

# Rampion 2 Wind Farm Category 7: Other Documents Outline Code of Construction Practice (clean) Date: January 2024 Revision B

Document Reference: 7.2 Pursuant to: APFP Regulation 5 (2) (q) Ecodoc number: 004866596-(02)

#### **Document revisions**

Revision	Date	Status/reason for issue	Author	Checked by	Approved by
Α	04/08/2023	Final for DCO Application	WSP	RED	RED
В	16/01/2024	Update of Appendix B – Vegetation Retention Plans – Figure 7.2.1, 7.2.2 and addition of Figure 7.2.5 – Pond retention plan. Amendments to commitments following relevant representations. Addition of protocol for addressing crossings of private means of access in Section 5.7.	WSP	RED	RED



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Appendix D	Outline Site Waste Management Plan (see Document Ref: 7.4)



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# **Executive Summary**

This Outline Code of Construction Practice (CoCP) has been prepared to secure the embedded environmental measures that will apply to all activities associated with the construction of the onshore elements of the Proposed Development. This is part of a suite of plans supporting onshore construction works for Rampion 2.

The Outline CoCP has been developed alongside the Environmental Impact Assessment (EIA) process and includes embedded environmental measures derived from the assessment process, legislative requirements and industry best practice.

This Outline CoCP includes general principles on site layout, working hours, lighting and emergency planning procedures. It also includes topic specific environmental measures to be implemented during the construction of the Proposed Development.

Stage specific CoCPs will be produced by the appointed Contractor(s) following the grant of the Development Consent Order (DCO) and prior to the relevant stage of construction. This will be produced in accordance with this Outline CoCP for approval of the relevant planning authority, prior to the commencement of that stage of works.



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# 1. Introduction

#### 1.1 Overview of the Proposed Development

- 1.1.1 Rampion Extension Development Limited (hereafter referred to as 'RED') (the Applicant) is developing the Rampion 2 Offshore Wind Farm Project (Rampion 2) located adjacent to the existing Rampion Offshore Wind Farm Project ('Rampion 1') in the English Channel.
- 1.1.2 Rampion 2 will be located between 13km and 26km from the Sussex Coast in the English Channel and the offshore array area will occupy an area of approximately 160km<sup>2</sup>.
- 1.1.3 The key offshore elements of the Proposed Development will be as follows:
  - up to 90 offshore wind turbine generators (WTGs) and associated foundations;
  - blade tip of the WTGs will be up to 325m above Lowest Astronomical Tide (LAT) and will have a 22m minimum air gap above Mean High Water Springs (MHWS);
  - inter-array cables connecting the WTGs to up to three offshore substations;
  - up to two offshore interconnector export cables between the offshore substations; and
  - up to four offshore export cables each in its own trench, will be buried under the seabed within the final cable corridor;
  - the export cable circuits will be High Voltage Alternating Current (HVAC), with a voltage of up to 275kV.
- 1.1.4 The key onshore elements of the Proposed Development will be as follows:
  - a single landfall site near Climping, Arun District, connecting offshore and onshore cables using Horizontal Directional Drilling (HDD) installation techniques;
  - buried onshore cables in a single corridor for the maximum route length of up to 38.8km using:
    - trenching and backfilling installation techniques; and
    - trenchless and open cut crossings.
  - a new onshore substation, proposed near Cowfold, Horsham District, that will connect to an extension to the existing National Grid Bolney substation, Mid Sussex, via buried onshore cables; and
  - extension to and additional infrastructure at the existing National Grid Bolney substation, Mid Sussex District to connect Rampion 2 to the national grid electrical network.



1.1.5 A full description of the Proposed Development is provided in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4).

#### 1.2 Purpose

- 1.2.1 This Outline CoCP sets out the management measures that will apply to all works carried out within the onshore part of the proposed DCO Order Limits, landward of Mean High Water Springs (MHWS). The works are described in Environmental Statement (ES) Chapter 4: The Proposed Development, Volume 2 of the ES (Document Reference: 6.2.4) and are summarised below:
- 1.2.2 Construction works for the onshore cable corridor, joint bays (JBs), link boxes and transition joint bay (TJB) and associated onshore works for the connection of the offshore transmission cables;
- 1.2.3 Temporary accesses, construction compounds, compounds for trenchless crossings, cable stringing out areas and soil storage areas; and
- 1.2.4 Construction of the onshore substation and permanent access at Oakendene and the National Grid Bolney substation extension works.
- 1.2.5 The Outline CoCP and embedded environmental measures therein is secured in the requirements of the **draft Development Consent Order** (Document Reference: 3.1). As per the requirement, the Contractor(s) will provide a stage specific CoCP that is applicable to the specific constraints and works planned for each stage of the construction works. This will be provided for the approval of the relevant Local Planning Authority prior to the commencement of that stage of works.
- 1.2.6 The measures identified in this Outline CoCP have been derived from legislative requirements, industry best practice and include the embedded environmental measures developed as part of the Environmental Impact Assessment (EIA) process. These include controls and monitoring procedures for management of the construction works to ensure impacts to the environment are avoided, prevented, or reduced.
- 1.2.7 This Outline CoCP has been developed alongside the EIA process, the results of which are reported in Chapters 6-29 of the Rampion 2 Environmental Statement, Volume 2 (Document References: 6.2.6 to 6.2.29) and in response to the consultations undertaken prior to submission of the DCO Application. For further information on consultation and engagement please refer to the aspect chapters of the ES and the Consultation Report (Document Reference: 5.1.

#### 1.3 Structure

- 1.3.1 This Outline CoCP is set out in the following sections:
  - Section 2: Approach to environmental management including how this Outline CoCP will be implemented;
  - Section 3: Supporting plans to the Outline CoCP;
  - Section 4: General site management;



• Section 5: Management of onshore environmental issues – This outlines the embedded environmental measures that the Contractor(s) and sub-contractors will be required to adhere to for the onshore construction works.



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# 2. Approach to environmental management

#### 2.1 Implementation of the Outline CoCP

- 2.1.1 This Outline CoCP has been submitted with the DCO Application and alongside the supporting management plans (see **Section 3**), and it secures the embedded environmental measures to avoid, prevent or reduce the impacts arising during the construction of the Proposed Development. This Outline CoCP and supporting plans will be issued to the relevant Contractor(s) who will then be responsible for production of stage specific CoCPs developed in accordance with the framework provided in this document. The Contractor(s) will be responsible for are delivery of the works in compliance with these documents as a contractual requirement.
- 2.1.2 As per the requirements of the **draft DCO** (Document Reference: 3.1), no stage of any works landward of MHWS may commence until a stage specific CoCP (which must accord with the Outline CoCP has been submitted to and approved by the relevant planning authority, in consultation with relevant stakeholders.
- 2.1.3 The Contractor(s) will be required to prepare the stage specific CoCPs and any supporting documents to demonstrate how the management measures and principles provided in the Outline CoCP will be implemented for the planned works and monitored effectively. This will be accompanied by stage specific management plans as shown in **Graphic 2-1**.
- 2.1.4 In accordance with the requirement of the **draft DCO** (Document Reference: 3.1) the stages of works for the onshore elements of the Proposed Development will be identified in a written programme which will be submitted to and approved by the relevant planning authorities prior to commencement of works.



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#### **Draft Development Consent Order Certified Plans** Requirements Outline Outline Public Design and Access Outline Landscape Outline Skills **Outline Written Scheme** Outline Code of Construction **Outline Construction** Rights of Statement (DAS) for and Ecology Management Plan and Employment Outline Operational Outline Operational of Investigation **Construction Practice** Method Traffic Management Plan Way Management Plan Onshore Substation Strategy Drainage Plan Travel Plan Statement and NG Bolney extension DCO Application **Outline Construction Outline Site Waste** Workforce Travel Plan Management Plan **Outline Soils** Management Plan Vegetation **Operational Phase** Retention Plan DCO Grant - - - - - -Development of management plans for each stage of works for approval by relevant consent granting body Detailed Design for Construction Landscape Public Rights of Skills and Construction Written Scheme of Code of Construction Traffic Operational Onshore Substation Operational Method and Ecology Way Management Employment Strategy Communication Construction Practice Management Plan Investigation Management Plan Drainage Plan and NG Bolney Travel Plan Statement Plan Plan extension Site Waste Construction Workforce Management Plan Travel Plan **Operational Light Operational Noise** Operations and Emissions Plan Management Plan Maintenance Plan Materials Management Plan Soils Soils Resource Plan Management Plan Post Consent Biodiversity Management Plan Noise and Vibration Management Plan Dust Management Plan Emergency Response Plan **Pollution Prevention Plan** and Pollution Incident Response Plan **Construction Phase** Drainage Plan Arboricultural Method Statement and Tree Protection Plan

#### Graphic 2-1 Hierarchy of management plans

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#### 2.2 Commitments

- 2.2.1 The **Commitments Register** (Document Reference: 7.22) identifies the embedded environmental measures that will be implemented as part of the Proposed Development. The **Commitments Register** (Document Reference: 7.22) has been populated with a range of environmental measures including those designed to avoid, prevent, and reduce impacts. These have been informed by the ongoing design evolution process, stakeholder engagement and consultation, good practice and/or are considered to be industry best practice and procedures for Nationally Significant Infrastructure Projects (NSIPs), in particular offshore wind farm development.
- 2.2.2 The **Commitments Register** (Document Reference: 7.22) identifies how each environmental measure will be secured such as through requirements of the DCO, the deemed Marine Licence (dML) (for the offshore part of the Proposed Development) and associated documents including this Outline CoCP and supporting management plans (see **Graphic 2-1**).
- 2.2.3 This Outline CoCP identifies commitments relevant to the construction of the onshore elements of the Proposed Development and makes reference to these commitments in subsequent sections, including general site management and aspect specific commitments. Commitments are referred to in this document by their commitment ID, which is a unique numerical identifier. The full list can be found in the **Commitments Register** (Document Reference: 7.22).

# 2.3 Health and Safety and Environmental Management Systems

- 2.3.1 Rampion Extension Development Limited (RED) will develop and implement a Health, Safety, Security and Environment (HSSE) Strategy for the Proposed Development. The HSSE Strategy will describe the way in which the Proposed Development will be delivered and include detail of compliance with relevant policies, Management Systems, and regulatory requirements, throughout the lifecycle of the Proposed Development. All aspects of the construction work will be delivered in accordance with the Construction (Design and Management) Regulations 2015 (CDM). Commitments related to Health and Safety are detailed in **Table 2-1** below.
- 2.3.2 RED will review the management system of the Principal Contractor and any Contractor(s) it directly engages with to ensure that they meet expectations with respect of the HSSE Strategy. Every Contractor and any sub-contractors will be expected to comply with RED requirements for delivering the Proposed Development in accordance with the HSSE Strategy and in line with any plans, requirements or risk assessments.
- 2.3.3 RED will appoint a Principal Designer and a Principal Contractor, who will be responsible for the management of risk (including of major accidents and disasters as identified in **ES Chapter 27 Major Accidents and Disasters, Volume 2** of the ES (Document Reference: 6.2.27)) during the design and construction phases. RED will perform the duties required of the 'Client' under CDM.

2.3.4 During the design and construction phases, the Principal Designer, Principal Contractor(s) (once appointed) and the Client (RED), all have a role to ensure that HSSE risk is managed. Risk assessments will be kept under review to ensure that any new hazards or potential risk reduction measures can be identified and incorporated. The Principal Contractor(s) will be responsible for managing the performance of all sub-contractors.

#### Table 2-1 Commitments relevant to Health and Safety

Commitment ID	Measure Proposed
C-25	All aspects of the construction work will be accordance with the CDM Regulations 2015.
C-170	A Heath, Safety, Security and Environment (HSSE) Strategy will be developed. The HSSE Strategy will describe the way in which the Proposed Development will be delivered. It will include detail of compliance with relevant policies, Management Systems and regulatory requirements, throughout the lifecycle of the Proposed Development.
C-171	A suitable and sufficient risk assessment of the potential impacts of major accidents and disasters has been undertaken and will be kept under review throughout the Proposed Development lifecycle (design, construction, operation and decommissioning stages).
C-172	The risk resulting from Major Accidents and/or Disasters will be eliminated So Far As Is Reasonably Practicable (SFAIRP) and any risk which cannot be designed out will be examined to ensure the risk is reduced As Low As Reasonably Practicable (ALARP). This applies to both Safety and Environmental Major Accidents and the impacts on the Proposed Development from disasters.

- 2.3.5 RED recognises that its activities will have an environmental impact and is committed to ensuring excellence in environmental performance for all its employees and Contractor(s). The Contractor(s) will be expected to have an Environment Management System (EMS) that is certified under the International Organization for Standardization (ISO) Environmental Management Standard 14001 or other suitable environmental management system. The EMS will form the basis and structure for how the Contractor(s) will undertake environmental management during the construction of the Proposed Development and ensure that the relevant measures and commitments made during the environmental assessment process are adhered to. The EMS will set out:
  - the procedures to be implemented to monitor compliance with environmental legislation and other relevant requirements;
  - the key environmental effects of the construction works and how they will be managed;



- staff competence and training requirements;
- record-keeping arrangements; and
- monitoring compliance and the effectiveness of the measures included within the Outline CoCP and supporting management plans.

#### 2.4 Roles and responsibilities

- 2.4.1 The main roles and responsibilities required to implement this Outline CoCP and supporting management plans are outlined below. The details of specific roles and responsibilities during construction of the onshore works will be identified once development consent has been granted and Contractor(s) appointed and included in the stage specific CoCP.
- 2.4.2 RED will have overall responsibility for:
  - compliance with the DCO and requirements therein;
  - implementation of the HSSE strategy for the Proposed Development;
  - monitoring the performance of Contractor(s) (via inspections, audits, and reporting); and
- 2.4.3 RED will appoint the Principal Contractor in line with the requirements of the CDM Regulations 2015. The Principal Contractor(s) will produce a HSSE plan in line with the RED HSSE Strategy and will be responsible for managing the performance of all sub-contractors against the HSSE plan. All appointed Contractor(s) and sub-contractors will be contractually required to deliver the construction works in accordance with the DCO. The Contractor(s) will be responsible for preparing stage specific CoCPs and other supporting plans for the stage for which they are responsible, which must accord with this Outline CoCP.
- 2.4.4 Further specific roles required to be delivered by RED and/or its Contractor(s) and sub-contractors to deliver the works in accordance with this Outline CoCP will include:
  - Environment Manager and advisors;
  - Ecological Clerk of Works (ECoW);
  - Archaeological Clerk of Works;
  - Archaeological Contractor;
  - Agricultural Liaison Officer; and
  - Community Liaison Officer.

#### 2.5 Training and competence

2.5.1 All staff employed by RED, and their Contractor(s) will receive training to ensure they are fully aware of their responsibilities in ensuring the measures outlined in this Outline CoCP, subsequent stage specific CoCP supporting management plans are complied with.

- 2.5.2 Contactor(s) will ensure all staff are suitably experienced and qualified including any sub-contractors and will be responsible for identifying training needs of their workforce.
- 2.5.3 All staff attending site will be required to undertake a site induction and work under the appropriate Risk Assessment and Method Statements (RAMS). Toolbox talks will be provided to ensure the workforce are kept up to date with HSSE matters specific to the work in question.

#### 2.6 Community liaison

- 2.6.1 RED will produce a Construction Communications Plan (CCP) prior to the commencement of construction, for approval of the relevant planning authorities. The CCP will:
  - outline the Proposed Development;
  - build on stakeholder engagement carried out throughout development to strengthen relationships with key stakeholder organisations and individuals, alongside the wider community;
  - identify a range of communication tools, methods and opportunities to reach this target audience and enable them to reach the construction team;
  - include a range of communication materials designed to reach the target audience;
  - include a series of tailored Communication and Mitigation Plans to provide more detail for local communities along the 38.8km onshore cable route;
  - produce dedicated Communications Plans for special interest user groups, such as fishers, diver and public rights of way users; and
  - set out the complaints procedure.
- 2.6.2 This will all be set within the overarching objective of keeping our workforce, other sea users, businesses, residents and visitors to the local area, safe and appropriately informed for the duration of construction.

#### 2.7 Complaints

2.7.1 It is recognised that in any major construction project, there may be occasion where a member of the community wishes to make a complaint. The procedure for making a complaint will be outlined in the CCP.

# 3. Supporting plans to the Outline CoCP

**Table 3-1** identifies the supporting management plans which have been appended to this Outline CoCP or submitted as standalone documents as part of the DCO application. **Table 3-1** also identifies those plans which will be prepared and form appendices to the stage specific CoCP which will be provided for approval by the relevant authorities prior to that stage of the works. The stage specific documents will be developed in accordance with the outline documents submitted with the DCO Application.

Document Title	Document Purpose	Status
Submitted with the DCO		
Outline Construction Traffic Management Plan (CTMP) (Document Reference: 7.6)	To outline measures which will be implemented to manage traffic generated during construction of the onshore elements of the Proposed Development.	Outline CTMP (Document Reference: 7.6) provided with DCO Application.
Outline Public Rights of Way Management Plan (PRoWMP) (Document Reference: 7.8)	To outline management measures for all ProWs and Open Access Land (OAL) affected by the onshore elements of the Proposed Development.	Outline PRoWMP (Document Reference: 7.8) provided with DCO Application.
Outline Construction Workforce Travel Plan (Document Reference: 7.7)	To outline the principles for management of travel by personnel during construction of the Proposed Development.	Outline Construction Workforce Travel Plan (Document Reference: 7.7) provided with DCO Application.
Outline Soils Management Plan (SMP) (Document Reference: 7.4)	To outline management measures to minimise adverse effects on soil resource.	Outline SMP (Document Reference: 7.4) provided with DCO Application.

# Table 3-1Management plans for the construction phase that support the Outline<br/>CoCP and DCO Application

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Document Title	Document Purpose	Status
Vegetation Retention Plans (VRP) and Pond Retention Plans (PRP) (see Appendix B in this CoCP)	To outline the vegetation and ponds proposed to be retained and protected during the construction of the Proposed Development.	VRPs provided as <b>Appendix B</b> within the Outline CoCP.
Outline Onshore Written Scheme of Investigation (WSI) (Document Reference: 7.9)	To outline measures required to mitigate impacts to the historic environment.	Outline WSI (Document Reference: 7.9) provided with DCO Application.
Outline Landscape and Ecological Management Plan (LEMP) (Document Reference: 7.10)	To outline habitat reinstatement, creation and management measures required during and following the construction phase of the onshore elements of the Proposed Development.	Outline LEMP (Document Reference: 7.10) provided with DCO Application.
Outline Site Waste Management Plan (SWMP) (Document Reference: 7.3)	To outline measures required to manage waste during the construction phase for the onshore elements of the Proposed Development.	Outline SWMP (Document Reference: 7.3) provided with DCO Application.
Submitted post-consent (stag	le specific)	
Code of Construction Practice (CoCP)	To describe management measures, based on this Outline CoCP, that will apply to all works carried out during construction period of the onshore part of the Proposed Development.	To be produced by the Contractor(s) and approved by the local authority in consultation with Natural England, the Environment Agency and highway authority.
Site Waste Management Plan (SWMP)	To describe measures, based on the <b>Outline SWMP</b> (Document Reference: 7.3), which will be implemented to manage waste during the construction phase for the onshore elements of the Proposed Development.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Materials Management Plan (MMP)	To record where excavated non- waste materials will be reused during the construction period in	To be produced by the Contractor(s) and included in the



Document Title	Document Purpose	Status
	line with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP).	stage specific CoCP.
Soils Management Plan (SMP)	To describe measures, based on the <b>Outline SMP</b> (Document Reference: 7.4), implemented to minimise adverse effects on soil resource during the construction period.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Biodiversity Management Plan	To describe measures implemented to protect habitats and species and prevent spread of invasive non-native species during the construction period.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Noise and Vibration Management Plan (NVMP)	To describe measures implemented to manage noise and vibration levels during the construction period.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Dust Management Plan (DMP)	To describe measures implemented to manage dust levels and air quality issues during the construction period.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Emergency Response Plan (ERP)	To describe the procedures implemented in the event of an emergency during the construction period.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Pollution Prevention Plan and (PPP) Pollution Incident Control Plan (PICP)	To describe measures implemented to prevent pollution events, and in the event of an accidental spill or other pollution incident during the construction period.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Arboricultural Method Statement and Tree Protection Plan	To describe trees to be removed and physical protection measures required for trees and hedgerows.	To be produced by the Contractor(s) and included in the stage specific CoCP.

Document Title	Document Purpose	Status
Construction Phase Drainage Plan (CPDP)	To describe measures implemented to ensure the existing land drainage regime is not compromised during the construction period.	To be produced by the Contractor(s) and included in the stage specific CoCP.
Written Scheme of Investigation (WSI)	To describe the measures implemented to mitigate direct impacts to the historic environment during the construction period.	To be produced by the Contractor(s) and approved by the local authority in consultation with West Sussex County Council (WSCC)
Landscape and Ecology Management Plan (LEMP)	To describe landscape and habitat reinstatement, creation and monitoring and management measures to be implemented in the later stages of the construction period of the Proposed Development.	To be produced by the Contractor(s) and approved by the local authority in consultation with Natural England, the Environment Agency and highway authority.
Public Rights of Way Management Plan (PRoWMP)	To describe measures implemented to manage all PRoWs and OAL affected by the Proposed Development during the construction period.	To be produced by the Contractor(s) and approved by the relevant highway authority in consultation with the relevant local planning authority.
Construction Traffic Management Plan (CTMP)	To describe traffic management measures implemented to manage traffic generated during construction of the Proposed Development.	To be produced by the Contractor(s) and approved by the relevant highway authority in consultation with the relevant local planning authority.
Construction Workforce Travel Plan (CWTP)	To describe the principles for management of travel by personnel during construction of the Proposed Development.	To be produced by the Contractor(s) as an appendix to the CTMP.

# 4. General principles

#### 4.1 Introduction

4.1.1 This section identifies the management measures and embedded environmental measures relevant to general management of the onshore construction works for the Proposed Development. The appointed Contractor(s) must demonstrate compliance with these principles and secure these through the stage specific CoCP.

#### 4.2 Trenchless crossings

- 4.2.1 **Table 4-1** identifies the commitment to the employment of trenchless technology to cross a range of features which will avoid works that could otherwise be disruptive and potentially harmful to environmental features. This measure has also been extended for use at other environmentally sensitive locations including some woodlands.
- 4.2.2 This Outline CoCP is accompanied by a Crossing Schedule (**Appendix A**) identifying locations where trenchless crossings will be provided. For trenchless crossings, HDD has been assessed in the EIA as this is the preferred option due to reduced complexity and relatively low cost compared to other techniques. The detailed methodology and design of the trenchless crossings will be determined following site investigation and confirmed within stage specific Onshore Construction Method Statements.
- 4.2.3 The Crossing Schedule is based on the available information at the time of the DCO Application. Should an unexpected obstacle or constraint be encountered that requires an additional trenchless crossing, this would be confirmed in the crossing schedule accompanying the stage specific detailed CoCP for approval by the relevant planning authority. The submission of the detailed CoCP must be accompanied by confirmation that there are no new or materially different environmental effects arising compared to those assessed in the ES.

#### Table 4-1 Commitments relevant to trenchless crossings

# Commitment<br/>IDEmbedded environmental measure proposedC-5Main rivers, watercourses, railways and roads that form part of the<br/>Strategic Highways Network will be crossed by HDD or other trenchless<br/>technology where this represents the best environmental solution and is<br/>financially and technically feasible (see C-17).

#### 4.3 Site layout

4.3.1 The configuration of construction works for the onshore elements of the Proposed Development will vary depending on the location and activity being undertaken. The **Outline Construction Method Statement** (Document Reference: 7.23) contains further information in relation to construction activities at each of these locations and the stage specific Onshore Construction Method Statement will confirm the final installation methodologies in accordance with the principles outlined below in **paragraph 4.3.2** to **paragraph 4.3.5**. **Table 4-2** outlines the related commitment.

#### Table 4-2 Commitments relevant to site layout

Commitment ID	Embedded environmental measure proposed
C-20	The typical construction corridor will be 40m along the onshore cable corridor to minimise the construction footprint. At other discrete locations this may be expanded to accommodate working area, for example for HDD.

#### Onshore cable corridor

- 4.3.2 As per C-20, the typical construction corridor (illustrated in **Graphic 4-19** in the **ES Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4)) will not exceed 40m in width. This includes the working area for the four cable trenches, haul road, and topsoil and subsoil storage. The **Works Plans Onshore** (Document Reference: 2.2.2) include specific areas for soil storage and cable stringing out where this is not possible in the typical construction corridor. For the connection from the onshore substation at Oakendene to the existing National Grid Bolney substation, where two cables are required, the corridor will not exceed 30m in width. The working corridor will be narrowed in sensitive locations to reduce tree loss (C-204) as per **Section 5.6** and to avoid sensitive heritage assets (C-225).
- 4.3.3 There are other associated works that may be required beyond the typical construction corridor including areas for drainage and water treatment. The stage specific CoCP will include details of the locations where the corridor width will depart from the 40m typical corridor.

Trenchless crossing compounds

4.3.4 The proposed DCO Order Limits have been widened in areas to accommodate the need for trenchless crossings at the locations defined in the Crossing Schedule (**Appendix A**). The compounds for trenchless crossings will be up to 50 x 75m, with the landfall compound up to 120 x 100m and are to be located within the area defined on the Proposed DCO Order Limits.



#### Main compounds

4.3.5 The main compounds for the onshore construction works are the Oakendene substation compound, Oakendene west compound, Washington compound, Climping compound and National Grid Bolney substation extension compound. These compound areas are shown on the **Works Plans Onshore** (Document Reference: 2.2.2) as Works No. 10. These main compounds will include welfare, offices, parking, and plant, materials and waste storage.

#### 4.4 Working hours

- 4.4.1 Core working hours for onshore construction works for the Proposed Development are as follows:
  - 07:00 to 19:00 hours Monday to Friday; and
  - 08:00 to 13:00 hours on Saturday.
- 4.4.2 No activity outside these hours including Sundays, public holidays or bank holidays will take place apart from under the following circumstances:
  - where continuous periods (up to 24 hours, 7 days per week) of construction work are required for HDD<sup>1</sup>;
  - for other works requiring extended working hours such as concrete pouring which will require the relevant planning authority to be notified at least 72 hours in advance;
  - for the delivery of abnormal loads to the connection works, which may cause congestion on the local road network, and will require the relevant highway authority to be notified at least 72 hours in advance; or
  - as otherwise agreed in writing with the relevant planning authority.

#### Table 4-3Commitments relevant to working hours

# Commitment Embedded environmental measure proposed ID

C-22 Core working hours for construction of the onshore components will be 07:00 to 19:00 Monday to Friday, and 08:00 to 13:00 on Saturdays, apart from specific circumstances to be set out and agreed in the Outline CoCP.

<sup>&</sup>lt;sup>1</sup> HDD is a continuous activity and cannot be paused once started.



#### General site management

- 4.4.3 The Contractor(s) will ensure that all construction work areas will be arranged to reduce as far as practicable the environmental impacts having due regard to the constraints for each site, for example:
  - storage sites, temporary offices, fixed plant and machinery will be positioned appropriately (e.g. away from sensitive receptors);
  - appropriate signage for vehicles and pedestrians will be employed across the sites;
  - appropriate speed limits will be imposed on construction compounds, haul roads and access tracks;
  - noise generating activities will be sited away from noise-sensitive receptors where practicable; and
  - measures will be implemented to provide effective preventative pest and vermin control and prompt treatment of any pest and vermin infestation. Adequate arrangements will be made for handling food waste and other material attractive to vermin.
- 4.4.4 Contractor(s) will ensure good housekeeping at all construction sites which will include the following:
  - all construction sites to be kept clean, tidy and safe;
  - welfare facilities will be provided appropriate to the construction site and activities in question and adequate for the workforce;
  - smoking areas will be provided at appropriate locations (where required) for example, away from working locations or publicly accessible areas;
  - open fires will be prohibited; and
  - all necessary measures will be implemented to minimise the risk of fire and the Contractor(s) will comply with all local fire authority requirements.

#### 4.5 Site lighting

- 4.5.1 Construction work will usually be scheduled during daylight hours. At the main construction compounds and specific locations where continuous working is required (such as for HDD), or in poor light conditions during normal working hours, directional lighting and portable lighting units will be used where necessary to ensure safe working and/or site security.
- 4.5.2 Lighting will be designed and positioned to:
  - provide the necessary light levels for safe working;
  - minimise light spillage outside of the construction works area and/or light pollution;
  - avoid disturbance to nearby residents / occupiers of buildings; and

- minimise the impact of lighting on ecological receptors (for example, crepuscular and nocturnal wildlife, such as bats) and sensitive habitats including Ancient Woodland.
- 4.5.3 Site and welfare cabins, equipment and lighting will be sited to minimise visual intrusion as far as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to minimise glare and nuisance to residents, walkers and to minimise distraction or confusion to passing drivers on railways or nearby public highways.
- 4.5.4 The following standards and guidance will be complied with as far as reasonably practicable and applicable to construction works:
  - British Standard (BS) EN 12464-2:2014 Light and lighting. Lighting of work places. Outdoor work places;
  - Institution of Lighting Professionals, (2021). *Guidance Note 1 for the Reduction of Obtrusive Light*;
  - Chartered Institute of Building Services Engineers (CIBSE), (2018). Society of Light and Lighting Guide 1: The Industrial Environment;
  - CIBSE Society of Light and Lighting, (2016). Guide 6: *The Exterior Environment*; and
  - Bat Conservation Trust and Institution of Lighting Professionals (2018) Bats and artificial lighting in the UK. Bats and the Built Environment Series – Guidance Note 08/18.
- 4.5.5 Further details regarding lighting design during the construction phase will be provided by the Contractor(s) in the stage specific CoCP.

#### Table 4-4 Commitments relevant to site lighting

## Commitment Embedded environmental measure proposed ID

- C-105 A lighting design of all temporary and permanent lighting will be developed once contractors are appointed; however, the principles of lighting design will be detailed at the time of Application and informed by the joint guidance provided by the Bat Conservation Trust and Institution of Lighting Professionals (2018). The lighting design will account for the potential effects on biodiversity by taking measures to minimise lighting usage, minimise light spill, use most appropriate wave lengths of light and locate lighting in the most appropriate locations this is to decrease the potential displacement effects on light sensitive fauna such as bats.
- C-200 Where required, construction lighting would be limited to directional task lighting positioned to minimise impacts to residents and walkers within the South Downs National Park (SDNP) and informed by BS EN 12464-2:2014 Lighting of outdoor workplaces and guidance provided

### Commitment Embedded environmental measure proposed ID

by the CIBSE Society of Light and Lighting, The Bat Conservation Trust and the Institution of Lighting Professionals.

#### 4.6 Site security, screening, and fencing

- 4.6.1 The main compounds and trenchless crossing compounds will be secured to minimise the opportunity for unauthorised entry. Where appropriate, monitoring will be done remotely using CCTV technology and other remote monitoring equipment. Fencing will also be used to mark out and secure any works areas / compounds. The onshore cable construction corridor will be fenced on all sides, with stock-proof fencing used where farming practices require, prior to works starting. The type of fencing will be selected to suit the location and purpose.
- 4.6.2 All boundary fences / screens will be maintained in a tidy condition and will be fit for purpose. All temporary screening and fencing will be removed as soon as reasonably practicable after completion of the works. Where possible, access to construction areas will be limited to specified entry points and all personnel entries / exits will be monitored (i.e. by CCTV or security guards) for security and health and safety purposes.

#### 4.7 Arboriculture

4.7.1 **Appendix 22.16: Arboricultural Impact Assessment, Volume 4** of the ES (Document Reference: 6.4.22.16) has been submitted alongside the DCO Application. A stage specific Arboricultural Method Statement and Tree Protection Plan will be submitted with the stage specific CoCP. This includes the specific mitigation measures required for the protection of all trees and hedgerows situated in or adjacent to the working width. This will include measures such as the erection of protective fencing in order to minimise the impacts on trees and their roots. This will be undertaken in accordance with the guidance set out in BSI (2012) BS5837:2012 Trees in Relation to Construction.

#### Table 4-5 Commitments relevant to arboriculture

Commitment ID	Embedded environmental measure proposed
C-285	An Arboricultural Method Statement (AMS) will be produced based on a detailed design. The AMS will contain a schedule of all proposed tree removal with annotated plans; a Tree Protection Plan detailing the specification and alignment of temporary physical protection measures that will be required for trees and hedgerows during the construction phase; and measures to ensure compliance with the AMS. The AMS will be written by an arboriculturist in accordance with the terms set out in the

Commitment ID	Embedded environmental measure proposed
	Arboricultural Impact Assessment (Document ref 6.4.22.16) and implemented in full.
C-286	Mitigation planting for the removal of trees and hedgerow will be designed in accordance with the principles set out in the Arboricultural Impact Assessment (Document ref: 6.4.22.16) and Outline Landscape and Ecological Management Plan (LEMP) (Document ref: 7.10).

#### 4.8 Emergency planning procedures

- 4.8.1 Emergency procedures will be developed for the onshore elements of the Proposed Development that will take into account anticipated hazards and conditions on a location specific basis. Procedures will be documented in stage specific Emergency Response Plan (ERP) to be included the stage specific CoCP. This will include fire and site evacuation procedure, damage to utilities, severe weather plan and ERPs for flooding events. **Table 4-6** details commitments relevant to emergency planning. For pollution incidents, see **Section 4.9**.
- 4.8.2 The ERP will also contain emergency phone numbers, evacuation routes and muster points and the method of notifying relevant local and statutory authorities. Details will be displayed at work sites and included as part of the site induction for all staff.

#### Table 4-6 Commitments relevant to emergency planning procedures

Commitment ID	Embedded environmental measure proposed
C-70	An ERP in accordance with 'Unexploded ordnance, A guide for the construction industry CIRIA C681' (CIRIA, 2009) will be developed prior to construction. Site inductions, toolbox talks and appropriate training on the risks from unexploded ordnance (UXO) will also be undertaken as part of the construction approach for Rampion 2. In areas with a moderate UXO hazard level and above, a detailed UXO desk study will be undertaken prior to construction to identify where additional mitigation such as non-intrusive geophysical clearance or supervision by an explosive ordnance clearance (EOC) operative is required.
C-118	ERPs for flood events will be prepared for all construction activities, working areas, access and egress routes in floodplain areas (tidal and fluvial).

Commitment ID	Embedded environmental measure proposed
C-124	Where start and / or exit pits for HDD and other trenchless technologies are located within in the floodplain the Contractor will develop procedures as part of the ERP to be enacted.
C-184	The Contractor(s) for construction, operation and decommissioning will use a short to medium range weather forecasting service from the Met Office, or other approved meteorological data and weather forecast provider, to inform short to medium-term programme management of activities, including implementation of necessary environmental control and/or impact mitigation measures with respect to climate conditions and extreme weather events. The Contractor(s) will register with the Environment Agency's flood warning service in areas of flood risk. The Contractor(s) will use this information to ensure that relevant measures, including those within the CoCP and an Environmental Management System (EMS) or equivalent, are implemented and, as appropriate, consider additional measures to ensure the resilience of the programme during extreme weather events.
C-185	A high-level risk assessment of severe weather impacts on the construction, operation and decommissioning process will be produced by the Contractor(s) to inform mitigations. Any receptors and/or construction, operation and decommissioning related activities potentially sensitive to severe weather events, including projections for climate change, should be considered in the risk assessment.
C-188	Activities associated with the construction, operation, and decommissioning of the Proposed Development will be dependent upon health, safety, security and environmental (HSSE) legislation, site specific weather conditions, and, if applicable, metocean conditions. Best practice procedures and permits will be developed for activities to define procedures under adverse working conditions. RED will develop emergency response and contingency plans e.g. a Severe Weather Plan.

#### 4.9 **Pollution incident management**

4.9.1 The Contractor(s) will prepare a Pollution Prevention Plan (PPP) which will include a Pollution Incident Response Plan (PIRP) for the Proposed Development as part of the stage specific CoCP. The PIRP will be in line with Guidance for Pollution Prevention 21 (PPG 21, 2009).

#### Table 4-7 Commitments relevant to pollution incident management

Commitment ID	Embedded environmental measure proposed
C-8	During both construction and operation, vehicle maintenance and refuelling of machinery will be undertaken within designated areas where spillages can be easily contained, and machinery will be routinely checked to ensure it is in good working condition. These areas at risk of spillage or containing hazardous materials, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) will comply with industry good practice, be bunded, have appropriate containment and segregation and will be risk assessed and carefully sited to minimise the risk of hazardous substances entering the drainage system, or the local watercourses or sensitive land-based receptors. Where feasible, such areas will be sited at least 10m from a watercourse and away from areas at risk of flooding. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage/spillage.
C-14	Potential risks to human health from any unexpected ground contamination will be avoided by the use of Personal Protective Equipment (PPE) and by adopting appropriate working practices.
C-72	Prior to construction, an unexpected contamination protocol will be developed in line with Environment Agency (2020) guidance (LCRM) to minimise the potential risks to human health and controlled waters from any unexpected ground contamination. The protocol will take into account the requirements for risk assessment, the use of Personal Protective Equipment (PPE) and adoption of best practice methods during construction.
C-129	Temporary construction compounds will be surfaced with semi- permeable aggregate material (similar to access roads as per C-120) where practical, with the exception of fuel storage areas and similar where pollution containment in the event of a spillage is the priority. Areas of temporary construction compounds that are used for fuel storage, plant maintenance and refuelling will be surfaced with fully impermeable materials to prevent any infiltration of contaminated runoff and contain bunding in line with commitment C-8 and C-167.
C-150	Plant and machinery used during the construction and operation phases will be maintained to minimise the risks of oils leaks or similar, in line with C-8. Placing a drip tray beneath a plant and machinery during refuelling and the availability of spill kits will contain small spillages.
C-151	Contractors will be made aware of their statutory responsibility not to "cause or knowingly permit water pollution". A PPP and PIRP will be prepared for the Proposed Development, the latter in line with Guidance

## Commitment Embedded environmental measure proposed ID

for Pollution Prevention 21 (PPG 21, 2009), and all contractors will be briefed on these plans, with copies made available on site.

**C-167** Any tanks and associated pipe work containing oils, fuels and chemicals will be double skinned and provided with leak detection equipment. There will be a bunded capacity of 100% of the maximum tank volume for non-hazardous fluids. For hazardous chemicals, fuels or oils bund capacity will be the larger of 110% of the largest tank volume for single tank bunds, (or, in the case of multi tank bunds, 110% of the largest tank capacity or 25% of the combined tank capacity, whichever it is the largest). Fuel storage will be in accordance with the Control of Pollution (Oil Storage) (England) regulations 2001 and other Pollution Prevention Guidelines (PPGs). All stores of fuel will be located at least 20m from any watercourses and away from areas at risk of flooding.

#### 4.10 Reinstatement

- 4.10.1 Following completion of onshore construction activities, temporary infrastructure including main compounds, trenchless crossing compounds, soil storage areas, cable stringing out areas and accesses will be reinstated to the extent possible. Woodland cannot be established above the transmissions cables in order to protect them from root damage. In these instances, typical woodland ride and woodland edge vegetation will be established (e.g. scrub). For further information on reinstatement, please refer to the **Outline LEMP** (Document Reference: 7.10).
- 4.10.2 Areas of temporary habitat loss will be reinstated within two years of loss other than at temporary construction compounds, cable JBs, landfall, and the onshore substation where construction activity will take longer to complete.
- 4.10.3 JBs and link boxes are required to remain open for cable installation. Following cable installation and testing, they will be backfilled, and the working area reinstated. The **Outline SMP** (Document Reference: 7.4) and **Outline LEMP** (Document Reference: 7.10) provide the details regarding reinstatement of soils and landscape and ecological features respectively, the stage specific SMPs and LEMPs will be developed to provide the details of reinstatement accordance with these outline plans for approval of the relevant authority.

#### Table 4-8 Commitments relevant to reinstatement of sites on completion

Commitment	Embedded environmental measure proposed
ID	

C-7	Post construction, the work area will be reinstated to pre-existing
	conditions as far as reasonably practical in line with the Materials
	Management Plan (MMP) (C-69) and Defra 2009 Code of Construction

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Commitment ID	Embedded environmental measure proposed
	Practice for the Sustainable Use of Soils on Construction Sites PB13298.
C-27	Following construction, construction compounds will be returned to previous conditions as far as reasonably possible.
C-103	Areas of temporary habitat loss will begin reinstatement within 2 years of loss, other than at temporary construction compounds, cable joint bays, some haul roads, some construction access roads, landfall and substation locations where activities may take longer to complete. Habitat restoration (i.e. planting and seeding) will take place at an appropriate time of year dependent on habitat type. In general habitat restoration will seek to deliver the same habitat as the baseline, unless there is an opportunity to deliver enhancements. Woodland cannot be replaced above cable ducts and in these situations woodland ride habitats would be delivered.
C-199	An Outline Landscape and Ecology Management Plan will be developed to ensure all reinstated habitats are effectively established. To ensure effective restoration, habitats will be subject to appropriate maintenance, management (including adaptive management) and monitoring for ten years (measured from the time of planting / seeding in each discrete location).

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#### 4.11 Waste

4.11.1 An **Outline SWMP** (Document Reference: 7.3) has been submitted alongside the DCO Application and describes measures to manage waste during construction period of the onshore elements of the Proposed Development. The primary source of potential waste is from excavations, a description of how this material will be reused or disposed of is provided below in **paragraphs 4.12.1** to **4.12.4**.

#### 4.12 Excavated Materials

- 4.12.1 Following installation of the onshore cables, excavations will be directly backfilled with the excavated materials (subject to the excavated material being suitable for reuse the MMP will outline how the suitability of the material is defined in line with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP)) and finished with reinstatement of the topsoil material.
- 4.12.2 Surplus excavated materials will be managed in line with the waste hierarchy with preference given to reuse elsewhere in the Proposed Development, where feasible, and subject to the material being suitable for reuse.
- 4.12.3 Material that is not suitable for direct backfilling, reuse elsewhere in the Proposed Development or is surplus to requirement, will be managed as waste material in

accordance with the Waste Regulations (2011) and removed offsite for treatment / disposal as a Duty of Care. This is expected to include waste arisings from trenchless crossings.

- 4.12.4 An MMP will be developed by the Contractor prior to construction in accordance with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP). The MMP will contain the following:
  - roles and responsibilities with respect to the implementation of the MMP;
  - predicted excavated material volumes and their anticipated reuse / disposal routes;
  - specification against which proposed materials will be assessed, underpinned by an appropriate risk-based assessment in line with Environment Agency (2020) guidance (Land Contamination: Risk Management, LCRM) related to the place where they are to be used;
  - description of how excavated materials will be tracked from the point of excavation, through any temporary storage to their final destination;
  - the verification arrangements which will provide an audit trail to show how excavated materials have been properly assessed and sent to the correct destinations; and
  - details of how the MMP will be verified by a Qualified Person (QP) registered with CL:AIRE.

#### Table 4-9 Commitments relevant to waste

Commitment ID	Embedded environmental measure proposed
C-31	Any disposal off-site of excavated material will be undertaken in consultation with the landowner/occupier and in accordance with the Waste Management Regulations.
C-69	Construction strategies will be implemented that will seek to maximise the reuse of excavated clean materials from the onshore cable construction corridor where practicable and feasible. Prior to the stage of construction, an MMP will be developed which outlines where excavated non-waste materials will be reused in line with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP). The MMP will include a declaration by a Qualified Person that the MMP has been completed in accordance with the DoWCoP and that best practise is being followed.

# 5. Management of onshore environmental issues

# 5.1 Introduction

5.1.1 This section outlines aspect specific management measures to be implemented during construction period of the onshore elements of the Proposed Development. These measures have been developed through the EIA process in consultation with relevant stakeholders, the results of which are reported in the ES.

# 5.2 Landscape and visual

5.2.1 This section outlines required environmental measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects in respect to landscape and visual receptors identified in **Chapter 18: Landscape and Visual Impact, Volume 2** (Document Reference: 6.2.18).

# Commitments

5.2.2 **Table 5-1** details commitments specific to landscape and visual that will be secured through this Outline CoCP. Other relevant commitments are listed beneath **Table 5-1** including references to relevant sections of this Outline CoCP other management plans). Further information on specific management measures is also provided

### Table 5-1 Commitments relevant to landscape and visual

Commitment ID	Embedded environmental measure proposed
C-33	An Outline CoCP will be adopted to minimise temporary disturbance to residential properties, recreational users and existing land users. It will provide details of measures to protect environmental receptors.
C-193	Replacement planting should be characteristic of the area and resilient to climate change. Plant species will be selected carefully at detailed design stage with appropriate management and maintenance techniques established to support the development of these species in line with the environmental requirements.
C-199	An Outline Landscape and Ecology Management Plan will be developed to ensure all new planting is established within ten years of the construction period, with appropriate maintenance and management carried out over a ten-year period post planting.



5.2.3 Further commitments relevant to landscape and visual are: C-7, C-20, C-22, C-27, C-200 (General site management Section 4), C-11, C-12, C-19 (Soils and agriculture Section 5.5), C-21, C-114, C-115, C-174, C-196, C-216 (Terrestrial ecology and nature conservation Section 5.6), C-18, C-32, (Transport Section 5.7), C-29, C-128, C-130, C-132, C-133 (Water environment Section 5.10), C-165 (Outline CTMP (Document Reference: 7.6)), C-157, C-161, C-162, C-163, (Outline PRoWMP (Document Reference: 7.8)) and C-196 (Outline LEMP (Document Reference: 7.10)).

### **Management measures**

As per the commitments in **Table 4-8**, the onshore cable corridor, main compounds, soil storage areas, cable stringing out areas and trenchless crossing compounds will be returned to their pre-construction condition except for woodland above the transmission cables. The **Outline LEMP** (Document Reference: 7.10) provides further details on reinstatement.

- 5.2.4 In addition to the above, the following embedded environmental measures summarised below will be implemented to mitigate landscape and visual impacts for works on the onshore cable corridor:
  - Reduction to the working width of the onshore cable corridor at sensitive locations to protect landscape elements where practical. Notching vegetation and trenchless technology will be used in some locations such as roads and rivers (C-5, C-20, C-114 and C-115).
  - Developing phasing to reduce the amount of time trenches need to be open (C-19), typically working to sections 600m-1000m in length, particularly in the SDNP, allowing for quicker backfilling and progressive/early restoration and reinstatement of the landscape with all construction areas re-instated to pre-existing conditions as far as practical.
  - Avoid removing landscape elements, particularly where these are key characteristics and or veteran or mature trees, woodland and hedgerows as far as practical (C-21, C-23, C-115 and C-174).
  - develop stage specific LEMPs (in accordance with the Outline LEMP (Document Reference: 7.10) to reinstate landscape elements such as trees, woodland and hedgerows, which have been removed as a result of construction, including temporary construction / HDD compounds and temporary construction access (C-196).
  - Re-instate all vegetation (trees, woodland and hedgerows) removed during the construction process as far as possible (noting that only hedges can be planted within the onshore substation and onshore cable corridor easements). This includes trees and woodland removed to allow for temporary construction compounds or access and or the provision of visibility splays (C-115, C-165).
  - Trees and woodland removed as a result of the onshore cable corridor will be reinstated by new planting elsewhere within the proposed DCO Order

Limits as far as possible and attention will also be given to maintaining levels and types of vegetation and landscape patterns within each LCA to avoid any long-term adverse landscape effects (C-196).

 Ensure all new planting is established within ten years and appropriate maintenance and management plans provided (C-199).

# 5.3 Air quality

5.3.1 This section outlines required environmental measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects in respect to air quality receptors.

### Commitments

**Table 5-2** details commitments specific to air quality that will be secured through this Outline CoCP. Other relevant commitments are listed beneath **Table 5-2** including references to relevant sections of the Outline CoCP other management plans). Further information on specific management measures is also provided.

### Table 5-2 Commitments relevant to air quality

Commitment ID	Embedded environmental measure proposed
C-24	Best practice air quality management measures will be applied as described in Institute of Air Quality Management (IAQM) (2016) guidance on the Assessment of Dust from Demolition and Construction 2016, version 1.1.
C-133	Stockpiles will be present for the shortest practicable timeframe, with stockpiles being reinstated as the construction work progresses in order to minimise areas of exposed soil and any associated silt laden run-off. Stockpiles which are anticipated to remain for more than six months will be seeded to encourage stabilisation.
C-158	The proposed heavy goods vehicle (HGV) routing during the construction period to individual accesses will avoid the Air Quality Management Area (AQMA) in Cowfold where possible.

5.3.3 Further commitments relevant to air quality are: C-106 (General principles Section 4), C-33 (Landscape and visual Section 5.2), C-114 (Terrestrial ecology and nature conservation Section 5.6), C-19 (Ground conditions Section 5.8) and C-158 (Outline CTMP (Document Reference: 7.6)).

### Management measures

5.3.4 Specific environmental measures to be applied for construction dust management (IAQM 2016) are set out under the following headings. These are taken directly

from the IAQM guidance (2016) and adapted to the Proposed Development where applicable. These measures are good practice mitigation that is applicable to the different stages and types of construction activities, the detail of which will be secured and provided through the stage specific CoCP.

5.3.5 According to the qualitative dust assessment presented in the **Chapter 19: Air Quality, Volume 2** of the ES (Document Reference: 6.2.19) the landfall, Oakendene substation (including the adjacent Temporary Construction Compound (TCC)), TCC Oakendene west, Climping and Washington are classed as having medium dust risk and therefore all measures apply and will require provision of location specific Dust Management Plans (DMP) as part of the stage specific CoCP to be submitted for approval by the relevant planning authority. The onshore cable corridor and trenchless crossings are considered low risk while the National Grid Bolney substation extension works are considered to have negligible dust risk, however good practice will be followed.

#### Mitigation for all sites: Communication

- Develop and implement a CCP that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager / engineer or the site manager.
- Display the head or regional office contact information.

### On site dust management

 A DMP developed and implemented for the Proposed Development, which will include measures to control other emissions. The level of detail will depend on the risk and will include highly recommended measures from IAQM guidance (2016) as a minimum. Desirable measures should be included as appropriate for different components of the project, considering the sensitivity of different areas, the intensity of dust generating activity and duration.

#### Site management

- Record all dust and air quality complaints, identify cause(s), take appropriate action to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and action taken to resolve the situation in the log book.
- Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport / deliveries which might be using the same strategic road network routes.



Preparing and maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed, or fence stockpiles to prevent wind whipping.
- All waste will be managed and disposed of according to the **Outline Site** Waste Management Plan (Document Reference: 7.3).

Operating vehicle / machinery and sustainable travel

- Ensure all non-road vehicles comply with Non-Road Mobile Machinery (NRMM) standards, where applicable and feasible.
- Ensure all vehicles switch off engines when stationary no idling vehicles.
- Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum speed limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures, subject to the approval of the nominated undertaker and in agreement with the local authority, where appropriate)
- Produce a Construction Logistics Plan (see Outline Construction Traffic Management Plan (Document Reference: 7.6) for related measures) to manage the sustainable delivery of goods and materials.
- Implement the Construction Workforce Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and carsharing). See Outline Construction Traffic Management Plan (Document Reference: 7.6) for further details of these measures for the Proposed Development.

### Operations

 Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, for example, suitable local exhaust ventilation systems.



- Ensure an adequate water supply on the site for effective dust/particulate matter suppression / mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Measures specific to earthworks:

- Re-vegetate earthworks and exposed areas / soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches, or tackifiers where it is not possible to re-vegetate or cover with topsoil as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

Measures specific to construction:

- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Measures specific to trackout:

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site log book.

- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10m from receptors where possible.

### Monitoring

- 5.3.6 Daily on-site and off-site inspections will be undertaken by the Contractor(s), where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of site boundary, with cleaning to be provided if necessary.
- 5.3.7 Regular site inspections will be carried out by the Contractor(s) to monitor compliance with the DMP, inspection results will be recorded, and an inspection log made available to the local authority when asked.
- 5.3.8 The frequency of site inspections will be increased by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out, during prolonged dry or windy conditions or in response to complaints or an incident resulting in dust emissions.
- 5.3.9 During the preparation of the DMP, consultation with the relevant planning authority will be undertaken to ascertain where dust deposition, dust flux, or real-time PM<sub>10</sub> continuous monitoring locations should be considered. The project has identified the two medium risk area, the onshore substation and landfall, where monitoring is likely to be required. No other monitoring is recommended on the basis of lower risk for example, due to the shorter duration of the stages of construction works.

# 5.4 Noise and vibration

- 5.4.1 This section outlines required management measures and mitigation to ensure onshore construction works are conducted in a way that removes or reduces effects in respect to noise and vibration receptors. The framework for determination of construction noise and vibration significance as reported in ES Chapter 21: Noise and Vibration, Volume 2 of the ES (Document Reference: 6.2.21), methodologies for prediction and measures to mitigate impacts are drawn BS 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites. Part 1: Noise (BSI, 2014a), and BS 5228-2:2009 + A1:2014 Code of practice for noise and vibration construction and open sites. Part 1: Noise (BSI, 2014a), and BS 5228-2:2009 + A1:2014 Code of practice for noise and vibration construction and open sites. Part 2: Vibration (BSI, 2014b).
- 5.4.2 These best practice measures will be employed to reduce noise above the Lowest Observable Adverse Effect Level (LOAEL) as defined in the Noise Policy Statement for England (Department for Environment, Food and Rural Affairs



(Defra), 2010). Screening, or other additional mitigation, will be employed to avoid noise above the Significant Observable Adverse Effect Level (SOAEL). These are reported in the **ES Chapter 21: Noise and Vibration, Volume 2** of the ES (Document Reference: 6.2.21).

### Commitments

5.4.3 Table 5-3 details commitments specific to noise and vibration that will be secured through this Outline CoCP. Other relevant commitments are listed beneath Table 5-3 including references to relevant sections of this Outline CoCP other management plans). Further information on specific management measures and their implementation is also provided.

### Table 5-3 Commitments relevant to noise and vibration

Commitment ID	Embedded environmental measure proposed
C-10	No blasting is anticipated to be required and trenchless crossings will be undertaken by non-impact methods.
C-26	Where noisy activities are planned and may cause disturbance, the use of mufflers, acoustic barriers (or shrouds) and other suitable solutions will be applied.
	For HDD work sites near to noise sensitive receptors where predicted levels may exceed the BS 5228 thresholds of significance, mud pumps that operate overnight will be shrouded and the drill will be fitted with acoustic (i.e. high mass) panelling and louvres as well as engine silencers where diesel powered drills are used.
C-263	During detailed design, the contractor will review the construction noise assessments. Where any significant deviation from the initial sound level predictions is identified, such that levels in excess of the BS 5228 thresholds of significance, the Noise and Vibration Management Plan (NVMP) shall identify the necessary mitigation to avoid this. If necessary, a Section 61 application will be made to the relevant Local Planning Authority.
C-287	For the duration of the construction phase in this location, an enhanced acoustic barrier will be installed on the southern edge of the works, north of Brookfield caravan park. The barrier will be of a suitable dimension and sited appropriately to manage noise impacts at this location.

