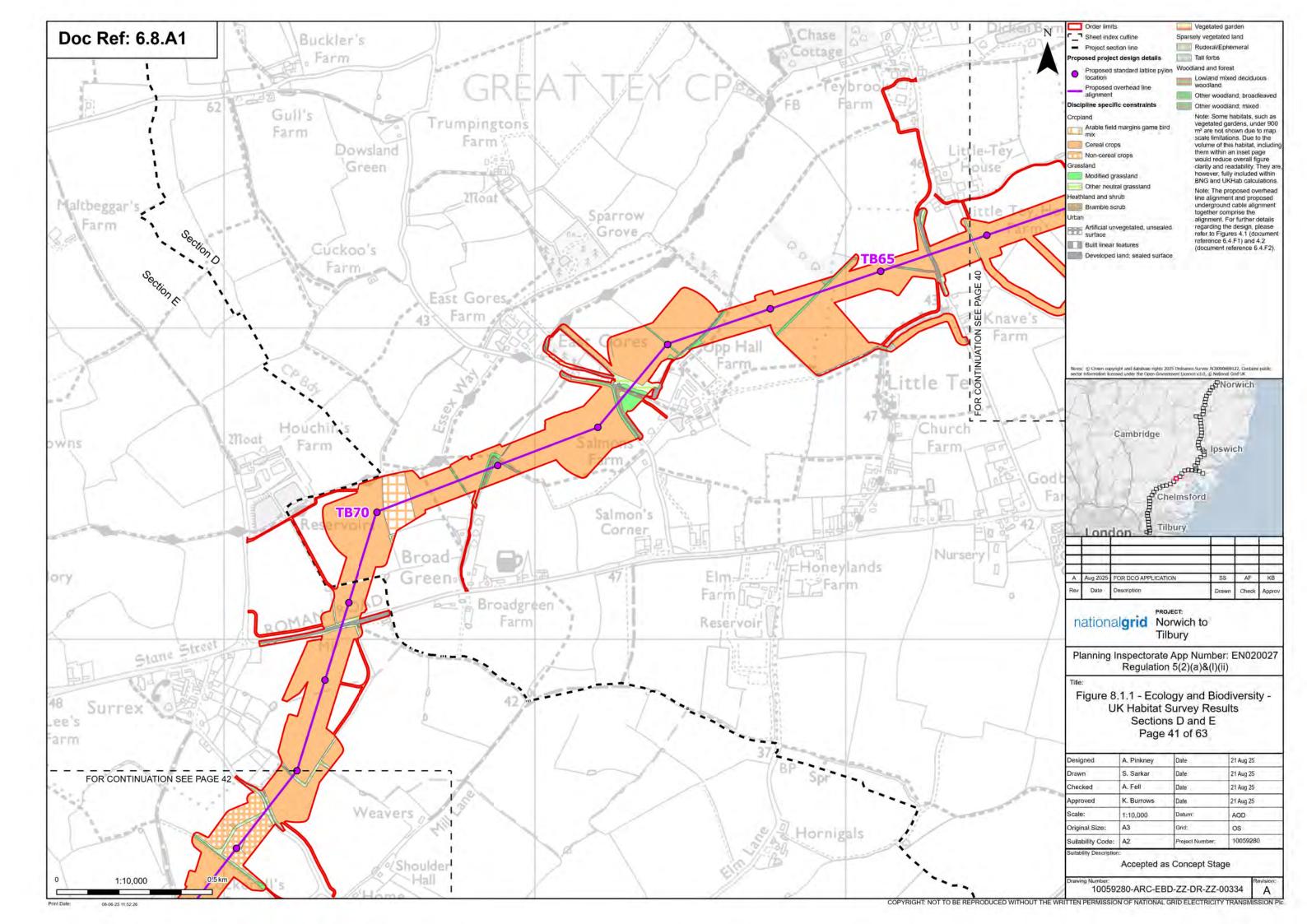


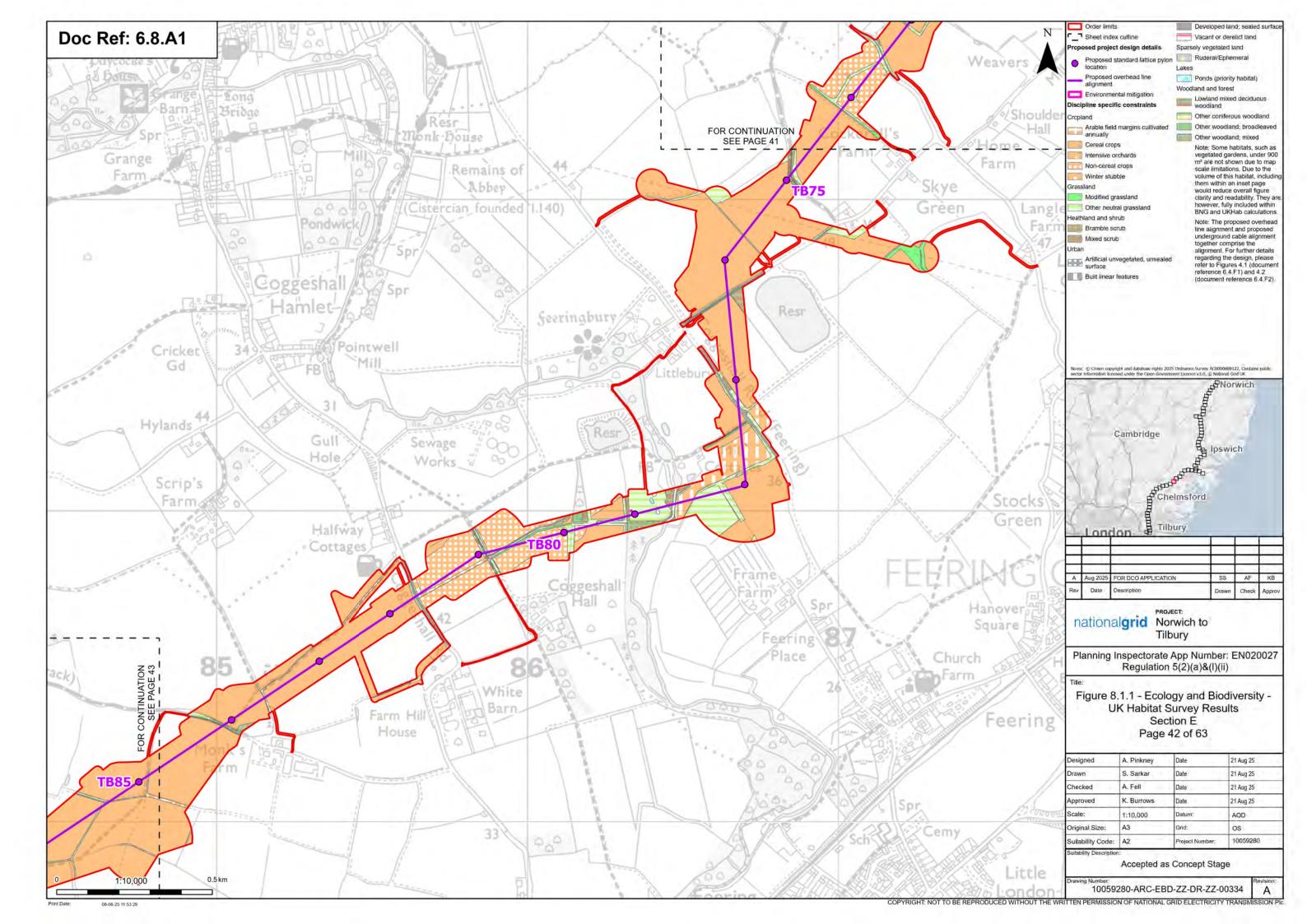


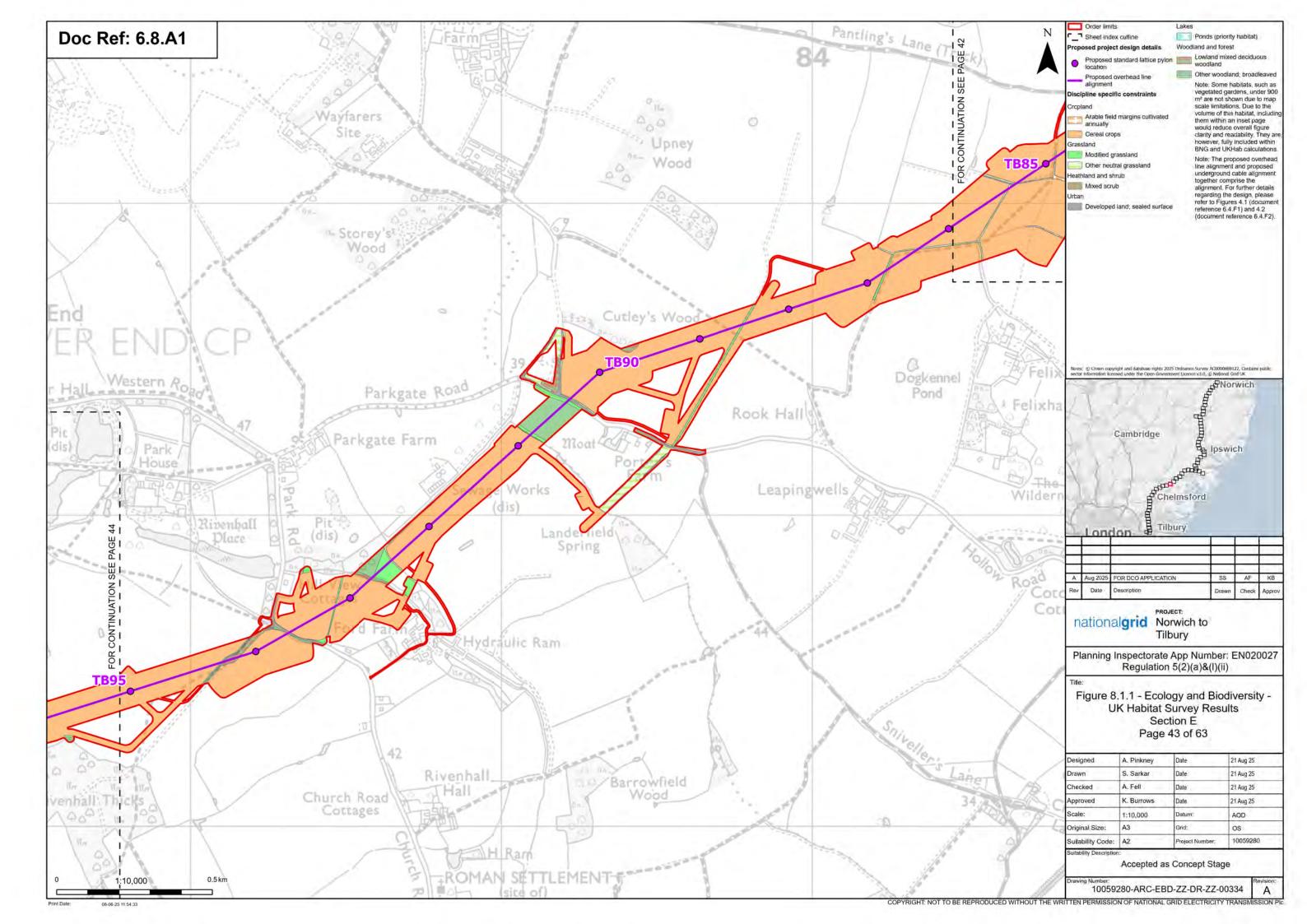


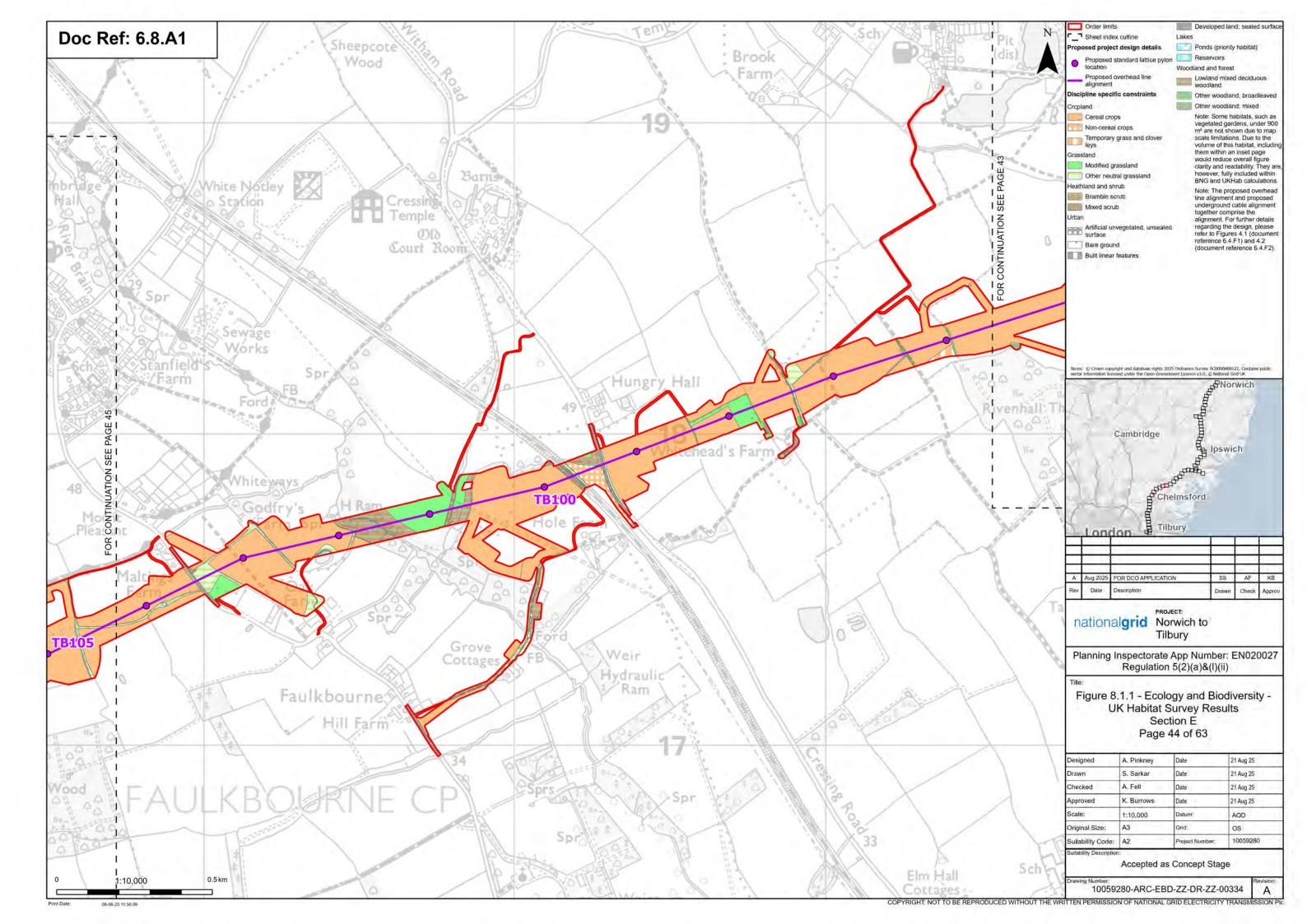


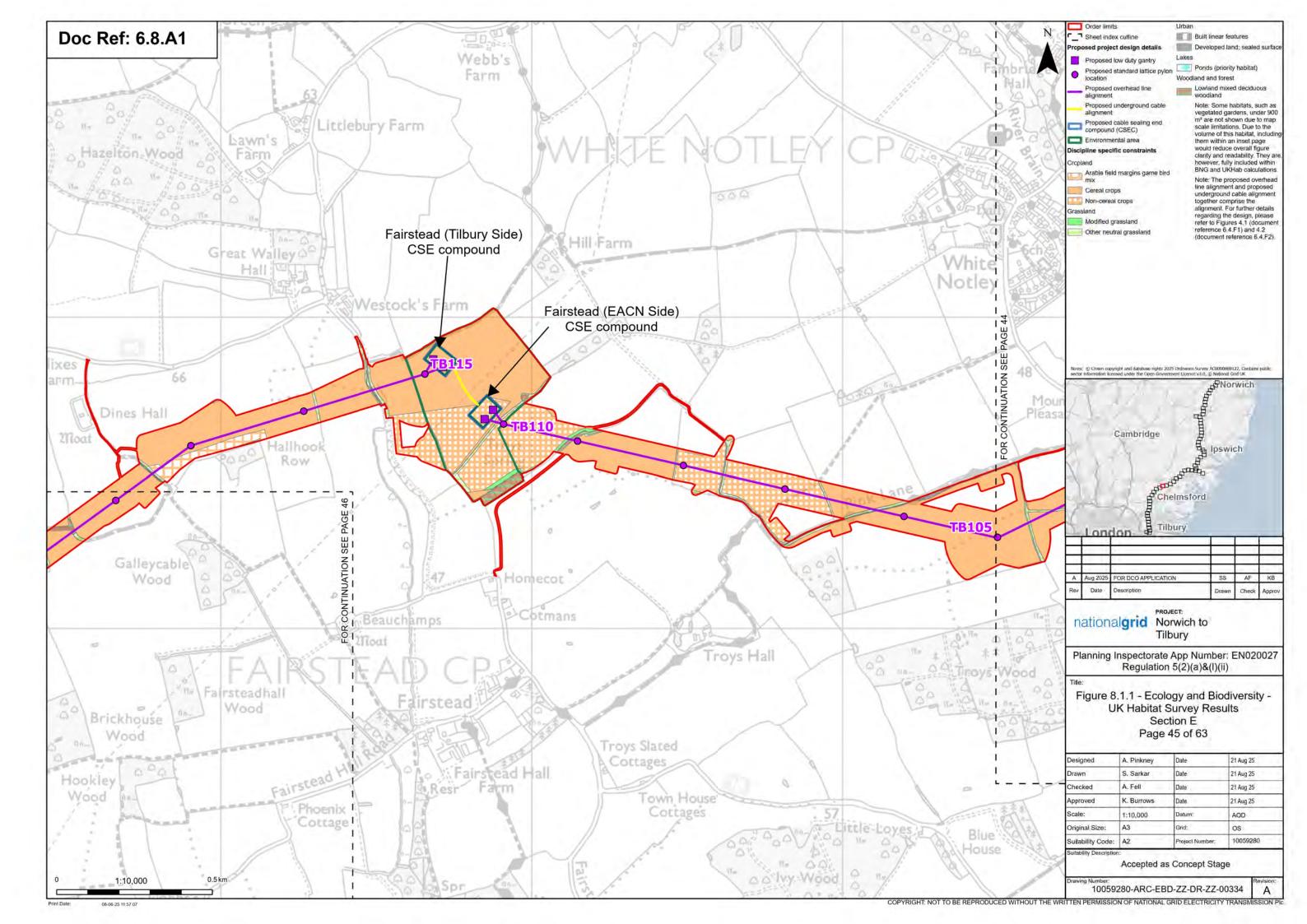


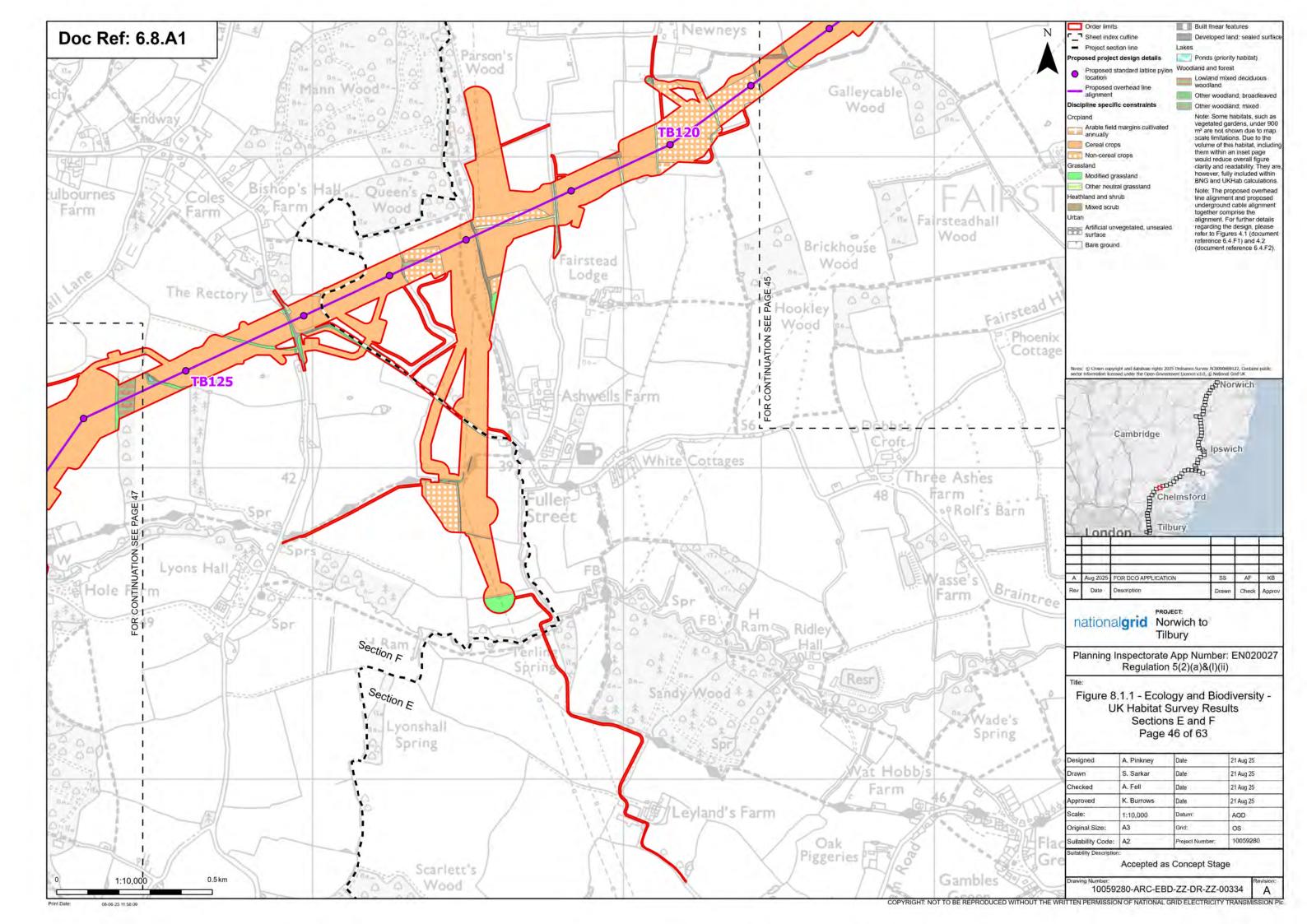


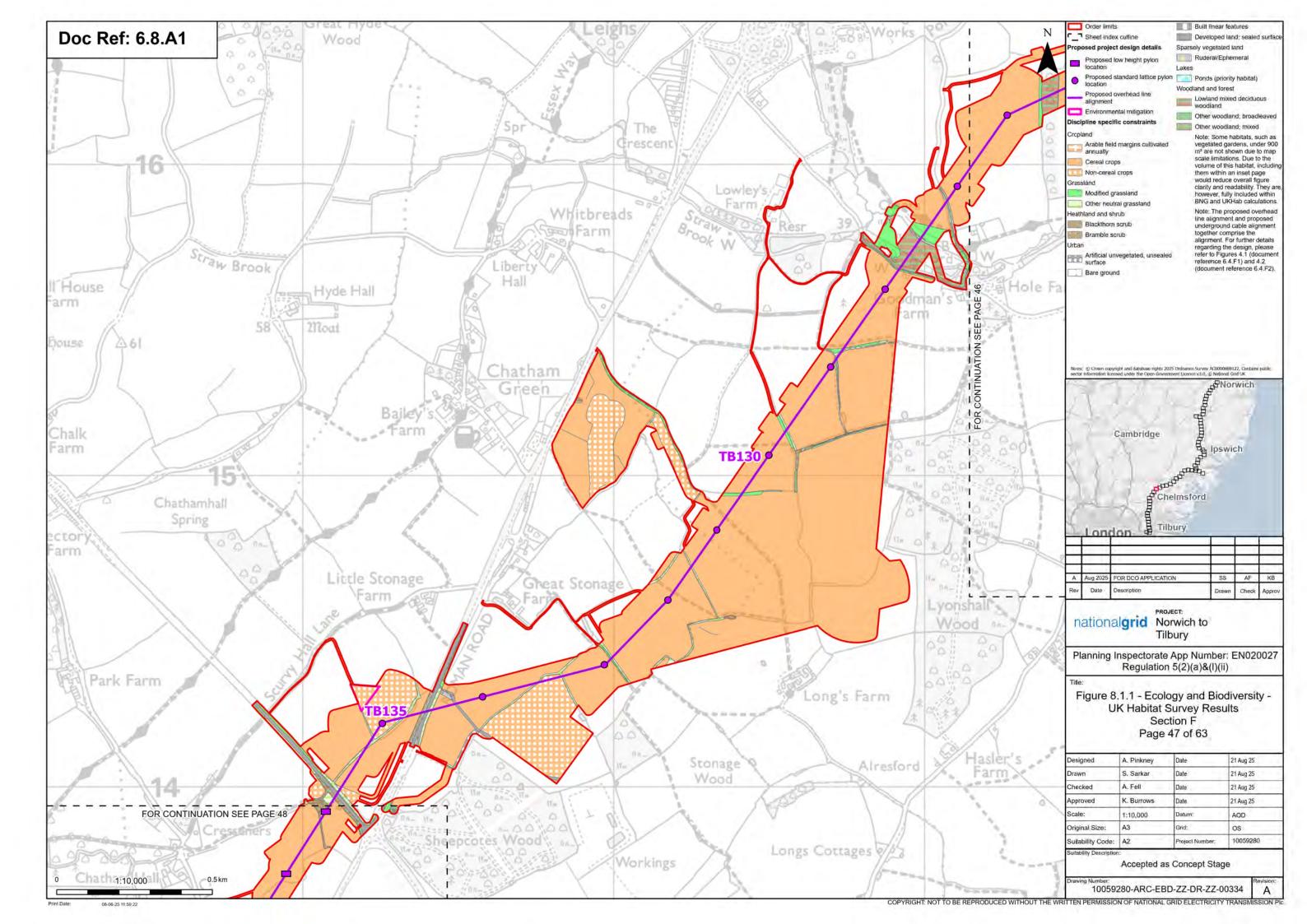


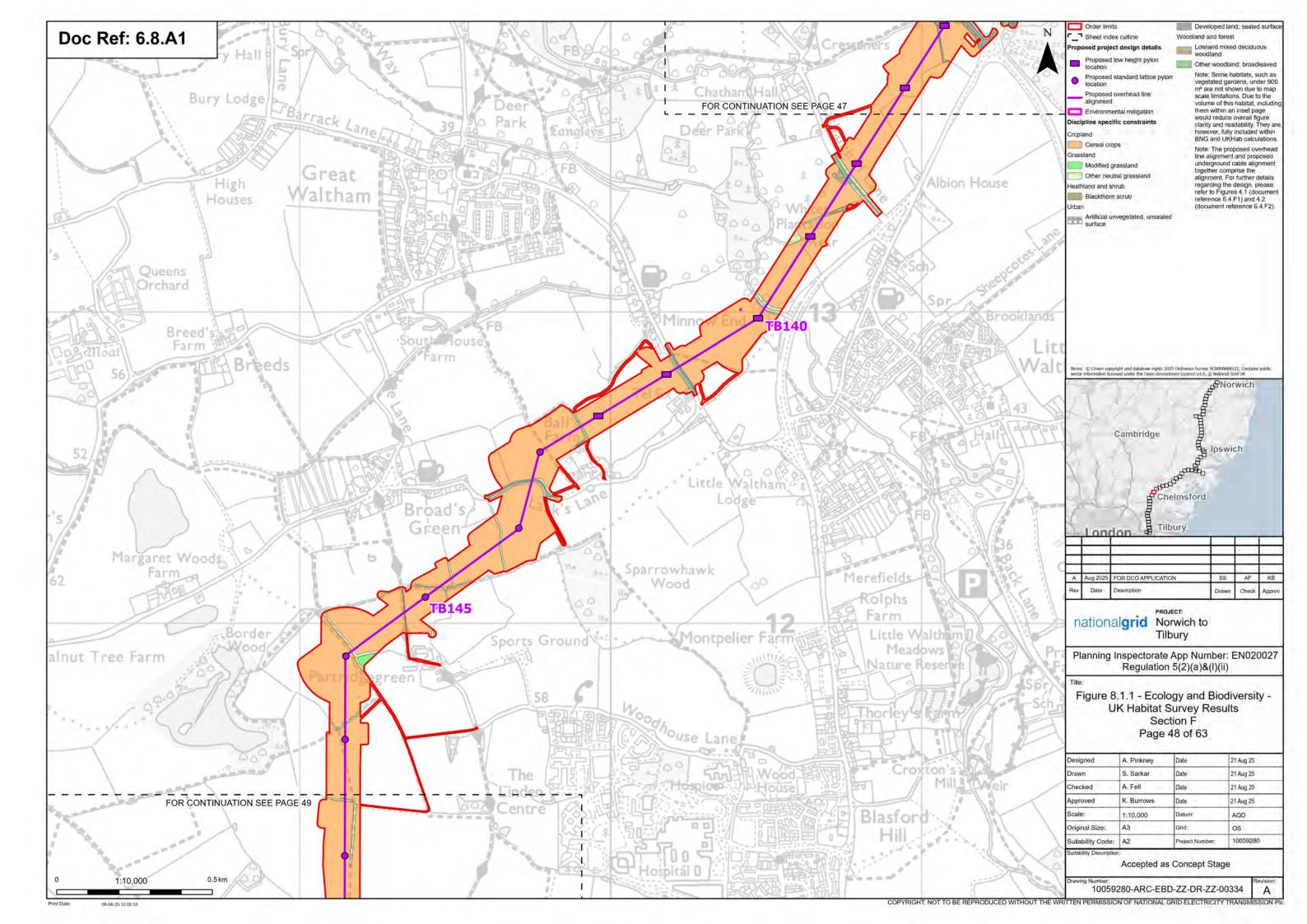


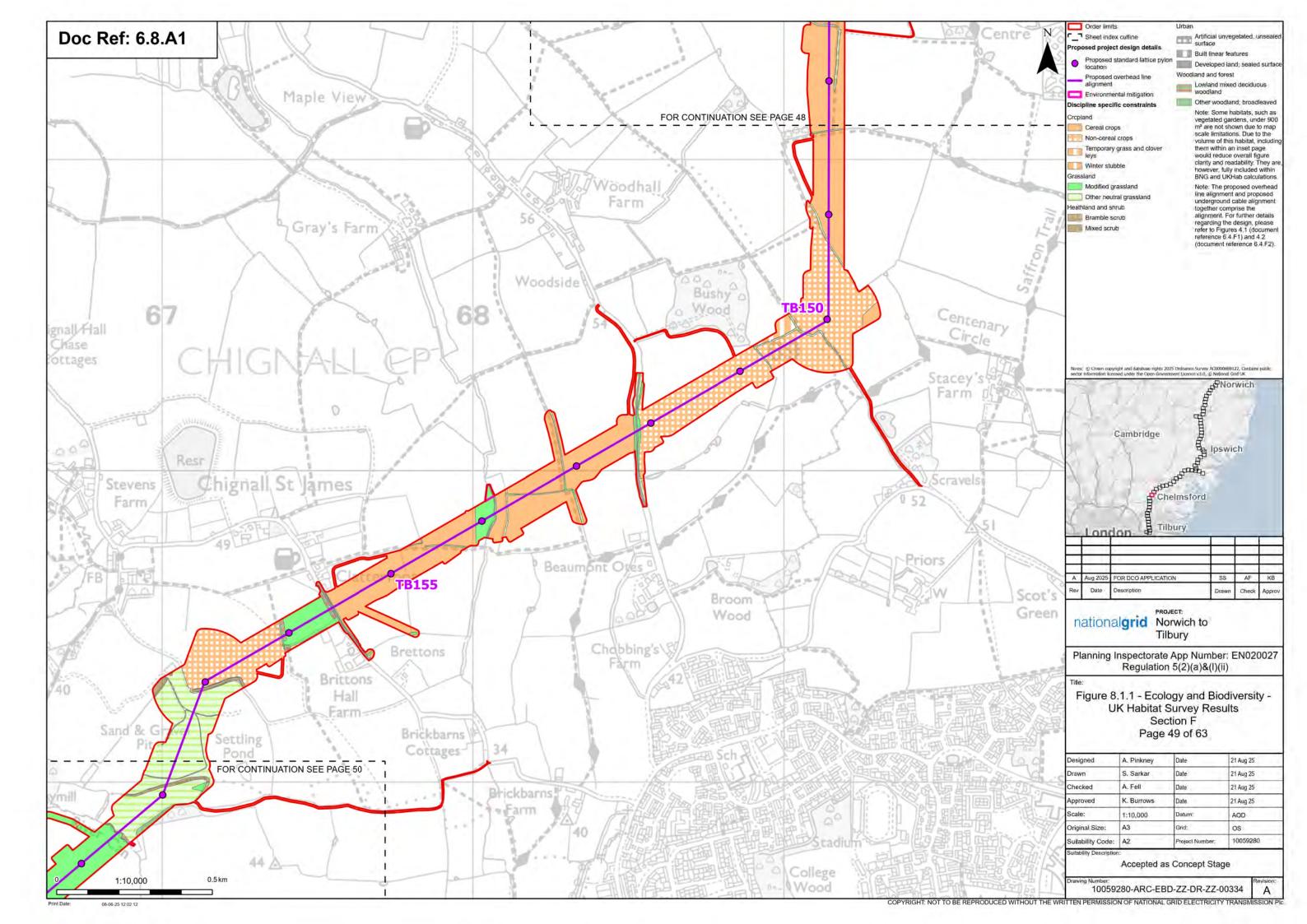


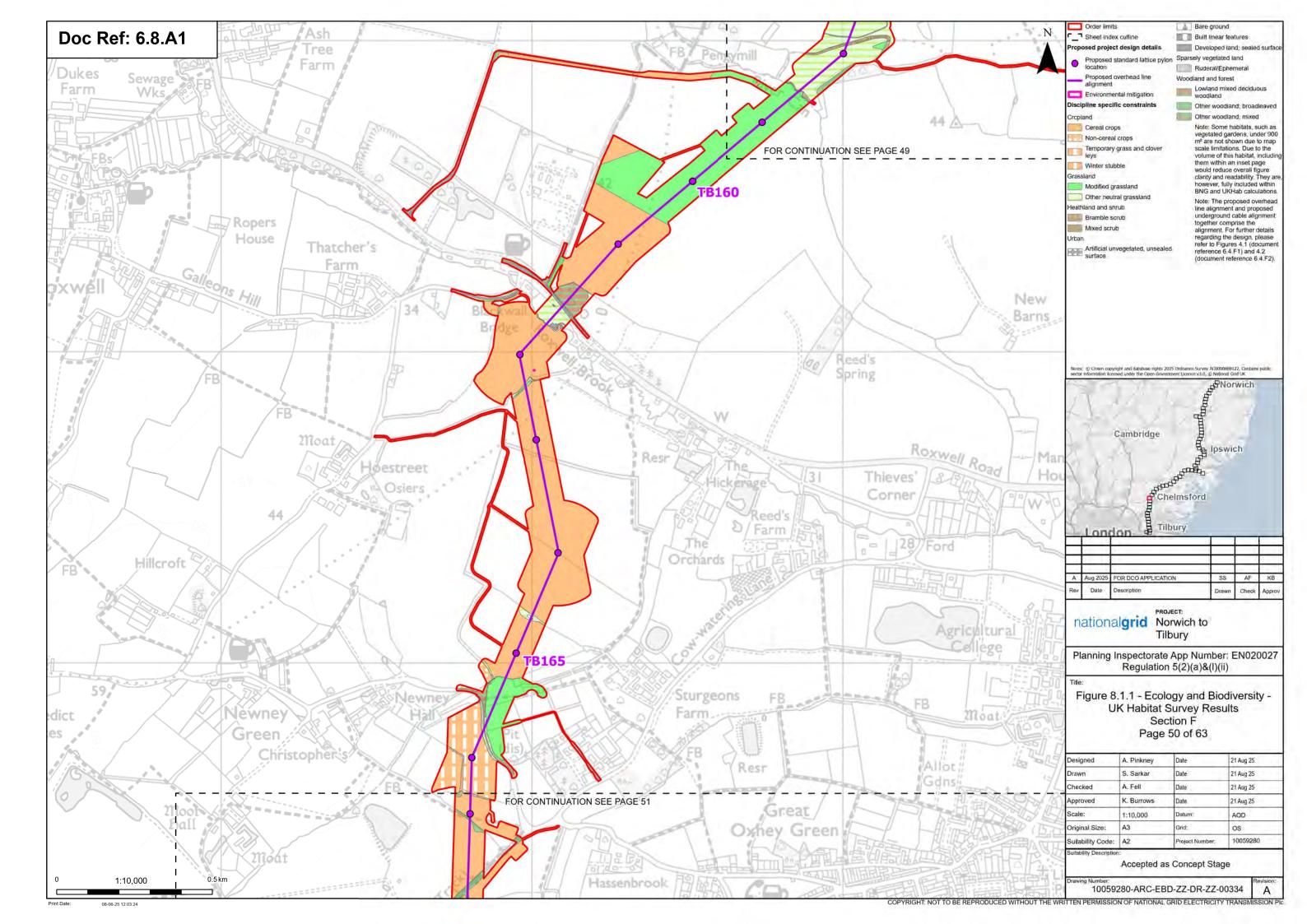


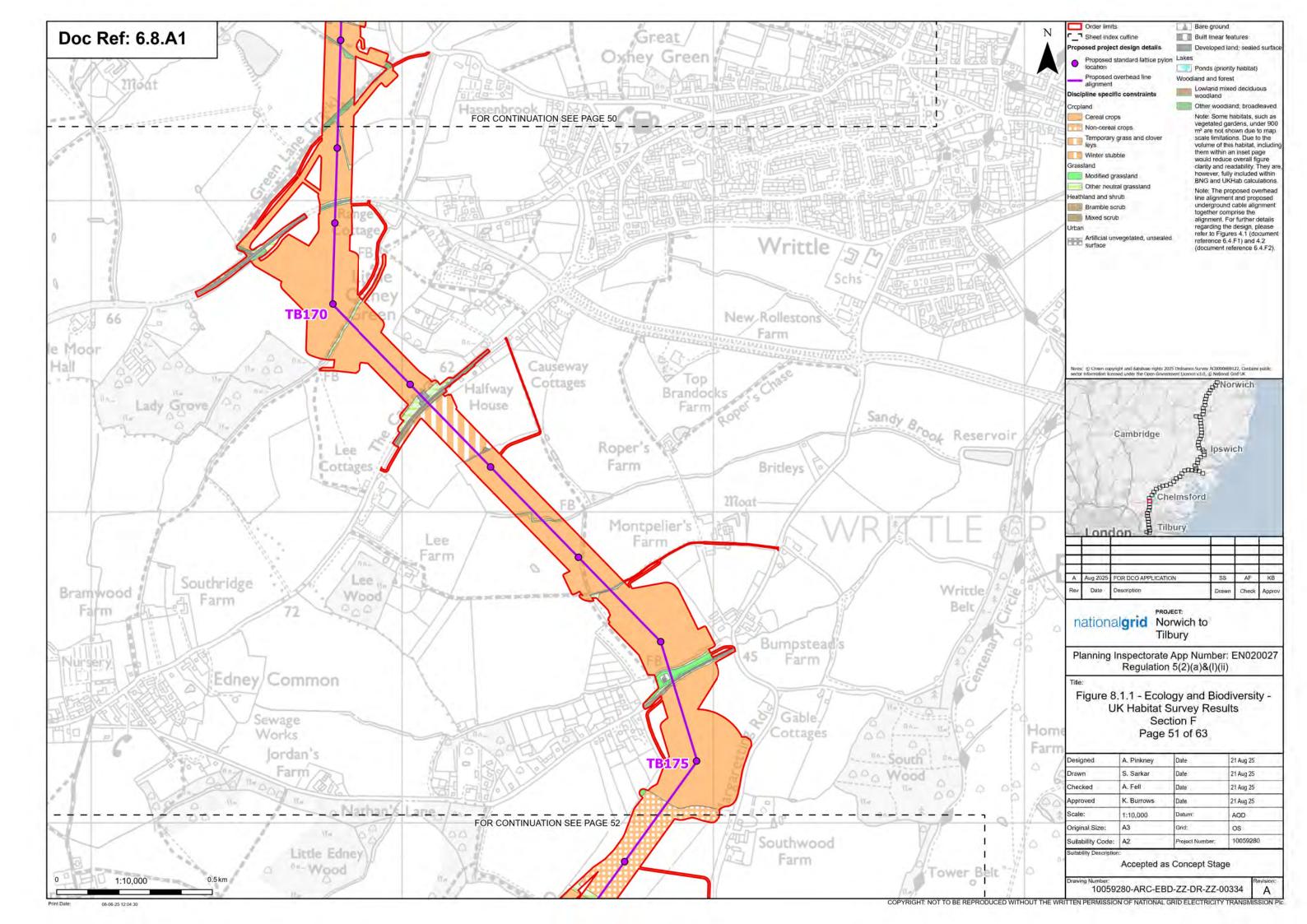


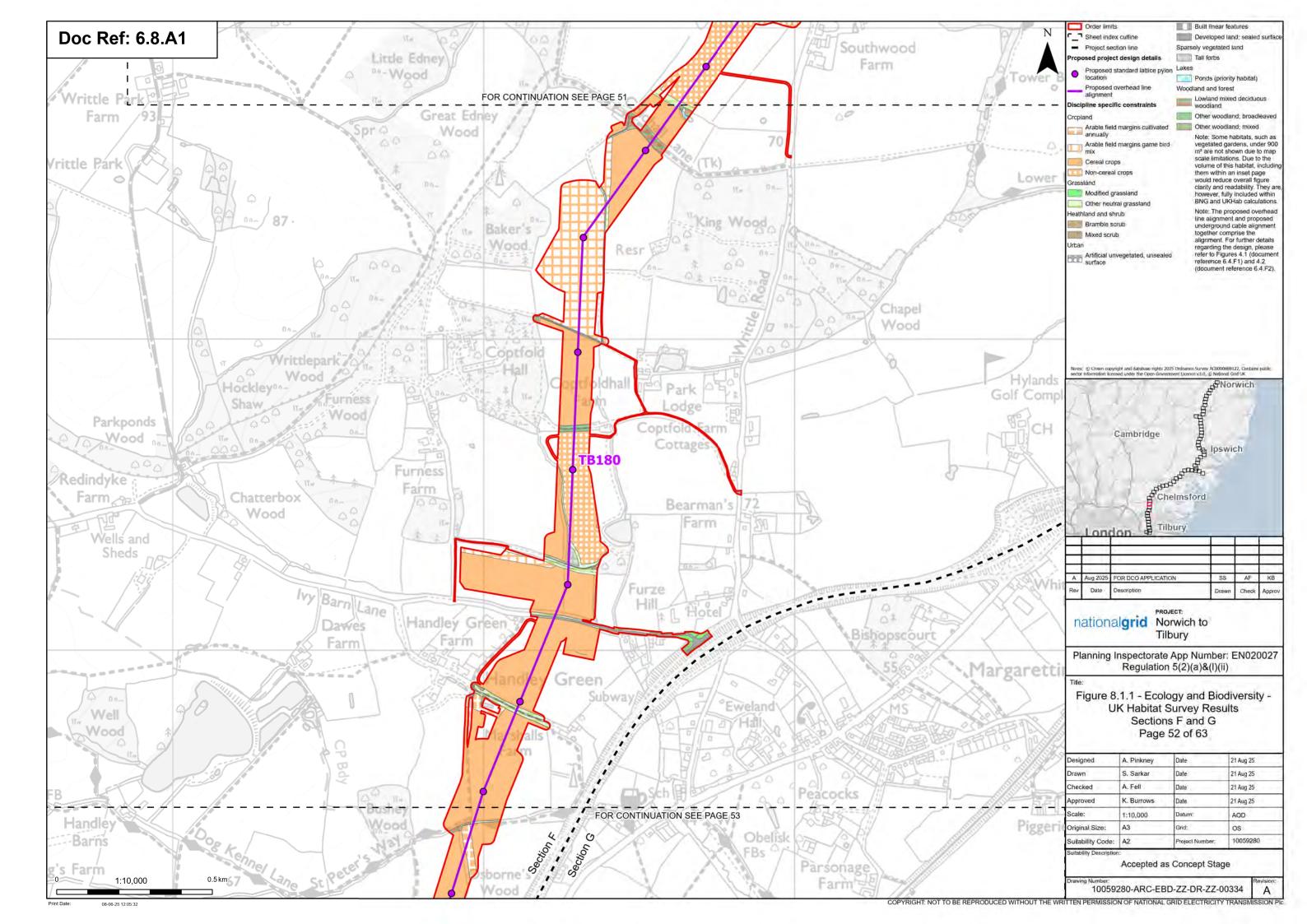


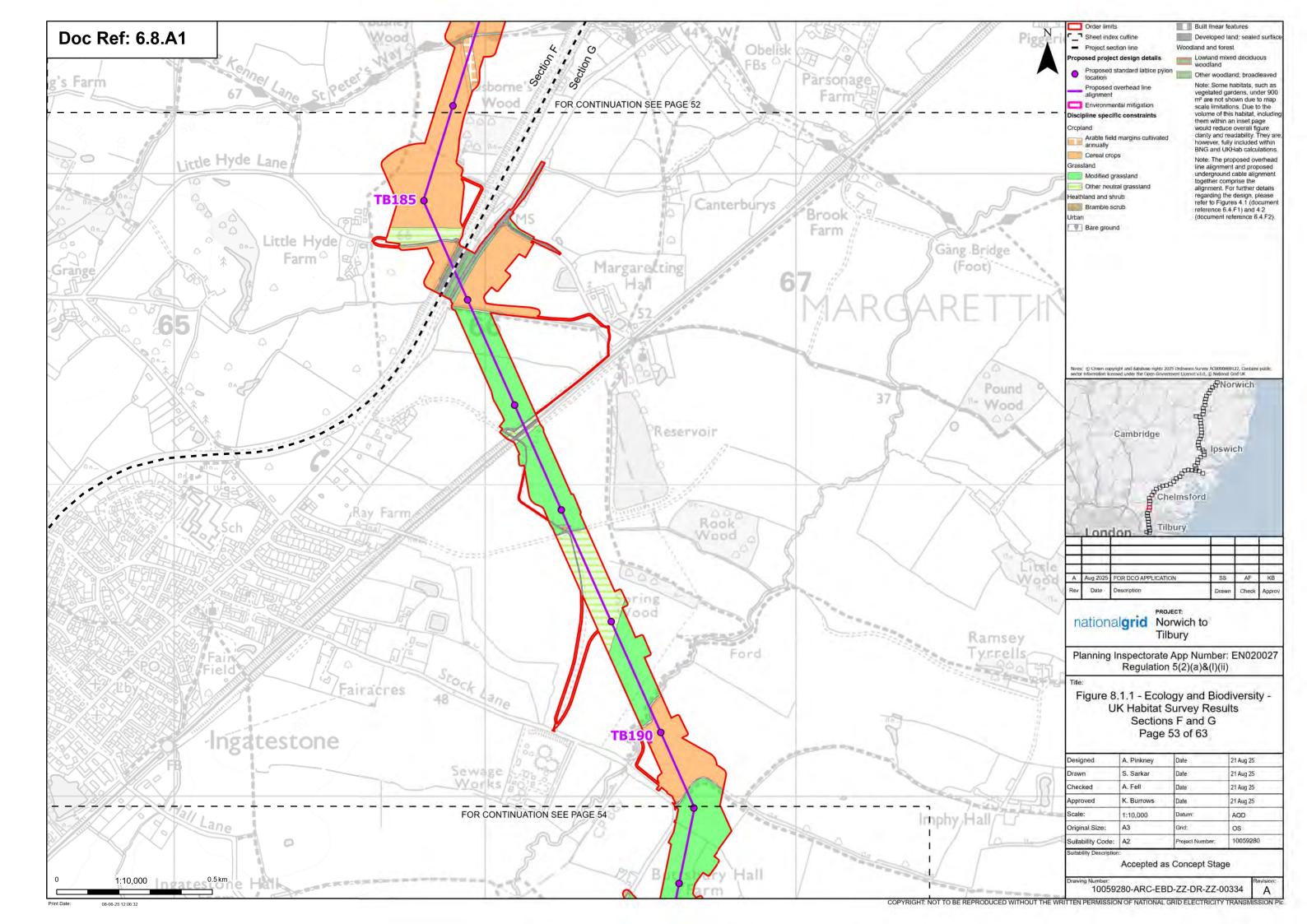


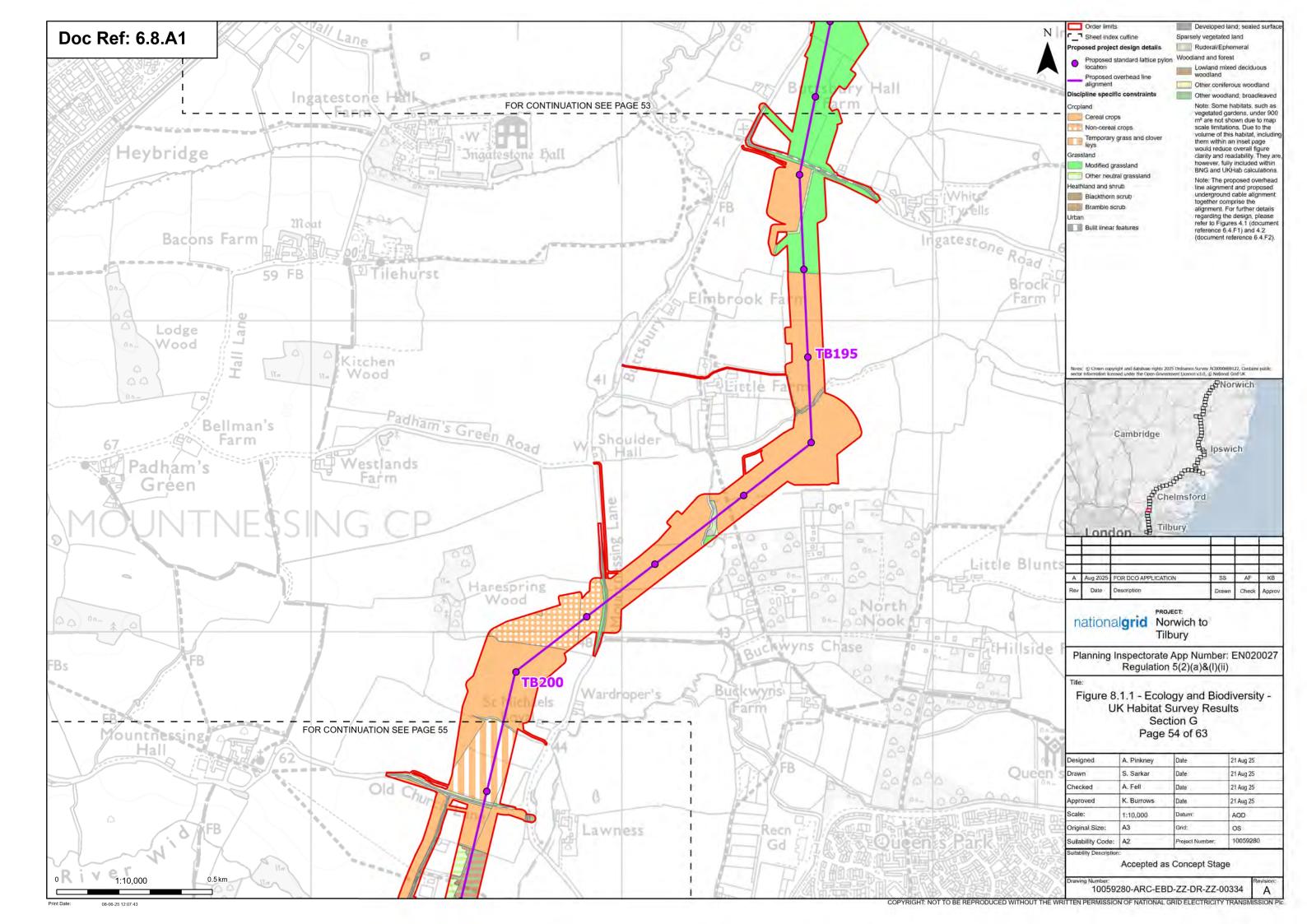


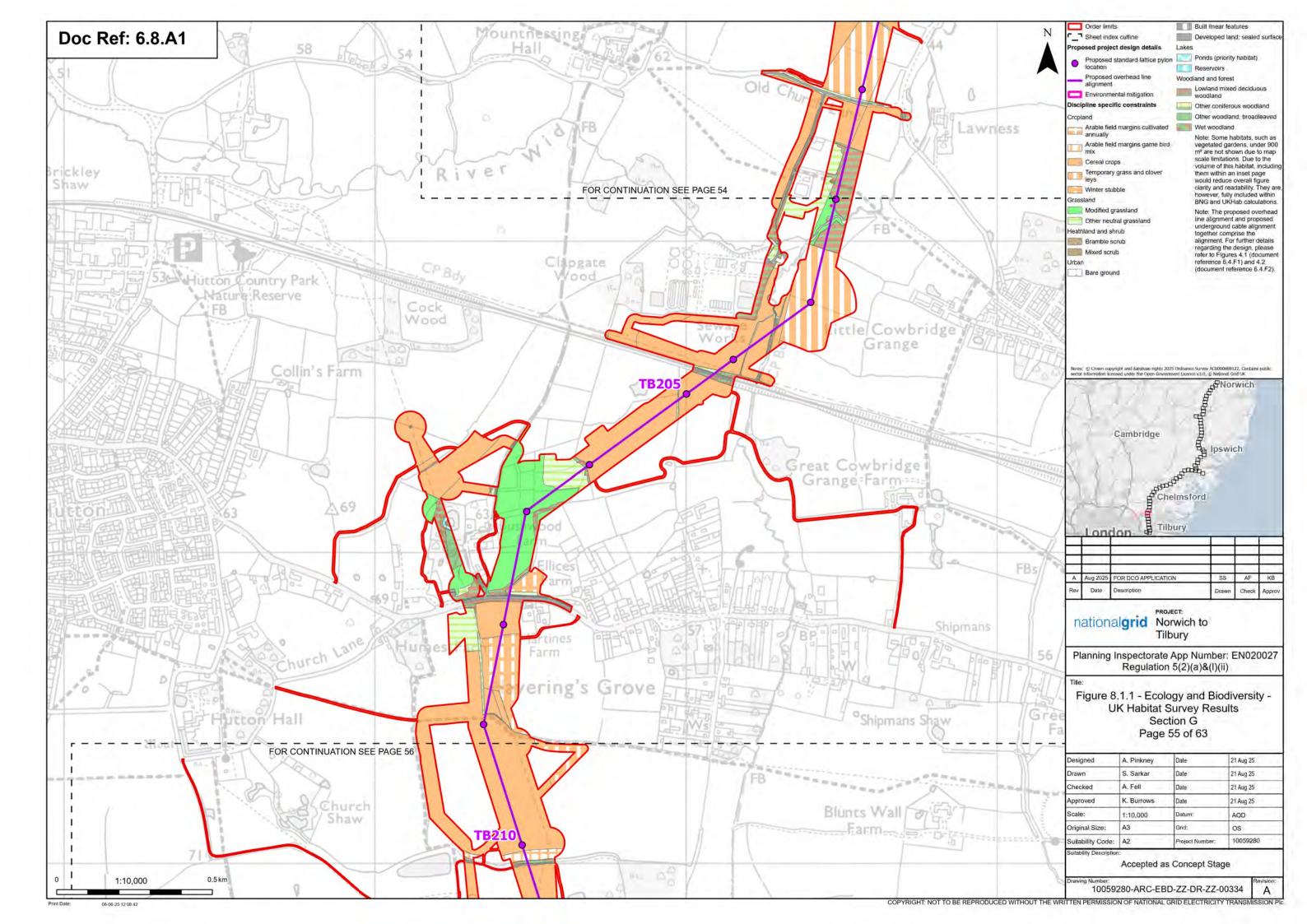


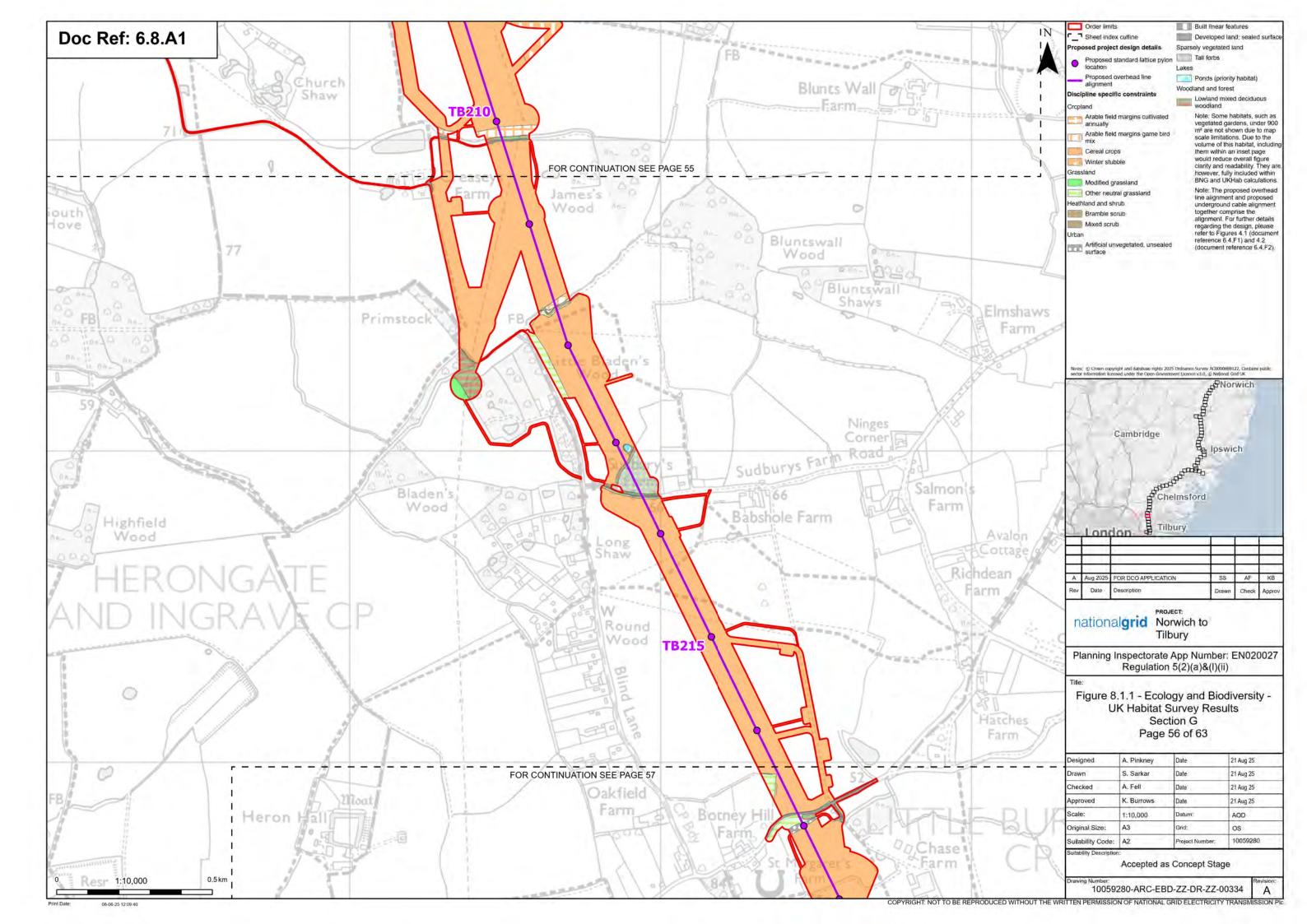


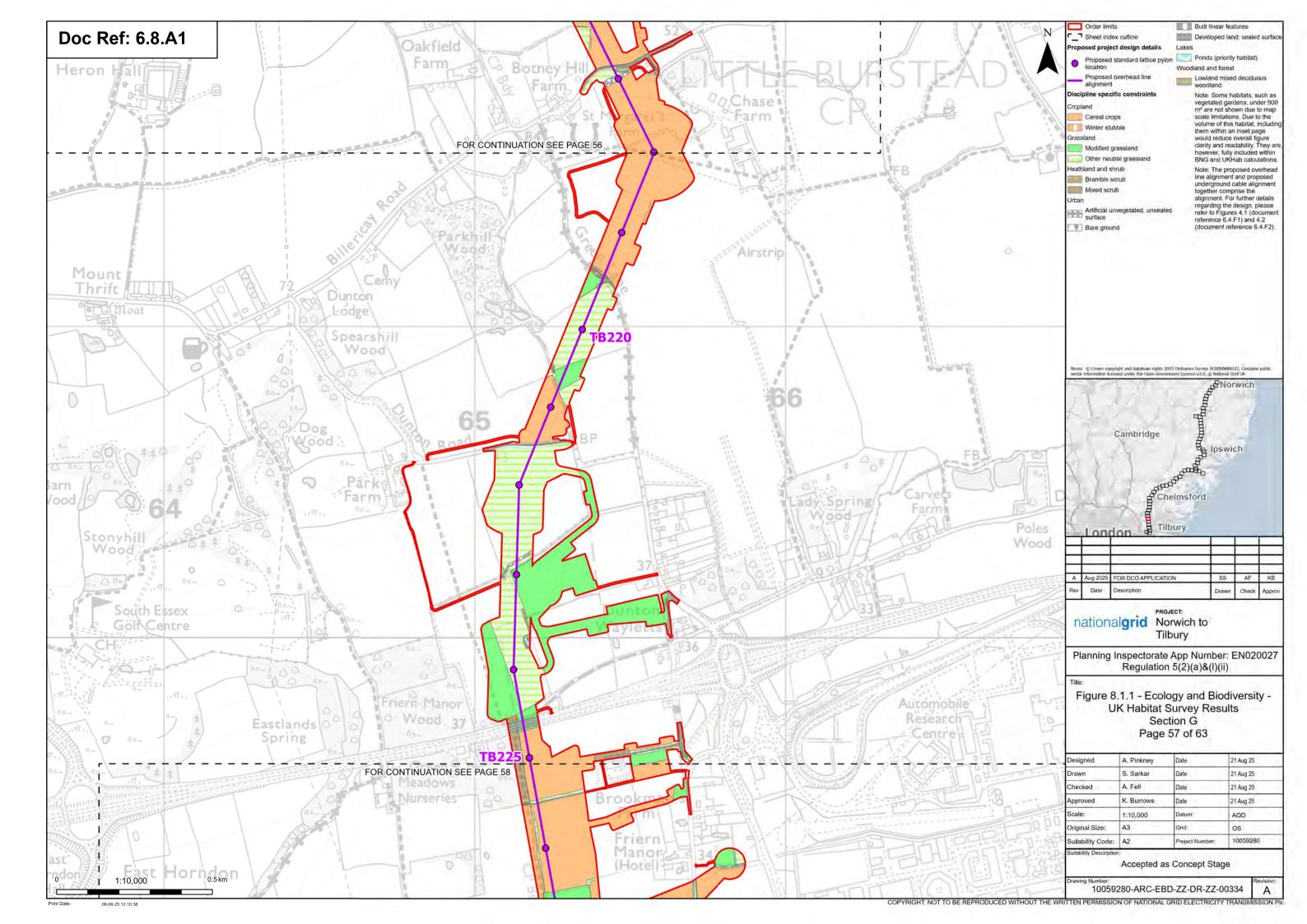


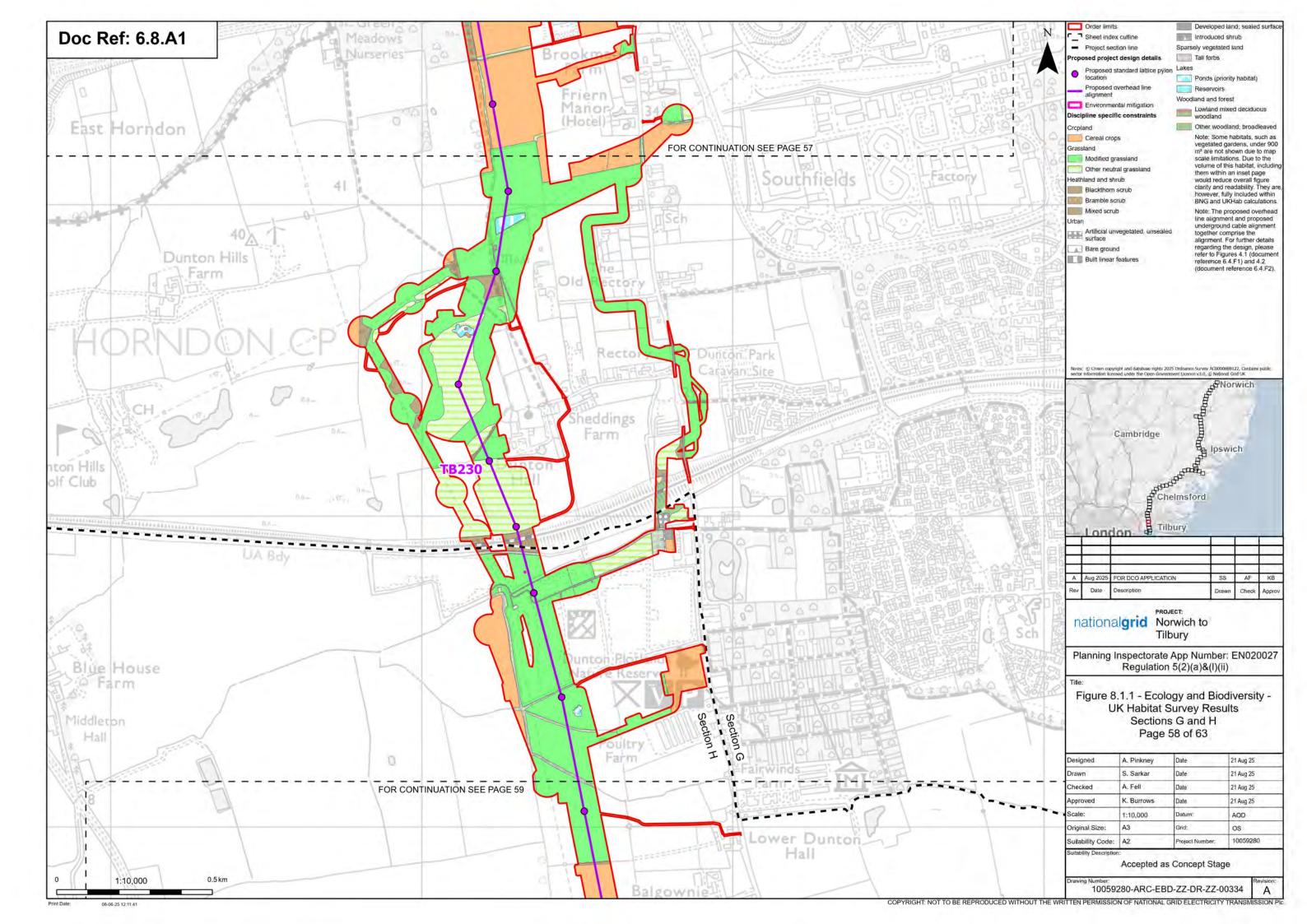


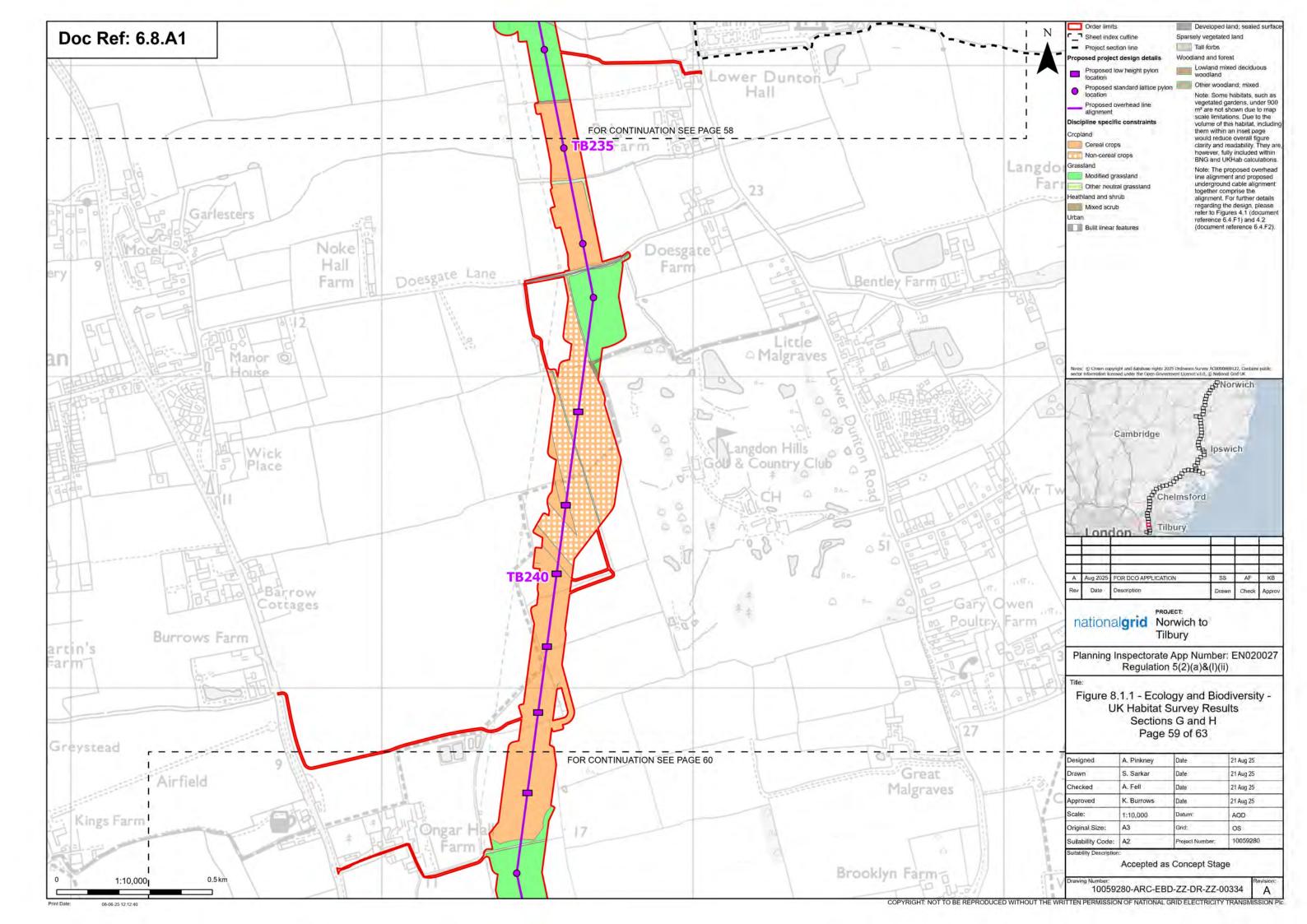


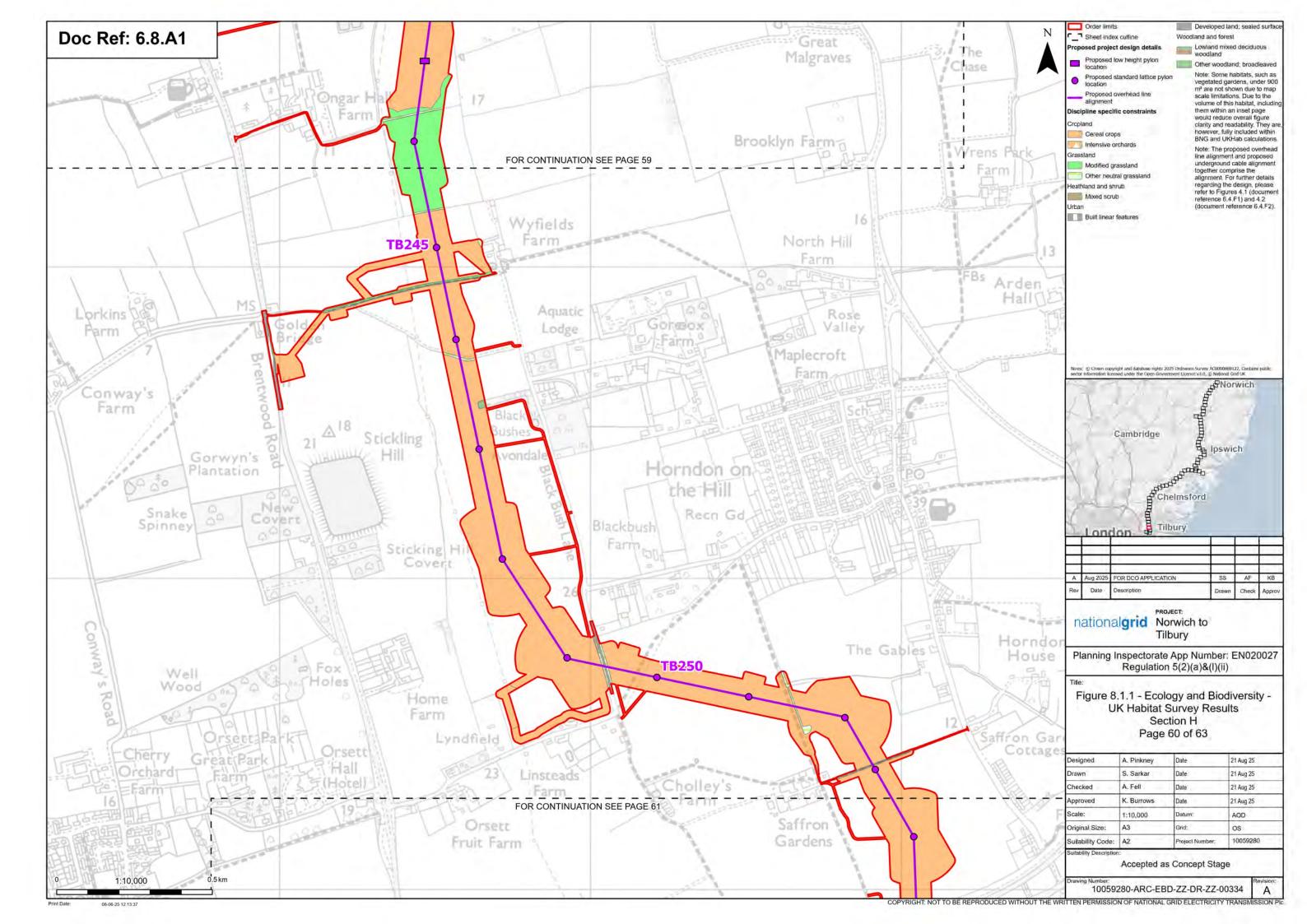


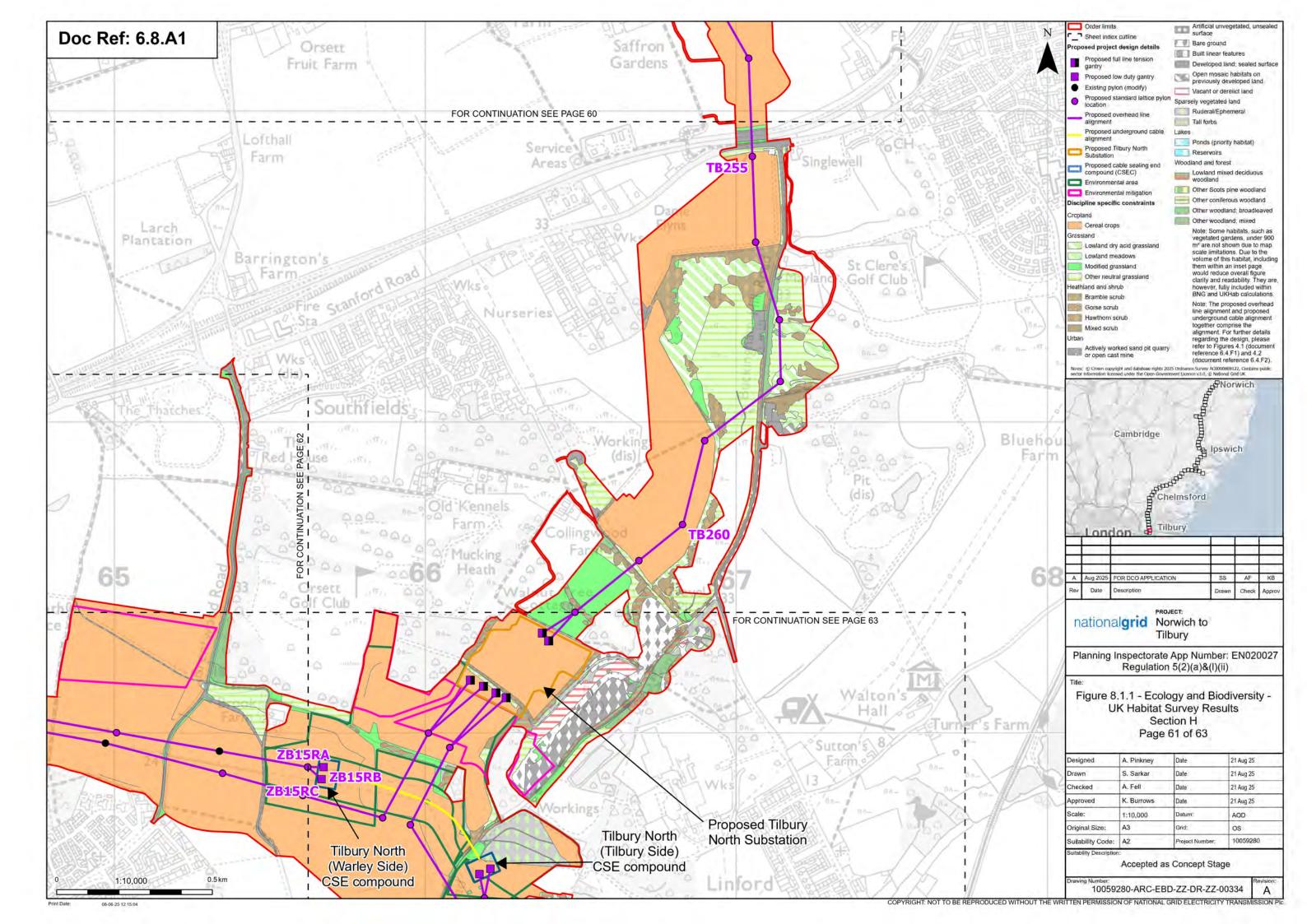


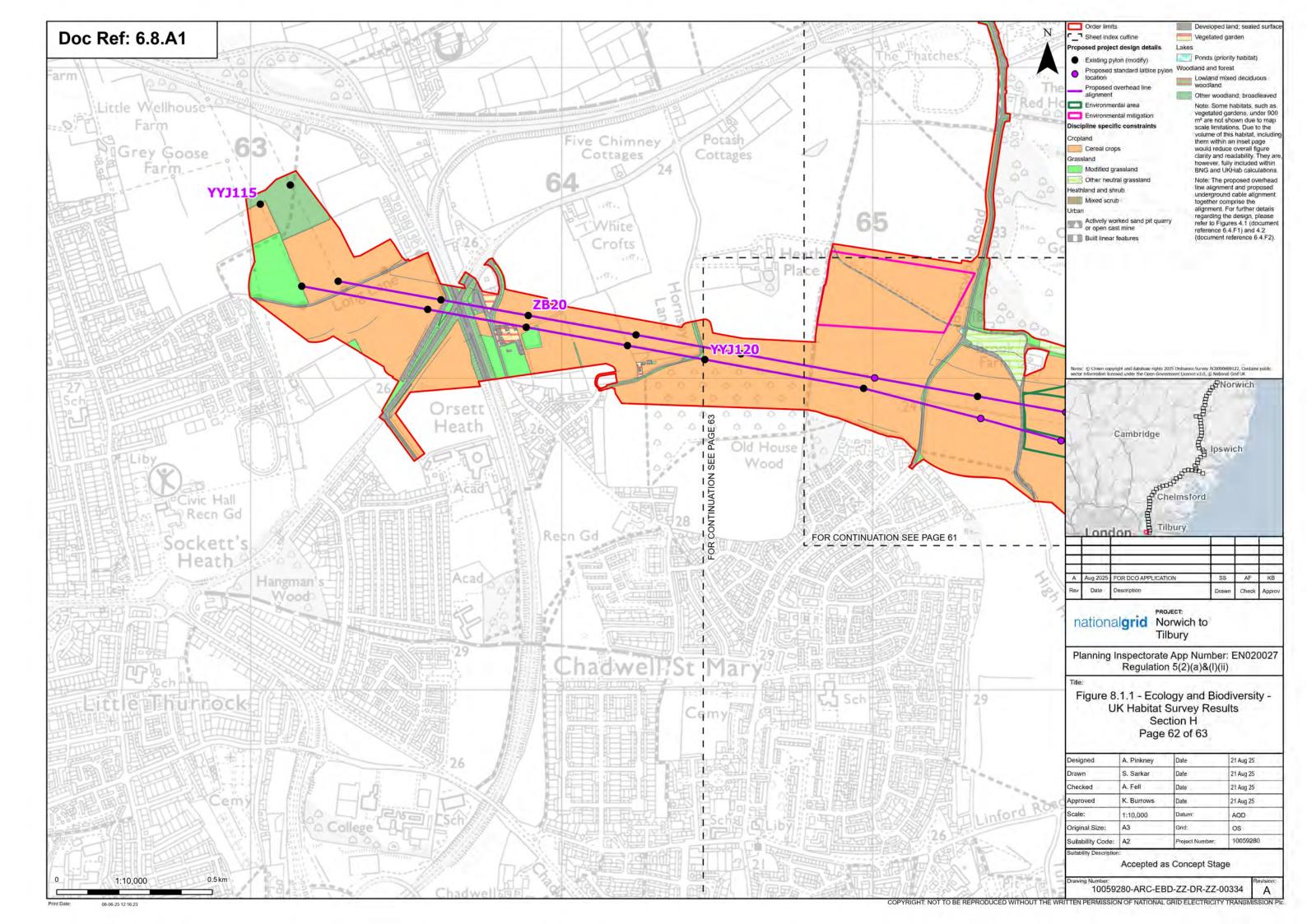












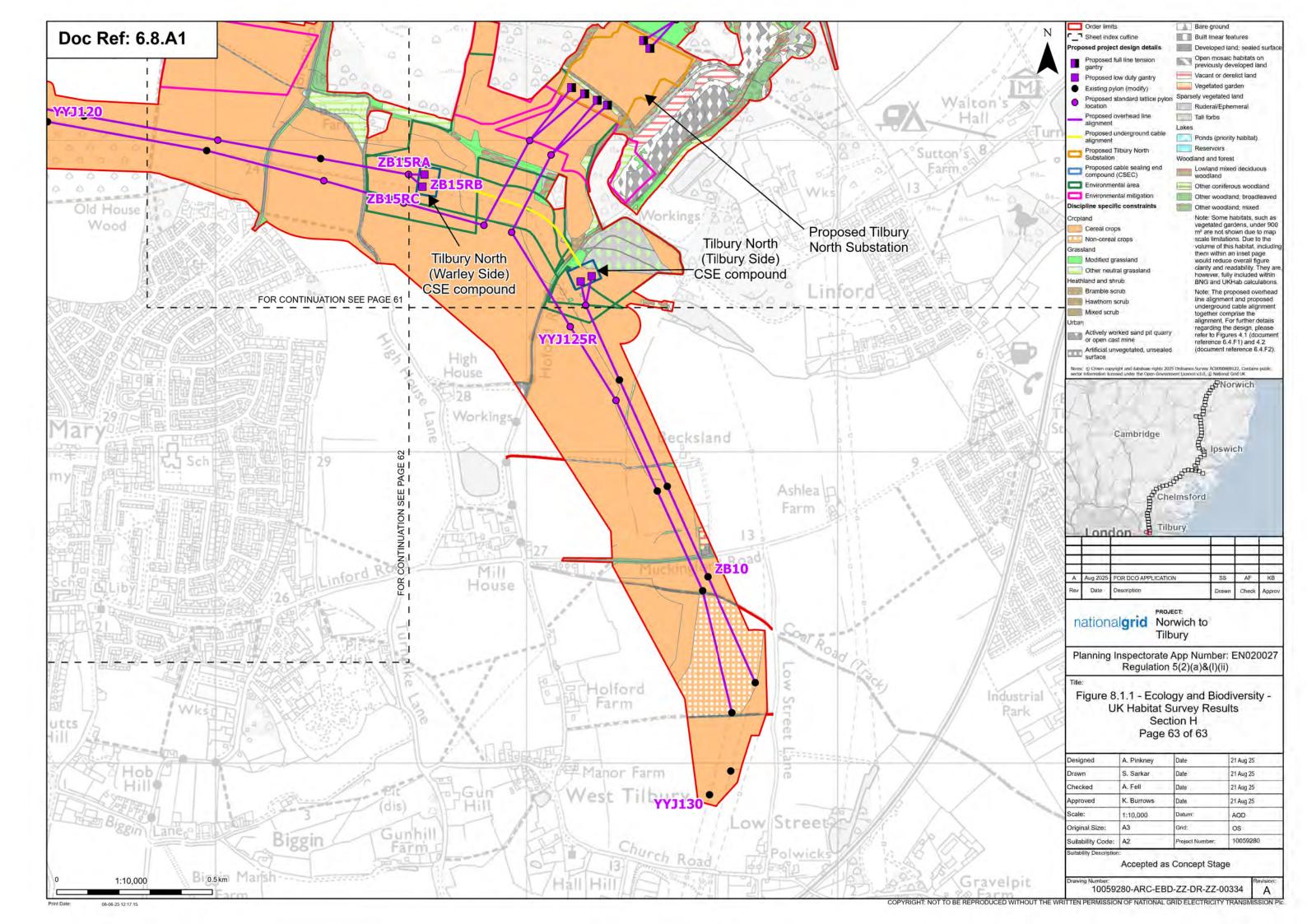
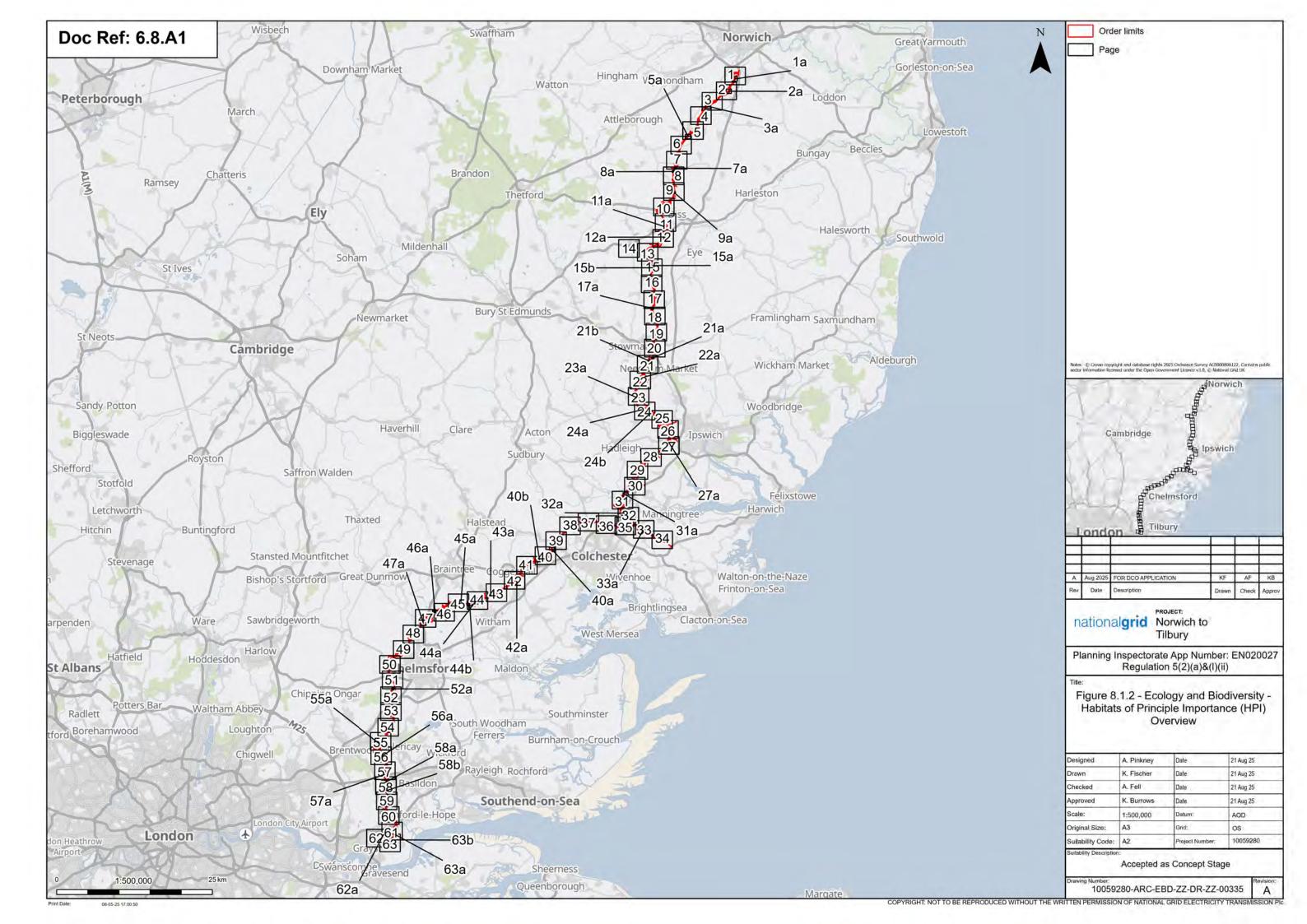
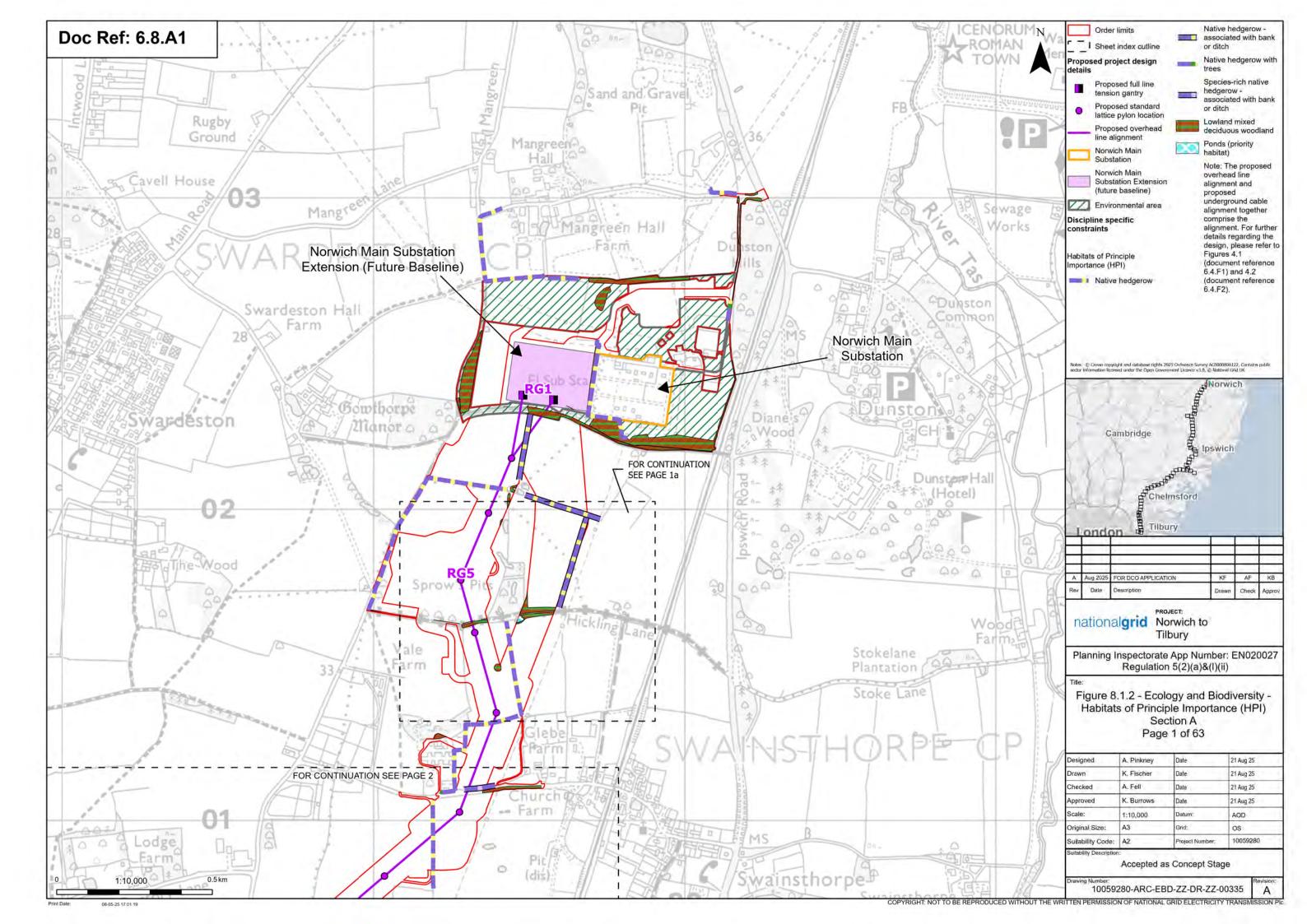
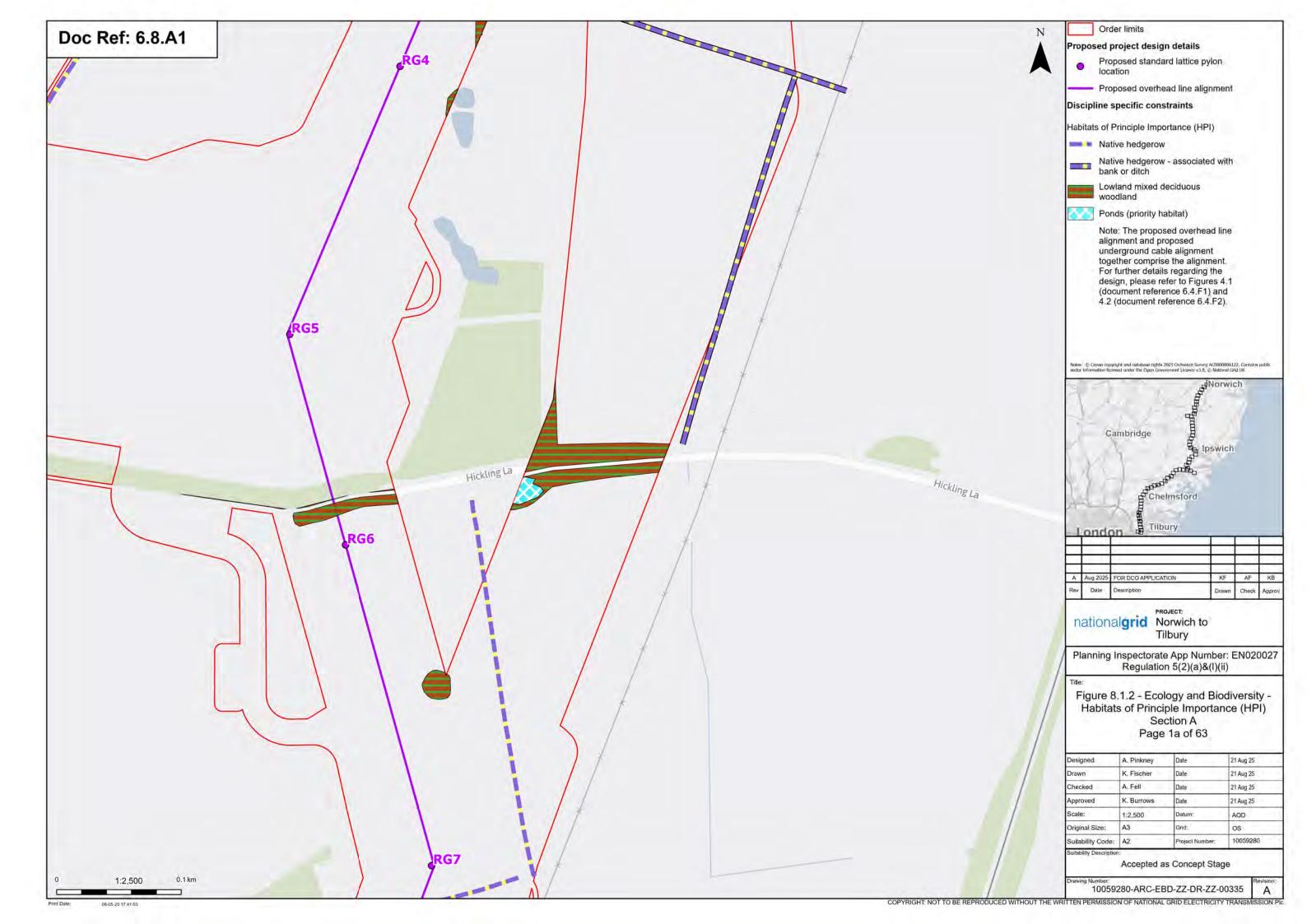
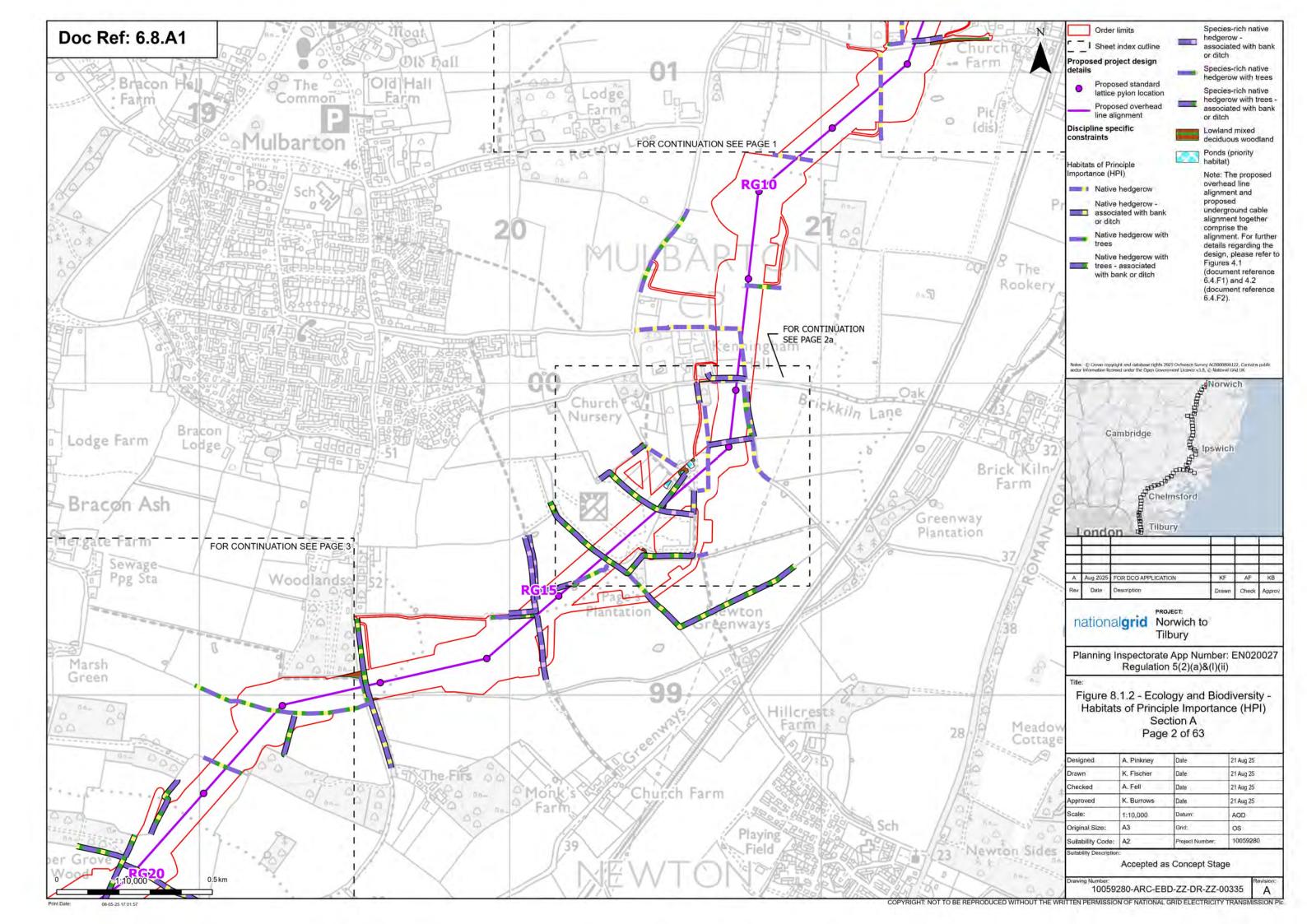


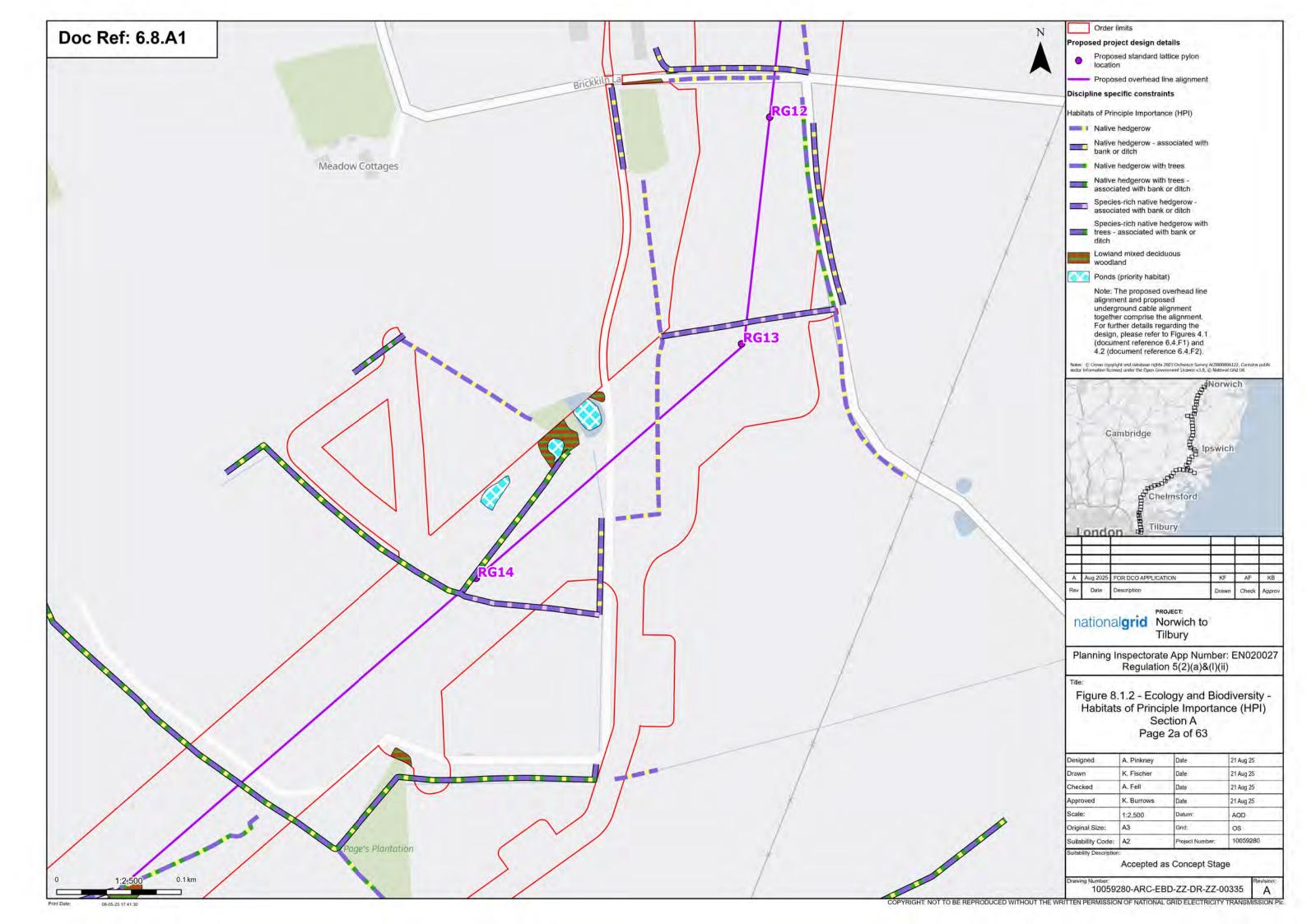
Figure A	8.1.2 -	Habitat (of Princi	pal Im	portance

