Onshore Cable Route

Hydrogeological Risk Assessment

(Appendix 1 of the Surface and Foul Water Drainage Management Plan)

(Applicable to Work Numbers 5B to 20, 25 to 38, 41 to 49 and 52 to 61)

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1	ALL	ALL	New document
2	16/17, 22, 25	6.6.6, 6.2.19, 6.4.1	Amended in accordance with consultee comment: SCC/MSDC (21/08/23) and Enviornment Agency (15/09/23)

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1. INTRODUCTION AND SCOPE

1.1. Development History

1. East Anglia Three Limited (EATL) was awarded a Development Consent Order (DCO) by the Secretary of State, Department of Business, Energy and Industrial Strategy (DBEIS) on 7 August 2017 for the East Anglia THREE Offshore Windfarm (EA THREE). The DCO granted consent for the development of a 1,200MW offshore windfarm and associated infrastructure. The DCO has now been subject to three non-material variations:

- In March 2019 EATL submitted a non-material change application to DBEIS to amend the consent to increase the maximum generating capacity from 1,200MW to 1,400MW and to limit the maximum number of gravity base foundations to 100. In June 2019 DBEIS authorised the proposed change application and issued an Amendments Order.
- In July 2020 EATL submitted a second non-material change application to DBEIS to amend the parameters of its offshore substations (reducing the number of these to one) and wind turbines (a decrease in the number of turbines and an increase in their hub height and rotor radius). On 15 April 2021 DBEIS authorised this proposed change application and issued an Amendments Order.
- In August 2021 EATL submitted a third non-material change application to DBEIS to amend the consent to remove the maximum generating capacity of 1,400MW and to amend the parameters of its wind turbines (a decrease in the number of turbines and an increase in their hub height and rotor radius). In September 2022 DBEIS authorised the proposed change application and issued an Amendments Order.

2. The onshore construction works associated with EA THREE will have a capacity of 1,400MW and transmission connection of 1,320MW. The construction works will be spread across a 37km corridor between the Suffolk coast at Bawdsey and the converter station at Bramford, passing the northern side of Ipswich. As a result of the strategic approach taken, the cables will be pulled through pre-installed ducts laid during the onshore works for East Anglia ONE Offshore Windfarm (EA ONE), thereby substantially reducing the impacts of connecting to the National Grid (NG) at the same location. The infrastructure to be installed for EA THREE, therefore, comprises:

- The landfall site with one associated transition bay location with two transition bays containing the connection between the offshore and onshore cables;
- Two onshore electrical cables (single core);
- Up to 62 jointing bay locations each with up to two jointing bays;
- One onshore converter station, adjacent to the EA ONE Substation;
- Three cables to link the converter station to the National Grid Bramford Substation;
- Up to three onshore fibre optic cables; and
- Landscaping and tree planting around the onshore converter station location.

3. Since the granting of the DCO, the decision has been made that the electrical connection for EA THREE will comprise a high voltage direct current (HVDC) cable rather than a high voltage alternating current cable and, therefore, the type of substation that will be required is a HVDC Converter Station. The substation will, therefore, be referred to here as a 'converter station' and this amended terminology has been agreed with the relevant authorities on 15 October 2020. It has also been determined that only one converter station will be constructed rather than two and that the Converter Station will be installed in a single construction phase.

4. The EA THREE onshore works commenced development in July 2022, with works at the Converter Station, Paper Mill Lane, Playford Corner and Clappits.

1.2. Project Overview

5. SLR Consulting Ltd (SLR) has been appointed to provide a Hydrogeological Risk Assessment (HRA) for the EA THREE Onshore Cable Route. This includes the entire cable route from landfall, Near Bawdsey to the converter station to the north-west of Ipswich, a total length of approximately 37km. .

6. The Environment Agency (EA) have requested that an HRA is undertaken wherever there is a potential receptor which could be impacted by the development, they have not provided specific guidance, however requirements for EA ONE North and EA TWO Offshore Windfarms have requested that an HRA is completed prior to commencement of any construction activity:

- *That could cause changes to aquifer flow or affect water quality within 500m of any groundwater dependent habitats within ecological sites;*
- *That require excavations below 1m within 250m of boreholes or springs;*
- *Within 250m of a groundwater abstraction*

7. An initial scoping exercise has therefore been completed based on these same search radii on the proposed cable route as presented on Figures 3 and 4. These present the locations of all ecological sites, groundwater abstractions and groundwater source protection zones along the length of the onshore cable route. The figures indicate that the majority of the western reaches of the route (from the A12 roundabout westwards) are located within groundwater Source Protection Zone 3 (Total Catchment) whilst a limited section to the far west runs through Source Protection Zones 1 and 2. Mapping also indicates both private and licensed groundwater abstractions within 250m.

8. The key infrastructure which will be included within the onshore cable route includes:

- 29 No. Jointing bays – buried so that the base is 2.5m below ground level.
- 29 No. Jointing bay compounds, stone access, CCS – generally less than 600mm but could be up to 800mm on boggy ground.
- Three additional Construction Consolidation Sites (CCS) (in addition to three already constructed at Paper Mill Lane, Playford Corner and Clappits) placed on formation level following vegetation and topsoil and subsoil removal,
- Stone haul road from access points to jointing bays, placed on formation level following vegetation and topsoil and subsoil removal.
- Track matting to HDD proving points- placed on ground surface, following vegetation removal.
- 20 No. HDD proving points –up to circa 1.5m deep

1.3. Purpose and Scope

9. This Hydrogeological Risk Assessment has been prepared as an appendix to the Surface and Foul Water Drainage Management Plan (EA3-LDC-CNS-REP-IBR-000081) for the onshore cable route and includes a desktop review of the route's baseline geology, hydrogeology and hydrology in order to develop a conceptual site model (CSM). This CSM is then used to assess the potential impact of the works on identified hydrogeological or hydrological receptors and to outline any mitigation which will be required to ensure the works do not adversely impact identified receptors.

2. ABBREVIATIONS

BEIS	Business, Energy and Industrial Strategy
BGS	British Geological Survey
CCS	Construction Consolidation Site
CEMP	Contractor Environmental Management Plan
CSM	Conceptual Site Model
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EA THREE	East Anglia Three Offshore Windfarm
EATL	East Anglia Three Limited
ESC	East Suffolk Council
GPP	Guidance for Pollution Prevention

HRA	Hydrogeological Risk Assessment
HIA	Hydrogeological Impact Assessment
mAOD	Metres Above Ordnance Datum
MSDC	Mid Suffolk District Council
NG	National Grid
NGR	National Grid Reference
PPG	Pollution Prevention Guidance
SCC	Suffolk County Council
SPA	Special Protection Area
SPZ	Groundwater Source Protection Zone
SSSI	Site of Special Scientific Interest

3. METHODOLOGY

10. This HRA has been developed in accordance with relevant EA guidance on completion of groundwater risk assessments[1] and Hydrogeological Impact Appraisals (HIA)[2] and includes the following stages:

- Section 5 provides a baseline assessment of the cable route. This includes a summary of the site geology and hydrogeology including information on ground conditions, groundwater levels and flows, groundwater quality and the location of potential receptors which could be impacted as a result of construction activities at the site. Finally, a CSM of the current hydrogeological regime is provided.
- Section 6 provides an assessment of the potential impact that the works could have upon the identified receptors and regional hydrogeology and hydrology. Appropriate mitigation measures are outlined where required.
- Section 7 provides a summary of the overall impact that the works could have upon the local hydrogeology and any identified receptors.

11. A qualitative risk assessment methodology has been used to assess the potential significance of impacts associated with the development works. Two factors are considered using this approach: the sensitivity of the receiving environment and the magnitude of any potential impact. This approach provides a mechanism for identifying where additional mitigation measures are potentially required to reduce the risk to groundwater or surface water receptors.

4. SOURCES OF INFORMATION

12. The following sources of information have been consulted to characterise the geology, hydrogeology and hydrology of the area within and surrounding the site:

- British Geological Survey (BGS) online maps (https://www.bgs.ac.uk/map-viewers/geoindex-onshore/) for details of geology and borehole logs;
- Hydrogeological map of Southern East Anglia, sourced from the BGS website (https://largeimages.bgs.ac.uk/iip/hydromaps.html?id=southern-east-anglia.jp[2]);
- National Soils Resource Institute Website for details on soils (https://www.landis.org.uk/soilscapes/);
- Defra Magic Map Website (https://magic.defra.gov.uk/) for details on groundwater classifications, source protection zones and groundwater and surface water dependent designated ecological sites;
- Groundwater and surface water quality and status as presented in the EA catchment planning datasets (https://environment.data.gov.uk/catchment-planning/); and
- Details of the site layout, proposed development, and other site details provided by the client.

[1] Available from Groundwater risk assessment for your environmental permit - GOV.UK (www.gov.uk) [Accessed November 2021]
[2] Environment Agency (April 2007) *Hydrogeological Impact Appraisal for Dewatering Abstractions*, Science Report – SC040020/SR1

5. CONCEPTUAL SITE MODEL

13. The geological and hydrogeological regime along the cable route and the surrounding area is considered under the following headings: location and topography; geological setting; and hydrogeological setting, all of which have been used to develop a CSM. This provides an overview of the regional hydrogeology and is assessed on a further local scale, based on the location of identified infrastructure which could influence groundwater receptors in Section 6.

5.1. Location and Topography

14. The onshore cable route extends for some 37km from landfall at National Grid Reference (NGR) TM 3475 3917, approximately 800m to the south-west of the village of Bawdsey in the south-east, to the Converter Station to the north-west of Ipswich at NGR TM 1025 4631 in the north-west.

15. The route initially follows low lying marshy ground along the River Deben estuary, crossing the River Deben near Falkenham, with ground levels less than 5mAbove Ordnance Datum (mAOD). The route subsequently follows gently undulating ground at elevations between 10 to 50mAOD.

16. The route primarily consists of arable land, with occasional areas of woodland, and several watercourse crossings.

17. The proposed layout of the works is provided as Appendix 1.

5.2. Geology

5.2.1. Soil, Superficial Deposits and Bedrock Geology

18. The Cranfield Soilscapes online soil map viewer indicates that the soils across the route consist of:

- *'Loamy and clayey soils of coastal flats with natural high groundwaters'* present in the south of the route, adjacent to the River Deben;
- *'freely draining slightly acid sandy soils'* between jointing bays JB 8/9 to JB 27/28 across the eastern and central parts of the route;
- *'freely draining slightly acid loamy soils'* between jointing bays JB 1/2 to JB 6/7 in the west of the route; and
- pockets of *'soils with impeded drainage'* and *'slowly permeable'* soils present in the north of the route.

5.2.2. Superficial Geology

19. A geological map showing the regional superficial geology as plotted on the BGS online mapping service Geoindex Onshore is provided as Figure 1.

20. The BGS Geoindex indicates that superficial deposits in the area comprise of either Tidal Flat deposits or Alluvial deposits beneath the principal watercourses and their associated flooplains (the River Deben and its tributaries and the River Gipping) with localised areas of River Terrace Deposits. These river channels have historically eroded the superificial diamicton and sands and gravels which would have been present across the area resulting in bedrock being present at surface across the valley sides.

21. Across higher ground, away from these river valleys are sands and gravels of the Kesgrave catchment and Lowestoft Formations which are in turn overlain by Diamicton (boulder clay) across higher ground to the north and north-west of Ipswich.

5.2.3. Bedrock Geology

22. BGS Geoindex indicates that the geological sequence in the area consists of the following sequence as outlined in Table 5-1.

Table 5-1 Geological Sequence within vicinity of Onshore Cable Route

Age	Formation	Description	Thickness (m)
Neogene	Red Crag	Coarse-grained, poorly sorted, cross-bedded shelly sands	0 – 15m
Paleogene	Thames Group	Mainly silty clays, some sandy or gravelly	0 – 26m
	Thanet Formation & Lambeth Group	Clay, sand and silt with subsidiary flint, mudstone and sandstone	0 - 10m
Cretaceous	Newhaven Chalk	Soft to medium hard, smooth white chalks with numerous marl seams	45-75m
	Culver Chalk	Soft white chalk, relatively marl free with flint seams	65-75m

23. The red crag forms an extensive sheet across much of Suffolk but is broken up into pockets along the cable route and is absent within the river valleys and to the north of Ipswich where the chalk is exposed at outcrop. The Thames Group deposits are present across the southern and eastern part of the cable route where it directly overlies the Thanet Formation and Chalk, thinning to the north before the Thanet Formation and underling Chalk ultimately outcrop to the north of Ipswich. At its thickest the Thames group are in excess of 26m at the coast, thinning to nil in the north.

24. The two main rivers; River Deben and River Gipping have eroded through the superficials and Thames deposits exposing the underlying Thanet Formation and in places the Chalk bedrock within the base of these valleys.

25. Bedrock geology, based on BGS Geoindex mapping, is provided in map format in Figure 2.

5.3. Hydrogeology

5.3.1. Recharge Mechanisms

26. The Met Office climate summary (1991 – 2020) for Wattisham (52.123, 0.961), located c.8.5km north-west of the converter station, indicates that the average annual rainfall for the cable route is 614mm.

27. Climate averages for Wattisham are provided below in Table 5-2.

Table 5-2 Met Office Climate Averages for Wattisham (1991 – 2020)

Month	Max. Temp. (°C)	Min. Temp. (°C)	Rainfall (mm)	Days of Rainfall ≥ 1mm
January	6.57	1.01	49.19	11.22
February	6.84	0.82	40.65	9.47
March	9.82	2.55	44.35	10.4
April	12.71	4.11	41.1	9.33
May	16.16	7.17	50.94	8.73
June	19.11	9.89	52.59	9.1
July	21.86	12.16	50.1	8.73
August	21.81	12.17	56.23	8.43
September	18.57	10.2	51.88	8.83
October	14.24	7.48	64.82	10.07
November	9.73	3.87	59.93	10.87
December	6.86	1.56	51.95	10.61
Annual	13.73	6.11	613.73	115.79

28. Recharge regionally will be variable depending upon the localised superficial geology. Where Diamicton is present across the western and northern part of the route recharge will be limited by the clayey nature of the deposits, however in the east and south of the route where superficial sands and gravel, crag bedrock or chalk are present at or near surface infiltration rates are likely to be relatively high.

5.3.2. Aquifer Characteristics and Groundwater Vulnerability

29. The aquifer characteristics and EA aquifer designation of the strata along the length of the route are summarised in Table 5-3.

Table 5-3 Aquifer Designations

Deposit Type	Age	Formation	Aquifer Designation
Superficial	Quaternary	Tidal Flat Deposits	Unproductive Strata
		Lowestoft Formation (Diamicton)	Secondary (Undifferentiated)
		Lowestoft Formation Sands and Gravels	Secondary A
		Kesgrave Catchment Sands and Gravels	
		Alluvium	
Bedrock	Neogene	Red Crag	Principal
	Paleogene	Thames Group	Unproductive Strata
		Thanet Formation & Lambeth Group	Secondary A
	Cretaceous	Newhaven Chalk	Principal
		Culver Chalk	

30. The various classifications are described by the EA as follows:

- Principal Aquifer: *layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.*
- Secondary A Aquifer: *permeable layers that can support local water supplies, and may form an important source of base flow to rivers.*
- Secondary B Aquifer: *lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin fissures and opening or eroded layers.*
- Secondary (undifferentiated): *where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value.*
- Unproductive Strata: *strata that are largely unable to provide usable water supplies and are unlikely to have surface water and wetlands ecosystems dependent on them.*

31. Given the variable geological conditions along the cable route there are likely to be a number of potential aquifers which could be affected by the works. The primary aquifers are likely to be:

- Shallow aquifer associated with superficial sands and gravels and underlying Red Crag, where these are underlain by Thames Group deposits or Thanet Formation these will form a perched aquifer, where directly underlain by Chalk it is likely groundwater will be in continuity with the underlying chalk aquifer;
- Chalk aquifer which is likely to be in continuity with overlying Red Crag (where present) and superficial sands and gravels in the north of the route (i.e. north and north-west of Ipswich where the Thames Group and Thanet Formation and Lambeth Group are absent). Further south and south-east, the chalk dips beneath the Thanet Formation and Thames Group deposits which will act as an aquitard between the shallow and deep aquifers.

32. Diamicton covers much of the northern part of the route. These deposits will potentially be variable with some groundwater flow possible within sand and gravel horizons, however the typically clayey nature of the deposits make it unlikely that the deposits will provide significant groundwater supply or baseflow to watercourses and will likely inhibit recharge to the underlying sands and gravels / chalk.

5.3.3. Groundwater Levels and Flow

33. A review of the 1981 Hydrogeological map of Southern East Anglia, sourced from the BGS website indicates that the potentiometric surface of groundwater within the Chalk is in a broadly south-easterly direction and is influenced by the Rivers Deben and Orwell, with groundwater levels falling from approximately 20mAOD in the vicinity of the converter station to 0mAOD where the chalk is potentially in continuity with the River Deben and River Orwell.