5.4.4 Further commitments relevant to noise and vibration are: C-22 (General principles **Section 4**), C-33 (Landscape and visual **Section 5.2**) and C-160 (**Outline CTMP** (Document Reference: 7.6)).

### **Management measures**

- 5.4.5 A Noise and Vibration Management Plan (NVMP) will be produced to secure the appropriate measures for the stage specific CoCP, to be developed in accordance with this Outline CoCP. The NVMP will apply throughout construction and will detail the objectives for managing and minimising construction noise and vibration on site and at the nearest noise sensitive receptors (NSRs).
- 5.4.6 The NVMP will detail the design of onshore assets and will incorporate Best Practicable Means (BPM) (as defined by the Control of Pollution Act (1974)) to minimise any associated noise impacts.
- 5.4.7 The NVMP will be developed on the basis of the confirmed list of plant and equipment proposed by the Contractor(s) prior to construction. Development of the NVMP will include a review of specific construction activities proposed by the Contractor(s) and the identification of the pertinent NSRs.

#### **Best Practicable Means**

- 5.4.8 BPM that Contractor(s) will adopt (as appropriate to the planned works) to minimise noise during construction include:
  - no crushing works at any time at any mobilisation area, without prior written consent of the relevant planning authority;
  - locating noisy temporary plant so that it is screened where possible from receptors by on-site structures, such as site cabins and other structures;
  - using modern, quiet equipment and ensuring equipment is properly maintained and operated by trained staff;
  - applying enclosures to particularly noisy equipment / plant;
  - ensuring that mobile plant is well maintained such that loose body fittings or exhausts do not rattle or vibrate;
  - ensure avoidance of unnecessary engine revving;
  - avoidance of reversing, where practicable;
  - fitting of low noise reversing warnings to pertinent vehicles;
  - ensure all vehicle movements occur within normal hours (as stated in Section 4.4) or at agreed times, taking into account the primary function of sensitive receptors in the vicinity (avoiding school drop-off / pickup periods);
  - maximise the reuse of any waste arising on site to minimise vehicle movements;
  - plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway. If waiting or queuing is unavoidable, then engines should be turned off;
  - minimise opening and closing of site access through good co-ordination of deliveries and vehicle movements;

- reporting any defective equipment / plant as soon as possible so that corrective maintenance can be undertaken;
- ensuring plant machinery is turned off when not in use;
- any plant found to be requiring interim maintenance to be taken out of use;
- providing local residents with 24-hour contact details for a site representative in the event of disturbance due to noise from the construction works;
- establishing a Construction Communications Plan, including a process for informing local residents about the construction works, detailing the timing and duration of any particularly noisy operations, and providing a contact telephone number;
- where practicable, noisy works should be interspersed between quieter works to provide periods of respite;
- where practicable, the works should be phased to ensure that the noisiest operations are performed during the least sensitive times;
- minimising the duration of the works is generally beneficial, if higher noise levels may result in a significant reduction in the overall duration of the works this should be considered;
- phasing of works closest to noise sensitive receptors where possible to give periods of respite;
- designated site-based staff shall have the authority to take the steps necessary on behalf of the Contractor(s) to ensure noise and vibration is adequately controlled and managed;
- locate the site access away from noise sensitive receptors where practicable;
- keep internal haul routes well maintained and avoid steep gradients;
- limit material and plant loading and unloading to normal working hours;
- reduce loading / unloading heights for muck away and material movement to mitigate impact noise;
- handle all material in a manner that minimises noise;
- consult relevant local planning guidance on construction noise and vibration; and
- all site staff are to be briefed on their responsibilities with respect to management of construction noise and vibration and the requirements of the DCO, the Outline CoCP and other legal requirements including application of BPM and any associated Section 61 consent. The performance of the training should then be regularly reviewed and repeated throughout the construction programme as appropriate.
- 5.4.9 Additional site-specific mitigation measures will be detailed in the stage specific NVMP as required based on the Contractor(s) detailed design or following substantiated complaints as outlined below.

### **Construction Plant Mitigation**

- 5.4.10 Careful scrutiny of plant selection at procurement stage will ensure that the potential noise impact of plant is reduced as much as reasonably possible. General plant considerations are as follows:
  - ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC, United Kingdom Statutory Instruments (SI) 2001/1701;
  - fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer;
  - follow manufacturer's guidance and instructions in relation to operation of plant and equipment, and use in a manner which minimises noise;
  - use all plant and equipment only for tasks for which it has been designed; and
  - shut down all plant and equipment in intermittent use in the intervening periods between works or throttle it down to a minimum.

### Localised screening and temporary noise barriers

- 5.4.11 Temporary noise barriers and localised screening will be installed as appropriate within the proposed DCO Order Limits to further reduce noise emissions in proximity to NSRs. The need will be determined based on the confirmed list of plant and equipment and construction programme. The exact specification of any noise barriers will be determined during detailed design and described in the stage specific NVMP. Noise barriers will have an appropriate specification for the location and noise reduction required.
- 5.4.12 As an example of the relative effectiveness of applying a temporary localised noise barrier BS 5228 (BSI, 2014a; 2014b) states:

"...as a working approximation, if there is a barrier or other topographic feature between the source and the receiving position, assume an approximate attenuation of 5 dB when the top of the plant is just visible to the receiver over the noise barrier, and of 10 dB when the noise screen completely hides the sources from the receiver. High topographical features and specifically designed and positioned noise barriers could provide greater attenuation."

### Trenchless crossings

- 5.4.13 HDD for trenchless crossings requires continuous working, including overnight, and will require acoustic screening, where identified in ES Chapter 21: Noise and Vibration, Volume 2 of the ES (Document Reference: 6.2.21) as per C-26 and to be reviewed as part of the production of the stage specific NVMP. Mitigation measures for this activity will include the following:
  - HDD drills will have the majority of its componentry within acoustic cladding, with associated acoustic louvres; and
  - mud pumps should be housed in temporary water-proof acoustic shrouds.



5.4.14 The exact specification of any acoustic shroud or enclosure that may be required will be determined during detailed design.

### Monitoring

- 5.4.15 Construction noise monitoring may be required if, for example, Section 61 consent is sought, complaints are received, or as required in discussion with the relevant planning authority. The requirement for noise monitoring will be identified by the Contractor(s) based on the confirmed list of plant and equipment and construction programme and a monitoring framework will be provided in the stage specific NVMP.
- 5.4.16 Descriptions of measures likely to be associated with construction noise monitoring are provided below in **paragraph 5.4.18**.
- 5.4.17 Any monitoring regime will be agreed with the relevant planning authority prior to implementation and details included in the stage specific CoCP. Any personnel undertaking noise and vibration monitoring shall be able to demonstrate their competency for the task. Any monitoring undertaken should be readily available for the local authority to review upon request.
- 5.4.18 Management measures associated with construction noise monitoring are as follows:
  - establish pre-existing levels of ambient noise;
  - carry out attended noise monitoring at the start of any new phase of works, to check source sound emission data from plant on-site and following any complaints;
  - carry out regular on-site observation monitoring and checks / audits to ensure that BPM is being employed at all times. Such checks should include:
    - hours of working;
    - presence of mitigation measures, equipment, and screening;
    - number and type of plant;
    - construction methods; and
    - where applicable any specific Section 61 consent conditions;
  - site reviews should be logged, and remedial actions recorded.

# 5.5 Soils and agriculture

5.5.1 This section outlines required management measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects in respect to soils and agriculture receptors.

### Commitments

5.5.2 **Table 5-4** details commitments specific to soils and agriculture that will be secured through this Outline CoCP. Other relevant commitments are listed beneath **Table** 

**5-4** including references to relevant sections of this Outline CoCP other management plans). Further information on specific management measures and their implementation is also provided.

### Table 5-4 Commitments relevant to soils and agriculture

Commitment ID	Embedded environmental measure proposed
C-11	During construction topsoil and subsoil will be stored within the temporary working corridor of the onshore cable. The topsoil and subsoil will be segregated and stored in line with Defra 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298, including guidance on utilising separate stockpiles and giving due consideration to adverse weather conditions. Any suspected or confirmed contaminated soils will be separated, contained and tested before removed.
C-12	During topsoil stripping, machinery with low ground pressure will be used to minimise soil compaction where the soil conditions indicate that compaction is possible. Storage time will be kept to the practicable minimum to prevent the soil deteriorating in quality. Topsoil stripped from different fields will be stored separately, as will soil from hedgerow banks or woodland strips.
C-19	The onshore cable will be constructed in discrete sections. The trenches will be excavated, the cable ducts will be laid, the trenches backfilled, and the reinstatement process commenced in as short a timeframe as practicable. At regular intervals (typically $600m - 1,000m$ ) along the route joint bays will be installed to enable the cable installation and connection process.
C-183	An Outline Soils Management Plan (SMP) has been developed (included in the Outline CoCP) to enable construction works to be completed in accordance with the Defra Code of Construction Practice for the Sustainable Use of Soils on Construction Sites 2009 to protect soil resources from damage during the construction phase. Where safety (unexploded ordnance - UXO) or access constraints have limited the extent of soil and ALC survey to date, survey will be completed at the required density post consent and prior to construction, as part of detailed design. Stage specific SMPs based in the Outline SMP will be produced prior to construction, and once the soil and ALC surveys are complete, to include protective measures for all relevant soil types and agricultural land grades within the working corridor.
C-256	To support the successful reinstatement of soils over shallow chalk bedrock and to help return the soil drainage conditions to baseline following soil reinstatement, handling and storage of excavated chalk within the cable corridor (including within the SDNP)) will be designed with reference to CIRIA (2002), Engineering in chalk (C574D) (as

updated) and as a minimum will include the measures set out in the Department for Transport (2020) Specification for the Reinstatement of Openings in Highways Fourth edition, for excavated chalk, including segregated stockpiling of chalk for re-use, avoidance of multiple handling and, during wet weather, protection of excavated chalk from water ingress.

- C-257 Where it is identified through soil resource and materials management planning that topsoil or subsoil cannot be reinstated at its original location, sampling and testing of excavated topsoil and subsoil will be completed in accordance with BS3882:2015 and BS8601:2013, respectively, at the earliest opportunity, to inform the reuse of these soils elsewhere within the proposed DCO Order Limits or at a suitable offsite receptor site in compliance with the Definition of Waste: Code of Practice and the Materials Management Plan (C-69).
- C-258 A tracked hydraulic excavator will be used to load topsoil and subsoil. Soils will be loaded into a dump truck and loose-tipped in heaps from the dump truck starting at the furthest point in the storage area and working back toward the access point. A tracked excavator will be used to level soil heaps, and to compact and re-grade the stockpile as needed, in accordance with the Defra guidance. Soils will be reinstated, or placed, by tracked hydraulic excavator using the loose tipping method in the Defra Code of Construction (Defra, 2009), with only gentle firming by tracked vehicles.
- Further commitments relevant to soils and agriculture are: C-1, C-5, C-6, C-7, C-31 (General Principles Section 4), C-33 (Landscape and visual Section 5.2), C-107, C-112, C-114 (Terrestrial ecology and nature conservation Section 5.6), C-69 (Waste Section 4.11) and C-13, C-28, C-29, C-131, C-132, C-133 (Water environment Section 5.10).

### Management measures

- 5.5.4 An **Outline SMP** (Document Reference: 7.4) has been developed and provided alongside the DCO Application. The Outline SMP sets out measures to enable construction works to be completed in accordance with the Defra Code of Construction Practice for Sustainable Use of Soils on Construction Sites 2009 to protect soil resources from damage during the construction phase. The Contractor(s) will provide stage specific SMPs for approval by the relevant planning authority prior to commencement. The SMP will include measures relating to:
  - land access (determine safe work period for machinery land access by using information from mapping soil types according to clay content and drainage; produce maps of sections with specific access periods);

- soil handling (advise on appropriate handling according to site specific soil type (clay content), weather conditions;
- prevention of erosion (undertake erosion risk assessment of the site, map soils low to very high risk advise management accordingly);
- land drainage;
- compliance monitoring (advise on compliance monitoring scheme to ensure works are carried out in accordance with advice provided to ensure soil protection and agricultural land quality); and
- remediation (advice for remediation works that may be required if management plan is not adhered to / should agricultural land problems be identified by landowners / operations the season following cable installation).
- 5.5.5 The stage specific SMPs shall be developed in conjunction with the MMP to ensure that excavated materials identified for reuse are stored appropriately to protect them from damage or cross contamination and that these materials (including soils) have a defined end use to avoid them becoming waste.
- 5.5.6 Any material which is not suitable for reuse or surplus will be disposed off-site in line with the measures outlined in **Section 4.11**.

# 5.6 Terrestrial ecology and nature conservation

5.6.1 This section outlines required environmental measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects on terrestrial ecology and nature conservation receptors identified in ES Chapter 22 Terrestrial ecology and nature conservation, Volume 2 (Document Reference: 6.2.22).

# Commitments

**Table 5-5** details commitments specific to terrestrial ecology and nature conservation that will be secured through this Outline CoCP. Other relevant commitments are listed beneath **Table 5-5** including references to relevant sections of this Outline CoCP other management plans). Further information on proposed specific management measures and their implementation is also provided.

### Table 5-5 Commitments relevant to terrestrial ecology and nature conservation

Commitment ID	Embedded environmental measure proposed
C-21	Where vegetation removal is necessary, it will be scheduled over winter to avoid bird breeding season. If not possible for all areas, any vegetation removal will be undertaken in line with British Standard (BS) 5837:2012 (Trees in relation to design, demolition and construction), This will be carried out under supervision and appropriately managed

Commitment ID	Embedded environmental measure proposed
	to remove the risk of damaging or destroying active nests, young or eggs. Suitable methods will also be used to ensure vegetation supporting other legally protected species is removed sensitively and in a legally compliant way.
C-64	For temporary watercourse crossings the works will be designed to enable the free passage of fish and aquatic mammals including continuation of bed material through the culvert. During construction (e.g. placing culverts or installing ducts), sections of the channel will need to be isolated using barriers that span the whole width of the channel. These isolation works will be of short duration and are expected to be completed within 48 hours of the placement of barriers to flow. Screening will take place to prevent fish being drawn into the pump.
C-103	Areas of temporary habitat loss will begin reinstatement within 2 years of loss, other than at temporary construction compounds, cable joint bays, some haul roads, some construction access roads, landfall and substation locations where activities may take longer to complete. Habitat restoration (i.e. planting and seeding) will take place at an appropriate time of year dependent on habitat type. In general habitat restoration will seek to deliver the same habitat as the baseline, unless there is an opportunity to deliver enhancements. Woodland cannot be replaced above cable ducts and in these situations woodland ride habitats would be delivered.
C-104	RED will deliver a Biodiversity Net Gain (BNG) of at least 10% for the onshore elements of the project, measured using Natural England's Biodiversity Metric. BNG will be delivered in line with the Biodiversity Gain Information provided.
C-105	A lighting design of all temporary and permanent lighting will be developed once contractors are appointed; however, the principles of lighting design will be detailed at the time of application and informed by the joint guidance provided by the Bat Conservation Trust and Institution of Lighting Professionals (2018). The lighting design will account for the potential effects on people (residents and walkers) and biodiversity by taking measures to minimise lighting usage, minimise light spill, use most appropriate wave lengths of light and locate lighting in the most appropriate locations – this is to decrease the potential displacement effects of light on sensitive fauna such as bats.
C-106	Speed limits will be imposed on all construction haul roads and access tracks to minimise the risk of road traffic collisions with fauna such as badgers, otters, bats and barn owls.

- **C-107** Tried and tested invasive species control and biosecurity measures will be used to avoid the spread of infested materials.
- C-112 No ground-breaking activity or use of wheeled or tracked vehicles will take place south of the seawall (above mean high water springs) within Climping Beach Site of Special Scientific Interest (SSSI) or Littlehampton Golf Course and Atherington Beach Local Wildlife Site (LWS) unless remedial action is required. Any predicted activity will be restricted to foot access for the purpose of surveying and monitoring of the progress of the HDD.
- C-114 No ground-breaking activity or use of wheeled or tracked vehicles will take place during the construction phase within Sullington Hill LWS unless remedial action is required. Any predicted activity will be restricted to foot access for the purpose of surveying and monitoring of the progress of the HDD. The existing farm tracks through Sullington Hill LWS may be used by light vehicles (e.g. 4 x 4, light van) for access purposes during the operation and maintenance phase.
- C-115 Hedgerows/tree lines crossed by the cable route will be 'notched' to reduce habitat loss and landscape and heritage impacts wherever possible. This is defined as removing one or more short sections (i.e. notches) within the same hedgerow/tree line. The removed sections will by default be replanted except where permanently lost on the Vegetation Retention Plan (see Appendix B - Vegetation Retention Plans in the Outline Code of Construction Practice). Where appropriate, hedgerows will be temporarily translocated to maintain diversity and structure and result in more rapid reinstatement. Hedgerow/tree line losses will be kept to approximately 14m total width at each hedgerow crossing point where notching can take place. For hedgerows deemed "important" under the Hedgerows Regulations 1997 (or where there are other considerations), losses will be reduced to a 6m notch for the temporary construction haul roads only, by trenchless installation of the cable ducts under them wherever possible (see Appendix B - Vegetation Retention Plans in the Outline Code of Construction Practice for the extent of hedgerow losses at each location).

Hedgerows subject to temporary translocation will be lifted using a tree spade to maintain diversity and structure and result in more rapid reinstatement. Where chances of success are questionable, notches will be made by removal and reinstatement through planting. The EcoW will justify the approach being taken in line with the responsibilities of implementing the Vegetation Retention Plans (see C-220).

Commitment ID	Embedded environmental measure proposed
	Reinstated hedgerows and tree lines will be monitored over a period of 10 years, and remedial action taken rapidly where signs of failure are identified.
C-117	Works on areas identified as floodplain (Flood Zones 2 and 3) will be programmed to avoid the period between October and February inclusive to avoid disturbance of waterbirds, and where possible, will be programmed to occur in late summer / early autumn, to avoid interaction with known flooding periods to minimise the potential for displacement of flood water.
C-135	A stand-off distance (distance to be determined based on biodiversity and pollution control considerations) will be applied from watercourse bank tops (other than for watercourse crossings) to account for potential issues such as water vole burrows, otter holts and pollution control.
C-174	Veteran trees are retained through design avoidance. Ground works within a buffer zone of 15 times the diameter of the tree or 5m from the edge of the tree's canopy will be avoided. Should transmission cables go under a veteran tree via a trenchless crossing a depth of at least 6m below ground within the buffer zone will be maintained to avoid root damage.
C-199	An Outline Landscape and Ecological Management Plan will be developed to ensure all new planting is established within ten years of the construction period, with appropriate maintenance and management carried out over a ten year period post planting.
C-203	Pre-construction checks for ground nesting birds will take place in advance of construction works (including for stone curlew, Eurasian curlew, lapwing and grey partridge) between late February and August. Where breeding birds are located species specific exclusion zones will be implemented within which no works can take place (e.g. 500m for stone curlew (Taylor et al., 2007), 100m for Lapwing (Liley & Fearnley 2011) and little ringed plover). The exclusion zones to be implemented will be agreed as part of the Outline Code of Construction practice.
C-204	The working corridor within woodland will be narrowed to be no more than 30m to reduce tree loss. Where the working corridor passes close to woodland that is being retained (as shown on the Vegetation Retention Plans) root protection areas conforming to BS5837:2012 will be demarcated and maintained.

Commitment ID	Embedded environmental measure proposed
C-205	Any open cut watercourse crossing will be undertaken in-line with advice outlined within the fisheries mitigation table within the Outline Code of Construction Practice, C-17, C-64, C-122, C-126, C-138 and C-139 to reduce potential impact to fish within watercourses. C-139 and C-211 should be combined, ensuring low-flow rates coincide with reduced migratory fish risk.
C-207	An Ecological Clerk of Works will work in conjunction with the contractors to ensure compliance with relevant wildlife legislation, agreed mitigation and best practice.
C-208	Pre-construction surveys for reptiles at the location of the substation will be undertaken prior to construction to determine current distribution. Where necessary appropriate mitigation will be implemented to ensure legal compliance. This will include trapping and translocation (within the immediate area). Along the cable route the Ecological Clerk of Works will implement destructive search techniques to avoid the death or injury of individual animals in localised patches of suitable habitat.
C-209	Pre-construction surveys for badger will be undertaken prior to construction. Where badger setts are located within or close to the working area suitable mitigation, under a development licence from Natural England where necessary, will be delivered under supervision from an Ecological Clerk of Works
C-210	Pre-construction surveys for water vole and otter will take place at all watercourse crossings prior to construction. Should water vole or otter be present suitable mitigation, under licence from Natural England where necessary, will be delivered under supervision from the Ecological Clerk of Works.
C-211	Pre-construction surveys of trees with bat roost potential that require removal or pruning will take place prior to works commencing. Trees and buildings in close proximity to the working area will also be surveyed where potential disturbance could occur. Should bat roosts be identified suitable mitigation, under a European Protected Species licence from Natural England, will be delivered under supervision from the Ecological Clerk of Works.
C-214	Pre-construction surveys for great crested newts will be undertaken prior to construction to determine current distribution. Where necessary appropriate mitigation will be implemented to ensure legal compliance. This will include avoidance of ponds through C-23, and removal of vegetation under licence from Natural England where necessary. Along the cable route the Ecological clerk of Works will implement destructive

search techniques to avoid the death or injury of individual animals in localised patches of suitable habitat.

- **C-215** Sussex Ornithological Society / Sussex Barn Owl Study Group will be contacted for information on the location of barn owl boxes within 250m of known works. The Ecological Clerk of Works will request any boxes present in the area are closed or relocated for the duration of works in the local area (within 250m) should a risk of abandonment be perceived. A pre-construction survey will also be carried out to check any boxes of other nesting opportunities (e.g. suitable farm buildings) within 250m of works to check for breeding activity. Should breeding sites be identified an exclusion zone of 250m (Ruddock & Whitfield 2007) will be implemented where no works can take place until chicks have fledged or the nest is no longer active.
- C-216 Where ancient woodland is crossed via trenchless crossing a depth of at least 6m below ground will be maintained to avoid root damage and drill launch and retrieval pits will be at least 25m from the woodland edge. All ancient woodland will be retained with a stand-off of a minimum of 25m from any surface construction works. Construction traffic may operate within 25m of an ancient woodland on existing tracks should any track maintenance works be restricted to the current width.
- C-217 The HDD works at the landfall location will be programmed to avoid the winter period between October and February inclusive, to avoid disturbance to wintering waterbirds during the coldest period.
- **C-220** The Vegetation Retention Plans and Pond Retention Plans that accompany the Outline Code of Construction Practice shows hedgerows, tree lines, woodland, scrub, calcareous grassland, semiimproved species rich grassland and ponds which are to be retained. Should any of these highlighted habitats require removal due to unforeseen circumstances at the detailed design phase, they will be highlighted to the relevant competent authority with a reasoned justification provided. These unforeseen, additional losses would be accounted for through commitment C-104 covering the commitment to the provision of biodiversity net gain.
- C-224 Where vegetation clearance is required to provide visibility splays at access points for the purposes of safe access and egress any hedgerows that require cutting will be retained, by cutting to a height of 90cm where safe to do so (any hedgerow trees will be considered on an individual basis). These "coppiced" hedgerows are shown on the Vegetation Retention Plans that accompanies the Outline Code of Construction Practice.

- C-229 Crossings of South Downs National Park Authority (SDNPA) designated chalk streams and watercourses supporting water vole will be designed to be less intrusive, for example by using a clear span bridge instead of a culvert to support the haul road or via use of trenchless crossing techniques. Open cut cable crossings will be constructed and reinstated in as short a timeframe as practicable. Details of the cable crossing methodologies at each water course can be found within the Crossing Schedule (Appendix A), with further information on haul road crossings being provided in the Code of Construction Practice.
- **C-232** Pre-construction checks for dormouse will be undertaken within areas considered to be suitable habitat that require removal, this is to avoid the death or injury of individual animals in localised areas. Where necessary appropriate mitigation will be implemented to ensure legal compliance. Enhancement opportunities to improve habitat connectivity will be sought through C-103, C-104, C-193, C-196 and C-199.
- 5.6.3 Further commitments relevant to terrestrial ecology and nature conservation are: C-22, C-105, C-106 (General principles **Section 4**), C-76 (Ground conditions **Section 5.8**) and C-17, C-117 (Water environment **Section 5.10**).

### Management measures

- 5.6.4 Measures to be implemented during the construction phase to avoid, minimise or mitigate negative effects on terrestrial ecology and nature conservation are described below. The information provided is to augment that described in the commitments relevant to terrestrial ecology and nature conservation (**Table 5-5**).
- 5.6.5 A stage specific Biodiversity Management Plan, securing the measures applicable, will form part of the stage specific CoCP and would provide details on the following:
  - Ecological surveys that will be undertaken or have been completed between DCO Application and construction commencing, as is pertinent to detailed design, construction scheduling, legal compliance (including licensing) and delivery of certain commitments outlined in **Table 5-5**;
  - Details of the safeguards in place to ensure legal compliance on a location-bylocation basis;
  - Details of the proposed activity at each trenchless crossing to minimise the risk of drilling fluid breakout within sensitive ecological features; and
  - Details on measures to avoid the spread of invasive non-native species.
- 5.6.6 Approaches to the reinstatement of habitat and creation of new habitat at the onshore substation site are described in more detail in the **Outline LEMP**

(Document Reference: 7.10). A stage specific LEMP will be produced and provide detailed information on habitat restoration (from temporary losses) and habitat creation (at the onshore substation site).

- 5.6.7 Stage specific plans will underpin the 'tool box talk' that will be given to all Contractors working on the Proposed Development by the EcoW (see commitment C-207). The EcoW will oversee the implementation of ecological measures during the construction phase of the Proposed Development. The EcoW will also oversee the delivery of reinstatement measures described in the **Outline LEMP** (Document Reference: 7.10). The EcoWs responsibilities will include:
  - ensuring all construction activities are undertaken in compliance with relevant wildlife legislation;
  - implementing measures to avoid, minimise or mitigate for potential environmental effects;
  - advising on-site decision making to minimise effects on the environment (e.g. micro-siting);
  - ensuring all contractors are aware of relevant environmental issues and actively incorporating this knowledge into decision making;
  - ensuring all bio-security protocols are actively followed; and
  - ensuring all fencing is located and maintained appropriately to avoid damage to neighbouring habitats, and sensitive areas (such as root protection areas) are maintained access free.

### **Climping Beach SSSI**

- 5.6.8 The offshore export cable come ashore at Climping using a horizontal directional drill. This will see cable ducts installed from below the low water mark to a HDD compound located in an arable field lying between the sea wall and Ferry Road. Dependent on the final alignment (determined during detailed design) these transmission cables may pass underneath the Climping Beach SSSI.
- 5.6.9 No ground breaking activity is required within Climping Beach SSSI. However, access will be required to monitor the path of the drills. This will be delivered using pedestrian access and hand-held monitoring equipment (C-112).
- 5.6.10 The HDD works will be programmed to take place outside the period between October and February inclusive (C-217) to avoid disturbance of sanderling during the winter. This measure also minimises disturbance to other waterbirds using the foreshore, inshore waters and fields north of the sea wall.
- 5.6.11 The use of HDD brings a risk that drilling fluids (a mix of the inert clay bentonite and water) will escape to the surface (known as frac out). The risk will be managed through the measures outlined in **Section 3.4** of the **Outline Construction Method Statement** (Document Reference: 7.23).
- 5.6.12 The risk of frac out increases close to the launch and exit locations (typically considered to be within 30m of launch and retrieval locations), simply because the amount of substrate above the drill head is limited. At Climping Beach the drilling compound within the arable fields is indicatively between 200m and 350m from the

SSSI boundary; with the location within the marine environment yet to be determined (although it will be both outside of the SSSI and at a sufficient distance for the cable to be at a reasonable depth prior to reaching the SSSI boundary – a minimum stand-off distance of 60m is proposed). The design will manage the risk of frac out overall, but especially with regard to the SSSI.

- 5.6.13 Onshore, if a frac out occurs a small sump would be dug and bunded by sand bags or other suitable materials with the fluid then pumped out to a suitable location (e.g. a mobile settlement tank). This area would be expected to be highly localised. Further information on how trenchless crossings will be designed, risks managed, and contingency plans implemented should there be a breakout of drilling fluid (see **Outline Construction Method Statement** (Document Reference: 7.23)).
- 5.6.14 The risk of frac out within Climping Beach SSSI is very low. However, should it occur, the following measures would be taken:
  - vehicle access would be taken using a low ground pressure vehicle, that uses existing tracks as far as possible;
  - ECoW present to rapidly define access/egress route and supervise removal of drilling fluids; and
  - ECoW to liaise with Natural England and WSCC to determine appropriate restoration of the affected area. This would be implemented following written agreement with Natural England and WSCC.
- 5.6.15 As part of the stage specific CoCP, the PPP and PIRP will detail the actions that would be taken should an unexpected frac out occur within Climping Beach SSSI.

### Ancient Woodland

- 5.6.16 Ancient Woodland, both ancient semi-natural woodland (ASNW) and plantation on ancient woodland sites (PAWS), is widespread on and adjacent to the onshore cable corridor. No groundworks are proposed to occur within Ancient Woodland with it either being avoided, or effects mitigated through the use of trenchless techniques.
- 5.6.17 Where Ancient Woodland is avoided, a stand-off distance will be implemented between any construction activity and the edge of the woodland (the only exception being if existing forestry tracks or highway is being used by construction vehicles). This stand-off distance will be a minimum of 25m from the woodland edge (C-216); within this area no activity will be permitted including soil storage, materials storage, or drainage. Fencing will be positioned appropriately to prevent accidental egress.
- 5.6.18 Where trenchless crossings are required (Michelgrove Park and Calcot Wood) a minimum depth of 6m will be maintained when underneath Ancient Woodland (C-216) to protect tree roots from damage.
- 5.6.19 As with the trenchless crossing of Climping Beach SSSI, boreholes to inform geotechnical investigation will be undertaken outside areas of Ancient Woodland. Pedestrian access will be required to monitor the path of the bores as the operation progresses.

5.6.20 The potential for frac out will be managed as for Climping Beach SSSI, with a focus on detailed design, stringent monitoring and management during delivery and through the delivery of the PPP and PIRP if necessary. The risk of frac out for all proposed ancient woodland crossings is considered very low (see Outline Construction Method Statement (Document Reference: 7.23)). This conclusion is drawn, in part, due to the introduction of commitment C-216 which maintains significant levels of substrate above the drill head when under ancient woodland.

### Veteran trees

5.6.21 No veteran trees will be removed to facilitate the delivery of onshore infrastructure. C-174 ensures that there will be no ground works within a buffer zone of 15 times the diameter of the tree or 5m from the edge of the tree's canopy (see Arboricultural Impact Assessment, Appendix 22.16 (Document Reference: 6.4.22.16) of the ES for location of veteran trees). This stand-off distance is that recommended by Natural England and the Forestry Commission (2022). Should detailed design require cables to encroach the buffer zone, the onshore cables will be installed using trenchless methods, with a minimum depth under the buffer zone of at least 6m (C-216). Currently the use of HDD under veteran trees is not expected in any locations.

Local Wildlife Sites (LWS)

- 5.6.22 Two LWS are crossed by the proposed transmission cables, namely Littlehampton Golf Course and Atherington Beach LWS and Sullington Hill LWS.
- 5.6.23 Littlehampton Golf Course and Atherington Beach LWS is immediately adjacent to Climping Beach SSSI and will be crossed during the same HDD operations as described in paragraphs 5.6.7 and 5.6.14. C-112 provides the same restrictions on construction works as for Climping Beach SSSI.
- 5.6.24 Sullington Hill LWS will be crossed using trenchless methods (C-114) as a location dominated by calcareous grassland and scrub. The approach will be consistent with that described for Climping Beach SSSI and Littlehampton Golf Course and Atherington Beach LWS (see **Outline Construction Method Statement** (Document Reference: 7.23)).
  - geotechnical investigations will take place outside of the designated area;
  - detailed design will seek to minimise risk of frac out;
  - monitoring and management during the drilling operation would actively manage risk;
  - only pedestrian access within the designated area is required (unless the contingency plan needs to be implemented); and
  - an PPP and PIRP will be in place to manage any remedial actions required.
- 5.6.25 Less than 10m<sup>2</sup> of Bines Green LWS lies within the proposed DCO Order Limits. This area lies adjacent to an existing farm access track that is to be used by construction traffic. This track does not require any works to widen or alter its layout and therefore, no damage to Bines Green LWS is expected.



### **Vegetation Retention Plans**

- 5.6.26 The Vegetation Retention Plans (VRP) and Pond Retention Plans are included (see **Appendix B**) to ensure that notable habitats in the proposed DCO Order Limits are avoided wherever possible and temporary and/or permanent loss is minimised where they cannot be retained. The VRP illustrates the habitats that provide both intrinsic value and act to connect features together at the landscape scale. These habitats are:
  - woodland (all types);
  - species-rich grassland;
  - scrub;
  - hedgerows; and
  - ponds.
- 5.6.27 The VRP identifies the impact on individual areas of these habitats including whether it is to be retained or measures are to be taken to minimise loss or highlight where permanent loss is unavoidable (see individual descriptions of measure by habitat type below). The Contractor(s) will need to account for these habitats within the detailed design. Where the construction approach would result in additional losses over those stated in the VRP they must be highlighted in the stage specific CoCP and justified in consultation with the competent authority (i.e. WSCC and SDNPA) to be in line with C-220.
- 5.6.28 Crossings of watercourses are shown on the Crossing Schedule (see **Appendix A Crossing Schedule**).
- 5.6.29 Information on the reinstatement of habitats is provided in the **Outline LEMP** (Document Reference: 7.10).

Woodland (all woodland types)

- 5.6.30 Woodland has been avoided through design wherever possible, with other areas crossed using trenchless methods for the primary reason of avoiding tree loss or as an associated benefit of crossing other features (e.g. roads). Where a trenchless crossing is used vehicular access will not be required other than in a small number of places where a haul road is still required (as shown on the VRP). Trenchless crossing methodologies will include implementation of measures described in the **Outline Construction Method Statement** (Document Reference: 7.23) to minimise the risk of frac out. The PPP and PIRP will be in place to manage any remedial actions required.
- 5.6.31 Where woodlands will be crossed using open trenching techniques, C-224 ensures that habitat losses are minimised. The working corridor in these areas would be reduced to a maximum of 30m and root protection areas conforming to BS5837:2012 (BSI, 2012) demarcated to enable as many trees as possible to be maintained and protected from damage. These areas are highlighted in the VRP. To minimise the working width, soil and material storage will be located outside wooded areas.

### Coastal and floodplain grazing marsh

- 5.6.32 Coastal and floodplain grazing marsh within the proposed DCO Order Limits is avoided where possible, and will be crossed by trenchless techniques in other areas (e.g. as the Rivers Arun and Adur see **Appendix A Crossing Schedule**). However, this habitat is extensive in the Arun Valley and Adur Valleys and therefore, some temporary loss is unavoidable. The areas crossed using open cut techniques primarily comprise agriculturally modified grasslands and wet ditches.
- 5.6.33 In order to minimise the amount of damage to this habitat, works will be scheduled to occur outside of the winter period (C-117). This will focus activity in the drier months, thereby preserving (as far as possible) soil structure. Reinstatement to agriculturally modified grassland will be rapid with a high probability of success.

#### Hedgerows / tree lines

- 5.6.34 All hedgerows / tree lines within the proposed DCO Order Limits are described within the VRP. Each hedgerow / tree line has been assigned to one of the following categories:
  - Retained (no loss proposed, any pruning in keeping with typical management);
  - Coppiced (retained but cut to 0.9m where visibility splays are required and then allowed to regrow following closure of temporary construction accesses);
  - Notched (one or more sections removed from a single hedgerow / tree line and reinstated following construction);
  - Temporarily lost (hedgerows / tree lines temporarily lost during construction e.g. due to access, temporary construction compound establishment, angle of crossing of cable corridor and reinstated following construction); and
  - Permanently lost (hedgerows / tree lines lost within the permanent footprint of the onshore substation at Oakendene and National Grid Bolney substation extension works and on the permanent easement of the onshore cable corridor).
- 5.6.35 Retained hedgerows / tree lines are those within the proposed DCO Order Limits where no loss is predicted to occur. These hedgerows may require maintenance (e.g. cutting into shape if overhanging a track), but this would be no more than would be expected as normal practice by the landowner. Hedgerows / tree lines may be retained where they mark the edges of existing farm tracks that will be used for access, border proposed temporary construction compounds or are crossed as an incidental result of the use of trenchless techniques to cross other constraints (e.g. roads and rivers). Where standard trees or tree lines are present, suitable root protection areas (in line with BS5837:2012 (BSI, 2012)) will be maintained. Should access be taken through an existing gateway in the hedgerow this will be specified in the VRP.
- 5.6.36 Coppiced hedgerows / tree lines are those at access points to or from the public highway that need to be reduced in height to provide suitable visibility to ensure safe access and egress. These will be retained but reduced in height to 0.9m. Tree lines will only be considered for coppicing if they comprise appropriate

species and are of a suitable size/age class. If coppicing is not possible these are shown as 'temporarily lost' on the VRP.

- Where hedgerows / tree lines are crossed by the onshore cable corridor and/or the 5.6.37 temporary construction haul road these will be notched (other than in certain situations where additional hedgerow removal is necessary - e.g. due to changing direction of cables, open cut crossings of public highway etc.). This is defined as removing a short section within the hedgerow / tree line with the majority being retained within the onshore cable corridor. A notch of ~6m (width may be slightly wider where hedgerows run at an angle across the cable corridor), would be created to take the temporary construction haul road with the cable ducts being installed within trenches dug through ~2m wide notches made in the hedgerow (i.e. four transmission cables and a haul road equal ~14m of hedgerow removal in five notches within the cable corridor). Where hedgerows are deemed 'important' under the definition in the Hedgerows Regulations 1997 or are noted as being of particular note due to being species rich of supporting interesting species (e.g. black poplar) opportunities to minimize temporary loss further have been identified . In these instances wherever possible, the cable ducts would be installed without removing hedgerow (other than for the haul road). The tunnelling would be achieved by hand digging either side of the hedgerow (at typical duct depth of 1.2m) prior to the duct being pushed through (using an excavator or an appropriate trenchless technique to cover the short distance) and connected to adjacent lengths of ducting. This approach is in line with that described in National Joint Utilities Group (NJUG) guidelines (2007). The notches will be micro-sited to avoid, as far as practicable, standard trees and will make use of existing gaps.
- 5.6.38 For hedgerows considered "important" under the Hedgerows Regulations 1997 or those recorded as being of particular note due to their species richness or support of interesting species<sup>2</sup> (e.g. black poplar), and where ground conditions suggest chances of success are high, a tree spade will be used to remove the notch in the hedge. The removed section of hedgerow will be placed within a temporary receptor trench dug in close proximity to the notch and maintained (i.e. monitored and watered as necessary). This section would then be returned to its original position in the first winter period following the cessation of construction works in that location. Should any translocated sections fail, the woody framework would act as a matrix to support new planting.
- 5.6.39 Each notched hedgerow to be translocated would be pruned back to hard wood, and reduced in height to approximately 1m, to reduce strain on the hedge prior to translocation. The removal of hedgerow would take place between October and March (other than in areas waterlogged during this period when works would need to take place as and when construction is possible and other issues such as active birds' nests can be suitably managed) with any gaps not immediately within active construction works being closed with temporary fencing as necessary. This timing allows hedgerows to be relocated at a time of year when the chances of success (i.e. survival of translocated hedge plants) are highest. The removed hedgerow sections would be managed as necessary (e.g. irrigated).

<sup>&</sup>lt;sup>2</sup> Where species of interest such as black poplar are growing within scrub patches / belts consideration of translocation will also be considered.

- 5.6.40 Monitoring (and any necessary management over and above that being undertaken on neighbouring hedge sections by the landowner) would take place in the following spring/summer (minimum of two visits at least two months apart) to determine whether additional planting is required at any of the restored notched hedgerows. Where additional planting is required, this will take place in the first winter period following identification of need. Additional checks over the following spring/summer periods would take place during the ten-year establishment phase to ensure that any failures are rectified with additional planting. For the first spring/summer period of establishment the section of translocated hedge would be watered as necessary.
- 5.6.41 Where hedgerows are unlikely to be successfully translocated due to ground conditions (e.g. thin soils over chalk prone to desiccation) or they are defunct or of poor quality, they will be removed and replanted. Where whips are planted, they will be appropriately sized and protected from herbivory and irrigated as necessary. The monitoring, management and replacement regime would mirror that for translocated hedgerows.
- 5.6.42 Where hedgerows are temporarily lost due to access works and temporary construction compounds. The hedgerows will be removed and latterly reinstated with new planting following the completion of construction. The VRP in Appendix B show the hedgerows that will be temporarily lost.

### Watercourse and wet ditch crossings

- 5.6.43 The Crossing Schedule (**Appendix A**) provides details of the watercourses including rivers, streams and wet ditches that will be crossed by the onshore cables. Of the 41 watercourse crossings identified, 20 will be achieved using trenchless techniques, with the remaining crossed using open cut techniques. This detail is secured in the Crossing Schedule (**Appendix A**).
- 5.6.44 Watercourses to be crossed using open cut techniques will be crossed by damming the channel and over pumping the water to maintain flow downstream. Bed materials will then be removed and stored separately from other substrate. Ducts will be put in place within a duct block and dressed back with excavated substrate and the original bed material. The watercourse is not expected to be dammed for more than a 48-hour period. Once the dam is removed, the bank profiles will be reinstated.
- 5.6.45 Haul roads crossing the watercourses will be installed in two ways, the most common will be through the use of temporary culverts. These culverts will be designed to enable the passage of fish and other wildlife (C-205). Where chalk streams have been identified by SDNPA that are to be crossed using open cut methodology, the potential effect will be minimised by the use of temporary clear span bridges, as opposed to culverts (C-229). Further clear span bridges will be used in any locations where water vole activity is identified (C-210).

### Habitat restoration

5.6.46 Habitat restoration is to take place within 2 years of the temporary loss occurring (C-103) other than at temporary construction compounds, cable JBs, landfall, and substation locations. It is expected that restoration will take place sequentially

once temporary works in an area have been completed, and therefore the timescale of 2 years is considered precautionary.

5.6.47 Further information on habitat restoration, including its management and monitoring is provided in the **Outline LEMP** (Document Reference: 7.10).

### Badgers

- 5.6.48 The ECoW will oversee a programme of badger surveys in all suitable habitat within 30m of any working area at least two months prior to expected activity in that area (C-209). Should the current baseline have evolved in the period between application and construction, and badger setts that could be damaged, destroyed, or subject to significant disturbance are identified, the ECoW would oversee an application for a badger licence from Natural England. Works would then take place following the appropriate mitigation and compensation measures described within the licence conditions. Based on current desk-study and field survey information there is no current need for a badger licence, although relatively modest changes in distribution of setts (or expansion of existing main setts) could make a licence necessary prior to construction.
- 5.6.49 Should the results of the pre-construction survey prove negative, the ECoW will still carry out further checks of suitable habitat within 30m of the working area in the days prior to construction occurring in each relevant area. If a new excavation is identified during the pre-works check, a buffer area of 30m would be demarcated and work within this area suspended until a badger licence could be gained from Natural England (if necessary, dependent on proposed works).
- 5.6.50 A 10mph speed limit will also be applied to all construction access and haul roads to limit the potential for traffic collisions with badgers (C-106).
- 5.6.51 All excavations left open overnight will be provided with a means of escape should a badger make its way in (e.g. a plank or similar). However, as trenches are filled sequentially after ducts are installed, the amount of open excavation on any given day is expected to be low.

### Otter

- 5.6.52 The ECoW will oversee a programme of otter surveys in suitable habitat within 200m of any working area at least two months prior to expected activity in that area (C-210). Should the current baseline have evolved in the period between application and construction, and otter resting places that could be damaged, destroyed, or subject to significant disturbance are identified, the ECoW would oversee the application for a European Protected Species licence (EPSL) from Natural England. Works would then take place following the appropriate mitigation and compensation measures described within the EPSL. Based on current desk-study and field survey information, an EPSL for otter is not expected to be necessary.
- 5.6.53 Should the results of the pre-construction survey prove negative, the EcoW will still carry out further checks of suitable habitat within 200m of the working area in the days prior to construction occurring in each relevant area. If an otter holt is identified during the pre-works check, a buffer area of 200m would be demarcated

and work within this suspended until an EPSL could be gained from Natural England.

5.6.54 A 10mph speed limit will also be applied to all construction access and haul roads to limit the potential for traffic collisions with otters (C-106), whilst a stand-off from watercourses and wet ditches (where there is no crossing point) will be implemented to avoid any damage to otter resting places (C-135).

### Water vole

- 5.6.55 The EcoW will oversee a programme of water vole surveys in suitable habitat within 25m of any working area at least two months prior to expected activity in that area (C-210). Should the current baseline have evolved in the period between application and construction, and water vole burrows that could be damaged, destroyed, or subject to significant disturbance are identified, the ECoW would oversee the application for a water vole licence from Natural England. Works would then take place following the appropriate mitigation and compensation measures described within the licence. Based on current desk-study and field survey information a water vole licence is likely required for one or more watercourse / ditch crossings within the floodplain and coastal grazing marsh in the Arun Valley. In all locations where open trenching is to be used to cross watercourses or ditches where water vole are present, within the working area or within 25m of it, clear span bridges will be used to provide the haul road (C-229) to minimise habitat loss and maintain connectivity.
- 5.6.56 The ECoW will continue to carry out checks of suitable habitat within 25m of the working area for water vole in the days prior to construction occurring in each relevant area. If water vole burrows are identified during the pre-works check at crossing points works will be suspended until a licence can be gained from Natural England.
- 5.6.57 A stand-off from watercourses and wet ditches (where there is not a crossing point) will be implemented to avoid any damage to water vole burrows (C-135).

### Bats

- 5.6.58 Bat roosts may be present in trees requiring removal to facilitate the delivery of onshore infrastructure. During detailed design of the onshore cable corridor, the aim will be to avoid and retain as many trees as possible. A pre-construction survey of those trees with moderate or high bat roost potential that are likely be lost will be carried out. The ECoW will ensure that the survey results are incorporated within the detailed design and roosting features retained through micro-siting where possible.
- 5.6.59 If necessary, an application for an EPSL will be made to enable the removal of trees supporting bat roosts. Within the licence application the provision of suitable mitigation and compensation will be detailed based on the individual features of each tree. It is noted that very few circumstances are expected where an extant bat roost would need to be removed as there are a range of alternatives (e.g. through micro-siting, use of trenchless crossing) that would be preferred (in terms of the licensing tests).

- 5.6.60 Foraging and commuting bats may be disturbed or displaced by artificial lighting. In order to minimise this all permanent and temporary lighting will be designed in line with the joint guidance provided by the Bat Conservation Trust and Institution of Lighting Professionals (2018). Lighting will be minimised both via limiting where, when and for how long it is used, as well as by designing and placing necessary lighting in such a way as to minimise light spill (C-105).
- 5.6.61 Current expectation is that temporary lighting is restricted to the locations of trenchless crossings, temporary construction compounds and the substation. Permanent lighting would be in place at the substation location, but would not be required to be turned on for the majority of nights (i.e. it may be used for repair works, security etc.).

### Hazel dormouse

- 5.6.62 The ECoW will oversee a programme of dormouse surveys at the onshore substation at Oakendene and any woodland that will be lost to the Proposed Development (C-232). The outcome of the surveys will be used in tandem with the habitat creation proposed at the onshore substation (see Design and Access Statement (Document Reference: 5.8) and Outline LEMP (Document Reference: 7.10) for further information) to inform an application for an EPSL. The EPSL application would cover measures such as the retention of vegetation, the timing of vegetation removal (between November and February), the phased removal of vegetation, hand search and relocation of hibernating dormice if necessary. Currently an EPSL is only expected to be needed at the onshore substation at Oakendene based on survey results.
- 5.6.63 Where dormouse have not been located during field survey, but where potential for this species exists, additional measures will be taken by the ECoW. Where there is woodland that would be lost to development further surveys would be undertaken to determine if the baseline situation has changed during the period between application and construction. Should presence be recorded similar measures to those that would be implemented at the onshore substation would be delivered or the approach to construction would be altered. For hedgerow and scrub crossings the EcoW will undertake an assessment of the risk of dormice being present, with hand searches and phased vegetation removal being undertaken where necessary. Should dormouse be recorded within any habitat during vegetation removal, works will cease within the area of suitable habitat (e.g. hedgerow or scrub patch) and the ECoW will then either apply for an EPSL or enable passive relocation of the dormouse into suitable adjacent habitat.

### Great crested newt

5.6.64 All ponds within the proposed DCO Order Limits will be retained (see **Appendix B** - **Pond retention plan** and C-220) @and@ therefore any effects on great crested newts will be due to terrestrial habitat loss, with associated potential death or injury of individuals. This will largely be accounted for through the application for and delivery of a District Level Licence (DLL) for this species which provides strategically located habitat to boost the size and resilience of the local great crested newt population.

- 5.6.65 Regardless of the DLL, measures will be taken around the temporary works to limit the risk to individual great crested newts of death or injury through vegetation removal or the use of temporary trackway. It is noted that in order to inform the DLL further eDNA testing of ponds will be required due to the time between the DCO Application and the expected start of construction (C-214).
- <sup>5.6.66</sup> In habitats within 250m of ponds where great crested newts are known to occur, or those where survey access has not been granted, suitable terrestrial habitat for great crested newts will be removed under supervision of the ECoW. This will include a phased removal and hand search (e.g. of hedgerow bottoms), with approach dependent on time of year. Where possible, all vegetation will be removed to just above ground level (~15cm) during winter, with the remainder removed during the active period of great crested newts). Should any great crested newts be identified at the time of full clearance they would be relocated by the ECoW to suitable habitat in the near vicinity.
- 5.6.67 Should temporary trackway be used as part of access works within 250m of ponds where great crested newts are known to occur, or those where adjacent landowners have not granted access permission, a buffer of no less than 2m along the edge of all trackway, will be maintained as short cropped vegetation (less than ~15cm in height) for the duration that the trackway is in situ. The type of trackway used will be of a suitable specification to reduce the potential for great crested newts to shelter beneath (e.g., flat-based plastic/rubber trackway such as Tufftrak), with any gaps (due to uneven ground) being sealed with suitable devices (e.g. sand bags).

### Reptiles and amphibians (other than great crested newt)

- 5.6.68 Reptiles and amphibians may occur in suitable habitats within the proposed DCO Order Limits. In all locations excluding the onshore substation at Oakendene, the potential effects are restricted to the accidental death or injury of individuals given the relatively small land take in any particular location. Therefore, the ECoW will be responsible for supervising a phased removal of vegetation before undertaking destructive searches of suitable habitat as it is removed (C-208). Any individuals located will be captured and relocated into suitable habitat in the near vicinity.
- 5.6.69 At the onshore substation pre-commencement surveys will take place to determine the size of the reptile population at the time. Following the survey, appropriate trapping and translocation will take place to ensure that individuals are removed and excluded from areas within which they would be at risk. Habitat creation at the onshore substation location (see **Design and Access Statement** (Document Reference: 5.8 and **Outline LEMP** (Document Reference: 7.10)) in advance of losses will provide sufficient new habitat to enable successful translocation of reptiles based on the number of individuals noted during surveys to inform the DCO Application.

### Breeding birds

5.6.70 Avoidance of active nests during the bird breeding season will be achieved through the commitments made (see **Table 5-5**). Removal of vegetation will be undertaken outside the breeding season where possible (C-21). This will remove

the potential risk of damaging or destroying active nests, young or eggs within hedgerows, scrub and other suitable habitats that would otherwise be in the working area. It is noted that this removal may be to a low level only (~15cm above ground level) to allow for dormouse, great crested newt or reptile mitigation (e.g. passive relocation). This will be determined on a case-by-case basis by the ECoW.

- 5.6.71 Ground nesting birds could potentially breed within the construction area, regardless of habitat changes made during the winter period. Pre-construction checks would be organised by the ECoW between late February and August in areas of active works, or when works are expected in the breeding period. If active nests are located, species specific exclusion zones will be implemented based on best available information from scientific literature (C-203).
- 5.6.72 In order to prevent disturbance of barn owl using nest boxes provided by the Sussex Barn Owl Study Group, the ECoW will make contact with the Group in advance of the commencement of works. Box locations that may be affected (i.e. those lying within 250m) will be identified and works scheduled to take place at a time when nests will not be active (C-215).

### Wintering Birds

5.6.73 Wintering birds using the coastal strip at the landfall and coastal and floodplain grazing marshes associated with the Arun Valley and Adur Valley may be disturbed by the construction works. To reduce the potential for disturbance the construction works will be scheduled to take place between March and September inclusive at the landfall and in areas located within Flood Zones 2 and 3 (C-117).

### Fish

- 5.6.74 All main rivers and larger watercourses that are known to support migratory fish (identified from desk study including information provided by SDNPA) are maintained through the use of trenchless techniques (C-5).
- 5.6.75 Where open cut techniques will be used to cross watercourses the passage of fish will be maintained through employment of fish friendly measures, with minimal blockages and culverts being designed to be passable (C-64 and C-205). Further, where chalk streams identified by SDNPA are present culverts will not be used in favour of clear span bridges (C-229).

# 5.7 Transport

5.7.1 This section outlines management measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects on transport receptors.

### Commitments

5.7.2 **Table 5-6** details commitments specific to transport that will be secured through this Outline CoCP. Other relevant commitments are listed beneath the **Table 5-6** 

including references to relevant sections of this Outline CoCP other management plans).

Table 5-6	Commitments relevant to transport
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Commitment ID	Measure Proposed
C-18	A crossing schedule will be prepared which includes crossing methodology for each crossing of road, rail, public right of way (PRoW) and watercourse.
C-32	Signage and/or temporary public rights of way (PRoW) / footpath diversions will be provided during construction.

5.7.3 Further commitments relevant to transport are: C-157, C-158, C-159, C-160, C-165, C-166 (Outline CTMP (Document Reference: 7.6) and C-161, C162, C-163 (Outline PRoWMP (Document Reference: 7.8).

### Management measures

- 5.7.4 An **Outline CTMP** (Document Reference: 7.6) and **Outline PRoWMP** (Document Reference: 7.8) have been submitted with the DCO Application and details embedded environmental measures relating to the mitigation and management of traffic flows and PRoW.
- 5.7.5 The **Outline CTMP** (Document Reference: 7.6) details measures which will be implemented in relation to traffic generated during construction of the onshore elements of the Proposed Development. These measures cover:
  - general construction traffic management/mitigation;
  - traffic signage;
  - core working hours;
  - HGV and LV construction vehicle records;
  - HGV emissions;
  - banksmen or presence of qualified personnel at access;
  - timing of HGV movements;
  - exceptional circumstances;
  - abnormal indivisible loads;
  - cleaning of vehicles;
  - highway conditions survey;
  - delivery management systems; and
  - information packs and communications.