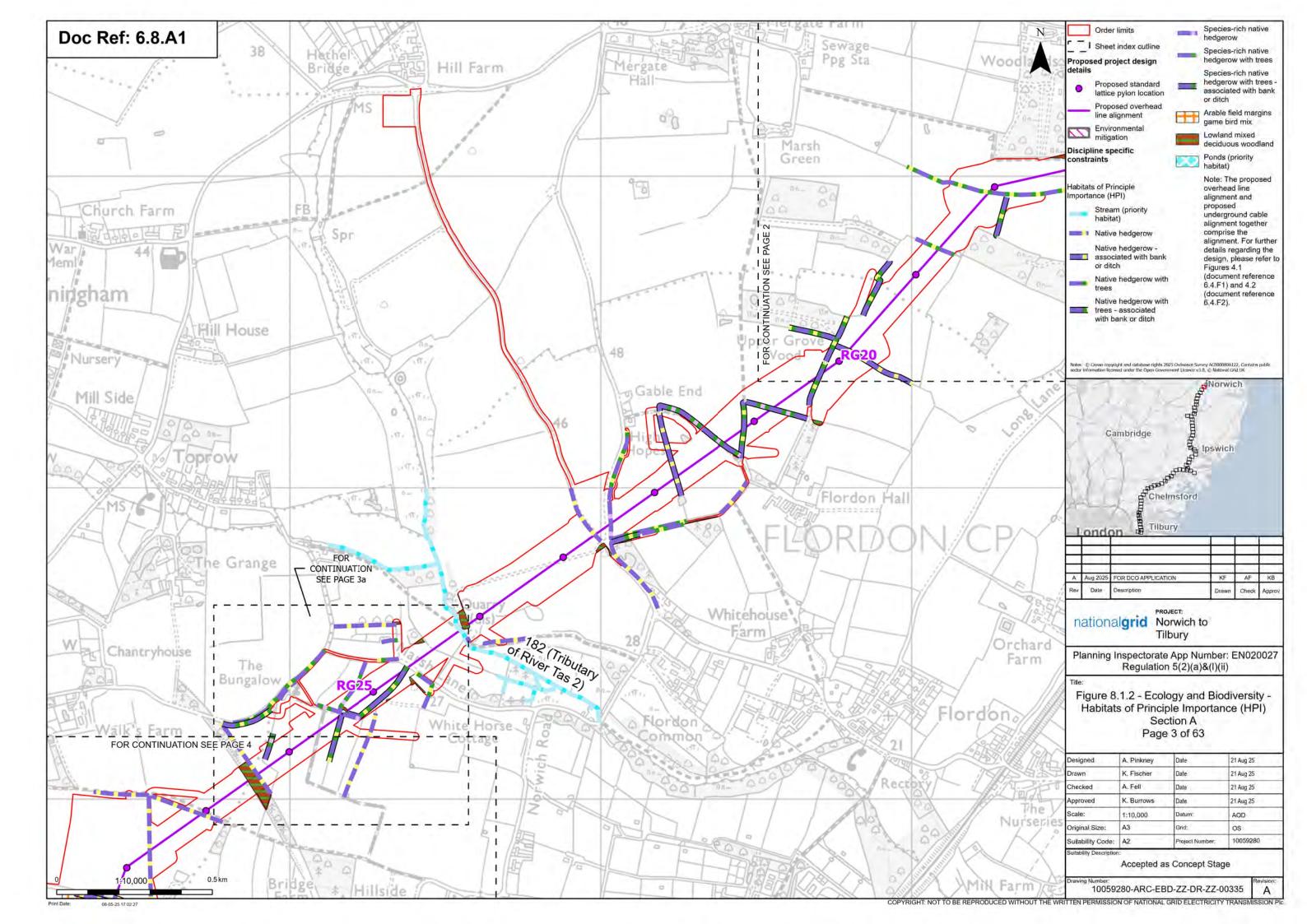


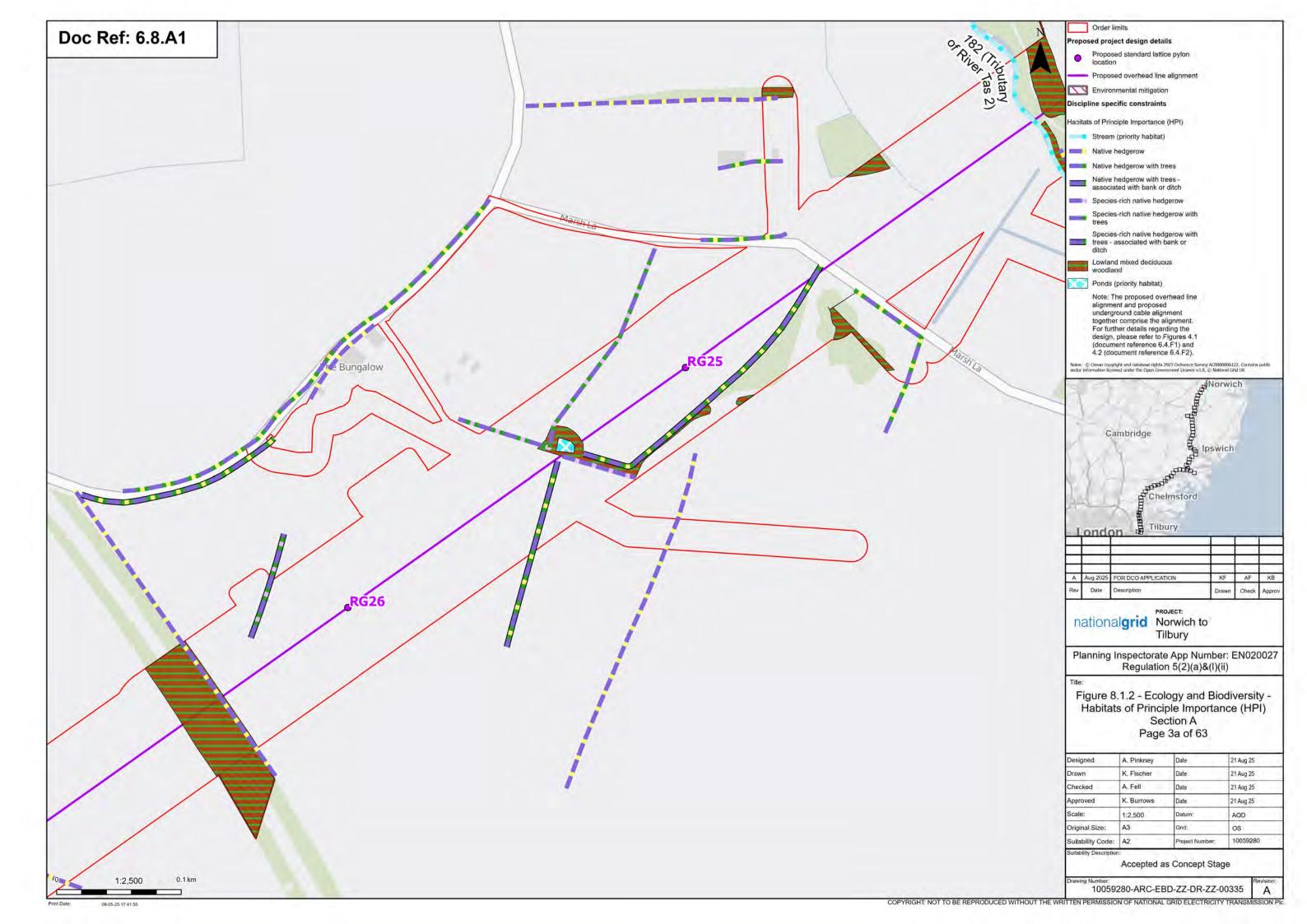


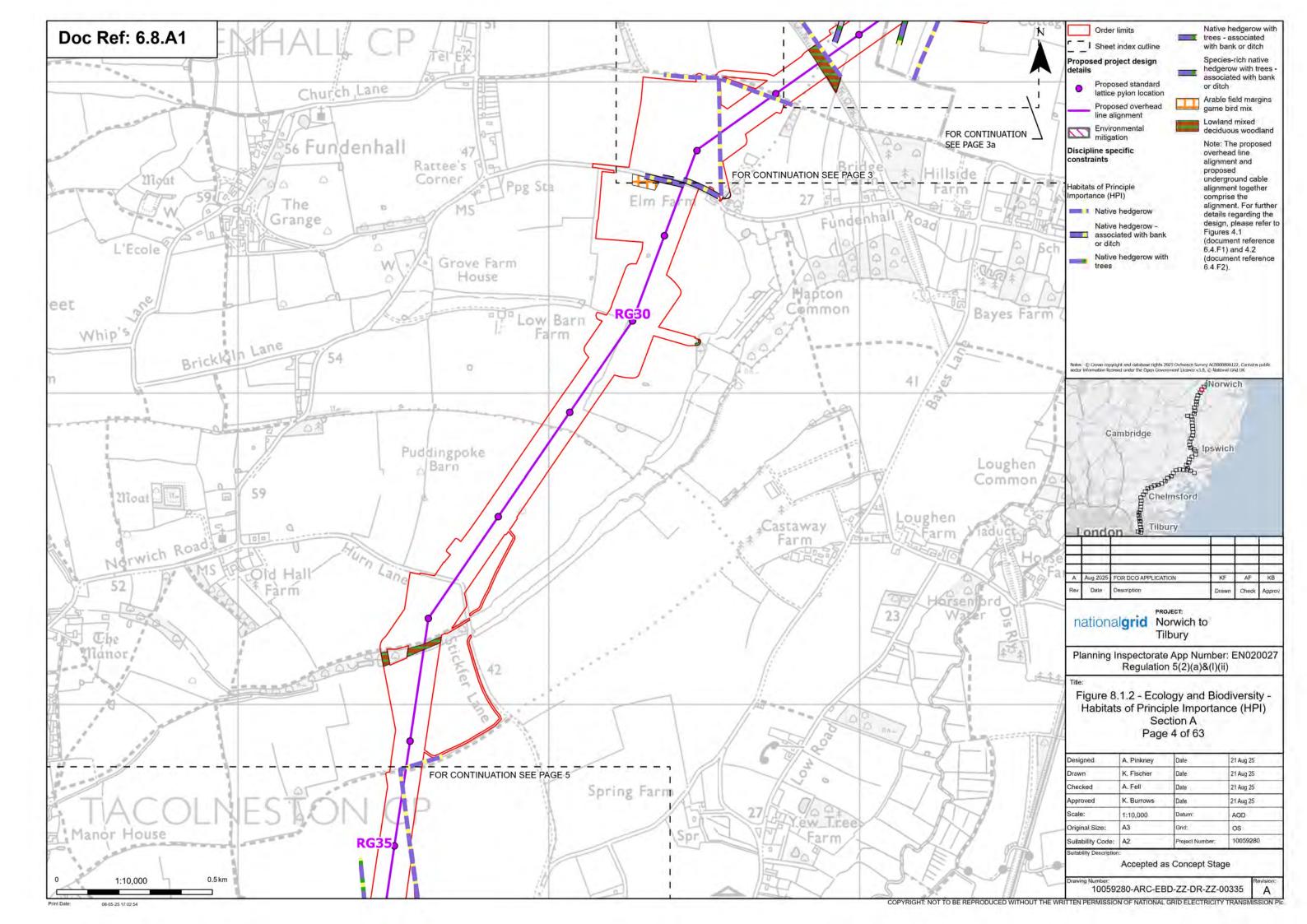


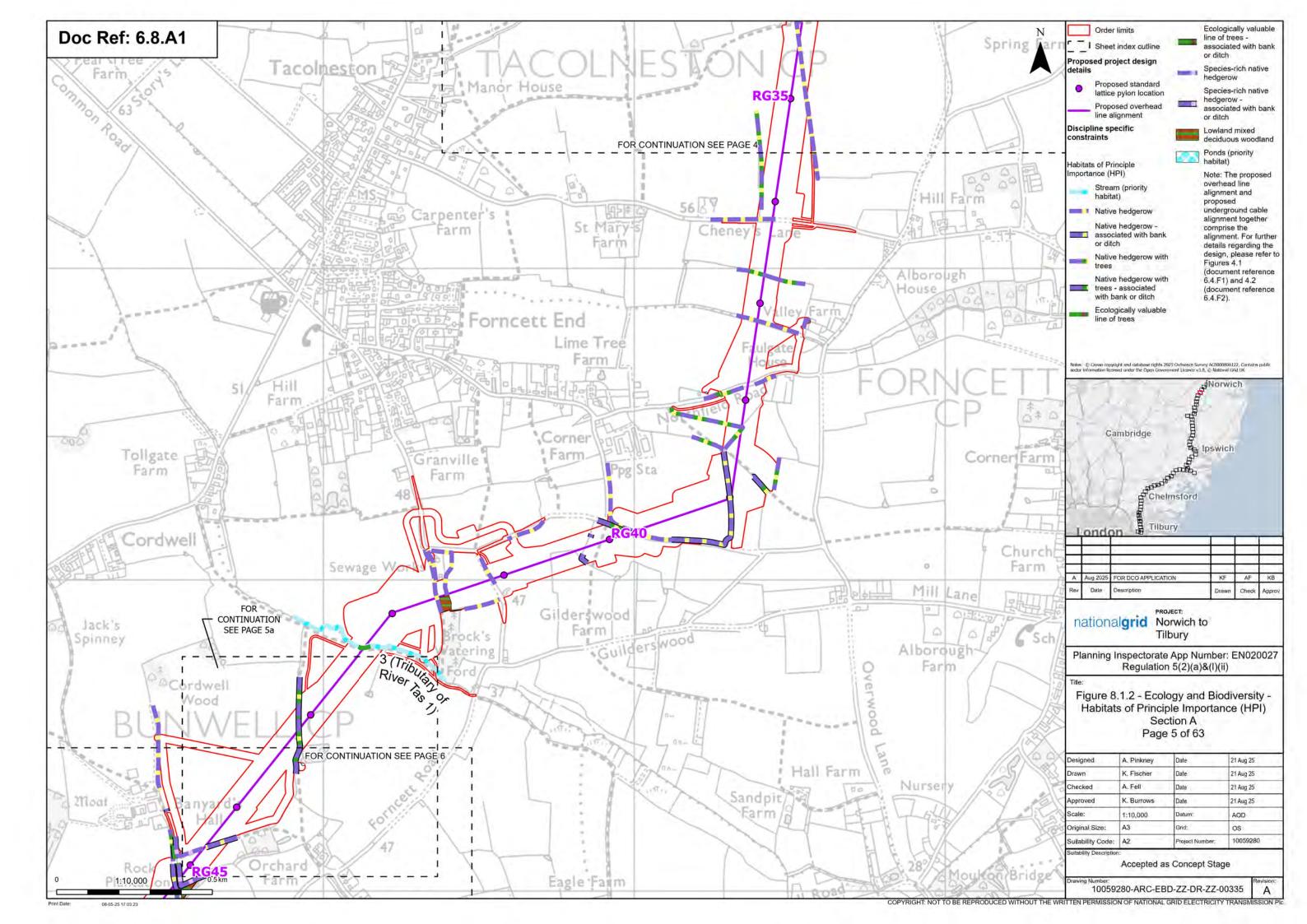


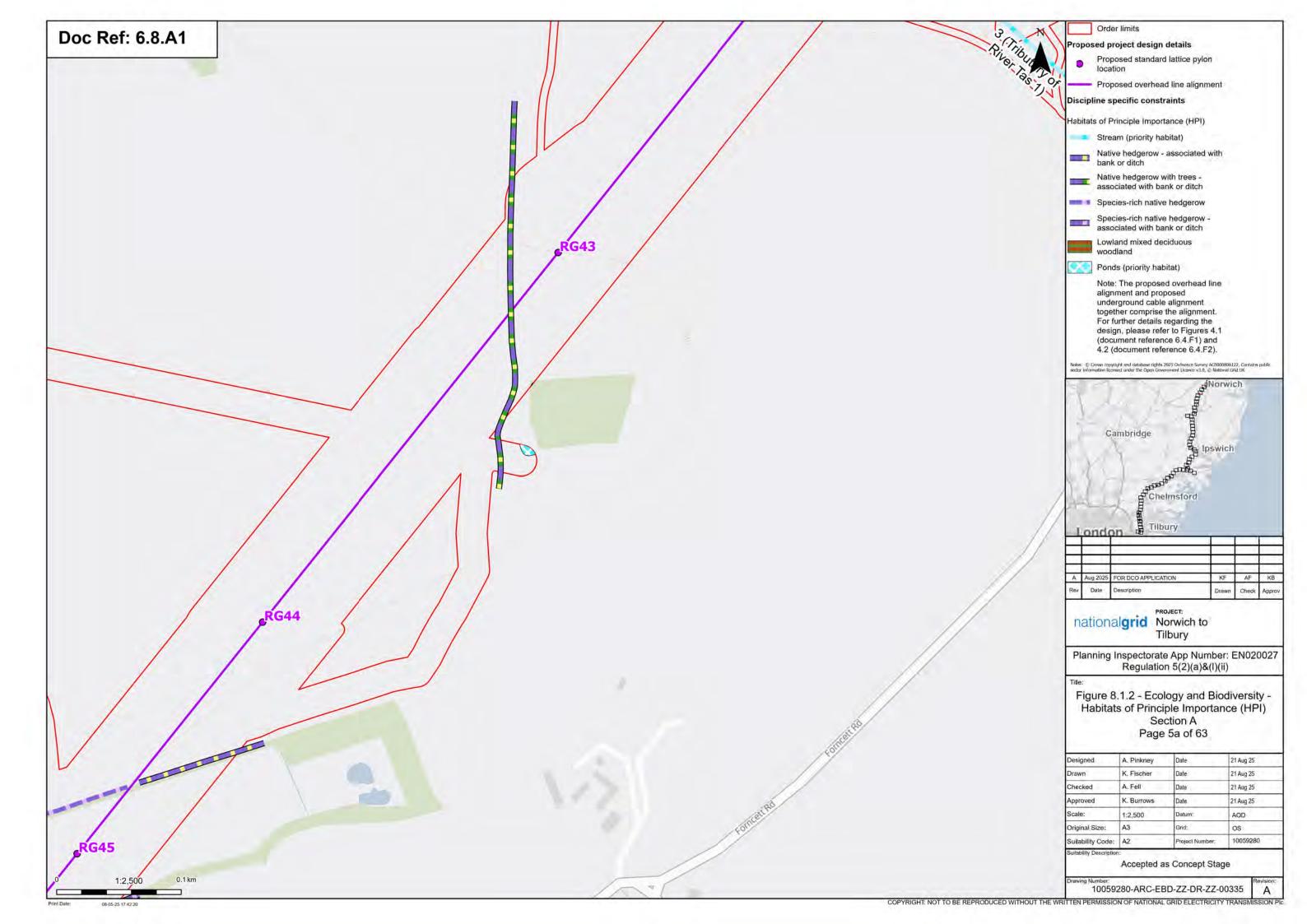


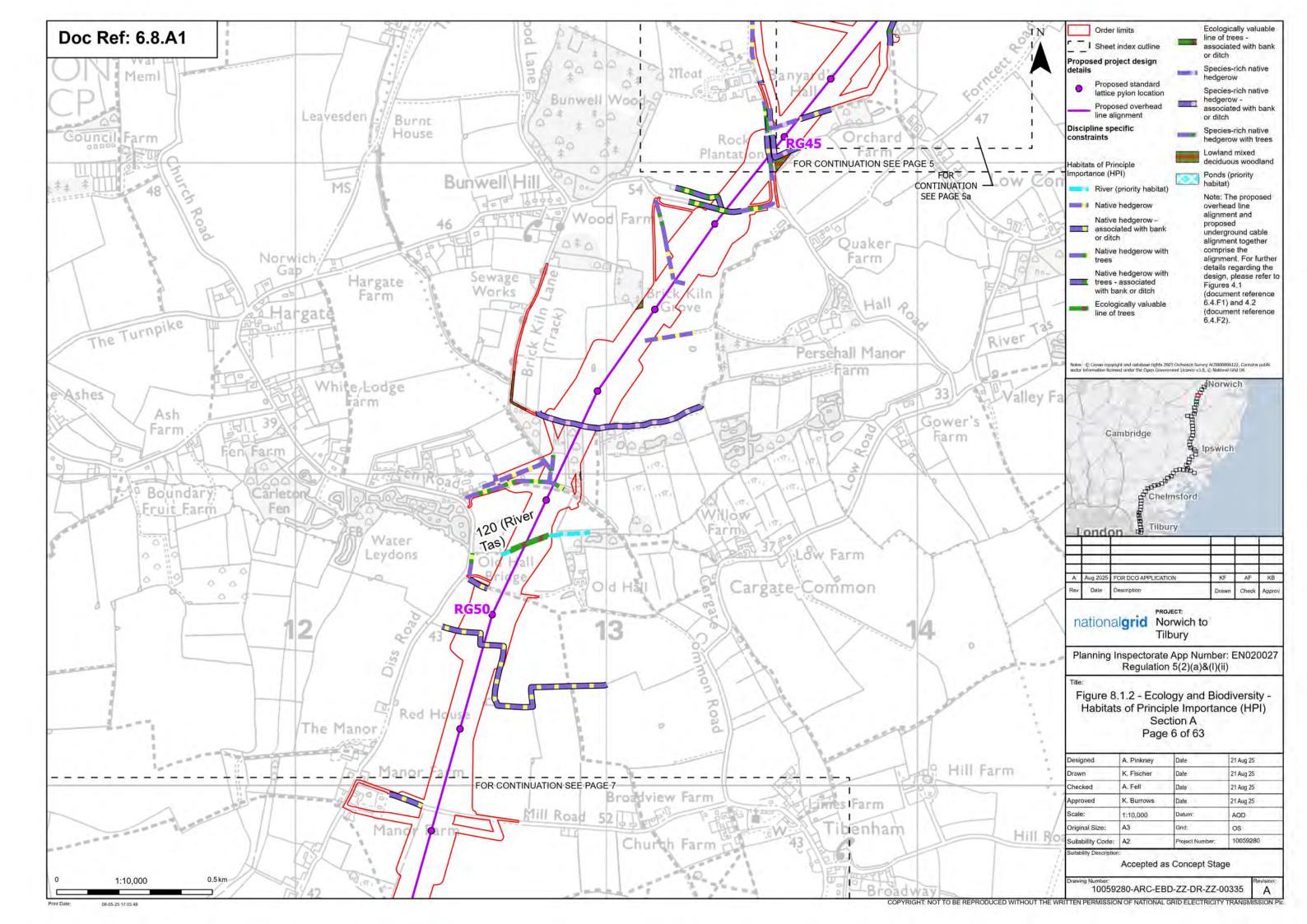


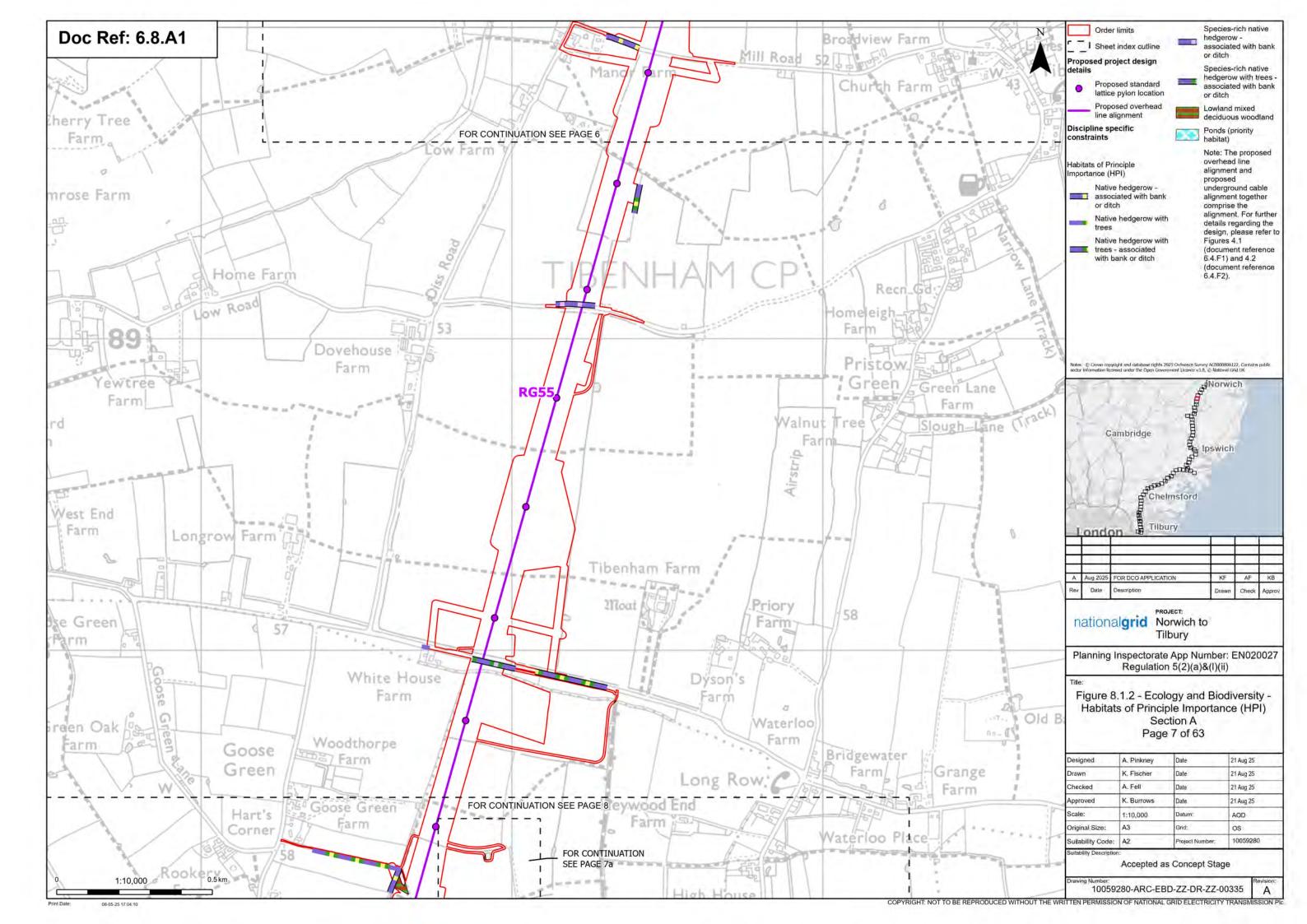


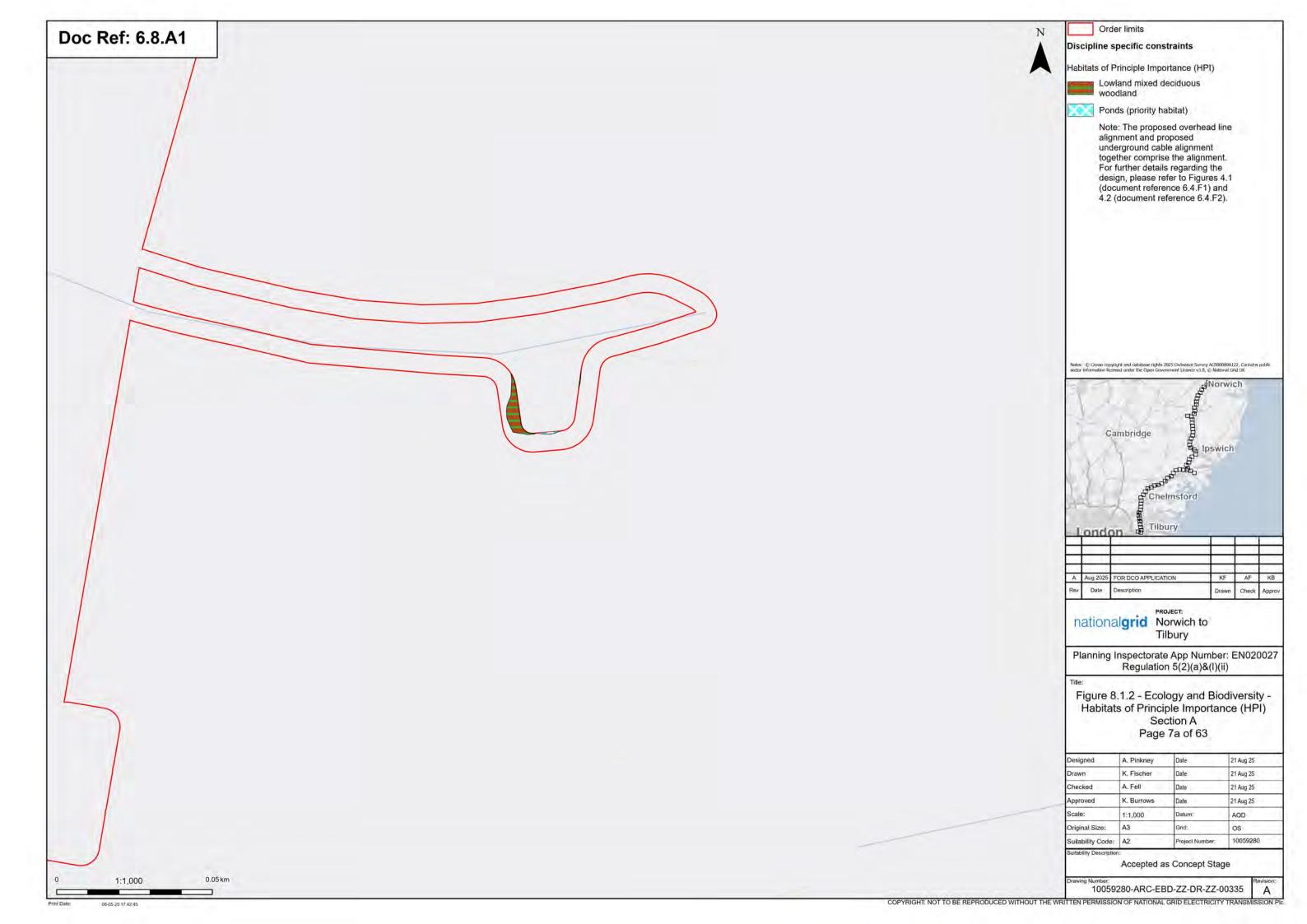


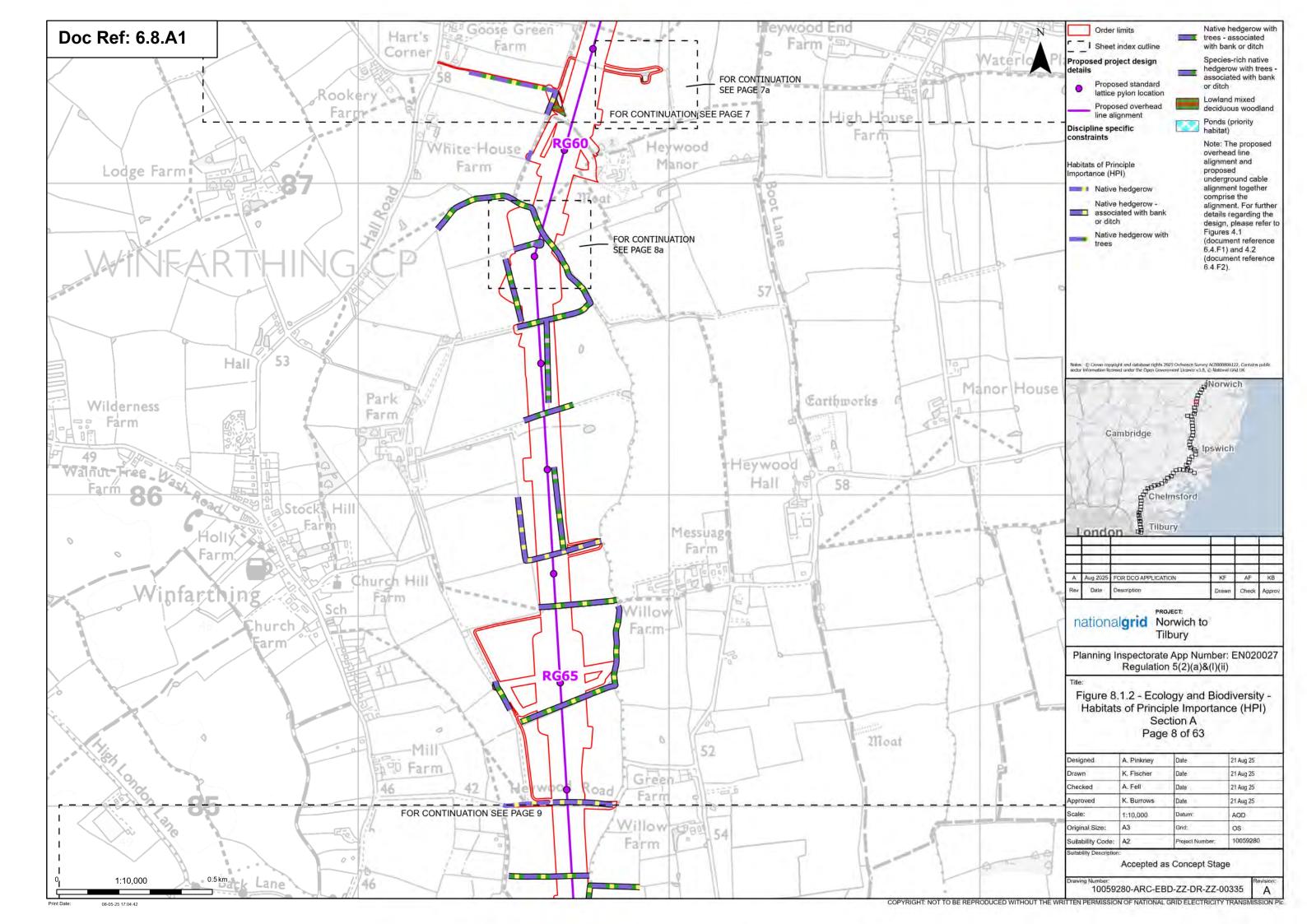


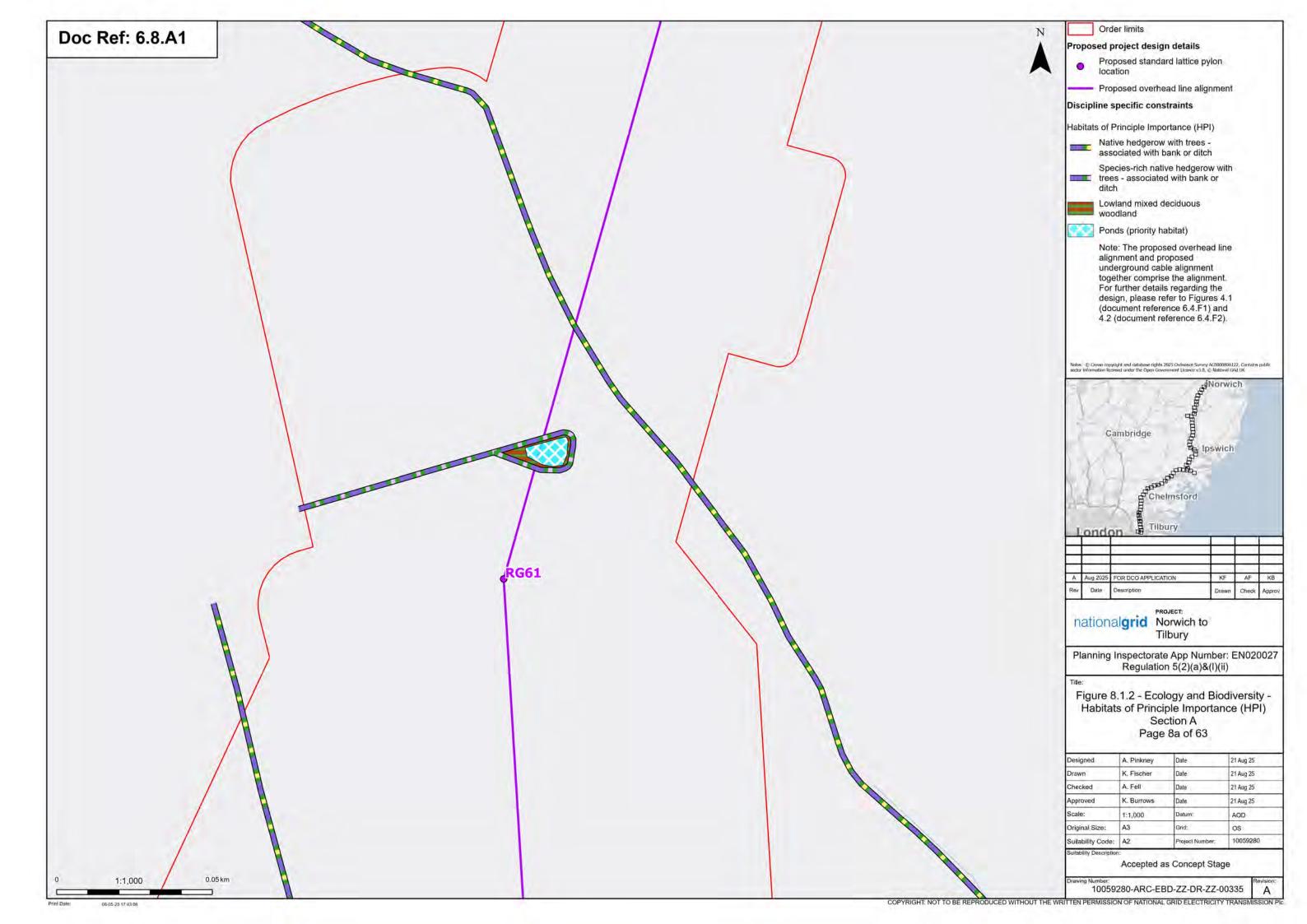


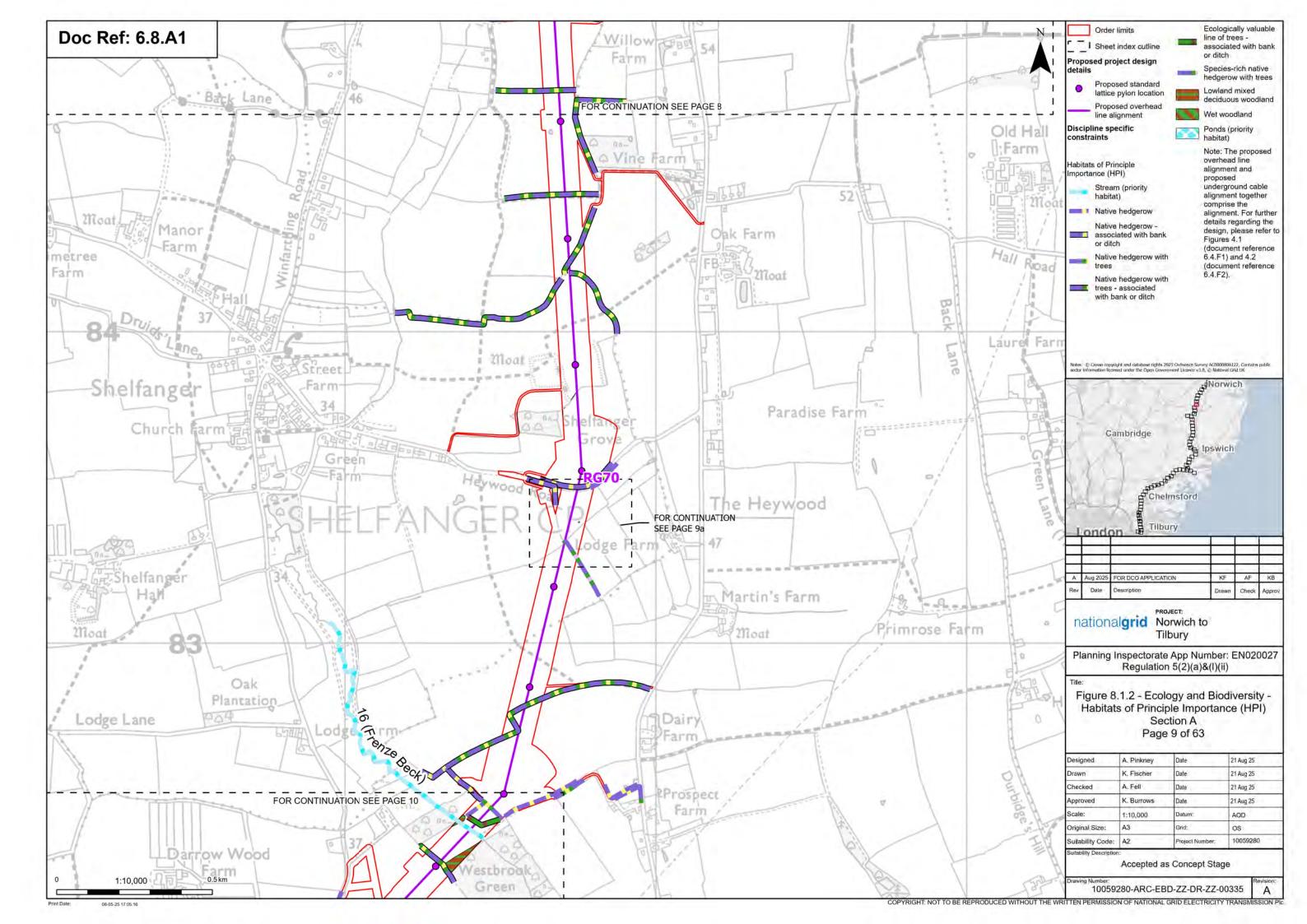


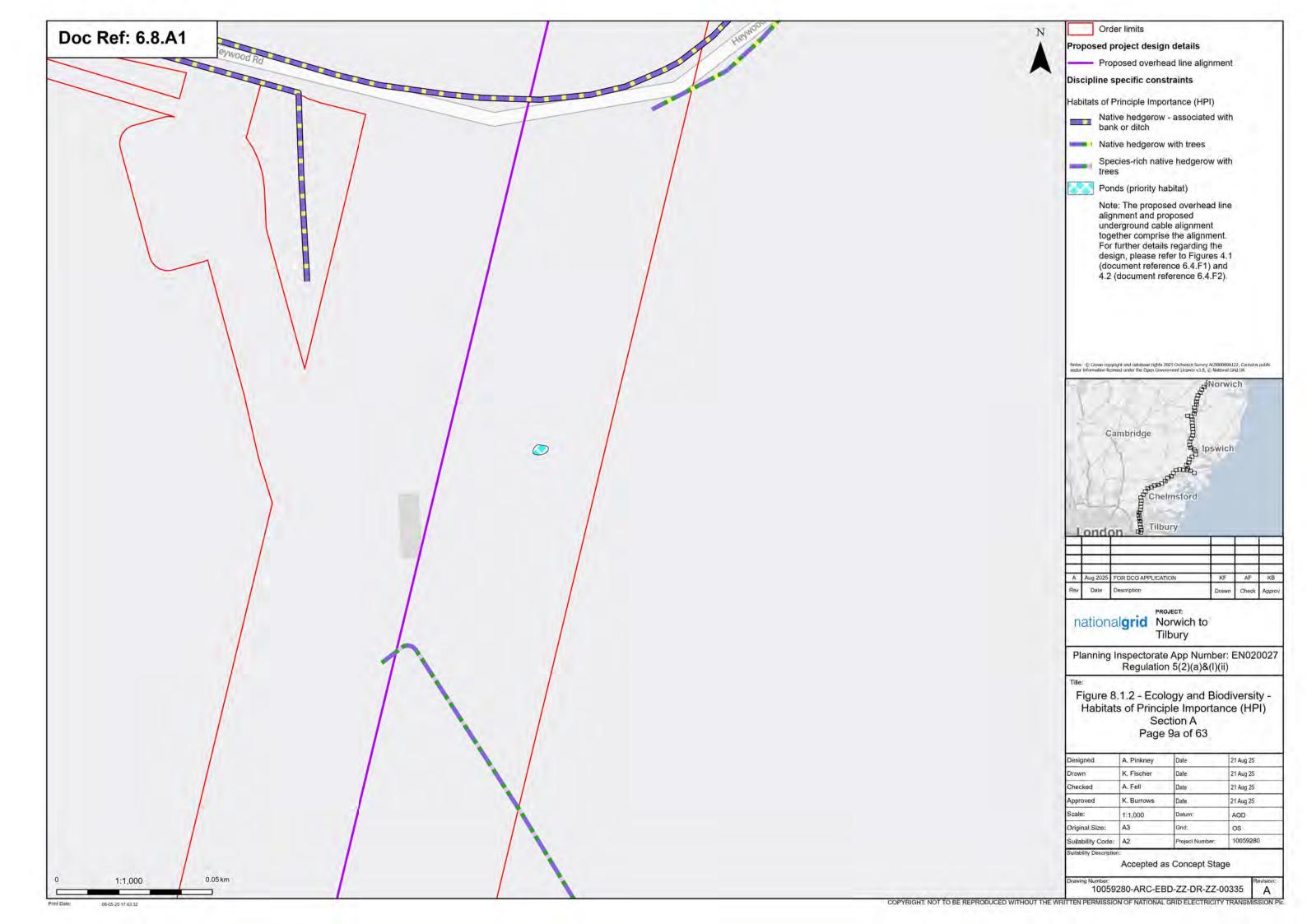


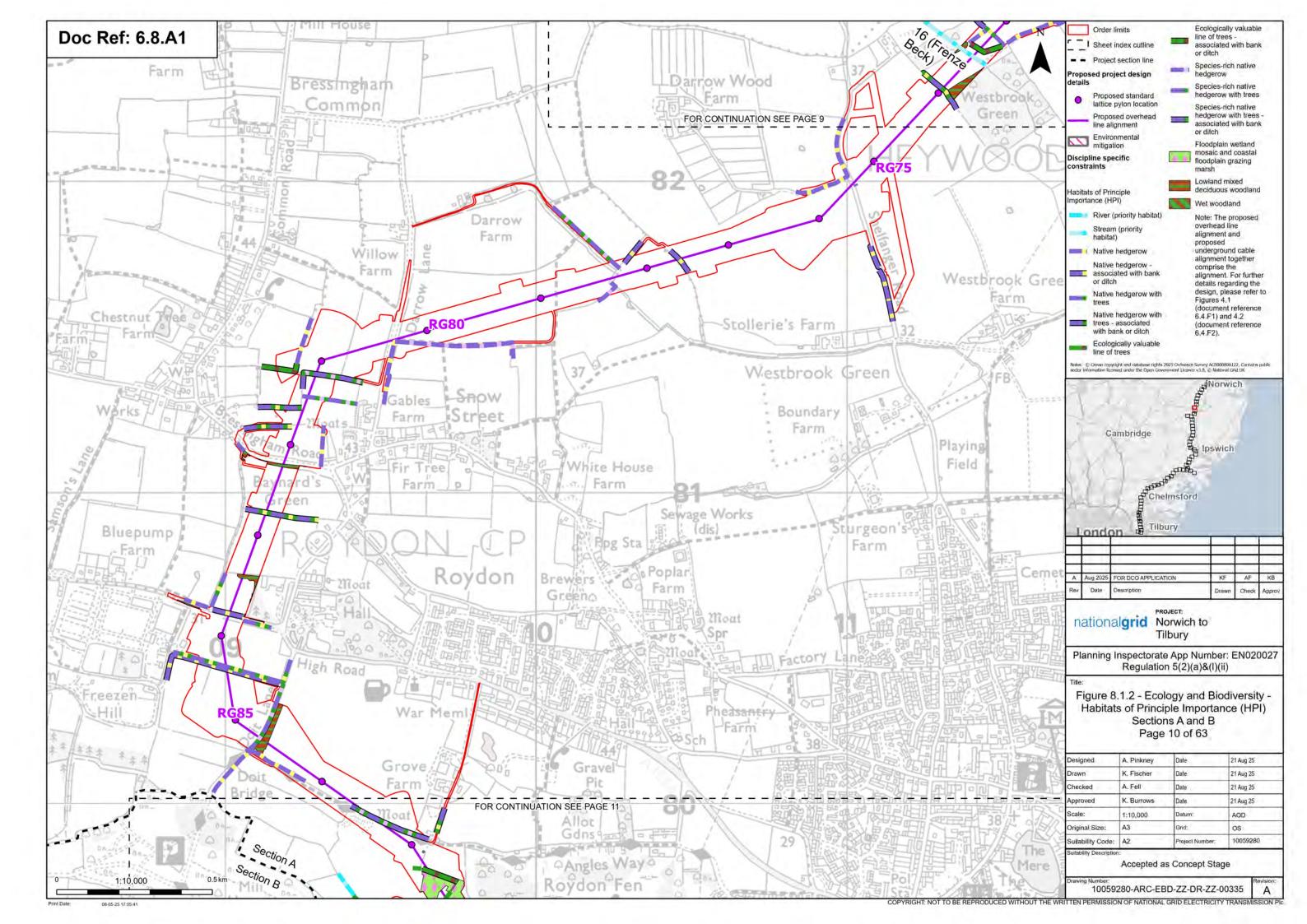


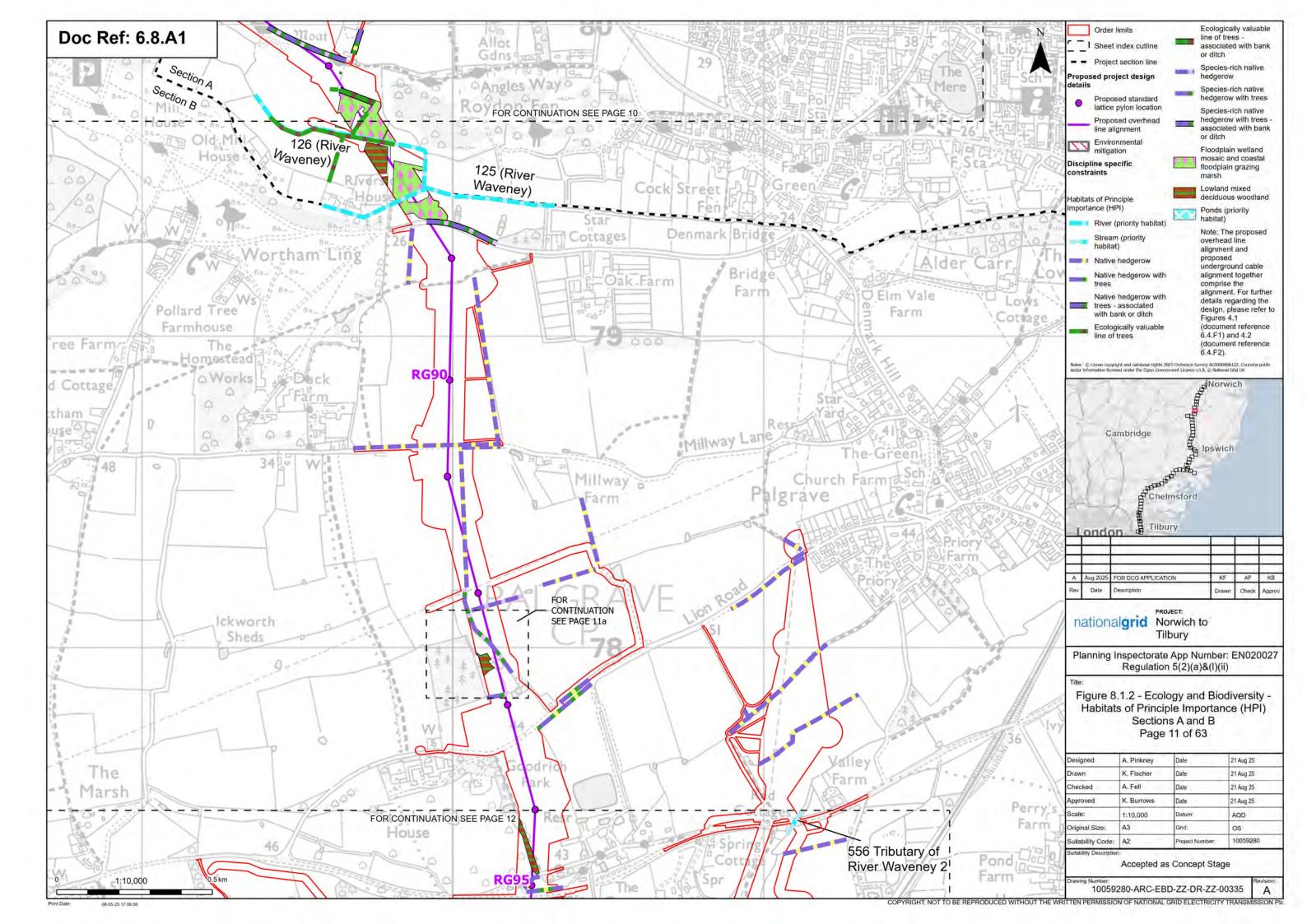


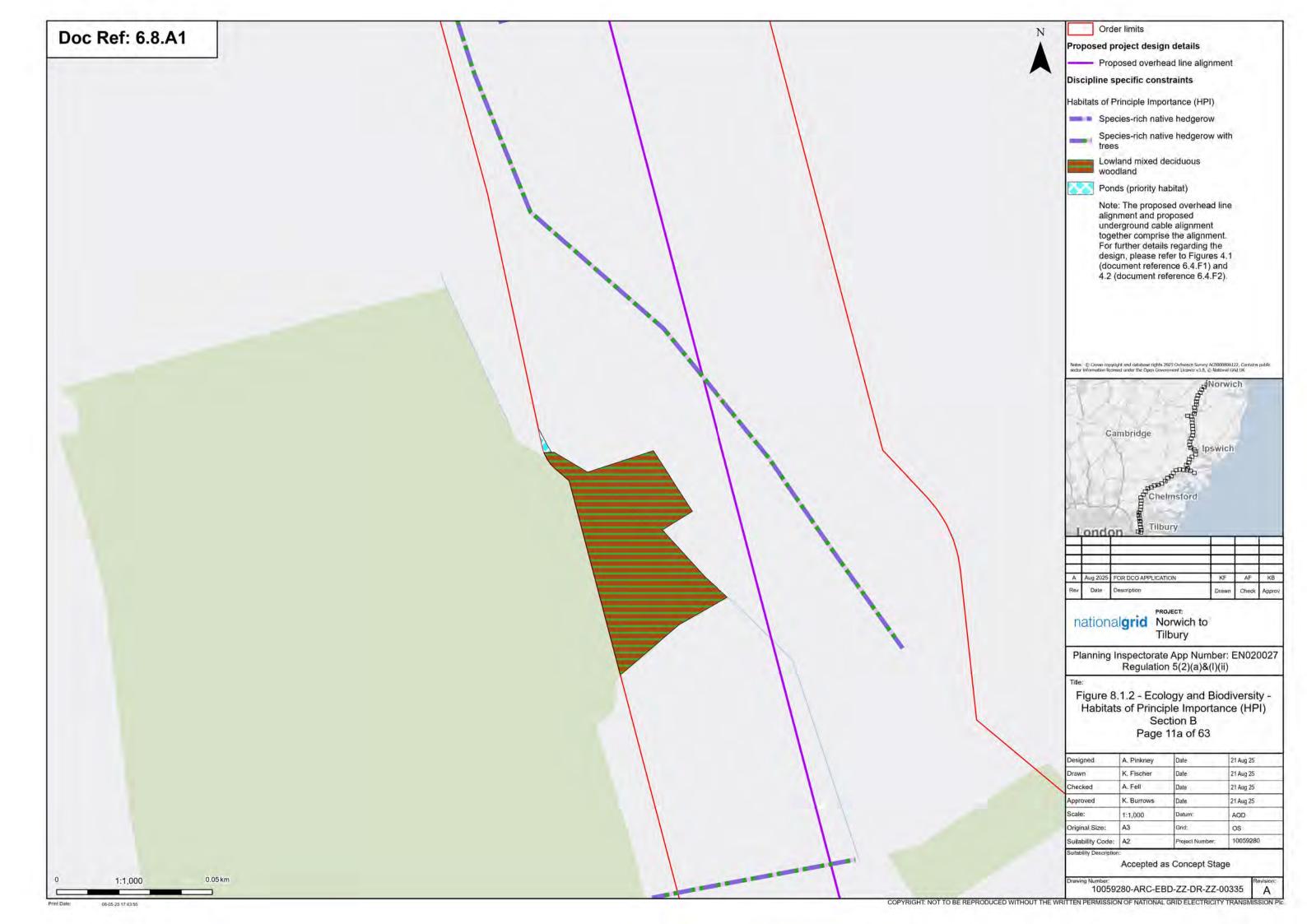


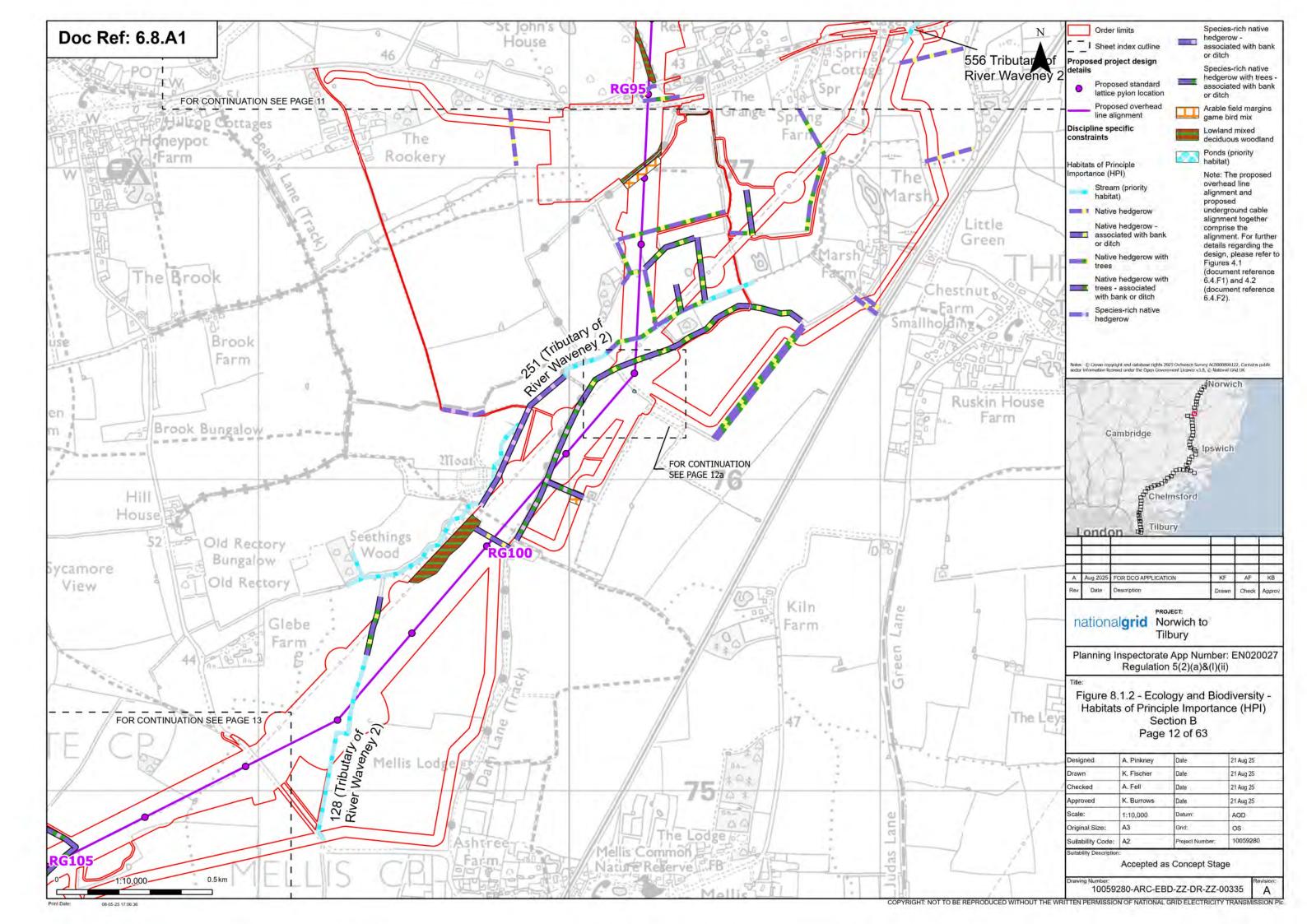


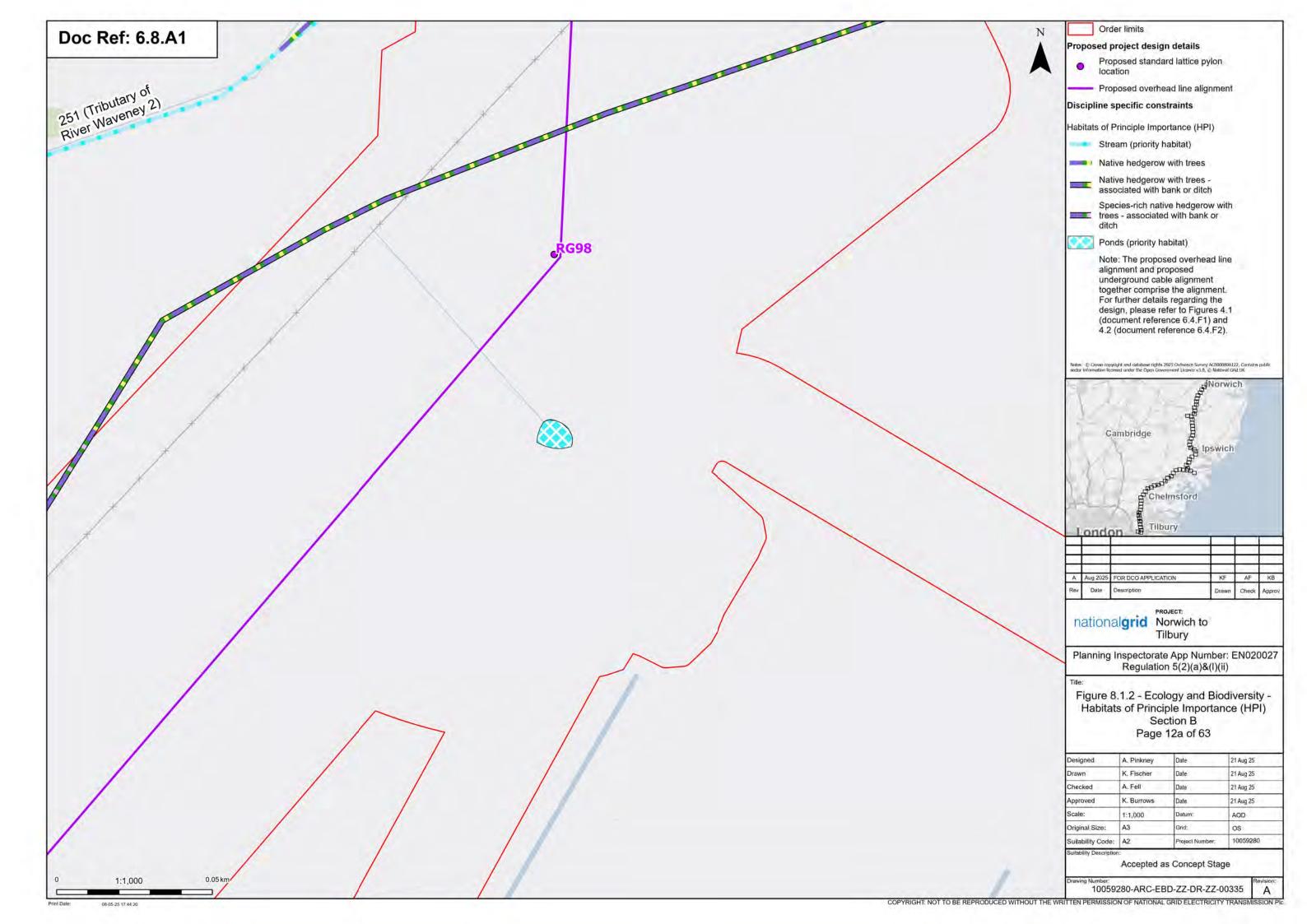


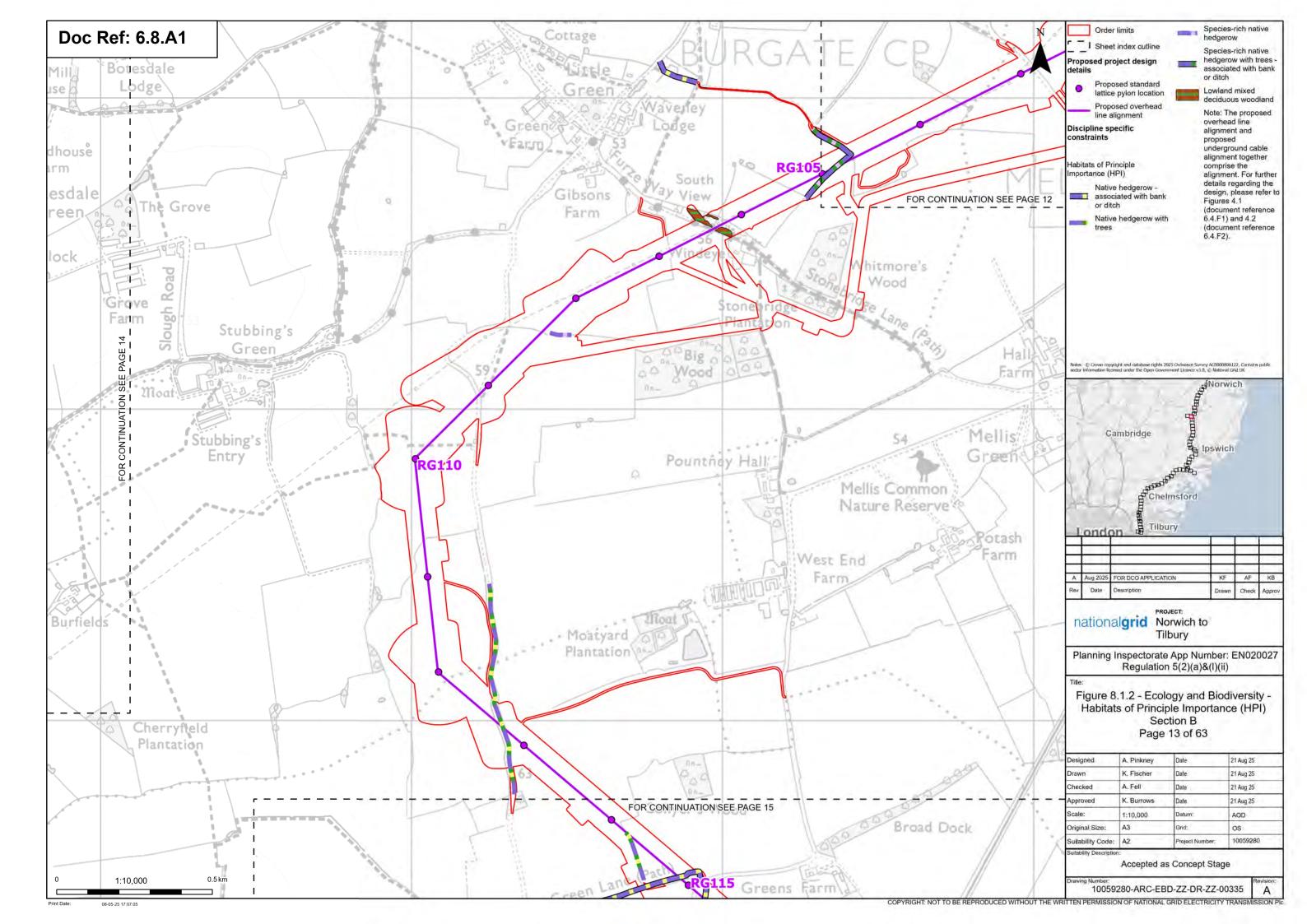


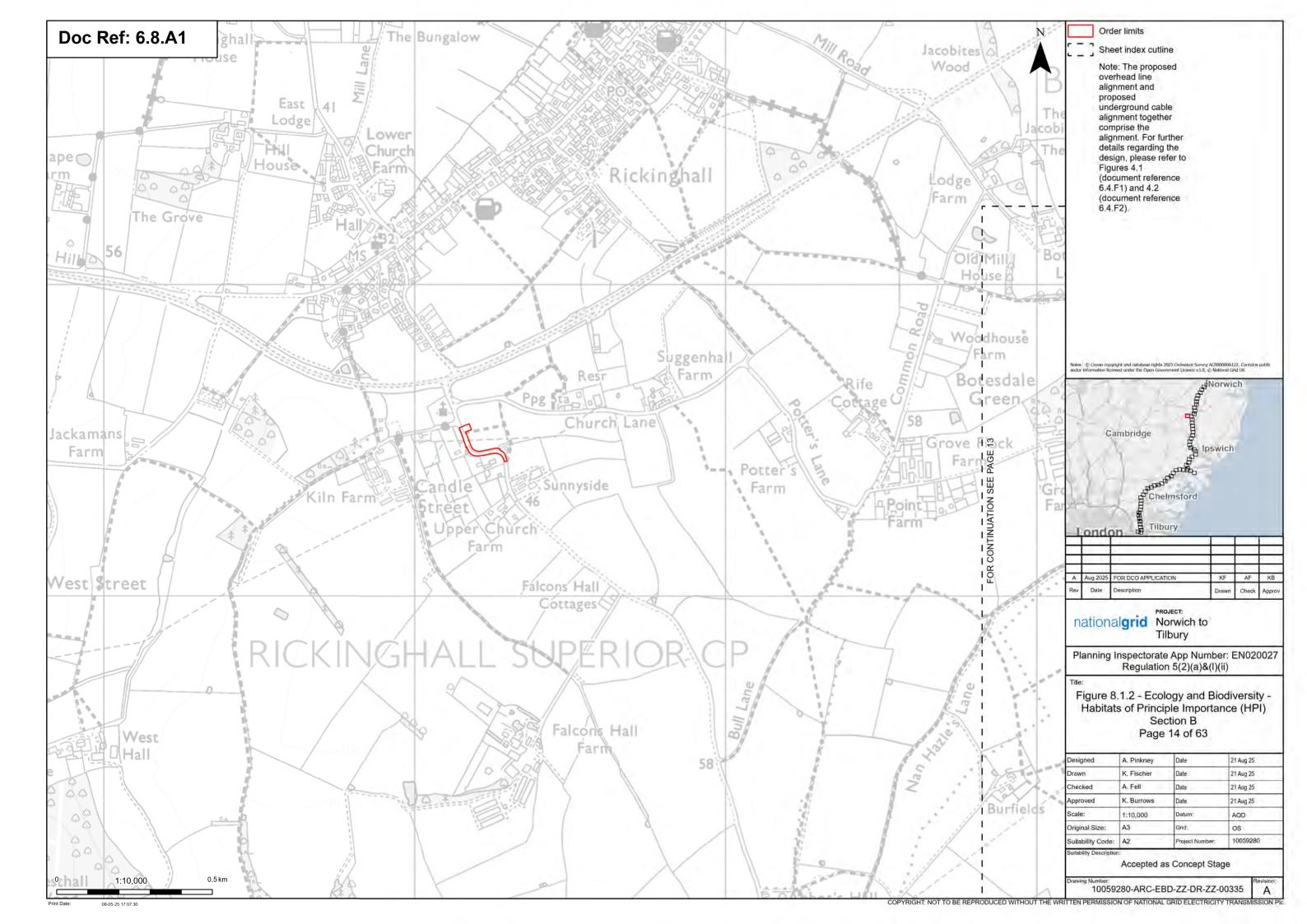


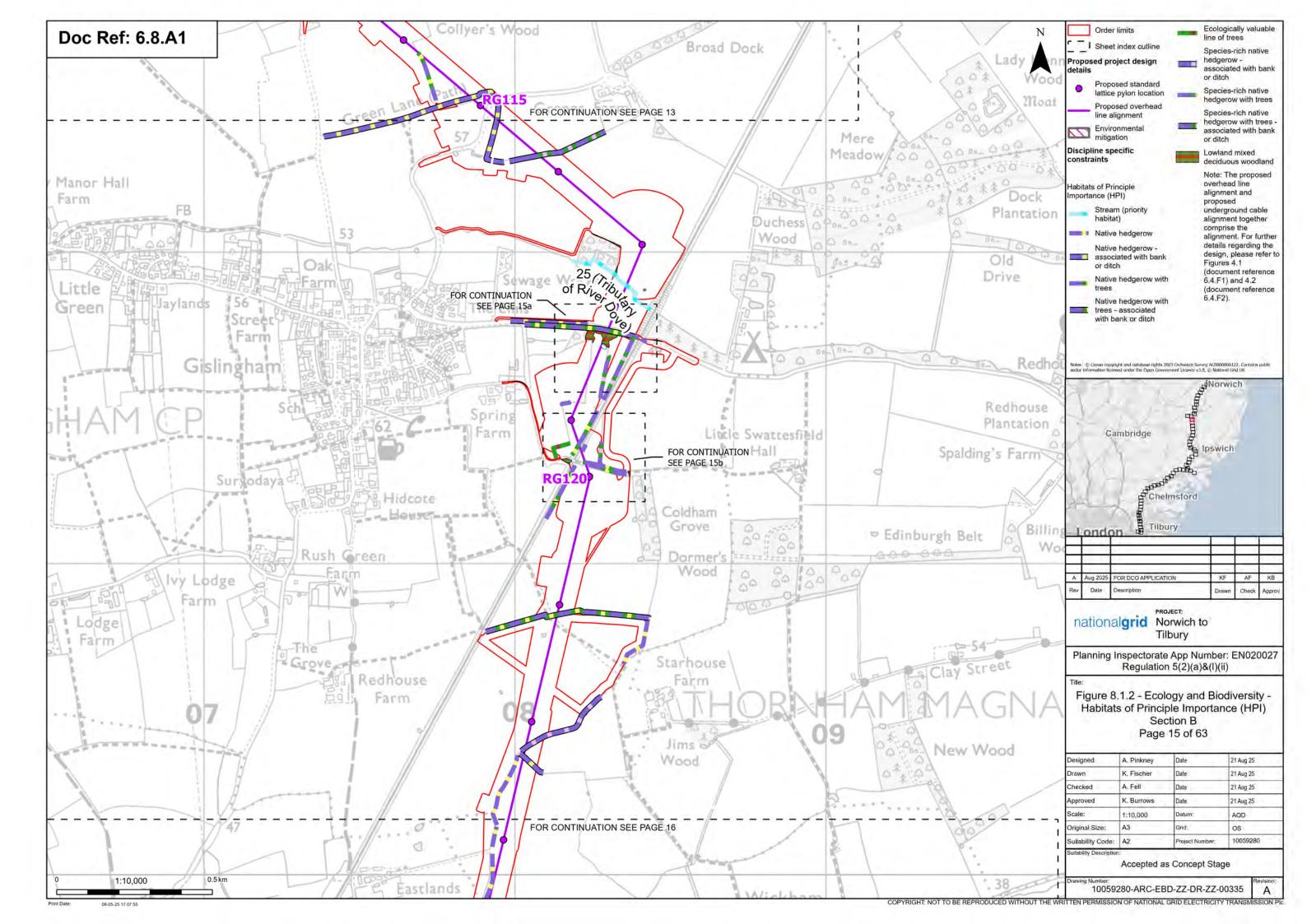


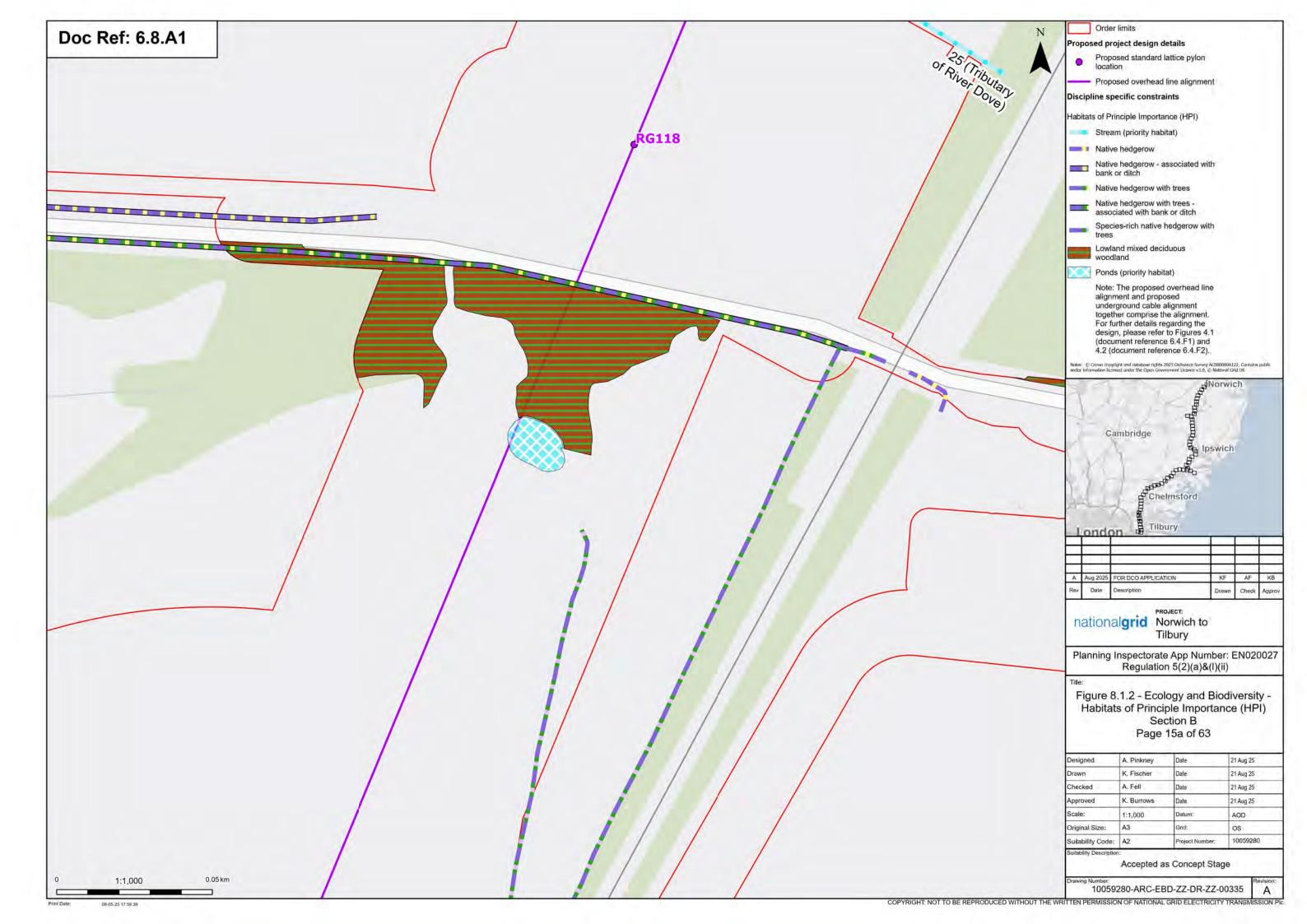


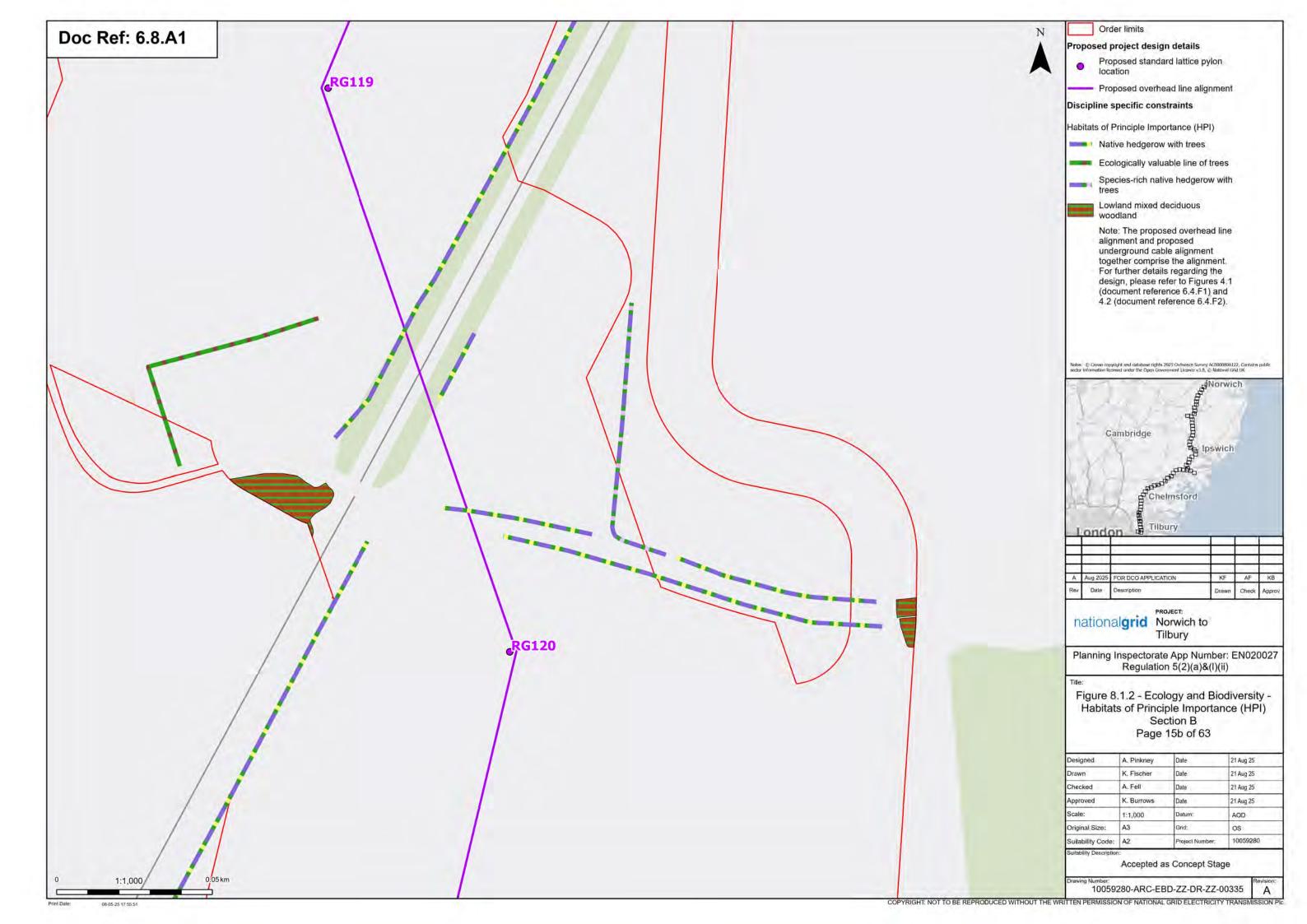


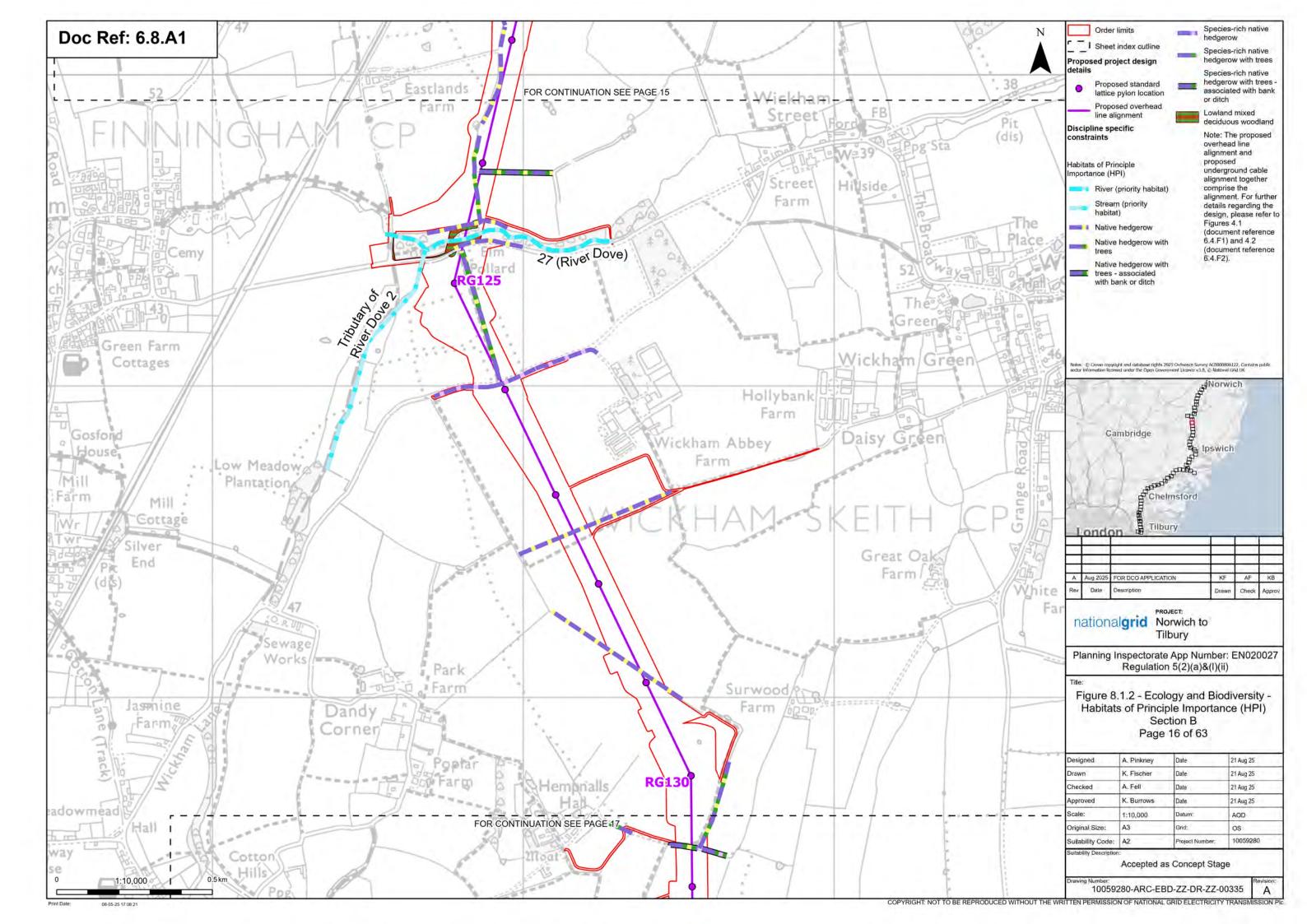


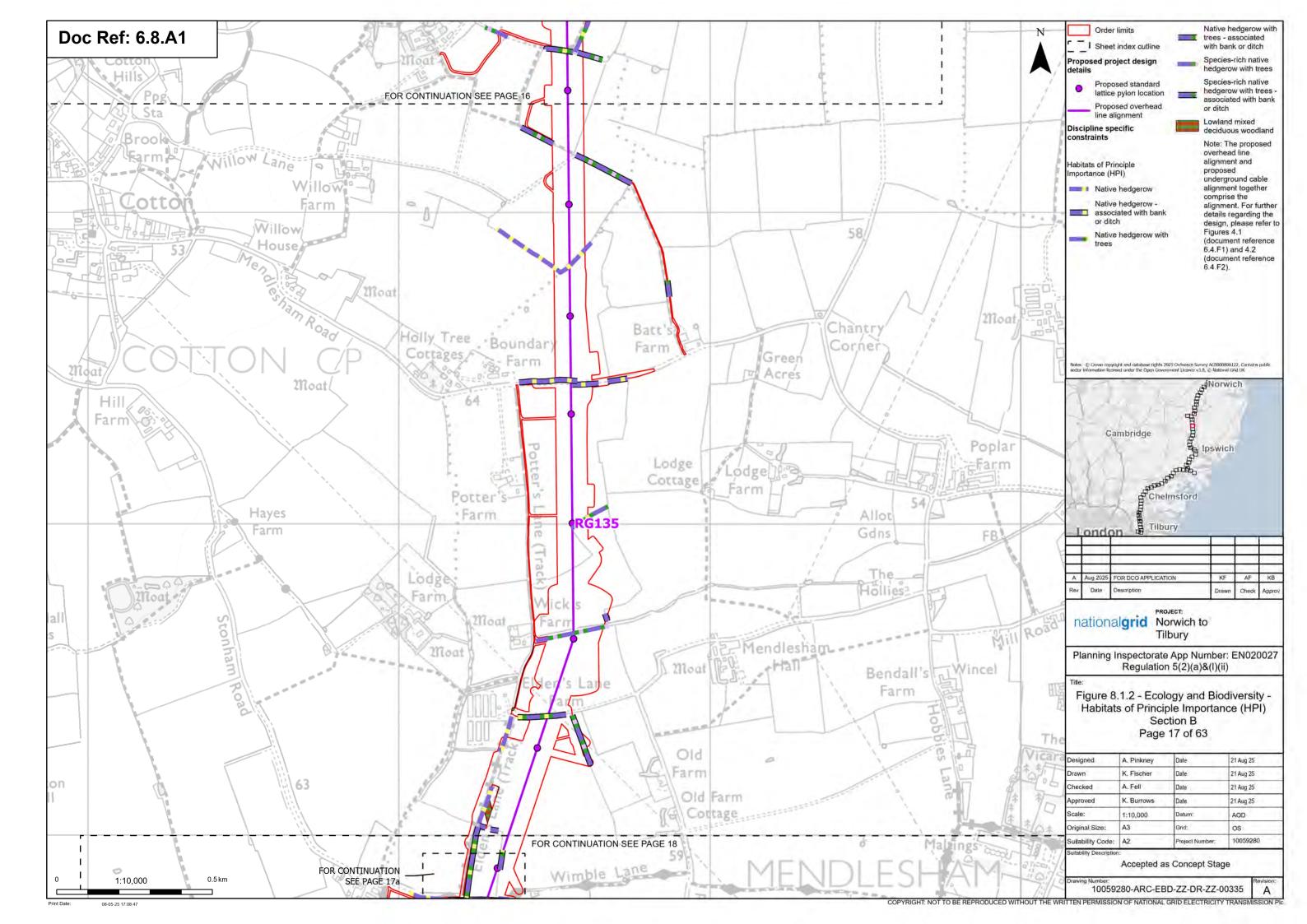


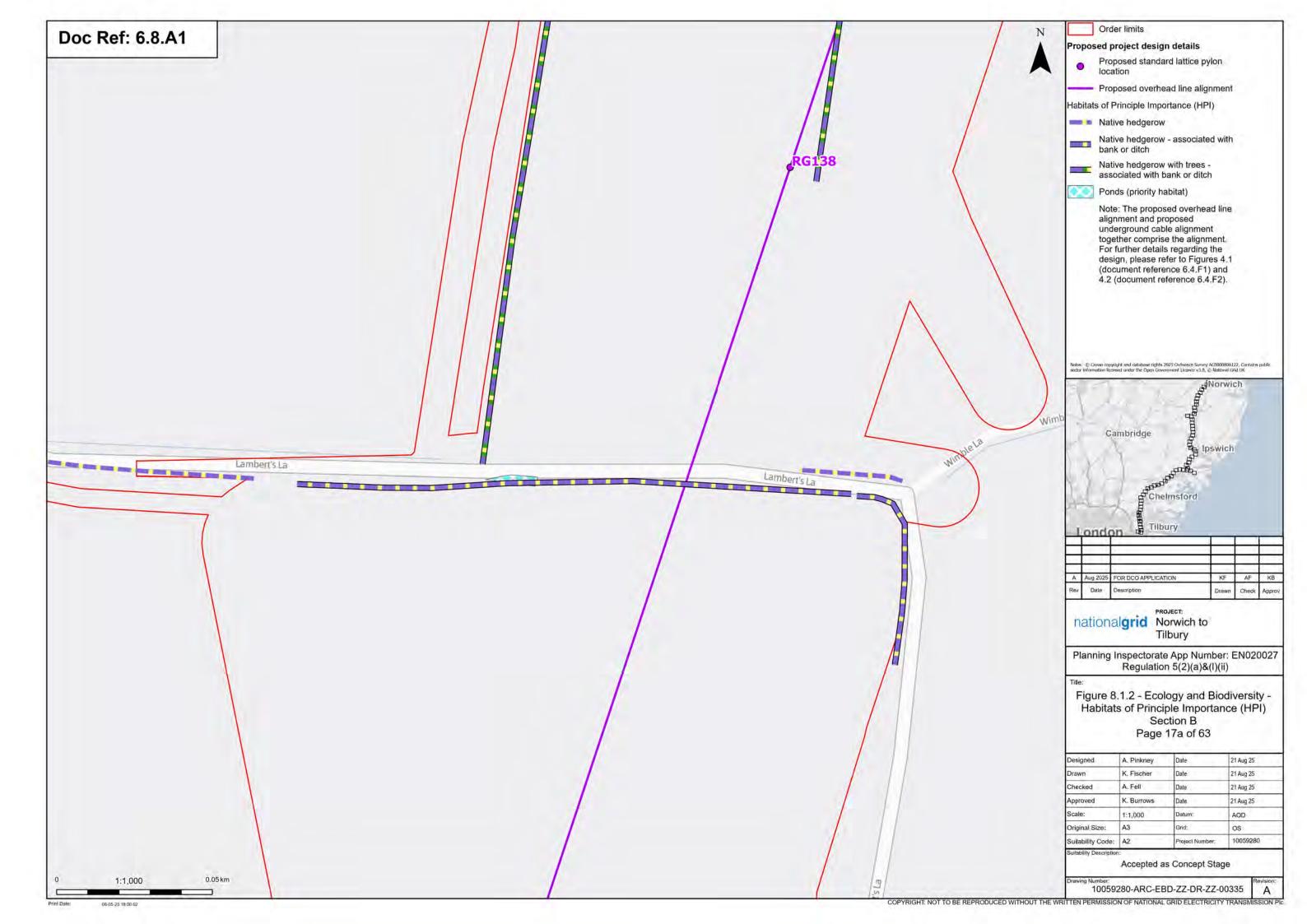


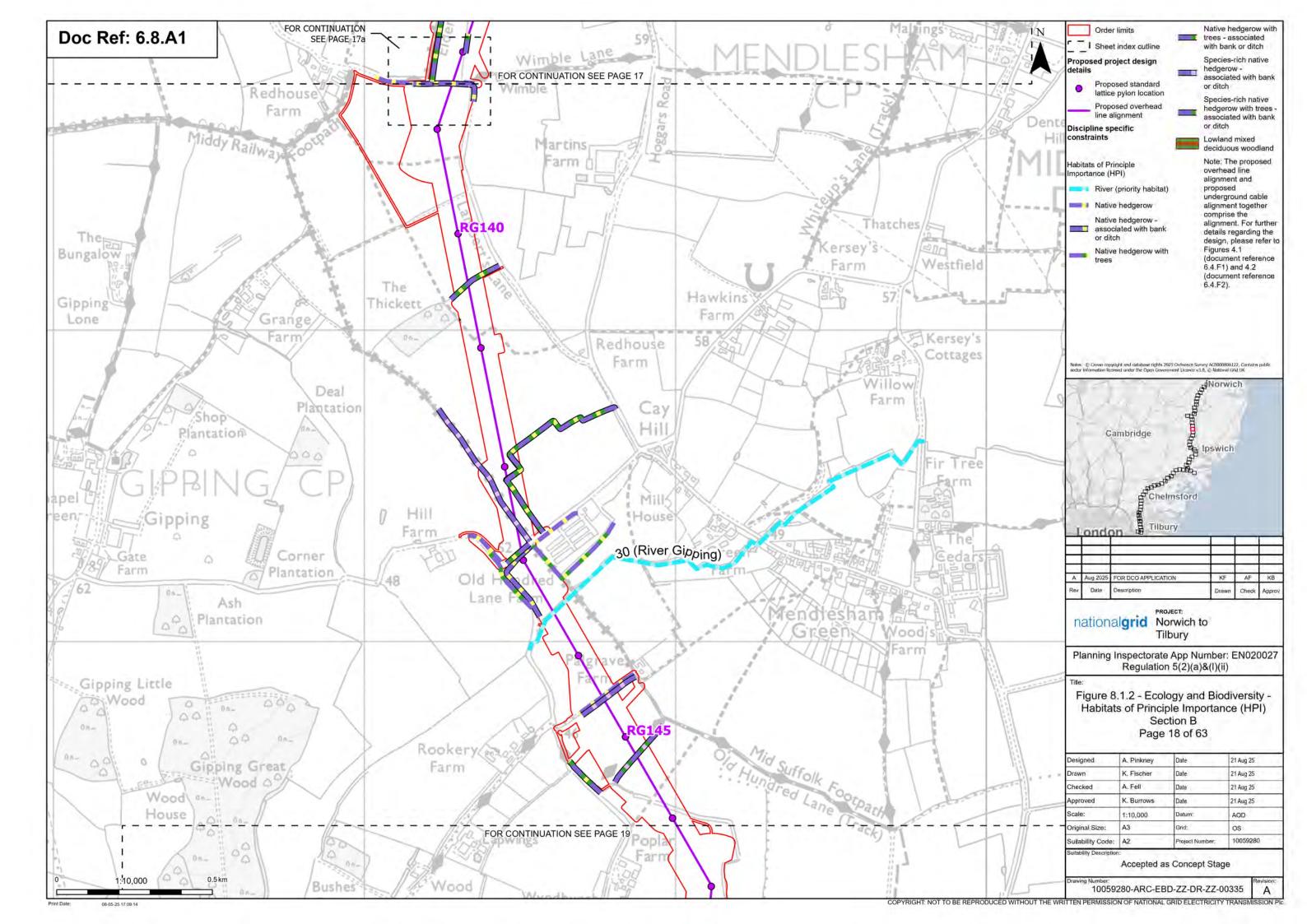


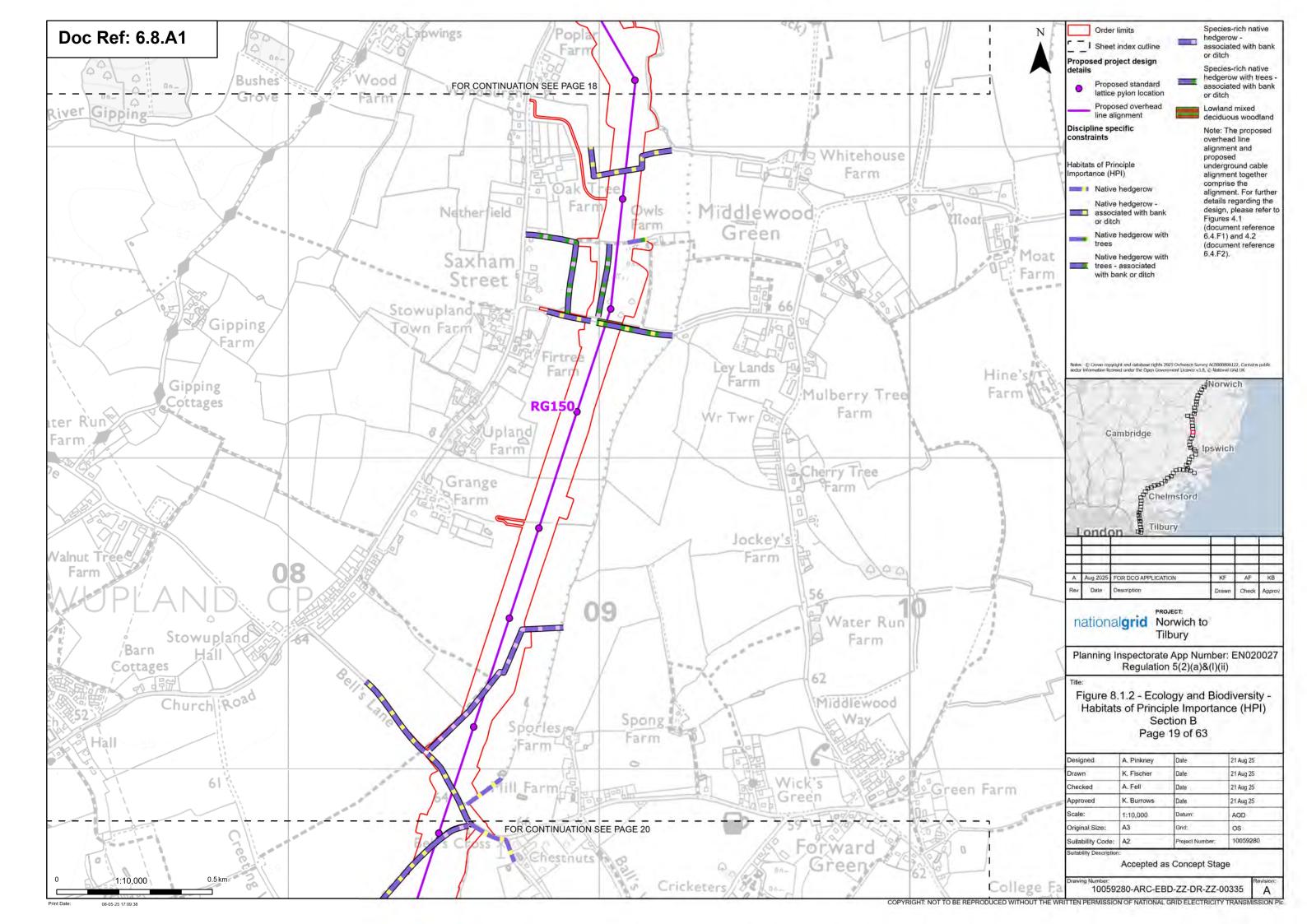


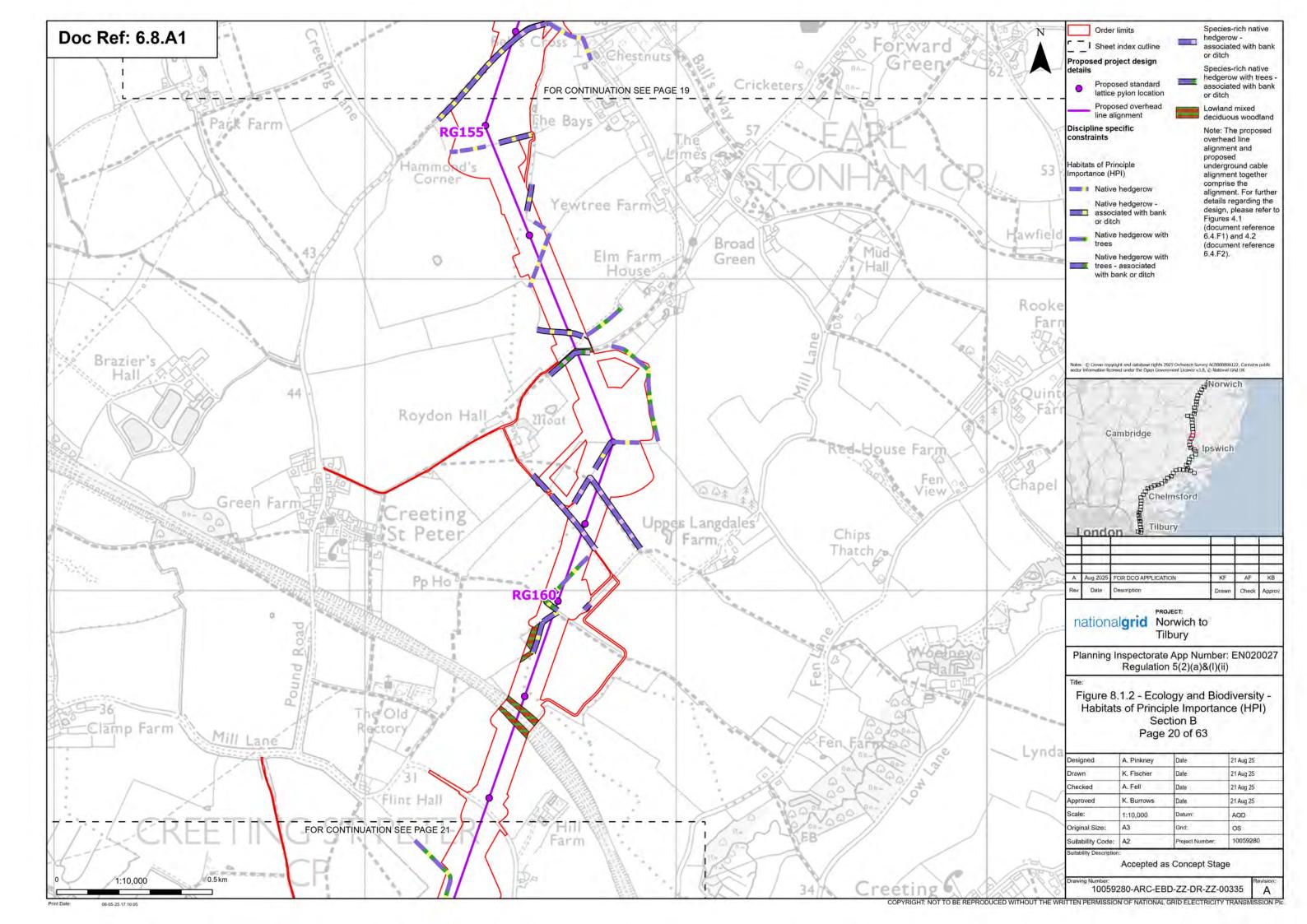


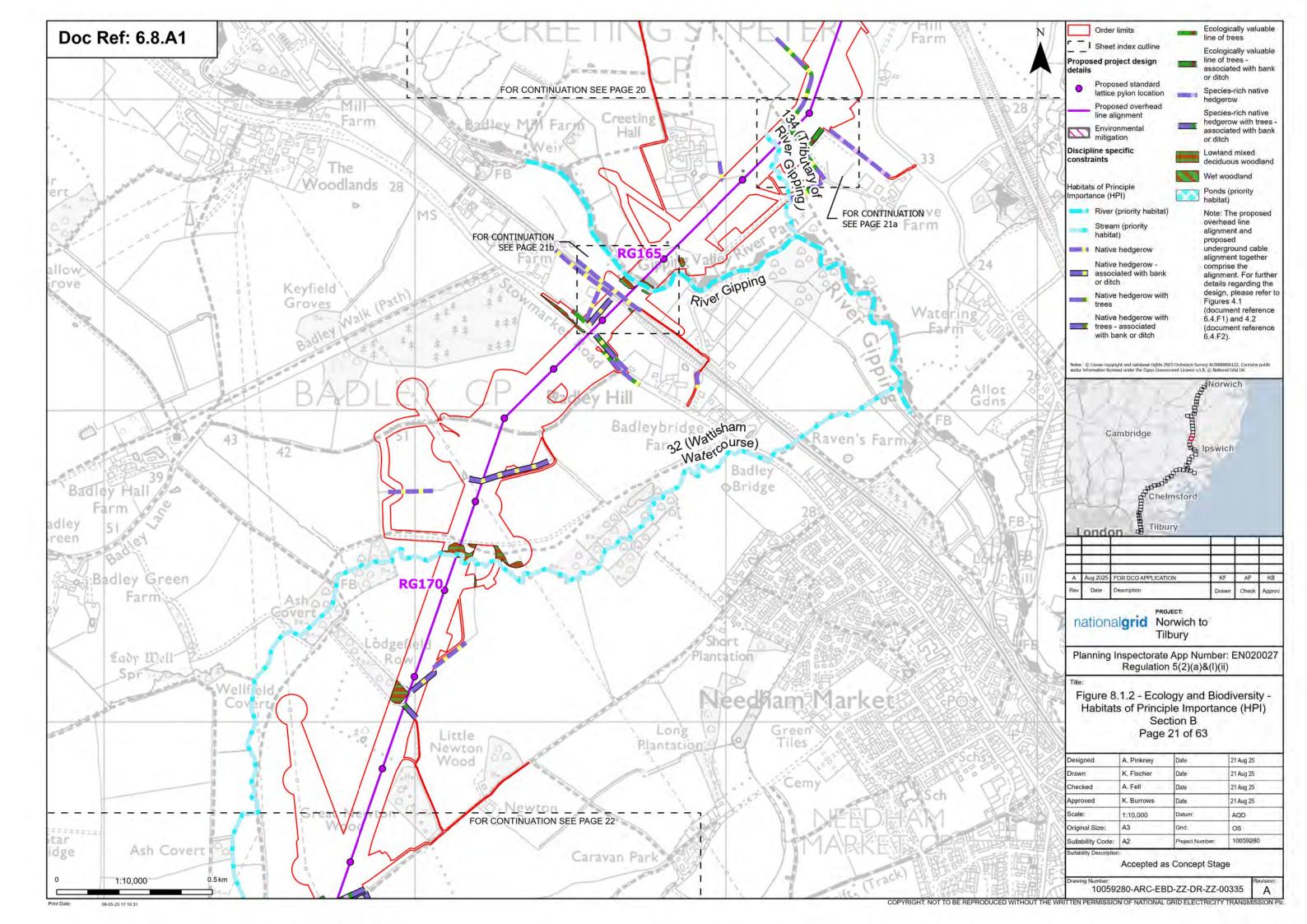


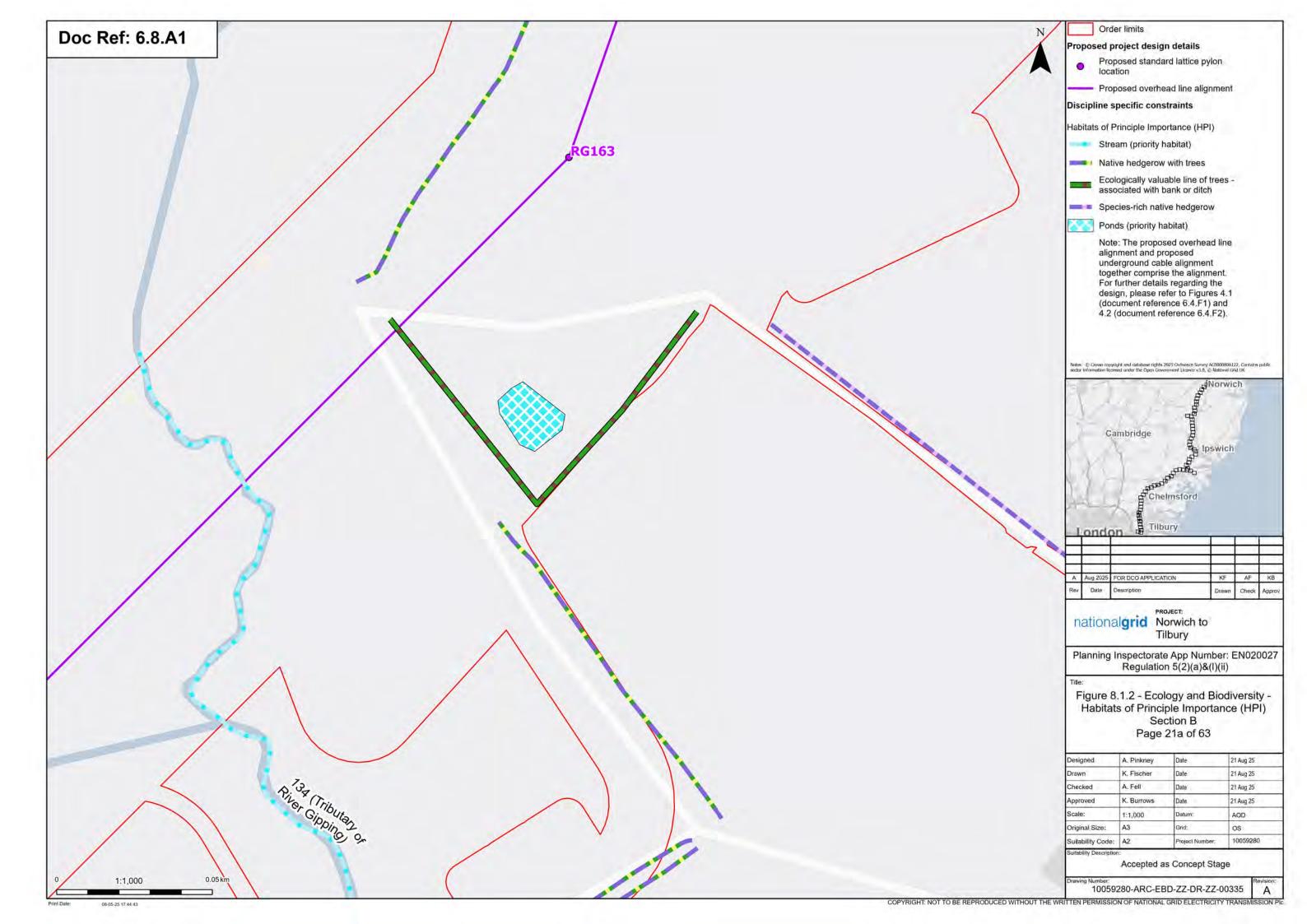


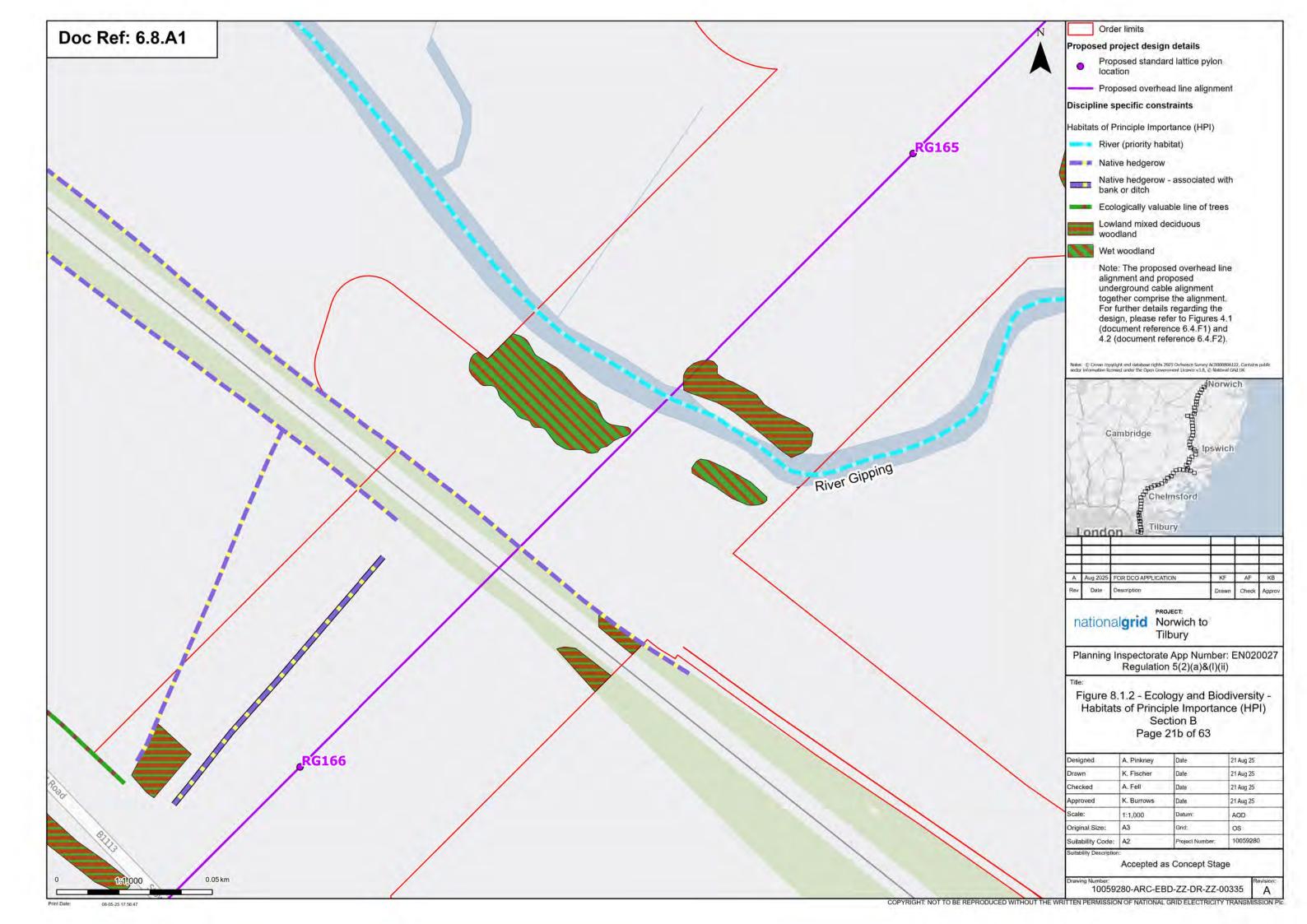


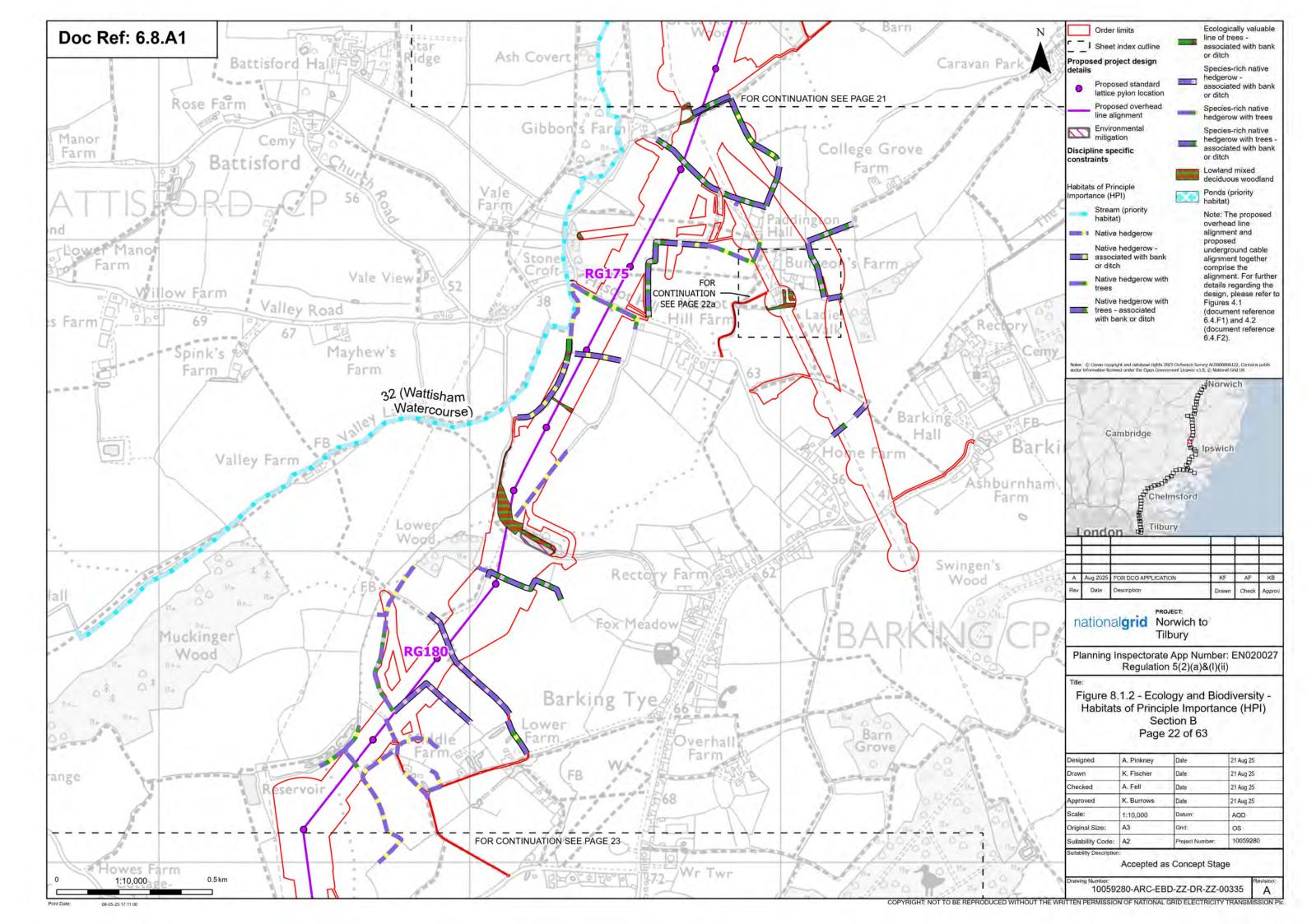




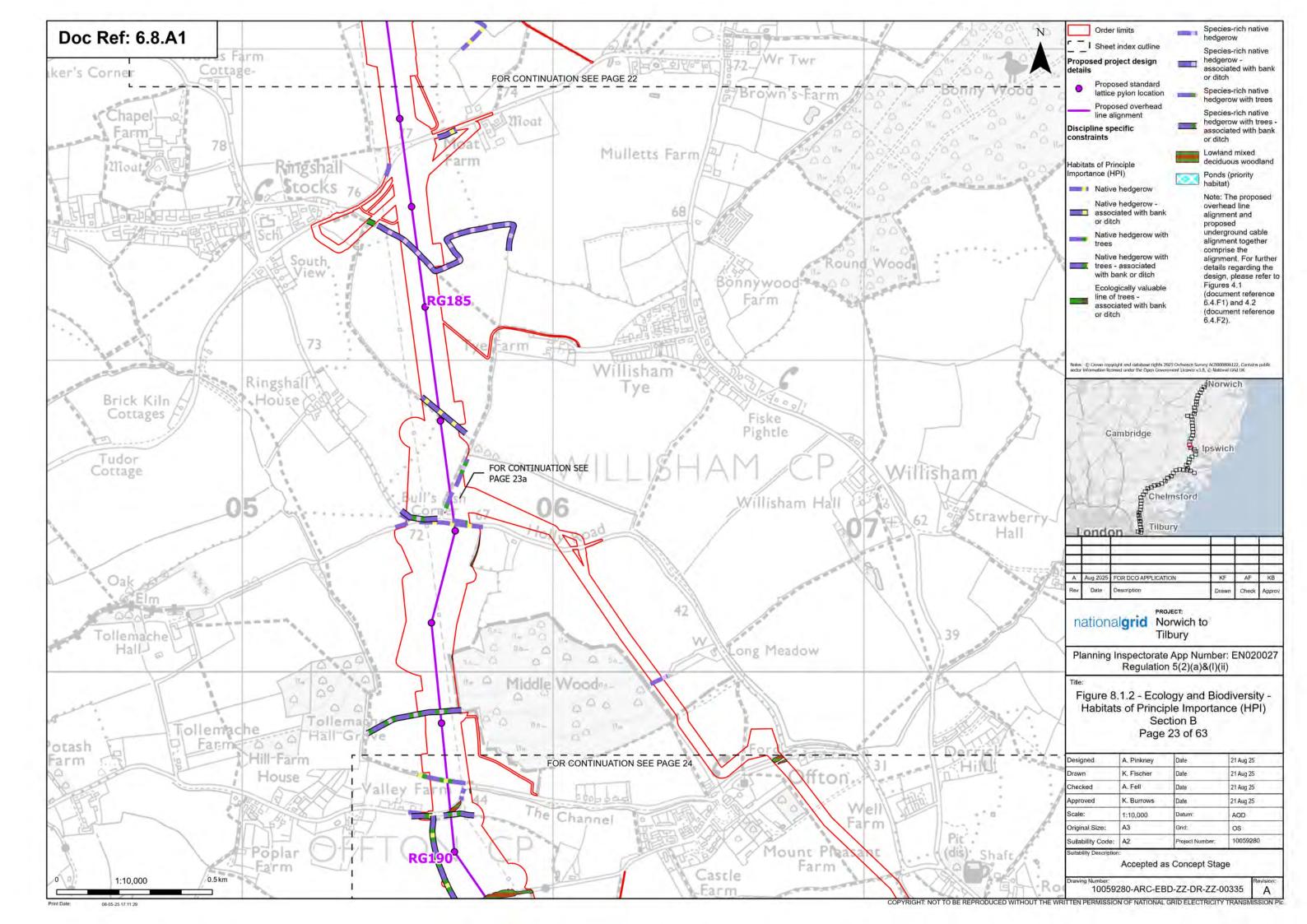


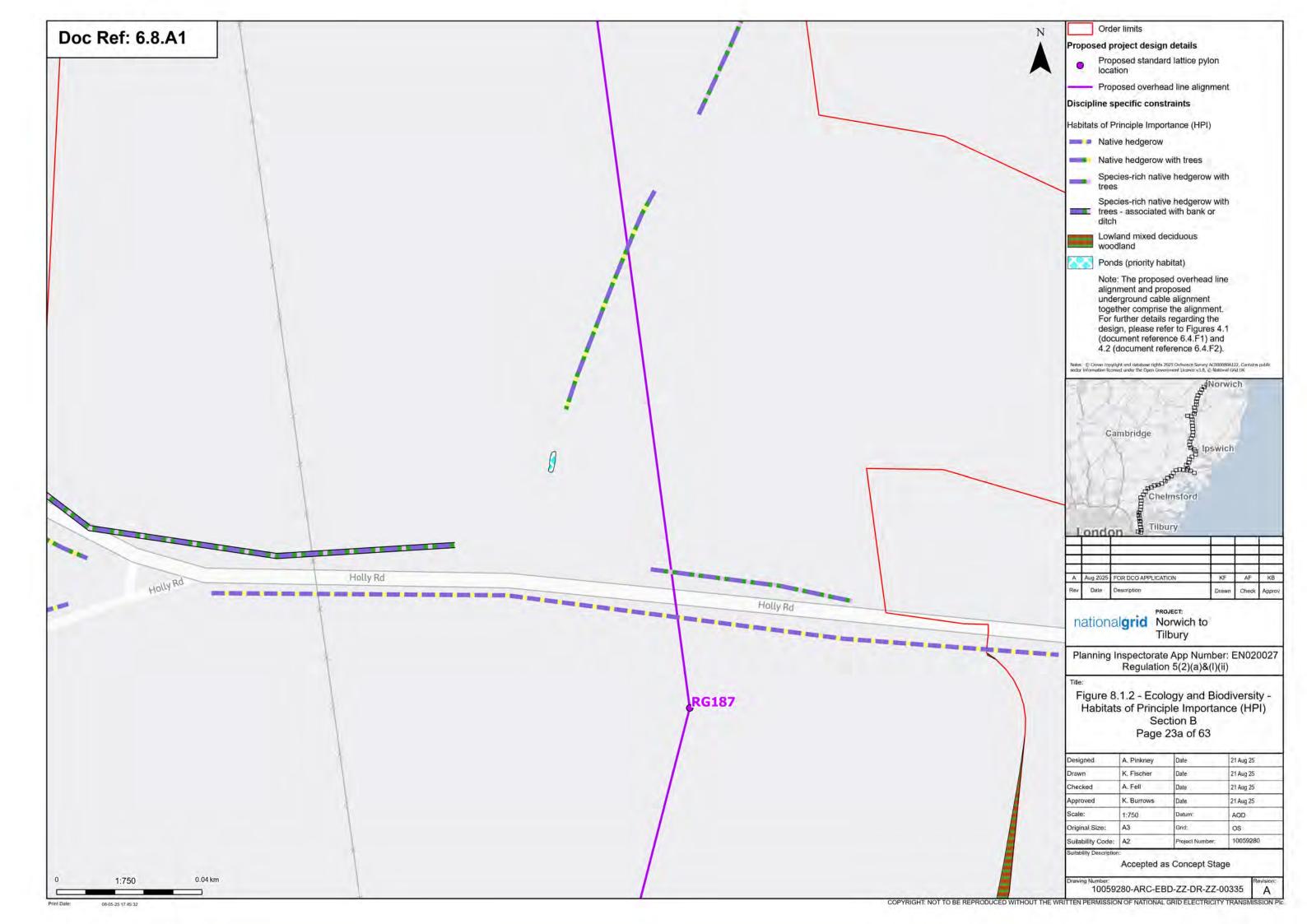


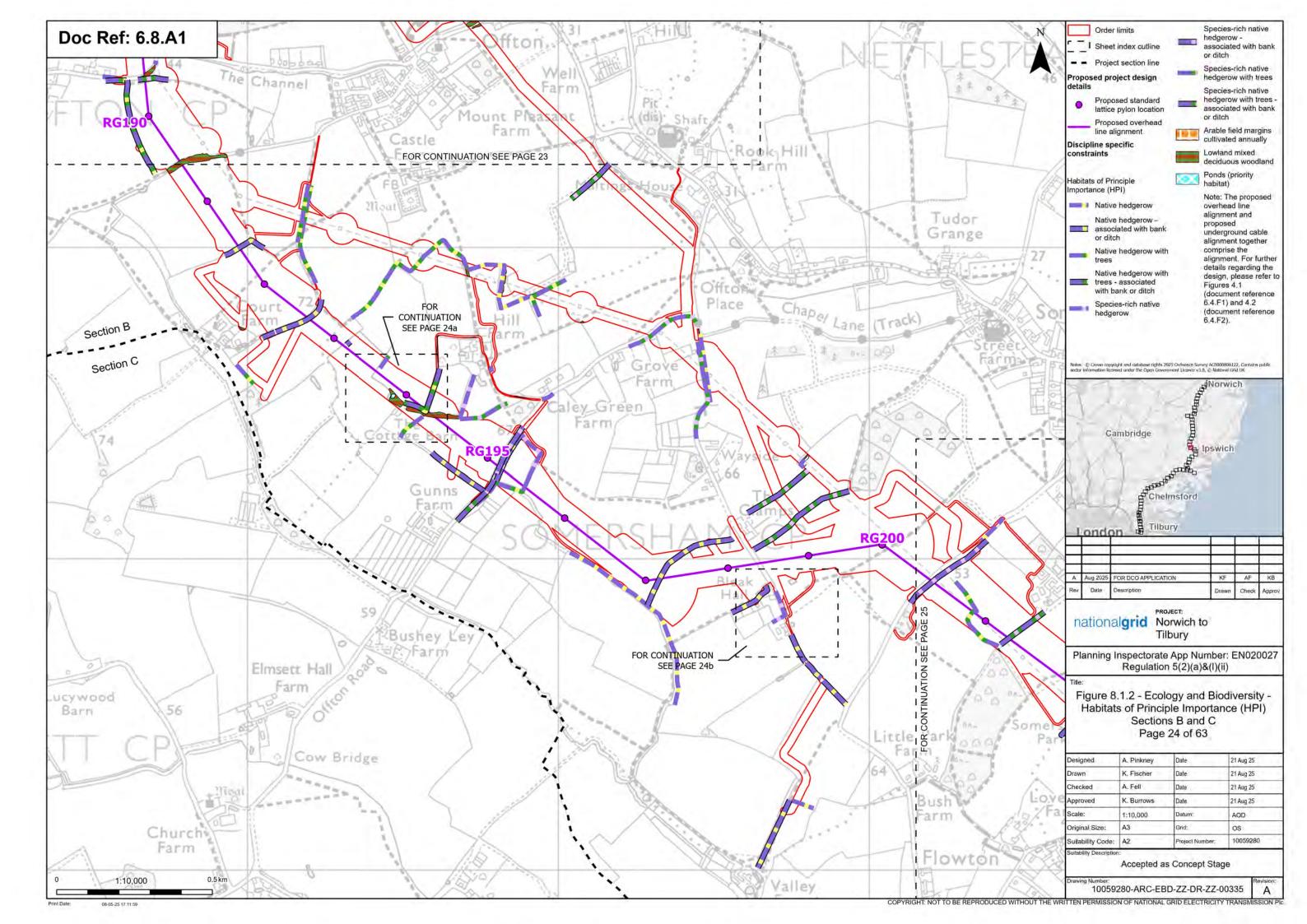


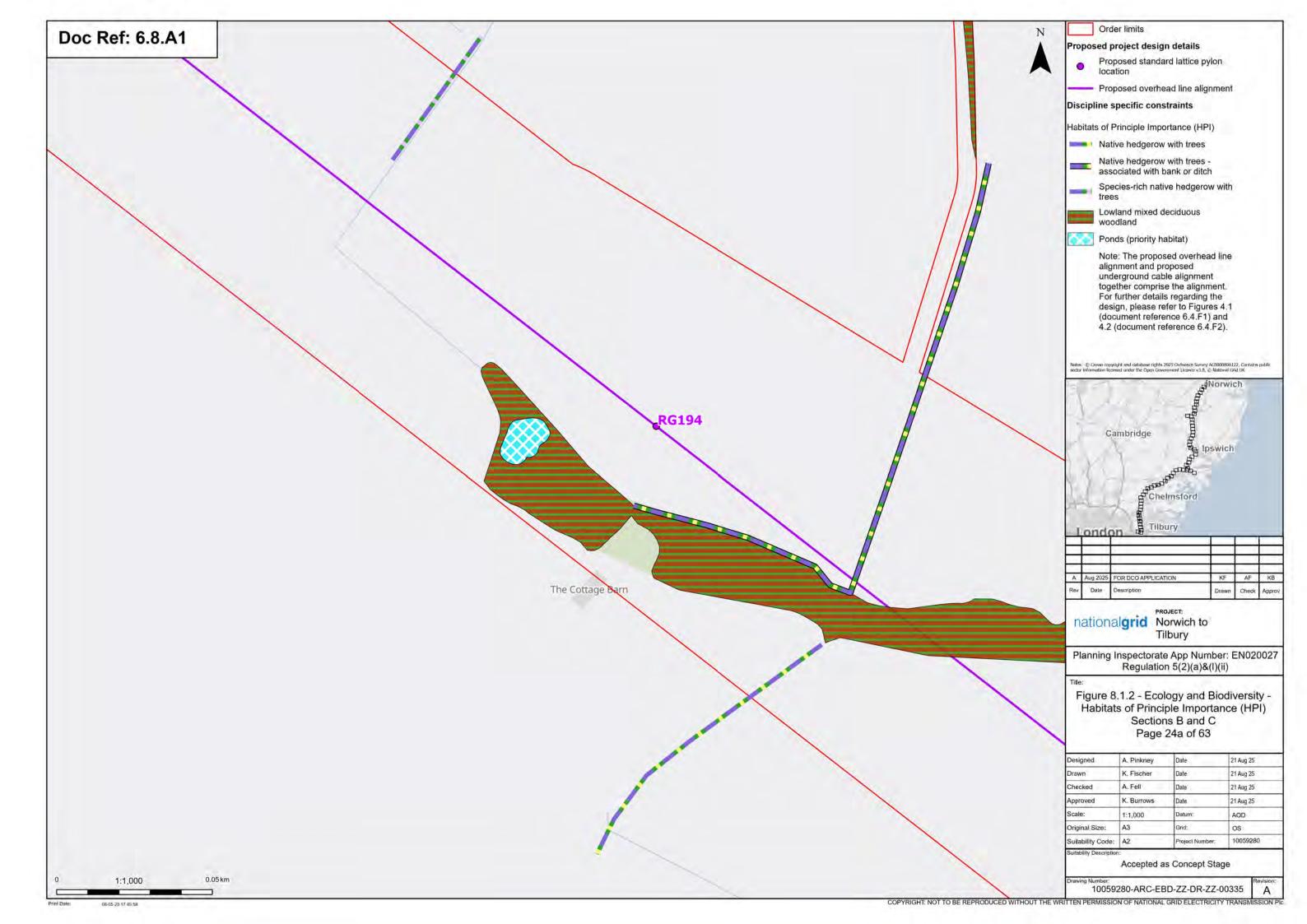


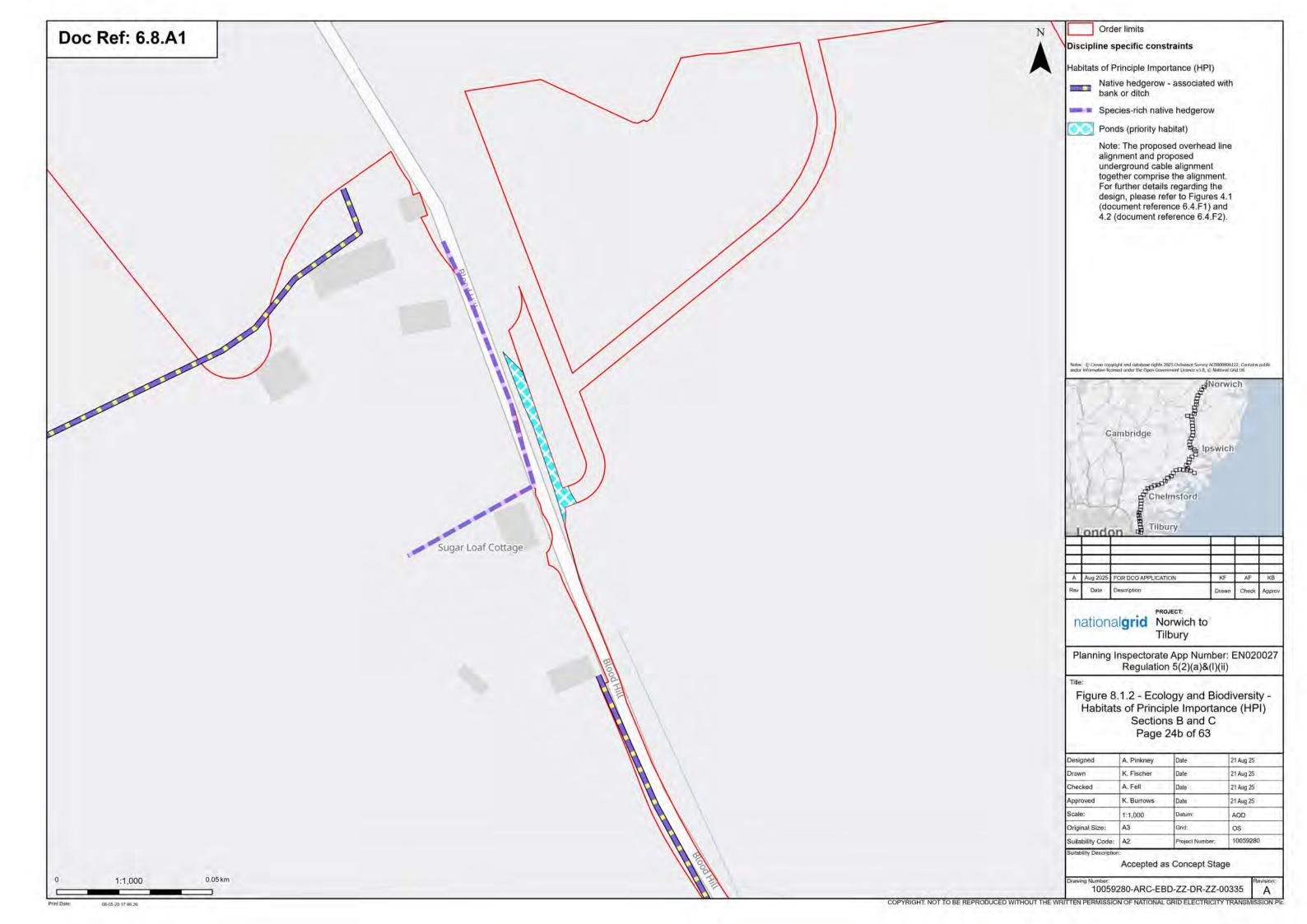


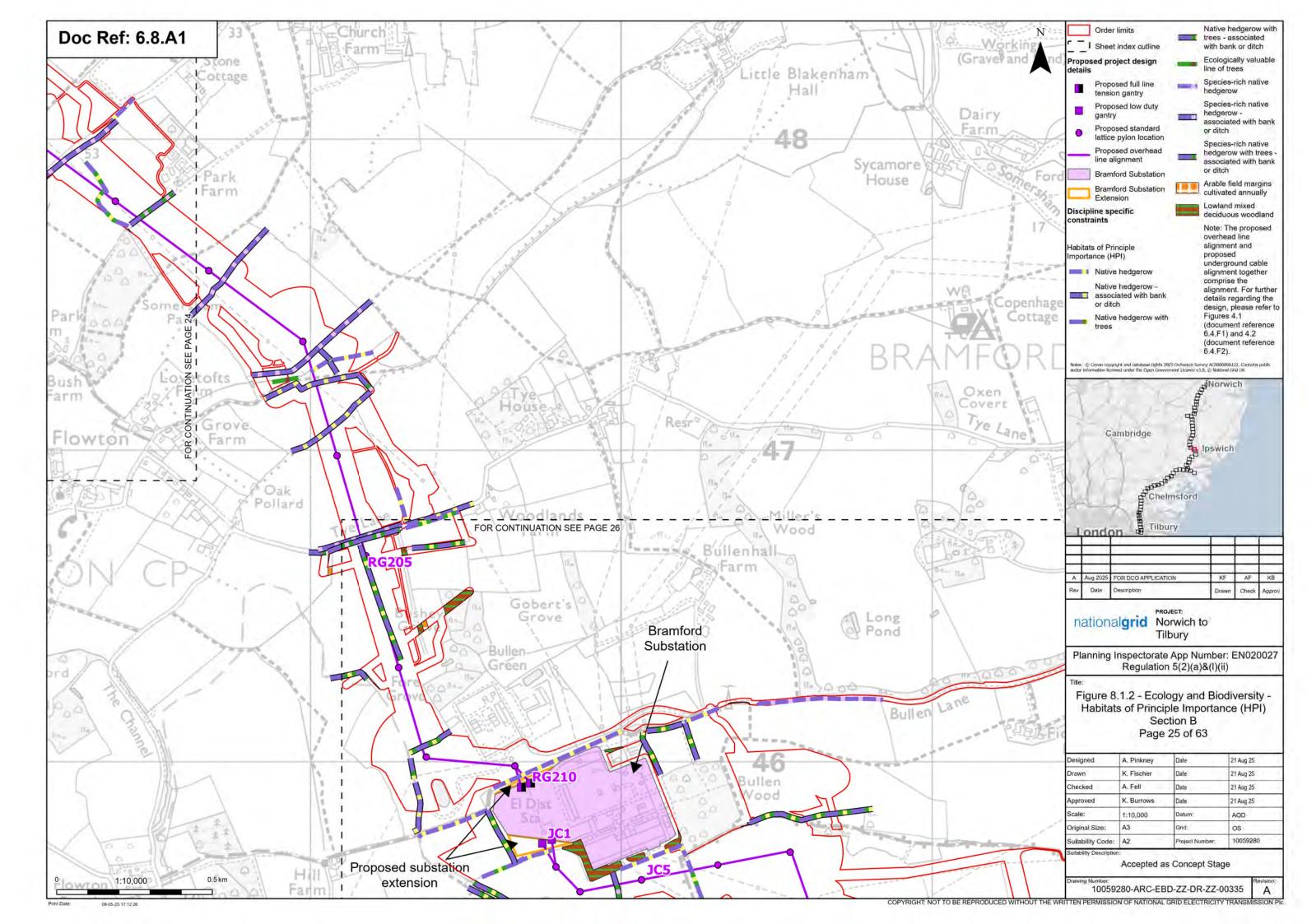


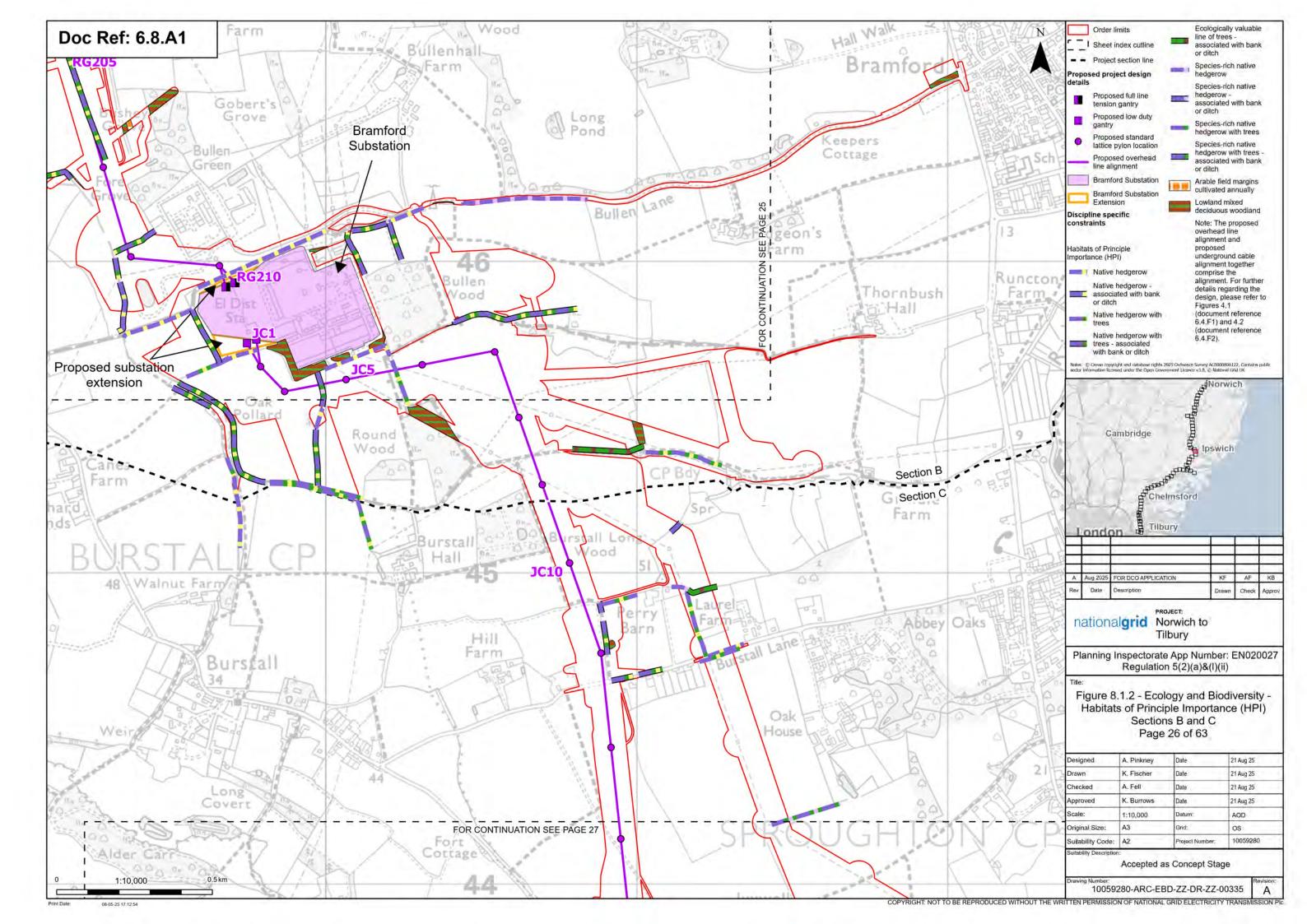


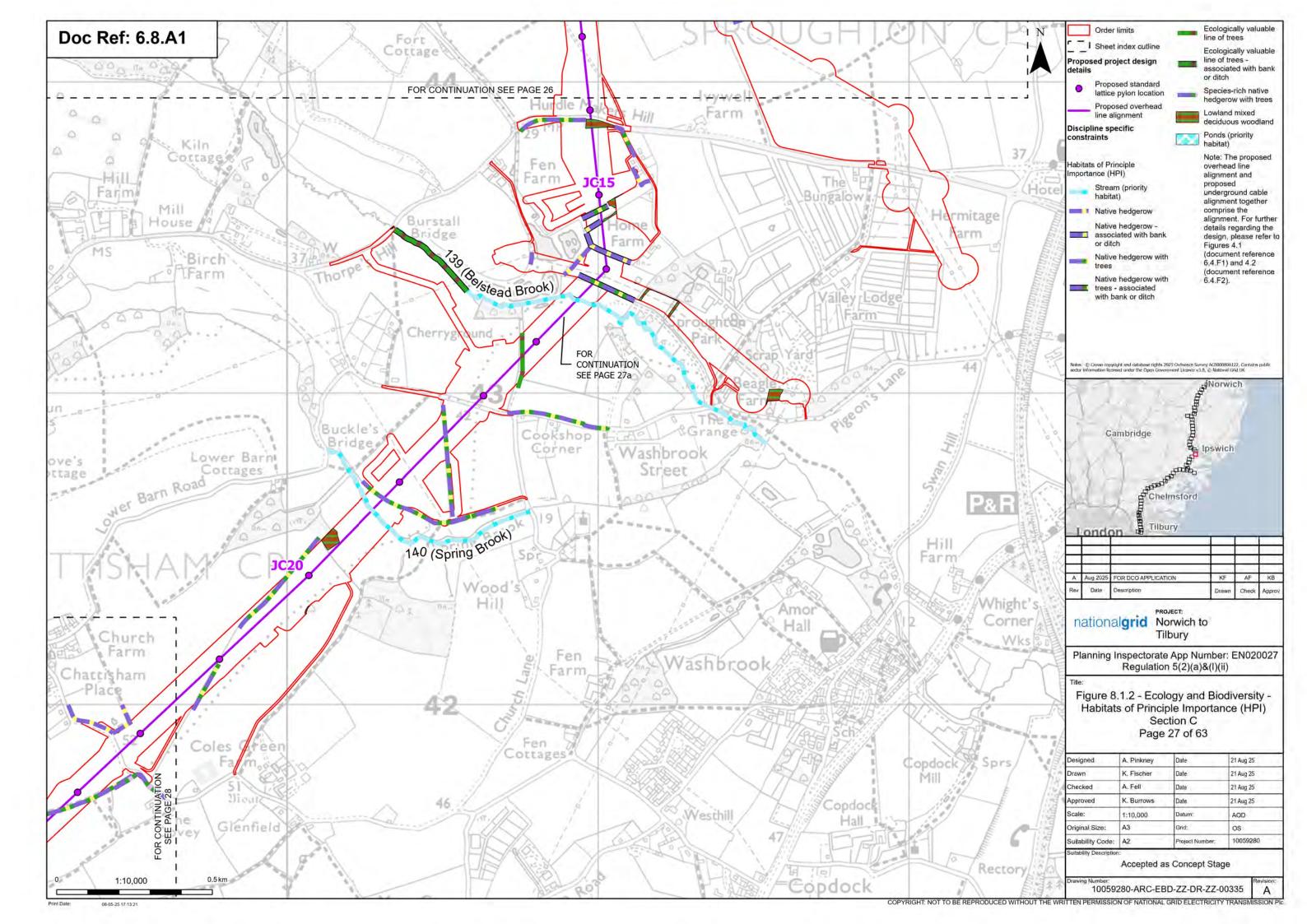


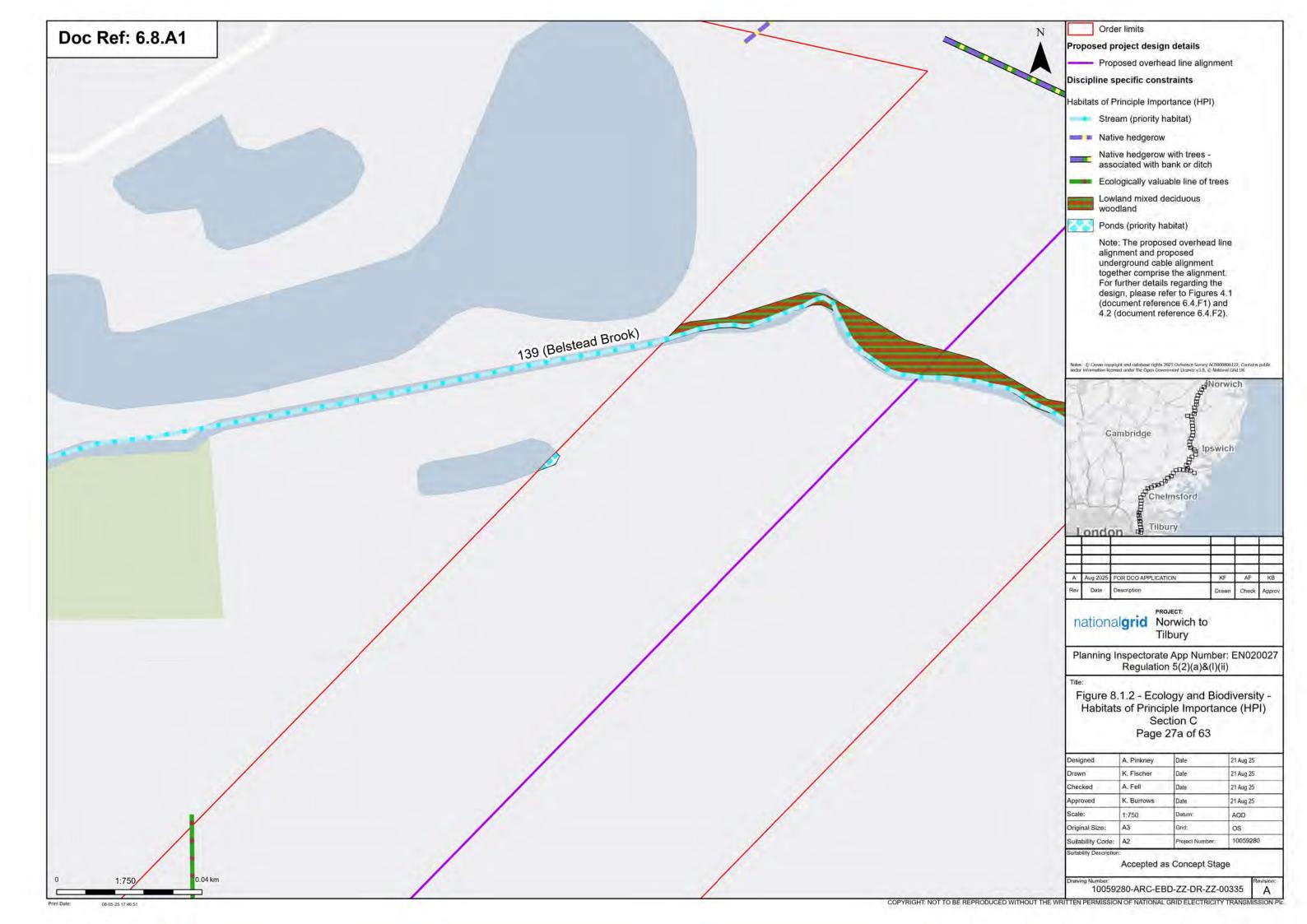


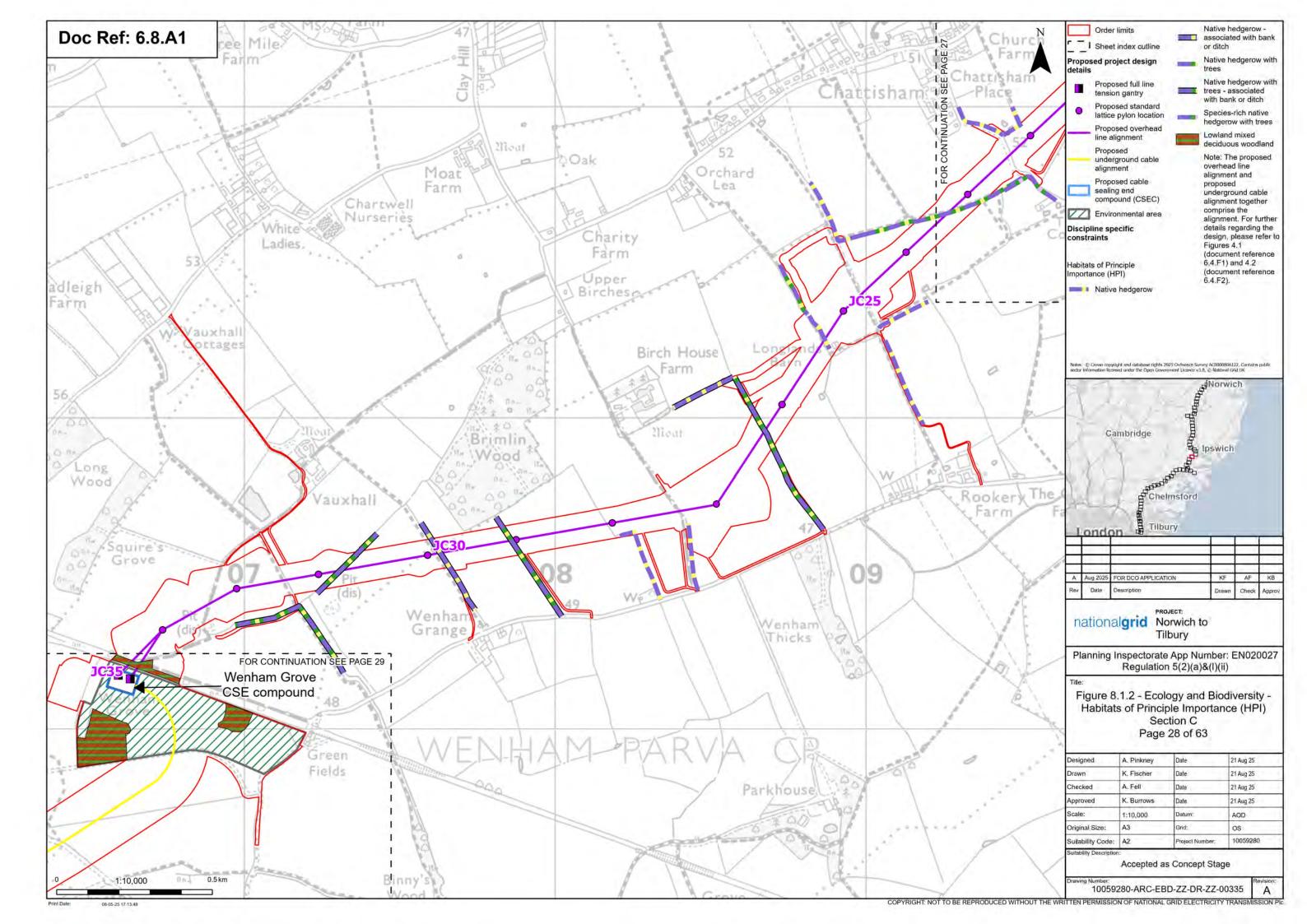