34. The regional geological mapping indicates that both watercourses have eroded through the Thames deposits along much of their channels, creating a potential hydraulic connection between groundwater and surface water.

35. The groundwater table in the Crag is reported to be 10-15mAOD in the south and south-east of the cable route with flow towards the River Deben and its tributaries, confirming that the groundwater in the crag is perched on the Thames Group deposits. Further north where the Thames Group are absent, the groundwater in the crag is similar to the Chalk, indicating that the two units are for a single aquifer.

5.3.4. Groundwater Abstractions and Source Protection Zones

36. Defra's Magic Map website indicates that the majority of the western half of the route (from the Converter Station to Jointing Bay JB14/15/Top Street CCS) is located within a Zone III (total catchment) groundwater Source Protection Zone (SPZ) which is likely to be associated with the extent of the underlying Chalk aquifer.

37. Jointing Bays JB 2/3 and JB 5/6 and both ends of HDD2 are located within Source Protection Zone 1 (Inner) zone which are likely to be associated with major abstractions from the chalk bedrock. There are no source protection zones along the southern half of the route (from Jointing Bays JB 14/15/Top Street CCS to Jointing Bay TJB 28/29.

38. There are a total of 17 licensed abstractions, 73 private abstractions and 146 springs recorded within 1km radius of the red line boundary of the route, however the majority of these are located in excess of 250m from any elements of the onshore cable route which require excavation below 1m. The locations of all abstractions, springs and SPZs are presented on Figure 3.1 – 3.10.

39. The following works which will potentially extend greater than 1m below ground level (either jointing bays or HDD proving points) are to be located within a 250m radius of either a licensed abstraction, private abstraction or spring.

Jointing Bays (following the route from west to east)

- **Jointing Bay JB 2/3** – located within SPZ1 and located within 250m of two private water supplies (to the north-west and north-east respectively)
- **Jointing Bay JB 3/4** – located within 250m of a number of potential springs to the north and south;
- **Jointing Bay JB 6/7** – located within 250m of a private water supply and spring (located to the south);
- **Jointing Bay JB 7/8** – Located approximately 150m south-west of two springs;
- **Jointing Bay JB 8/9** – located approximately 150m south-west of three springs;
- **Jointing Bay JB 10/11** – located approximately 250m north of a spring;
- **Jointing Bay JB 13/14** – located approximate 200m north of a private water supply
- **Jointing Bay JB 14/15** – located within 250m of 2 springs located to the west;
- **Jointing Bay JB 15/16** – located 100m north of licensed abstraction 7/35/10/*G/0018
- **Jointing Bay JB 16/17** – located within 250m of a private water supply at 2 springs;
- **Jointing Bay JB 17/18** – located approximately 100m north-east of a private water supply;
- **Jointing Bay JB 18/19** – located within 250m of a licensed abstraction (7/35/10/*G/0016) and private water supply located to the south-west;
- **Jointing Bay JB 20/21 – located approximately 450m east of Newbourne Springs Site of Special Scientific Interest (SSSI); and**
- **Jointing Bay JB 21/22** – located approximately 200m north-west of a spring.

HDD Proving Points (following the route from west to east)[3]

- **HDD2 proving points** – located within SPZ1 and within 250m of one private water supplies and one licenced surface water abstraction;
- **HDD19 Proving Points** – located within SPZ3 and within 250m of three springs;
- **HDD4 Proving Points** – located within SPZ3 and within 250m of five springs and one licenced surface water abstraction;
- **HDD5 Proving Points** – located within SPZ3, with the western point located 250m from one licenced surface water abstraction;
- **HDD6 Proving Points** – located within SPZ3 and within 250m of three springs;
- **HDD20 Proving Points** – located within SPZ3 and within 250m of one spring;
- **HDD7 Proving Points** – located within SPZ3 and within 250m of one spring, one licenced surface water abstraction and one private water supply;
- **HDD8 Proving Points** – located within SPZ3 and within 250m of five springs;
- **HDD9 Proving Points** – located within 250m of one spring.
- **HDD10 Proving Points** – located within 250m of one licenced surface water abstraction and two springs;
- **HDD11 West Proving Point** – located within 250m of one licenced surface water abstraction and two springs;
- **HDD12 Proving Points** – located within 250m of one spring and two private water supplies;
- **HDD13 Proving Points** – located within 250m of one licenced surface water abstraction and two private water supplies;
- **HDD14 West Proving Point** – located within 250m of three springs;

40. No details are available as to the source or use of the private water supplies. Details of the licensed abstractions recorded within 250m radius of either a jointing bay or HDD proving point are summarised in Table 5-4.

Table 5-4 Licensed Abstraction Details

License No.	Holder	Use	Max Daily Quantity	Max Annual Quantity	Source Type and Unit
7/35/10/*G/0018	Notcutts Ltd.	Spray Irrigation	1,100	16,300	Groundwater from Chalk
7/35/10/*G/0016	D.E. Parken	Spray Irrigation	455	36,300	Groundwater from Chalk

5.3.5. Hydrology

41. The cable route falls within the catchment of two major estuaries and their associated tributaries; the River Deben which the cable route crosses shortly before landfall and the River Orwell, to the south of Ipswich. There are also numerous smaller tributaries of these watercourses which are crossed by the cable route including the River Fynn (tributary of the River Deben) which is crossed near Playford Corner, River Gipping (tributary of the River Orwell) which is crossed north of Ipswich and Somersham watercourse (tributary of the River Gipping) which is crossed near the western extent of the route.

42. The watercourses all flow in a broadly southerly or south-easterly direction, draining from the relative higher ground to the north-west of the cable route. As discussed above, where these watercourses are underlain by chalk or Thanet Formation there is likely to be an element of groundwater baseflow, with the groundwater contours clearly influenced by these channels.

43. There are also numerous smaller minor watercourses and drains along the route, although given that these are typically shallow they are unlikely to be significant groundwater receptors, although these have been reviewed further where necessary.

[3] Each HDD requires two proving locations, nominally described as "western point" and "eastern point". For this assessment, if distance between points is less that 500m, points have been considered as one structure.

5.3.6. Groundwater Dependent Ecological Sites

44. A review of the Defra Magic Map webpage indicates that the only designated ecological sites within a 500m radius of the redline boundary are the Deben Estuary RAMSAR, Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) which the cable route crosses in two places and Newbourne Springs SSSI located approximately 600m to the west of Jointing Bay JB 20/21.

45. The location of all ecological sites are presented on Figures 4.1 to 4.9. This indicates that four jointing bays (JB 16/17, JB 24/25, JB 25/26 and JB 26/27) and six HDD proving points (HDD10, HDD11, HDD13, HDD14, HDD16 and HDD17) are located within a 500m radius of the Deben Estuary. The Deben estuary is designated for "*its population of overwintering waders and its extensive and diverse saltmarsh communities".* Whilst it is possible that there will be an element of groundwater baseflow into the estuary, it is dominated by tidal flows which maintain the saltmarshes. It is therefore considered that the Deben Estuary is not considered a groundwater dependent ecological site and impact has not been assessed further.

46. Whilst the Newbourne Springs SSSI would be considered a groundwater dependent ecological site, there are no below ground elements of the works within a 500m radius and therefore no further assessment of impact on this SSSI is considered necessary.

5.4. Conceptual Site Model

47. The assessment of the baseline conditions of the cable route indicates that the route is underlain by several potential aquifers which could be influenced by any excavations, principally associated with the Chalk, Red Crag or superficial sands and gravels. Regional groundwater contours suggest groundwater levels are potentially in continuity with major watercourses, where the low permeability Thames Group deposits are absent, and therefore depths to groundwater are potentially shallow along the route of these valleys.

48. Across much of the northern part of the route, the superficial sands and gravels and Crag / Chalk bedrock are overlain by low permeability Diamicton (boulder clay) which is considered to have a low permeability and will impede drainage and potentially confine groundwater.

49. In the north of the route, the superficial sands and gravels and crag bedrock (where present) are likely to be in continuity with the underlying Chalk and form a single aquifer (although minor perched groundwater is possible within the superficials) which will become confined by the Thames Group deposits in the south and south-eastern part of the route. Superficial sands and gravels and/or Red Crag bedrock overlying these Thames Group deposits are likely to form a shallow perched aquifer in this area.

50. Regional hydrogeological mapping indicates that groundwater flow in both the Chalk and Crag is influenced by the river channels and likely to be in continuity with surface water. In the northern part of the route groundwater is likely to be 10m+ below ground level, however within the river valleys the depth to groundwater could potentially be shallow and close to surface.

51. Licensed abstraction, private water supplies or springs have been recorded within a 250m radius of twelve of the jointing bays and fourteen of the HDD proving points. There are considered to be no groundwater dependent ecological sites within 250m of any of the below ground elements of the route.

6. HYDROGEOLOGICAL & HYDROLOGICAL IMPACT ASSESSMENT

6.1. Proposed Development

52. The onshore cable route will include the following works which could influence groundwater:

- 29 No. Jointing bays- buried so that the base is 2.5m below ground level
- 29 No. Jointing bay compounds, stone haul roads, CCS – generally less than 600mm but could be up to 800mm on boggy ground
- Track matting to HDD proving points- placed on ground surface, following vegetation removal
- 20 HDD proving points – excavated up to circa 1.5m deep.

53. Works are shown in plan view in Appendix 1.

54. Only the jointing bays and HDD proving points extend below 1m below ground level and therefore these have been reviewed to determine which required further assessment. As outlined in Section 5.3.4, twelve of the jointing bays and eighteen HDD proving points are shown to be located within a 250m radius of either a licenced abstraction, private water supply or spring. These have therefore been assessed in further detail.

6.2. Location Specific CSM

55. Each of the elements identified as being within the extent of further assessment has been reviewed in further detail to assess the local hydrogeological setting and to identify any potential pathways from the works location to the receptor.

6.2.1. Jointing Bay JB 2/3 HDD2

56. Jointing Bay JB 2/3 is located at National Grid Reference (NGR) TM 11300 47700, at an elevation of c.20mAOD. The proving points for HDD2 are centred on NGR TM112478, running either side of a ford; the points sit at an elevation of c.15m AOD.

57. BGS mapping indicates that the both structures are superficially underlain by the Lowestoft Formation. Beneath the jointing bay, the formation comprises Diamicton (sandy clay) whilst the proving points are underlain by sands and gravels. The bedrock geology comprises the Newhaven Chalk formation.

58. Nearby borehole logs indicate that the Lowestoft Formation is variable with lenses of sands, silts and clays which are often interbedded. None of the nearby shallow boreholes (<10m) recorded any groundwater within the superficials. The superficials are typically 3-5m in thickness.

59. The regional hydrogeological map indicates that the groundwater in the Chalk is c.5 - 10mAOD, this is reflected by a nearby BGS borehole[4] which indicates a resting water level in the Chalk approximately 2.5m below ground level, c.10mAOD. This indicates that there is a likely c.10m thick unsaturated zone beneath the jointing bay.

60. There are three private water supplies, a licensed abstraction and a spring located within relatively close proximity of the structures (within 350m). Given the nature of the superficial geology and shallow depth to groundwater within the Chalk, these abstractions are likely to be either from the Chalk or from surface water (the private supply to the north-east and north-west are both located adjacent to watercourses).

61. Based on the local geological and hydrogeological conditions it is considered that there is a low potential for the excavations to encounter groundwater within the Chalk. Based on the anticipated ground conditions it is likely that any excavation will be entirely within the shallow superficials. There is potential for some perched water within the superficials but due to the often clayey nature of the diamicton it is considered unlikely that significant groundwater will be encountered.

6.2.2. Jointing Bay JB 3/4, HDD19 & HDD4

62. The location and elevation information of the structures are as follows:

- Jointing Bay JB 3/4 is located at National Grid Reference (NGR) TM 12192 48980, at an elevation of c.9mAOD.
- The proving points for HDD19 are centred on NGR TM 12068 48986, at an elevation of c.9mAOD, with the points sitting either side of Lorraine Way road.
- The proving points for HDD4 are centred on NGR TM 12444 49008, at an elevation of c.9m AOD, the points sitting either side of the River Gipping and a north-south railway line.

[4] BGS ID: 561059 : BGS Reference: TM14NW154

63. The structures are located within the floodplain of the River Gipping and several other minor watercourses. BGS mapping indicates that the structures are underlain by superficial alluvium and River Terrace deposits associated with the River Gipping which overlie Newhaven Chalk formation bedrock.

64. Nearby borehole logs[5] indicate that the alluvium is typically described as a slightly sandy clay with horizons of peat, whilst the underling River Terrace Deposits are described as a fine to coarse Sand and Gravel. BGS logs indicate that the alluvium is up to 4m in thickness adjacent to the River Gipping, although as the location is close to the edge of the alluvium this will potentially be thin at this location. The underlying River Terrace Deposits is recorded at thicknesses of between 3m and 7m locally. It is therefore considered that any excavations associated with the jointing bay will be within the Alluvium and River Terrace deposits but are unlikely to encounter Chalk Bedrock.

65. The regional hydrogeological map indicates that the groundwater in the Chalk is c.5mAOD, based on nearby borehole logs this would indicate that the chalk groundwater is likely to be in continuity with the overlying Terrace Gravels. Nearby borehole logs indicate groundwater strikes between 2-5m below ground level and typically between 5mAOD and 7mAOD. This indicates that groundwater in the chalk and River Terrace deposits will potentially be in continuity with the River Gipping.

66. A number of the potential springs have been identified within a 250m radius to the north and south of the structures. These are associated with a number of minor watercourses and drains which drain in a southerly direction, ultimately discharging to the River Gipping to the south. BGS mapping suggests that these drains are all located on Alluvium and it is therefore likely that these will primarily be fed from surface water run-off, however given the shallow depth to groundwater the potential for some groundwater baseflow cannot be ruled out.

67. Based on the local geological and hydrogeological conditions it is considered likely that the jointing bay excavation will encounter the superficial Terrace Gravels and could feasibly encounter groundwater, although this is likely to be towards the base of any excavation and unlikely to require significant dewatering.

6.2.3. HDD5

68. HDD5 is located at National Grid Reference (NGR) TM 13280 49013, at an elevation of c.13mAOD, with the points sitting either side of the A14 road and a ford feeding the River Gipping.

69. The structure sits on the edge of the floodplain for the River Gipping and is superficially underlain by a thin outcrop of river terrace gravels. The underlying bedrock geology comprises the Newhaven Upper Chalk.

70. Nearby borehole logs associated with the A14 indicate that the gravels are approximately 3.5m thick and are lithologically descried as medium-dense, orange-brown, clayey, medium-fine sand with gravel. Published BGS logs indicate that the gravels thicken to approximately 7m thickness towards the centre of the flood plain. It is therefore considered that any excavations associated with the HDD proving points would be within the Alluvium and River Terrace deposits but are unlikely to encounter Chalk Bedrock.

71. The regional hydrogeological map indicates that the groundwater in the Chalk is c.5mAOD, based on nearby borehole logs this would indicate that the chalk groundwater is likely to be in continuity with the overlying Terrace Gravels. Nearby borehole logs indicate groundwater strikes between 2-5m below ground level and typically between 5mAOD and 7mAOD. This indicates that groundwater in the chalk and River Terrace deposits will potentially be in continuity with the River Gipping.

72. There is one licenced surface water abstraction located c.248m to the north-west of the western proving point associated with a nearby business park. It is likely that this abstraction takes water from the chalk bedrock.

73. Based on the local geological and hydrogeological conditions it is considered likely that any excavations associated with the HDD points will encounter the superficial Terrace Gravels and could feasibly encounter groundwater, although this is likely to be towards the base of any excavation and unlikely to require significant dewatering.

[5] viewborehole (bgs.ac.uk)

6.2.4. Jointing Bay JB 6/7

74. Jointing Bay JB 6/7 is located at National Grid Reference (NGR) TM 17088 49343, at an elevation of c.51mAOD on an elevated ridge of land between the River Gipping valley to the west and the River Fynn valley to the east. BGS mapping indicates that the geology comprises of superficial Diamicton (boulder clay) overlying glacial sands and gravels (both forming part of the Lowestoft Formation). These overlie Thames Group (Clay) bedrock which is in turn underlain by the Thanet Formation and Newhaven Chalk.

75. Nearby borehole logs indicate that the Diamicton is recorded up to 10.7m in thickness with the underlying sands and gravels recorded in excess of 11.9m[6]. The chalk bedrock (the principal aquifer within the bedrock) is located c.50m below ground level and is confined by the overlying Thames Group deposits. No information is available on groundwater levels in the vicinity of the jointing bay however it is likely that any groundwater will be limited to the sands and gravels which will be perched on the underlying low permeability Thames Group bedrock.