- 5.7.6 Further details on management measures referenced above are provided in the **Outline CTMP** (Document Reference: 7.6).
- 5.7.7 The Outline PRoWMP (Document Reference: 7.8) details embedded environmental measures which will be implemented to manage impacts to PRoW during the construction of the onshore elements of the Proposed Development. These measures include:
  - temporary closure and diversions (where required) for PRoW that are crossed by open cut method as part of the construction of the onshore cable corridor;
  - signage and appropriate speed limits for PRoWs which are also proposed construction accesses, these are known as 'shared routes';
  - signage and appropriate active management where PRoWs cross temporary construction access tracks;
  - appropriate warning signage and management measures (where required) for PRoWs that meet the highways network at a temporary construction access;
  - inspection and maintenance of PRoW;
  - signage management; and
  - measures related to areas of open access management.
- 5.7.8 Further details on the management measures outlined above is provided in the **Outline PRoWMP** (Document Reference: 7.8).
- 5.7.9 The Crossing Schedule (**Appendix A**) secures the detail of crossing techniques whether by trenchless or open cut technique, including roads, rail and PRoWs.
- 5.7.10 In some locations the onshore cable corridor will cross Private Means of Access (PMA) such as driveways to single properties and private roads which access multiple properties where the owners have rights of access. The strategy to maintain PMA during construction is summarised below. This strategy sets out the general principles and solutions to be adopted during construction, noting that comprehensive management strategies and design solutions will be developed in collaboration with stakeholders during detailed design. The following general principles will apply to management of PMA during the cable route construction:
  - Any access restrictions or effect on individual properties / businesses will be kept to a minimum. The applicant will work with local stakeholders to develop individual solutions to keep disruptions as low as reasonably possible;
  - All crossings of PMA will be developed to allow emergency access at all times (through the provision of road plating);
  - Contractors will be required to accommodate reasonable requests for access during the working day by temporary plating of trench unless a suitable diversion if provided around the works;
  - The trench will be plated or temporarily backfilled outside of construction working hours where feasible to restore access, unless a suitable diversion is provided around the works;



- Any access restrictions or closures will be communicated to all residents and businesses with affected rights of access (as recorded in the Book of Reference [APP-026] or successor document); and
- A nominated point of contact on behalf of the Applicant will be communicated to all residents and businesses at least three months before the start of construction who can be contacted in case of any concerns of grievances.

# 5.8 **Ground conditions (including contamination)**

5.8.1 This section outlines management measures to be implemented to ensure construction works are conducted in a way that removes or reduces the effects on ground conditions.

### Commitments

5.8.2 **Table 5-7** details commitments specific to ground conditions that will be secured through this Outline CoCP. Other relevant commitments to ground conditions are listed beneath the **Table 5-7** including references to relevant sections of this Outline CoCP other management plan). Further information on measures and their implementation is also provided.

### Table 5-7 Commitments relevant to ground conditions

Commitment ID	Measure Proposed
C-71	RED will ensure that the land used for the Proposed Development is suitable for the proposed use with respect to the potential for soil and groundwater contamination and, where necessary, risk-based remediation is undertaken in line with Environment Agency (2020) guidance (Land Contamination: Risk Management). The precise design of any remediation strategy will be confirmed in the detailed design after consent has been granted. This will be informed by targeted ground investigation, in line with the findings of the Phase 1 Desk Study.
C-72	Prior to construction, an unexpected contamination protocol will be developed in line with Environment Agency (2020) guidance (LCRM) to minimise the potential risks to human health and controlled waters from any unexpected ground contamination. The protocol will take into account the requirements for risk assessment, the use of Personal Protective Equipment (PPE) and adoption of best practice methods during construction.
C-76	In line with good practice, a PPP will be developed to detail how ground and surface waters will be protected from construction and operation related pollution. These will include information on the use and storage of any fuels, oils and other chemicals (in line with C-8 and C-167), measures for protecting licenced and

Commitment ID	Measure Proposed
	private groundwater abstractions (in line with commitment C- 147) and pollution incidence response planning.
C-116	The basis of the structural design for the proposed onshore cable corridor and onshore substation infrastructure will be completed in general accordance with design standards to minimise the risk of structural or geotechnical instability. The structural design of onshore substation buildings will give due consideration to minimum design requirements for ambient design temperatures, wind pressures and snow loads, including climate change allowances where appropriate.

5.8.3 Further commitments relevant to ground conditions are: C-25 (Health, Safety and Environmental Management Systems Section 2.3) C-8, C-14, C-31, C-69, C-70, C-150, C-153, C-167 (General principles Section 4), C-33 (Landscape and visual Section 5.2), C-24 (Air quality Section 5.3) and C-17, C-143, C-149, C-151, C-234, C-235, C-236 (Water environment Section 5.10).

#### **Management measures**

- 5.8.4 The risk of land contamination arising from the Proposed Development will be managed in line with the Environment Agency guidance on land contamination and risk management (LCRM). The first stage of the LCRM process, a Preliminary Risk Assessment, has been completed as part of **ES Chapter 24 Ground Conditions, Volume 2** (Document Reference: 6.2.24). This identifies one potential source of contamination (Brookbarn Farm historical landfill) and the locations for permanent infrastructure associated with the onshore substation and National Grid Bolney substation extension works at which further assessment will be undertaken post-DCO consent in line with commitment C-71 and secured by the requirement in the **draft DCO** (Document Reference: 3.1). Outside of these locations, works for the Proposed Development will be managed in line with the points below.
- 5.8.5 Construction works for the Proposed Development will be subject to the CDM Regulations (2015) and implementation of safe working practices as part of normal construction health and safety management under the Health and Safety at Work Act (1974) and regulations made under the Act. These legal obligations include the requirement for risk assessment of and method statements for all construction related activities (see Section 2.4 Health, Safety and Environmental Management Systems).
- 5.8.6 Under CDM 2015, the Principal Contractor will plan, manage and coordinate health and safety in the construction phase of the project, and this will include ensuring that risk assessments and method statements include consideration of land contamination and ground instability risks when developing appropriate working methods, and any requirements for additional control measures such as the use of appropriate PPE.



5.8.7 The Contractor(s) will be responsible for ensuring that the commitments relating to ground conditions are understood and incorporated into working methods and included in the stage specific CoCP, including the process for managing unexpected contamination (in line with C-72).

## 5.9 Historic environment

5.9.1 This section outlines management measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects to the historic environment.

### Commitments

5.9.2 Table 5-8 details commitments specific to historic environment that will be secured through the Outline Onshore Written Scheme of Investigation (WSI) (Document Reference: 7.9), submitted as part of the DCO Application. Other commitments are listed beneath Table 5-8 including references to relevant sections of this Outline CoCP (or other management plan). Further information on measures and their implementation is also provided.

Commitment ID	Measure Proposed
C-79	Archaeological and paleoenvironmental mitigation will entail an agreed programme of archaeological recording and dissemination to mitigate any significant adverse effects during construction. Provision will be made for appropriate curation/deposition of the site archive.
C-225	Where previously unknown archaeological remains of high heritage significance are identified through surveys along the cable route, and where these locations have not been possible to avoid during earlier design stage, consideration will be made for engineering solutions (e.g. narrowing of the construction corridor, divert cable route within DCO Order Limits, re-siting stockpiles,) to avoid impacts in the first instance. Where impacts are not avoidable, these will be minimised where possible through design solutions and an appropriate programme of mitigation will be undertaken to ensure preservation by record. Such measures will be reviewed in consultation with relevant stakeholders (WSCC Archaeologist and Historic England). An onshore outline WSI provides detail of appropriate methodologies to be implemented during the evaluation and mitigation stages of the archaeological works.

#### Table 5-8 Commitments relevant to historic environment

5.9.3 Further commitments relevant to historic environment are C-20, C-22, C-27 (General principles **Section 4**), (Landscape and visual **Section 5.2**), C-24 (Air

quality **Section 5.3**), C-11, C-12, C-19 (Soils and agriculture **Section 5.5**), C-26 (Noise and vibration **Section 5.4**), C-21, C-115 (Terrestrial ecology and nature conservation **Section 5.6**), C-13, C-133 (Water environment **Section 5.10**), C-68 (**Outline LEMP** (Document Reference: 7.10)) and C-157 (**Outline CTMP** (Document Reference: 7.6)).

#### **Management measures**

- 5.9.4 The **Outline Onshore WSI** (Document Reference: 7.9) is the primary document which provides a framework for the management of impacts to archaeology and built heritage during construction of the Proposed Development. The **Outline Onshore WSI** (Document Reference: 7.9) provides a summary of the archaeological background, and regional research agenda, as well as setting out the overarching procedures and standards for archaeological works required as part of the evaluation and mitigation strategy. This document also includes the further evaluation proposals based on data collected prior to DCO Application.
- 5.9.5 Stage specific written schemes of archaeological investigation (SSWSIs) will secure the detail of the archaeological works required, to be approved pursuant to the DCO required. These will be produced for each stage on the basis of geophysical survey and evaluation trial trenching. Where required, for example where it has not been practicable to complete surveys in advance of DCO Application, additional SSWSIs will be provided setting out proposals for an initial evaluation survey. SSWSIs will also be produced for mitigation which may be required following completion of evaluation surveys.

## 5.10 Water environment

5.10.1 This section outlines management measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects to the water environment.

## Commitments

5.10.2 Table 5-9 details commitments specific to water environment that will be secured through this Outline CoCP. Other relevant commitments are listed beneath Table 5-9 including references to relevant sections of this Outline CoCP other management plans). Further information on measures and their implementation is also provided.

#### Table 5-9 Commitments relevant to water environment

Commitment ID	Measure Proposed
C-5	Main rivers, watercourses, railways and roads that form part of the Strategic Highways Network will be crossed by HDD or other trenchless technology where this represents the best environment solution and is financially and technically feasible (see C-17).

Commitment ID	Measure Proposed
C-6	Where practical, sensitive sites will be avoided by the temporary and permanent onshore project footprint including SSSIs, Local Nature Reserves, Local Wildlife Sites, ancient woodland, areas of consented development, areas of historic and authorised landfills and other known areas of potential contamination, National Trust Land, Listed Buildings, Scheduled monuments, and mineral resources (including existing mineral sites, minerals sites allocated in development plans and mineral safeguarding areas).
C-13	In areas (or during periods of adverse weather) there may be the requirement to import aggregates to create a stable surface for construction traffic movements. Options such as bogmatting and geotextiles will be considered by the principal contractor for sensitive sections of the route to reduce impact. Selection of an appropriate measure to lower the risk of ground compaction will be made by a suitably trained / experienced person.
C-17	Where trenchless techniques are not required or are not practical, watercourses may be crossed by open cut techniques (with flows overpumped around the working area). Appropriate environmental permits or land drainage consents will be applied for works from the Environment Agency (e.g. for Main Rivers, works on or near sea defences/flood defence structures or in a flood plain) or from the Lead Local Flood Authority (LLFA) (for Ordinary Watercourse crossings) (see C-5).
C-19	The onshore cable will be constructed in discrete sections. The trenches will be excavated, the cable ducts will be laid, the trenches back-filled and the reinstatement process commenced in as short a timeframe as practicable. At regular intervals (typically $600m - 1,000m$ ) along the route joint bays / pits will be installed to enable the cable installation and connection process.
C-28	Particular care will be taken to ensure that the existing land drainage regime is not compromised as a result of construction. A specialist drainage contractor / consultant will be engaged prior to construction to develop the pre- and post-construction drainage plan on agricultural land. Land drainage systems will be maintained during construction and reinstated on completion. Temporary cut-off drains will be installed parallel to the trench- line, before the start of construction, to intercept soil and groundwater before it reaches the trench. These field drains will discharge to local drainage ditches through silt traps, as appropriate, to minimise sediment release.
C-30	Geotextiles or other membranes may be used to temporarily control and minimise erosion or transport of sediment from construction sites in areas that are considered unprotected.

Commitment ID	Measure Proposed
C-64	For temporary watercourse crossings the works will be designed to enable the free passage of fish and aquatic mammals including continuation of bed material through the culvert. During construction (e.g. placing culverts or installing ducts), sections of the channel will need to be isolated using barriers that span the whole width of the channel. These isolation works will be of short duration and are expected to be completed within 48 hours of the placement of barriers to flow. Screening will take place to prevent fish being drawn into the pump.
C-73	Drainage design to manage, attenuate and, if necessary, treat surface water run-off will be included in all elements of temporary and permanent infrastructure. These will be designed in accordance with Sustainable Drainage (SuDS) principles including allowances for climate change and discharged at pre- development rates. Where the development intersects overland flow pathways or areas of known surface water flooding appropriate measures will be embedded into the design.
C-74	All sub-surface infrastructure will be designed to retain sub- surface flow pathways to avoid any localised increases in groundwater flooding.
C-75	Construction and permanent development in flood plains will be avoided wherever possible. Where this is not possible environmental measures will be developed to ensure the works are National Policy Statement compliant, including a sequential approach to siting of infrastructure and passing the Exception Test where appropriate.
C-77	Dewatering of excavations will be undertaken in line with good practice. Effects of dewatering on potential receptors will be incorporated into the proposed approaches for each piece of infrastructure. Appropriate treatment will be installed before discharge to surface or groundwater, this will include the use of siltbusters (or similar) before discharge to surface waters. Appropriate licences and permits will be applied for if required.
C-78	Licensed and private water supplies will be avoided where practicable; if any impacts are anticipated then appropriate measures will be put in place to avoid impact on the quantity and quality of the supply.
C-117	Works on areas identified as floodplain (Flood Zones 2 and 3) will be programmed to avoid the period between October and February inclusive to avoid disturbance of waterbirds, and where possible, will be programmed to occur in late summer/ early

Commitment ID	Measure Proposed
	autumn, to avoid interaction with known flooding periods to minimise the potential for displacement of floodwater.
C-119	In the fluvial floodplain, temporary trackway (rather than raised stone roads) will be utilised for the temporary haul road and access routes wherever practicable.
C-120	Stone access routes/ haul road and working areas will be constructed of semi-permeable aggregate material (similar to compounds as per commitment C-129) where practical.
C-121	Run-off from access routes / haul road and working areas will be allowed to infiltrate wherever possible.
C-122	All permanent cable crossings will pass beneath the bed of watercourses (no within bank crossings). Sufficient depth between the bed of the watercourse and the top of the cable (whether trenchless or open cut) will be provided to ensure no potential for exposure of cable due to scour.
C-123	Starter (and exit) pits for HDD and other trenchless technologies will be micro-sited outside of the floodplain where possible (by moving the pits further away from watercourses).
C-125	Where the cable route crosses an Environment Agency flood defence, trenchless methodologies will be used.
C-126	Minor watercourses (where open cut techniques are proposed for the permanent cable crossings) will also have temporary crossings for the haul road to provide vehicular access along the route. A mixture of culverts and/or clear span bridges could be employed based on crossing specific requirements (size of watercourse and flood risk). These will be subject to permits and consents with the Environment Agency and (LLFA).
C-127	Temporary watercourse crossings will not be provided for the haul road where the cable crossing will be trenchless. Vehicular access will use existing public highways and bridges.
C-128	Any temporary crossings will be in place for the minimal time possible.
C-130	During construction, no soil stockpiles will be stored within 8m of Ordinary Watercourses, within 8m of a non-tidal Main River, and within 16m of a tidal Main River.
C-131	Where potential flood risk receptors could be impacted by a loss of floodplain storage and / or impacts on floodplain conveyance, the loss will be addressed through soil stockpiles (associated with

Commitment ID	Measure Proposed
	both the cable construction and the temporary haul road) being located outside of the fluvial floodplain wherever possible. Where not possible, further assessment has been undertaken in the Flood Risk Assessment (FRA) and further measures (e.g. C-119, C-132 and C-133) have been proposed to address this where necessary.
C-132	Soil stockpiles in the tidal floodplain will have regular gaps to prevent floodplain compartmentalisation. Soil stockpiles would have a maximum bund to gap ratio of 4:1. The worst-case scenario for a continuous length of embankment would be up to 80m i.e. with 20m gaps at 80m intervals
C-133	Stockpiles will be present for the shortest practicable timeframe, with stockpiles being reinstated as the construction work progresses. Stockpiles which remain present for six months or longer will be seeded to encourage stabilisation.
C-134	During construction, dewatering activities (of excavations) will be halted if a flood alert or flood warning is in place downstream, in order to minimise any impacts on flood flow conveyance and to maintain access for watercourse maintenance.
C-135	A standoff distance (distance to be determined based on biodiversity and pollution control considerations) will be applied from watercourse bank tops (other than for watercourse crossings) to account for potential issues such as water vole burrows, otter holts and pollution control.
C-137	All proposed onshore infrastructure and construction activities will be sited outside of the SPZ1 for the Southern Water public water supplies. The only exceptions to this will be for light 4 X 4 construction access route which crosses part of Warningcamp SPZ1 and the installation of several minor passing places within the Patching SPZ1. Access routes will utilise existing tracks, roads, farm entrances etc as far as practicable, and where necessary no-dig solutions (e.g. aluminium trackway) and other site-specific measures (e.g. C-250 and C-251) would also be utilised. There will be no storage of hazardous materials including chemicals, oils and fuels within any SPZ.
C-138	Details of the proposed trenchless watercourse crossing techniques will be discussed between with the Environment Agency at the detailed design stage. The depth of the trenchless crossing will be such that the river bed and watercourse is undisturbed by construction activities. Specific construction method statements will be prepared.

Commitment ID	Measure Proposed
C-139	Culverting activities and onshore construction of cable circuit crossings will take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects.
C-140	Temporary cut-off drains will be installed to prevent surface water and shallow groundwater ingress into excavations. Intercepted water will be encouraged to infiltrate into the ground, mimicking natural flow patterns in accordance with the principles of SuDS. Where discharge of cut-off drains to watercourses is the only practical option, appropriate measures will be employed to moderate runoff rates, and promote settlement of suspended sediment.
C-141	Dewatering of trench excavations will be carefully monitored and groundwater flow disruption and drawdown will be minimised via good construction practices. The time any excavation is open will be kept to a minimum to minimise ingress of water and dewatering requirements.
C-142	If water being pumped from excavations is suspected to be contaminated, appropriate measures will be taken in accordance with Environment Agency guidance and the Environmental Permitting Regulations to prevent uncontrolled or unauthorised releases of this water to ground or to the water environment.
C-143	Any temporary onsite storage of excavated materials suspected or confirmed to be contaminated will be on impermeable sheeting, covered over and with adequate leachate / runoff drainage to prevent migration of contaminants from the stockpile. Materials will be segregated where possible to prevent cross-contamination occurring. Such materials will only be reused if they are confirmed as suitable for use in line with the requirements of the Materials Management Plan (C-69).
C-144	In areas where there are groundwater seepages / flush zones identified along the access tracks at the detailed design stage, the Contractor will utilise geotextiles beneath the track material or bogmat where necessary to prevent the track from settling into the ground to help maintain sub-surface flow.
C-145	To enable access during construction, temporary clear span bridges will be used for those temporary watercourse crossings too wide or deep to be crossed using culverts.
C-146	The location of statutory undertaker assets (including water supply and sewer pipes, water and waste treatment works etc.) will be confirmed through inspection of detailed plans from the undertakers. All assets potentially affected by the Proposed

Commitment ID	Measure Proposed
	Development will be identified, with particular consideration to access roads and crossings.
C-147	The Contractor will identify springs, abstractions and any sewerage infrastructure including treatment plants, septic tanks, soakaways, interconnecting pipes and outfalls, that require appropriate protection. These features will be mapped and appropriate exclusion zones will be applied to ensure that construction methods do not disturb the physical infrastructure layout. All appointed Contractor staff will be given training to protect abstractions deemed to be at risk. In the event that an abstraction is identified as being at risk of water quality deterioration, a comprehensive sampling programme will be agreed with the relevant local authority for the abstraction in question. Furthermore, in the event that there is an impact on a water supply, an alternative supply will be made available.
C-148	During construction, a programme of visual inspections will be undertaken to ensure that the potential effects on the River Arun and Adur tributaries are appropriately monitored. The visual inspection points will be selected downstream of construction areas. See C-151 for response plan in the event that observations identify that an intervention is necessary.
C-149	In areas where there is a potential for hydrocarbon residues from run-off / isolated leakages surface water drainage measures will be provided to capture hydrocarbons prior to discharge, such as hydrocarbon interceptors.
C-150	Plant and machinery used during the construction and operation phases will be maintained to minimise the risks of oils leaks or similar, in line with C-8. Placing a drip tray beneath a plant and machinery during refuelling and the availability of spill kits will contain small spillages.
C-151	Contractors will be made aware of their statutory responsibility not to "cause or knowingly permit water pollution". A PPP and PIRP will be prepared for the Proposed Development, the latter in line with Pollution Prevention Guideline 21 (PPG 21, 2009), and all contractors will be briefed on these plans, with copies made available on site.
C-152	In the event that piling is selected for installation of the onshore substation foundations, a detailed piling risk assessment will be developed. This will be submitted to the Environment Agency for approval at the detailed design stage, prior to the commencement of construction.

Commitment ID	Measure Proposed
C-154	In the fluvial floodplain and at surface water flow pathways, the permanent cable will be completely buried, with the land above reinstated to pre-construction ground level (some mounding may be appropriate to allow for settlement).
C-175	Where use of trackway is not possible, access routes (and working areas) in the fluvial floodplain will be as close to ground level as possible to avoid impacting flood flow conveyance and loss of floodplain storage (a slight raised surface is often required to allow for drainage).
C-176	For temporary watercourse crossings, where culverts are to be used, these will be appropriately sized to maintain existing flow conveyance. Where existing culverts already exist nearby, similarly sized culverts may be suitable.
C-177	Where feasible multiple pipes will not be used for culverts of temporary watercourse crossings (culverts should have a single pipe/opening of an appropriate size for the watercourse cross section).
C-178	Circular culverts for temporary watercourse crossings will have concrete bedding in locations where ground conditions suggest that settlement could occur, e.g. Arun Internal Drainage Board (IDB) district.
C-179	Stockpile gaps would be located at topographic low points to preserve existing flow paths.
C-180	Where stockpiles are placed on both sides of the access routes/ haul road the gaps will coincide.
C-181	Access roads will have cross drainage provided where necessary at topographic low points.
C-182	Any works within 5m of any watercourse in the Internal Drainage Board (IDB) district will be subject to consent from the Environment Agency. Any works within 8m of a non-tidal Main River or 16m for a tidal Main River will be subject to consent from the Environment Agency (the majority of the Main Rivers are tidal for the majority of the cable route). Work within banktop of any other watercourse (not main river and outside of IDB) would require consent from the Lead Local Flood Authority (LLFA).
C-227	Techniques will be employed by the contractor to manage the risk of drilling fluid breakout or losses into the deposits or strata surrounding the HDD bore. Drilling fluids will be used to seal permeable deposits or strata. The naturally occurring bentonite

Commitment ID	Measure Proposed
	clay will be used as the base for the drilling fluid, which will line the bore wall, preventing fluid loss and near-surface groundwater ingress.
C-229	Crossings of SDNP Authority designated chalk streams will be designed to be less intrusive, for example by using a clear span bridge instead of a culvert to support the haul road or via use of trenchless crossing techniques. Open cut cable crossings will be constructed and reinstated in as short a timeframe as practicable. Details of the cable crossing methodologies at each water course can be found within the Crossing Schedule (Volume 4, Appendix 4.2) with further information on haul road crossings being provided in the Outline Code of Construction Practice (see management measures section below).
C-234	Techniques will be employed by the contractor to manage the risk of drilling fluid breakout or losses into the deposits or strata surrounding the trenchless crossings (including HDD bores). The risk of breakouts can be mitigated by adopting good drilling practices, including:
	1. Experienced drillers;
	2. Standard process and procedures for drilling, data collection and communication;
	<ol> <li>Appropriate drill fluid monitoring (fluid properties, volume/flow, and downhole pressure;</li> </ol>
	4. Development of a breakout response plan, so that breakout response plan so that equipment and trained personnel are in place for rapid response; and
	5. Acquisition of rights-of-way or easements for at least the first 60m from both the entry and exit holes so that no access-related delays are incurred in response to any breakouts.
C-235	Best practice techniques and methodologies will be carried out during the implementation of HDD works. The HDD works are to be undertaken in accordance with Pipeline Design for Installation of Horizontal directional drilling (Manual of Practice) by ASCE Oct 2014 or similar.

Commitment ID	Measure Proposed
C-236	For trenchless crossings detailed pre-drilling planning of methods and processes will be undertaken. The extensive pre-drill planning will include the compilation of potential sub-surface structures along the alignment, environmental due diligence of the sites of the entry and exit holes, a geotechnical investigation along the proposed alignment to determine geological conditions with an emphasis on identifying sensitive areas and problematic ground conditions, and the analytical analysis of fluid pressures versus depth of cover to determine adequate depths of cover to minimise breakouts
C-241	<ul> <li>During HDD activities, the drilling fluid engineer will carefully monitor the fluid usage in the recycling system and will quickly identify if fluid is being lost into the strata. If fluid loss is identified there are a number of measures that can be taken to seal the bore, including the following: <ol> <li>Modifying the drilling fluid properties to increase the effectiveness of the bentonite clay filter cake that lines the wall of the borehole;</li> </ol> </li> <li>Standard process and procedures in place for drilling, data collection, and communication;</li> </ul>
	3. Appropriate drill fluid monitoring (fluid properties, fluid volume and flow, and downhole annular pressure);
	<ol> <li>Addition of stop-loss materials to bridge and seal larger voids in the soil; and</li> </ol>
	5. Modifying the mud weight (drilling fluid density) to either balance or counter the groundwater pressure depending on ground conditions.
C-245	Environmentally hazardous drilling fluids, or those containing groundwater hazardous substances, will not be used during trenchless crossings (including HDD).
C-246	A watching brief will be carried out by the appointed Contractor and their Environmental Clerk of Works to monitor the drilling of the trenchless crossing (TC-11) and the excavation of trenches along a targeted part of the cable route which is in closest proximity to karstic solution features between Hammerpot and The Buckmans (TC-12a) (Chainage 9.3km to 11.7 km). The watching brief will be carried out to identify sensitive areas and ground conditions (swelling clays, transition zones, preferential pathways for breakouts) in order to provide any evidence of karstic solution features within the cable corridor at this location.

In the event that any solution features are identified then micrositing of the route would be carried out to avoid such features.C-247RED will undertake ground investigation at the landfall site at the post-DCO application stage. This would be carried out to inform the exact stiing and detailed design of the Transition Joint Bay and associated apparatus. In addition, this would inform a 'coastal erosion and future beach profile estimation assessment', which in turn would inform the need for and design of any further mitigation and adaptive measures to help minimise the vulnerability of these assets from future coastal erosion and tidal flooding.C-250The construction of the passing place upgrades along Michelgrove Lane will be programmed for Spring – Autumn (March – November) when groundwater levels in this area are typically lower.C-251Prior to the commencement of the construction of the passing place along Michelgrove Lane, these works areas will be visually checked to confirm that there are no karst solution features. In the unlikely event that features are identified then micro-siting would be carried out to avoid any features.C-252Where the light construction access track overlaps with part of an ephemeral pond near Cobden Farm, ground protection measures for accesses and haul routes and cross drainage will be considered to help minimise any potential interruption to flow pathways.C-253A water quality monitoring programme will be carried out at private water supplies in proximity of the Order Limits, for instance at Brookbam Farm, Suzy Smith Racing / Angmering Park Estate and Michelgrove for an appropriate period prior to during and post construction of the cable route. Further details of the monitoring regime will be discussed and agreed with ADC at the post DCO stage.C-250Strategies to minimise water use, such as water harvesting	Commitment ID	Measure Proposed
post-DCO application stage. This would be carried out to inform the exact siting and detailed design of the Transition Joint Bay and associated apparatus. In addition, this would inform a 'coastal erosion and future beach profile estimation assessment', which in turn would inform the need for and design of any further mitigation and adaptive measures to help minimise the vulnerability of these assets from future coastal erosion and tidal flooding.C-250The construction of the passing place upgrades along Michelgrove Lane will be programmed for Spring – Autumn (March – November) when groundwater levels in this area are typically lower.C-251Prior to the commencement of the construction of the passing places along Michelgrove Lane, these works areas will be visually checked to confirm that there are no karst solution features. In the unlikely event that features are identified then micro-siting would be carried out to avoid any features.C-252Where the light construction access track overlaps with part of an ephemeral pond near Cobden Farm, ground protection measures for accesses and haul routes and cross drainage will be considered to help minimise any potential interruption to flow pathways.C-253A water quality monitoring programme will be carried out at private water supplies in proximity of the Order Limits, for instance at Brookbam Farm, Suzy Smith Racing / Angmering Park Estate and Michelgrove for an appropriate period prior to during and post construction of the cable route. Further details of the monitoring regime will be discussed and agreed with ADC at the post DCO stage.C-250Strategies to minimise water use, such as water harvesting or recycling, will be employed at the onshore substation, to be specified at the detailed design stage. Any residual negligible<		
<ul> <li>Michelgrove Lane will be programmed for Spring – Autumn (March – November) when groundwater levels in this area are typically lower.</li> <li>C-251</li> <li>Prior to the commencement of the construction of the passing places along Michelgrove Lane, these works areas will be visually checked to confirm that there are no karst solution features. In the unlikely event that features are identified then micro-siting would be carried out to avoid any features.</li> <li>C-252</li> <li>Where the light construction access track overlaps with part of an ephemeral pond near Cobden Farm, ground protection measures for accesses and haul routes and cross drainage will be considered to help minimise any potential interruption to flow pathways.</li> <li>C-253</li> <li>A water quality monitoring programme will be carried out at private water supplies in proximity of the Order Limits, for instance at Brookbarn Farm, Suzy Smith Racing / Angmering Park Estate and Michelgrove for an appropriate period prior to during and post construction of the cable route. Further details of the monitoring regime will be discussed and agreed with ADC at the post DCO stage.</li> <li>C-260</li> <li>Strategies to minimise water use, such as water harvesting or recycling, will be employed at the onshore substation, to be specified at the detailed design stage. Any residual negligible water use will be further mitigated as part of a multitiered</li> </ul>	C-247	post-DCO application stage. This would be carried out to inform the exact siting and detailed design of the Transition Joint Bay and associated apparatus. In addition, this would inform a 'coastal erosion and future beach profile estimation assessment', which in turn would inform the need for and design of any further mitigation and adaptive measures to help minimise the vulnerability of these
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	C-260	recycling, will be employed at the onshore substation, to be specified at the detailed design stage. Any residual negligible water use will be further mitigated as part of a multitiered

<sup>5.10.3</sup> Further commitments relevant to the water environment are C-25 (Health, Safety and Environmental Management Systems Section 2.32.4), C-7, C-8, C-20, C-27, C-118, C-124, C-129, C-150, C-151, C-153, C-167 (General principles Section 4), C-33 (Landscape and visual Section 5.2), C-10 (Noise and vibration Section 5.4),

C-11 (Soils and agriculture **Section 5.5**), C-21 (Terrestrial ecology and nature conservation **Section 5.6**), C-18 (Transport **Section 5.7**) and C-19, C-76 (Ground conditions **Section 5.8**).

#### Management measures

<sup>5.10.4</sup> The following section provides details of embedded environmental measures that will be detailed in the stage specific CoCPs to manage impacts on the onshore water environment and to avoid unacceptable adverse effects including changes to flow volume, water levels, water quality and watercourse morphology due to construction.

#### Pollution prevention

- 5.10.5 All relevant good practice guidance (set out in **ES Chapter 26 Water Environment, Volume 2** (Document Reference: 6.2.26)) will be followed on site to avoid pollution. This includes, but is not limited to, the following:
  - Netregs Guidance for Pollution Prevention (GPPs) (Netregs, 2022); and
  - Environment Agency Pollution Prevention Guidance (PPG) Notes (2014).
  - The Environment Agency's Approach to Groundwater Protection (Environment Agency, 2017), updating its previous Groundwater protection: principles and practice (GP3, 2013);
  - Discharges to Surface Water and Groundwater: Environmental Permits (Environment Agency, 2021);
  - *Groundwater Activity Exclusions from Environmental Permits* (Environment Agency, 2018a);
  - *Groundwater Risk Assessment for your Environmental Permit* (Environment Agency, 2018b);
  - Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra), 2009);
  - CIRIA C648 Control of Water Pollution from Linear Construction projects: Technical Guidance (Construction Industry Research and Information Association (CIRIA), 2006);
  - CIRIA C741 Environmental Good Practice on Site (CIRIA, 2015);
- 5.10.6 Further details for prevention of pollution from storage and handling of fuel, oil and other hazardous substances is provided in **Section 4.9**.
- 5.10.7 A monitoring programme will be implemented to ensure that measures taken to protect the water environment are effective. This will include visual inspections to ensure that potential effects on River Arun and Adur tributaries (C-148) and PWSs in close proximity to the route (C-253) are appropriately monitored. Monitoring will also be carried out during trenchless crossing activities to ensure the risk of drilling fluid breakout (C234 - C236) is minimised. In the unlikely event of a pollution incident, pollution incident management procedures will be carried out in accordance with **Section 4.9**.

5.10.8 A watching brief will also be carried out to the north of Hammerpot to ensure that potential karstic solution features are appropriately identified and avoided by the temporary construction corridor (C-246).

#### Construction Phase Drainage Plan

<sup>5.10.9</sup> Details of construction phase drainage will be developed by the Contractor(s) and will be presented in a Construction Phase Drainage Plan and approved as part of the stage specific CoCP. This will be developed following detailed drainage investigations and hydrological assessments to determine potential location-specific risks in relation to the water environment and identify appropriate measures to avoid or reduce risk. Examples of mitigation measures that will be implemented to reduce risk to the water environment are described below. Details of the Construction Phase Drainage Plan will be subject to consultation with WSCC (and other relevant consenting authorities including the Environment Agency) prior to the start of construction.

#### Stand-off distances from watercourses

5.10.10 Stand-off distances will be maintained between watercourses and construction works, including stockpiling. Where possible, works within 8m (16m where navigable) of watercourse banktops will be avoided.

#### Flood Risk Activity Permits/Land Drainage Consents

- 5.10.11 Watercourse crossings will be subject to either a Flood Risk Activity Permit (FRAP) from the Environment Agency (for Main Rivers), Ordinary Watercourse / Land Drainage Consents (LDC) from WSCC (ordinary watercourses outside of the IDB district) or the Environment Agency (ordinary watercourses inside the IDB district).
- 5.10.12 FRAP / LDC will be obtained from the Environment Agency, and WSCC for all works within 8m of a Main River banktop (Environment Agency) or Main River flood defence (Environment Agency), 16m where tidal (Environment Agency), 8m for IDB watercourses and where works are proposed between the bank-tops of all other watercourses (WSCC). The FRAP / LDC applications will need to demonstrate measures are in place to maintain water quality and minimise effects on watercourse morphology and conveyance and ensure compliance with Water Framework Directive objectives. A FRAP will also be necessary for any works affecting the shingle sea defence at Climping as it provides a defence against tidal flooding, a FRAP will be required for any work on or within 16m of the toe of this feature.

#### Watercourse crossings

- 5.10.13 All watercourse crossings of Main Rivers and WFD River water bodies will be trenchless, with no need for associated haul road crossings, as set out within the Crossing Schedule set out in **Appendix A**.
- 5.10.14 Where the route is open cut, associated temporary haul culverts and watercourse crossings will be designed to minimise morphological and conveyance effects and

sized to maintain existing flow conveyance. Clear span bridges will be used for those watercourses too wide or deep to be crossed using culverts. Temporary haul road crossings over chalk streams along the headwater streams of the Black Ditch (crossing reference DTX-1d-14) and Honeybridge Stream (crossing reference STRX-1d-03) will be designed as clear span bridges (i.e. they will span the entire watercourse from bank top to bank top) to minimise disturbance of the channel and maintain water flowing along the watercourse.

#### Soil stockpiles

- 5.10.15 Soil stockpiles will be located at least 8m from all watercourses (16m from the River Arun on account of it being a tidal main river). Temporary soakaway ditches (as above) will be installed where required to capture sediment-laden runoff from soil stockpiles, with ditches installed adjacent to those stockpiles that are deemed to present a potential risk of runoff to water features. Silt fences may also be installed adjacent to soil stockpiles within the proposed DCO Order Limits where watercourses are in close proximity or downslope. With the exception of stockpiles with a lifetime of less than 6 months, where appropriate all stockpiles will be seeded to stabilise the surface and reduce the risk of erosion.
- 5.10.16 Breaks in soil stockpiles of 20m will be ensured at no greater than 80m intervals. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access roads, the gaps should coincide.

#### Structures in the floodplain

- 5.10.17 Access roads (and working areas) within the floodplain are to be as close to ground level as possible (a slight raise surface is often required to allow to for drainage). This is to minimise the loss of floodplain storage volumes associated with raised structures such as access roads, working areas and associated topsoil stockpiles (for example trackway will be used wherever practicable). Cross drainage will be provided as necessary at topographic low points.
- 5.10.18 At following specified locations, in the vicinity of identified receptors, no raised structures will be located within the floodplain and these will be included in the stage specific CoCP. Access roads and working areas will be 'at grade' and any associated stockpiles will be located outside of the floodplain. Locations are situated in the Arun valley and are indicated in Figure 26.2.7 of the Flood Risk Assessment (Document Reference: 6.4.26.2). Areas allocated for these stockpiles are shown the Works Plans Onshore (Document Reference: 2.2.2) under Works No. 11.

#### **Construction Compounds**

5.10.19 Temporary construction compound work areas will, in most cases, be constructed from compacted aggregate, which may allow some infiltration of incident rainfall. However, fuel storage areas in the construction compounds will be underlain by low permeability material to specifically exclude infiltration and ensure that any pollution incidents associated with spillages/leakages can be contained.

- 5.10.20 There may be a requirement to manage locally displaced surface runoff from works areas on to agricultural or other land. This will generally not be drained via a piped or open channel drainage system but will instead be allowed to infiltrate wherever possible. Infiltration trenches will be used to promote infiltration of locally displaced runoff where required. Further measures, such as silt fencing, will be installed to prevent runoff from disturbed areas from reaching watercourses where appropriate.
- <sup>5.10.21</sup> Prior to the utilisation of any existing piped drainage systems, the Contractor would investigate the suitability of such systems and replace elements or install additional measures, such as oil interceptors, where required. Detailed drainage strategies will be prepared for each compound, utilising SuDS principles for any areas requiring new drainage system. Drainage from areas not served by existing drainage systems will be designed in accordance with SuDS principles and at pre-development rates. SuDS measures may include attenuation storage; infiltration trenches / soakaways.
- 5.10.22 Discharge of site drainage to Controlled Waters may require an Environmental Permit from the Environment Agency. Any discharge to sewer will be subject to permit from the relevant sewage undertaker.

Discharges and permits

#### Approach to permitted discharges

- 5.10.23 An Environmental Permit from the Environment Agency in relation to the dewatering discharge activity will likely be required across localised parts of the proposed DCO Order Limits due to the presence of LWS, for instance. Elsewhere a permit may not be required, provided the exceptions as set out by the Environment Agency's regulatory position statement are met (Environment Agency, 2018a). Discharges will not be made without prior consent from the Environment Agency (or sewerage undertaker if discharges to sewer are proposed).
- 5.10.24 To ensure discharges are appropriately authorised, the following measures will be followed:
  - Consult with the appropriate consenting body (the Environment Agency for discharges to controlled waters, including rivers, other watercourses and soakaways and the local sewerage undertaker for discharges to sewer) before any discharge is expected to be required from the site and obtain a permit, or where a permit is not required, obtain written confirmation that one is not required;
  - ensure that any permitted discharge is sampled and analysed at the frequency specified in the permit to ensure compliance and that monitoring results are kept. More frequent analysis may be required if analytical results indicate that limits are being approached or exceeded; and
  - ensure that the consenting body is advised if results indicate that limits are being exceeded and report the occurrence as an incident in accordance with Section 4.9 of this Outline CoCP. Take immediate steps to rectify the situation;

check receiving water for pollution resulting from exceedance; carry out any remediation works necessary.

#### Groundwater dewatering discharges

- 5.10.25 No silty water will be discharged directly into any watercourse. Groundwater dewatered from excavations (e.g. trenches) will be discharged to adjacent grassed/vegetated agricultural land, away from watercourses as far as possible. Where there remains the potential for this water to runoff into nearby surface water features or agricultural land used for crops, additional measures will be put in place, which may include surrounding the discharge area (grassed / vegetated agricultural land) with sediment fencing or passing the silt-laden water through a Siltbuster or similar.
- <sup>5.10.26</sup> The discharge rate must match the rate of infiltration into the soil which will vary with the soil type, amount of vegetation cover and the gradient. If infiltration is not possible, and discharge to a watercourse is required, this will be subject to a permit from the Environment Agency and will be proactively managed to meet the permit conditions. If discharges are at rates that could cause erosion to bed or banks, appropriate erosion measures would be incorporated. Dewatering will cease if a Flood Alert or Flood Warning has been issued by the Environment Agency for an area downstream. The receipt of the Flood Alert/Warning and actions to be taken will be detailed in the ERP discussed further below.

#### Disposal of accumulated rainfall/surface water

- 5.10.27 Rainwater and surface water may accumulate in a number of locations on site, for example in uncovered bunds and drip trays. This has the potential to become contaminated. Measures to reduce this risk will be included in the stage specific Construction Phase Drainage Plan, such as:
  - bunds or drum pallets to be covered, where possible, to prevent the accumulation of rainwater. Where this is not possible, the below procedures will be followed;
  - interceptor type drip trays to be provided rather than standard drip trays (for locations where drip trays will be permanently in place) or plant nappies (for mobile plant);
  - if a standard drip tray or uncovered bund is used, the contractor will:
    - ensure it is regularly inspected (daily) and emptied either via tanker and disposed of immediately off site at an appropriately licensed facility (for large quantities) or to an on-site, bunded, storage facility for later off-site disposal (small quantities). The inspection frequency will increase during times of frequent rainfall;
    - check water from uncovered bunds for obvious signs of contamination (for example, visible oil and smells) in order that the correct disposal option can be identified;
    - ensure that only uncontaminated water is disposed of by draining it onto a grassed or stoned area on the site; and

 ensure that any oil present is absorbed using a spill kit and disposed of as Hazardous Waste.

#### Management of other sources of effluent

- In accordance with the GPPs and PPGs, other effluents may be produced that need to be properly managed and controlled in order to prevent contamination of surface water. The contractor will ensure that:
  - washing of equipment using detergent is carried out at commercial facilities only;
  - washing of vehicles and equipment without the use of detergent is only carried out at either commercial facilities, or at purpose-built on-site wash stations (provision of which will be at the contractor's discretion) where the water is contained for controlled disposal;
  - all foul effluent will be contained; and
  - the foul effluent container will be subject to daily inspection and a maintenance and emptying schedule as recommended by the manufacturer. The effluent will be removed by tanker and disposed of at a licensed facility.

Protection of controlled waters from leached contaminants

- 5.10.28 A preliminary risk assessment (desk study) has been undertaken during the design phase of the Proposed Development (see **Section 5.8** of this Outline CoCP for further details). The findings of this assessment have informed the ES and indicates that contamination risk to controlled waters is predominantly low. Confirmatory intrusive investigations would be undertaken prior to construction at Brookbarn Farm historic landfill. In the unlikely event that this identified a potential risk greater than that indicated by the desk study, then protection/remediation measures would be determined based on the specific ground conditions and agreed with the Environment Agency prior to construction. This process would be secured by the requirement in the **draft DCO** (Document Reference: 3.1) ensuring that controlled waters are protected from potentially contaminative ground conditions.
- 5.10.29 The installation of runoff control measures and ensuring that stockpiles are located away from watercourses, as discussed above, would further minimise the risk of contaminants arising from the excavation of contaminated land from reaching watercourses.

#### ERP and Flood Events

- 5.10.30 The ERP will include planning for Flood Events and will be prepared for all works stages located in Flood Zones 2 and 3. This will also cover those working areas that are accessed via Flood Zones 2 and/or 3, to/from which access/egress could be compromised during a flood event.
- 5.10.31 Details of emergency responses for the relevant stage of the works will be developed by the Contractor and included in the ERP. The plan will detail the procedure to be followed if flooding of the construction site is expected:

- personnel to evacuate the working areas at risk of flooding this is the primary safety consideration, and is the highest priority in the unlikely event that there is insufficient time to undertake the following activities;
- making the site safe prior to evacuation this would include appropriate storage of equipment and materials, securing items to prevent them being mobilised in, or causing pollution of flood water; and
- removal of critical plant and equipment from at risk areas this may be removal from access roads or working areas and could include raising critical items above the flood level or removing them from the floodplain completely to one of the main compounds.
- 5.10.32 To expedite response upon receiving an alert/warning, the following elements should be specified in the plan:
  - areas at risk of flooding should be clearly marked on site access plans, including details of Environment Agency Flood Warning Areas;
  - evacuation routes from flood risk areas should be clearly defined;
  - circumstances under which different responses would be implemented should be specified, with an escalation of response associated with increasing levels of danger. For example, a 'be prepared' alert may be raised upon receipt of an Environment Agency Flood Alert or a Met Office severe weather warning for heavy rain, followed by an 'evacuate' order upon receipt of an Environment Agency Flood Warning, or at the discretion of the site HSSE Manager, based upon an appraisal of local conditions; and those items of plant and equipment that could be left in-situ without risk of damage or causing pollution should be identified, together with those items that should be evacuated, provided sufficient notice is provided and it is safe to do so.
  - dewatering activities should be ceased when a Flood Alert or Flood Warning is received for an area downstream.
  - For any given area of construction, the flood response and evacuation plan for that area should be finalised before commencement of works on site. All personnel should be briefed on the contents of the plan as part of the site induction process.

## 5.11 Climate change

5.11.1 This section outlines management measures to be implemented to ensure construction works are conducted in a way that removes or reduces effects in respect to climate change.

## Commitments

5.11.2 **Table 5-10** details commitments specific to climate change that will be secured through this Outline CoCP. Other relevant commitments to climate change are listed beneath **Table 5-10** including references to relevant sections of this Outline CoCP other management plan). Further information on measures and their implementation is also provided.

Commitment ID	Measure Proposed
C-233	Construction activities will be planned through use of a Risk Assessment Method Statement (RAMS) alongside safety bulletins. Safety bulletins will include alerts for upcoming hot spells, rainfall events and high winds or storm events. The RAMS will put in place procedures in the case of extreme weather (high temperatures, extreme winds, flooding, wildfire risk). This may include altering the construction programme to delaying affected activities, changing shift patterns, Personal Protective Equipment (PPE), toolbox talks and alternative trackmatting (see <b>Proposed Development Parameters</b> (Document Reference: 6.4.4.2) for sensitive sections of construction areas.
C-240	It is anticipated that similar environmental measures to those embedded into the Proposed Development design for the construction phase would be implemented at the decommissioning phase. For example any material required for temporary infrastructure at decommissioning should be selected in accordance with the climate conditions at that time. The decommissioning phase would be subject to an onshore decommissioning plan, for approval by the local planning authority (DCO Requirement 16).
C-243	Fuel and energy consumption: Energy efficient and well-maintained plant and equipment should be used and as should mains electricity, if available, rather than diesel-fuelled portable generators. This will reduce GHG emissions from fuel and energy consumption.
C-244	Vehicle emissions: There are GHG emissions associated with construction traffic. Deliveries will be consolidated where possible and there should be 'no idling' vehicles. Sustainable modes of travel for the construction workforce will be encouraged.
C-248	Embodied Carbon: There are embodied GHG emissions associated with the raw materials used to construct the Proposed Development. Where possible, choice of local sourcing of construction should be encouraged. Circular economy principles will be considered and deployed where possible. Carbon measuring and reporting will be undertaken.

#### Table 5-10 Commitments relevant to Climate Change

5.11.3 Further commitments relevant to climate change are C-184, C-185 (Emergency Planning Procedures Section 4.8), C-193 (Landscape and Visual Section 5.2), C-24 (Air Quality Section 5.3, C-116 (Ground conditions Section 5.8) and C-73, C-230 (Water environment Section 5.10).

#### **Management measures**

5.11.4 As detailed in **Section 2.3** Contractor(s) will develop and implement an EMS which will form the basis and structure for undertaking environmental management



during the construction of the Proposed Development. This document will ensure that relevant measures and commitments made during the environmental impact assessment are adhered to.

5.11.5 Within the document C-243, C-244, C-248 will be incorporated, ensuring that appropriate measures are in place to reduce the GHGs from embodied carbon, construction processes and construction traffic. The EMS will also incorporate C-233 which will ensure that RAMS will consider extreme weather.

# 6. Glossary of terms and abbreviations

#### Definition Term (acronym) ALARP Reduced As Low As Reasonably Practicable **BPM Best Practicable Means** CCP Construction Communications Plan CDM Construction, Design and Management **CL:AIRE** Contaminated Land: Applications in Real Environments **Code of Construction** The code sets out the standards and procedures to which Practice (CoCP) developers and contractors must adhere to when undertaking construction of major projects. This will assist with managing the environmental impacts and will identify the main responsibilities and requirements of developers and contractors in constructing their projects. Contractor(s) Any contractor working on the construction of the Proposed Development. CPDP **Construction Phase Drainage Plan CTMP** Construction Traffic Management Plan **CTWP** Construction Workforce Travel Plan **DCO** Application An application for consent to undertake a Nationally Significant Infrastructure Project made to the Planning Inspectorate who will consider the application and make a recommendation to the Secretary of State, who will decide on whether development consent should be granted for the Proposed Development. Decommissioning The period during which a development and its associated processes are removed from active operation. dML **Deemed Marine Licence Development Consent** This is the means of obtaining permission for Order (DCO) developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.

#### Table 6-1 Glossary of terms and abbreviations



Term (acronym)	Definition
DMP	Dust Management Plan
DoWCoP	Definition of Waste Code of Practice
Easement	The easement refers to permanent statutory access agreements to the land under which the cables are laid.
ECoW	Ecological Clerk of Works
Embedded environmental measures	Equate to 'primary environmental measures' as defined by Institute of Environmental Management and Assessment (2016). They are measures to avoid or reduce environmental effects that are directly incorporated into the preferred masterplan for the Proposed Development.
EMS	Environmental Management System
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
Environmental measures	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible, remedy identified effects.
Environmental Statement (ES)	The written output presenting the full findings of the Environmental Impact Assessment.
EOC	Explosive Ordnance Clearance
ERPs	Emergency Response Plans
IAQM	Institute of Air Quality Management
IDB	Internal Drainage Board
ISO 14001	The international standard that specifies requirements for an effective environmental management system (EMS). It provides a framework that an organization can follow, rather than establishing environmental performance requirements.
FRA	Flood Risk Assessment
GPP	Guidance for Pollution Prevention
HGV	Heavy Goods Vehicle



Term (acronym)	Definition
Horizontal Directional Drill (HDD)	An engineering technique avoiding open trenches.
HRA	Habitat Regulations Assessment
HSSE	Health, Safety, Security and Environment
HVAC	High Voltage Alternating Current
ISO	International Organization for Standardization
JB	Joint Bay
kV	Kilovolt
LEMP	Landscape and Ecology Management Plan
MHWS	Mean High-Water Springs
ММР	Materials Management Plan
МРН	Miles Per Hour
Nationally Significant Infrastructure Project (NSIP)	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO. These include proposals for renewable energy projects with an installed capacity greater than 100MW.
NVMP	Noise and Vibration Management Plan
NRMM	Non-Road Mobile Machinery
NSR	Noise Sensitive Receptor
PICP	Pollution Incident Control Plan
PIRP	Pollution Incident Response Plan
PPE	Personal Protective Equipment
PPG	Pollution Prevention Guidance
PPPs	Pollution Prevention Plans
Principal Contractor(s)	As defined in the Construction (Design and Management) Regulations 2015 a "Principal Contractor is the contractor with control over the construction phase of a project involving more than one contractor. They are appointed in writing by the client to plan, manage, monitor and coordinate health and safety during this phase."



Term (acronym)	Definition
Proposed Development	The development that is subject to the application for development consent, as described in <b>Chapter 4: The Proposed Development, Volume 2</b> of the ES (Document Reference: 6.2.4).
PRoW	Public Rights of Way
PRoWMP	Public Rights of Way Management Plan
QP	Qualified Person
RAMS	Risk and Method Statements
RED	Rampion Extension Development Limited (the Applicant)
SDNPA	South Downs National Park Authority
Secretary of State (SoS)	The SoS of Business, Energy and Industrial Strategy oversees the planning system and decision making with regards to development consent for offshore wind farms. This agent works within the relevant government department relating to the application.
Section 61 consent	Section 61 of the Control of Pollution Act 1974. Prior consent from the local authority for works proposed to potentially cause a noise nuisance to agree working hours, noise levels and further mitigation measures.
SFAIRP	So Far As Is Reasonably Practicable
SMP	Soil Management Plan
SPZ	Source Protection Zone
SSWSI	Stage Specific Written Scheme of Investigation
SuDS	Sustainable Drainage Systems
SWMP	Site Waste Management Plan
ТЈВ	Transition Joint Bay
Unexploded Ordnance (UXO)	Unexploded ordnance are explosive weapons (bombs, shells, grenades, land mines, naval mines, etc.) that did not explode when they were deployed and still pose a risk of detonation, potentially many decades after they were used or discarded
WFD	Water Framework Directive



Term (acronym)	Definition
WSI	Written Scheme of Investigation
WSCC	West Sussex County Council
Wind Turbine Generators (WTGs)	The components of a wind turbine, including the tower, nacelle, and rotor.



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## Appendix A Crossing schedule

This schedule identifies the proposed crossing method of features for the onshore cable route from the landfall TJB to the onshore substation at Oakendene and onward to the existing National Grid Bolney substation. The crossing type and crossing construction method is presented for each crossing. The final crossing schedule will be provided in each stage specific CoCP as per the **draft Development Consent Order (DCO)** (Document Reference: 3.1) requirements.