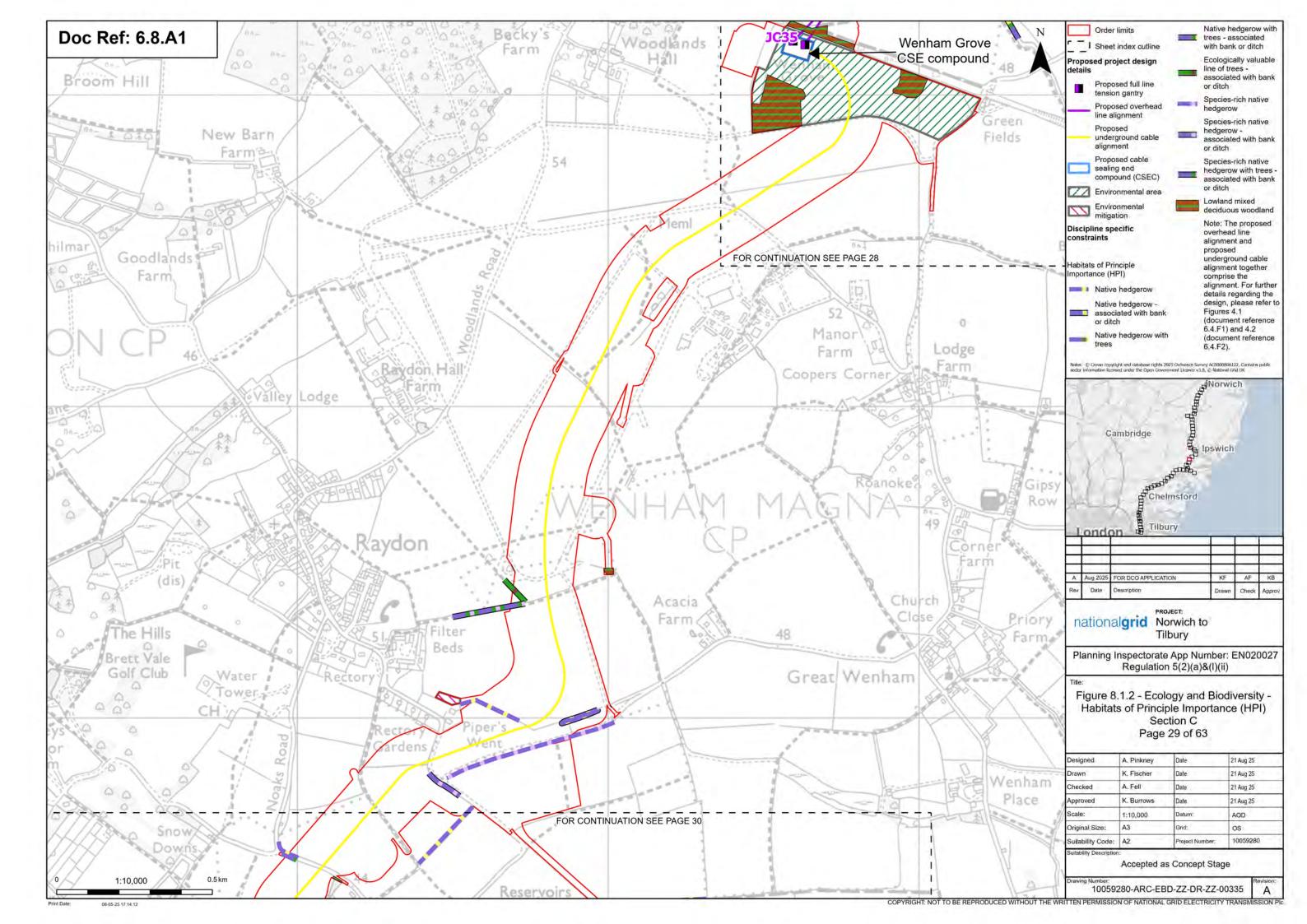


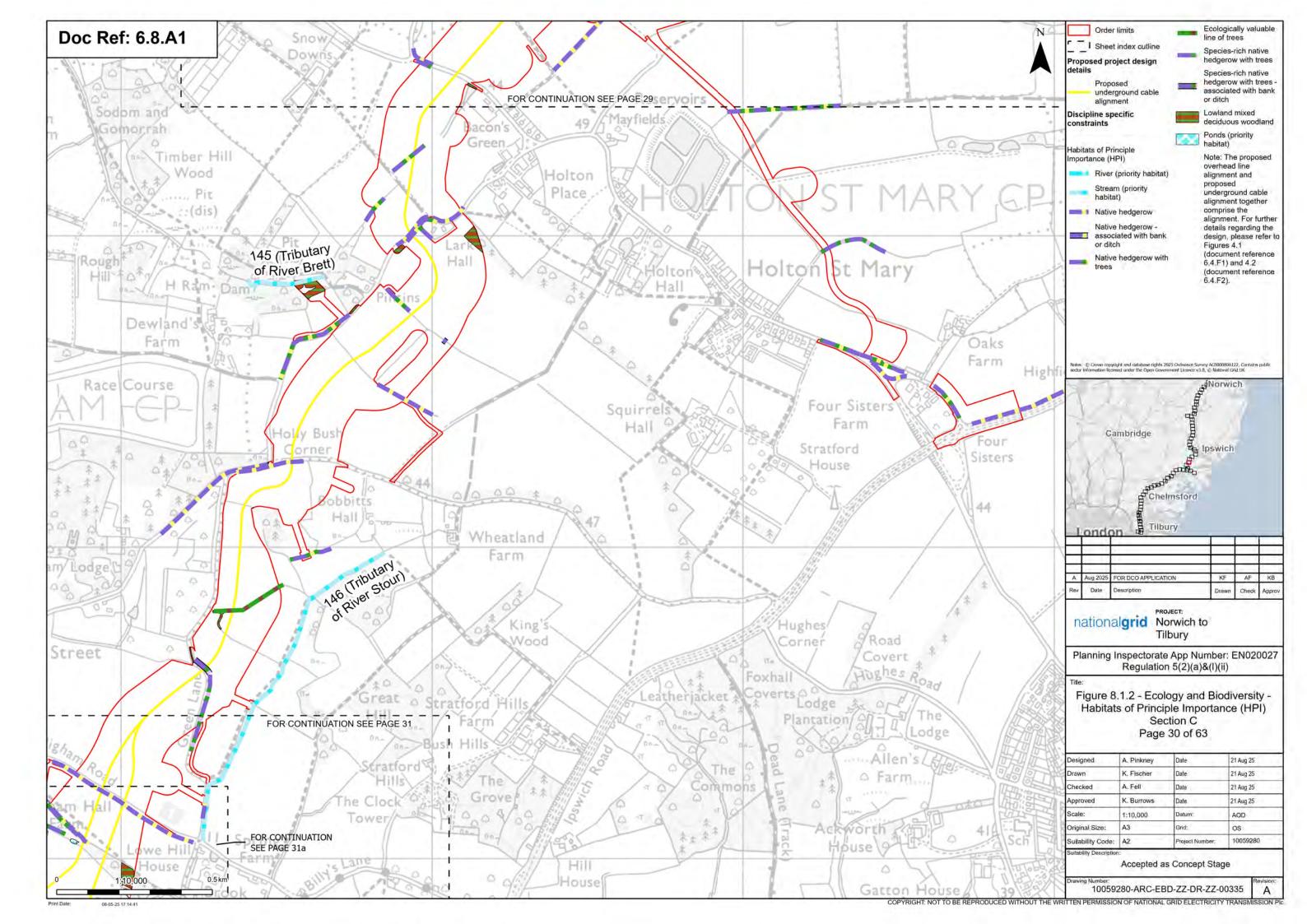


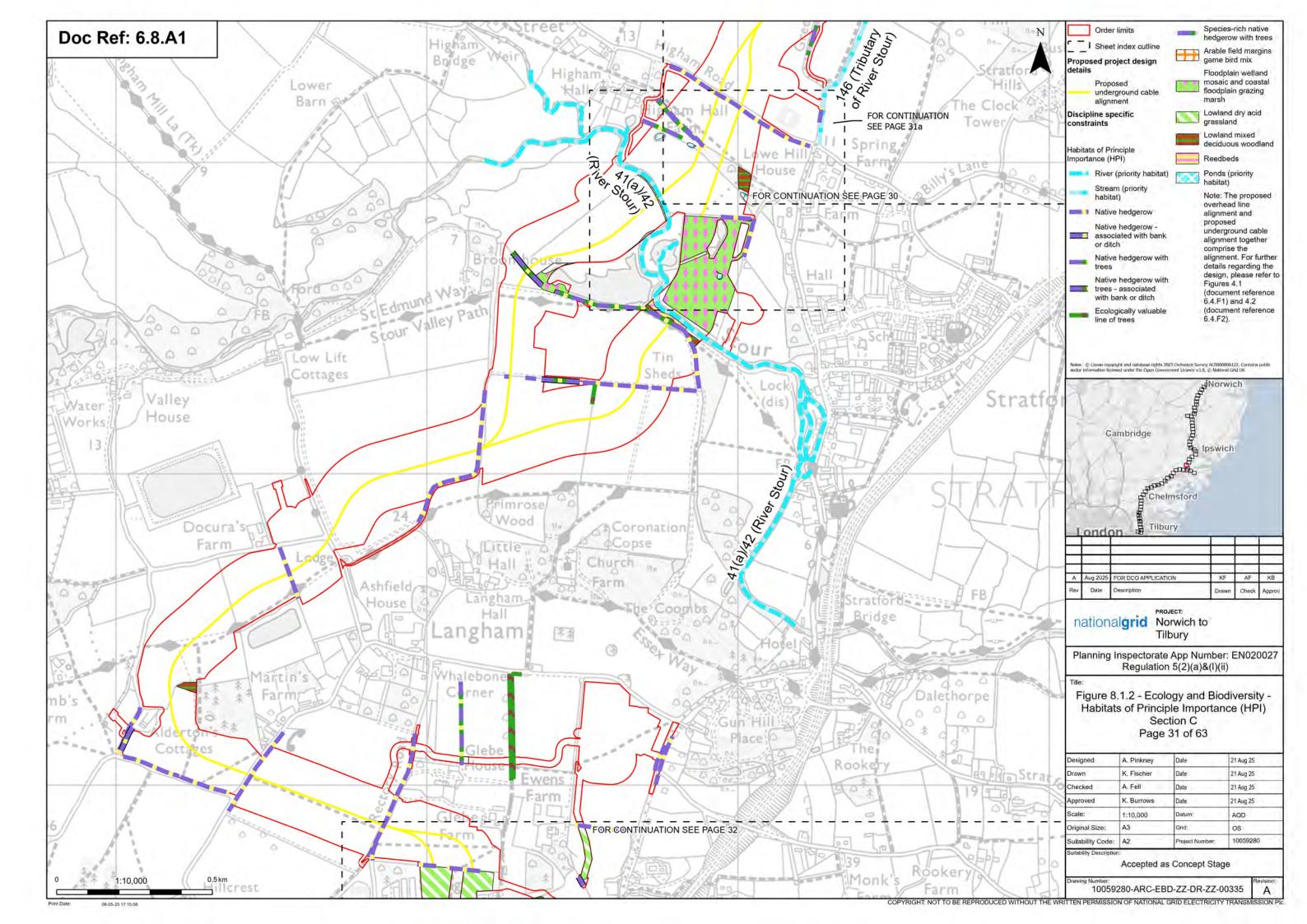


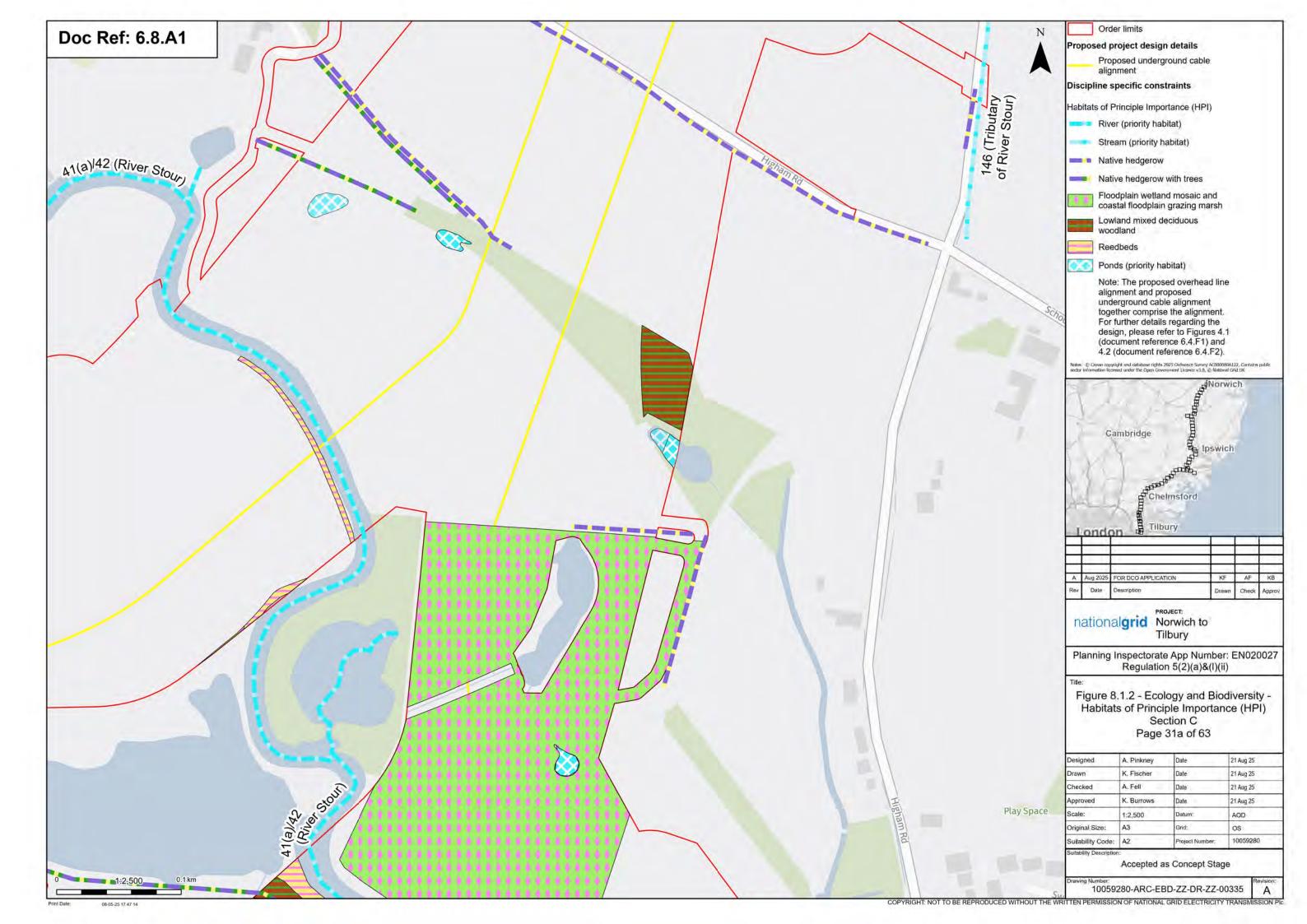


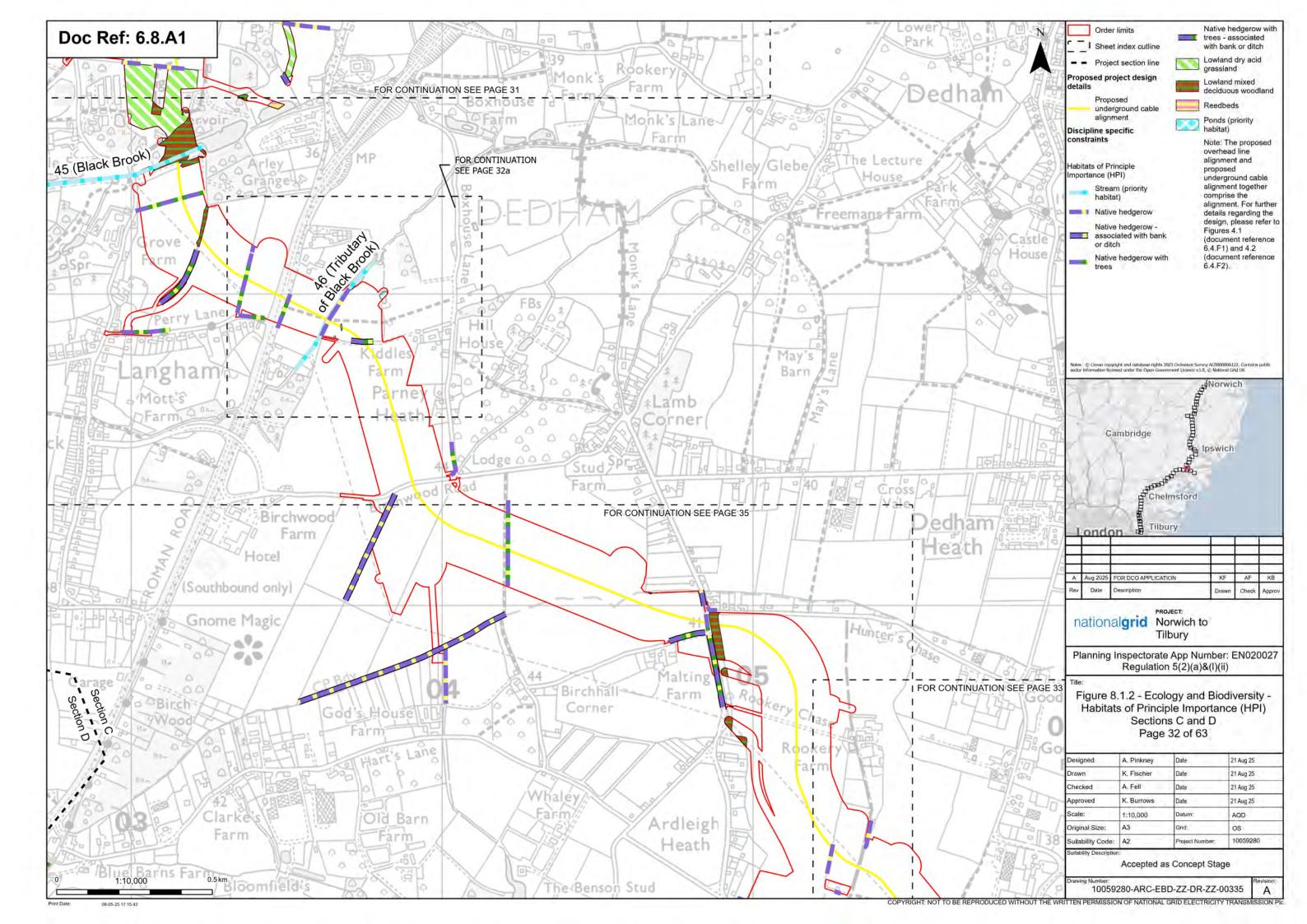


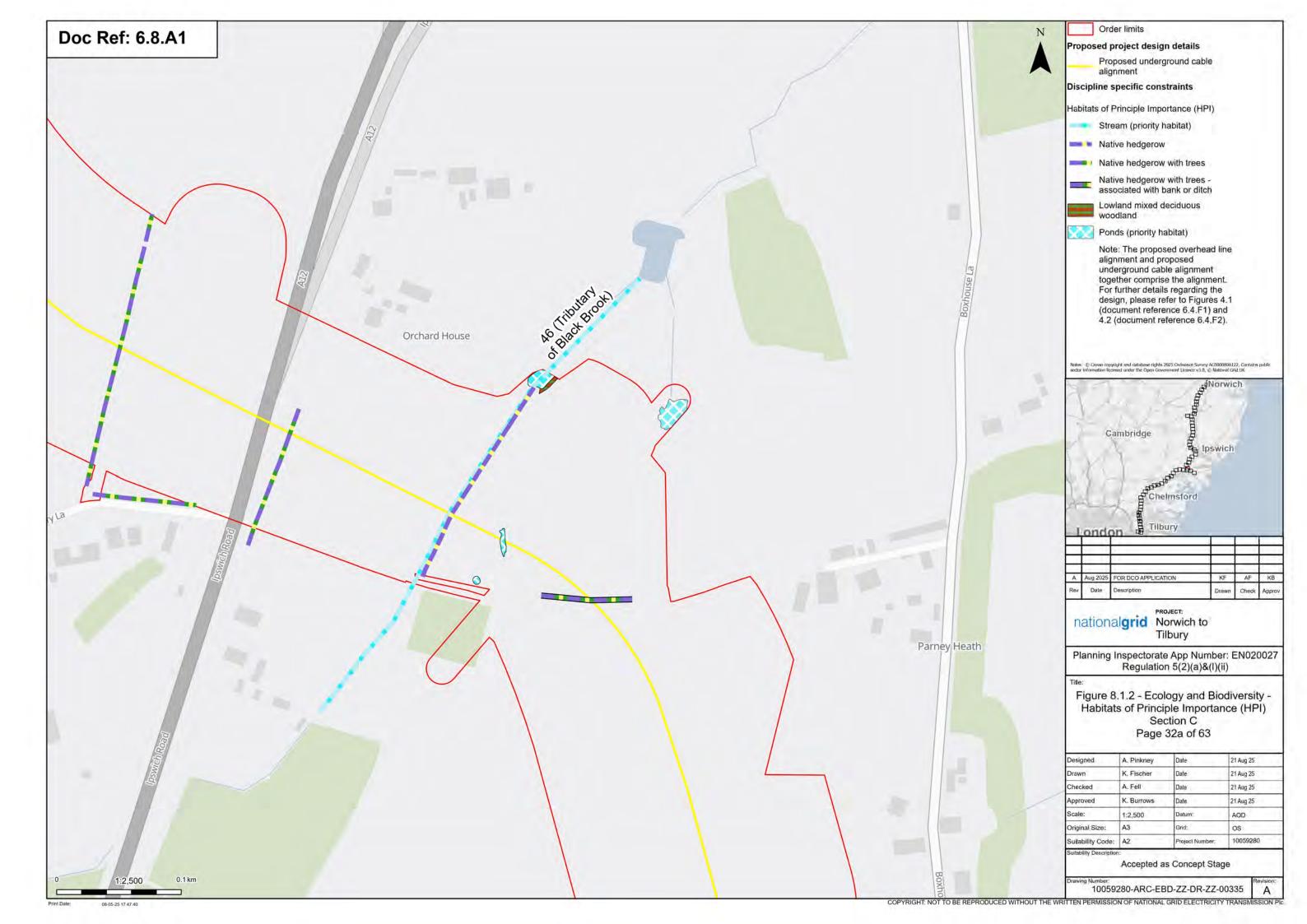


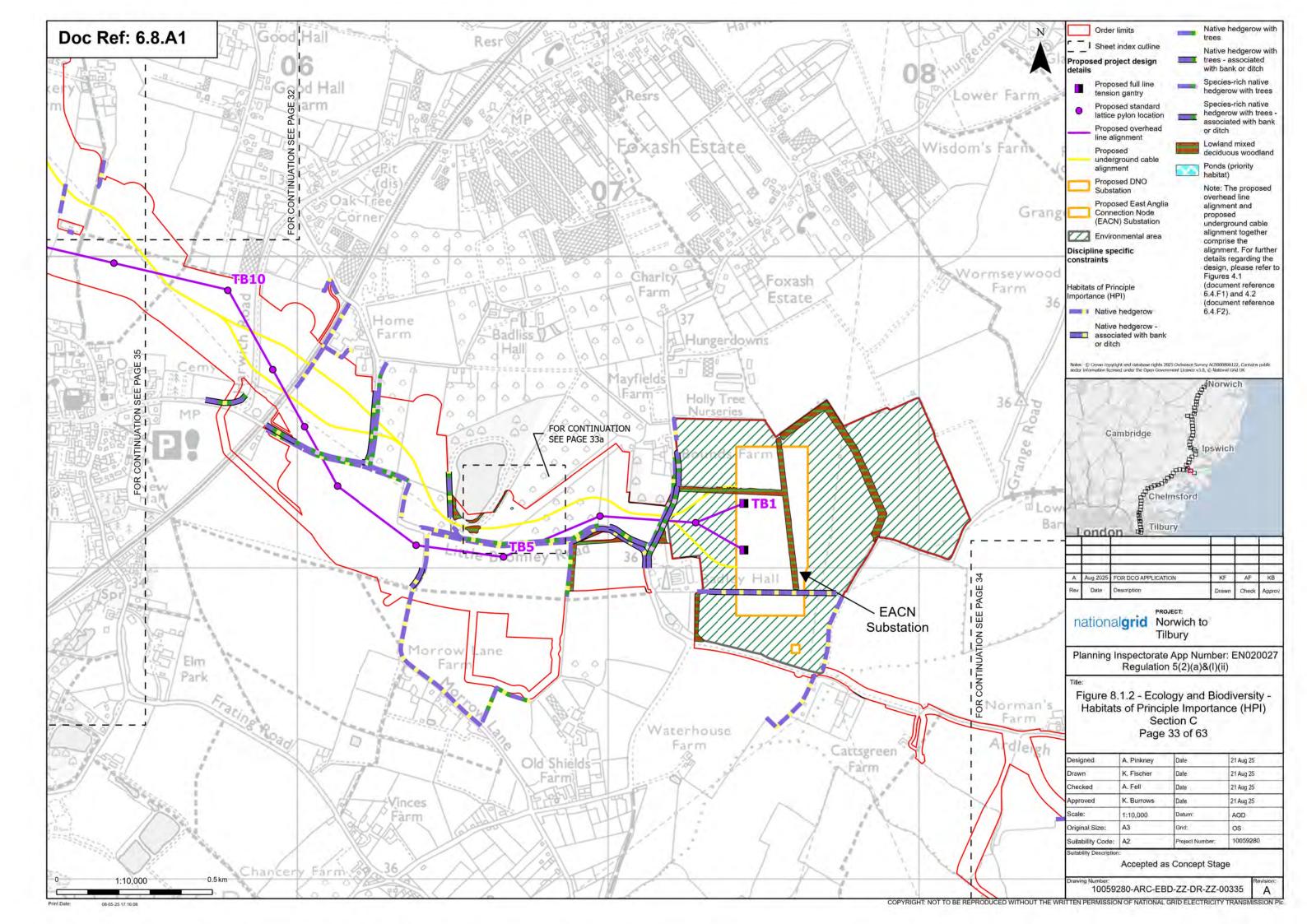


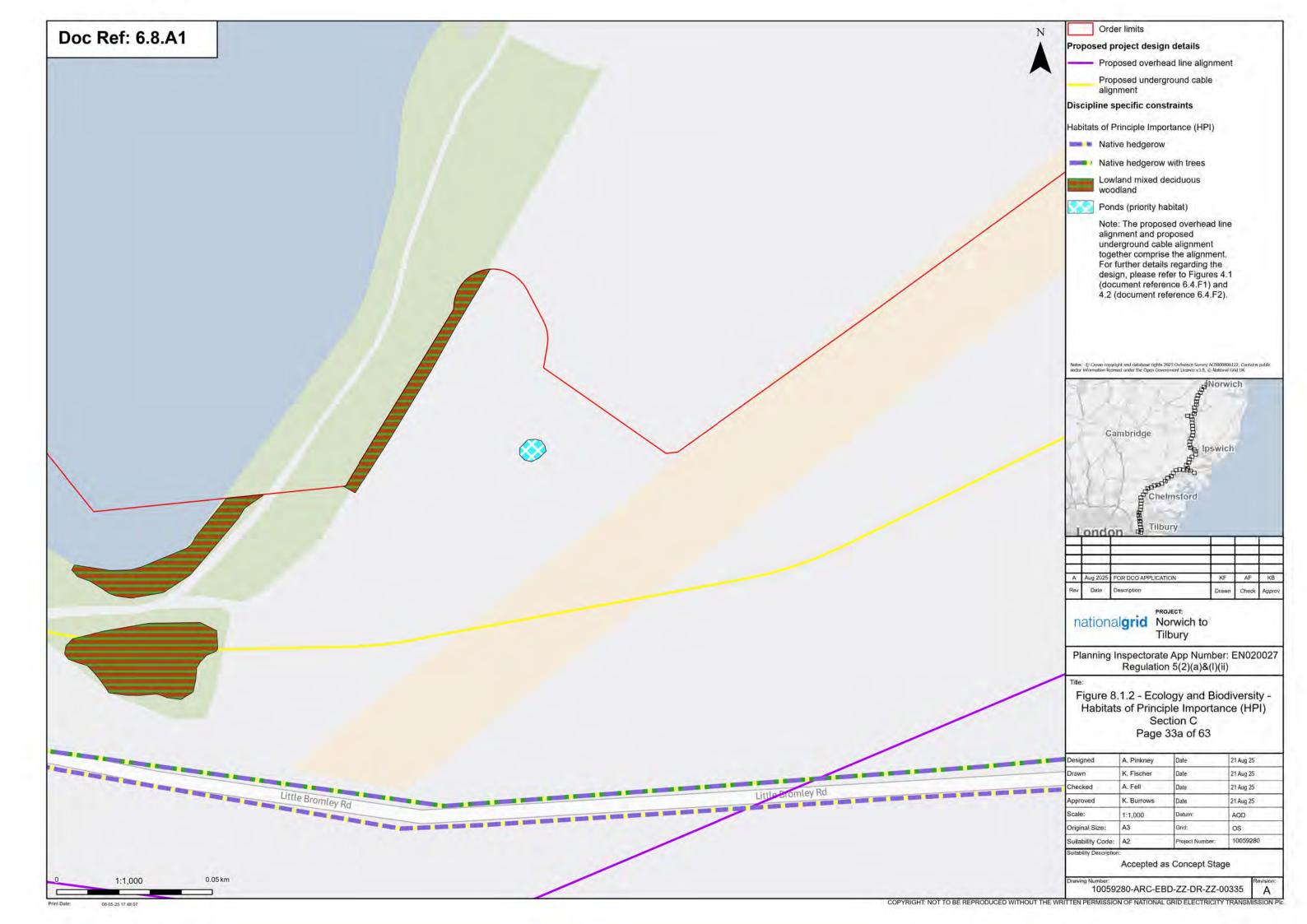


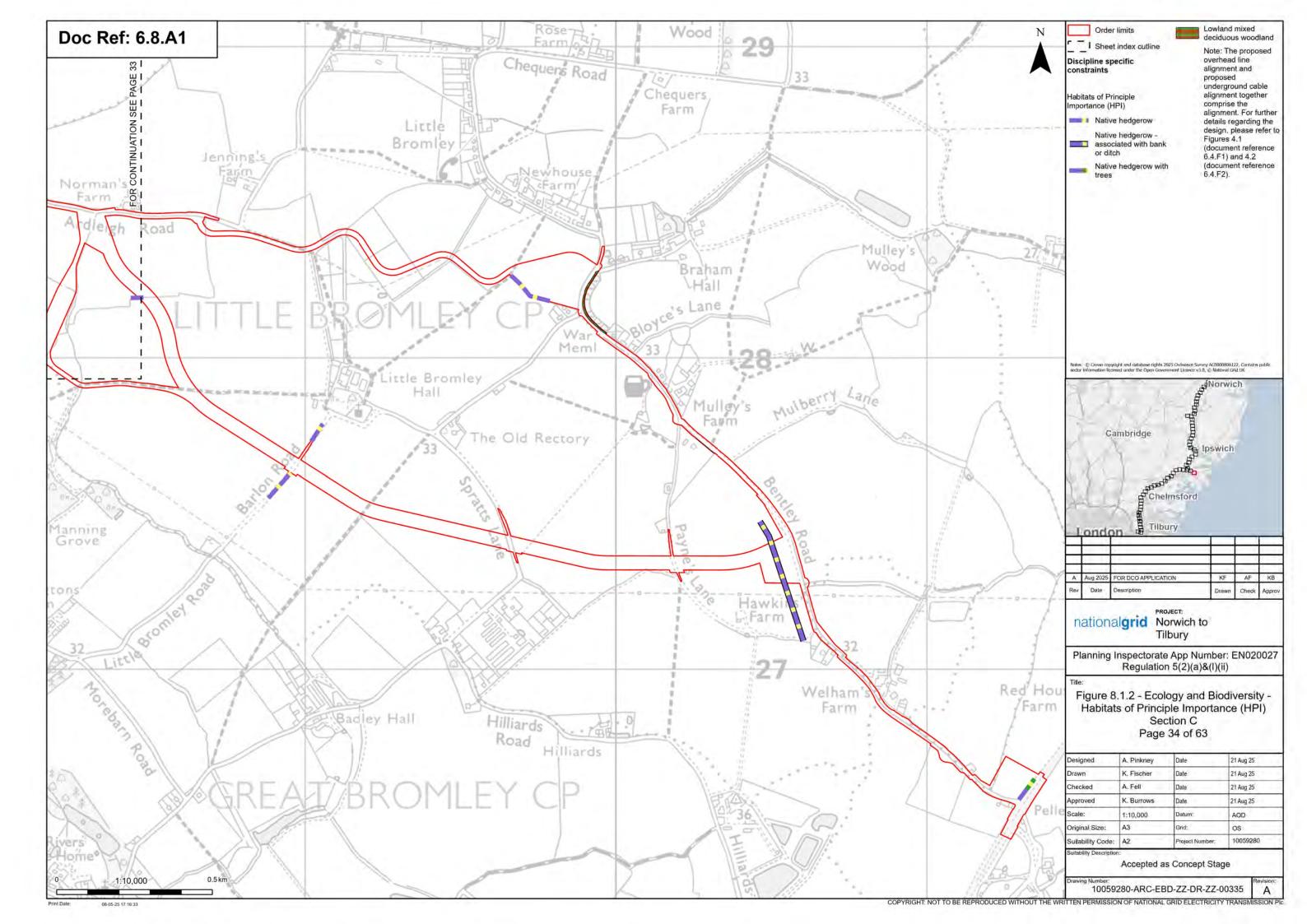


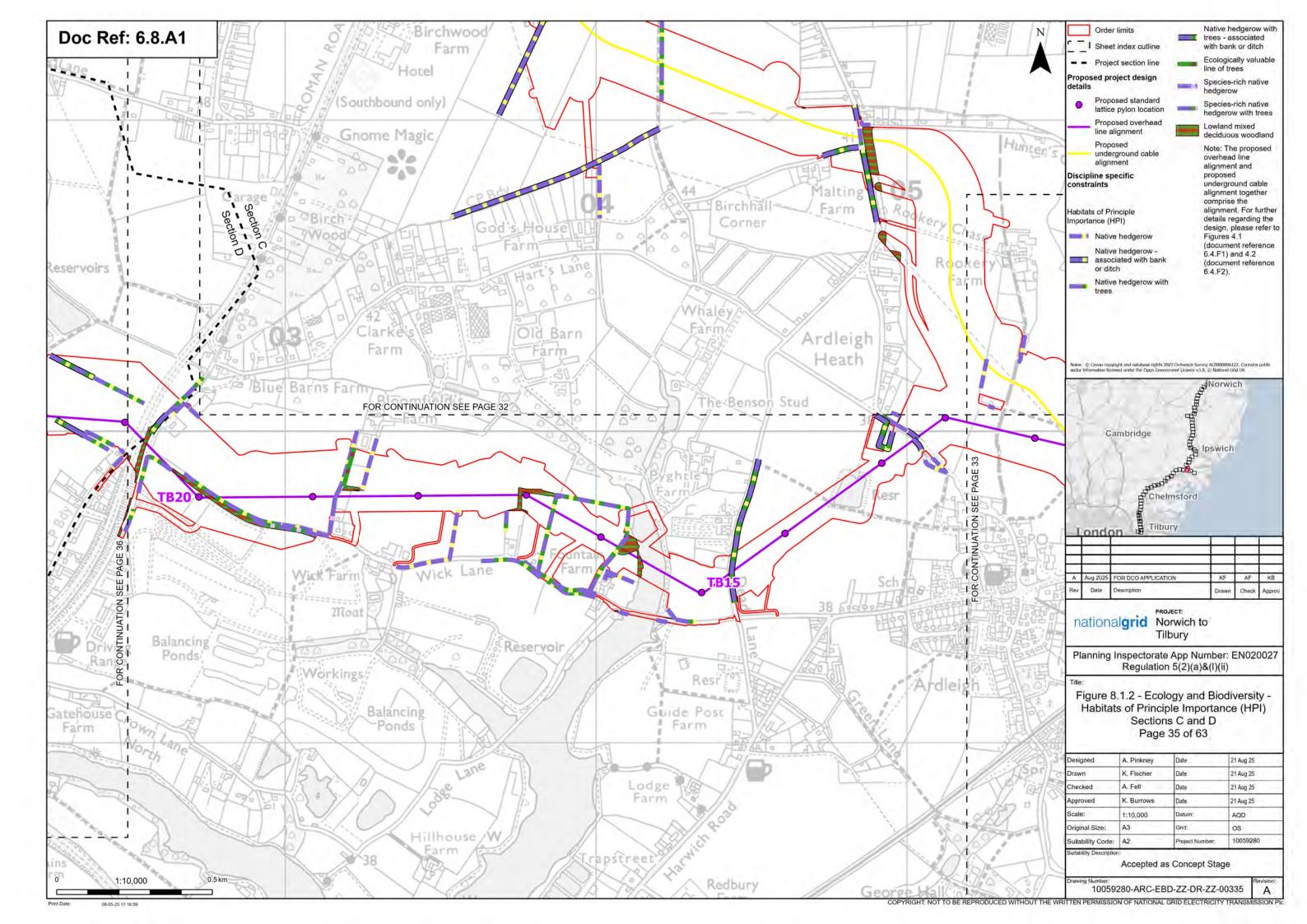


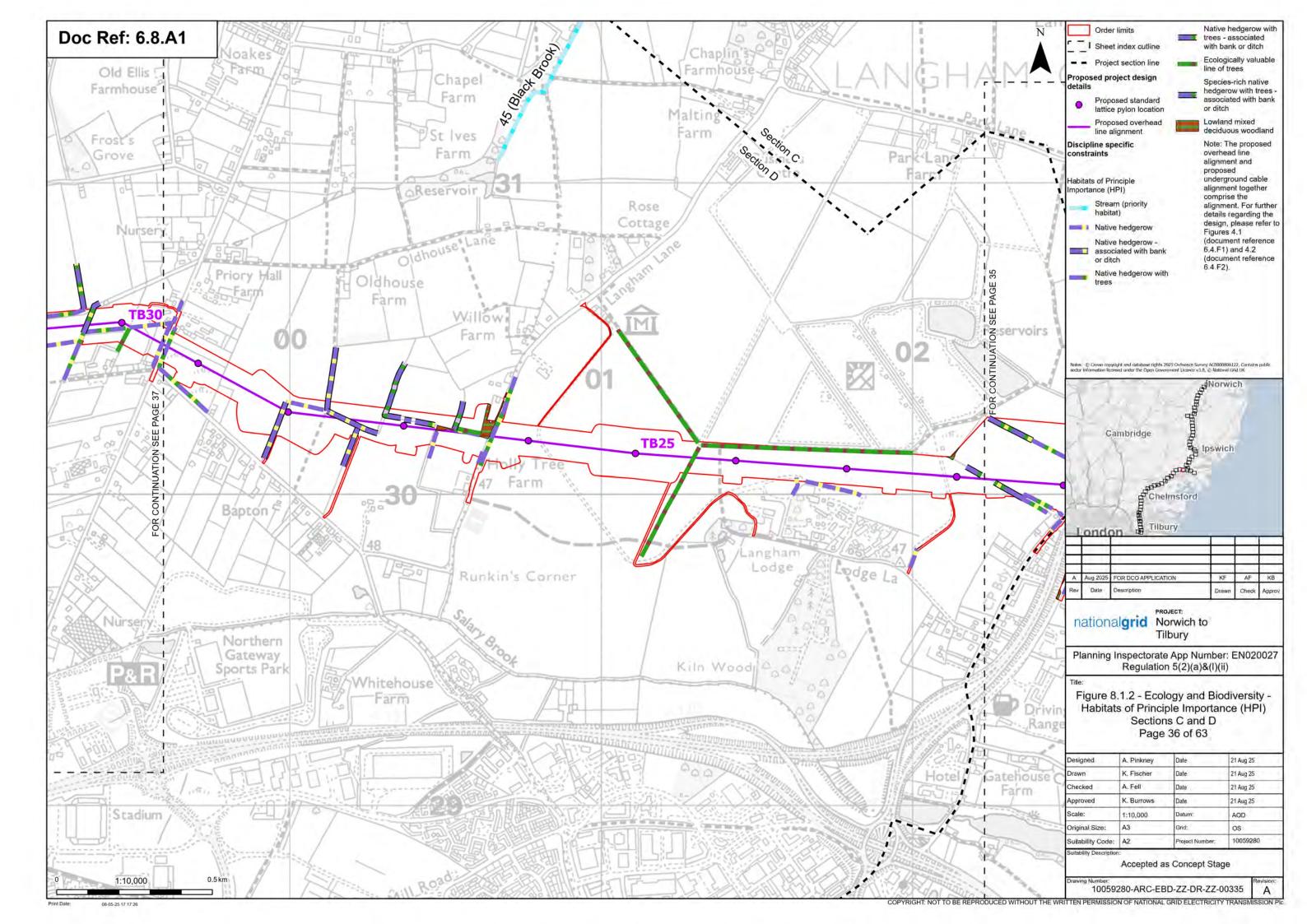


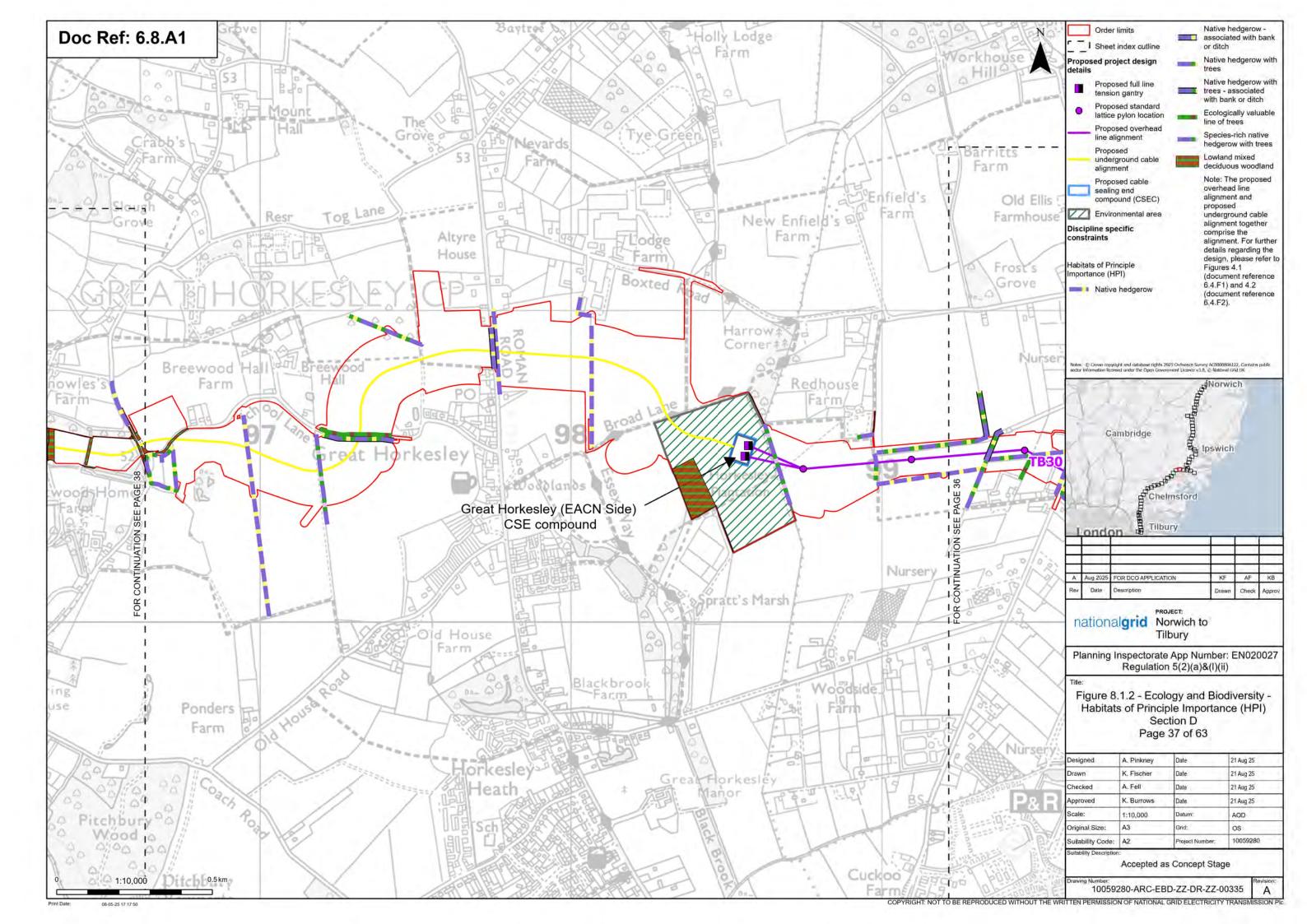


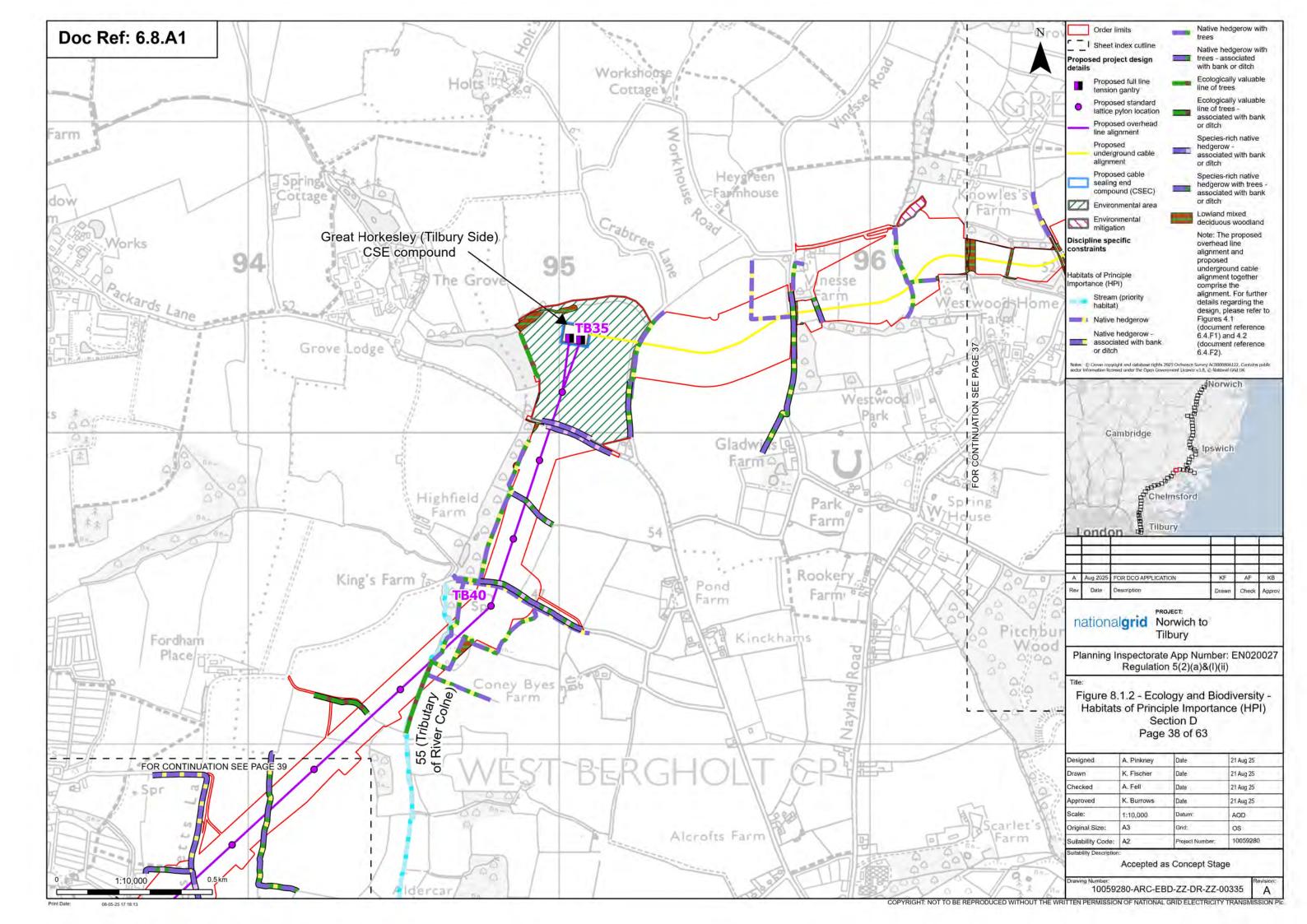


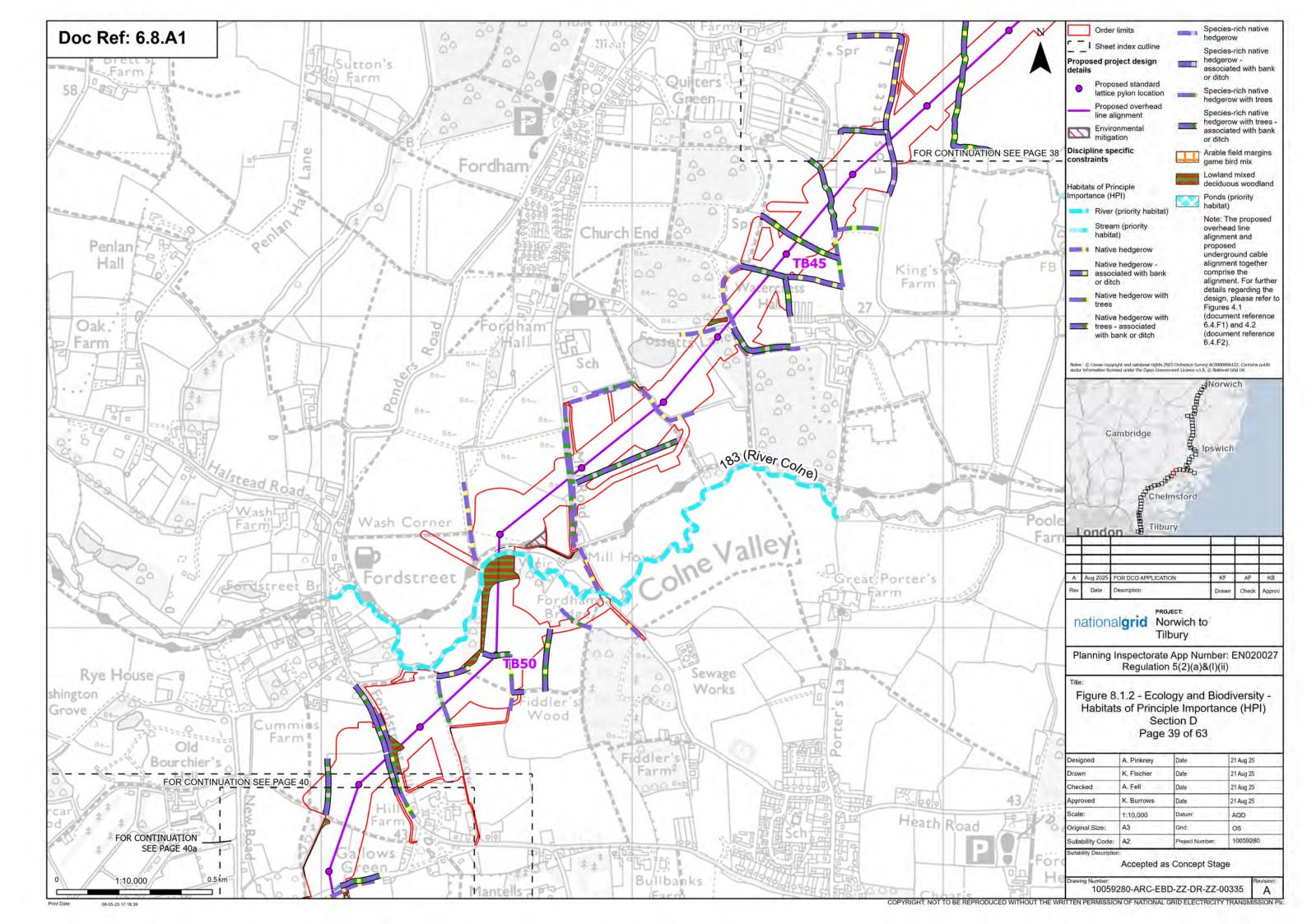


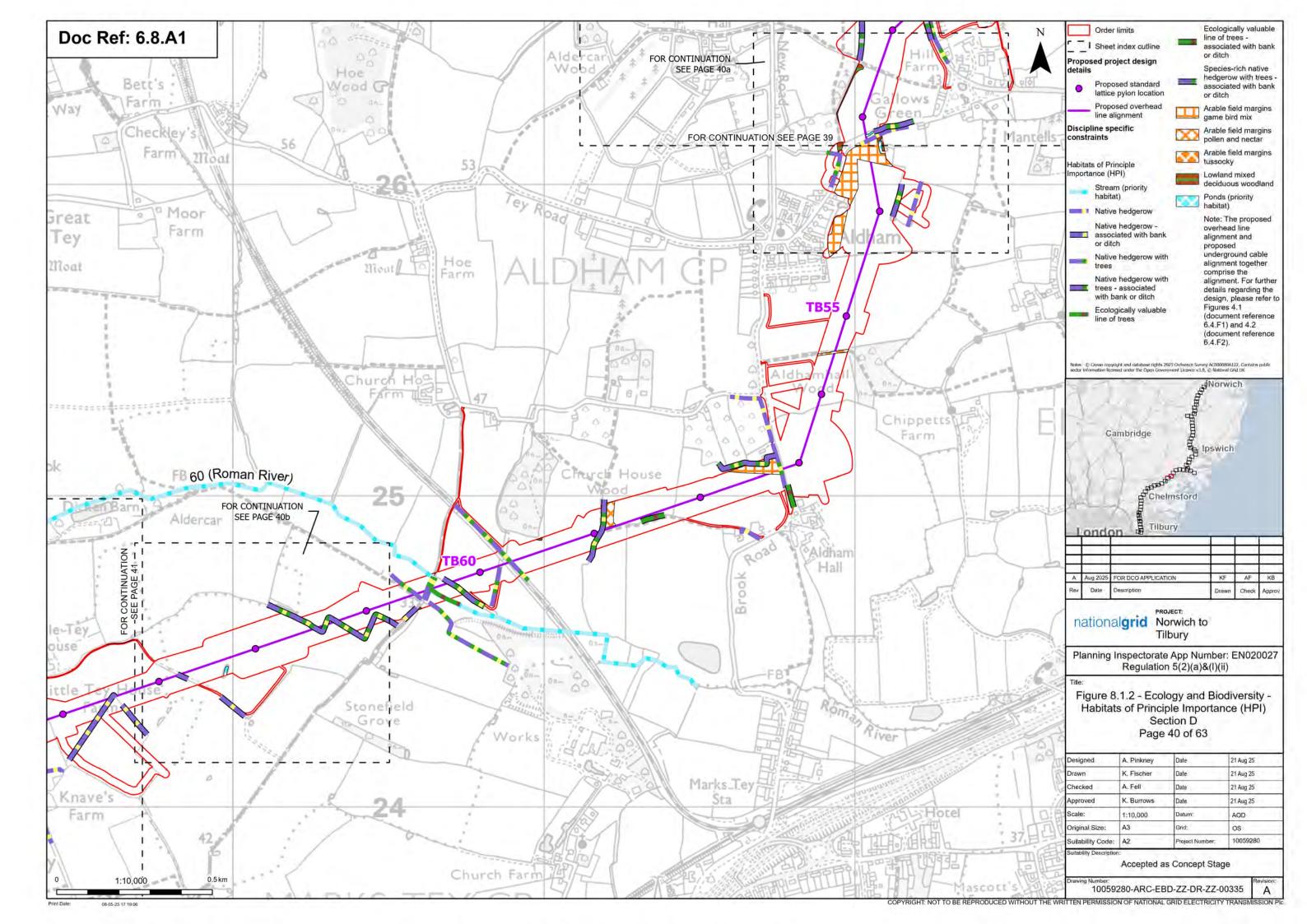


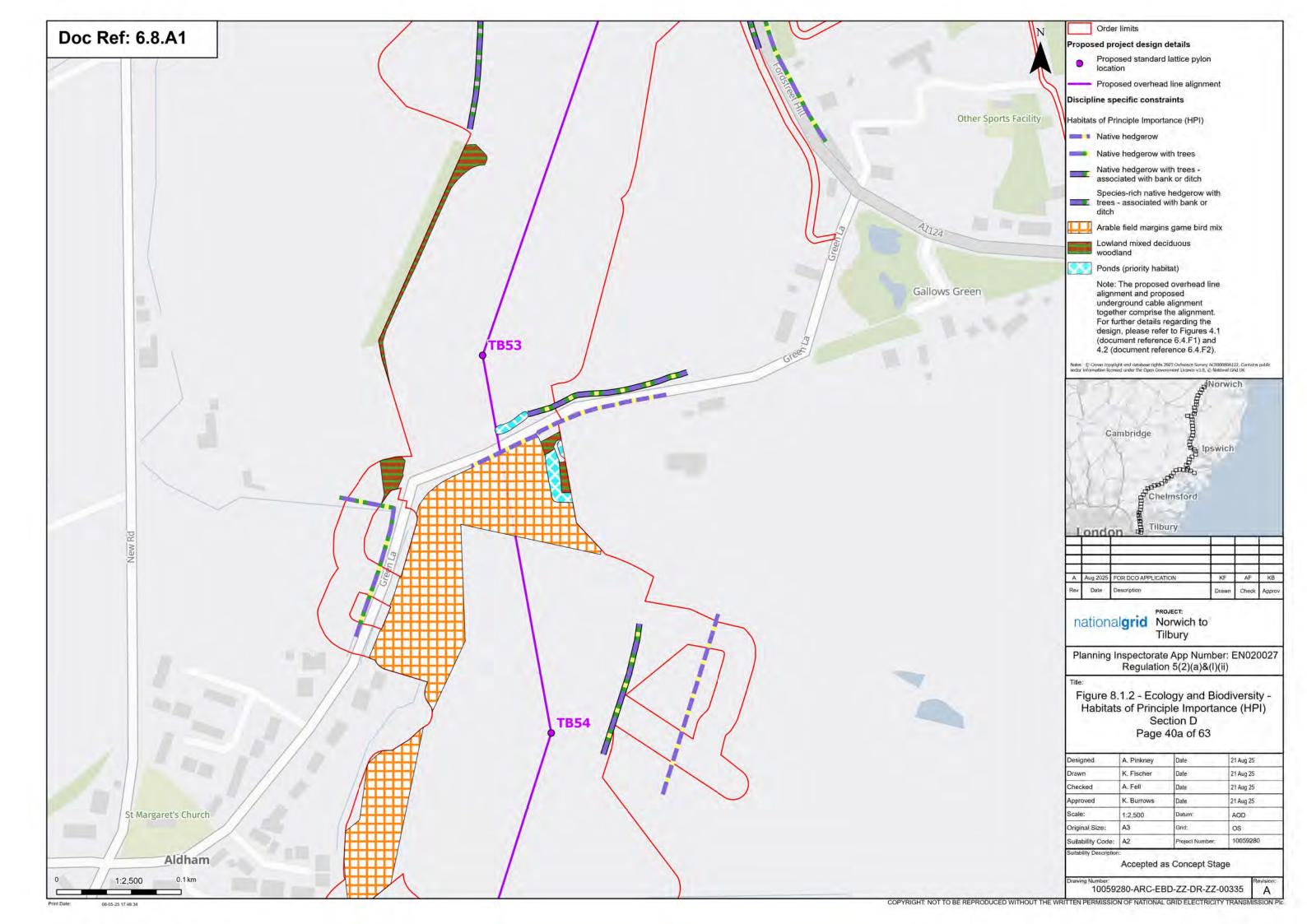


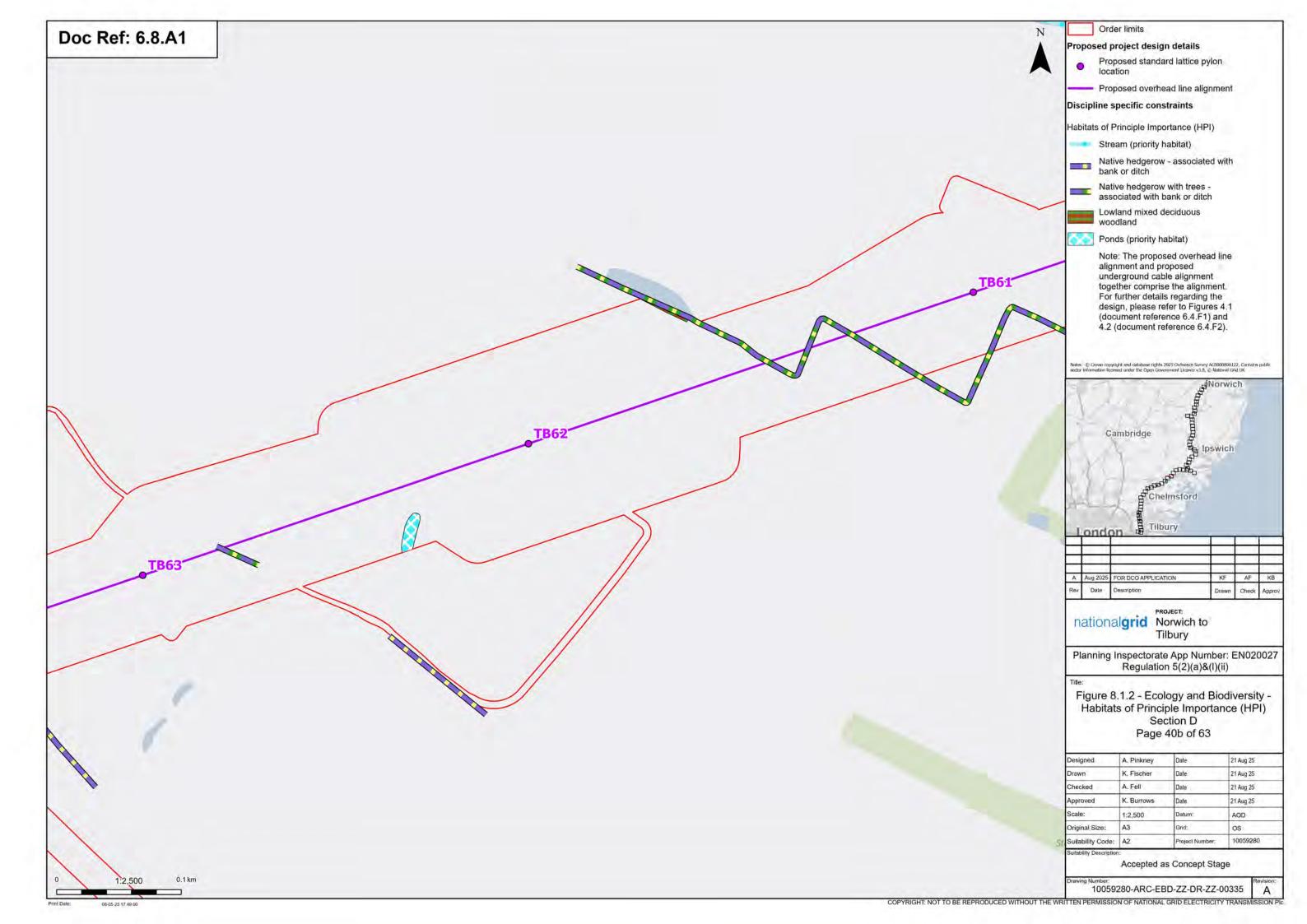


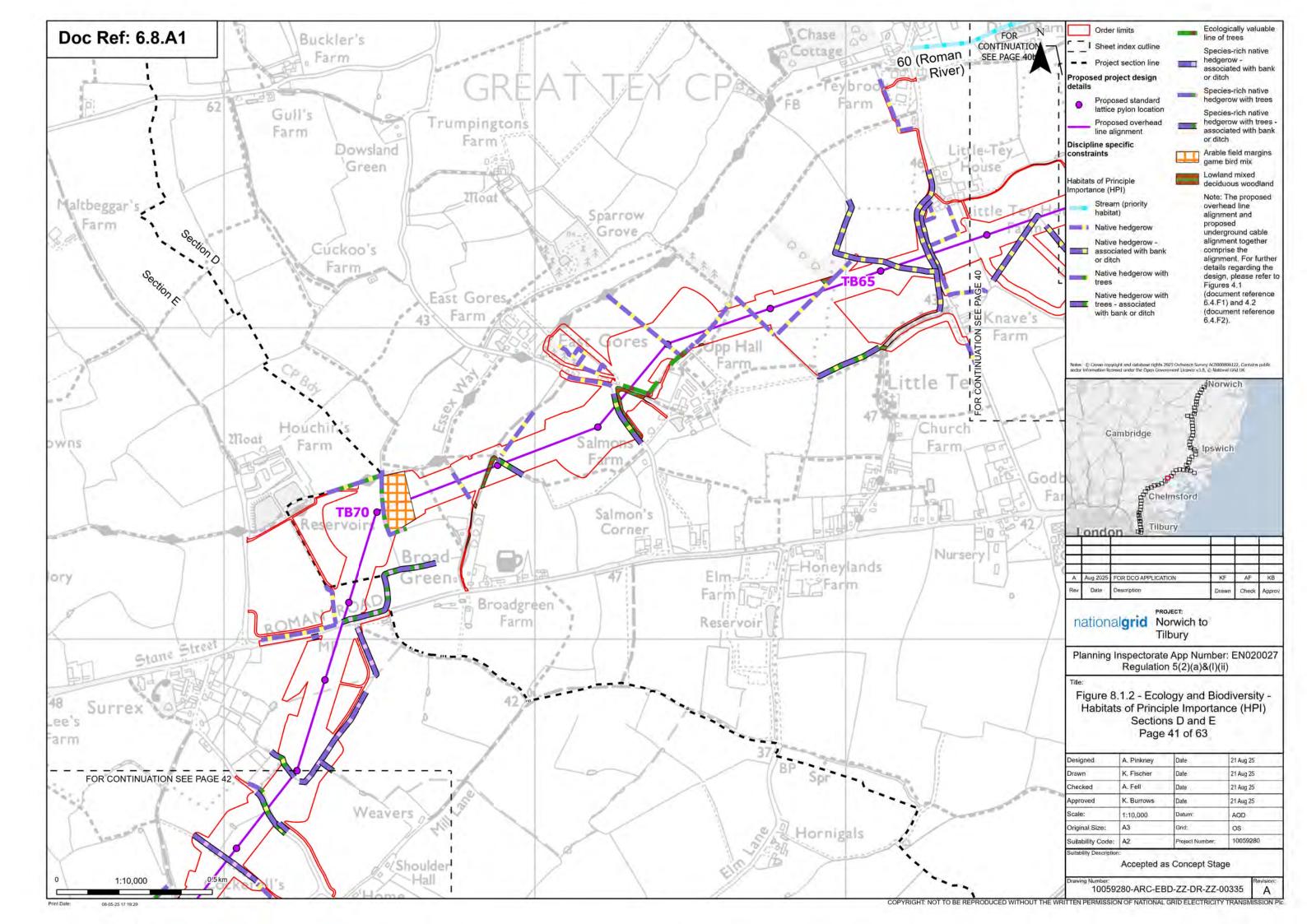


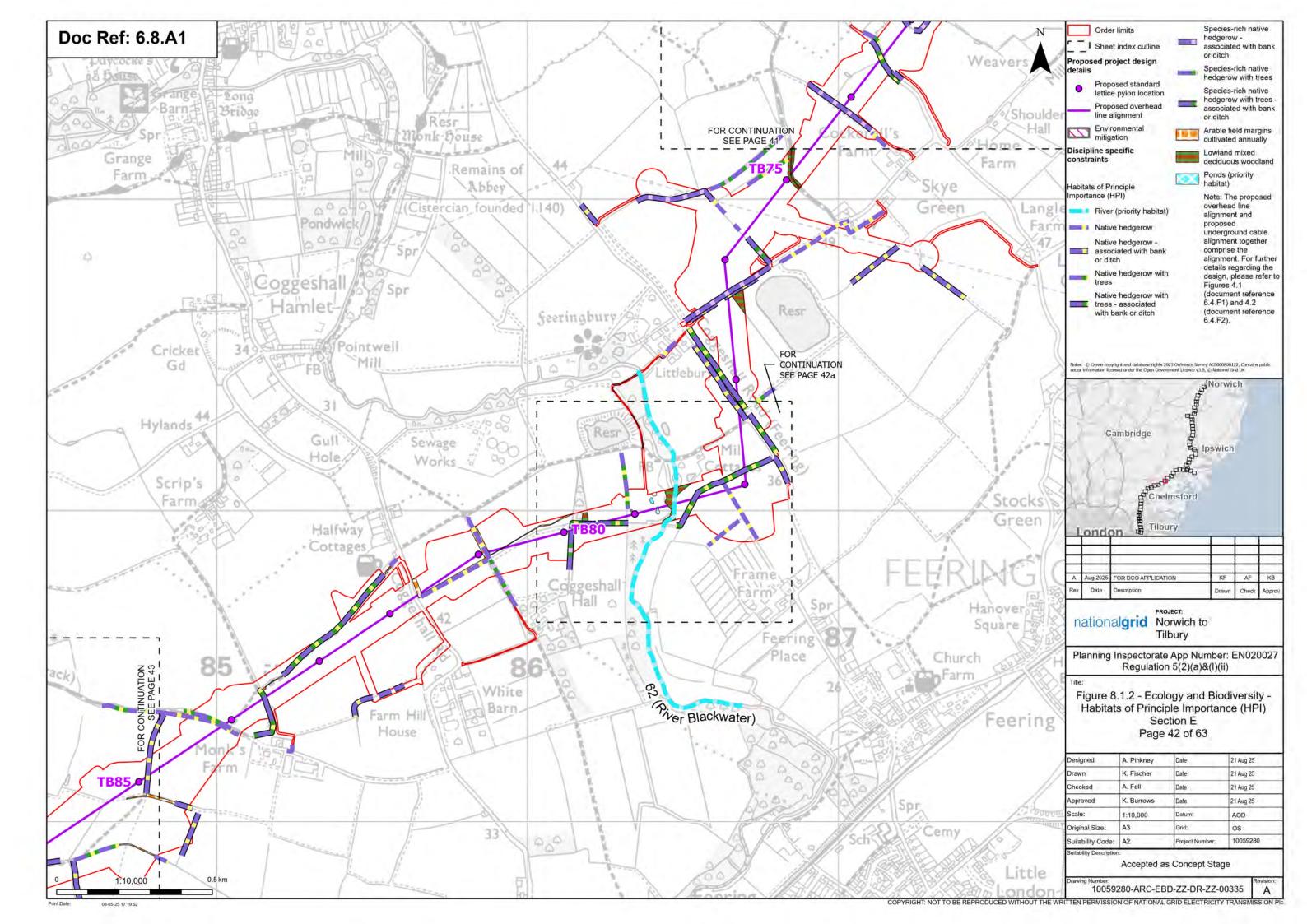


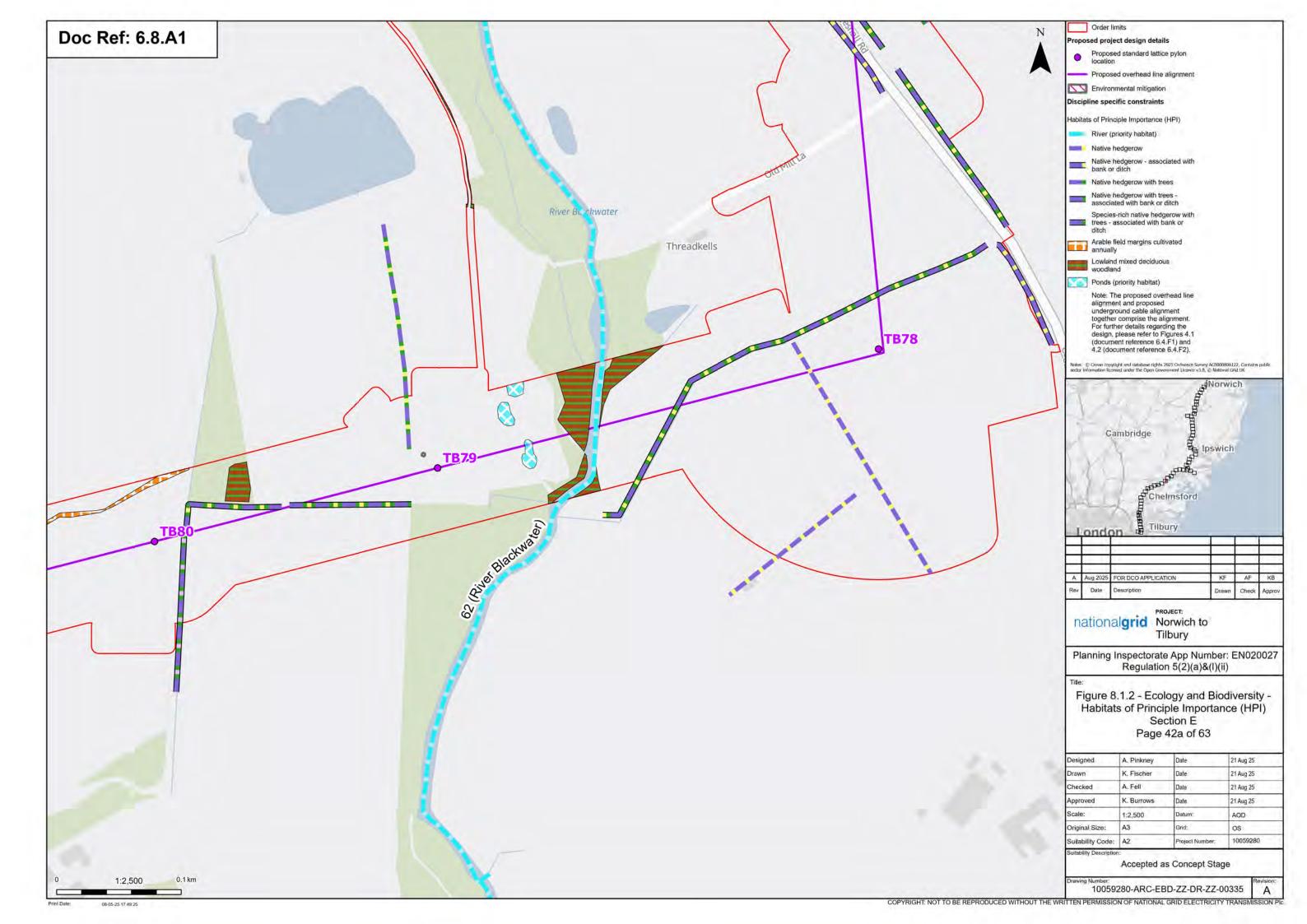


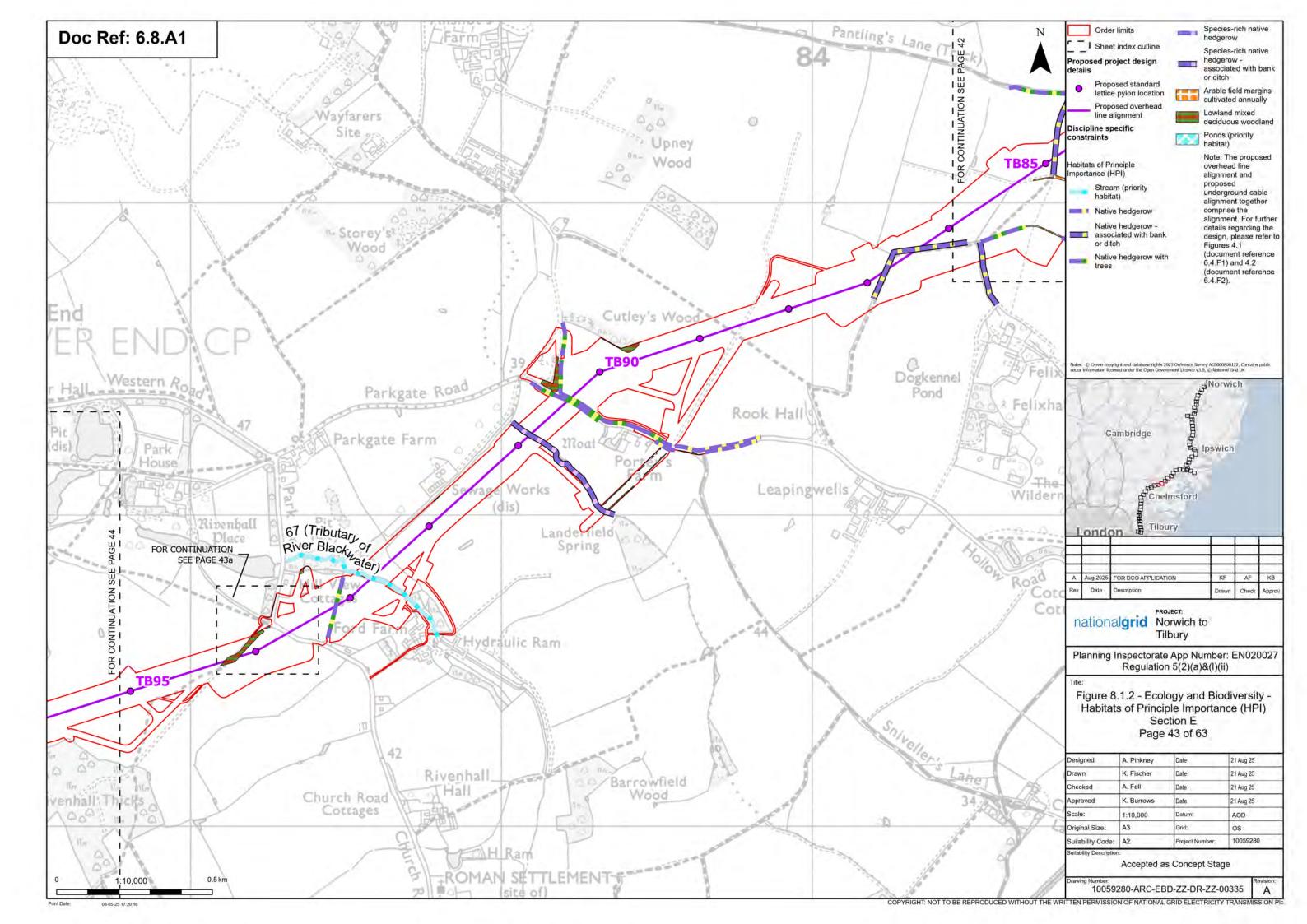


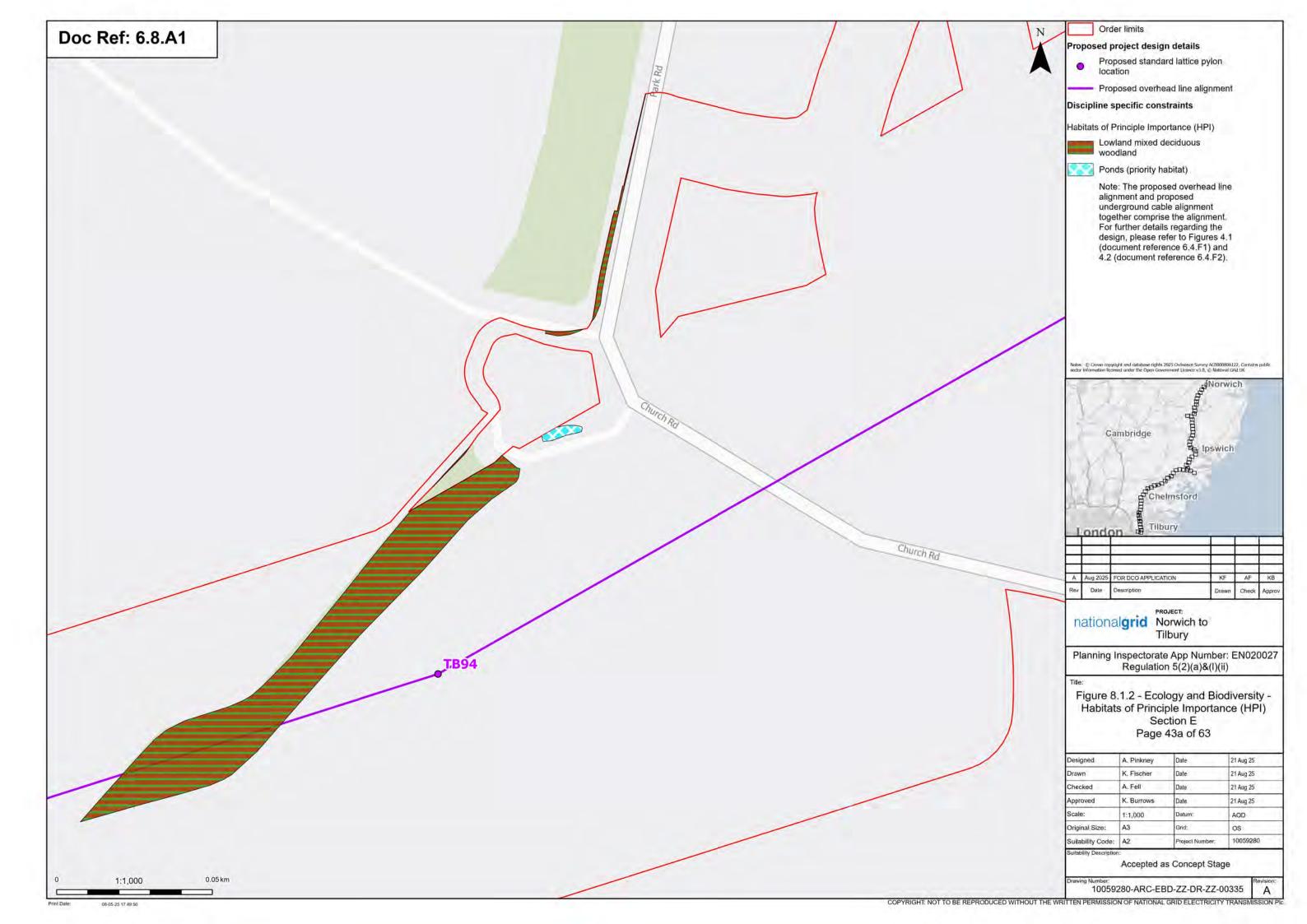


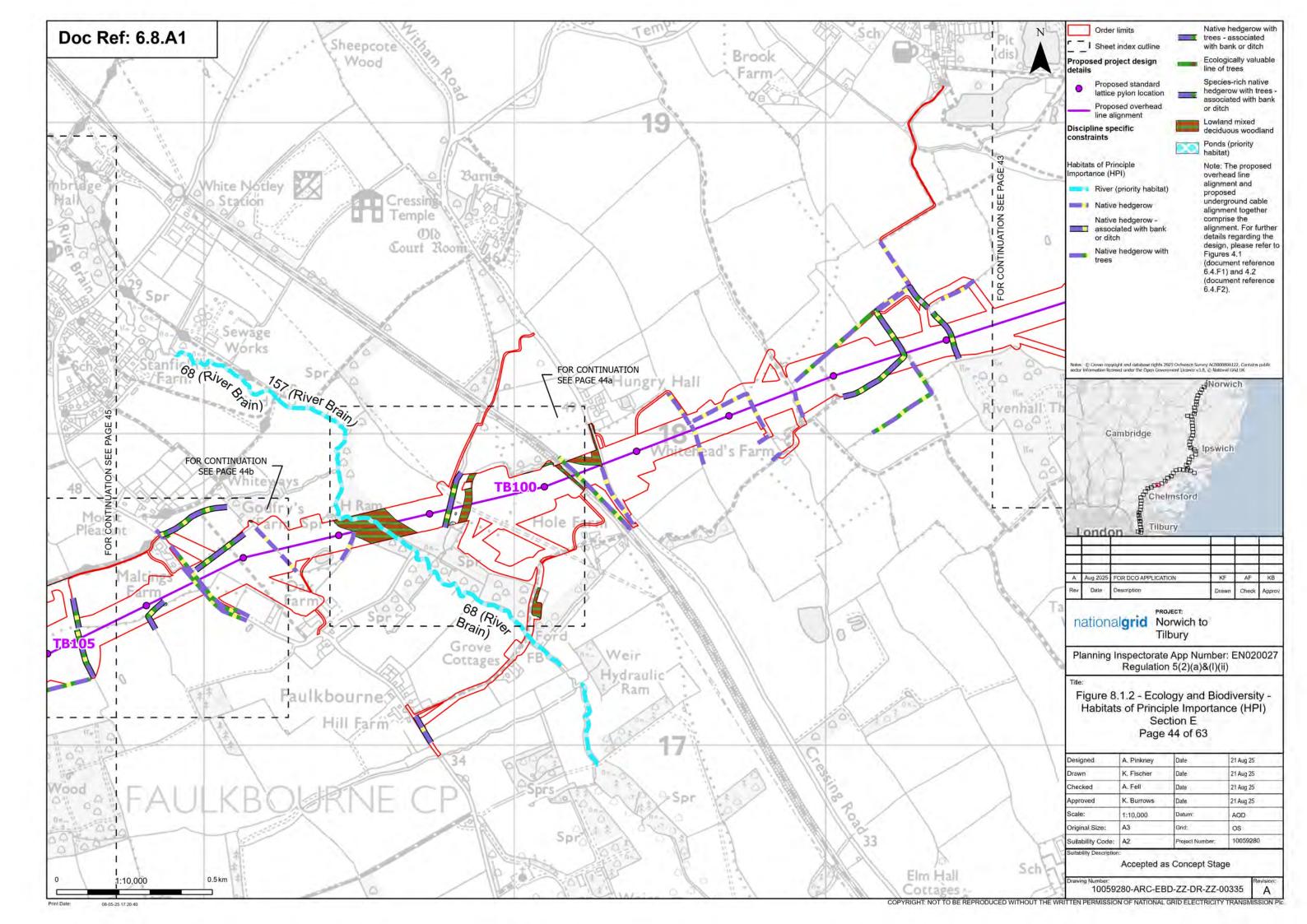


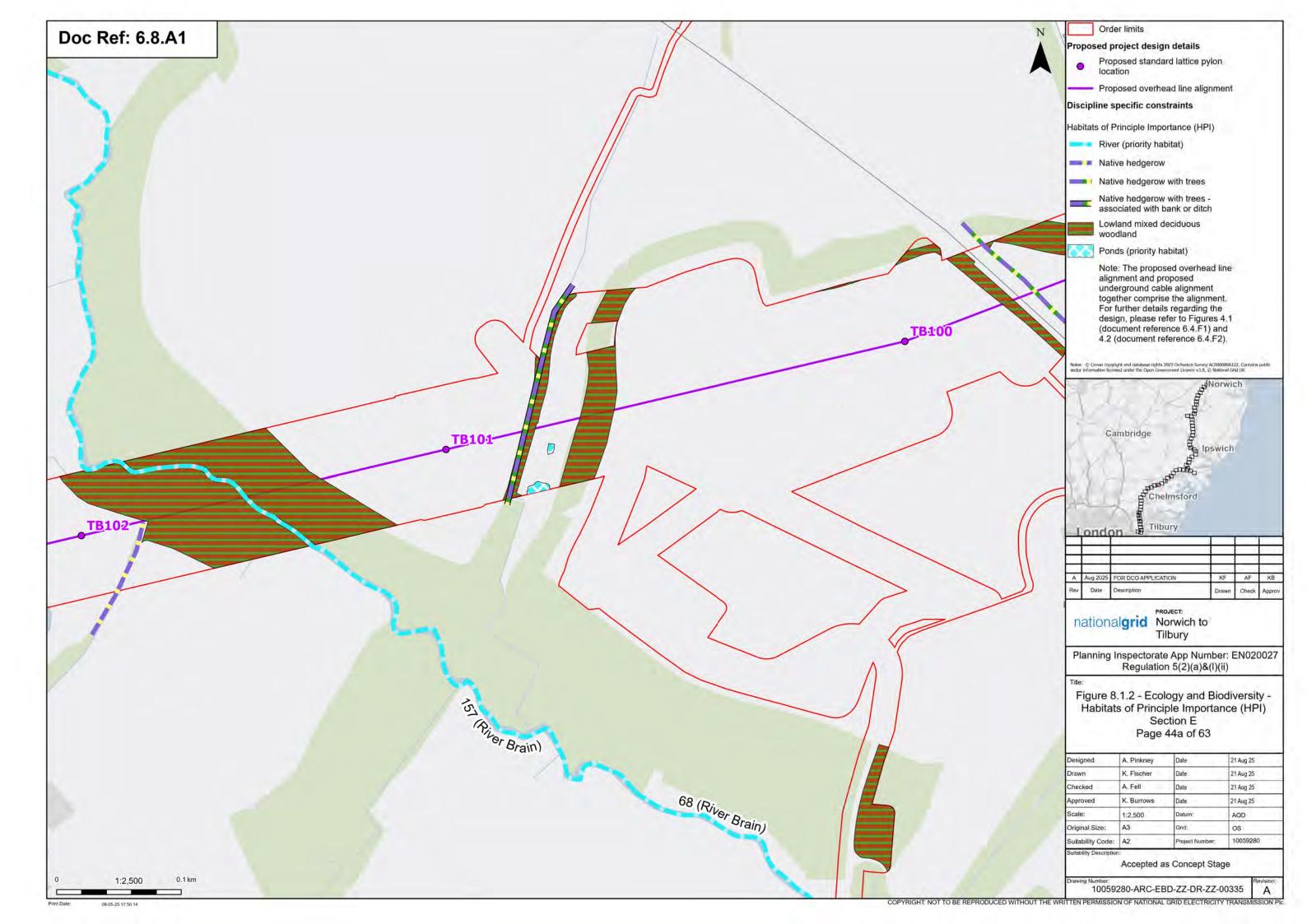


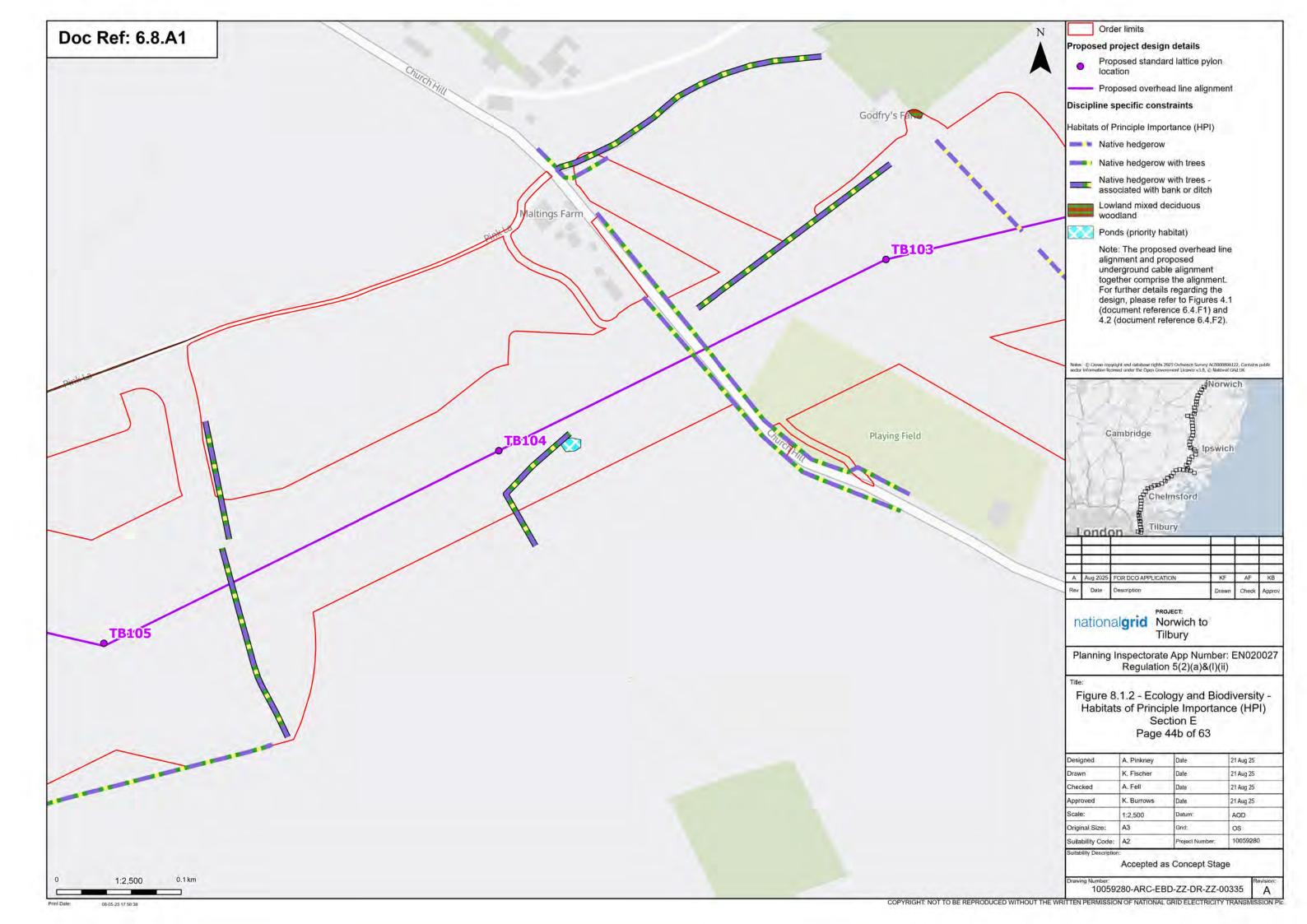


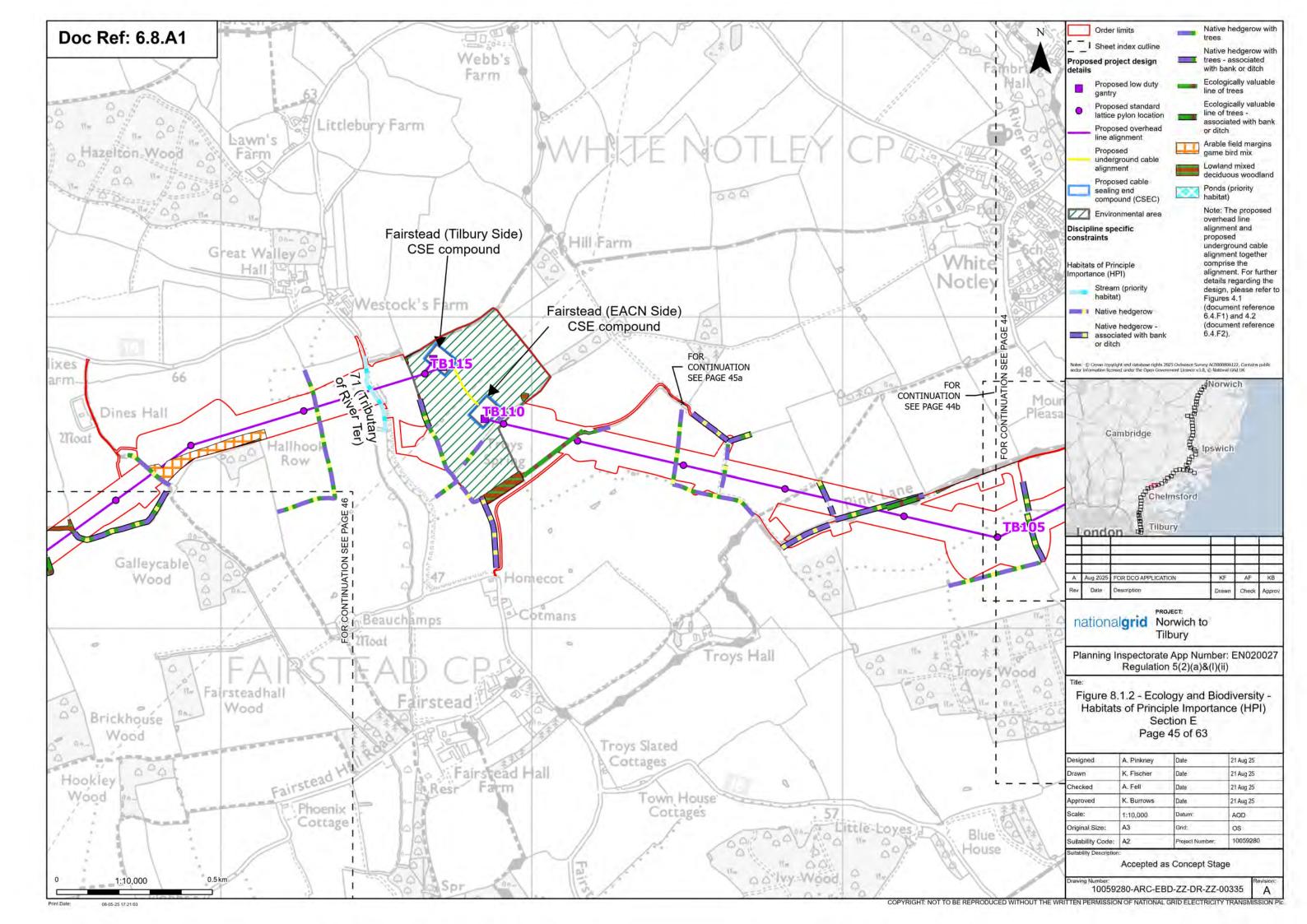


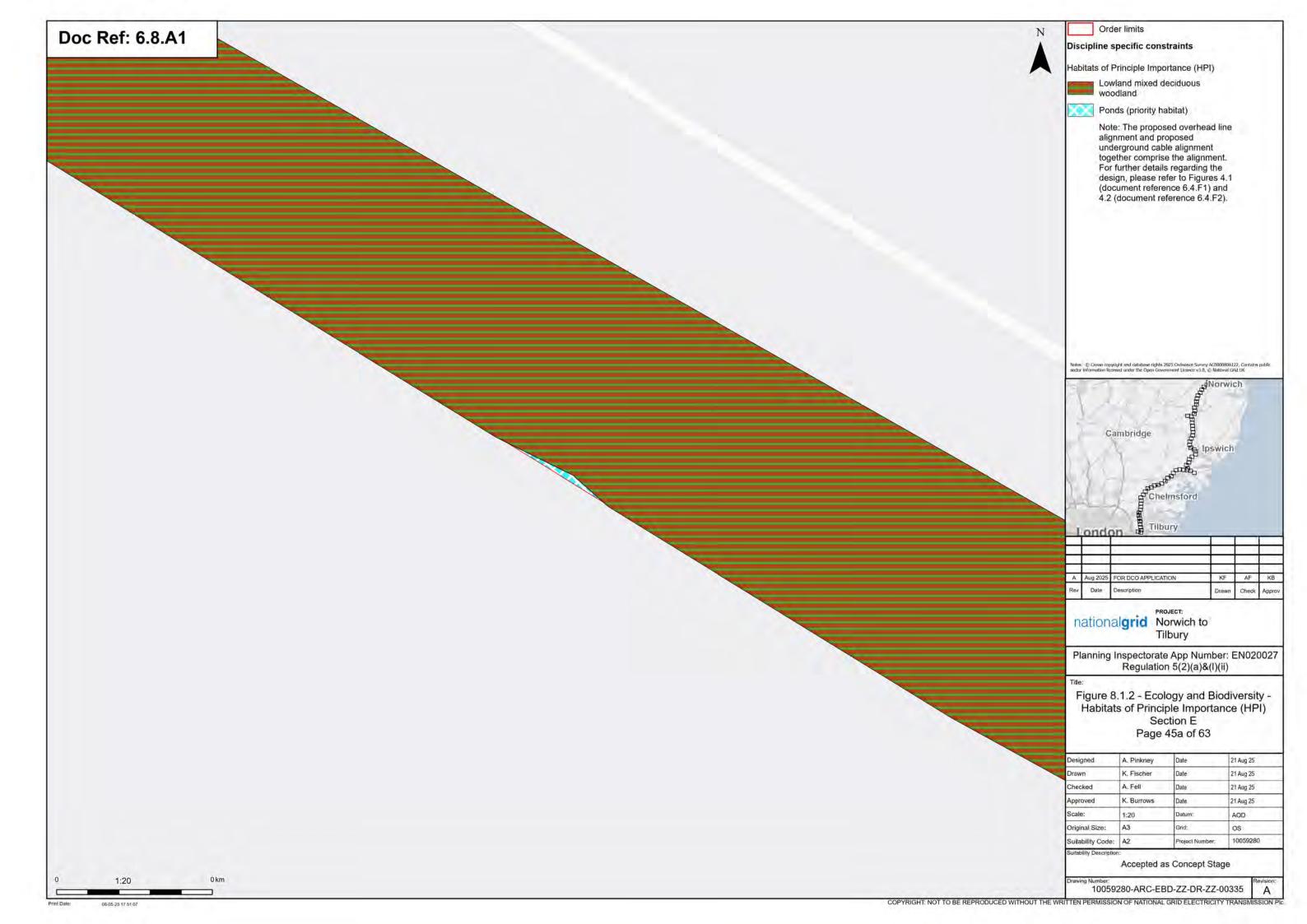


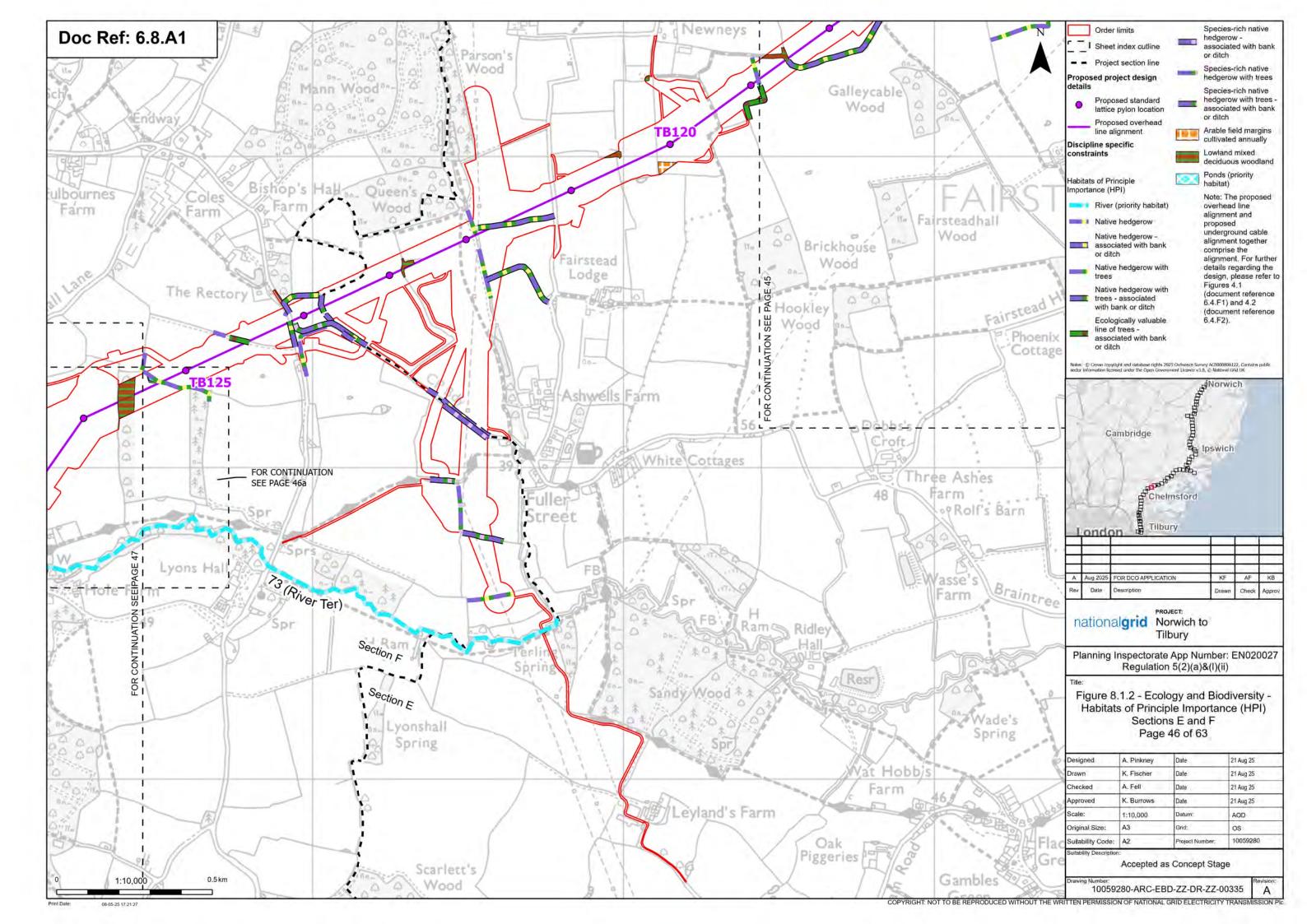


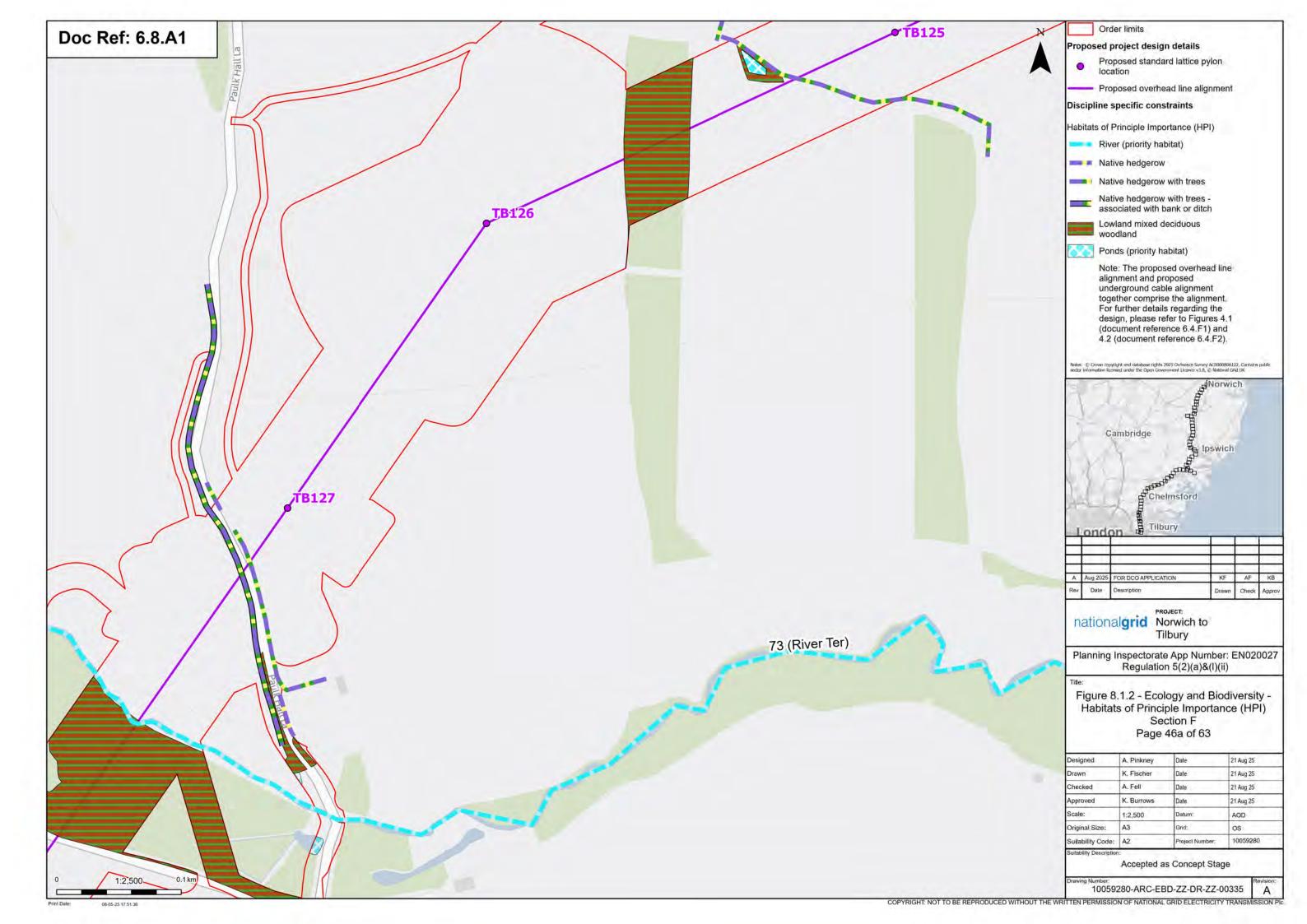


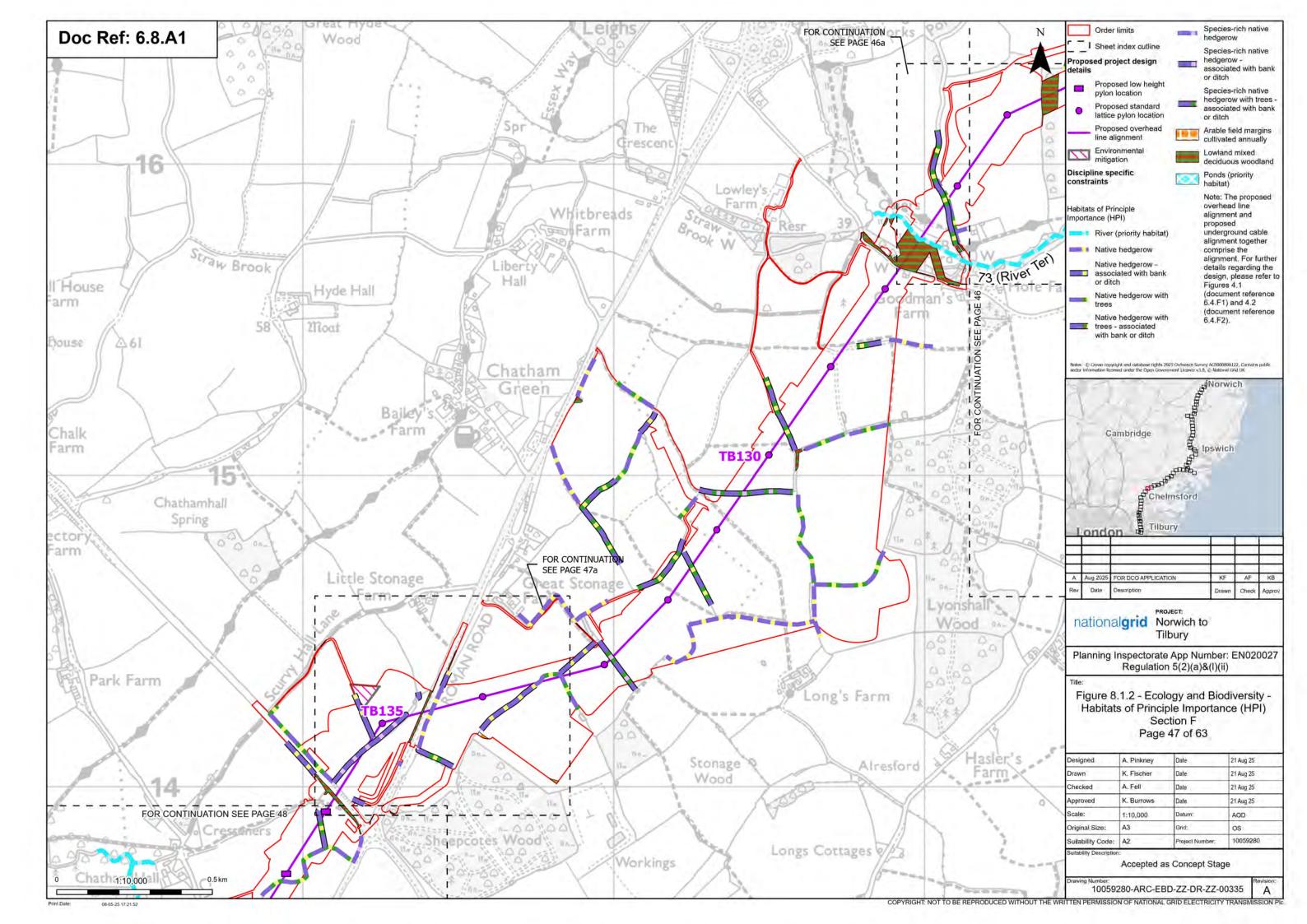


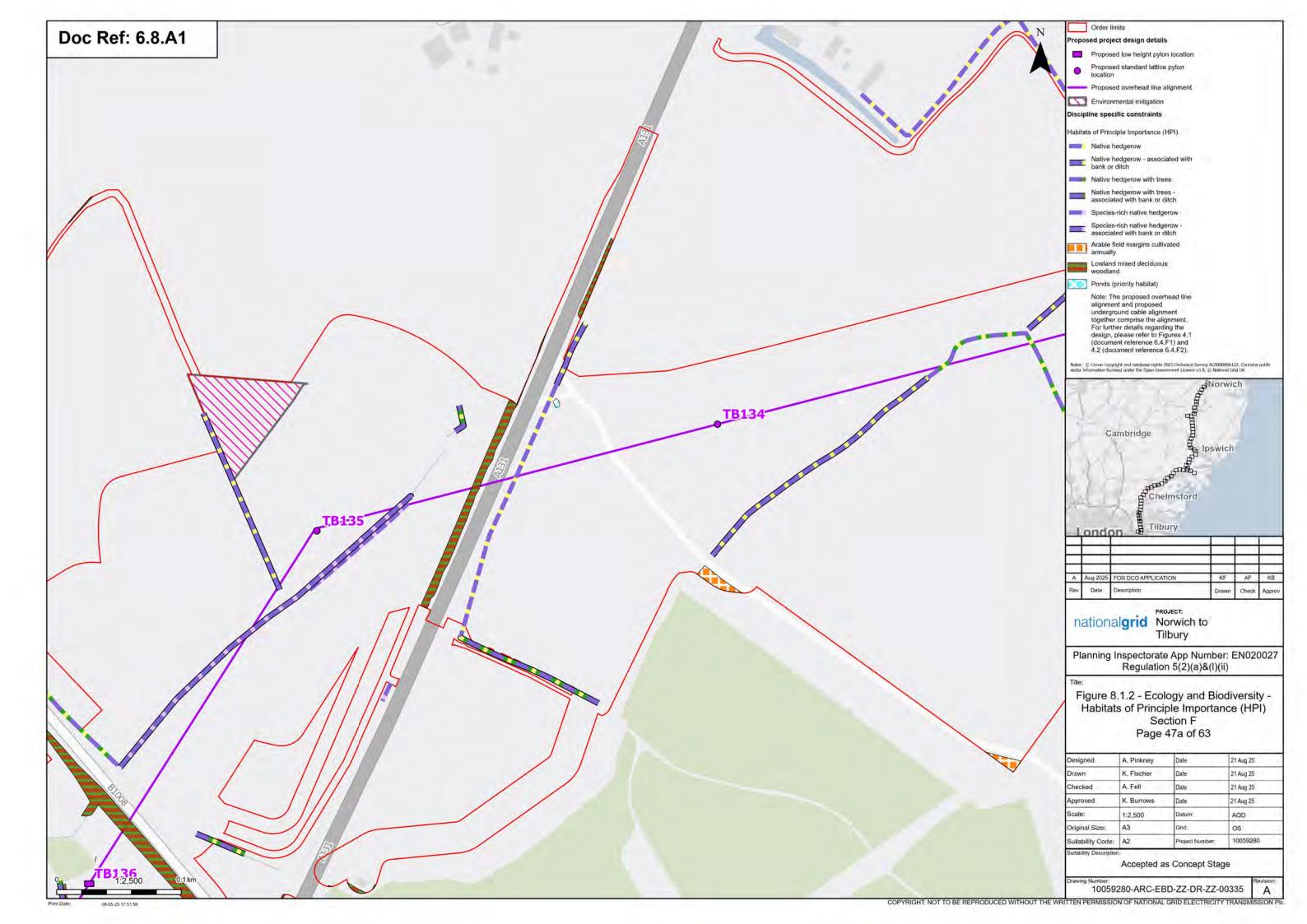


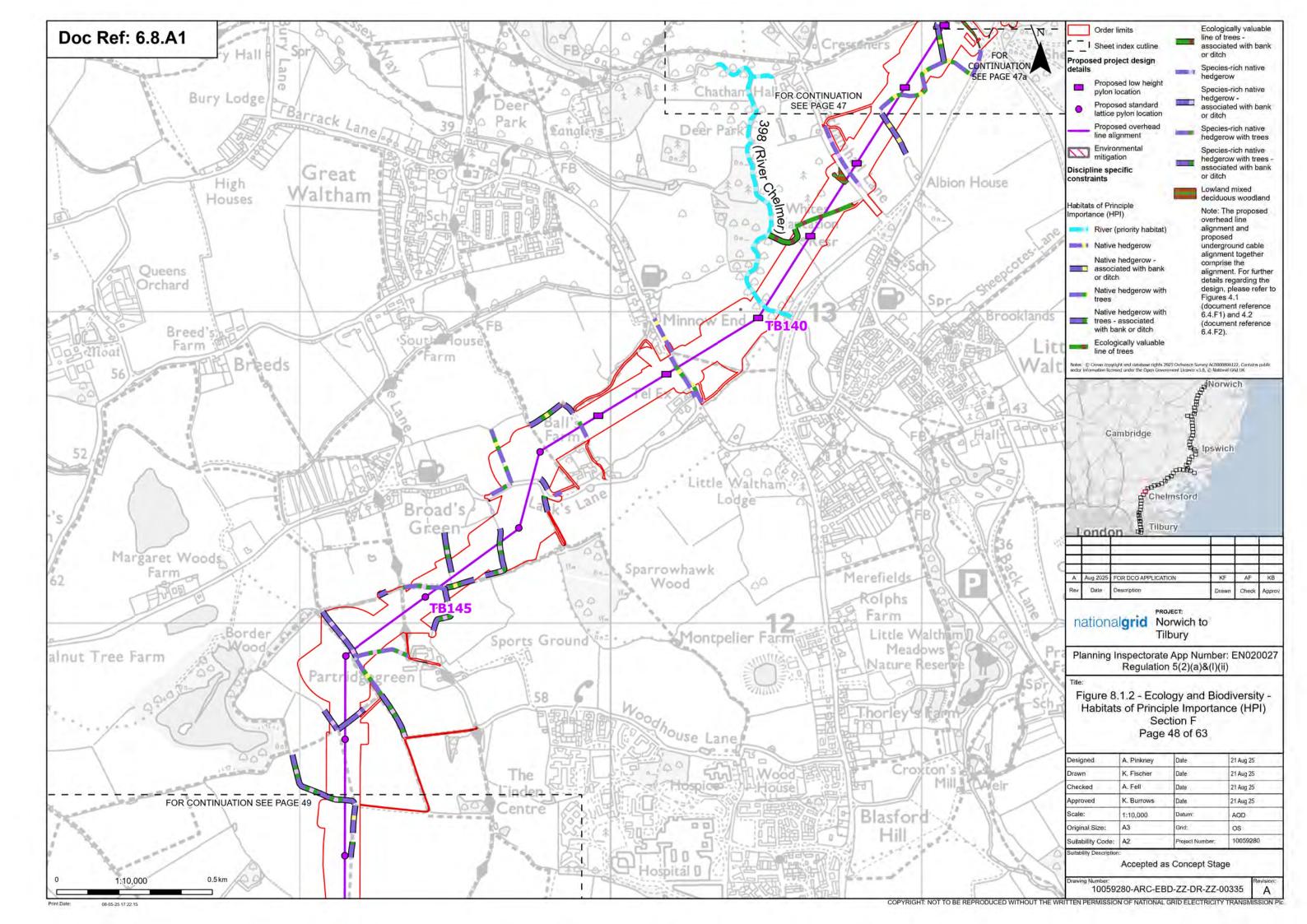


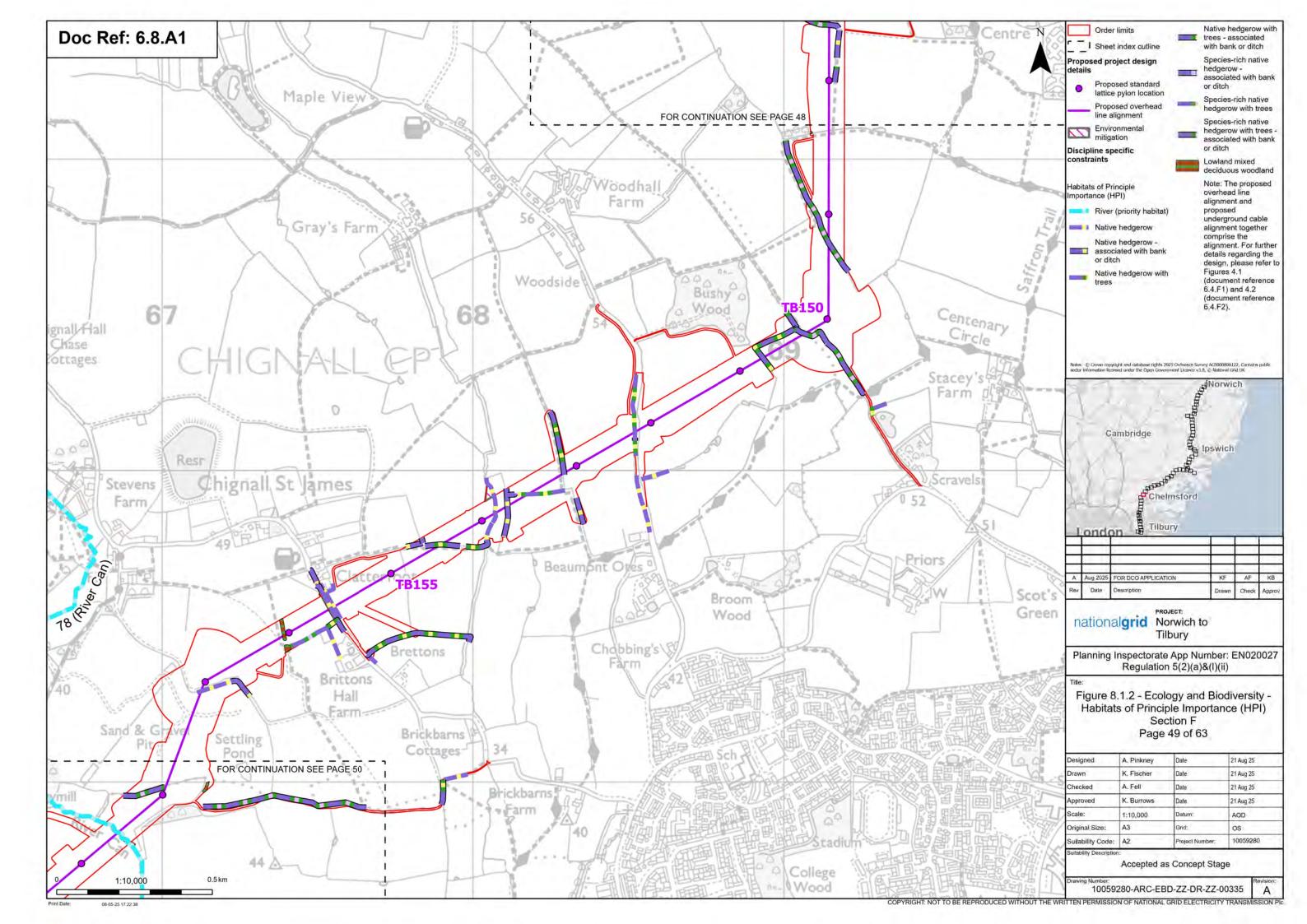


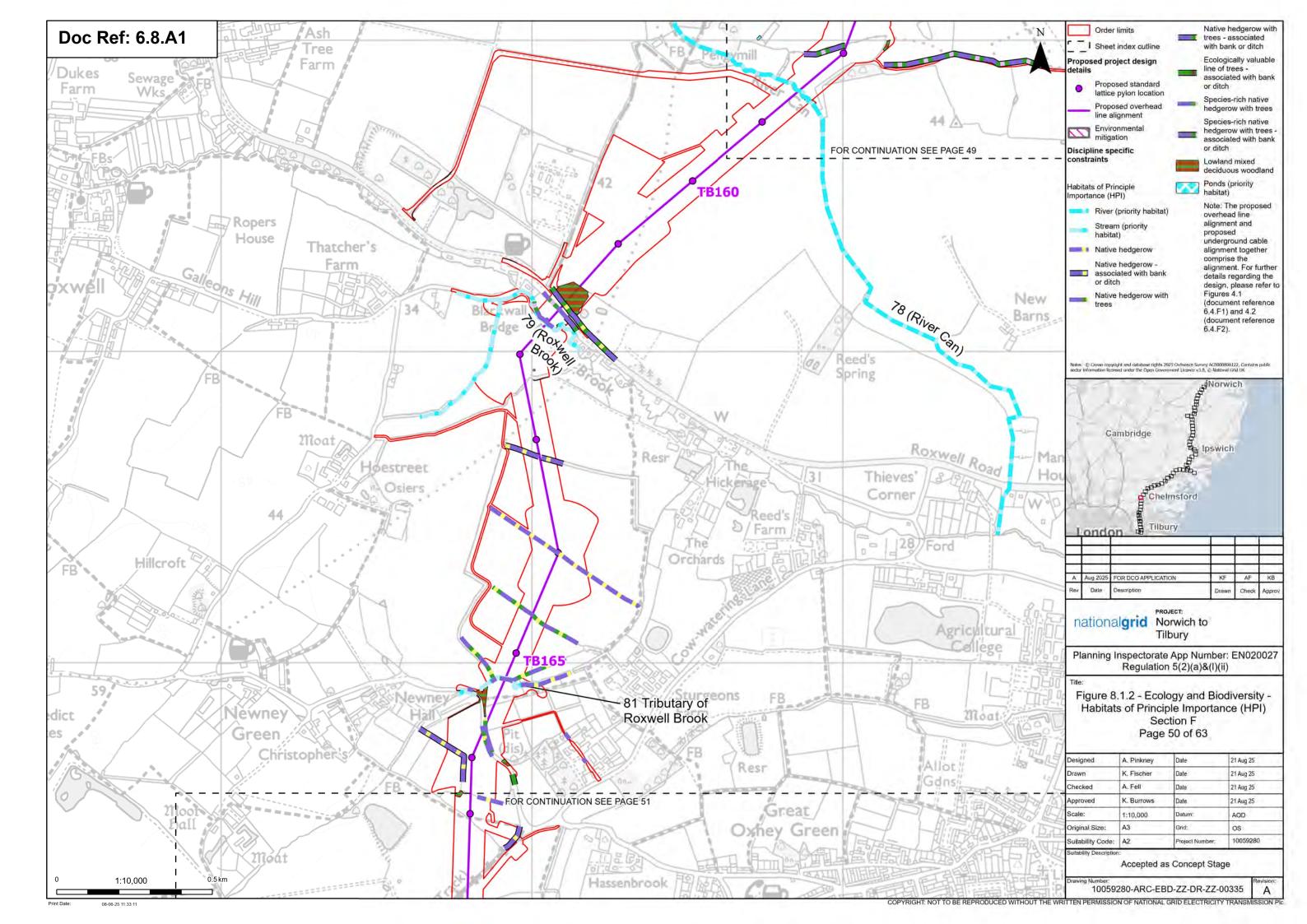


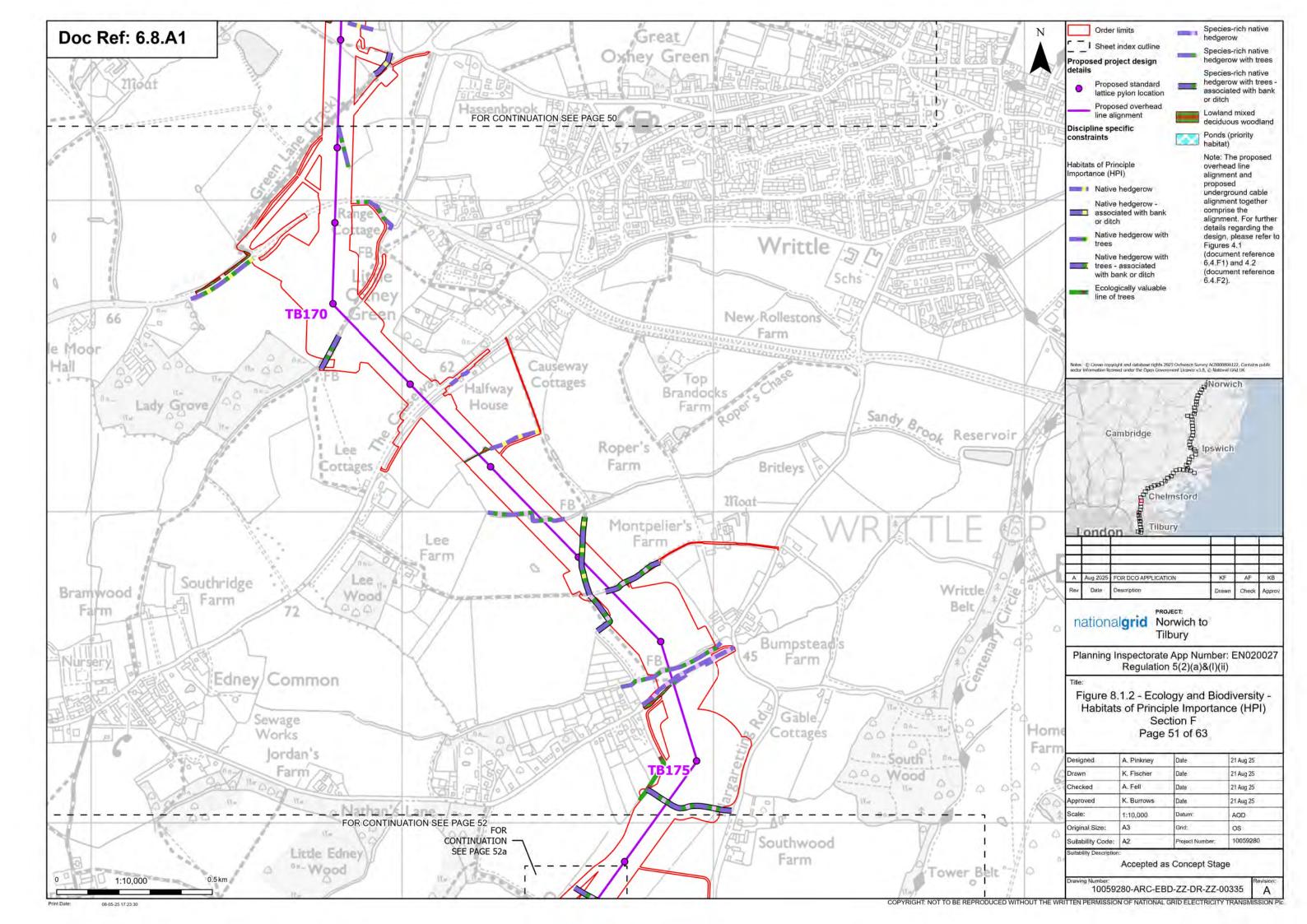


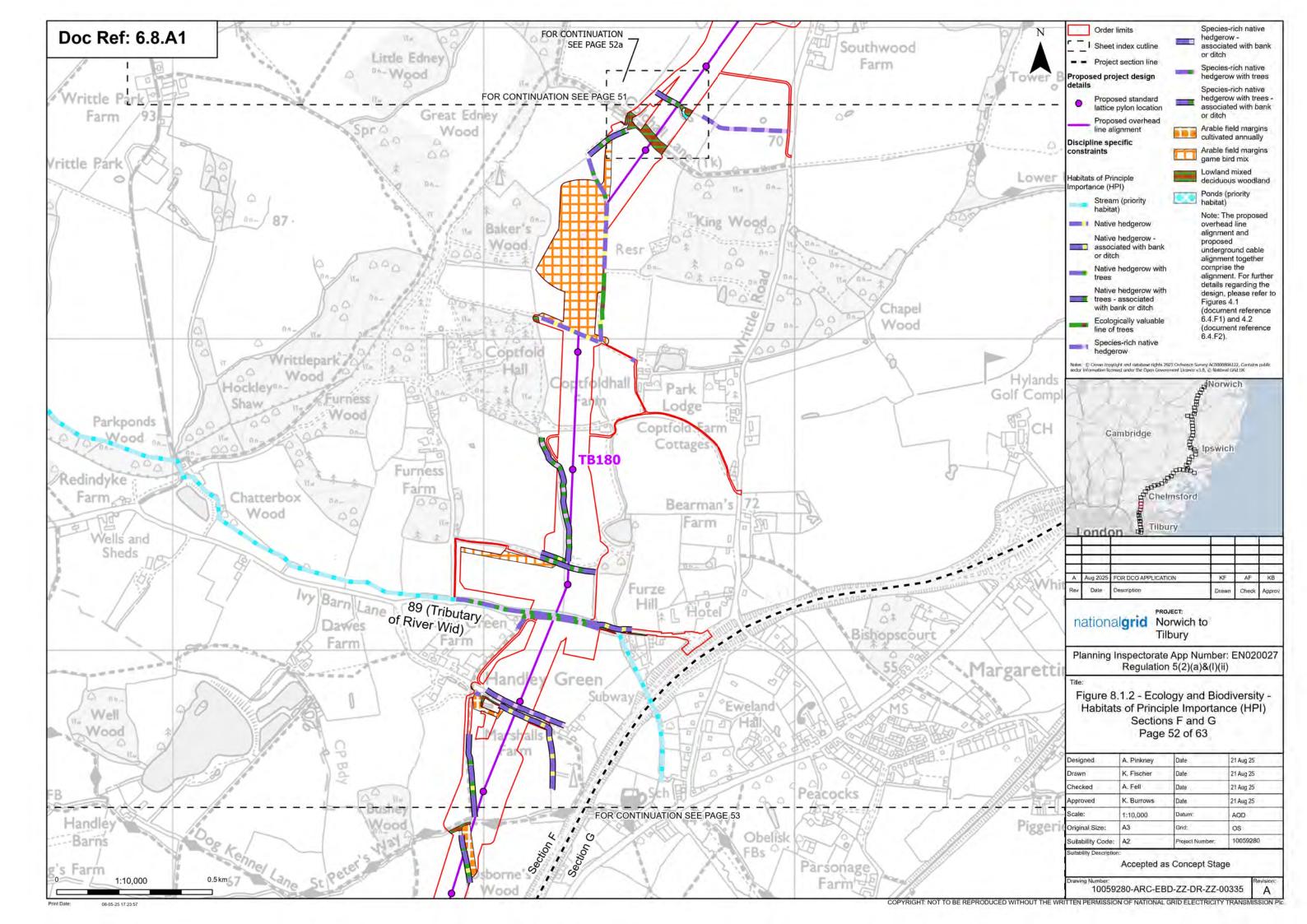


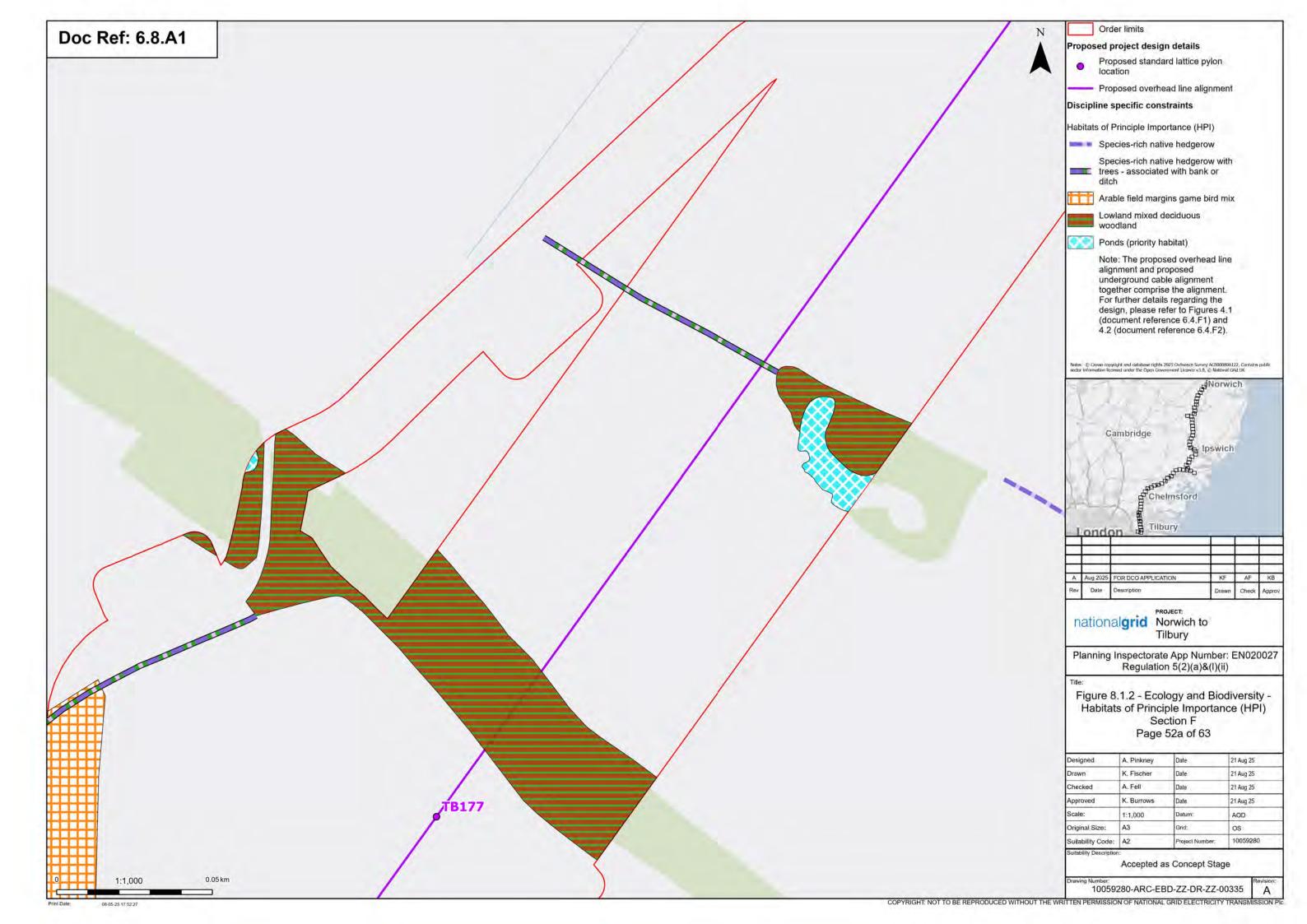


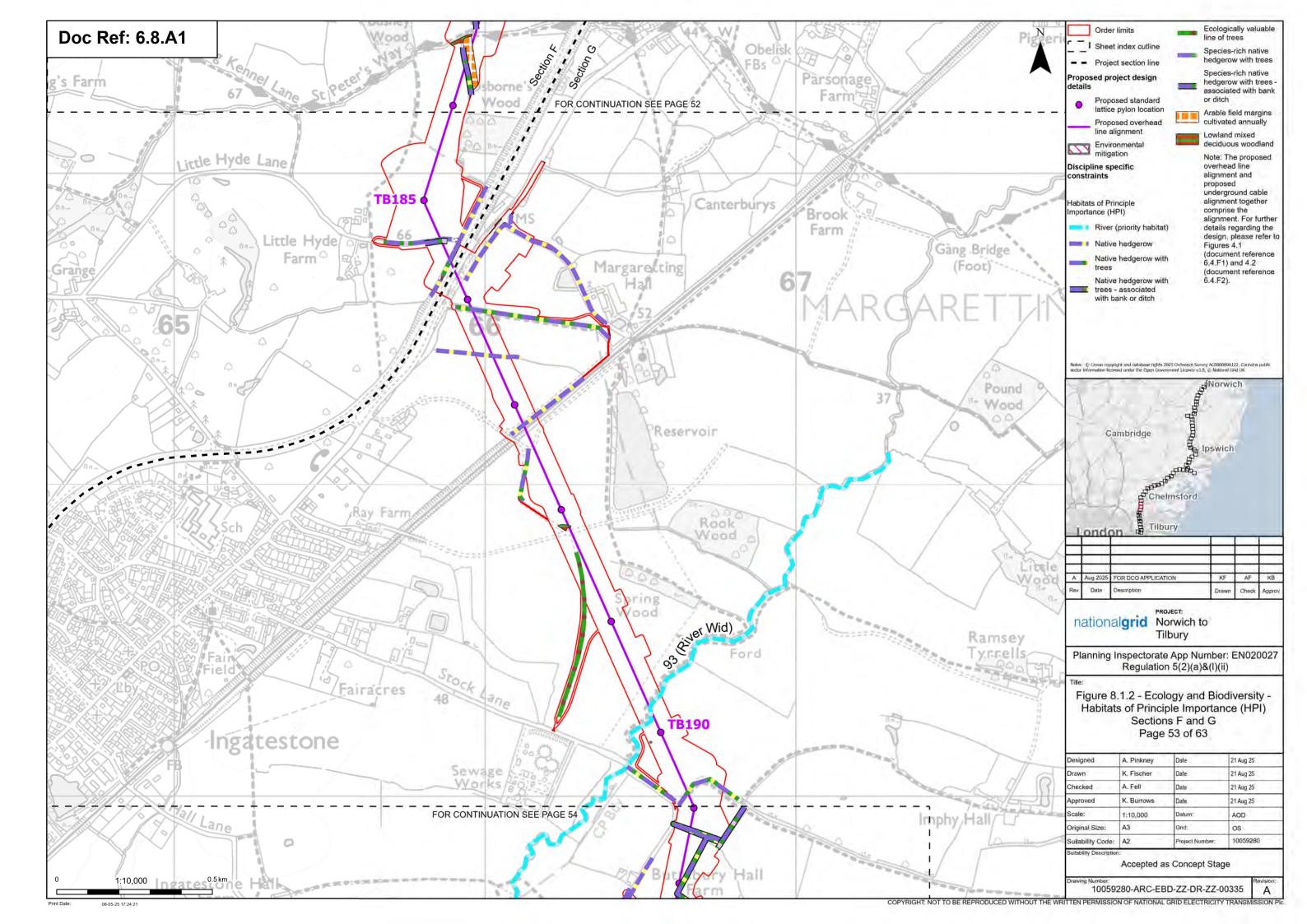


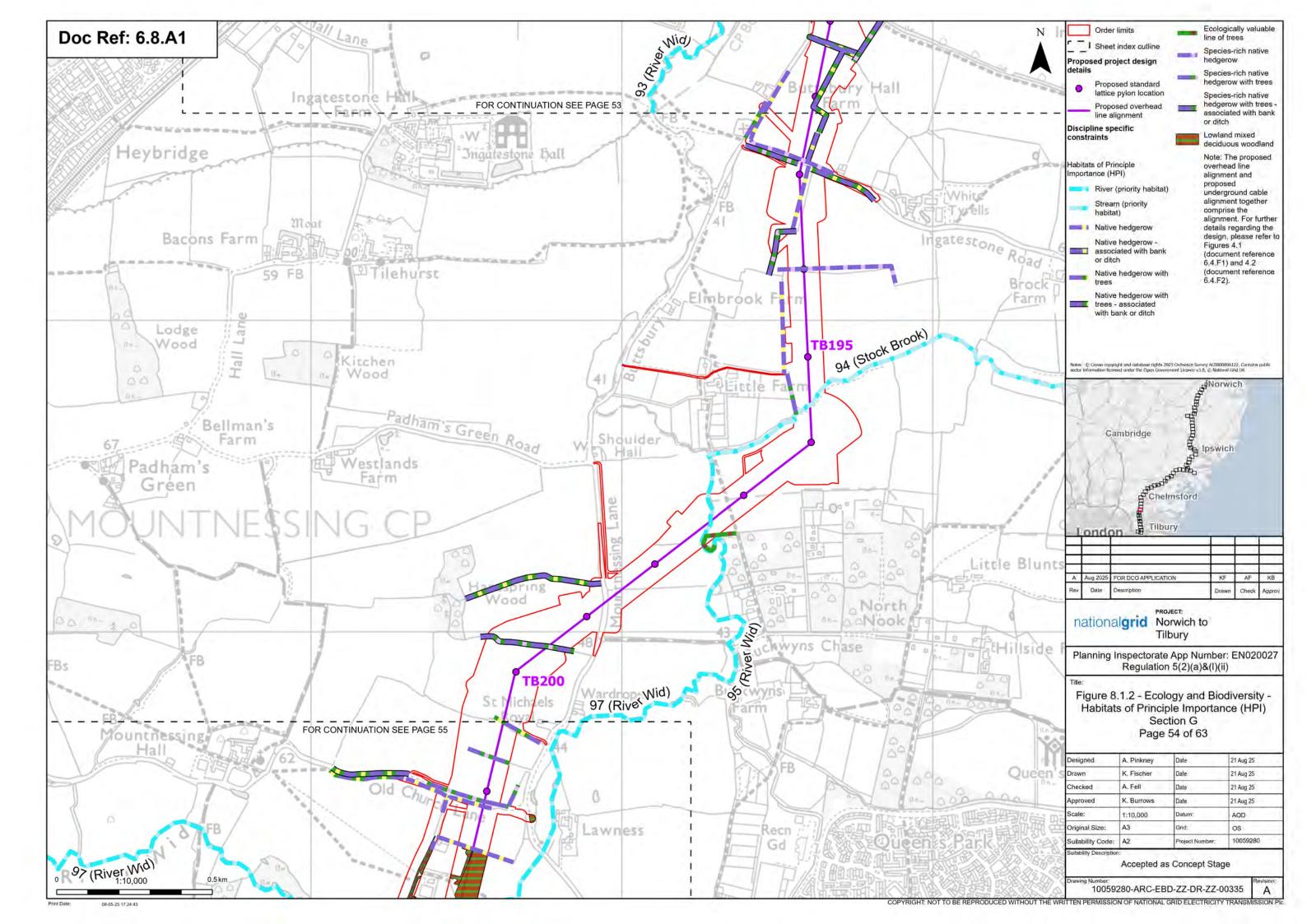


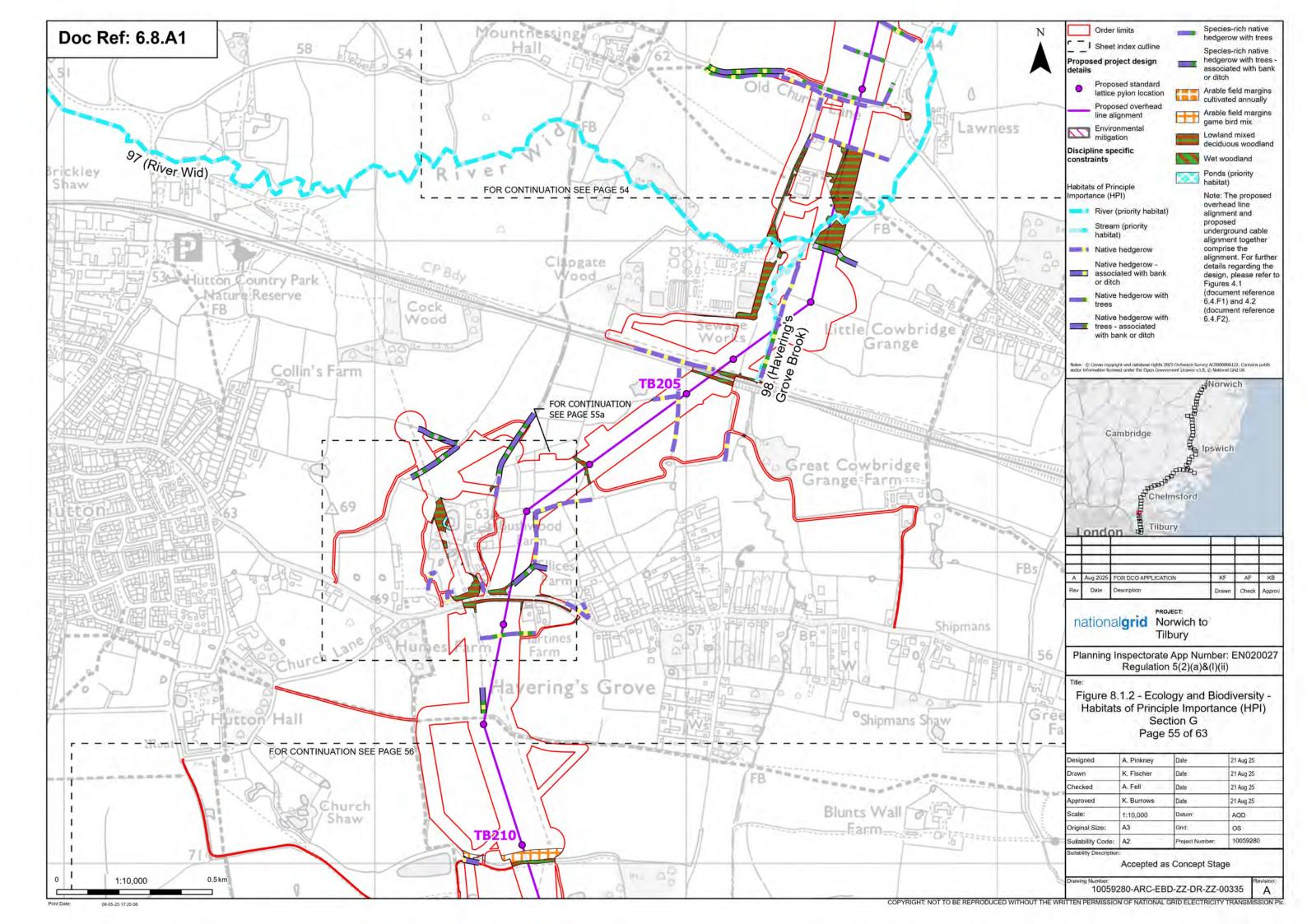


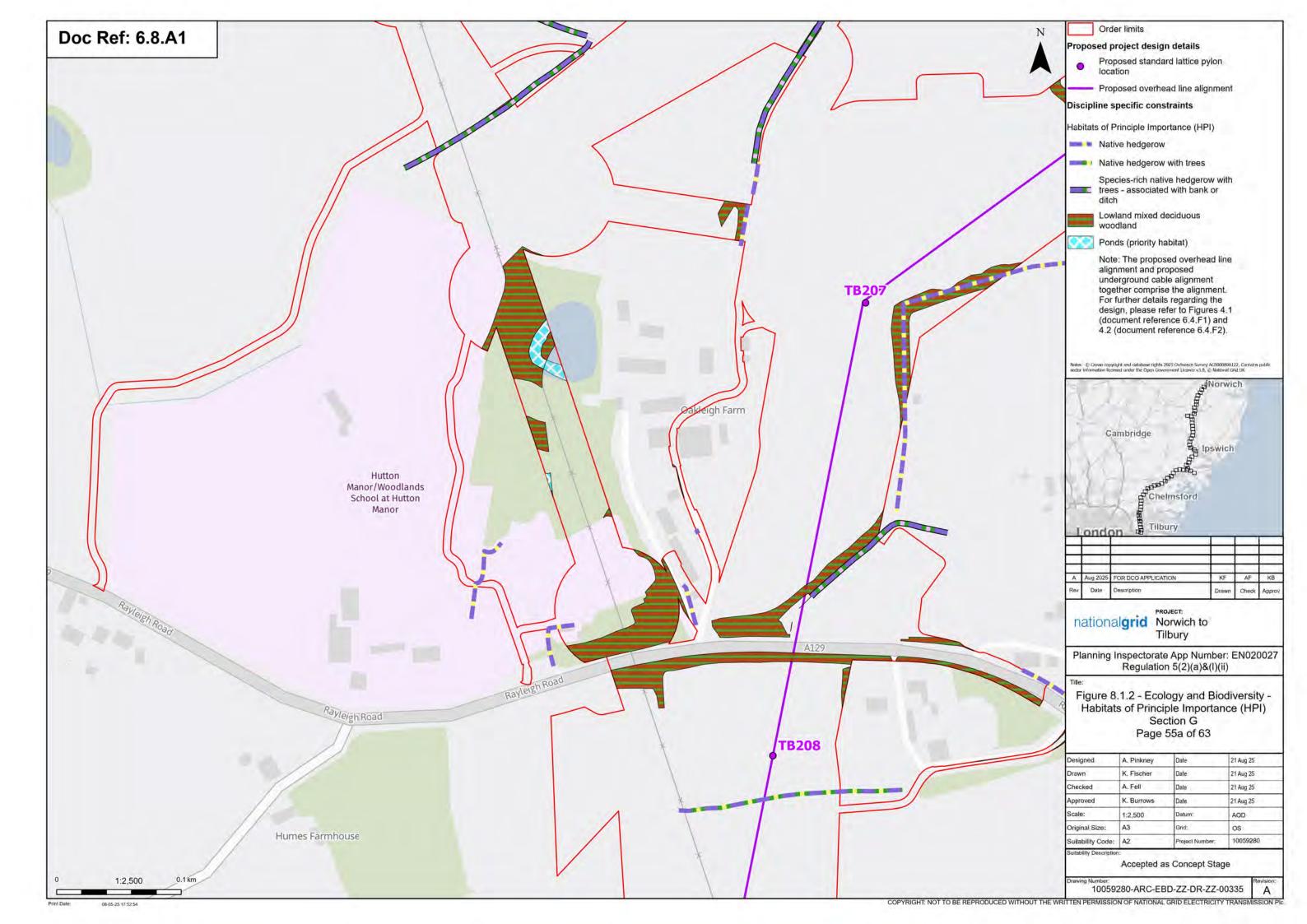


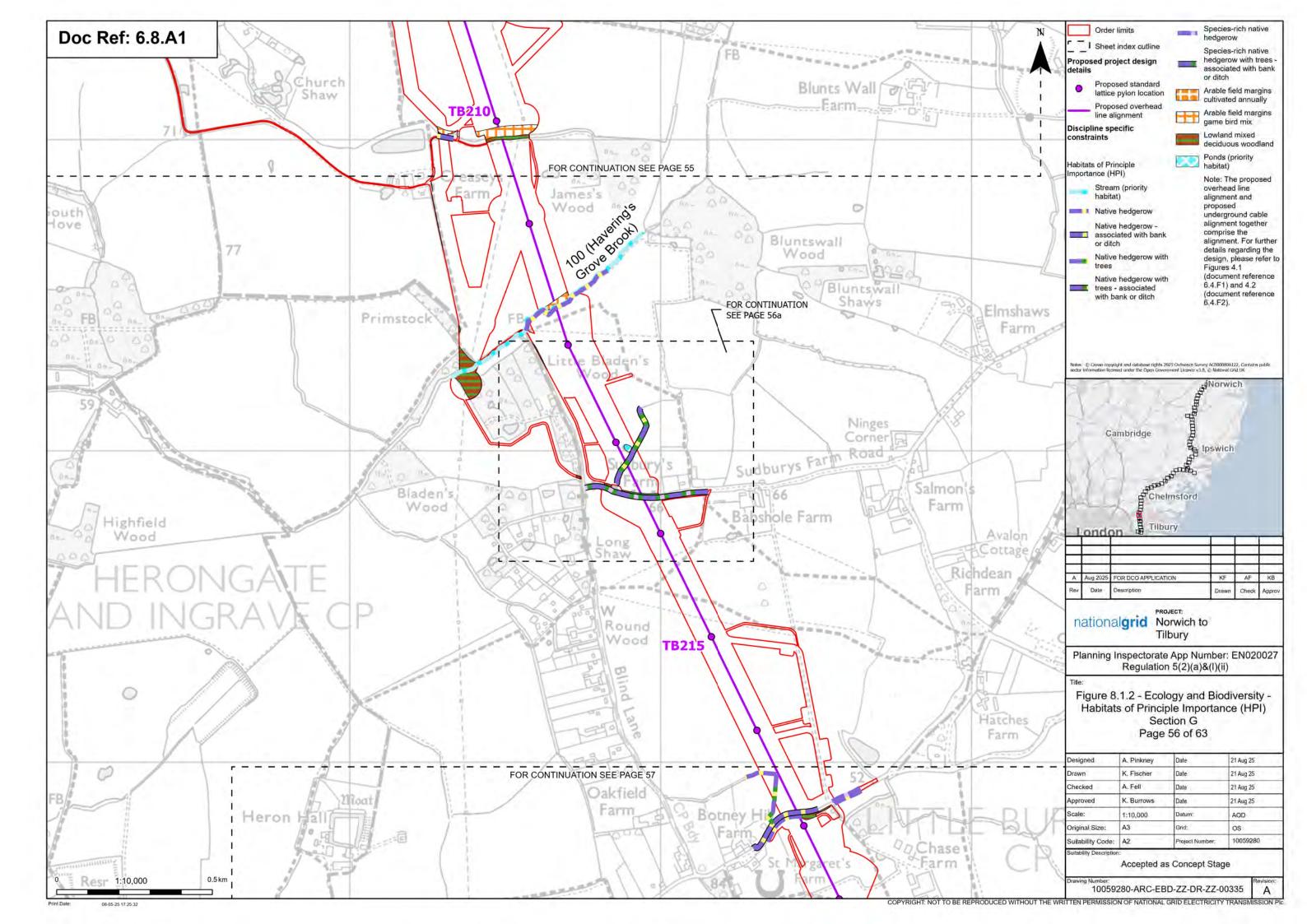


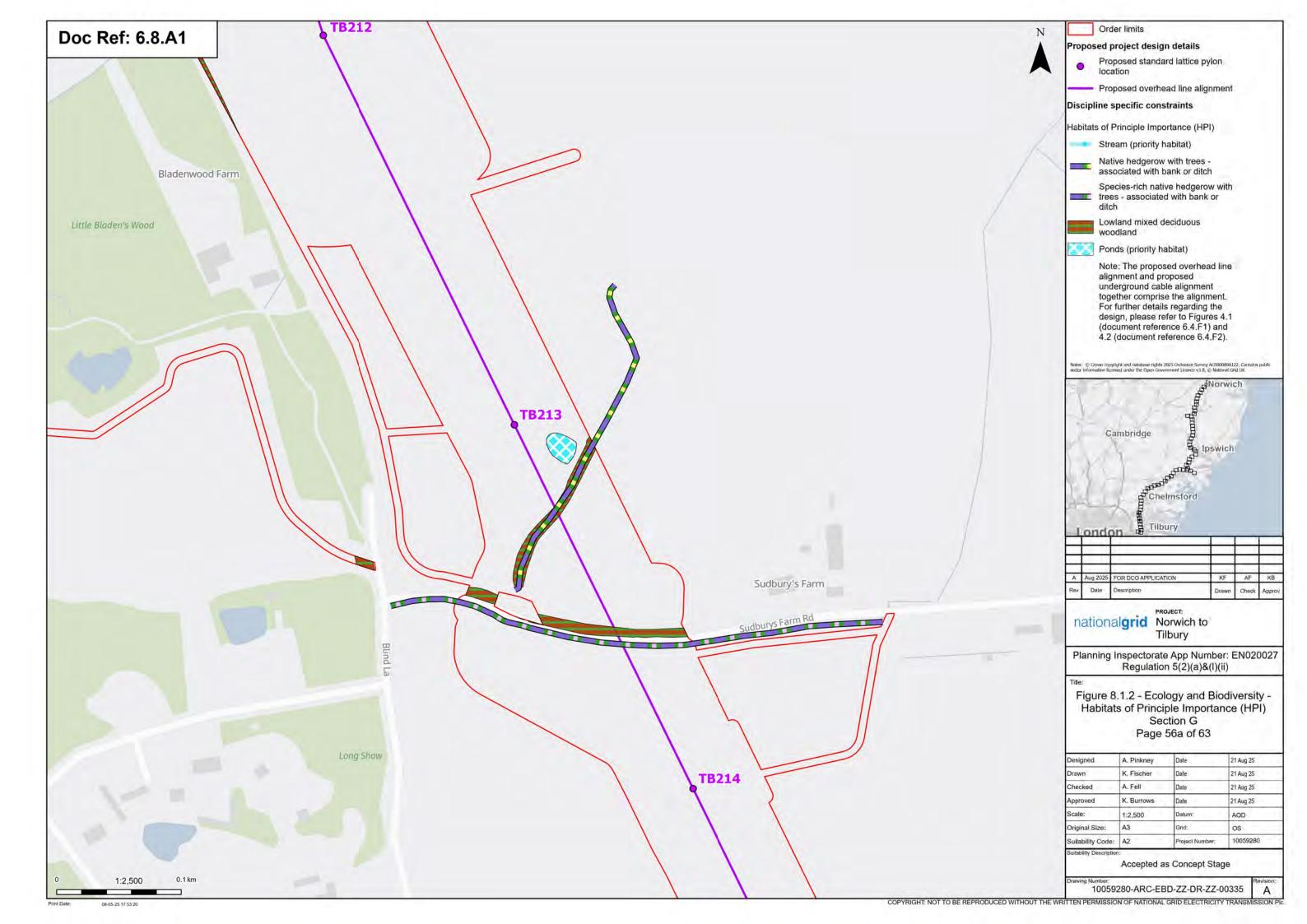