76. The jointing bay is located within a 250m radius of several springs and a private water supply. These will potentially be from the glacial sands and gravels, which is shown to outcrop within a small area within the vicinity of Willow Tree Farm.

77. Given the thickness of the Diamicton locally, it is considered that any below ground works are unlikely to extend beyond the base of the Diamicton and therefore unlikely to encounter groundwater within the underlying sands and gravels.

6.2.5. Jointing Bay JB 7/8

78. Jointing Bay JB 7/8 is located at National Grid Reference (NGR) TM 18008 48758, at an elevation of c.46mAOD on an elevated ridge of land between the River Gipping valley to the west and River Fynn valley to the east. BGS mapping indicates that the geology comprises of superficial Diamicton (boulder clay) overlying glacial sands and gravels (both forming part of the Lowestoft Formation). These overlie Thames Group (Clay) bedrock which is in turn underlain by the Thanet Formation and Newhaven Chalk.

79. The geological and hydrogeological conditions are similar to those at Jointing Bay JB 6/7 with potential groundwater present within the sands and gravels.

80. The jointing bay is located to the south-west of what have been recorded as possible springs, although a closer review of the local topography and geology indicates that these are a series of ponds excavated into the low permeability Diamicton and are likely to form from localised surface water run-off as opposed to groundwater baseflow.

81. Given the thickness of the Diamicton locally it is considered that any below ground works are unlikely to extend beyond the base of the Diamicton and therefore unlikely to encounter groundwater within the underlying sands and gravels. In addition, the springs recorded within the mapping are considered unlikely to be a groundwater receptor therefore no further assessment of jointing bay 7/8 is required.

6.2.6. Jointing Bay JB 8/9

82. Jointing Bay JB 8/9 is located at NGR TM 18768 49147, at an elevation of c.33mAOD on the western side of the River Fynn valley, approximately 16m above the River at c.17mAOD. BGS mapping indicates that the geology comprises superficial Lowestoft Formation sands and gravels overlying Chillesford Church Sand Member and Thames Group (Clay) bedrock.

83. No information is available on the thickness of either the Lowestoft Formation or Chillesford Sand member, however it is noted that the location is close to the edge of the superficial outcrop suggesting that the sequence will potentially be thin. The Chillesford Sand member is a relatively small geographical area which does not appear to be connected to the more extensive deposits to the east of the River Fynn. A BGS log within the Chillesford Formation to the east of the River Fynn indicates that these are in excess of 10m in thickness .

[6] BGS ID: 561500 : BGS Reference: TM14NE25

84. There are a number of springs recorded to the north-east of the jointing bay. These rise from the juncture along the eastern edge of an outcrop of Chillesford Sand and Lowestoft Formation sands and gravels present to the east of the River Fynn. It is however noted that the River Fynn has eroded through the superficials and the Chillesford Sand and is resting on the underlying Thames Formation. There is therefore no direct hydraulic connection between either the superficial or bedrock sands and gravels beneath Jointing Bay JB8/9 and the recorded springs.

85. It is noted that there is the potential for some minor seepages or springs on the western side of the valley, however as none of these are identified on OS mapping any such features are likely to be minor and highly unlikely to provide significant flow to the River Fynn.

6.2.7. HDD6

86. HDD6 proving points are centred on NGR TM 18969 49141, at an elevation of c.17mAOD, with the points sitting either side of the River Fynn.

87. BGS mapping indicates that the proving points are not underlain by superficials, however immediately in between the points is a band of alluvium associated with the river system. The bedrock geology comprises deposits of the Thames Group (interbedded units of clay, silt and sand), which are in turn underlain by the Thanet Formation and Newhaven Chalk. There are no published borehole logs relevant to the area.

88. The receptor mapping indicates that located within 250m of the proving points are three springs, which are likely to source from outcropping sand beds of the Chillesford Church Sand Member located c.40m to the north-east of the eastern proving point.

89. With consideration for the low permeability, clay-rich geology underlying the proving points, it is considered that any excavations are unlikely to encounter groundwaters, nor impact any nearby receptors.

6.2.8. HDD20

90. HDD20 proving points are centred on NGR TM 19820 48790, at an elevation of c.41mAOD, with the points sitting either side of Grundisburgh Road.

91. BGS mapping indicates that the proving points are superficially underlain by the Lowestoft formation comprising diamicton. This in turn is underlain by a bedrock comprising sand units of the Red Crag formation followed by the Thames group (Clay, Silt and Sant), undifferentiated members of the Thanet formation and the Newhaven chalk at depth. The proving points are located on the western periphery of the outcrop of the Red Crag formation.

92. BGS-published logs identify the superficial sand and gravels as comprising “yellow and orange-brown, sands” to a thickness of 10.1 metres, underlain by the Red Crag formation of 5 metres thickness which in turn are underlain by clay-rich units of the Thames group. Groundwater conditions were not recorded on the logs.

93. No data is readily available for groundwater levels within the bedrock sand units. As the HDD points are located on the western periphery of the Bedrock sands, it is considered that the principal groundwater flow direction is to the west and towards the channel of the River Fynn.

94. The receptor mapping indicates that located within 250m of the proving points is one spring; it is likely that this spring sources from an outcropping unit of superficial sand and gravels associated with the Kesgrave Catchment subgroup. With consideration for the likely westerly groundwater flow direction, the spring is therefore up-gradient of the proving points.

6.2.9. Jointing Bay JB 10/11

95. Jointing Bay JB 10/11 is located at National Grid Reference (NGR) TM 20790 48552, located at an elevation of c.28mAOD to the north of the River Fynn valley. BGS mapping indicates that the jointing bay is on the southern edge of an outcrop of Superficial Kesgrave Catchment sands and gravels which overlie Red Crag bedrock with Thames Group deposits beneath.

96. The jointing bay is close to the edge of the Red Crag where the Thames Group outcrop at surface. A BGS borehole log to the north of the jointing bay[7] indicates that the sands and gravels are approximately 4.1m in thickness with the underlying Crag approximately 6.6m (24.7mAOD), although these are both likely to thin towards the south therefore the thicknesses are likely to be less. Water strikes indicate that groundwater was struck 6.7m below ground level.

97. The mapping indicates a spring approximately 250m to the south of the jointing bay along the junction between the crag and Thames Group deposits. This location coincides with a BGS log[8] which indicates a spring rising within the superficials at approximately 21mAOD.

98. Based on the recorded water levels, groundwater within the sands and gravels / crag is estimated at 23-24mAOD, given a ground elevation of 28mAOD this would indicate a likely unsaturated zone of 4m+.

99. Based on the above it is anticipated that the excavations undertaken at jointing bay JB 10/11 are unlikely to encounter groundwater, however it cannot be definitely ruled out. An assessment of impact based on a worst case assumption that groundwater is encountered has therefore been undertaken.

6.2.10. HDD7

100. HDD7 proving points are centered on NGR TM 23210 48278, at an elevation of c.12 mAOD, with the points sitting either side of Lodge Road. BGS mapping indicates that the proving points are not underlain by any superficial geology, instead being underlain by a bedrock comprising the Thames Group deposits (interbedded clay, silt and sand).

101. Published borehole records indicate that the bedrock geology primarily comprises clay-rich units to an approximate thickness of 10m BGL.

102. The receptor mapping indicates that located within 250m of the proving points is a spring, one licensed surface water abstraction and a private water supply. Both the surface water abstraction and the private water supply are situated on a tributary of the River Fynn, located c.180m to the east. The spring sources from an outcrop of the Kesgrave sand and gravel superficials.

103. With consideration for the low permeability, clay-rich geology underlying the proving points, it is considered that any excavations are unlikely to encounter groundwaters, nor impact any nearby receptors.

6.2.11. HDD8

104. HDD8 proving points are centered on NGR TM 23210 48278, at an elevation of c.12 mAOD, with the points sitting either side of the A12. BGS mapping indicates that the proving points are not underlain by any superficial geology, instead being underlain by a bedrock comprising the Thames Group deposits (interbedded clay, silt and sand).

105. Published borehole records indicate that the bedrock geology primarily comprises clay-rich units to an approximate thickness of 10m BGL. Locally these deposits have been proven to a minimum thickness of 6m.

106. The receptor mapping indicates that located within 250m of the proving points are a number of potential springs associated with several drainage ditches. These are likely to be sources either directly by surface water run-off or where superficial river terrace deposits or Kesgrave Catchment sands and gravels outcrop.

107. With consideration for the low permeability, clay-rich geology underlying the proving points and the lack of any superficials in this vicinity, it is considered that any excavations are unlikely to encounter groundwaters, nor impact any nearby receptors.

[7] BGS ID: 564105 : BGS Reference: TM24NW2
[8] BGS ID: 564161 : BGS Reference: TM24NW58

6.2.12. Jointing Bay JB 13/14

108. Jointing Bay JB 13/14 is located at National Grid Reference (NGR) TM 24698, 48302, at an elevation of c.35mAOD to the north-east of the River Fynn valley. BGS mapping indicates that the jointing bay is on the southern edge of an outcrop of Superficial Sands and Gravels of the Lowestoft Formation and Kesgrave Catchment which overlie Red Crag bedrock with Thames Group deposits beneath.

109. Nearby BGS logs to the north-west[9] and north-east[10] indicate that the superficials are between 10.1 and 12m in thickness with the crag approximately 9m in thickness. Groundwater strikes were recorded within the crag bedrock at a depth of approximately 15 - 16m below ground level (20 - 22mAOD).

110. The jointing bay is located approximately 200m to the north of a private water supply, there is no BGS borehole at this location, however given its location it is likely that this will abstract from the Red Crag bedrock.

111. Given the estimated water table of 20-22mAOD and ground elevation of approximately 35mAOD there is likely to be a 13m to 15m unsaturated zone beneath the jointing bay. It is therefore highly unlikely that the works will encounter groundwater.

6.2.13. HDD8

112. HDD8 proving points are centred on NGR TM 24932 47860, at an elevation of c.10mAOD, with the points sitting either side of the A12.

113. BGS mapping indicates that the proving points are not underlain by superficials, however River Terrace and alluvium deposits associated with the channel of the River Fynn are identified immediately to the west. The bedrock geology is observed to comprise the Thames group (interbedded clay, silt, sand) which in turn are underlain by undifferentiated members of the Thanet formation and the Newhaven chalk at depth.

114. Published borehole logs associated with the A12 indicate that the initial 10 metres below ground level primarily comprises clay-rich geology, interbedded with silty, fine-to-medium beds of sand (up to a maximum thickness of 2.5 metres).

115. The receptor mapping indicates that located within 250m of the proving points are four springs which likely source from nearby outcrops of river terrace gravels and the Kesgrave catchment subgroup.

116. With consideration for the low permeability, clay-rich geology underlying the proving points, it is considered that any excavations are unlikely to encounter groundwaters, nor impact any nearby receptors.

6.2.14. Jointing Bay JB 14/15 & HDD9

117. The location and elevation information of the structures are as follows:

- Jointing Bay JB 14/15 is located at National Grid Reference (NGR) TM 25417 47878, at an elevation of c.25mAOD to the south-east of the Top Street A30-B1438 roundabout.
- HDD9 proving points are centred on NGR TM 25494 47859, at an elevation of c.27mAOD, with the points underlying a feeder road to the A12.

118. BGS mapping indicates that the structures are on the southern edge of an outcrop of Superficial Sands and Gravels of the Kesgrave Catchment subgroup which overlie Red Crag bedrock with Thames Group deposits beneath.

[9] BGS ID: 564129 : BGS Reference: TM24NW26
[10] BGS ID: 564378 : BGS Reference: TM24NW274

119. The structures are located close to the edge of the Red Crag where the Thames Group outcrop at surface. Nearby BGS logs indicate that the superficials are relatively shallow (1.5m to 3m in thickness) in logs to the north, and thins out entirely to the south. The underlying Red Crag also thins to the south, with logs to the north[11] indicating the crag to be in excess of 8m in thickness, thinning to 3m in a borehole to the south-west[12].

120. Most of the shallow boreholes (<10m) were recorded as dry, whilst one of the deeper wells located to the north-west[13] does record a water strike within the Crag bedrock at an elevation of approximately 15mAOD. This is consistent with the regional hydrogeological map which also records groundwater levels at c.15mAOD.

121. Two springs are recorded approximately 250m to the west of the jointing bay. The locations of these are therefore consistent with the boundary between the Red Crag bedrock and Thames Group. This is likely to reflect a springline associated with seepages from the Crag.

122. Based on the above information, it is estimated that there will be a c.10m unsaturated zone beneath the structures. Based on a maximum depth of 2.5m below ground level it is considered unlikely that the ground works will encounter groundwater.

6.2.15. Jointing Bay JB 15/16, HDD10 & HDD11 West

123. Jointing Bay JB 15/16, HDD10 and the western proving point for HDD11 are located at National Grid Reference (NGR) TM 26205 47782, at an elevation of c.12mAOD to the north of the River Fynn. HDD11 passes under the River Fynn whilst HDD10 passes beneath Sandy Lane.

124. BGS mapping indicates that the structures are underlain by Thames Group deposits bedrock with no recorded overlying superficial deposits.

125. A BGS log associated with the nearby abstraction borehole, located approximately 100m to the south of the jointing bay[14] indicates that the Thames Group and underlying Thanet Formation and Lambeth Group deposits are c.16m in thickness, although the log does not differentiate between the two units, it is noted that there are approximately 4.3m of clays recorded close to the surface with sequences of sands and clays beneath. These are underlain by the Chalk bedrock.

126. The borehole log indicates a resting groundwater at c.0.5mAOD within the Chalk and to be tidally influenced, indicating that the chalk groundwater is likely to be in continuity with the overlying Thanet Formation and Lambeth Group deposits.

127. Given the thickness of the low permeability clays beneath the site, it is considered that the proposals will not excavate through the unproductive strata and there will therefore be no potential pathway to impact the licensed abstraction to the south.

6.2.16. Jointing Bay JB 16/17 & HDD11 East

128. The location and elevation information of the structures are as follows:

- Jointing Bay JB 16/17 is located at National Grid Reference (NGR) TM 26510 46771, at an elevation of c.10mAOD to the south-of the River Fynn and east of River Deben.
- The eastern proving point for HDD11 is located at NGR TM 26432 47030, at an elevation of c.13mAOD to the south-of the River Fynn and east of River Deben.

129. BGS mapping indicates that the structures are underlain by Thames Group deposits bedrock with no recorded overlying superficial deposits. BGS logs indicates that the Thames Group deposits are between 6m and 7m in thickness.

11 BGS ID: 564435 : BGS Reference: TM24NE50
12 BGS ID: 564456 : BGS Reference: TM24NE71
13 BGS ID: 564455 : BGS Reference: TM24NE70
14 BGS ID: 564425 : BGS Reference: TM24NE40

130. The Thames Group comprises of mainly silty clays and clays and is classified by the Environment Agency as unproductive strata. This is not therefore considered a potential groundwater pathway or receptor.

131. The structures are located within 250m of two springs and two private water supplies, which are located to the west. These are located along the junction between the Red Crag and Thames Group and are likely to be sourced from the Crag. Given that the Red Crag is absent at this location there is considered to be no potential pathway from the jointing bay location to affect these features.

6.2.17. Jointing Bay JB 17/18, HDD12 and HDD13

132. The location and elevation information of the structures are as follows:

- Jointing Bay JB 17/18 is located at National Grid Reference (NGR) TM 26777 46050, at an elevation of c.19mAOD to west of the River Deben and north of a minor tributary of the Deben.
- HDD12 proving points are centred on NGR TM 26600 46119, at an elevation of c.23mAOD, with the points underlying Waldringfield Road.
- HDD13 proving points are centred on TM 26873 45868, at an elevation of c.5mAOD, with the points underlying a feeding tributary of the River Deben.

133. BGS mapping indicates that jointing bay 17/18 and HDD12 are located close to the edge of an outcrop of superficial Kesgrave Catchment Sands and Gravels overlying Red Crag bedrock with the Thames Group present beneath. HDD13 is located in a small valley across a feeding tributary; mapping indicates that each proving point is not underlain by superficials, instead sitting on a bedrock comprising the Thames Group (interbedded clay, silt and sand).

134. A BGS log located immediately to the east[15] indicates that the Crag is thin, with a total thickness of 2.74m, the superficial sands and gravels were absent at this location and given that jointing bay JB 17/18 and HDD12 is on the edge of the outcrop it is likely that they will be very thin at this location. The log also indicates that water was struck at the top of the sand, indicating that the crag is potentially fully saturated at this location.

135. The underlying Thames Group is identified in published borehole logs as comprising a “firm, dark-blue clay”, proven to a minimum thickness of 4.5m.

136. Jointing bay 17/18 and HDD12 are located to the north-east of two private water supplies located at Howe’s Farm. There are no BGS logs at this location however the mapping indicates the locations to be underlain by the Red Crag. It is therefore likely that these will be abstracting from either the Crag groundwater or surface watercourses present adjacent to the farm. As a conservative approach it is assumed that the these will abstract from the Crag bedrock.