PROW-1de-020.661501392101763Public Right of WayFootpath 173TrenchlessRDX-1de-010.764501366101860RoadFerry RoadTrenchlessDTX-1de-010.827501352101922Surface DrainSurface drainTrenchlessRDX-1de-020.986501316102077RoadA259TrenchlessPROW-1de-031.283501276102370Public Right of WayFootpath 168Open cutDTX-1de-021.441501259102528Surface DrainSurface drainOpen cut-	Ŭ	KP	U U	U U	Туре	Name	0		Approximate Length (m)
<b>RDX-1de-01</b> 0.764501366101860RoadFerry RoadTrenchlessTC-02400 <b>DTX-1de-01</b> 0.827501352101922Surface DrainSurface drainTrenchless <b>RDX-1de-02</b> 0.986501316102077RoadA259Trenchless <b>PROW-1de-03</b> 1.283501276102370Public Right of WayFootpath 168Open cut- <b>DTX-1de-02</b> 1.441501259102528Surface DrainSurface drainOpen cut-	PROW-1de-01	0.203	501137	101413	Public Right of Way	Footpath 174	Open cut	-	-
DTX-1de-01 $0.827$ $501352$ $101922$ Surface DrainSurface drainTrenchlessRDX-1de-02 $0.986$ $501316$ $102077$ RoadA259TrenchlessPROW-1de-03 $1.283$ $501276$ $102370$ Public Right of WayFootpath 168Open cut-DTX-1de-02 $1.441$ $501259$ $102528$ Surface DrainSurface drainOpen cut-	PROW-1de-02	0.661	501392	101763	Public Right of Way	Footpath 173	Trenchless		
<b>RDX-1de-02</b> 0.986501316102077RoadA259Trenchless <b>PROW-1de-03</b> 1.283501276102370Public Right of WayFootpath 168Open cut <b>DTX-1de-02</b> 1.441501259102528Surface DrainSurface drainOpen cut	RDX-1de-01	0.764	501366	101860	Road	Ferry Road	Trenchless	TC-02	400
PROW-1de-03         1.283         501276         102370         Public Right of Way         Footpath 168         Open cut         -         -           DTX-1de-02         1.441         501259         102528         Surface Drain         Surface drain         Open cut         -         -	DTX-1de-01	0.827	501352	101922	Surface Drain	Surface drain	Trenchless		
<b>DTX-1de-02</b> 1.441 501259 102528 Surface Drain Surface drain Open cut	RDX-1de-02	0.986	501316	102077	Road	A259	Trenchless		
	PROW-1de-03	1.283	501276	102370	Public Right of Way	Footpath 168	Open cut	-	-
DTX-1de-03 1.685 501235 102770 Surface Drain Surface drain Open cut	DTX-1de-02	1.441	501259	102528	Surface Drain	Surface drain	Open cut	-	-
	DTX-1de-03	1.685	501235	102770	Surface Drain	Surface drain	Open cut	-	-

#### Table 1-1 Crossing Schedule Landfall TJB to Onshore Substation

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
DTX-1de-04	1.881	501261	102960	Surface Drain	Surface drain	Open cut	-	-
TRX-1de-01	2.040	501320	103108	Track	Private Track	Trenchless		
PROW-1de-04	2.050	501324	103117	Public Right of Way	Footpath 206	Trenchless		
RVX-1de-01	2.079	501335	103144	Watercourse	River Arun	Trenchless	TC-03	400
DTX-1de-05	2.132	501355	103193	Surface Drain	Surface drain	Trenchless		
RLX-1de-01	2.235	501393	103289	Rail	Chichester - Littlehampton	Trenchless		
DTX-1de-06	2.598	501328	103628	Surface Drain	Surface drain	Open cut	-	-
DTX-1de-07	2.774	501263	103792	Surface Drain	Surface drain	Open cut	-	-
RLX-1de-02	3.205	501445	104148	Rail	Chichester - Worthing	Trenchless	TC-04	150
DTX-1de-08	3.275	501459	104217	Surface Drain	Black Ditch	Trenchless		
DTX-1de-09	3.479	501602	104346	Surface Drain	Surface drain	Open cut	-	-
DTX-1de-10	3.653	501770	104393	Surface Drain	Surface drain	Open cut	-	-
PROW-1de-05	4.384	502481	104554	Public Right of Way	Footpath 2165	Open cut	-	-
RDX-1de-03	4.438	502534	104559	Road	A284 Lyminster Road	Trenchless	TC-05	100

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
PROW-1de-06	4.660	502755	104581	Public Right of Way	Footpath 2163/1	Open cut	-	-
RDX-1de-04	4.985	503074	104645	Road	Lyminster Bypass	Trenchless	TC-06	150
PLX-1de-01	5.561	503644	104719	SGN Pipeline	SGN Pipeline	Open cut	-	-
PROW-1de-07	5.637	503699	104762	Public Right of Way	Bridleway 2163	Open cut	-	-
DTX-1de-11	6.068	503734	105183	Surface Drain	Surface drain	Open cut	-	-
DTX-1de-12	6.181	503824	105241	Surface Drain	Surface drain	Open cut	-	-
PROW-1de-08	6.185	503828	105241	Public Right of Way	Footpath 2202/1	Open cut	-	-
DTX-1de-13	6.628	504269	105272	Surface Drain	Surface drain	Open cut		-
RDX-1de-05	7.015	504634	105379	Road	Polling Street	Trenchless	TC-07	100
PROW-1de-09	7.256	504875	105375	Public Right of Way	Footpath 2200	Open cut	-	-
DTX-1de-14	7.430	505049	105372	Surface Drain	Surface drain	Open cut	-	-
PROW-1de-10	7.960	505517	105534	Public Right of Way	Footpath 2199	Open cut	-	-
STRX-1de-01	8.177	505714	105590	Watercourse	Stream	Trenchless	TC-08	100
PROW-1de-11	8.184	505721	105591	Public Right of Way	Footpath 2198	Trenchless		

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
WLX-1de-01	8.499	506018	105509	Woodland	Mature planting alongside Decoy Lane	Trenchless		
RDX-1de-06	8.515	506034	105509	Road	Decoy Lane	Trenchless	TC-09	100
WLX-1de-02	8.540	506059	105510	Woodland	Mature planting alongside Decoy Lane	Trenchless		
PROW-1de-12	8.776	506235	105655	Public Right of Way	Footpath 2176	Open cut	-	-
RDX-1de-07	8.925	506327	105758	Road	A27	Trenchless	TC-10	150
PROW-1de-13	9.117	506468	105860	Public Right of Way	Footpath 2190	Open cut	-	-
PROW-1de-14	9.379	506720	105932	Public Right of Way	Bridleway 2188	Trenchless		
WLX-1de-03	9.386	506727	105934	Woodland	Mature planting alongside lane/footpath	Trenchless	TC-11	100
TRX-1de-02	10.309	506978	106742	Track	Private Track	Open cut	-	-
PROW-1de-15	10.310	506978	106743	Public Right of Way	Bridleway 2208	Open cut	-	-
PROW-1de-16	10.490	506978	106923	Public Right of Way	Footpath 2174/1	Open cut	-	-
TRX-1de-03	10.633	507028	107050	Track	Private Track	Open cut	-	-

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
TRX-1de-04+	11.762	507500	108029	Track	Private Track	Trenchless		
PROW-1de-17+	11.762	507500	108029	Public Right of Way	Bridleway 2180/1	Trenchless		
TRX-1de-05+	11.885	507568	108131	Track	Private Track	Trenchless		
PROW-1de-18+	11.920	507570	108134	Public Right of Way	Footpath 2210	Trenchless		
TRX-1de-06 +	11.938	507603	108184	Track	Private Track	Trenchless	TC-12	450
PROW-1de- 18a+	11.940	507570	108134	Public Right of Way	Monarch's Way bridleway 2175	Trenchless		
PROW-1de-19+	11.957	507604	108186	Public Right of Way	Footpath 2211/1	Trenchless		
WLX-1de-04+	11.982	507621	108212	Woodland	Michelgrove Park	Trenchless		
SLX-1de-01+	12.088	507680	108301	Terrain	Michelgrove Park	Trenchless		
TRX-1de-07+	12.298	507794	108477	Track	Private Track	Open cut	-	-
TRX-1de-08+	12.620	507963	108751	Track	Private Track	Open cut	-	-
TRX-1de-09	12.835	508165	108750	Track	Private Track	Open cut	-	-
RDX-1de-08	12.981	508308	108723	Road	Private Road	Open cut	-	-
PROW-1de-20	12.982	508309	108723	Public Right of Way	Bridleway 2208	Open cut	-	-
TRX-1de-10	13.518	508779	108840	Track	Private Track	Open cut	-	-

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
PROW-1de-21	13.533	508787	108853	Public Right of Way	Footpath 2260/1	Open cut	-	_
TRX-1de-11	13.849	508853	109182	Track	Private Track	Open cut	-	-
PROW-1de-22	13.869	508857	109201	Public Right of Way	Footpath 2262	Open cut	-	-
TRX-1de-12	14.967	509232	110179	Track	Private Track	Open cut	-	-
PROW-1de-23	14.971	509233	110184	Public Right of Way	Bridleway 2173	Open cut	-	-
TRX-1de-13	15.727	509343	110918	Track	Private Track	Open cut	-	-
TRX-1de-14*	16.577	509721	111574	Track	Private Track	Open cut	-	-
PROW-1de-24*	16.578	509722	111575	Public Right of Way	Restricted Byway 2092	Open cut	-	-
PLX-1de-02*	16.761	509795	111714	SGN Pipeline	SGN Pipeline	Open cut (or trenchless depending on crossing location within HDD Limit of Deviation)	-	-
PROW-1de-25*	16.780	509794	111733	Public Right of Way	Restricted Byway 2693	Trenchless	TC-15	350

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
WLX-1de-05*	16.990	509786	111943	Woodland	Sullington Hill LWS	Trenchless		
TRX-1de-15	17.637	510213	112326	Track	Private track	Open cut	-	-
TRX-1de-16	18.087	510515	112658	Track	Private Track	Open cut	-	-
PROW-1de-27	18.601	510969	112842	Public Right of Way	Bridleway 2665	Open cut	-	-
TRX-1de-17	18.601	510970	112842	Track	Private track	Open cut	-	-
TRX-1de-18	18.870	511114	113064	Track	Private track	Open cut	-	-
PROW-1de-28	19.150	511377	113139	Public Right of Way	Bridleway 2697	Open cut	-	-
TRX-1de-19	19.150	511377	113139	Track	Private track	Open cut	-	-
RDX-1de-09	19.627	511854	113139	Road	A24	Trenchless		
PROW-1de-29	19.663	511890	113139	Public Right of Way	Footpath 2698	Trenchless		
RDX-1de-10	19.982	512209	113140	Road	London Road	Trenchless	TC-16	550
RDX-1de-11	20.016	512243	113140	Road	A283	Trenchless		
STRX-1de-02	20.081	512308	113140	Watercourse	Stream	Trenchless		
PROW-1de-30	20.208	512433	113128	Public Right of Way	Footpath 2701	Open cut	-	-
DTX-1de-15	20.301	512520	113095	Surface Drain	Surface drain	Trenchless	TC-17	200

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
RDX-1de-12	20.342	512558	113080	Road	A283	Trenchless		
TRX-1de-20	20.385	512598	113065	Track	Private track	Trenchless		
TRX-1de-21	20.468	512679	113064	Track	Private track	Open cut	-	-
PROW-1de-31	20.642	512840	113130	Public Right of Way	Bridleway 2703	Open cut	-	-
TRX-1de-22	20.644	512842	113131	Track	Private track	Open cut	-	-
TRX-1de-23	21.393	513497	113375	Track	Private track	Open cut	-	-
DTX-1de-16	21.559	513317	113360	Surface Drain	Surface drain	Open cut	-	-
STRX-1de-03	21.848	513950	113415	Watercourse	Stream	Open cut	-	-
STRX-1de-04	22.016	514073	113491	Watercourse	Stream	Trenchless	TC-18	200
RDX-1de-13	22.028	514074	113503	Road	A283	Trenchless	10-10	200
RDX-1de-14	22.567	514403	113778	Road	Water Lane	Trenchless	TC-19	200
STRX-1de-05	22.615	514450	113787	Watercourse	Stream	Trenchless	10-19	200
PROW-1de-32	22.833	514664	113830	Public Right of Way	Footpath 2710	Open cut	-	-
PROW-1de-33	23.152	514980	113867	Public Right of Way	Bridleway 2711	Open cut	-	-
TRX-1de-24	23.152	514980	113867	Track	Private track	Open cut	-	-

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
PLX-1de-03	23.252	515080	113865	SGN Pipeline	SGN Pipeline	Open cut	-	
DTX-1de-17	23.405	515233	113861	Surface Drain	Surface drain	Open cut	-	-
STRX-1de-06	23.920	515676	113991	Watercourse	Stream	Open cut	-	-
TRX-1de-25	24.232	515877	114202	Track	Private track	Open cut	-	-
PROW-1de-34	24.236	515880	114204	Public Right of Way	Footpath 2514	Open cut	-	-
TRX-1de-26	25.012	516529	114623	Track	Private track	Open cut	-	-
PROW-1de-35	25.014	516531	114624	Public Right of Way	Bridleway 2594	Open cut	-	-
PROW-1de-36	25.607	517103	114773	Public Right of Way	Bridleway 2589/1	Open cut	-	-
STRX-1de-07	25.942	517259	115007	Watercourse	Stream	Trenchless		
WLX-1de-07	26.033	517347	115031	Woodland	Calcot Wood	Trenchless	TC-20	350
RDX-1de-15	26.166	517475	115066	Road	Spithandle Lane	Trenchless	10-20	330
STRX-1de-08	26.198	517506	115075	Watercourse	Stream	Trenchless		
STRX-1de-09	27.135	517894	115627	Watercourse	Stream	Trenchless	TC-21	200
RDX-1de-16	27.191	517936	115664	Road	B2135	Trenchless		
PROW-1de-37	27.806	518211	116178	Public Right of Way	Footpath 2519	Open cut	-	-

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
TRX-1de-27	27.815	518214	116186	Track	Private Track	Open cut	-	-
PROW-1de-38	28.226	518533	116421	Public Right of Way	Footpath 2520	Open cut	-	-
STRX-1de-10	28.292	518554	116488	Watercourse	Stream	Open cut	-	-
PLX-1de-04	28.321	518561	116519	SGN Pipeline	SGN Pipeline	Open cut	-	
STRX-1de-11	28.439	518590	116634	Watercourse	Stream	Open cut	-	-
TRX-1de-28	28.610	518655	116792	Track	Private track	Trenchless	TC-22	150
PROW-1de-39	28.614	518656	116796	Public Right of Way	Footpath 2519	Trenchless		
STRX-1de-12	28.973	518795	117127	Watercourse	Stream	Open cut	-	-
DTX-1de-18	29.183	518960	117235	Surface Drain	Surface drain	Trenchless		
RVX-1de-02	29.260	519034	117257	Watercourse	River Adur	Trenchless	TC-23	350
DTX-1de-19	29.315	519086	117273	Surface Drain	Surface drain	Trenchless		
DTX-1de-20	29.829	519549	117488	Surface Drain	Surface drain	Open cut	-	-
TRX-1de-29	30.264	519791	117834	Track	Disused railway line	Open cut	-	-
PROW-1de-40	30.267	519792	117836	Public Right of Way	Bridleway 3514	Open cut	-	-
PLX-1de-05	30.281	519798	117849	SGN Pipeline	SGN Pipeline	Open cut	-	

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
STRX-1de-13	30.303	519803	117871	Watercourse	Stream	Open cut	-	-
PROW-1de-41	30.589	519702	118133	Public Right of Way	Footpath 2374	Open cut	-	-
STRX-1de-14	30.780	519678	118322	Watercourse	Stream	Open cut	-	-
PROW-1de-42	31.342	519894	118829	Public Right of Way	Footpath 1841	Open cut	-	-
STRX-1de-15	31.811	519925	119296	Watercourse	Stream	Open cut	-	-
RDX-1de-17	31.900	519963	119373	Road	B2116	Open cut	-	-
STRX-1de-16	32.159	520204	119427	Watercourse	Stream	Open cut	-	-
RDX-1de-18	33.168	520890	120047	Road	A281	Trenchless	TC-24	100
TRX-1de-30	33.562	521237	120230	Track	Private track	Open cut	-	-
STRX-1de-17	34.232	521752	120623	Watercourse	Stream	Trenchless	TC-25	100
PROW-1de-43	34.419	521824	120795	Public Right of Way	Footpath 1781	Open cut	-	-
PROW-1de-44	34.635	521938	120978	Public Right of Way	Footpath 1776/1	Open cut	-	-
STRX-1de-18	34.976	522203	121181	Watercourse	Cowfold Stream	Trenchless	TC-26	200
TRX-1de-31	35.193	522381	121303	Track	Private track	Open cut	-	-
PROW-1de-45	35.196	522383	121305	Public Right of Way	Footpath 1782	Open cut	-	-

Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
PROW-1de-46	35.374	522544	121374	Public Right of Way	Footpath 1783	Open cut	-	-
STRX-1de-19	35.673	522808	121488	Watercourse	Stream	Open cut	-	-
TRX-1de-32	35.810	522819	121624	Track	Private track	Open cut	-	-
PROW-1de-47	35.812	522820	121626	Public Right of Way	Bridleway 1730	Open cut	-	-
TRX-1de-33	36.189	523043	121915	Track	Private track	Open cut	-	-
PROW-1de-48	36.189	523044	121915	Public Right of Way	Footpath 1787	Open cut	-	-
STRX-1de-20	36.419	523046	122143	Watercourse	Stream	Trenchless	TC-27	100

\* Flexibility at the top of Sullington Hill may result in these crossings being replaced in accordance with those listed below in **Table 1-2**, subject to ground investigation and detailed design.

+ Flexibility at Michelgrove may result in these crossings being replaced in accordance with those listed below in **Table 1-3**, subject to ground investigation and detailed design.

Table 1-2	Crossing	references for t	flexibility a	at Sullington Hill
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Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
PLX-1dw-02	16.365	509348	111550	SGN Pipeline	SGN Pipeline	Open cut	-	-
TRX-1dw-13	16.514	509258	111667	Track	Private Track	Open cut	-	-
PROW-1dw-24	16.514	509258	111667	Public Right of Way	Bridleway 2282/1	Open cut	-	-
TRX-1dw-14	16.695	509152	111810	Track	Private Track	Open cut	-	-
PROW-1dw-25	16.702	509151	111816	Public Right of Way		Open cut	-	-
TRX-1dw-15	16.912	509233	111972	Track	Private Track	Open cut	-	-
PLX-1dw-03	17.090	509410	111996	SGN Pipeline	SGN Pipeline	Trenchless		
PROW-1dw-26	17.187	509506	112007	Public Right of Way	Bridleway 2282	Trenchless		
PROW-1dw-27	17.192	509511	112008	Public Right of Way	Bridleway 2688	Trenchless	TC-15	350
TRX-1dw-16	17.216	509535	112011	Track	Private track	Trenchless		
PROW-1dw-28	17.217	509536	112011	Public Right of Way	Bridleway 2108/1	Trenchless		
SLX-1dw-02	17.273	509591	112017	Terrain	Sullington Hill LWS	Trenchless		

## Table 1-3 Crossing references for flexibility at Michelgrove

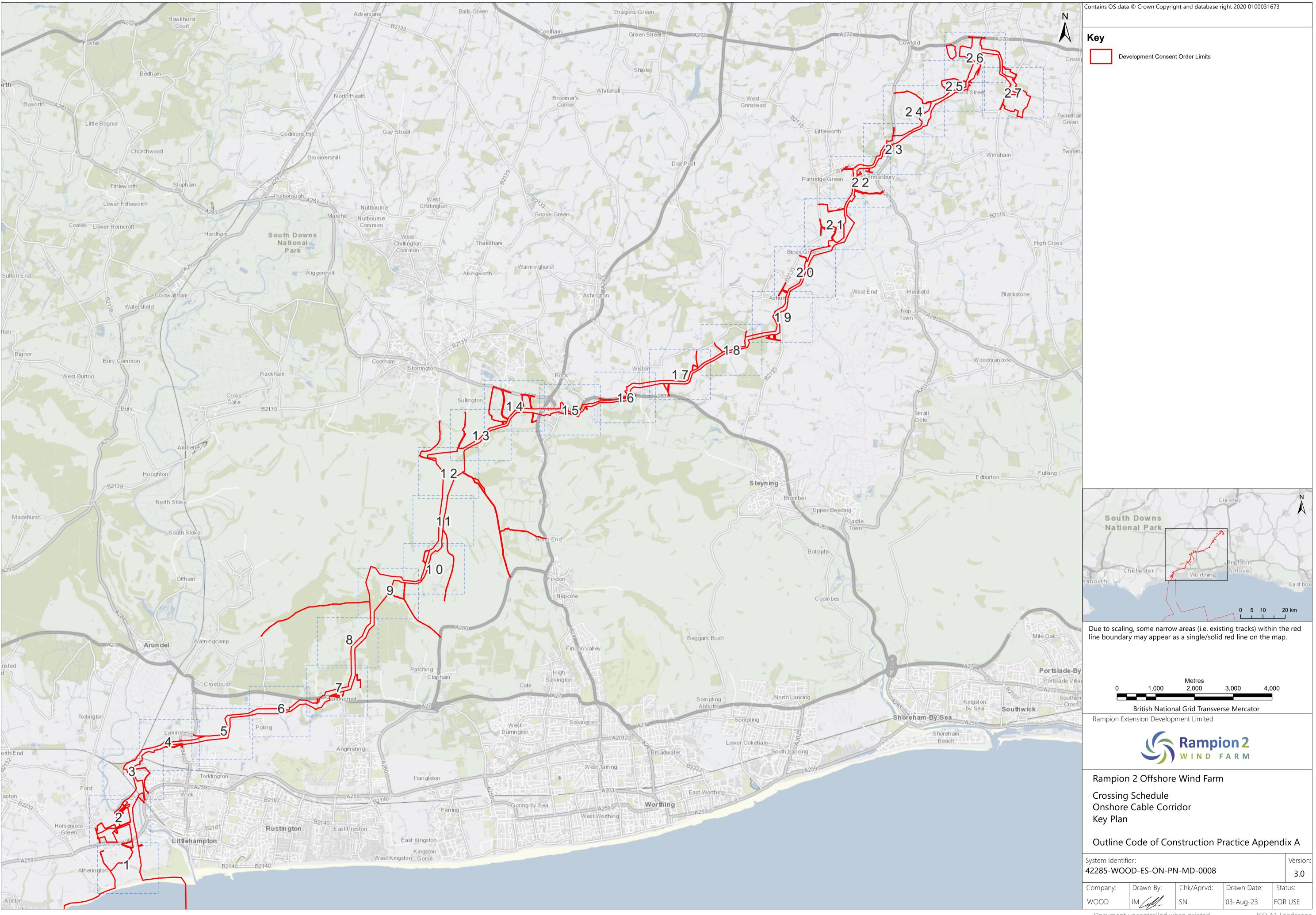
Crossing Reference	КР	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
TRX-1dx-01	11.817	507473	108093	Track	Private Track	Trenchless		
TRX-1dx-02	11.854	507475	108130	Track	Private Track	Trenchless		
WLX-1dx-01	11.879	507477	108156	Woodland	Woodland	Trenchless	40 - /h	200
TRX-1dx-03	11.931	507479	108207	Track	Private Track	Trenchless	12a/b	300
PROW-1dx- 01	11.933	507479	108208	Public Right of Way	Monarch's Way bridleway 2211	Trenchless		
PROW-1dx- 02	12.073	507510	108329	Public Right of Way	Bridleway 2175	Trenchless		
TRX-1dx-04	12.076	507513	108330	Track	Private Track	Trenchless		
TRX-1dx-05	12.152	507587	108349	Track	Private Track	Trenchless	12b	250
WLX-1dx-02	12.164	507599	108351	Woodland	Woodland	Trenchless		
SLX-1dx-01	12.182	507615	108356	Terrain	Michelgrove Park	Trenchless		

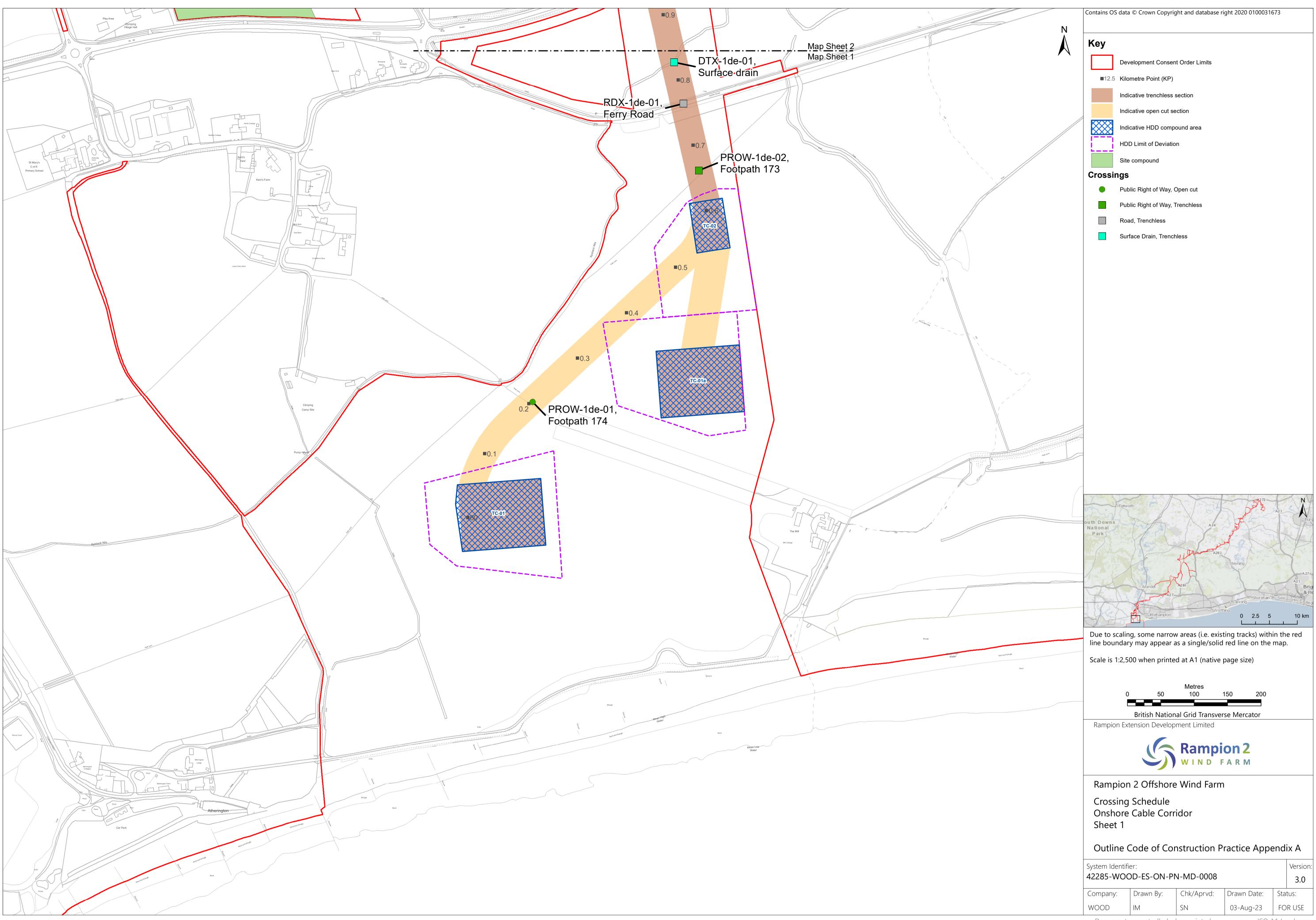
Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless Reference	Approximate Length (m)
WLX-1dx-03	12.173	507438	108441	Woodland	Woodland	Trenchless	12b/c	350
TRX-1dx-06	12.479	507380	108730	Track	Private Track	Trenchless		
PROW-1dx- 03	12.481	507380	108732	Public Right of Way	Bridleway 2175	Trenchless	12c/d	250
SLX-1dx-02	12.556	507407	108802	Terrain	Michelgrove Park	Trenchless	120/U	
TRX-1dx-07	12.597	507422	108841	Track	Private Track	Trenchless		

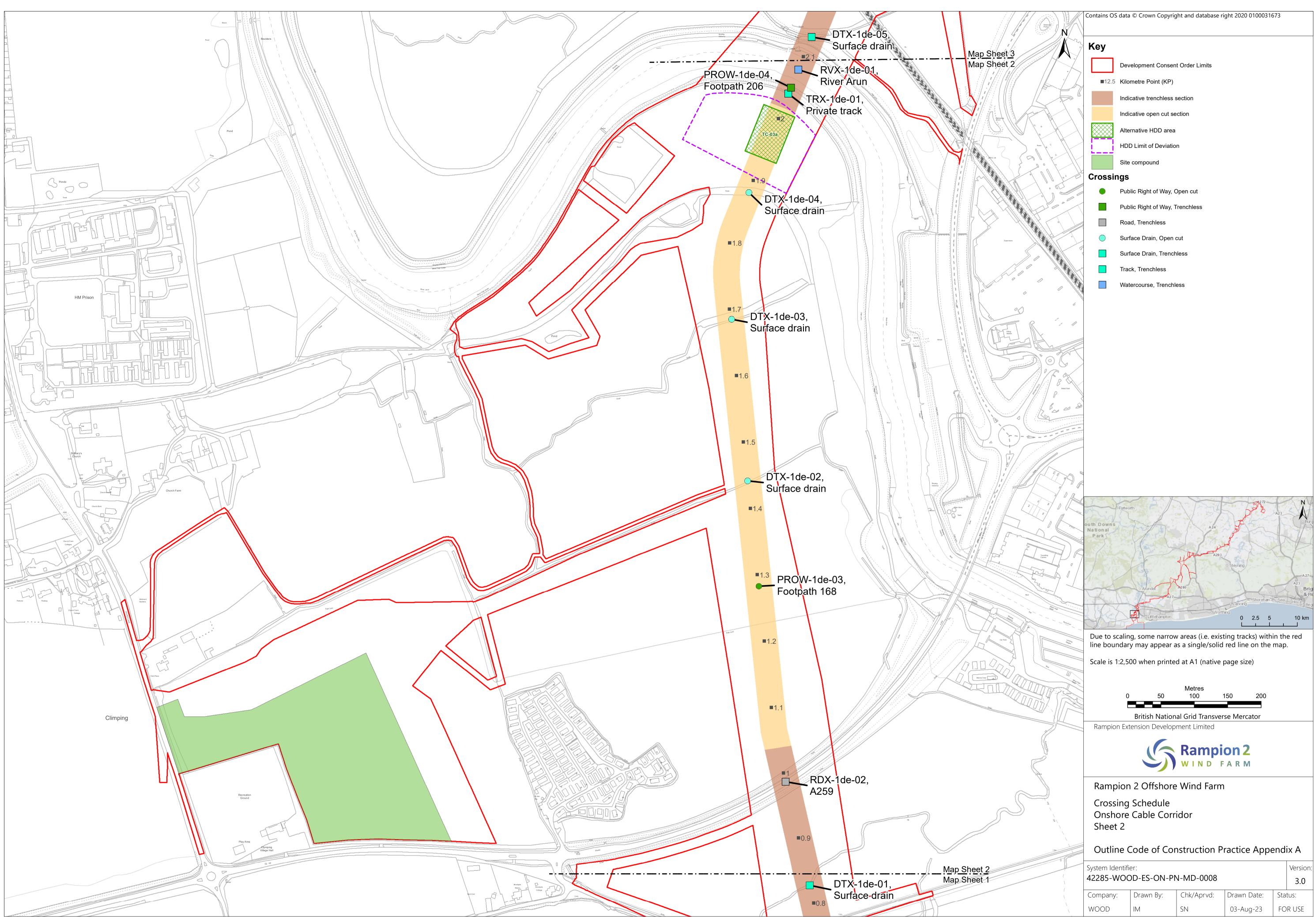
## Table 1-4 Crossing Schedule Onshore Substation to National Grid Bolney Substation

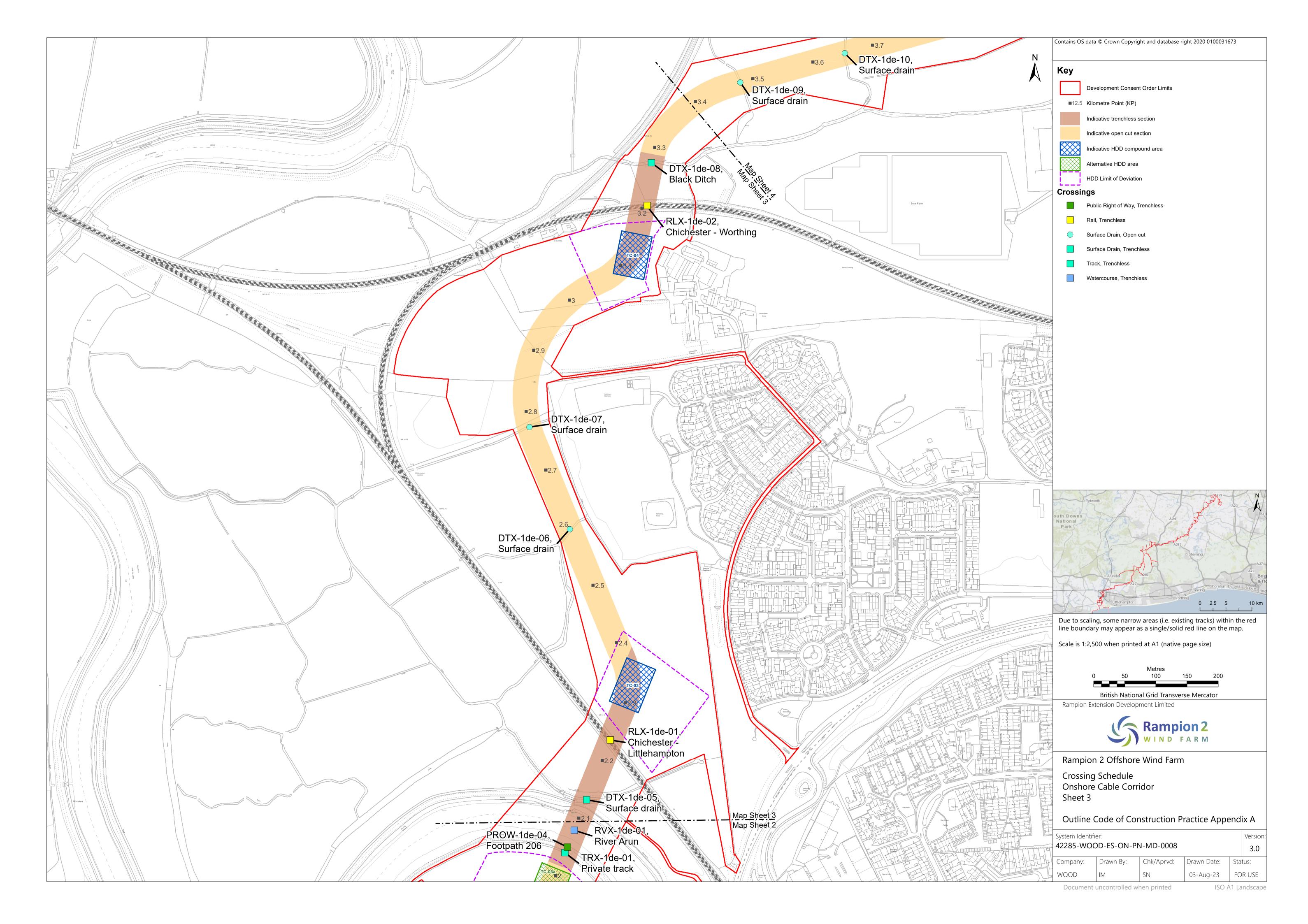
Crossing Reference	KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless reference	Approximate Length (m)
RDX-OD-01	0.060	523160	122419	Road	Kent Street	Trenchless	TC-28	150
STRX-OD-01	0.395	523492	122378	Watercourse	Stream	Open cut	-	-
TRX-OD-01	0.703	523694	122184	Track	Private track	Open cut	-	-
PROW-OD- 01	0.860	523697	122027	Public Right of Way	Footpath 1789	Open cut	-	-

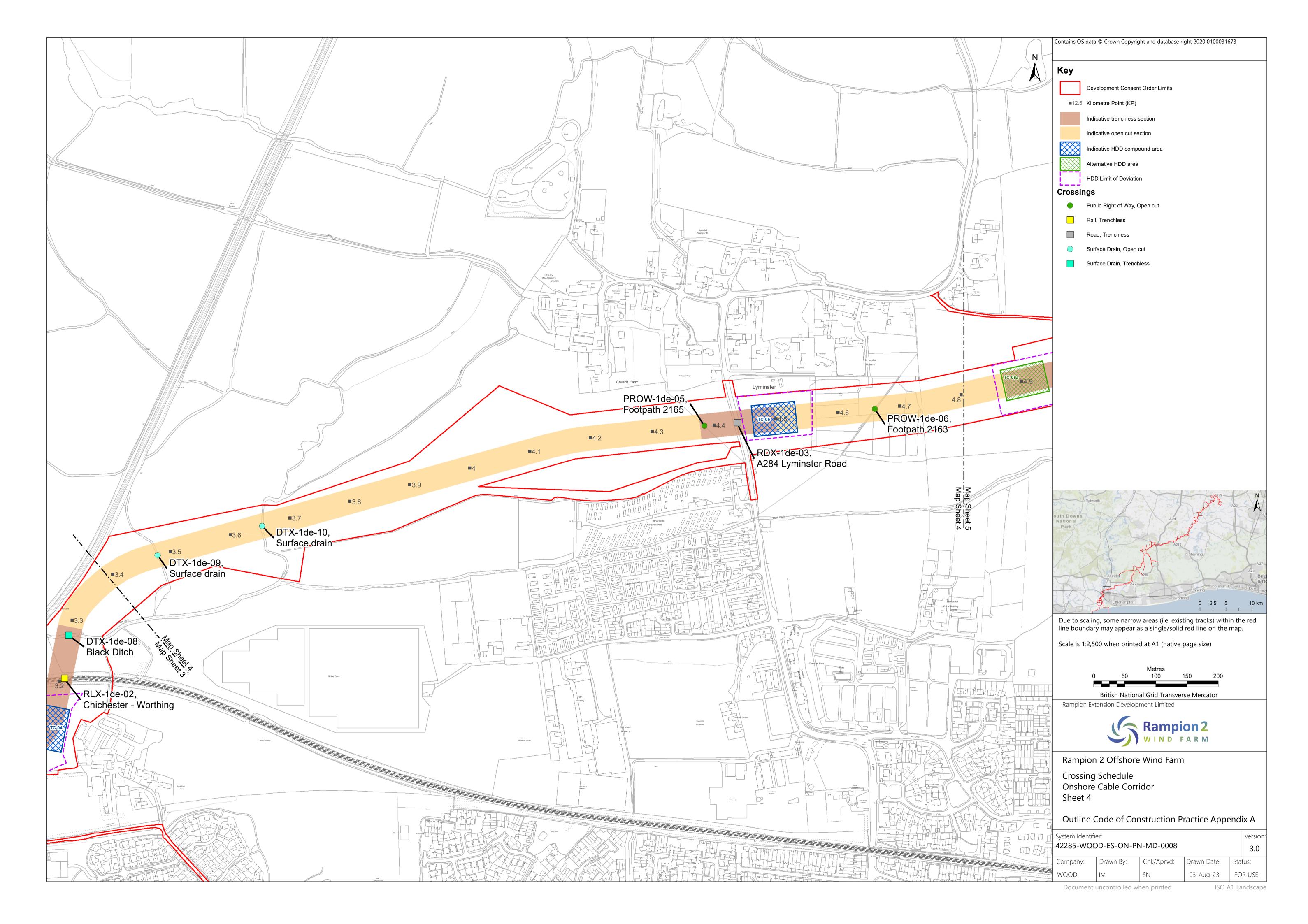
Crossino Referenc	· KP	Easting (OSGB)	Northing (OSGB)	Туре	Name	Crossing Method	Trenchless reference	Approximate Length (m)
TRX-OD-0	<b>02</b> 0.988	523685	121902	Track	Private track	Open cut	-	-
TRX-OD-0	<b>3</b> 1.022	523681	121869	Track	Private track	Open cut	-	-
TRX-OD-0	<b>1.358</b>	523961	121640	Track	Private driveway	Trenchless		
WLX-OD-(	<b>)1</b> 1.427	523991	121613	Woodland	Mature planting alongside Wineham Lane	Trenchless	TC-29	200
RDX-OD-0	<b>)2</b> 1.437	523998	121608	Road	Wineham Lane	Trenchless		
STRX-OD-	<b>02</b> 1.676	524122	121399	Watercourse	Stream	Open cut	-	-
PROW-OI 02	<b>D-</b> 1.706	524151	121392	Public Right of Way	Footpath 1T	Open cut	-	-
DTX-OD-0	<b>1</b> 1.878	524299	121306	Surface Drain	Proposed drain	Open cut	-	-