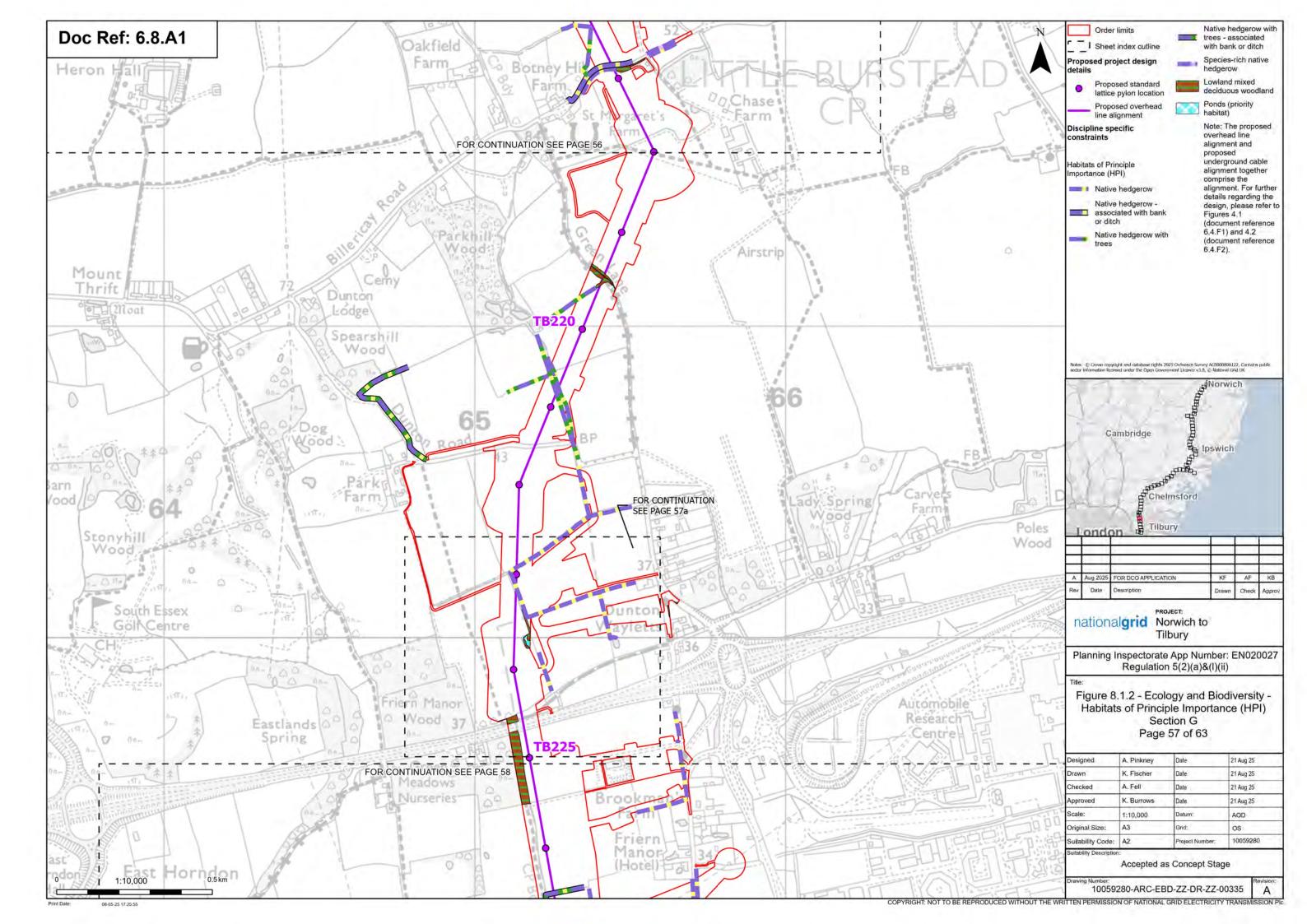


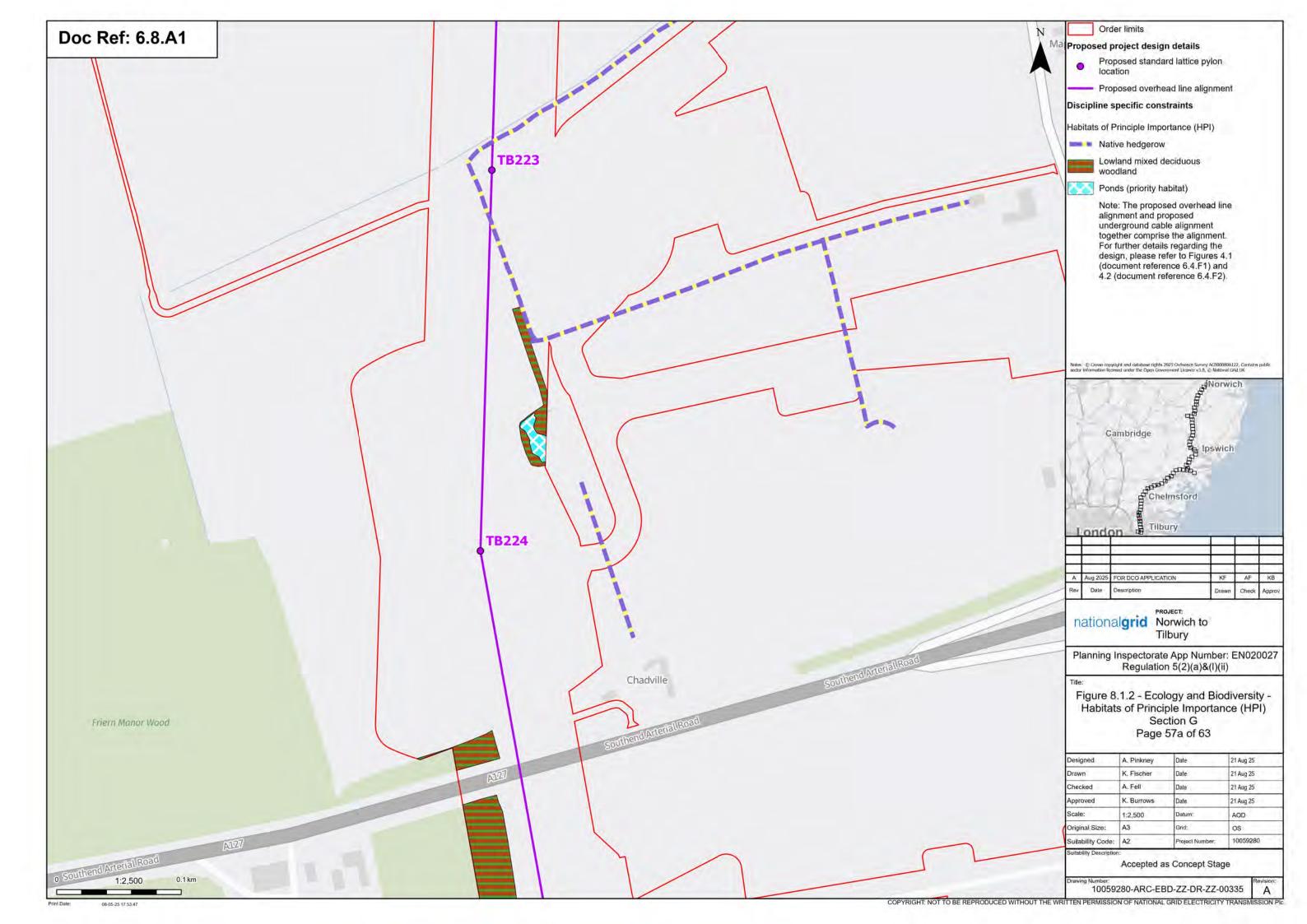


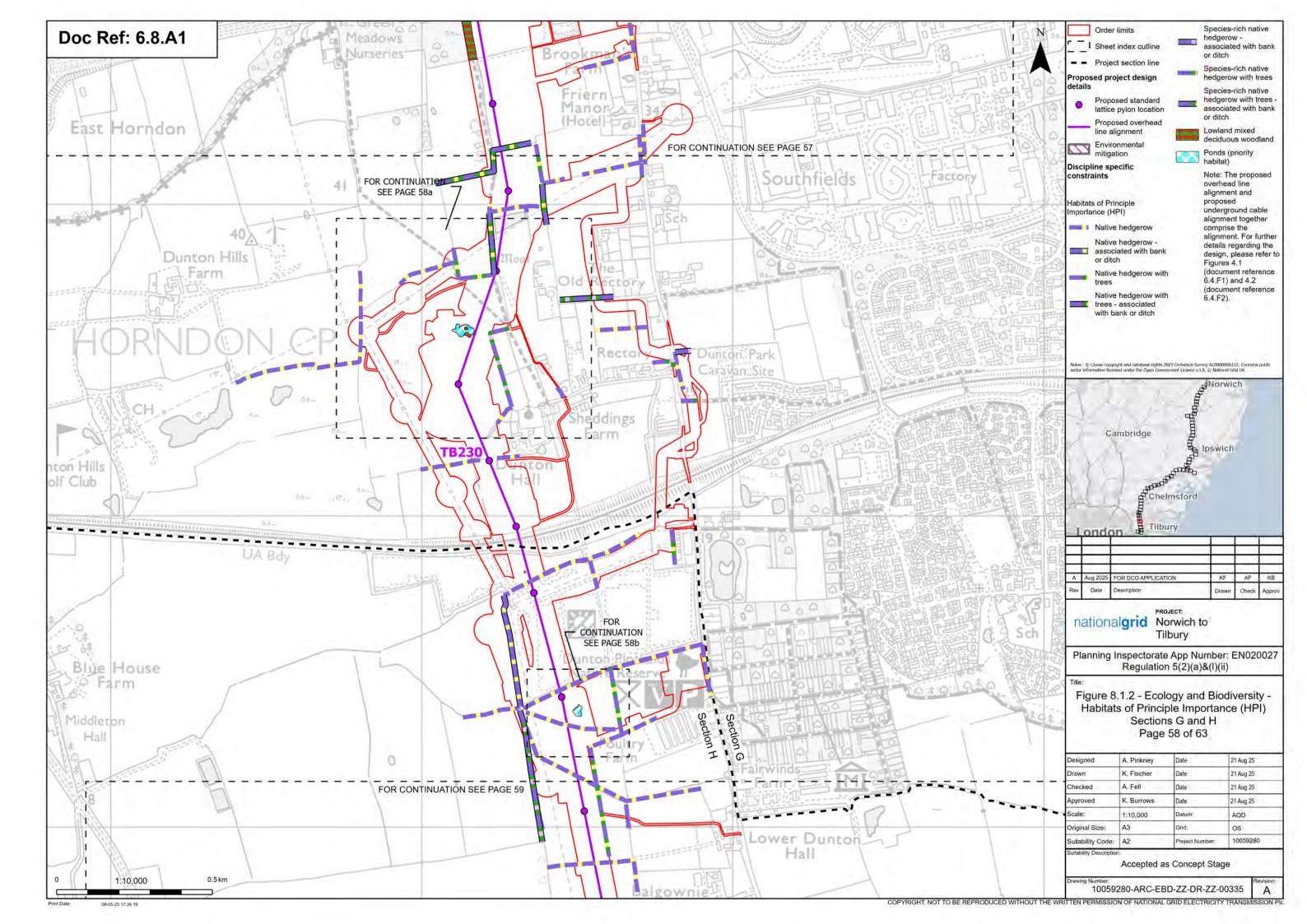


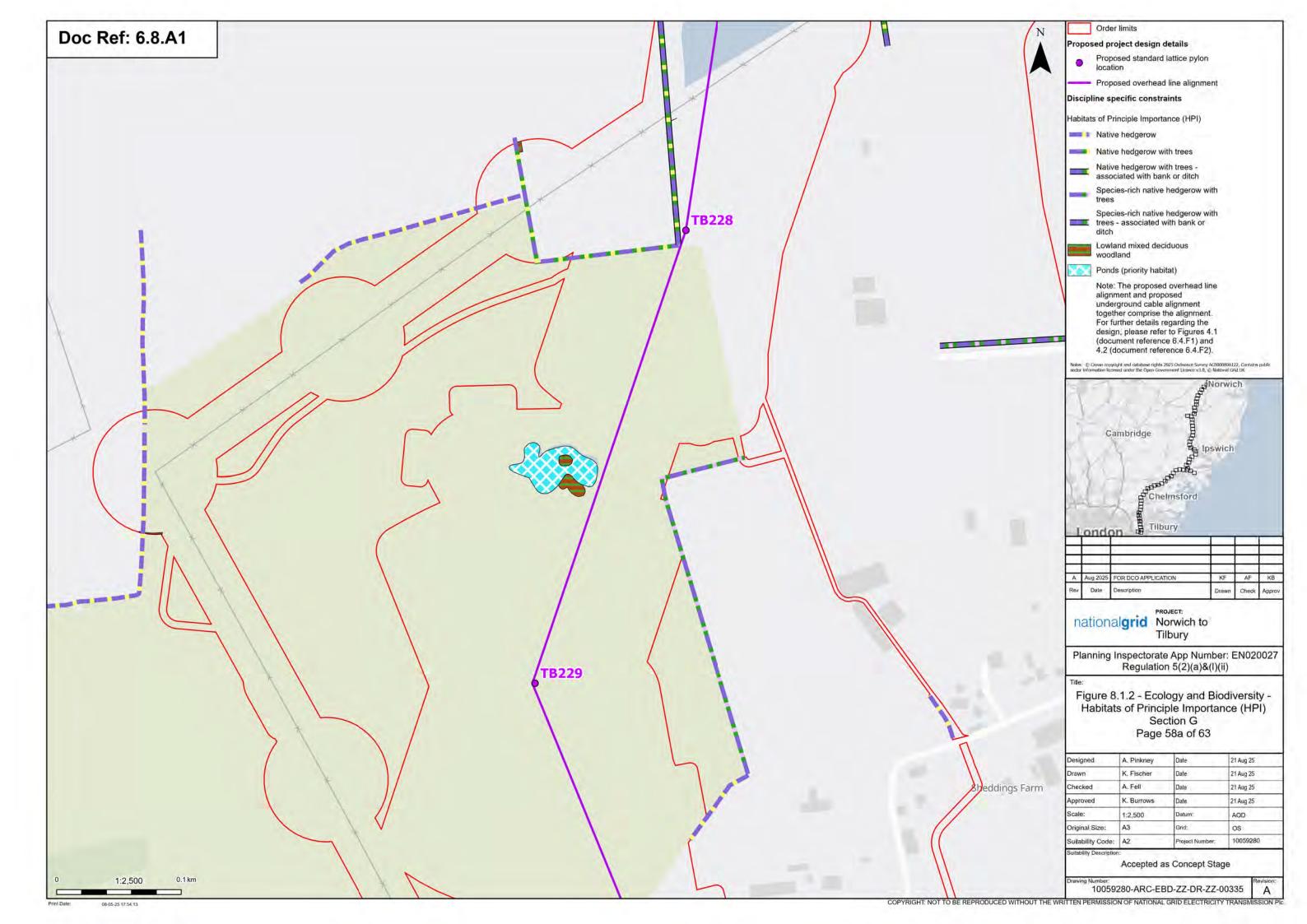


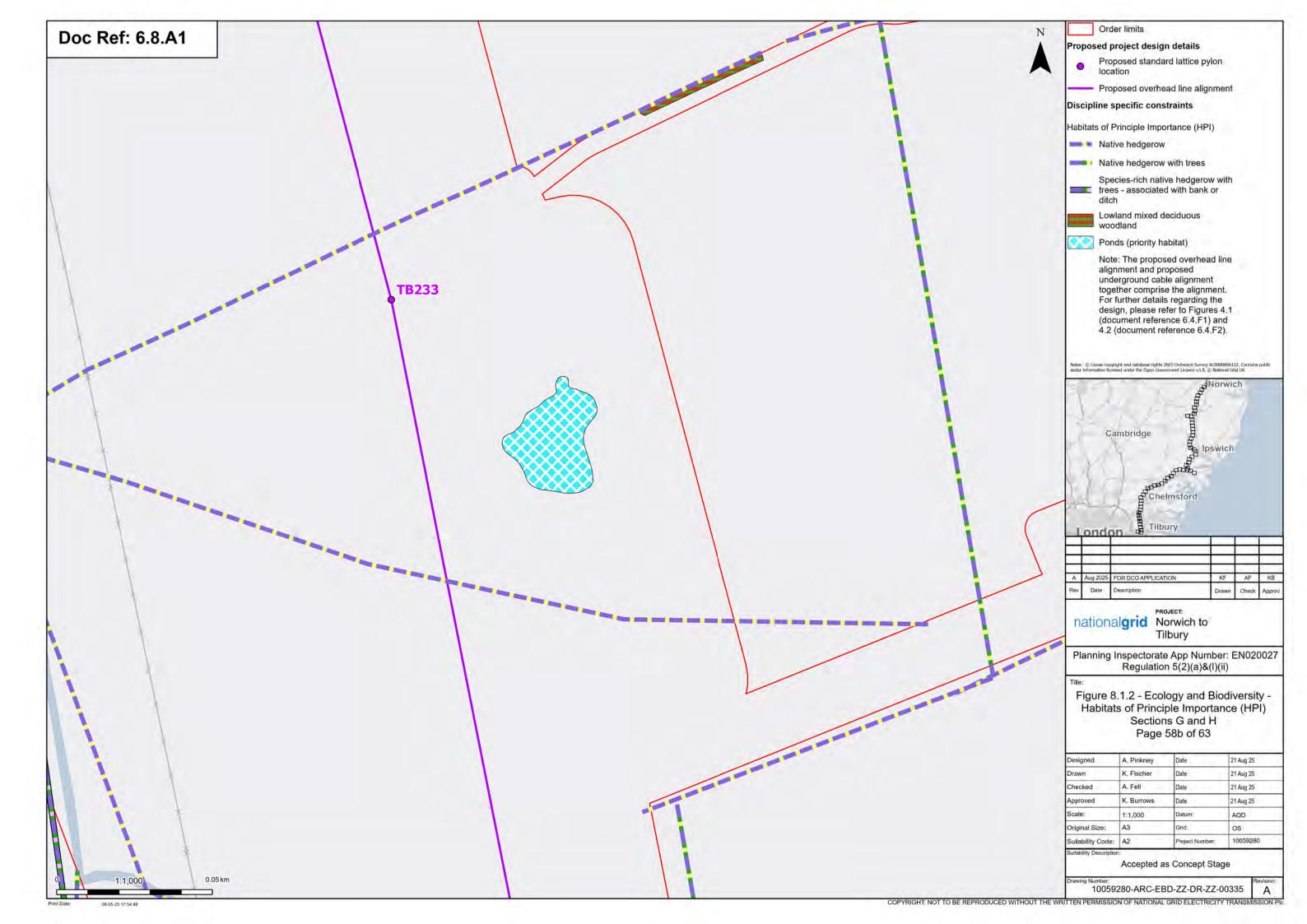


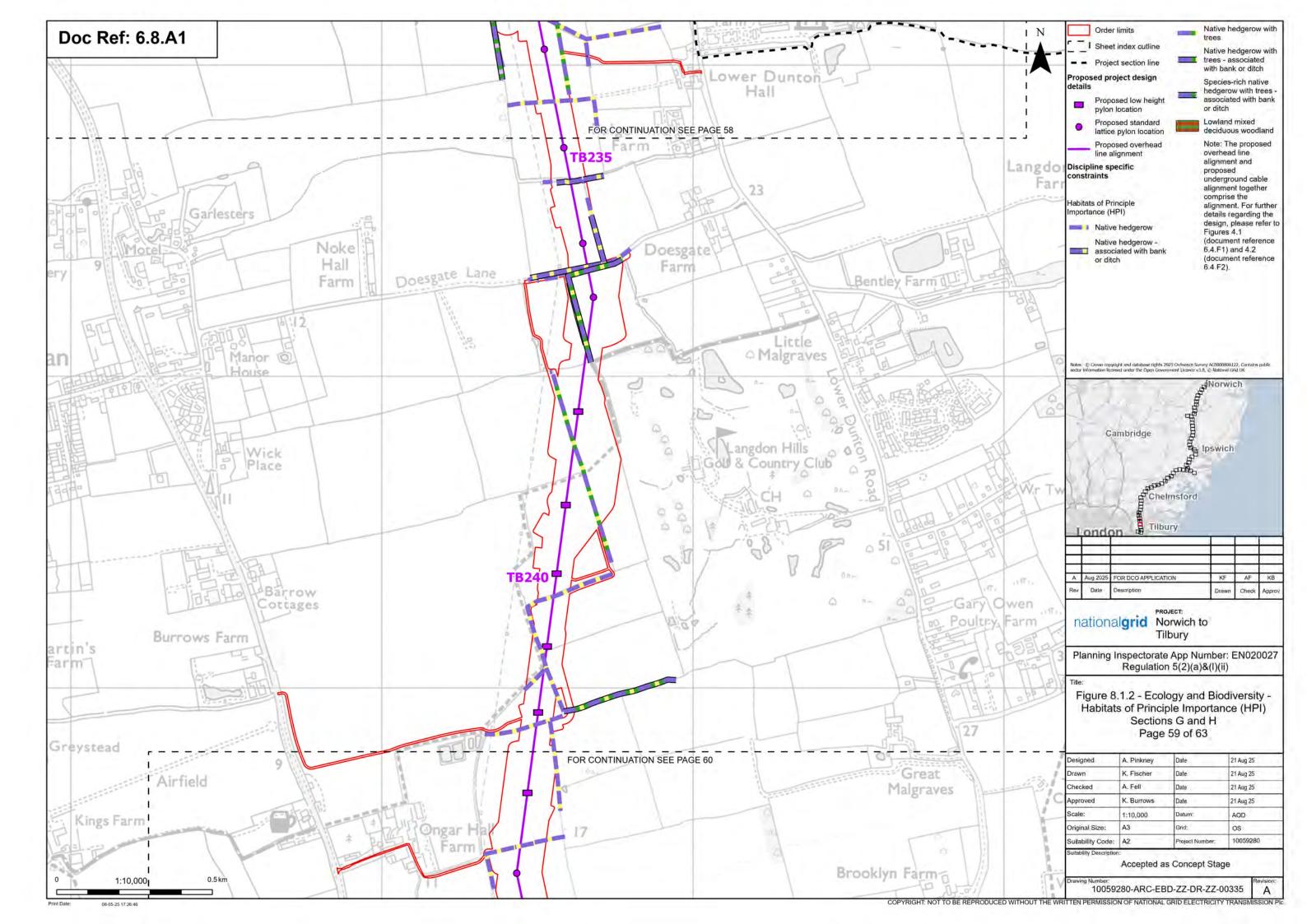


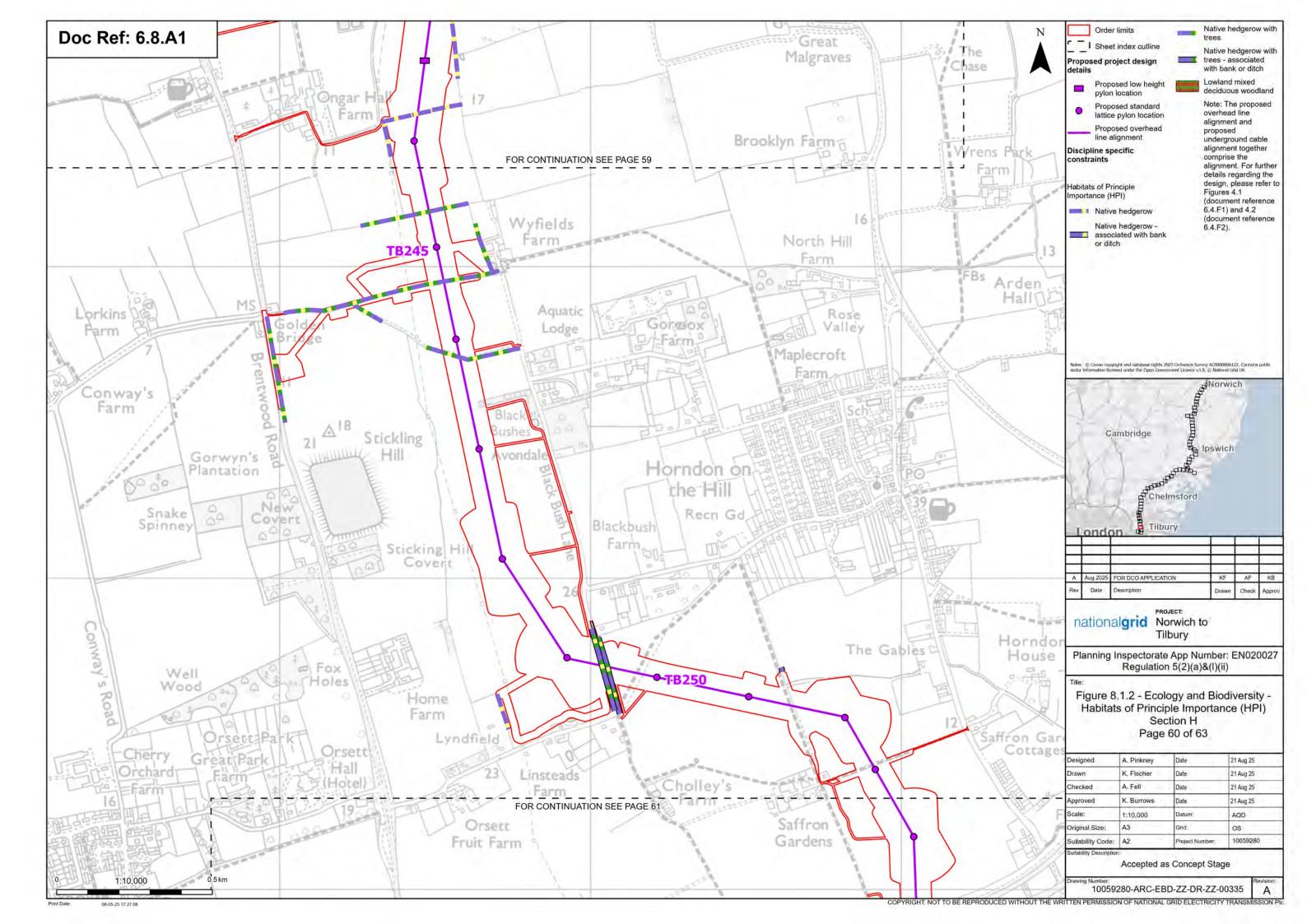


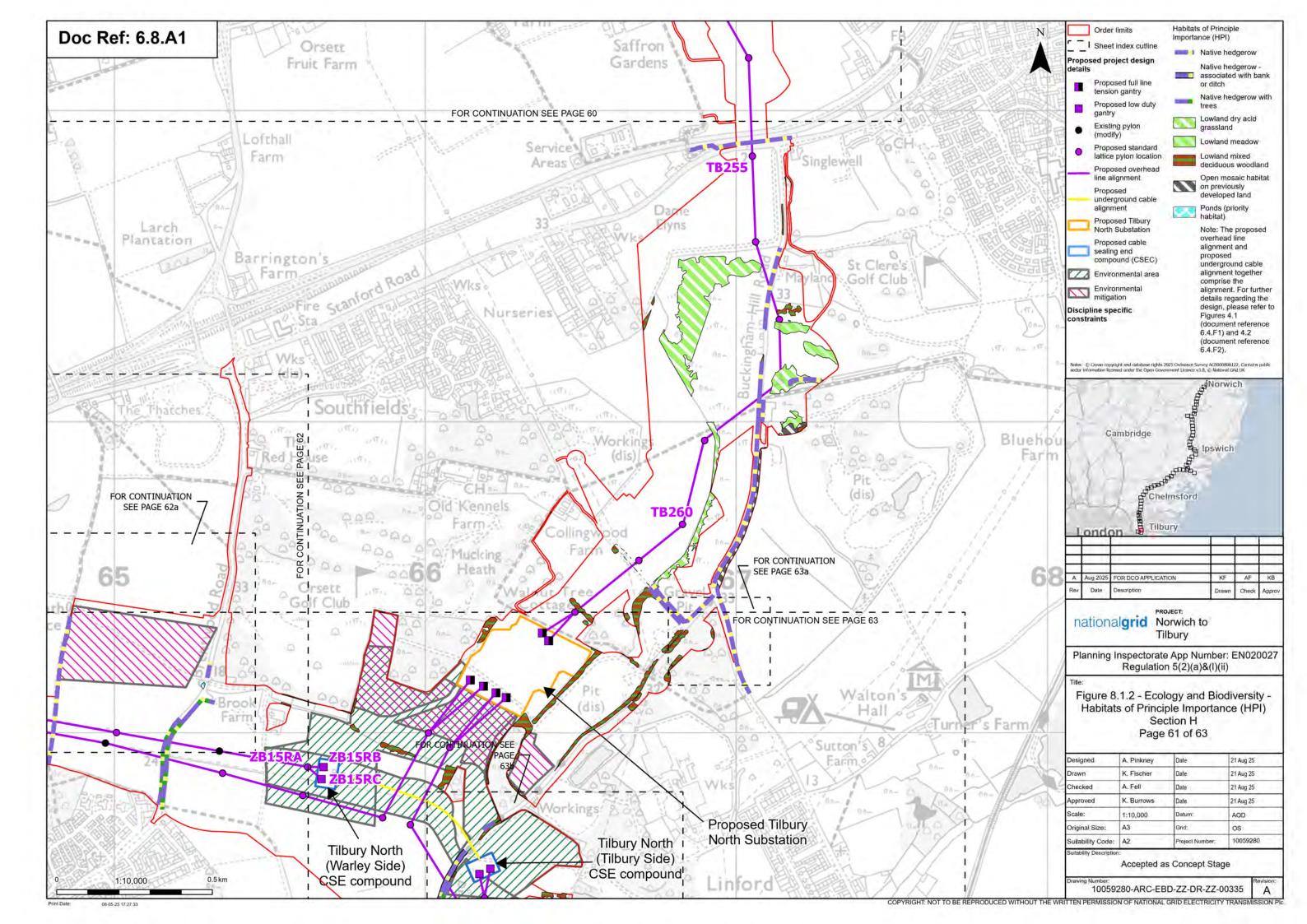


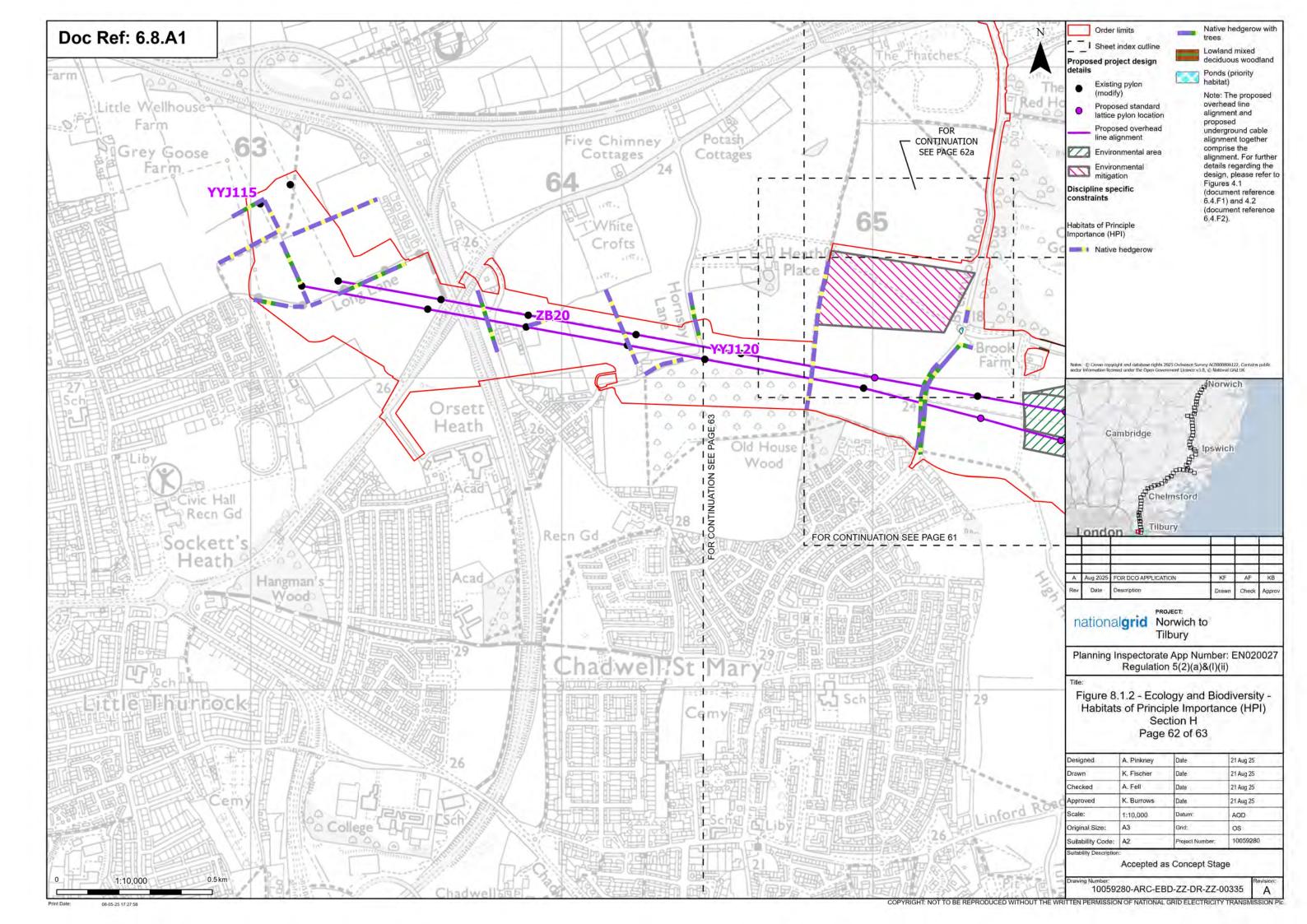


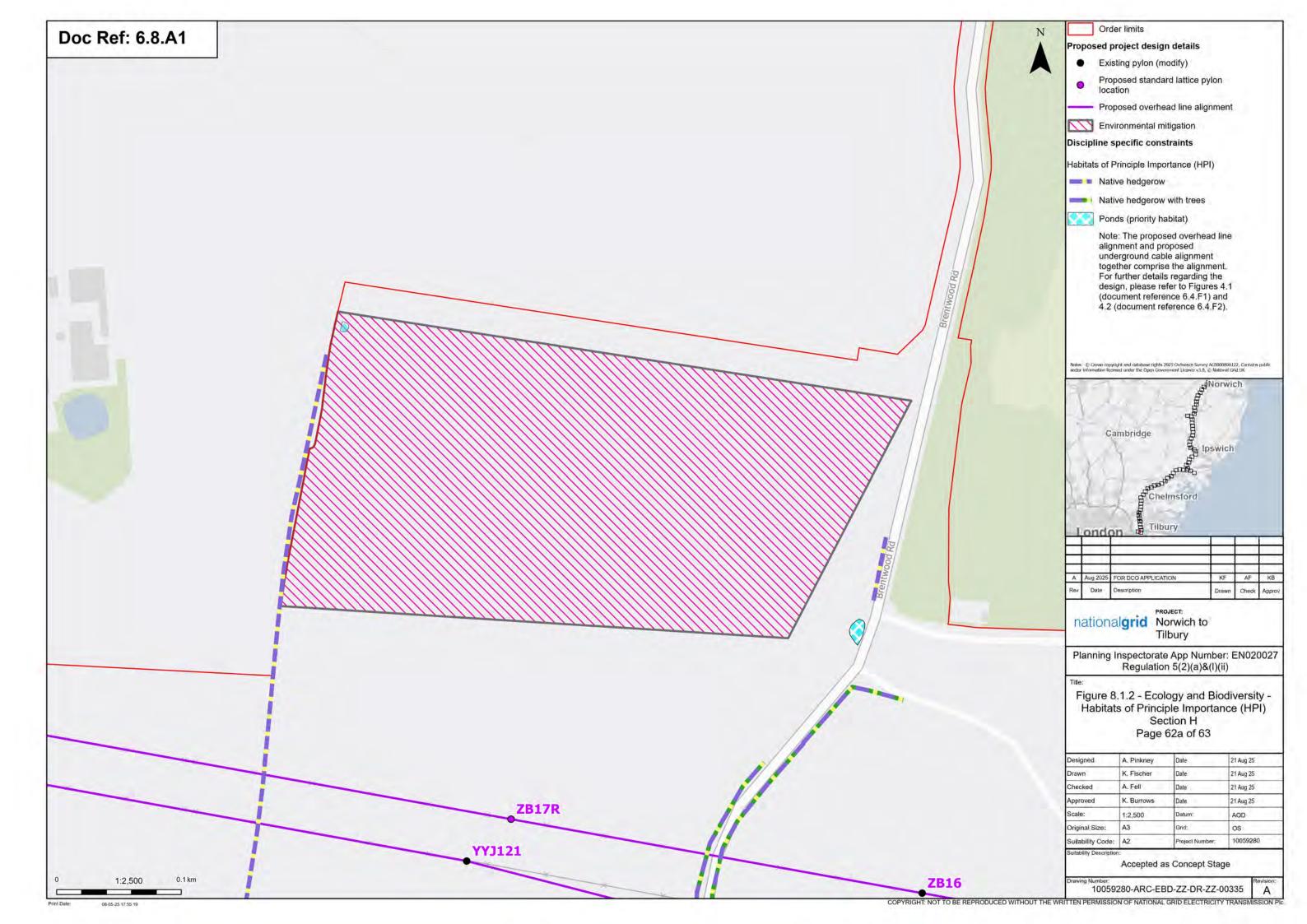


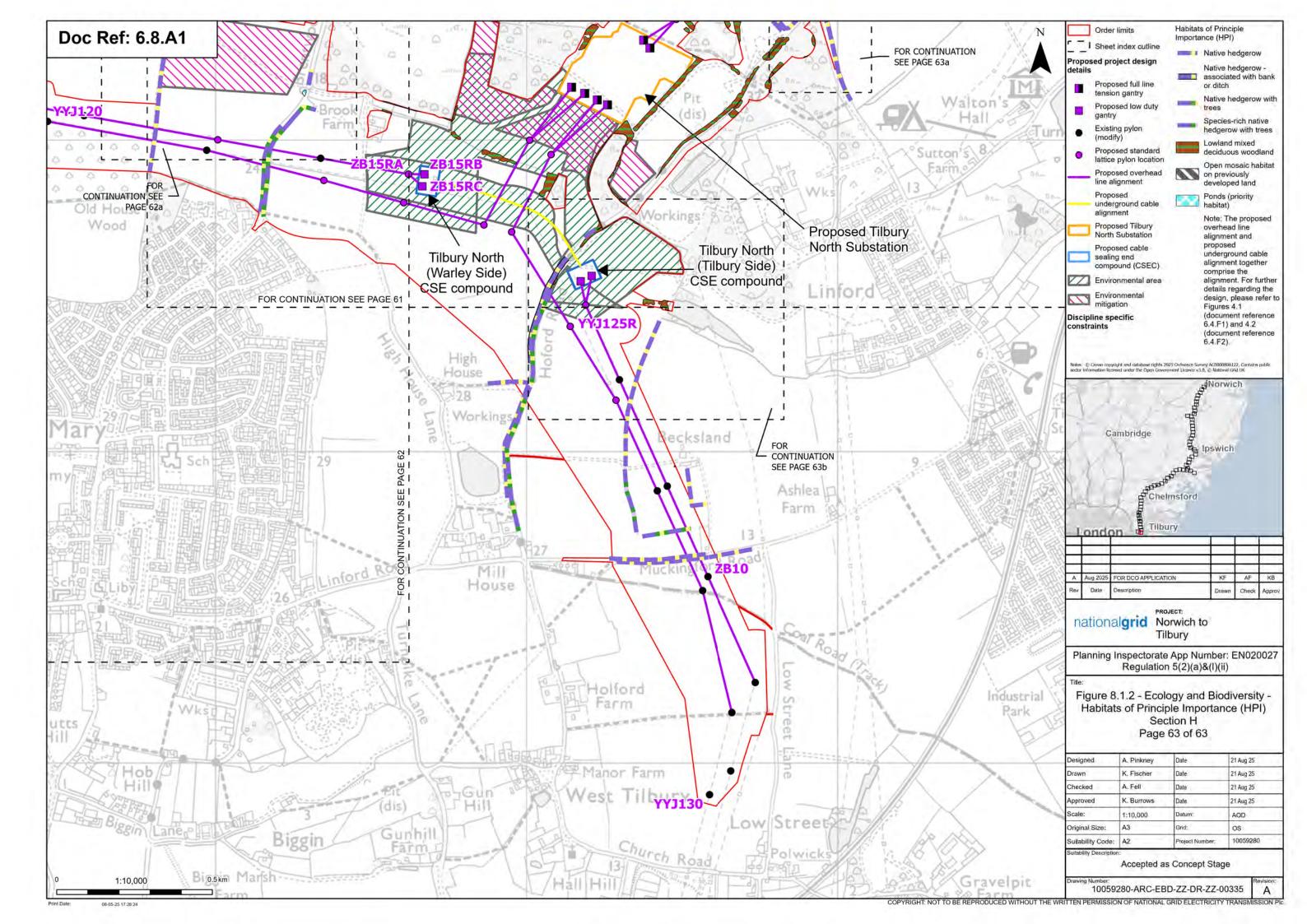














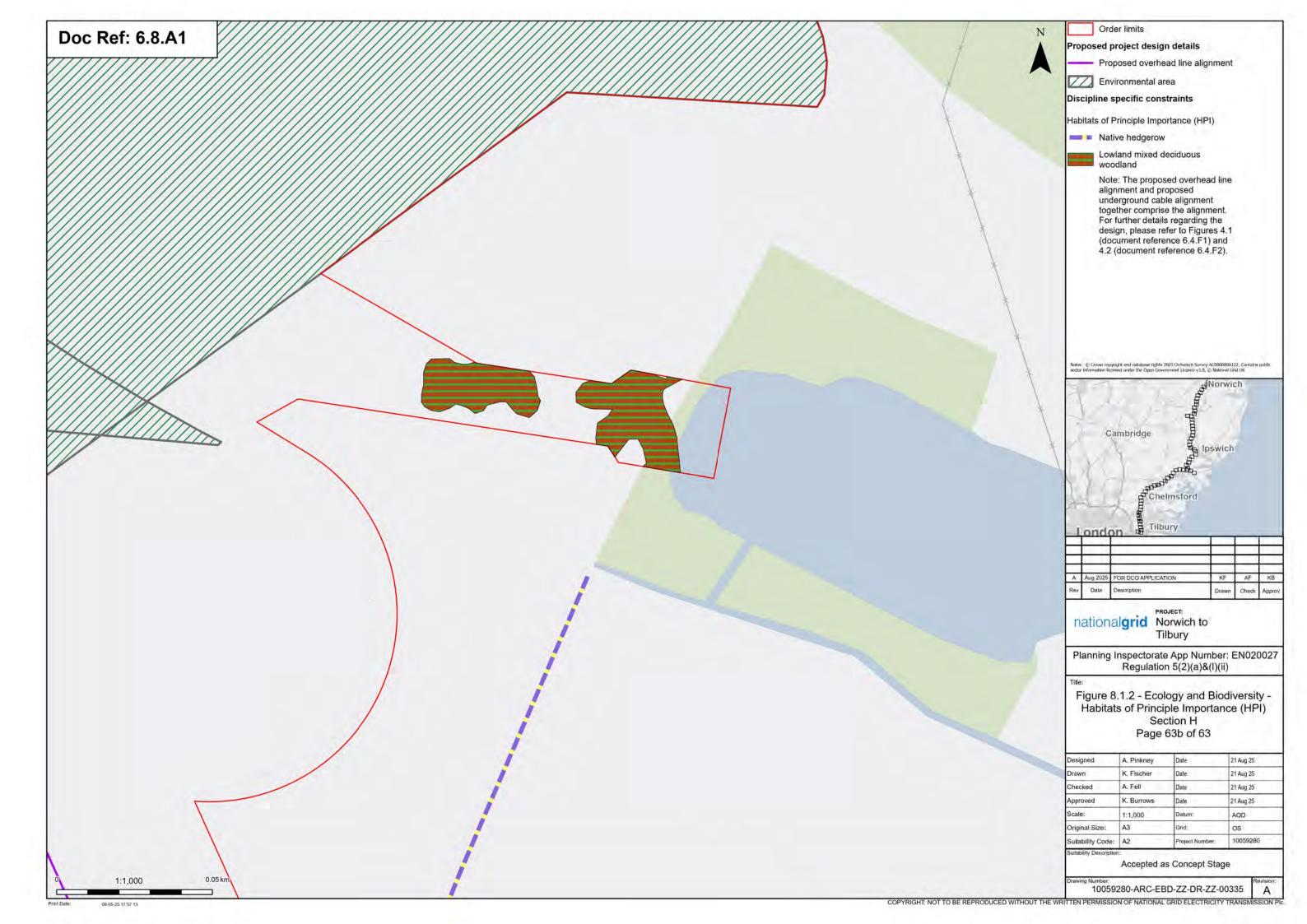
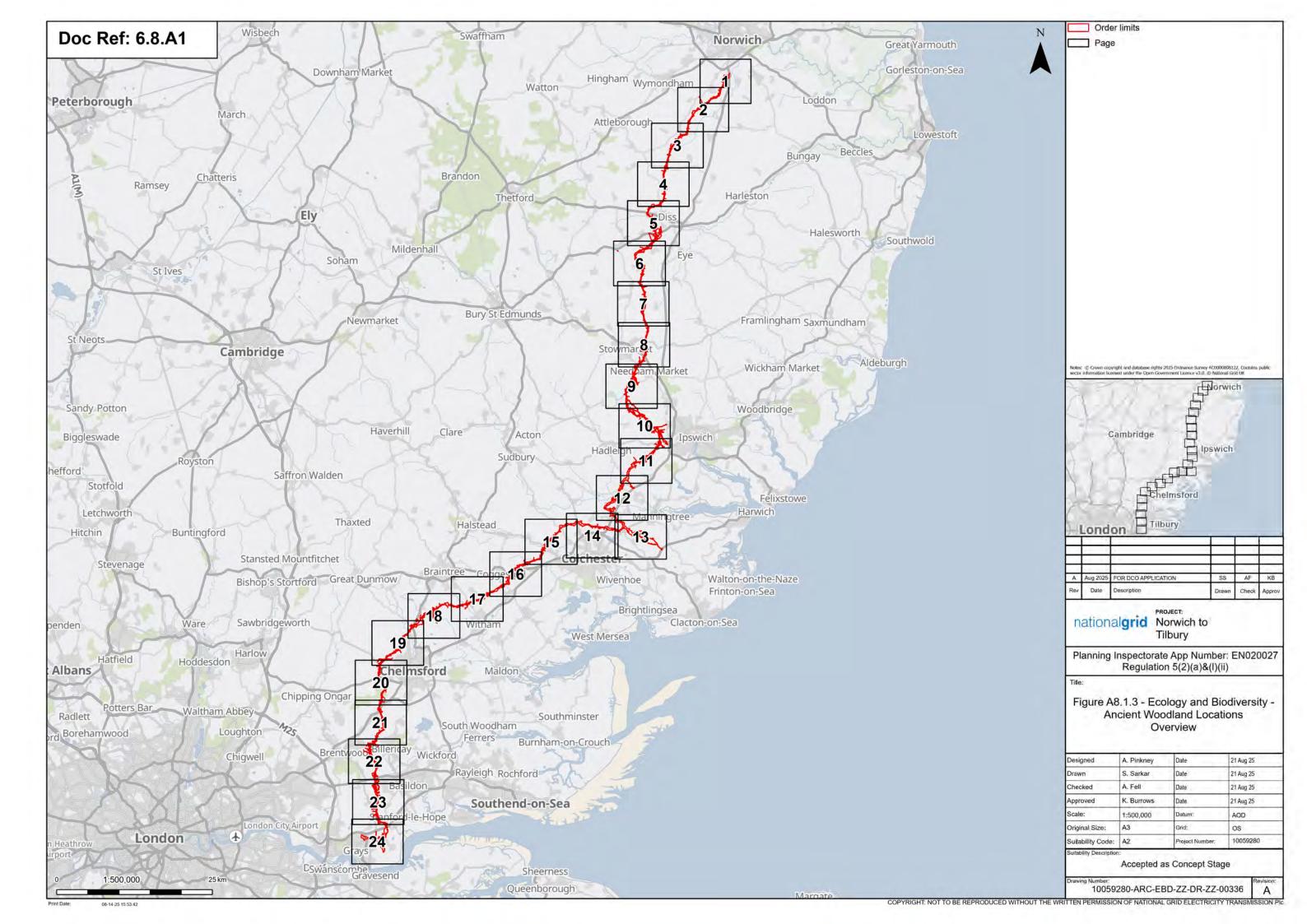
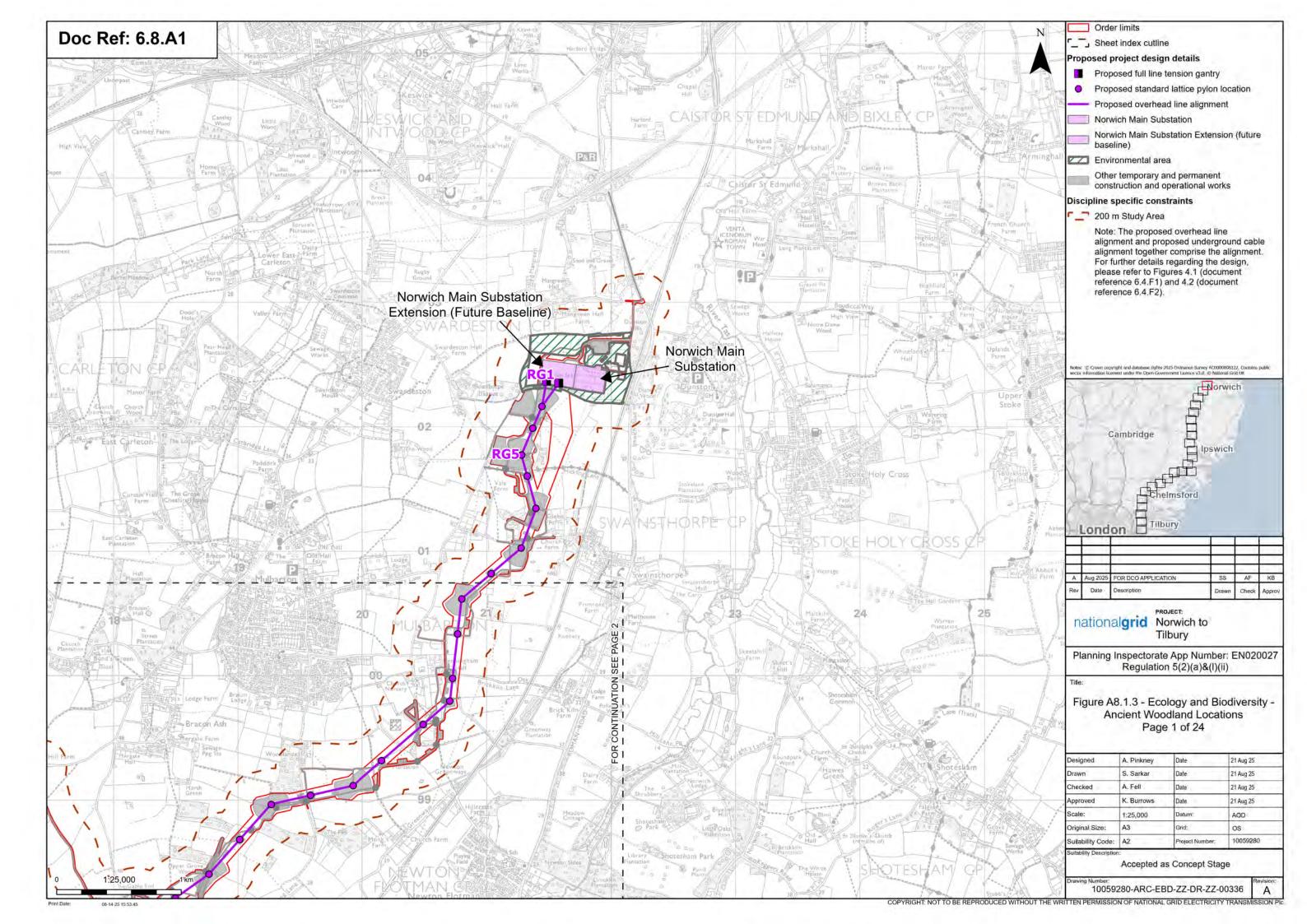
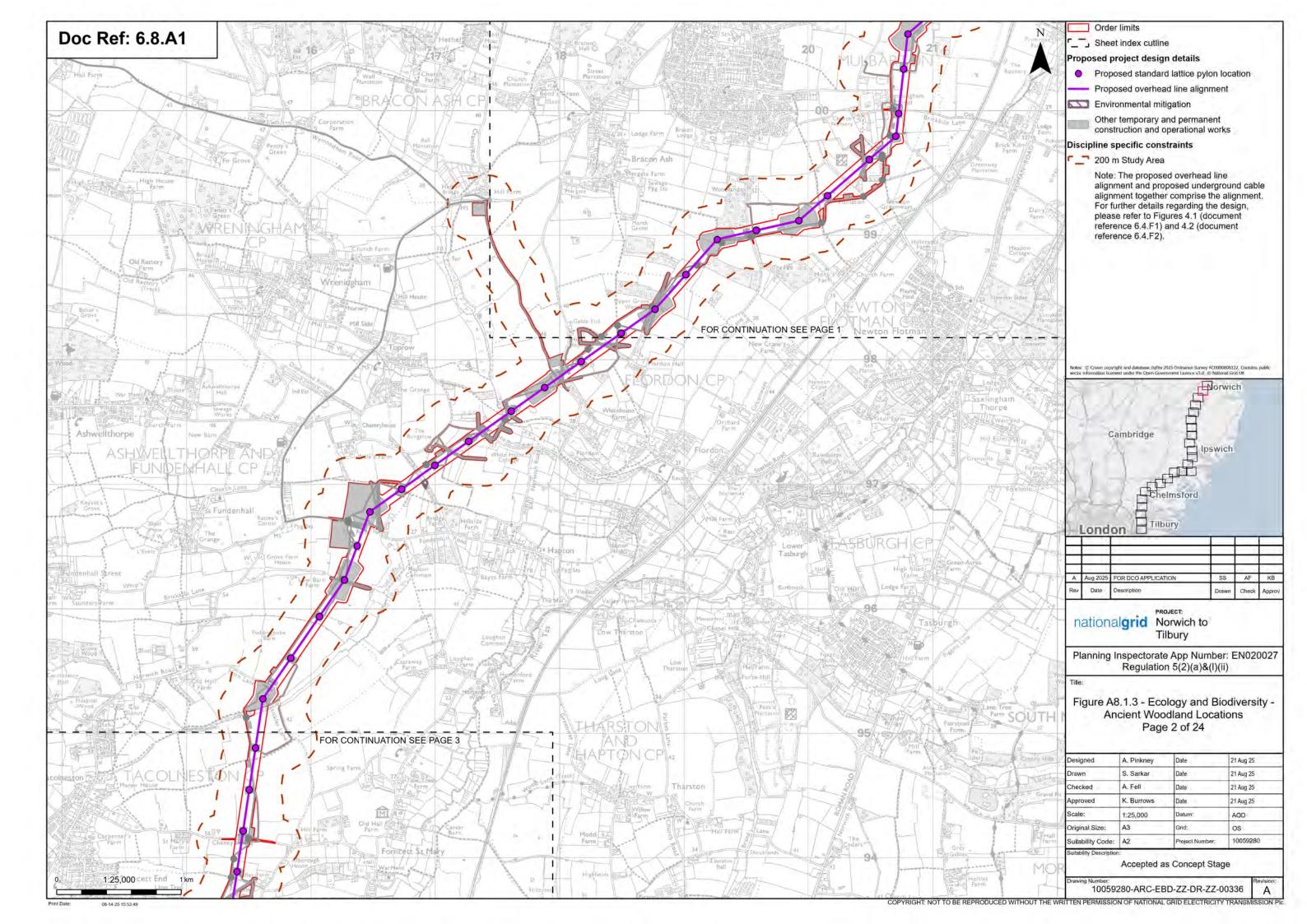
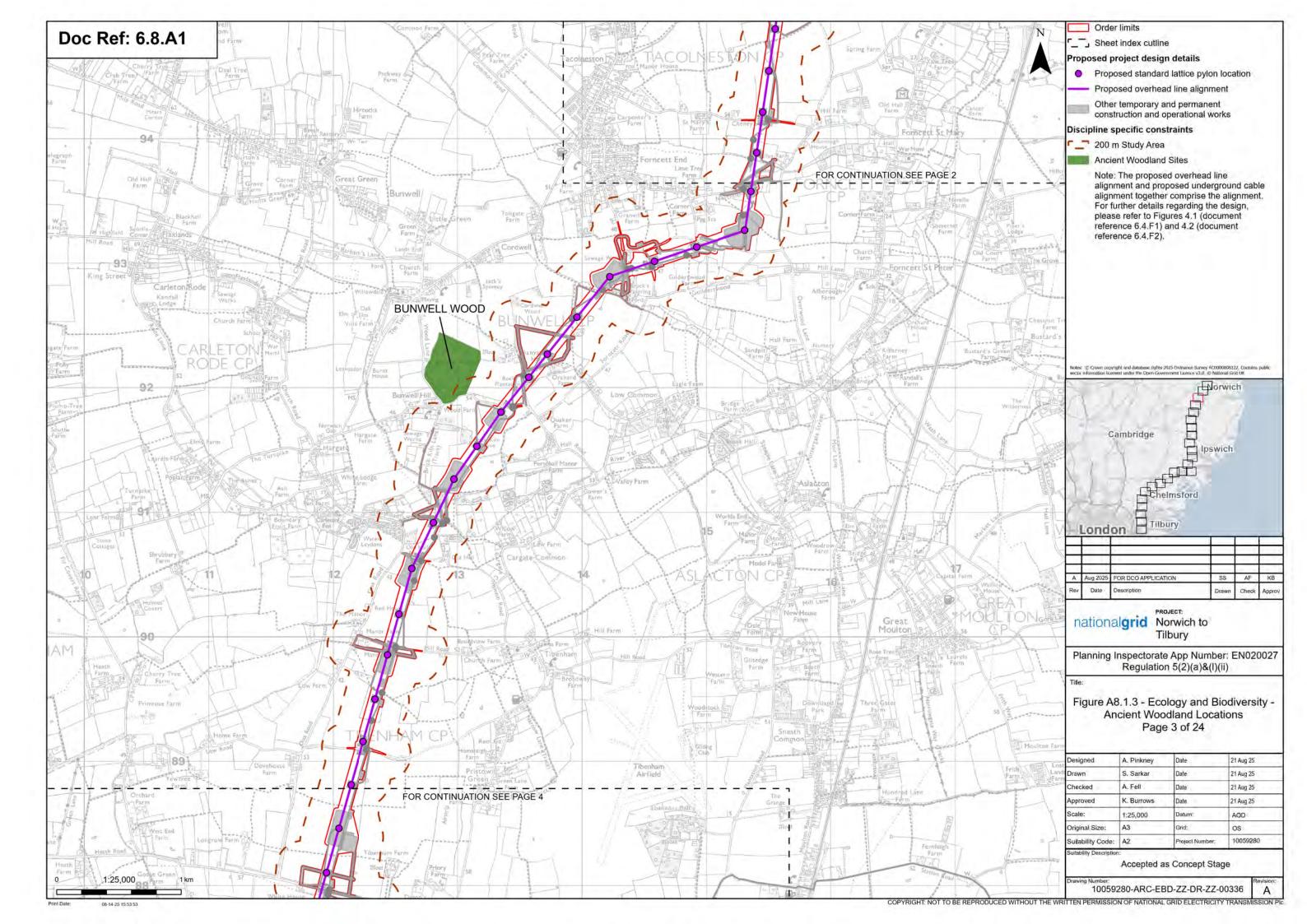


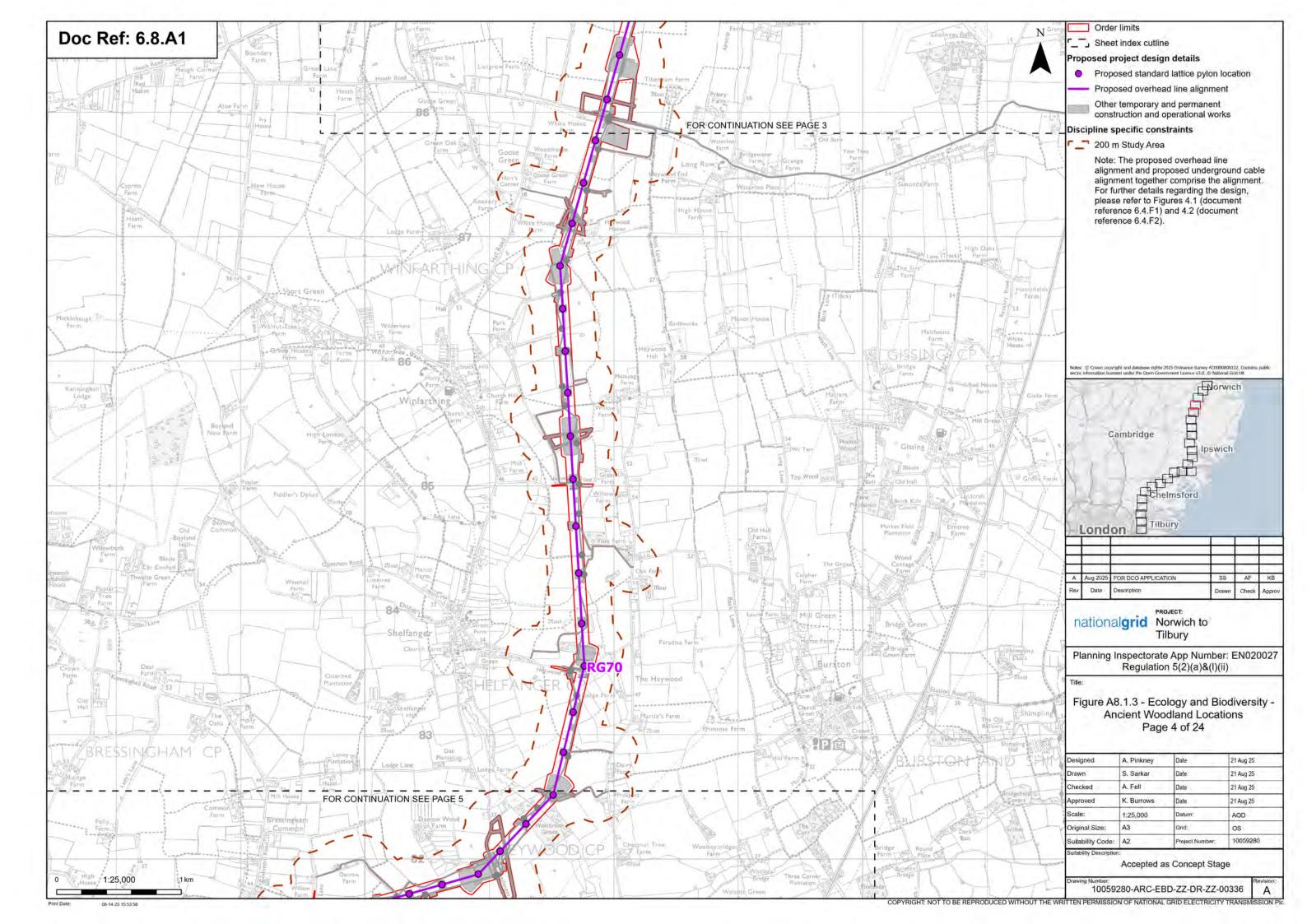
Figure A8.1.3 -	Ancient Woodland L	_ocations

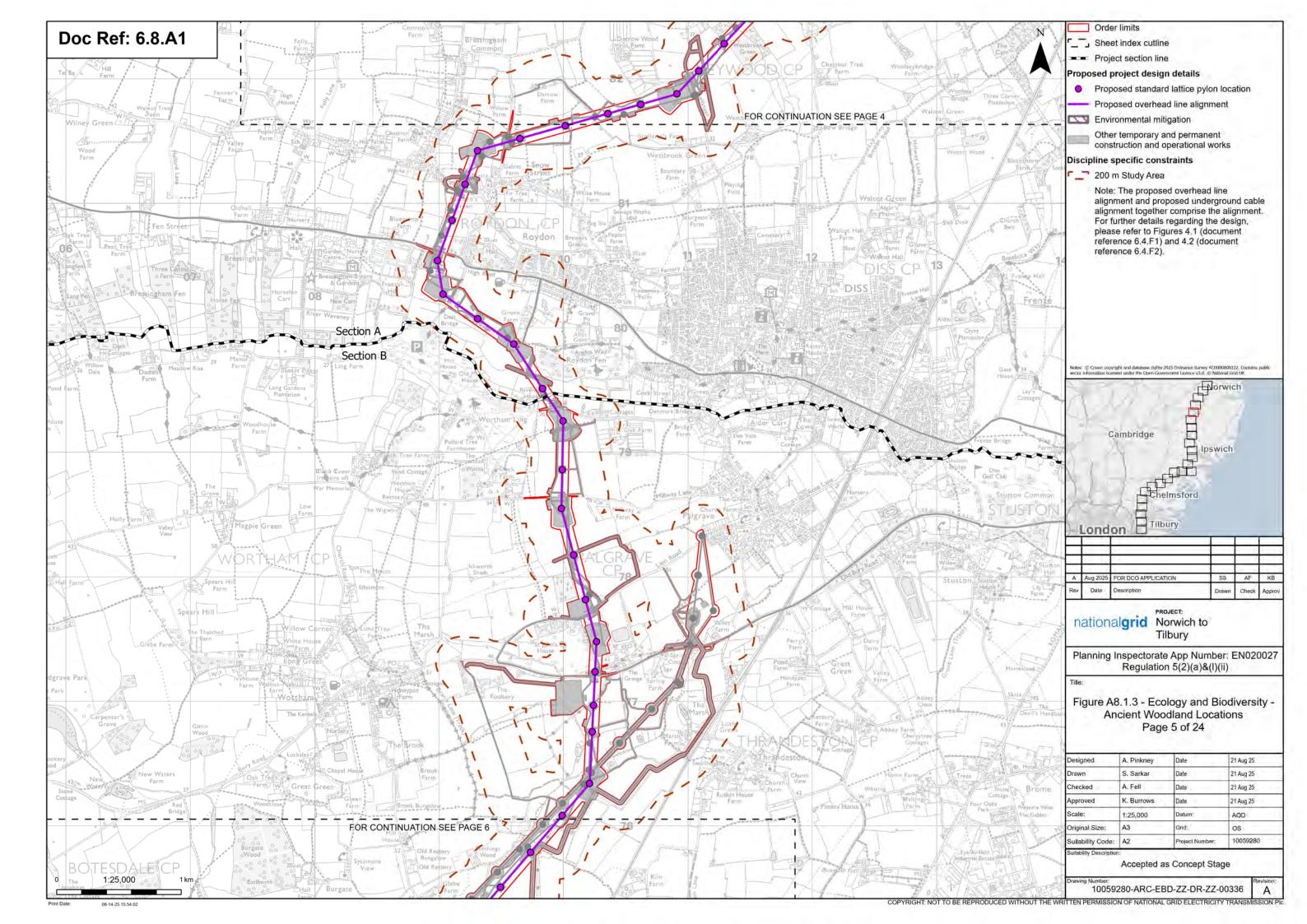


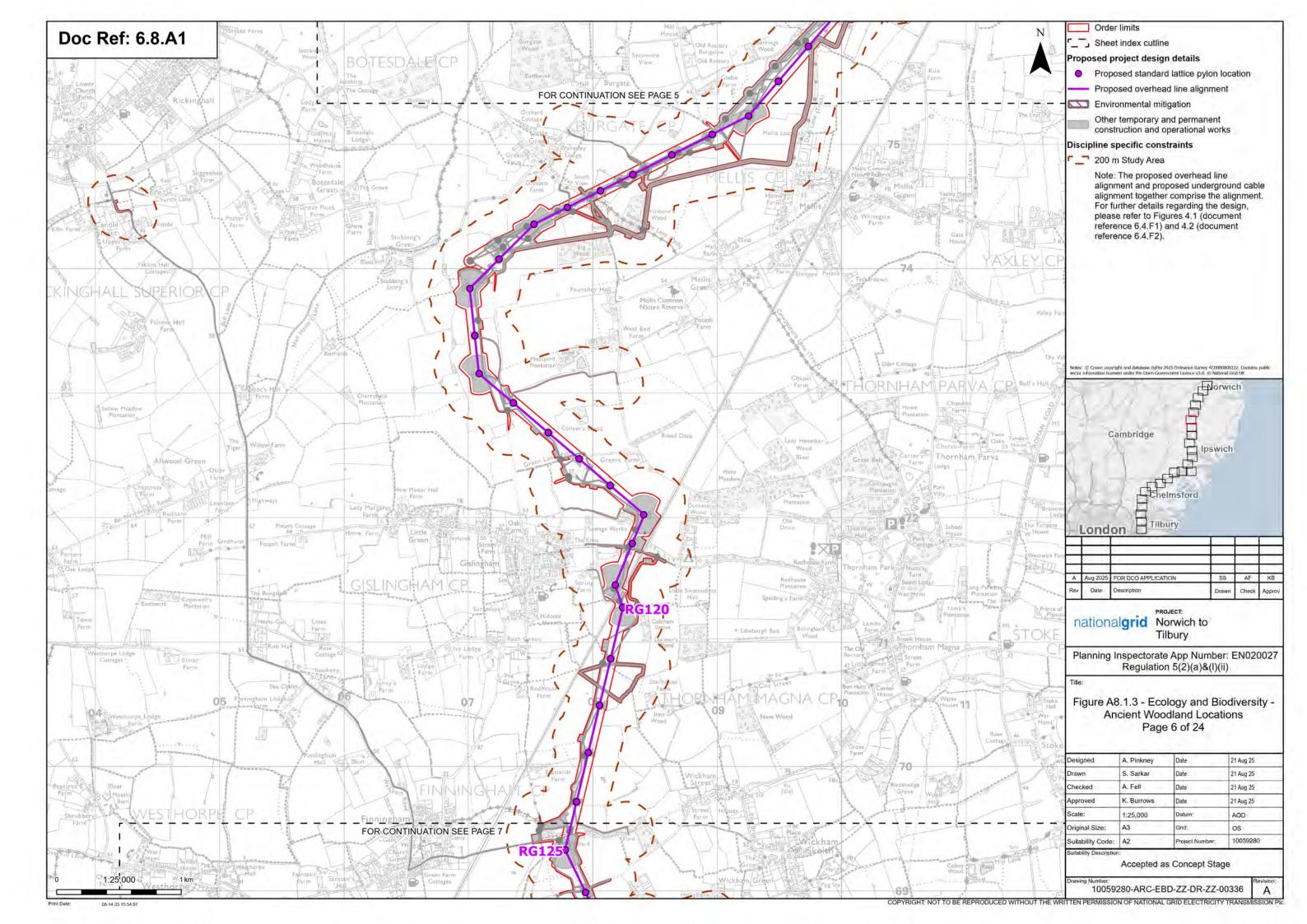


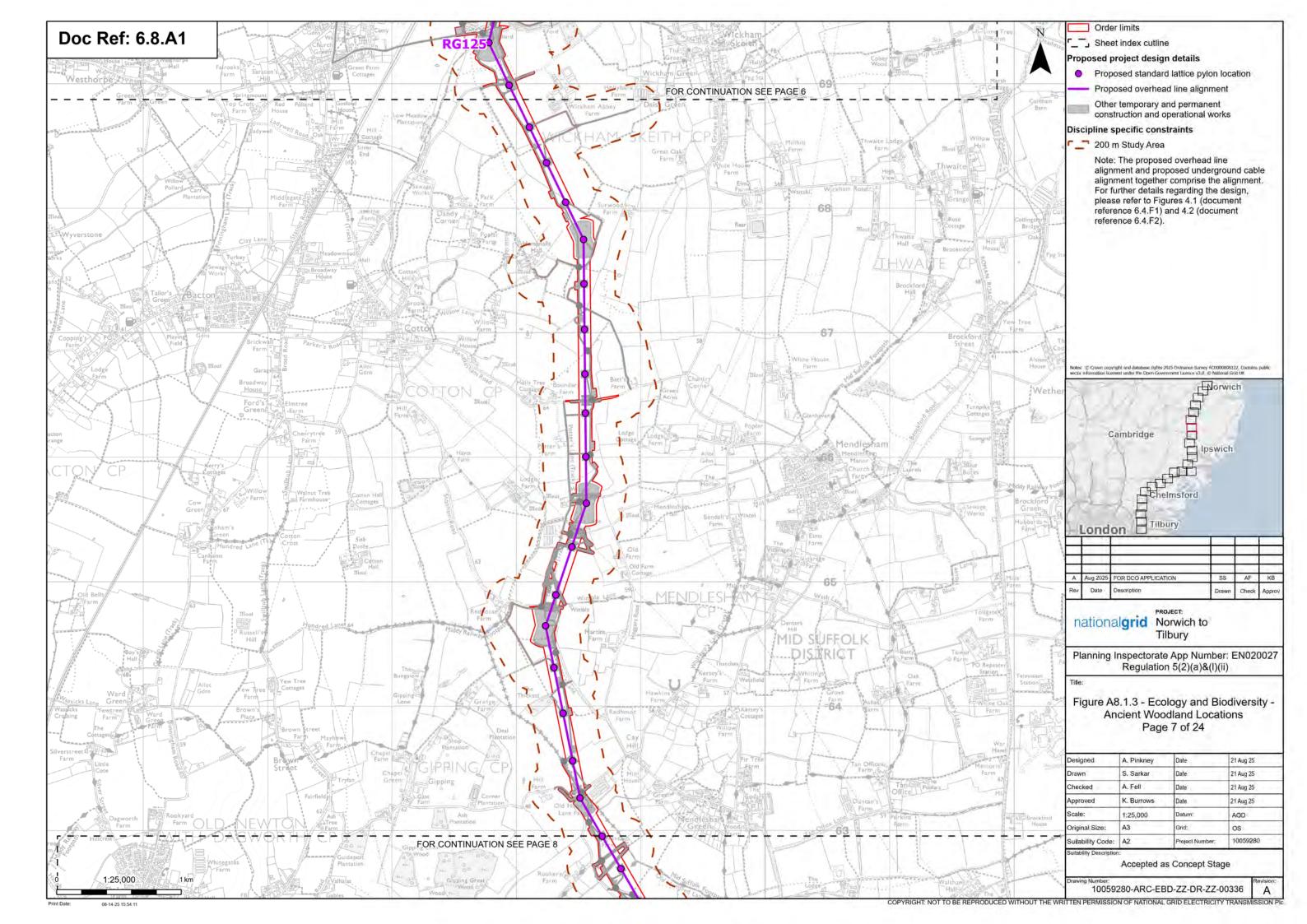


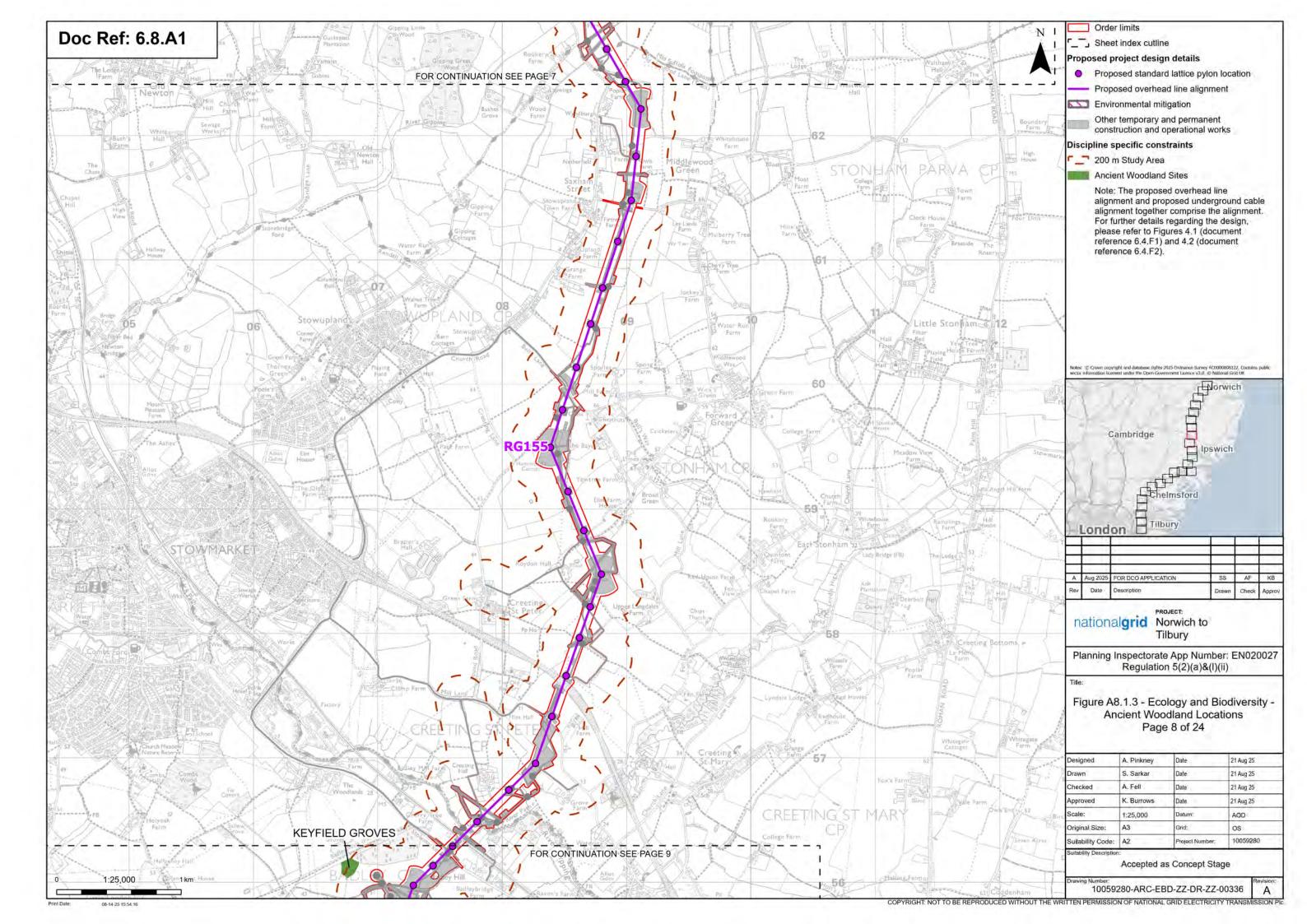


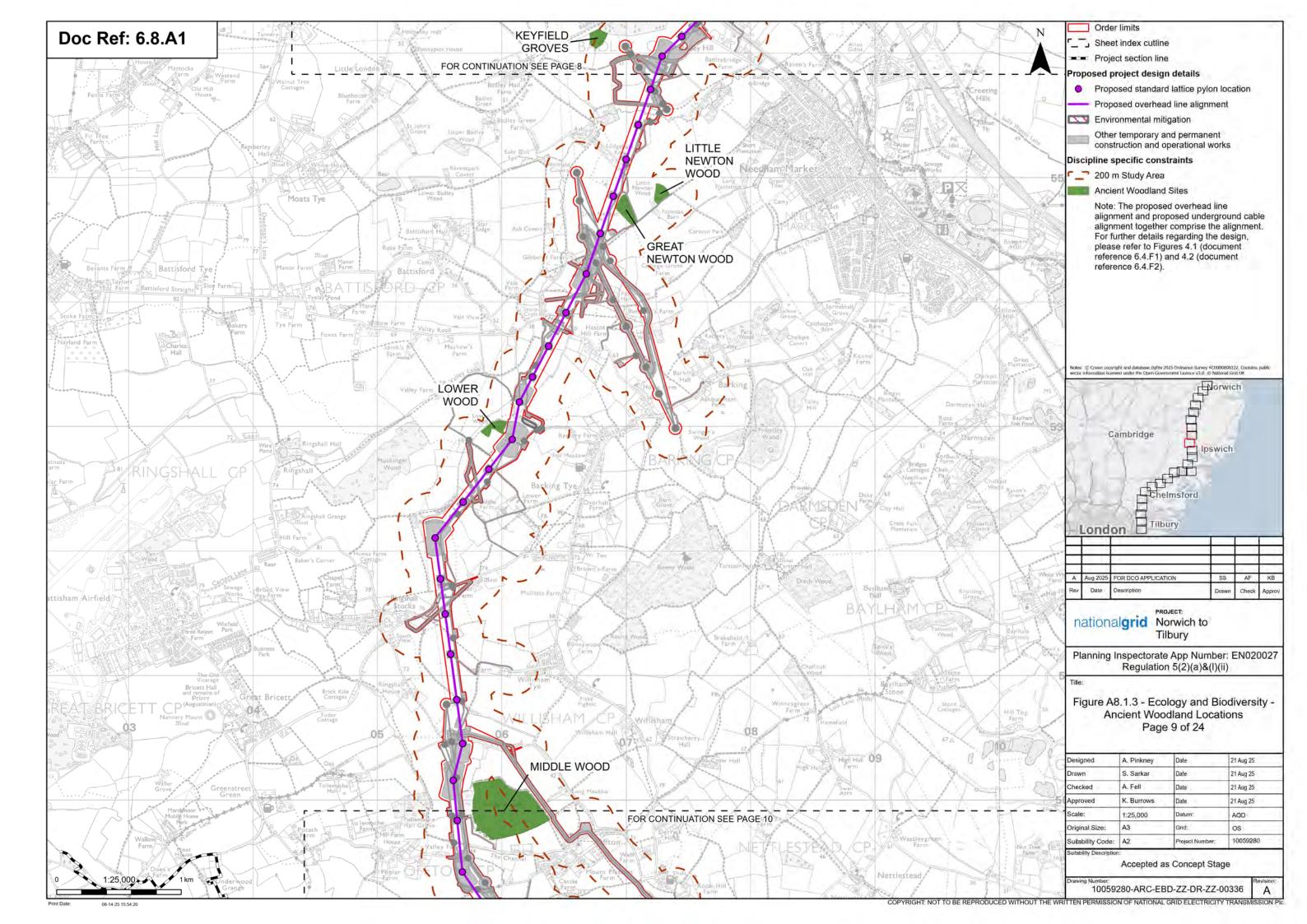


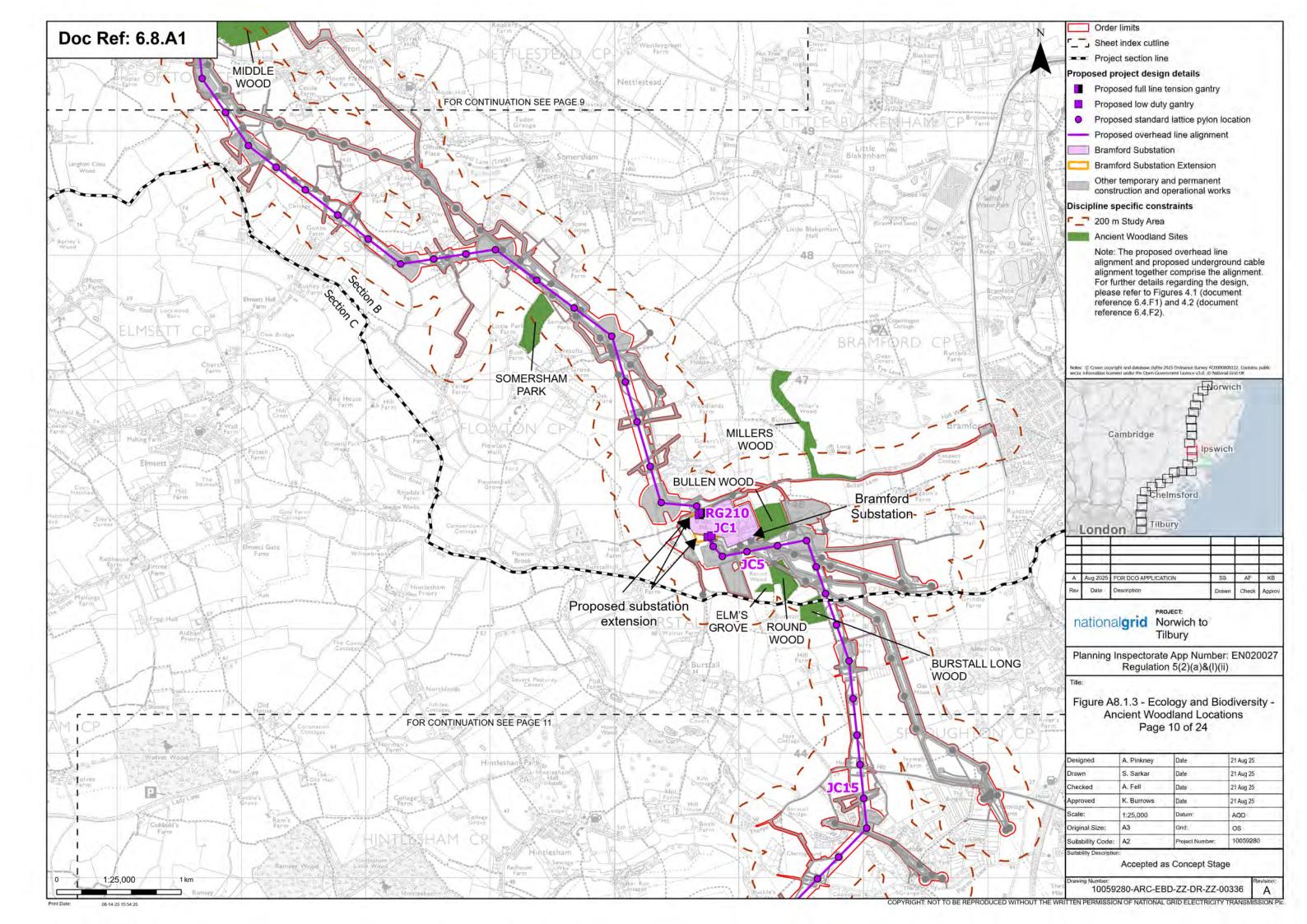


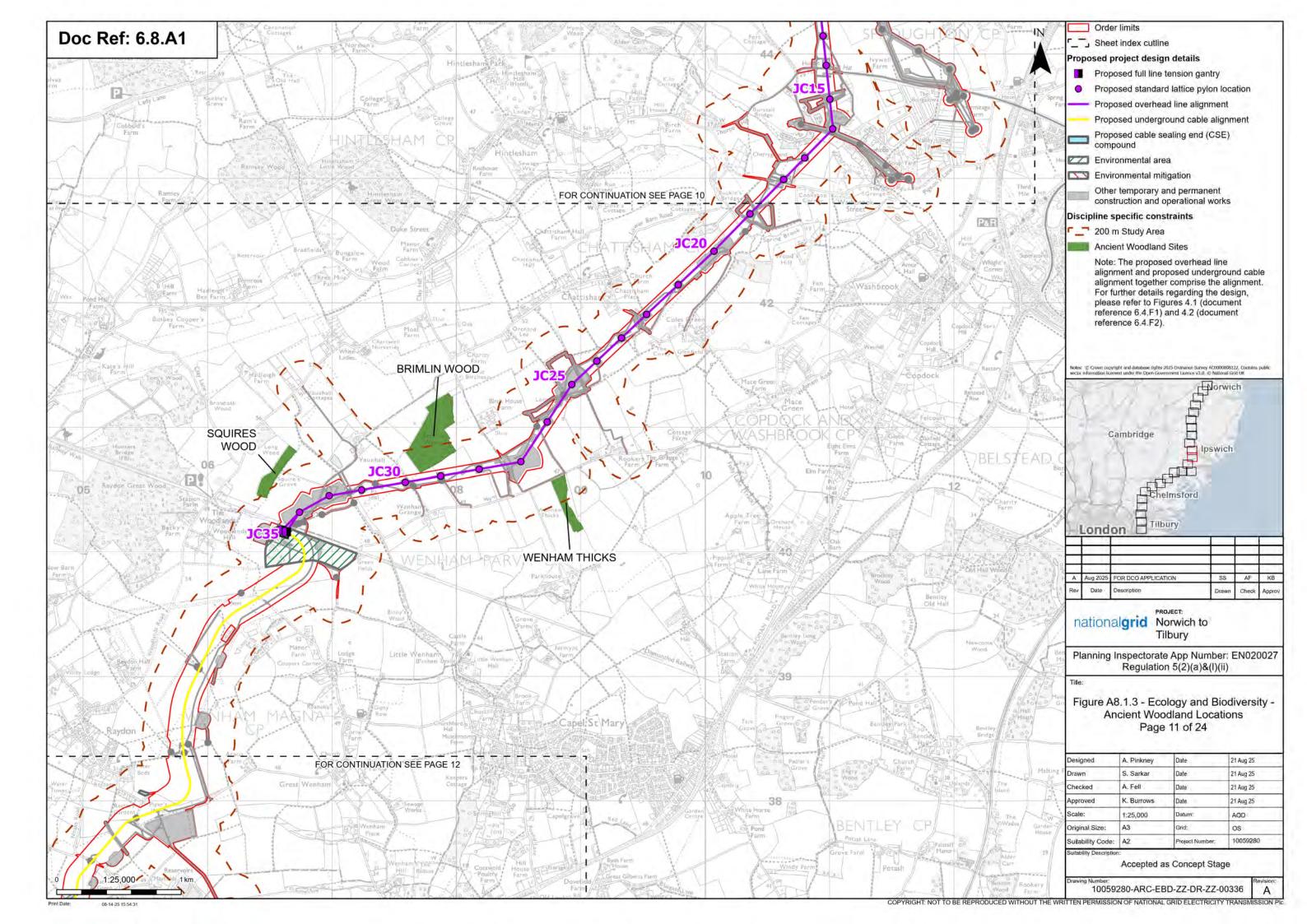


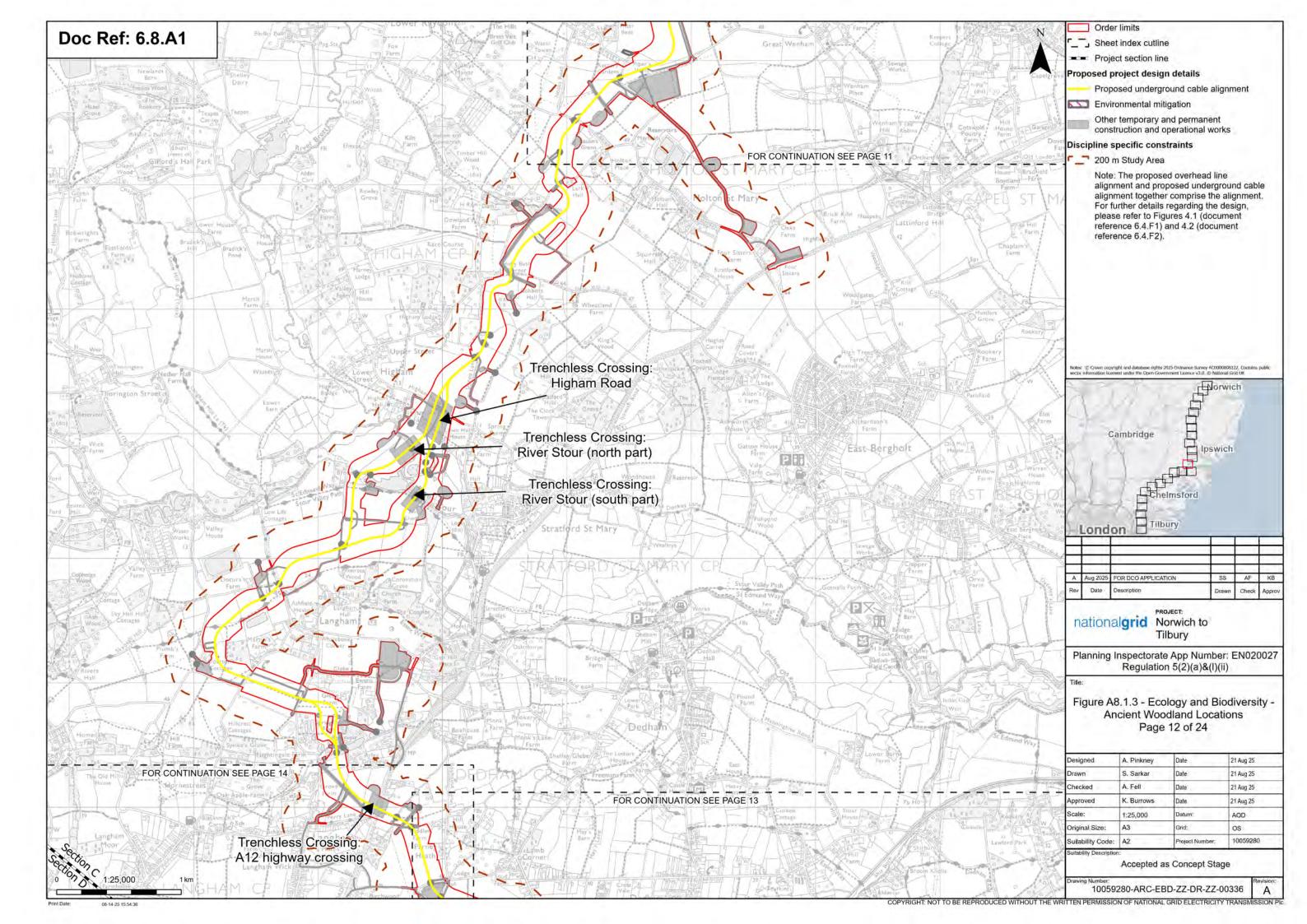


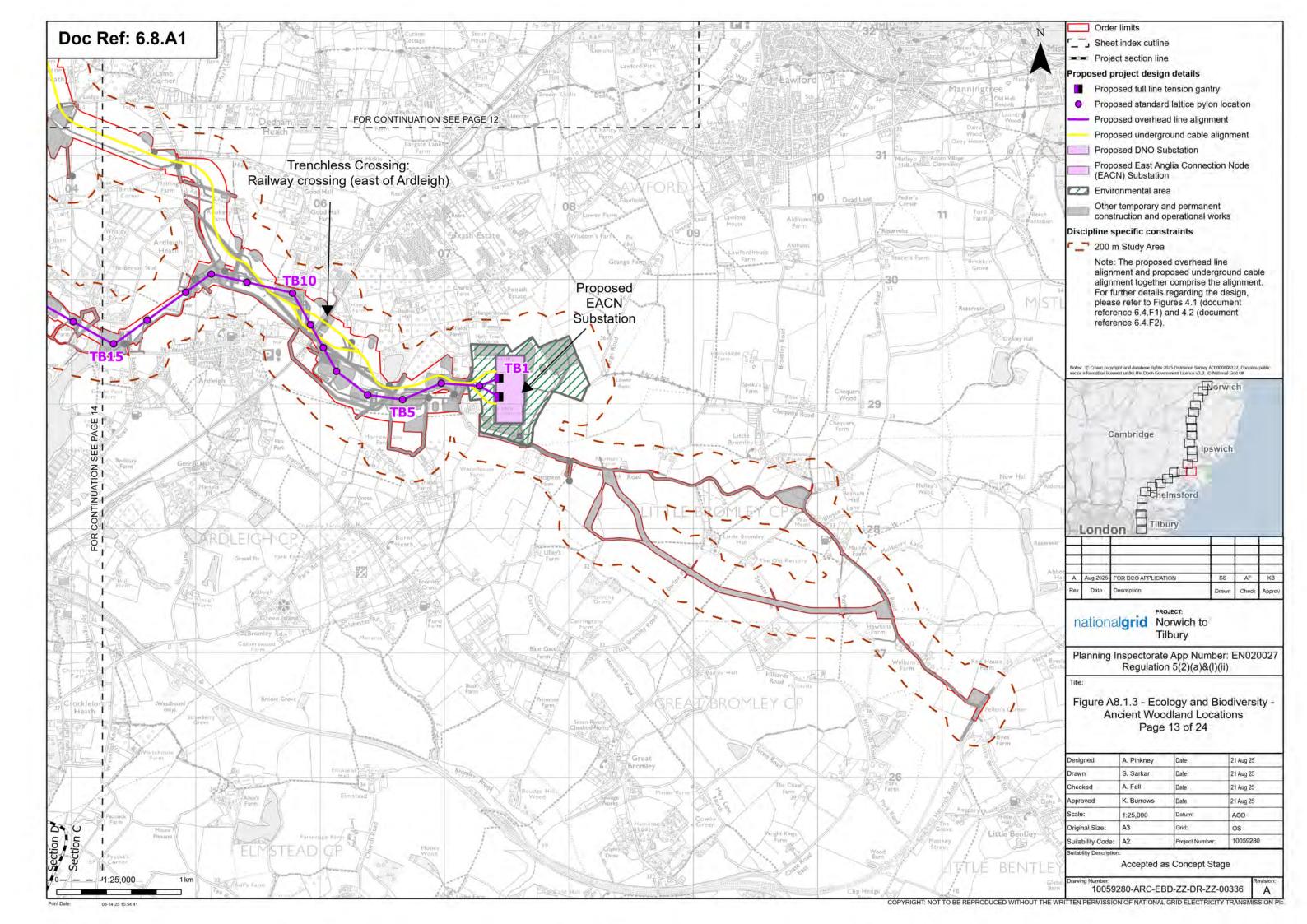


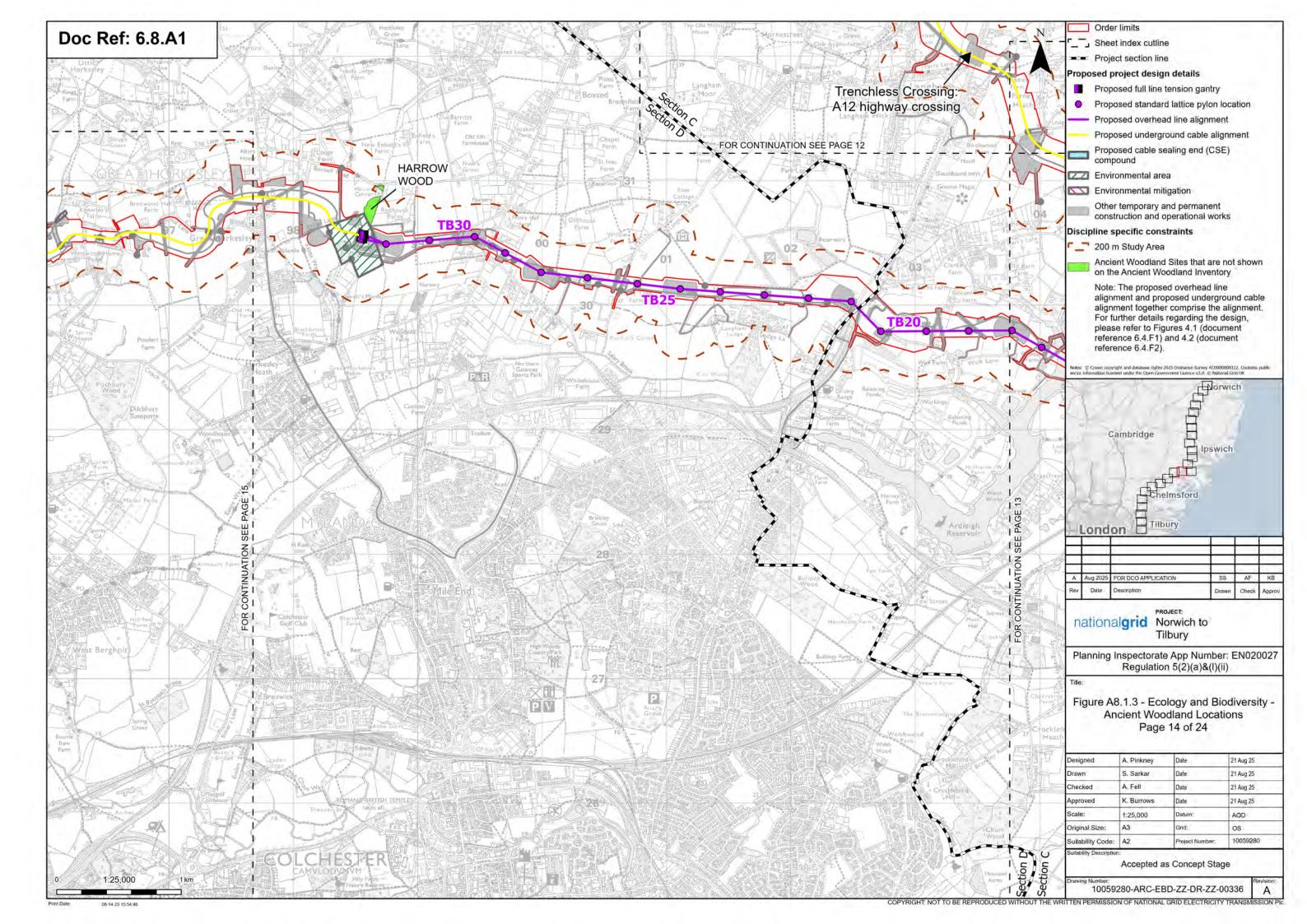


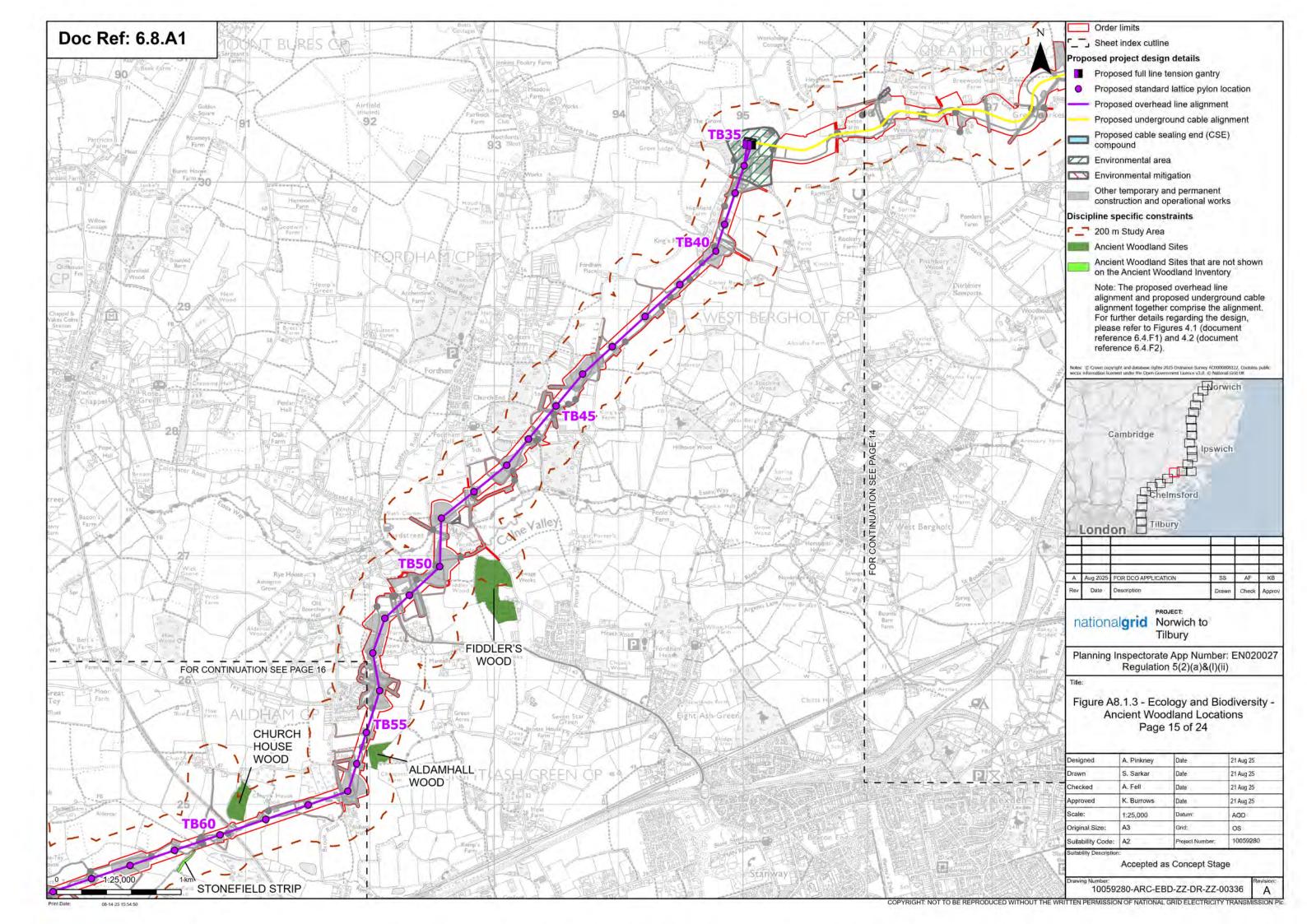


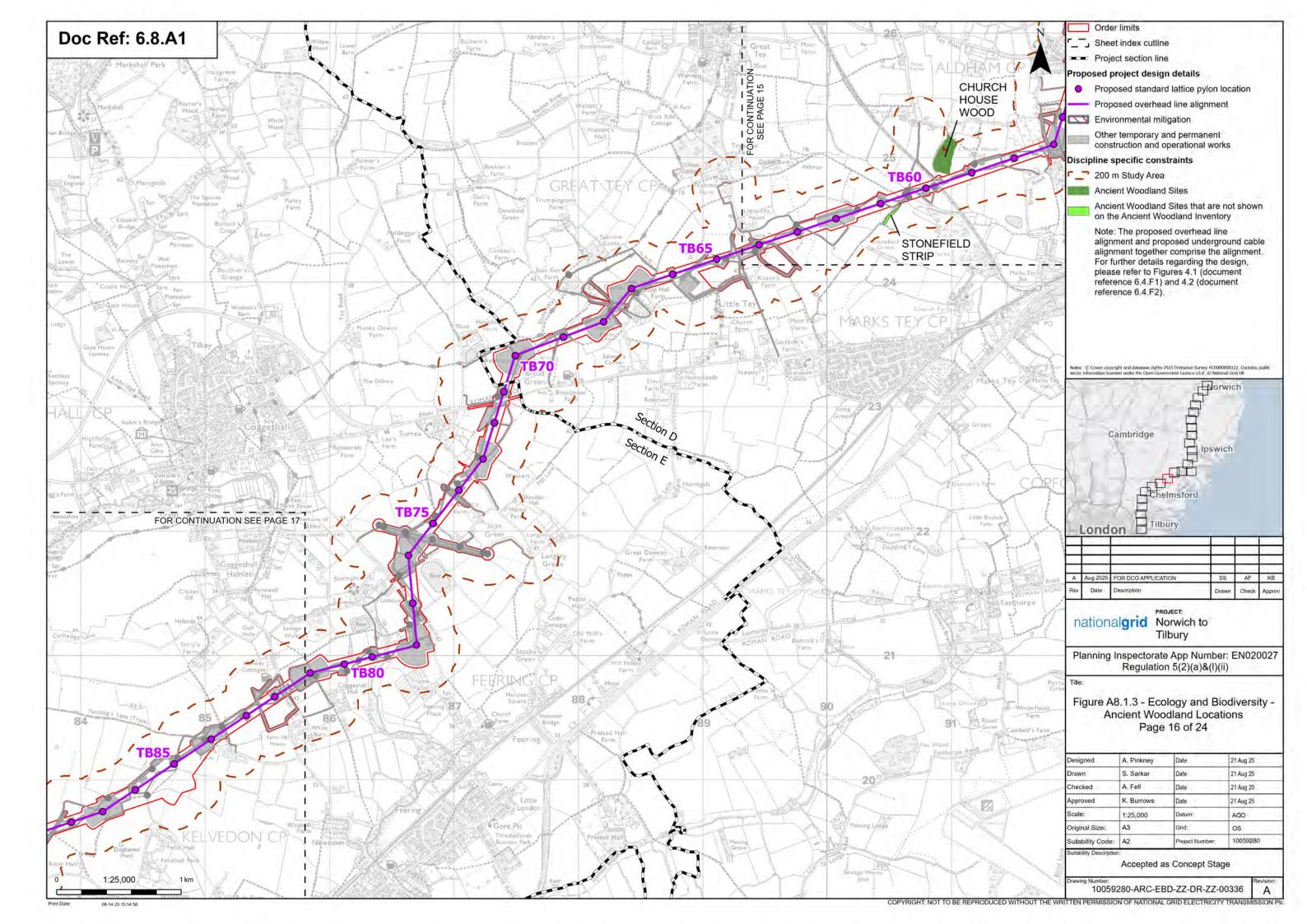


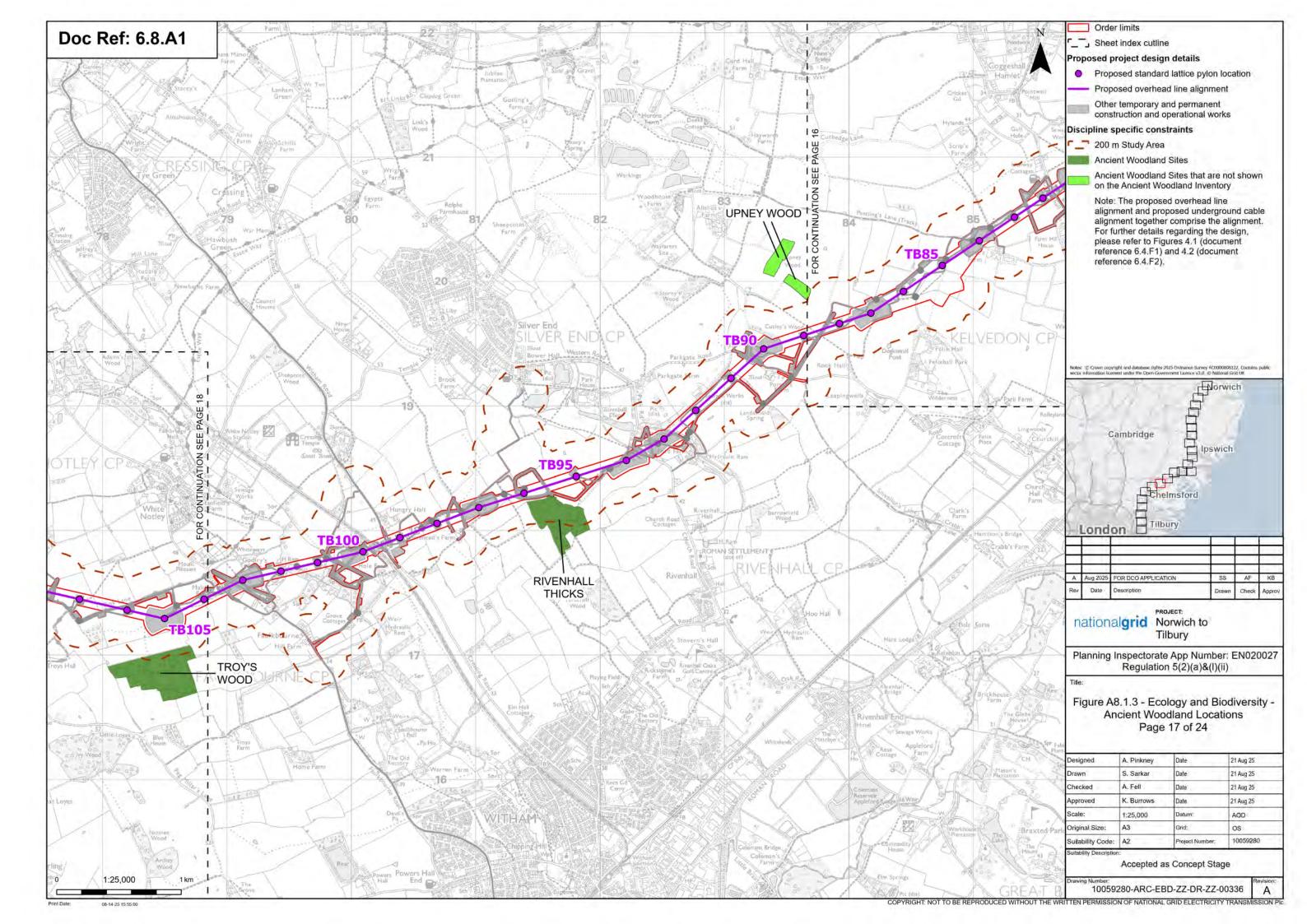


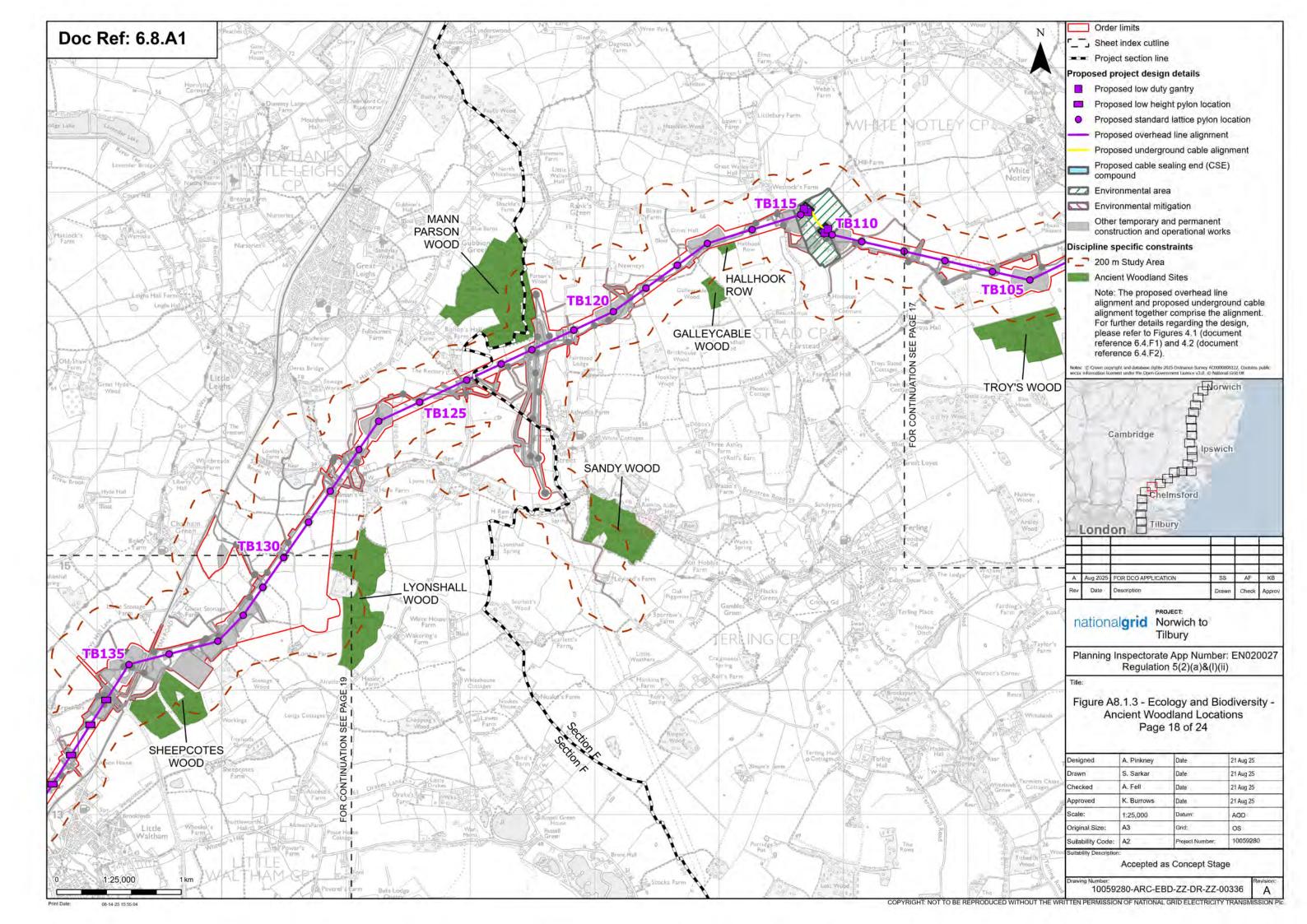


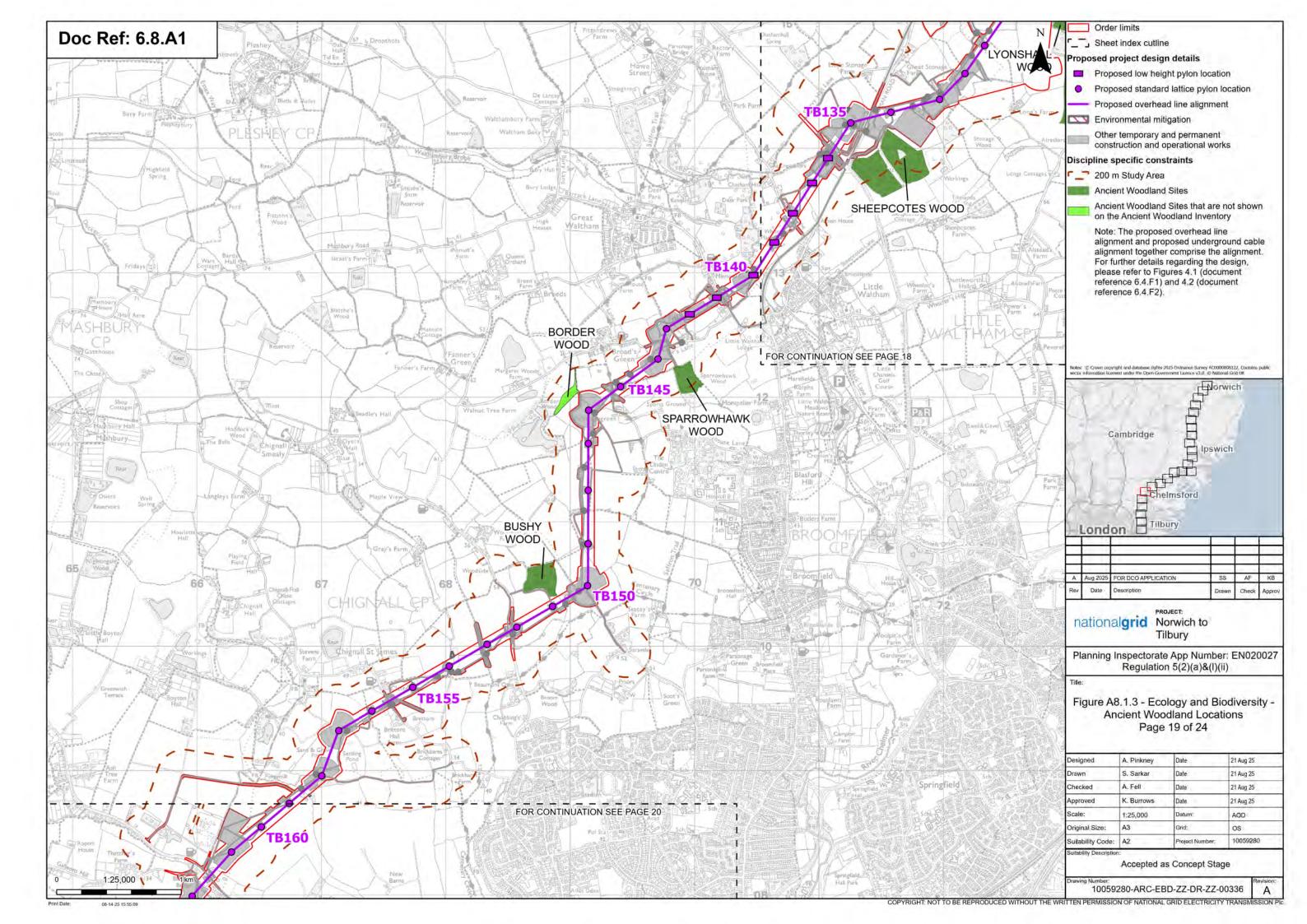


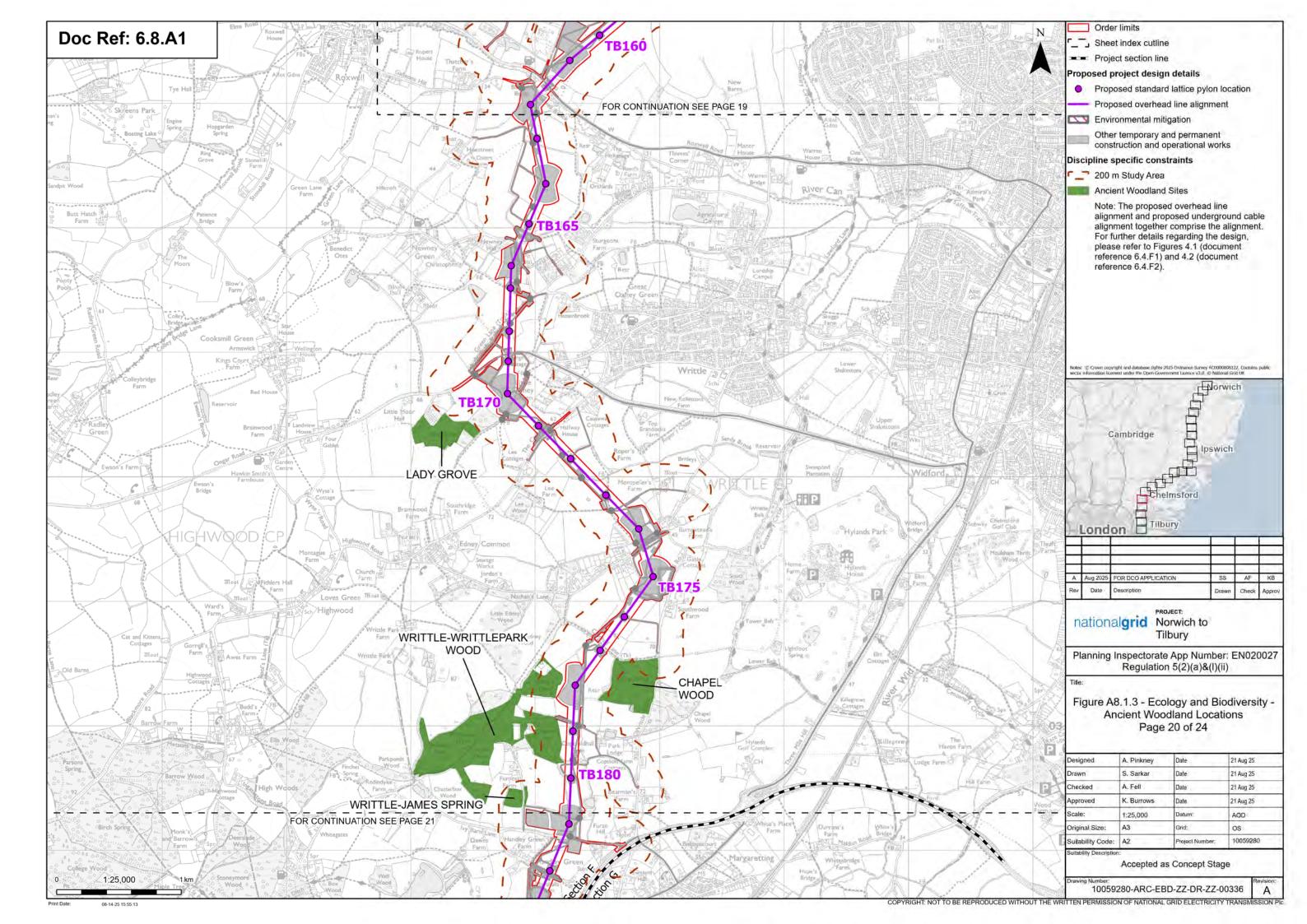


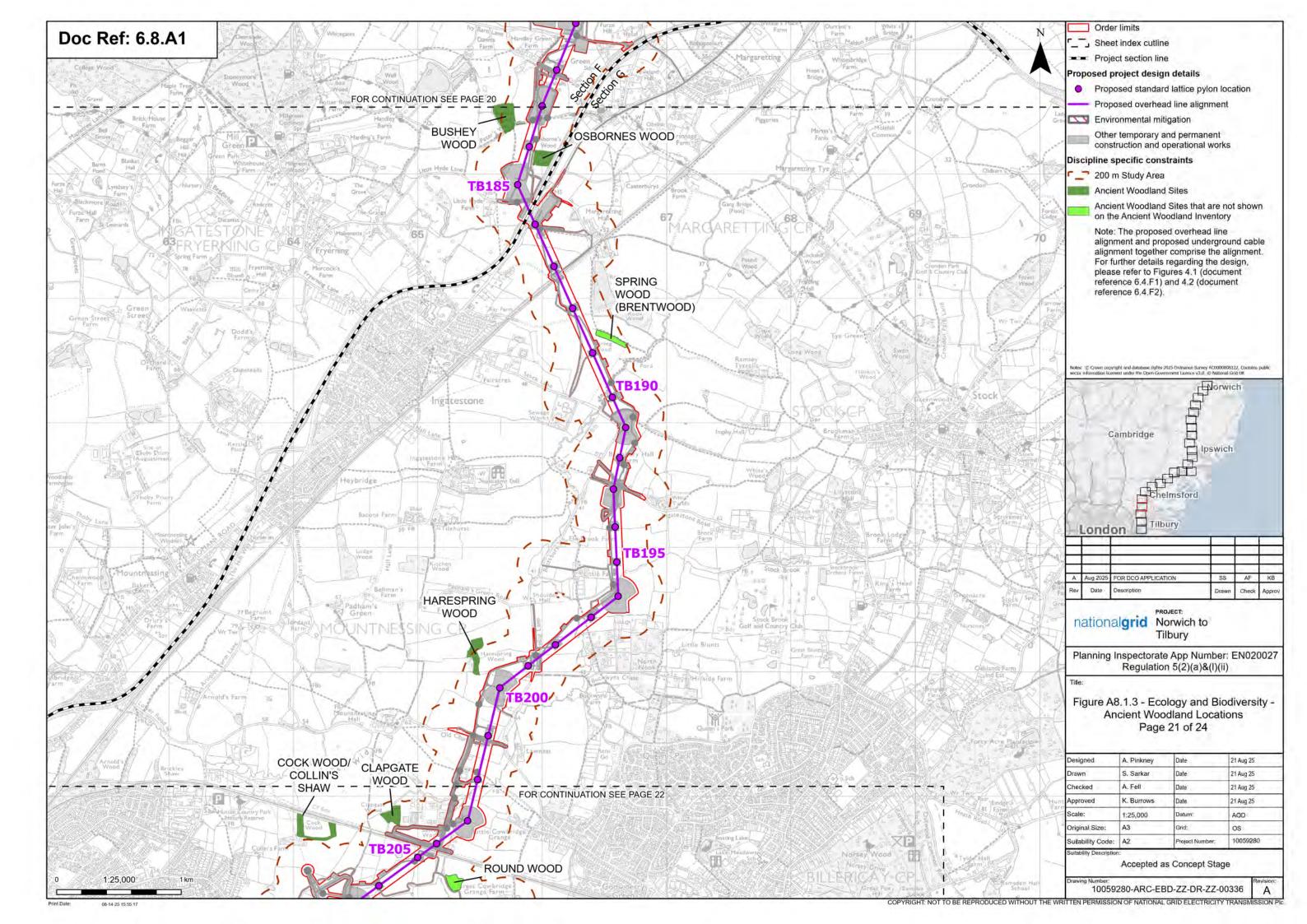


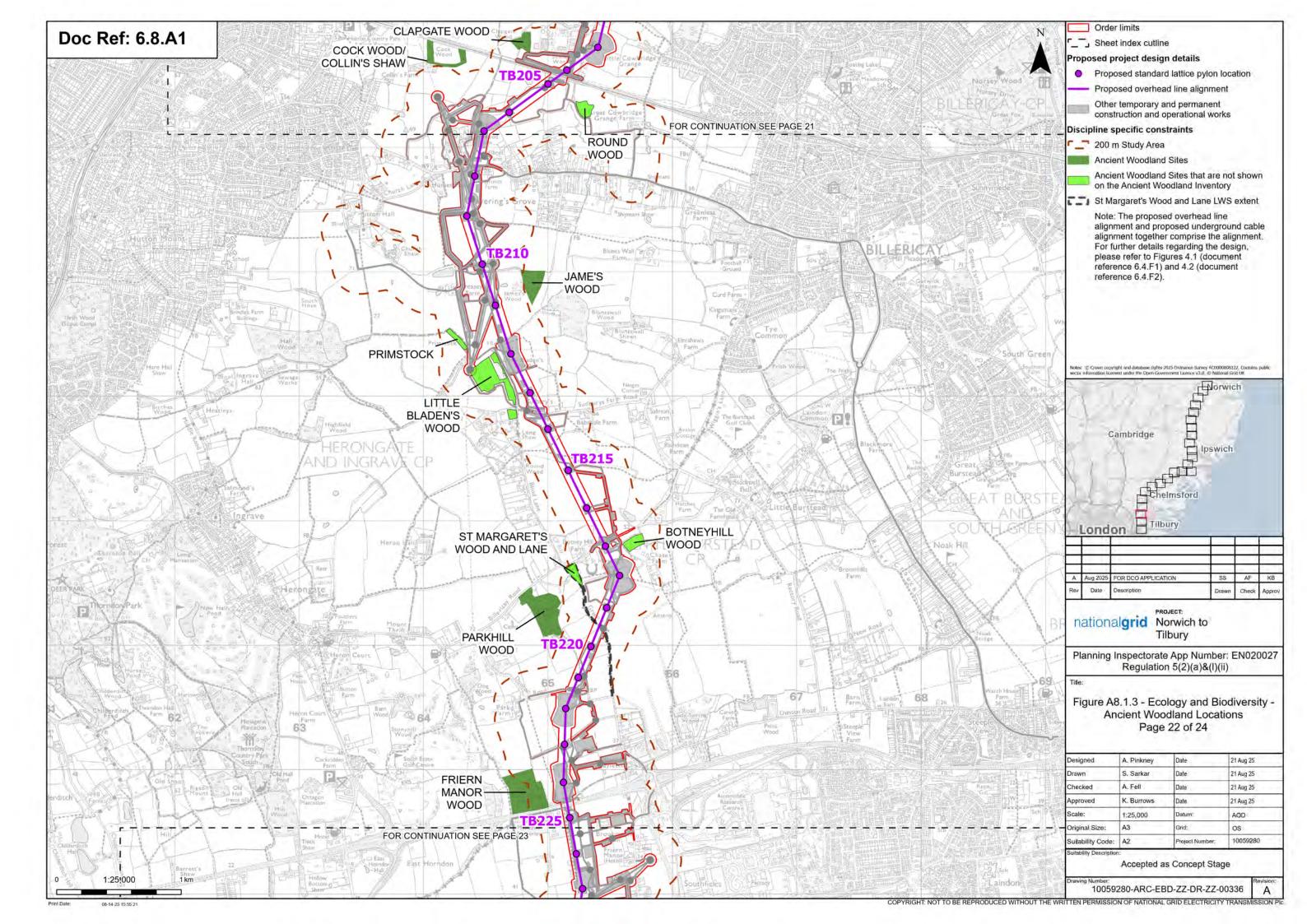


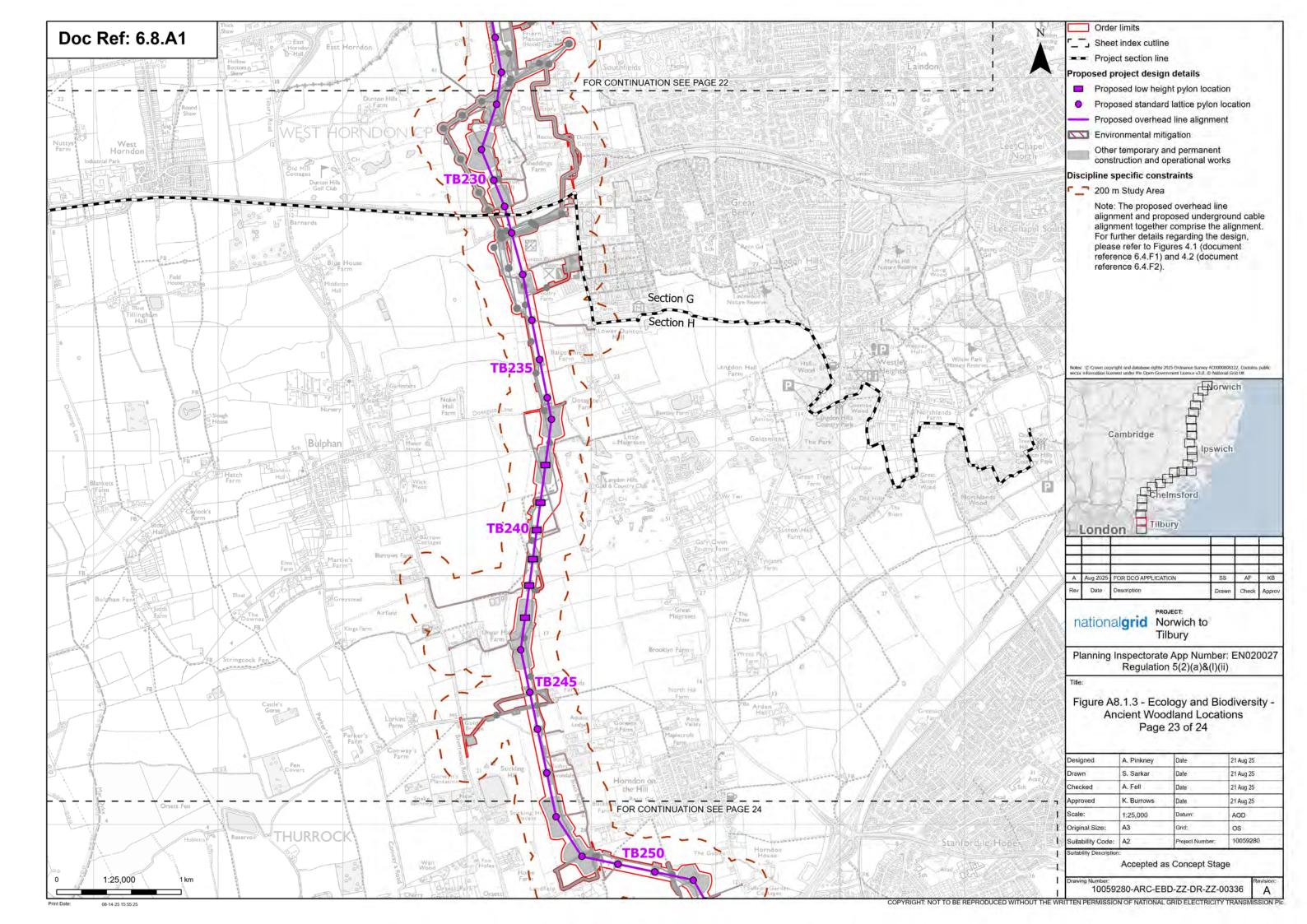












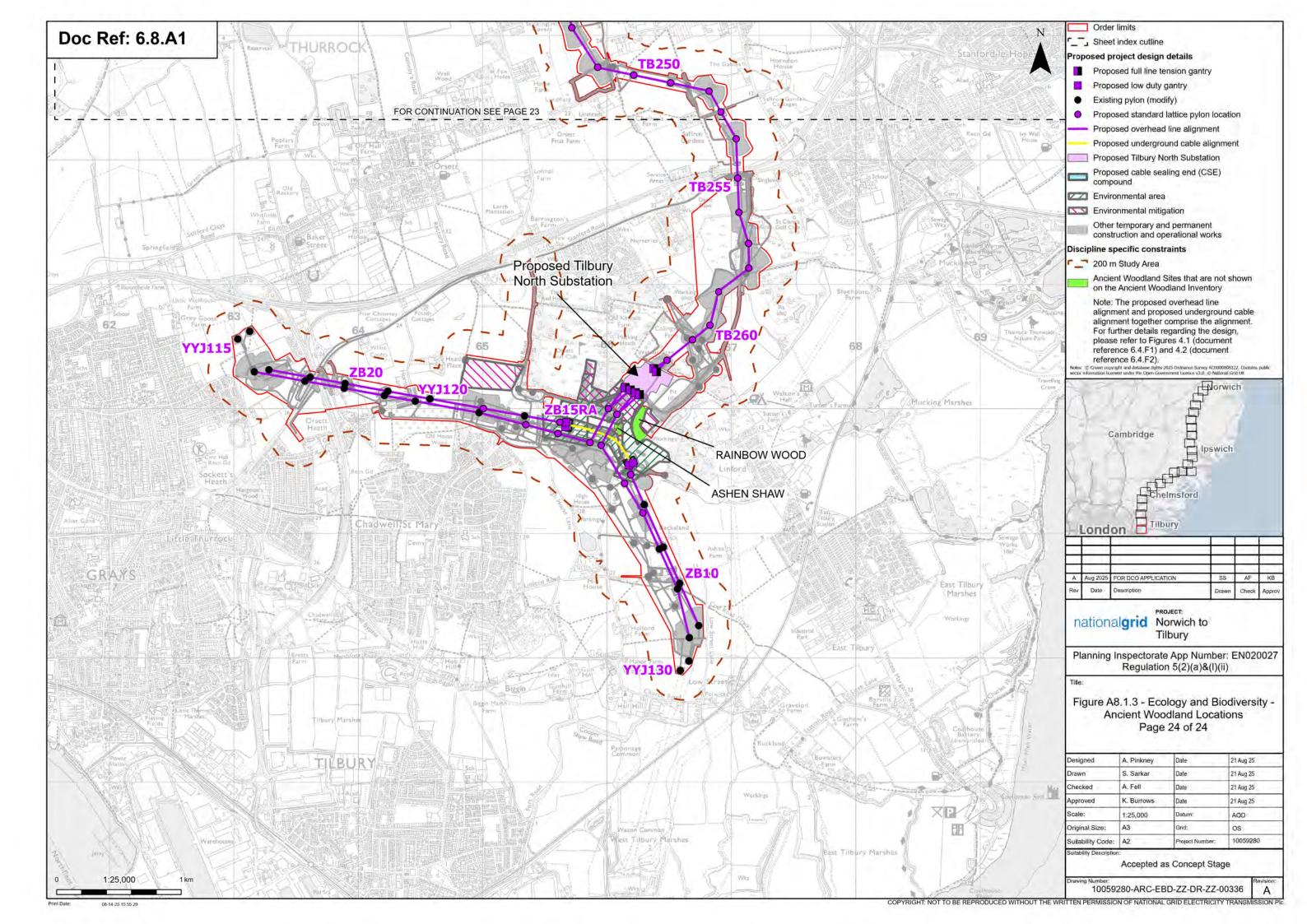
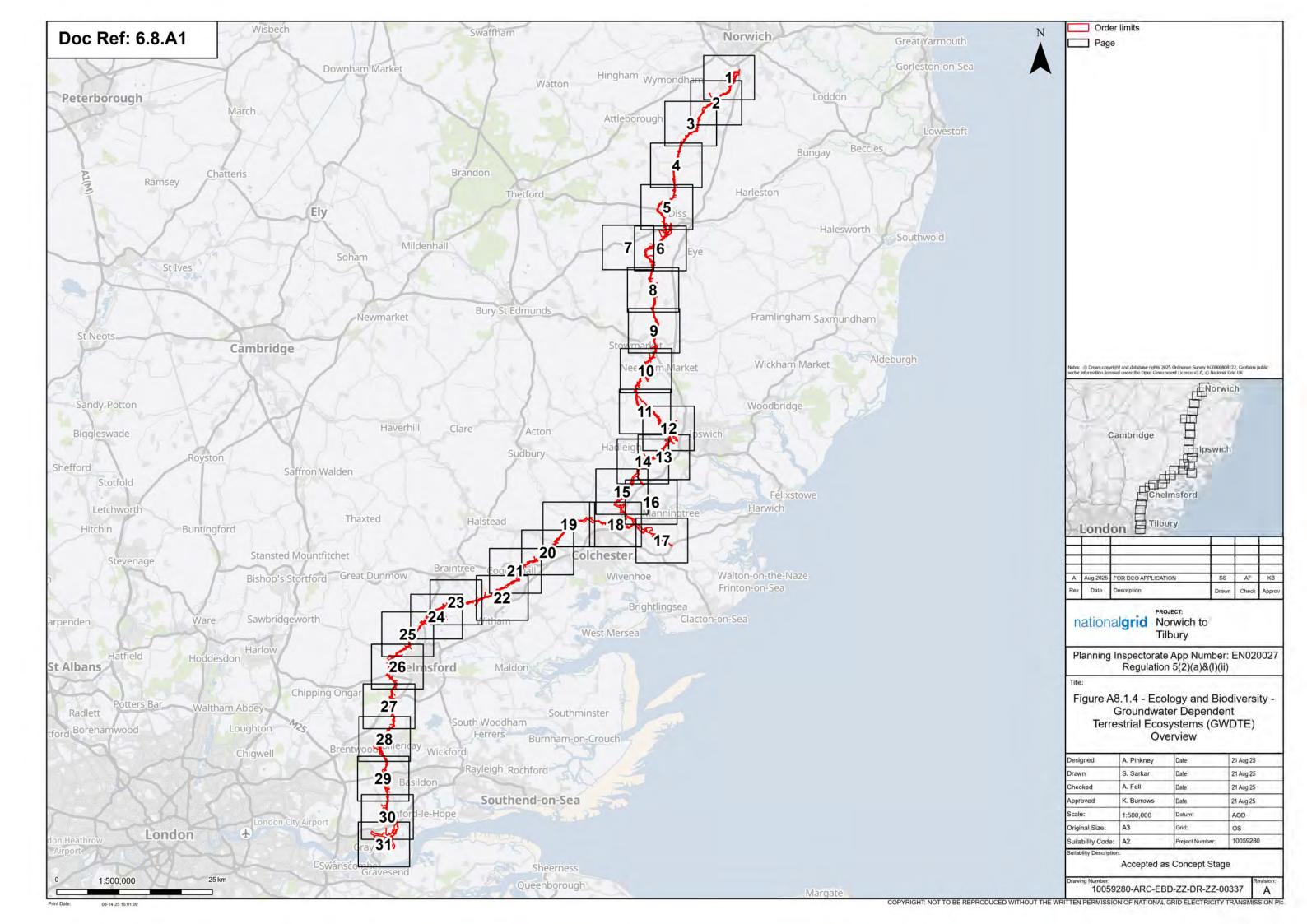
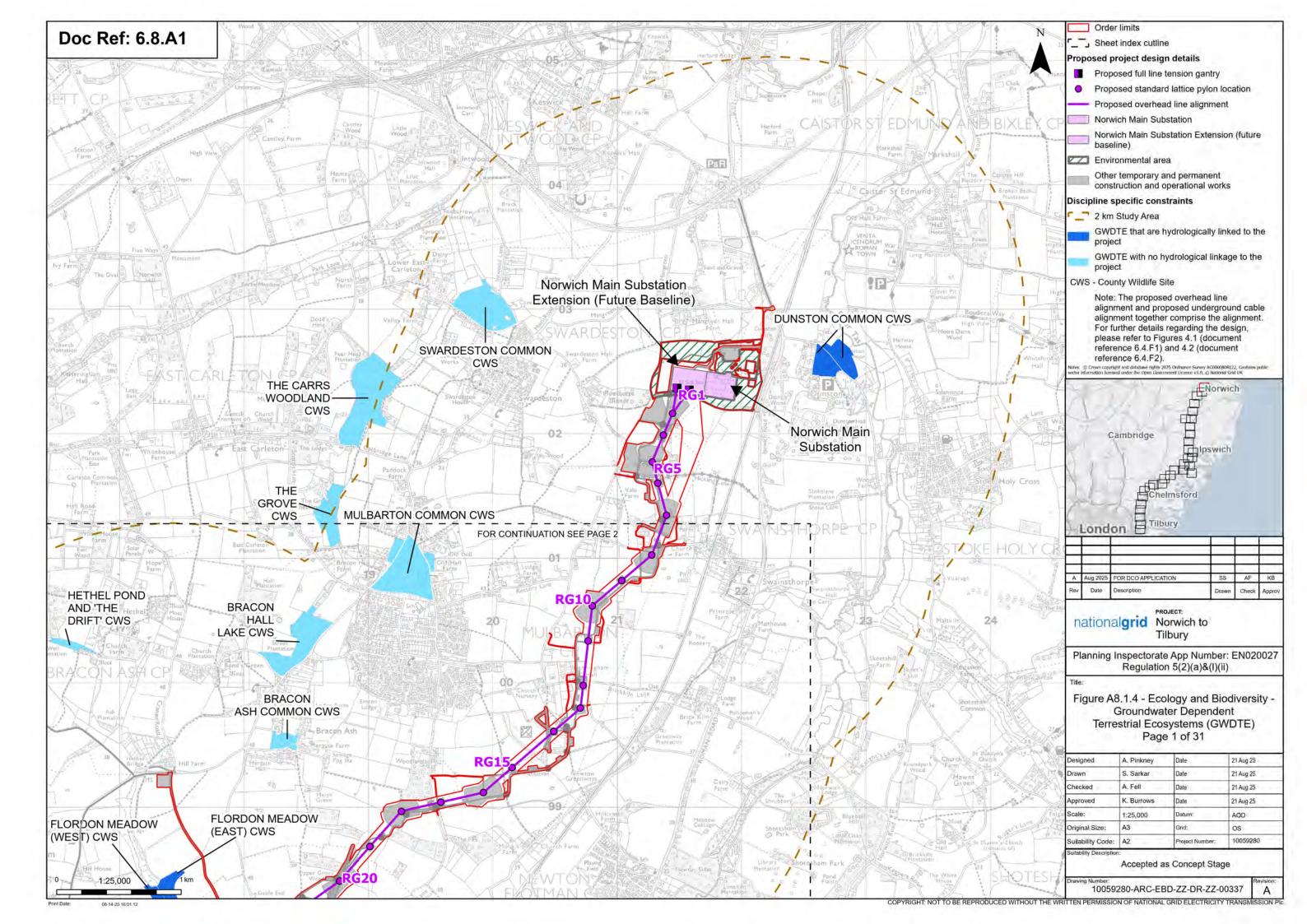
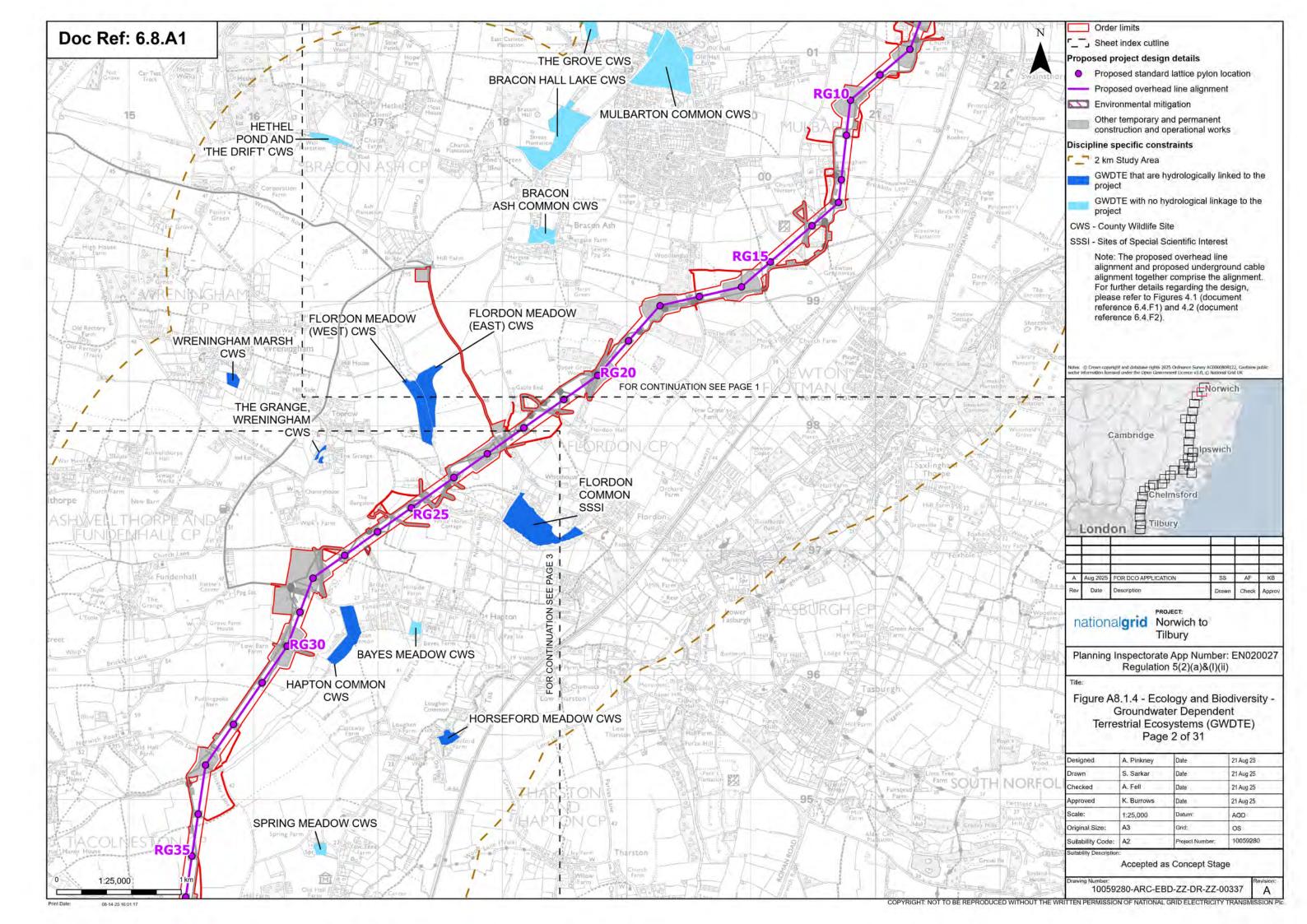
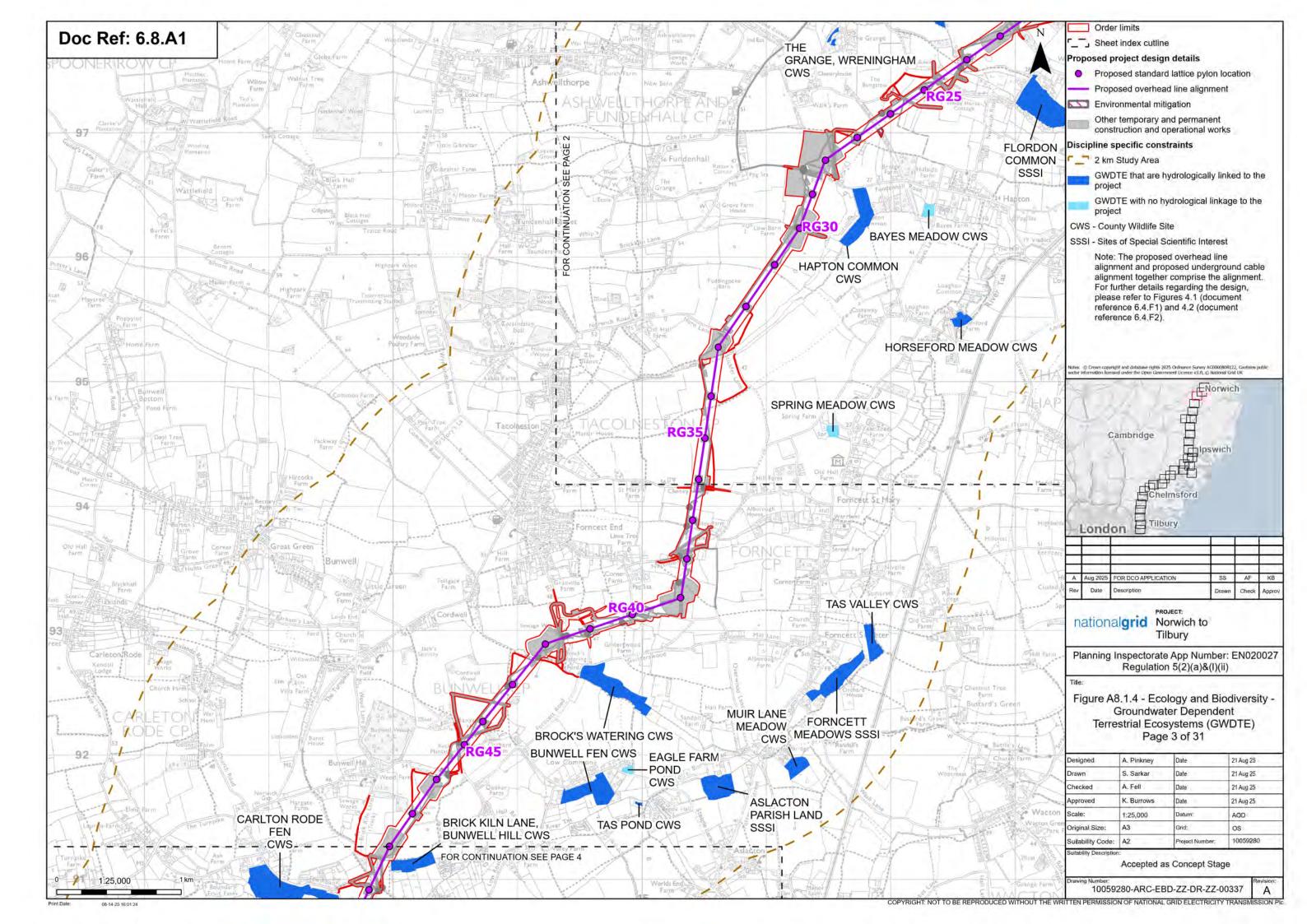