137. HDD 13 is located within 250m of an additional private water supply and a licenced surface water abstraction which takes water from the feeding tributary to the River Debden.

138. Given the above, there is the potential that excavation associated with the jointing bay and HDD12 will encounter groundwater within the Crag and potentially impact these abstractions. The potential impact and appropriate mitigation are outlined below. HDD13 is based on clay-rich, low permeability strata and therefore any groundwater encountered would be limited to incidental seepages with no consistent water table; this structure will not be considered further.

6.2.18. Jointing Bay JB 18/19

139. Jointing Bay JB 18/19 is located at National Grid Reference (NGR) TM 27487 45406, at an elevation of c.24mAOD to west of the River Deben. BGS mapping indicates that the jointing bay is underlain by superficial Kesgrave Catchment Sands and Gravels overlying Red Crag bedrock with the Thames Group present beneath.

[15] BGS ID: 564399 : BGS Reference: TM24NE14

140. A BGS log located immediately to the north[16] indicates that the superficial sands and gravels are approximately 4.6m in thickness with the underlying Red Crag also 4.6m thick. Groundwater was recorded within the Crag at approximately 15.2mAOD (8.3m below ground level) and indicates a relatively thin saturated thickness of approximately 1.2m. This is consistent with the regional hydrogeological map which records a groundwater level in the Crag of between 10-15mAOD.

141. Based on the available information, there is likely to be a 9m + unsaturated zone present beneath the jointing bay indicating that the excavation is highly unlikely to encounter groundwater.

142. A licensed abstraction is located approximately 175m to the south-west of the site, this abstracts groundwater from the underlying Chalk aquifer. As the chalk is confined by the overlying Thames Group deposits there is considered to be no potential impact on this abstraction.

143. A private water supply is also located adjacent to this abstraction. No information is available on this supply and there is no BGS borehole log at this location, as a conservative approach it is assumed that this is abstracting from the Crag. Although as noted the proposals are considered unlikely to encounter groundwater therefore there will be no significant impact on this abstraction.

6.2.19. Jointing Bay JB 20/21

144. Jointing Bay JB 20/21 is located at NGR TM 27683 43737, at an elevation of c.21.5mAOD to west of the River Deben. BGS mapping indicates that there are no superficial deposits beneath the jointing bay and that it is directly underlain by Red Crag bedrock with the Thames Group deposits.

145. A BGS log located immediately to the east indicates that the Red Crag is approximately 17.1m in thickness. Groundwater was recorded within the Crag at approximately 7.3mAOD (14.2m below ground level) and indicates a relatively thin saturated thickness of less than 3m. This is consistent with the regional hydrogeological map which records a groundwater level in the Crag of less than 10mAOD.

146. The jointing bay is located 450m east of the Newbourne Springs SSSI which includes a significant number of springs from the crag bedrock, although it is noted that the closest is more than 500m from the jointing bay.

147. Based on the available information, there is likely to be a 10m + unsaturated zone present beneath the jointing bay indicating that the excavation is highly unlikely to encounter groundwater. Given the distance to the nearest spring and the depth to groundwater any impact from Jointing Bay JB20/21 is considered highly unlikely.

6.2.20. Jointing Bay JB 21/22 HDD14 West

148. The location and elevation information of the structures are as follows:

- The Jointing Bay JB 21/22 is located at National Grid Reference (NGR) TM 28052 41943, at an elevation of c.22mAOD to west of the River Deben and north of the Mill River.
- The western proving point of HDD14 is centred on NGR TM 28118 41765, at an elevation of c5mAOD to the west of the River Deben and north of the Mill River.

149. BGS mapping indicates that the jointing bay is underlain by superficial Kesgrave Catchment Sands and Gravels overlying Red Crag bedrock with the Thames Group present beneath. The jointing bay is very close to the edge of the superficial sand and gravel outcrop and the junction between the Red Crag and Thames Group. The western HDD14 proving point is located marginally to the south and consequently is not underlain by any superficials, instead sitting directly on bedrock comprising the Thames Group.

[16] BGS ID: 564405 : BGS Reference: TM24NE20

150. There are no nearby BGS borehole logs which are relevant to the mapped geology. However, based on the conditions recorded at other locations with a similar geology, it is likely that the superficials and Crag will be relatively thin at the location of JB 21/22. Wider monitoring data indicates that the crag typically has a relatively thin saturated horizon (1-2m) which forms spring flows where the Thames Group outcrops at surface within the river valleys. Given that the jointing bay is located close to the Thames Group outcrop within the base of the valley, it is possible that the depth to groundwater will be relatively shallow and therefore the jointing bay could potentially encounter groundwater.

151. Nearby published borehole log TM24SE26 describes the Thames group bedrock as comprising brown, weathered clay. Due to the low permeability of the lithology, any groundwater encountered is likely to be incidental seepages and not evidence of a wider water table.

152. The jointing bay is located to the north of several springs which form along the northern side of the Mill River valley and are likely to form from seepages from the Red Crag at the junction with the Thames Group. Further assessment of potential impact on the springs has therefore been undertaken.

6.3. Impact Assessment

6.3.1. Potential Effects

153. Without appropriate design and controls, construction of the works has the potential to impair local hydrology (water quality) and hydrogeology (groundwater levels, flow and quality), such as:

- The use of machinery and the movement of soils has the potential to generate suspended solids in run-off and/or introduce oils or hydrocarbons to the water environment;
- Existing groundwater flow paths could be disturbed or altered, impacting on nearby groundwater abstractions.

154. Standard construction techniques and best practices are to be used to avoid or reduce these potential impacts. Details are given in the following section.

6.3.2. Embedded Mitigation

155. Best practice construction techniques and procedures that have been developed through a series of management plans for approval by the EA, East Suffolk Council, Mid Suffolk District Council and Suffolk County Council, in accordance with the requirements of the DCO. These include:

- Onshore Cable Route Surface Water and Drainage Management Plan (EA3-LDC-CNS-REP-IBR-000081)
- Onshore Cable Route Code of Construction Practice (EA3-LDC-CNS-REP-IBR-000084) including:
  - Pollution Prevention and Emergency Incident Response Plan; and
  - Project Environmental Management Plan.

156. The construction works will also be undertaken in accordance with good practice guidance within the following documents:

- CIRIA SP156 Control of Water Pollution from Construction Sites - Guide to Good Practice, 2002;
- CIRIA C502 Environmental Good Practice on Site C741, CIRIA 2015;

157. The Pollution Prevention Guidelines (PPGs) (which are progressively being replaced with Guidance for Pollution Prevention (GPPs)) provide environmental good practice for the whole of the UK and relevant PPGs/GPPs will be followed, including:

- GPP01: Understanding your environmental responsibilities – good environmental practices (Oct 2020)
- GPP02: Above Ground Oil Storage Tanks (Jan 2018);
- GPP04: Treatment and Disposal of wastewater where there is no connection to the public sewer (Nov 2017);

- PPG6: Working at construction and demolition sites (2012);
- GPP08: Safe storage and disposal of used oils (July 2017);
- GPP13: Vehicle Washing and Cleansing (April 2017);
- PPG18: Managing fire water and major spillages (June 2000);
- GPP21: Pollution incident response planning (June 2021);
- GPP22: Dealing with Spills (Oct 2018).

6.3.3. Impact upon Groundwater Levels and Flow Regimes

158. The maximum depth of excavation associated with the onshore cable route is up to 2.5m associated with the jointing bays (HDD duct proving excavation depths will be up to 1.5m). The review of the anticipated geological and hydrogeological conditions indicates that at most locations the maximum excavation depth is likely to be well above the water table. It is however noted that jointing bays JB 3/4 , JB 10/11, JB 17/18 and JB 21/22 and HDD5 have the potential to encounter groundwater.

159. In the event that groundwater is encountered within the excavations, there is the potential need for dewatering of the excavations. These would be dewatered and discharged back to ground, following treatment if necessary. As the excavations will be small and only open for a relatively short period of time the potential volume of water encountered will be small and negligible in relation to the overall size of the aquifer. The potential significance of impact is therefore considered to be minor. Nonetheless appropriate monitoring and mitigation (if required) is outlined below.

6.3.4. Impact on Groundwater Quality

160. The construction works at the site will inevitably give rise to suspended solids which if not managed could pollute surface waters and groundwaters. The construction works will also involve the use of mobile plant which could give rise to fuel spills which could potentially contaminate surface waters and groundwaters.

161. The onshore cable route construction works will be undertaken in accordance with the management plans outlined in Section 6.3.2 which provide details of how construction will be completed in an environmentally safe manner and minimise the potential for spillages.

162. Best practice techniques will be incorporated within the management procedures for construction activities onsite in order to protect the water environment from pollution incidents. Key mitigation measures, as set out in the management plans, can be summarised as follows:

- during operation there will be heavy machinery required onsite and, as a result, it is appropriate to adopt best working practices and measures to protect the water environment, including those set out in the EA's Guidance for Pollution Prevention (GPP1);
- in accordance with GPP2 all above ground onsite fuel and chemical storage will be bunded;
- an emergency spill response kit will be maintained onsite;
- a vehicle management system will be put in place wherever necessary to reduce the potential conflicts between vehicles and thereby reduce the risk of collision;
- a speed limit will be imposed on site to reduce the likelihood and significance of any collisions;
- in accordance with GPP5 the amount of time stripped ground and soil stockpiles being exposed will be minimised and vegetation will only be removed from the area that needs to be exposed in the near future.
- plant and wheel washing will be carried out in a designated area of hard standing at least 10 metres from any watercourse or surface water drain or rock outcrop (hard rock at surface).

163. Given the embedded mitigation in place, the potential risk during construction to groundwater quality and subsequently surface water quality of any down-stream watercourses in hydraulic continuity with the Chalk is assessed as **'negligible'** to **'low'**.

164. This potential risk assessment applies also to the outer (Zone II) and inner (Zone I) Groundwater Source Protection Zones eastwards and southwest of the site.

165. No additional mitigation beyond that outlined above is considered necessary.

6.3.5. Impact upon Ecological Sites

166. As outlined within Section 5.3.4, there are not considered to be any designated ecological sites which could be considered a potential receptor.

6.4. Monitoring and Mitigation

6.4.1. Monitoring

167. It is recommended that if it is deemed necessary to dewater any of jointing bays JB 3/4 , JB 10/11, JB 17/18 or JB 21/22 that monitoring of the relevant water supply or spring is undertaken throughout to ensure that there is no adverse impact on supply. This would include monitoring of water levels of private water supplies and either visual monitoring or flow monitoring of springs (if feasible).

168. Given the short duration of dewatering and, therefore, monitoring, construction of structures for monitoring spring flow is considered unnecessary, however an initial walkover of spring locations should be undertaken (if landowner permission is forthcoming). If possible measurements of flow should be undertaken, either through volumetric approach (i.e. measuring the rate of flow into a container of known volume) or through measurement of the stream flow (i.e. measuring the cross-sectional area of stream down-stream of spring and velocity of the flow).

169. Work should be undertaken by a qualified hydrologist and the most appropriate method for measuring flow undertaken based on the nature of the spring. Where flows are not sufficient to measure or it is not possible to measure in a quantitative manner a qualitative visual assessment would be undertaken.

170. In the unlikely event that a notable drop in water levels or flows is recorded the dewatering would be ceased until appropriate assessment of impact or suitable mitigation can be put into place.

171. Baseline monitoring of these water features should also be undertaken, with landowner permission, prior to commencement of works to provide a baseline groundwater level or flow from which to observe any significant changes during works. This should consist of at least one round of monitoring, although additional rounds to identify any natural variations would be beneficial if feasible.

6.4.2. Mitigation

In the unlikely event that mitigation is required in response to the monitoring, this would likely involve either changing the method of working to avoid the need for dewatering or providing a replacement water supply to ensure that continuity of supply is available throughout the works.

7. CONCLUSION

172. A hydrogeological and hydrological impact assessment has been undertaken to assess the potential impact upon the local hydrogeological and hydrological regime of the proposed onshore cable route works extent.

173. The assessment has identified a total of twelve jointing bays and fourteen HDD proving points which are located within a 250m radius of a licensed abstraction, private water supply or spring, however further assessment of each of these indicates that only four are considered have the potential to encounter groundwater. Due to the relatively shallow depths and areas of excavation required, and the short duration of works the potential impact on the private water supplies and/or springs is considered to be low and even if localised dewatering is required the low volumes are unlikely to impact the receptors, nonetheless additional monitoring of these has been recommended in the event the dewatering is required to ensure that the works do not result an adverse impact on these features.

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APPENDIX 1 SITE CONTEXT PLAN

609500 610000 610500 611000

246500 246000

TYE LANE
Track
Track
Track
HDD-1E
HDD-1W
HDD-21W
HDD-21E
AP-1
CP-01
JB 1/2
PRoW 1
Bullen Lane CCS
AP-2
BULLEN LANE
PRoW A
Path (um)
Path (um)
BULLEN LANE
Track
Inset Frame
IPSWICH

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

- EA THREE Development Order Limits
- Crossing Point (Road Crossings Numbered)
- Public Right of Way
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Consolidated Construction Site Compound
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Stone Haul Road
- Trackway

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.1 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

610000 610500 611000 611500

247000 246500

N

Path (um)

BACK LANE (TRACK)

PRoW 2

Track

TYE LANE

TYE LANE

TYE LANE

Track

HDD-1E

HDD-1W

Track

PRoW 1

Track

Inset Frame

IPSWICH

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

EA THREE Development Order Limits

Public Right of Way

Horizontal Direct Drilling Duct Proving Platform

Top Soil Strip

Indicative Top Soil Bund

Trackway

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.2 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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610500 611000 611500 612000

248000 247500

Track
Track
Path (um)
SOMERSHAM ROAD
Track
Track
B 1113
SOMERSHAM ROAD
L'ORAINE WAY
BACK LANE (TRACK)
BACK LANE (TRACK)

Inset Frame
IPSWICH

HDD-2E
HDD-2W
AP-5
AP-4
AP-3
PRoW 3
JB 2/3
PRoW 2

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

EA THREE Development Order Limits
Public Right of Way
Jointing Bay Hardstanding
Horizontal Direct Drilling Duct Proving Platform
Top Soil Strip
Indicative Top Soil Bund
Indicative Subsoil Bund
Existing Track
HGV Turning
Stone Haul Road
Trackway

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.3 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

611000 611500 612000 612500

249000 248500

AP-8 AP-7 HDD-19E HDD-19W Inset Frame

Track Track B1113 BRAMFORD ROAD B1113 THE BEECHES GP GP POUND LANE Path (um) WB Path (um) SOMERSHAM ROAD Track LORAINE WAY Track

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

- EA THREE Development Order Limits
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- Stone Haul Road
- Trackway

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A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.4 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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612000 612500 613000 613500

249500 249000 248500

N

B 1113 BRAMFORD ROAD Track Path (um) A14 GROVE ORCHARD PAPER MILL LANE

Inset Frame

AP-8 AP-7 AP-9 AP-10

JB 3/4 JB 4/5

HDD-19E HDD-19W HDD-4W HDD-4E HDD-5W HDD-5E

CP-05

Paper Mill Lane CCS

PRoW 4

OLD IPSWICH ROAD Posts

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

- EA THREE Development Order Limits
- Crossing Point (Road Crossings Numbered)
- Public Right of Way
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Consolidated Construction Site Compound
- Soil Storage
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.5 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

614000
614500
615000
249500
249000
Path (um)
Path (um)
Track
Track
Track
Path (um)
Track
Track
Track
Track
Track
Track
Track
Posts
JB 4/5
PRoW 4
Inset Frame
IPSWICH
Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

EA THREE Development Order Limits
Public Right of Way
Jointing Bay Hardstanding
Indicative Top Soil Bund
Indicative Subsoil Bund
Stone Haul Road

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A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.6 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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615500 616000 616500 617000

249500 249000

Track

HENLEY ROAD

AP-12

AP-11

JB 5/6

JB 6/7

PRoW 8

PRoW 9

Path (um)

SANDY LANE

Track

HENLEY ROAD

Path (um)

Inset Frame

IPSWICH

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

EA THREE Development Order Limits
Public Right of Way
Watercourse within the DOL
Jointing Bay Hardstanding
Indicative Top Soil Bund
Indicative Subsoil Bund
HGV Turning
Stone Haul Road

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A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.7 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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617000 617500 618000 618500

249500 249000 248500

PRoW 8 JB 6/7 PRoW 9 PRoW 10 PRoW 11 JB 8/9 JB 7/8 CP-14

Path (um) Path (um) Path (um) Path (um) Path (um)

GOCKFIELD HALL LANE ROSE HILL B 1077 SANDY LANE LANE GOCKFIELD HALL LANE WITNESHAM Track Track Track Track Post