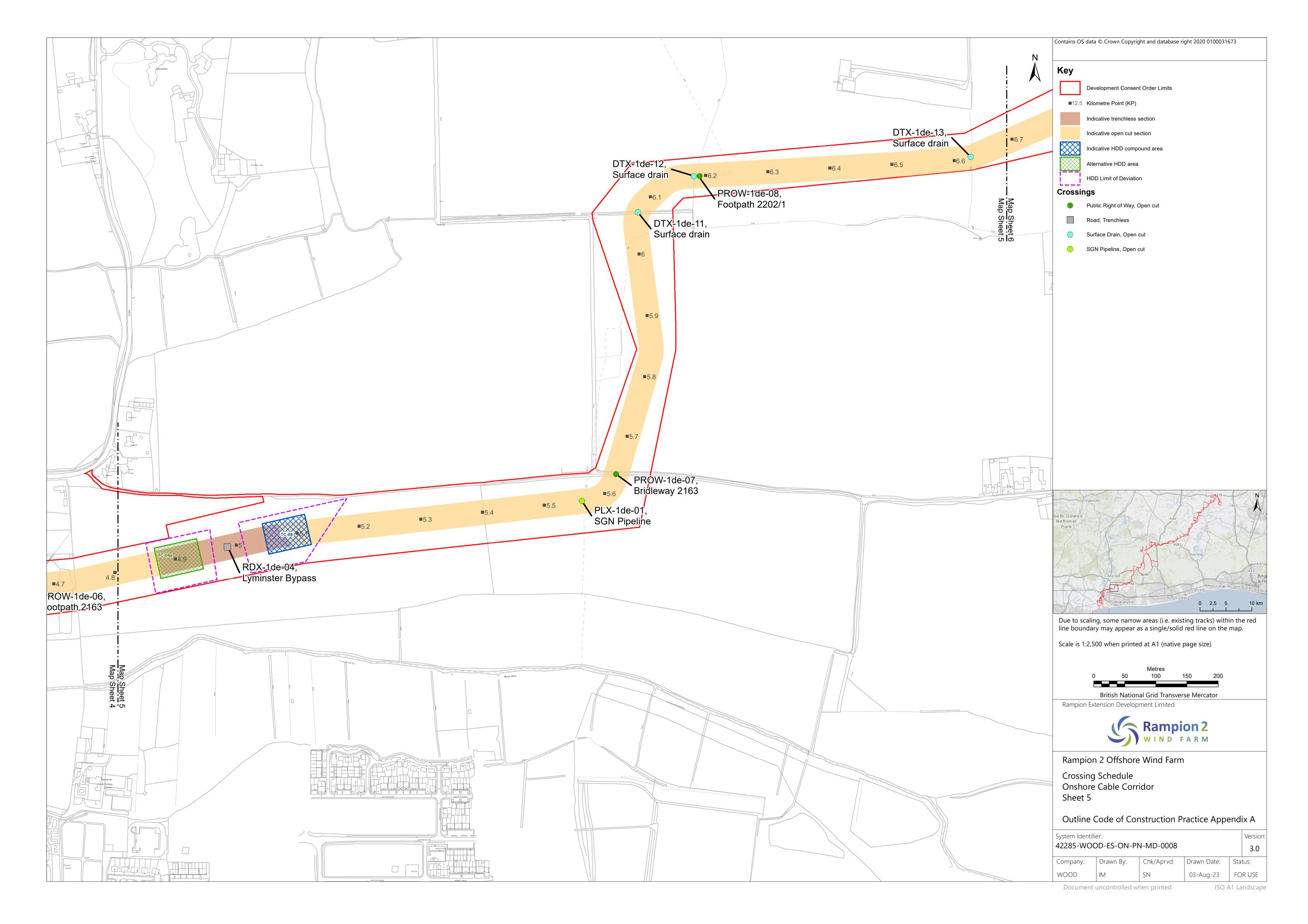


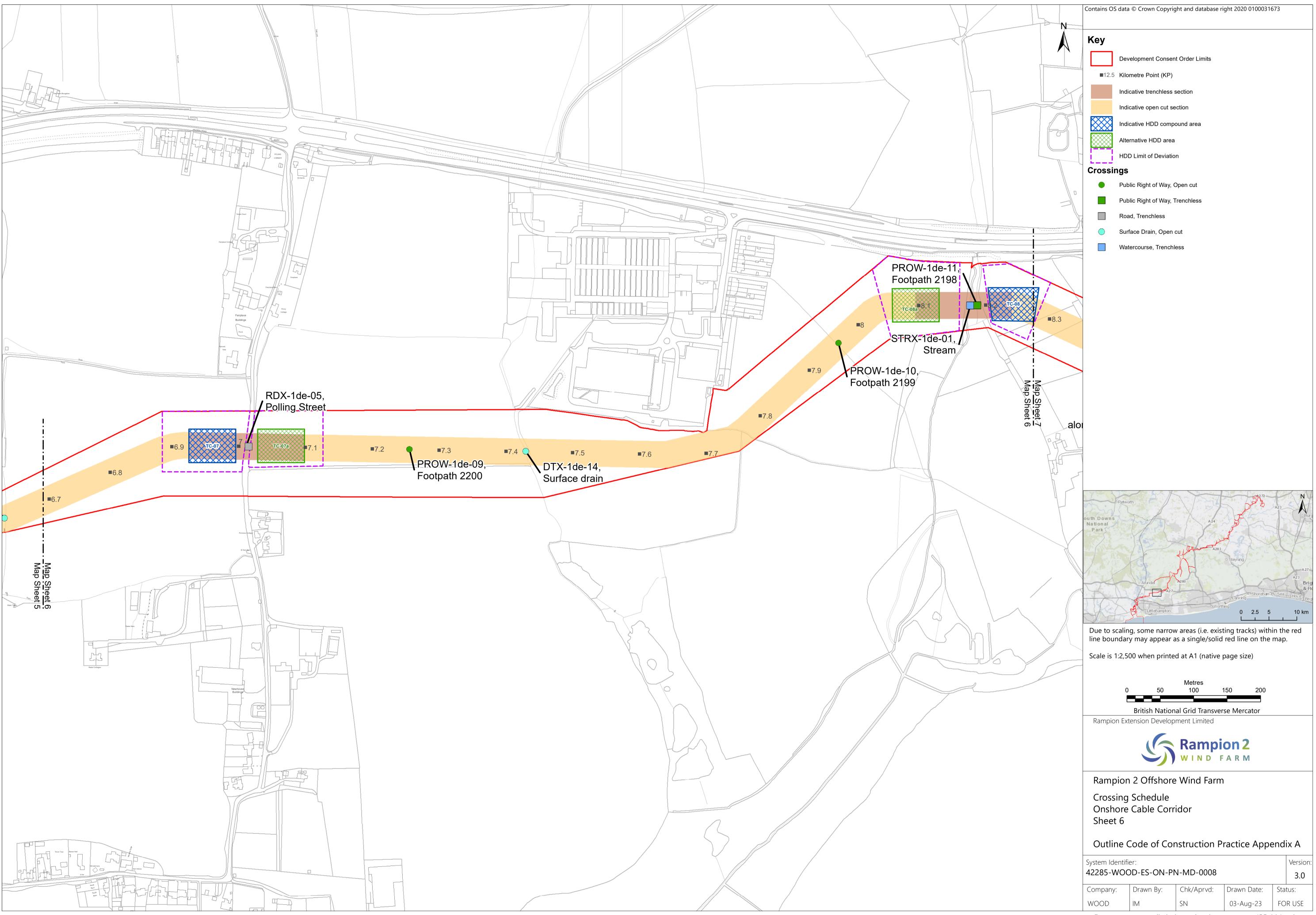


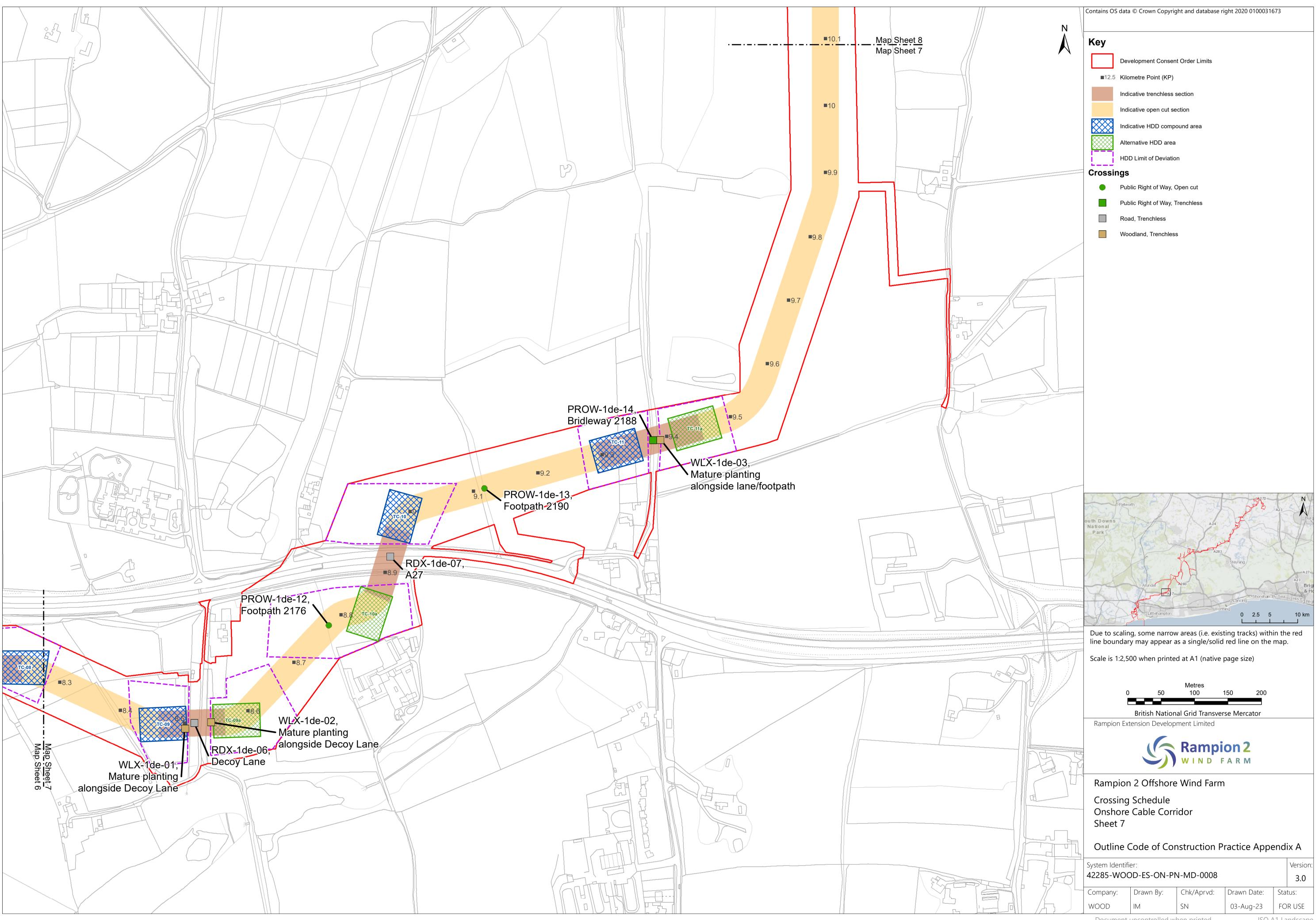


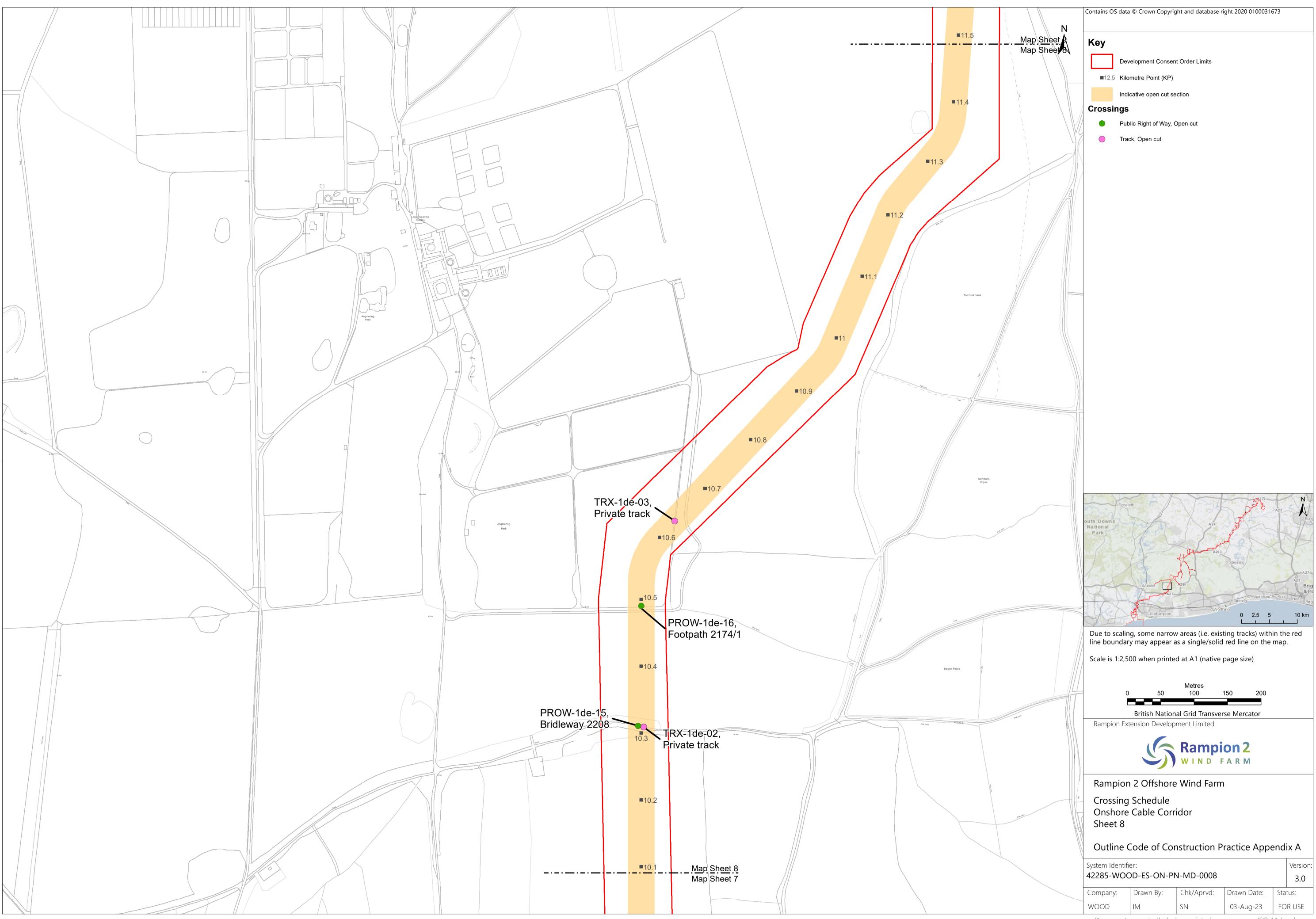




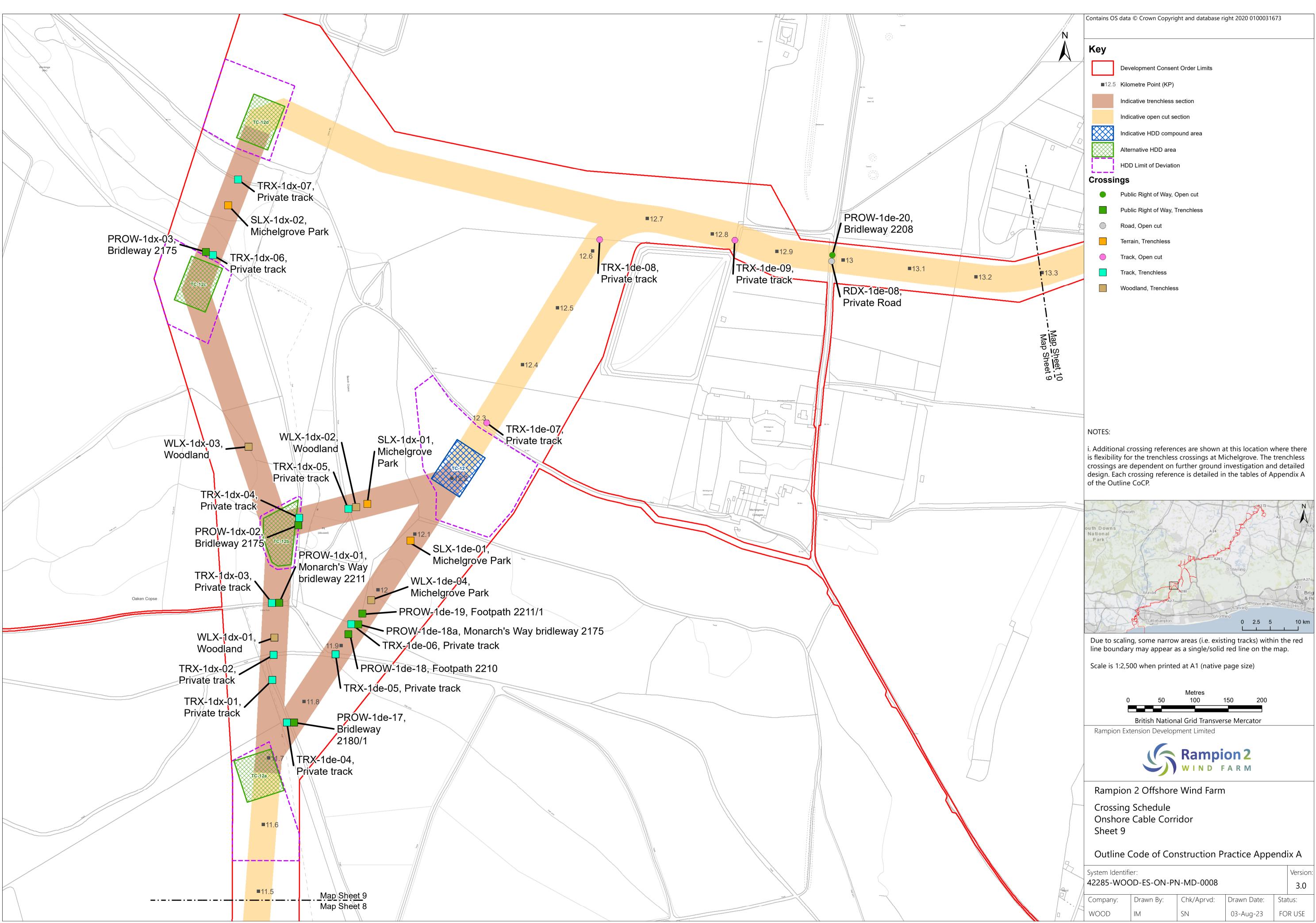


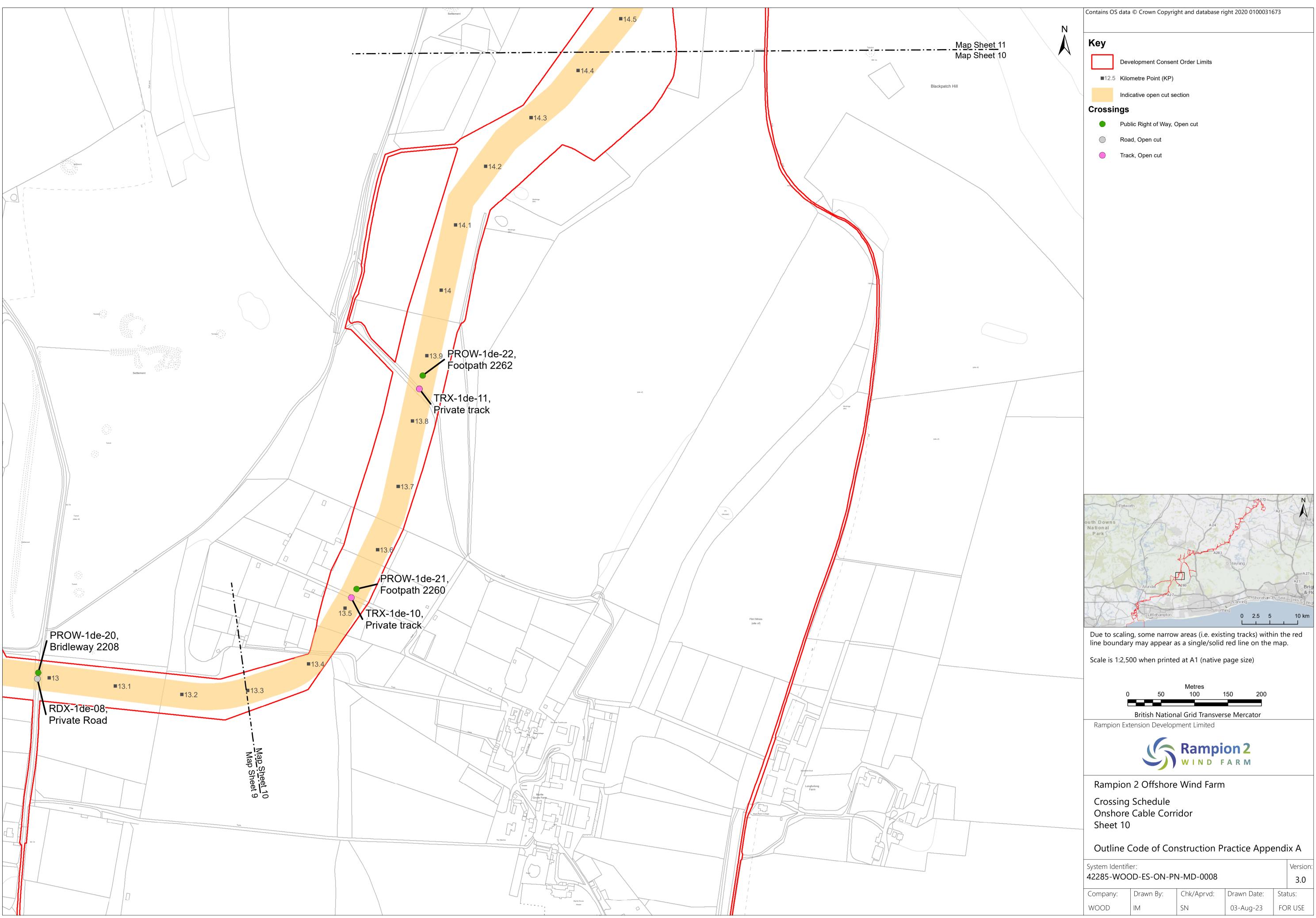


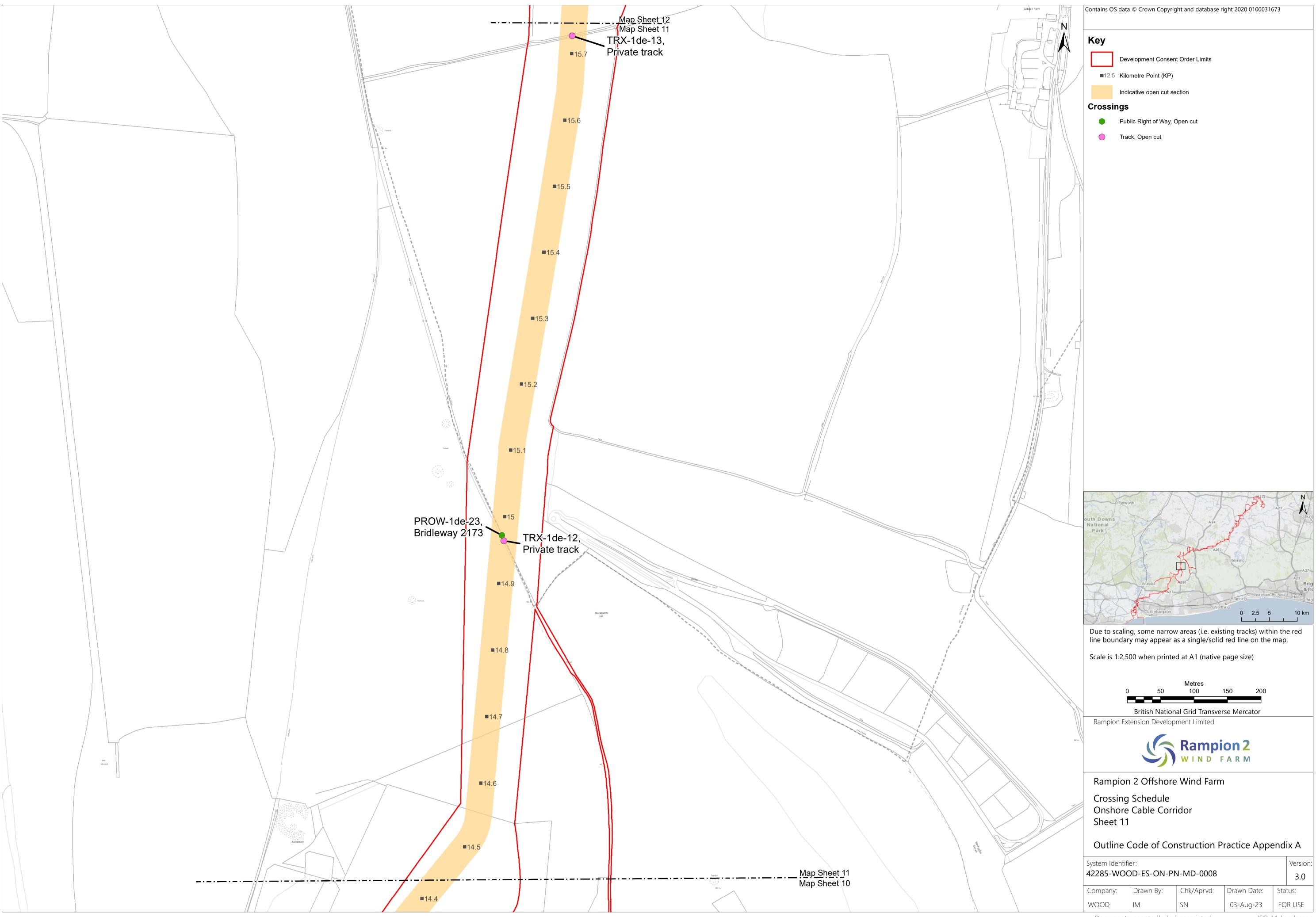


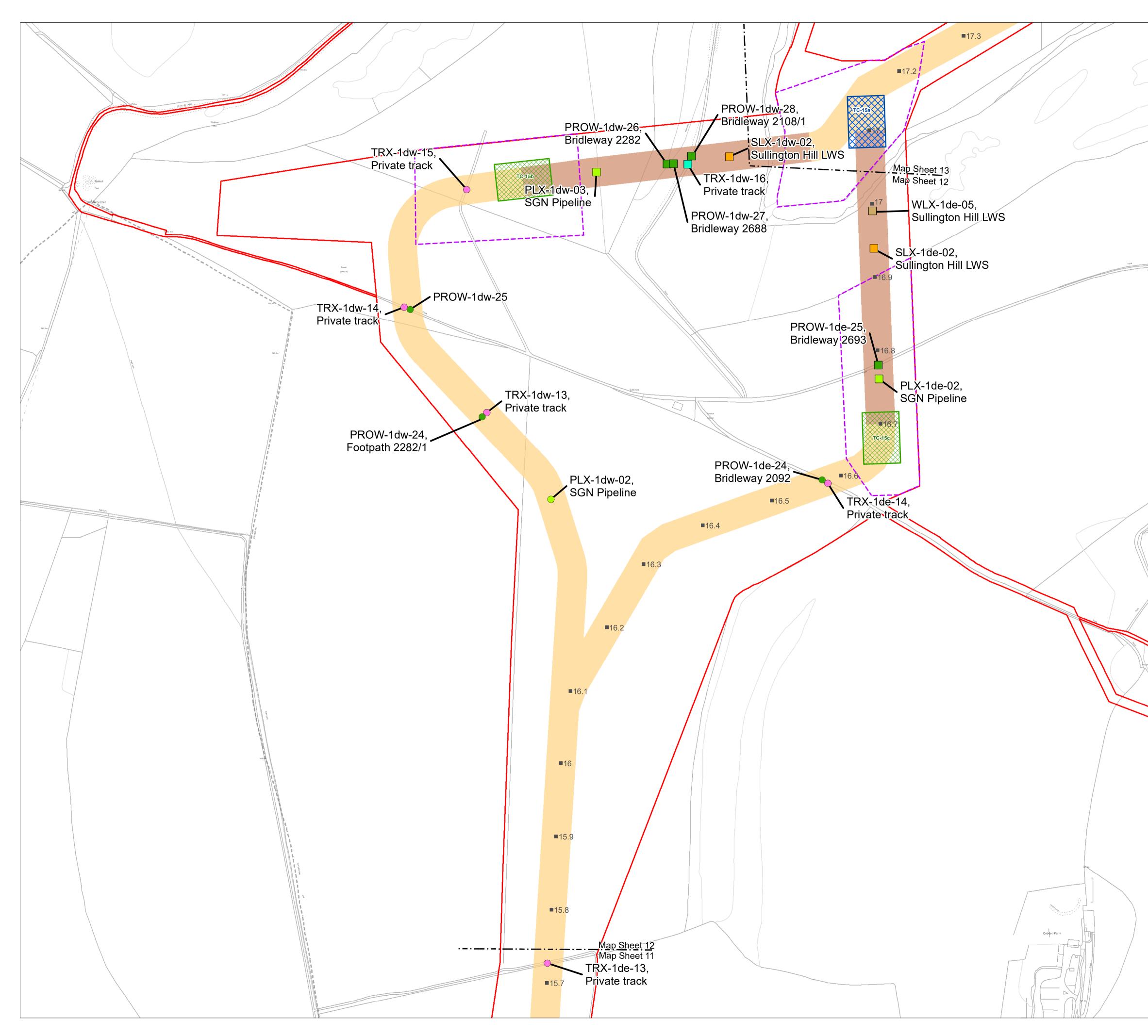


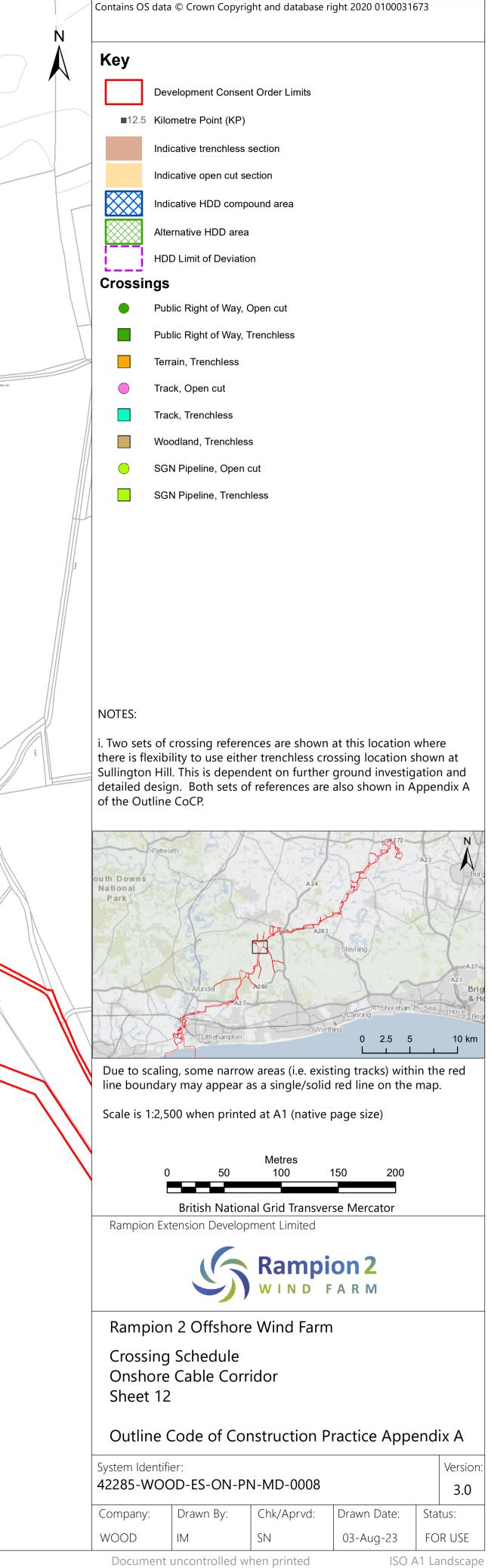
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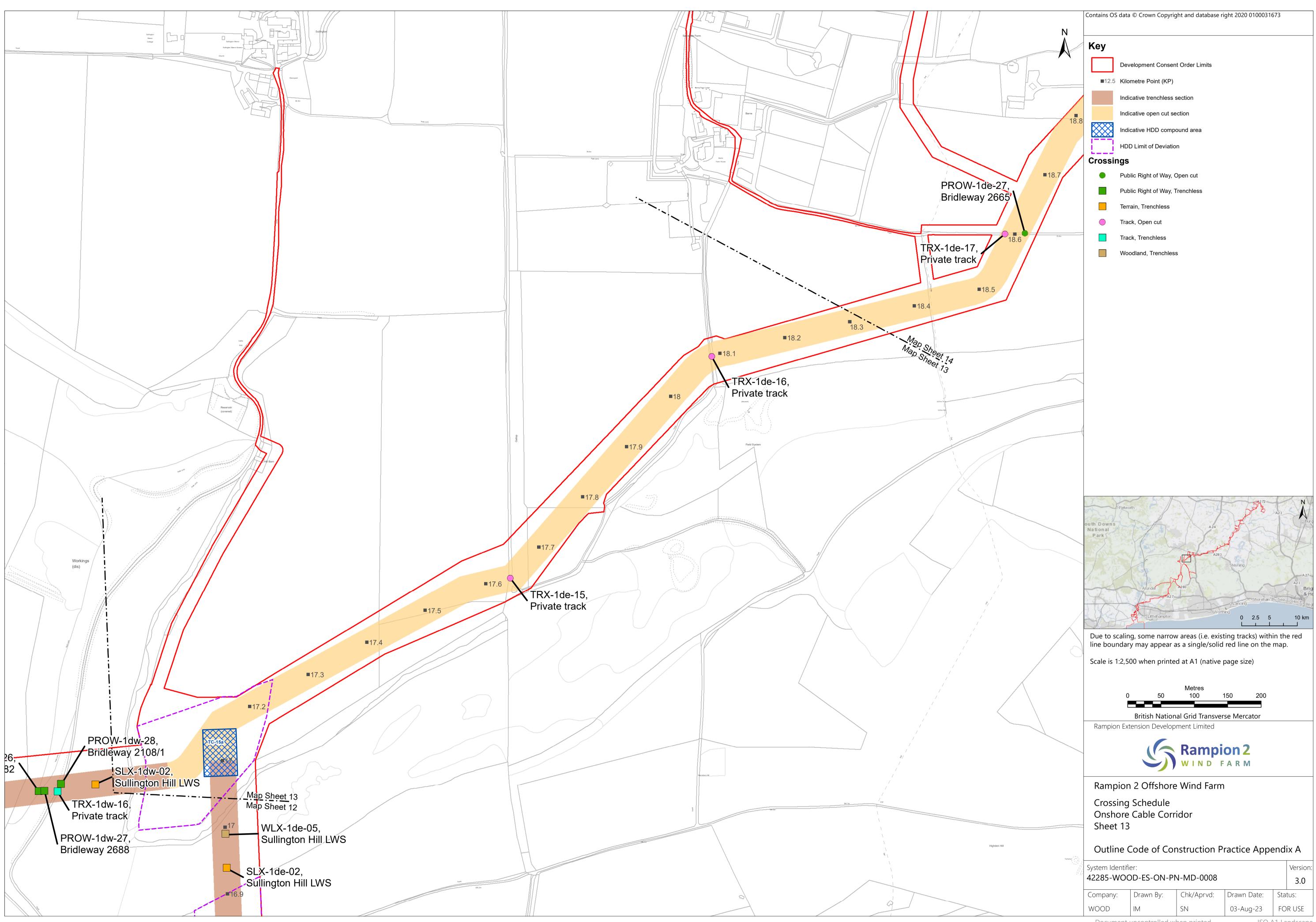