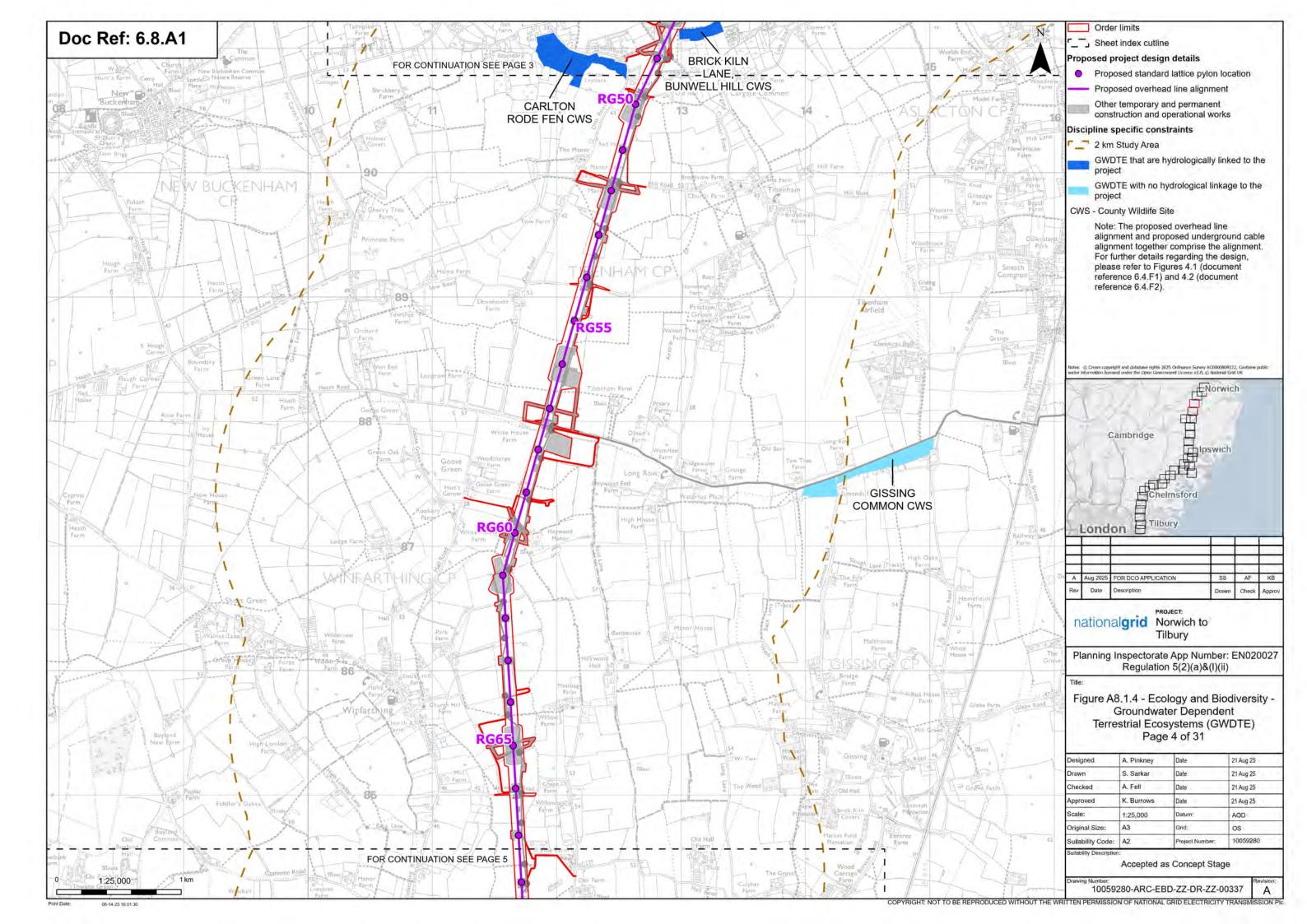
Figure A8.1.4 - Groundwater Dependant Terrestrial Ecosystems					

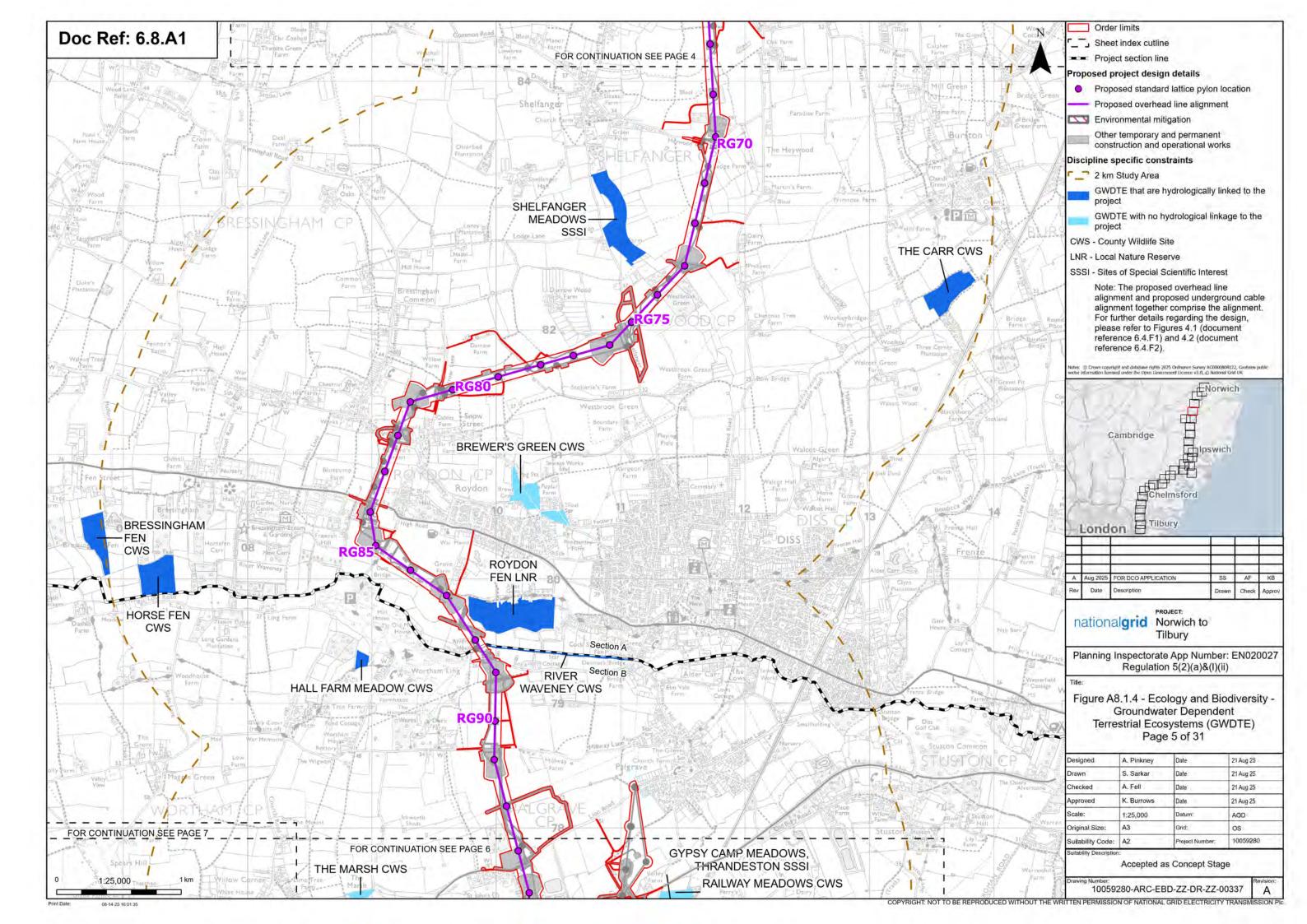


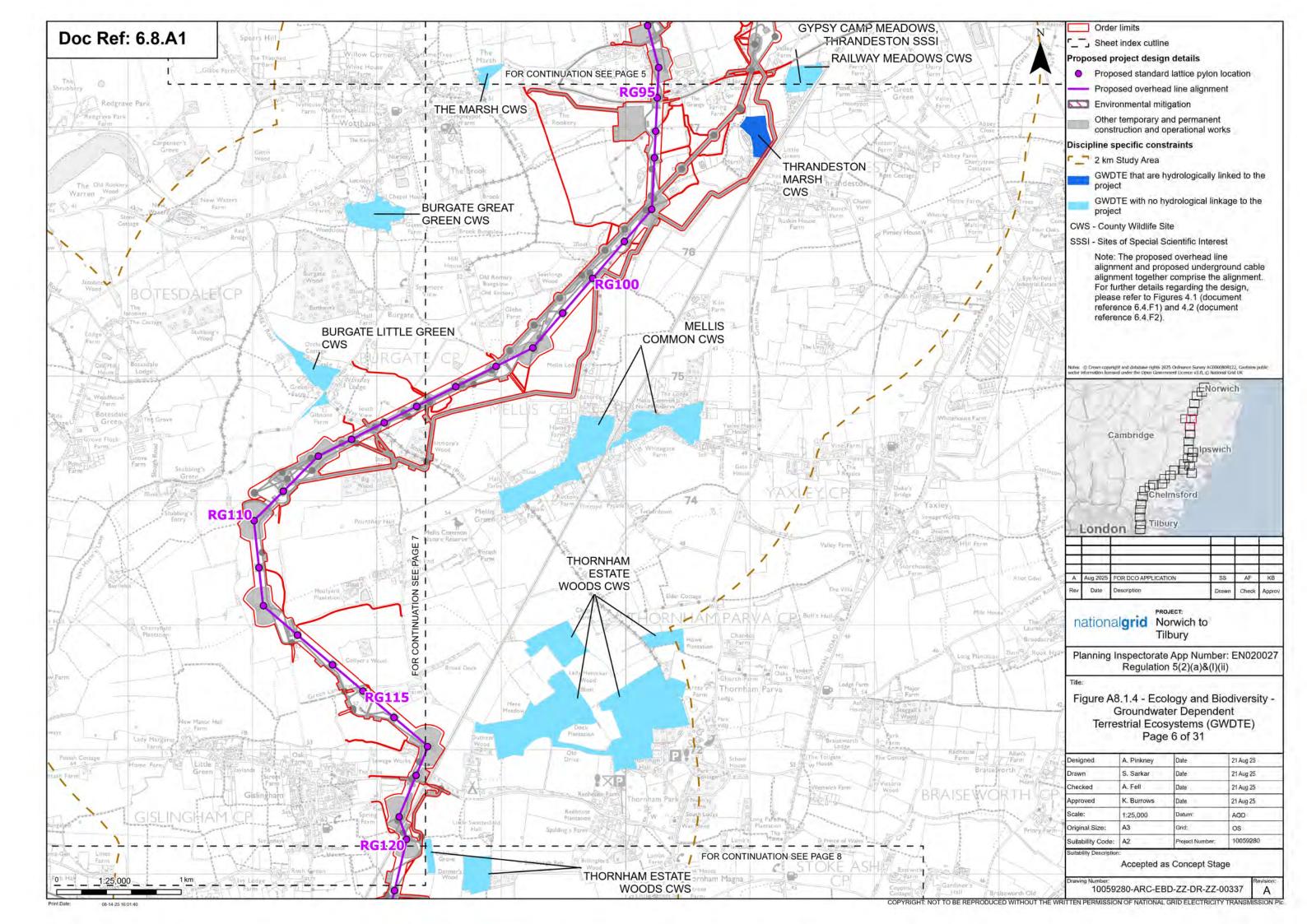


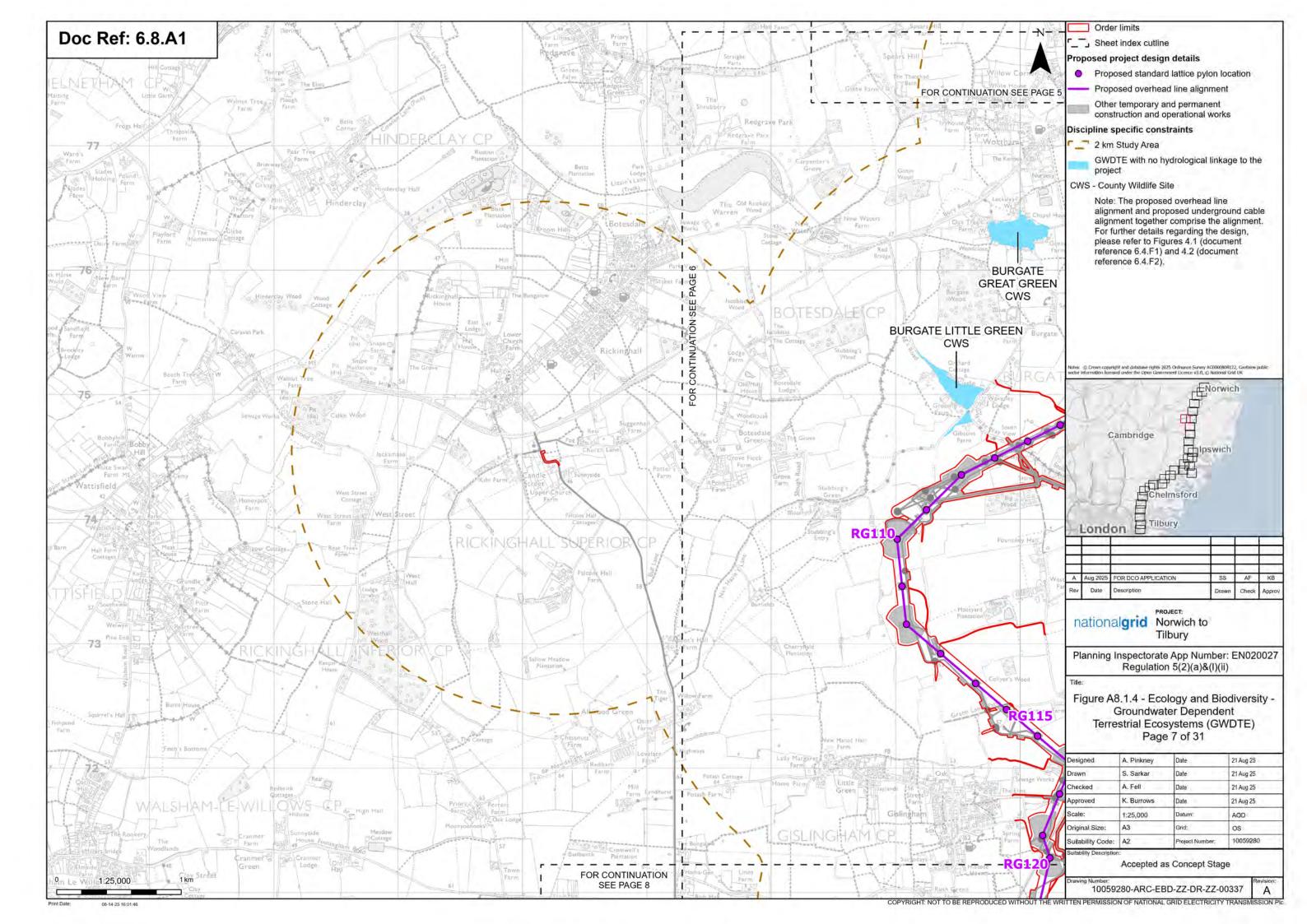


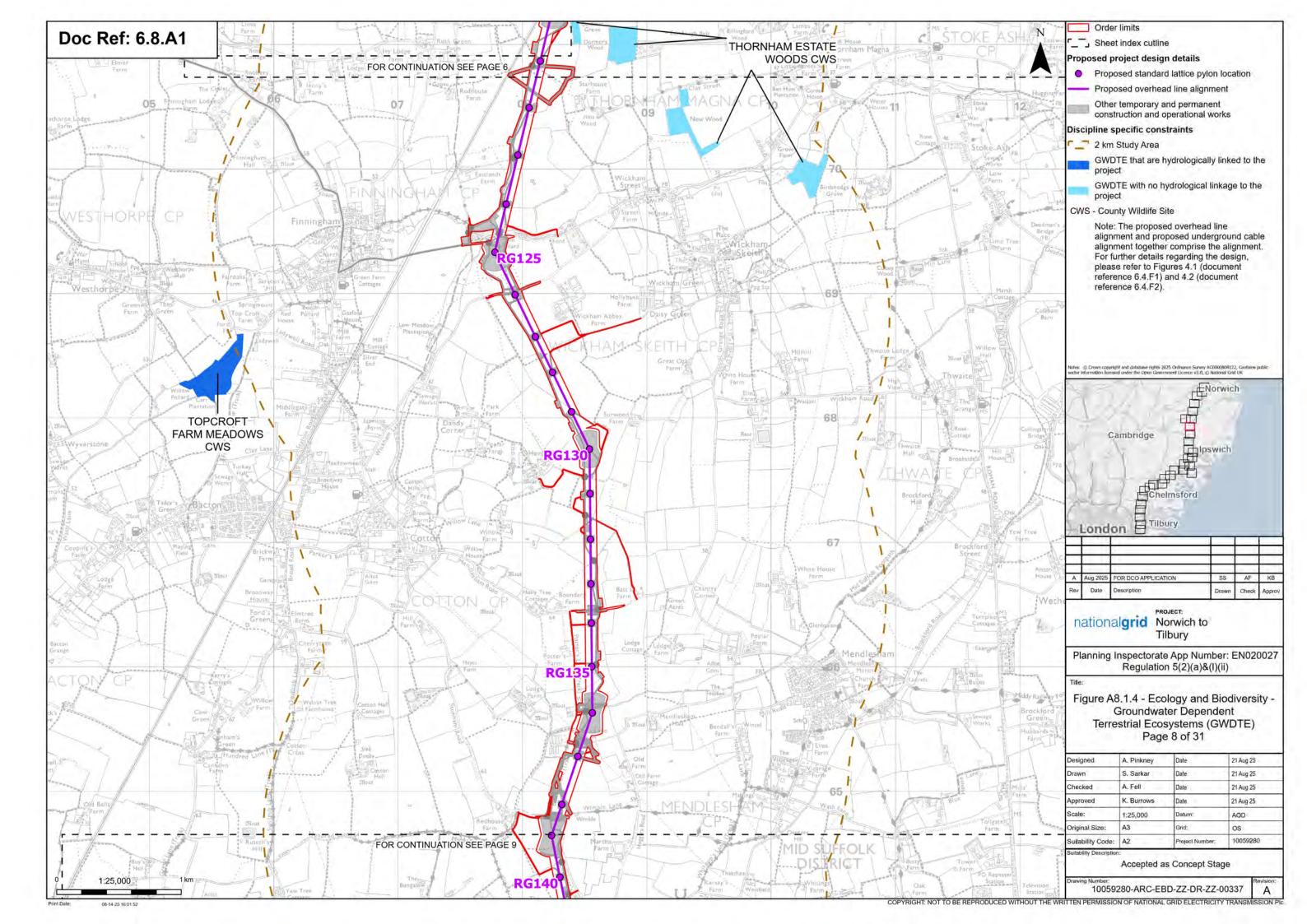


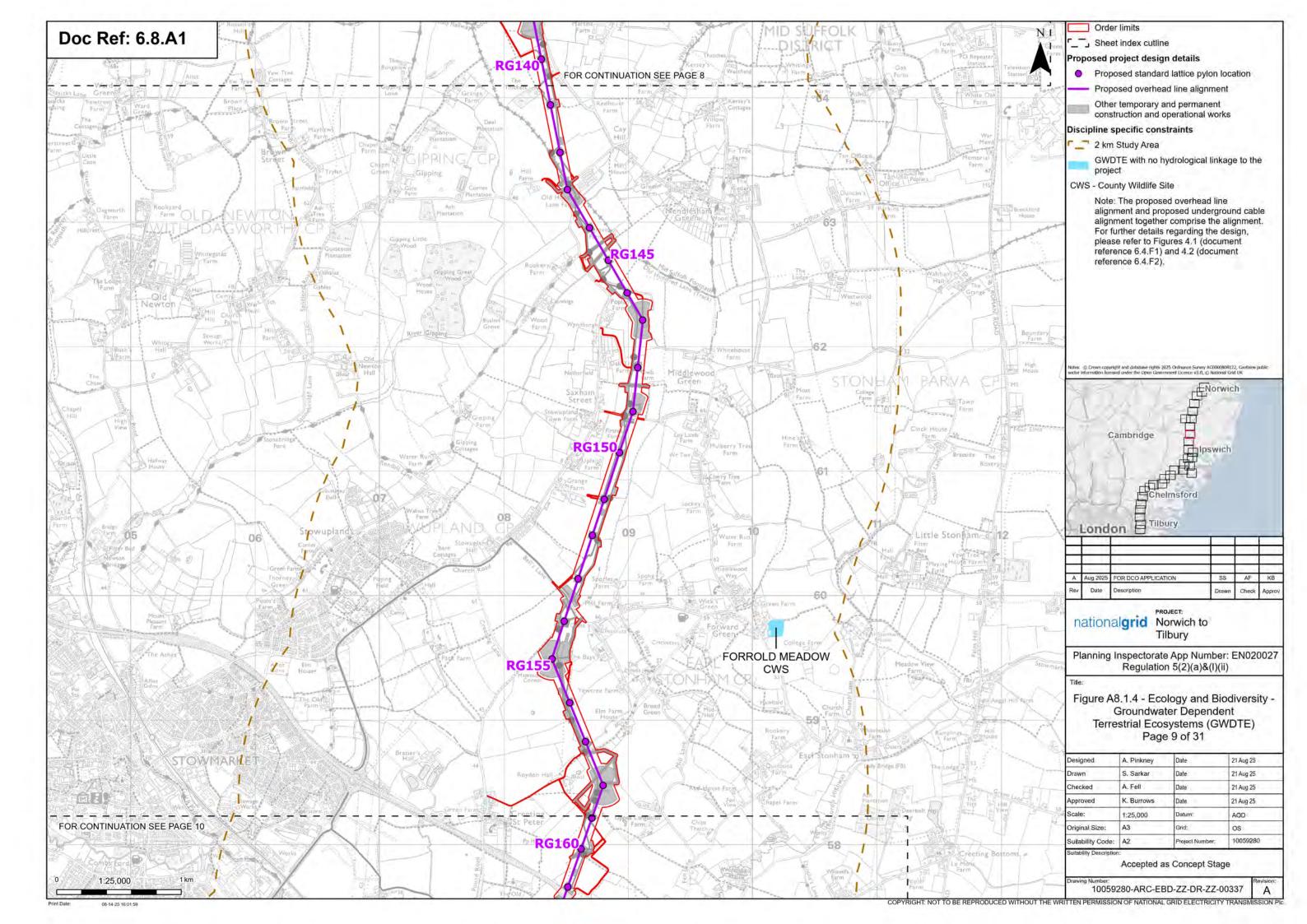


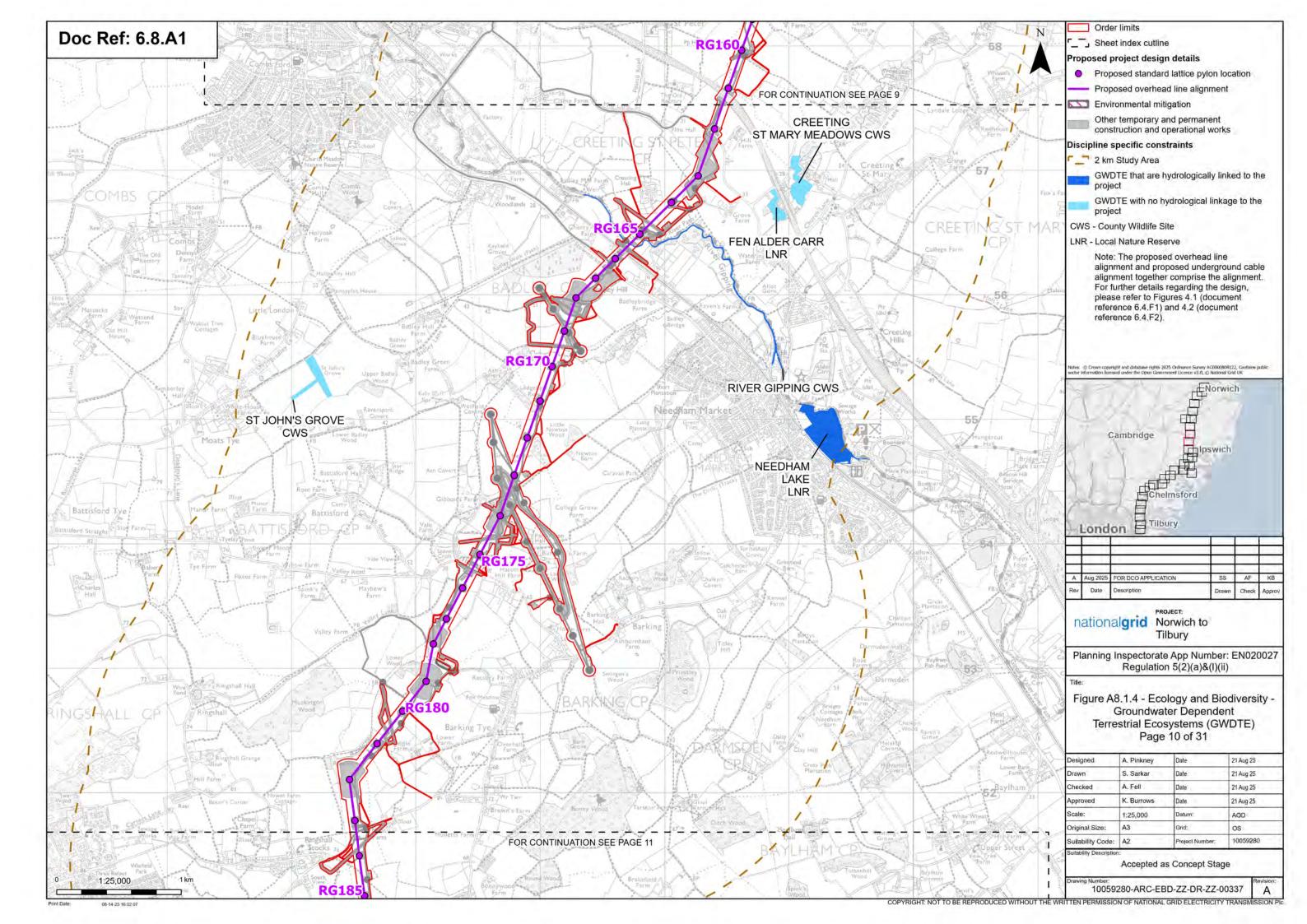


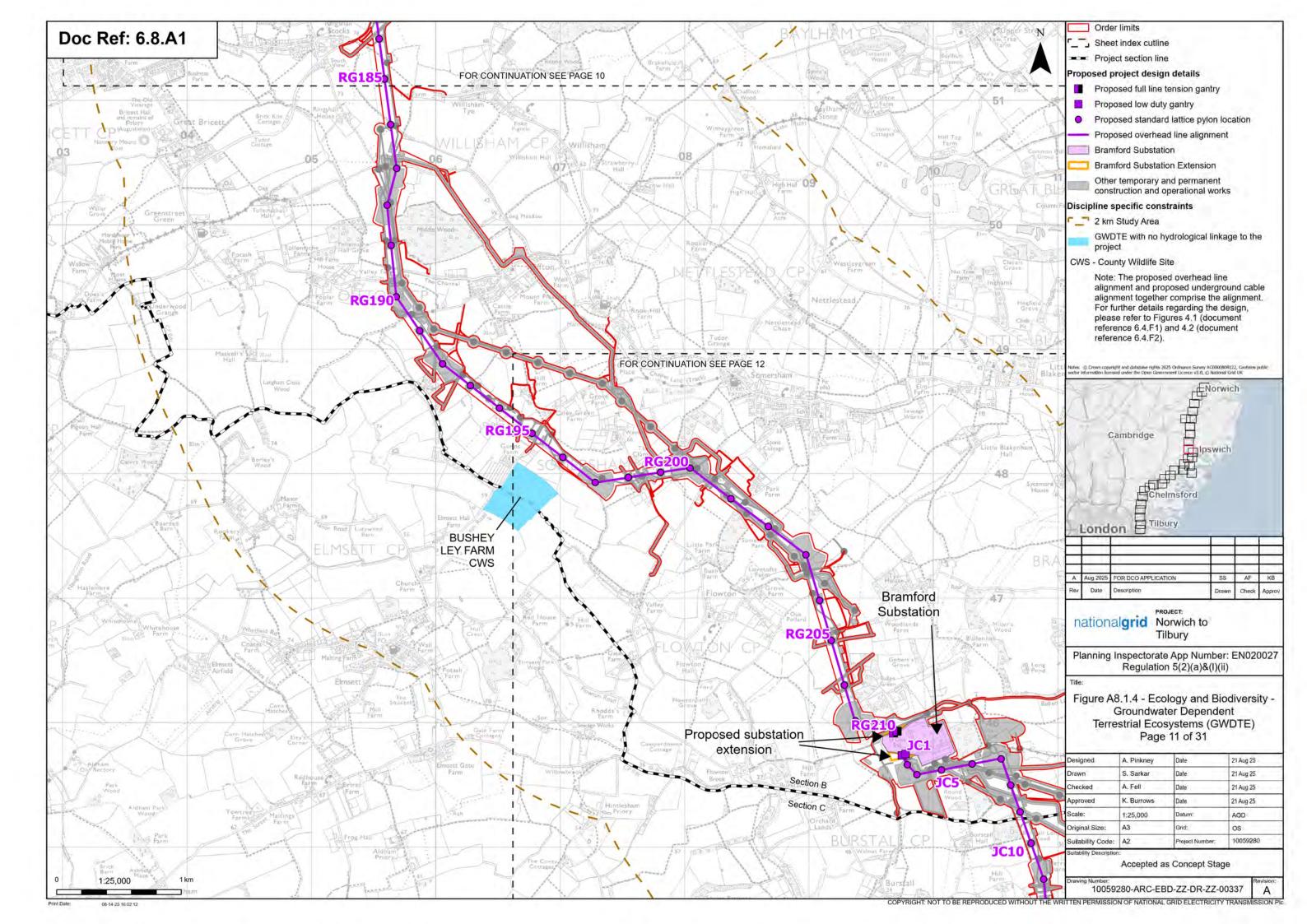


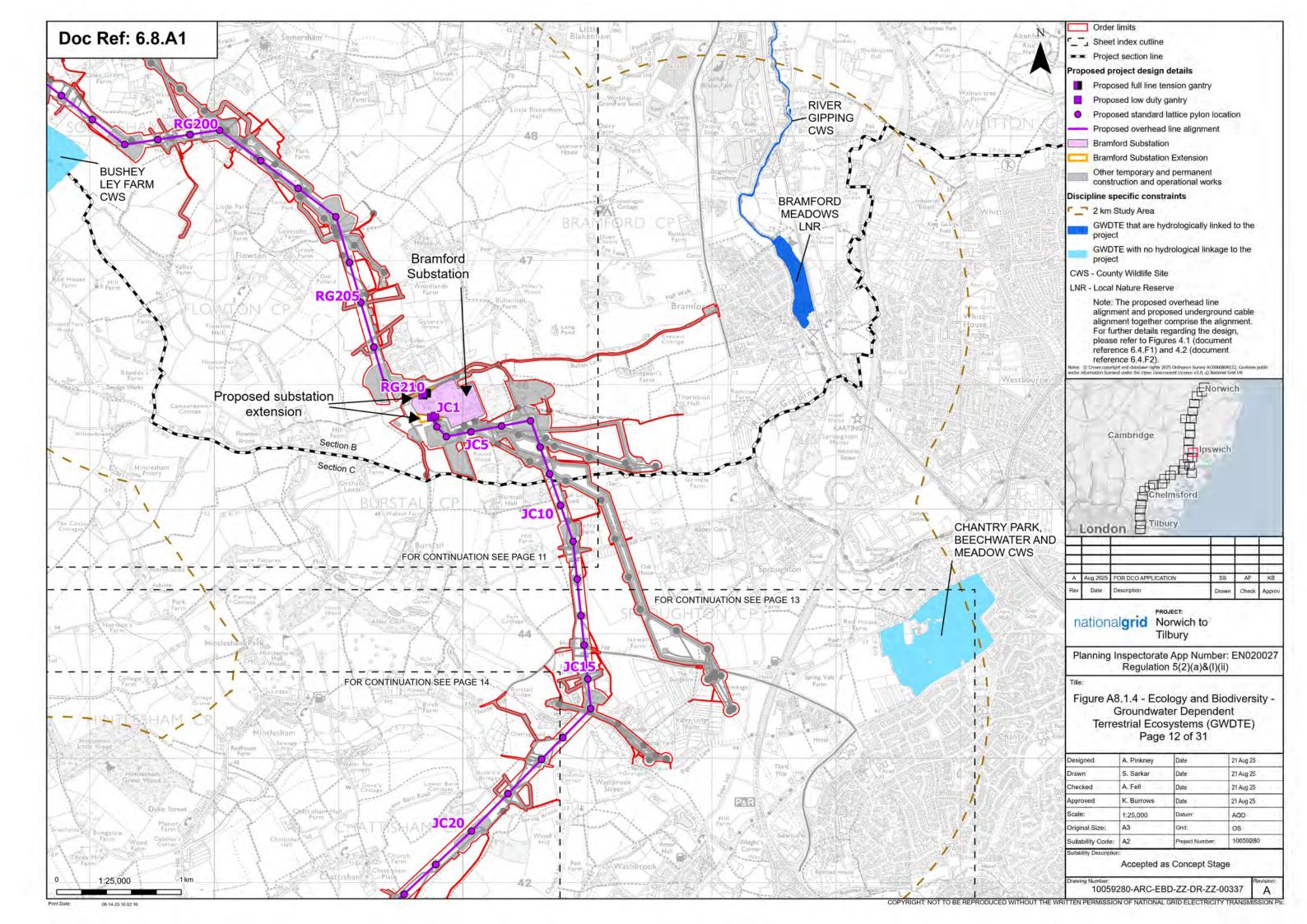


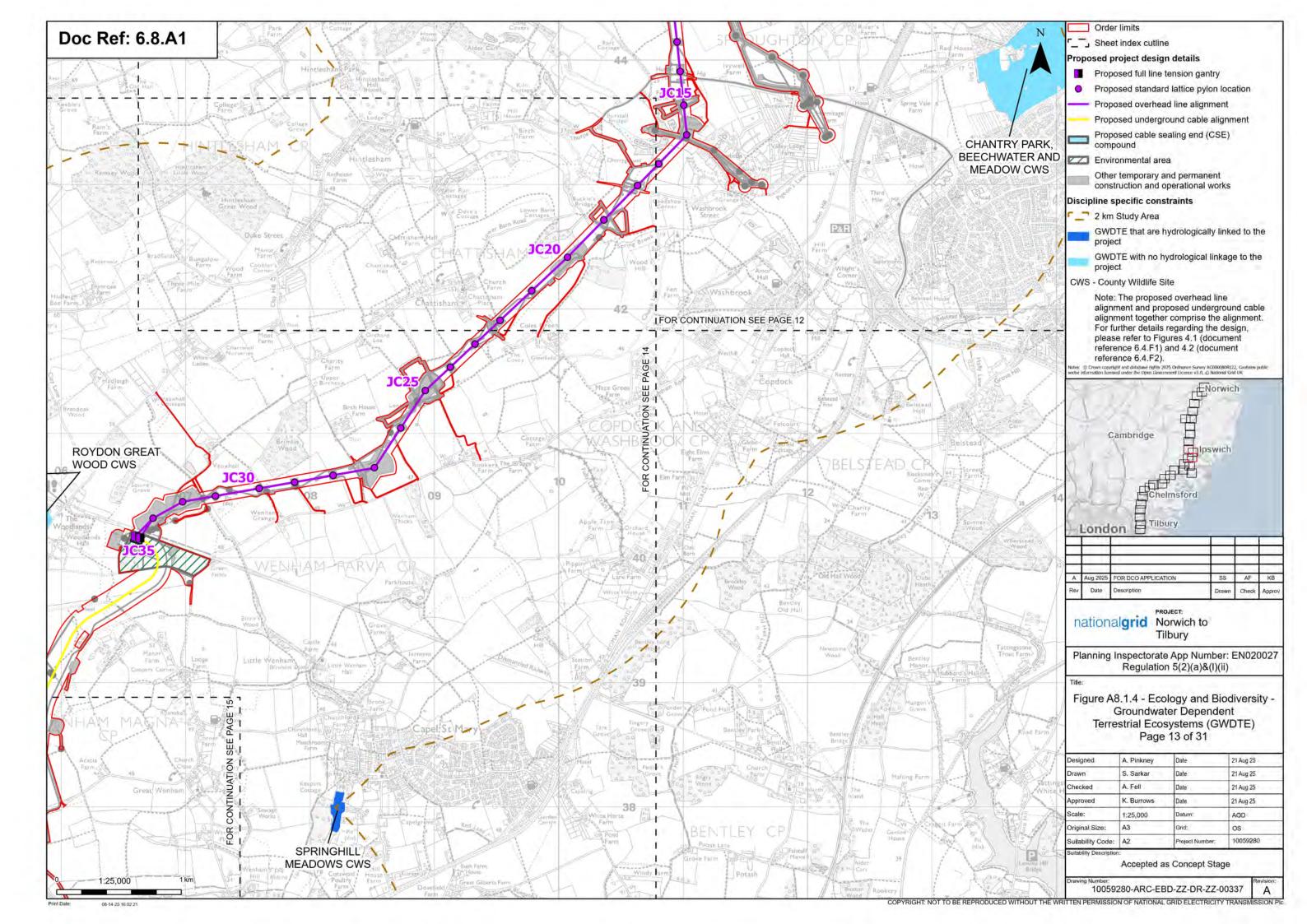


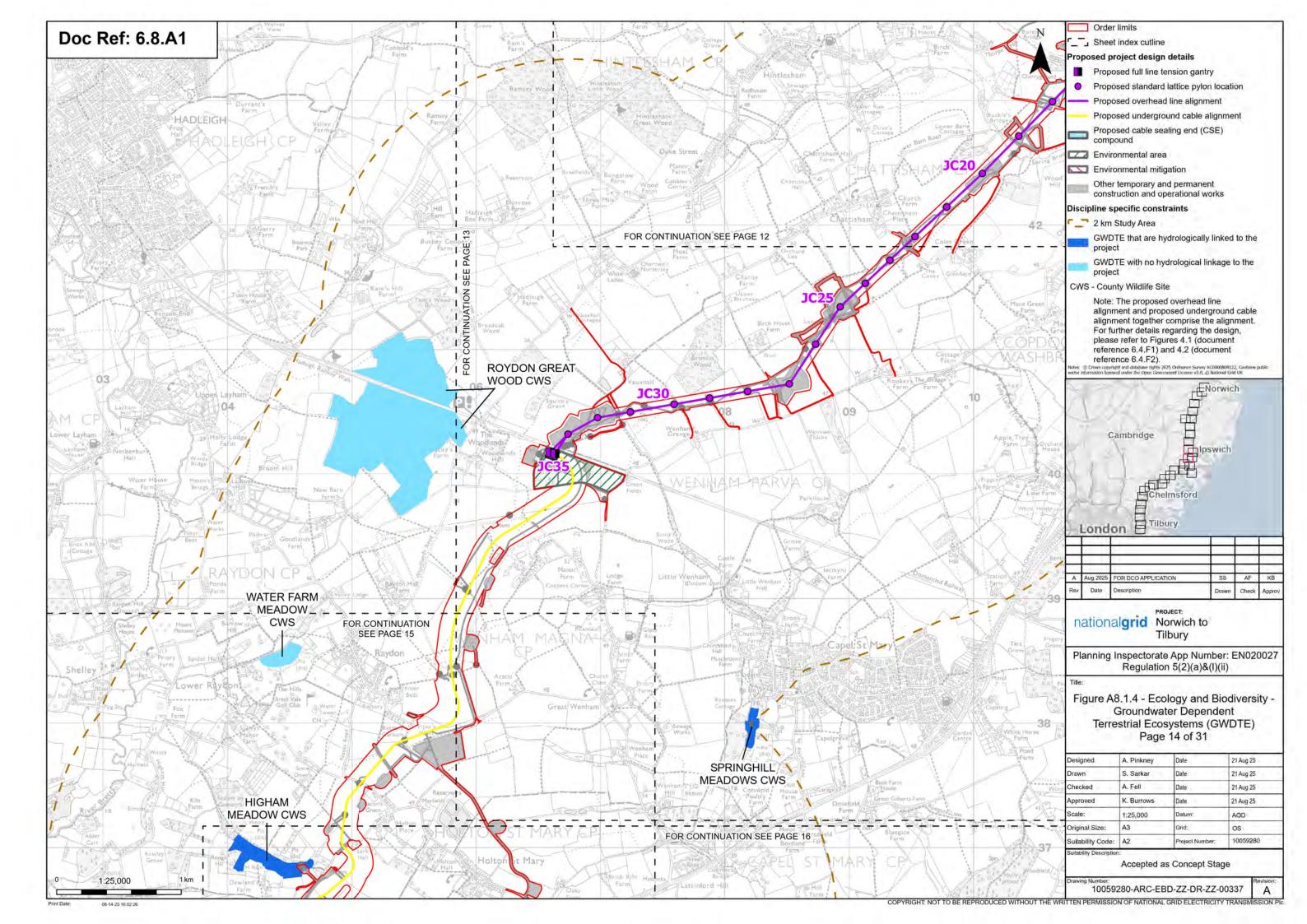


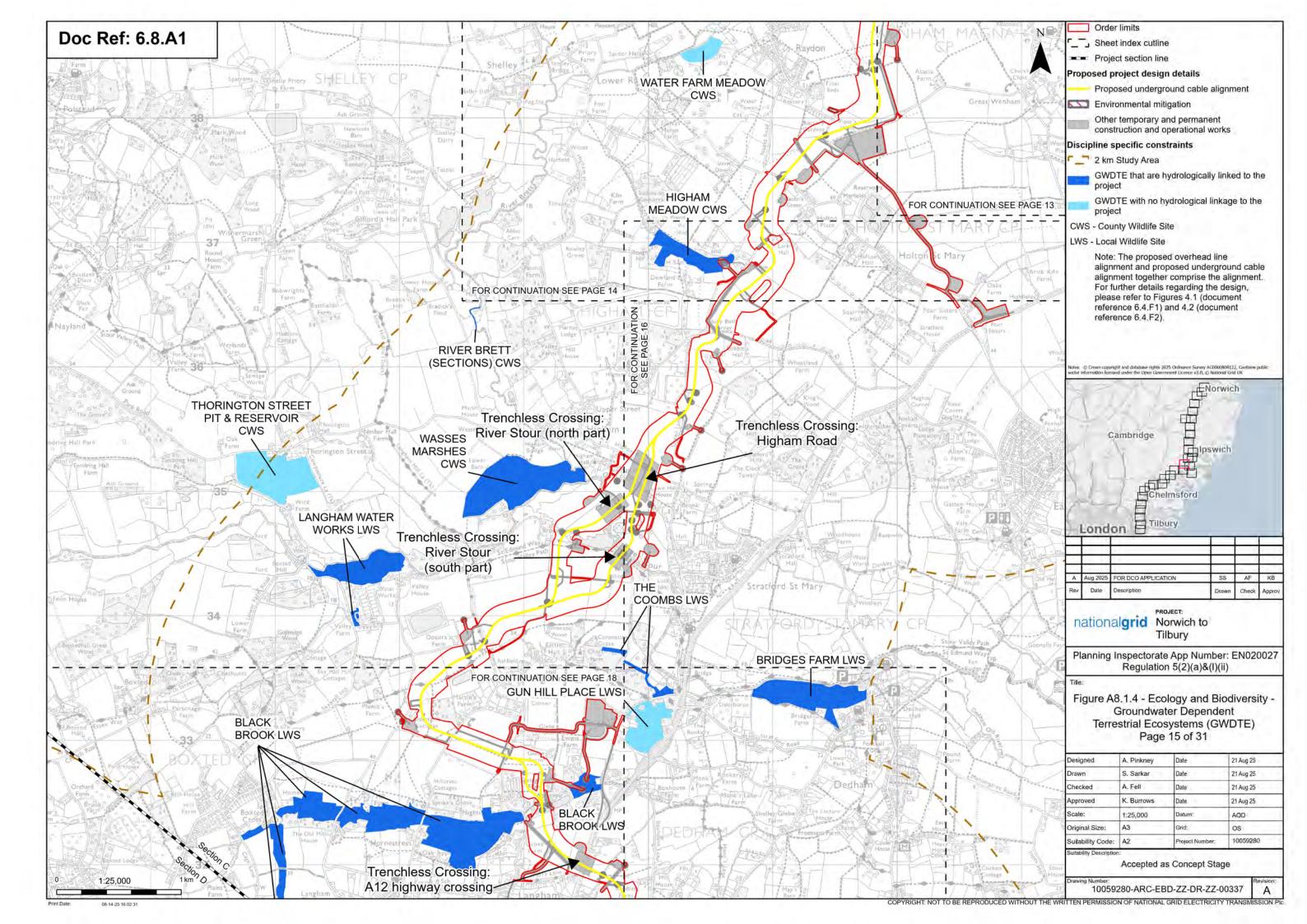


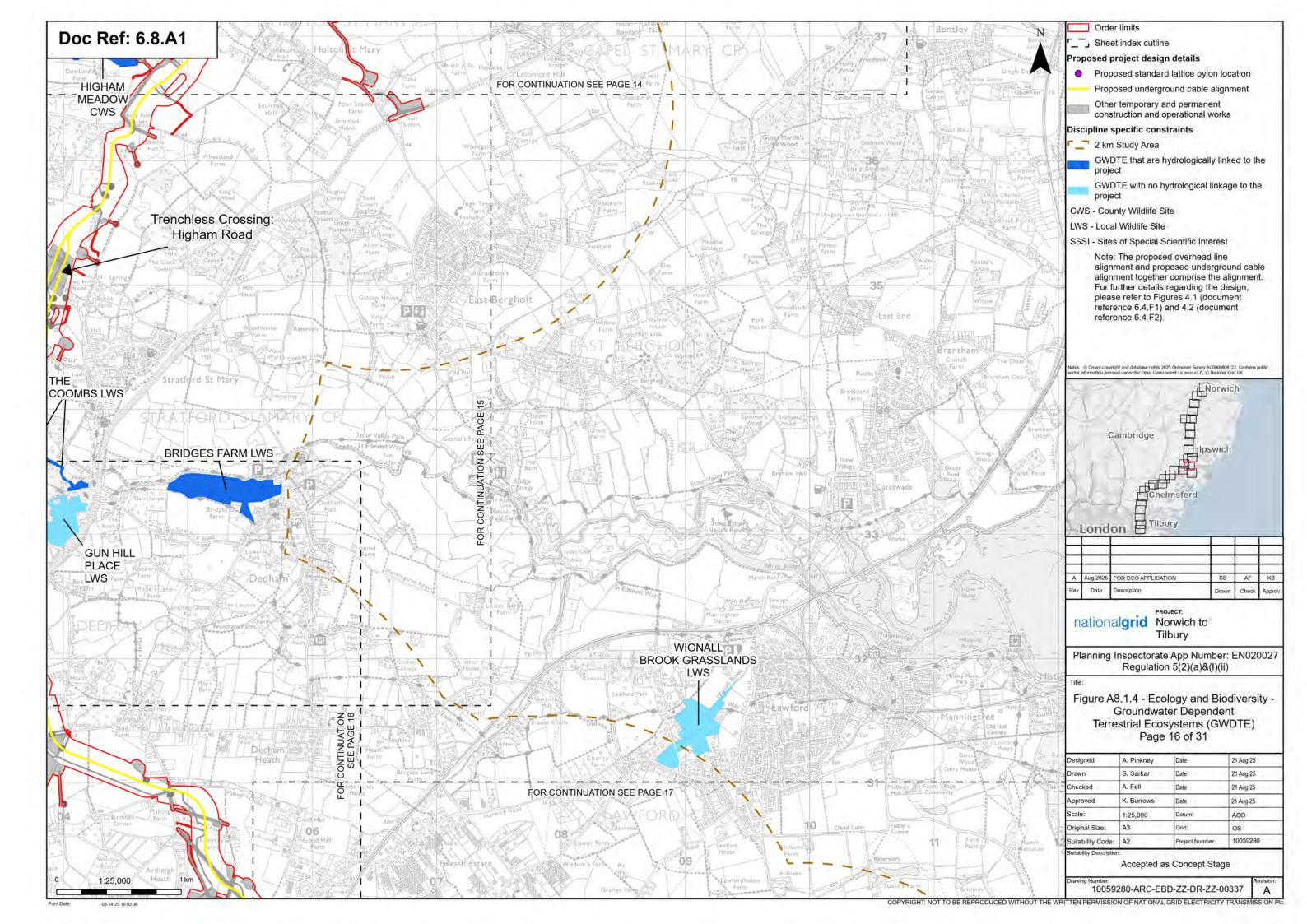


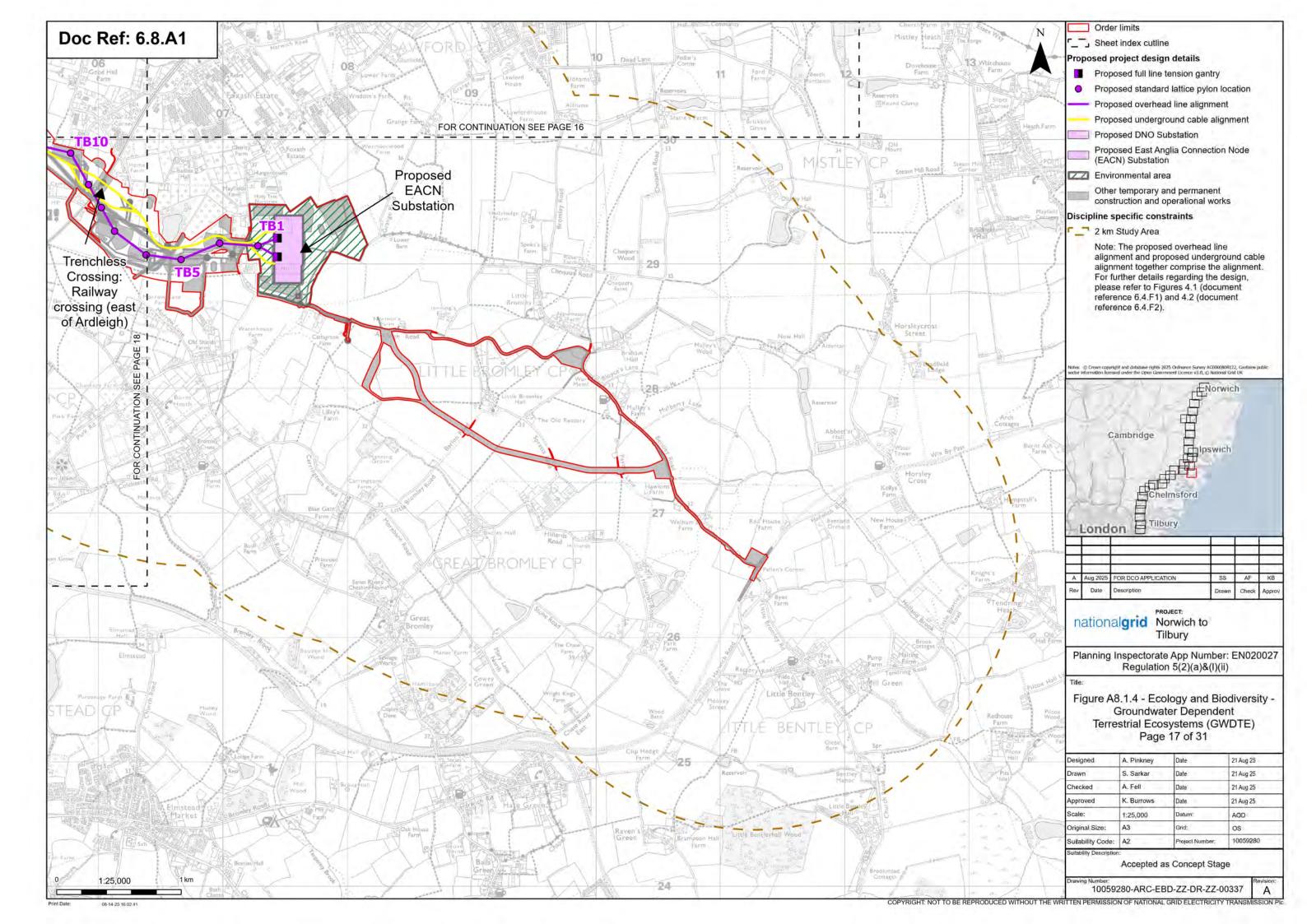


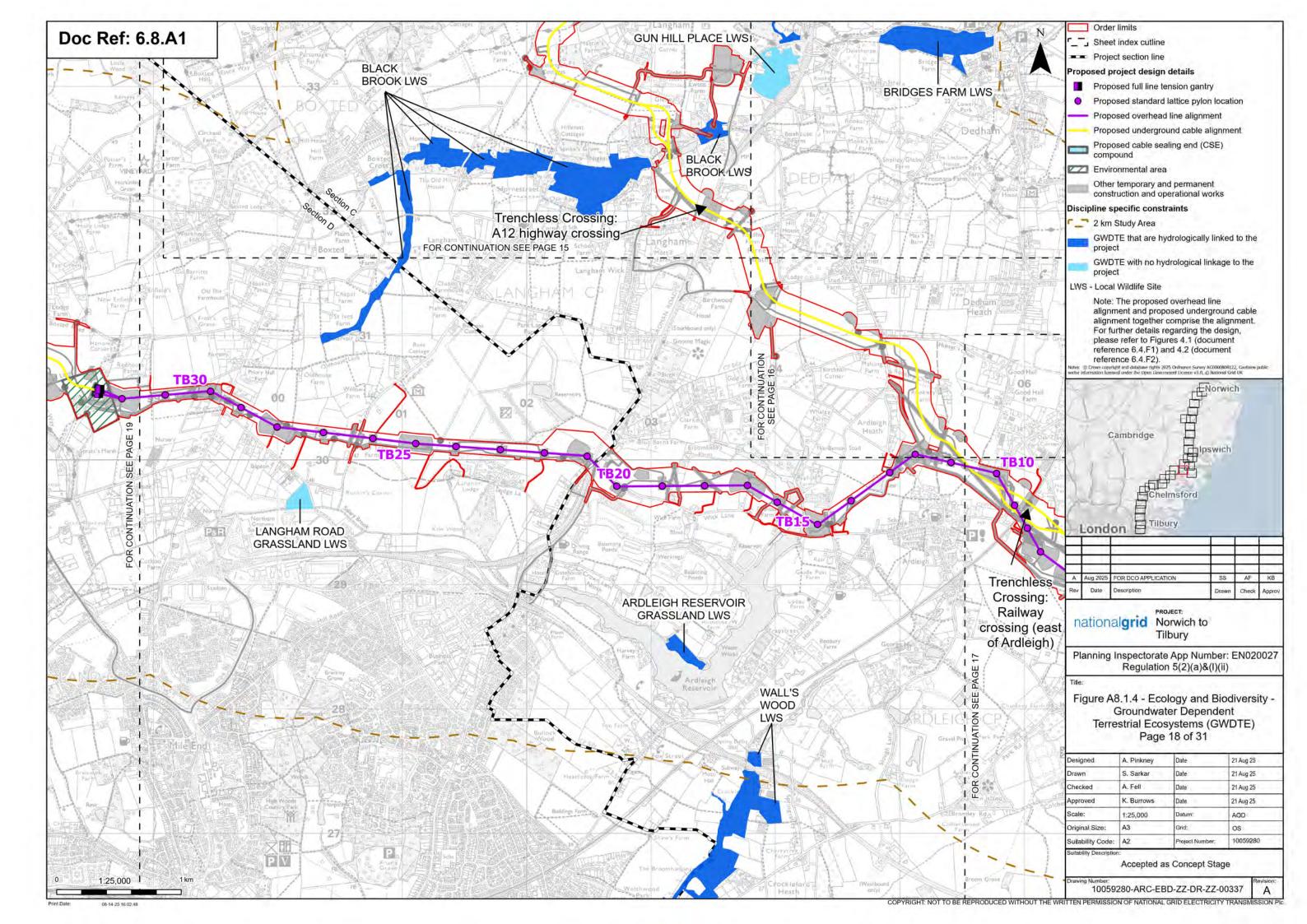


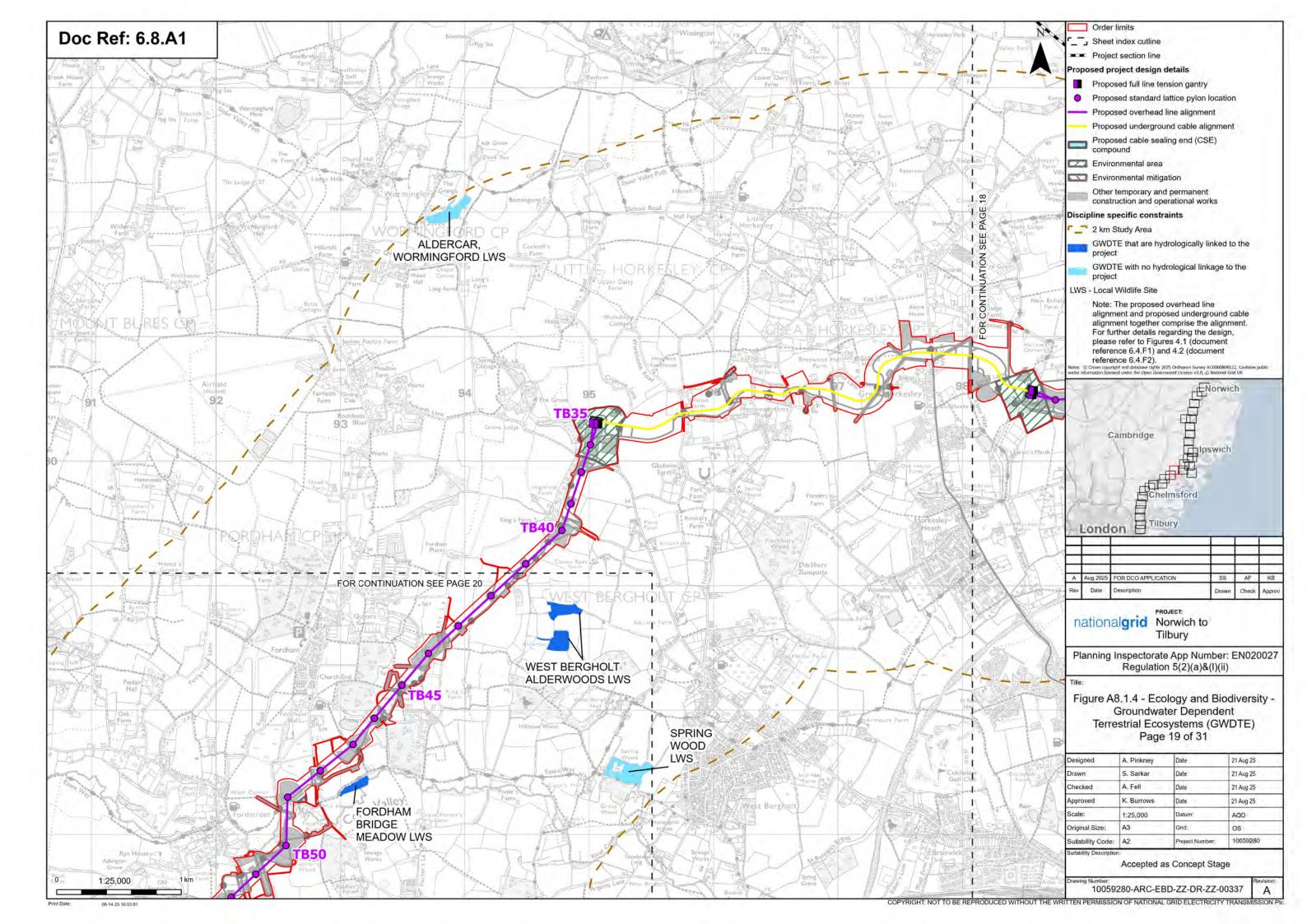


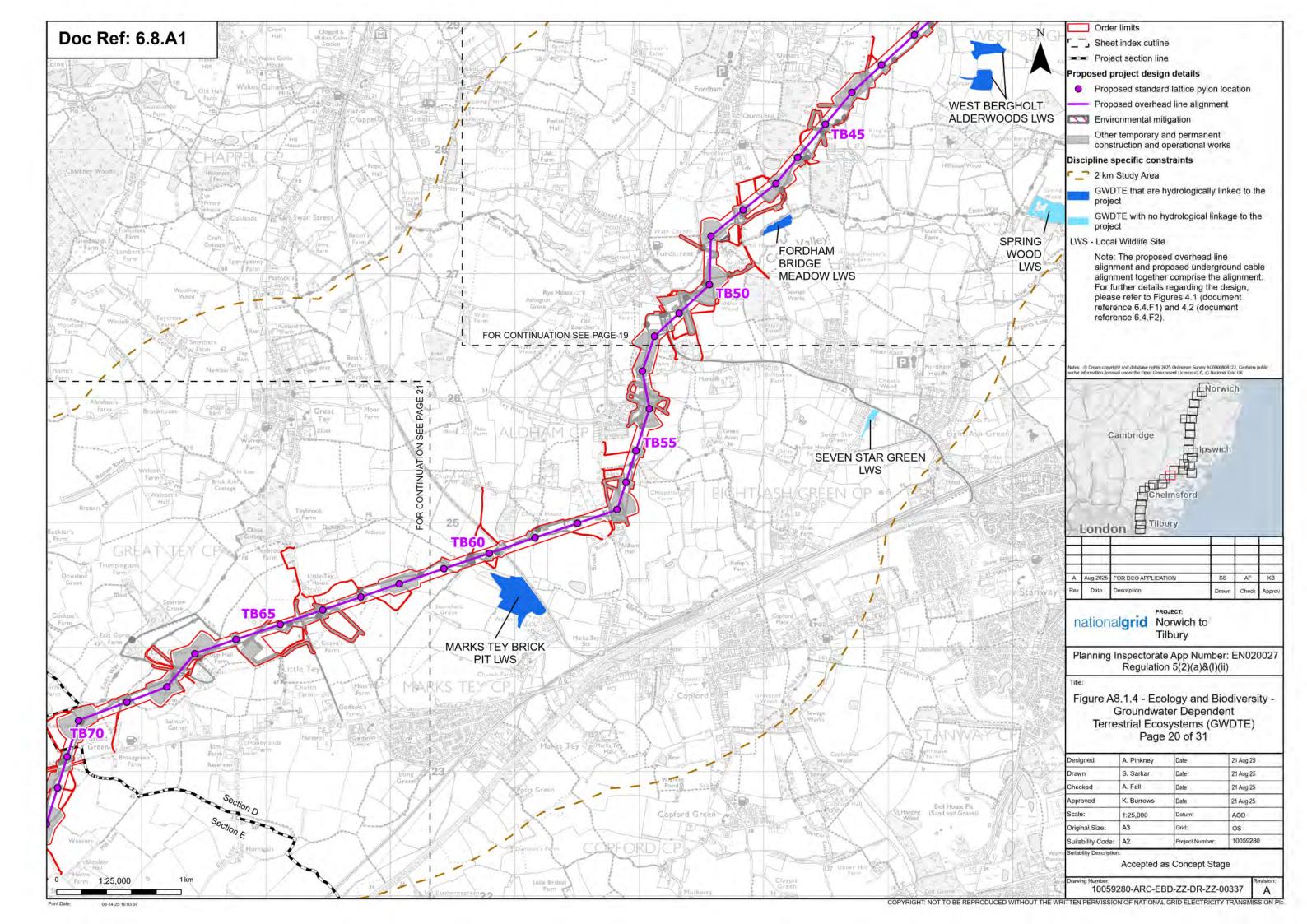


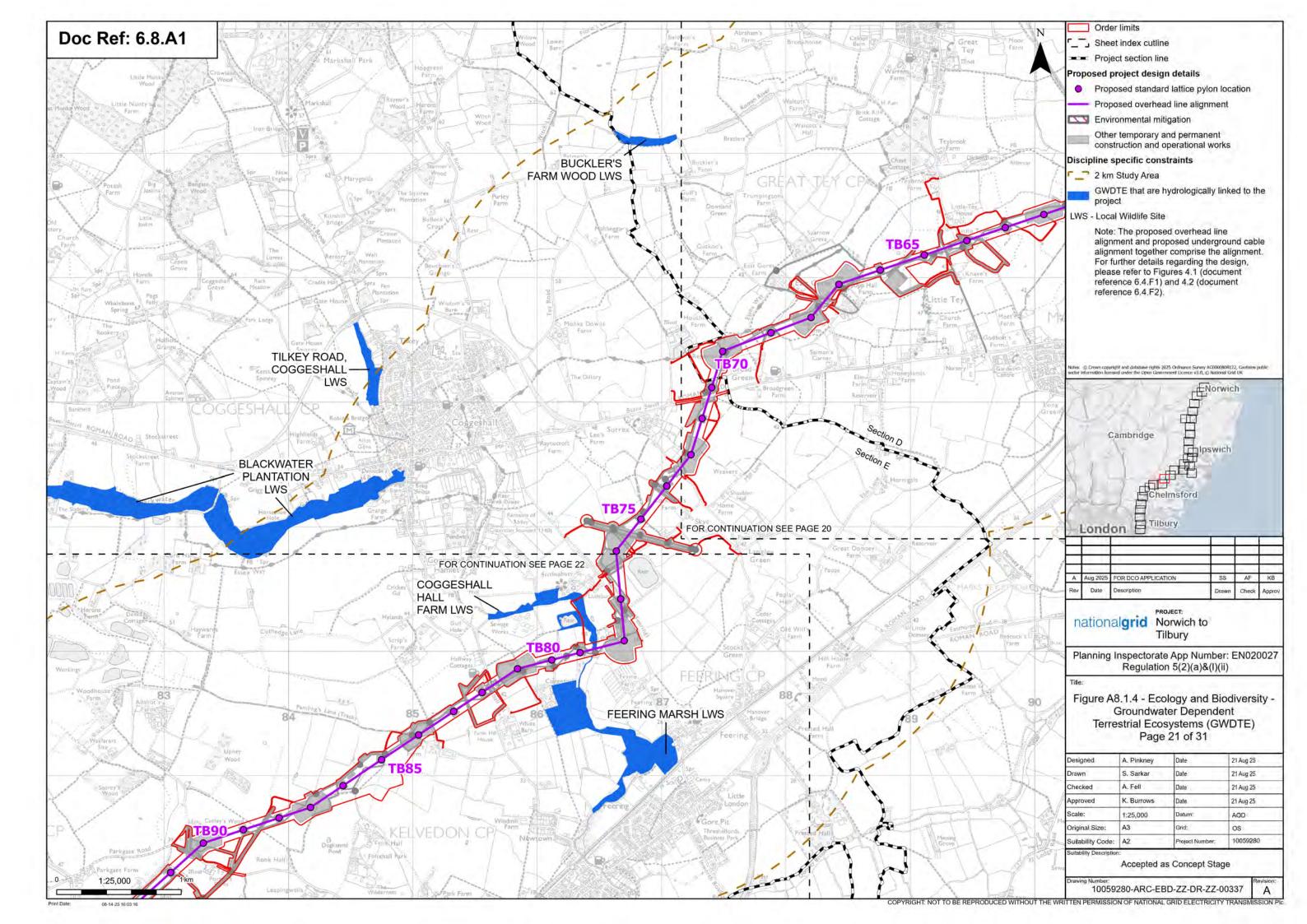


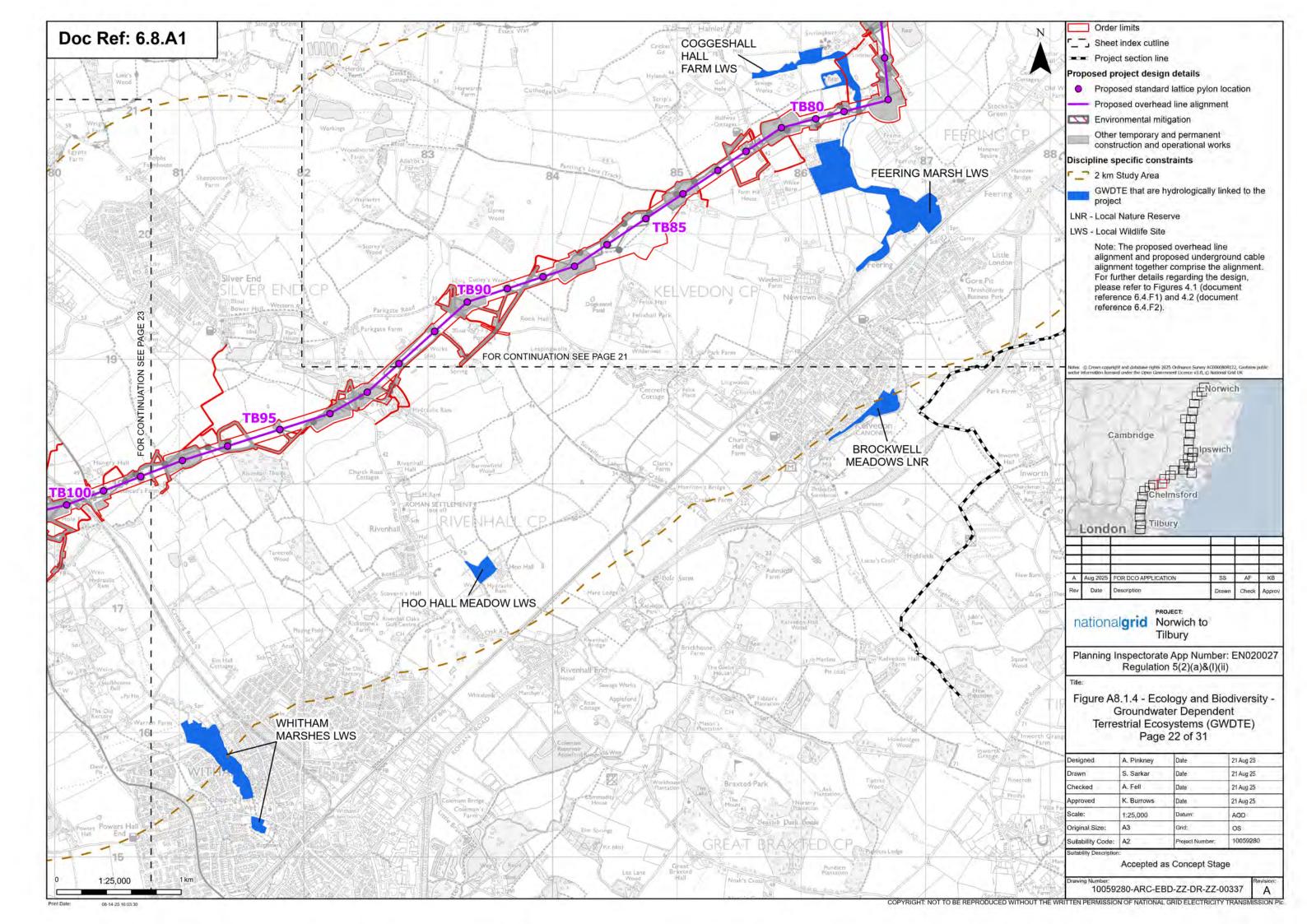


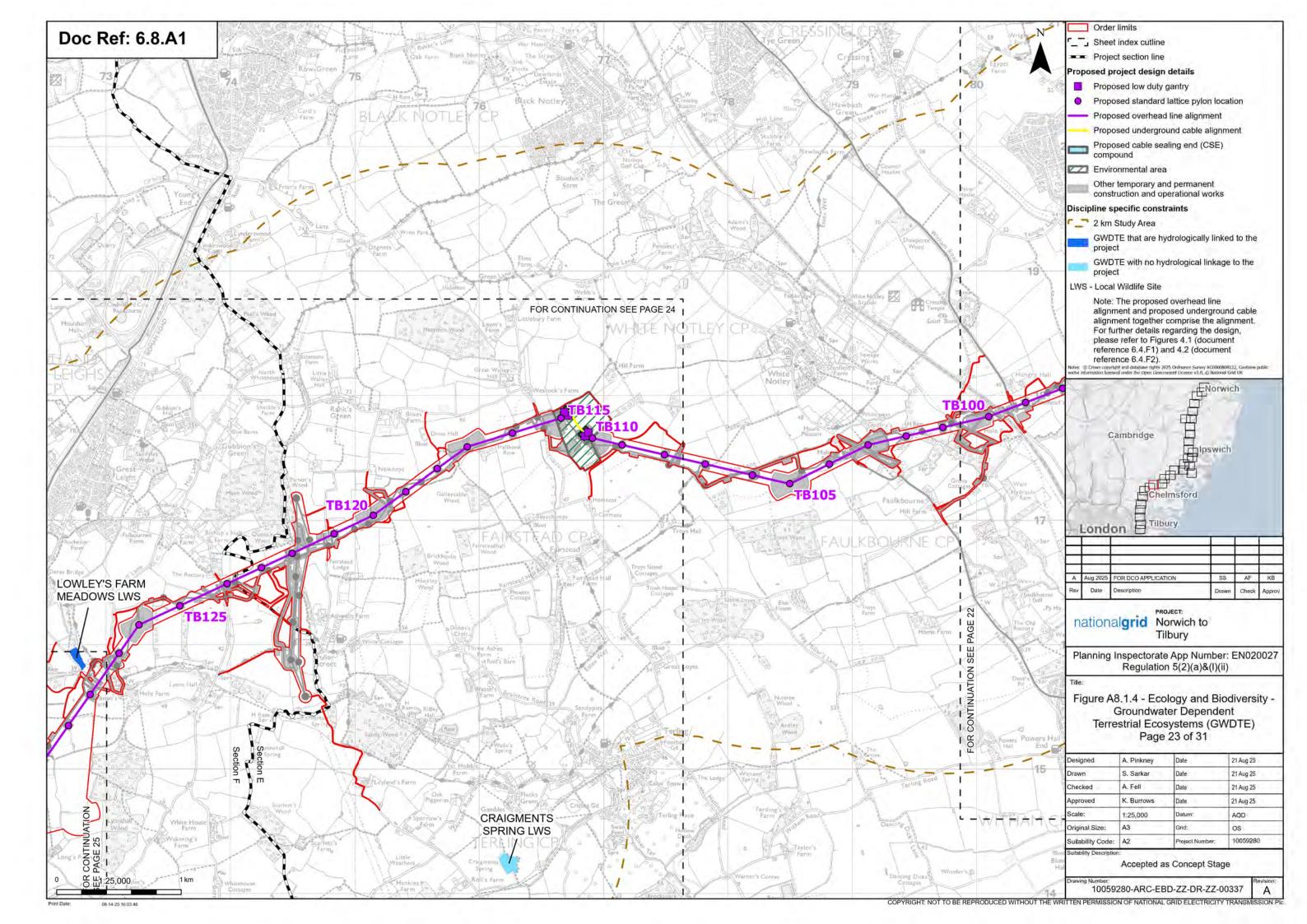


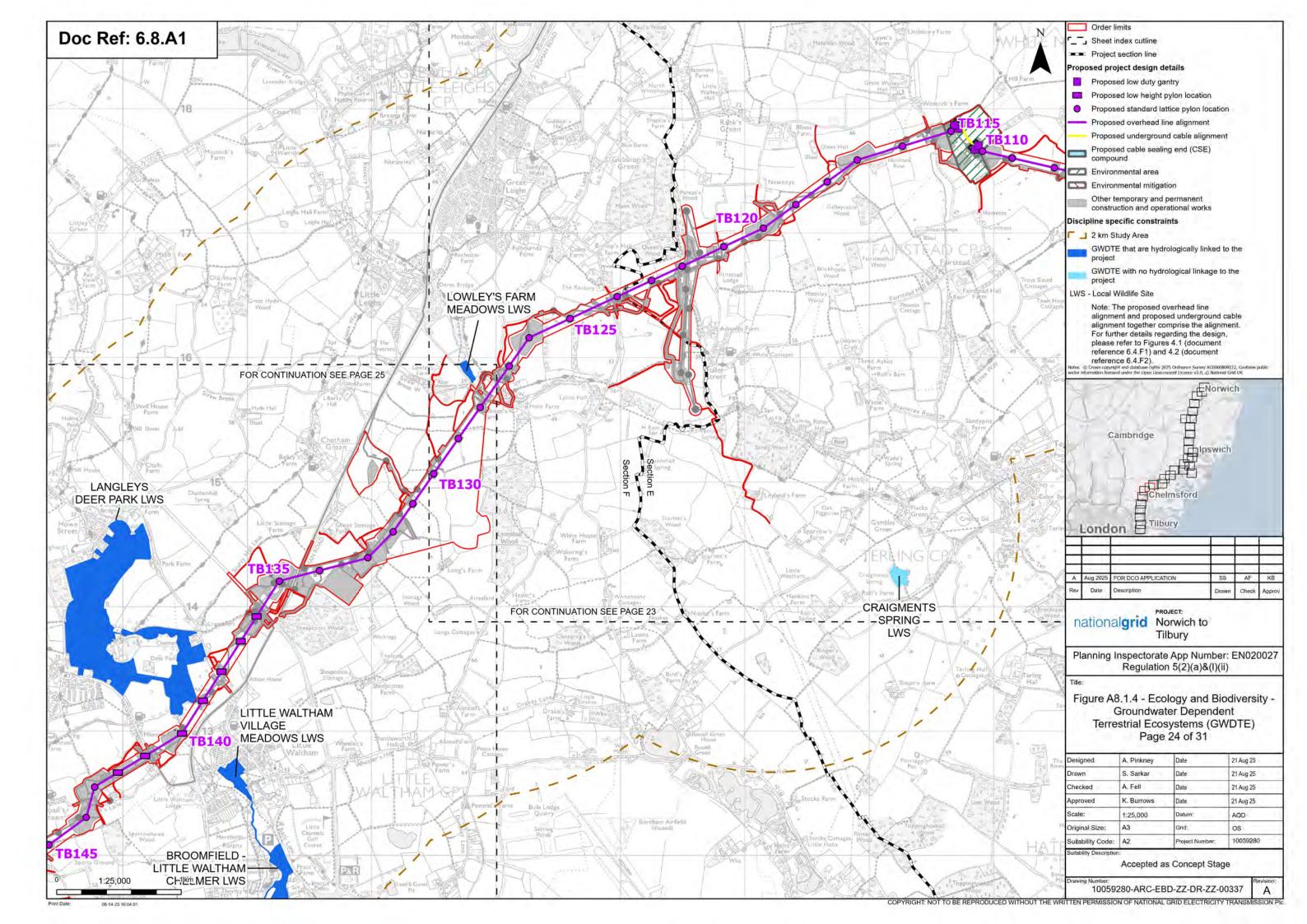


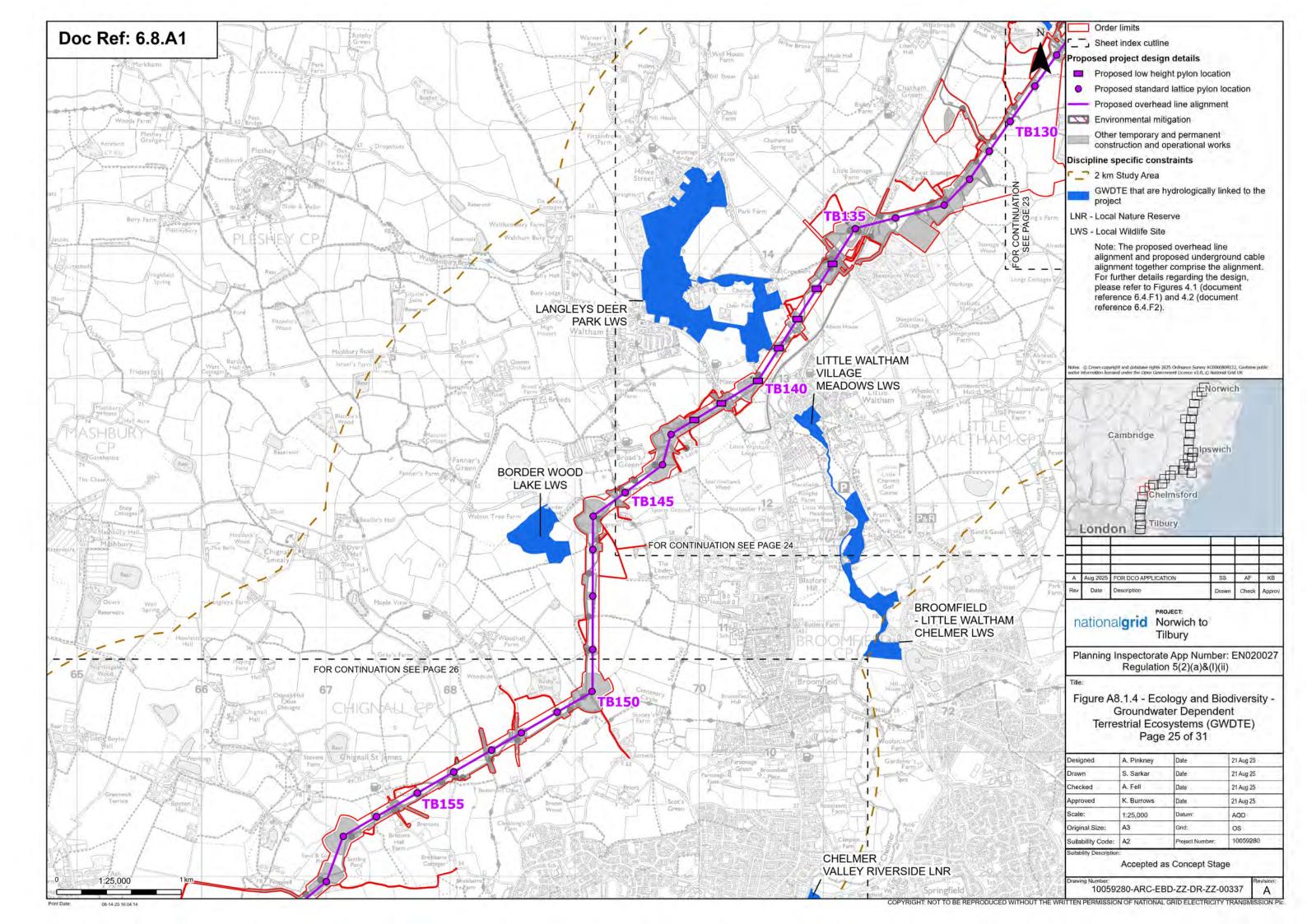


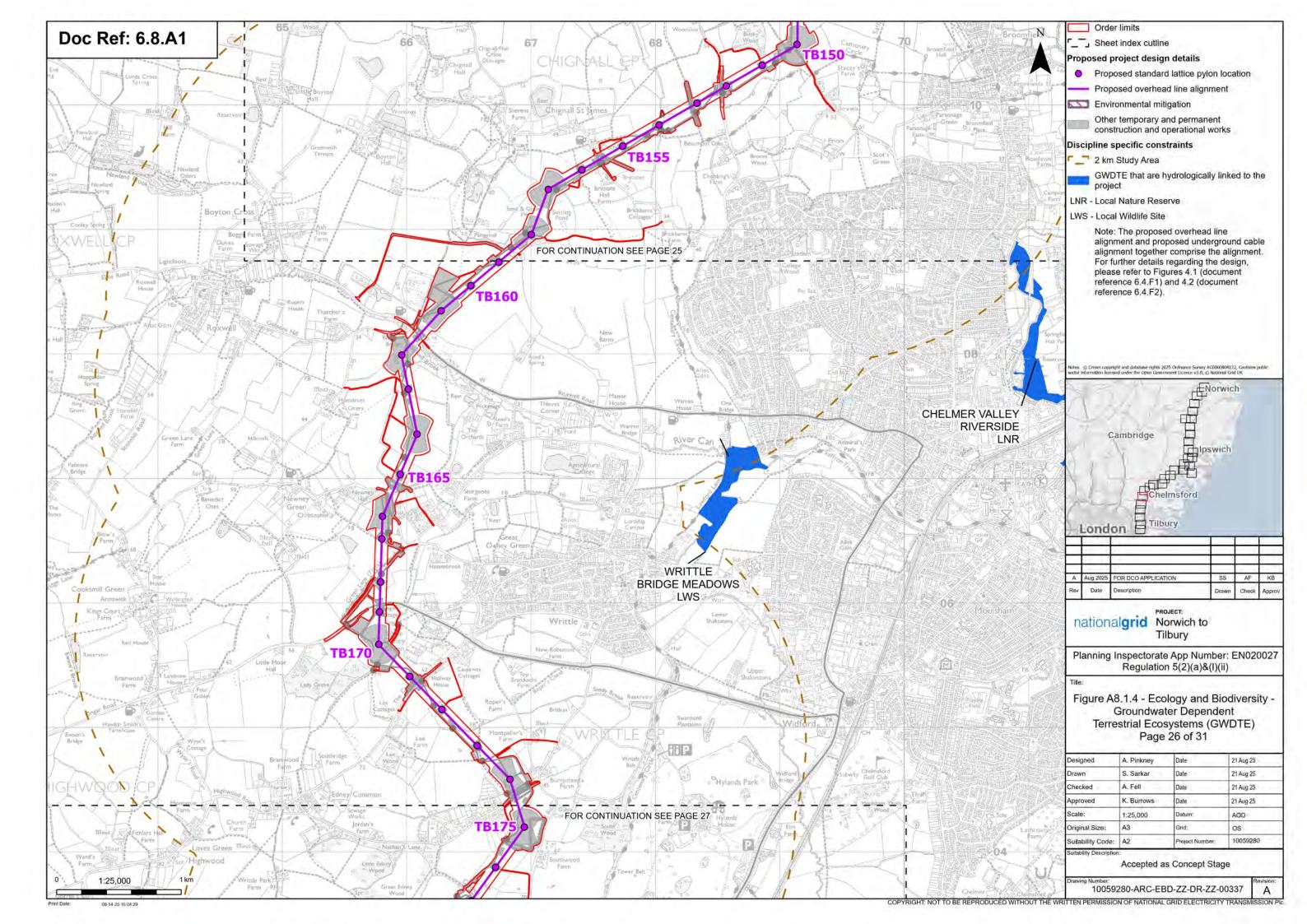


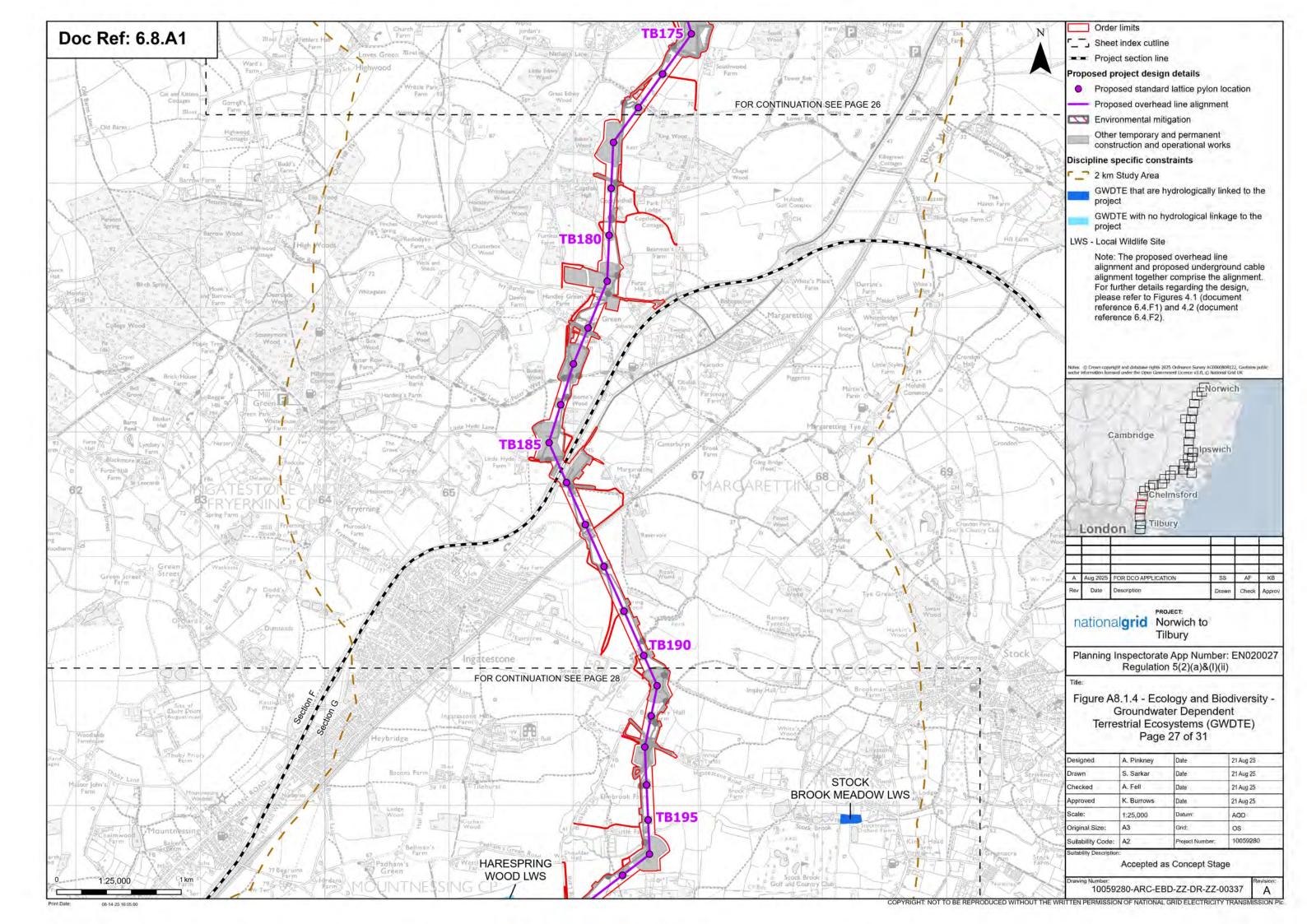


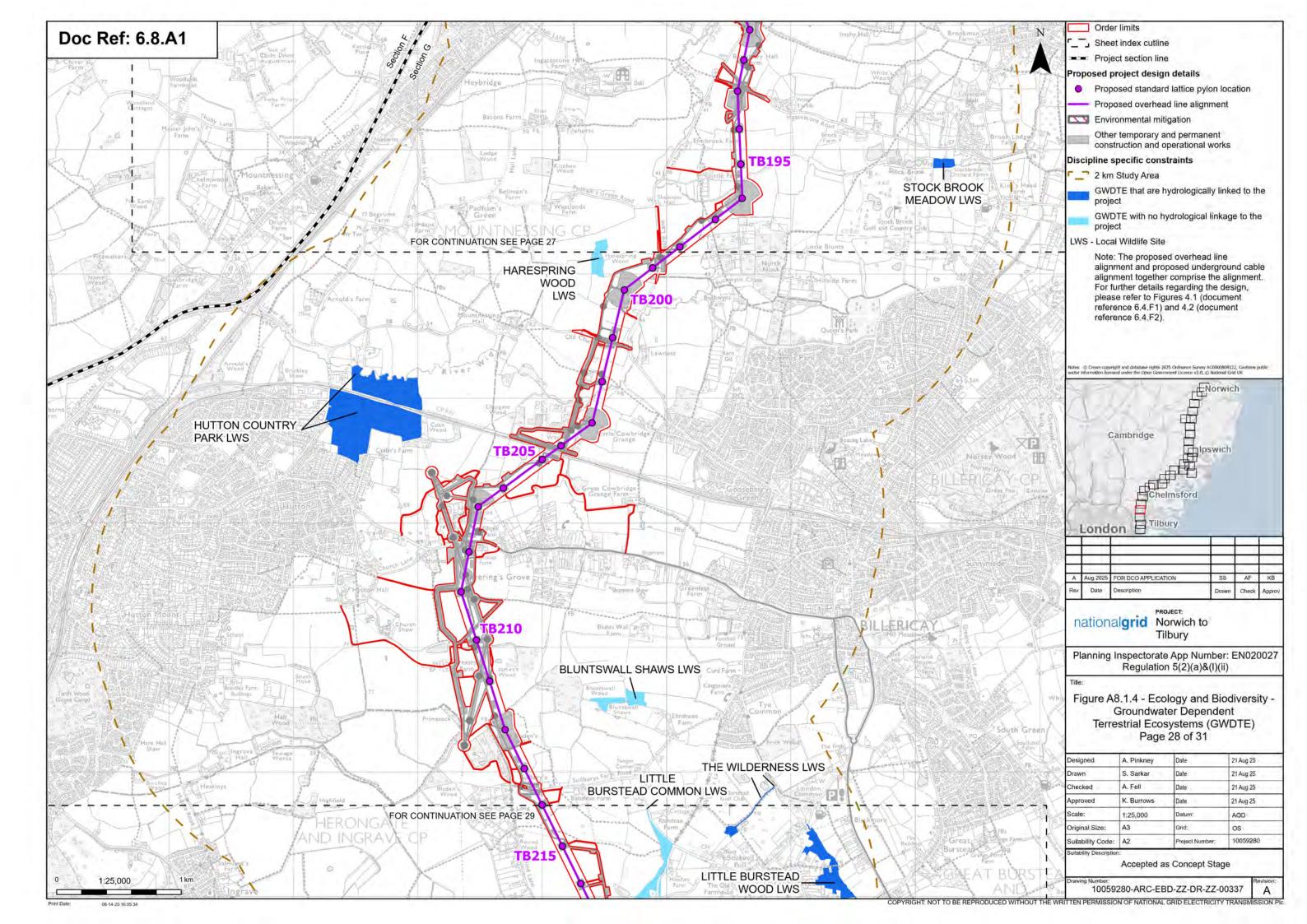


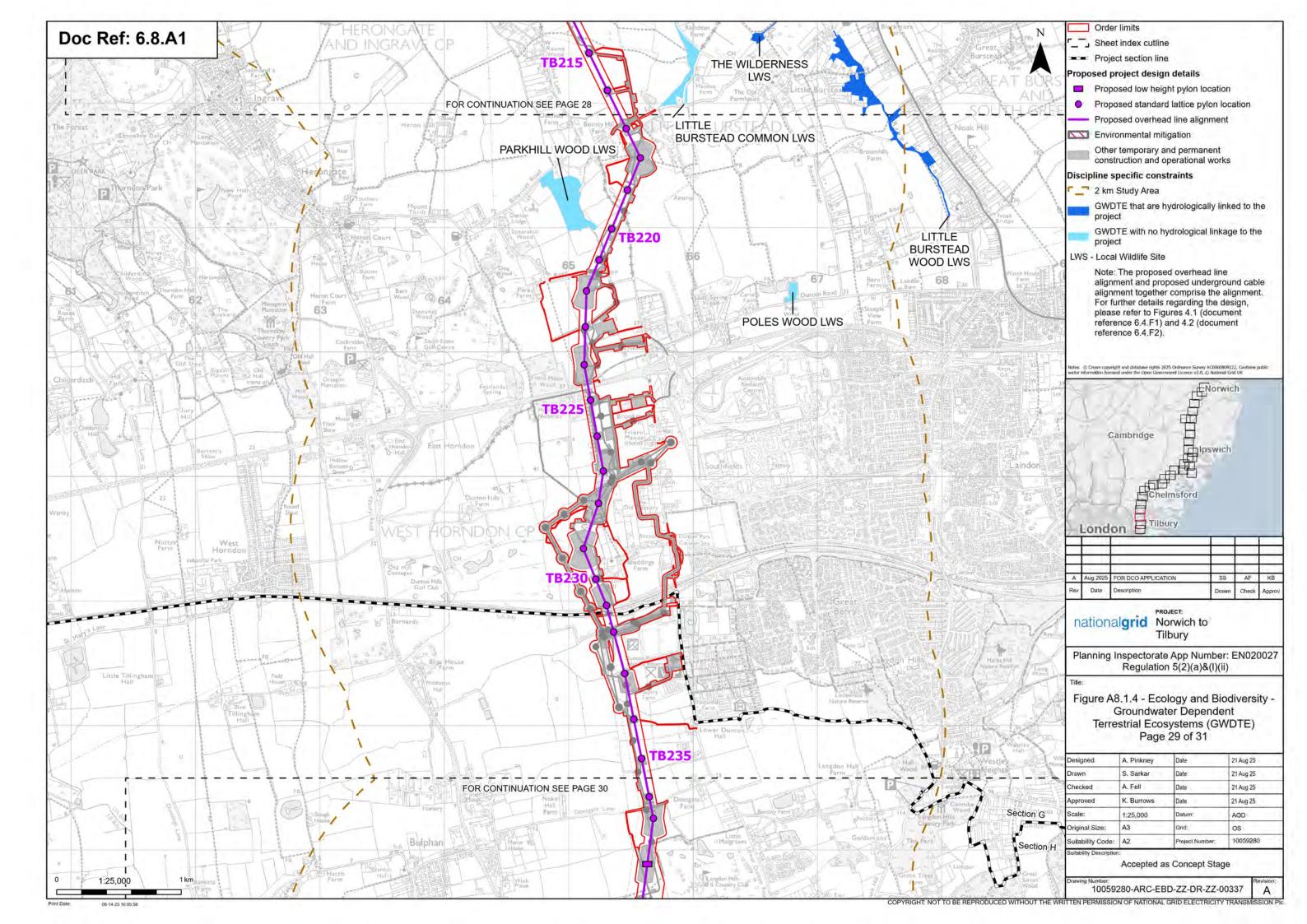


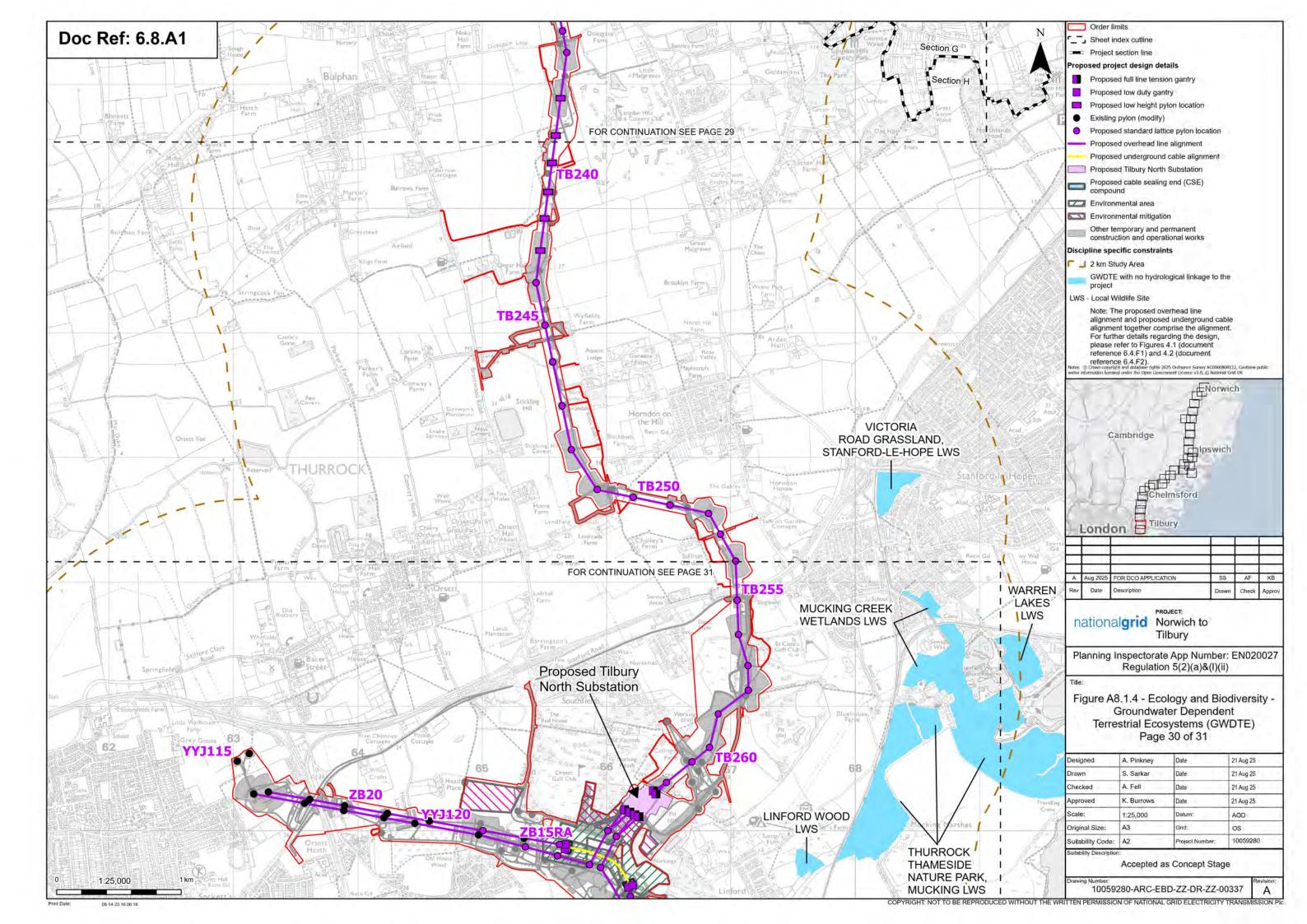












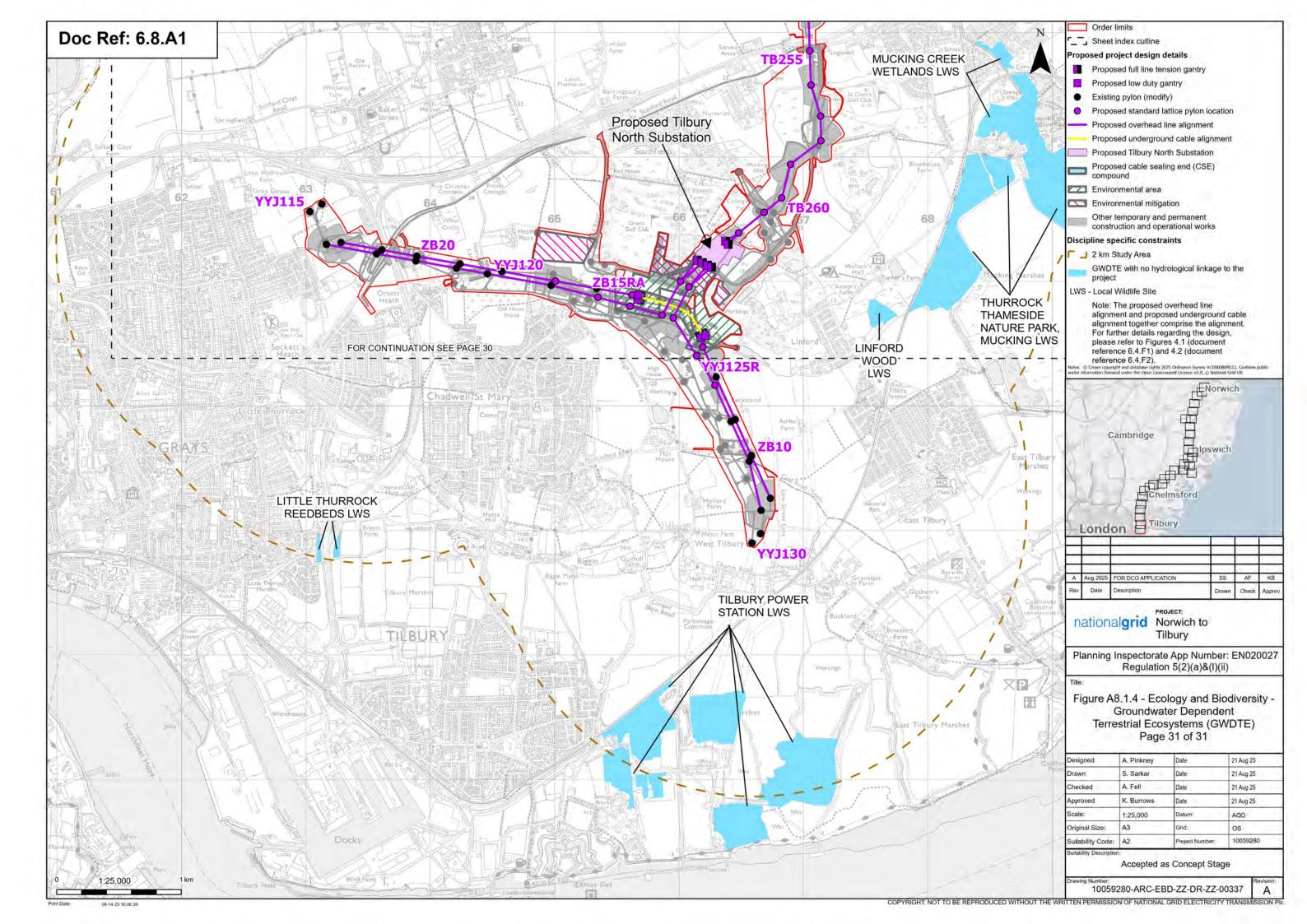
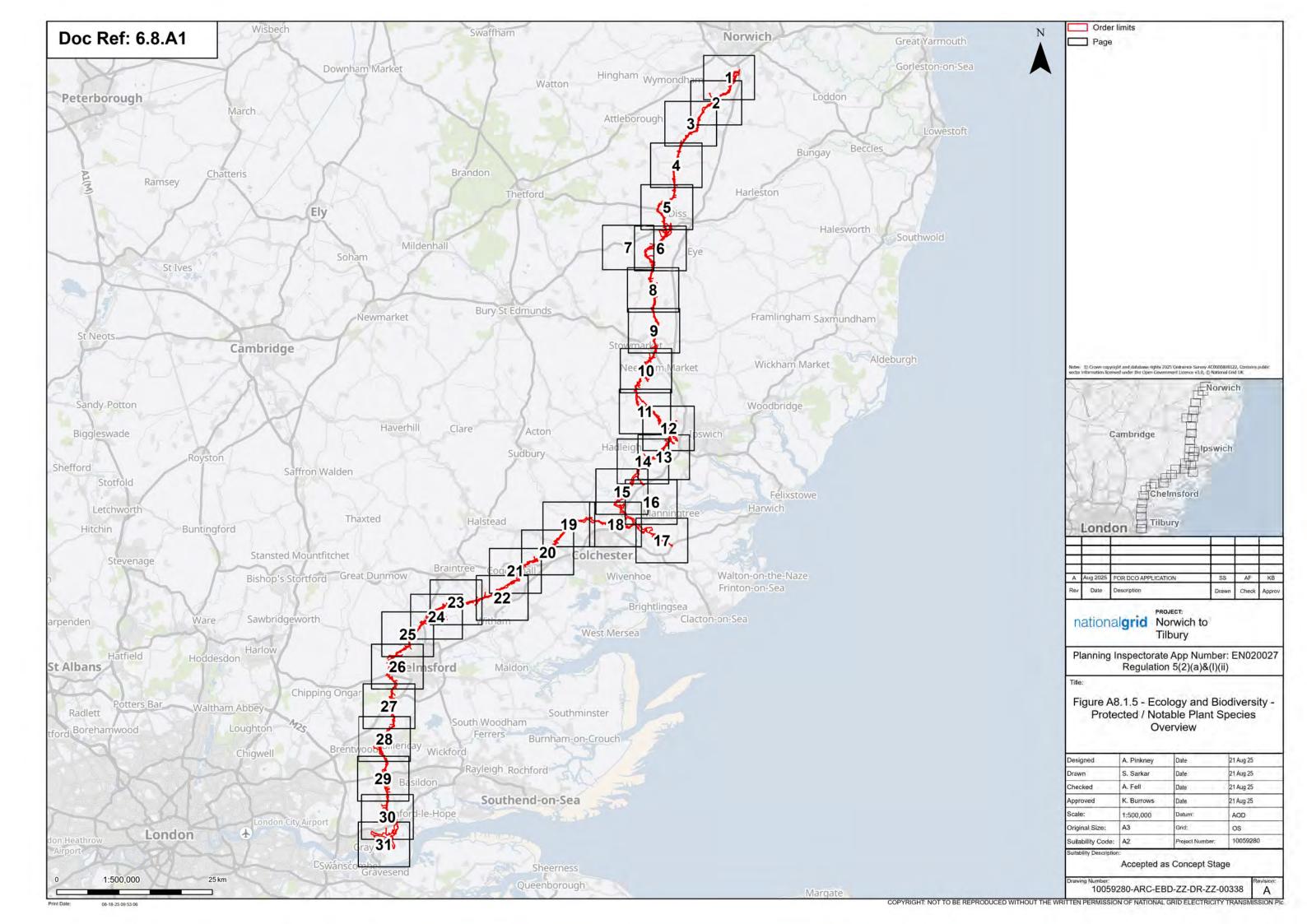
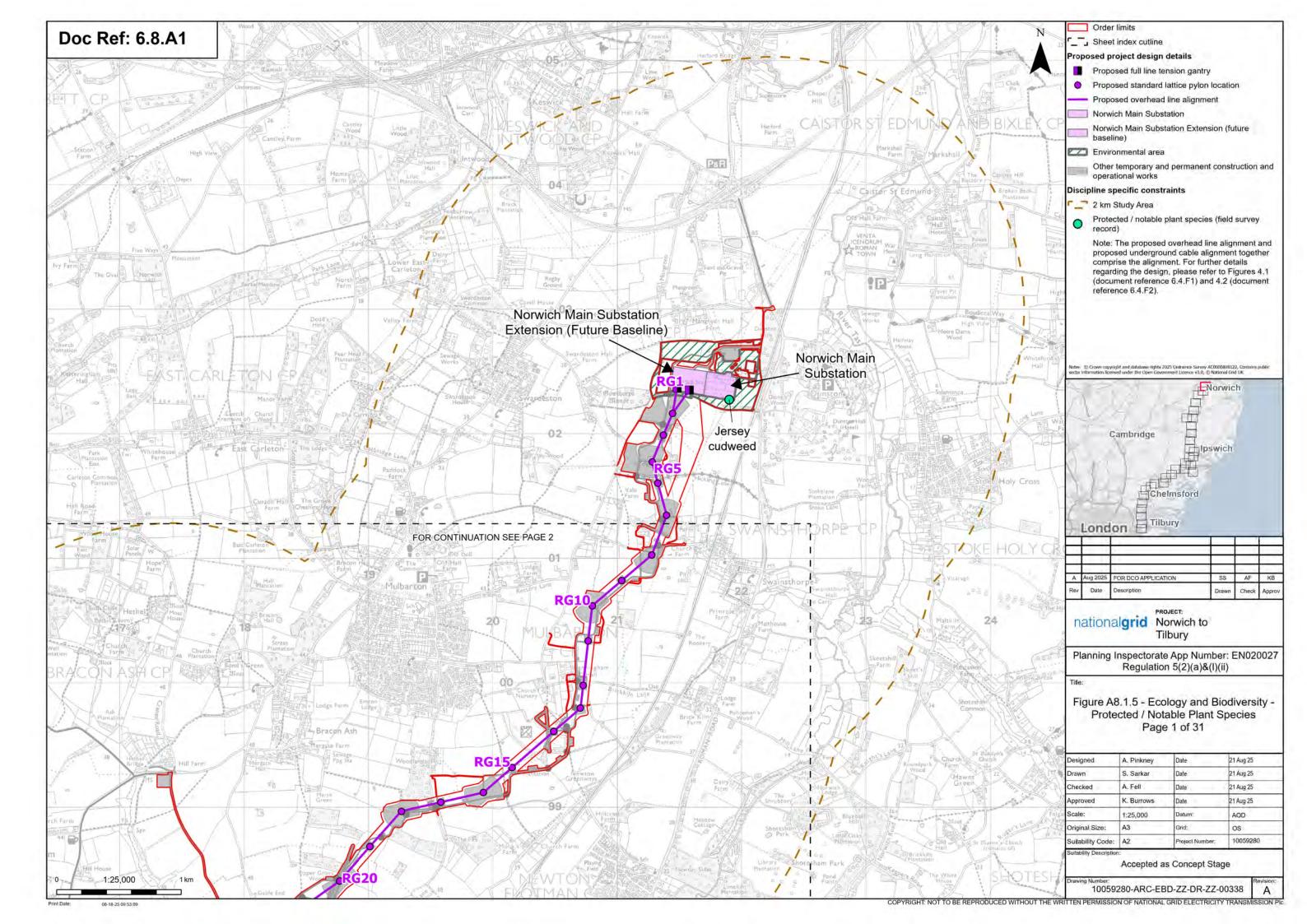
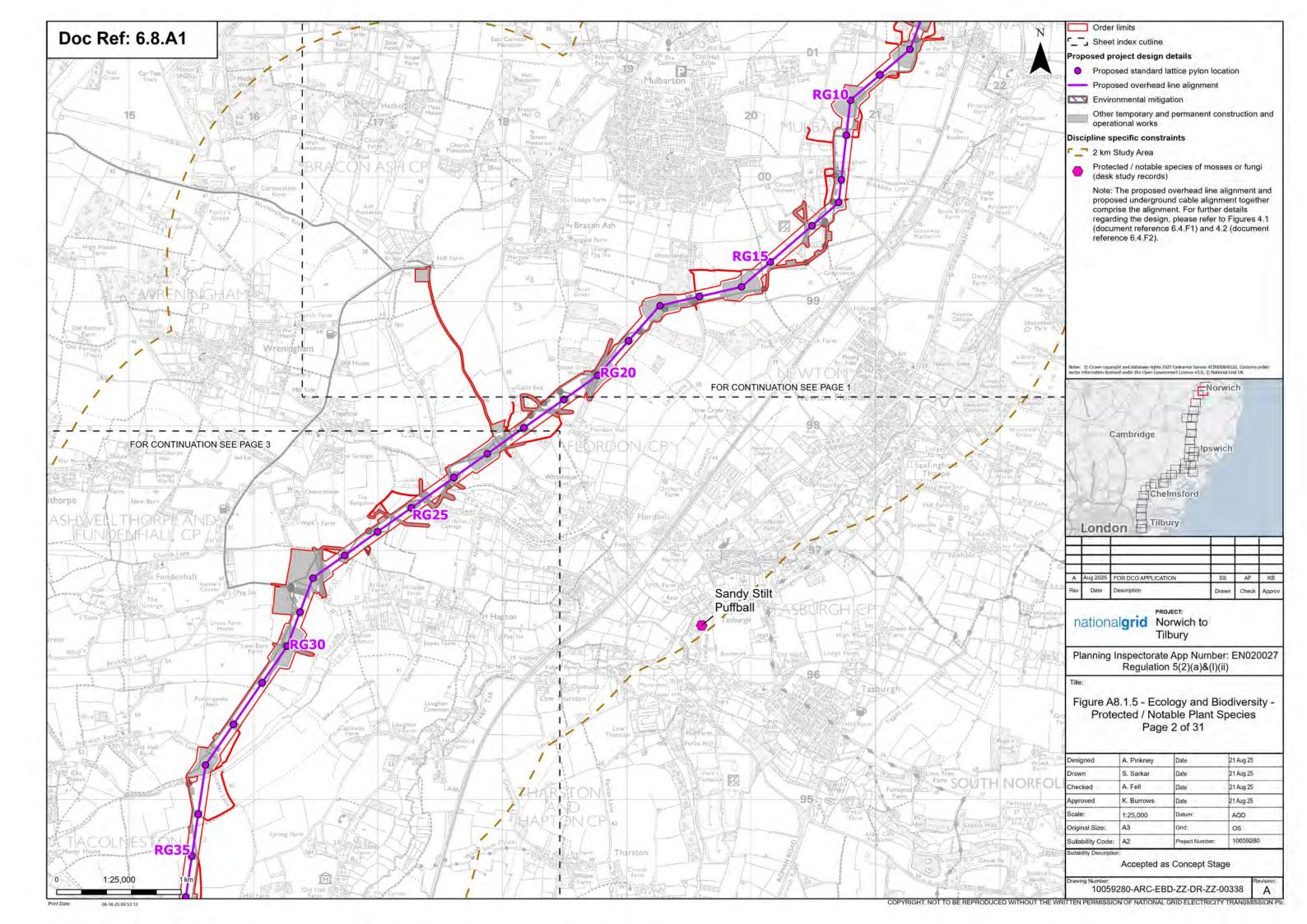
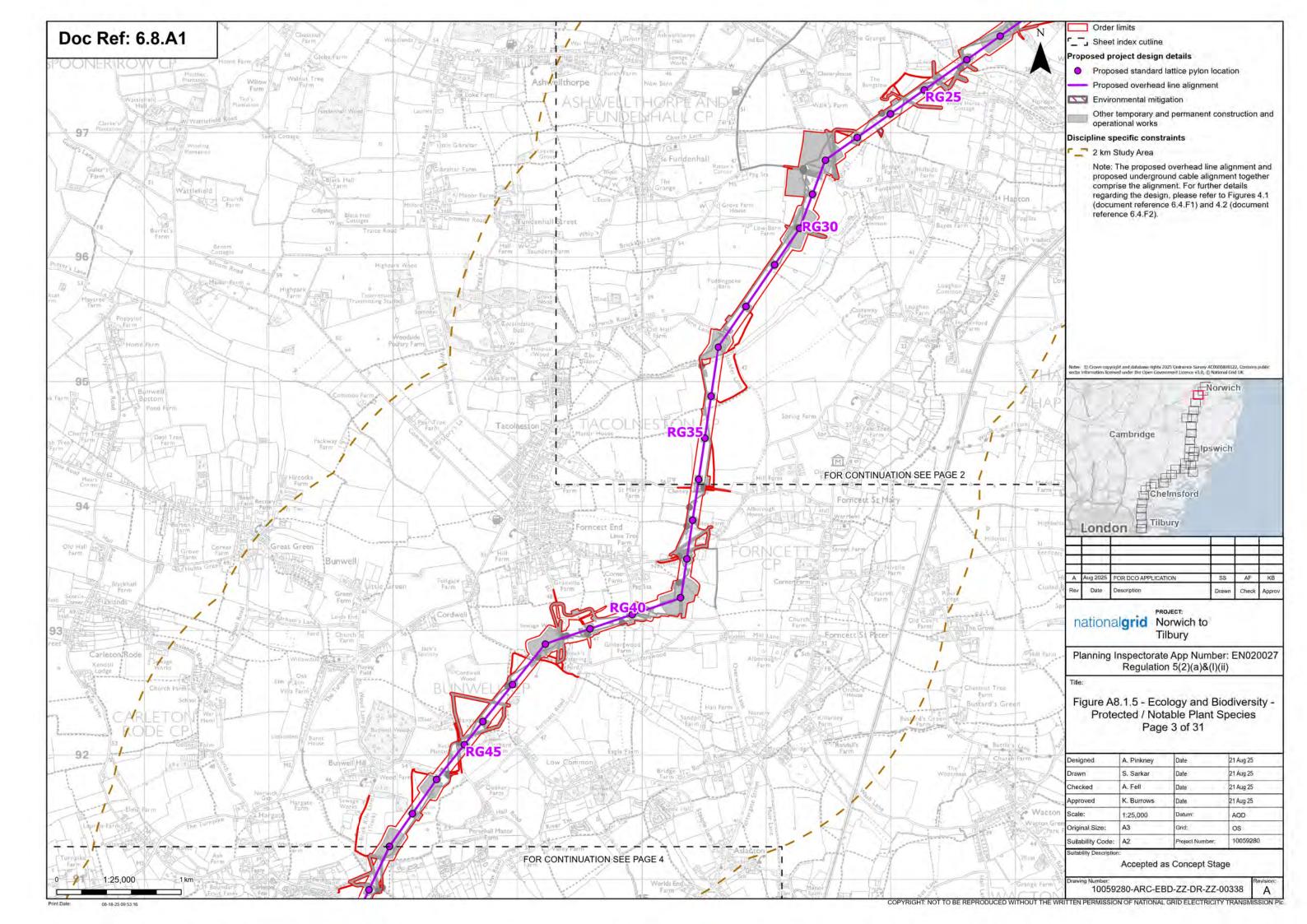


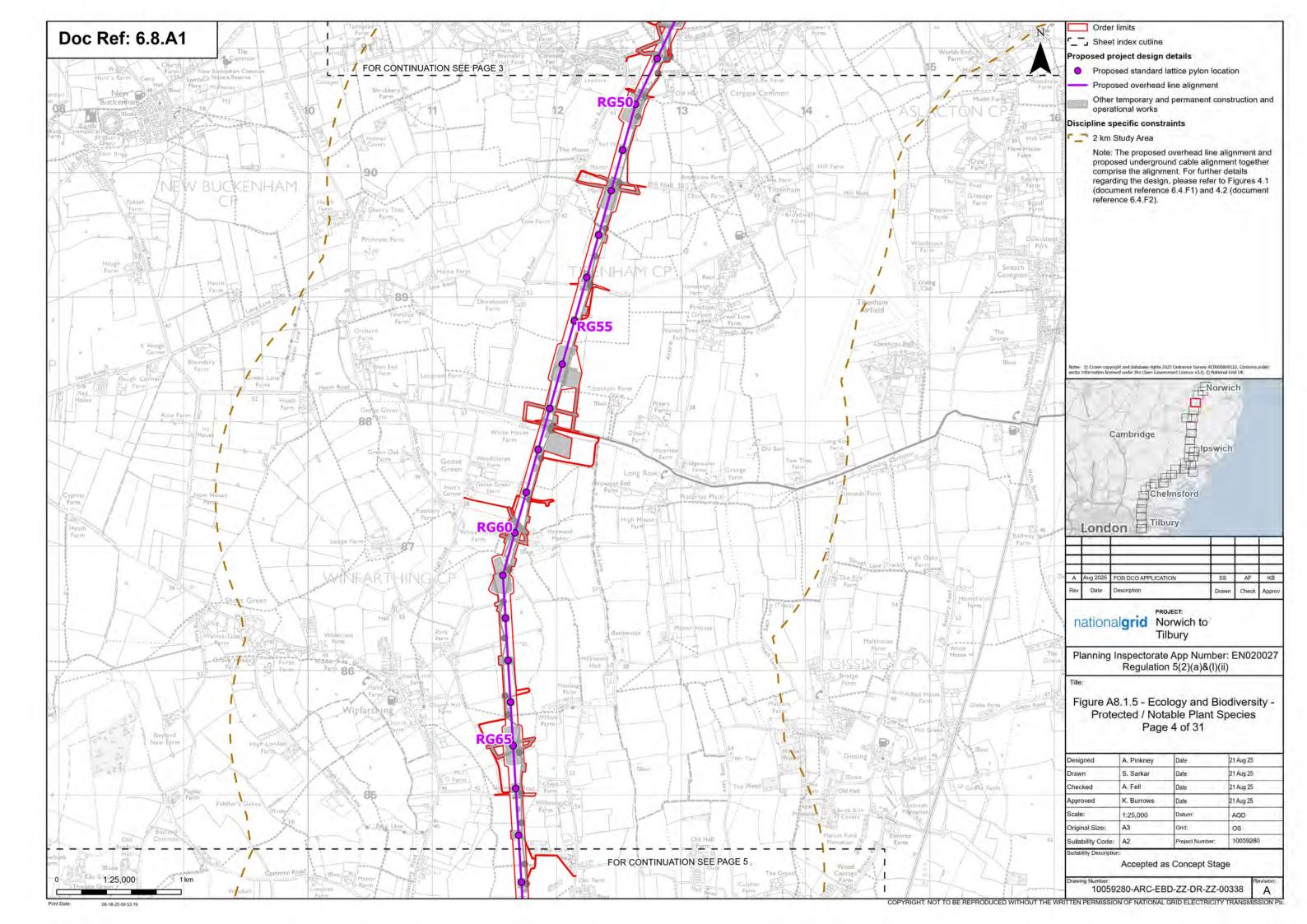
Figure A8.1.5 -	Protected/	Notable	Plant	Species