Inset Frame

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

EA THREE Development Order Limits
Crossing Point (Road Crossings Numbered)
Public Right of Way
Watercourse within the DOL
Jointing Bay Hardstanding
Indicative Top Soil Bund
Indicative Subsoil Bund
HGV Turning
Stone Haul Road
Trackway

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A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.8 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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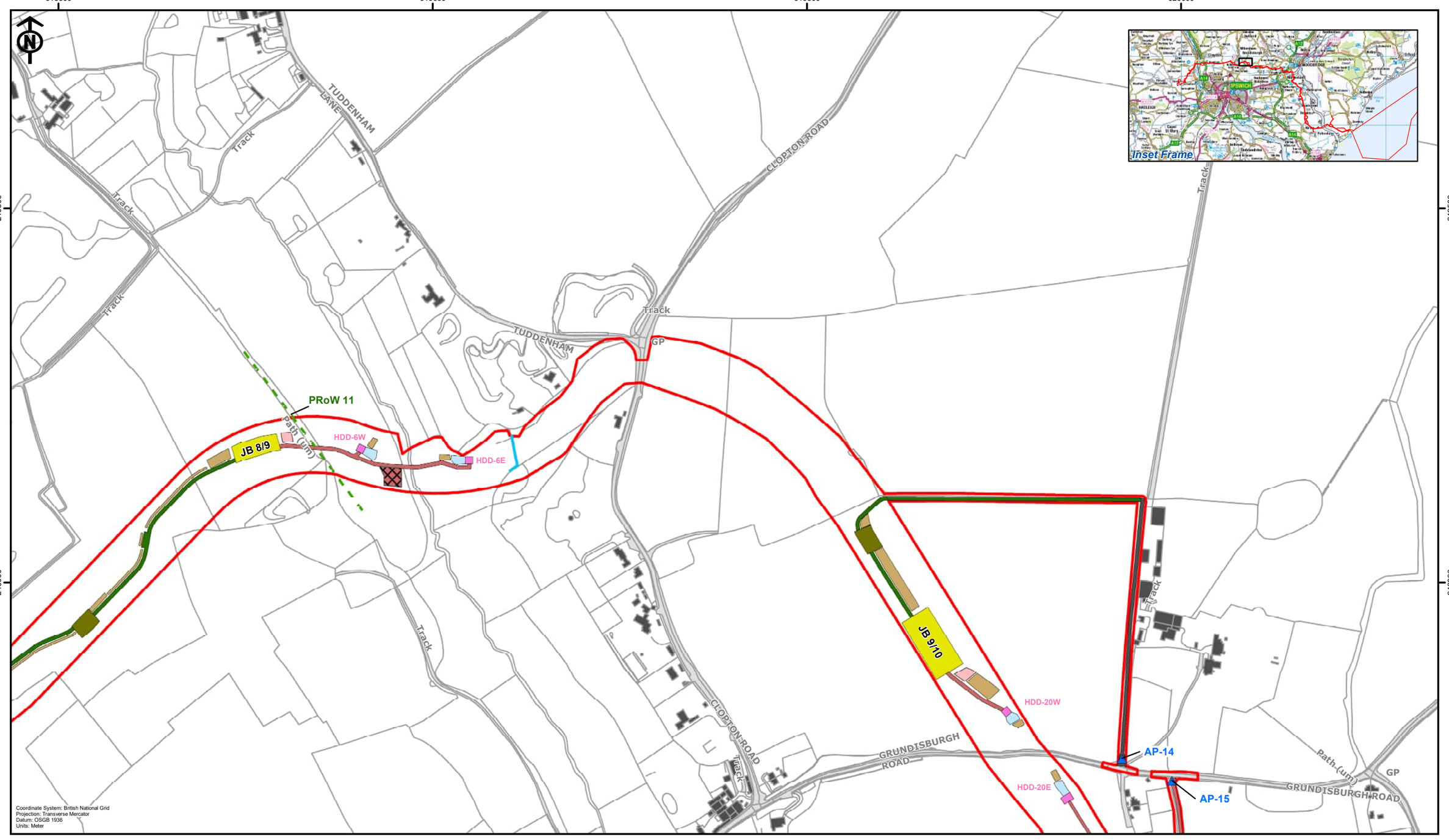
618500 619000 619500 620000

249500 249000



- EA THREE Development Order Limits
- Public Right of Way
- Watercourse within the DOL
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway
- Trackway Crane Pad

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Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.9 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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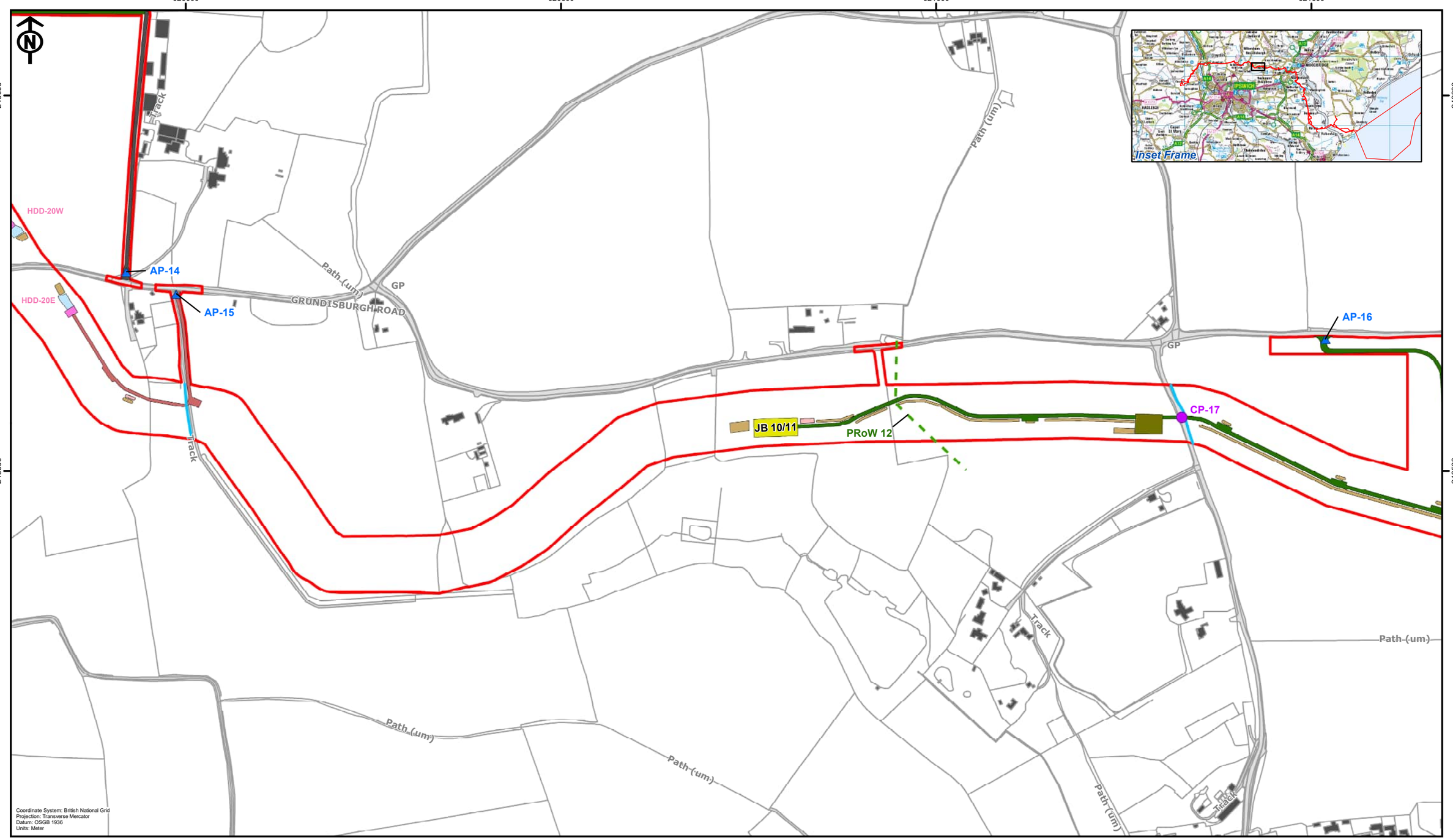
620000 620500 621000 621500

249000 248500



- EA THREE Development Order Limits
- Crossing Point (Road Crossings Numbered)
- Public Right of Way
- Watercourse within the DOL
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway

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A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.10 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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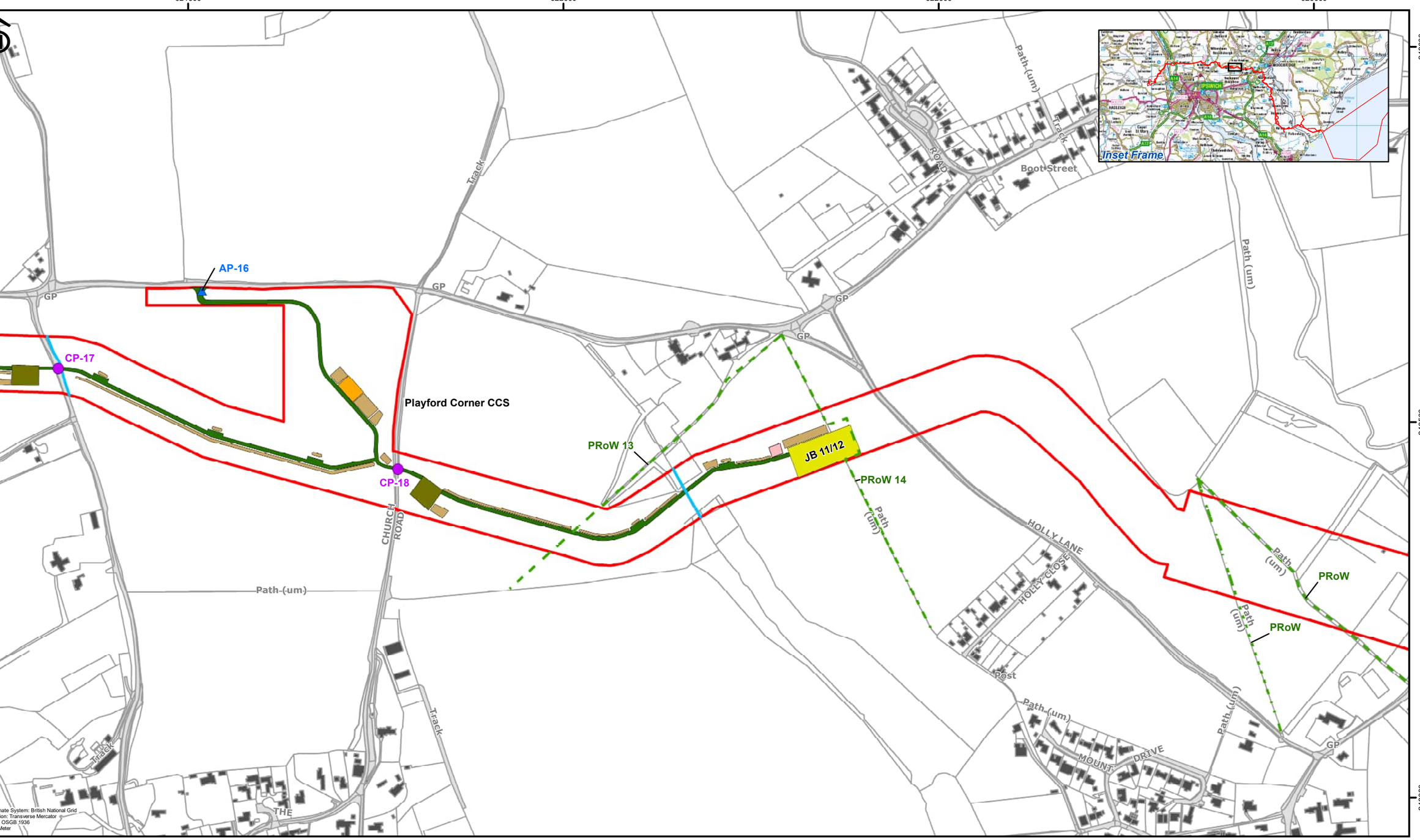
621500 622000 622500 623000

249000 248500 248000



- EA THREE Development Order Limits
- Crossing Point (Road Crossings Numbered)
- Public Right of Way
- Watercourse within the DOL
- Jointing Bay Hardstanding
- Consolidated Construction Site Compound
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- HGV Turning
- Stone Haul Road

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A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.11 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

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623500 624000 624500

249000 248500 248000

Track
Tk
GP
ROSERY LANE
Track
LOWER STREET
ORCHARD LANE
LODGE ROAD
ROSERY LANE
GP
GP
Track
AP-18
PRoW 18
AP-17
JB 13/14
HDD-7W
CP-22
HDD-7E
JB 12/13
PRoW
Path
Track
PRoW 19
PRoW 19
PRoW 20
Path
HDD-8W

Inset Frame

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

EA THREE Development Order Limits
Crossing Point (Road Crossings Numbered)
Public Right of Way
Watercourse within the DOL
Jointing Bay Hardstanding
Horizontal Direct Drilling Duct Proving Platform
Top Soil Strip
Indicative Top Soil Bund
Indicative Subsoil Bund
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.12 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

625000 625500 626000 626500

248000 247500

JB 13/14
PRoW 19
PRoW 19
HDD-8W
PRoW 20
CP-26
HDD-8E
PRoW 42
PRoW 21
JB 14/15
Top Street CCS
AP-19
HDD-9E
AP-20
HDD-10E
JB 15/16
AP-21
HDD-10W
PRoW 22
Inset Frame

A12
B 1438
IPSWICH ROAD
CHRISTCHURCH DRIVE
SECKFORD HALL ROAD
PINE ROAD
CLAYTON COURT
TURNER CLOSE
THE LANCERS
PINEWOOD MEADOW
BRIARWOOD ROAD
BROOMHEATH
CALIFORNIA
SANDY LANE
DUKE'S PARK
Path (um)
Track
Lay-by
Tunnel
BROCK
TOP STREET
THE STREET
BEALINGS ROAD

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

EA THREE Development Order Limits
Crossing Point (Road Crossings Numbered)
Public Right of Way
Watercourse within the DOL
Jointing Bay Hardstanding
Horizontal Direct Drilling Duct Proving Platform
Consolidated Construction Site Compound
Top Soil Strip
Indicative Top Soil Bund
Indicative Subsoil Bund
Stone Haul Road
Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.13 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

625500 626000 626500 627000

247500 247000 246500

THE STREET
Track
Path (um)
Track
Track
Path (um)
Path (um)
PRoW 22
Path (um)
Inset Frame
IPSWICH
SCHOOL LANE
Path (um)
Track
HDD-11E
VIKING CLOSE
PRoW 23
Path (um)
Track
SCHOOL LANE
CHURCH LANE
Path (um)
PRoW 24
Track
Track
THREE STILES LANE (TRACK)
Lay-by
JB 16/17
PRoW 25
Track
Track
WALDRINGFIELD ROAD
Path (um)
PRoW 26
MILL LANE (TRACK)
Path (um)
Track

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

EA THREE Development Order Limits
Public Right of Way
Watercourse within the DOL
Jointing Bay Hardstanding
Horizontal Direct Drilling Duct Proving Platform
Top Soil Strip
Indicative Top Soil Bund
Indicative Subsoil Bund
Stone Haul Road
Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.14 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

626000 626500 627000 627500

246000 245500

AP-22
PRoW 26
AP-23
AP-24
CP-31
HDD-12W
HDD-12E
HDD-13W
HDD-13E
JB 17/18
JB 18/19
WALDRINGFIELD ROAD
NEWBOURNE ROAD
Path (um)
Track
IPSWICH
Inset Frame

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

- EA THREE Development Order Limits
- Crossing Point (Road Crossings Numbered)
- Public Right of Way
- Watercourse within the DOL
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.15 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

627000
627500
628000
245500
245000
244500

N

JB 18/19
JB 19/20
AP-25

WAUDRINGFIELD ROAD
Path (um)
Track
WOODBRIDGE ROAD
FISHPOND ROAD
SANDY LANE
IPSWICH ROAD
NEWBOURNE ROAD
SULLIVAN PLACE
SCHOOL ROAD
SUNNYHILL
GP
DEBENHAM'S
CLIFF MEADOWS
CLIFF ROAD
MILL ROAD

Inset Frame

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

EA THREE Development Order Limits
Jointing Bay Hardstanding
Indicative Top Soil Bund
Indicative Subsoil Bund
Stone Haul Road