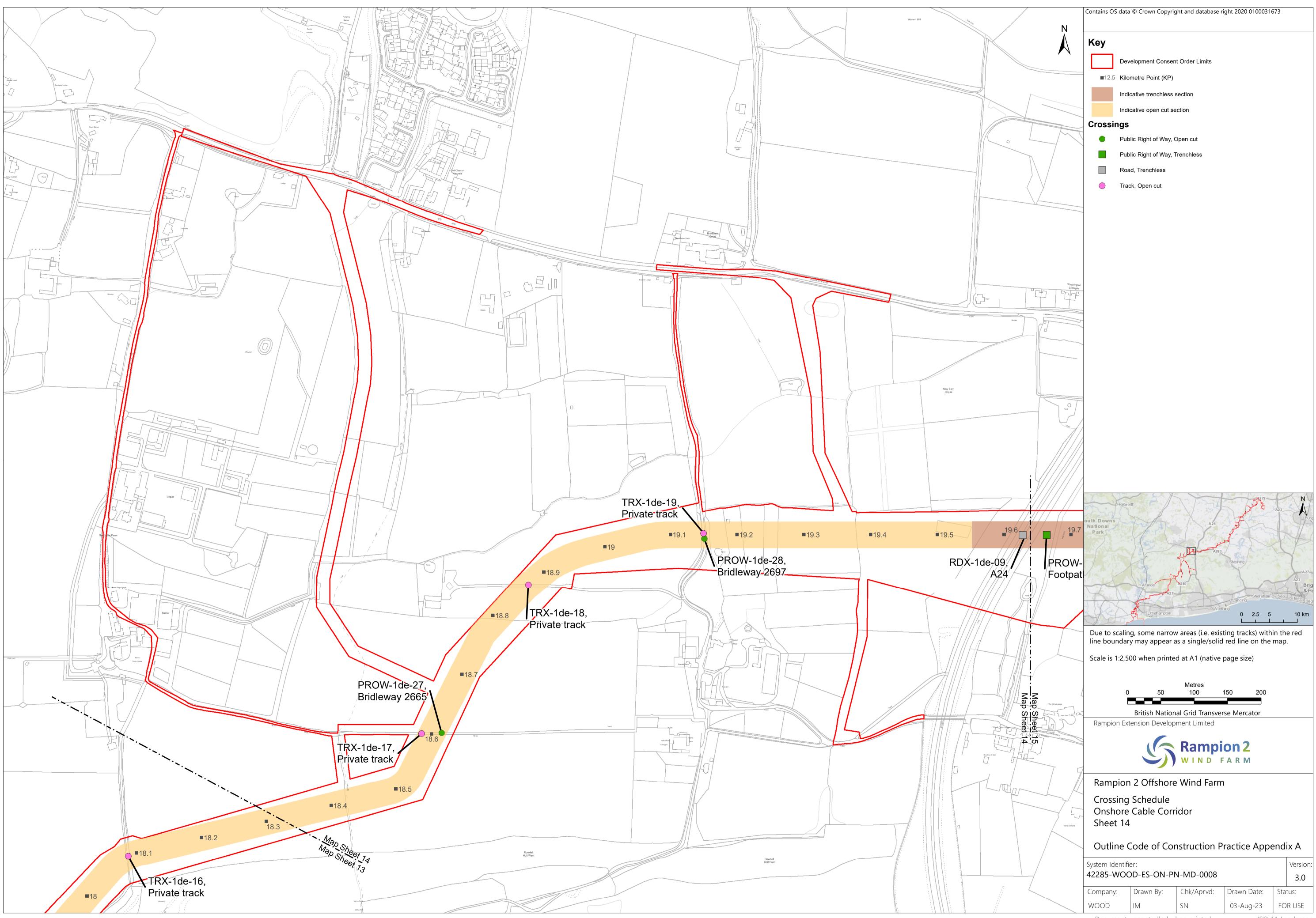


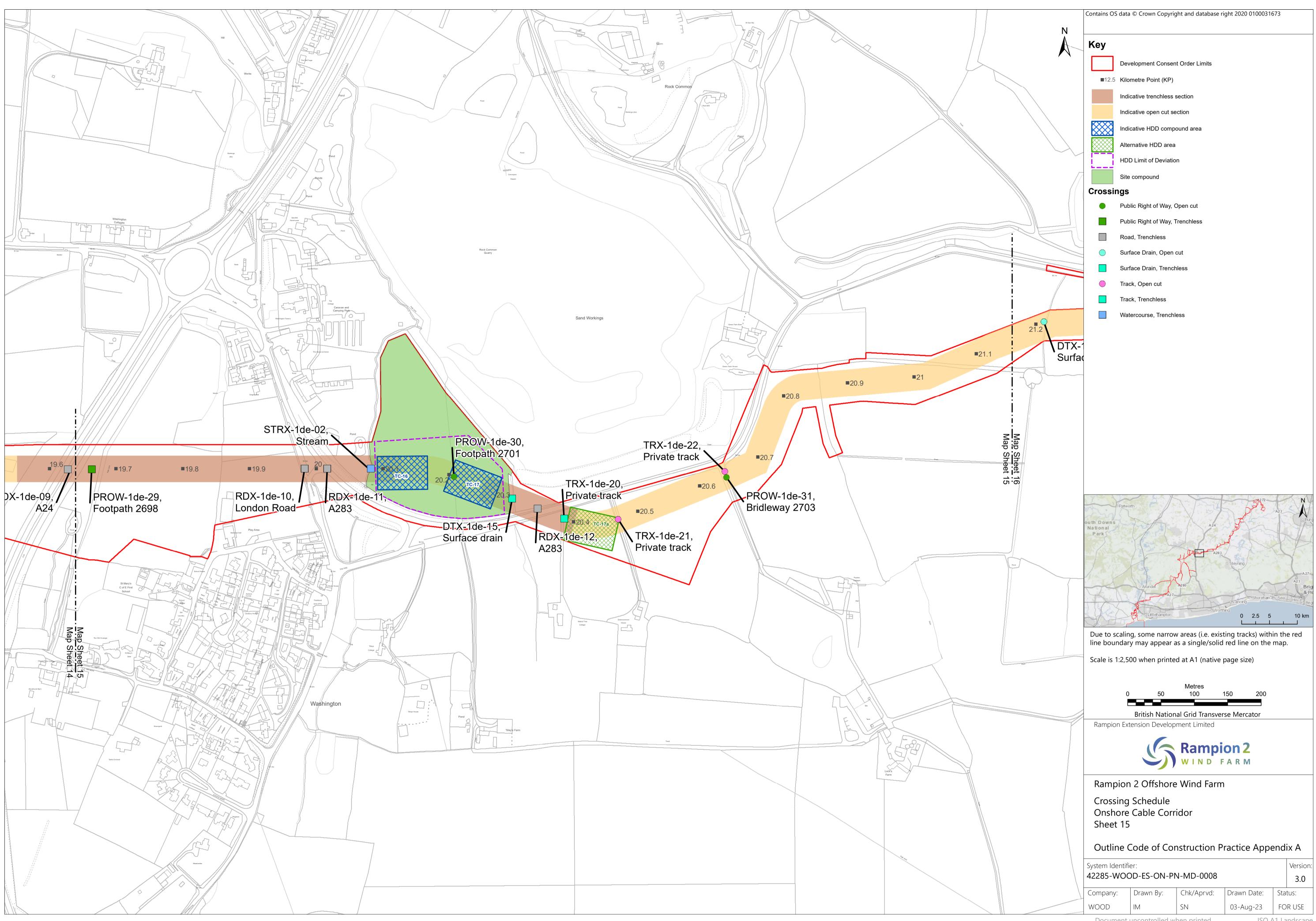


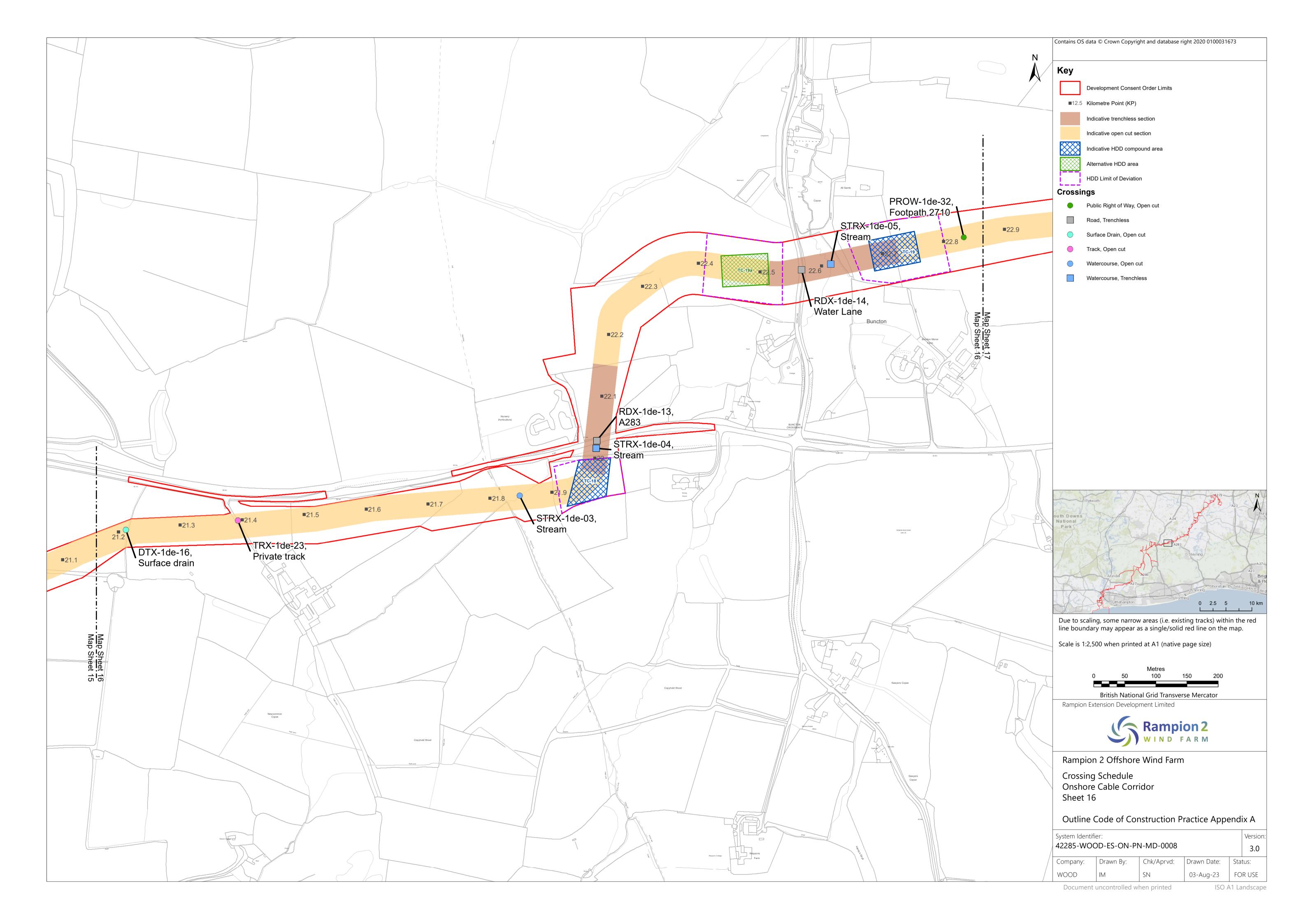


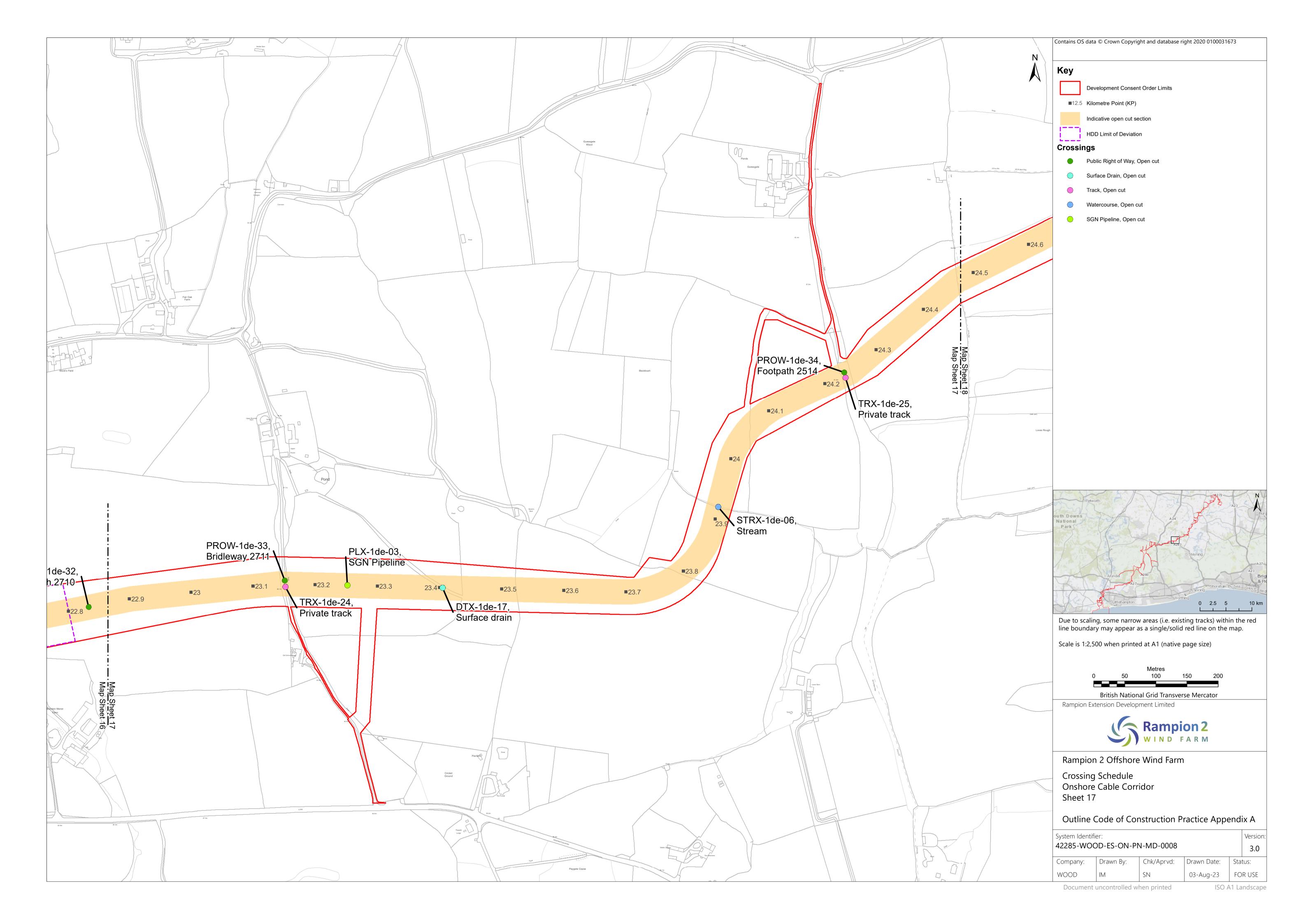


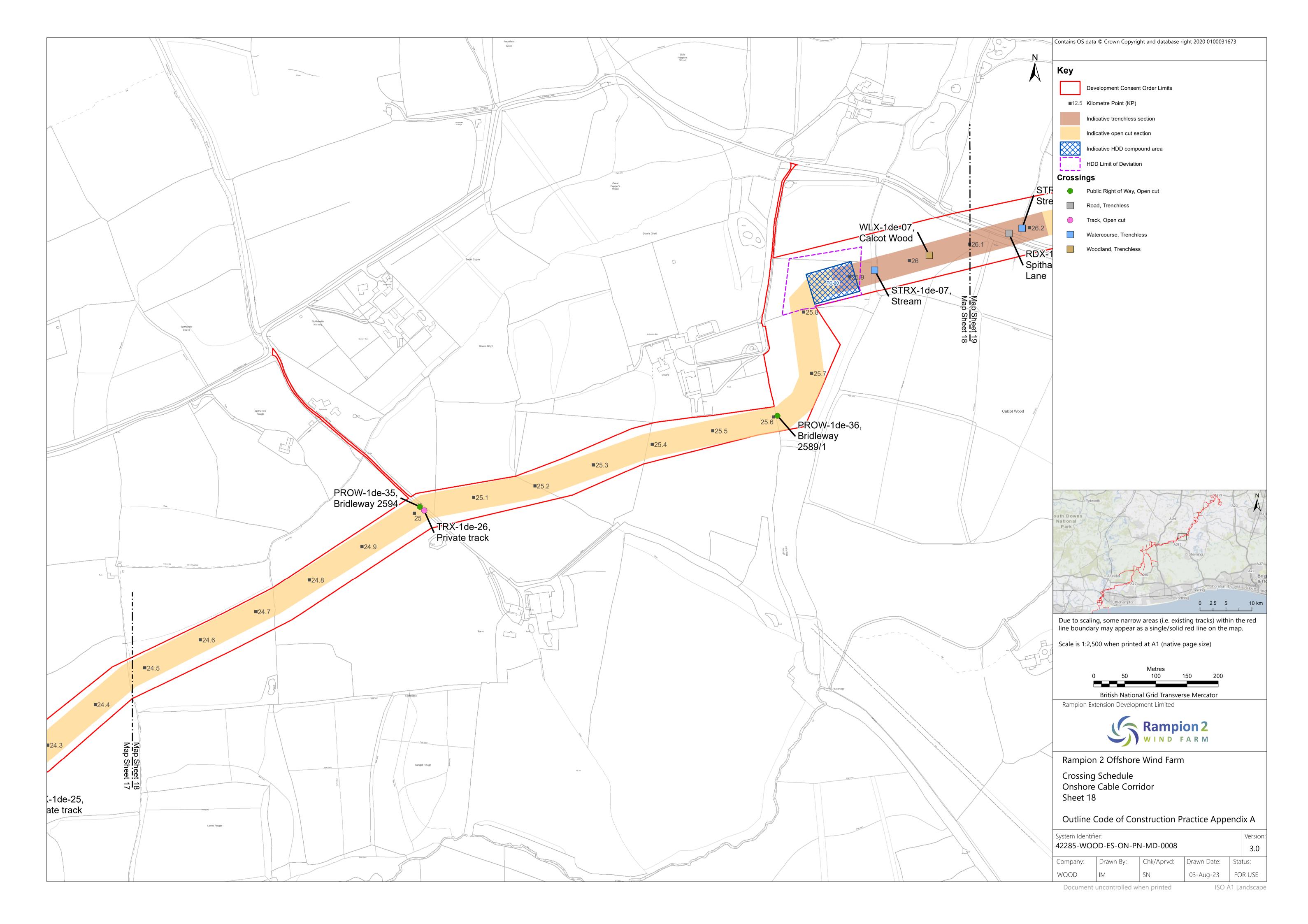


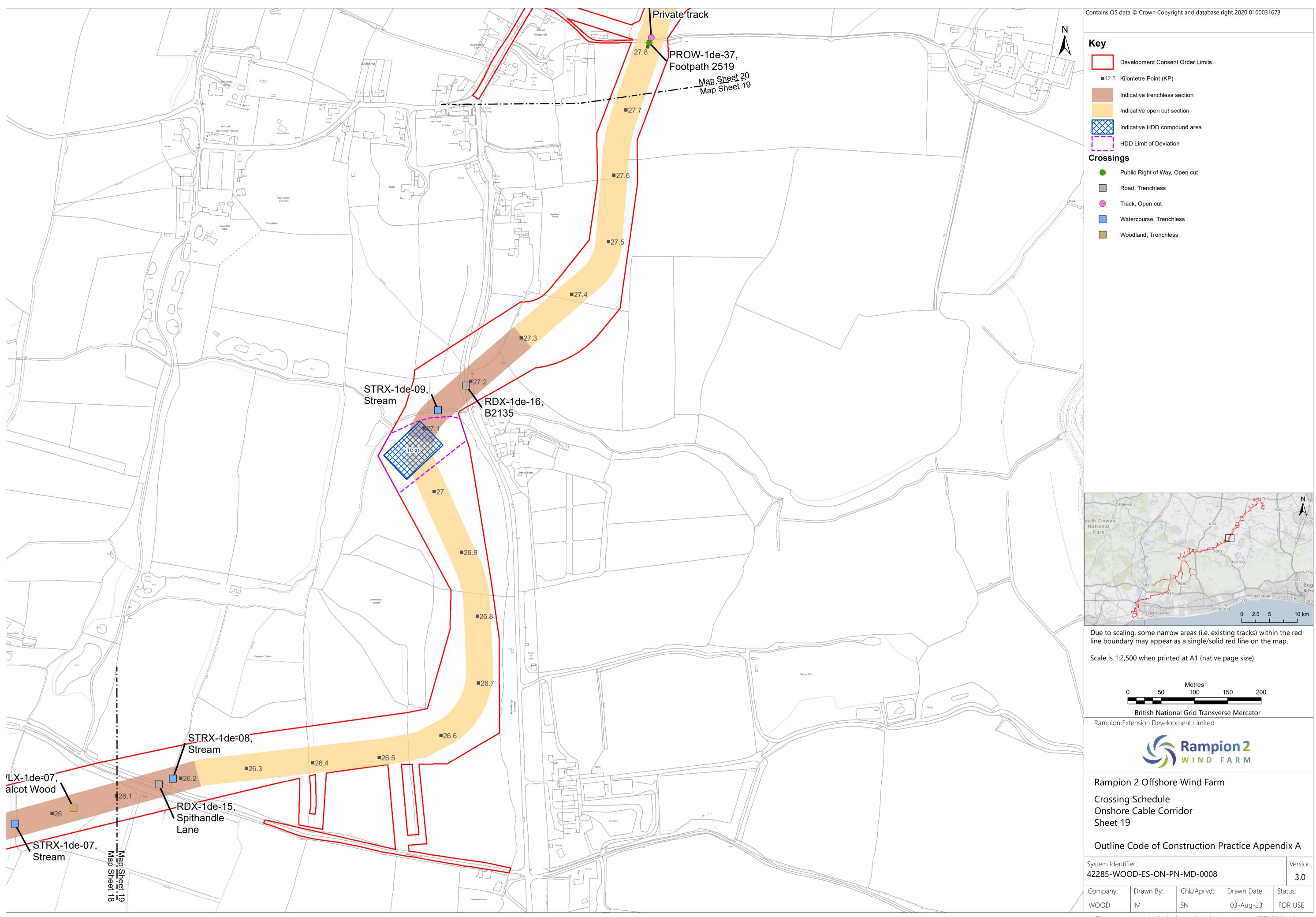


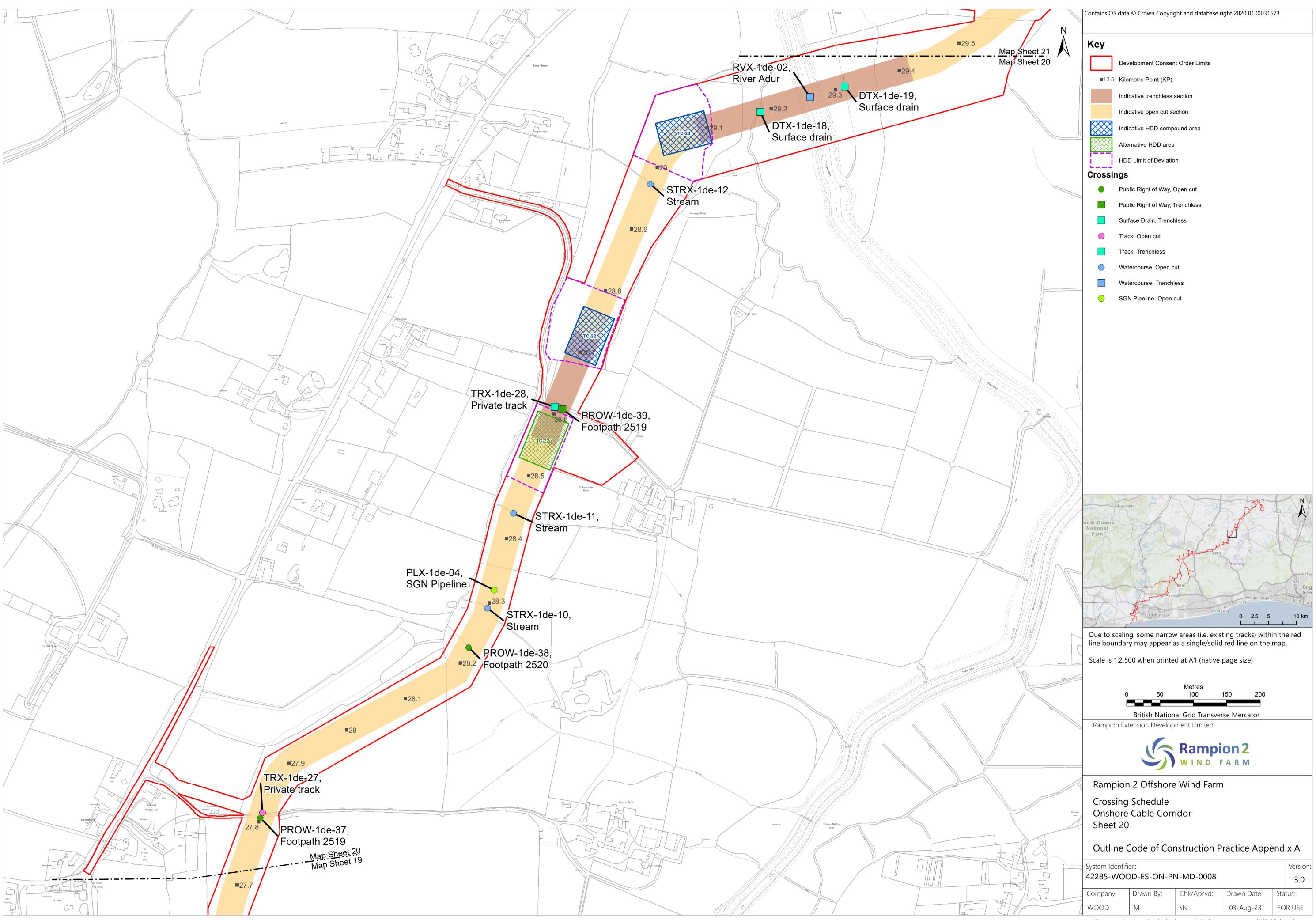


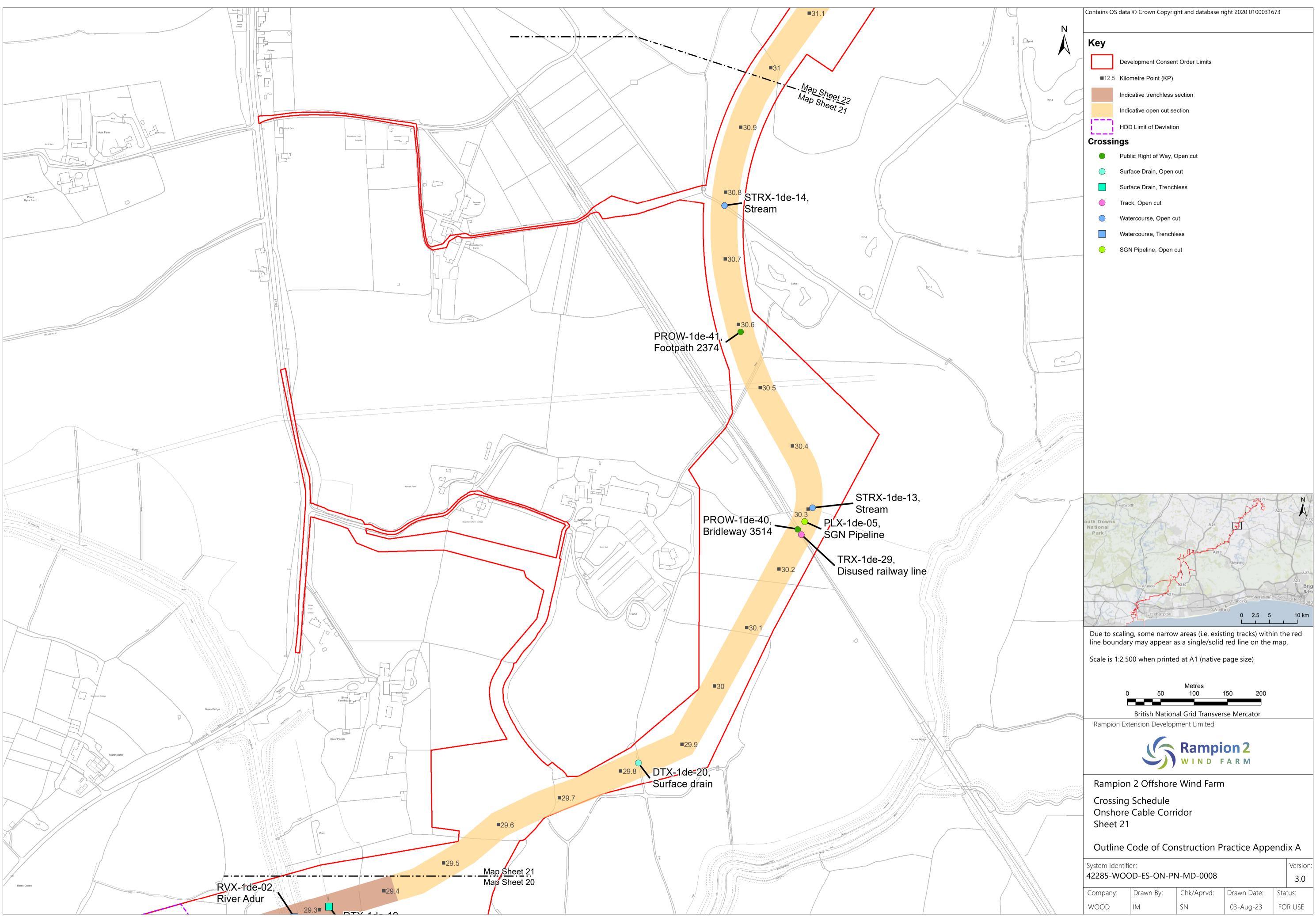


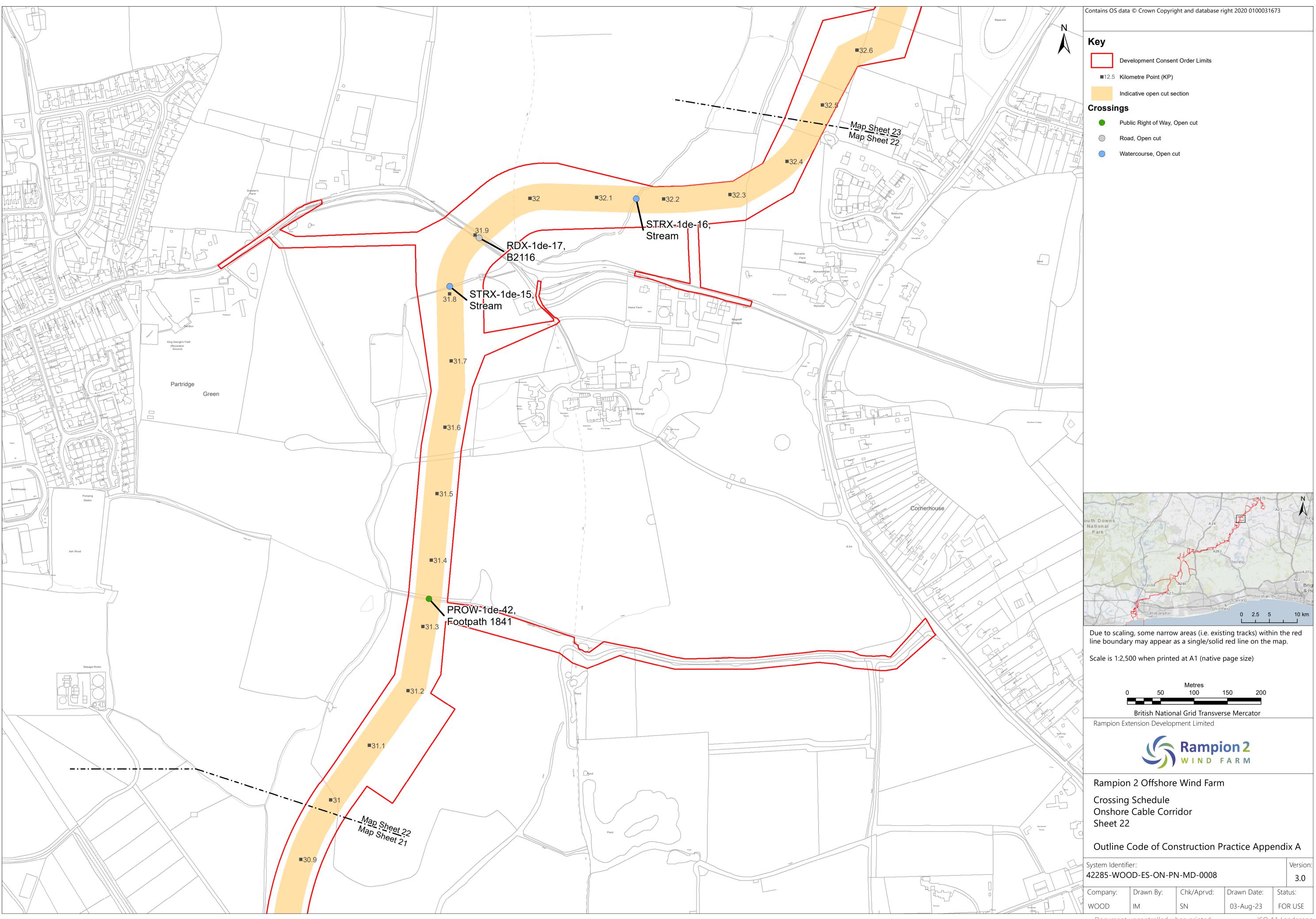


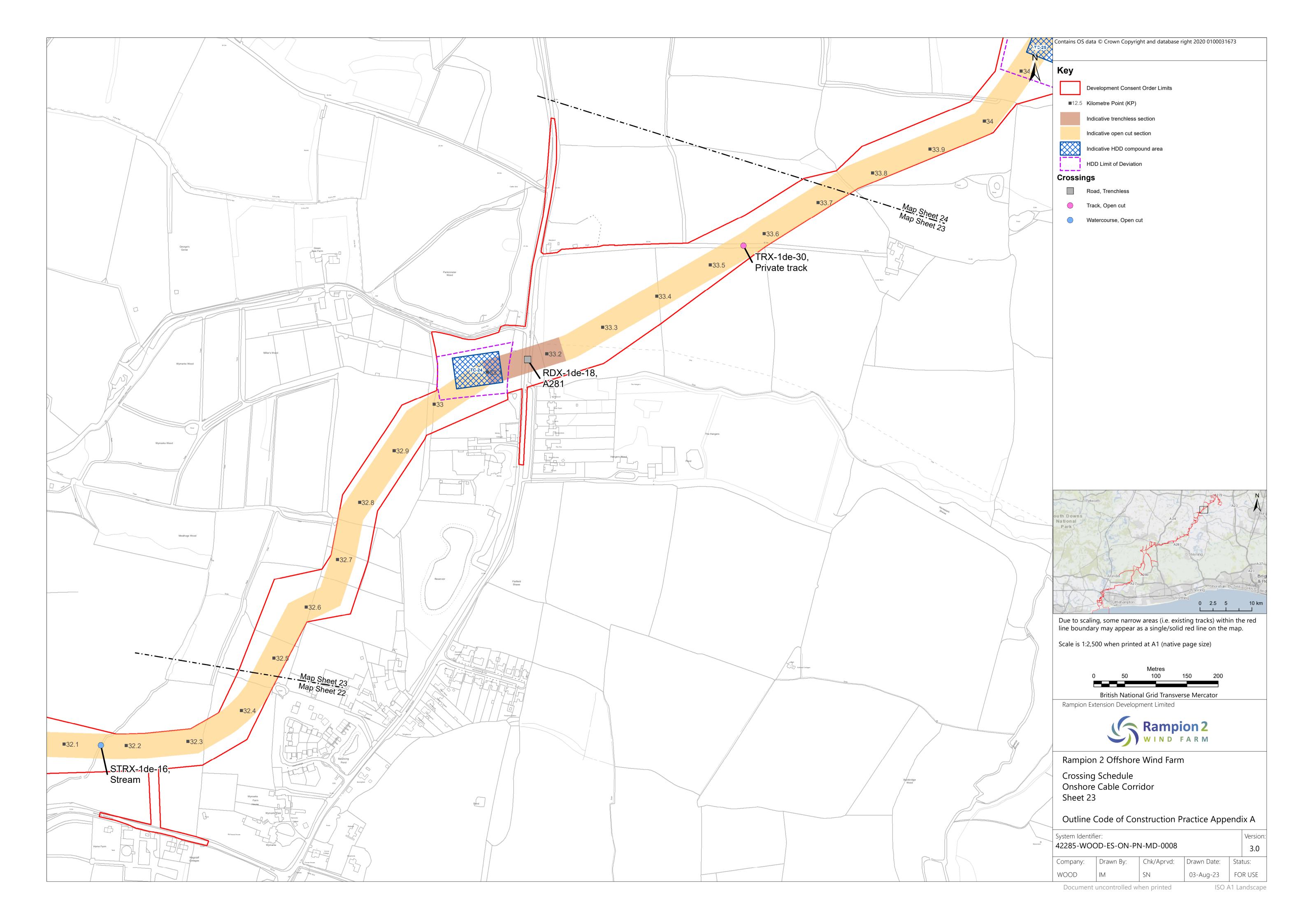


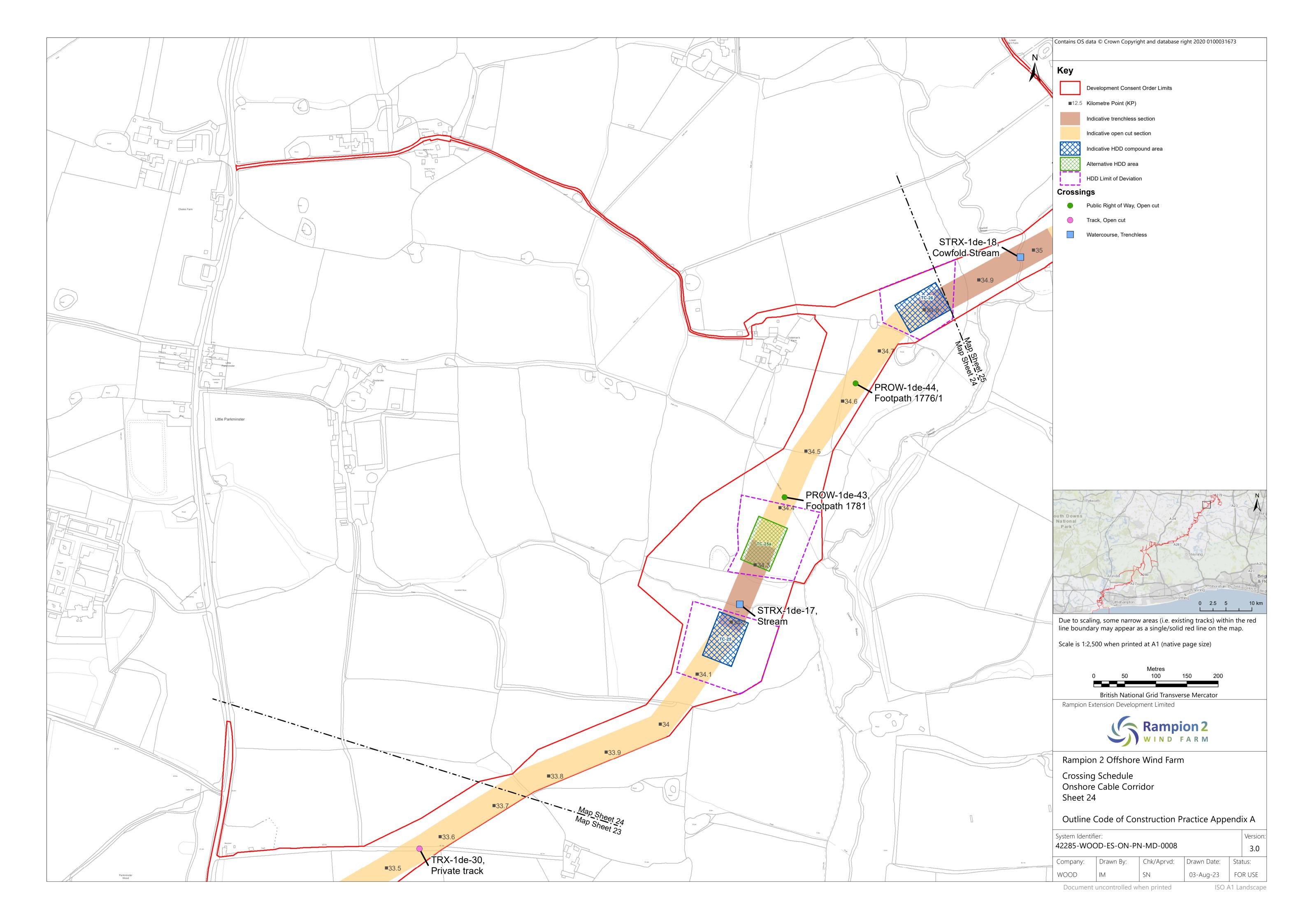


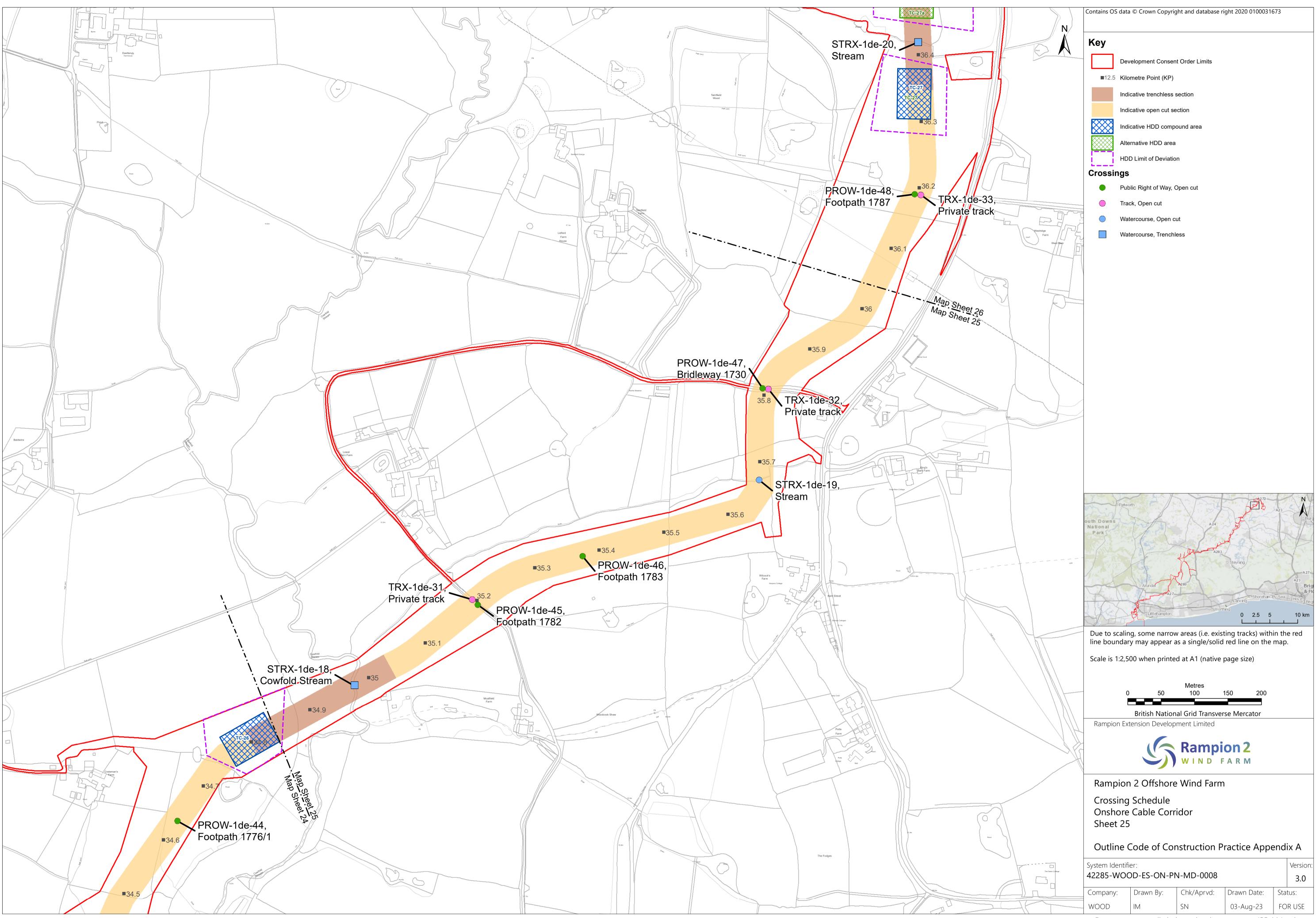




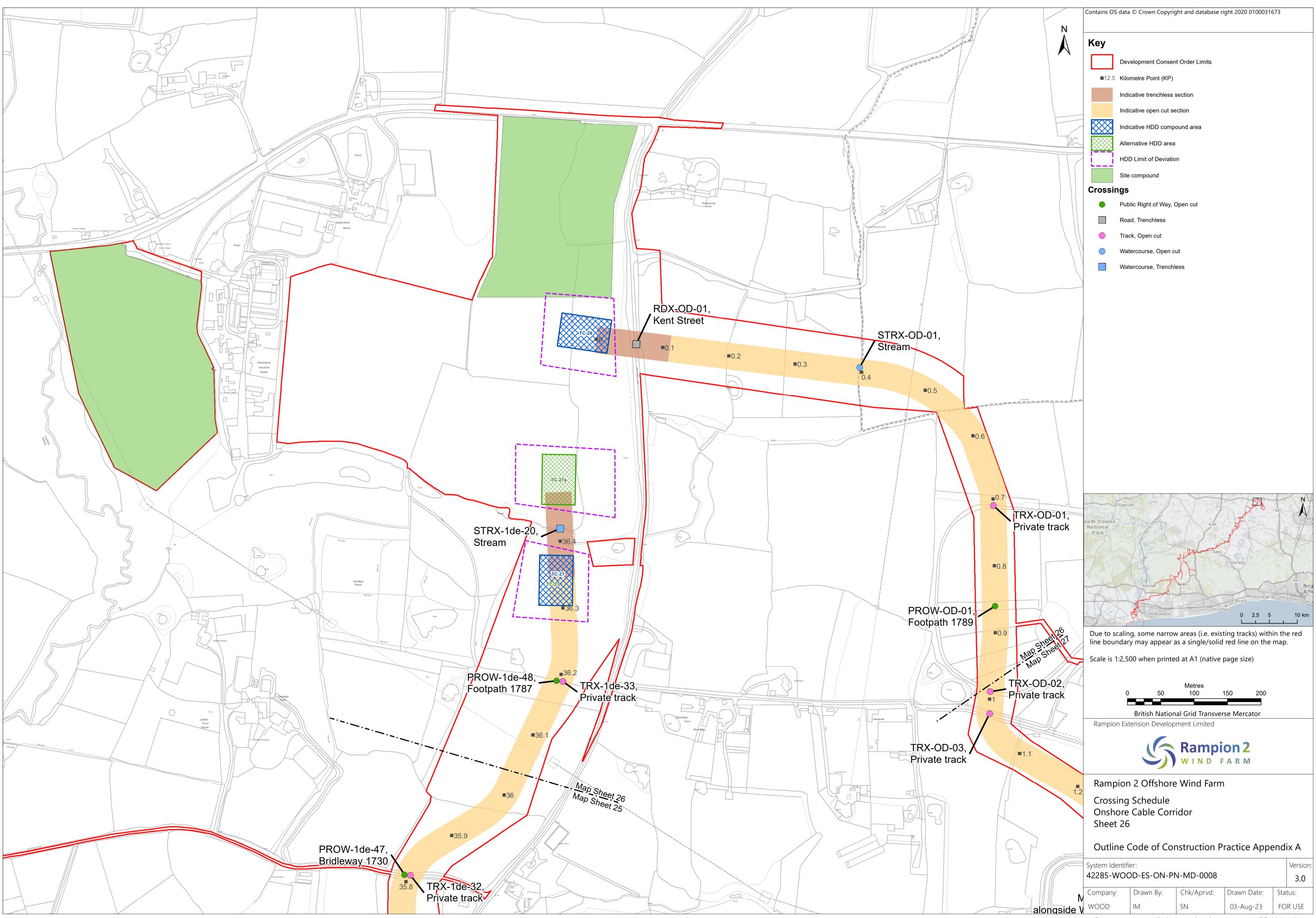




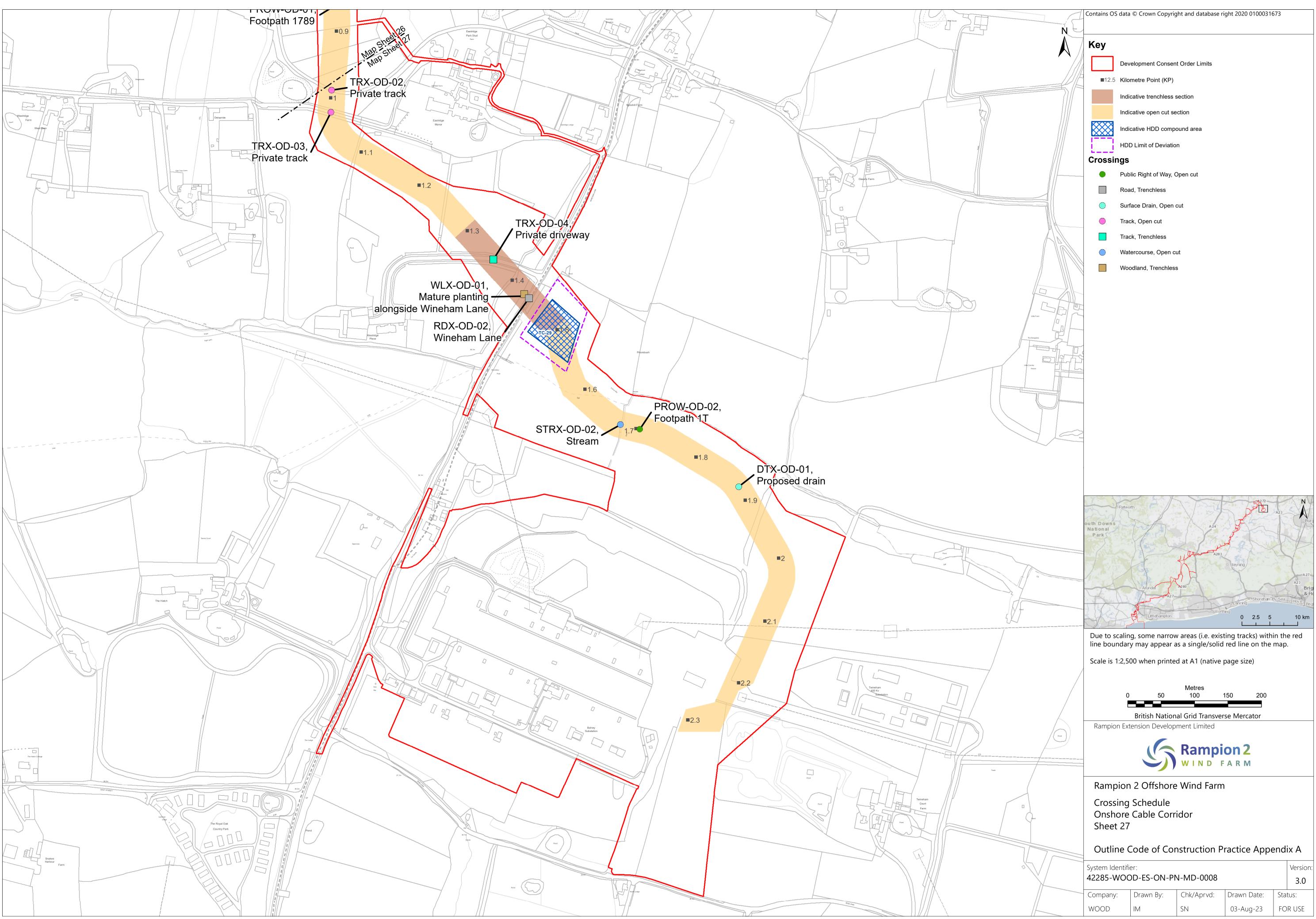




ISO A1 Landscape



ISO A1 Landscape



ISO A1 Landscape



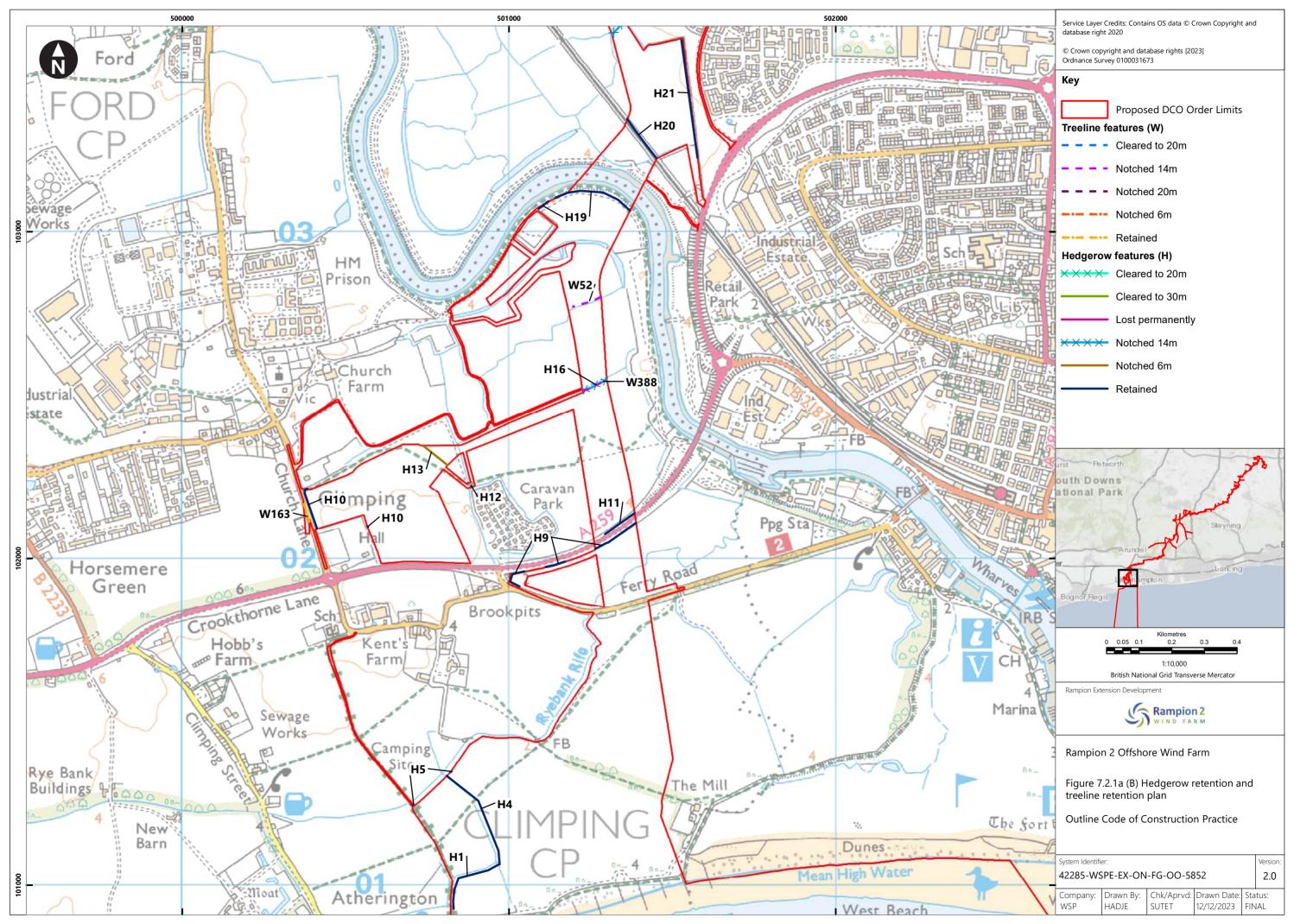
## Appendix B Vegetation Retention Plans and Pond Retention Plans

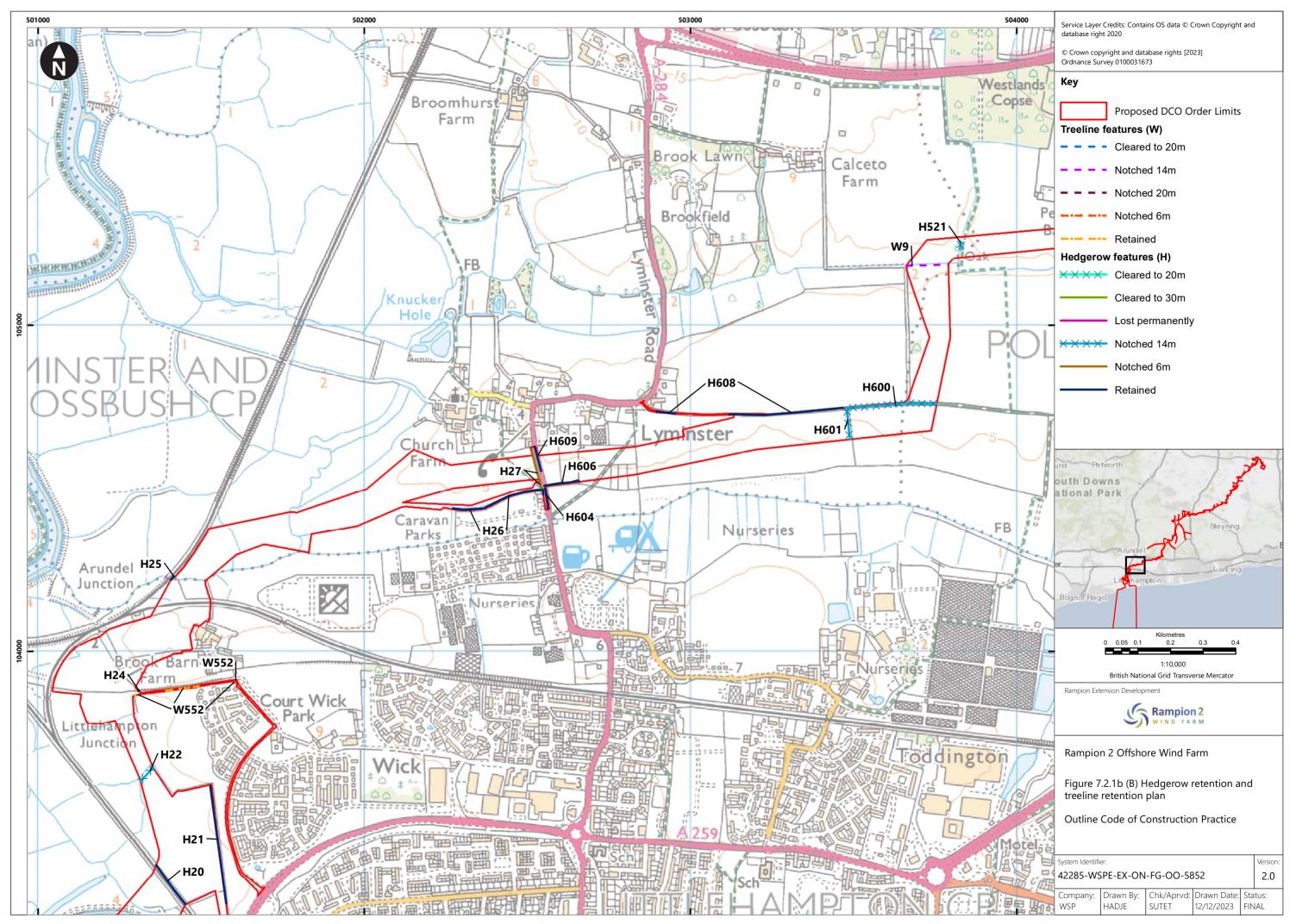
This appendix includes the following retention plans listed below. The figures only show areas of the onshore cable corridor where the feature to be retained is present.

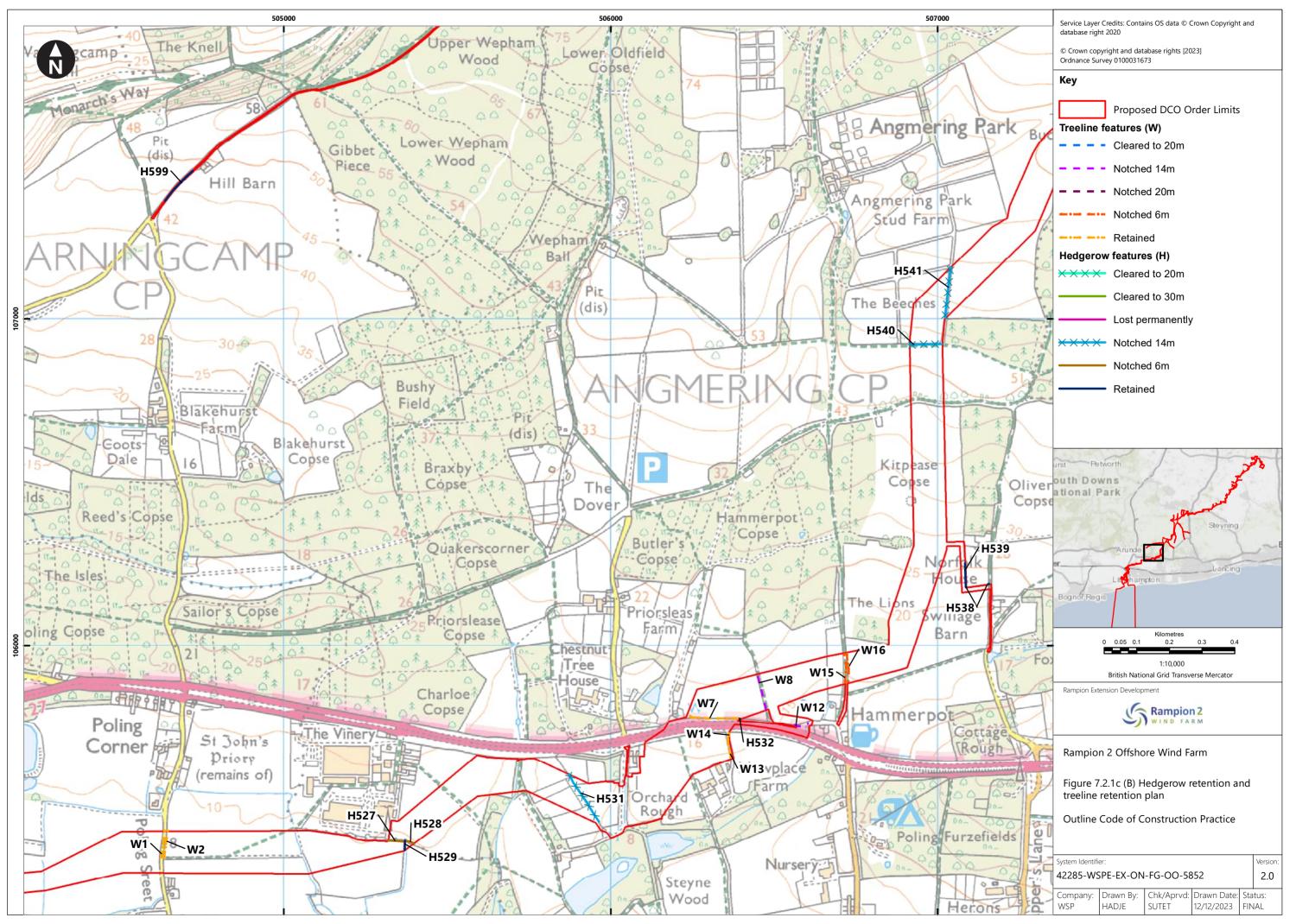
- Figure 7.2.1 Hedgerow retention and treeline retention plan
- Figure 7.2.2 Woodland retention plan
- Figure 7.2.3 Scrub retention plan
- Figure 7.2.4 Grasslands retention plan
- Figure 7.2.5 Pond retention plan

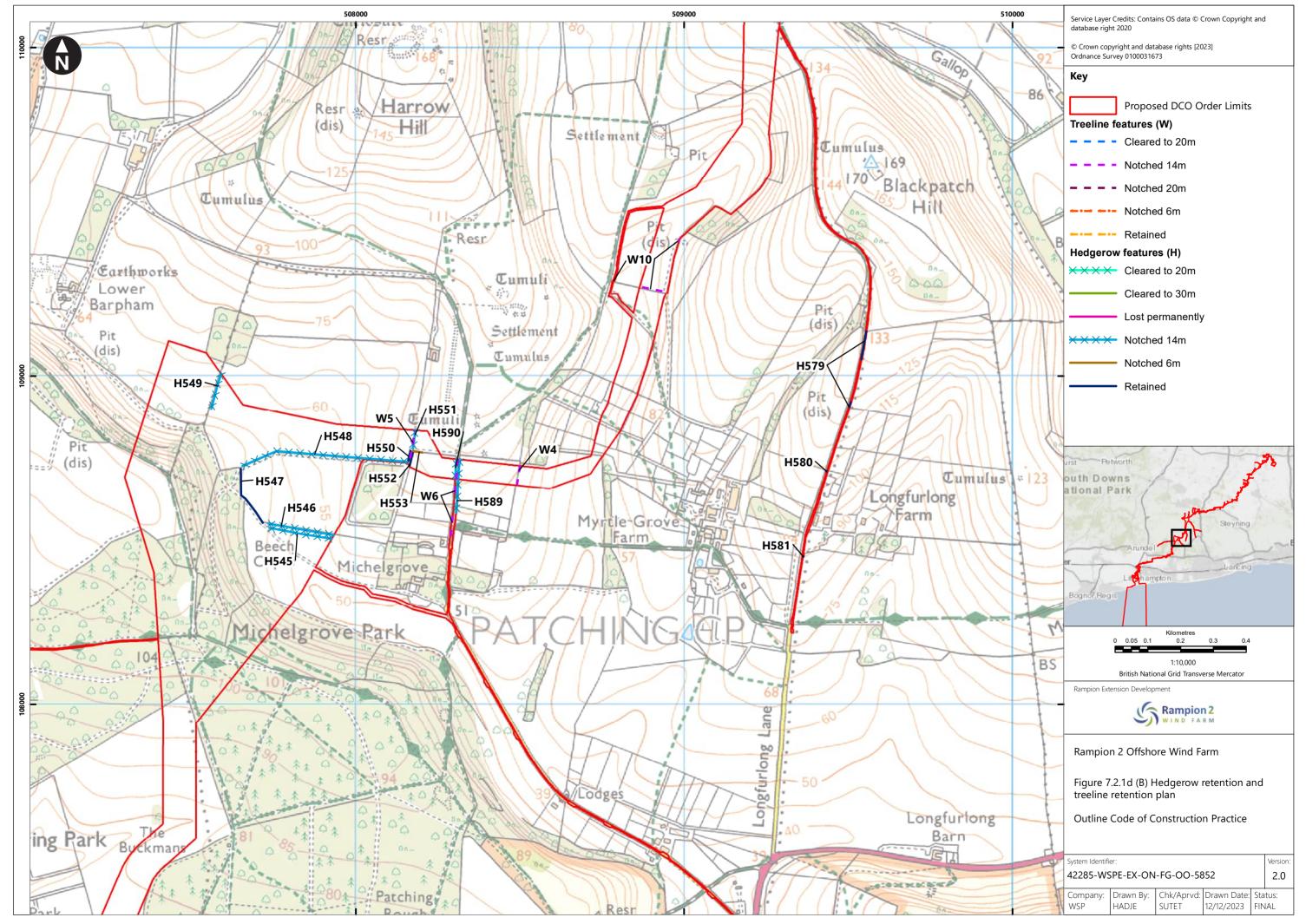


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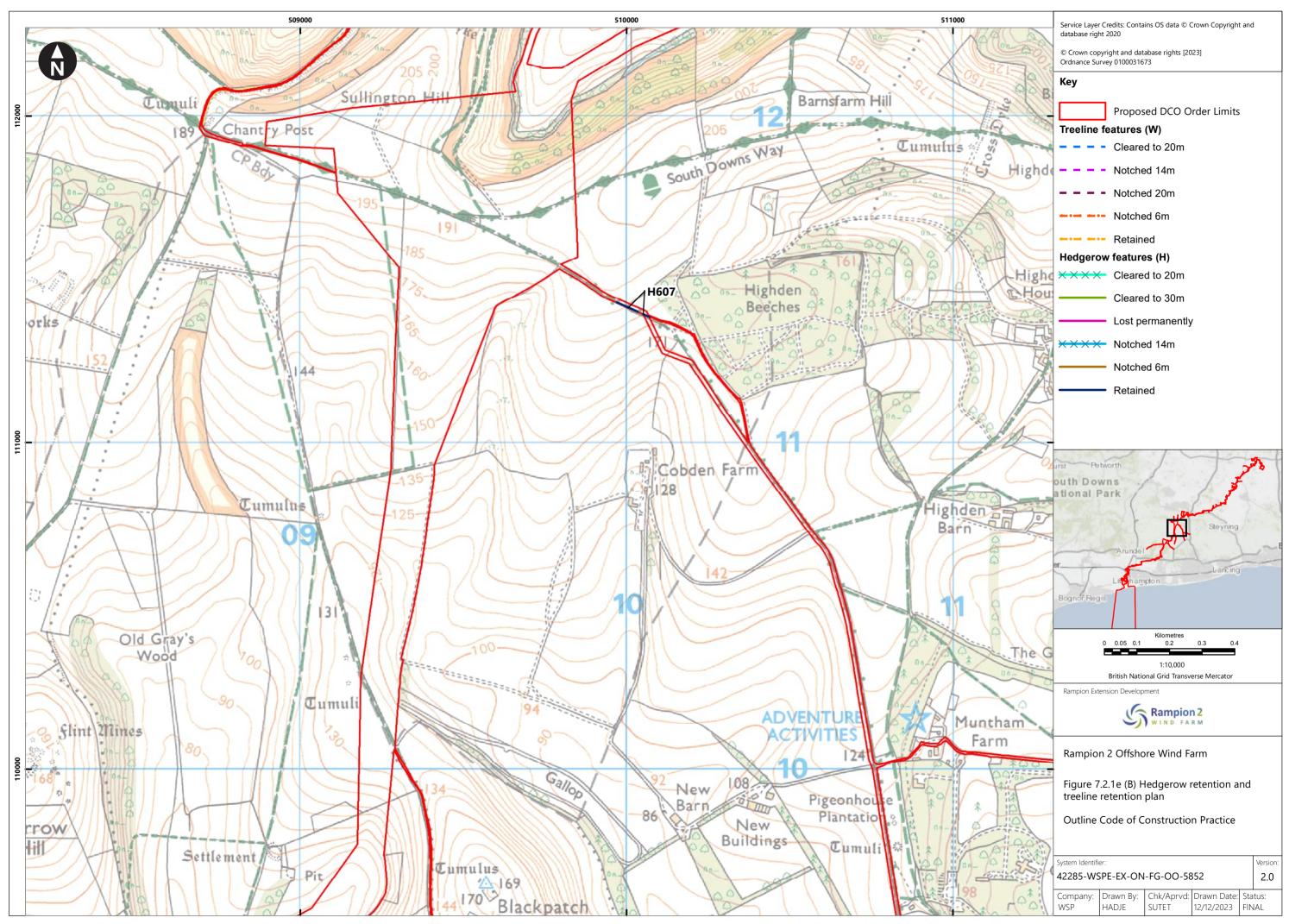


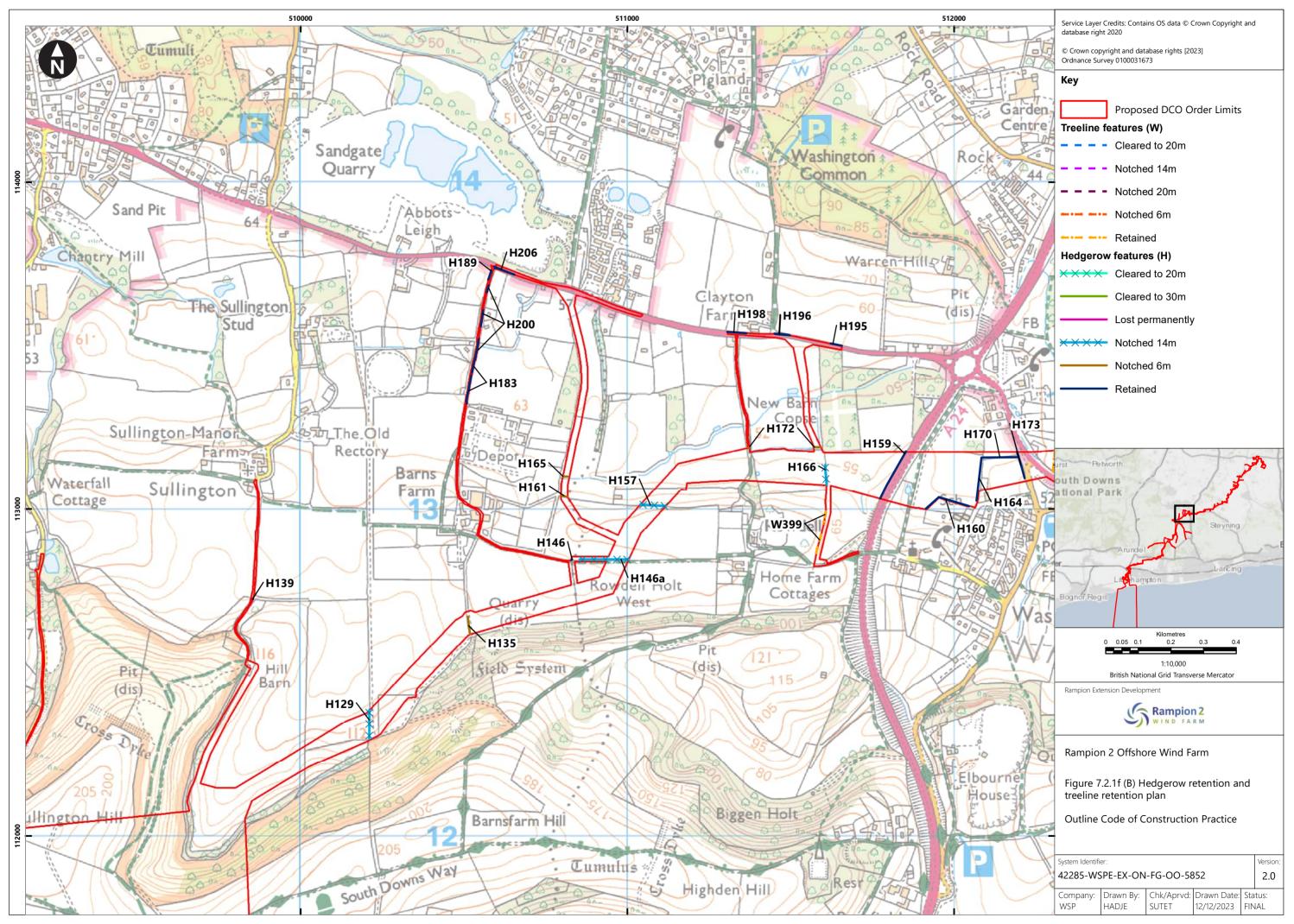


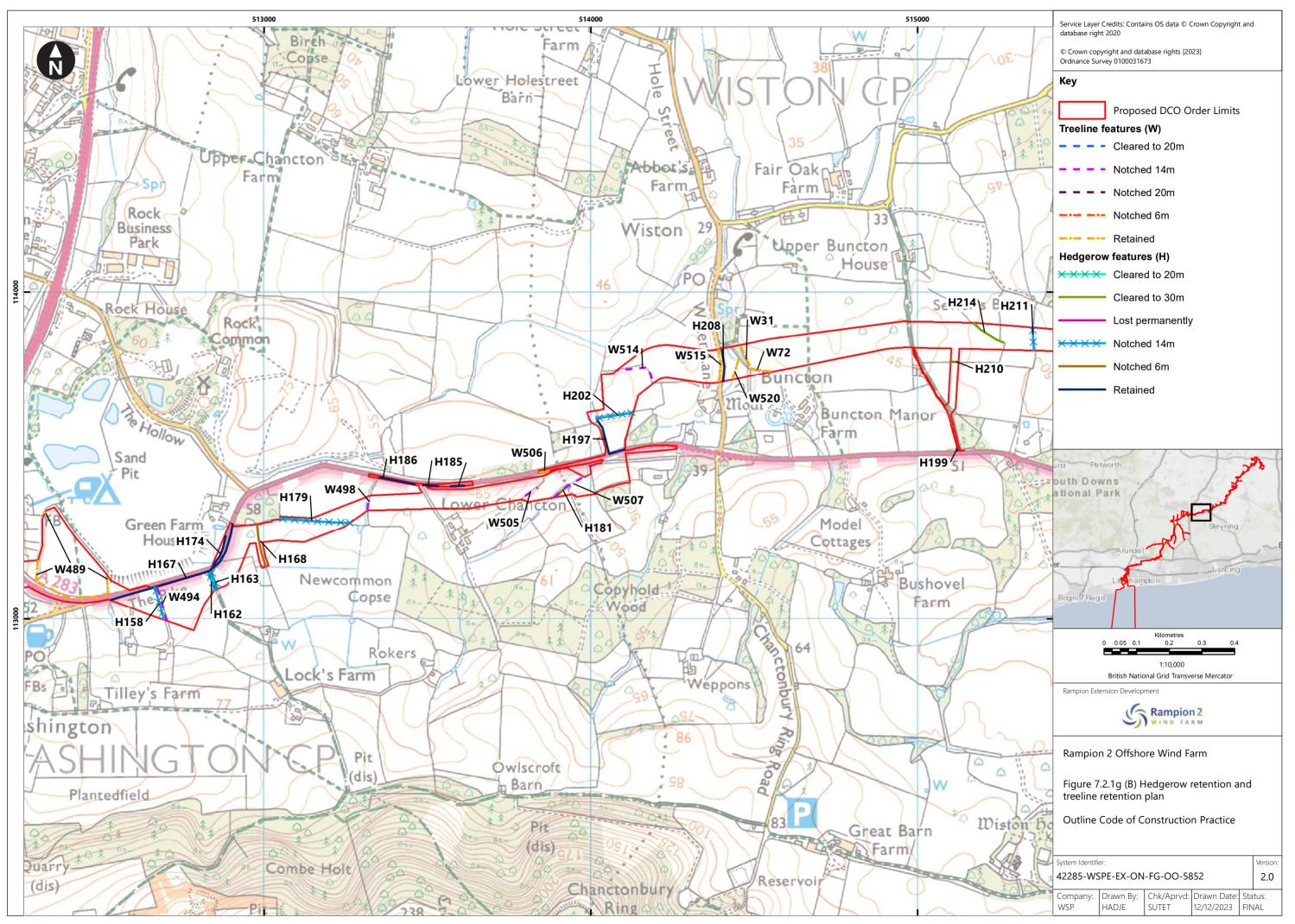


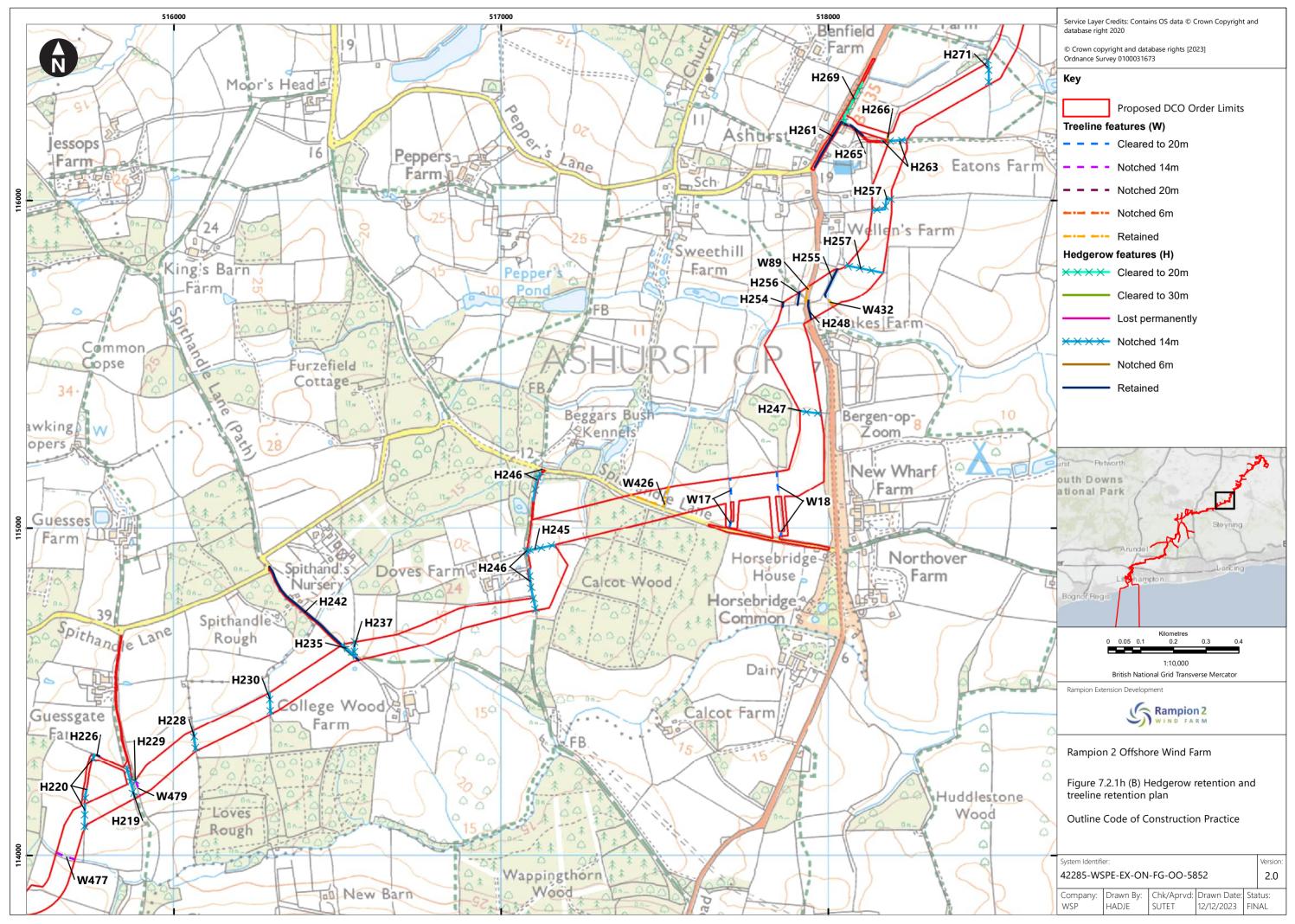


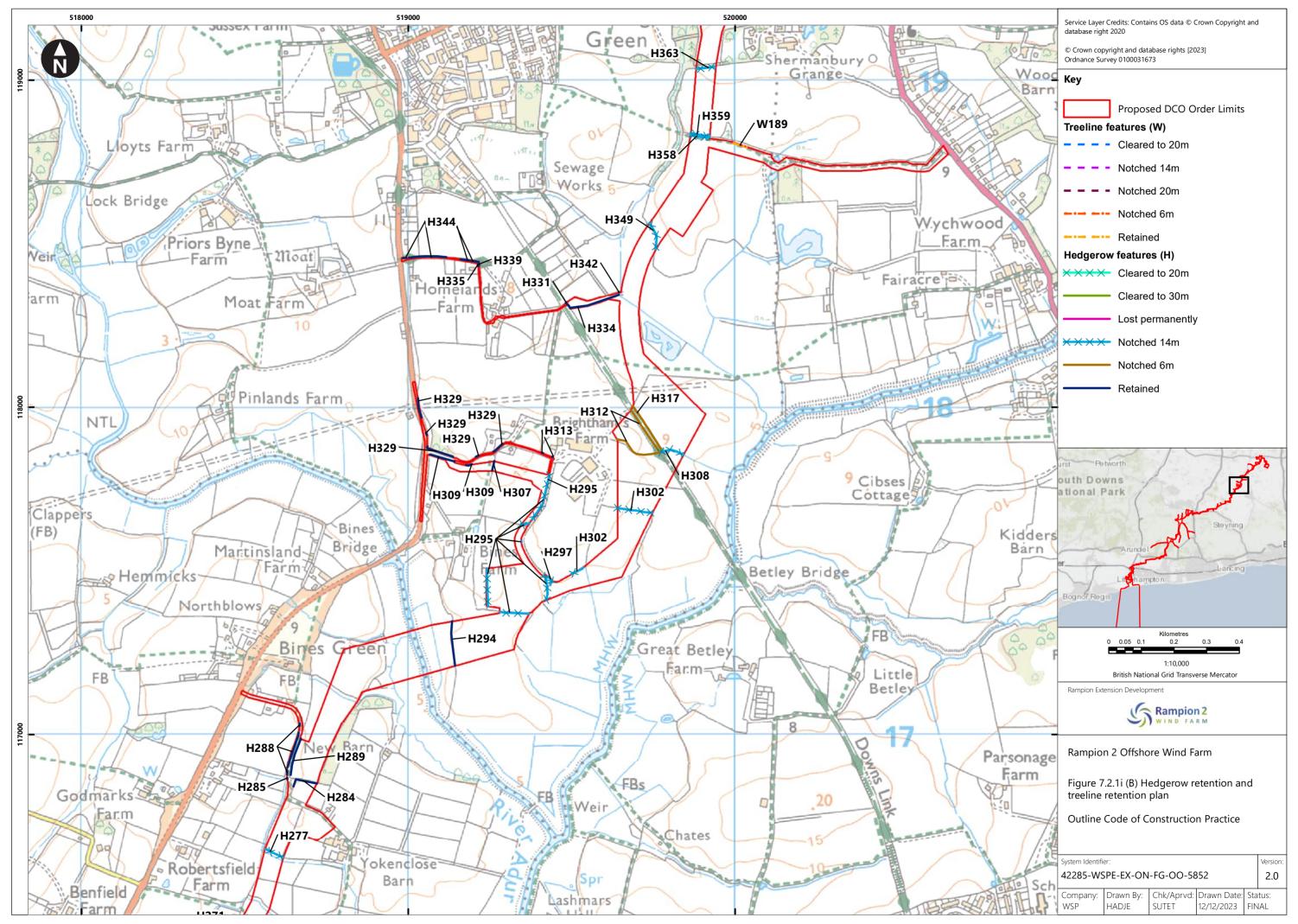
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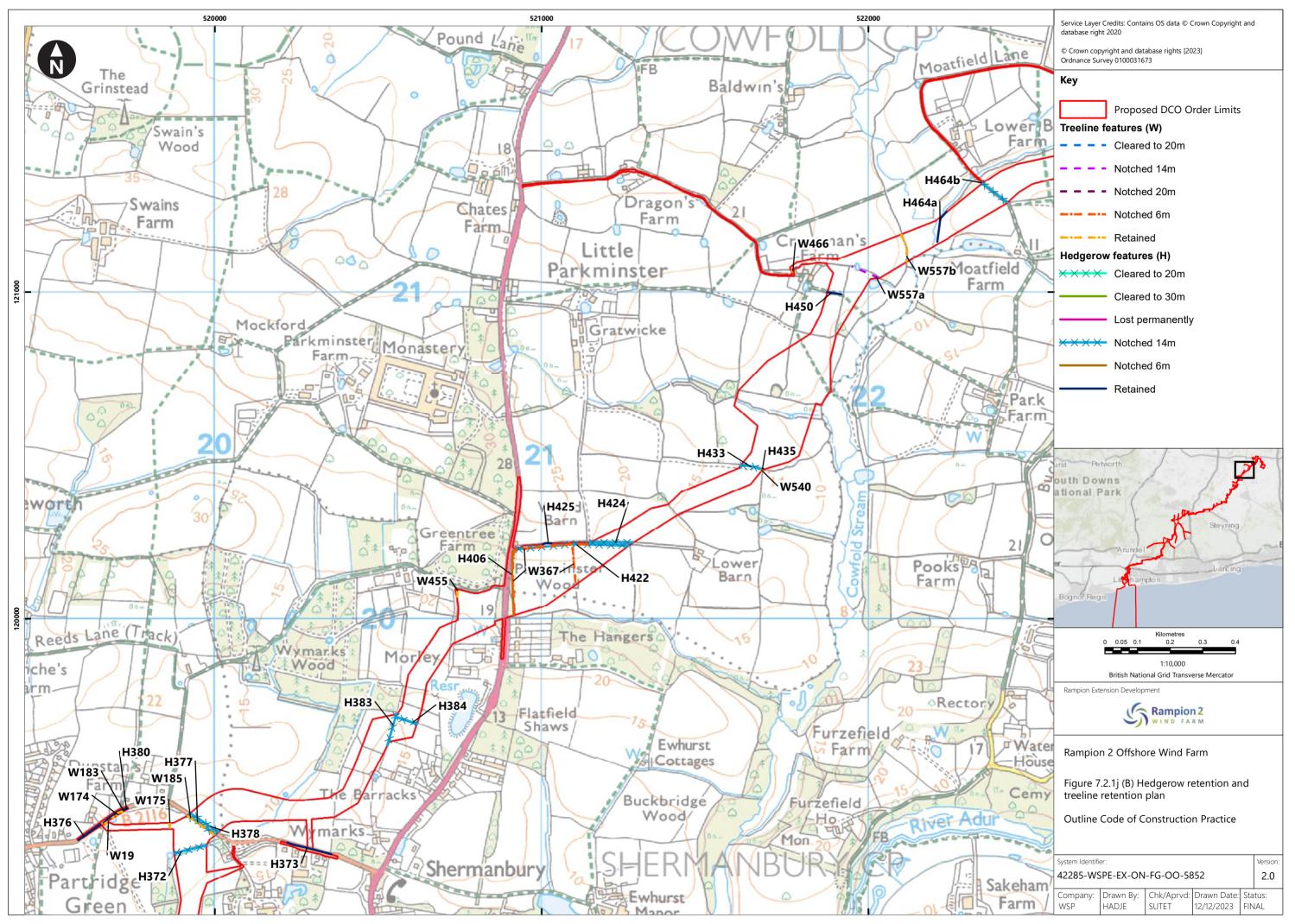