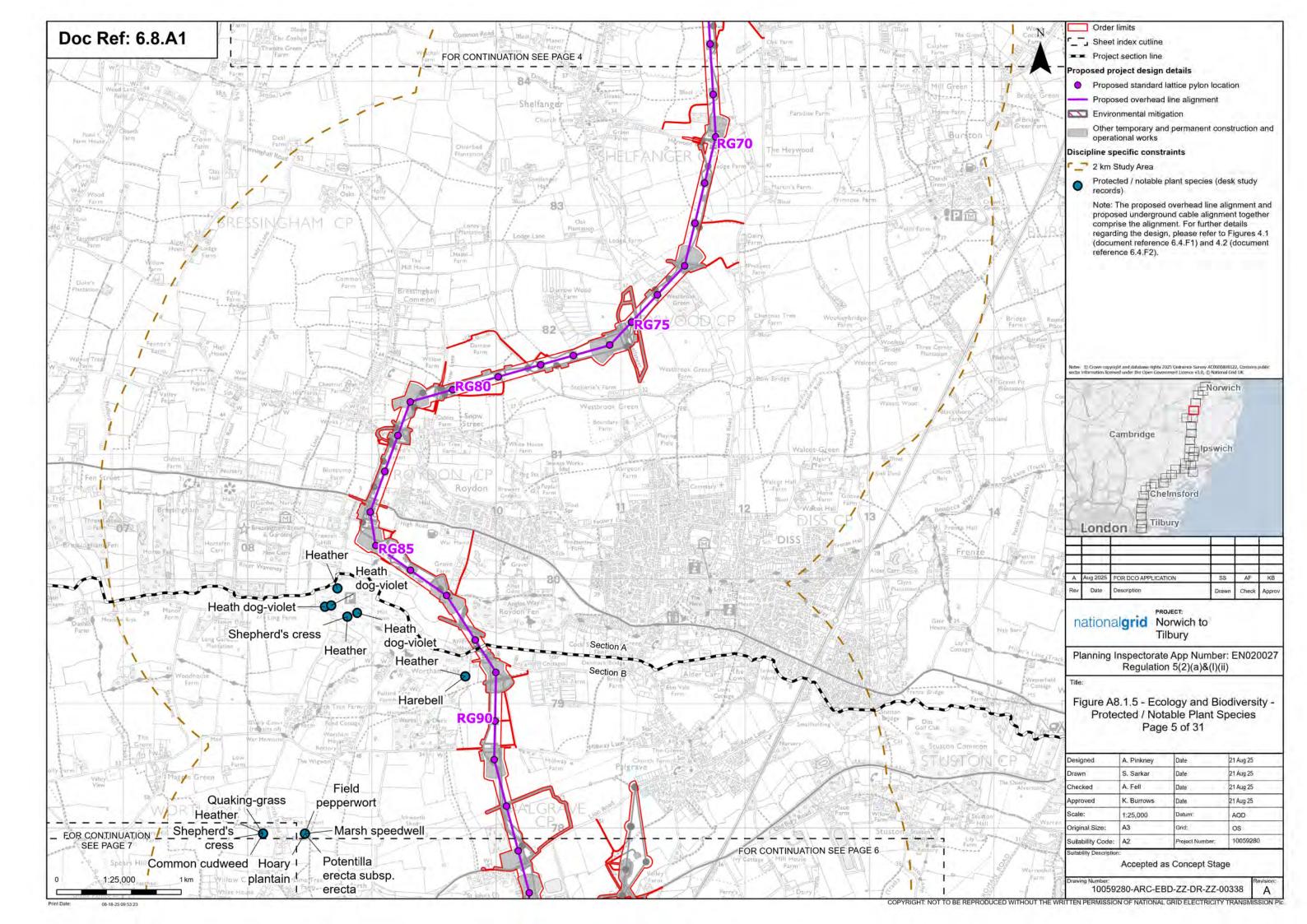


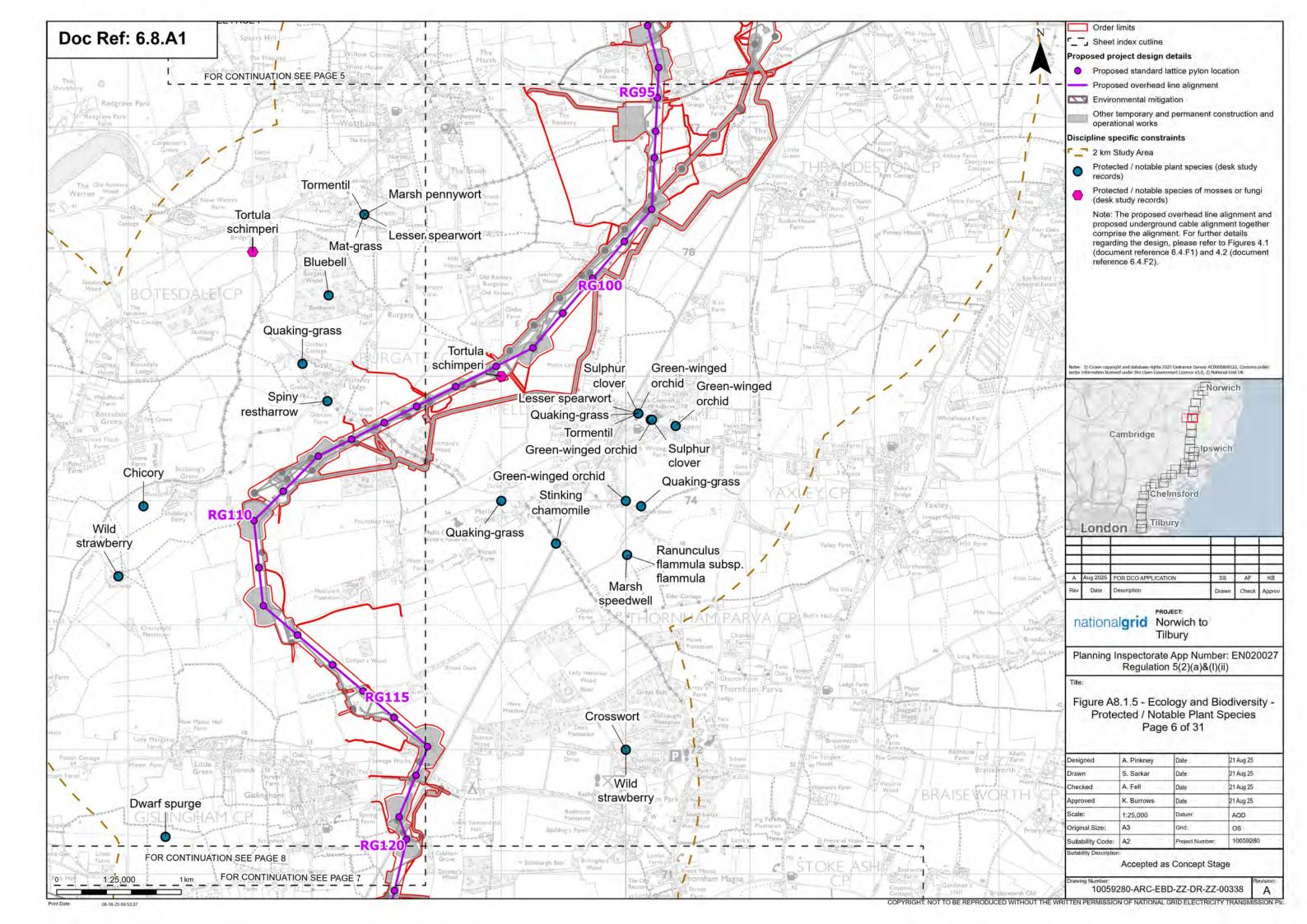


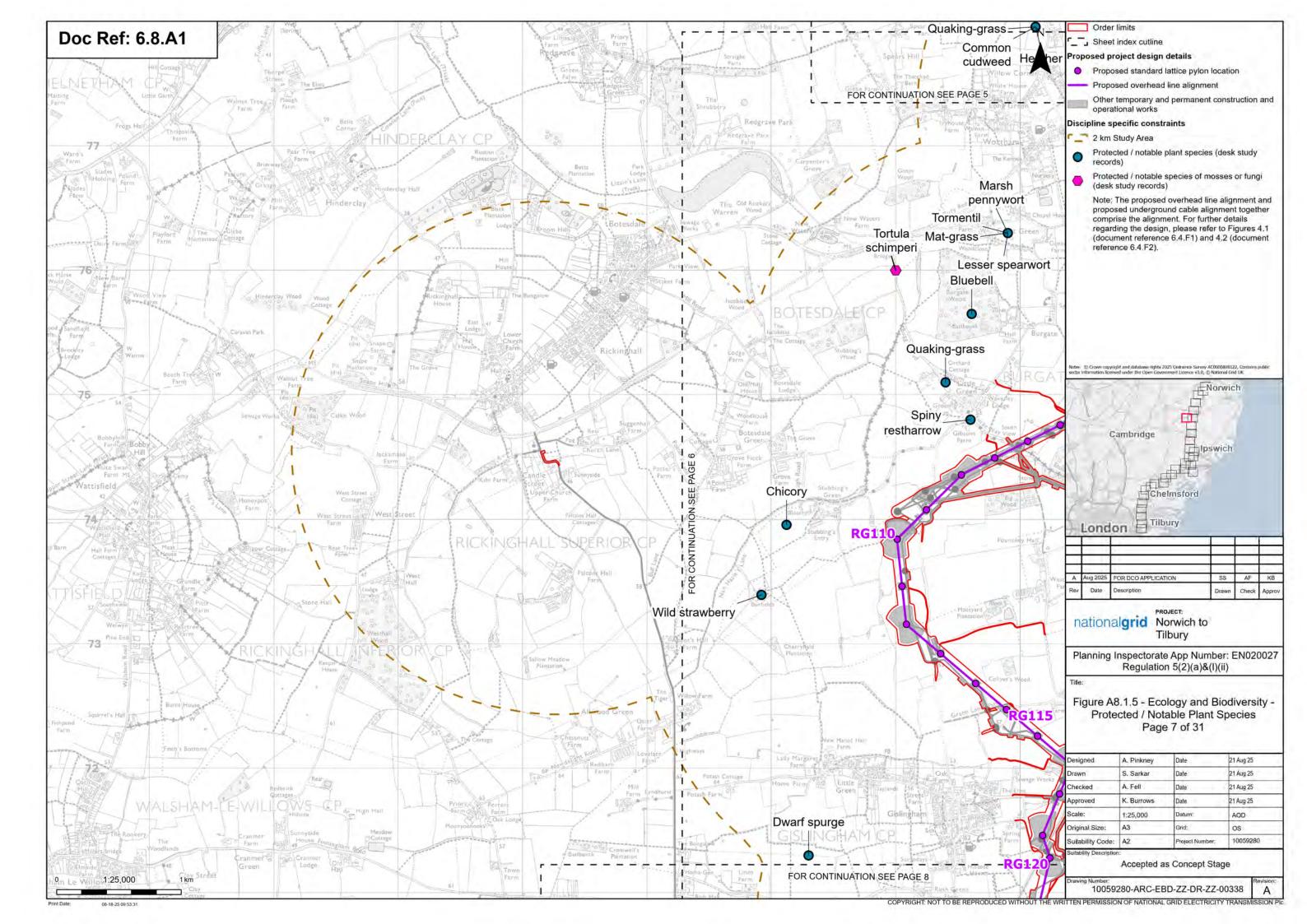


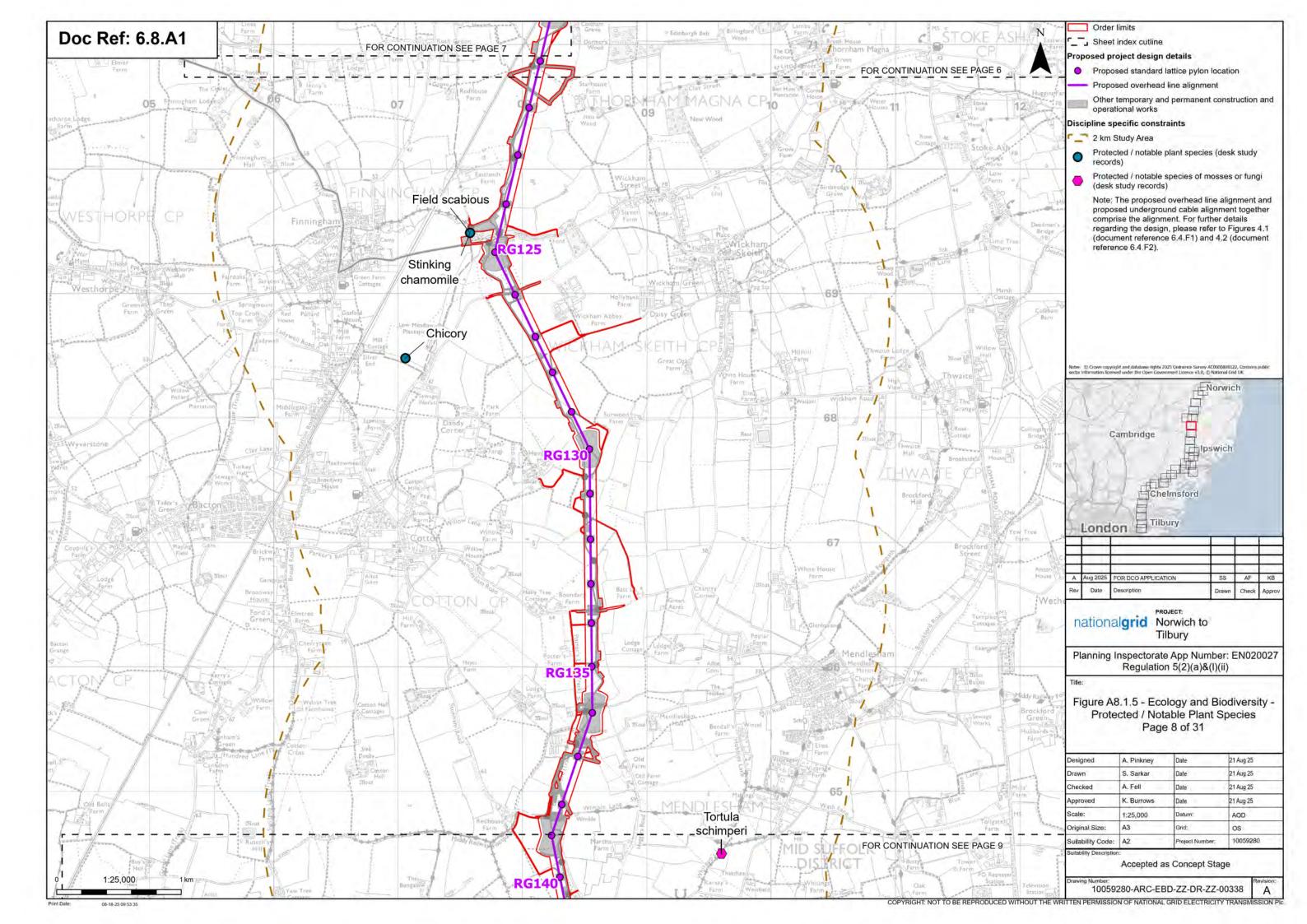


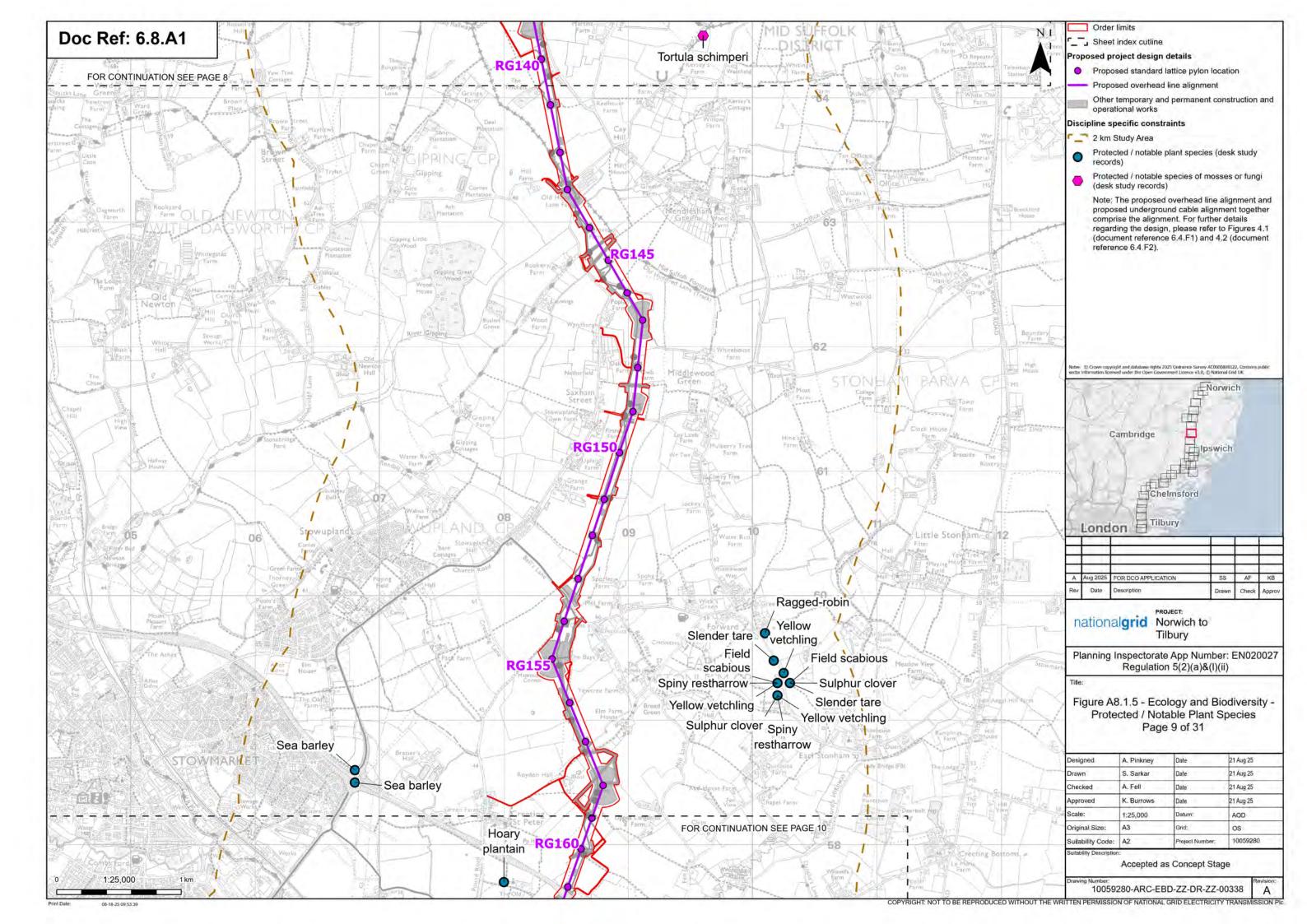


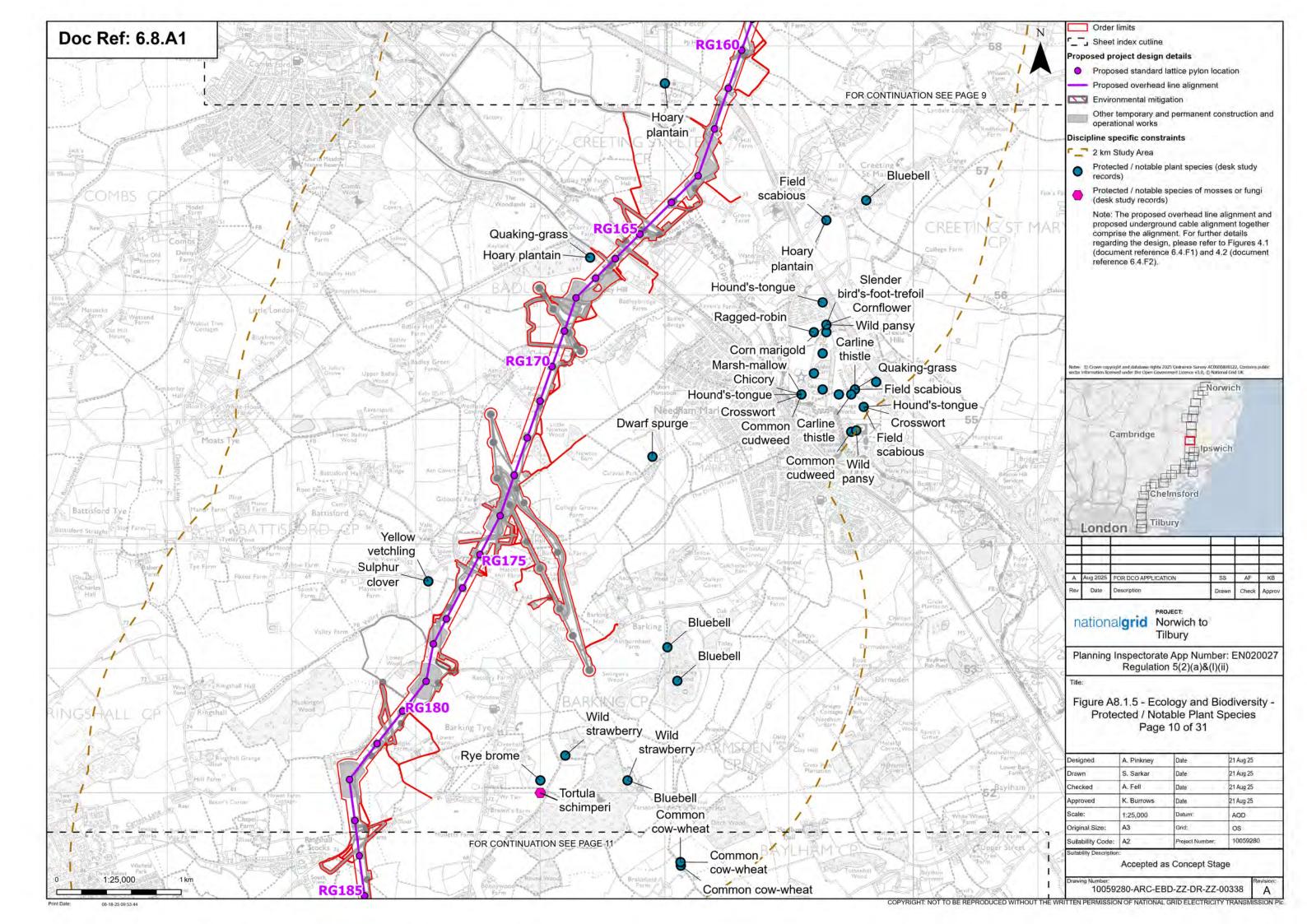


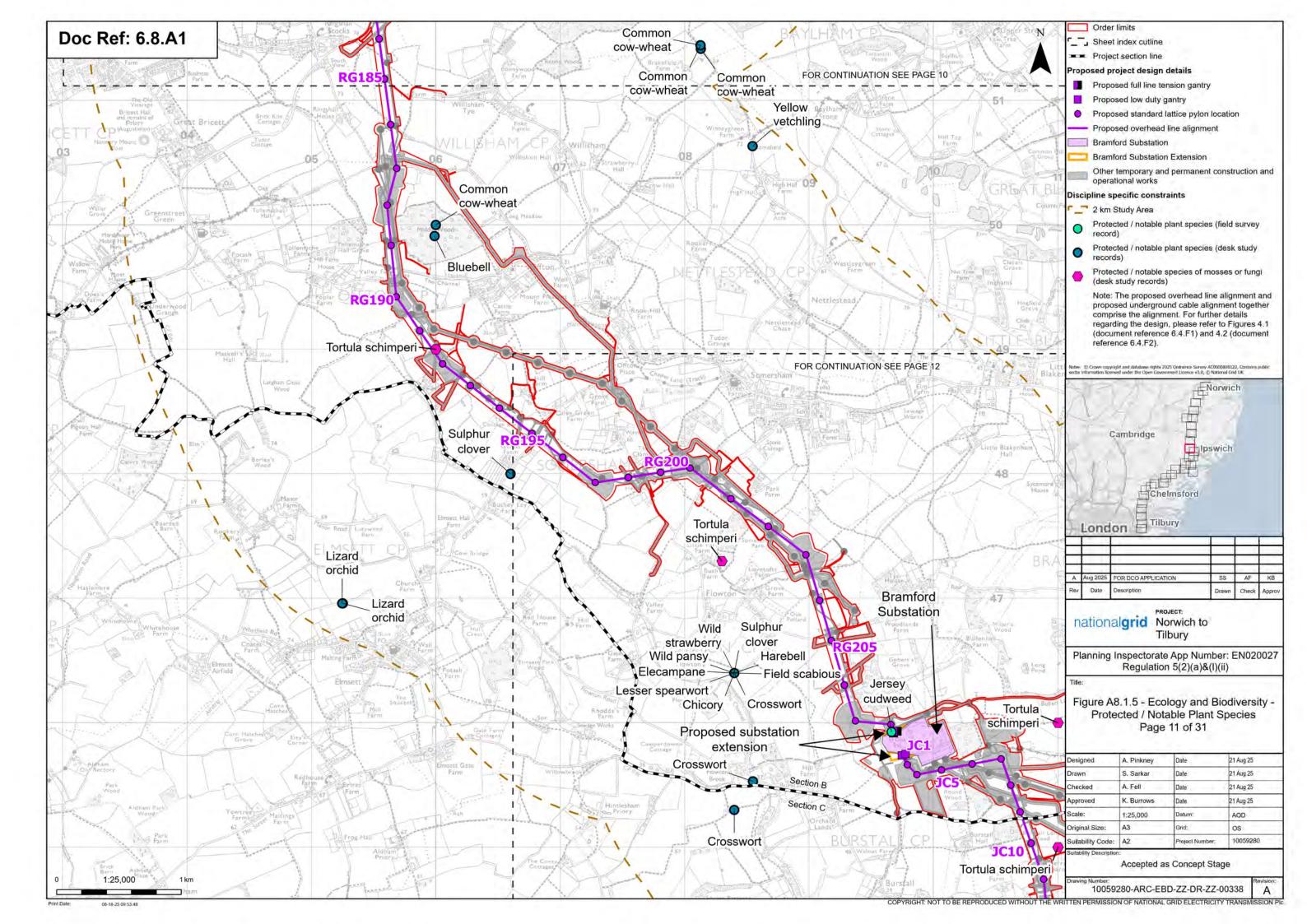


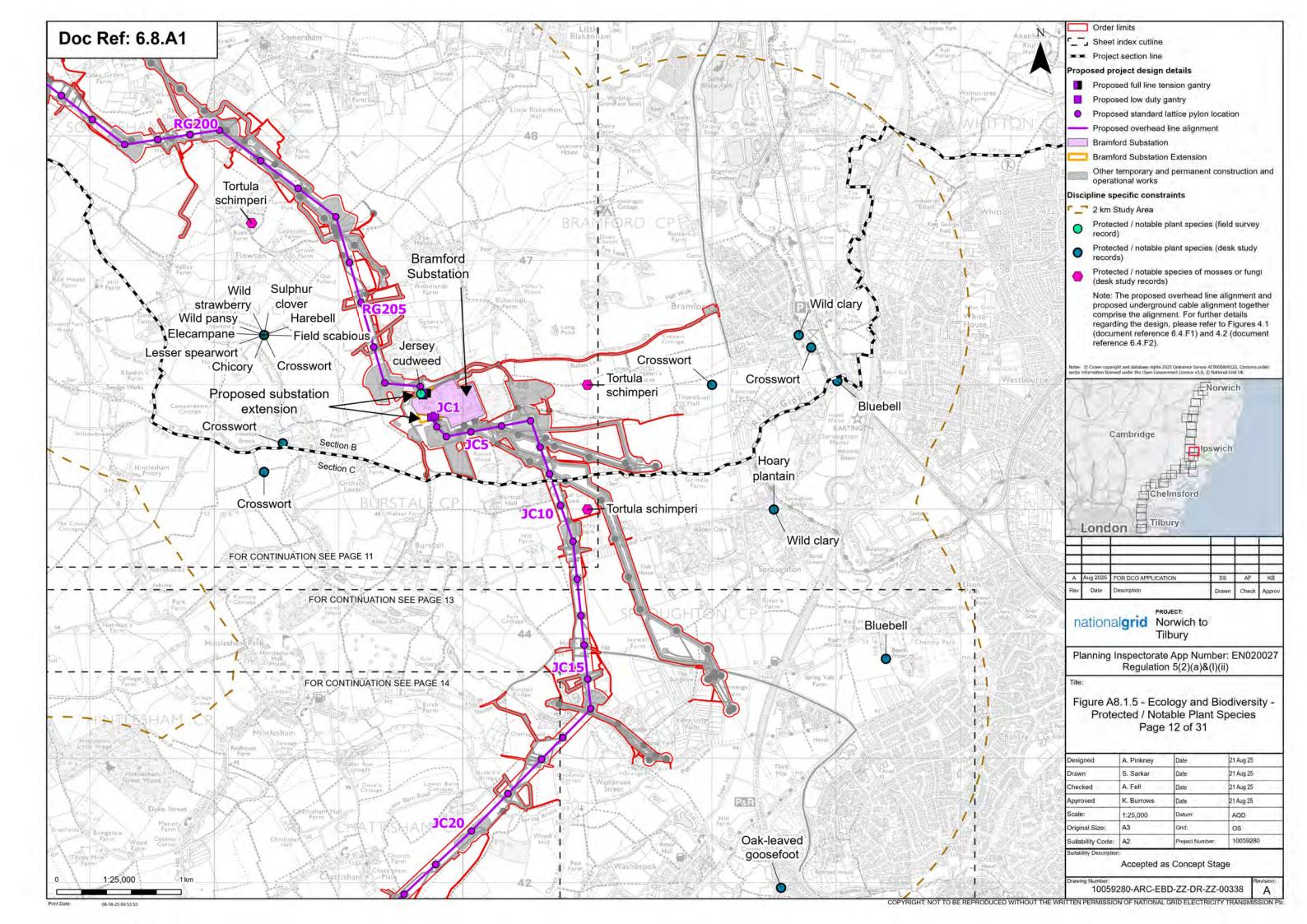


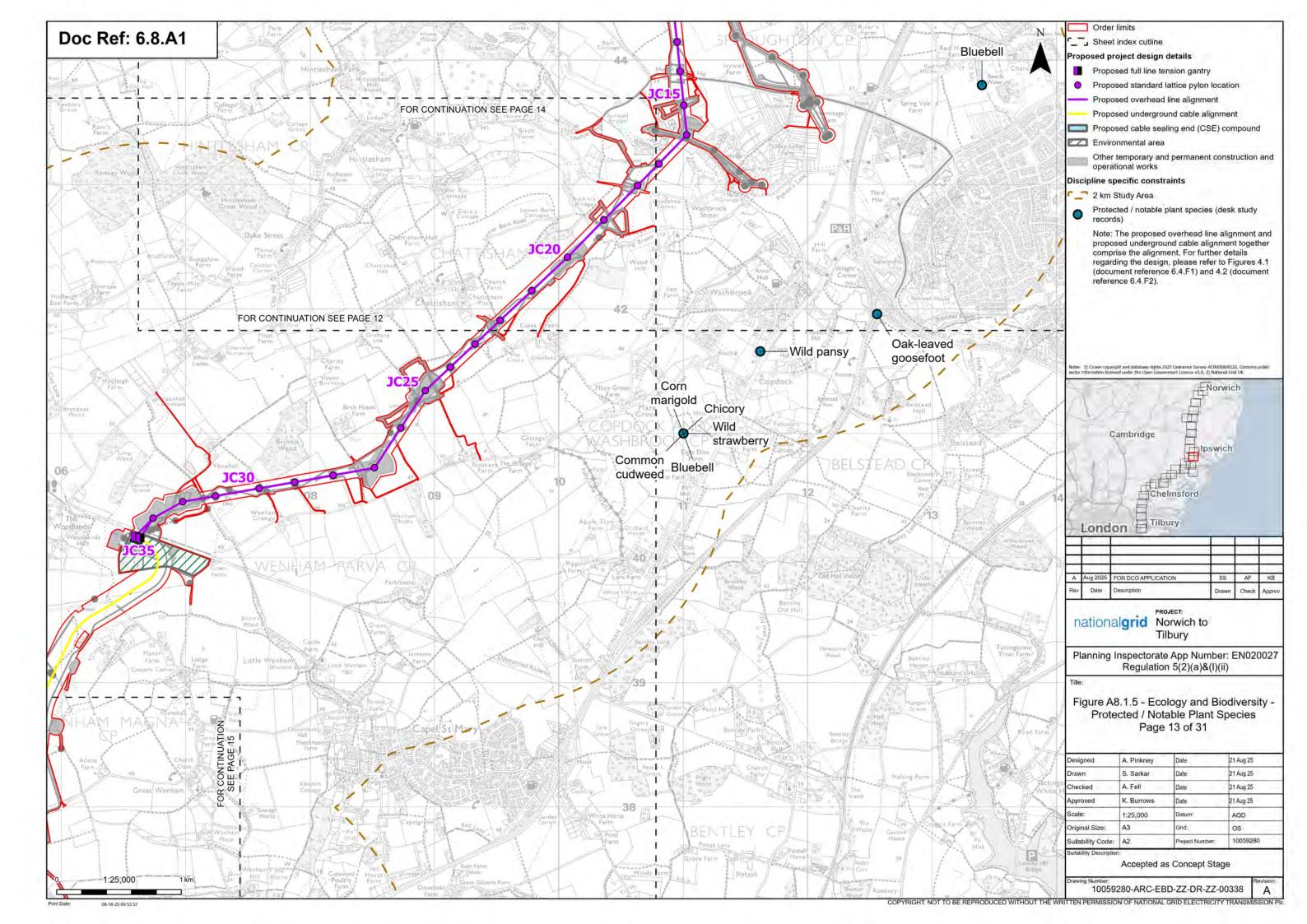


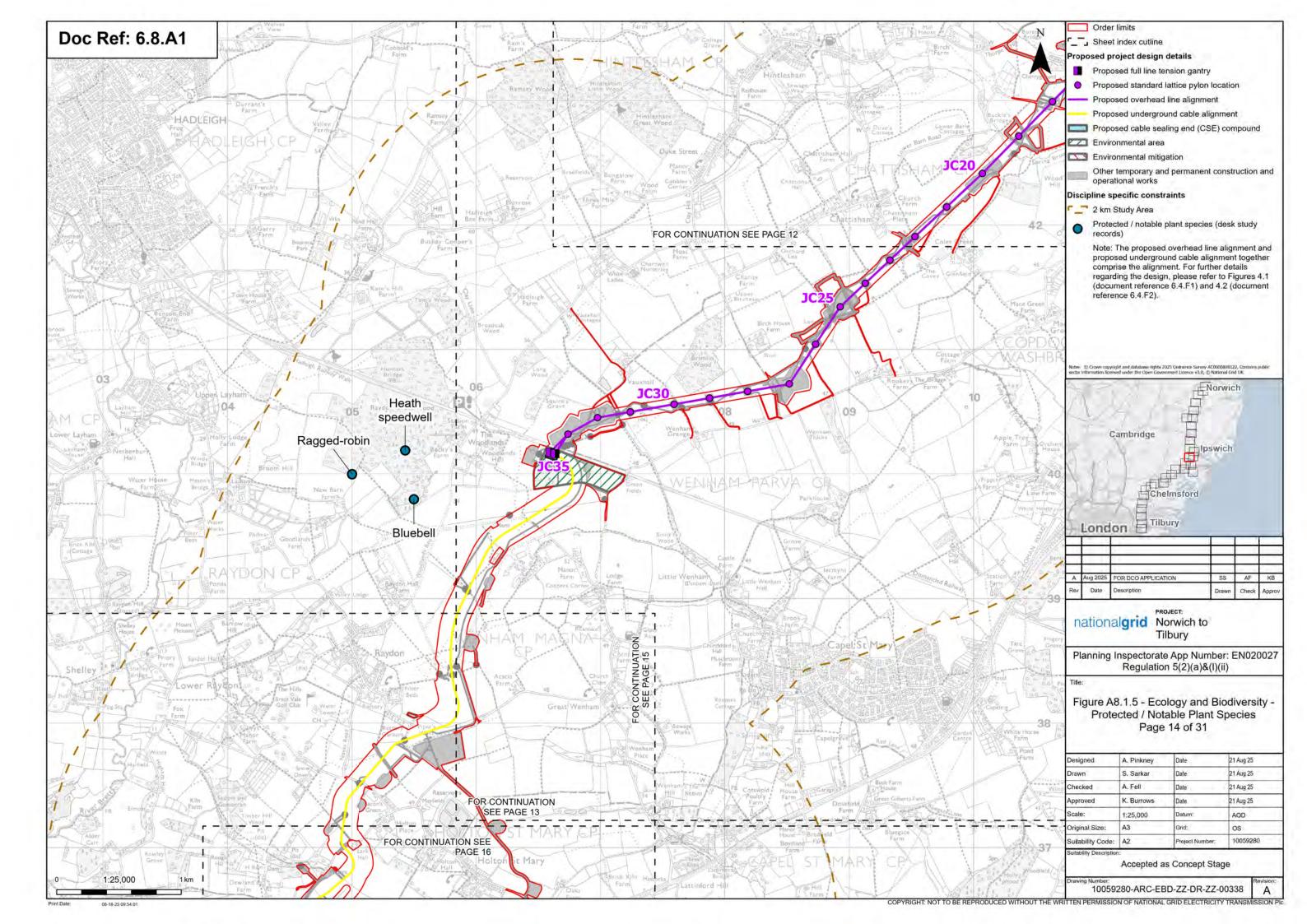


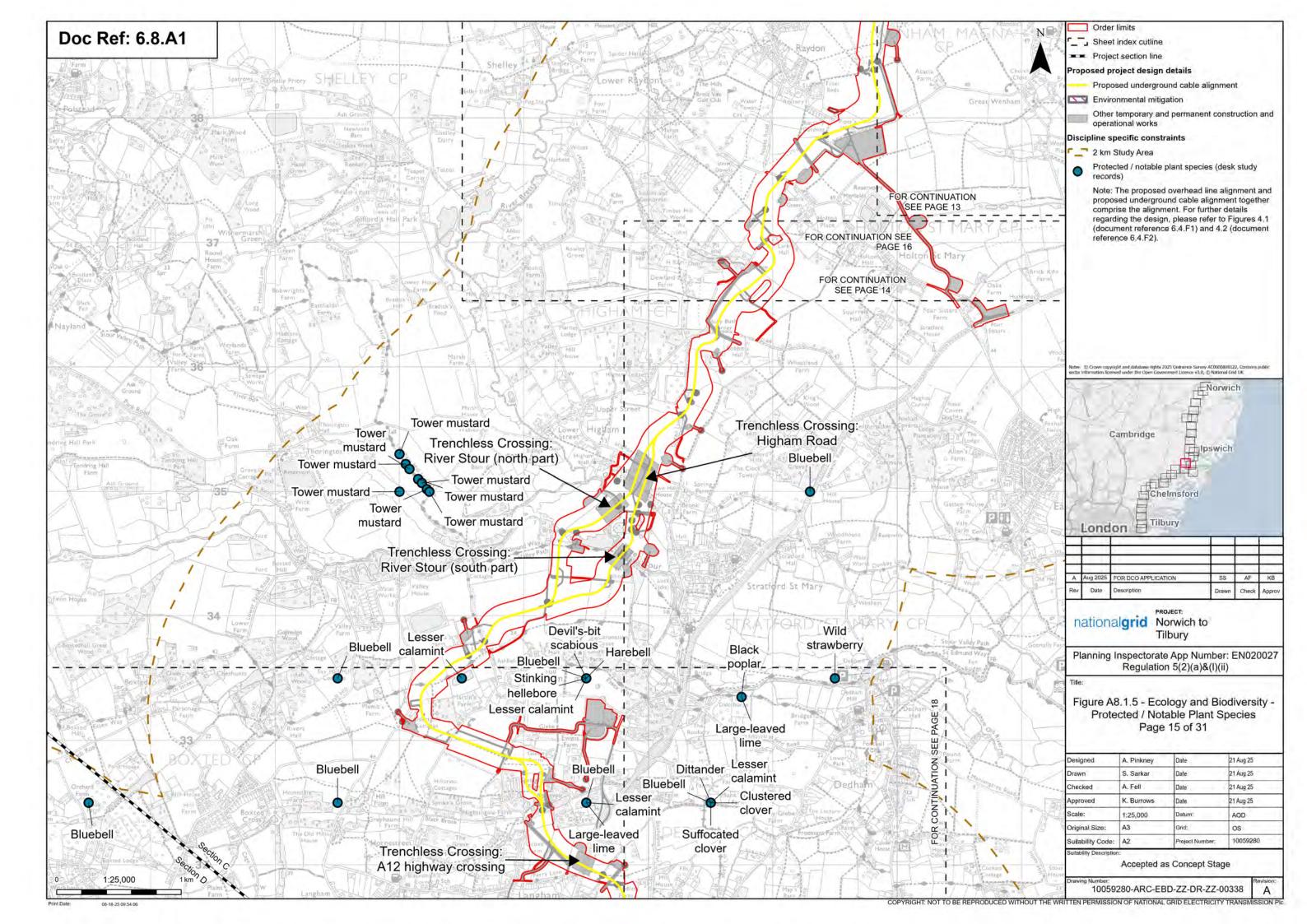


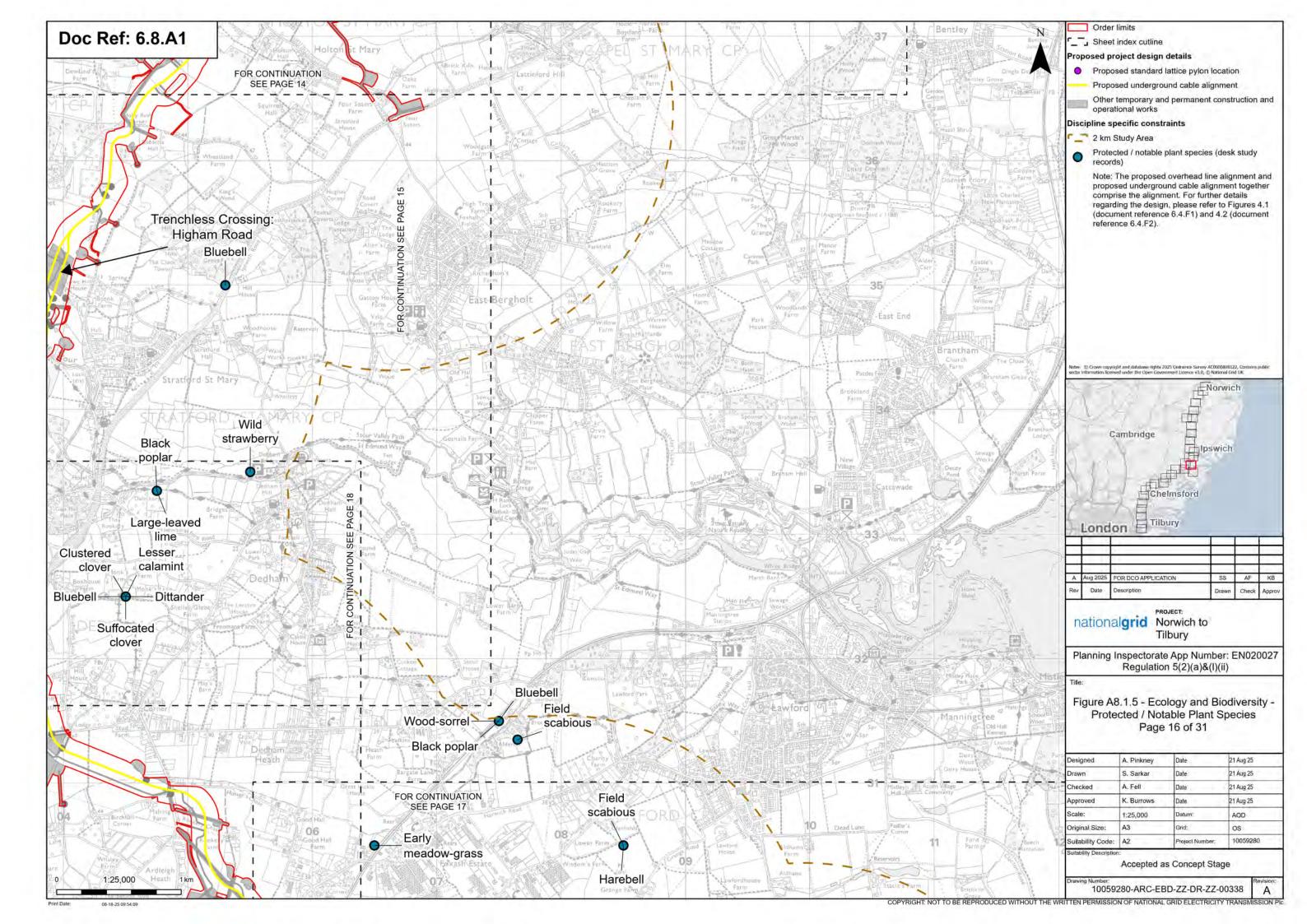


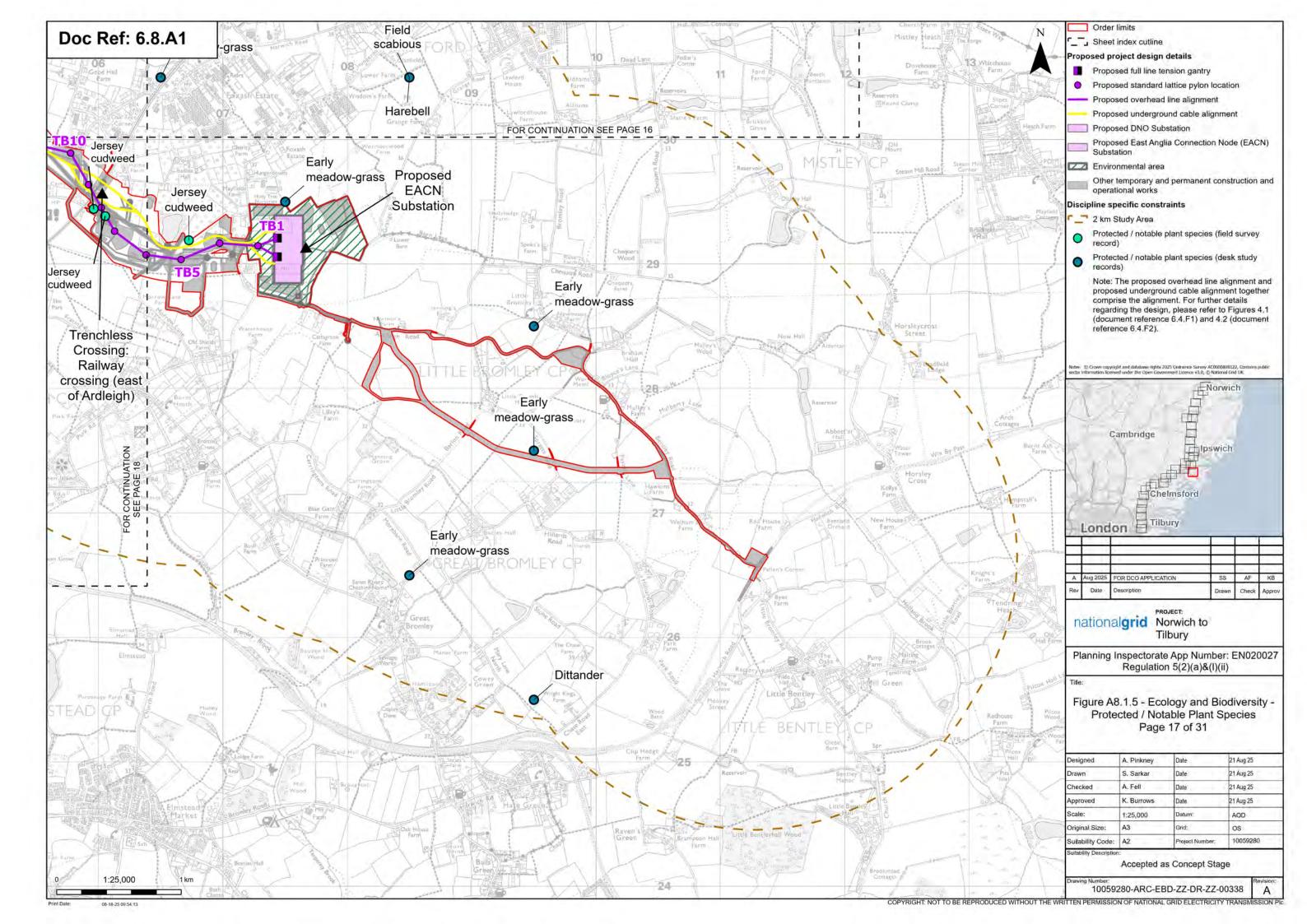


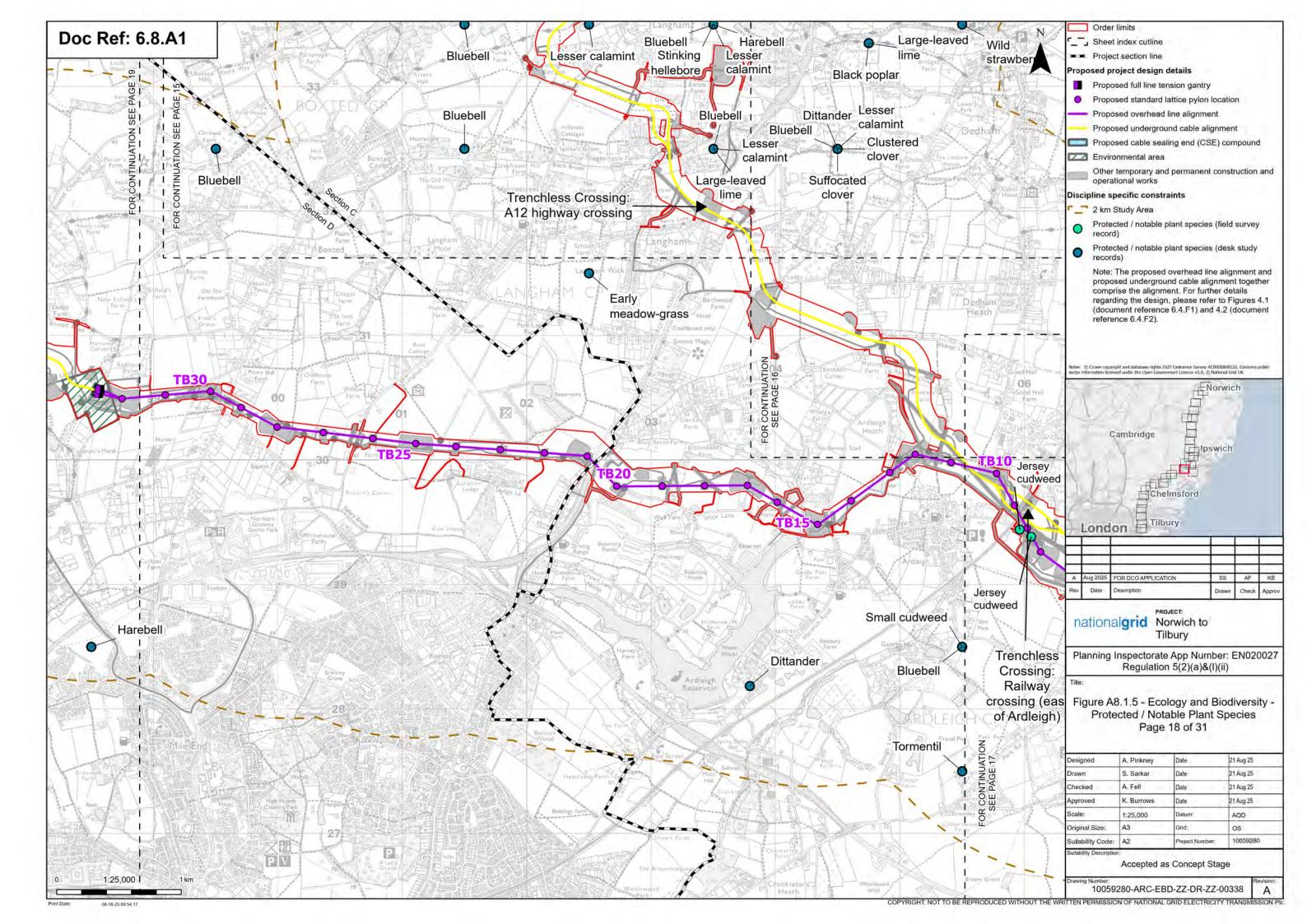


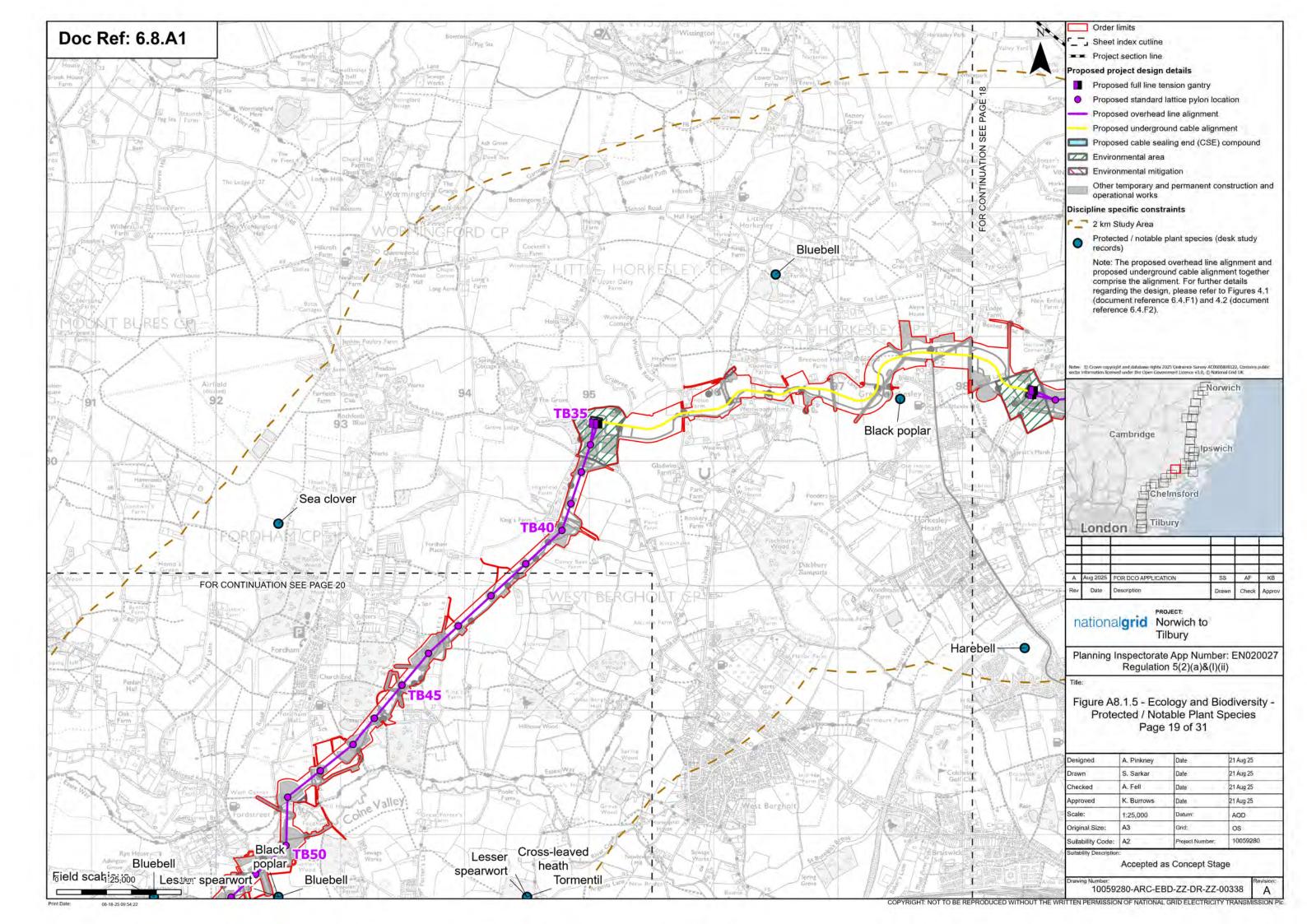


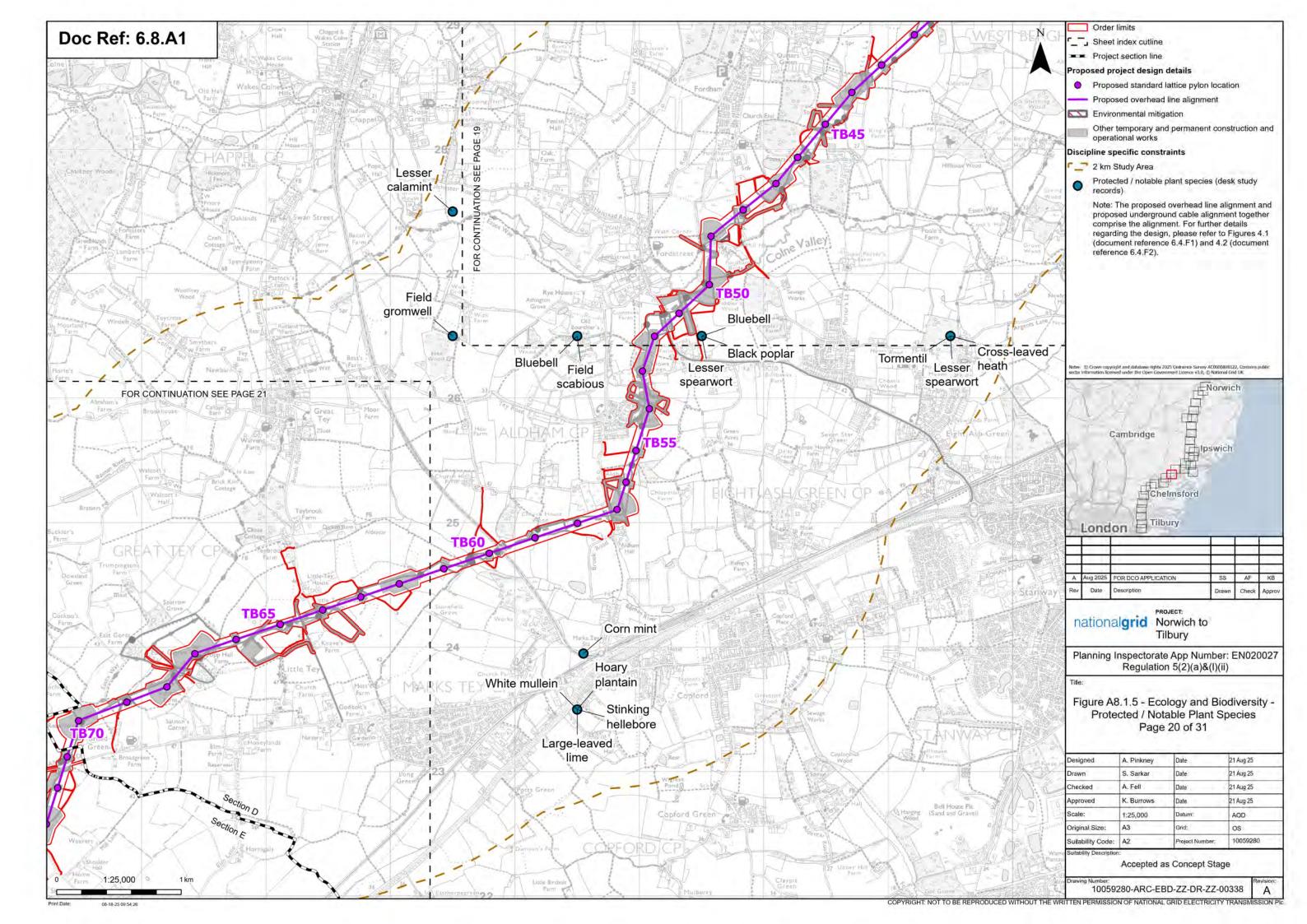


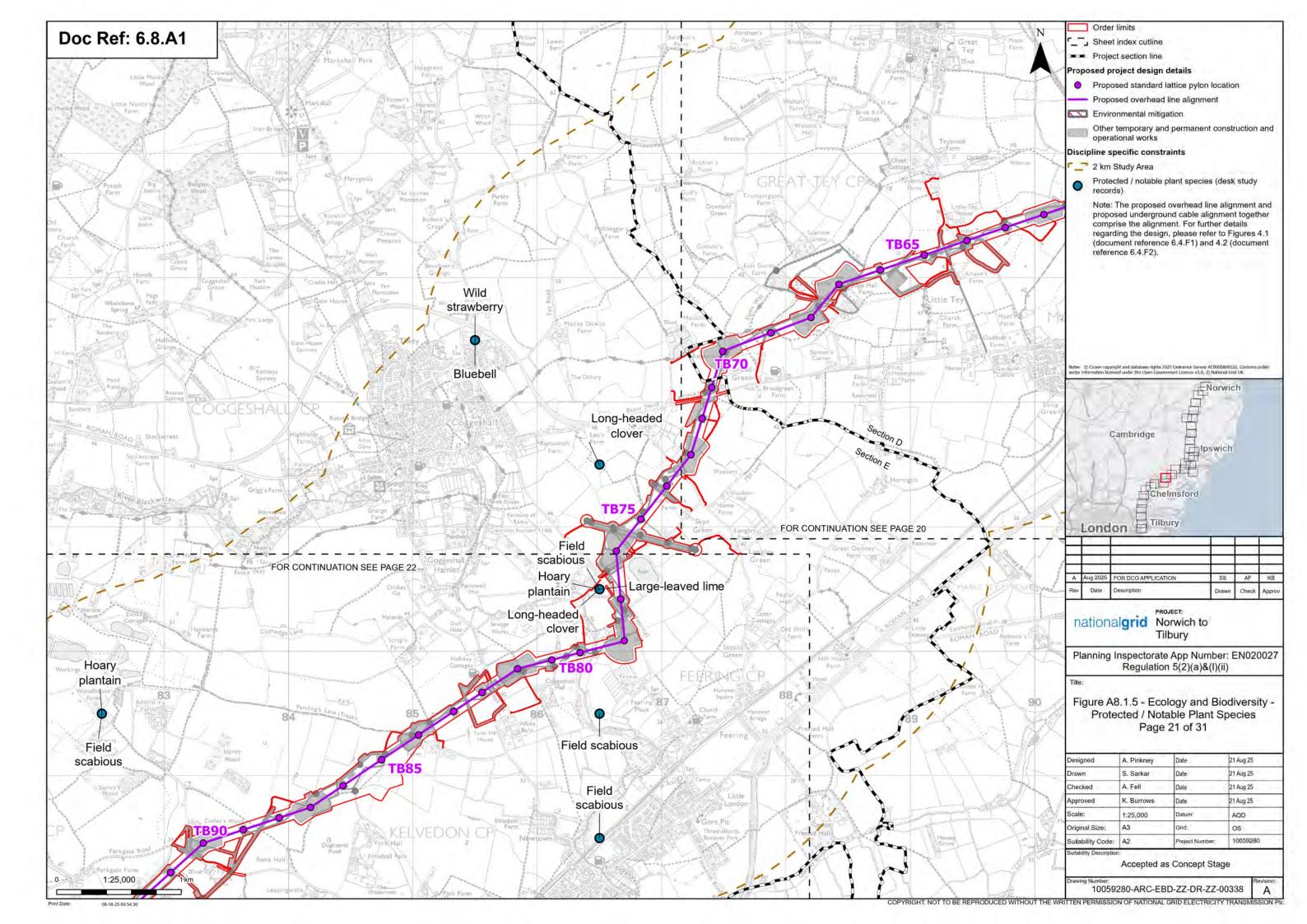


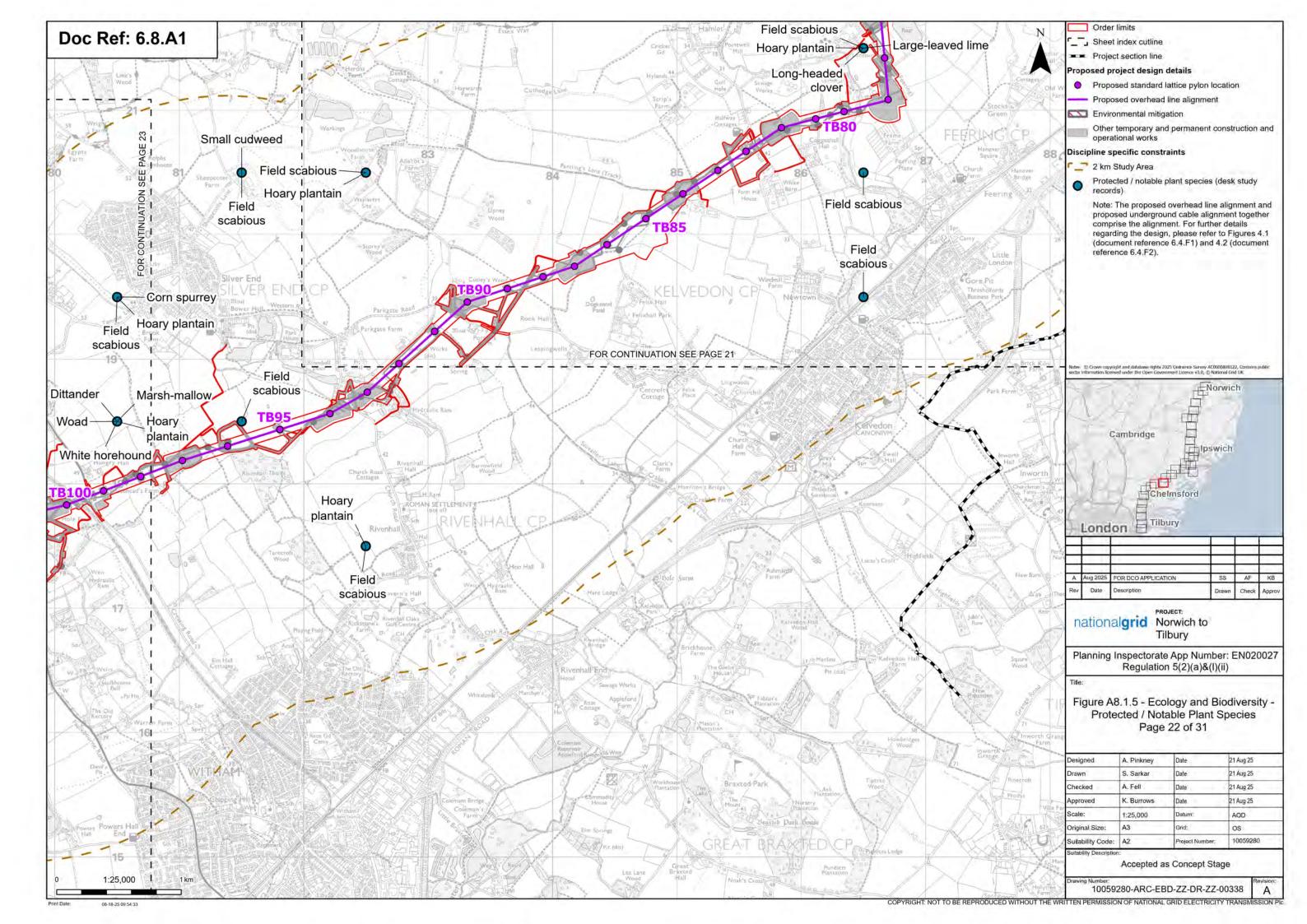


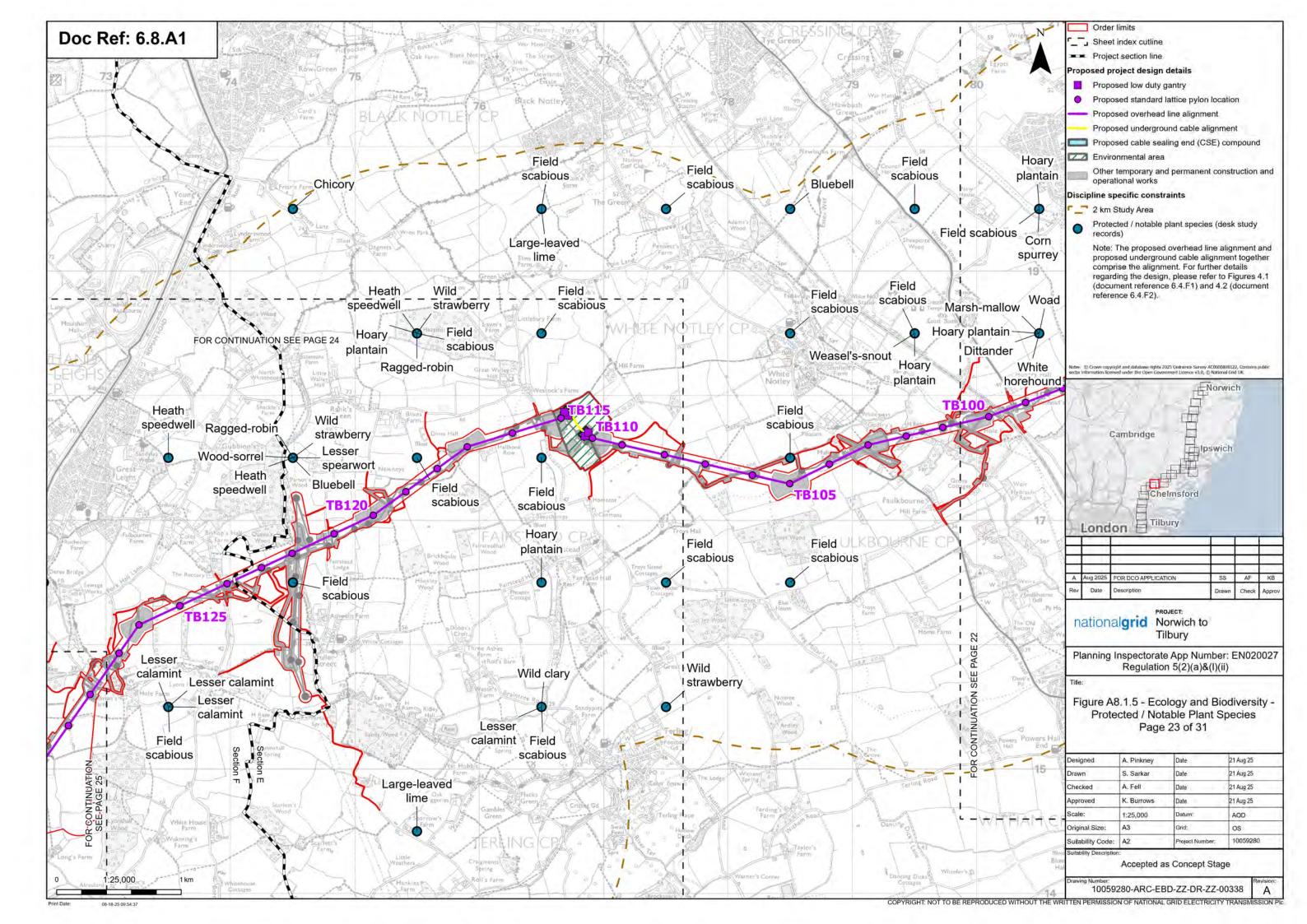


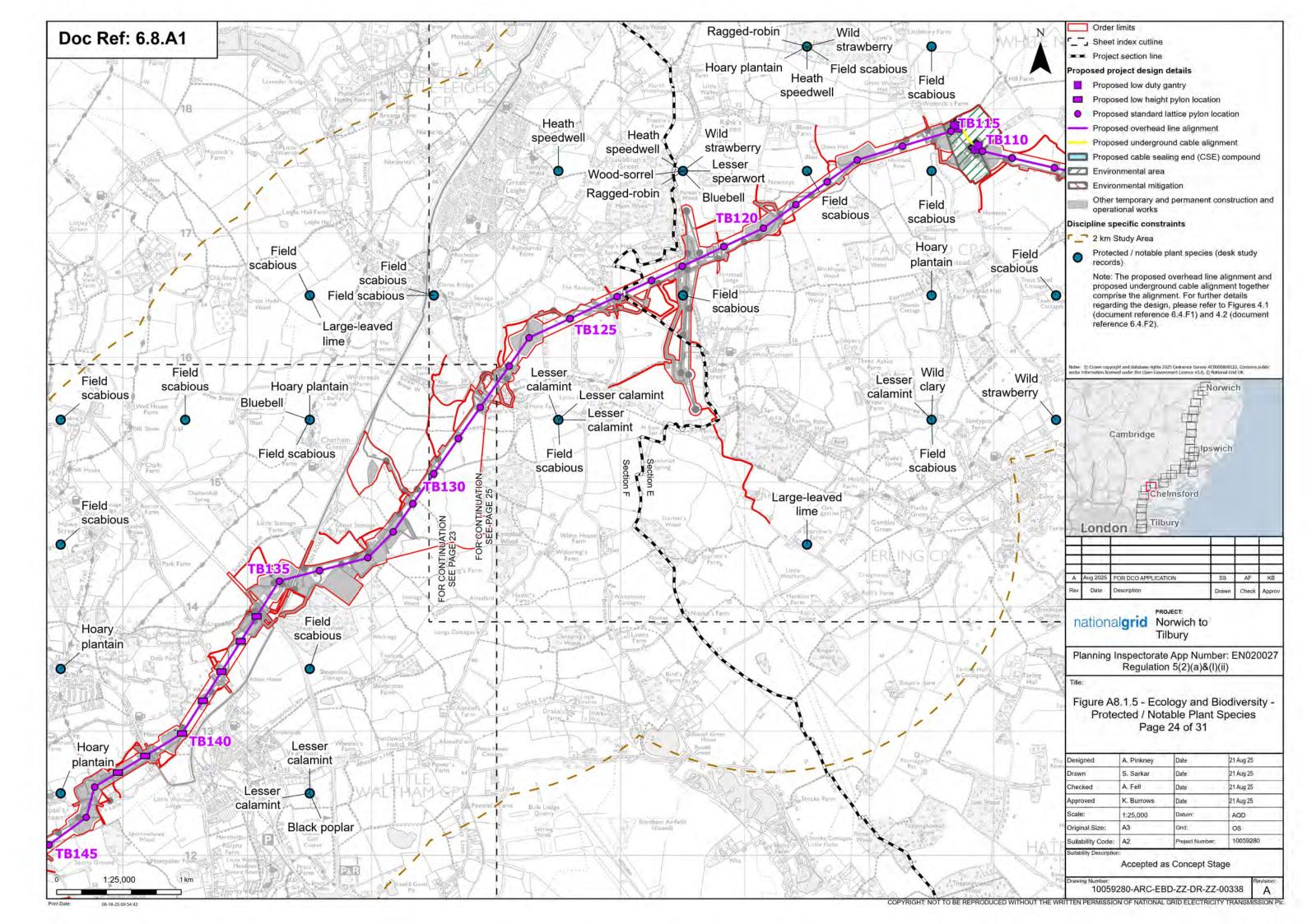


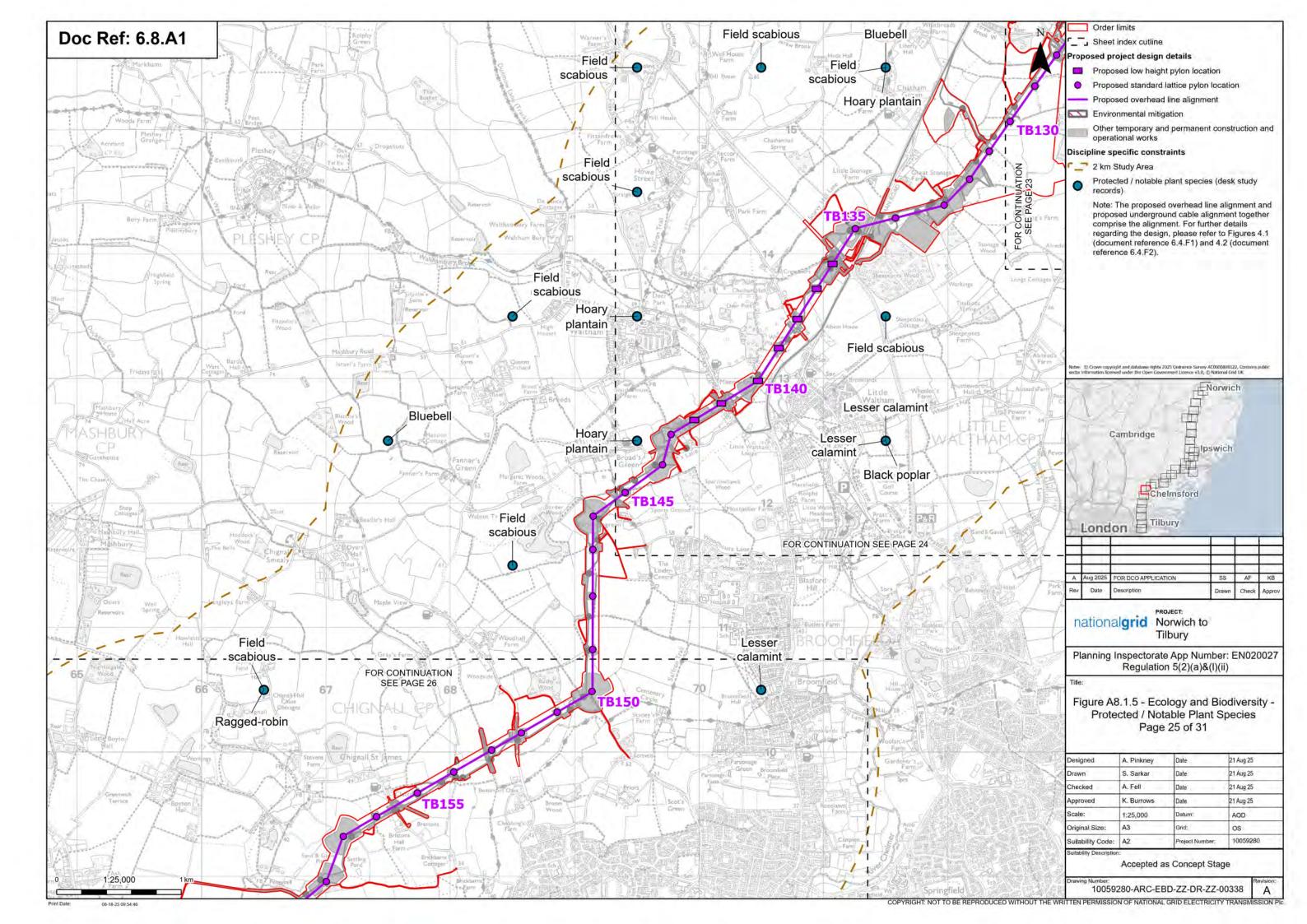


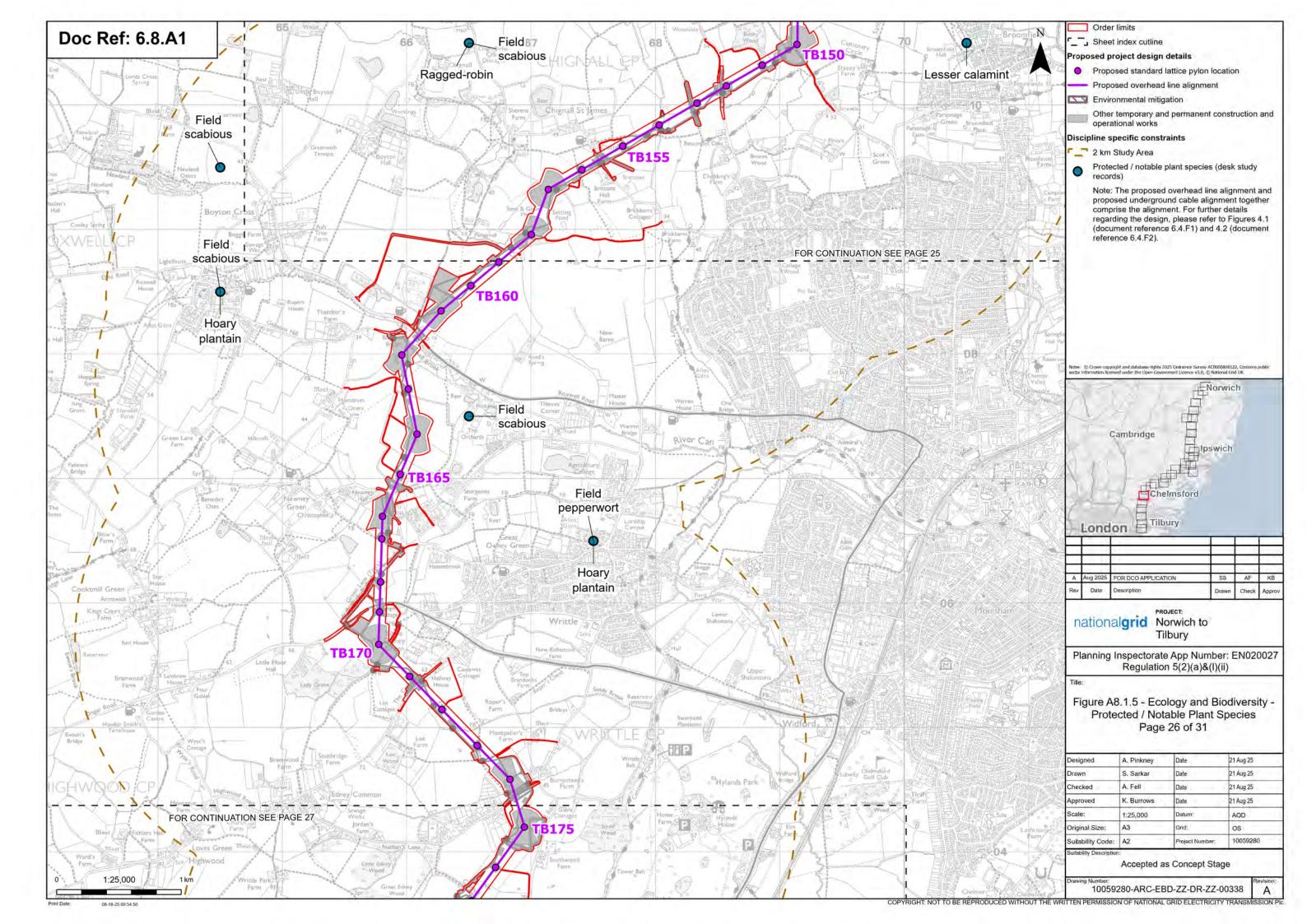


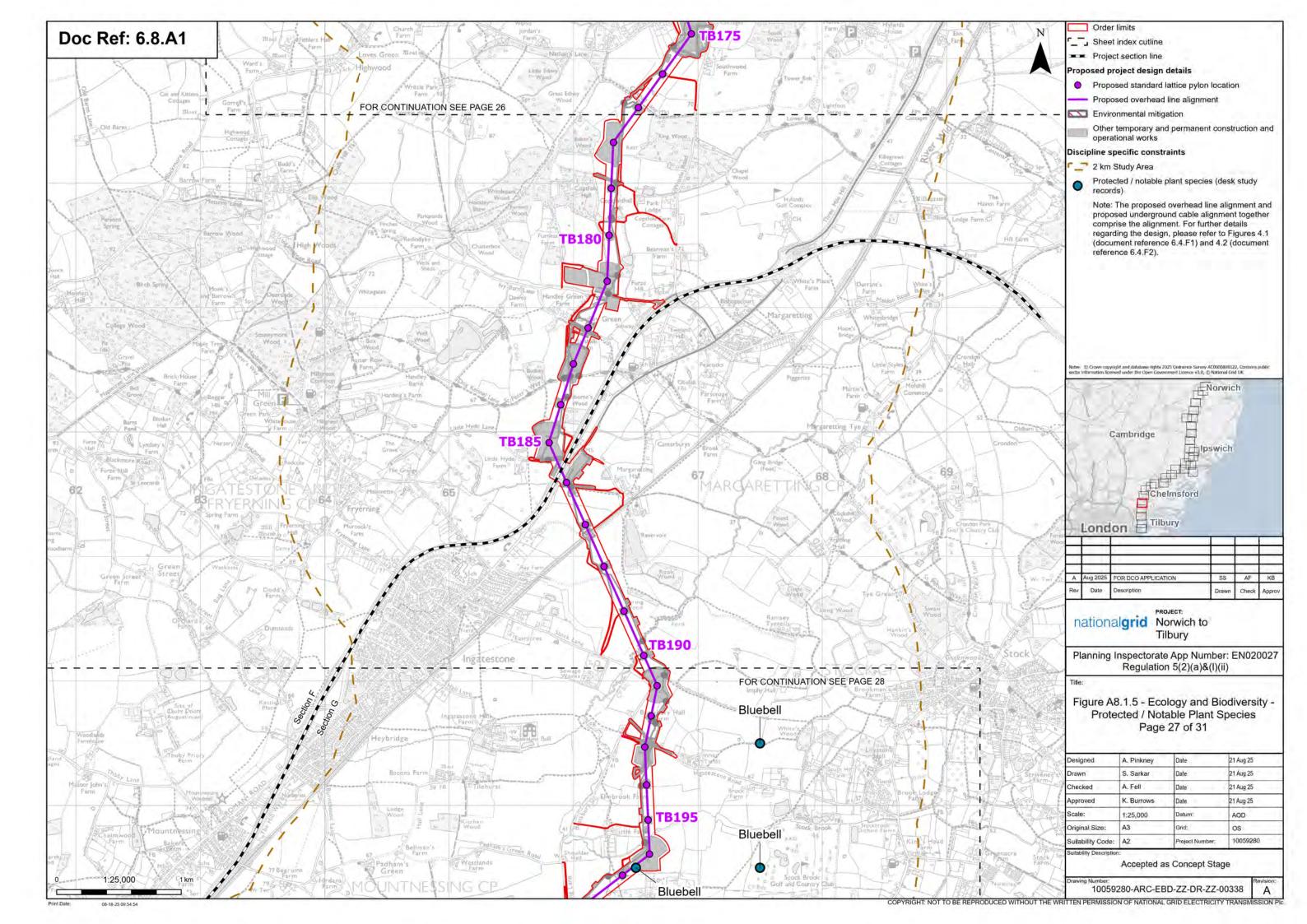


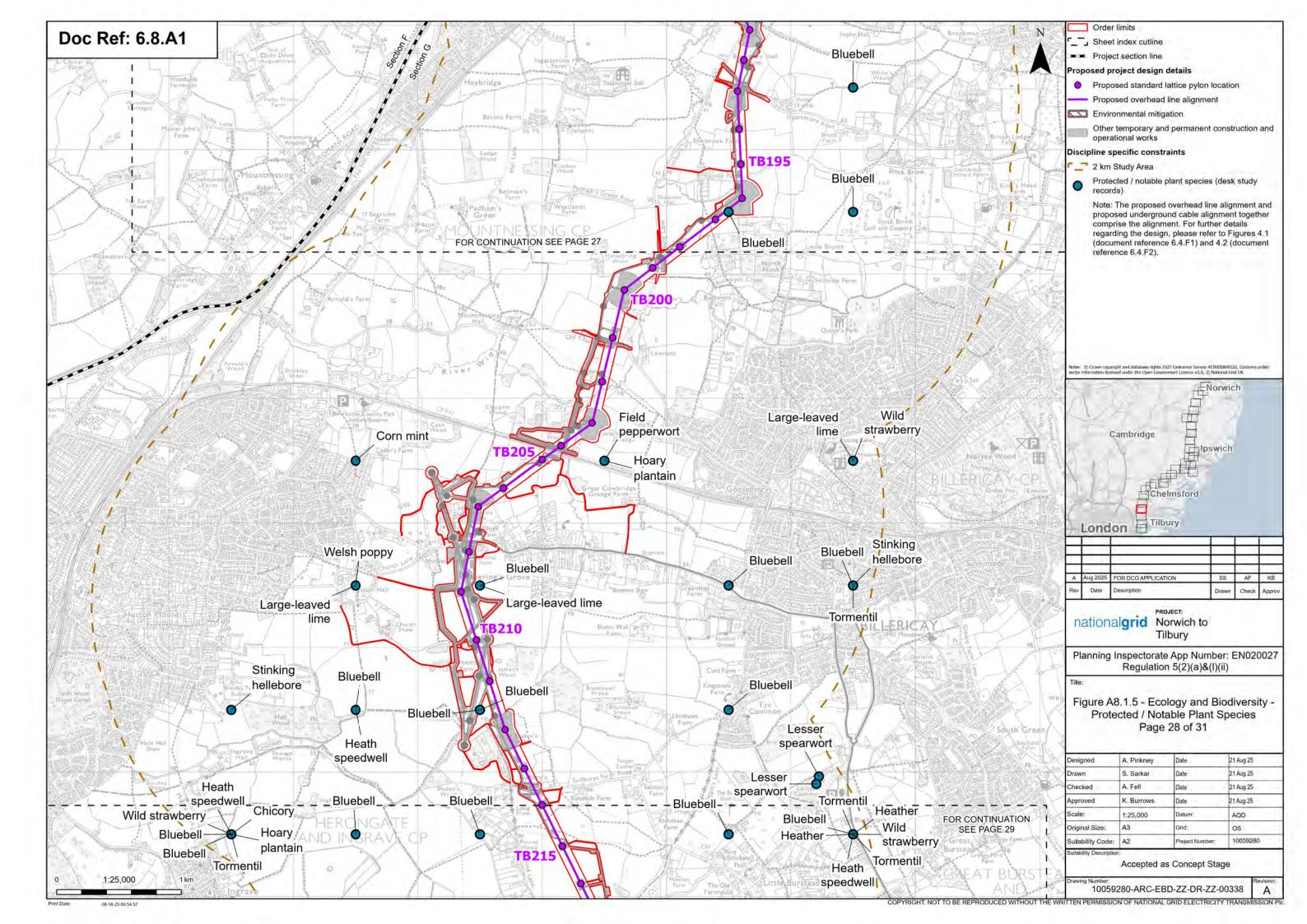


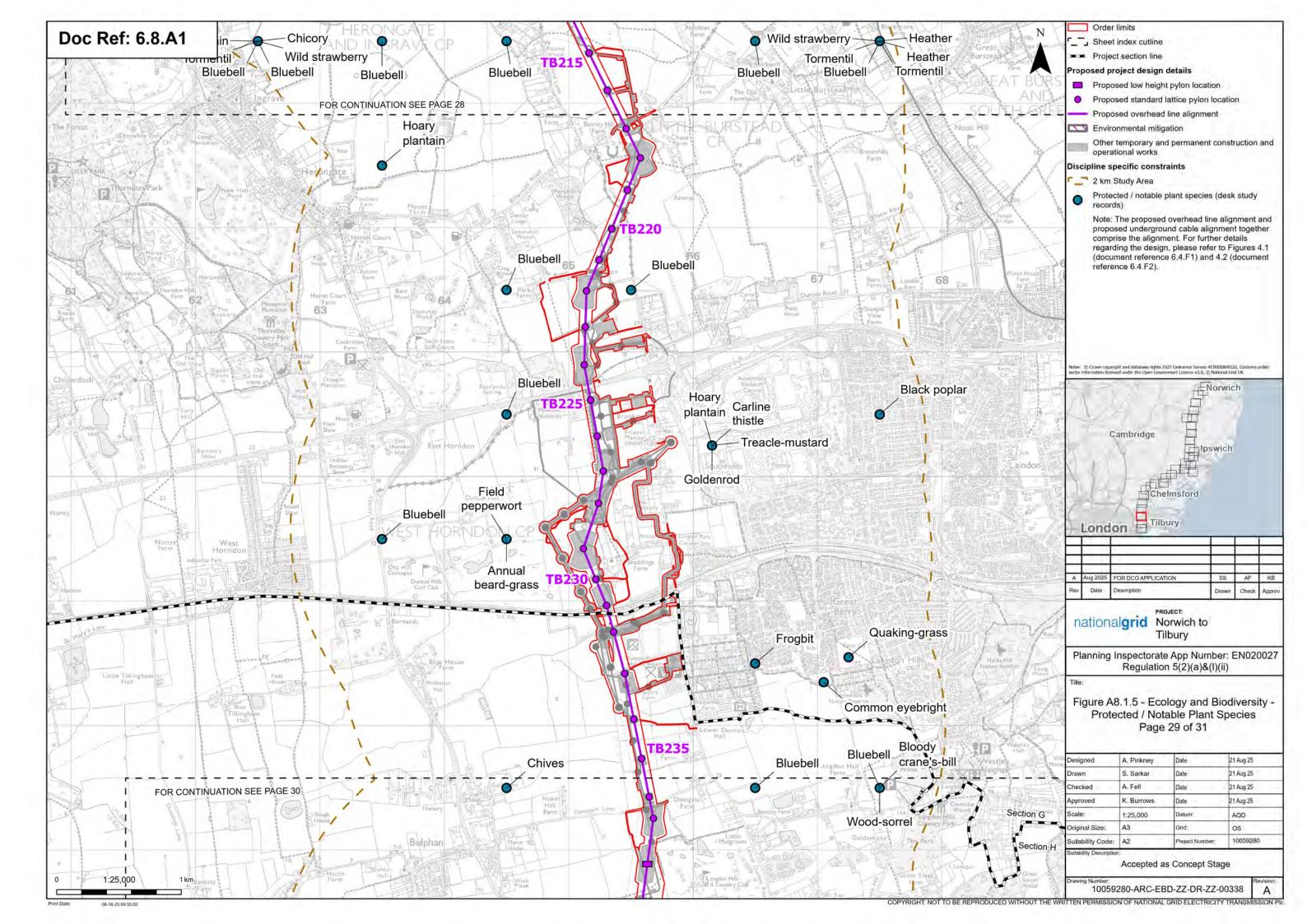


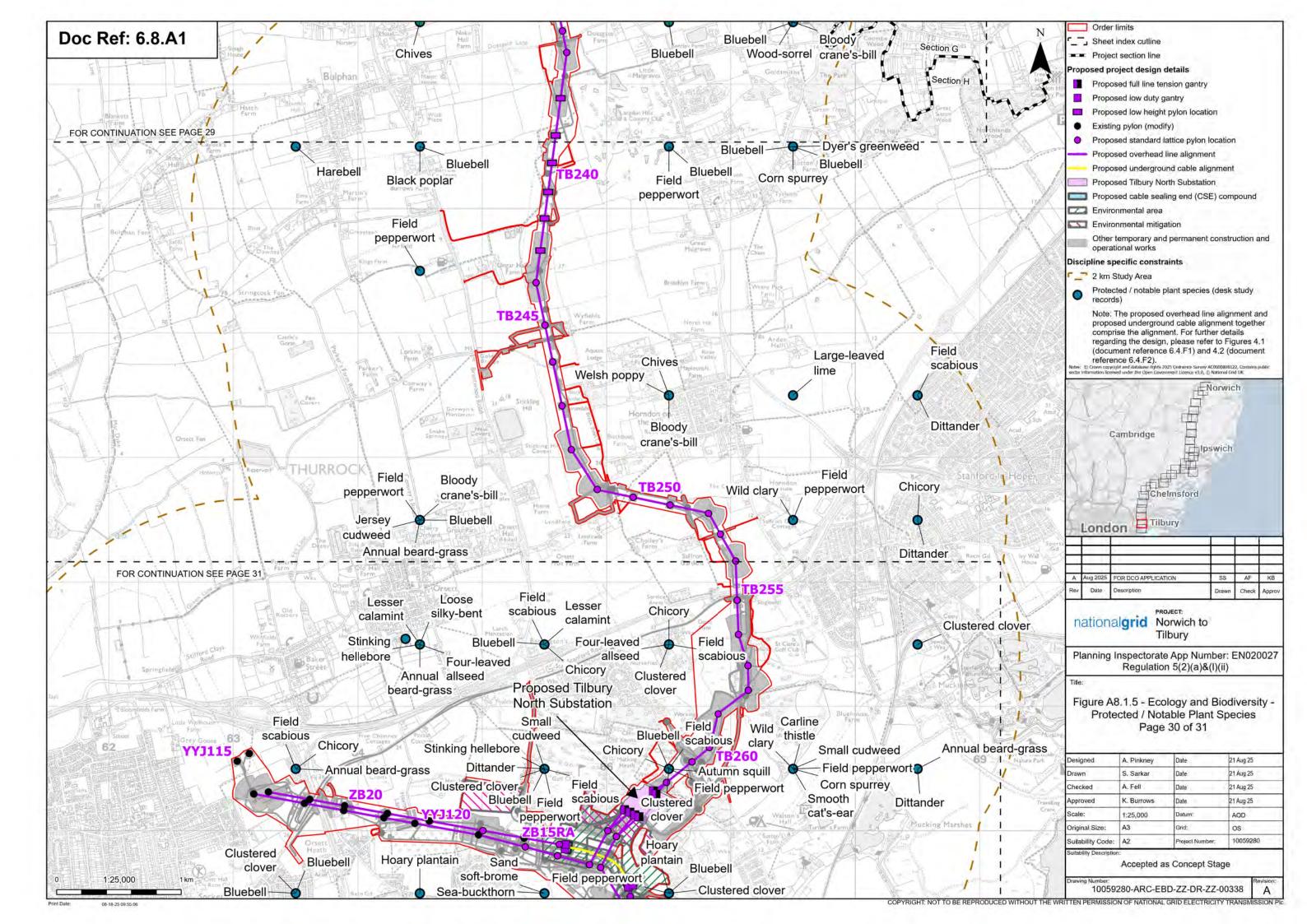












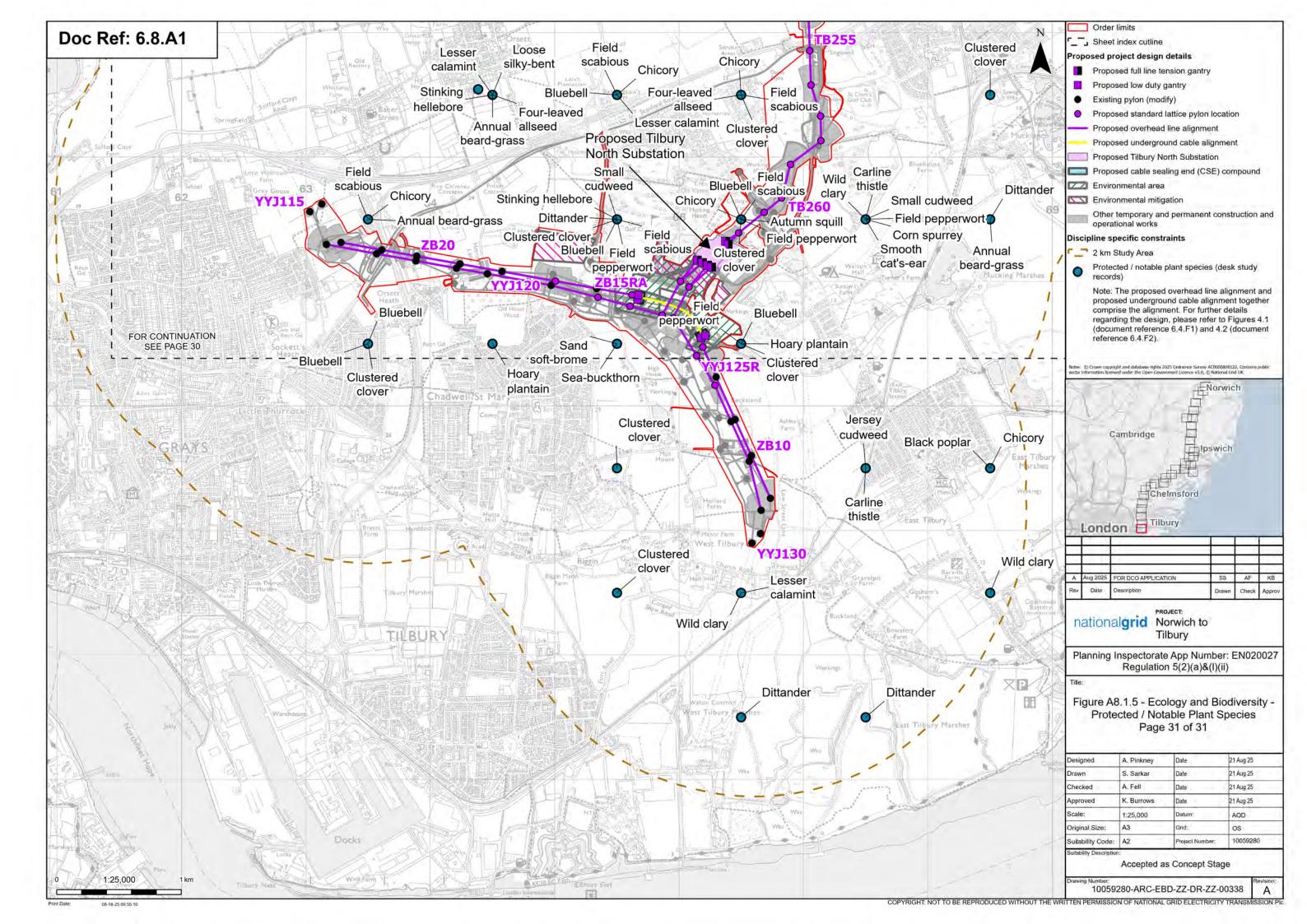
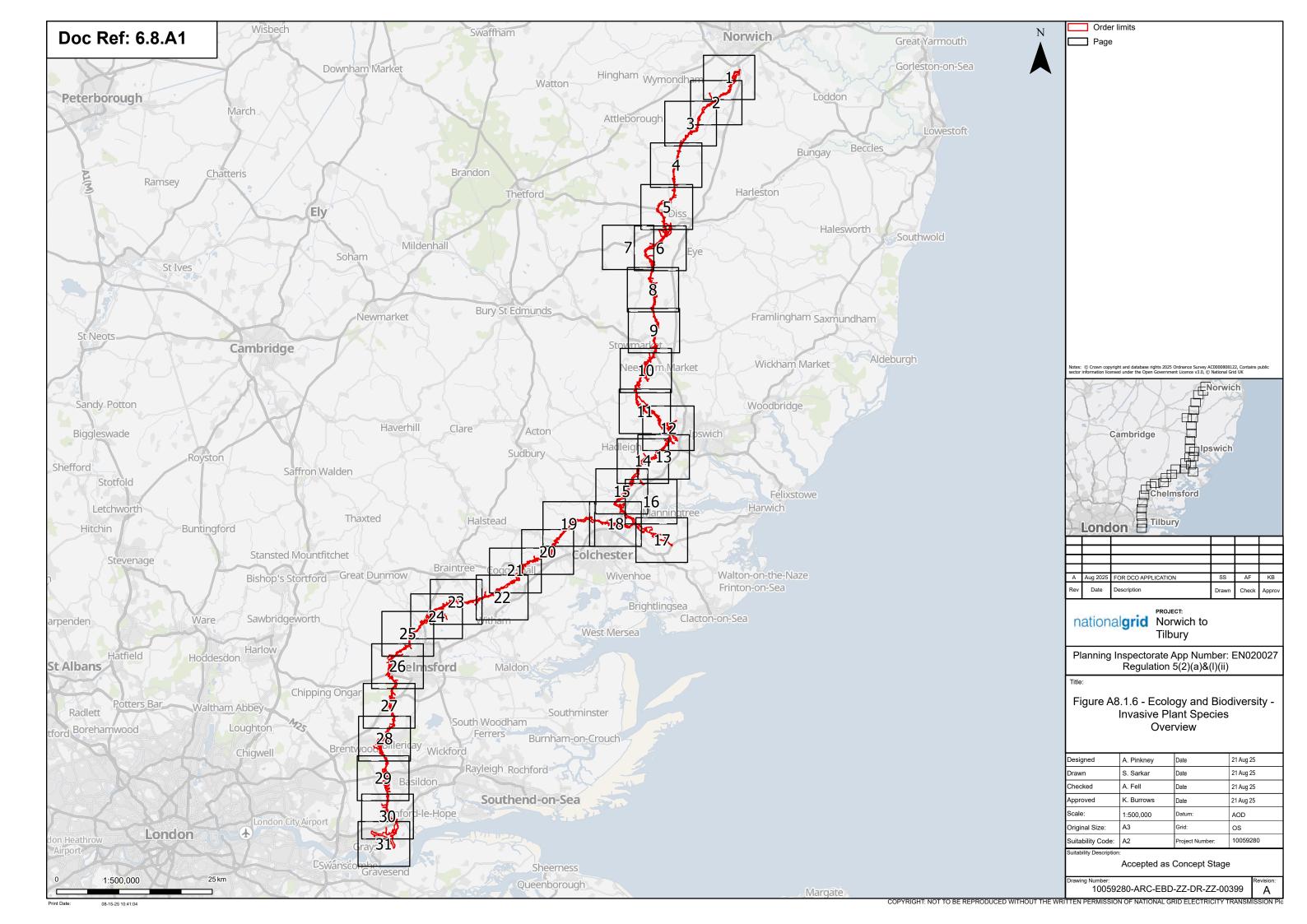
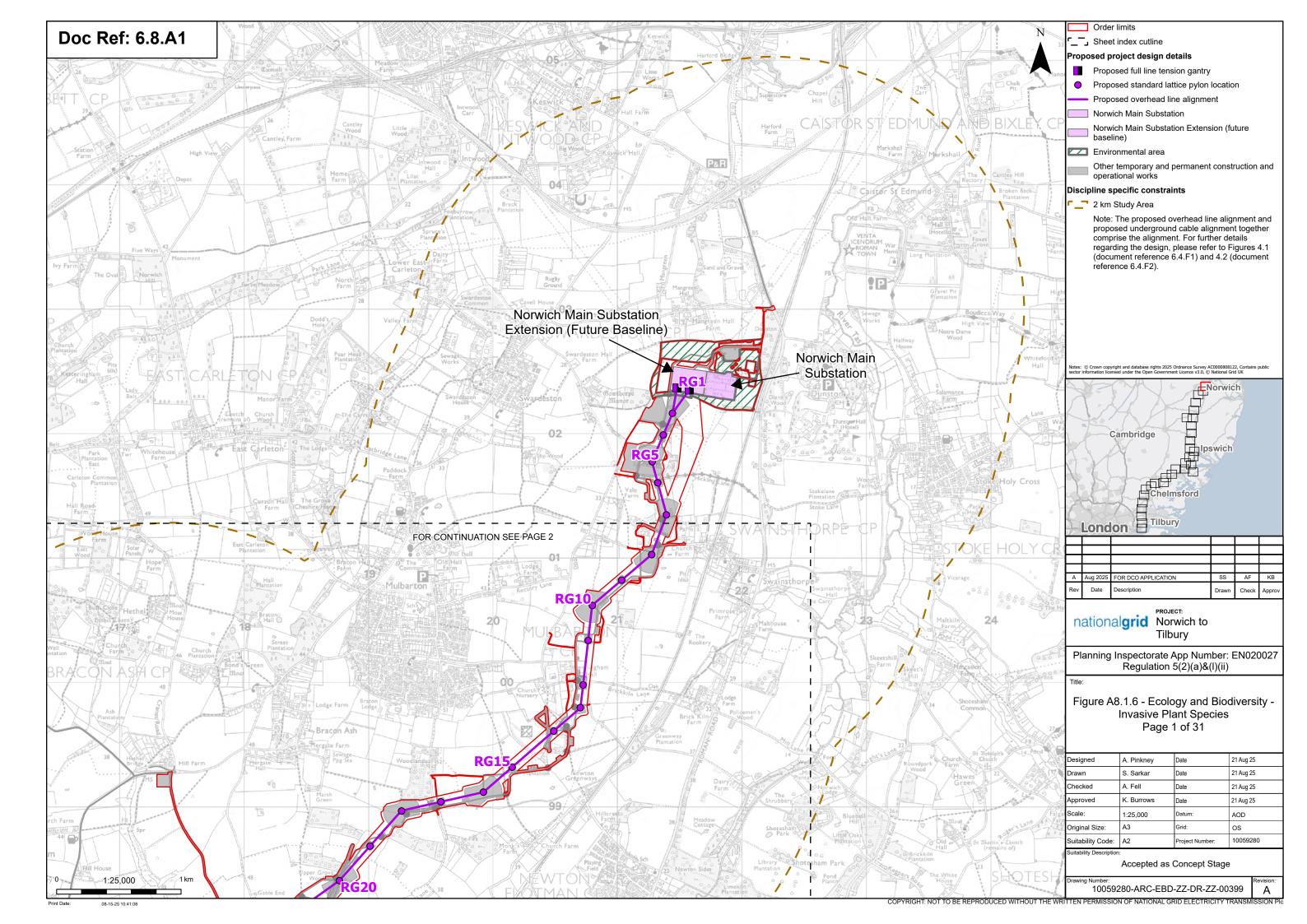
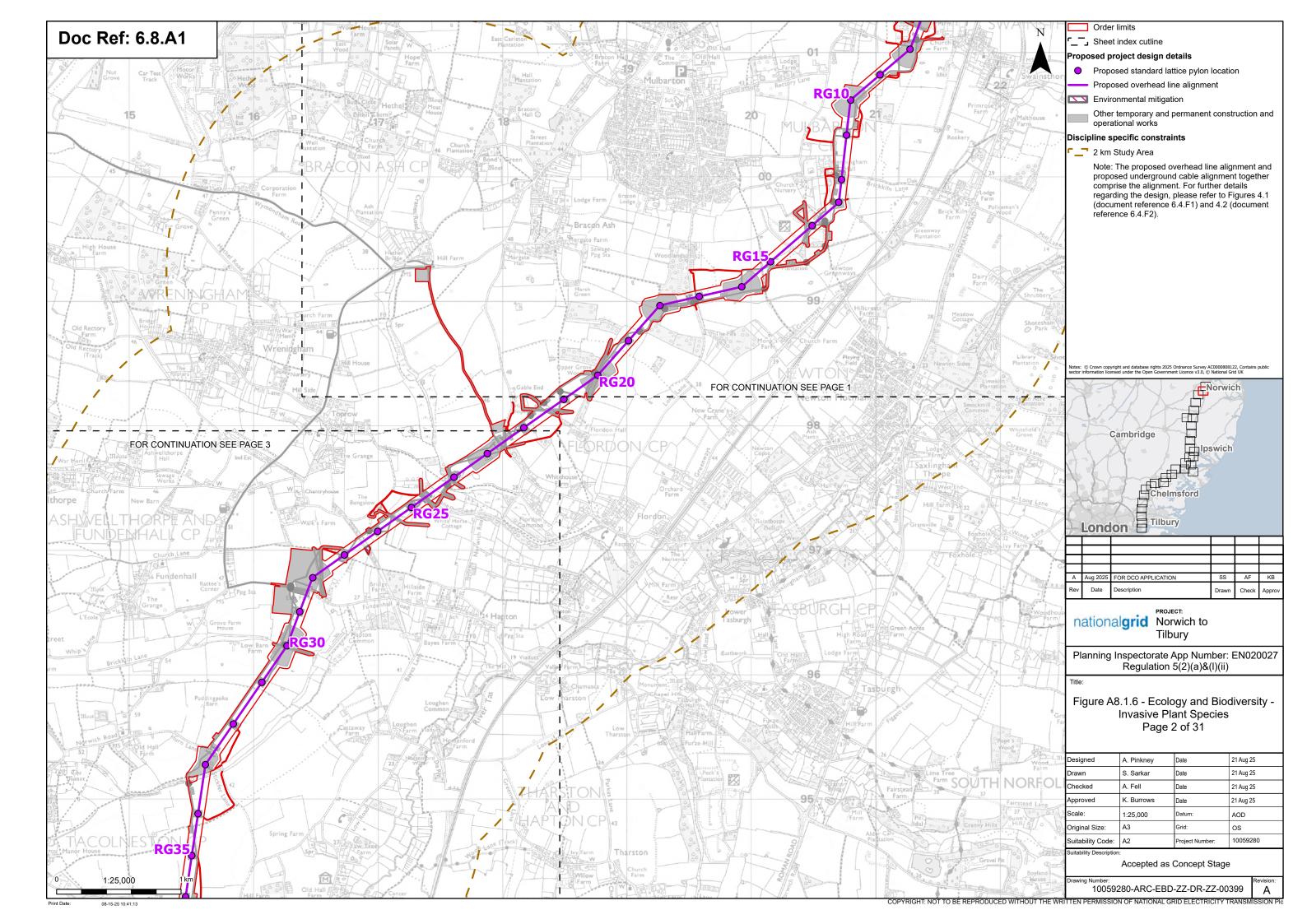
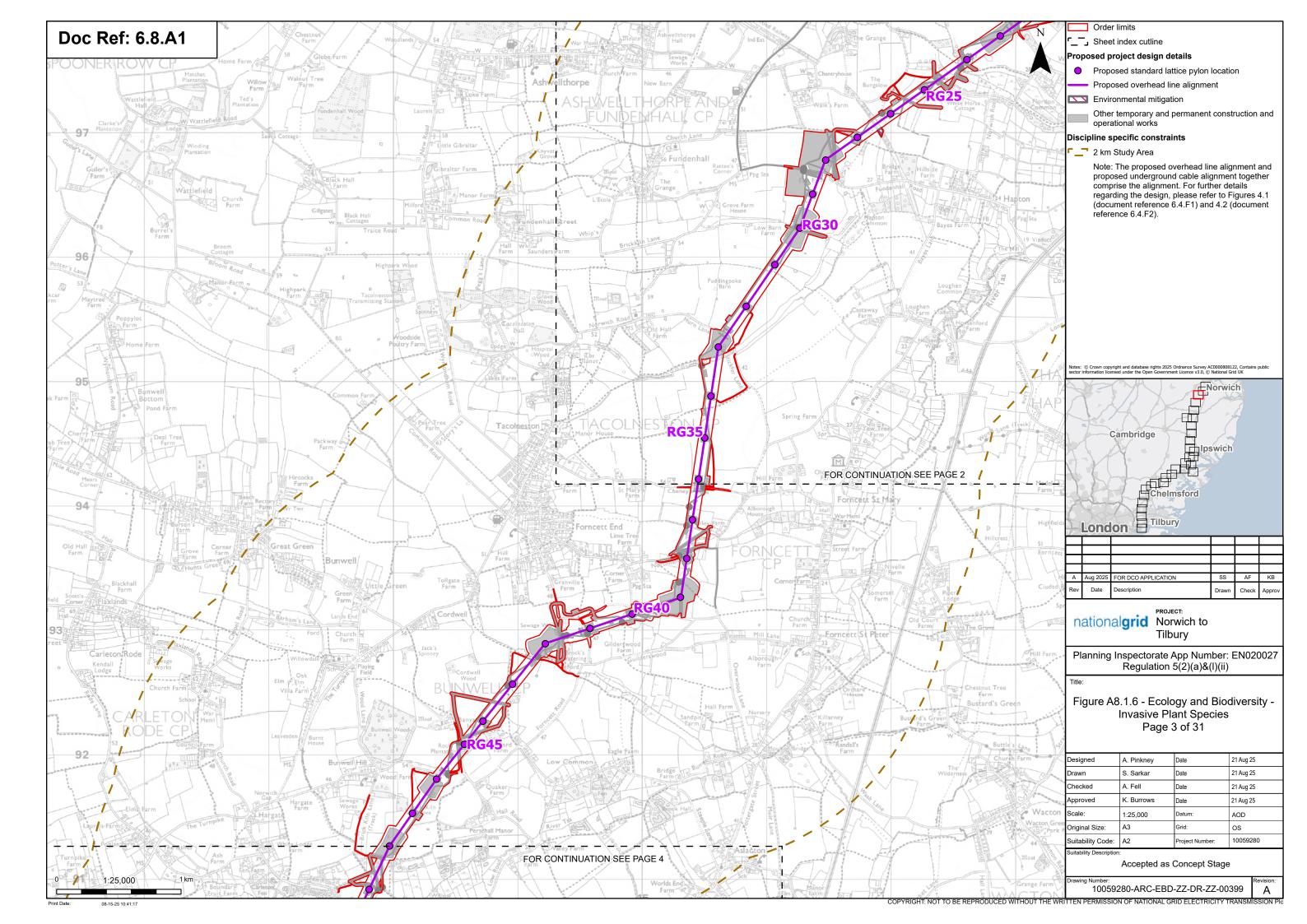


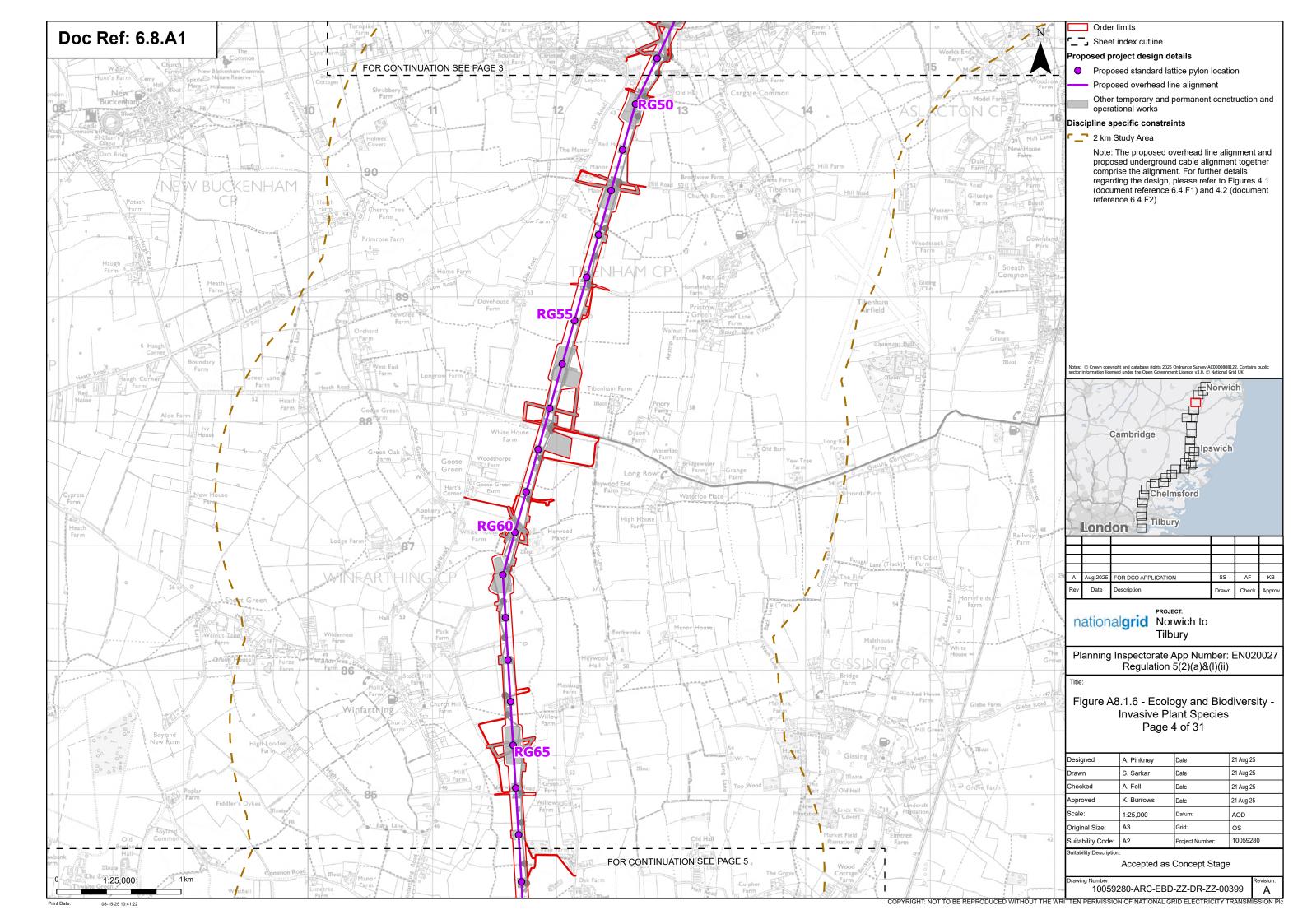
Figure A8.1.6 -	Invasive	Plant	Species
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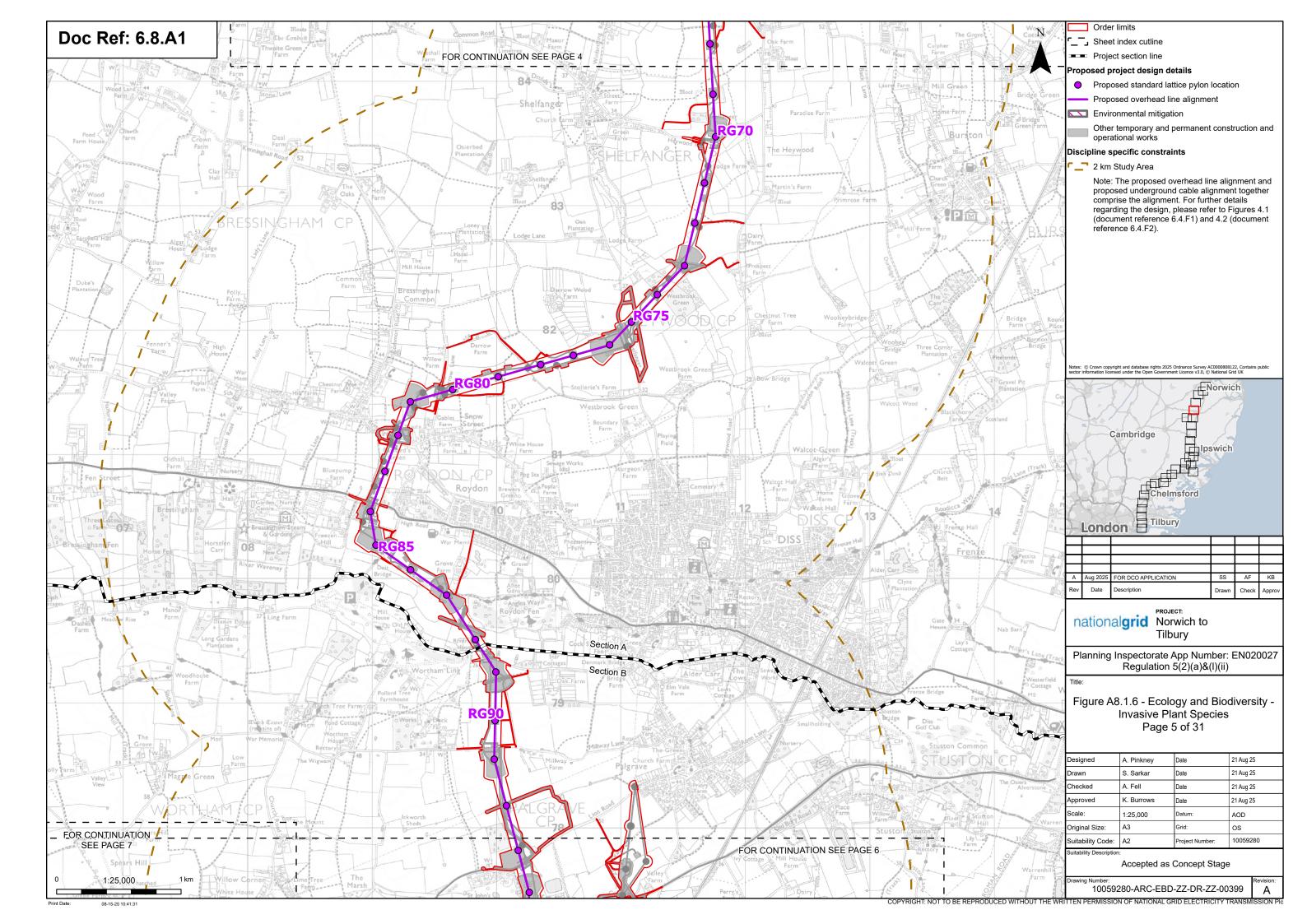