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

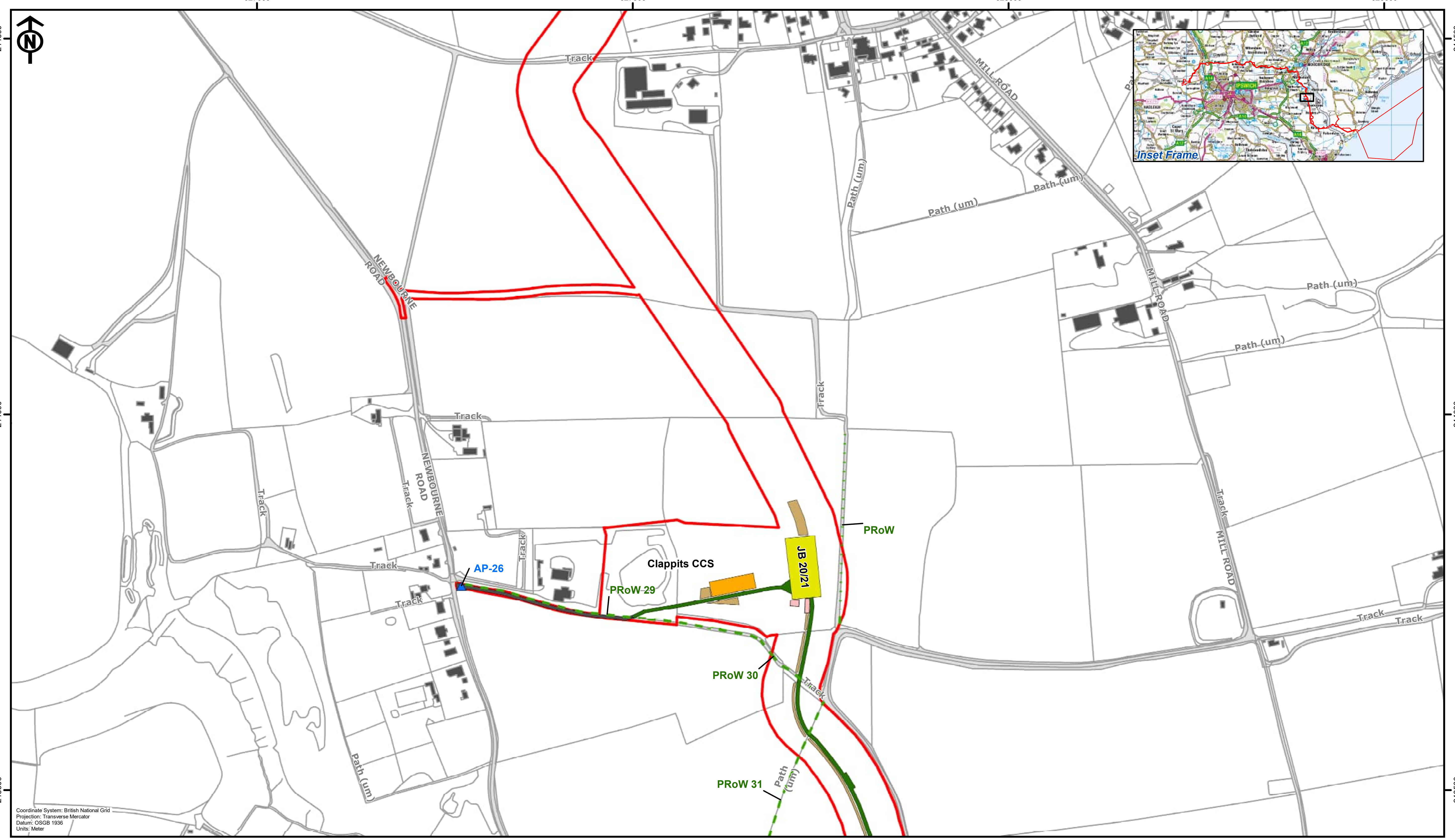
0 100 200 Metres

EA THREE Cable Route

FIGURE 1.16 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023.05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd



EA THREE Development Order Limits	Consolidated Construction Site Compound
Public Right of Way	Indicative Top Soil Bund
Jointing Bay Hardstanding	Indicative Subsoil Bund
Stone Haul Road	Existing Track

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.17 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

627500
628000
628500
243500
243000

PRoW 31
Path (um)
Path (um)
WOODBRIDGE ROAD
Track
FERN LANE
THE STREET
GP
CP-36
Guide Post
Track
IPSWICH ROAD
GP
Track
Track
Track
Track
Track
CHURCH LANE
Inset Frame
IPSWICH

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

EA THREE Development Order Limits
Crossing Point (Road Crossings Numbered)
Public Right of Way
Indicative Top Soil Bund
HGV Turning
Stone Haul Road

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.18 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

627500
628000
628500
629000
242500
242000

Track
MILL ROAD
Track
Path (um)
PRoW 32
Track
CHURCH LANE
Track
Path
Track
Track
Track
JB 21/22
HDD-14W
Path (um)

Inset Frame
IPSWICH
WOODBRIDGE
HADLEIGH

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

EA THREE Development Order Limits
Public Right of Way
Jointing Bay Hardstanding
Horizontal Direct Drilling Duct Proving Platform
Top Soil Strip
Indicative Top Soil Bund
Indicative Subsoil Bund
HGV Turning
Stone Haul Road
Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

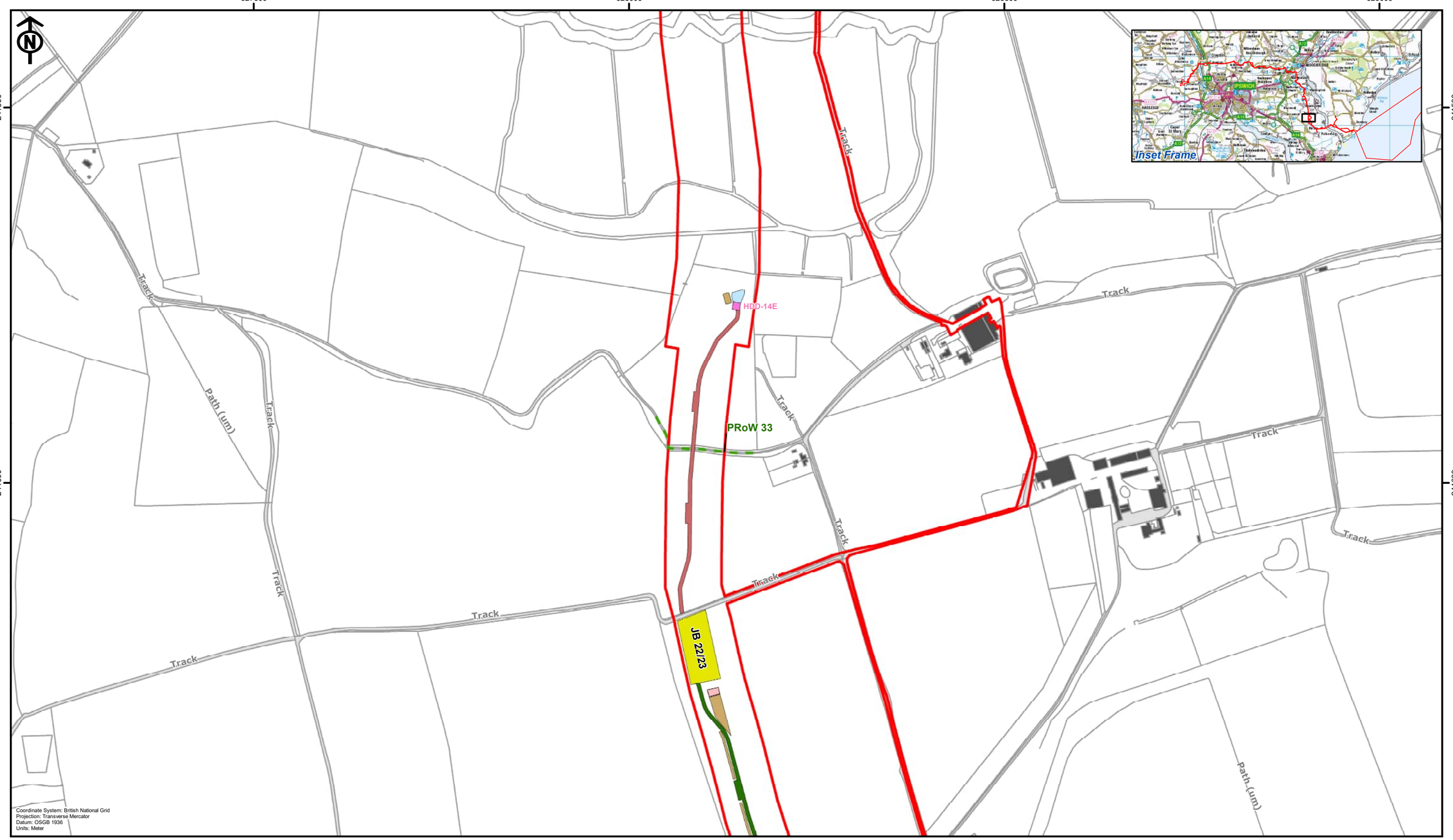
FIGURE 1.19 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

627500 628000 628500 629000

241500 241000



- EA THREE Development Order Limits
- Public Right of Way
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Stone Haul Road
- Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

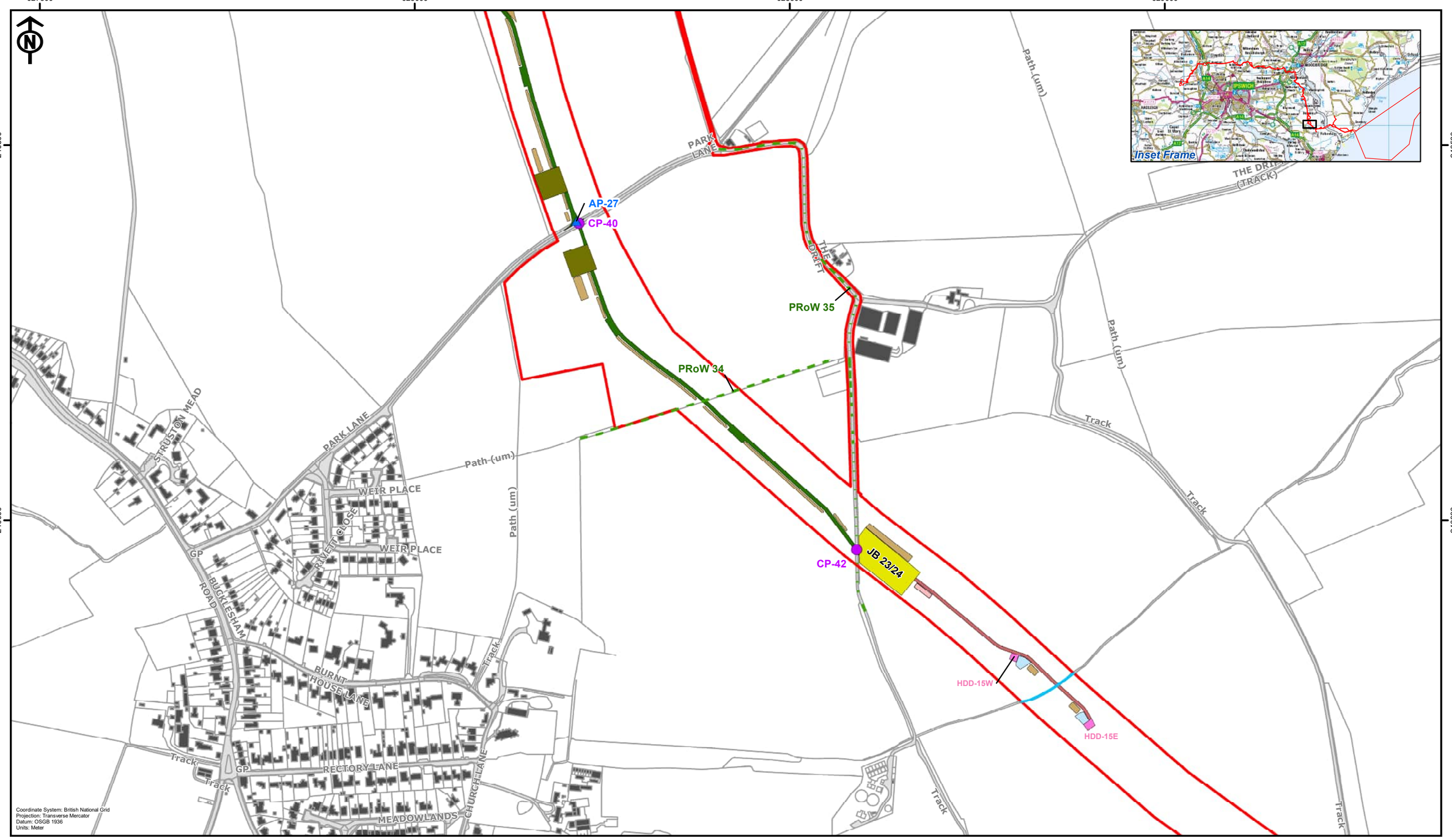
FIGURE 1.20 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

627500 628000 628500 629000

240500 240000



- EA THREE Development Order Limits
- Crossing Point (Road Crossings Numbered)
- Public Right of Way
- Watercourse within the DOL
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- HGV Turning
- Stone Haul Road
- Trackway

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.21 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

629000 629500 630000 630500

239500

239000

HDD-15W

HDD-15E

Track

PRoW 36

PRoW 37b

Track

Track

PRoW

HDD-16W

JB 24/25

DRUNKARDS LANE (TRACK)

Track

PRoW 37a

Path (um)

AP-28

LOWER FALKENHAM ROAD

FALKENHAM ROAD

FALKENHAM ROAD

Path (um)

Track

SHEEPGATE LANE

SHEEPGATE LANE

Inset Frame

IPSWICH

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

- EA THREE Development Order Limits
- Public Right of Way
- Watercourse within the DOL
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

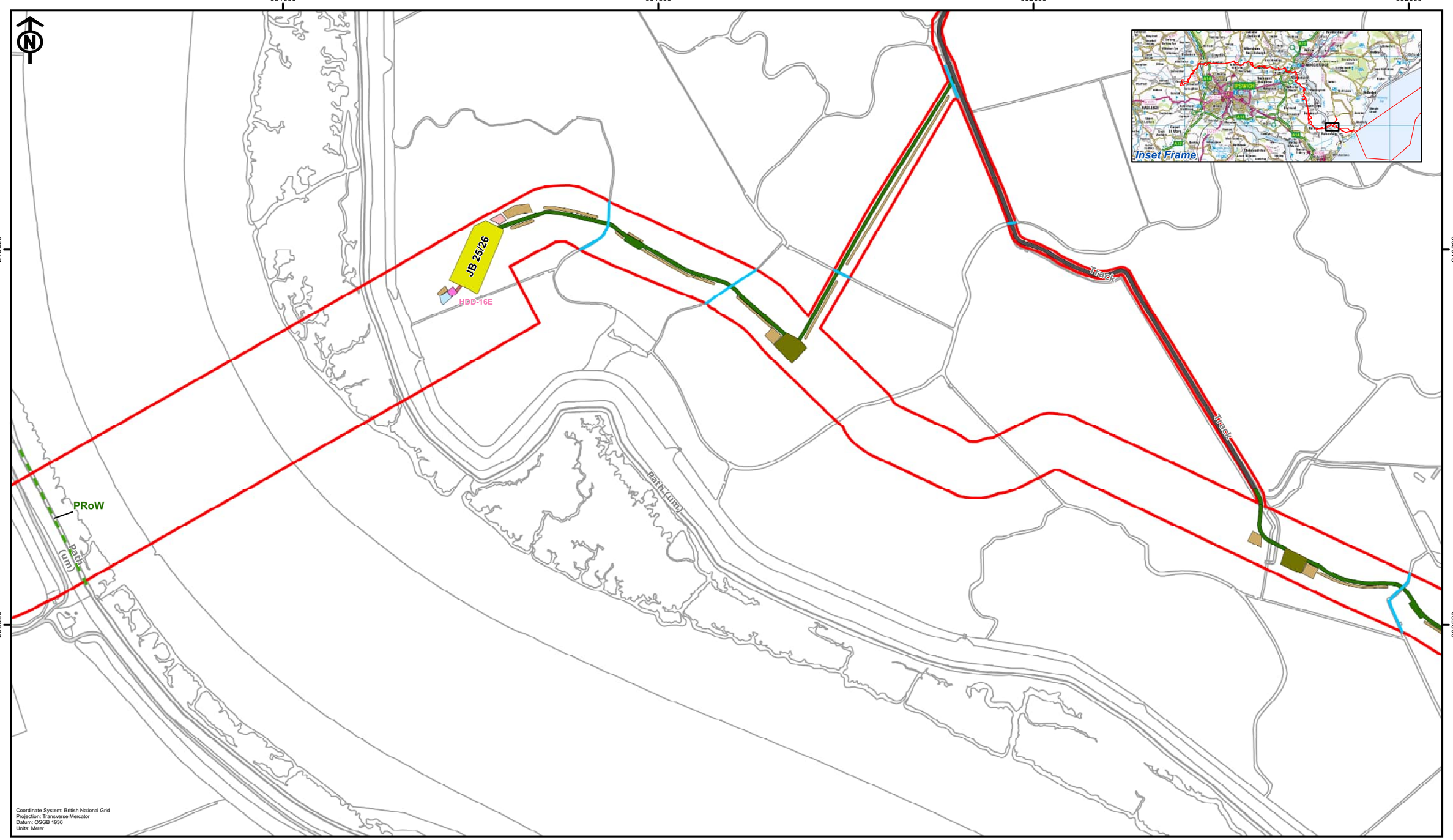
FIGURE 1.22 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