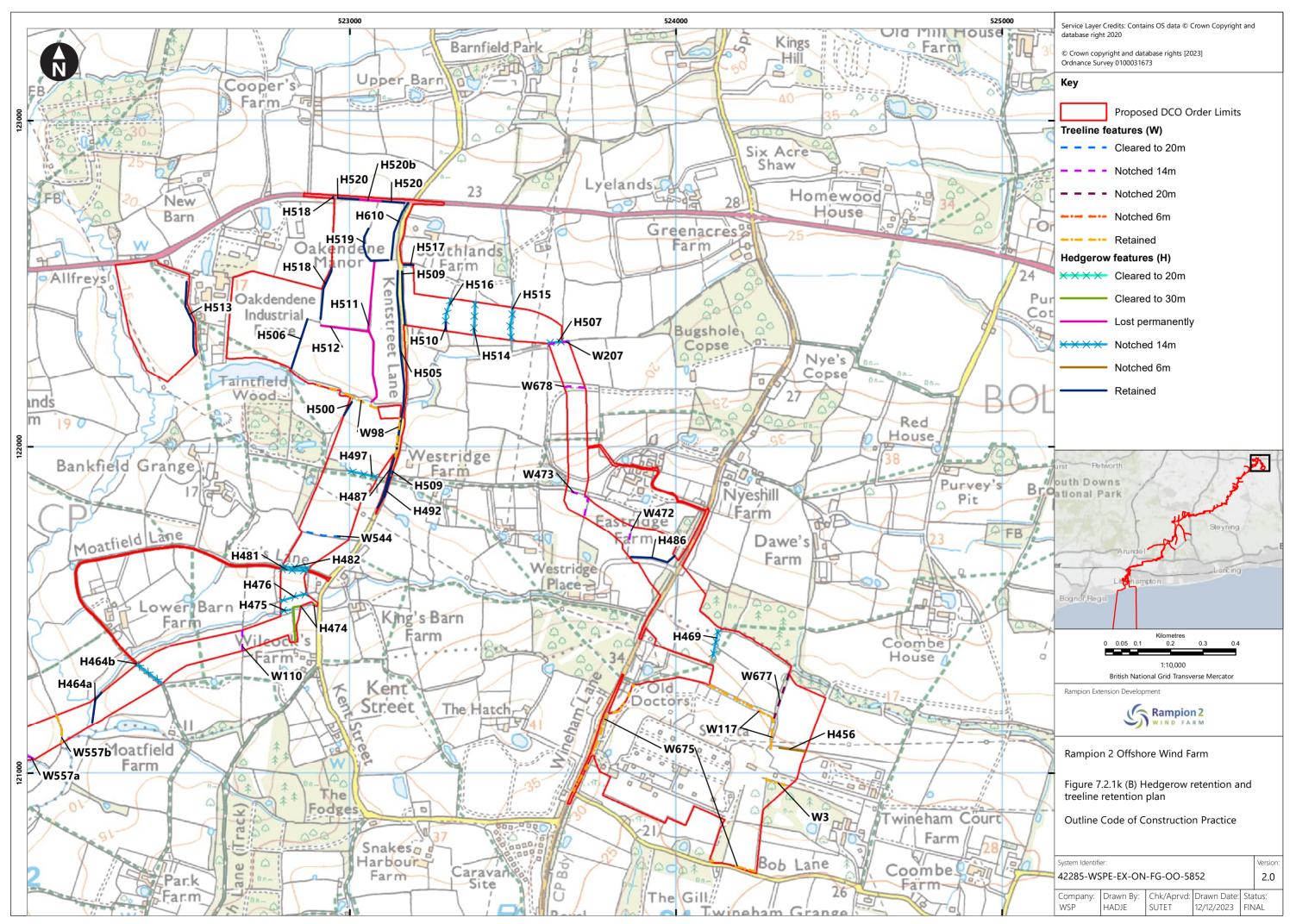


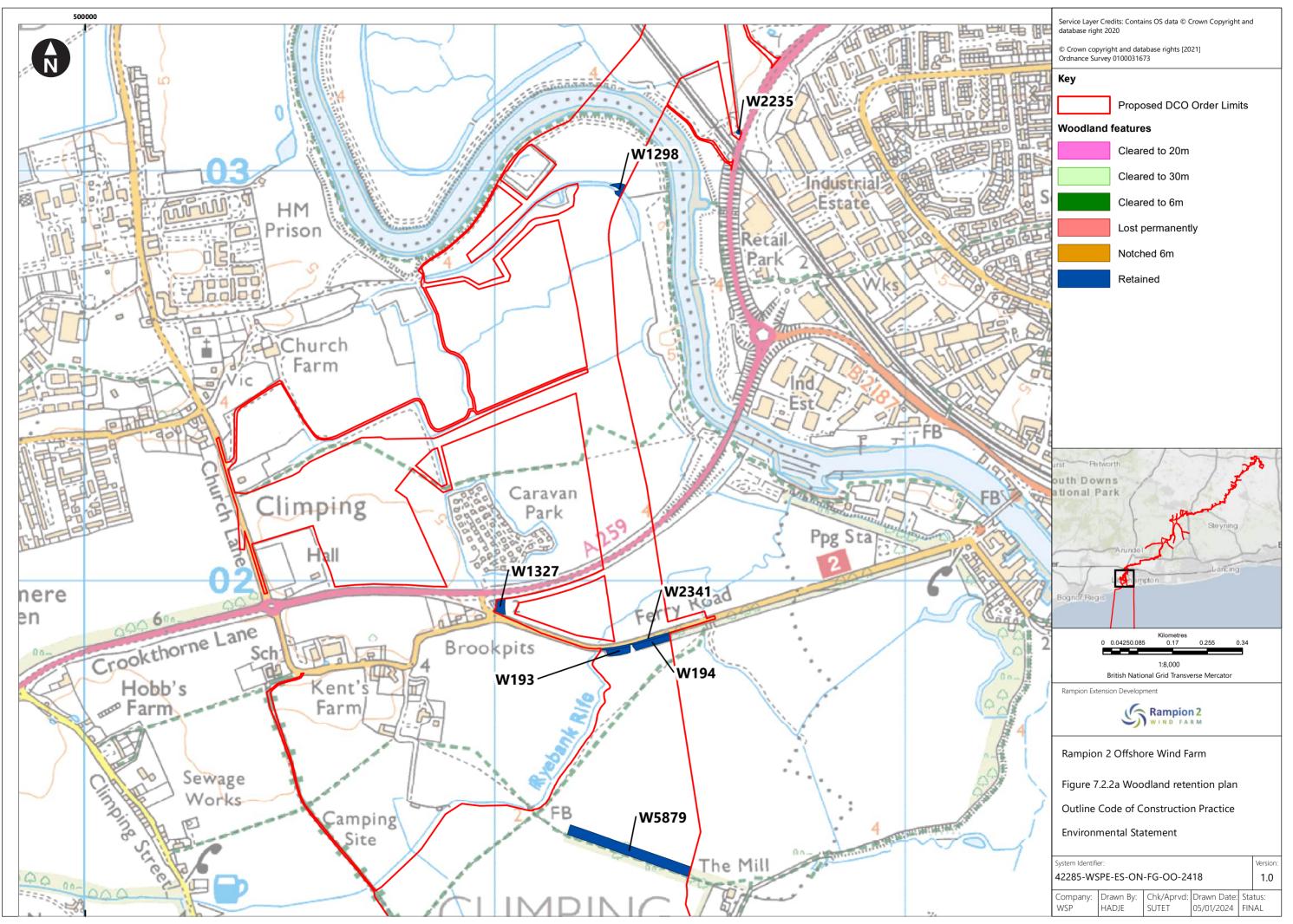


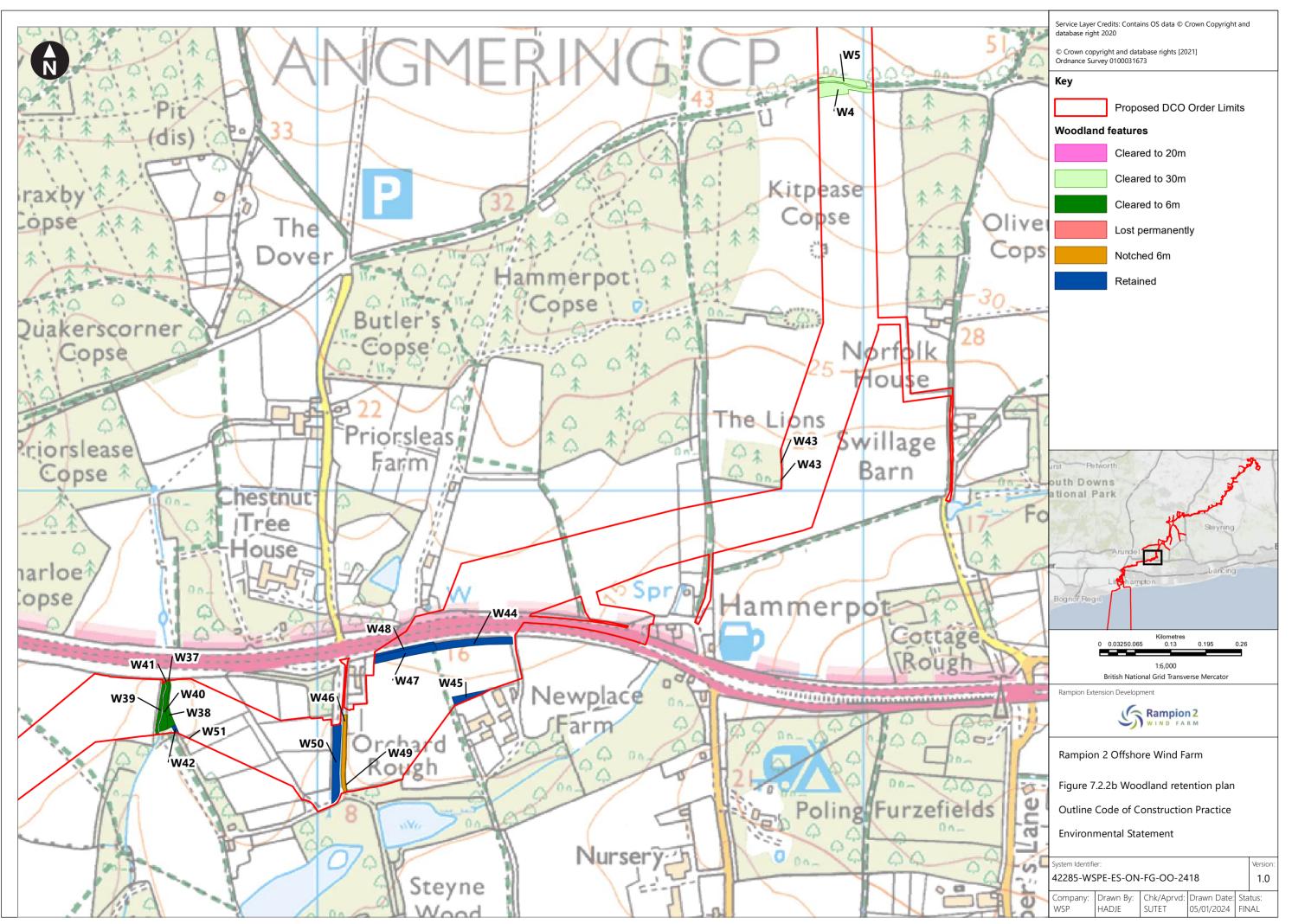


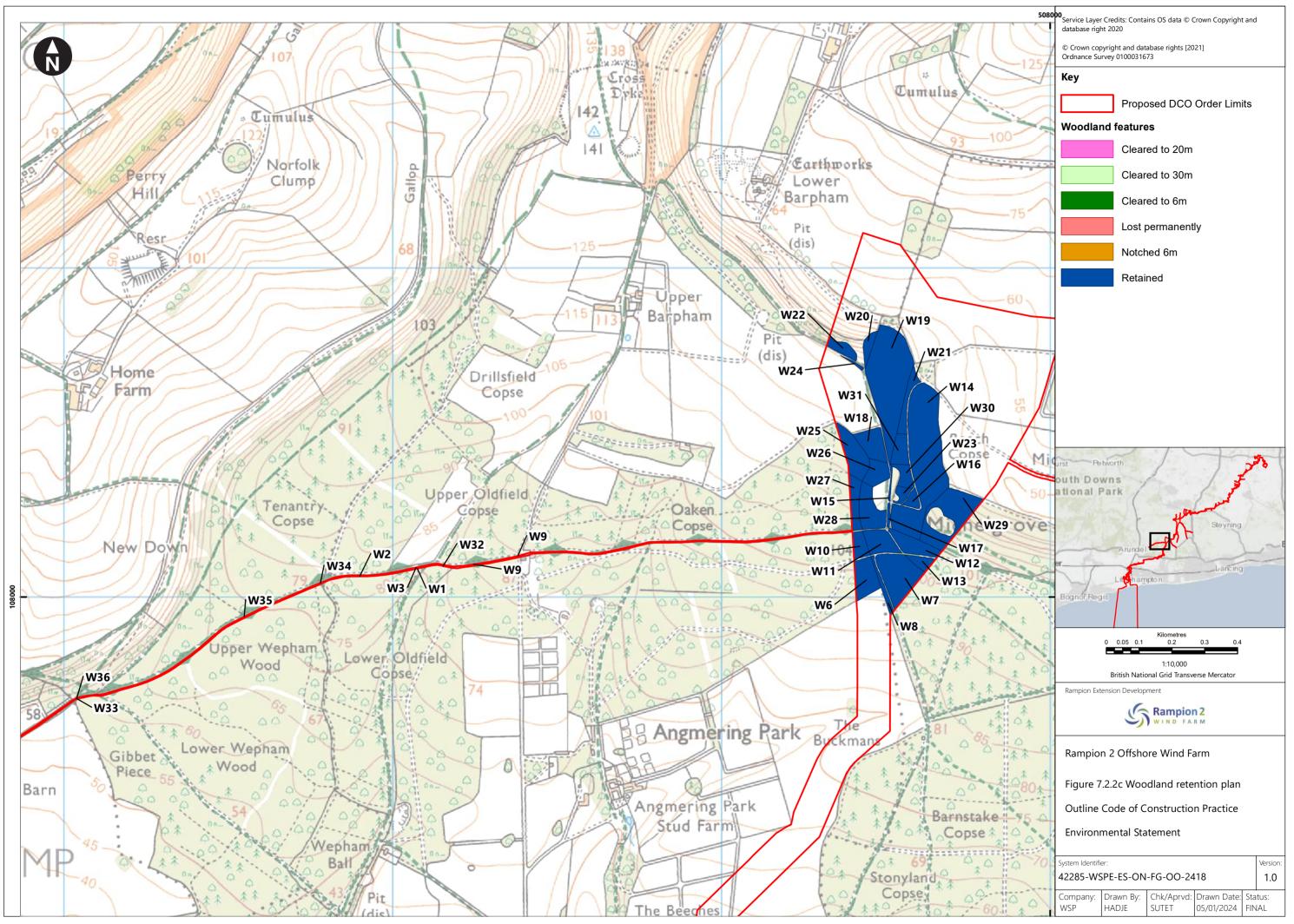


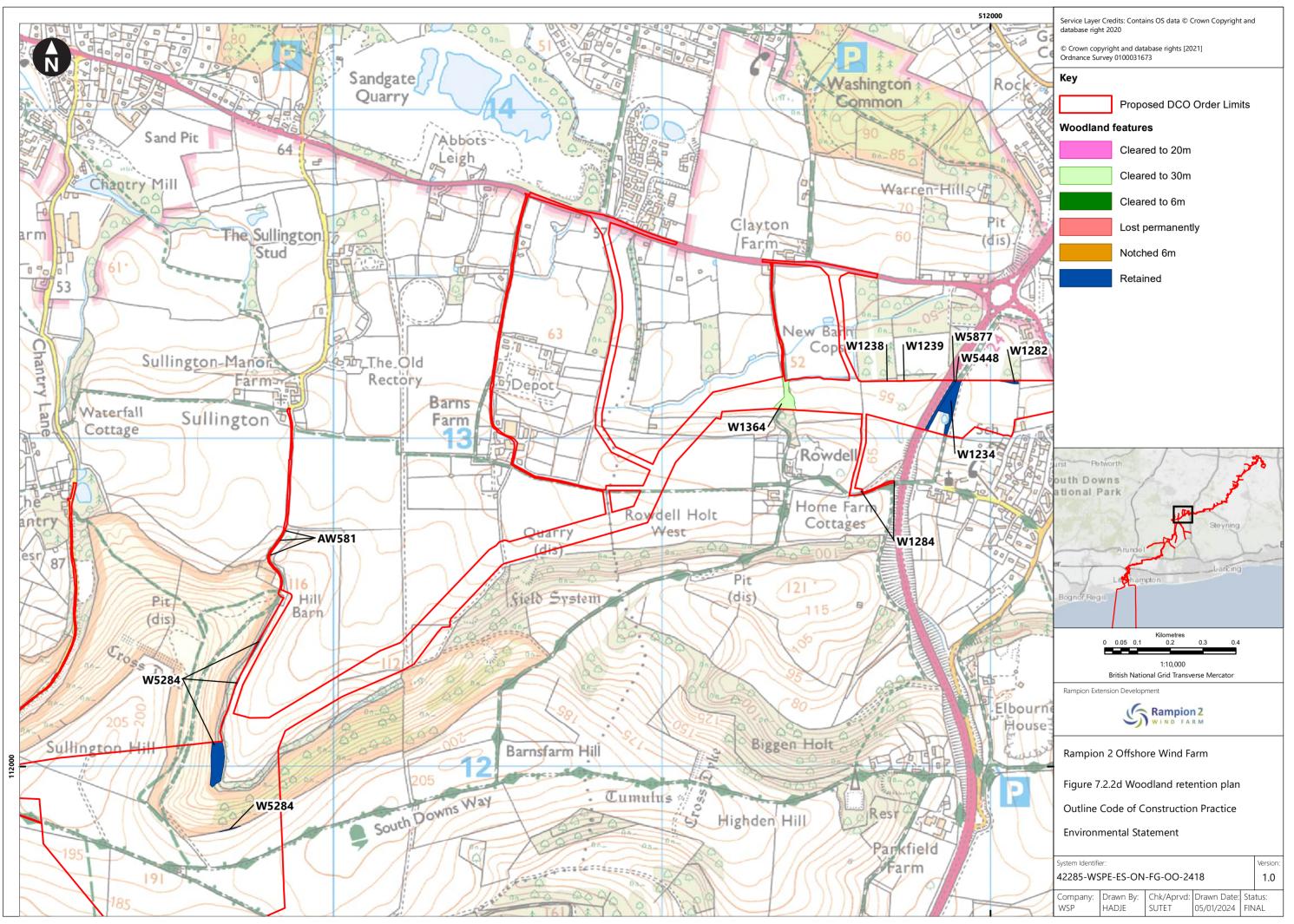


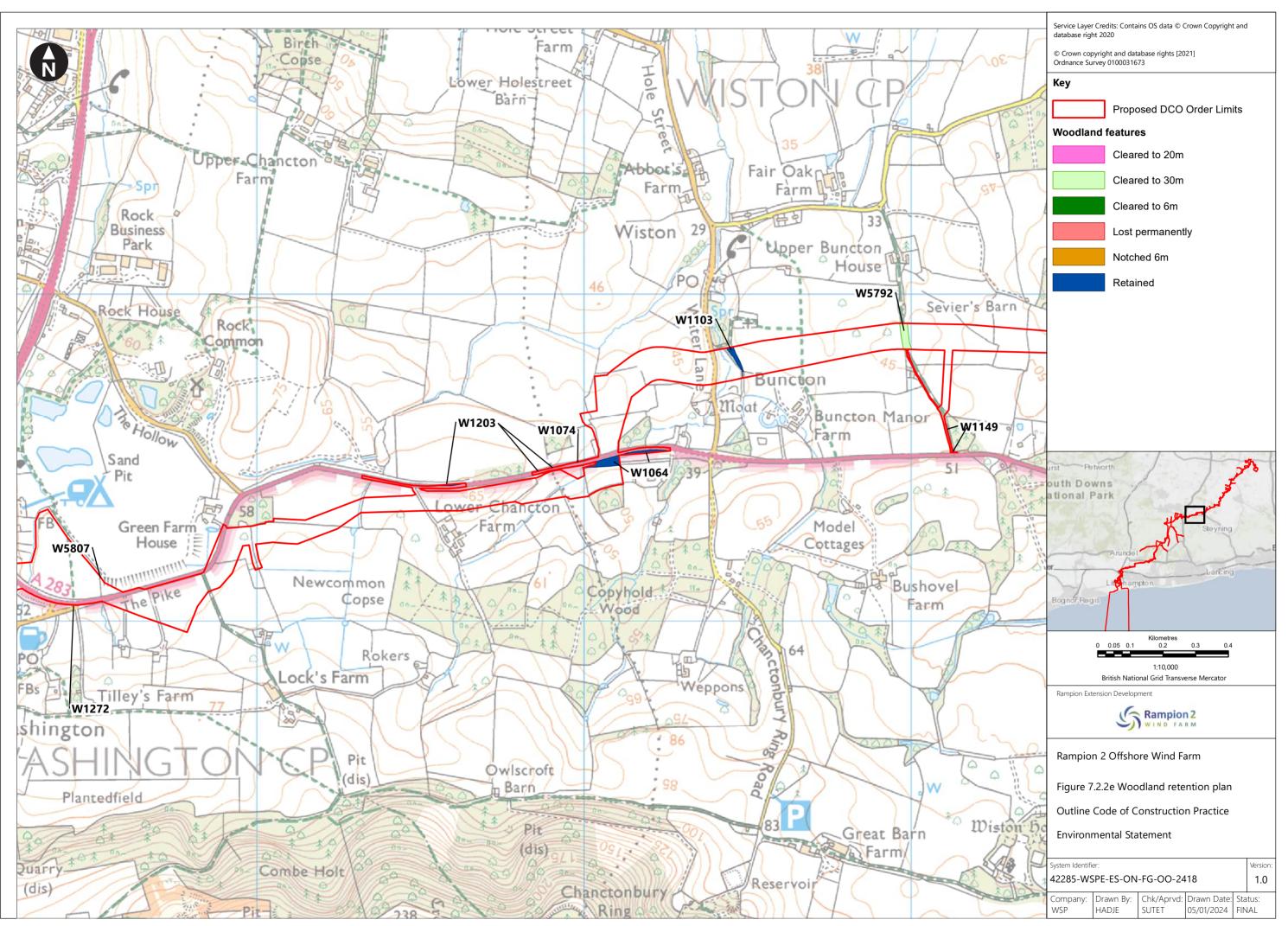


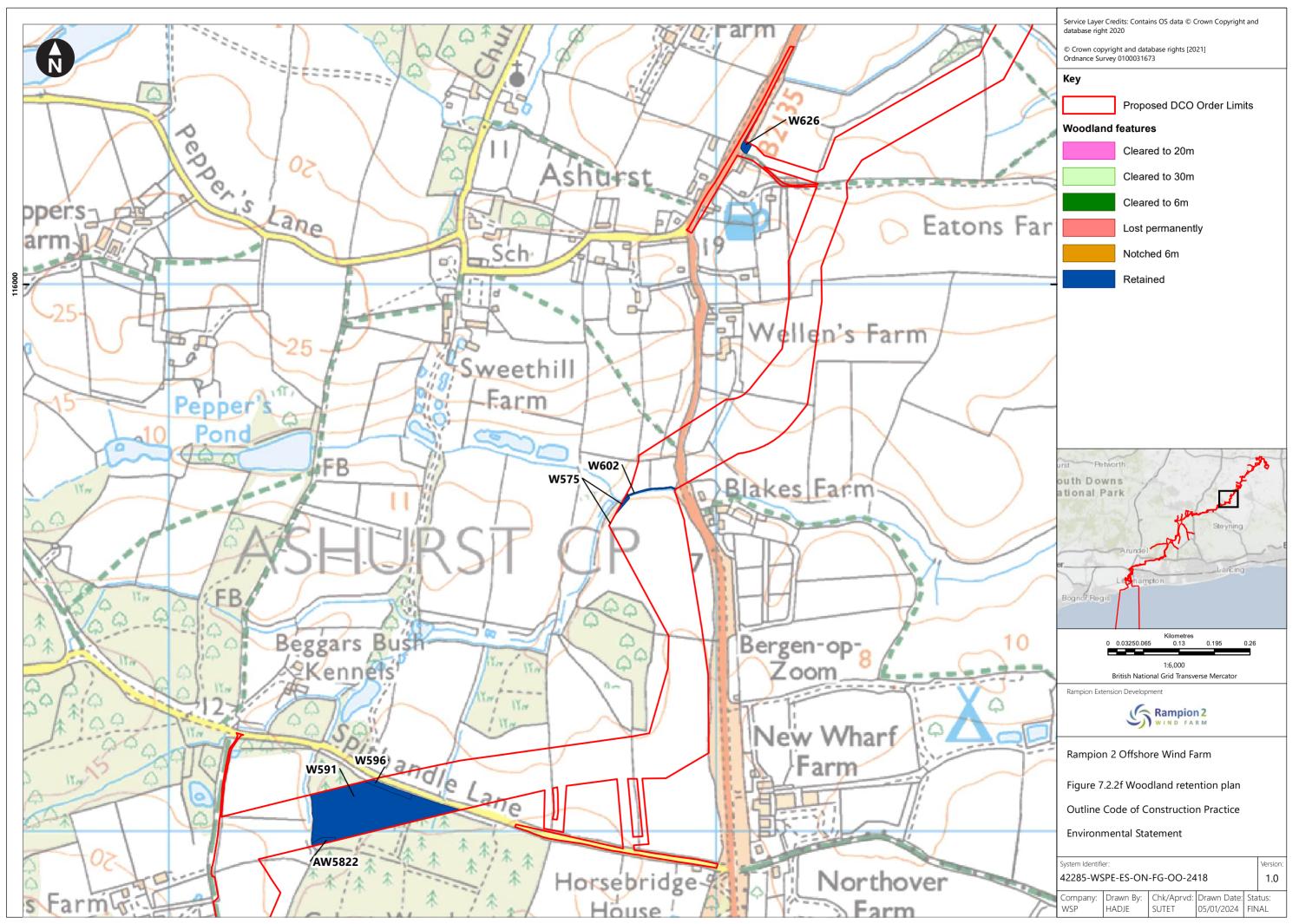


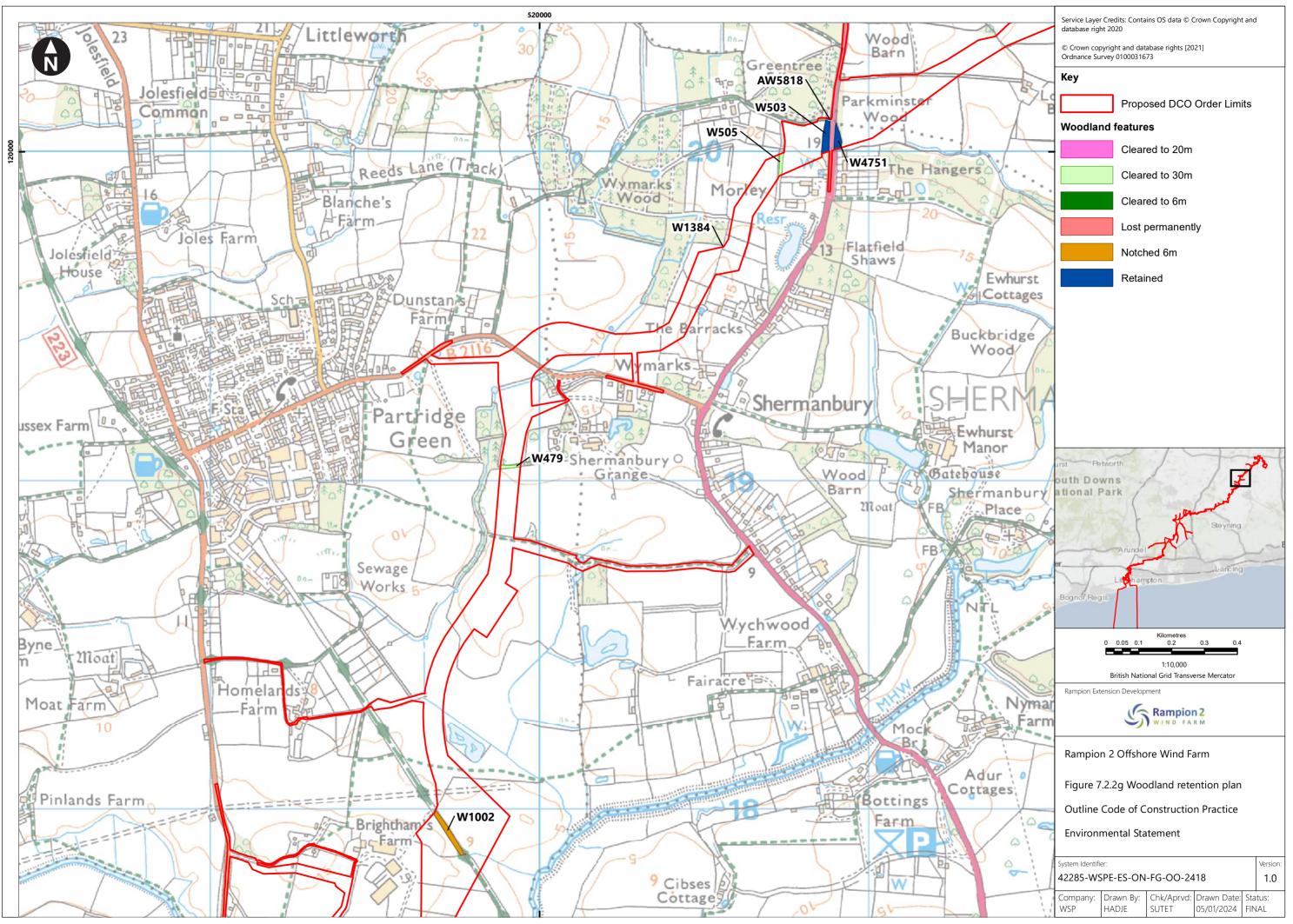


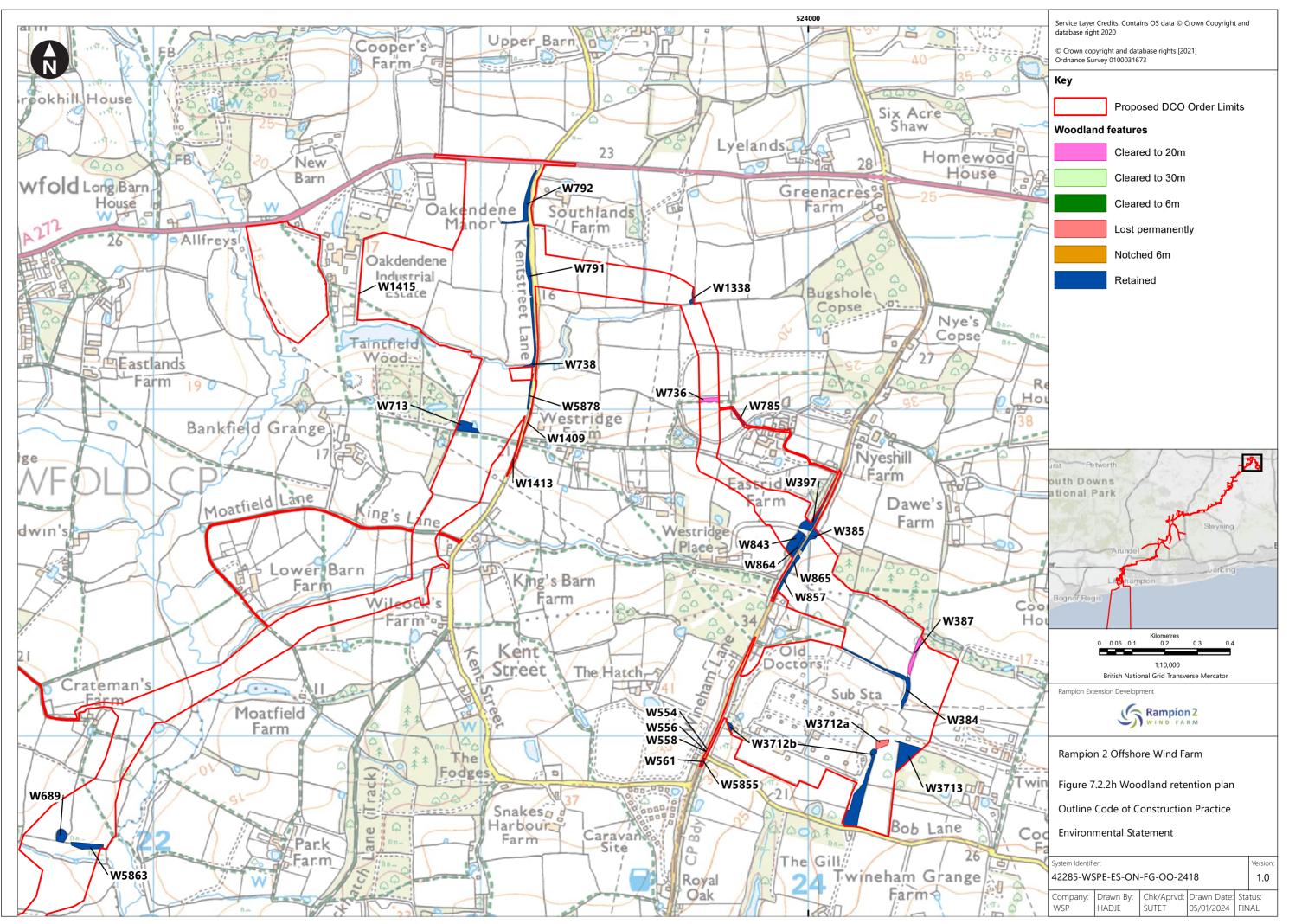


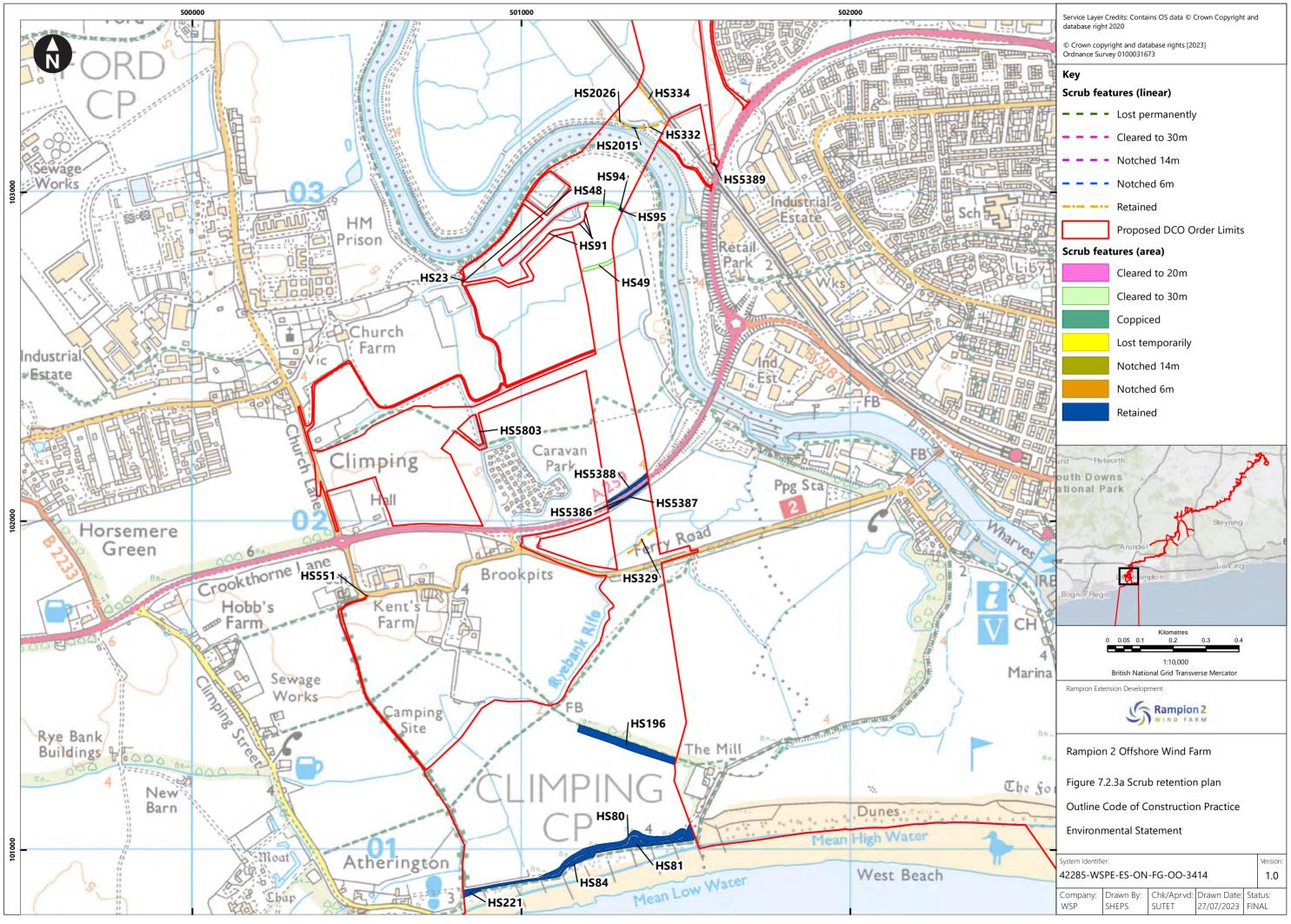


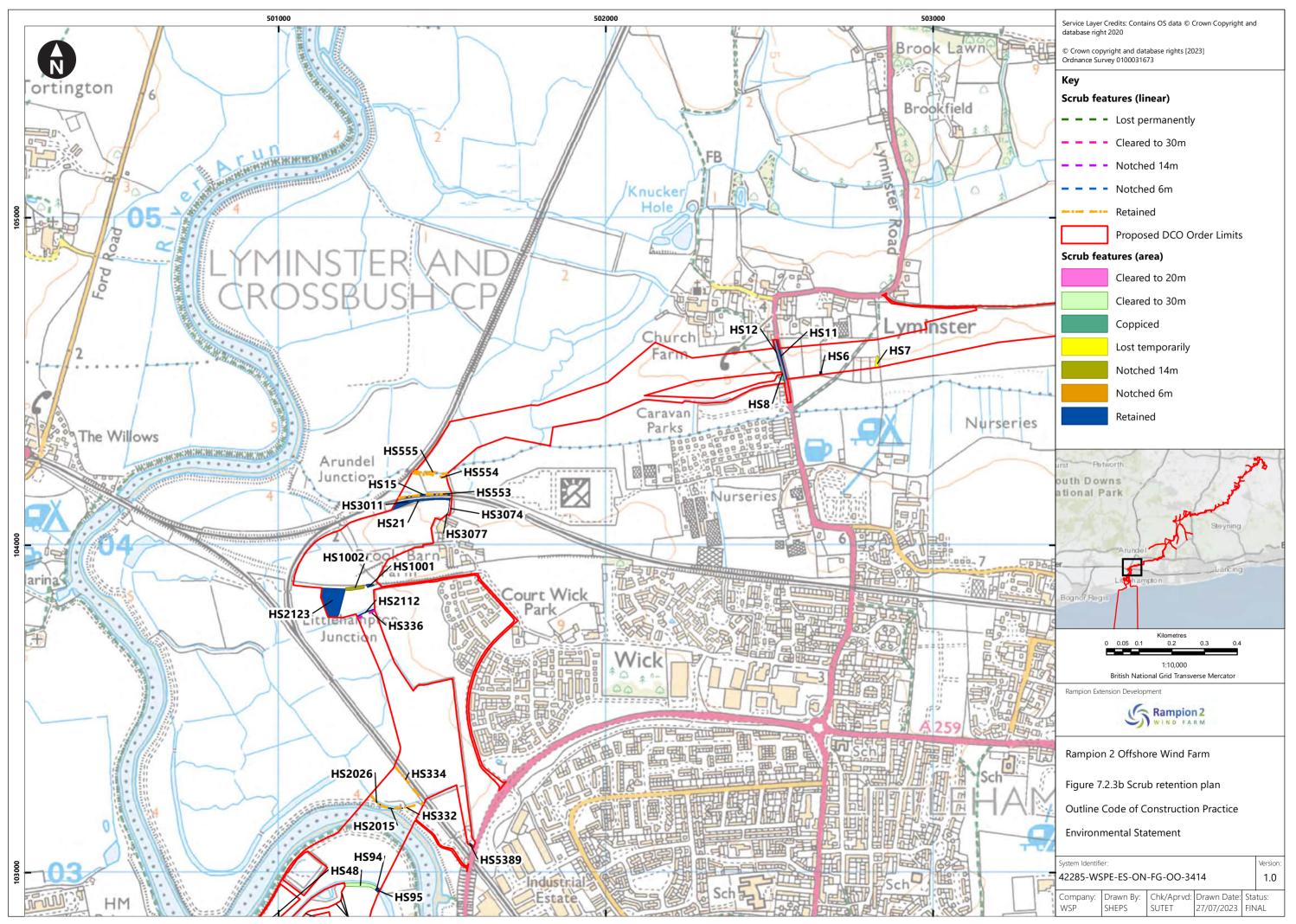


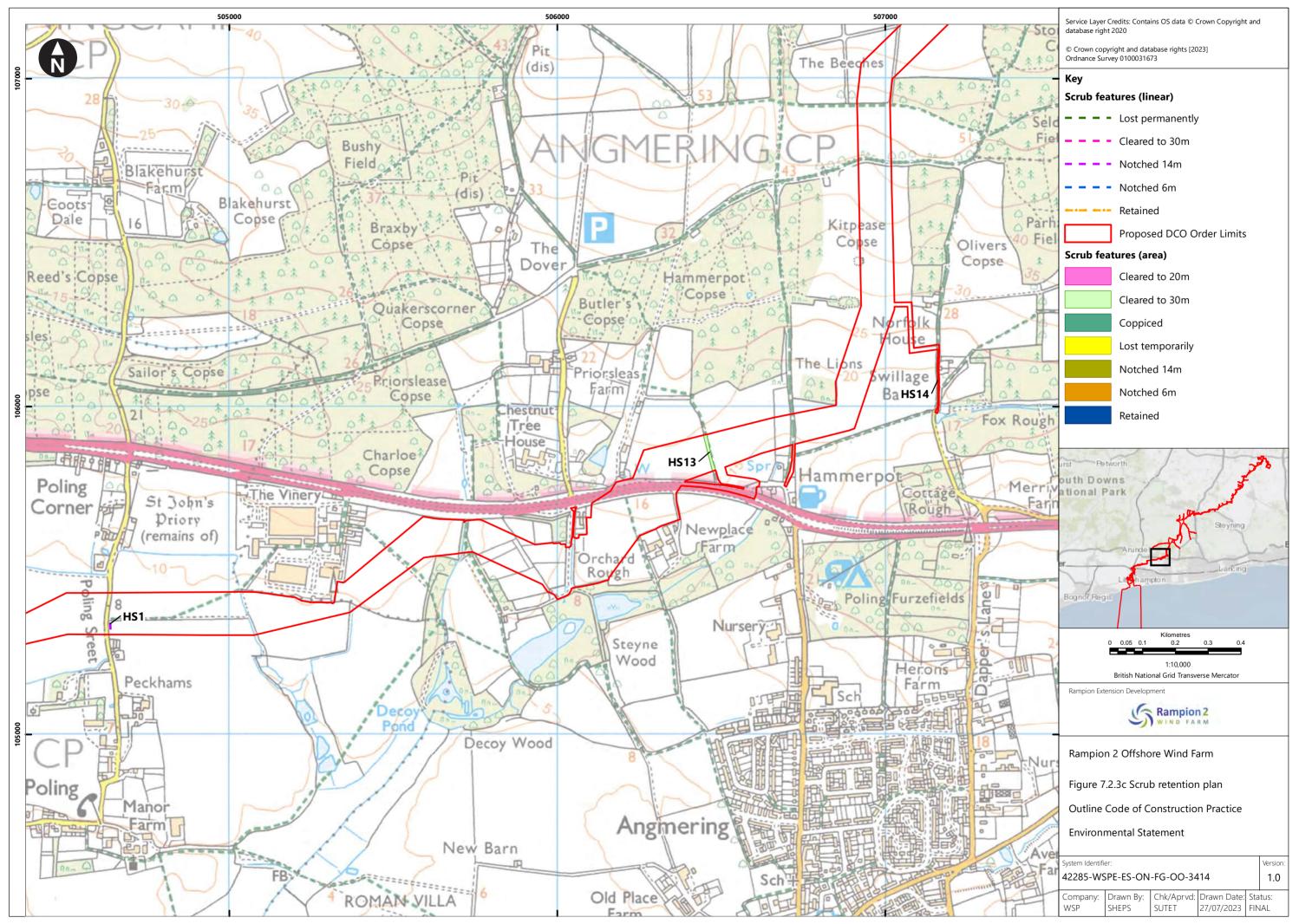


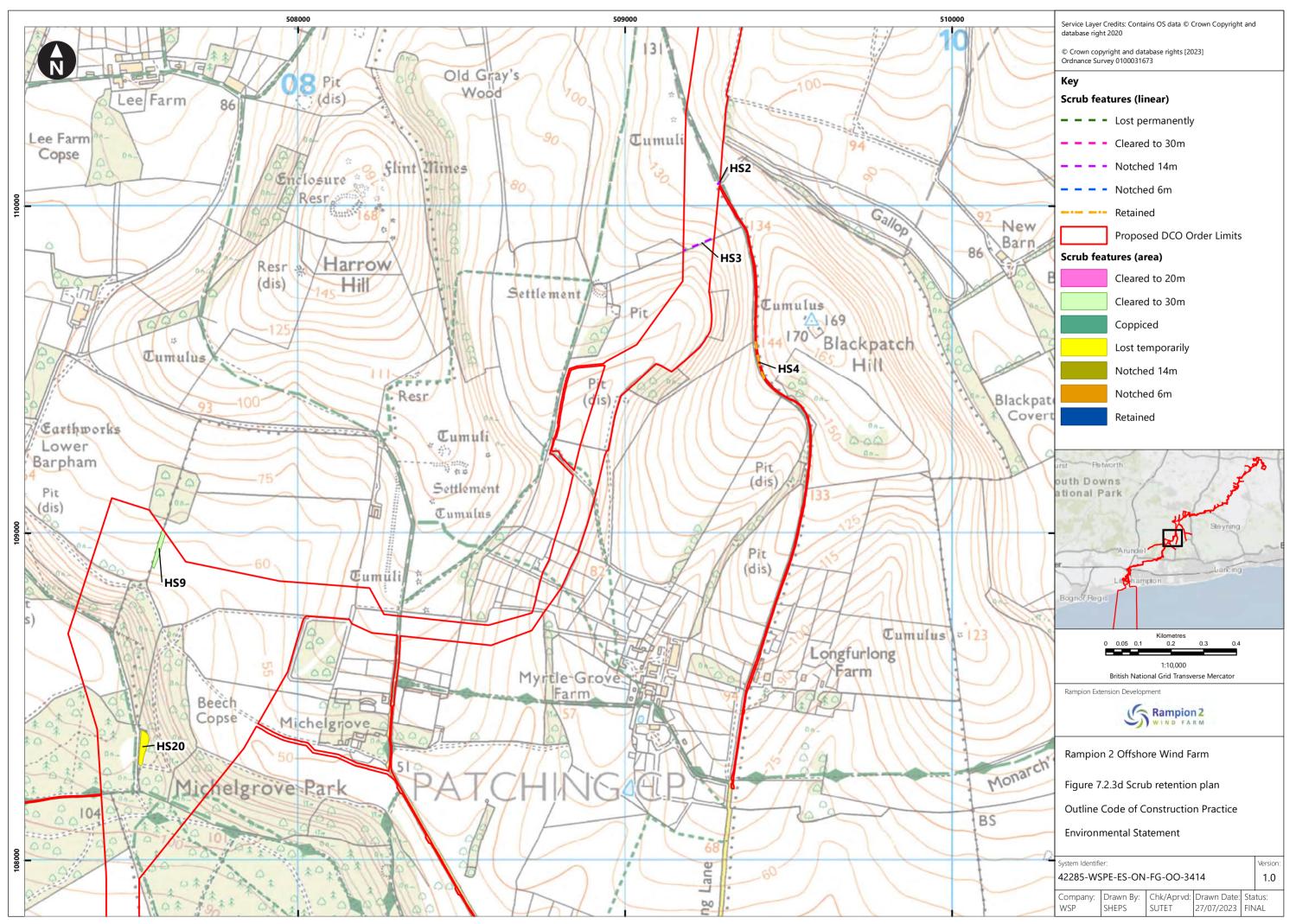


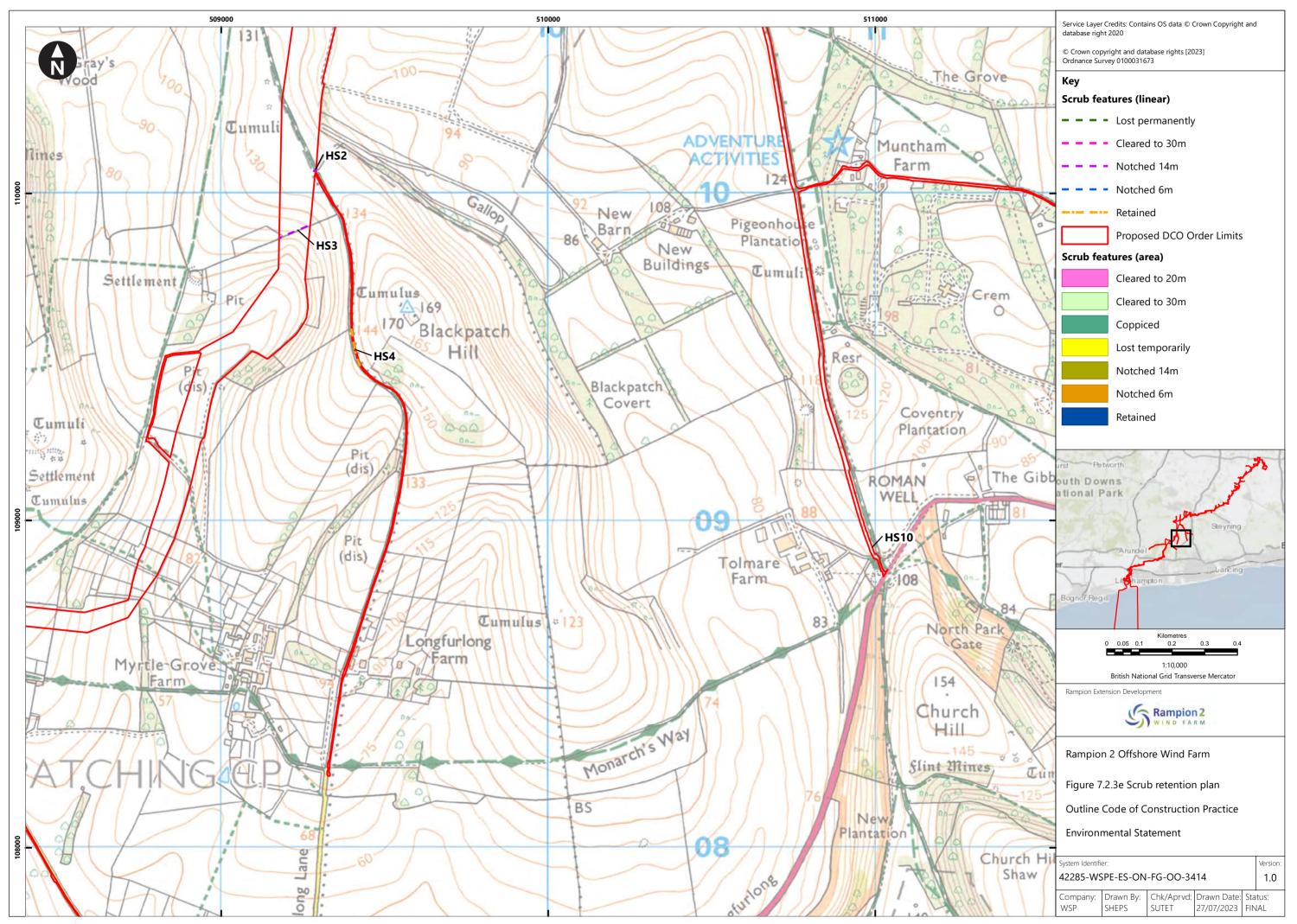


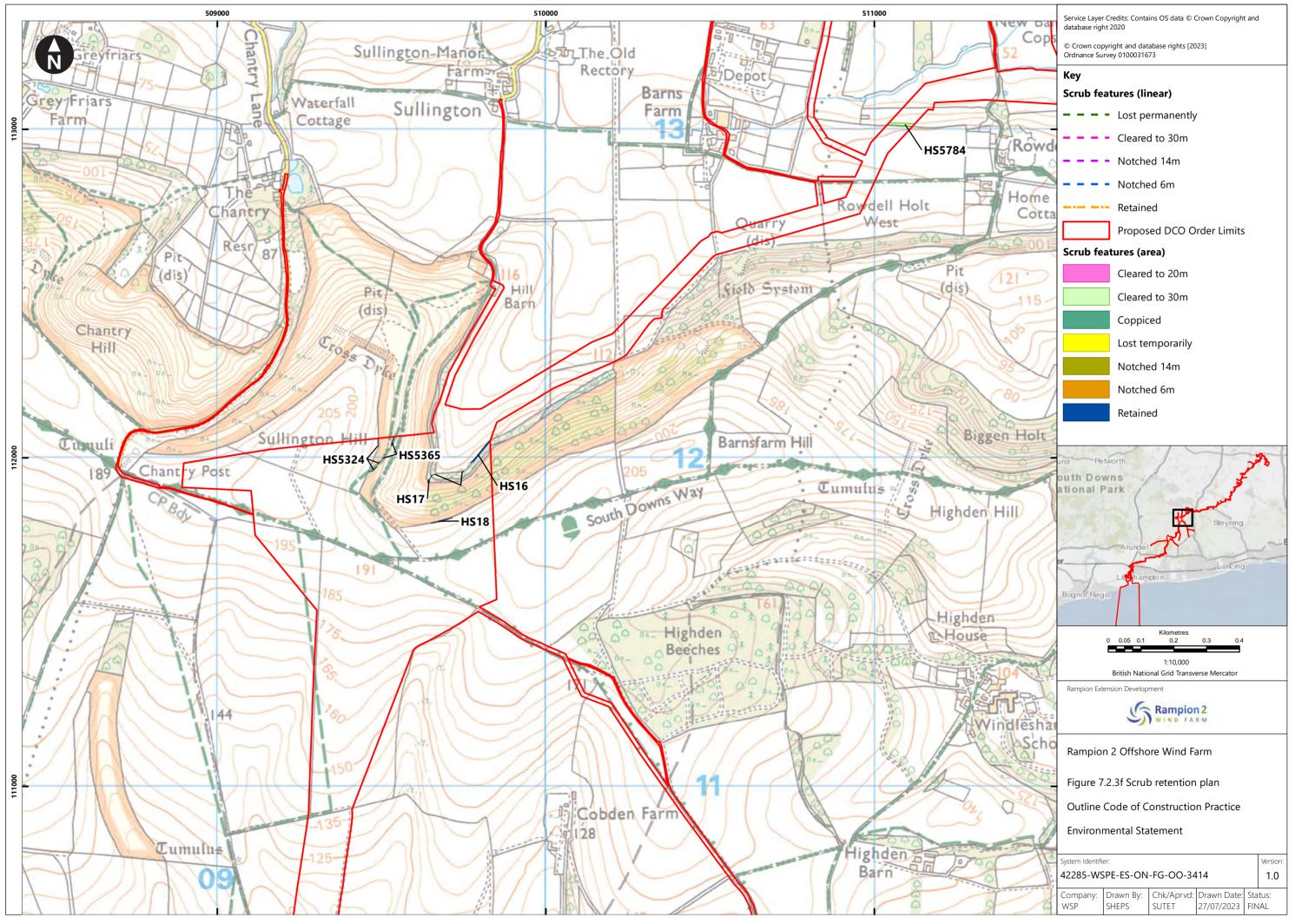


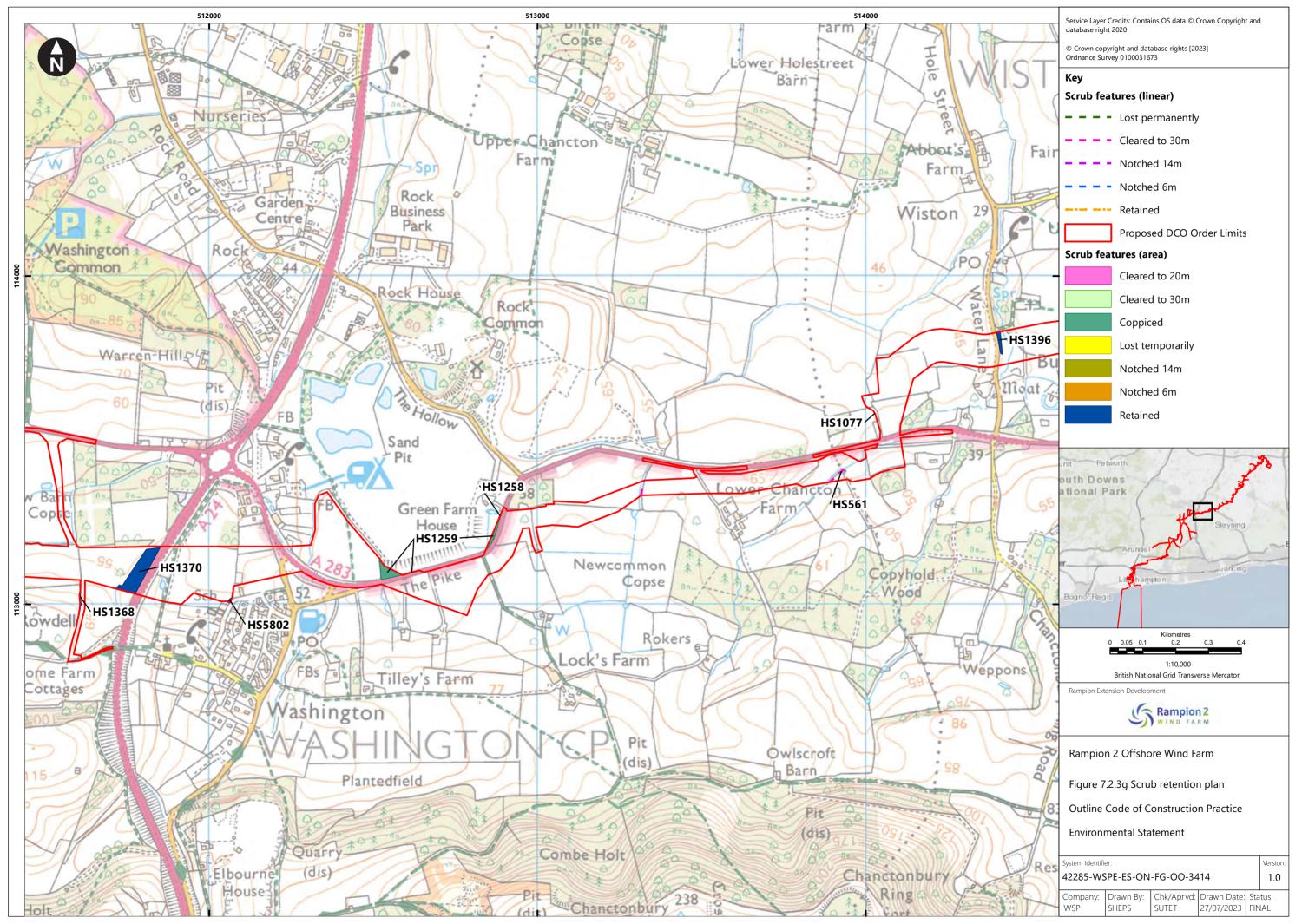


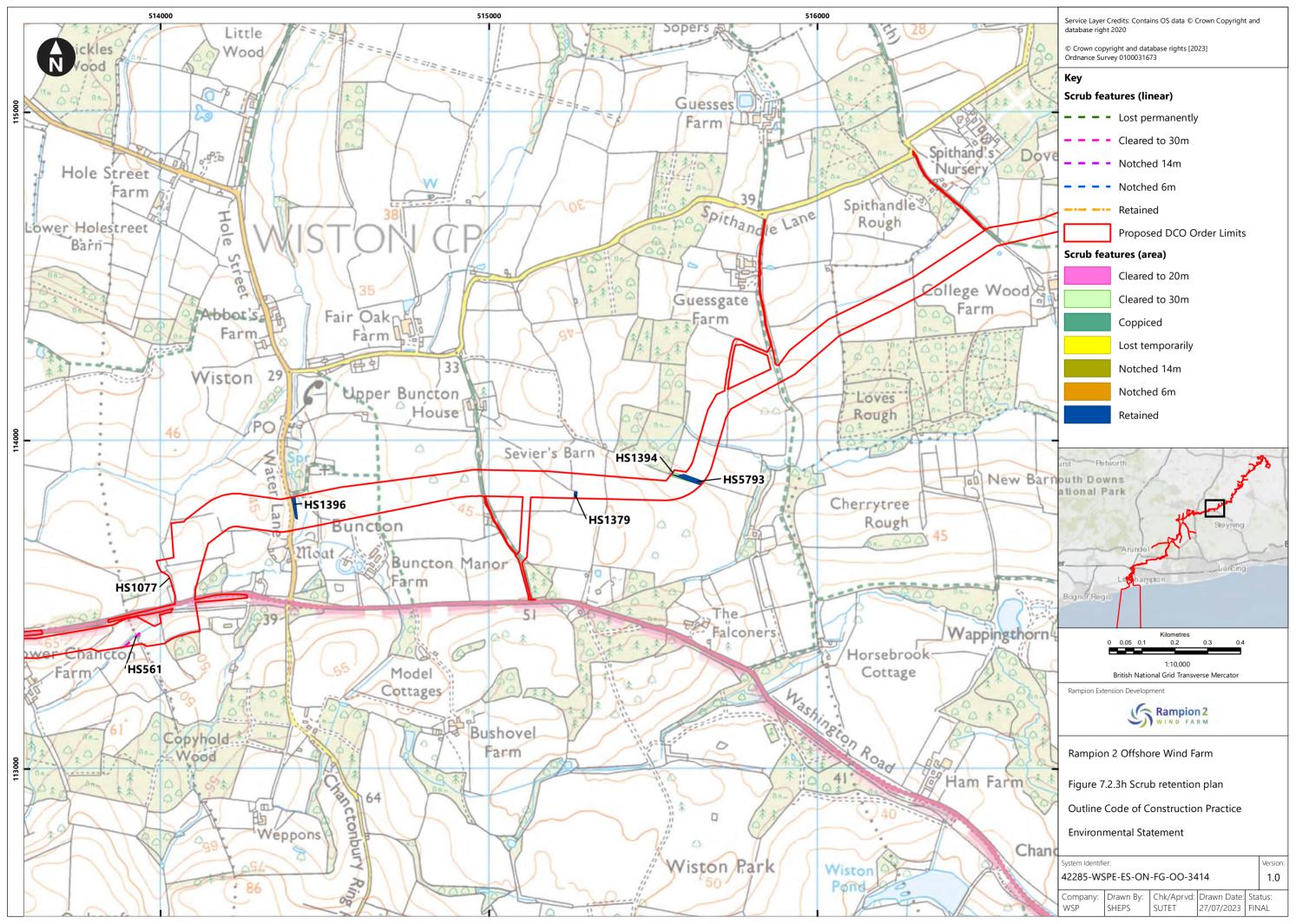


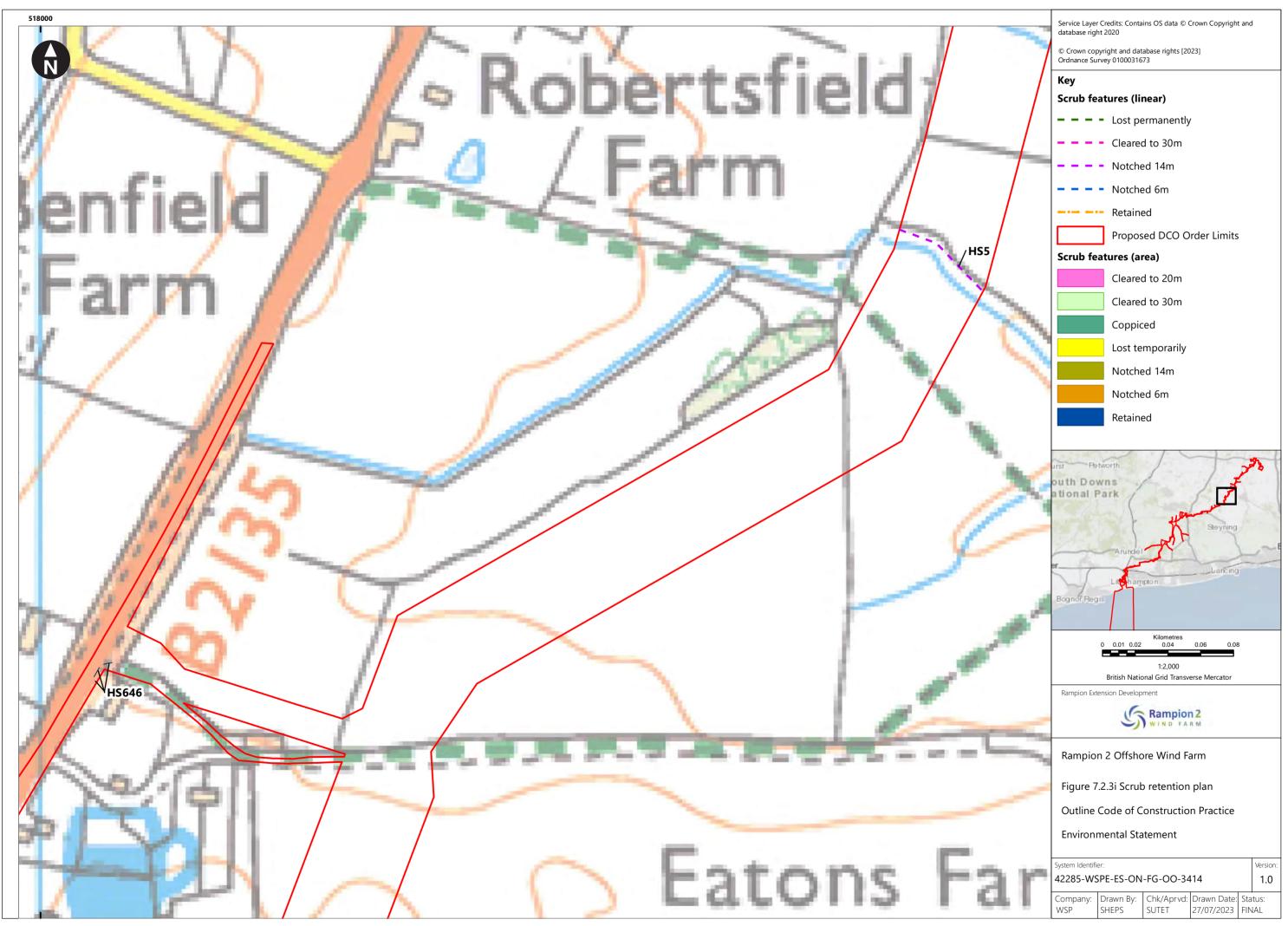