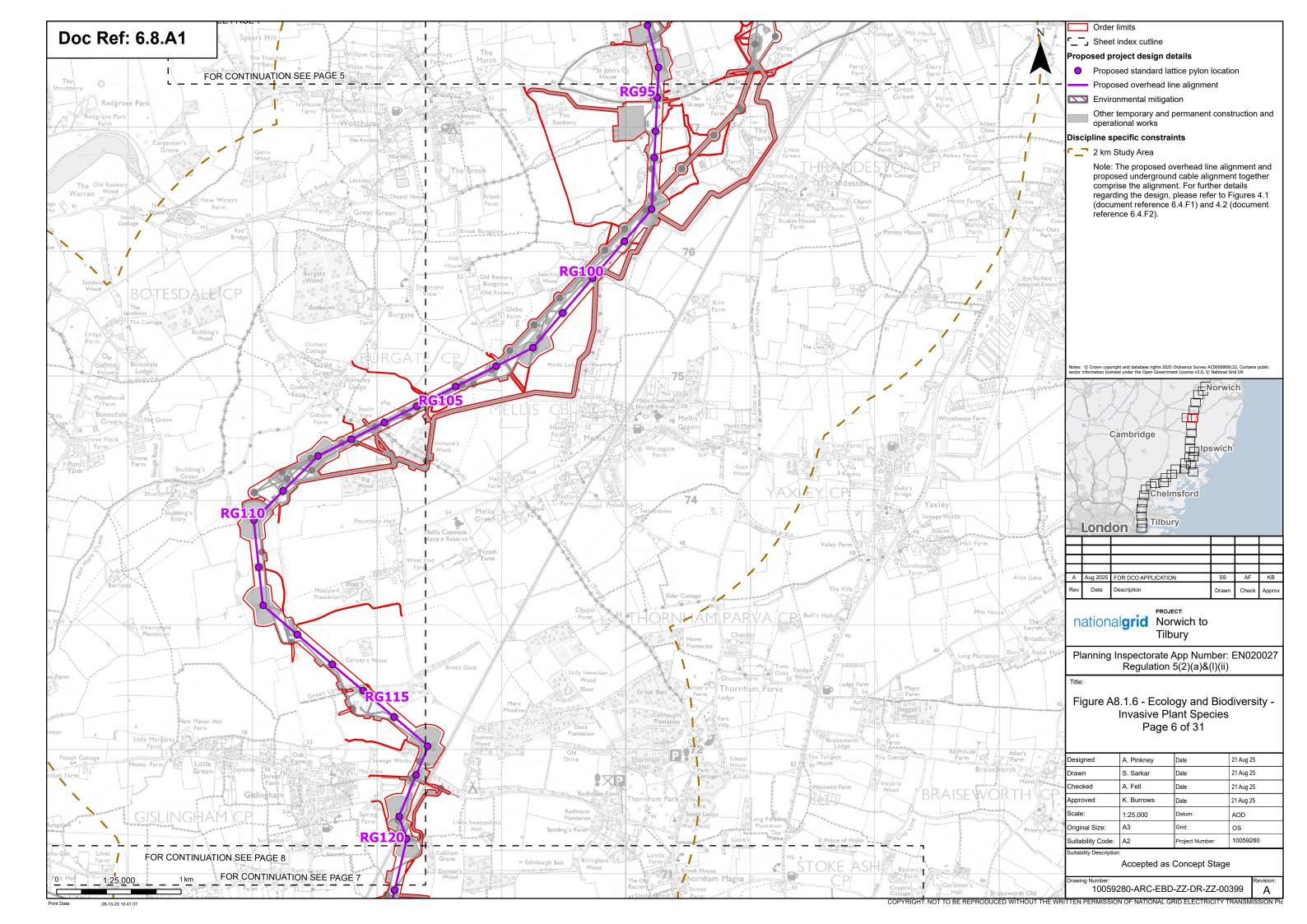


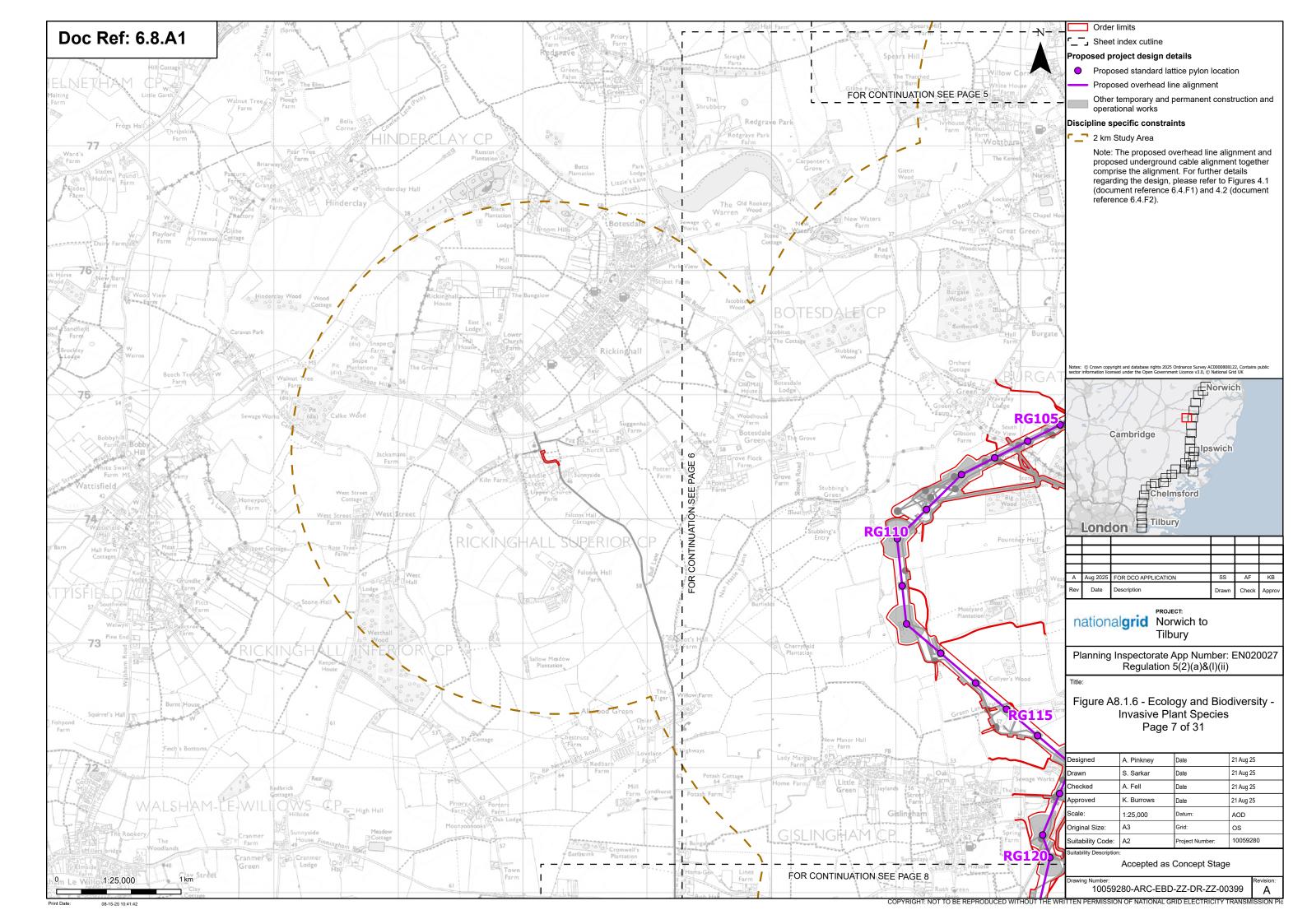


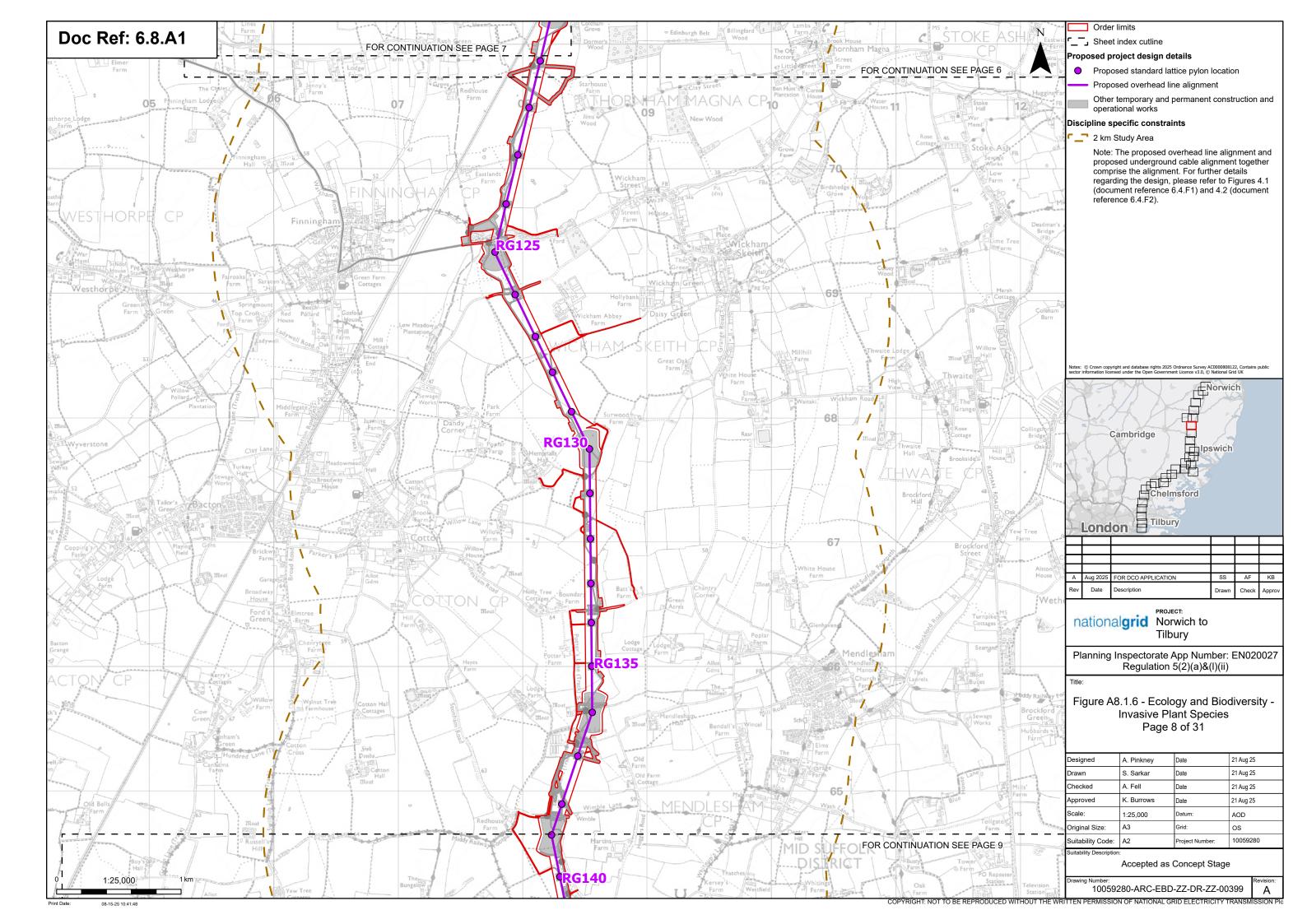


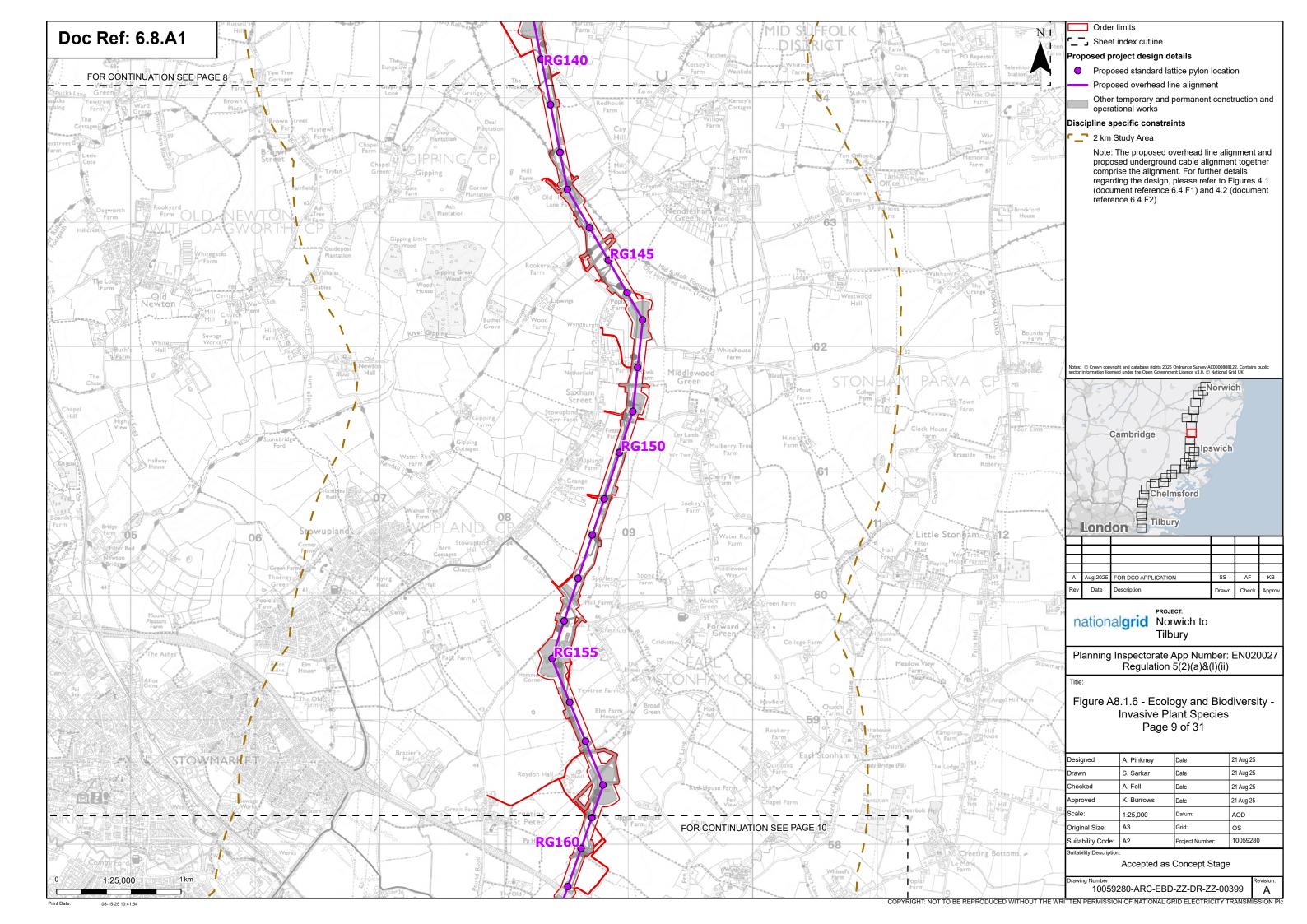


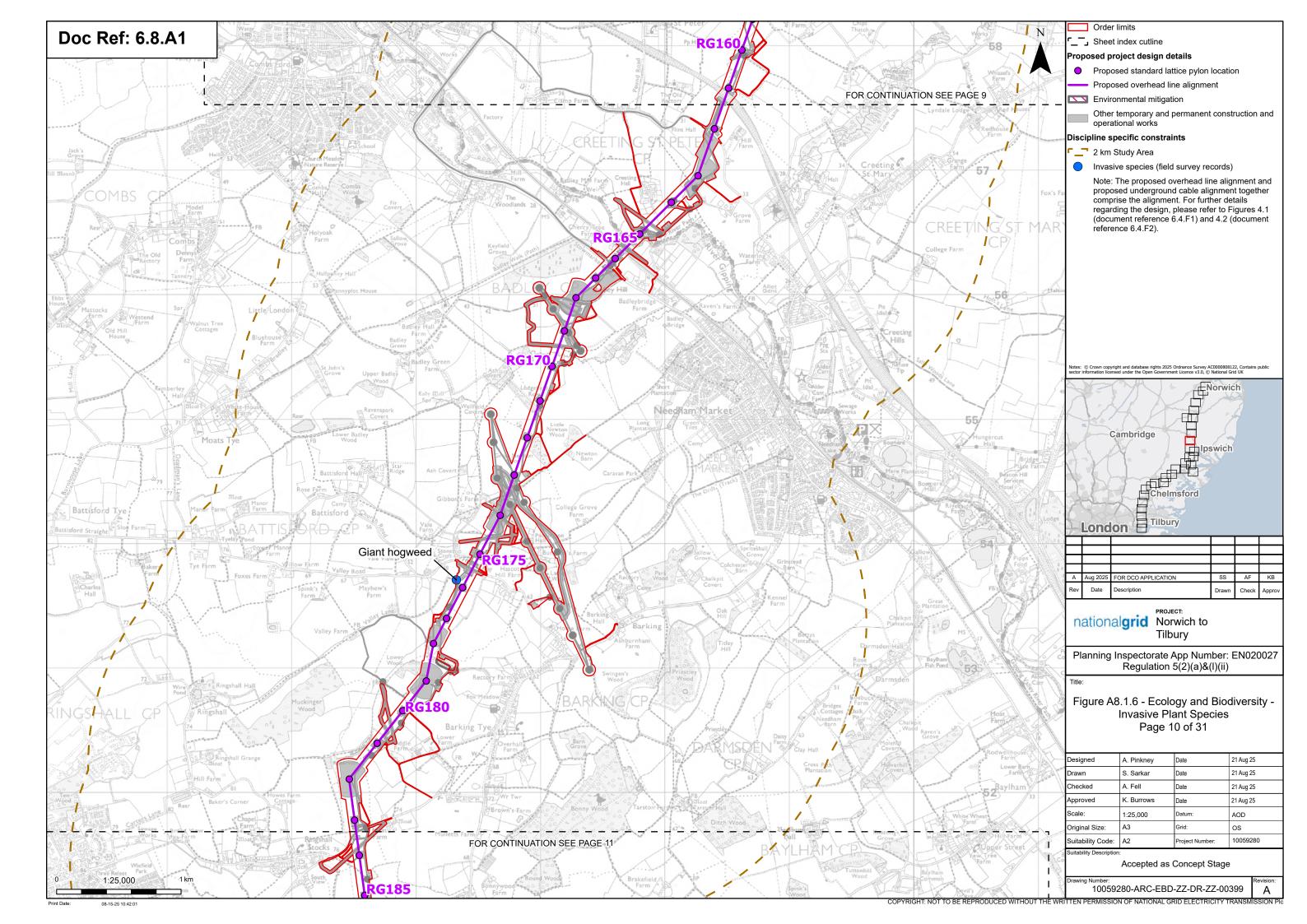


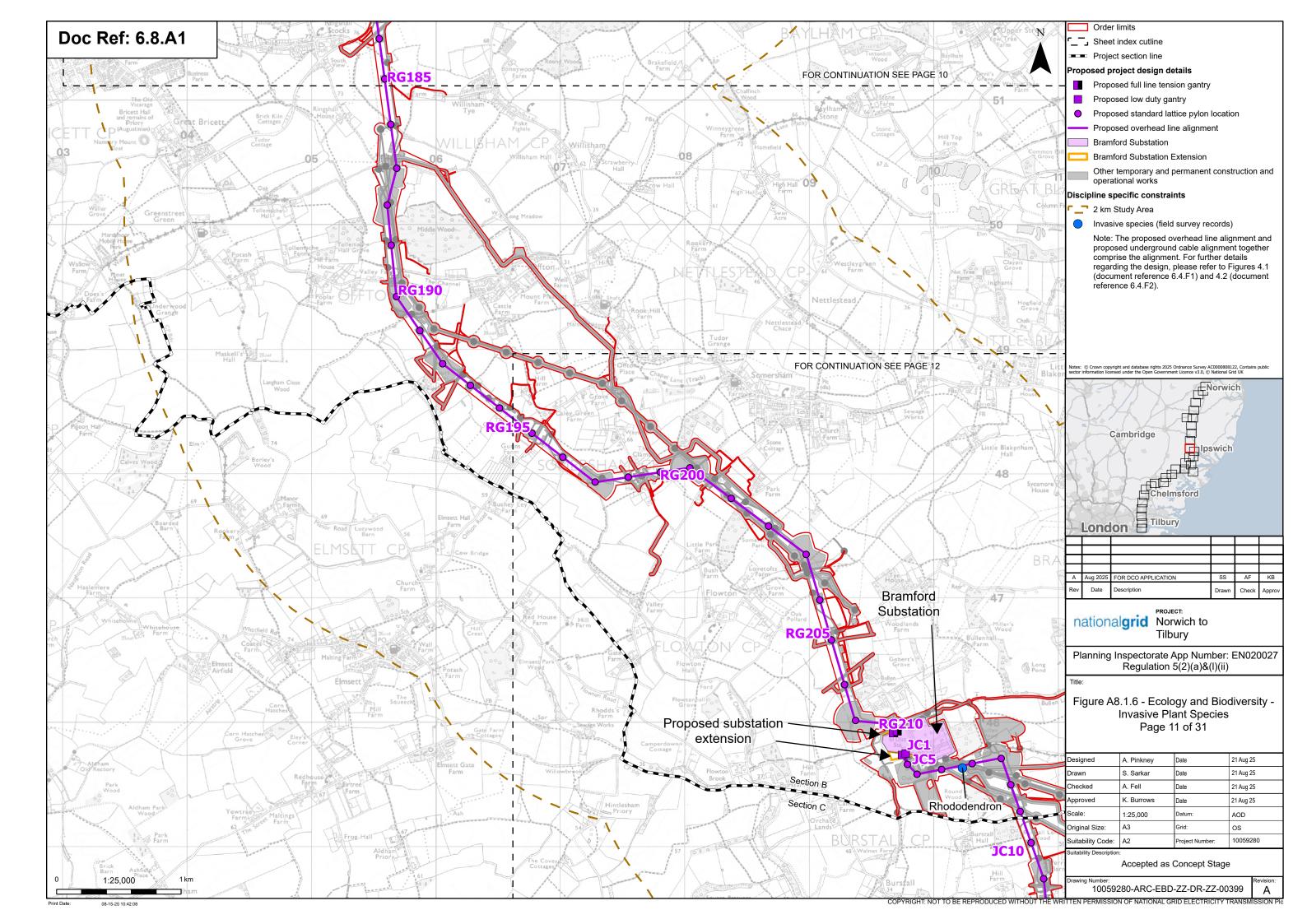


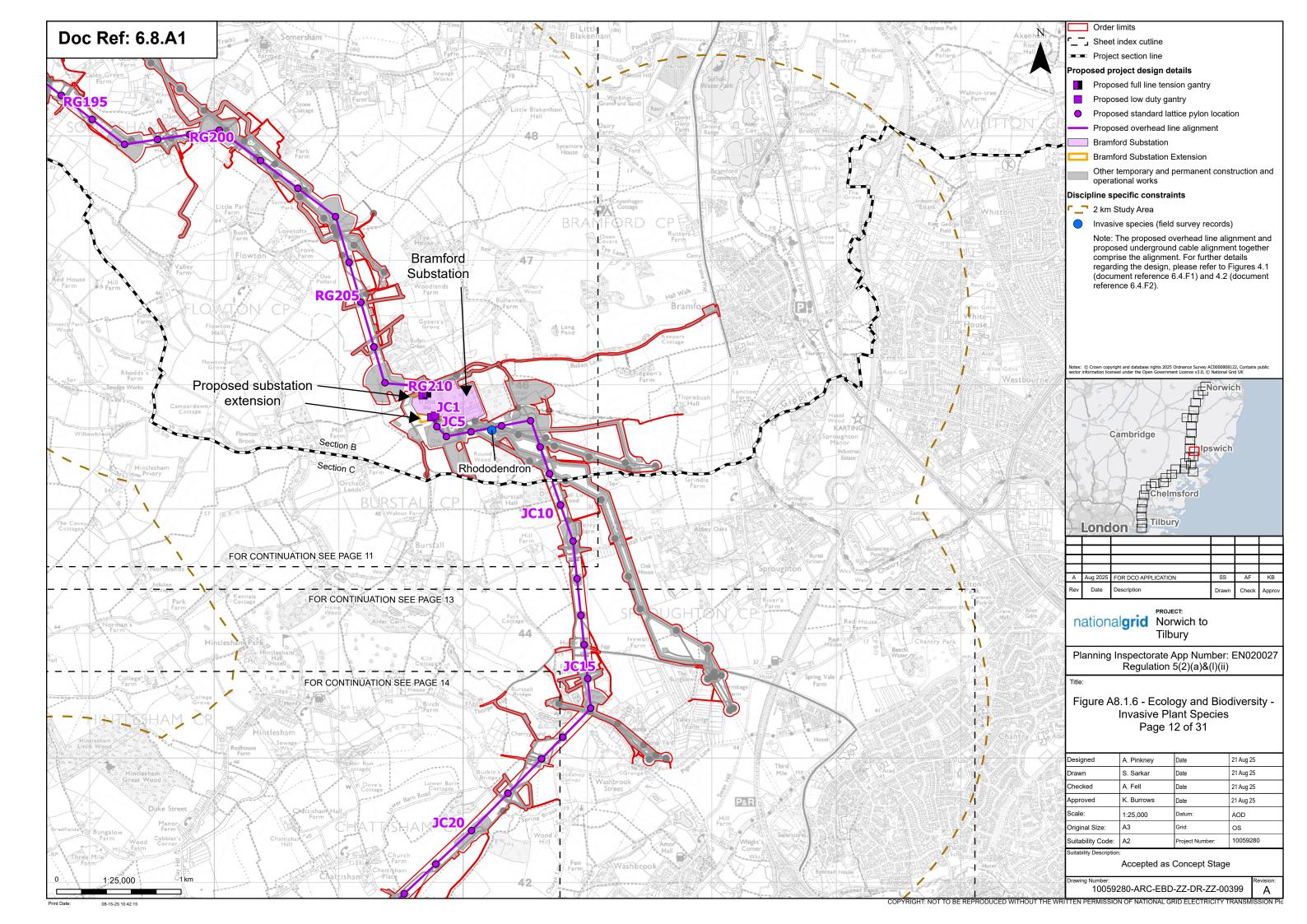


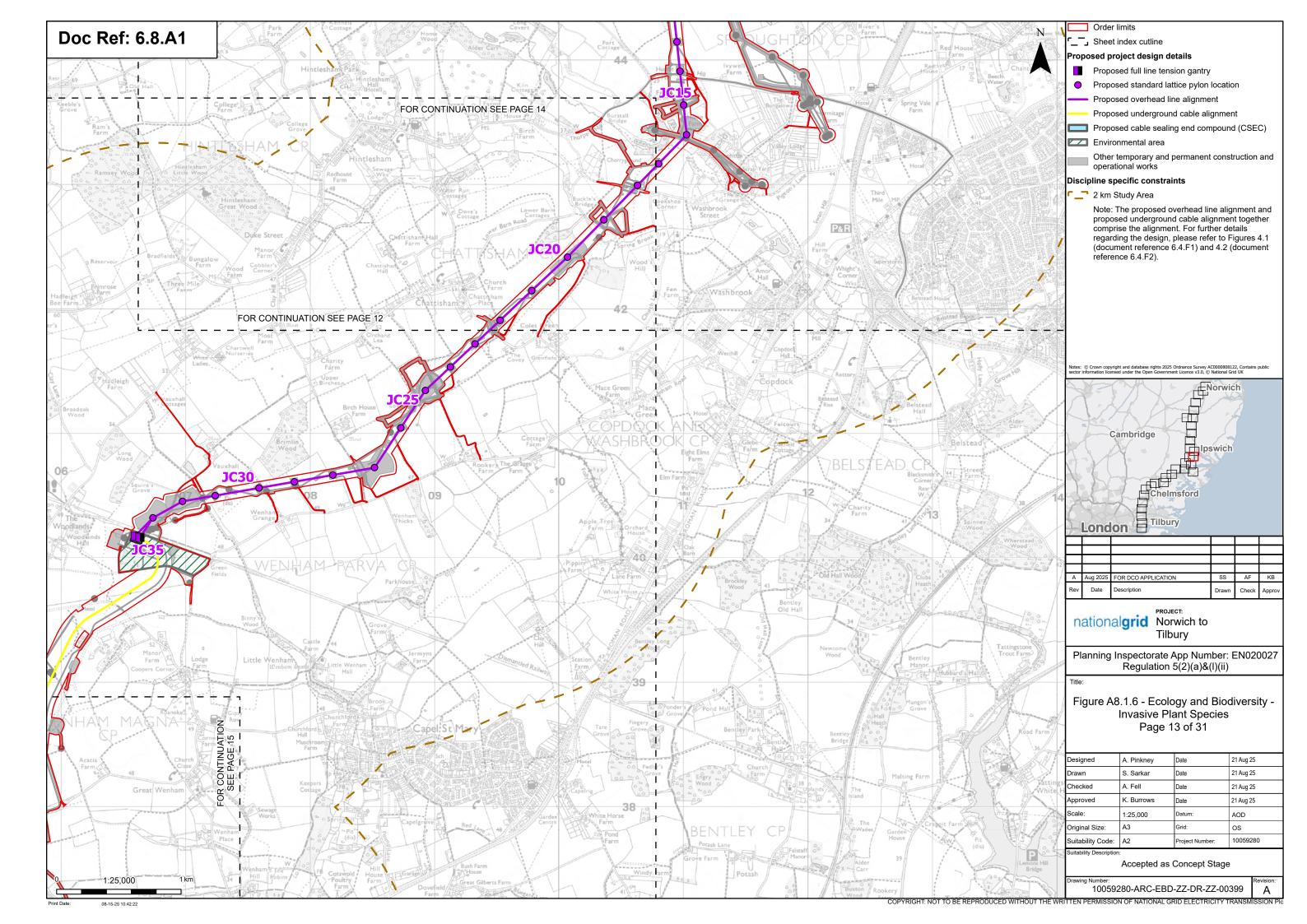


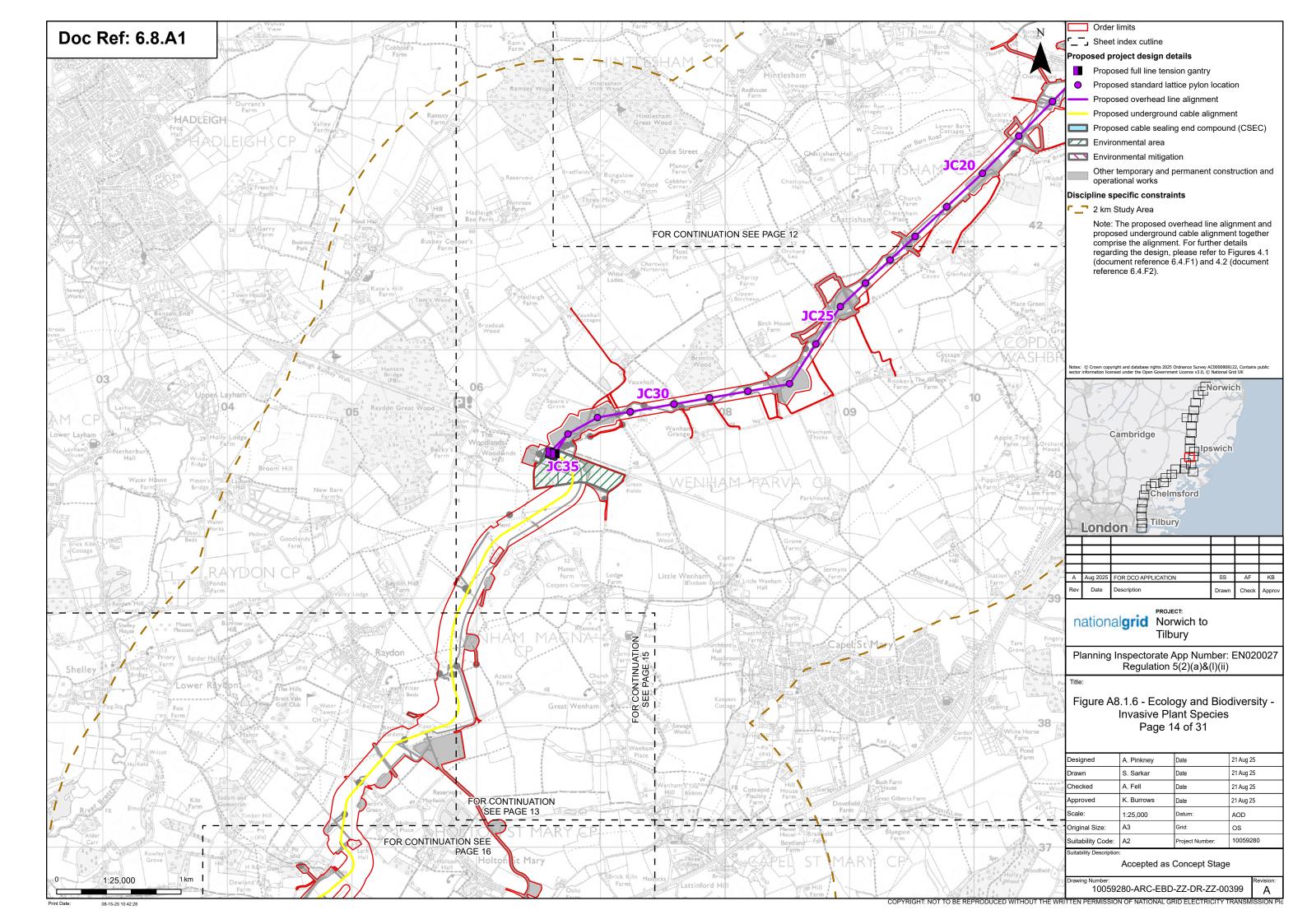


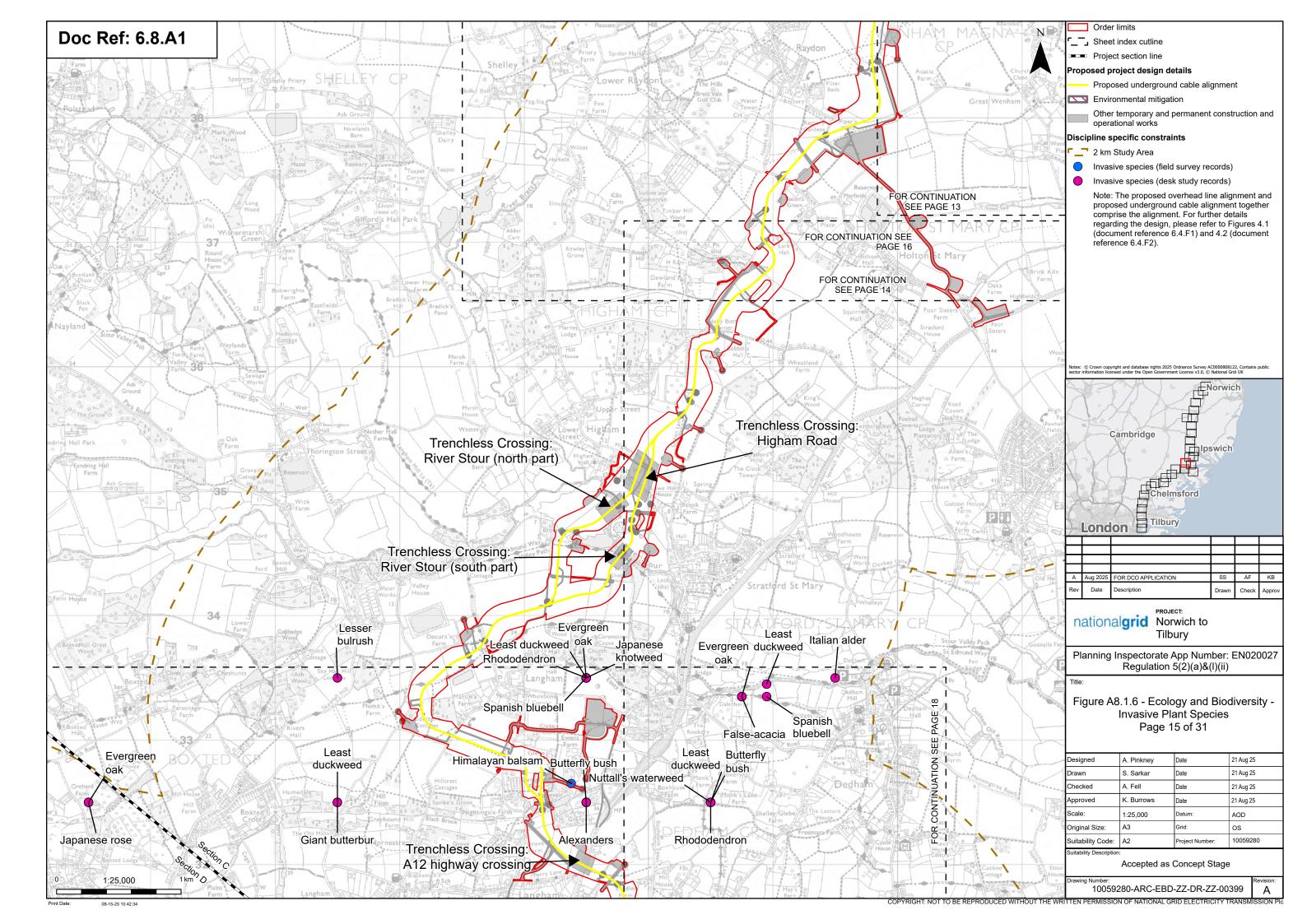


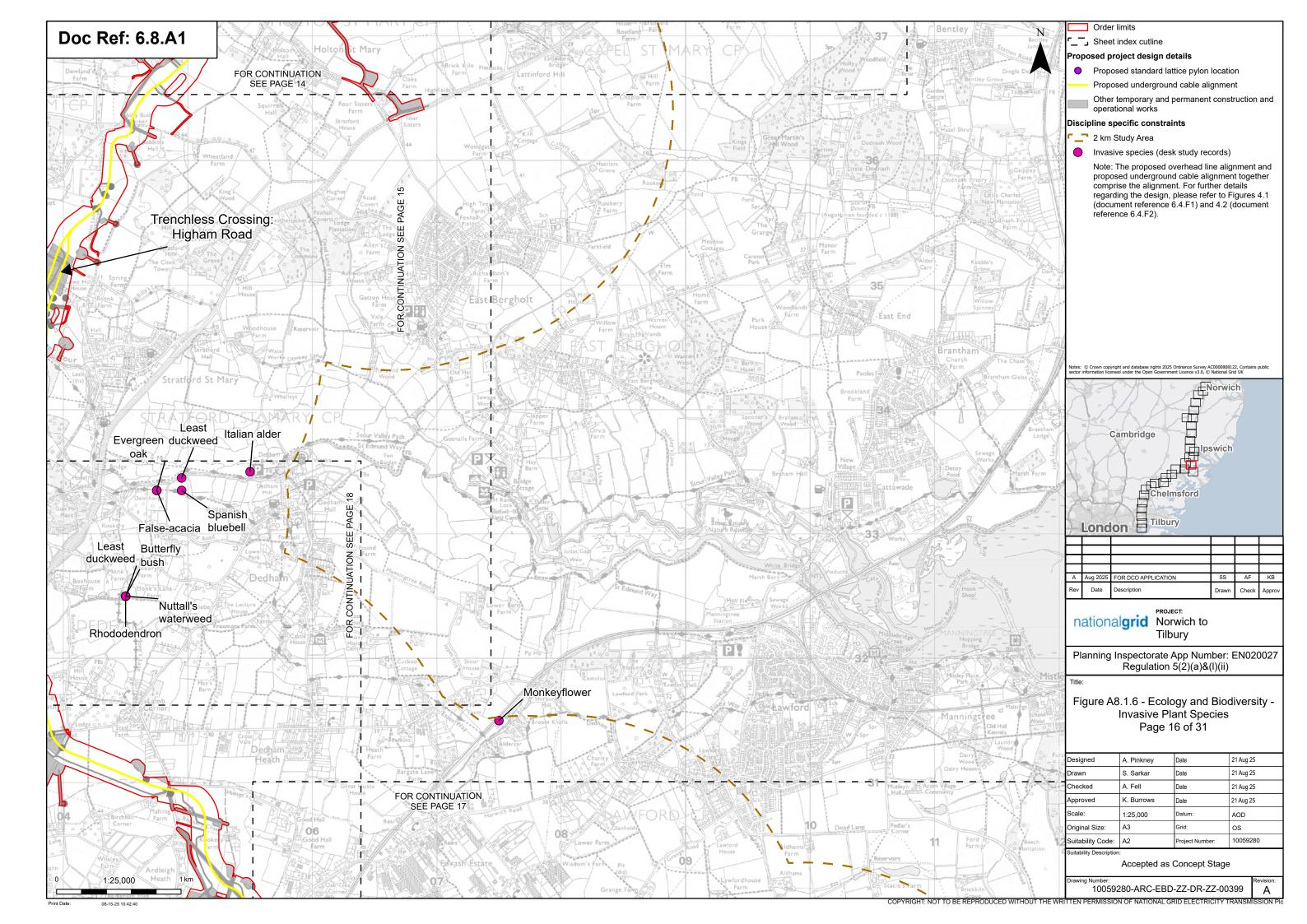


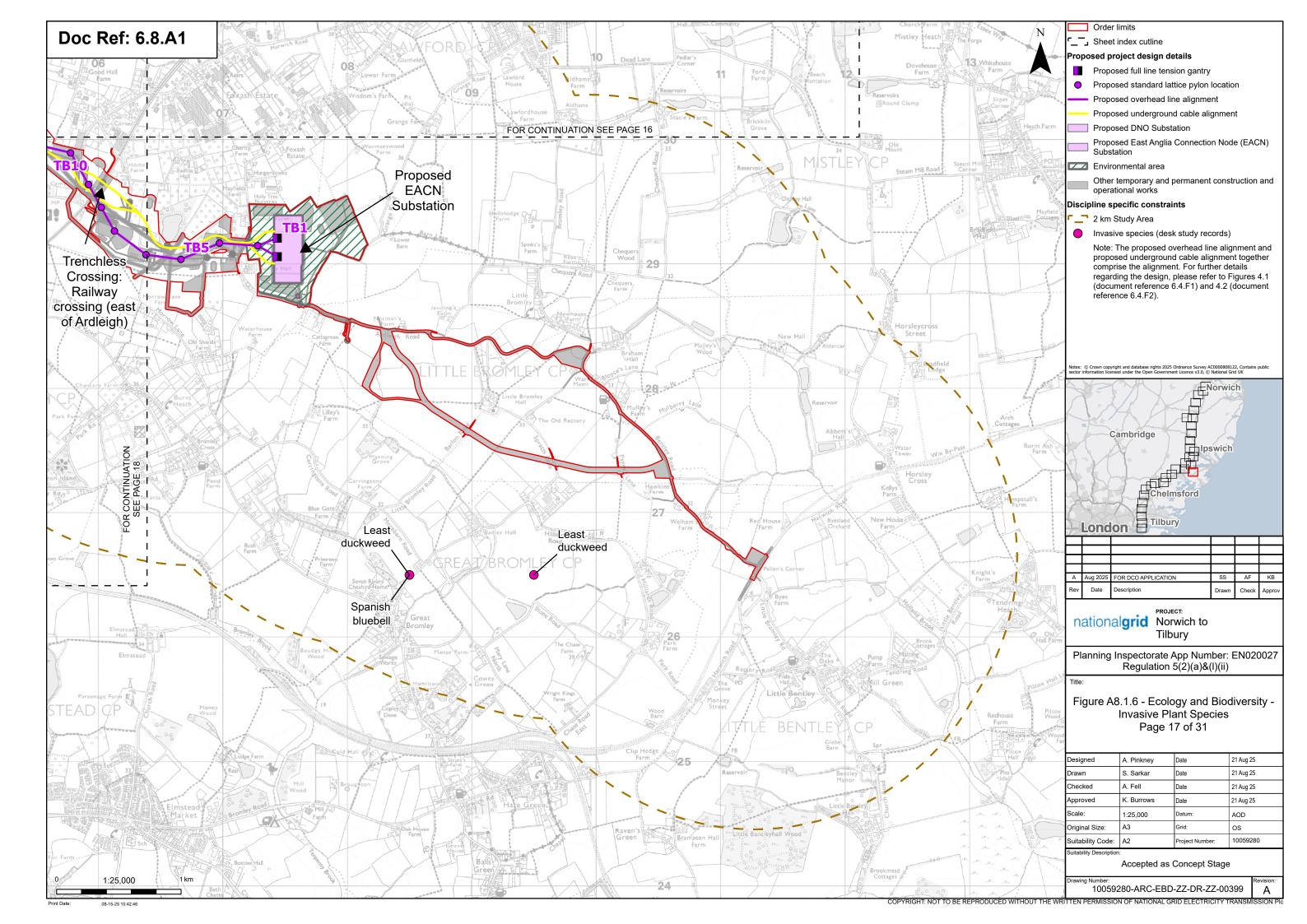


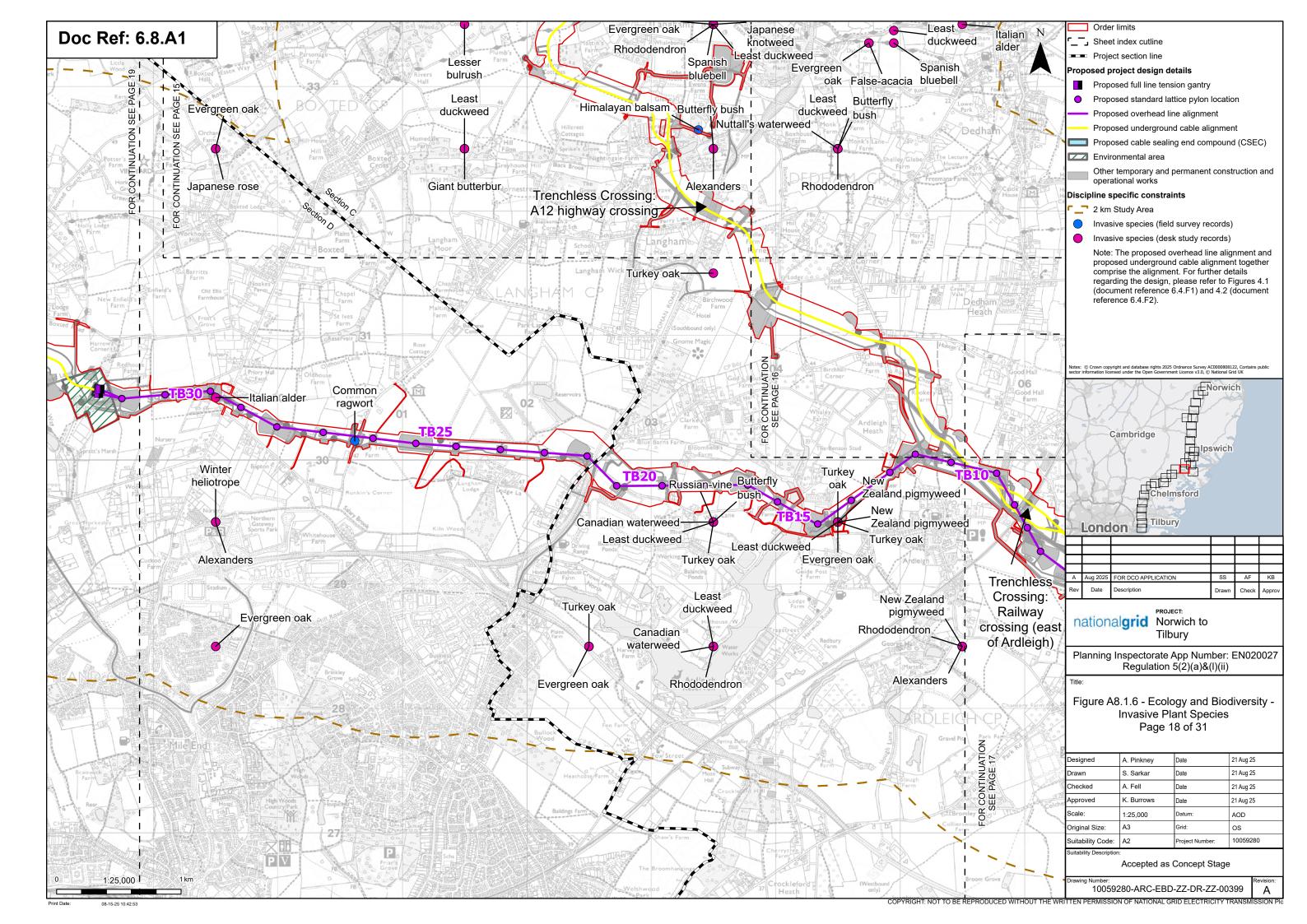


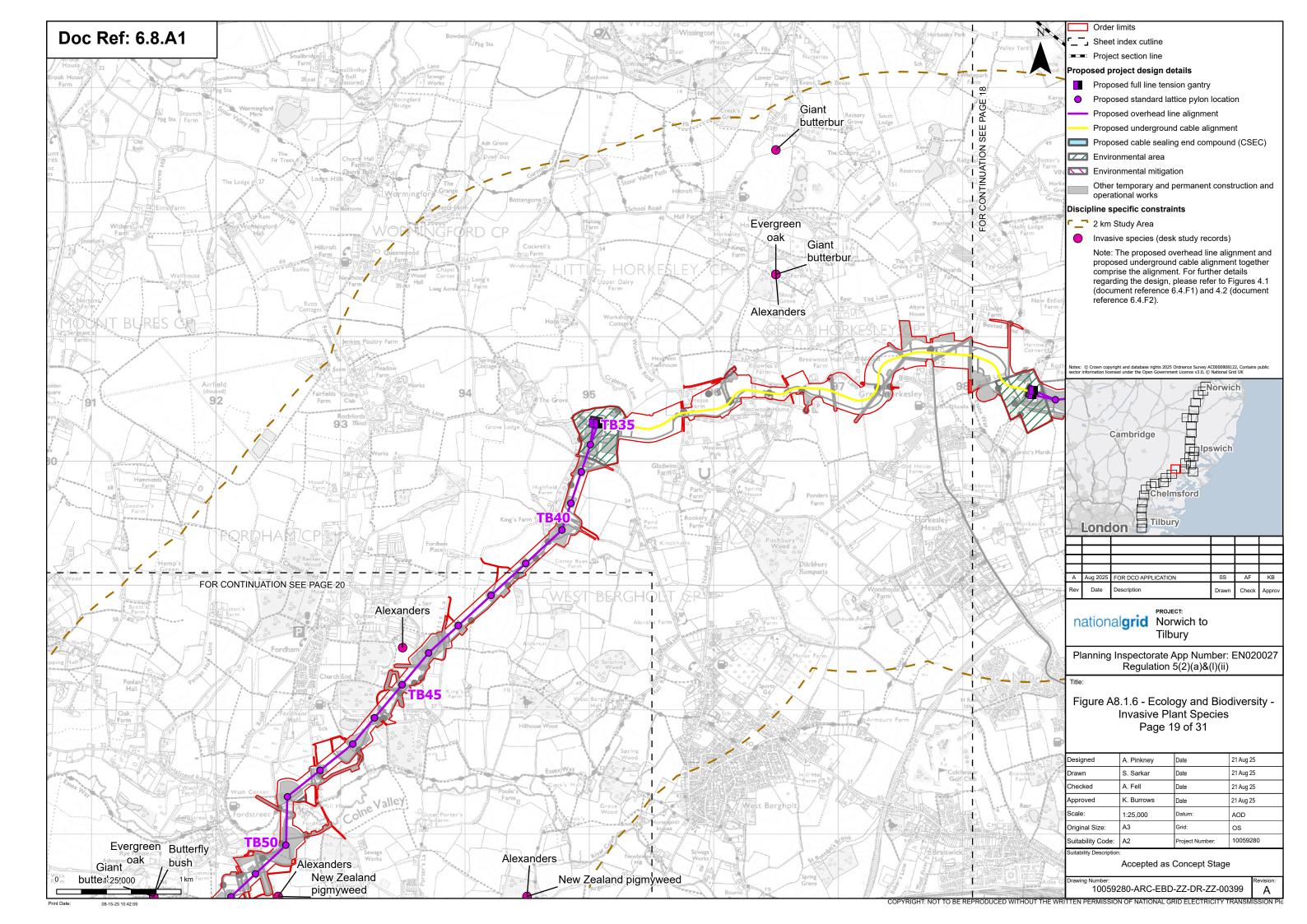


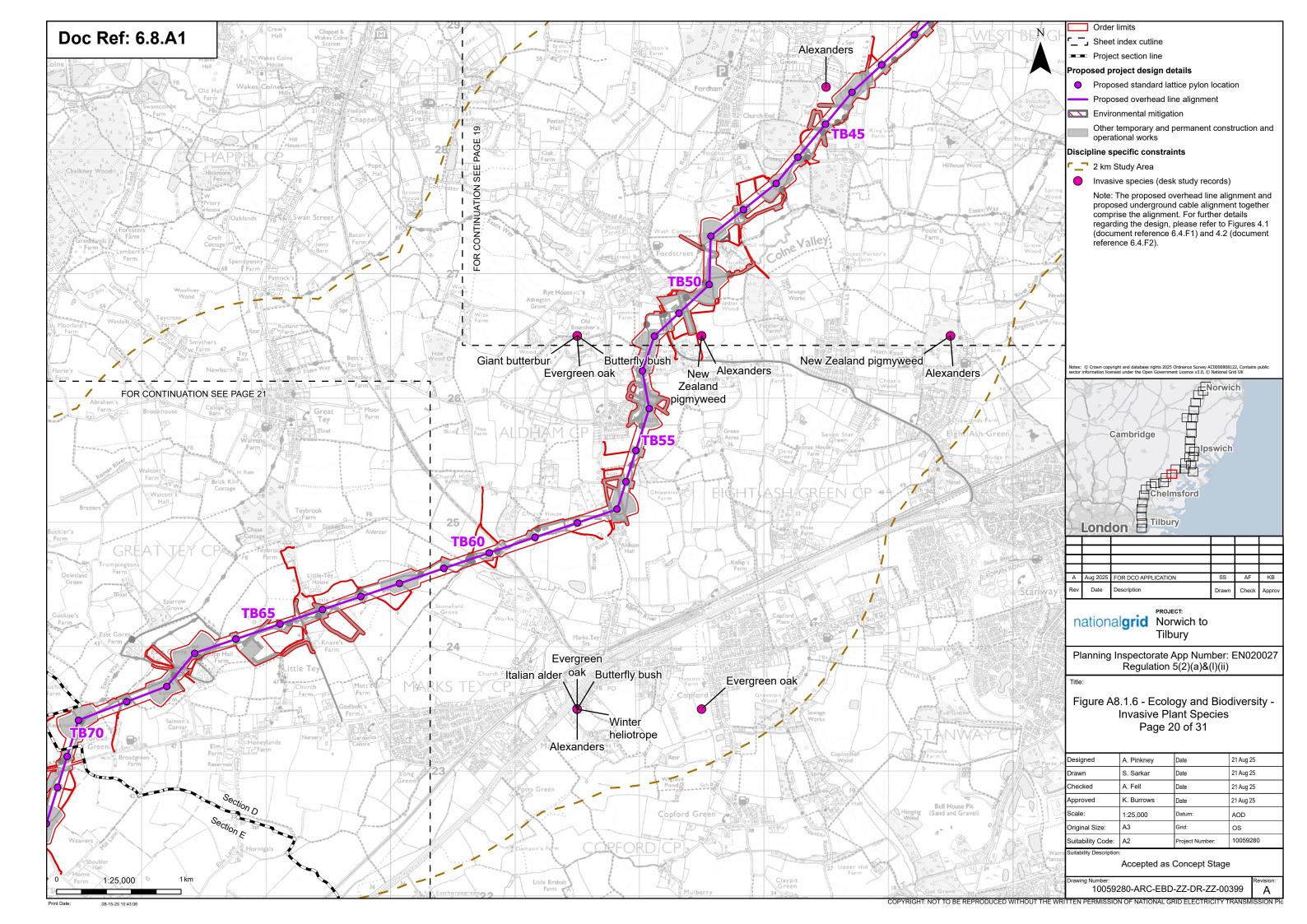












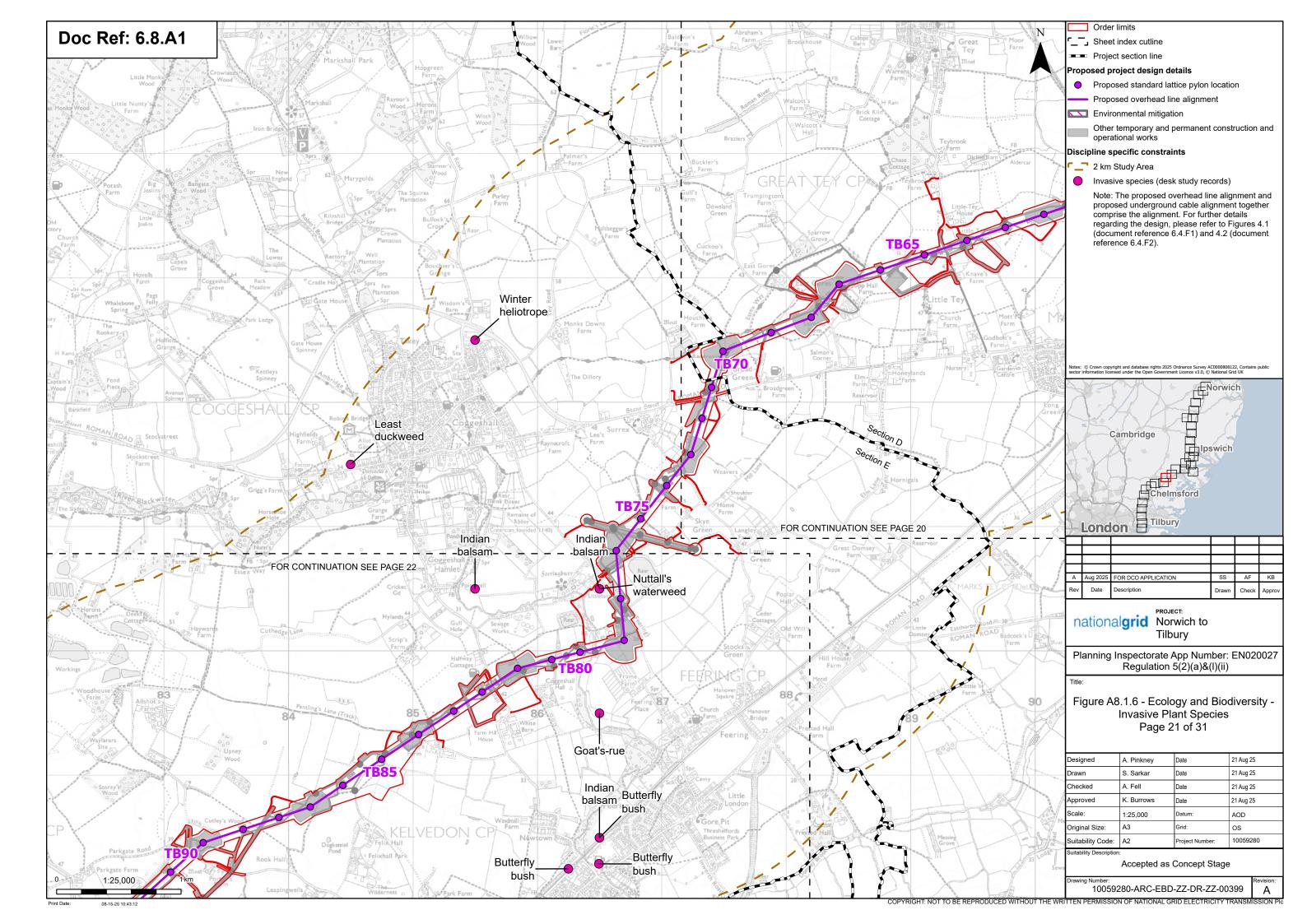
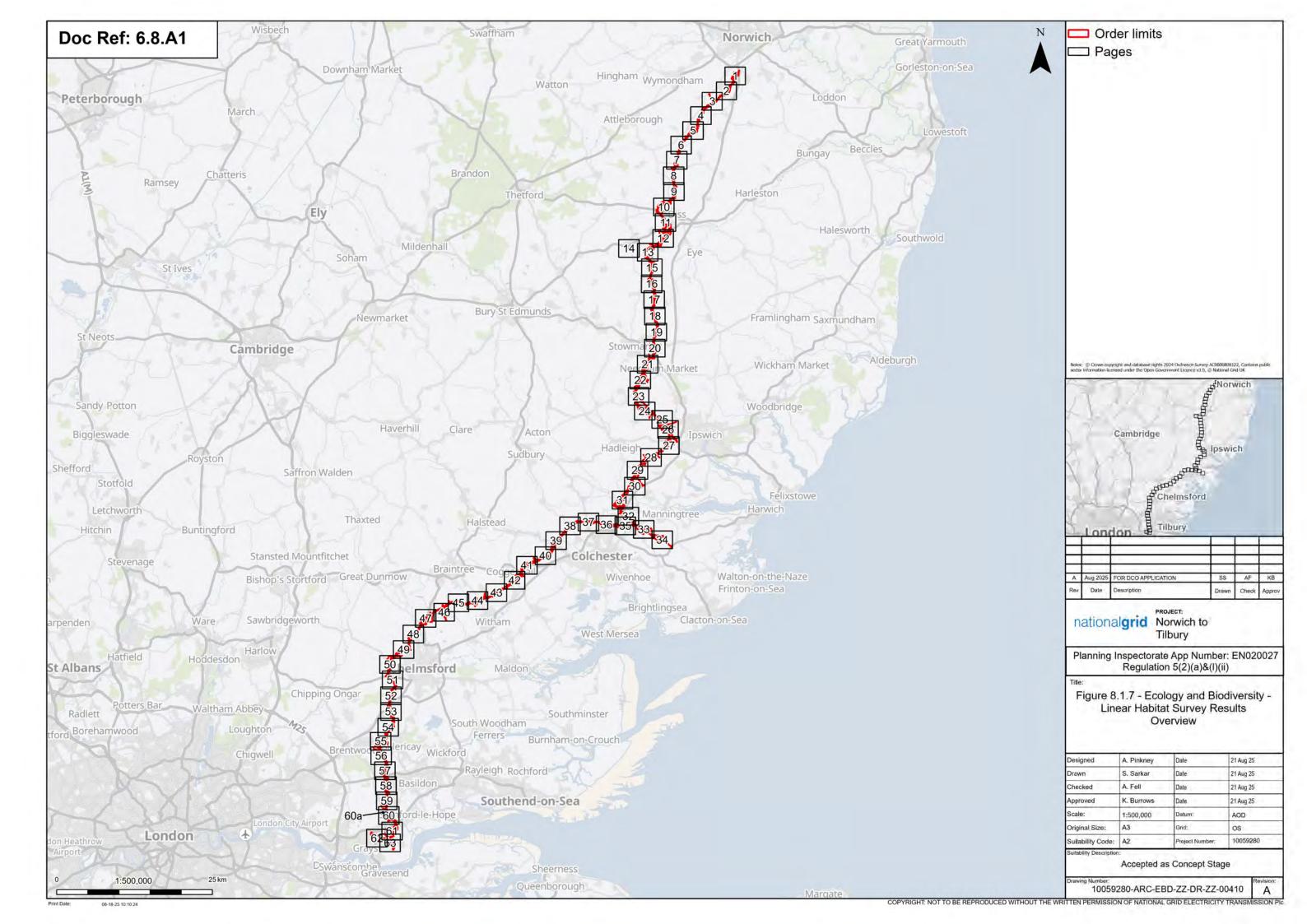
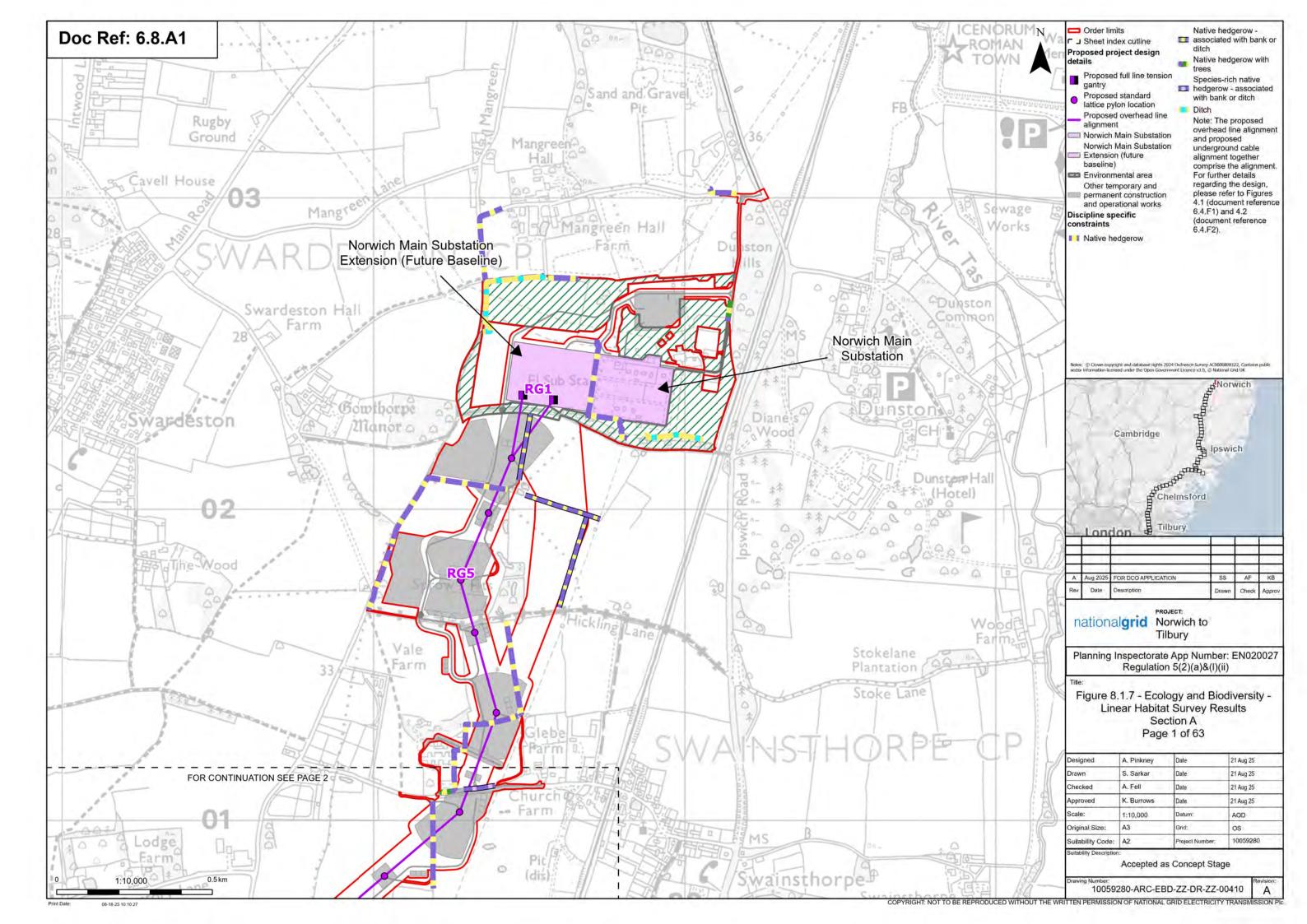
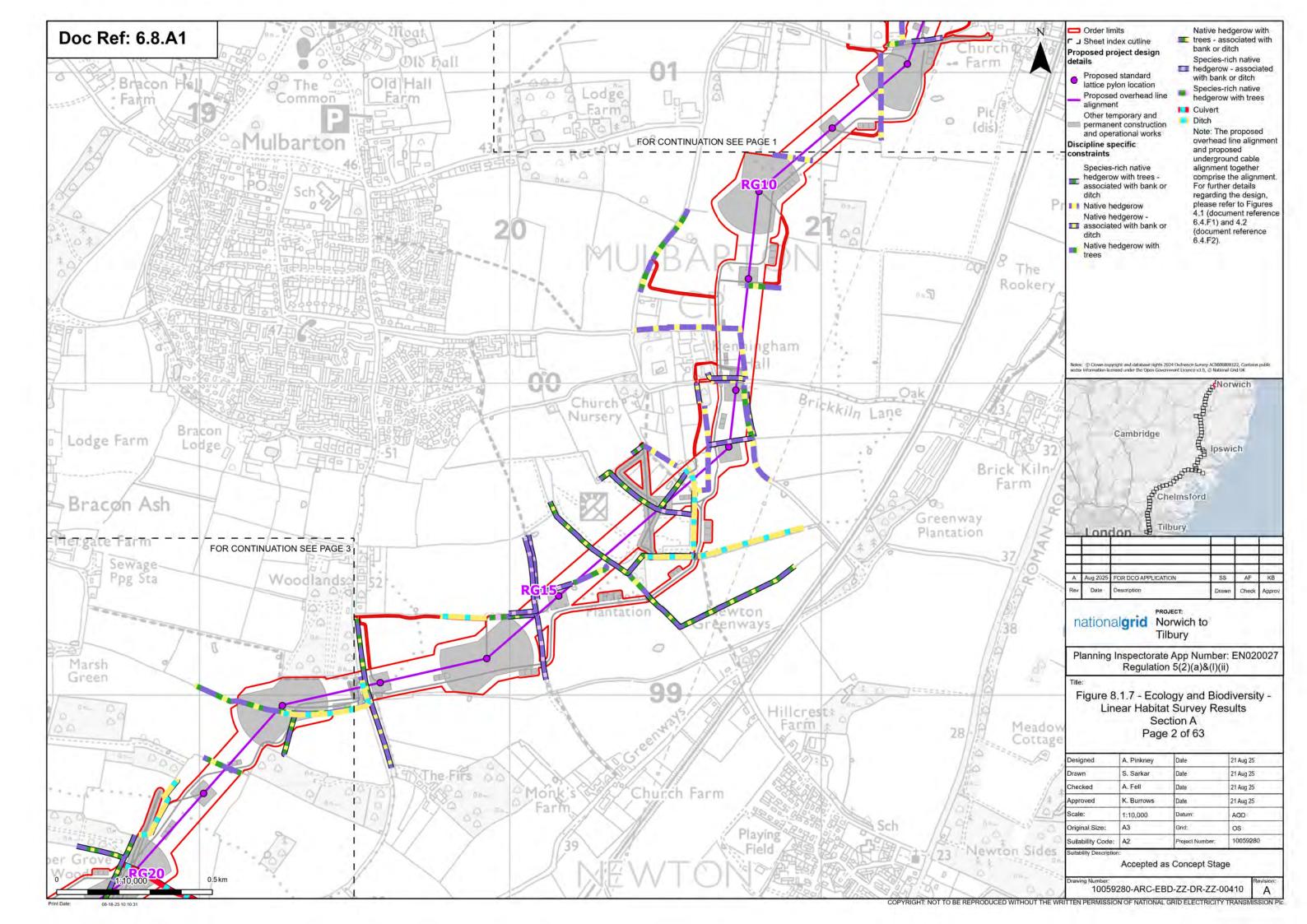
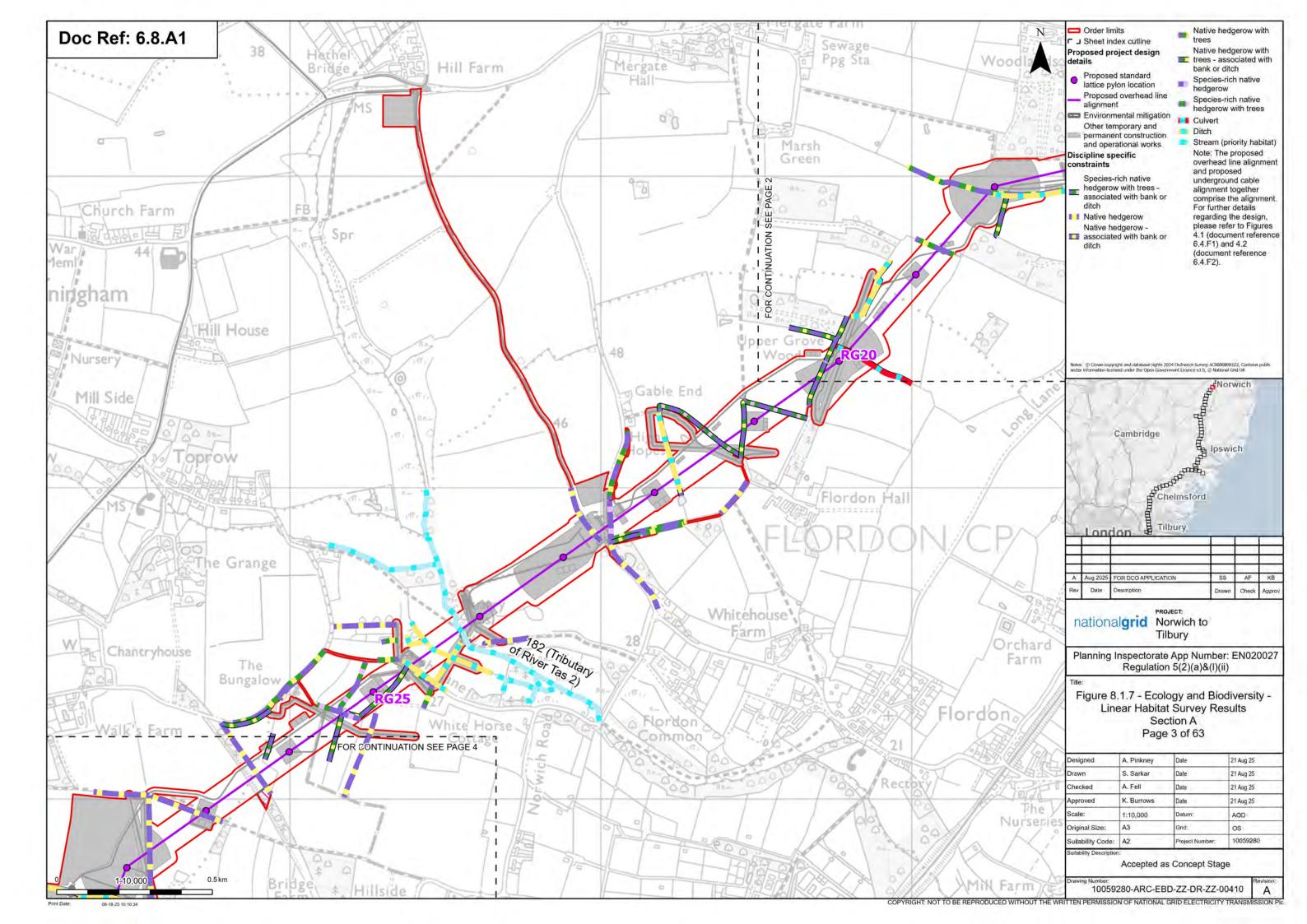


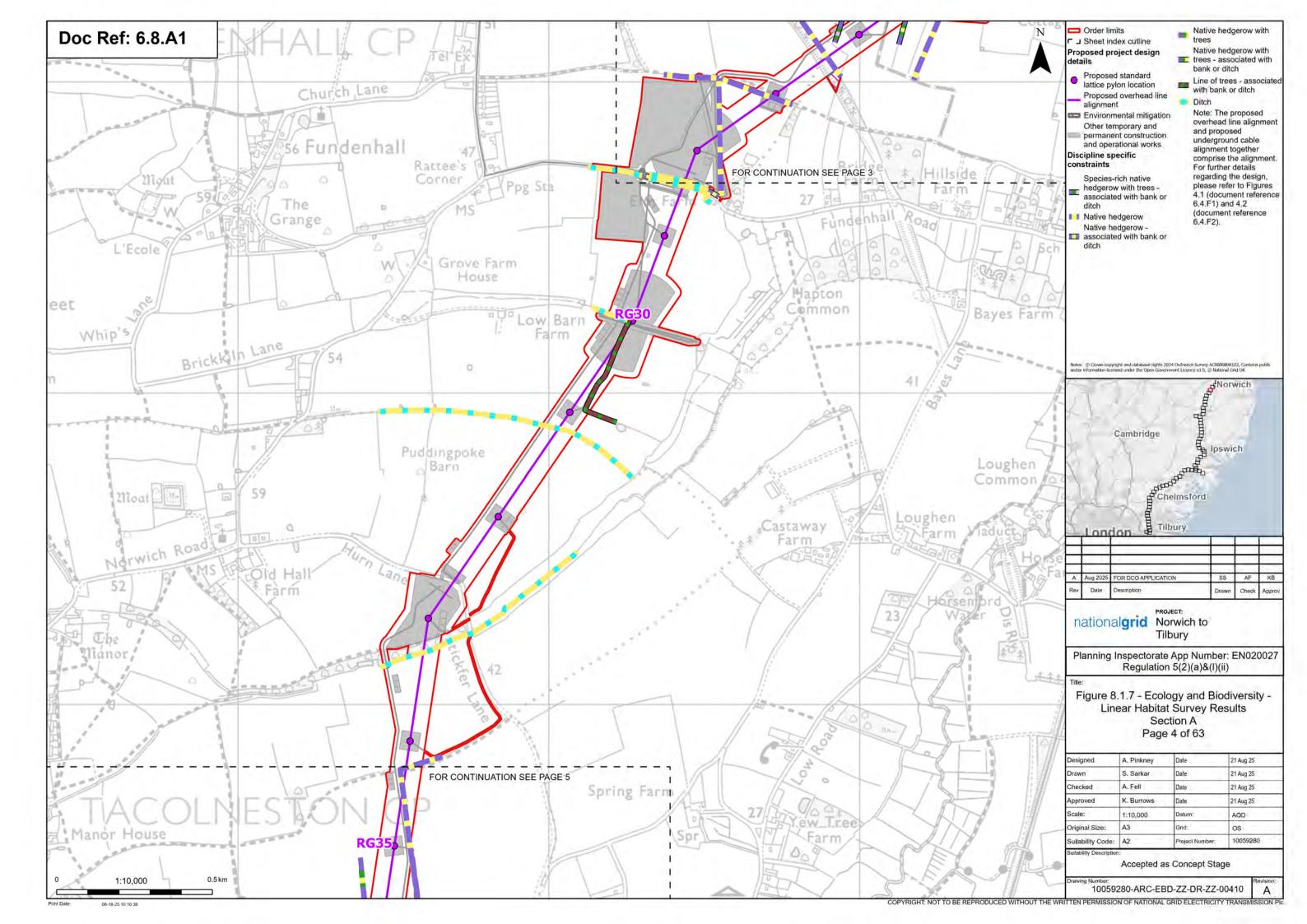
Figure A8.1.7 -	Linear	Habitat	Survey	Results