631000 631500 632000 632500

240000 239500



- EA THREE Development Order Limits
- Public Right of Way
- Watercourse within the DOL
- Jointing Bay Hardstanding
- Horizontal Direct Drilling Duct Proving Platform
- Top Soil Strip
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.23 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

631500 632000 632500 633000

241000 240500

AP-29

GP

PRoW 39

Path (um)

Track

DUKE'S LANE (TRACK)

Inset Frame

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

EA THREE Development Order Limits

Public Right of Way

Existing Track

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Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.24 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

632500 633000 633500 634000

239500 239000

JB 26/27

HDD-17W

HDD-17E

Track

Path (um)

Inset Frame

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

EA THREE Development Order Limits
Watercourse within the DOL
Jointing Bay Hardstanding
Horizontal Direct Drilling Duct Proving Platform
Top Soil Strip
Indicative Top Soil Bund
Indicative Subsoil Bund
HGV Turning
Stone Haul Road
Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.25 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

634000 634500 635000 635500

239500 239000

Track
FERRY ROAD
PRoW 41
AP-31
Track
Track
Landfall CCS
Transitional Jointing Bays
PRoW 40
Track
JB 27/28
CP-49
AP-30
FERRY ROAD
Path (um)

Inset Frame

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

- EA THREE Development Order Limits
- Crossing Point (Road Crossings Numbered)
- Public Right of Way
- Watercourse within the DOL
- Transition Jointing Bays
- Jointing Bay Hardstanding
- Consolidated Construction Site Compound
- Indicative Top Soil Bund
- Indicative Subsoil Bund
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway

GoBe consultants

Rev	Date	By	Comment
A	29/11/2023	PW	First Issue

Original A3 Plot Scale 1:5,000

0 100 200 Metres

EA THREE Cable Route

FIGURE 1.26 Site Context Plan

Drg No	404.5356.00006.0001.0
Rev	0
Date	29/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\1 Site Context Plan\404.5356.00006.0001.0 Site Context.mxd

609000 610000 611000 612000

248000 247000 246000

Stone Cottage
Park Farm
Little
rk Farm
Tye Farm
Woodlands Farm
Black
Cottage
Flowton
ton Hall
Tye Lane
The Channel
Hill Farm
Burstallhill
Sycamore
House
Dairy Farm
Somersham Road
Copenhagen
Cottage
B1113
Rutters Farm
Grove House
Paper Mill Lane
Bramford Hall
West Wing
Keepers
Cottage
Bullen Hall Farm
Fidgeon's Farm
Thornbush Hall
The Street
Ship Lane
Fitzgerald Road
Bramford
Runcton Farm
River Gipping

AP-5
HDD-2E
AP-4
HDD-2W
AP-3
JB 2/3
HDD-1E
HDD-1W
HDD-21E
CP-01
AP-2
JB 1/2
HDD-21W
AP-1
Bullen Lane CCS

Inset Frame
IPSWICH
WOODBRIDGE

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

Superficial Geology

Alluvium - Clay and Silt
Head - Diamicton
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Diamiction
Lowestoft Formation - Sand and Gravel
River Terrace Deposits (Undifferentiated) - Sand and Gravel

GoBe consultants

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.1 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd

611000 612000 613000 614000 615000

250000 249000 248000

Claydon
Slade Cottages
Wood House
Claydon Farm
Church Lane
Chapel Lane
Bramford Road
Blackacre Hill
Cottage Farm
The Meadows
Claydon Hill
Broomvale Farm
Broomvale Cottages
Paper Mill Lane CCS
AP-8
AP-10
HDD-19E
HDD-19W
HDD-4W
HDD-4E
HDD-5E
HDD-5W
JB 3/4
CP-05
AP-9
AP-7
JB 4/5
Hillview Cottage
JB 5/6
Bower Farm
River Gipping
Pound Lane
Meakbeggars Hall
Akenham
Blood Hill
Lower Dairy Farm
Loraine Way
Paper Mill Farm
The Paper Mill House
Broom Hill
A14
Old Norwich Road
Waterworks Cottage
Thurleston Lane
Longfellow Court
Church Farm
Whitton Church Lane
Defoe Road
AP-5
HDD-2E
AP-4
HDD-2W
JB 2/3
AP-3
B1113
Somersham Road
Inset Frame
IPSWICH
WOODBRIDGE

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Soil Storage
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

Superficial Geology

Alluvium - Clay and Silt
Head - Diamicton
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Diamiction
Lowestoft Formation - Sand and Gravel
Peat
River Terrace Deposits (Undifferentiated) - Sand and Gravel

GoBe consultants

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.2 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd

615000 616000 617000 618000 619000

250000 249000 248000

Henley Road
Akenham Hall Farm
don Farm
The Maples
Bower Farm
kenham
Hill Farm
Waterworks Cottage
Longfellow Court
Thurleston Lane
Church Farm
Lower Road
Westbrook
Westerfield
Low Farm
Orchard House Farm
Willow Tree Farm
Cockfield Hall Lane
Rose Hill
Valley Farm
Red Barn Farm
B1077
Cowslip Cottage
Westerfield Road
Redgates
Whiteholme
Two Gables Farm
Westerfield Lane
Main Road
Moss Lane
River Fynn
Tudd
St M
Clopton
Inset Frame
IPSWICH
WOODBRIDGE
A14

JB 5/6
JB 6/7
JB 7/8
JB 8/9
AP-11
AP-12
CP-14
HDD-6E
HDD-6W

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Superficial Geology
Alluvium - Clay and Silt
Glaciolacustrine Deposits, Mid Pleistocene - Clay And Silt
Head - Diamicton
Lowestoft Formation - Diamiction
Lowestoft Formation - Sand and Gravel

GoBe consultants

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

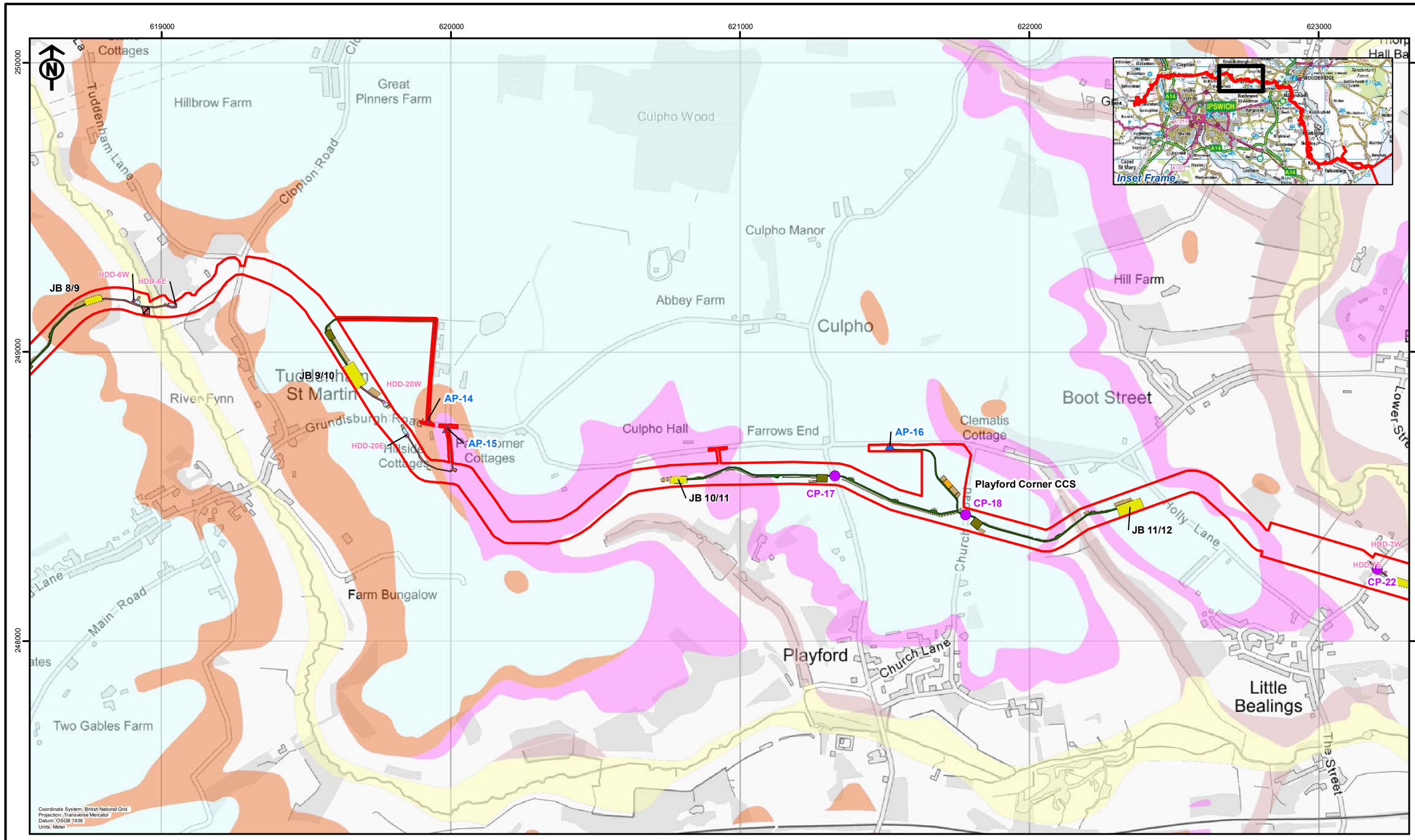
0 200 400 Metres

EA THREE Cable Route

FIGURE 1.3 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

Superficial Geology

Alluvium - Clay and Silt
Head - Diamicton
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Diamiction
Lowestoft Formation - Sand and Gravel

GoBe consultants

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.4 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd

623000 624000 625000 626000 627000

248000 247000

Rosery Lane
Lower Street
Bealings House
Wood Barn Cottages
Birds Hill
Rosery Farm
Seckford Hall Bungalow
Holly Lane
Lodge Road
Meadow Cottage
Cherry Tree Cottage
Cherry Tree Farm
Seckford Hall Hotel
Ipswich Road
B1438
Broom Hill
Dower House
Little Bealings
River Fynn
Top Street
Maidensgrave
Creek Farm
Kyson Hill
The Street
Colonels Farm Cottage
Martlesham Road
Bealings Road
A12
Beaconhill Farm
Martlesham Creek
Osierbed House
Hall Road
Bloomfield's Farm
Main Road
School Lane
Waldringfield Road
The White House
Martlesham Plantation
Walk Farm Cottage
Hill Farm

JB 11/12
HDD-7W
HDD-7E
CP-22
JB 12/13
AP-17
AP-18
JB 13/14
HDD-8W
HDD-8E
Top Street CCS
JB-14/15
AP-19
HDD-9E
AP-21
AP-20
HDD-10E
HDD-10W
JB 15/16
HDD-11E
JB 16/17
AP-22

Inset Frame

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

Superficial Geology

Alluvium - Clay and Silt
Head - Diamicton
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Diamiction
Lowestoft Formation - Sand and Gravel
River Terrace Deposits (Undifferentiated) - Sand and Gravel
Tidal Flat Deposits - Clay and Silt

GoBe consultants

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.5 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023.05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd

625000 626000 627000 628000 629000

247000 246000 245000

Martlesham Creek

Bromeswell Hill Farm

Main Road

School Lane

Waldringfield Road

Felixstowe Road

Walk Farm Cottage

The Old Rotary Club

Thatched Farm

Hill Farm

Methersgate

River Deben

Howe's Farm

Newbourne Road

Ralph's Cottage

The Hawthorns

Rudds Barn

Cross Farm

Cross Cottage

Waldringfield Heath

Gloster Road

Fishpond Road

Sandy Lane

School Road

HDD-11E

JB 16/17

AP-22

HDD-12E

HDD-12W

CP-31

HDD-13W

AP-23

HDD-13E

AP-24

JB 18/19

AP-25

JB 19/20

Inset Frame

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)

Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip

Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Superficial Geology

Alluvium - Clay and Silt
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Diamiction
Lowestoft Formation - Sand and Gravel
River Terrace Deposits (Undifferentiated) - Sand and Gravel
River Terrace Deposits, 2 - Sand and Gravel
Tidal Flat Deposits - Clay and Silt

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.6 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd

626000 627000 628000 629000 630000

245000 244000 243000

AP-25 JB 19/20 AP-26 JB 20/21 CP-36

Fishpond Lane
School Road
Cliff Road
Waldringfield
Glebe Farm
Mill Road
White Hall
Plum Tree Cottage
Clappits CCS
Woodbridge Road
Newbourne
The Street
Street Farm
Church Lane
Hemley
Ramsholt Lodge Farm
Plum Tree H
swich Road

Inset Frame

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

- EA THREE Development Order Limits
- Access Point
- Crossing Point (Road Crossings Numbered)
- Existing Track
- HGV Turning
- Stone Haul Road
- Top Soil Bund
- Jointing Bay Hardstanding
- Consolidated Construction Site Compound

Superficial Geology

- Alluvium - Clay and Silt
- Kesgrave Catchment Subgrouo - Sand and Gravel
- Lowestoft Formation - Sand and Gravel
- River Terrace Deposits, 2 - Sand and Gravel
- Tidal Flat Deposits - Clay and Silt

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

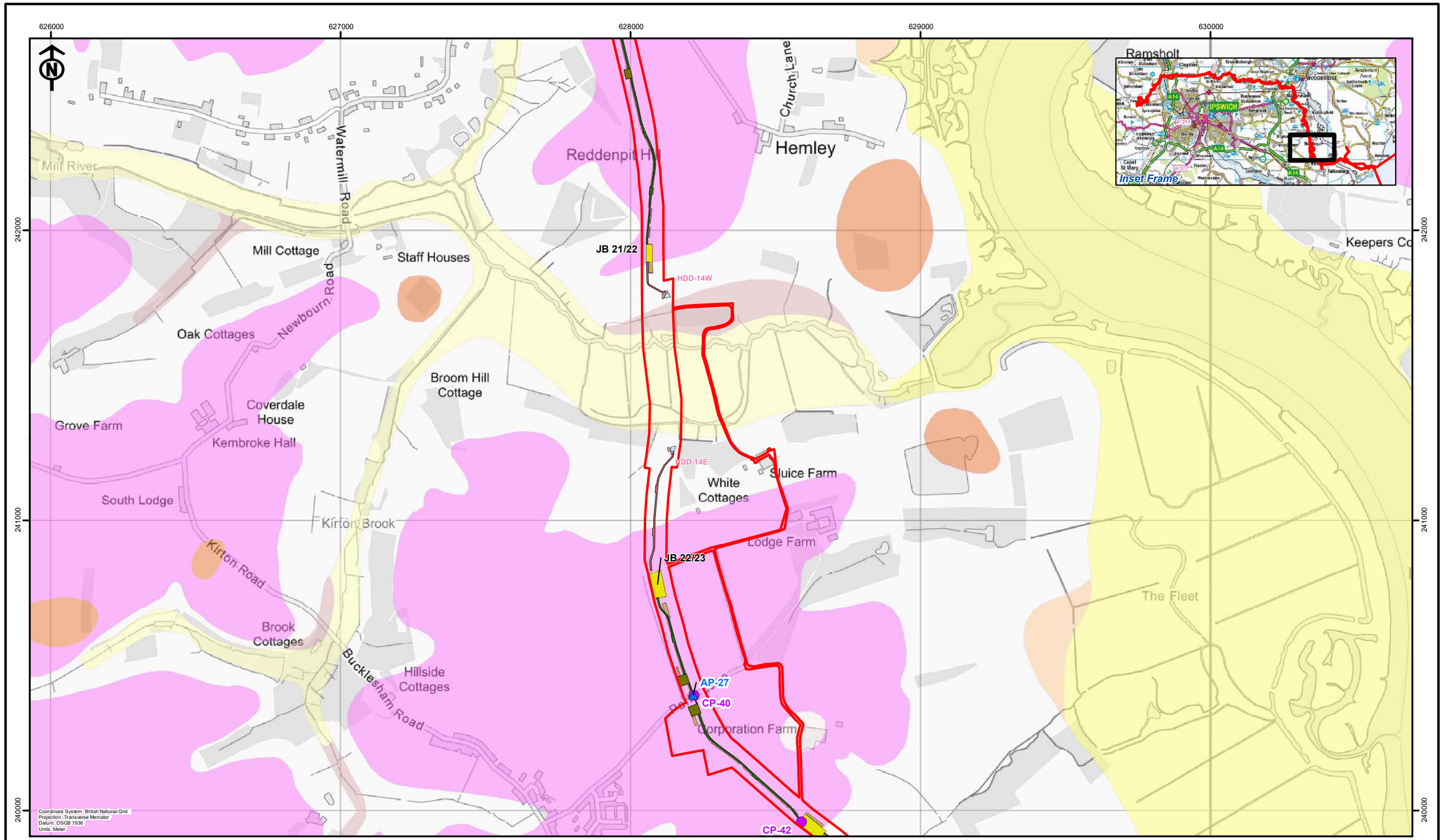
0 200 400 Metres

EA THREE Cable Route

FIGURE 1.7 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Superficial Geology