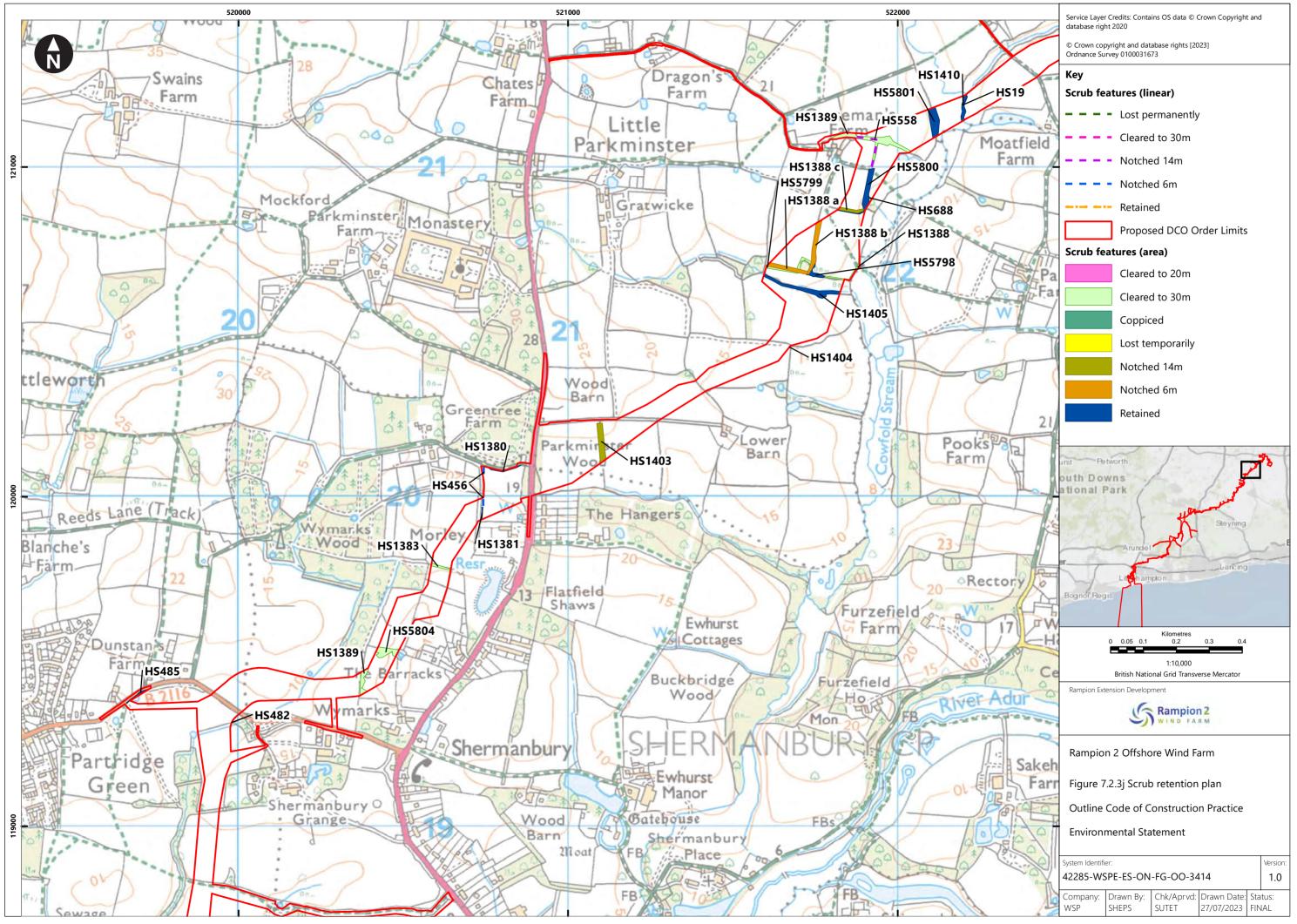


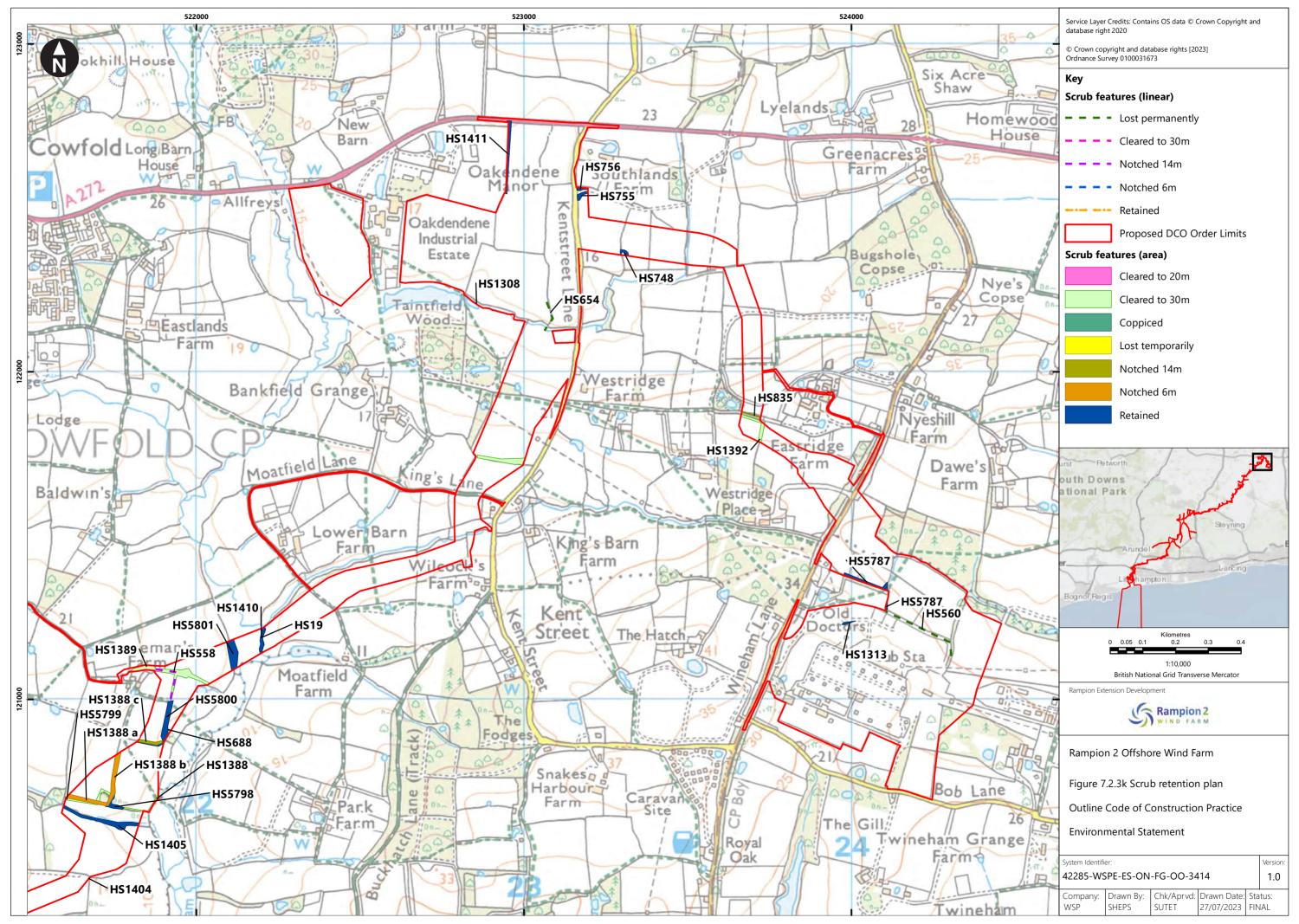


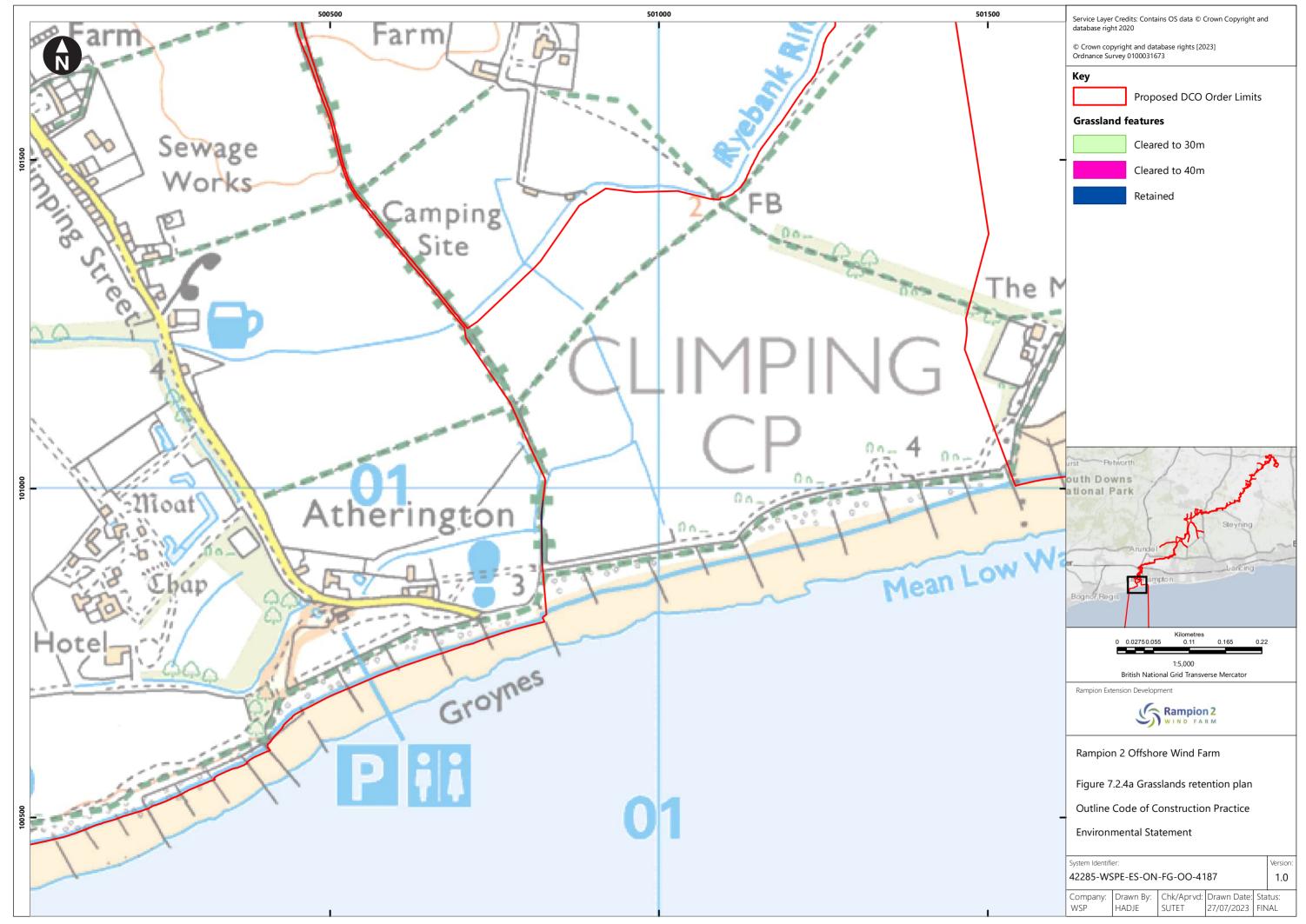




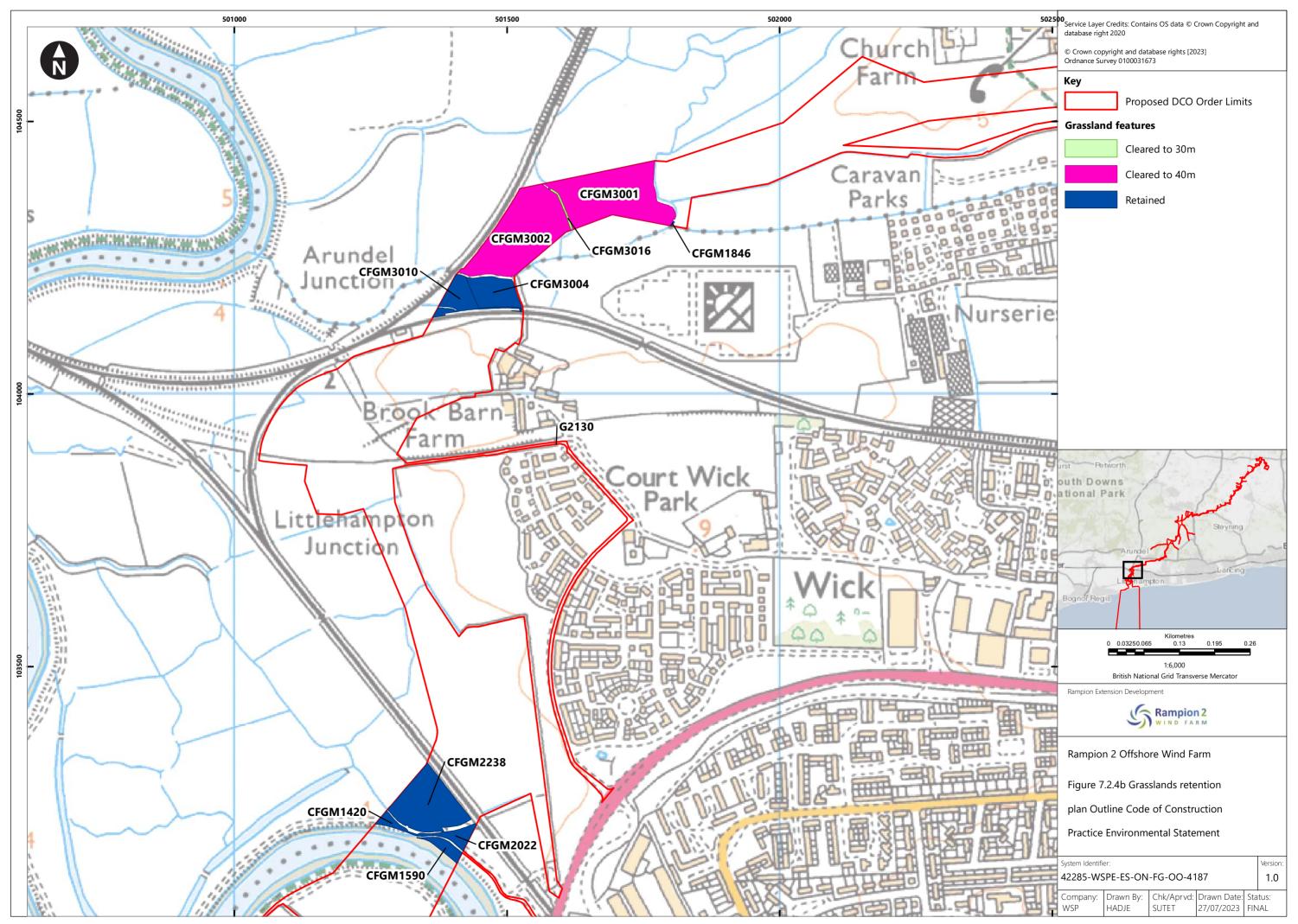


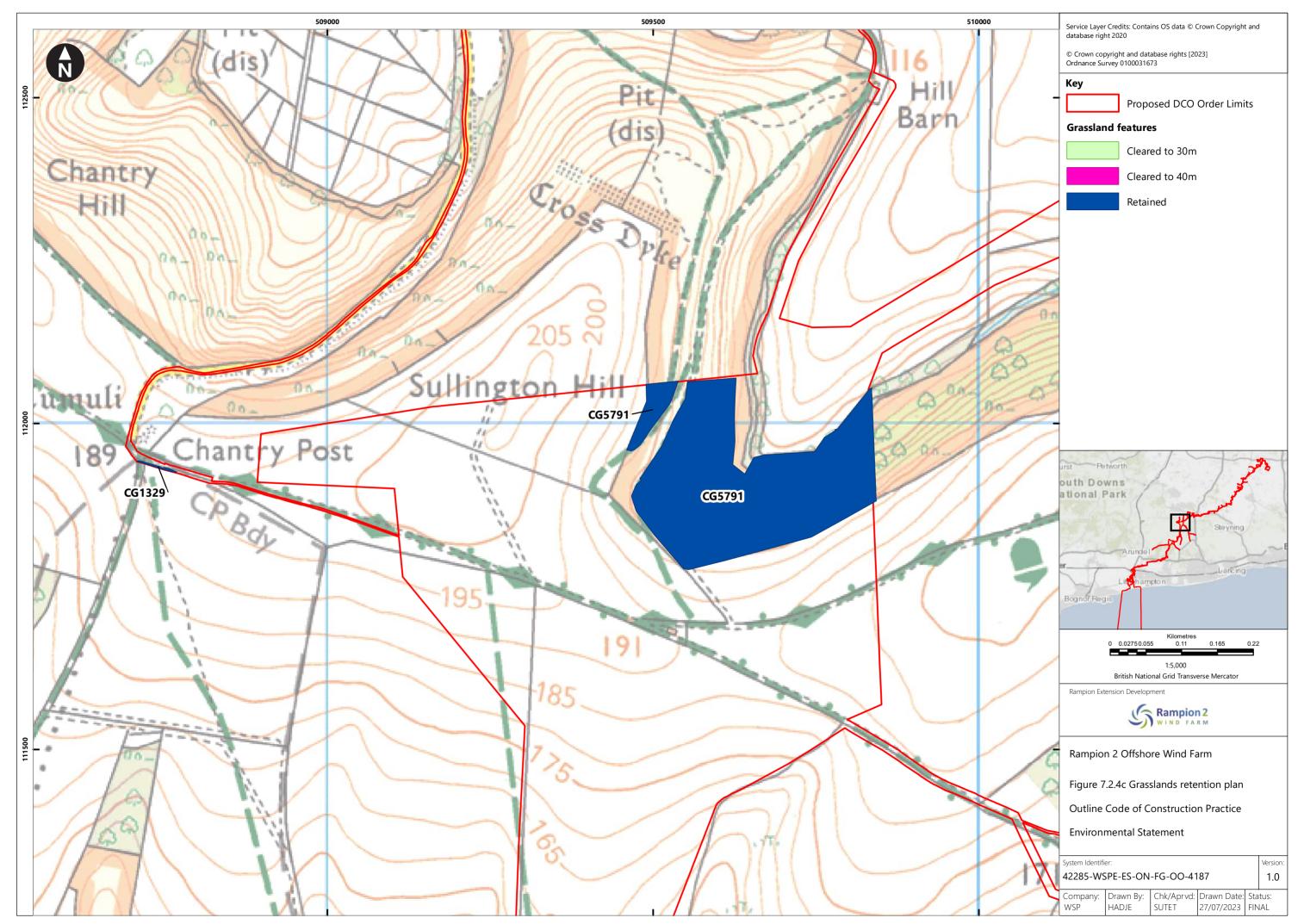


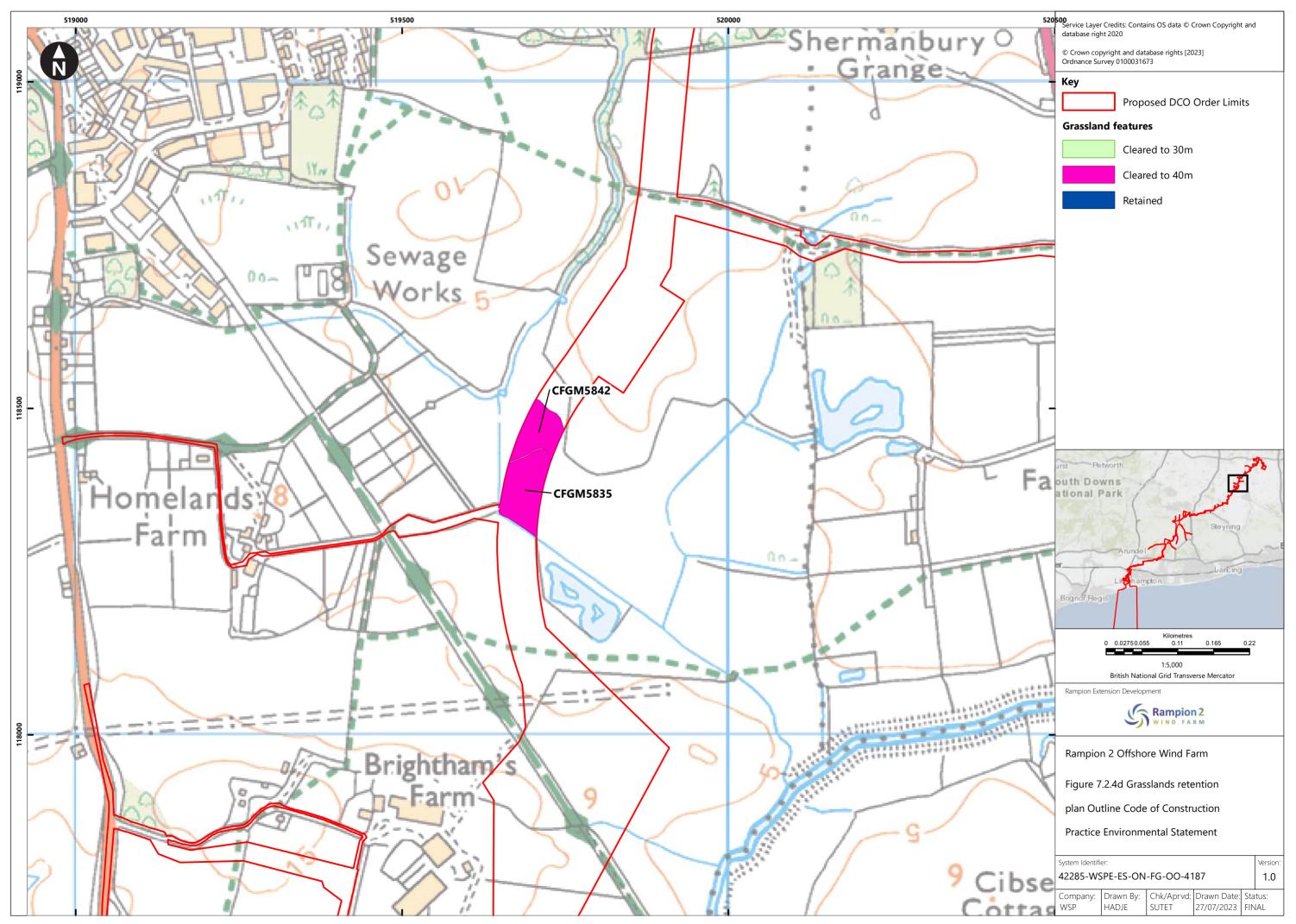


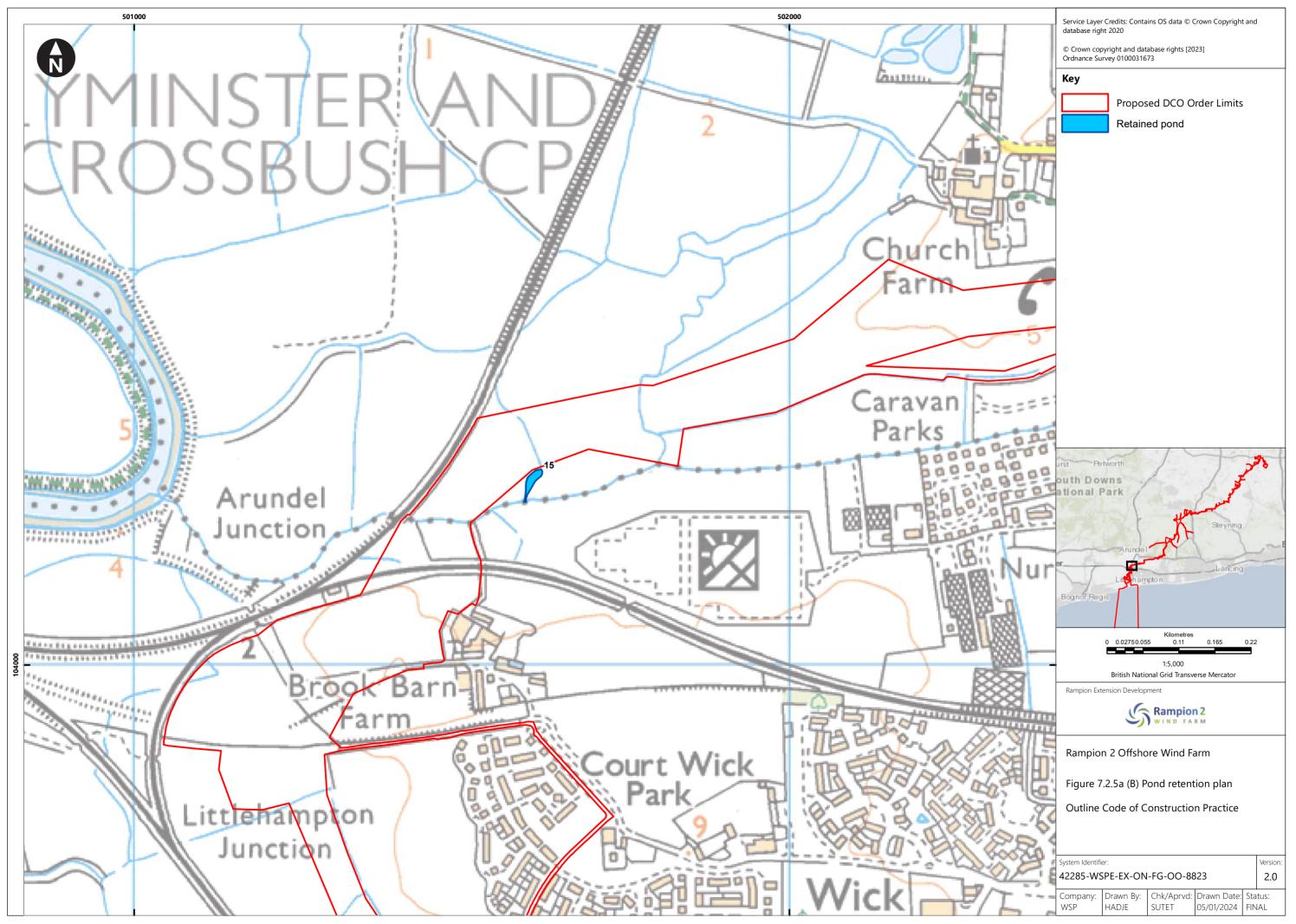


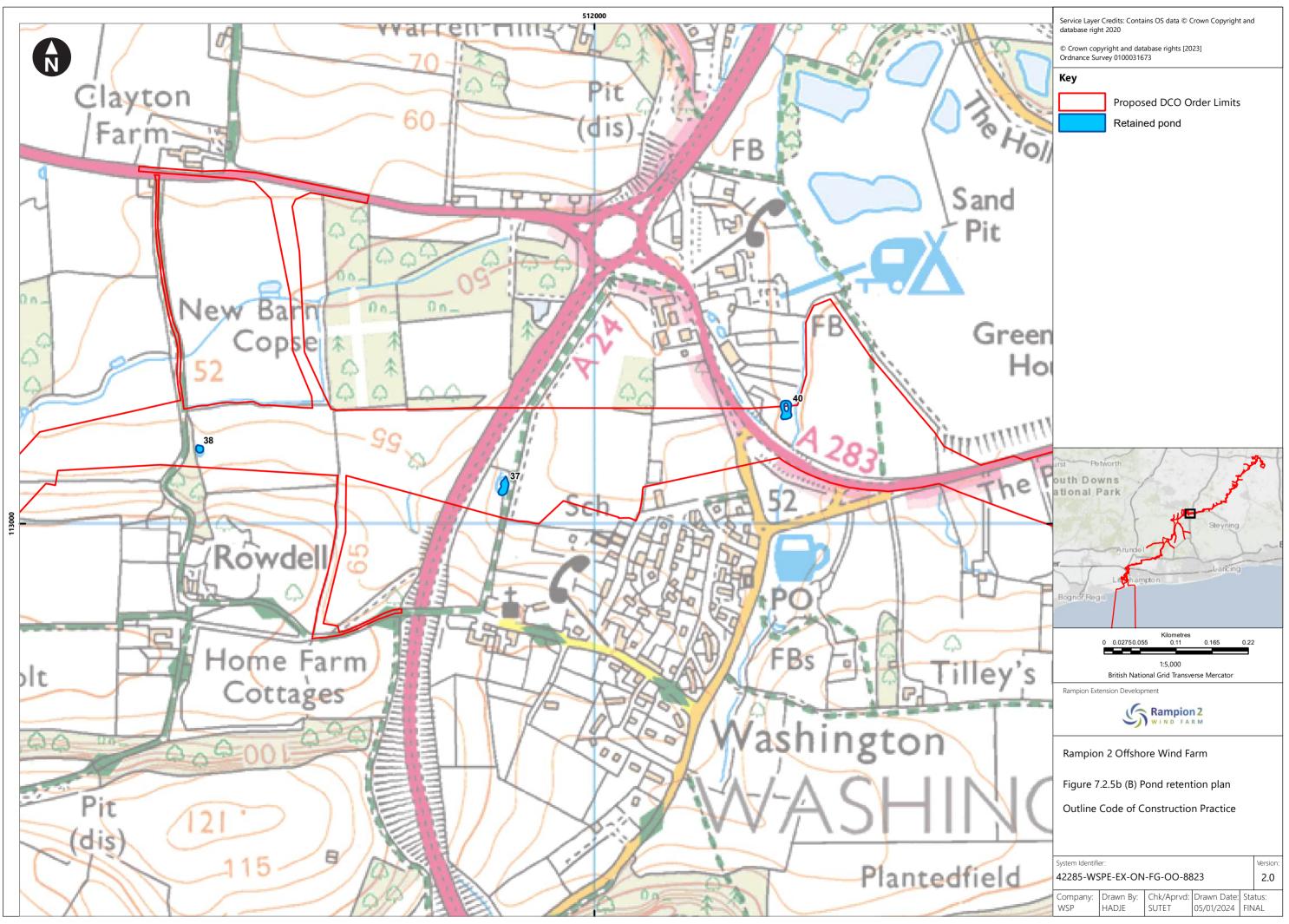
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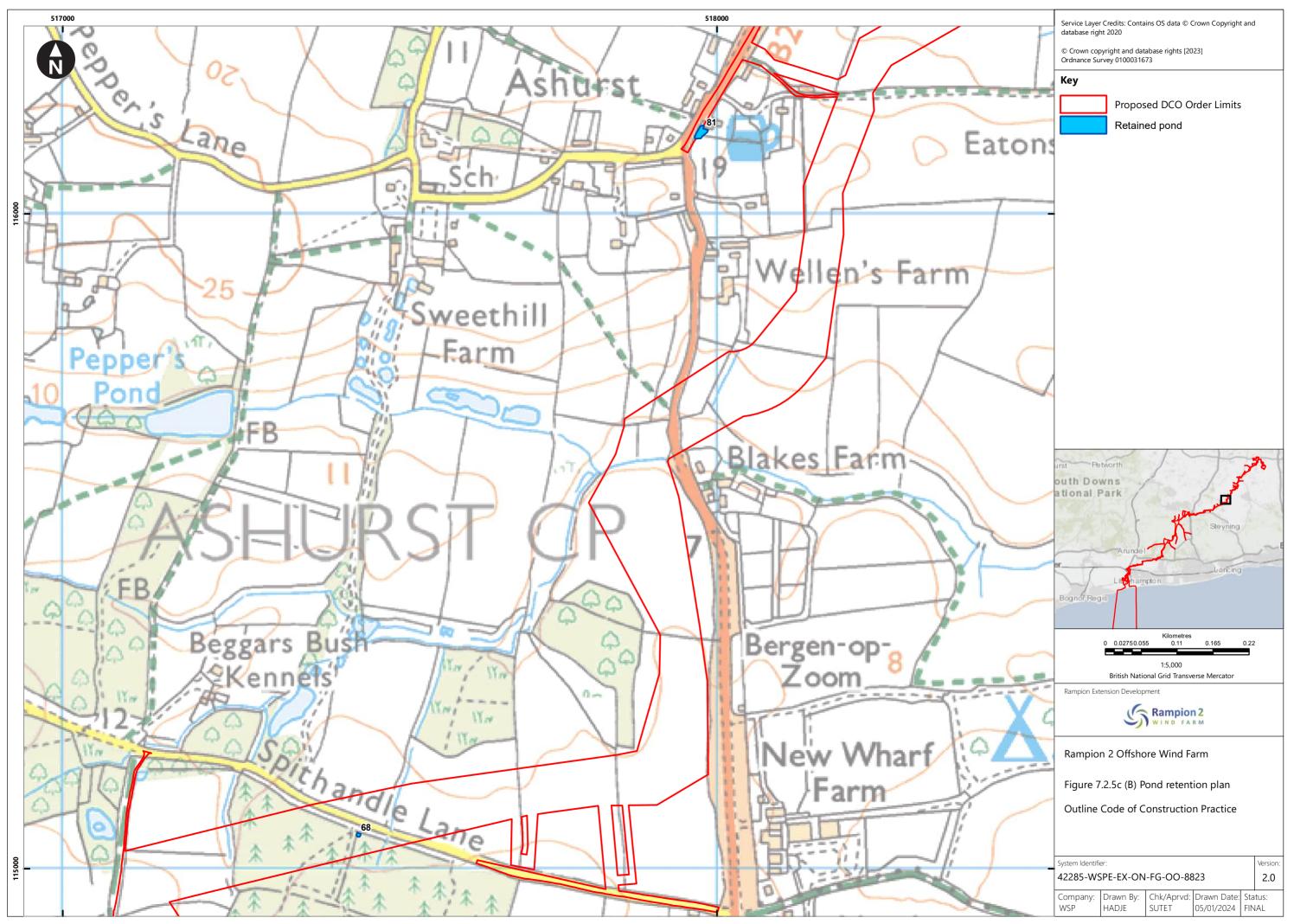


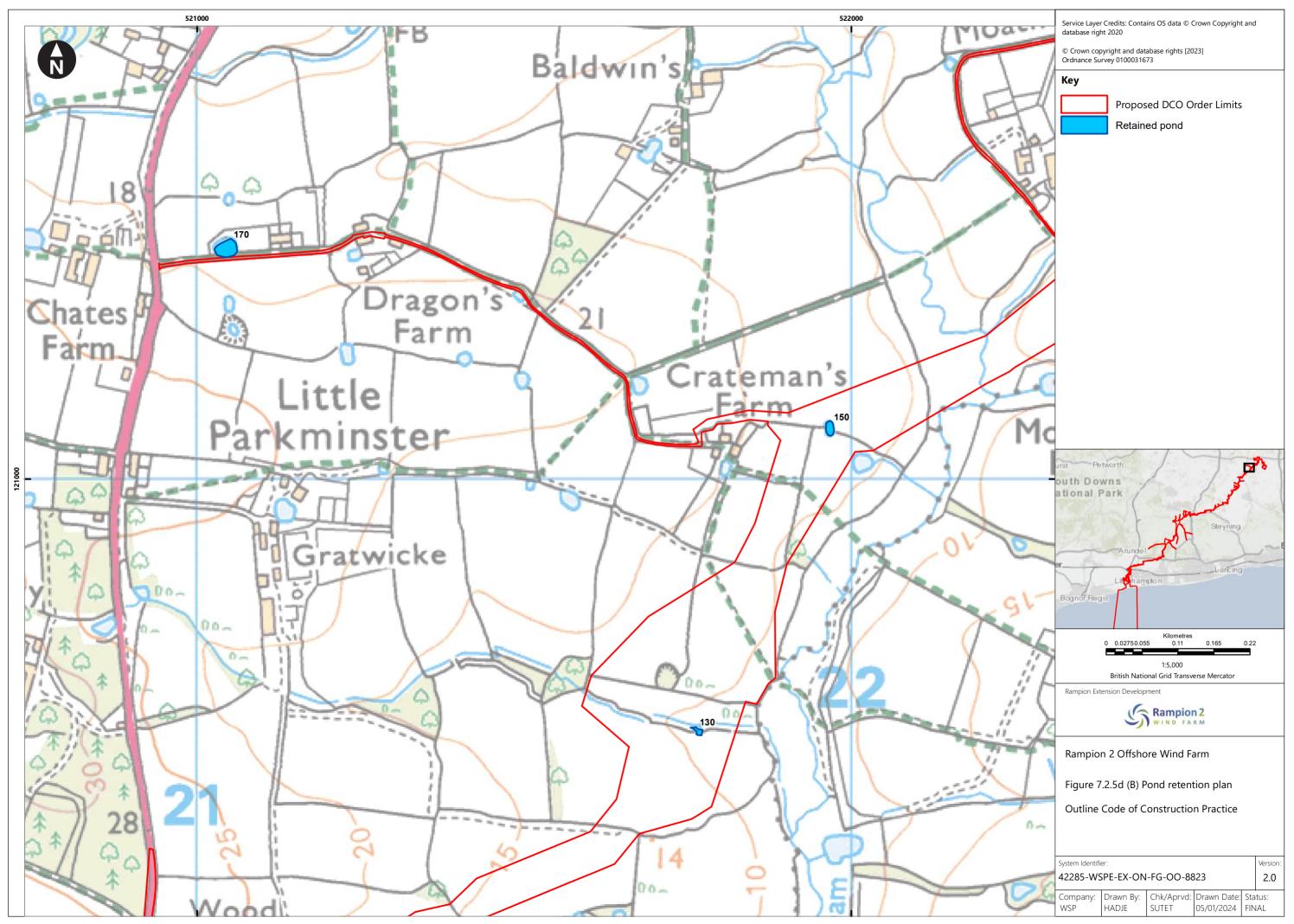


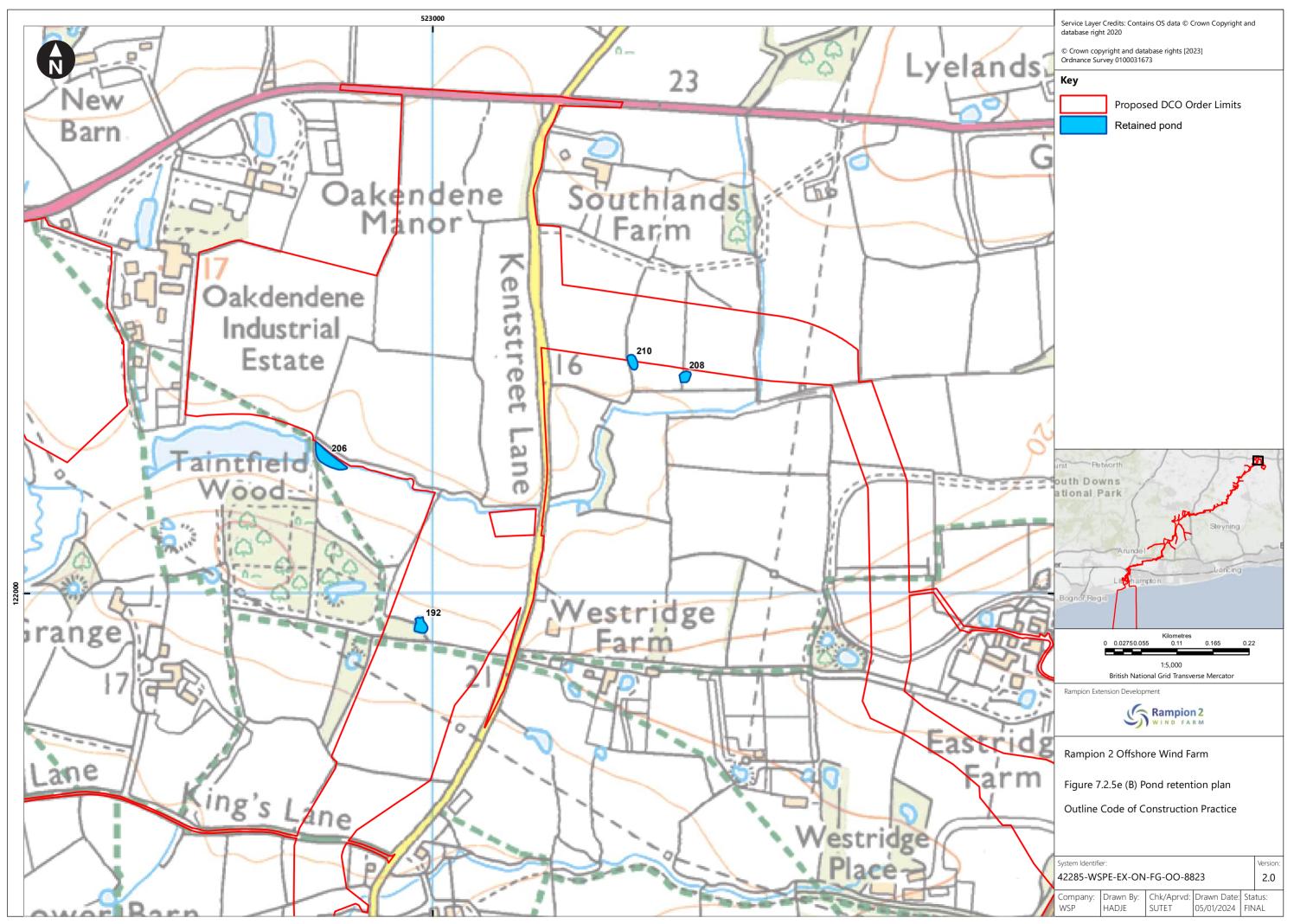














## Appendix C Outline Soils Management Plan (see Document Ref: 7.3)



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## Appendix D Outline Site Waste Management Plan (see Document Ref: 7.4)