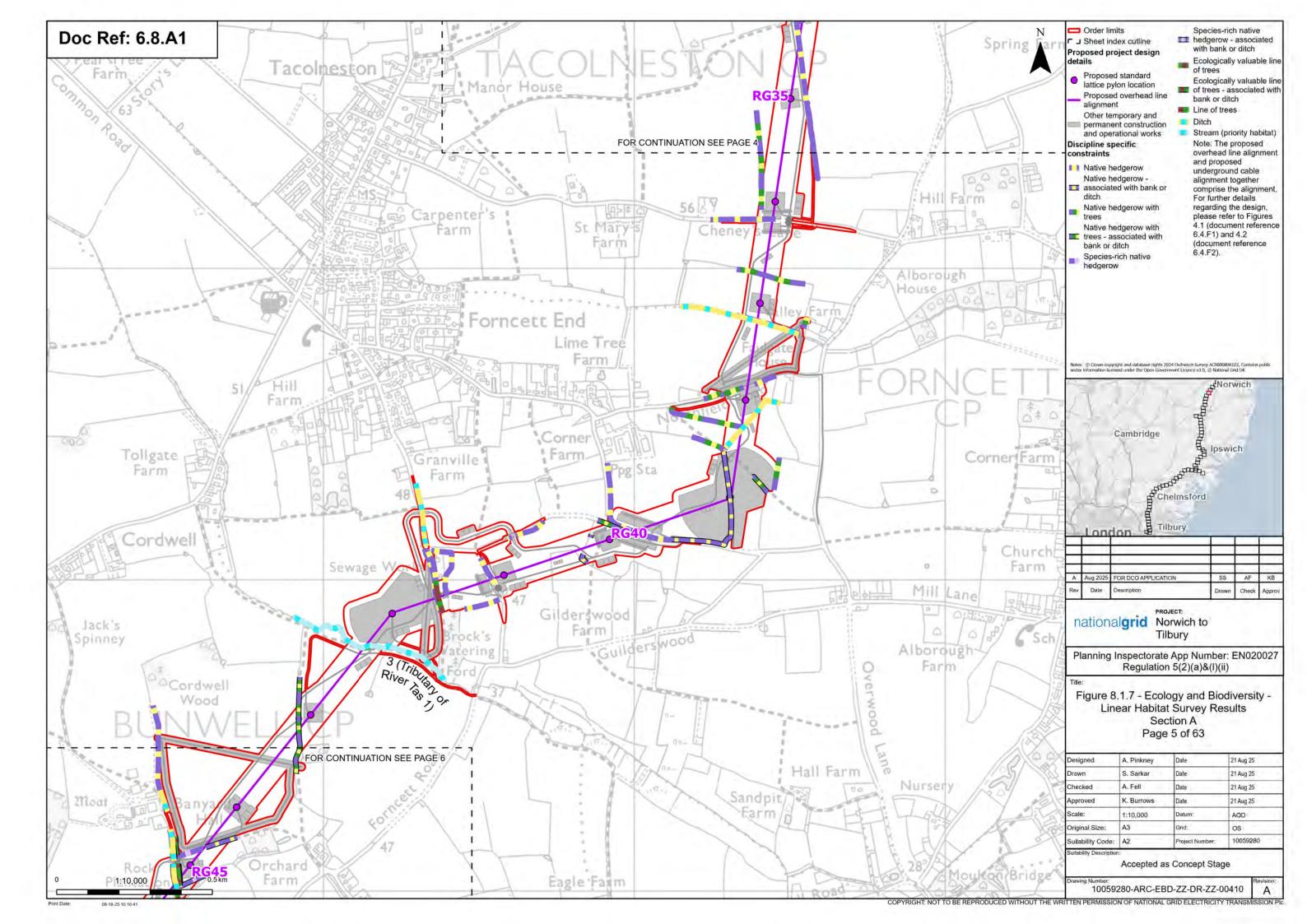


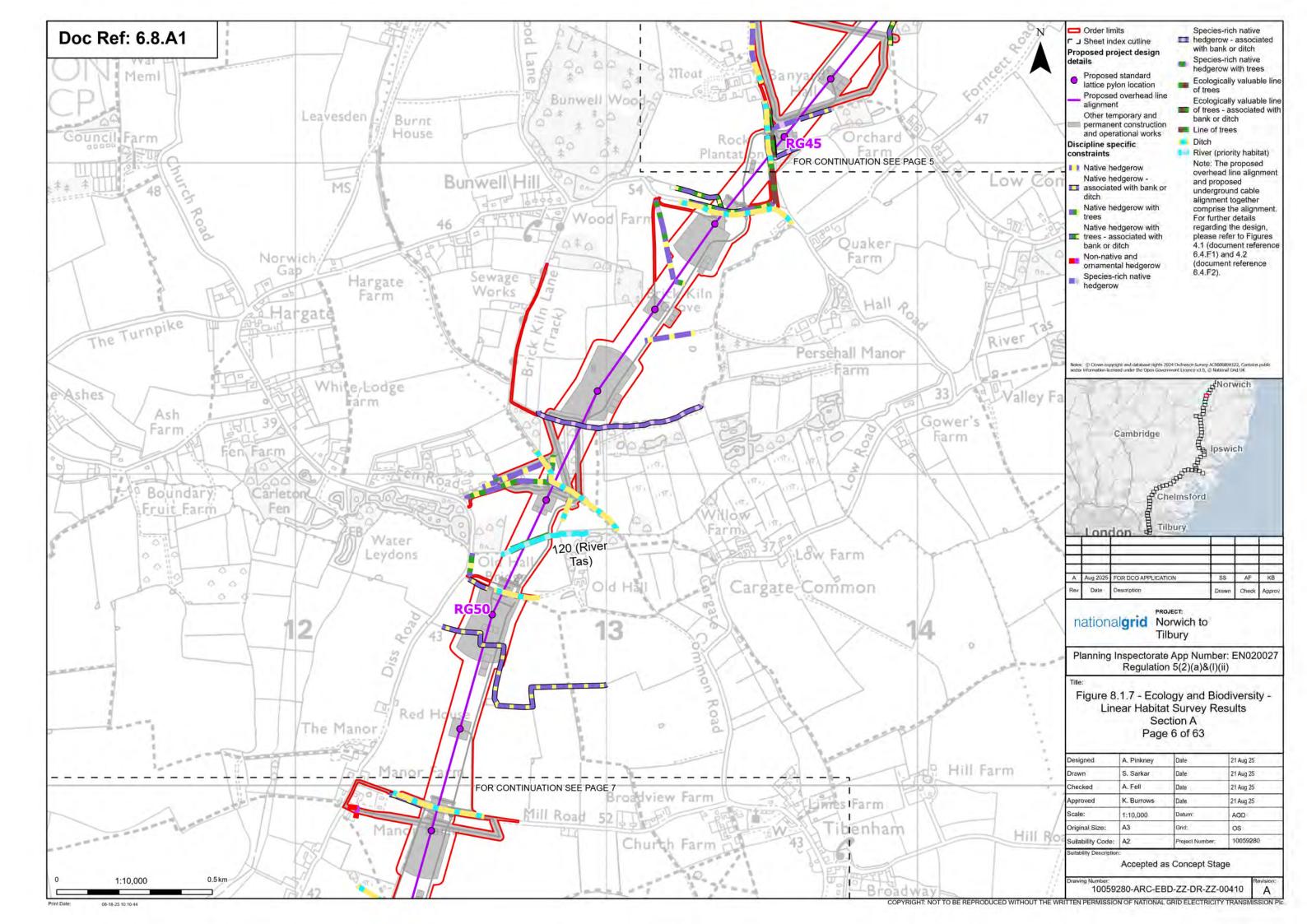


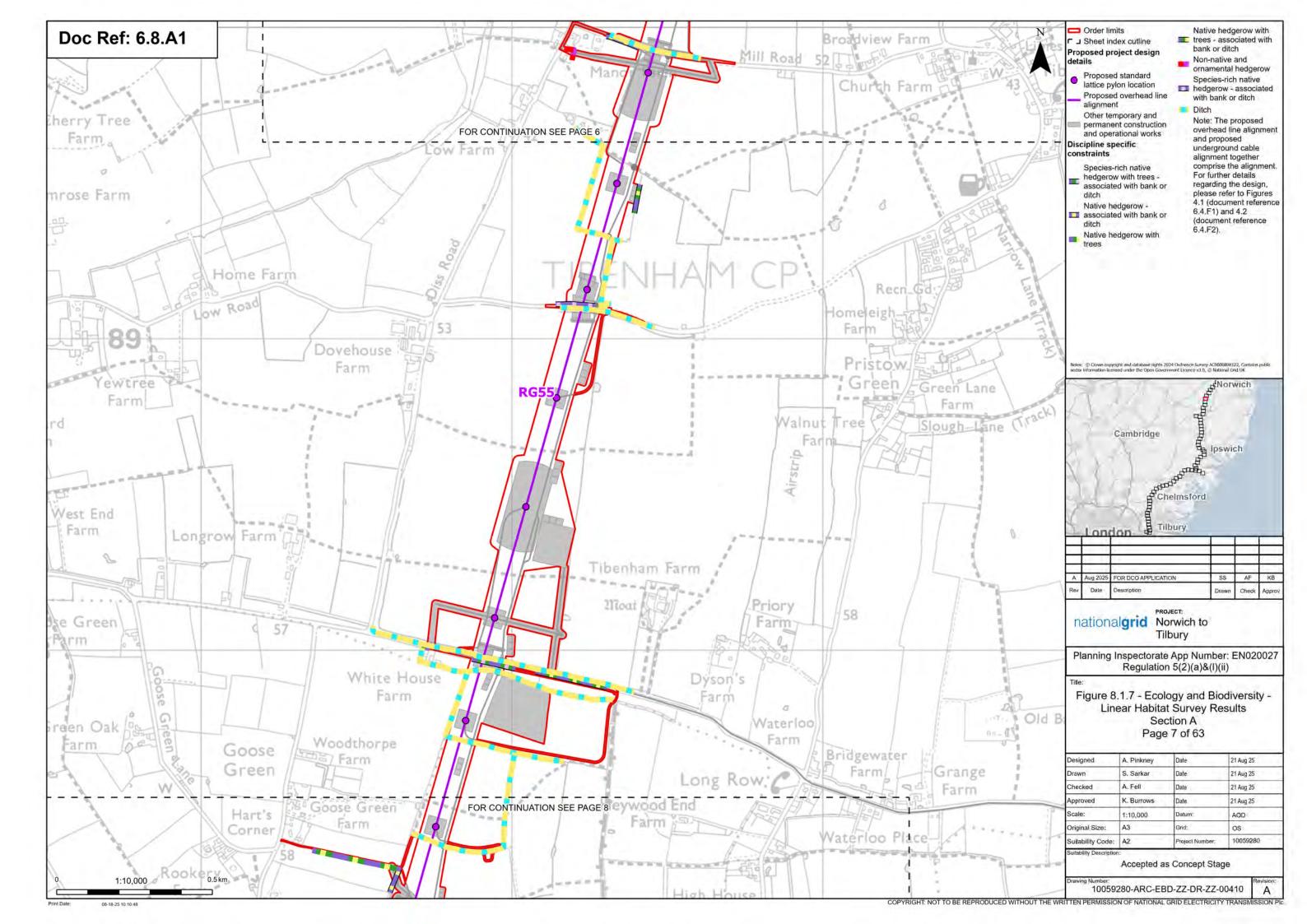


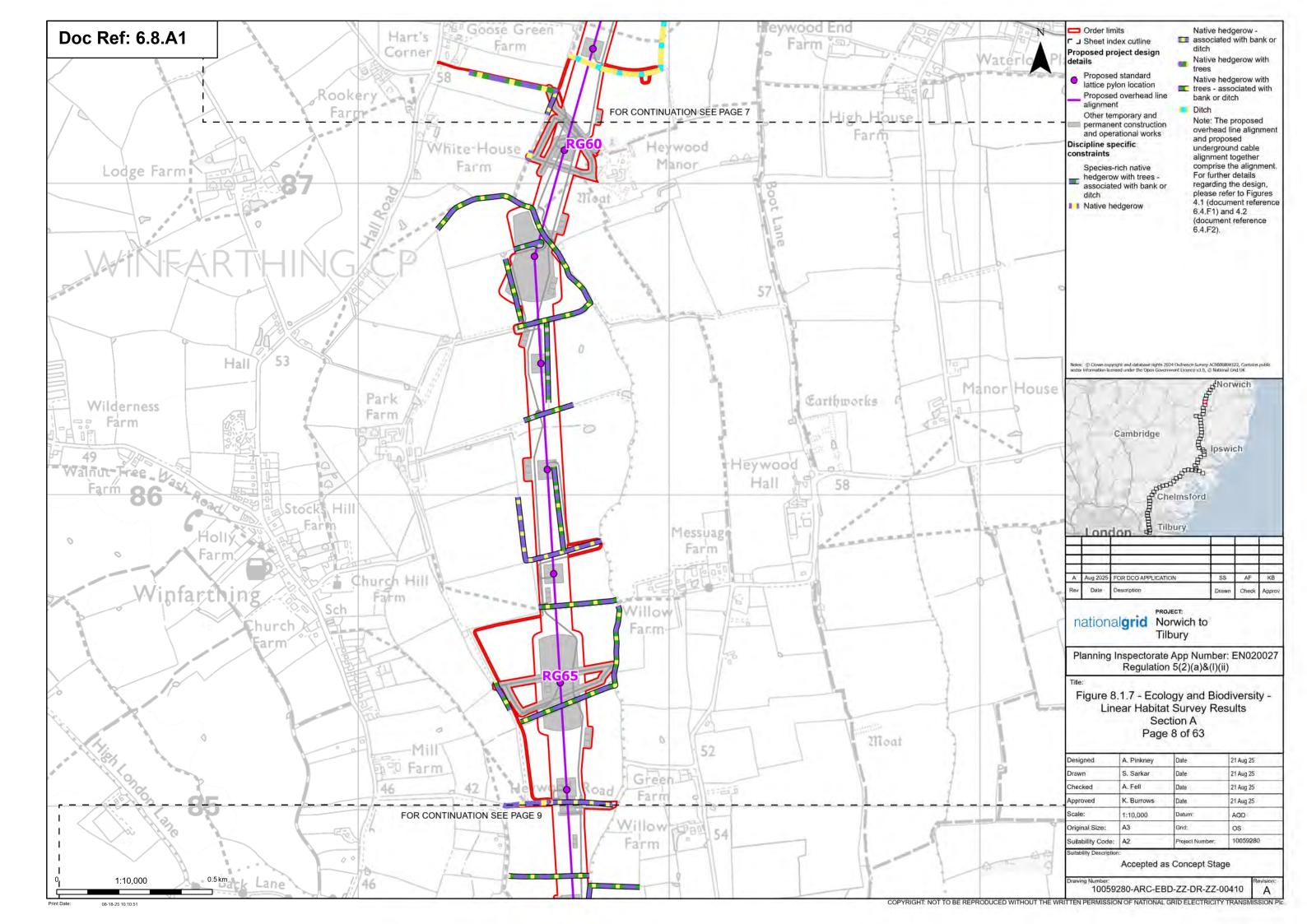


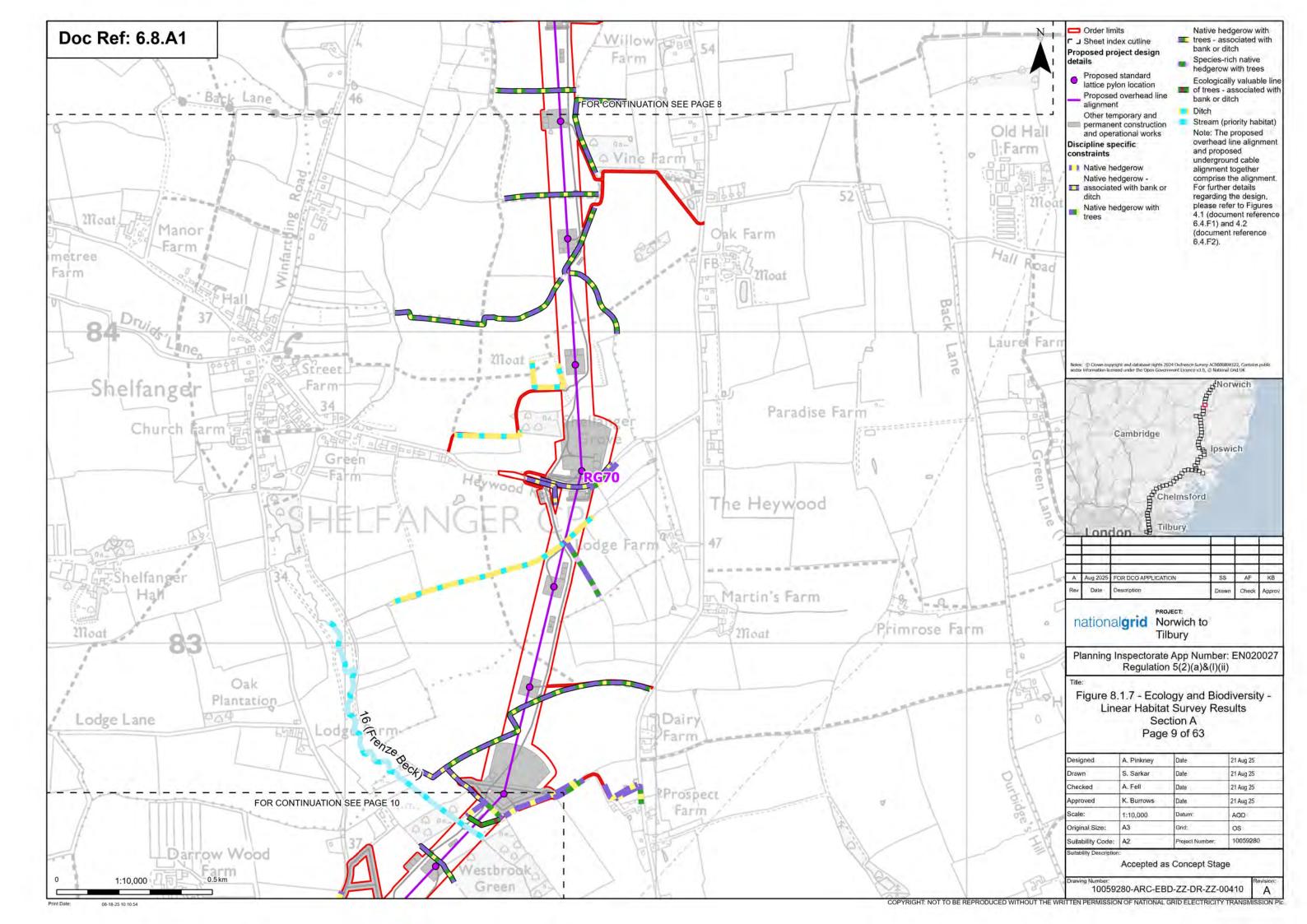


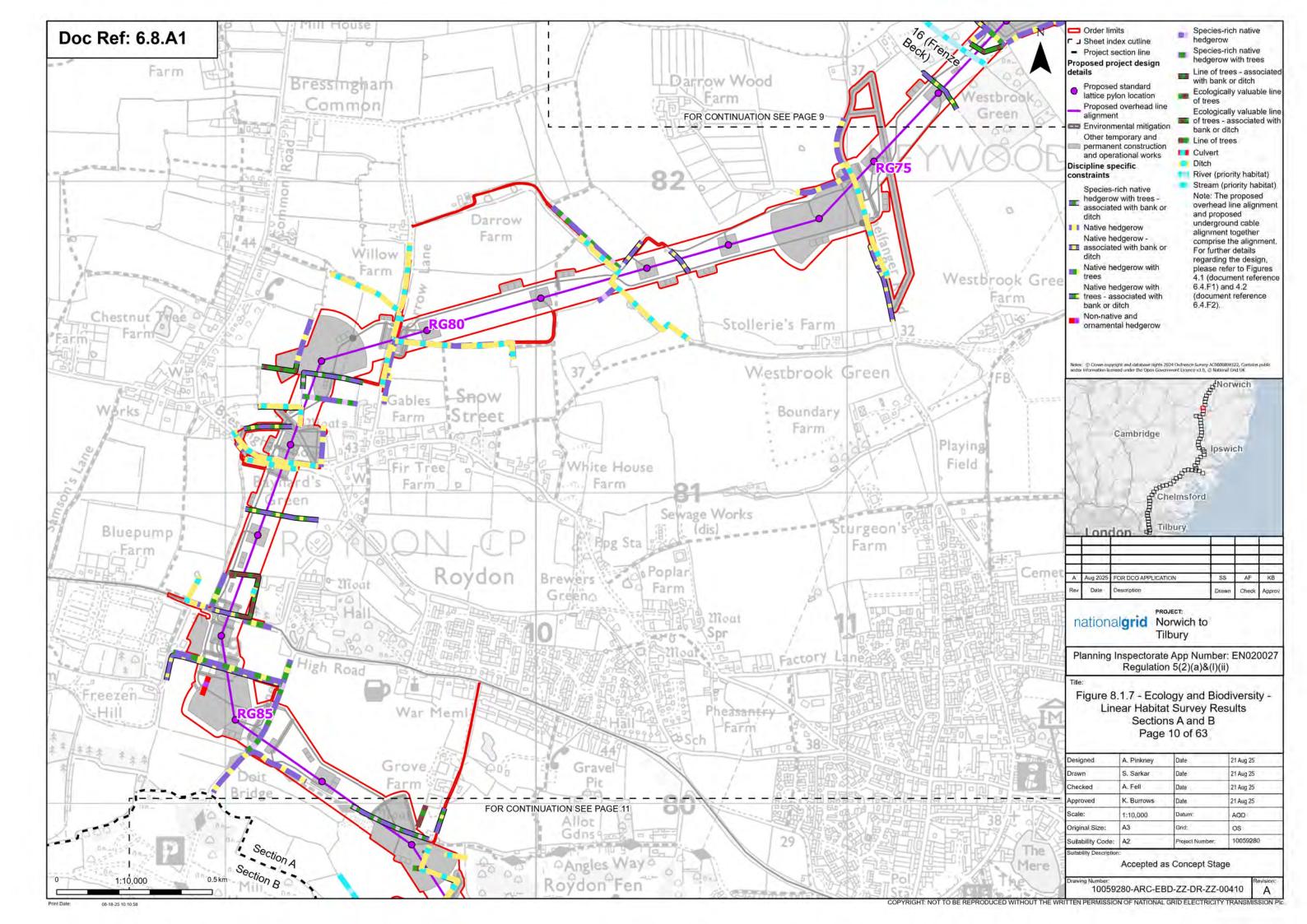


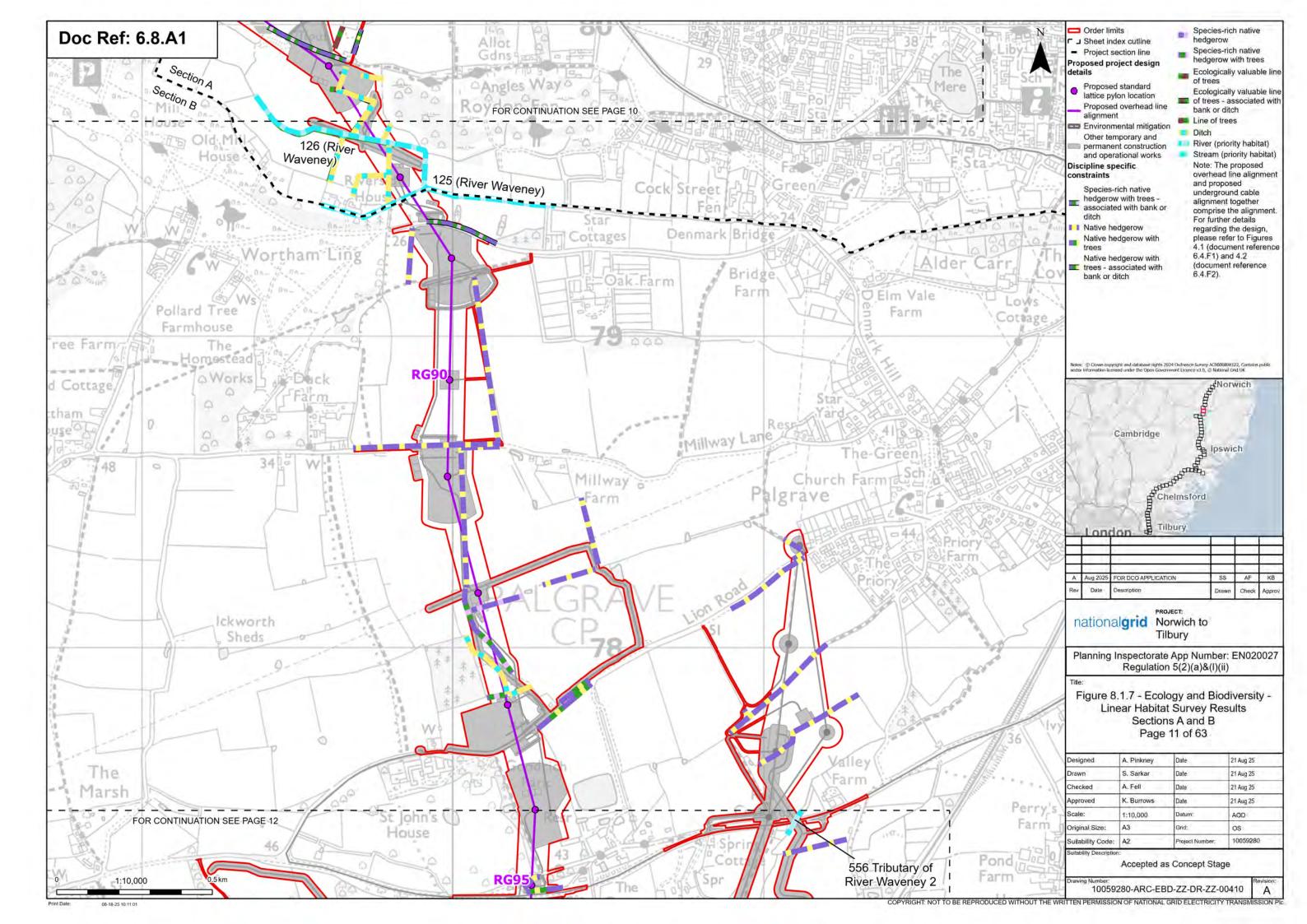


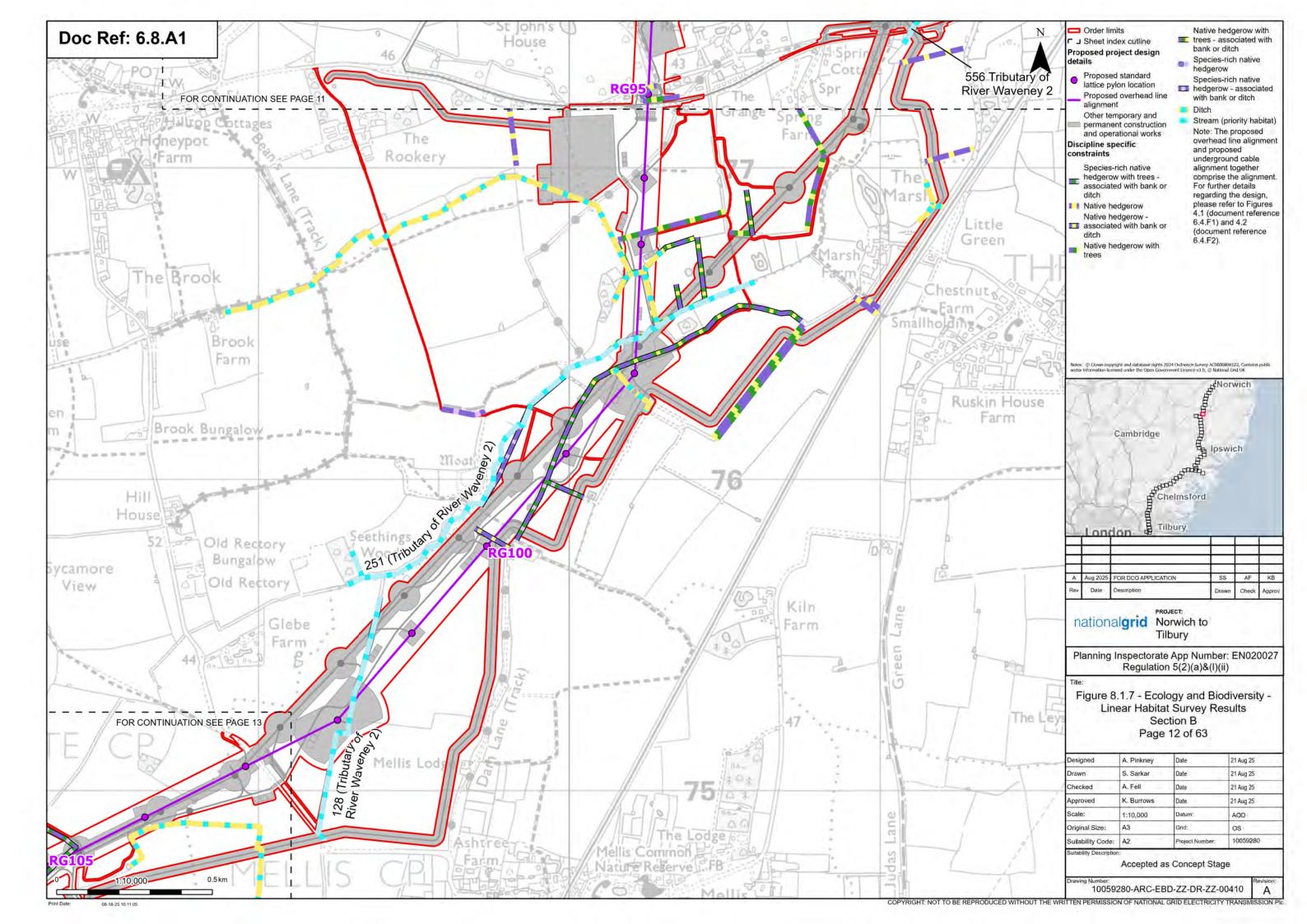


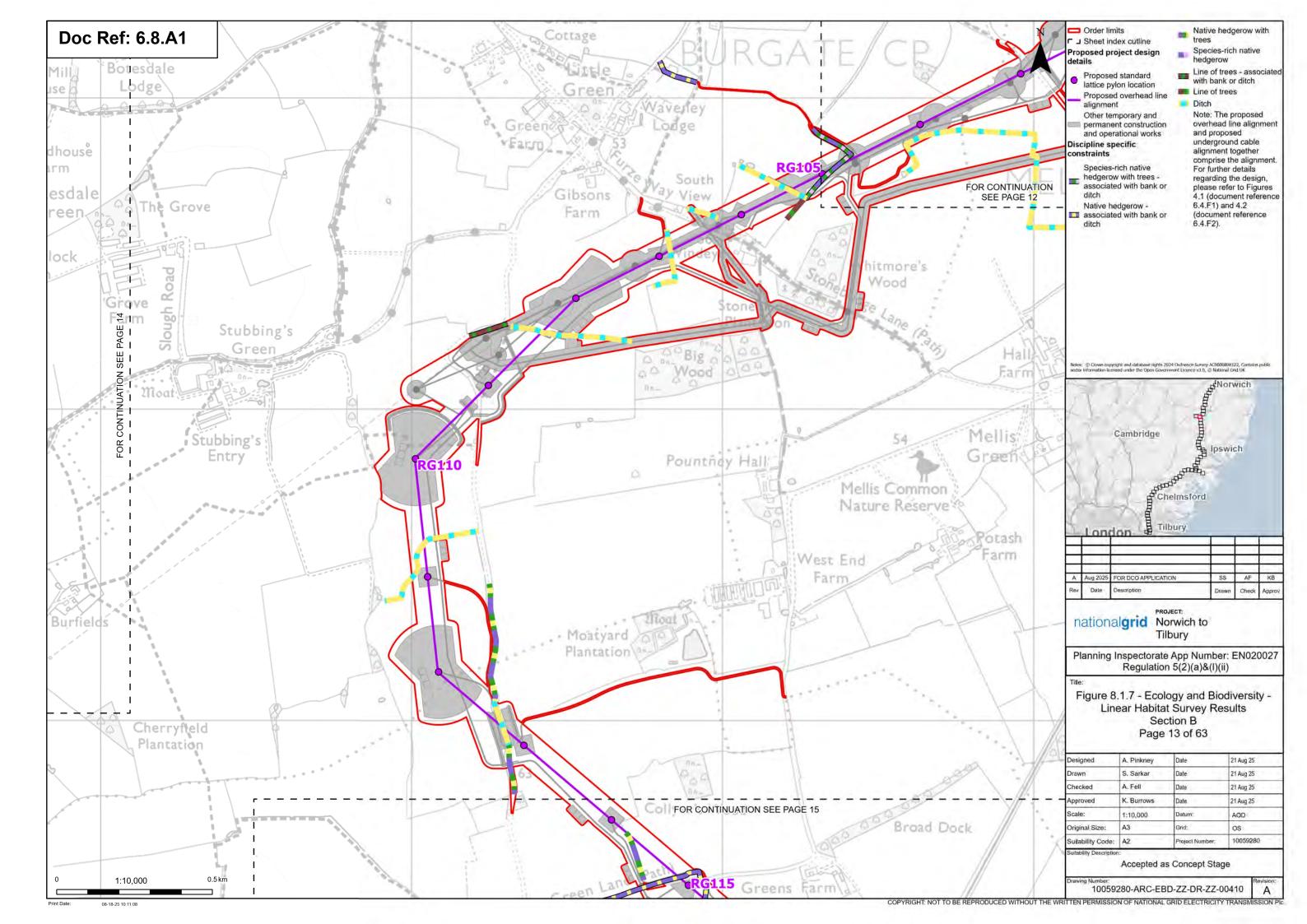


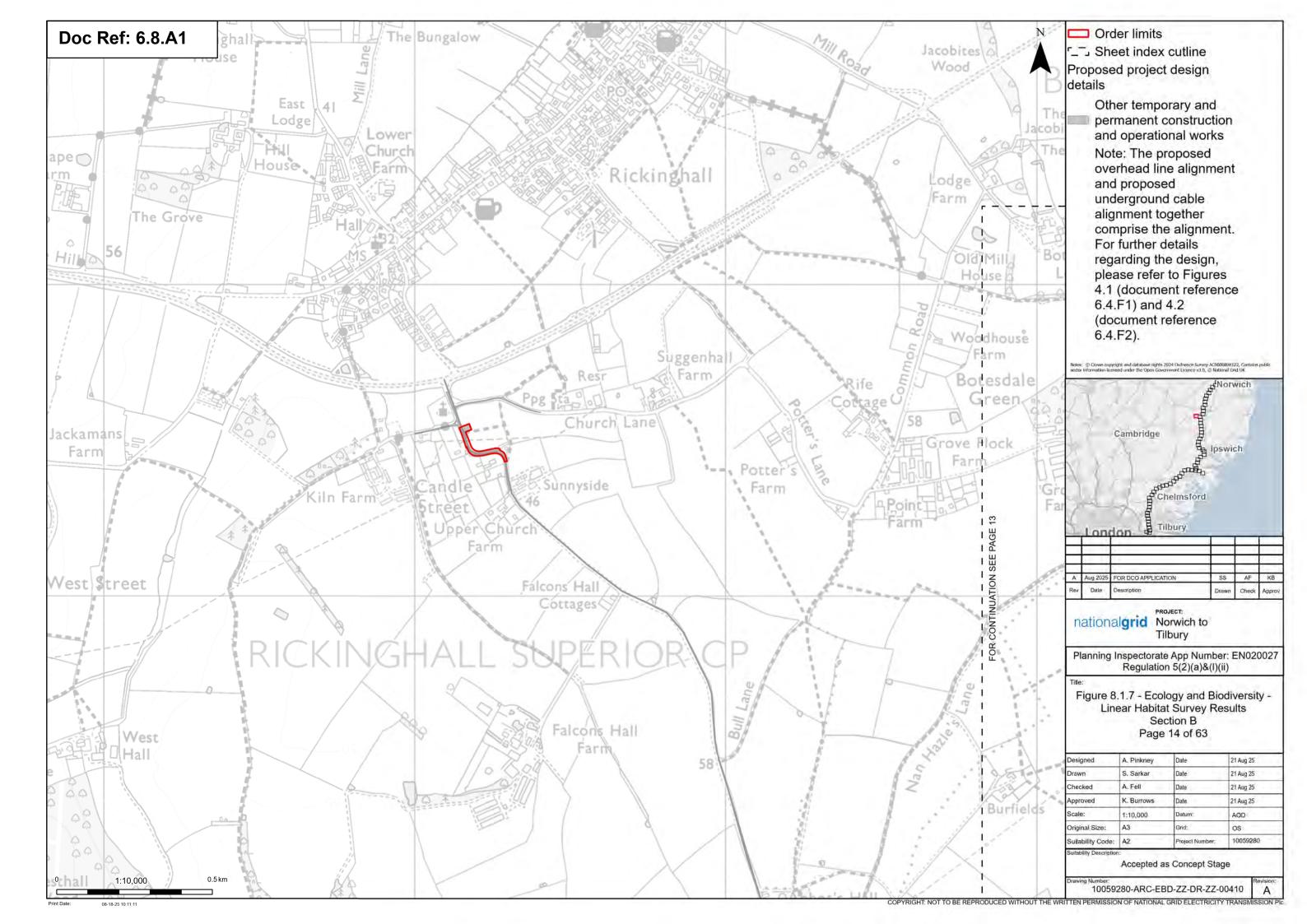


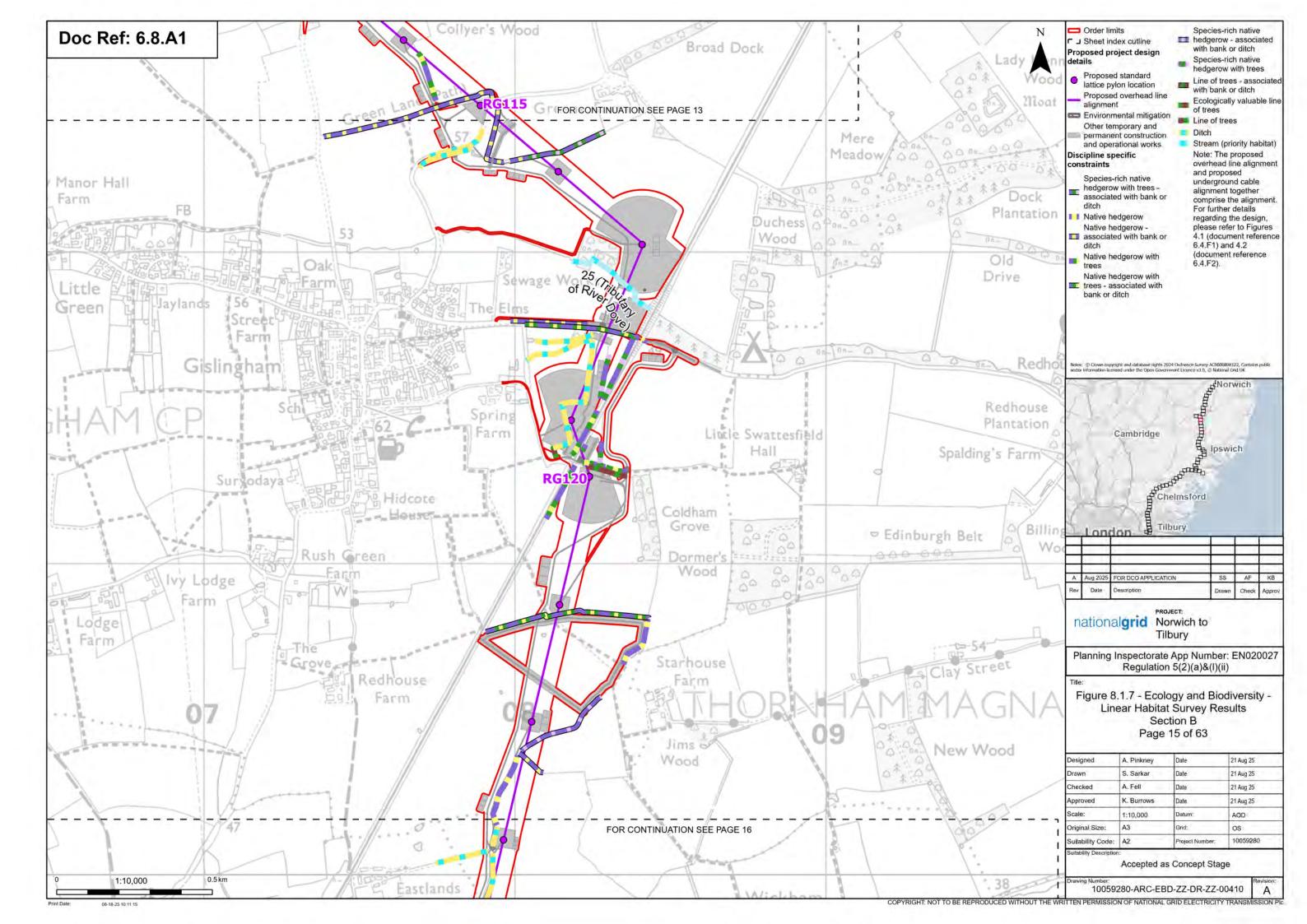


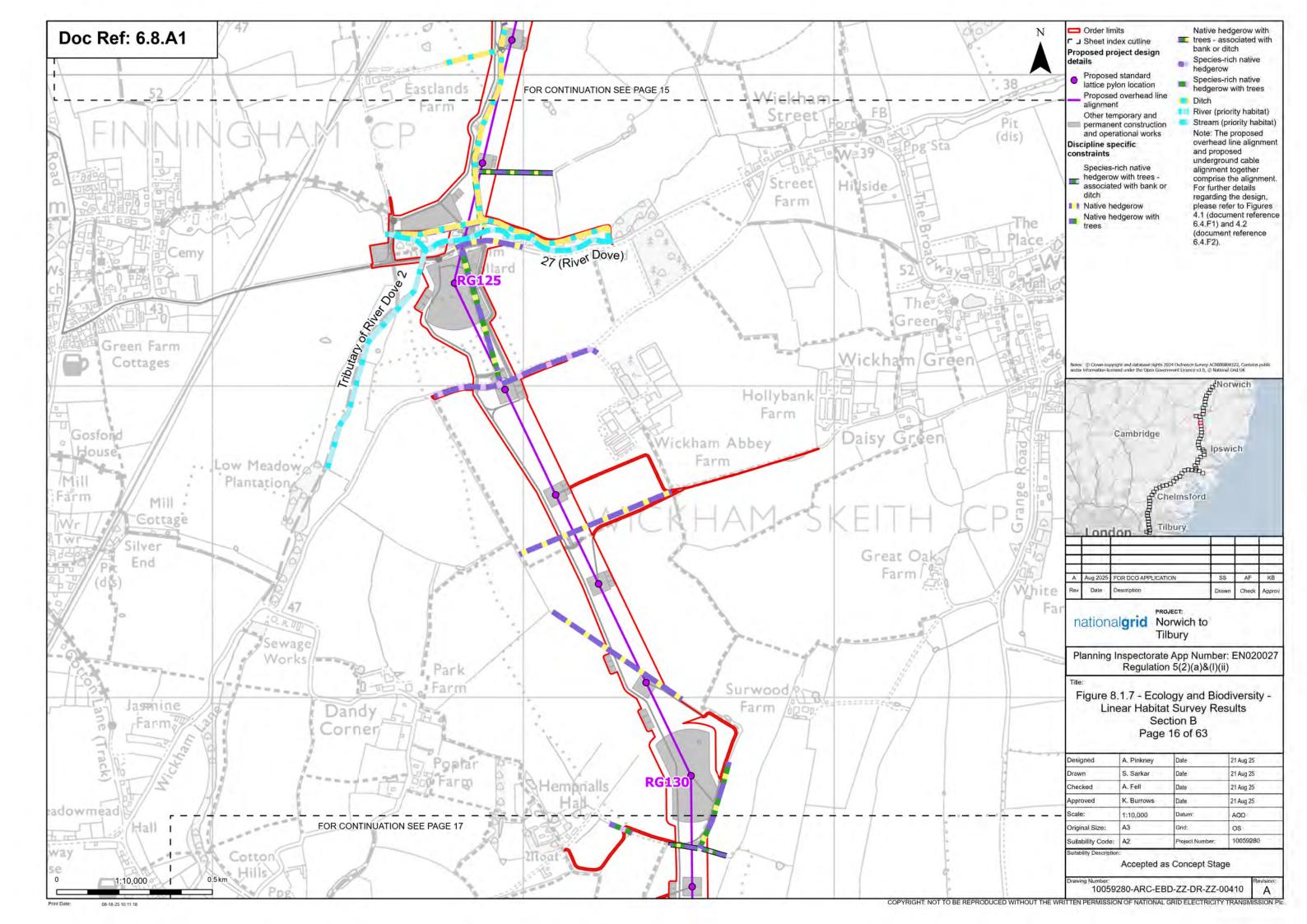


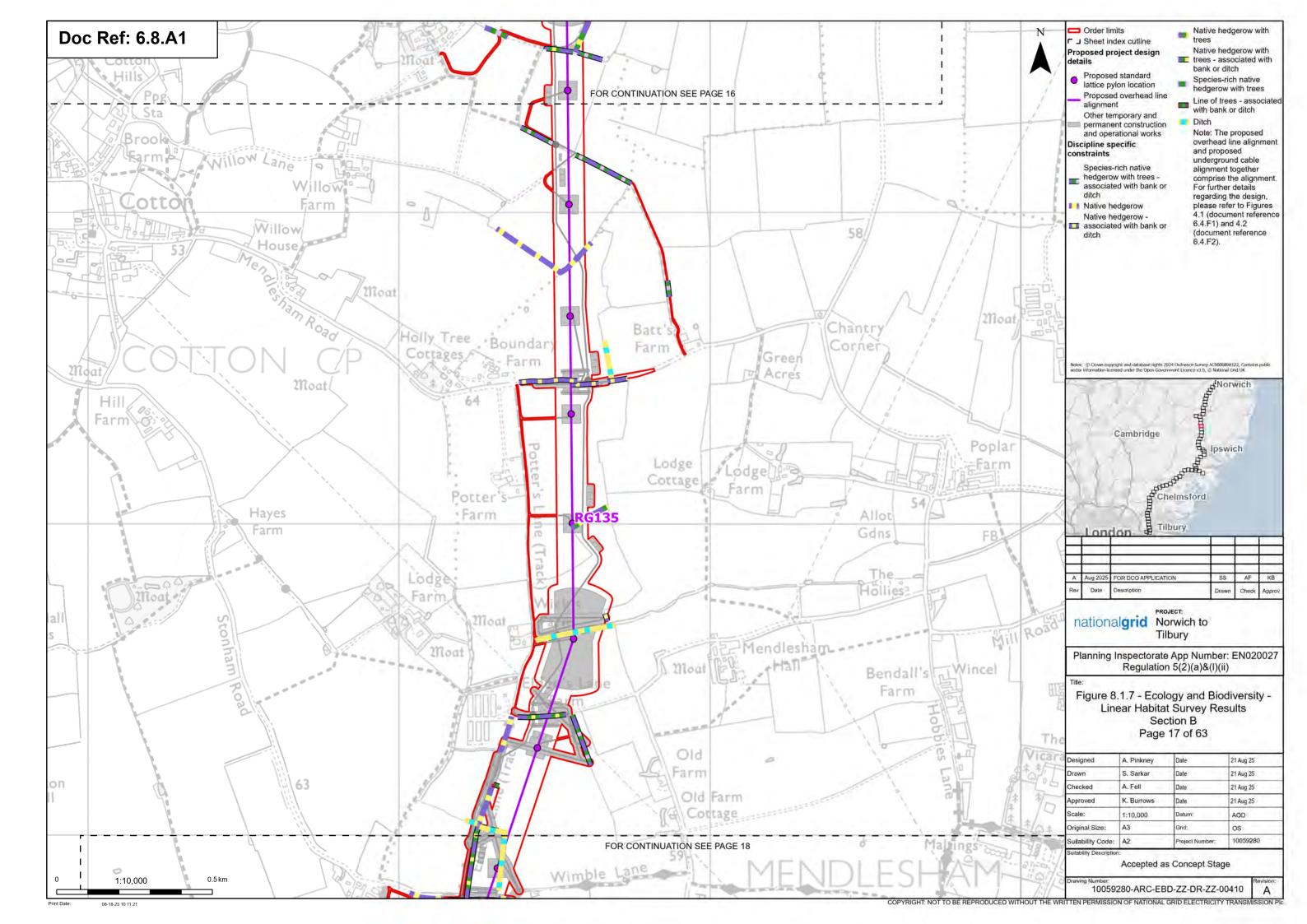


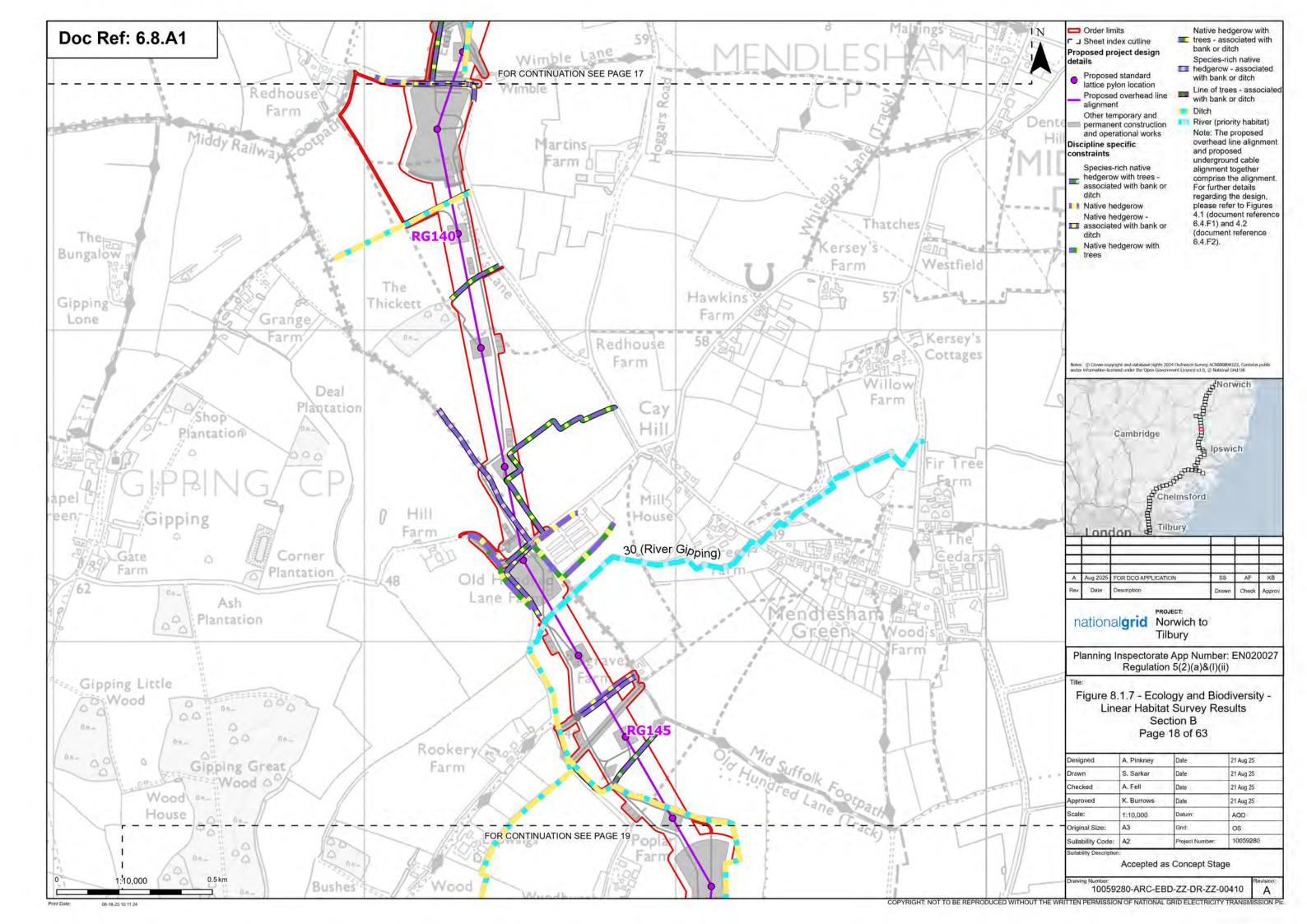


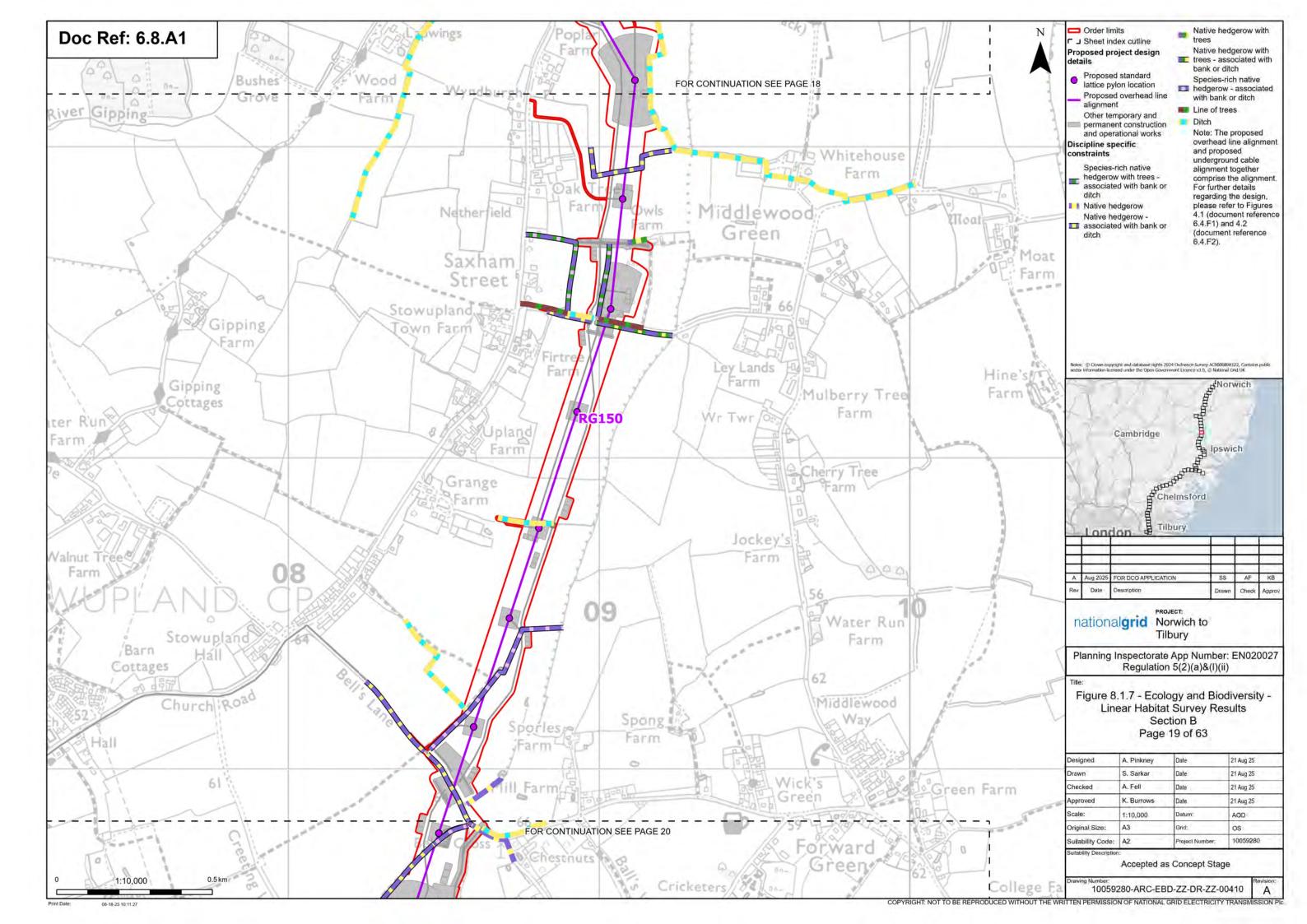


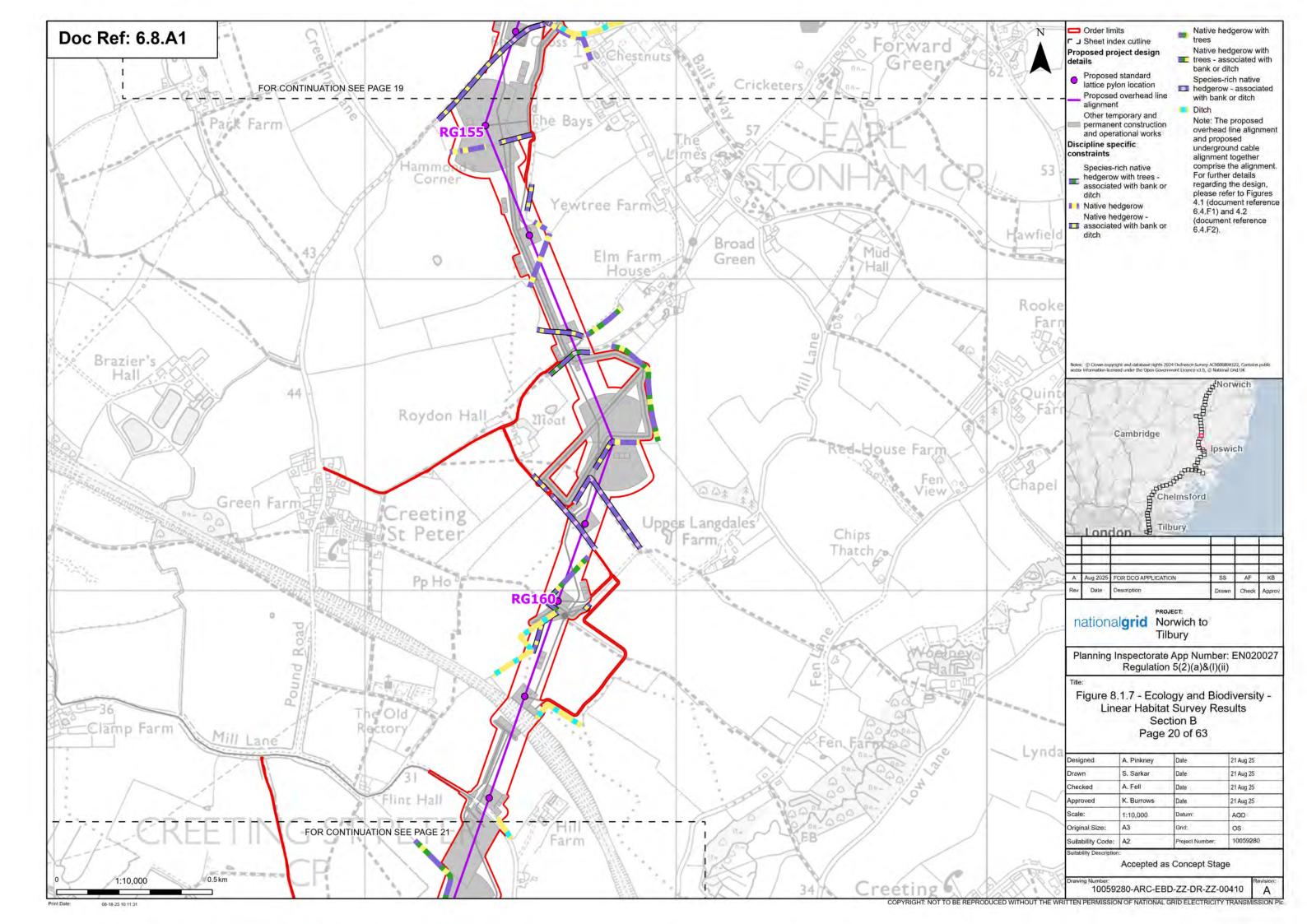


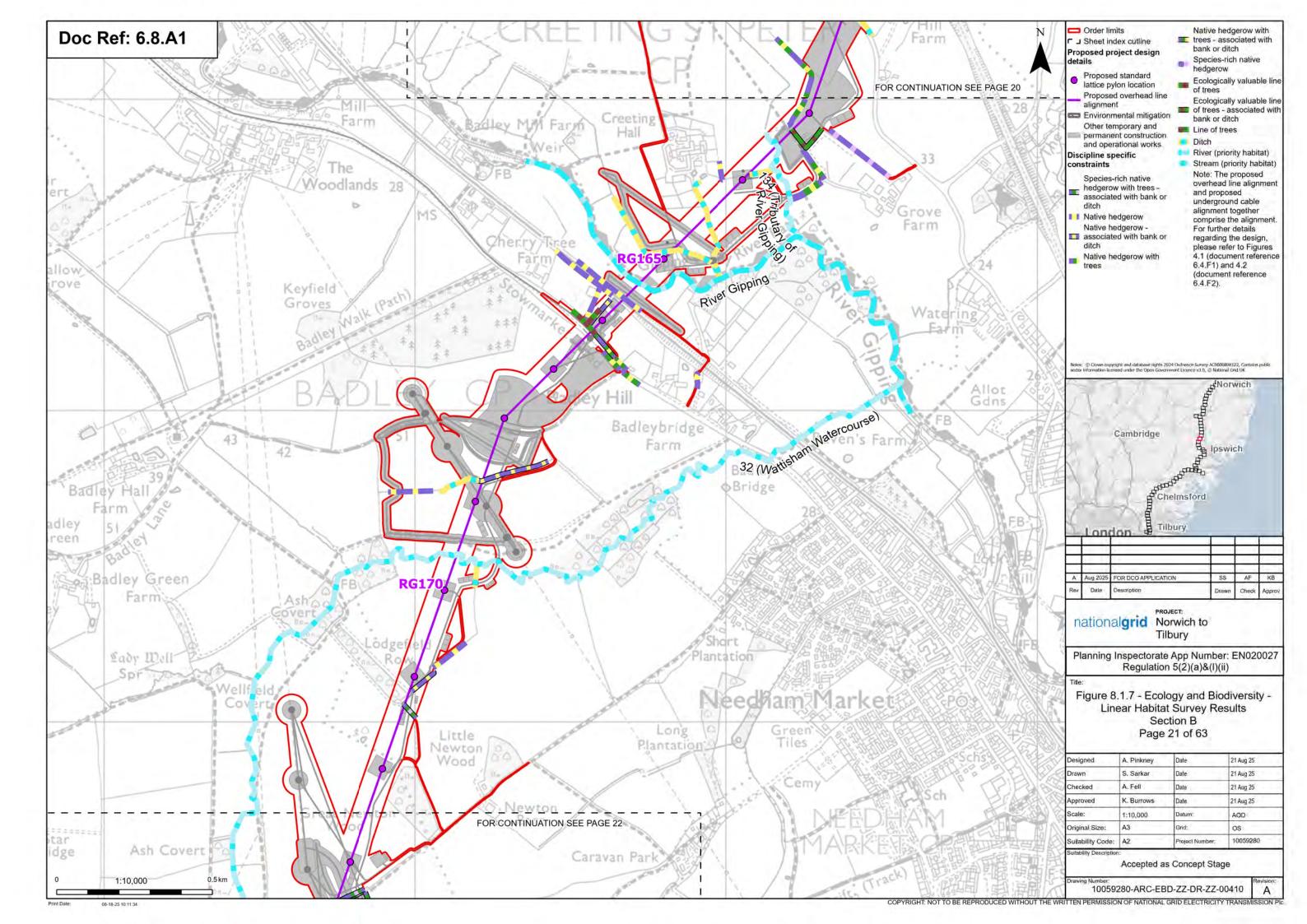


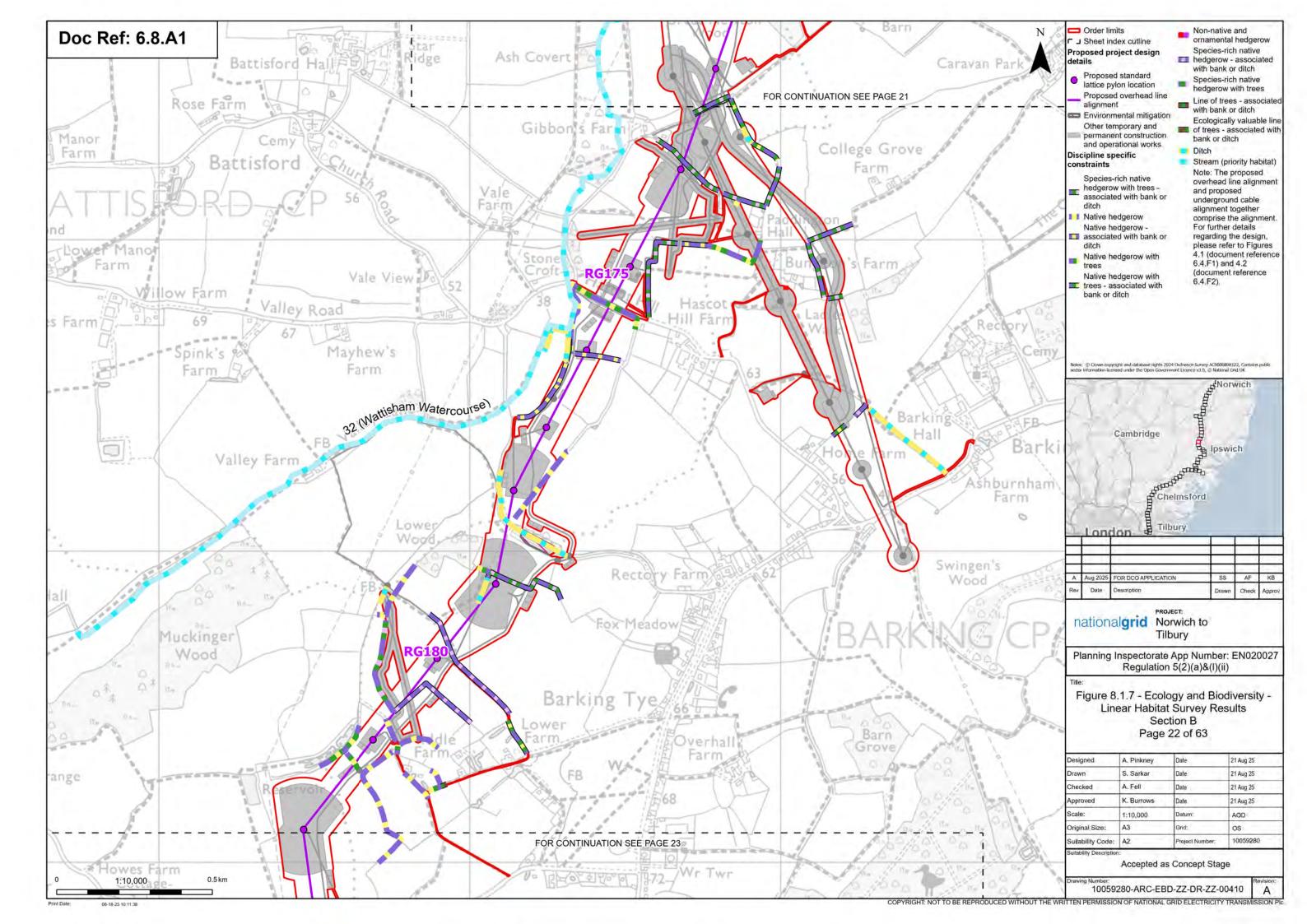


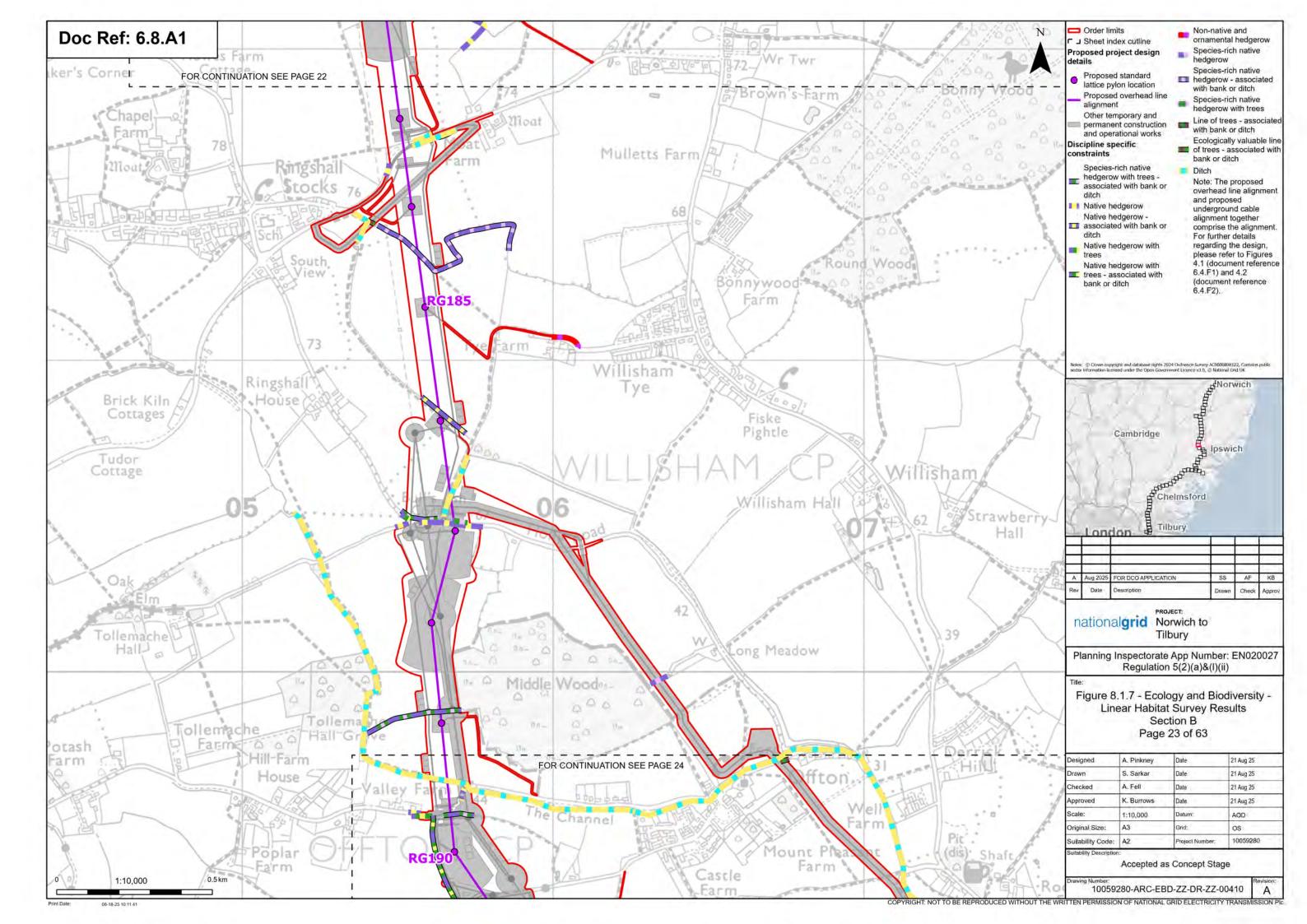


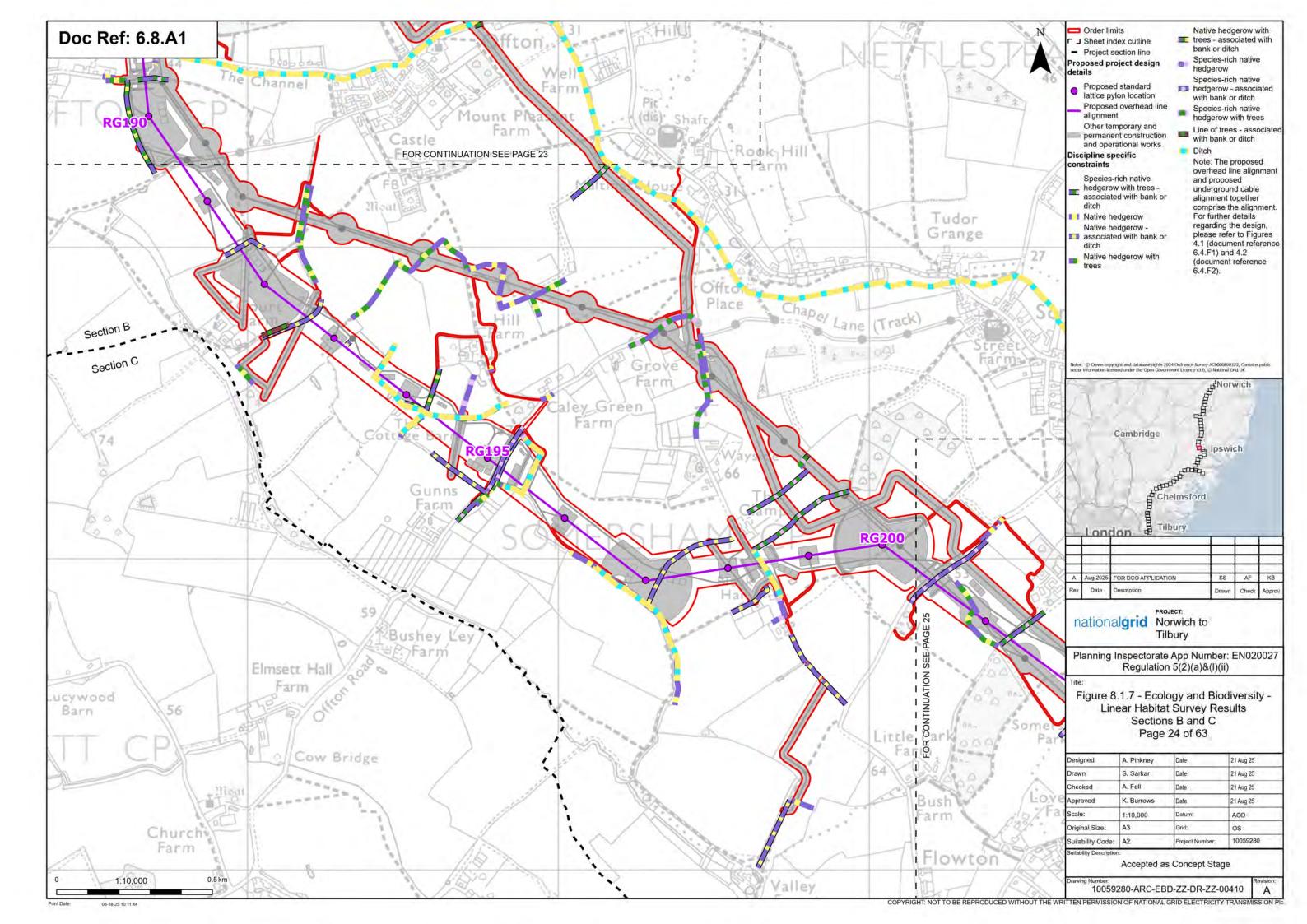


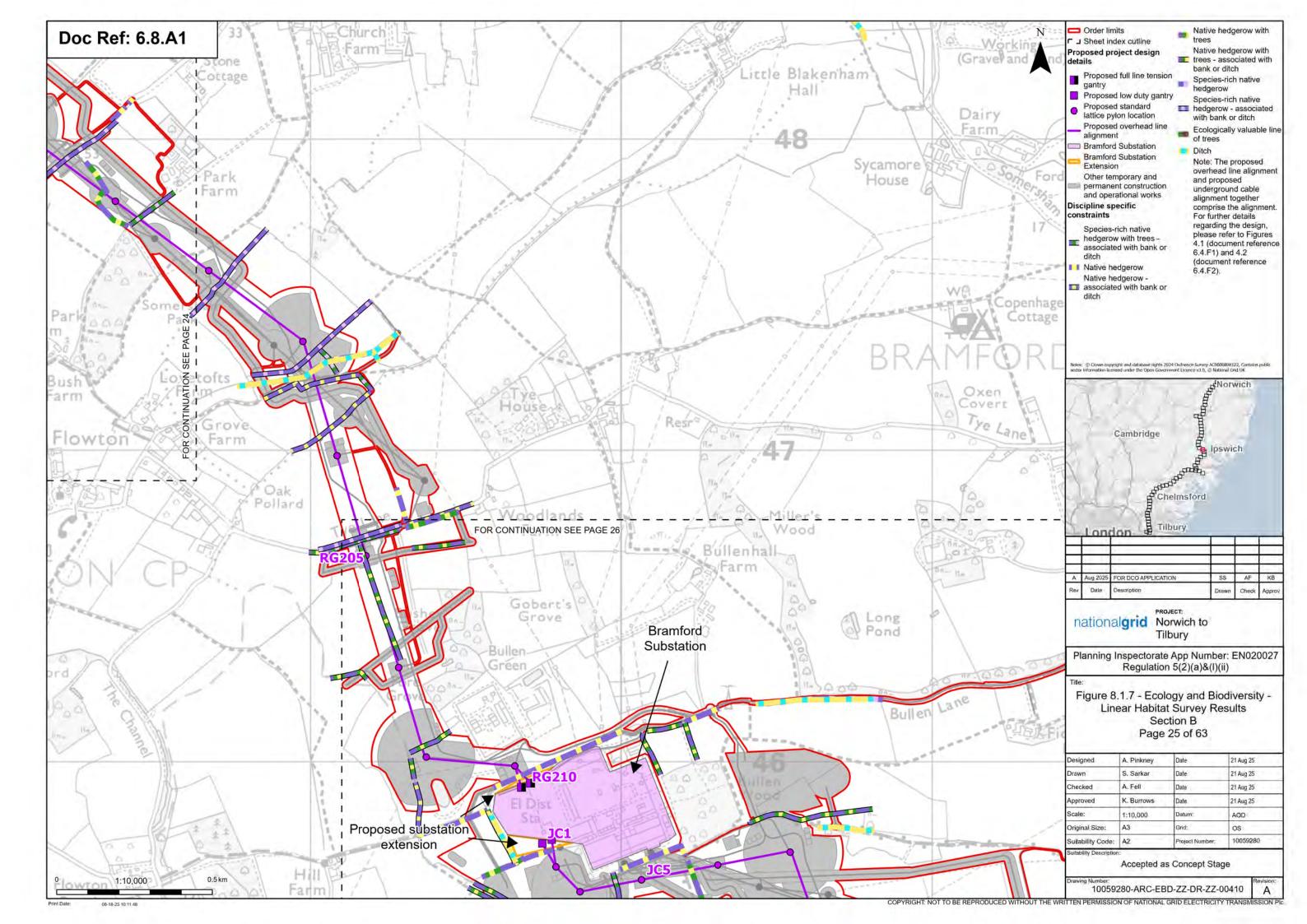


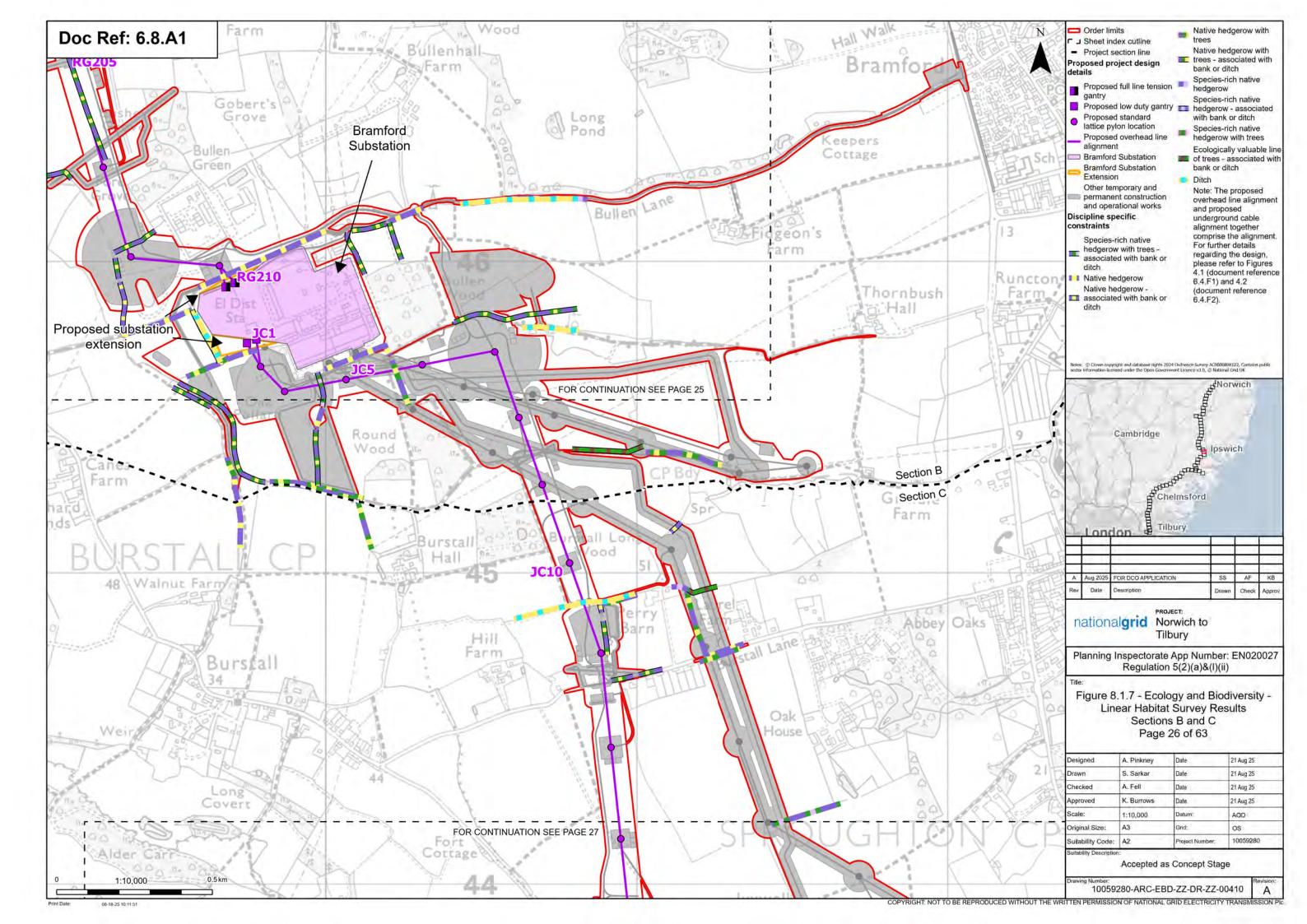


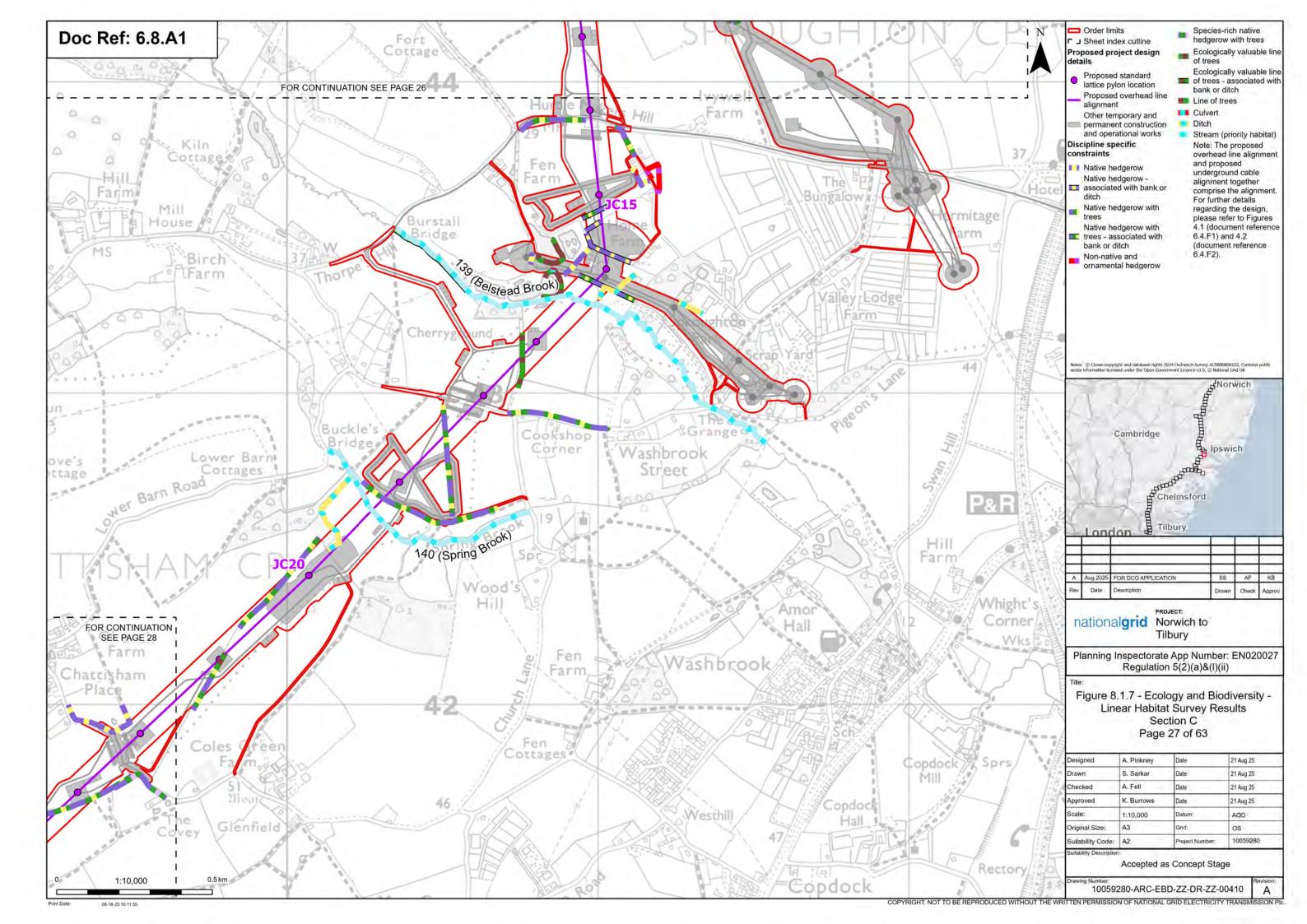


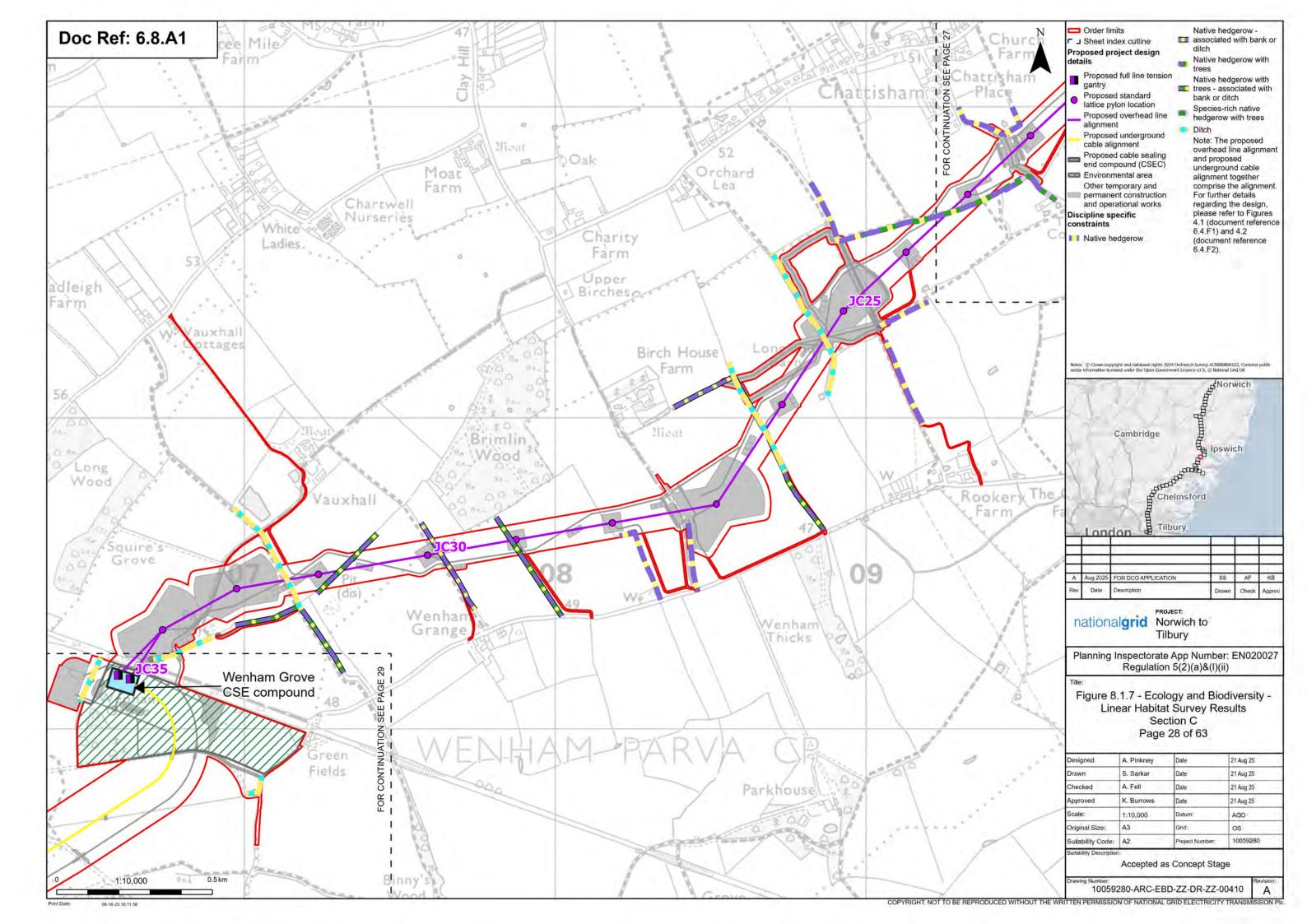


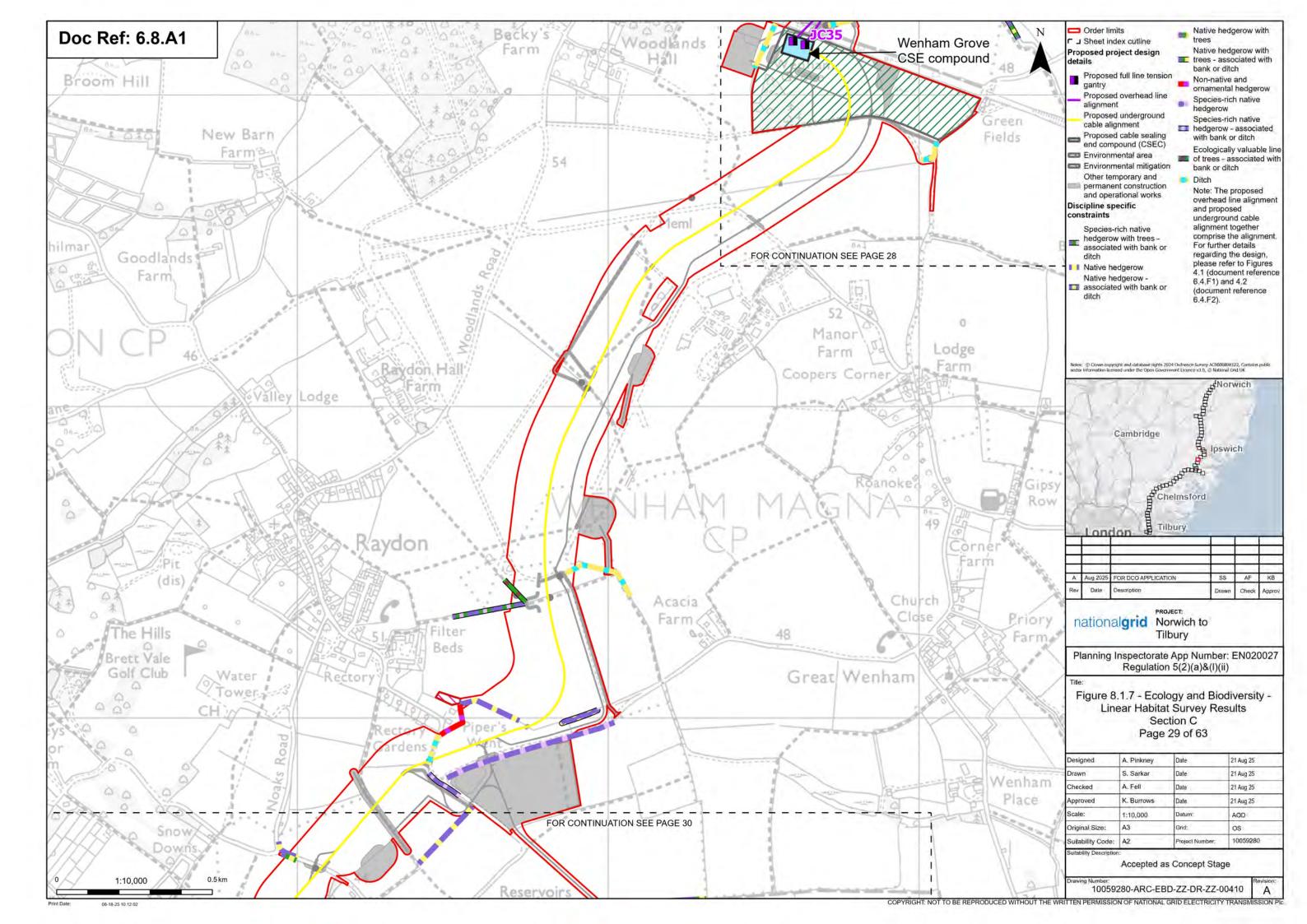


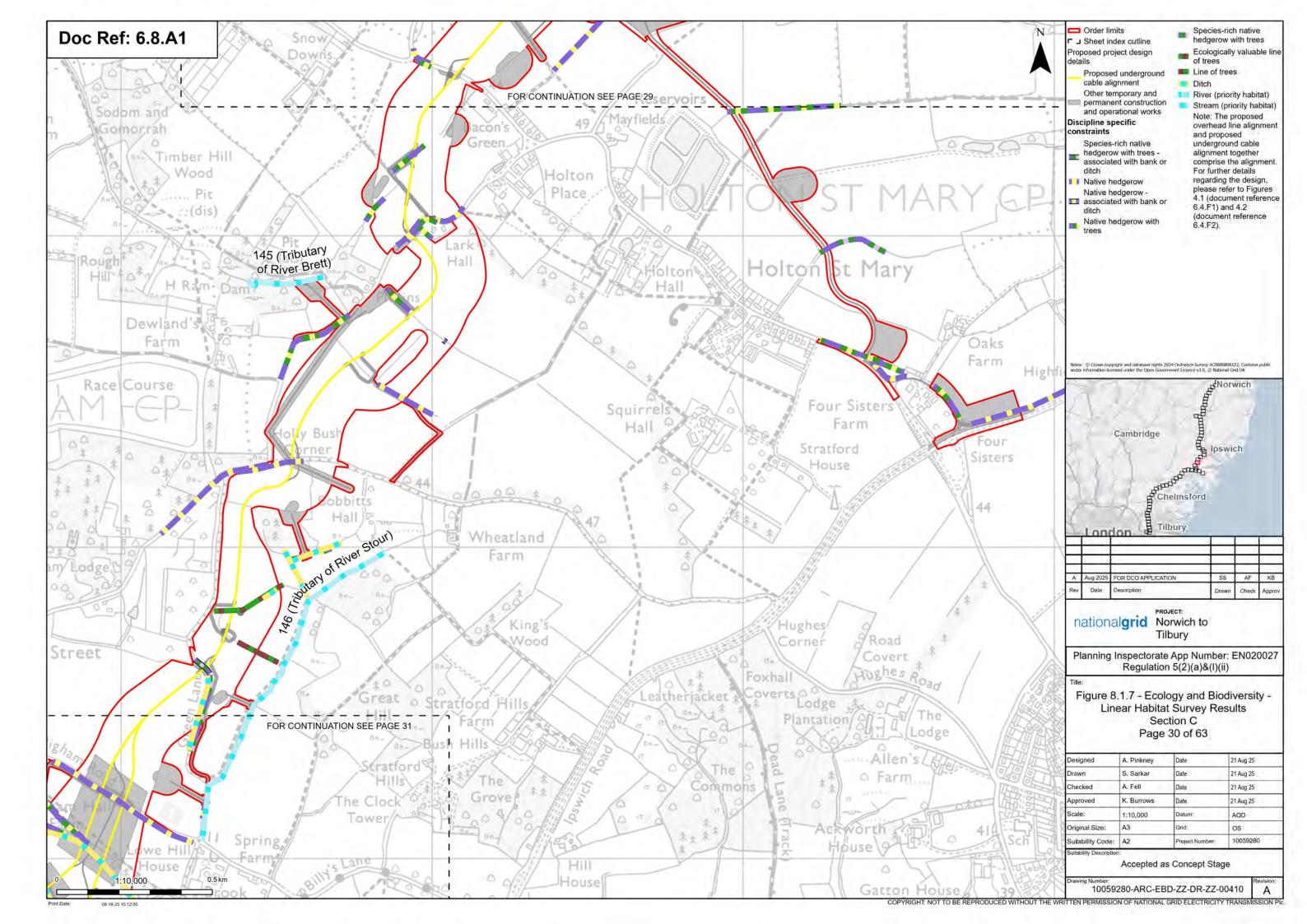


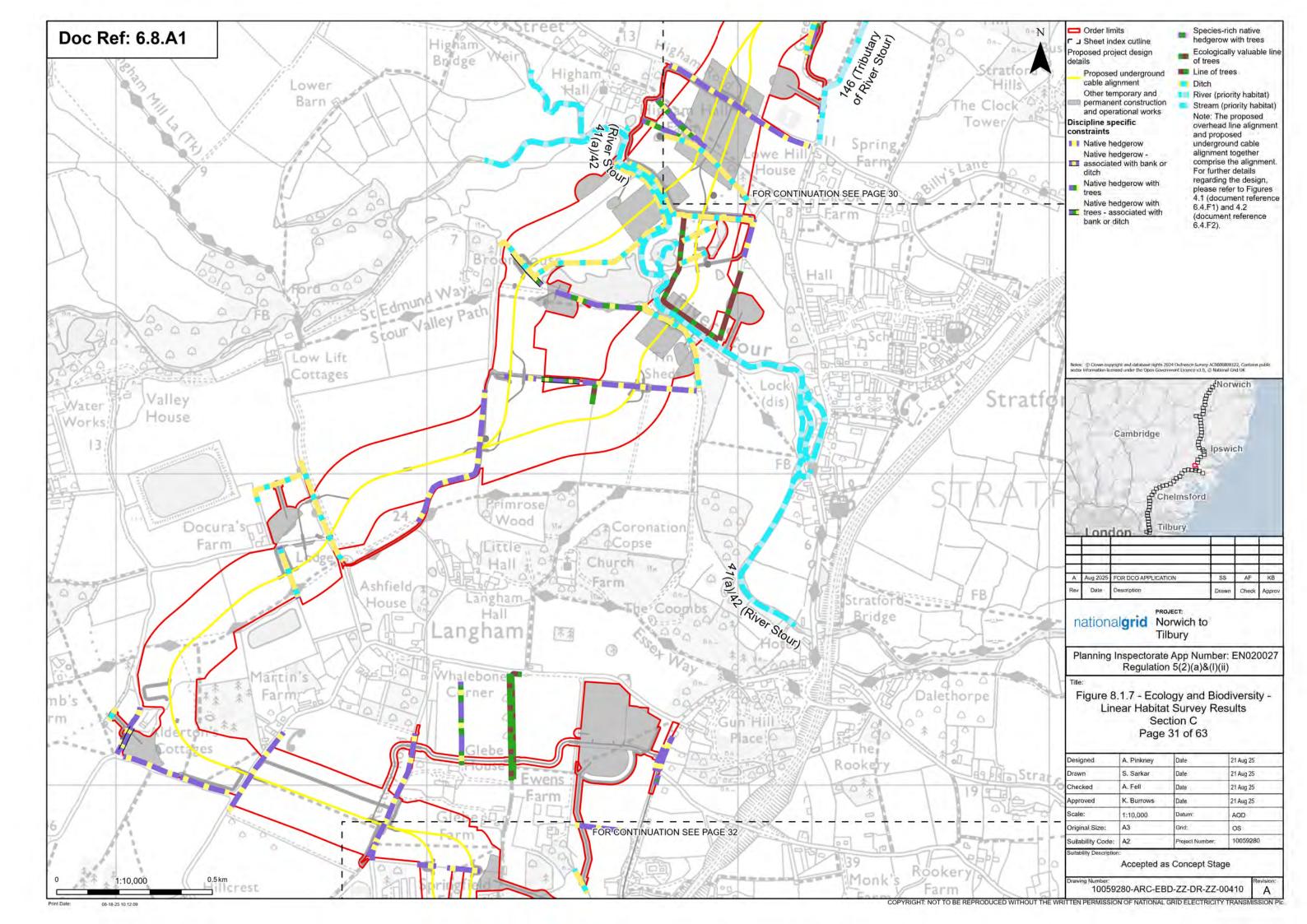


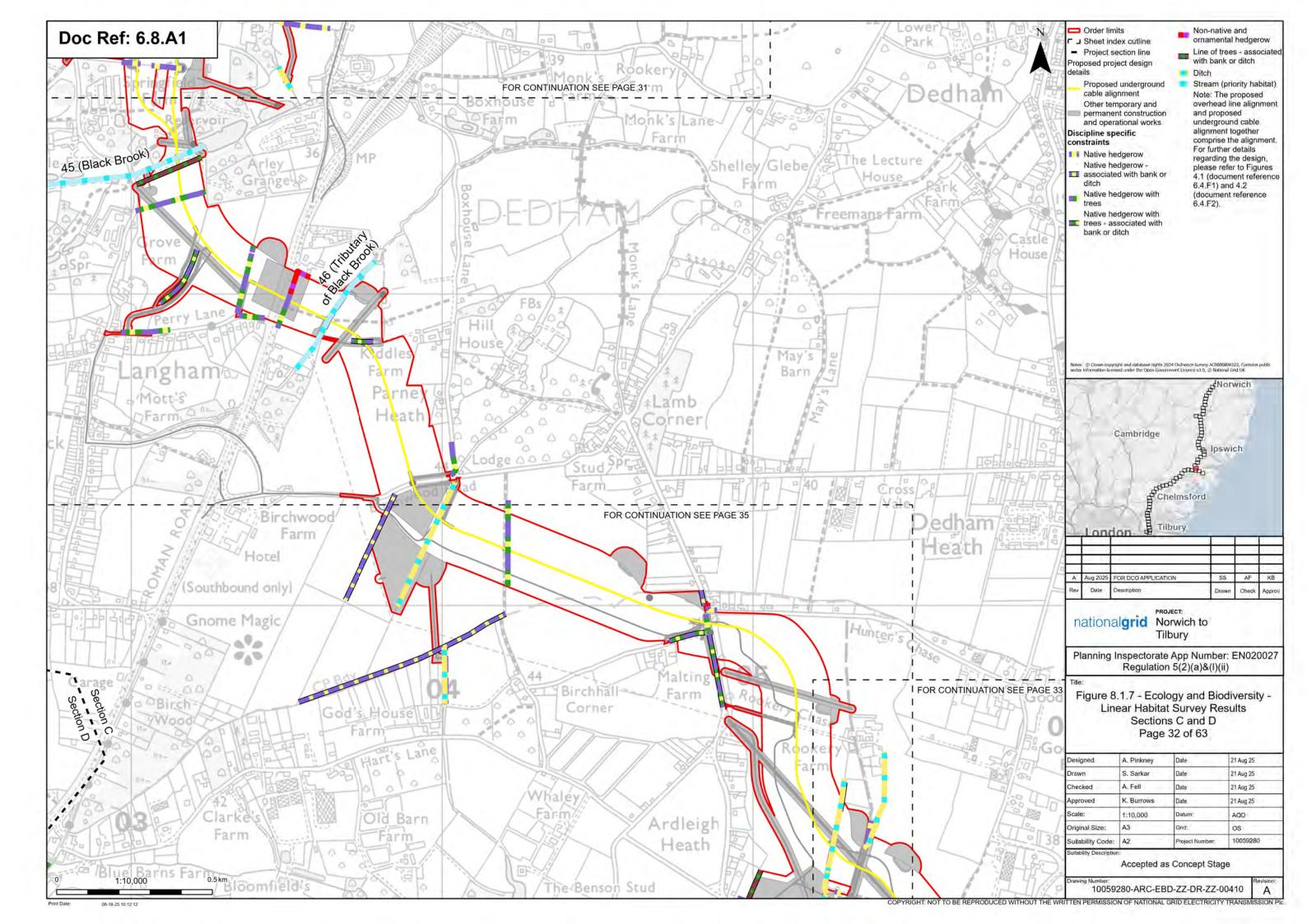


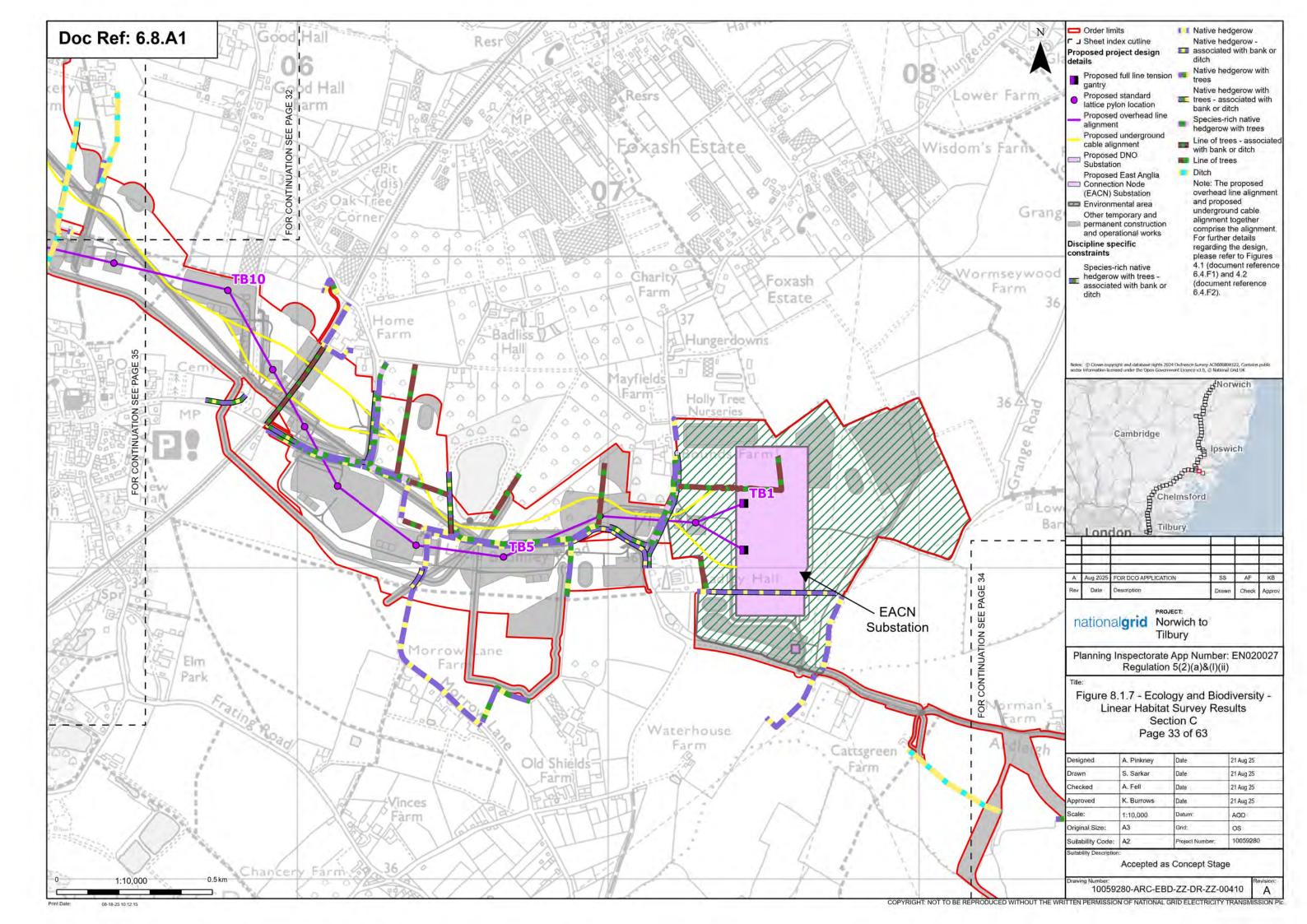


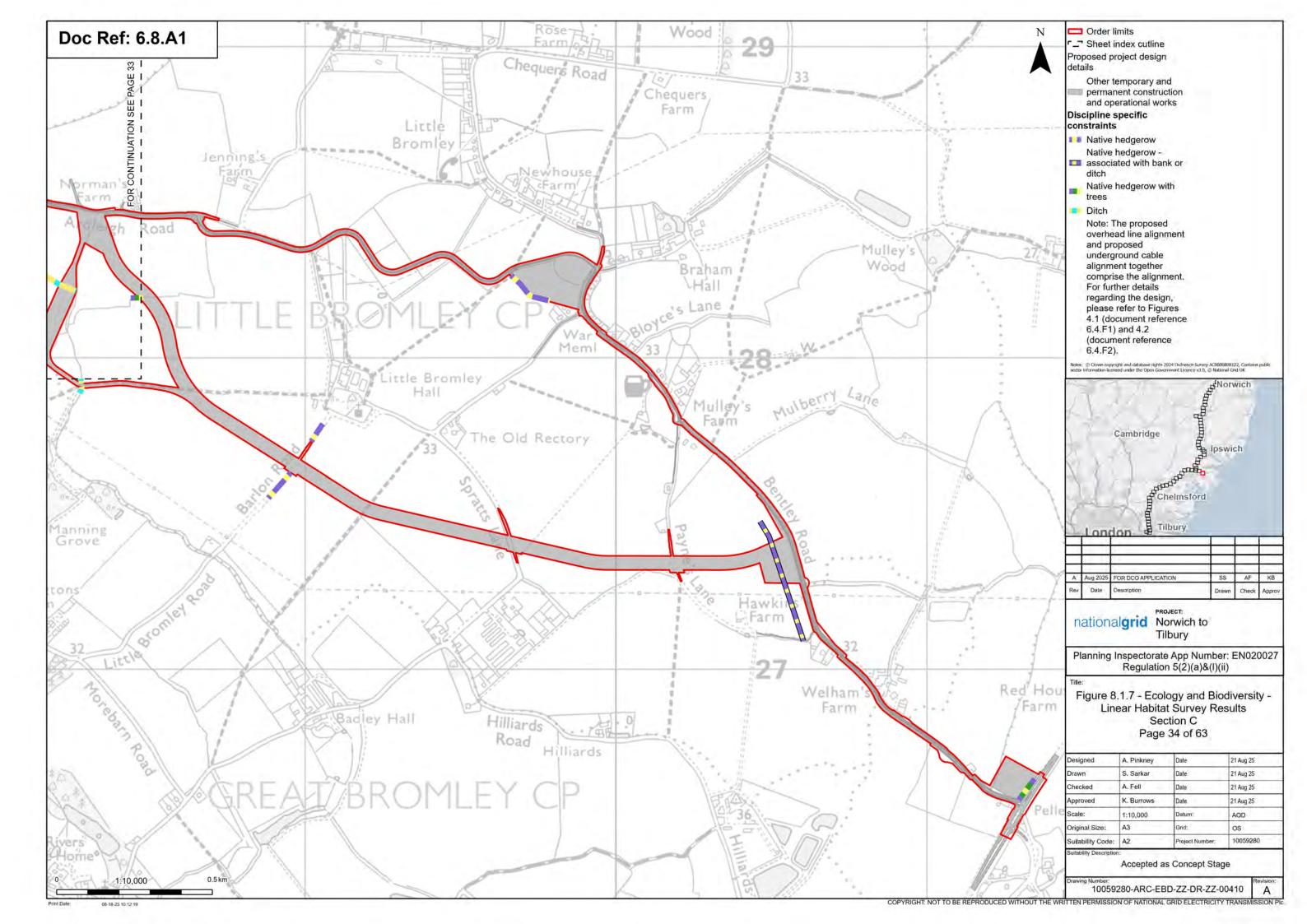


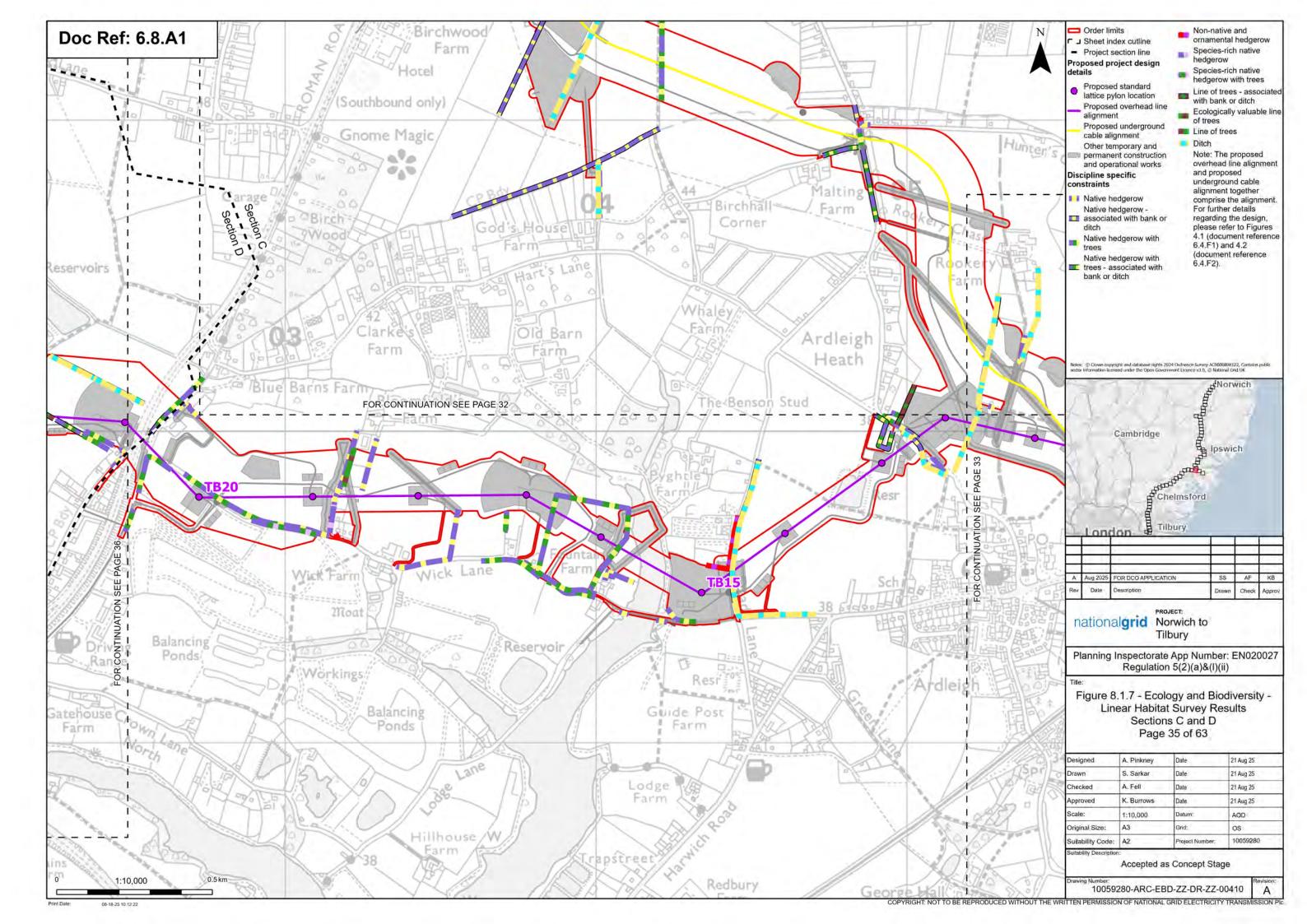


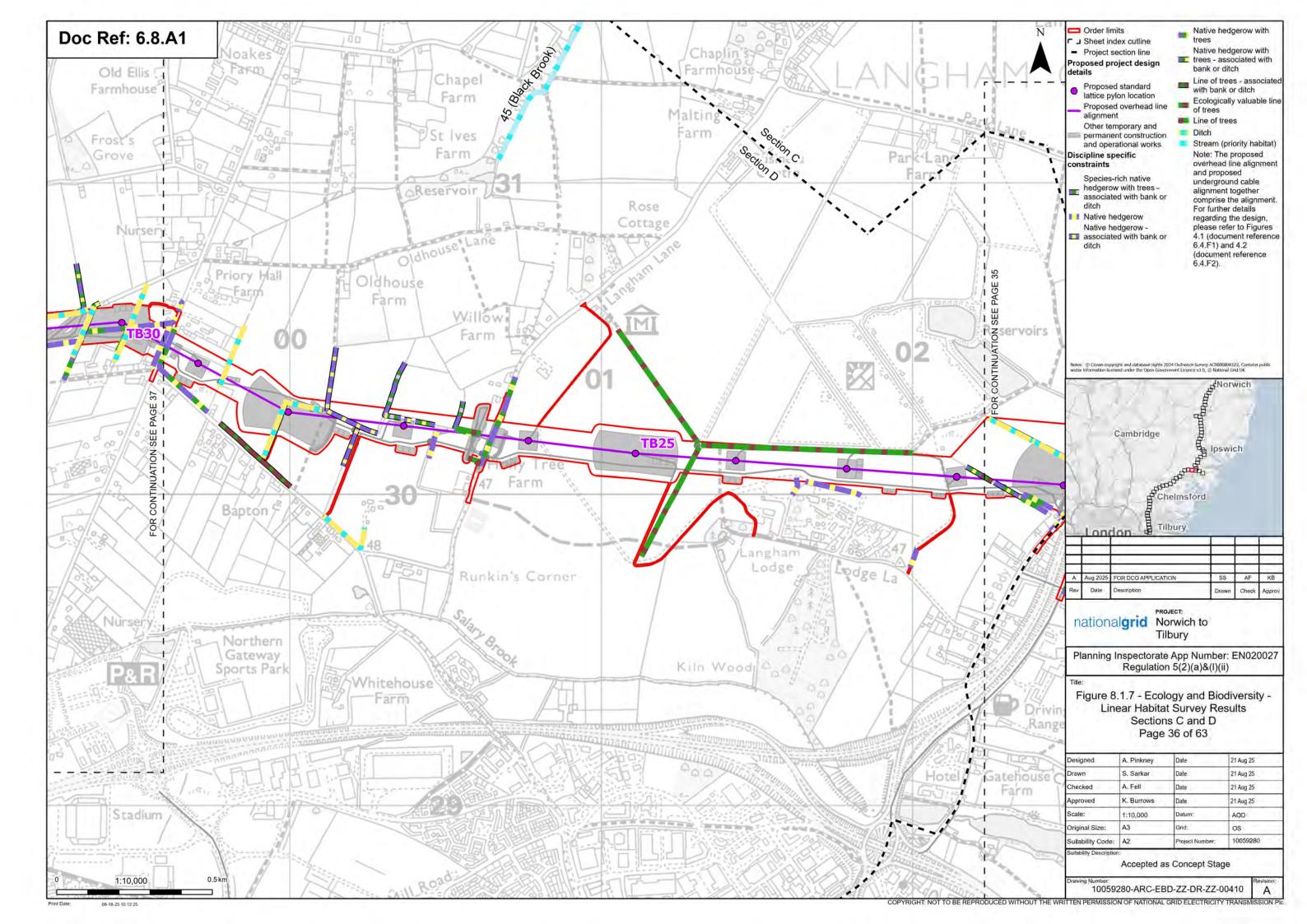


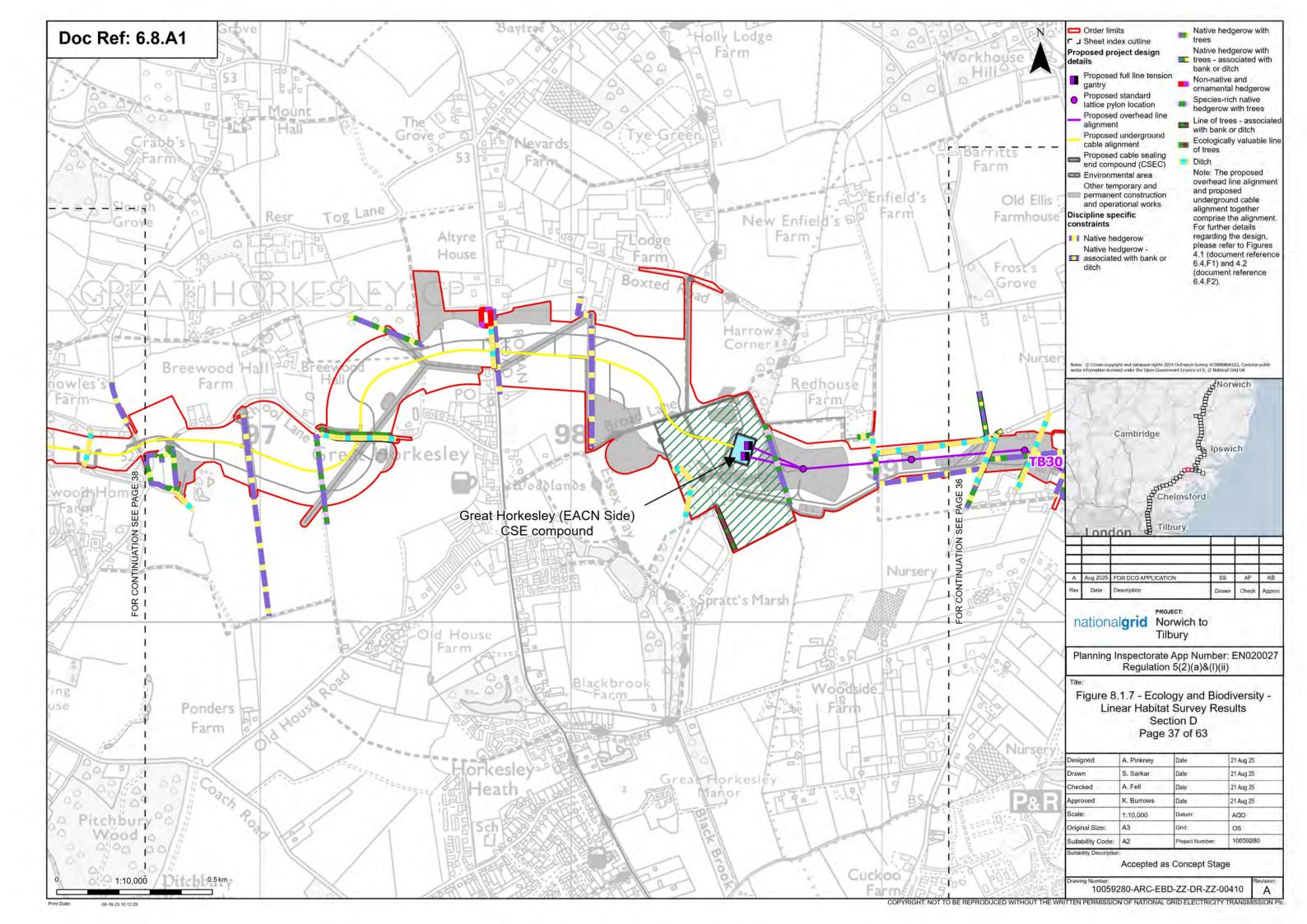


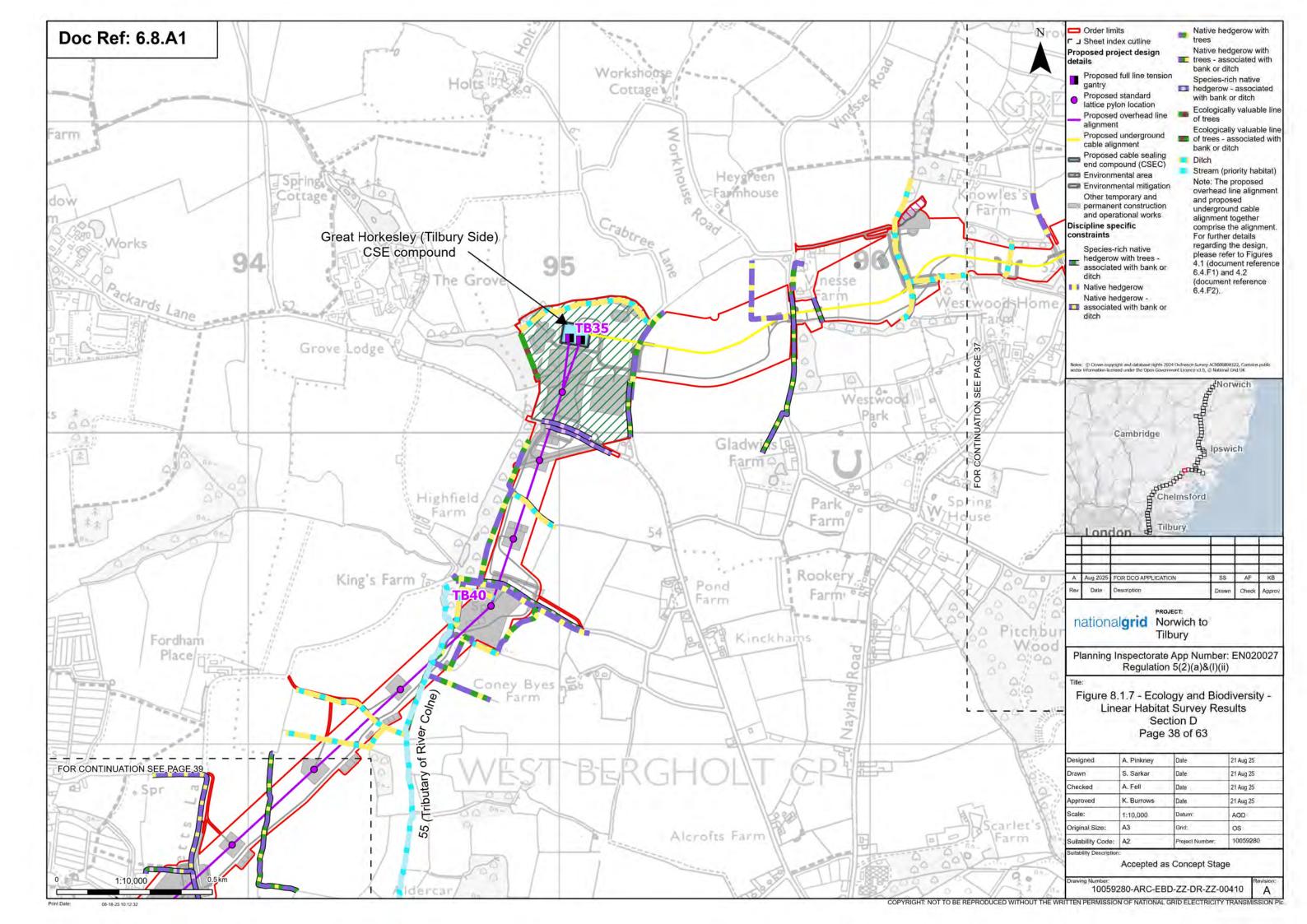


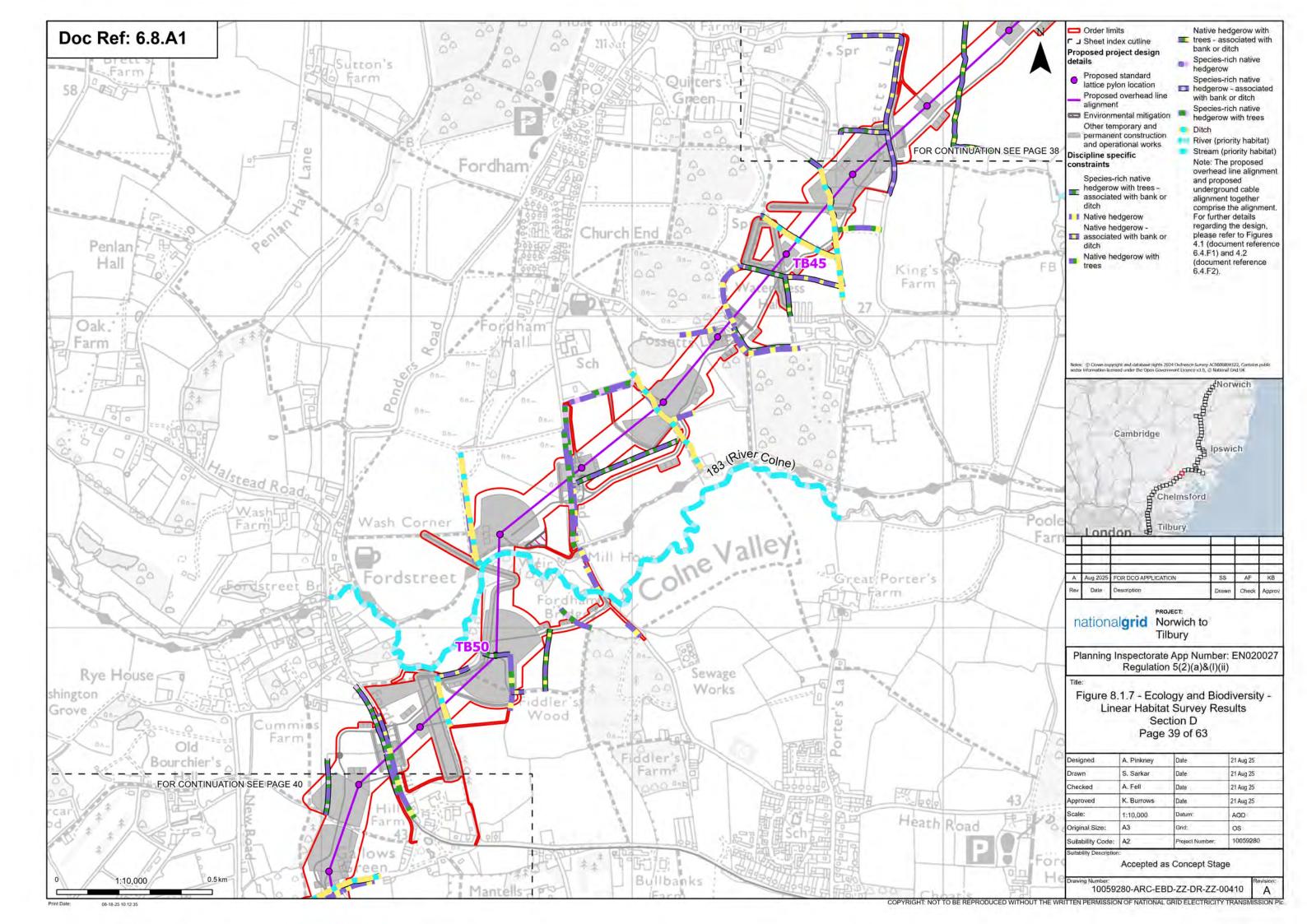


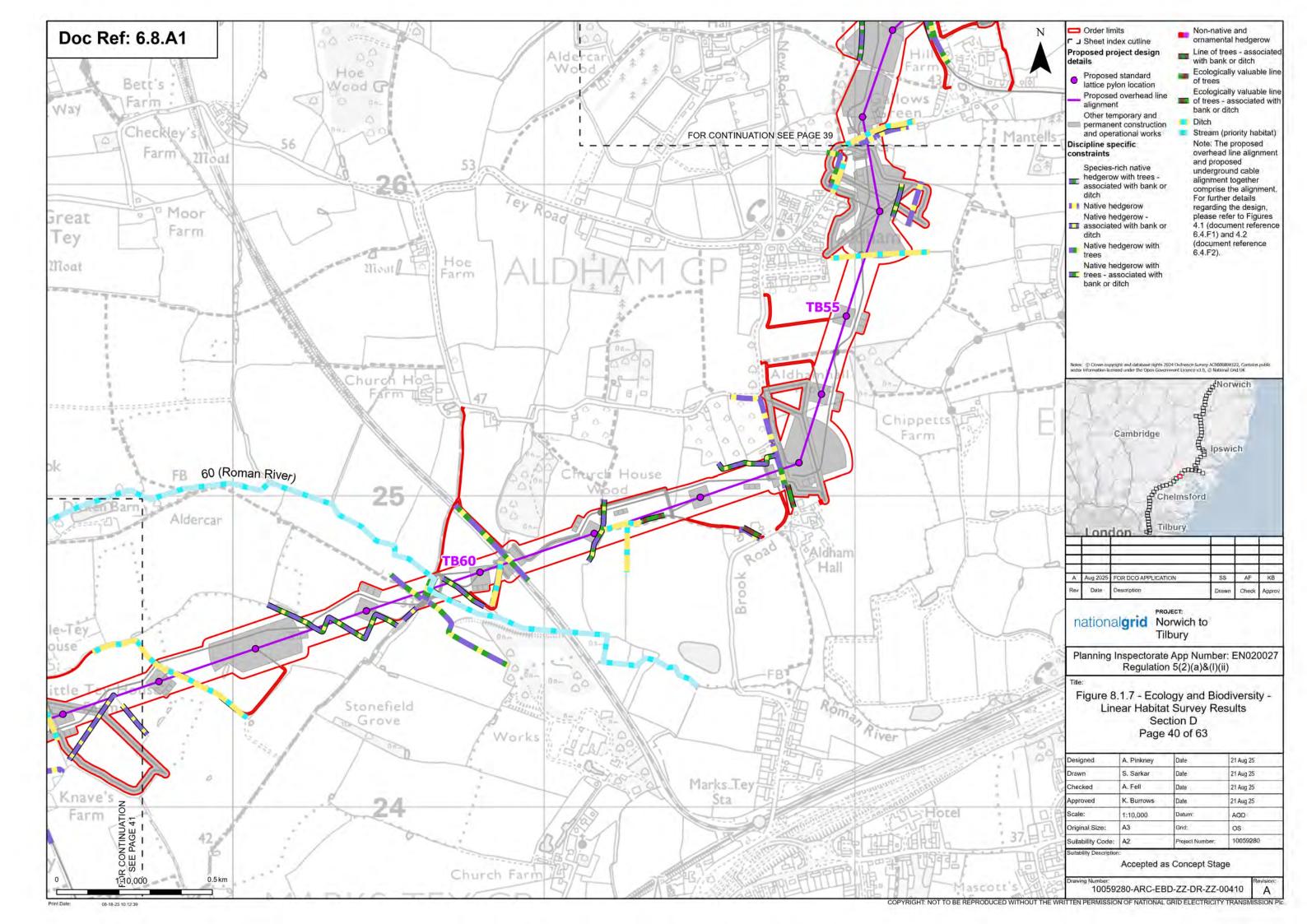


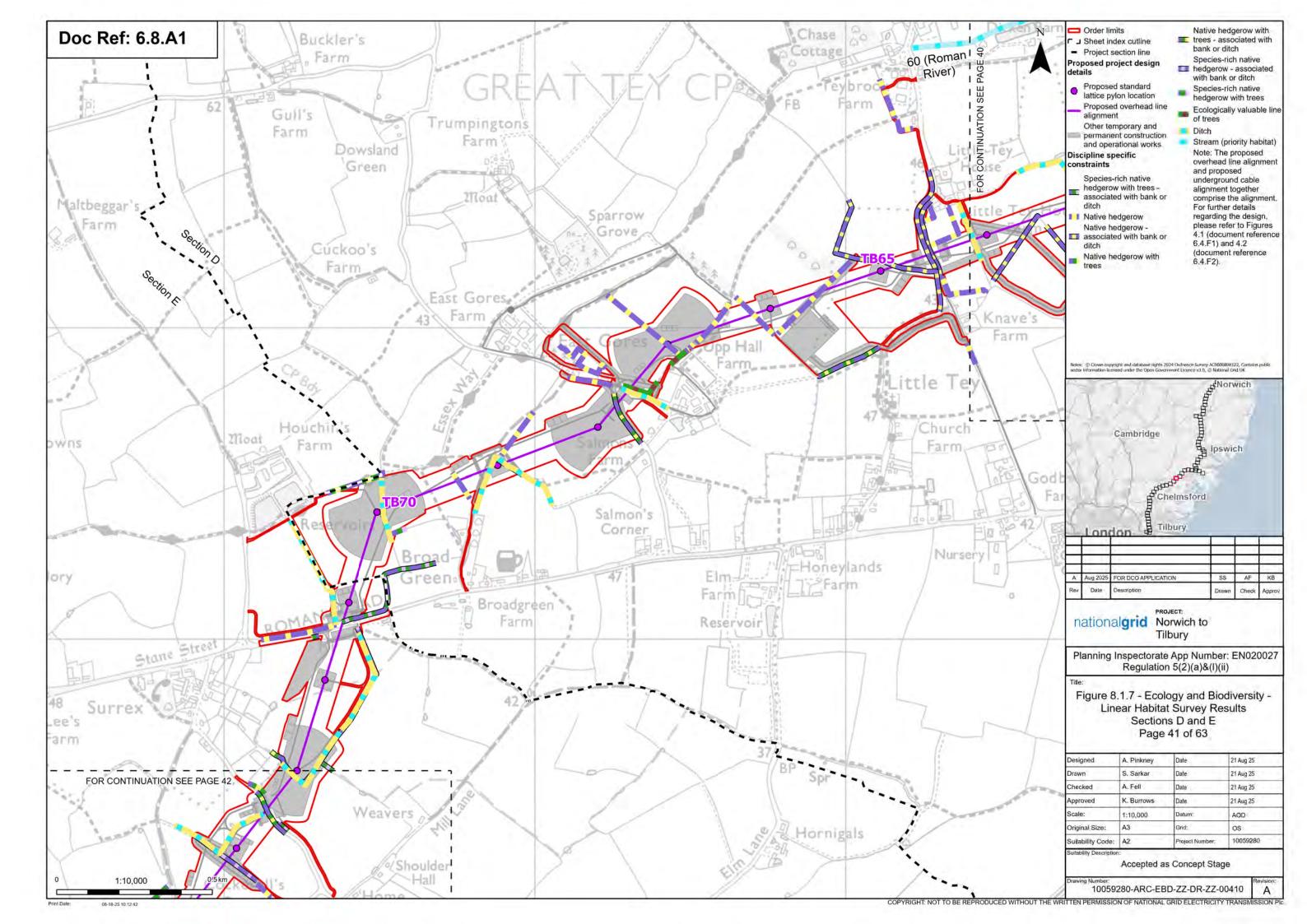


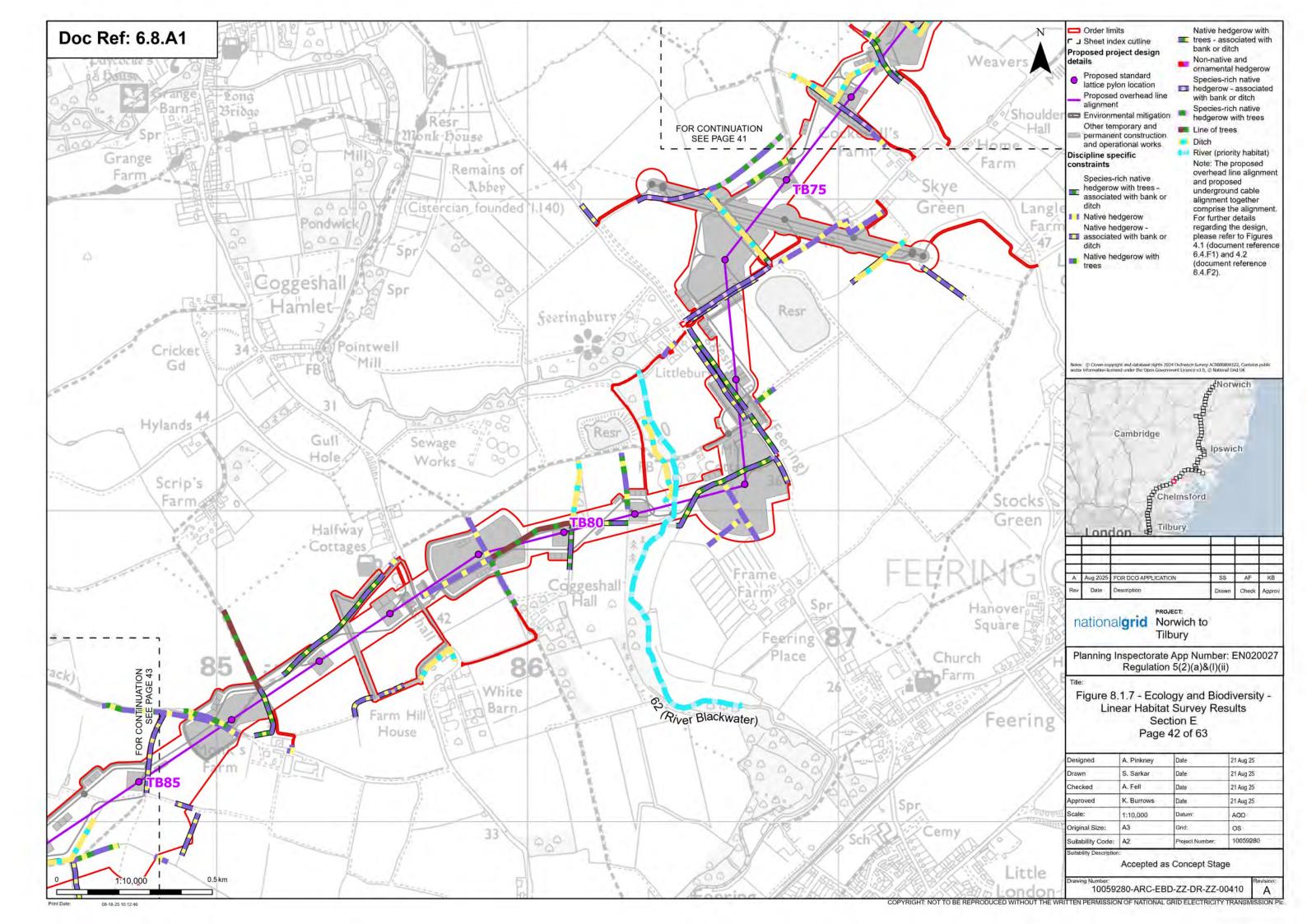


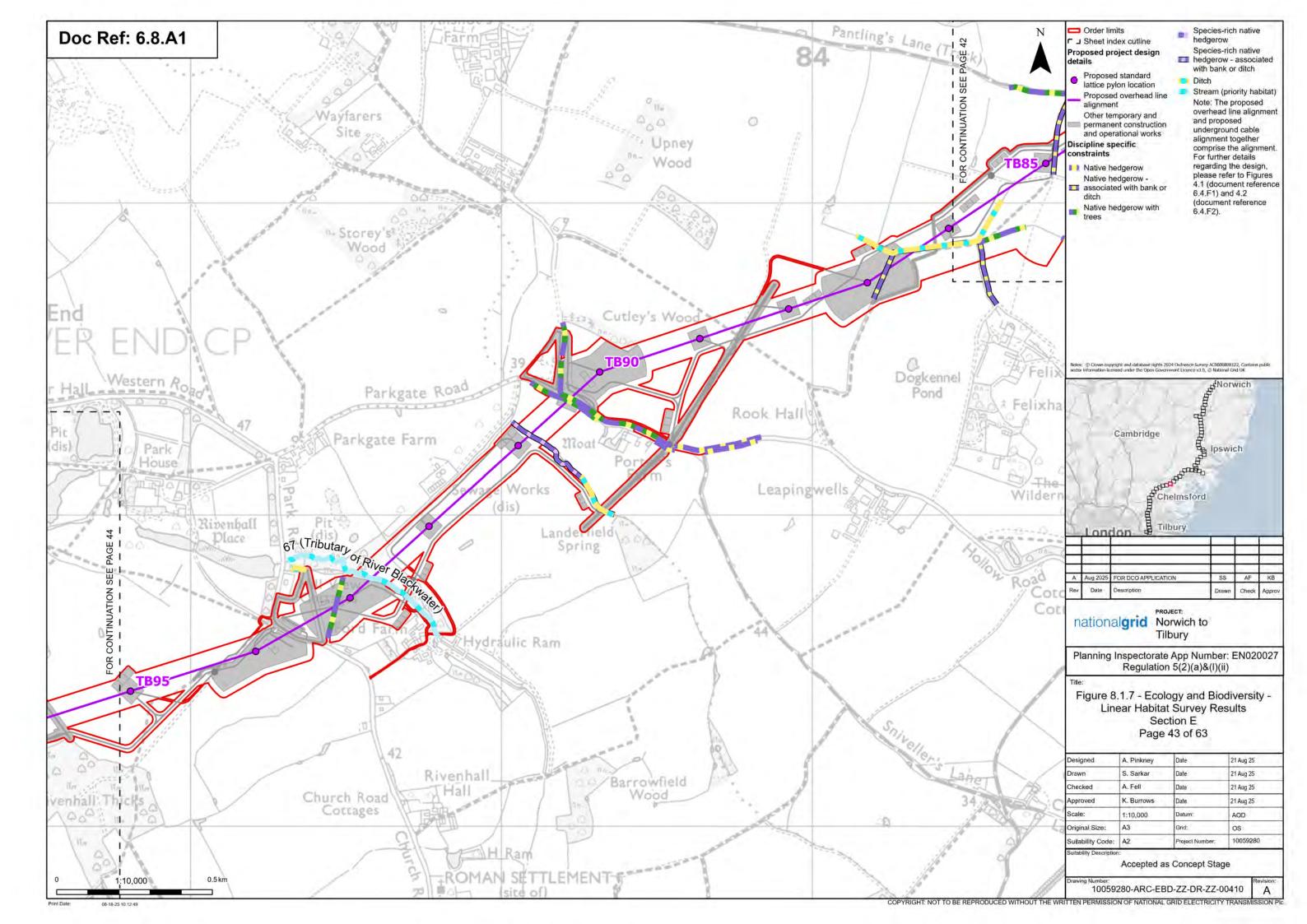


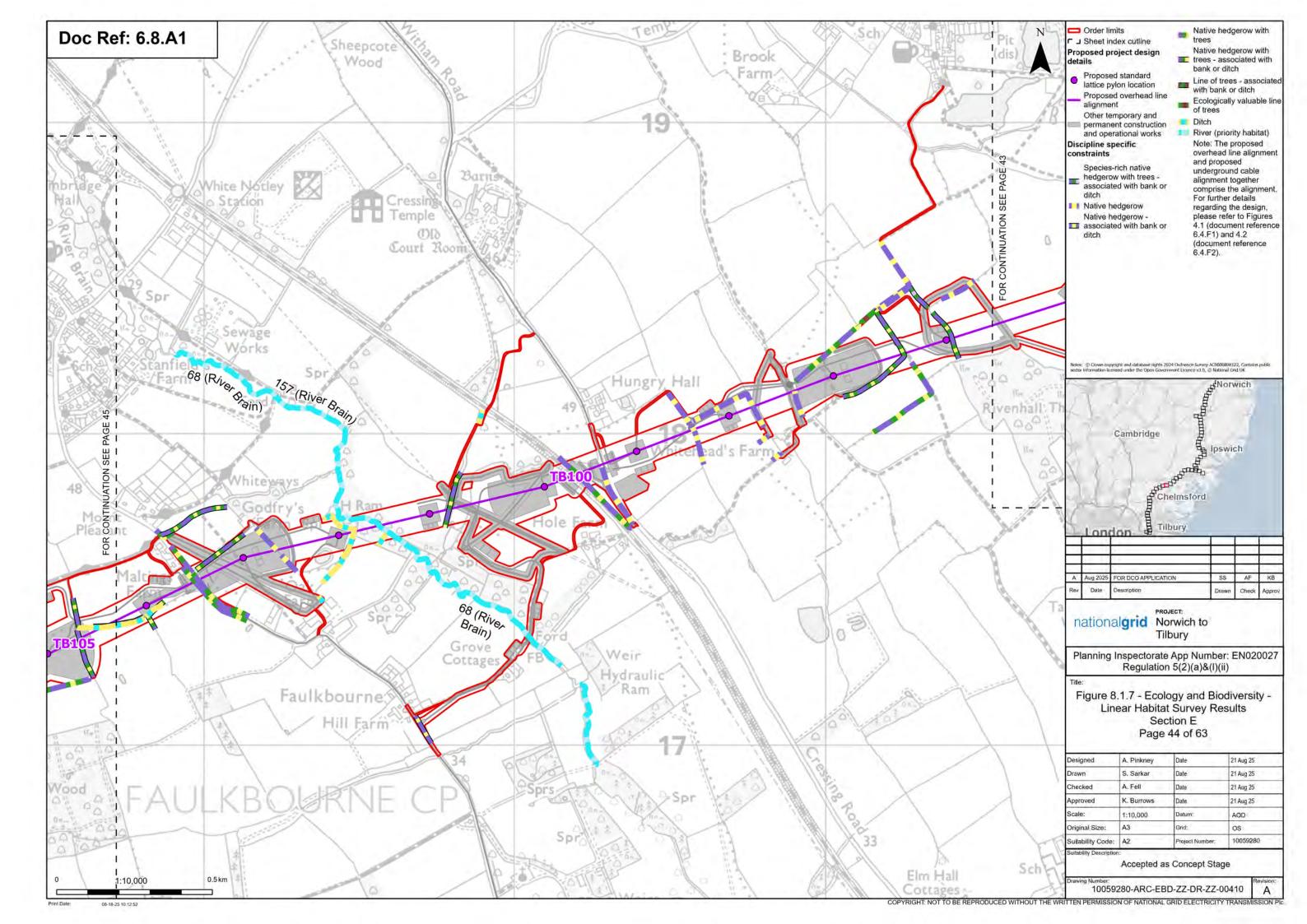


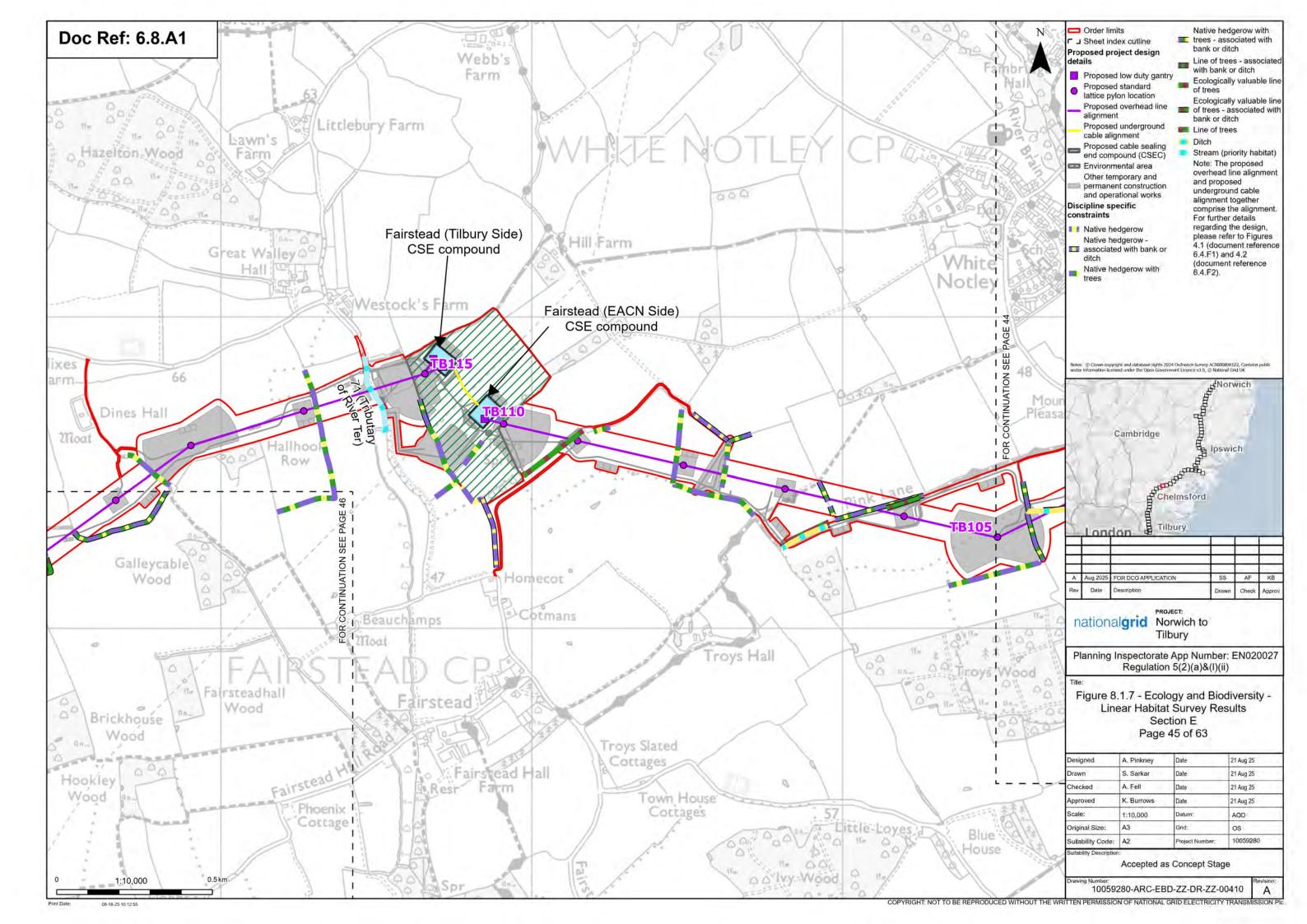


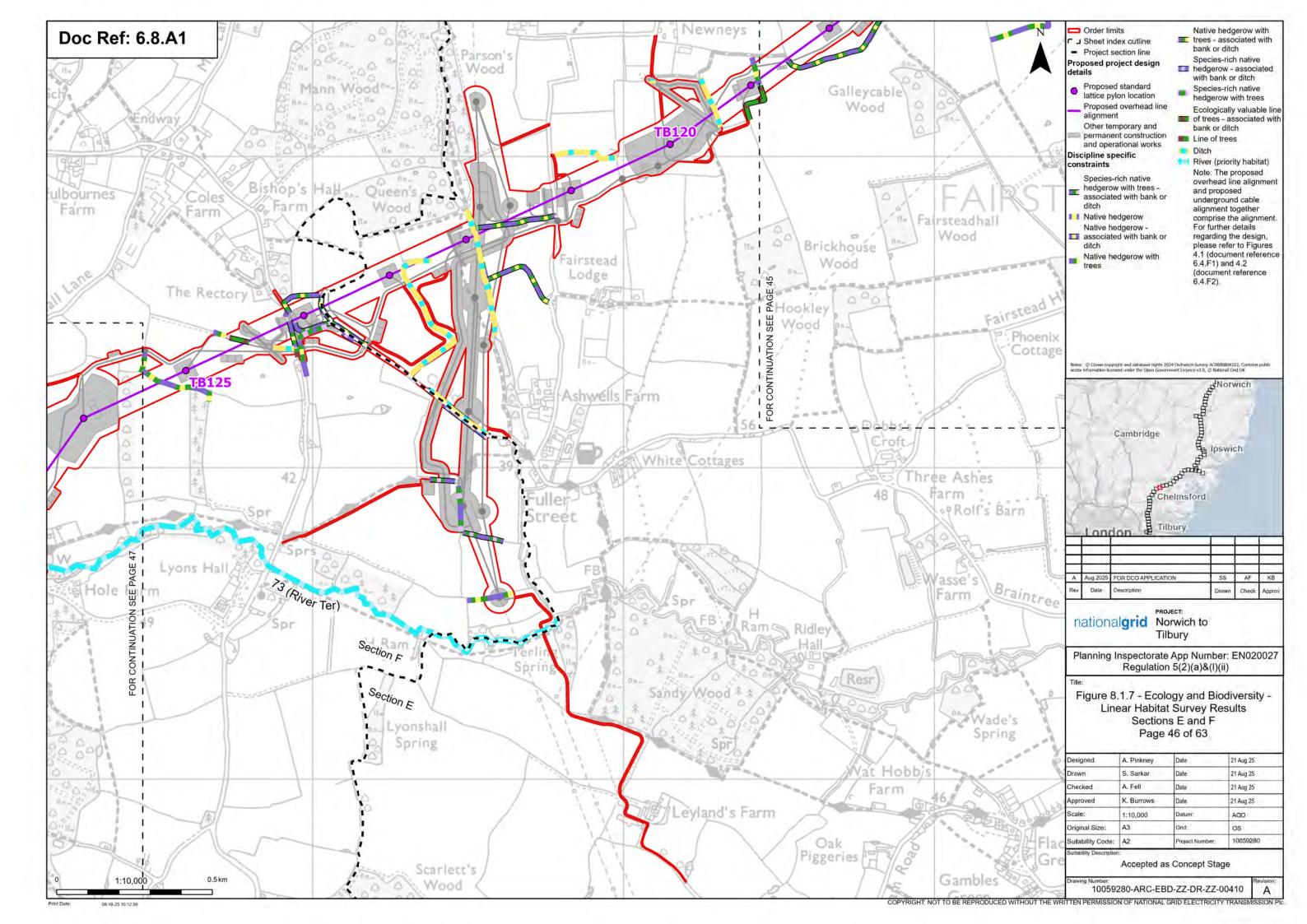


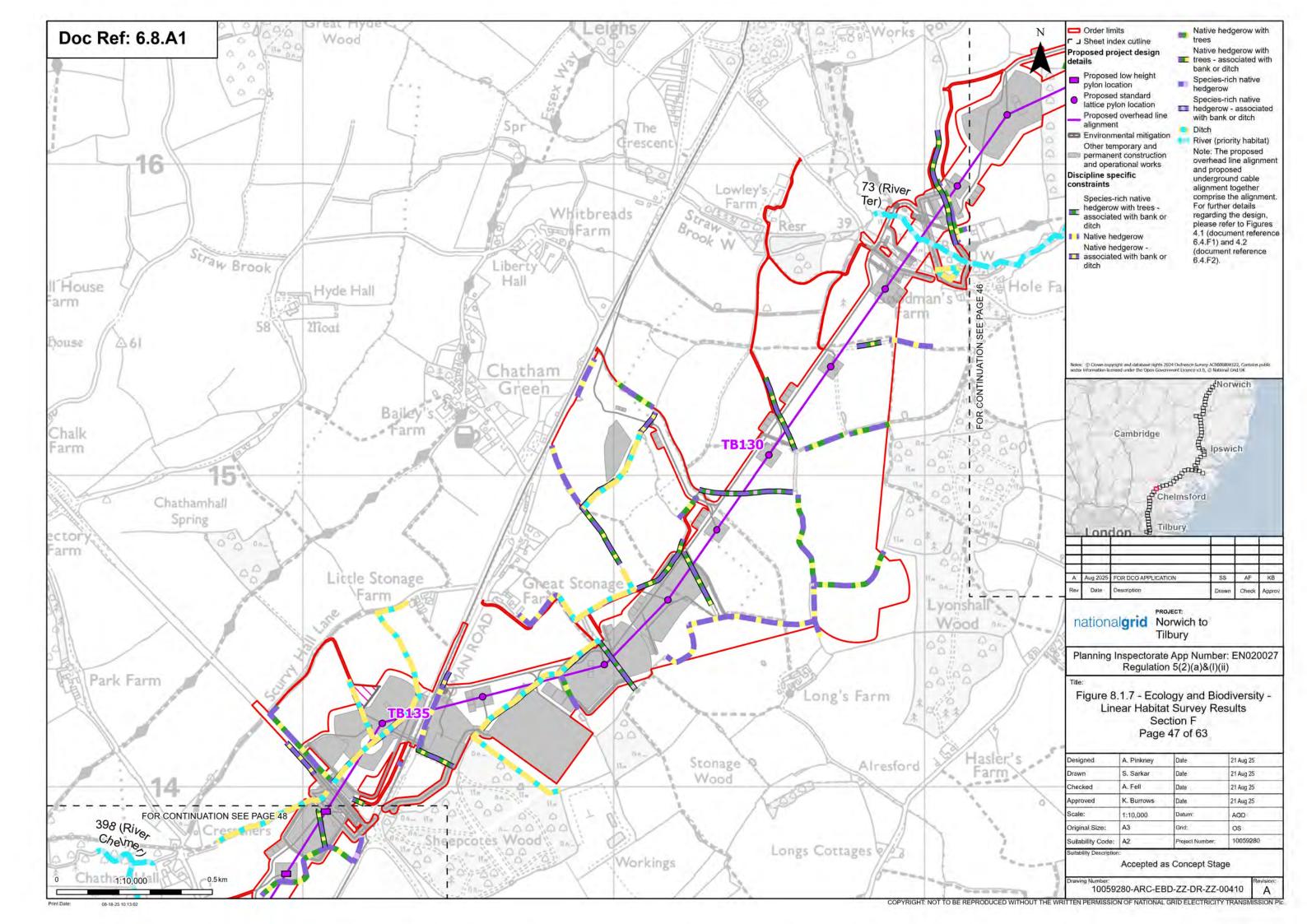


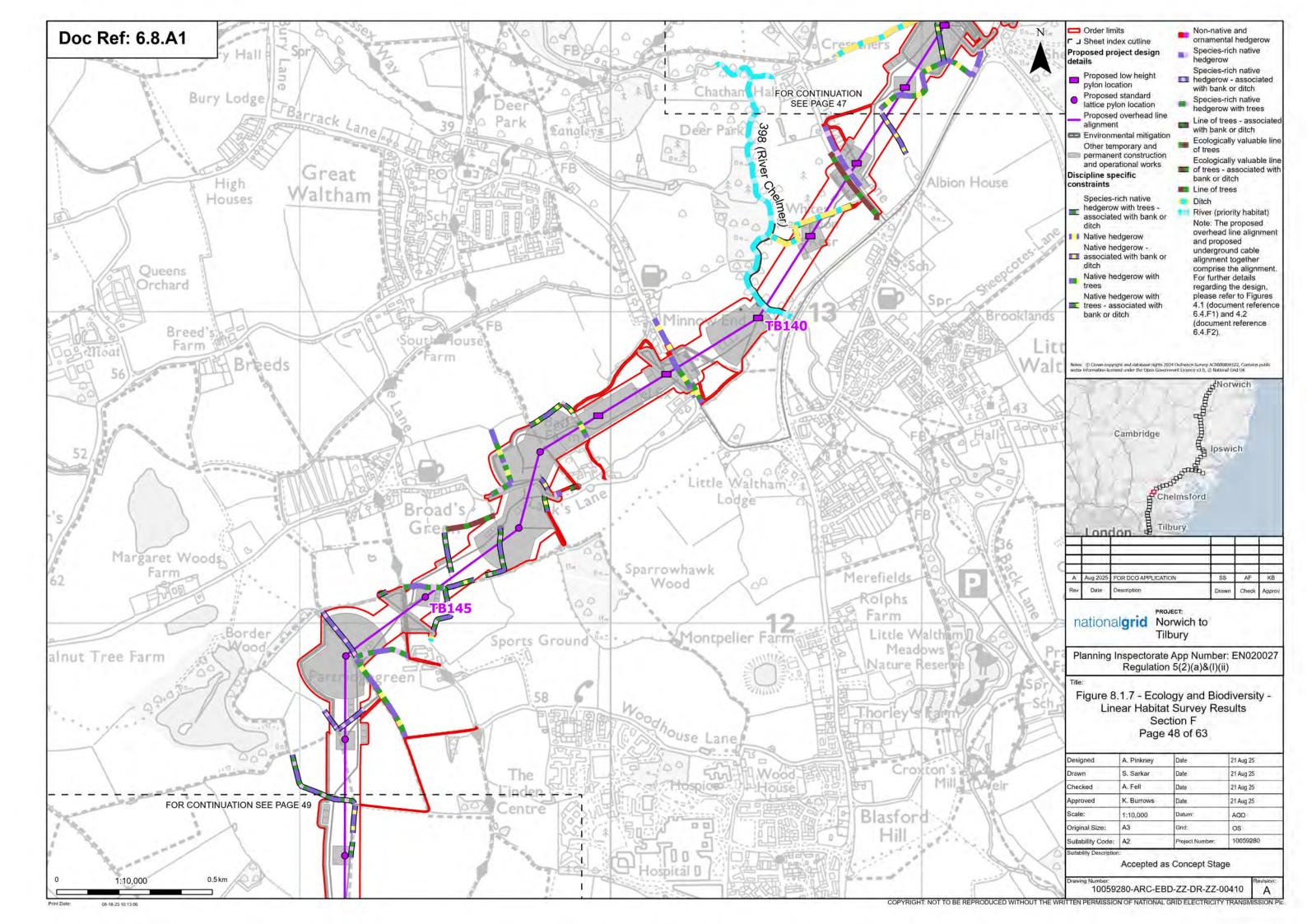


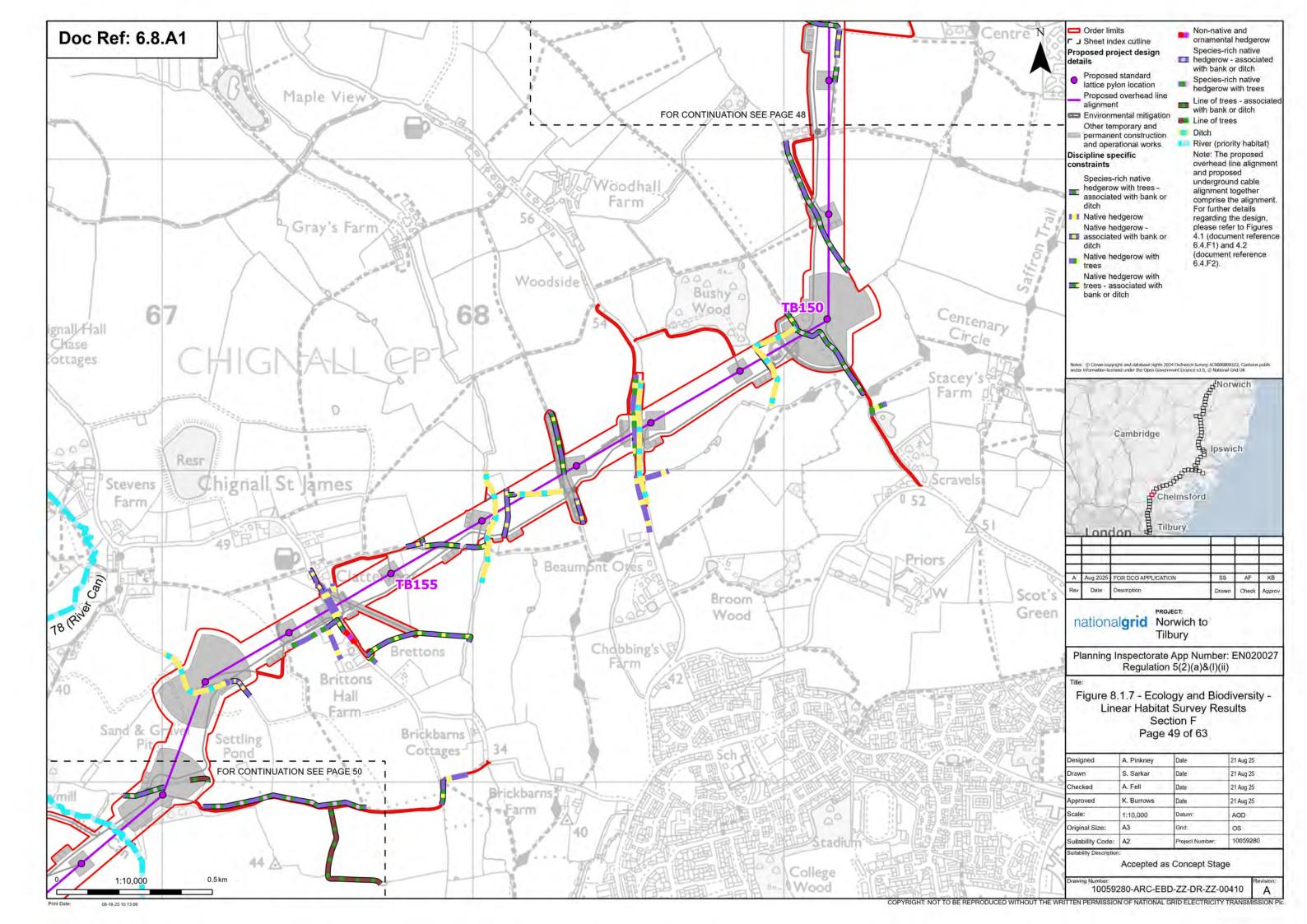


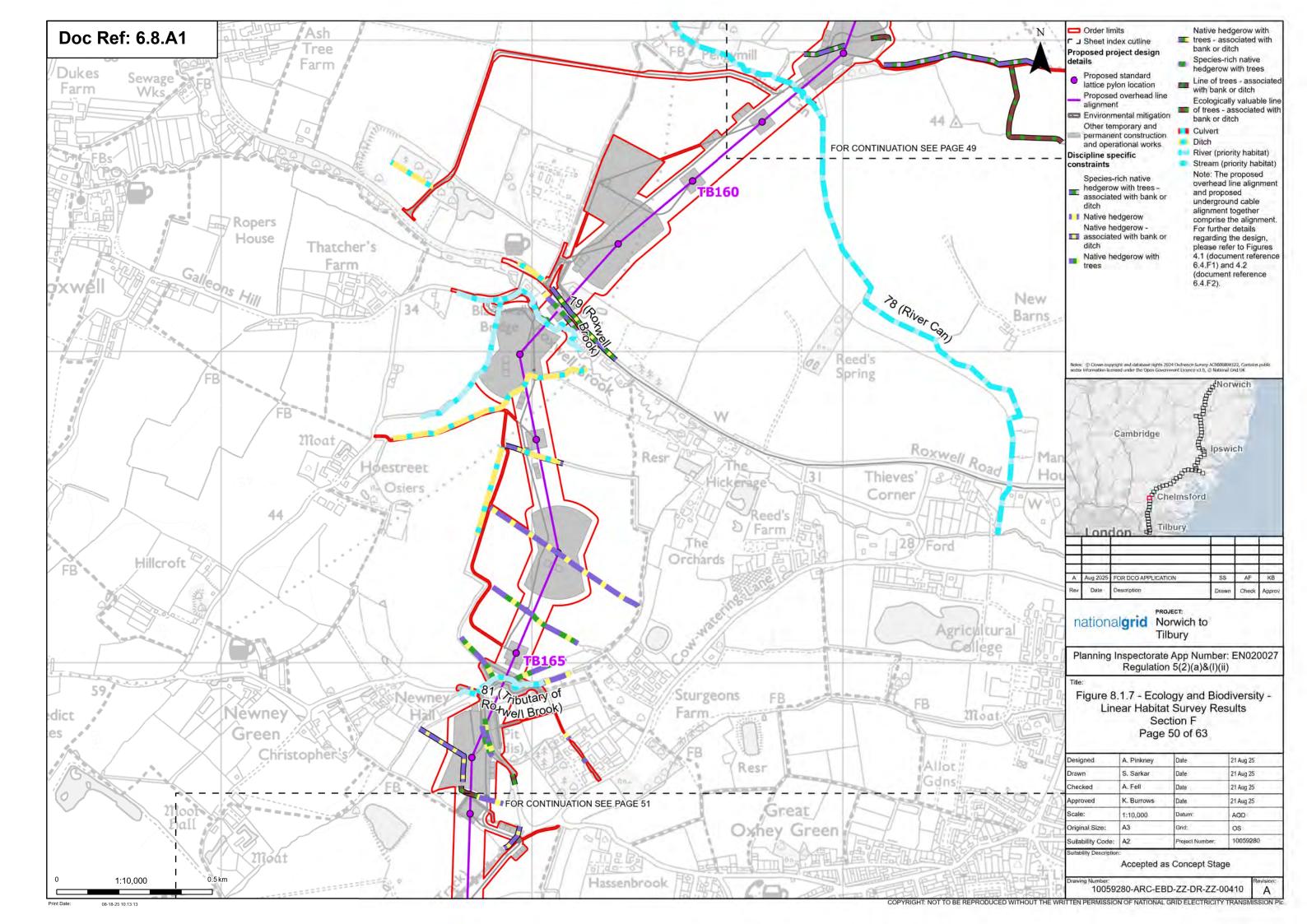


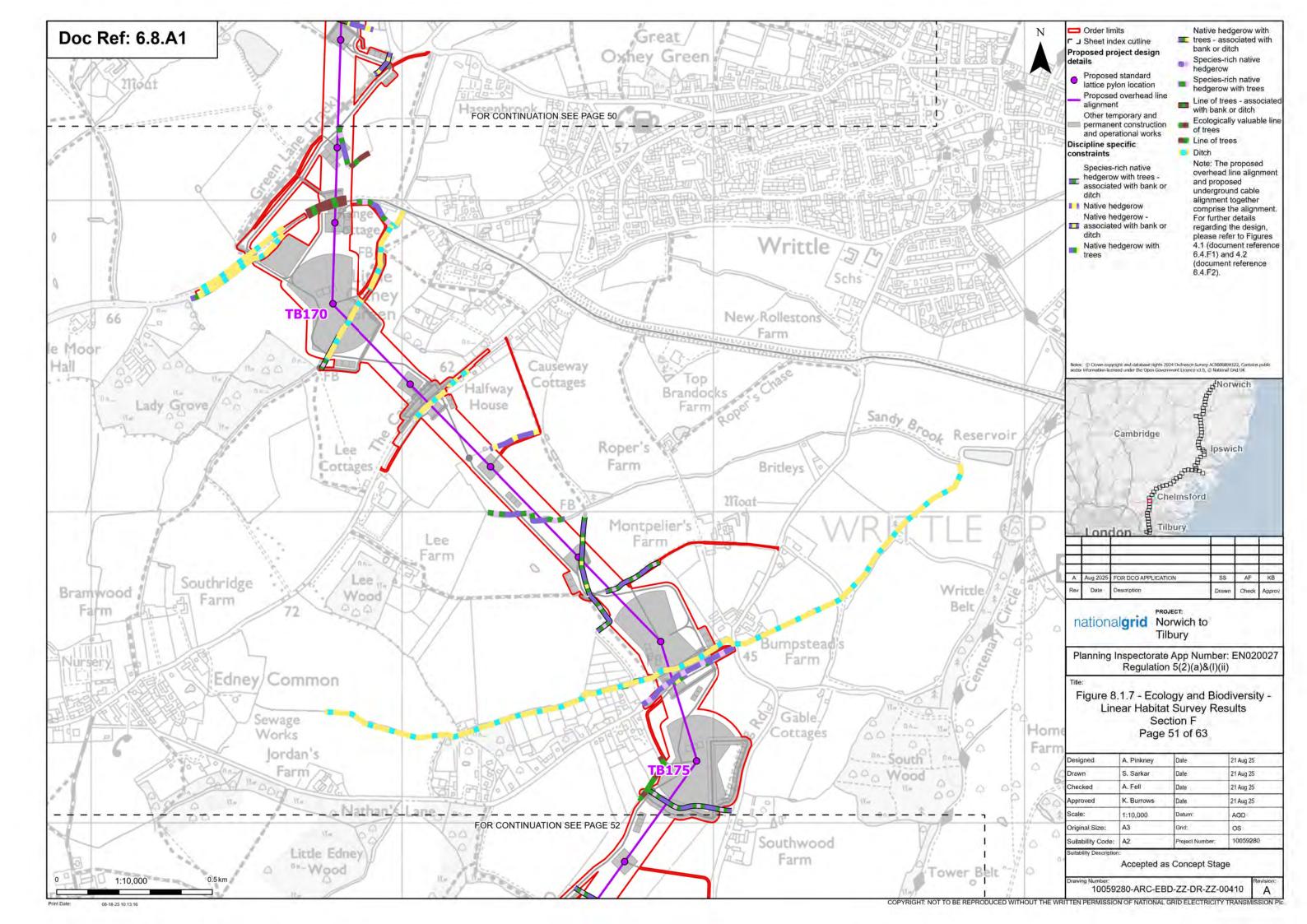


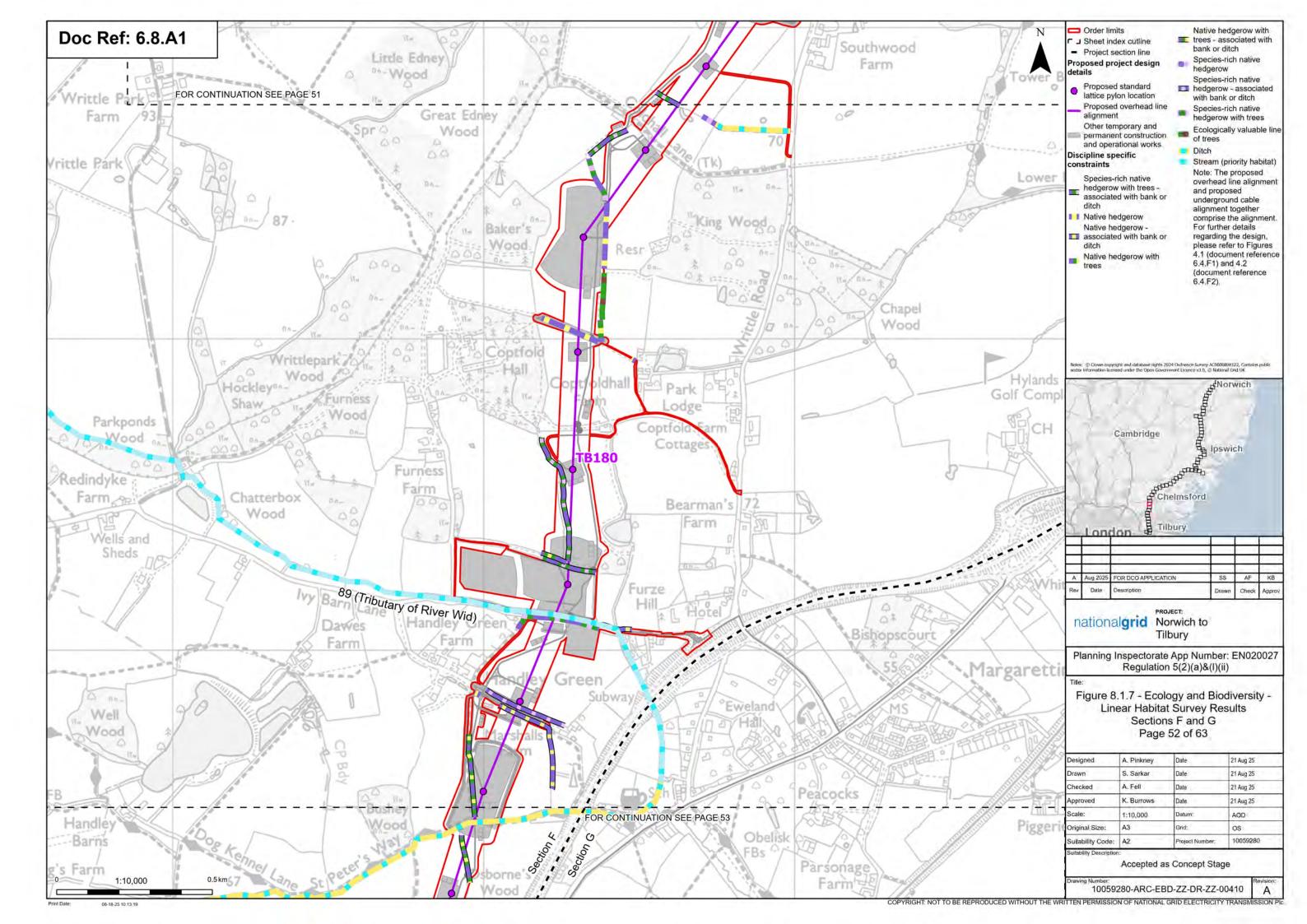


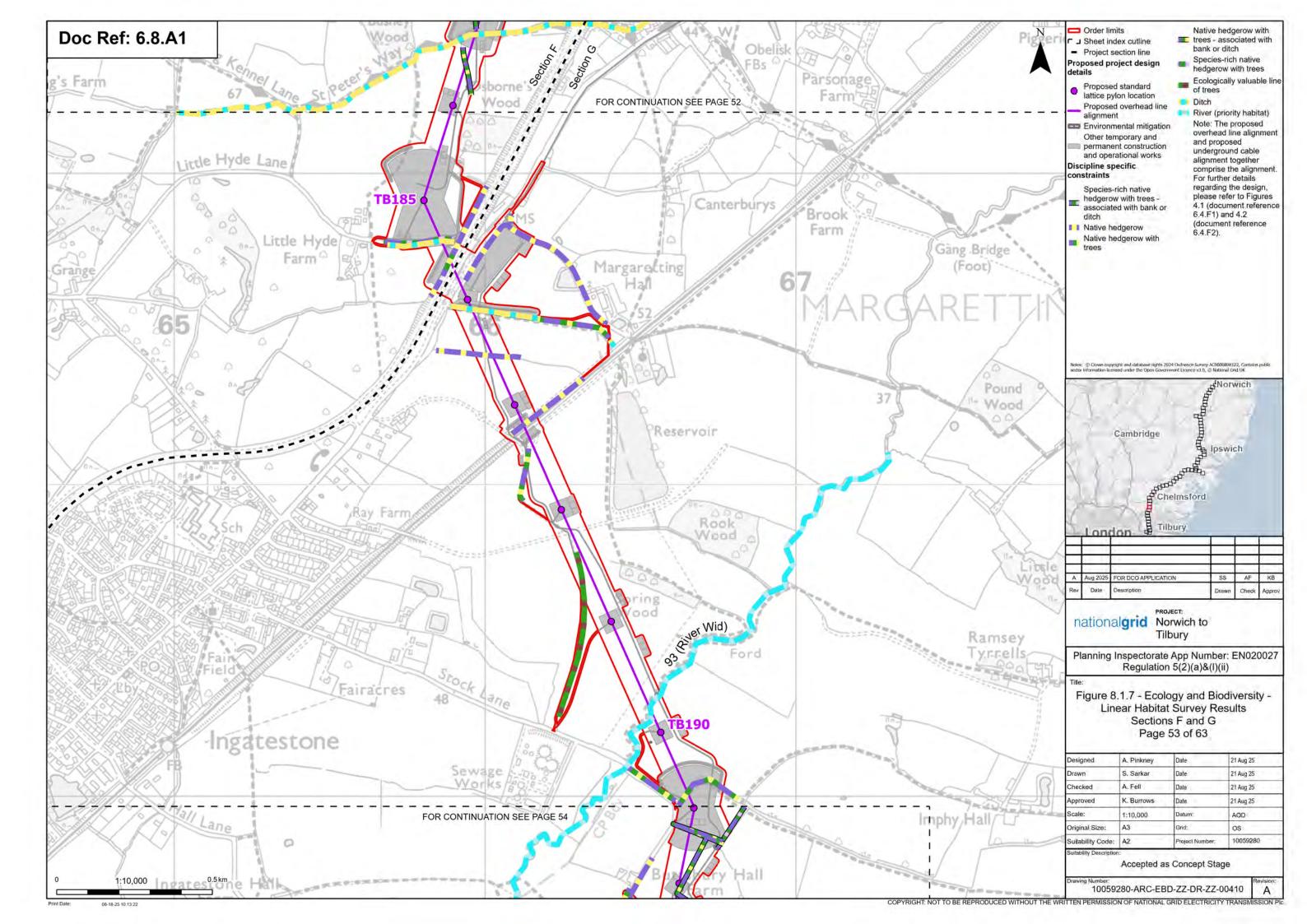


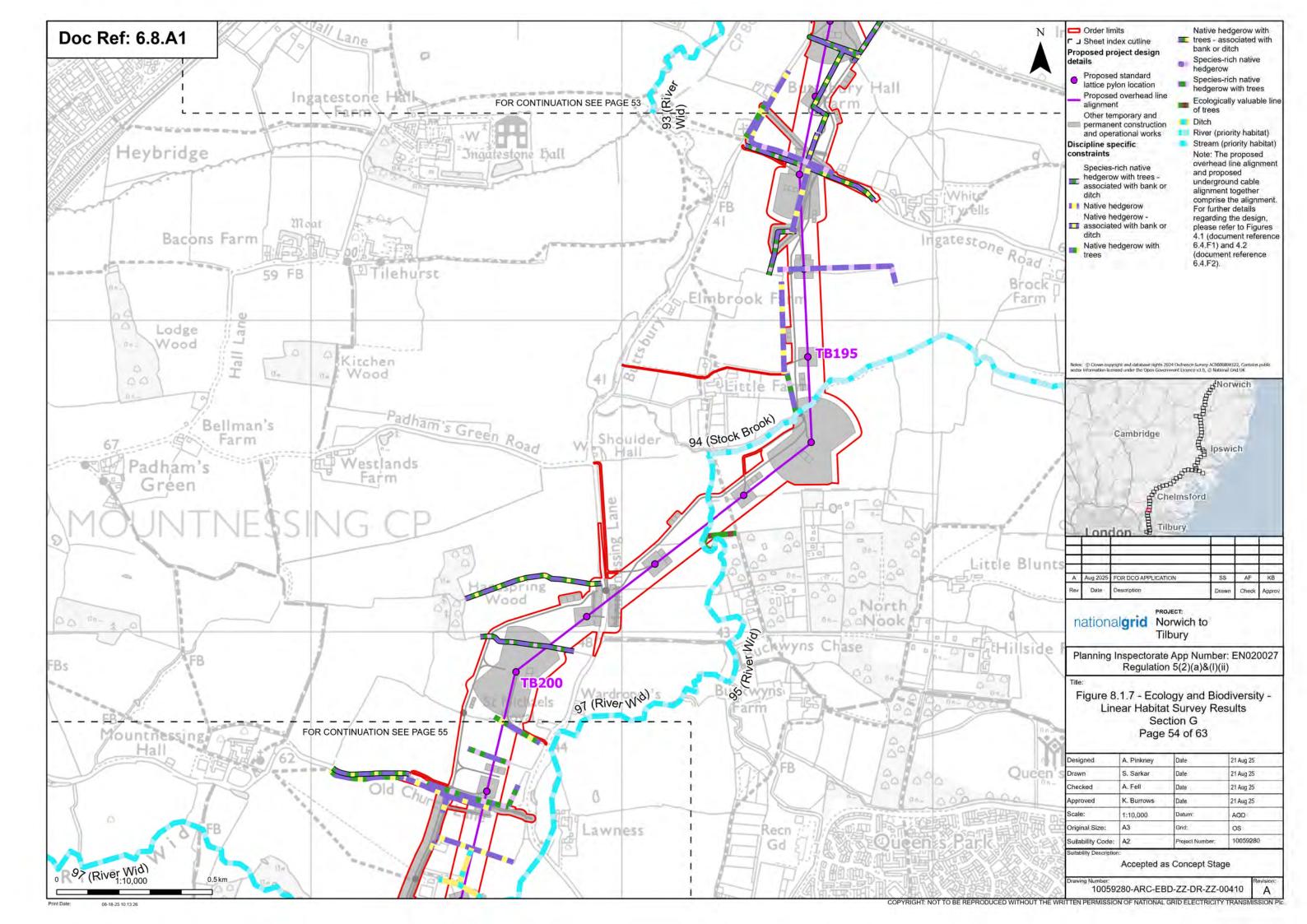


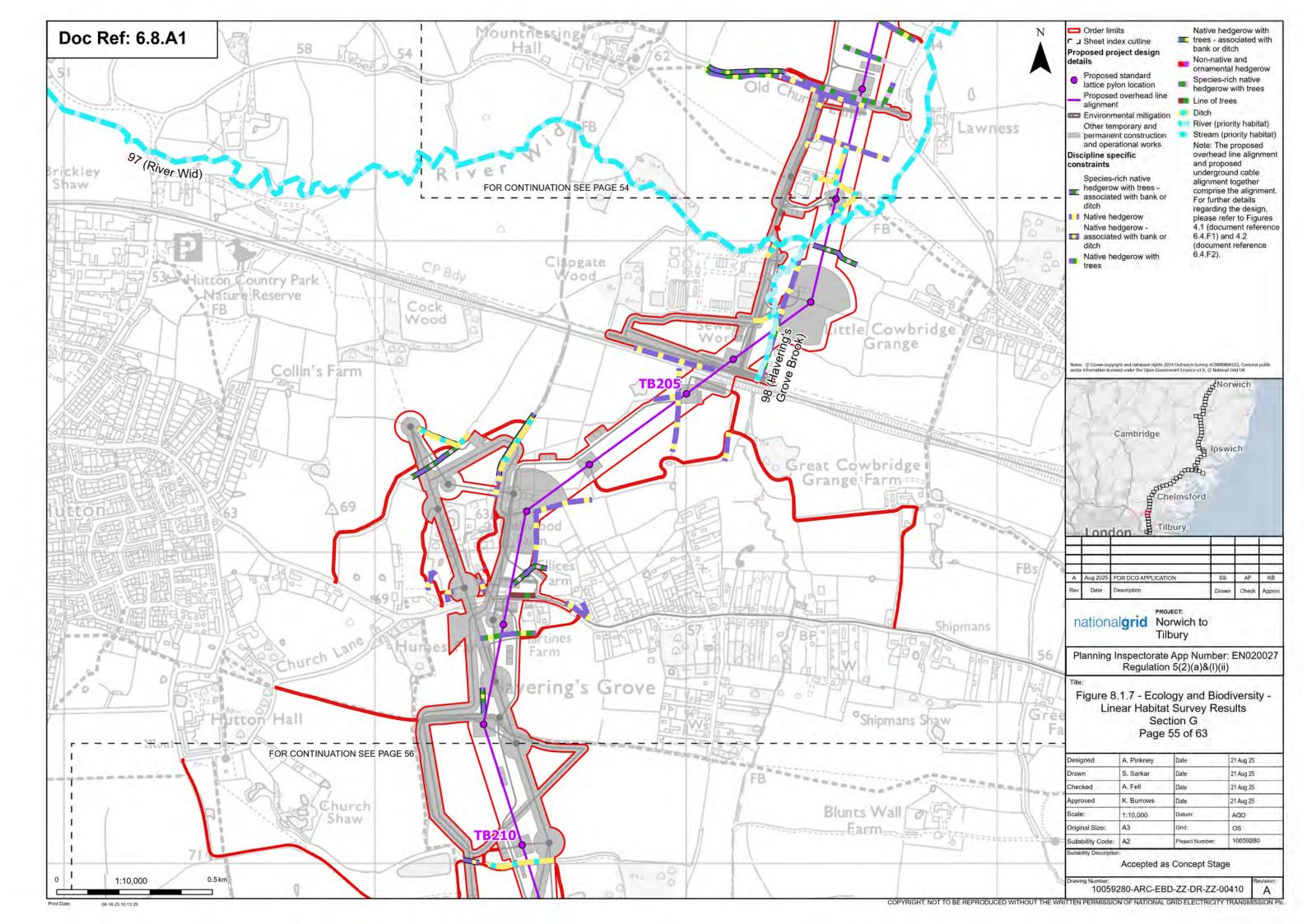


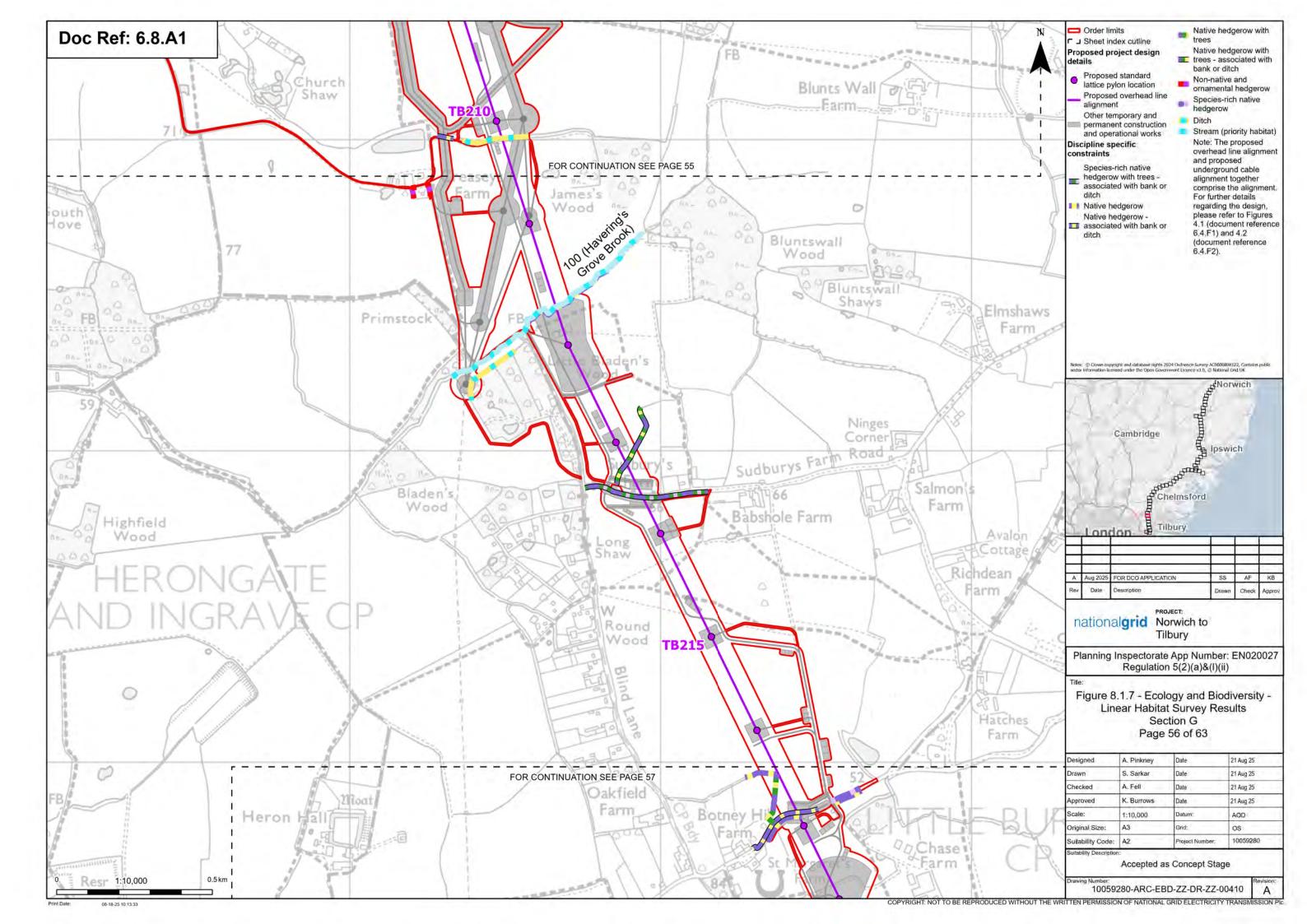


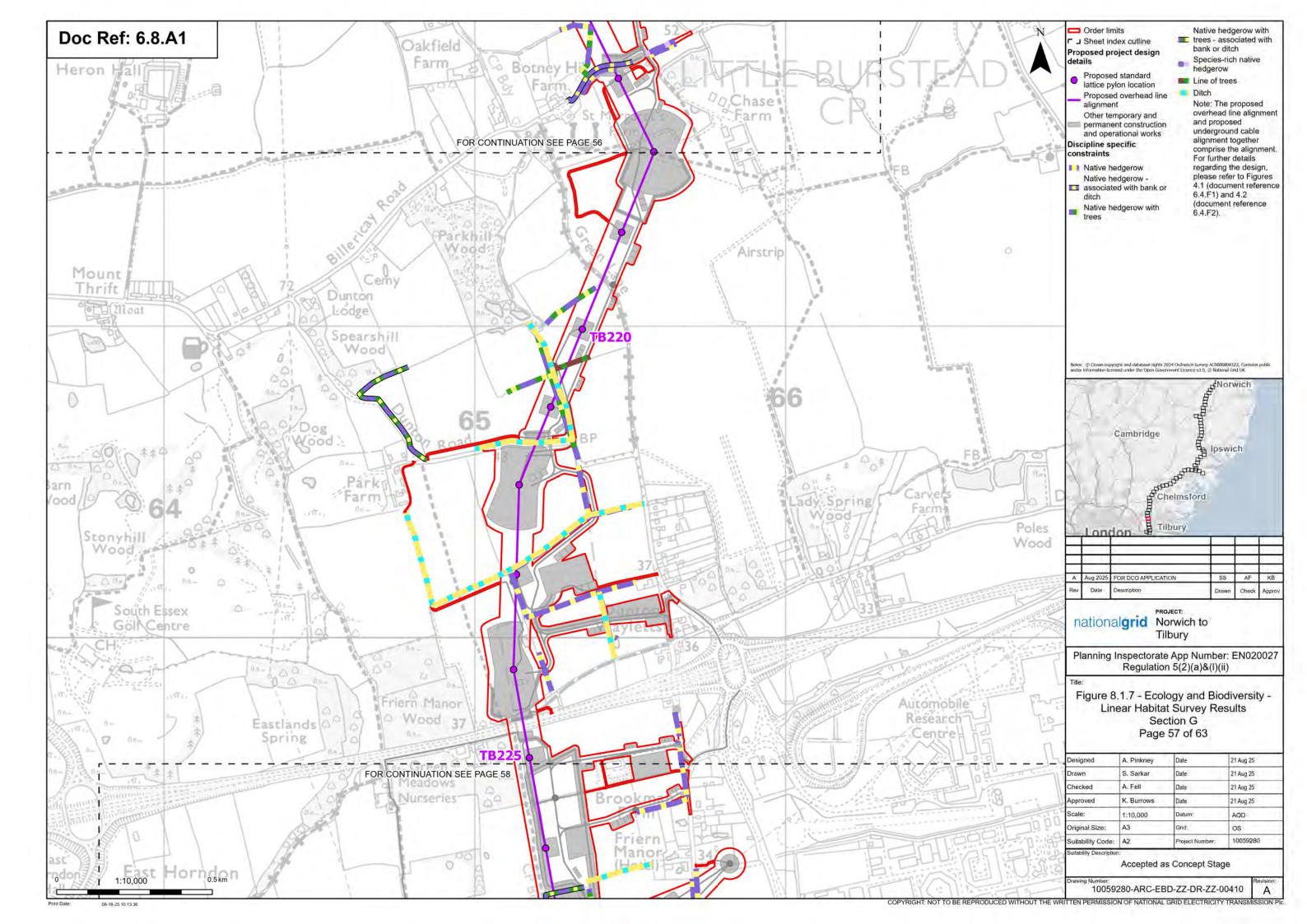


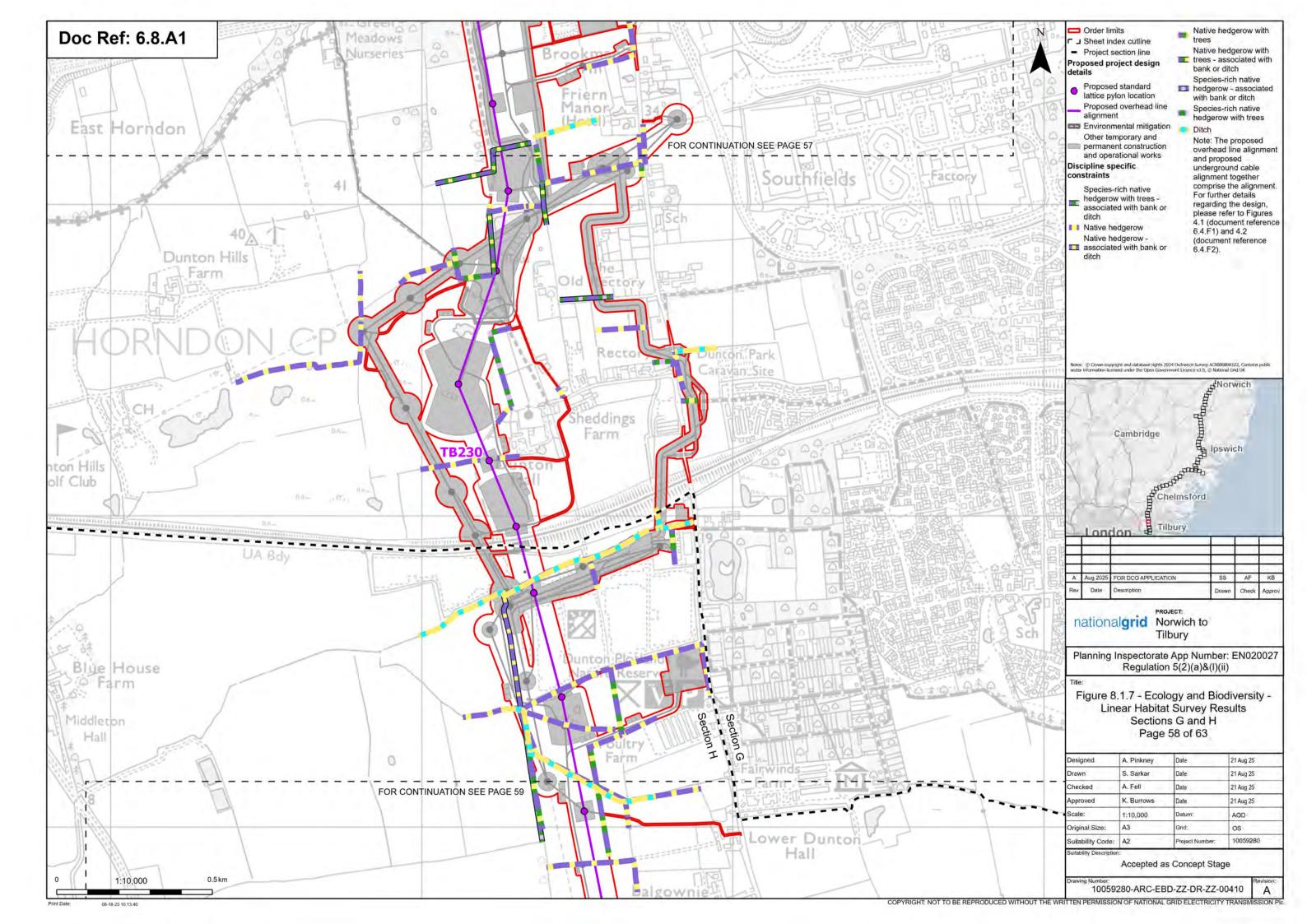


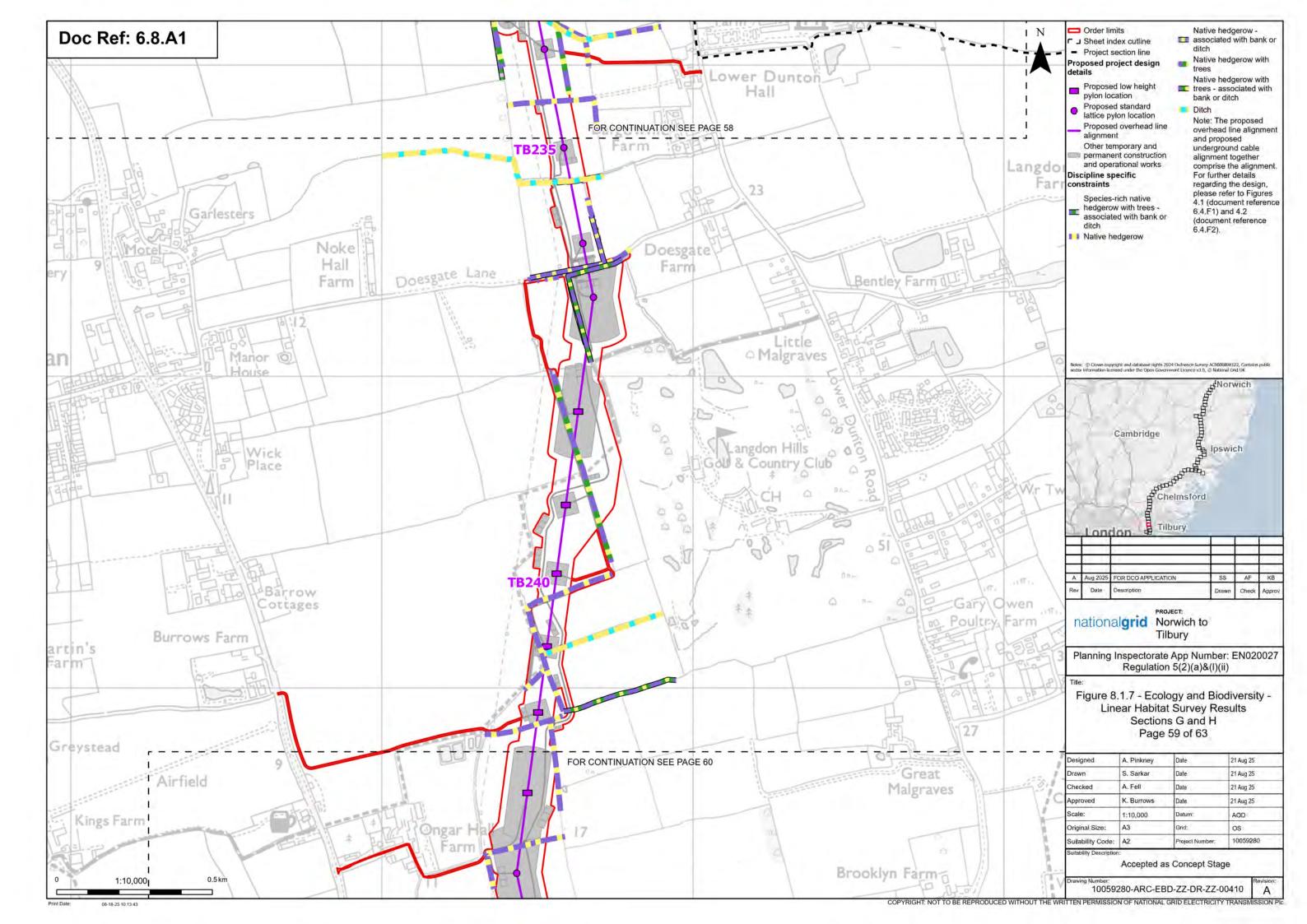


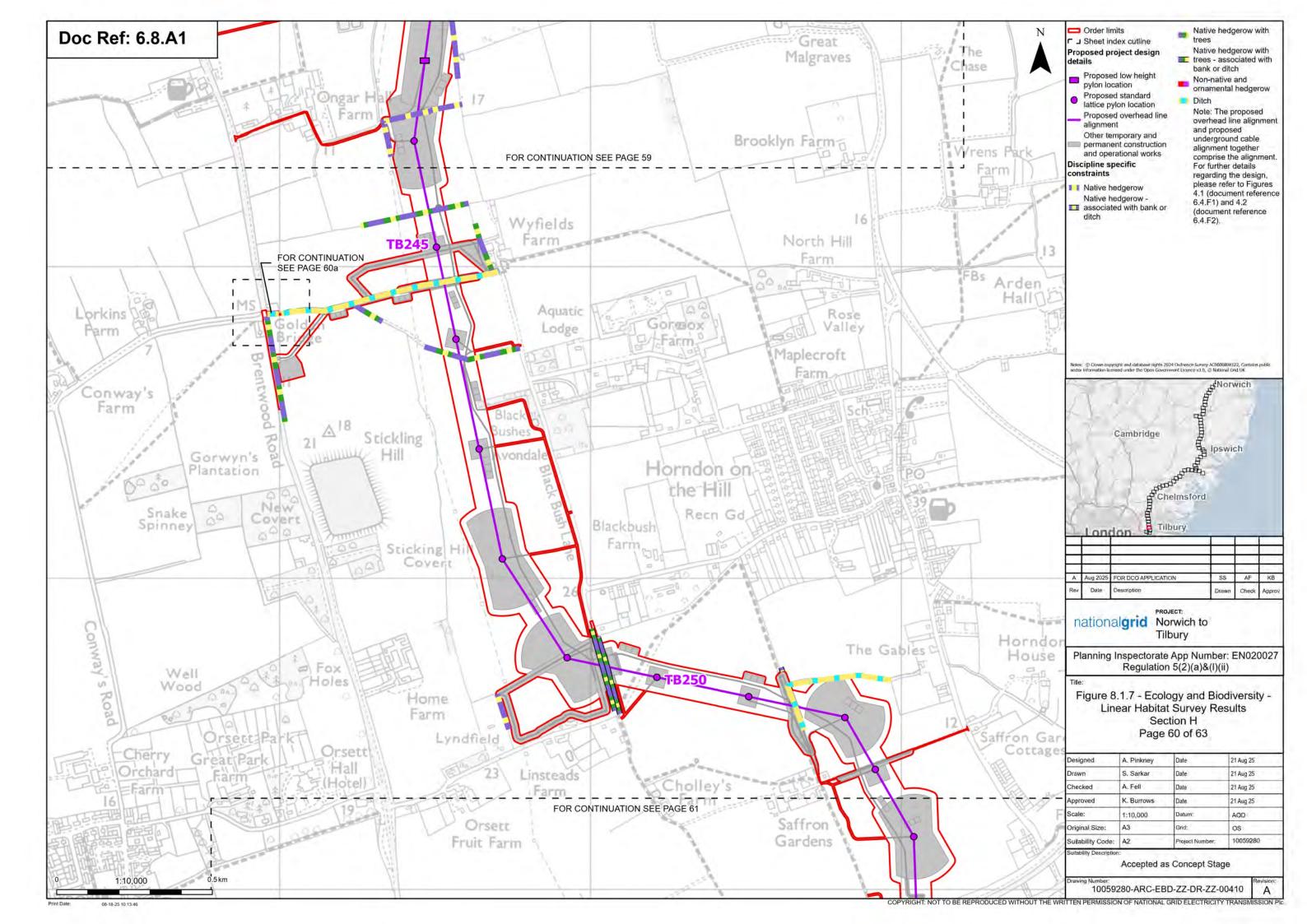


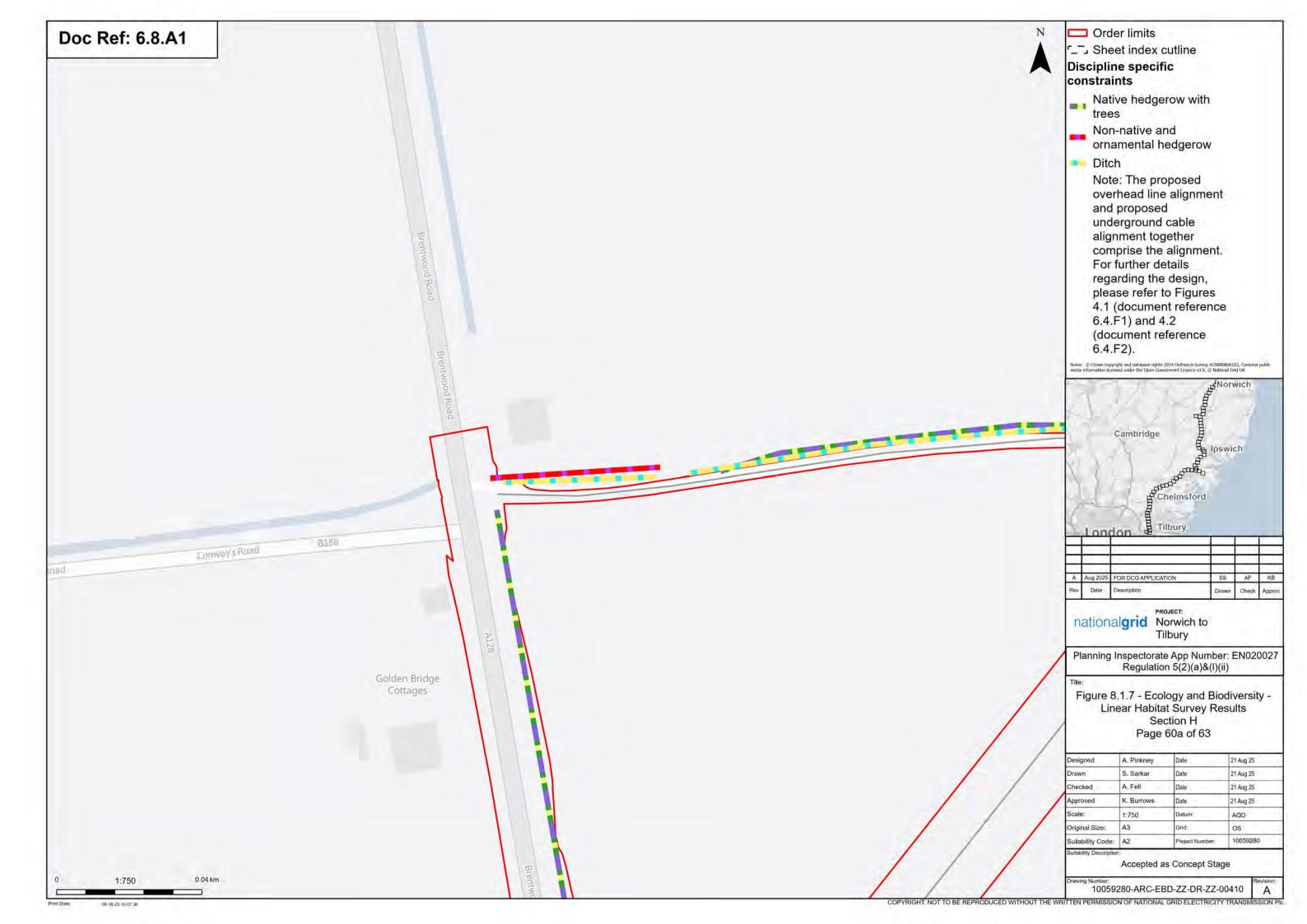


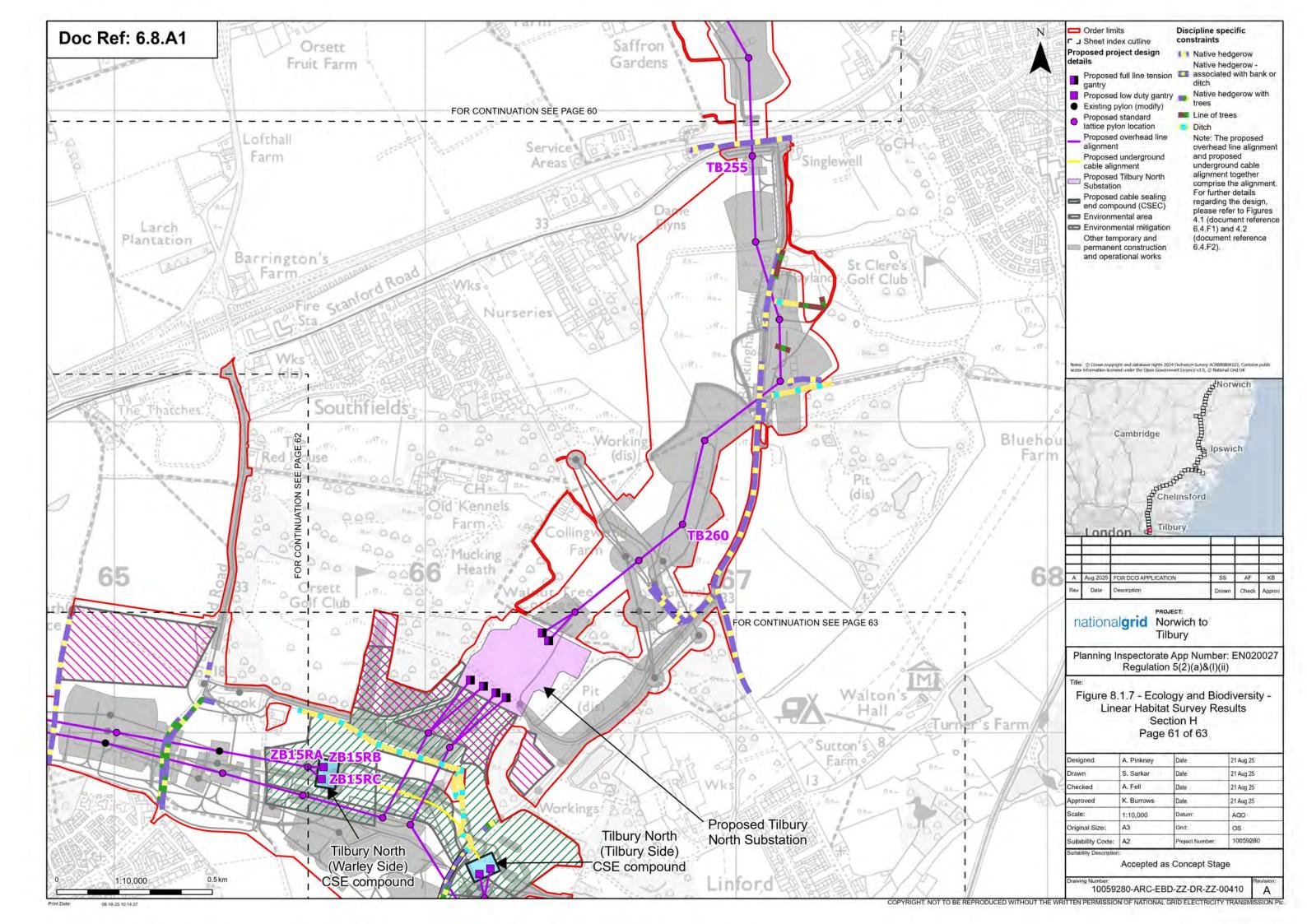


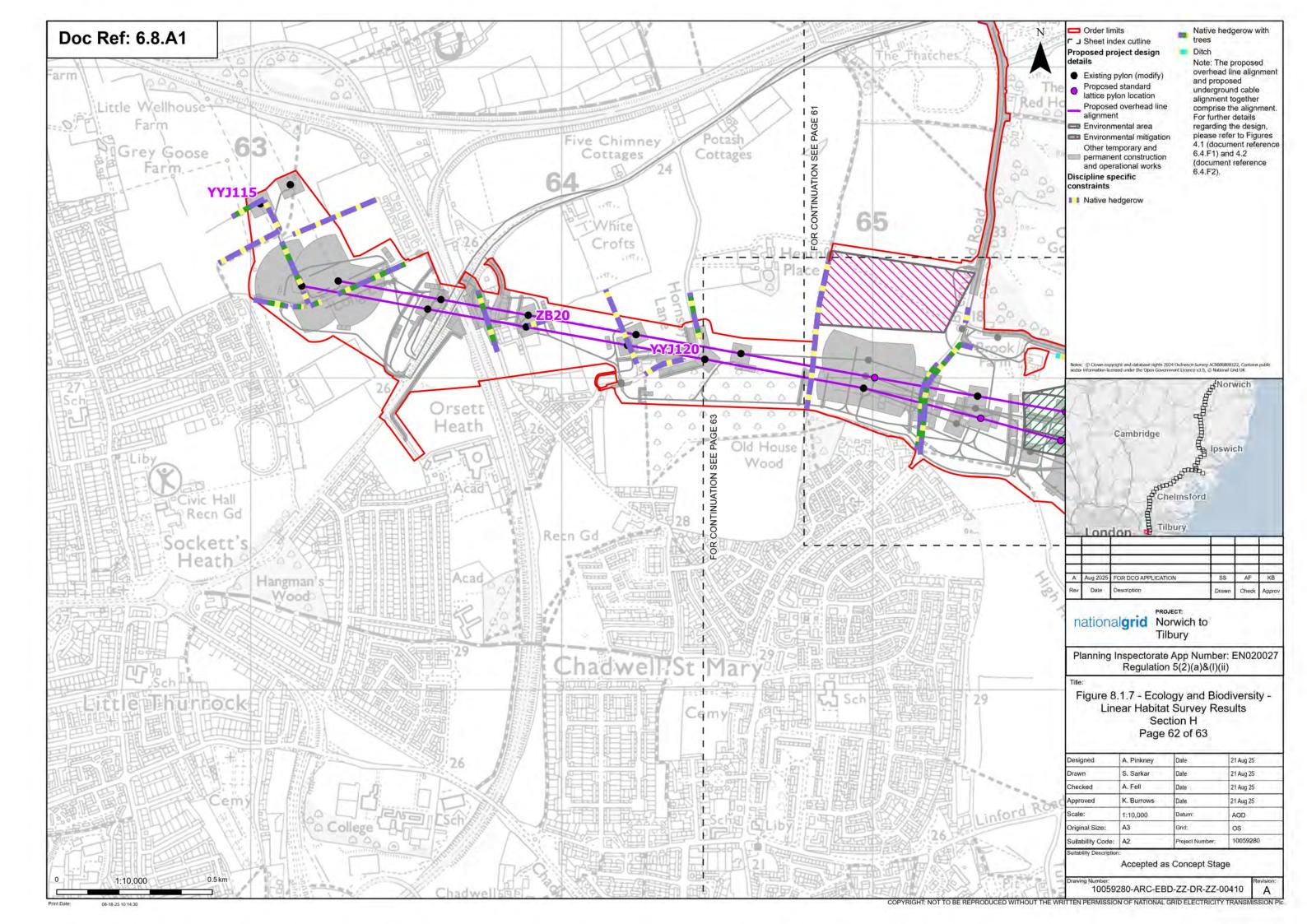


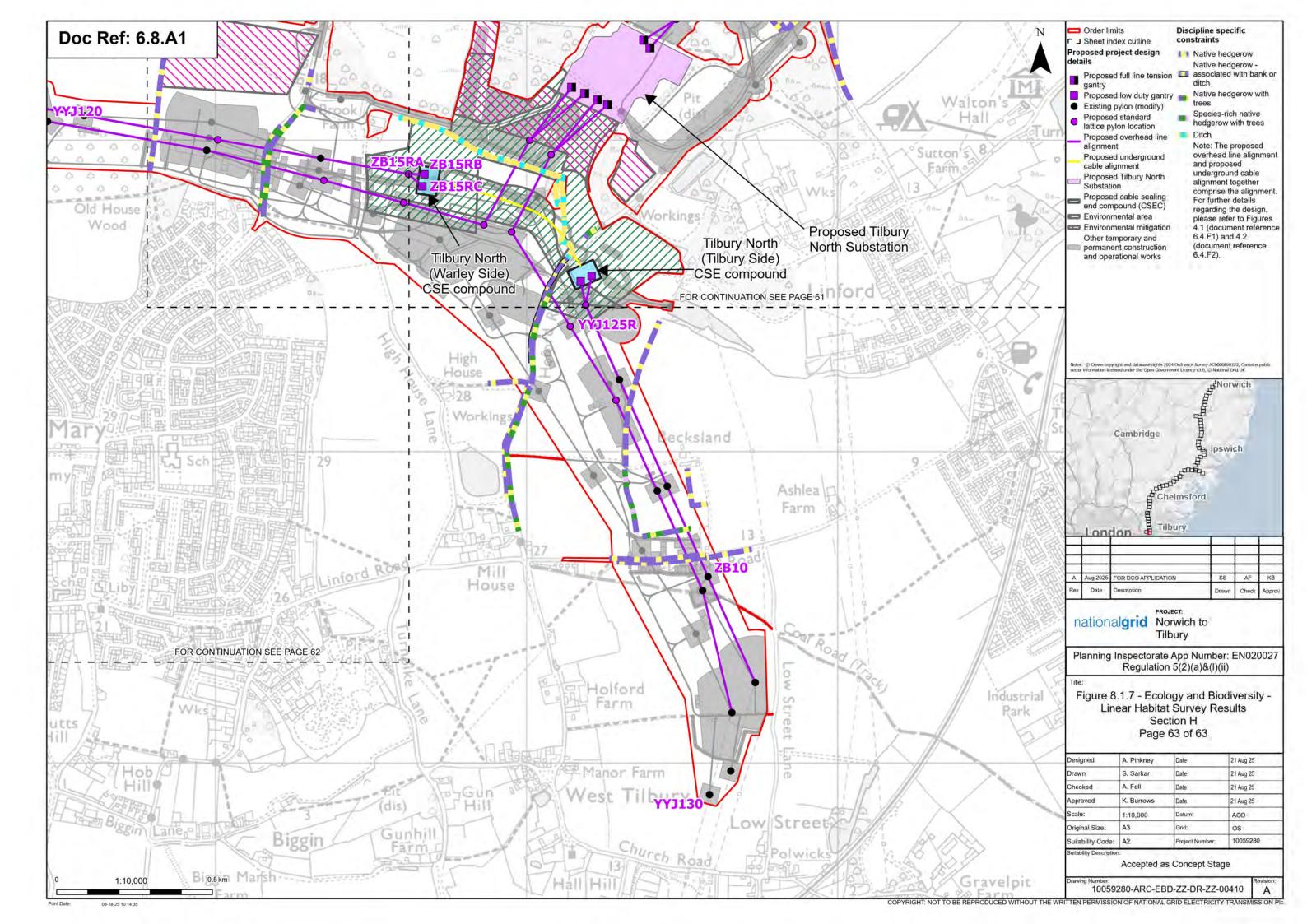












Annex B. Desk Study Records for Protected/Notable and Invasive Plant Species

Annex B: Desk Study Records for Protected/Notable and Invasive Plant Species

Table A8.1.13 Desk study records for protected/notable and invasive plant species

Common Name	Taxon Name	Designated Status
Fungi		
Sandy Stilt Puffball	Battarrea phalloides	Section 41 WCA Schedule 8
Protected/Notable Plant	S	
Annual Beard-grass	Polypogon monspeliensis	Nationally Scarce
Autumn Squill	Scilla autumnalis	Nationally Scarce
Black Poplar	Populus nigra subsp. betulifolia	Essex Bap
Bloody Cranes's-bill	Geranium sanguineum	England Red Listed: Near Threatened
Bluebell	Hyacinthoides non-scripta	WCA Schedule 8 (sale only) England Red Listed: Least Concern
Carline Thistle	Carlina vulgaris	England Red Listed: Near Threatened
Chicory	Cichorium intybus	England Red Listed: Vulnerable
Chives	Allium schoenoprasum	Nationally Scarce
Clustered Clover	Trifolium glomeratum	Nationally Scarce
Common Cow-wheat	Melampyrum pratense	England Red Listed: Near Threatened
Common Cudweed	Filago vulgaris	England Red Listed: Near Threatened
Common Eyebright	Euphrasia nemorosa	England Red Listed: Near Threatened
Common Rock-rose	Helianthemum nummularium	England Red Listed: Near Threatened
Common Sea-lavender	Limonium vulgare	England Red Listed: Near Threatened
Common Valerian	Valeriana officinalis	England Red Listed: Near Threatened
Corn Marigold	Glebionis segetum	England Red Listed: Vulnerable
Corn Mint	Mentha arvensis	England Red Listed: Near Threatened
Corn Spurrey	Spergula arvensis	England Red Listed: Vulnerable

Common Name	Taxon Name	Designated Status
Cornflower	Centaurea cyanus	Section 41
Cross-leaved Heath	Erica tetralix	England Red Listed: Near Threatened
Crosswort	Cruciata laevipes	
Curved Hard-grass	Parapholis incurva	Nationally Scarce
Devil's-bit Scabious	Succisa pratensis	England Red Listed: Near Threatened
Dittander	Lepidium latifolium	Nationally Scarce
Dwarf Spurge	Euphorbia exigua	England Red Listed: Vulnerable
Dyer's Greenweed	Genista tinctoria	England Red Listed: Vulnerable
Early Meadow-grass	Poa infirma	Nationally Scarce
Elecampane	Inula helenium	England Red Listed: Near Threatened
Field Gromwell	Lithospermum arvense	England Red Listed: Endangered
Field Pepperwort	Lepidium campestre	England Red Listed: Near Threatened
Field Scabious	Knautia arvensis	England Red Listed: Near Threatened
Four-leaved Allseed	Polycarpon tetraphyllum	Nationally Rare
Frogbit	Hydrocharis morsus-ranae	England Red Listed: Vulnerable
Goldenrod	Solidago virgaurea	England Red Listed: Near Threatened
Golden-samphire	Inula crithmoides	Nationally Scarce
Green-winged Orchid	Anacamptis morio	England Red Listed: Vulnerable
Harebell	Campanula rotundifolia	England Red Listed: Near Threatened
Heath Dog-violet	Viola canina	England Red Listed: Vulnerable
Heath Speedwell	Veronica officinalis	England Red Listed: Near Threatened
Heather	Calluna vulgaris	England Red Listed: Near Threatened
Hoary Plantain	Plantago media	England Red Listed: Near Threatened
Hound's-tongue	Cynoglossum officinale	England Red Listed: Near Threatened
Jersey Cudweed	Gnaphalium luteoalbum	WCA Schedule 8
Large Leaved Lime	Tilia platyphyllos	Nationally Scarce
Lesser Calamint	Clinopodium calamintha	Nationally Scarce
Lesser Spearwort	Ranunculus flammula	England Red Listed: Vulnerable
Lizard Orchid	Himantoglossum hircinum	Nationally Scarce WCA Schedule 8

Common Name	Taxon Name	Designated Status
Long-headed Clover	Trifolium incarnatum subsp. molinerii	Nationally Rare
Loose Silky-bent	Apera spica-venti	England Red Listed: Near Threatened
Marsh Pennywort	Hydrocotyle vulgaris	England Red Listed: Near Threatened
Marsh Speedwell	Veronica scutellata	England Red Listed: Near Threatened
Marsh-mallow	Althaea officinalis	Nationally Scarce England Red Listed: Near Threatened
Mat-grass	Nardus stricta	England Red Listed: Near Threatened
Oak-leaved Goosefoot	Chenopodium glaucum	Nationally Scarce England Red Listed: Vulnerable
Quaking Grass	Briza media	England Red Listed: Near Threatened
Ragged-Robin	Silene flos-cuculi	England Red Listed: Near Threatened
Rye Brome	Bromus secalinus	Nationally Scarce England Red Listed: Near Threatened
Saltmarsh Goosefoot	Chenopodium chenopodioides	Nationally Scarce
Sand Soft-brome	Bromus hordeaceus subsp. thominei	Nationally Scarce
Sea Barley	Hordeum marinum	Nationally Scarce England Red Listed: Vulnerable Section 41
Sea Clover	Trifolium squamosum	Nationally Scarce
Sea-buckthorn	Hippophae rhamnoides	Nationally Scarce
Shepherd's Cress	Teesdalia nudicaulis	England Red Listed: Near Threatened
Slender Bird's-foot-trefoil	Lotus angustissimus	Nationally Scarce England Red Listed: Near Threatened
Slender Tare	Vicia parviflora	Nationally Scarce England Red Listed: Vulnerable
Small Cudweed	Filago minima	England Red Listed: Near Threatened
Smooth Cat's-ear	Hypochaeris glabra	England Red Listed: Vulnerable
Spiny Restharrow	Ononis spinosa	England Red Listed: Near Threatened
Stiff Saltmarsh-grass	Puccinellia rupestris	Nationally Scarce
Stinking Chamomile	Anthemis cotula	England Red Listed: Vulnerable

Common Name	Taxon Name	Designated Status
Stinking Hellebore	Helleborus foetidus	Nationally Scarce
Suffocated Clover	Trifolium suffocatum	Nationally Scarce
Sulphur Clover	Trifolium ochroleucon	Nationally Scarce England Red Listed: Vulnerable
Tormentil	Potentilla erecta	England Red Listed: Near Threatened
Tower Mustard	Arabis glabra	Nationally Scarce England Red Listed: Endangered Section 41
Treacle-mustard	Erysimum cheiranthoides	England Red Listed: Near Threatened
Weasel's-snout	Misopates orontium	England Red Listed: Vulnerable
Welsh Poppy	Meconopsis cambrica	Nationally Scarce
White Horehound	Marrubium vulgare	Nationally Scarce
White Mullein	Verbascum lychnitis	Nationally Scarce
Wild Clary	Salvia verbenaca	England Red Listed: Near Threatened
Wild Pansy	Viola tricolor	England Red Listed: Near Threatened
Wild Strawberry	Fragaria vesca	England Red Listed: Near Threatened
Woad	Isatis tinctoria	Nationally Scarce
Wood-sorrel	Oxalis acetosella	England Red Listed: Near Threatened
Yellow Vetchling	Lathyrus aphaca	Nationally Scarce England Red Listed: Vulnerable
Bryophytes		
N/A	Tortula schimperi	Nationally Rare
Invasive Species		
Canadian Waterweed	Elodea canadensis	Wildlife and Countryside Act Schedule 9
Giant Knotweed	Fallopia sachalinensis	Wildlife and Countryside Act Schedule 9
Giant-rhubarb	Gunnera tinctoria	Wildlife and Countryside Act Schedule 9
Giant Hogweed	Heracleum mantegazzianum	Wildlife and Countryside Act Schedule 9
Japanese Knotweed	Fallopia japonica	Wildlife and Countryside Act Schedule 9
New Zealand Pigmyweed	Crassula helmsii	Wildlife and Countryside Act Schedule 9
Rhododendron	Rhododendron ponticum	Wildlife and Countryside Act Schedule 9

Common Name	Taxon Name	Designated Status
Three-cornered Garlic	Allium triquetrum	Wildlife and Countryside Act Schedule 9
Alexanders	Smyrnium olusatrum	Wildlife and Countryside Act Schedule 9
American Skunk-cabbage	Lysichiton americanus	Other Invasive Species
Butterfly-bush	Buddleja davidii	Other Invasive Species
Canadian Goldenrod	Solidago canadensis	Other Invasive Species
Common Cord-grass	Spartina anglica	Other Invasive Species
Evergreen Oak	Quercus ilex	Other Invasive Species
False acacia	Robinia pseudoacacia	Other Invasive Species
Fringed Water-lily	Nymphoides peltata	Other Invasive Species
Giant Butterbur	Petasites japonicus	Other Invasive Species
Goat's-rue	Galega officinalis	Other Invasive Species
Indian Balsam	Impatiens glandulifera	Other Invasive Species
Italian Alder	Alnus cordata	Other Invasive Species
Japanese Rose	Rosa rugosa	Other Invasive Species
Least Duckweed	Lemna minuta	Other Invasive Species
Lesser Bulrush	Typha angustifolia	Other Invasive Species
Nuttall's Waterweed	Elodea nuttallii	Other Invasive Species
Pale Galingale	Cyperus eragrostis	Other Invasive Species
Russian vine	Fallopia baldschuanica	Other Invasive Species
Spanish Bluebell	Hyacinthoides hispanica	Other Invasive Species
Turkey Oak	Quercus cerris	Other Invasive Species
Winter Heliotrope	Petasites fragrans	Other Invasive Species

Annex C. Groundwater Dependant Terrestrial Ecosystems (Sites of Special Scientific Interest)

Annex C: Groundwater Dependant Terrestrial Ecosystems (Sites of Special Scientific Interest)

Table A8.1.14 Groundwater dependant terrestrial ecosystems (Sites of Special Scientific Interest)

Project Section	Site Name	GWDTE	Location in Relation to Project
A	Aslacton Parish Land	Wet marsh grassland and fen grassland	3 km downstream of the Project where the River Tas (which feeds the site) is crossed by overhead line and haul road.
Α	Forncett Meadows	Marshy grassland	4 km downstream of the Project where the River Tas (which feeds the site) is crossed by overhead line and haul road.
A	Flordon Common also part of the Norfolk Valley Fens SAC	Calcareous fen	0.5 km downstream of the Project where the River Tas (which feeds the fen) is crossed by overhead line.
A	Shelfanger Meadows	Flower rich hay meadows	0.3 km upstream of the Project where a watercourse is crossed by the haul road and overhead line.
В	Gypsey Camp Meadows, Thrandeston	Wet meadow	No hydrological connection to the Project.

Annex D. Groundwater Dependant Terrestrial Ecosystems (Local Nature Reserves)

Annex D: Groundwater Dependant Terrestrial Ecosystems (Local Nature Reserves)

Table A8.1.15 Groundwater dependant terrestrial ecosystems (Local Nature Reserves)

Project Section	Site Name	GWDTE	Location in Relation to Project
A	Roydon Fen	Wet woodland and lowland fen	0.2 km downstream of where River Waveney is crossed by overhead line [also a CWS].
В	Bramford Meadows	Grassland and scrub alongside river	More than 4.5 km downstream of location where the haul road and overhead line cross the watercourse [also CWS].
В	Fen Alder Carr	Open water, tall fen and wet woodland	No direct hydrological connection between this site and the watercourses that are crossed by the Project [also a CWS].
В	Needham Lake	Lake and marsh	2.5 km downstream of location where overhead line crosses the River Gipping that feeds this LNR.
Е	Brockwell Meadows	Water meadow on banks of River Blackwater	3.5 km downstream of location where overhead line crosses the River Blackwater that feeds this LNR
F	Chelmer Valley Riverside	Ponds on banks of River Chelmer	5.9 km downstream of location where the haul road and overhead line cross the River Chelmer that feeds this LNR.
G	Hutton Country Park	Marshy and wetland habitat	1.98 km upstream of location where the haul road crosses the River Wid [also a LWS].

Annex E. Groundwater Dependant Terrestrial Ecosystems (County Wildlife Sites)

Annex E: Groundwater Dependant Terrestrial Ecosystems (County Wildlife Sites)

Table A8.1.16 Groundwater dependant terrestrial ecosystems (County Wildlife Sites)

Project Section	Site Name	GWDTE	Location in Relation to Project
А	Bayes Meadow	Marshy grassland	No hydrological connection to Project.
A	Roydon Fen	Wet woodland and lowland fen	0.2 km downstream of where River Waveney is crossed by overhead line [also LNR]
В	Bramford Meadows	Grassland and scrub alongside river	More than 4.5 km downstream of location where the haul road and overhead line cross the watercourse [also LNR].
Α	Bracon Ash Common	Pond and wet ditch	No hydrological connection to Project.
A	Bressingham Fen	Wet woodland	3 km upstream of location where overhead line crosses the River Waveney.
Α	Brewers Green	Ponds	No hydrological connection to Project.
A	Brick Kiln Lane, Bunwell Hill	Ponds and marshy grassland	0.6 km downstream of location where overhead line and haul road crosses the River Tas that feeds this CWS.
A	Brock's Watering	Wet grassland and stream	0.4 km downstream of location where overhead line and haul road crosses the watercourse which feeds this CWS.
A	Bunwell Fen	Wet woodland	2.3 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Carlton Rode Fen	Marshy grassland and fishing ponds	0.3 km upstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Dunston Common	Small pond	Over 15 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.

Project Section	Site Name	GWDTE	Location in Relation to Project
А	Eagle Farm Pond	Large pond	No hydrological connection to the Project.
A	Flordon Meadow (East)	Marshy grassland	0.5 km upstream of location where overhead line crosses a watercourse which is tributary to the River Tas.
A	Flordon Meadow (West)	Marshy grassland	0.3 km upstream of location where overhead line crosses a watercourse which is tributary to the River Tas.
А	Gissing Common	Patches of marshy grassland	No hydrological connection to the Project.
A	Hapton Common	Marshy grassland and fast-flowing stream	1.6 km downstream of location where overhead line crosses a watercourse which is tributary to the River Tas.
А	Hethel Pond and 'The Drift'	Pond	No hydrological connection to the Project.
A	Horseford Meadow	Seasonally flooded grassland during winter	More than 7 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Muir Lane Meadow	Small area of marshy grassland	4 km upstream of location where overhead line and haul road crosses the River Tas which feeds this CWS.
A	Mulbarton Common	Small area of marshy grassland	No hydrological connection to the Project.
A	Spring Meadow	Marshy grassland	No hydrological connection to the Project.
A	Bracon Hall Lake	Lake	No hydrological connection to the Project.
А	Swardeston Common	Three ponds	No hydrological connection to the Project.
A	Tas Pond	Pond	3km downstream of location where overhead line and haul road crosses the River Tas which may feed this CWS.
A	Tas Valley	Marshy Grassland	5.7 km downstream of location where overhead line and haul road crosses the River Tas which feeds this CWS. There is also a tributary watercourse of the River Tas which the Project

Project Section	Site Name	GWDTE	Location in Relation to Project
			Crosses 4.3 km downstream of this CWS.
A	The Carr	Damp grassland and swamp	2.8 km and 3.6 km (respectively) downstream of locations where overhead line and haul road crosses two watercourses which confluence and feed this CWS.
A	The Carrs Woodland	Damp woodland, swamp, marshy grassland, ponds, ditches including a species rich chalky ditch and flowing stream	No hydrological connection to the Project.
A	The Grange, Wreningham	Large pond	1.6 km upstream of location where overhead line crosses a watercourse which is a tributary to the River Tas.
A	The Grove	Lake	No hydrological connection to the Project.
A	Wreningham Marsh	Marshy grassland and wet meadow	2 km upstream of location where overhead line crosses a watercourse which is a tributary to the River Tas.
В	Burgate Great Green	Three large ponds	No hydrological connection to the Project.
В	Burgate Little Green	Pond	No hydrological connection to the Project.
В	Creeting St Mary Meadows	Wet meadows	No hydrological connection to the Project.
В	Forrold Meadow	Two ponds	No hydrological connection to the Project.
В	Hall Farm Meadow	Wet meadow	2 km upstream of location where overhead line crosses the River Waveney.
В	Horse Fen	Wet grassland	2.7 km upstream of location where overhead line crosses the River Waveney.
В	Mellis Common	Ponds	No hydrological connection to the Project.
В	Railway Meadows	Wet meadows	No hydrological connection to the Project.

Project Section	Site Name	GWDTE	Location in Relation to Project
В	River Gipping (Sections)	River	The Project directly crosses the River Gipping with an overhead line.
В	River Waveney (Sections)	River	The Project directly crosses the River Waveney with an overhead line.
В	St John's Grove	Pond	No hydrological connection to the Project.
В	The Marsh	Marshy grassland	No hydrological connection to the Project.
В	Thornham Estate Woods	Ponds	No hydrological connection to the Project.
В	Thrandeston Marsh	Marshy grassland	1.1 km downstream of location where overhead line, haul road and area where UK Power Networks (UKPN) overhead line mitigation works would cross a watercourse that feeds this CWS and then confluences the River Waveney.
В	Topcroft Farm Meadows	Wet woodland and marshy grassland	3 km upstream of location where overhead line crosses a watercourse which feeds this CWS.
B, C	Bushey Ley Farm	Stream	No hydrological connection to the Project.
С	Chantry Park, Beechwater and Meadow	Fishing pond	No hydrological connection to the Project.
С	Higham Meadow	Wet meadow and stream	The Project's sustainable drainage system outfalls into Higham Meadow watercourse.
С	Raydon Great Wood	Over thirty ponds	No hydrological connection to the Project.
С	River Brett (Sections)	River	The River Brett is a tributary to the River Stour and they confluence prior to the Project crossing the River Stour at two locations via directional drilling for underground cabling.
С	Springhill Meadows	Stream	2.8 km downstream of location where overhead line crosses a watercourse which feeds this CWS.
С	Thorington Street Pit and Reservoir	Reservoir	No hydrological connection to the Project.

Project Section	Site Name	GWDTE	Location in Relation to Project
С	Wasses Marshes	Grazing marsh	0.4 km upstream of location where the Project crosses the River Stour via directional drilling for underground cabling.
С	Water Farm Meadow	Wet meadow, open water and stream	No hydrological connection to the Project.

Annex F. Groundwater Dependant Terrestrial Ecosystems (Local Wildlife Sites)

Annex F: Groundwater Dependant Terrestrial Ecosystems (Local Wildlife Sites)

Table A8.1.17 Groundwater dependant terrestrial ecosystems (Local Wildlife Sites)

Project Section	Site Name	GWDTE	Location in Relation to Project
С	Ardleigh Reservoir Grassland	Reservoir edge and wet woodland species	1.5 km away along reservoir edge from location where overhead line crosses Ardleigh Reservoir.
С	Black Brook	Wet woodland	West section of LWS 0.1 km upstream of location where underground cable and haul road crosses the Black Brook and east section of LWS is 0.2 km downstream. East section is also the location of two surface water and attenuation drainage lines.
С	Bridges Farm	Alluvial floodplain pastures	2.2 km downstream of location where the underground cable crosses the River Stour that feeds this LWS via trenchless crossing.
С	Gun Hill Place	Lake	No hydrological connection to Project.
С	Langham Water Works	Wet woodland, lakes and water courses	2 km upstream of location where the underground cable crosses the River Stour, via trenchless crossing.
С	The Coombs	Wet stream valley and wet woodland	1 km downstream of location where the underground cable crosses the River Stour, via trenchless crossing.
С	Wall's Wood	Wet woodland and Salary Brook	2.2 km upstream of location where overhead line crosses Ardleigh Reservoir.
С	Wignall Brook Grasslands	Marshy grassland	No hydrological connection to Project.
D	Aldercar, Wormingford	Wet woodland	No hydrological connection to Project.
D	Fordham Bridge Meadow	River floodplain with swamp habitat	0.9 km downstream of location where overhead line crosses the River Colne.
D	Langham Road Grassland	Pond	No hydrological connection to Project.

Project Section	Site Name	GWDTE	Location in Relation to Project
D	Marks Tey Brick Pit	Wet woodland, marsh, open water habitats	0.4 km downstream of location where the haul road and overhead line crosses the Roman River.
D	Seven Star Green	Pond	No hydrological connection to Project.
D	Spring Wood (West Bergholt)	Marshy vegetation	No hydrological connection to Project.
D	West Bergholt Alderwoods	Wet woodland	0.7 km downstream along a tributary of the River Colne from where haul road and overhead line cross the waterbody.
E	Blackwater Plantation	Marsh and river	3.2 km upstream of location where overhead line and haul road cross the River Blackwater.
Е	Buckler's Farm Wood	Stream	4.3 km upstream of location where the overhead line and haul road cross the Roman River.
Е	Coggeshall Hall Farm	Lowland fen vegetation and complex riverine habitat	LWS intersected in the middle by overhead line and haul road where they cross the River Blackwater.
E	Craigments Spring	Pond	No hydrological connection to Project.
Е	Feering Marsh	Marshy grassland	1.2 km downstream of location where the overhead line and haul road cross the River Blackwater.
Е	Hoo Hall Meadows	Wet marshy grassland and stream	1.7 km downstream of location where the overhead line and haul road cross a River Blackwater tributary.
E	Tilkey Road, Coggeshall	Tall-herb marsh and brook	4.1 km upstream (on tributary) of location where the overhead line and haul road cross the River Blackwater.
Е	Witham Marsh	Sedge-beds, rough marshy grassland, springs, river	1.9 km downstream of location where the haul road crosses the River Brain.2.5 km downstream of location where overhead line crosses the River Brain.
F	Border Wood Lake	Lake and wet woodland	0.3 km stream connecting the LWS to where the overhead line passes.
F	Broomfield – Little Waltham Chelmer	Riverine habitat	0.9 km downstream of location where the overhead line crosses the River Chelmer.

Project Section	Site Name	GWDTE	Location in Relation to Project
F	Langleys Deer Park	Coastal and Floodplain Grazing Marsh and River	0.1 km upstream of location where the overhead line crosses the River Chelmer.
F	Little Waltham Village Meadows	Floodplain Grazing Marsh	0.5 km downstream of location where the overhead line crosses the River Chelmer.
F	Lowley's Farm Meadow	Coastal floodplains	0.06 km upstream of location where the haul road crosses River Ter, and 0.2 km upstream of location where overhead line crosses River Ter.
F	Writtle Bridge Meadow	Floodplain meadow	3.3 km downstream of location where the overhead line crosses the River Can.
G	Bluntswall Shaws	Pond and damp hollows	No hydrological connection to Project.
G	Harespring Wood	Wet woodland	No hydrological connection to Project.
G	Hutton Country Park	Marshy and wetland habitat	1.98 km upstream of location where the haul road crosses the River Wid. [also a LNR]
G	Little Burstead Common	Pond	No hydrological connection to Project.
G	Little Burstead Wood	Stream	3.6 km downstream of location where the overhead line crosses the River Crouch.
G	Parkhill Wood	Ponds	No hydrological connection to Project.
G	Poles Wood	Pond	No hydrological connection to Project.
G	Stock Brook Meadow	Damp meadow	1.8 km upstream of location where the overhead line and haul road crosses Stock Brook.
G	The Wilderness	Wet woodland and stream	3.4 km downstream of tributary of the River Crouch and then 2.4 km upstream of location where the haul road and overhead line crosses.
Н	Linford Wood	Wet woodland	No hydrological connection to Project.
Н	Little Thurrock Reedbeds	Reedbed	No hydrological connection to Project.
Н	Mucking Creek Wetlands	Reedbed and mosaic wetland habitat	No hydrological connection to Project.

Project Section	Site Name	GWDTE	Location in Relation to Project
Н	Thurrock Thameside Nature Park, Mucking	Lake and reeds	No hydrological connection to Project.
Н	Tilbury Power Station	Reed, mosaic of wetland habitats, grazing marsh	No hydrological connection to Project.
Н	Victoria Road Grassland, Stanford-le-Hope	Floodplain meadow	No hydrological connection to Project.
Н	Warren Lakes	Lakes, wet woodland, reed	No hydrological connection to Project.

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