Alluvium - Clay and Silt
Alluvium - Clay, Silt, Sand and Gravel
Head - Clay, Silt, Sand and Gravel
Head - Diamicton
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Sand and Gravel
River Terrace Deposits, 2 - Sand and Gravel
Tidal Flat Deposits - Clay and Silt

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.8 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd

629000 630000 631000 632000

241000 240000 239000

White Cottages
Sluice Farm
Lodge Farm
JB 22/23
AP-27
CP-40
Corporation Farm
CP-42
JB 23/24
HDD-15E
HDD-15W
irton
The Fleet
River Deben
Poplar Farm
Elm Row
Alderton House
HDD-16E
JB 25/26
JB 24/25
HDD-16W
JB 26/27
Red House Farm
AP-28
Falkenham Road
Lower Falkenham Road
Falkenham
Inset Frame
IPSWICH
WOODBRIDGE

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Superficial Geology

Alluvium - Clay, Silt, Sand and Gravel
Glaciolacustrine Deposits, Mid Pleistocene - Clay And Silt
Head - Diamicton
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Sand and Gravel
River Terrace Deposits, 2 - Sand and Gravel
Tidal Flat Deposits - Clay and Silt

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.9 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0023.0 Superficial Geology.mxd

632000 633000 634000 635000

240000 239000 238000

The Carriage House

Bawdsey

The Street

East Lane

The Stables

Tower House

Inset Frame

HDD-16E

JB 26/27

HDD-17W

HDD-17E

JB 27/28

AP-31

Landfall CCS

AP-30

CP-49

Middle Barn

Ferry Road

Queen's Fleet

Marsh Cottages

Kennelman's Cottage

King's Fleet

The Gatehouse

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)

Existing Track
HGV Turning
Stone Haul Road
Trackway
Transition Jointing Bays

Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Consolidated Construction Site Compound

Superficial Geology

Blown Sand - Sand
Kesgrave Catchment Subgrouo - Sand and Gravel
Lowestoft Formation - Sand and Gravel
Marine Beach Deposits - Sand And Gravel
Tidal Flat Deposits - Clay and Silt

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 1.10 Superficial Geology

Drg No	404.5356.00006.0023.0
Rev	0
Date	10/11/2023
Layout	N/A

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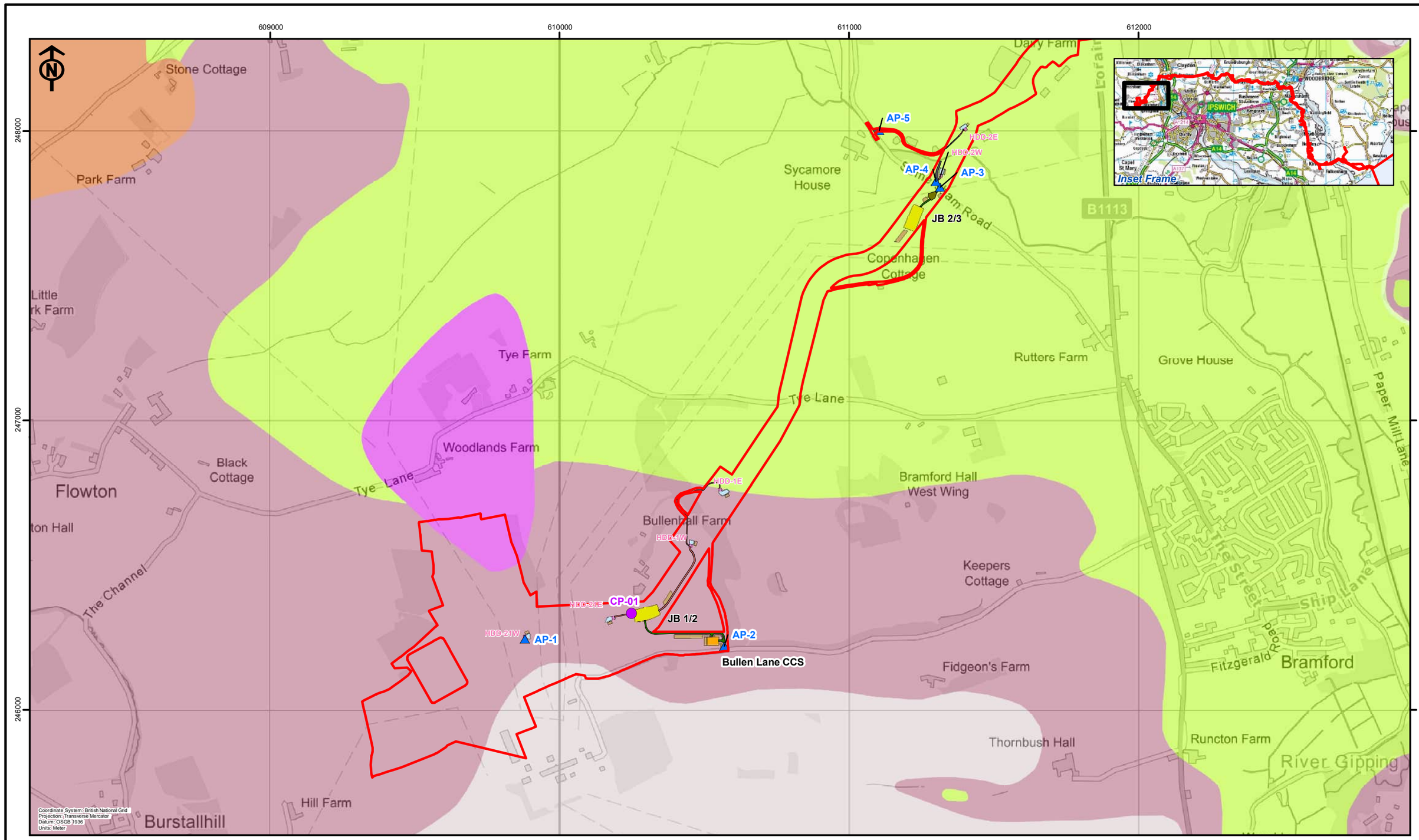

EA THREE Development Order Limits

Access Point

Crossing Point (Road Crossings Numbered)

Existing Track

HGV Turning

Stone Haul Road

Trackway

Top Soil Strip

Top Soil Bund

Jointing Bay Hardstanding

Horizontal Direct Drill Work Platform

Consolidated Construction Site Compound

Bedrock Geology

Chillesford Church Sand Member - Sand (Quaternary)

Red Crag Formation - Sand (Quaternary)

Thames Group - Clay, Silt And Sand (Paleogene)

Thanet Formation And Lambeth Group (Undifferentiated) - Clay And Sand (Paleogene)

Newhaven Chalk Formation - Chalk (Cretaceous)

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A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.1 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

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611000 612000 613000 614000 615000

250000 249000 248000

Claydon
Blackacre Hill
Cottage Farm
Broomvale Farm
Broomvale Cottages
The Meadows
Claydon Hill
Slade Cottages
Wood House
Claydon Farm
Church Lane
Chapel Lane
Bramford Road
Pipping Road
Paper Mill Lane CCS
AP-7
AP-8
AP-9
AP-10
JB 3/4
JB 4/5
JB 5/6
HDD-1W
HDD-1E
HDD-4W
HDD-4E
HDD-5W
HDD-5E
CP-05
River Gipping
Pound Lane
Hillview Cottage
Bower Farm
Akenham
Monkbeggars Hall
Blood Hill
Lower Dairy Farm
Lorraine Way
AP-5
AP-4
AP-3
HDD-2W
HDD-2E
JB 2/3
Summerham Road
B1113
Paper Mill Farm
The Paper Mill House
Broom Hill
A14
Old Norwich Road
Waterworks Cottage
Longfellow Court
Thurleston Lane
Church Farm
Whitton Church Lane
Defoe Road
Inset Frame
IPSWICH
WOODBRIDGE

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Soil Storage
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

Bedrock Geology

Chillesford Church Sand Member - Sand (Quaternary)
Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)
Culver Chalk Formation - Chalk (Cretaceous)
Newhaven Chalk Formation - Chalk (Cretaceous)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.2 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0024.0 Bedrock Geology.mxd

615000 616000 617000 618000 619000

250000 249000 248000

Inset Frame

Akenham Hall Farm
Henley Road
Low Farm
Valley Farm
Rose Hill
Red Barn Farm
Orchard House Farm
Cockfield Hall Lane
Willow Tree Farm
The Maples
Bower Farm
B1077
Cowslip Cottage
JB 6/7
JB 8/9
JB 5/6
JB 7/8
AP-12
AP-11
CP-14
HDD-6E
HDD-6W
Hill Farm
Waterworks Cottage
Thurleston Lane
Longfellow Court
Church Farm
Lower Road
Westbrook
Westerfield
Westerfield Road
Westerfield Lane
Main Road
Redgates
Whiteholme
Two Gables Farm
Moss Lane
River Fynn
Clopton
Tudd
St M
Dafoe Road

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Bedrock Geology

Chillesford Church Sand Member - Sand (Quaternary)
Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)
Thanet Formation And Lambeth Group (Undifferentiated) - Clay And Sand (Paleogene)
Culver Chalk Formation - Chalk (Cretaceous)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.3 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

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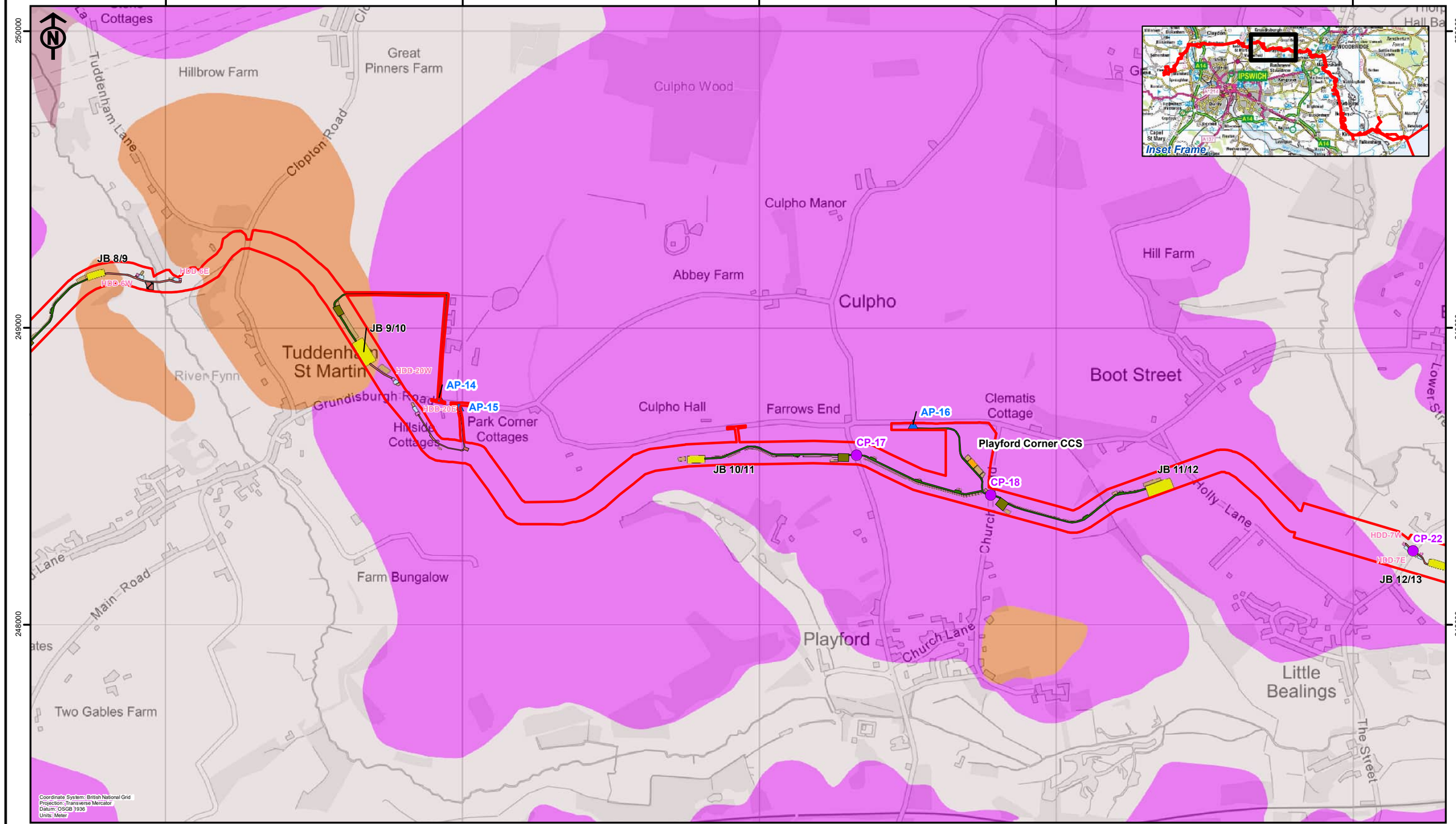

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

Bedrock Geology

Chillesford Church Sand Member - Sand (Quaternary)
Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)
Thanet Formation And Lambeth Group (Undifferentiated) - Clay And Sand (Paleogene)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.4 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0024.0 Bedrock Geology.mxd

623000 624000 625000 626000 627000

248000 247000

Bealings House
Wood Barn Cottages
Rosery Lane
Lower Street
Rosery Farm
Birds Hill
Seckford Hall Bungalow
Holly Lane
Lodge Lane
Meadow Cottage
Cherry Tree Cottage
Cherry Tree Farm
Seckford Hall Hotel
Ipswich Road
B1438
Broom Hill
Maidensgrave
Top Street
Dower House
Little Bealings
River Fynn
The Street
Creek Farm
Kyson Hill
Bealings Road
Colonels Farm Cottage
Martlesham Road
A12
Beaconhill Farm
Martlesham Creek
Osierbed House
Hall Road
Bloomfield's Farm
Main Road
School Lane
Waldringfield Road
The White House
Martlesham Plantation
Walk Farm Cottage
Hill Farm

JB 11/12
JB 12/13
JB 13/14
JB 14/15
JB 15/16
JB 16/17
AP-17
AP-18
AP-19
AP-20
AP-21
AP-22
CP-22
HDD-7W
HDD-7E
HDD-8W
HDD-8E
HDD-9E
HDD-10W
HDD-10E
HDD-11E

Inset Frame
IPSWICH
WOODBRIDGE

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.5 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0024.0 Bedrock Geology.mxd

625000 626000 627000 628000 629000

247000 246000 245000

N

Martlesham Creek

Bramble Hill

Inset Frame

HDD-11E

JB 16/17

School Lane

Main Road

Waldringfield Road

Walk Farm Cottage

Hill Farm

Methersgate

AP-22

Thatched Farm

The Old Rotary Club

Felixstowe Road

HDD-12W

CP-31

HDD-12E

JB 17/18

AP-23

Howe's Farm

River Deben

HDD-13W

HDD-13E

Newbourne Road

Ralph's Cottage

The Hawthorns

AP-24

Rudds Barn

Cross Farm

JB 18/19

Cross Cottage

Gloster Road

Waldringfield Heath

Fishpond Road

Sandy Lane

AP-25

JB 19/20

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)

Existing Track
HGV Turning
Stone Haul Road
Trackway

Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Bedrock Geology

Chillesford Church Sand Member - Sand (Quaternary)
Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)
Thanet Formation And Lambeth Group (Undifferentiated) - Clay And Sand (Paleogene)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.6 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

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626000 627000 628000 629000 630000

245000 244000 243000

AP-25
JB 19/20
School Road
Cliff Road
Waldringfield
Fishpond Lane
Swich Road
Glebe Farm
Clappits CCS
JB 20/21
AP-26
Mill Road
White Hall
Plum Tree Cottage
Woodbridge Road
Newbourne
CP-36
The Street
Street Farm
Church Lane
Hemley
Plum Tree H
Ramsholt Lodge Farm
Water

Inset Frame

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Top Soil Bund
Jointing Bay Hardstanding
Consolidated Construction Site Compound

Bedrock Geology

Chillesford Church Sand Member - Sand (Quaternary)
Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

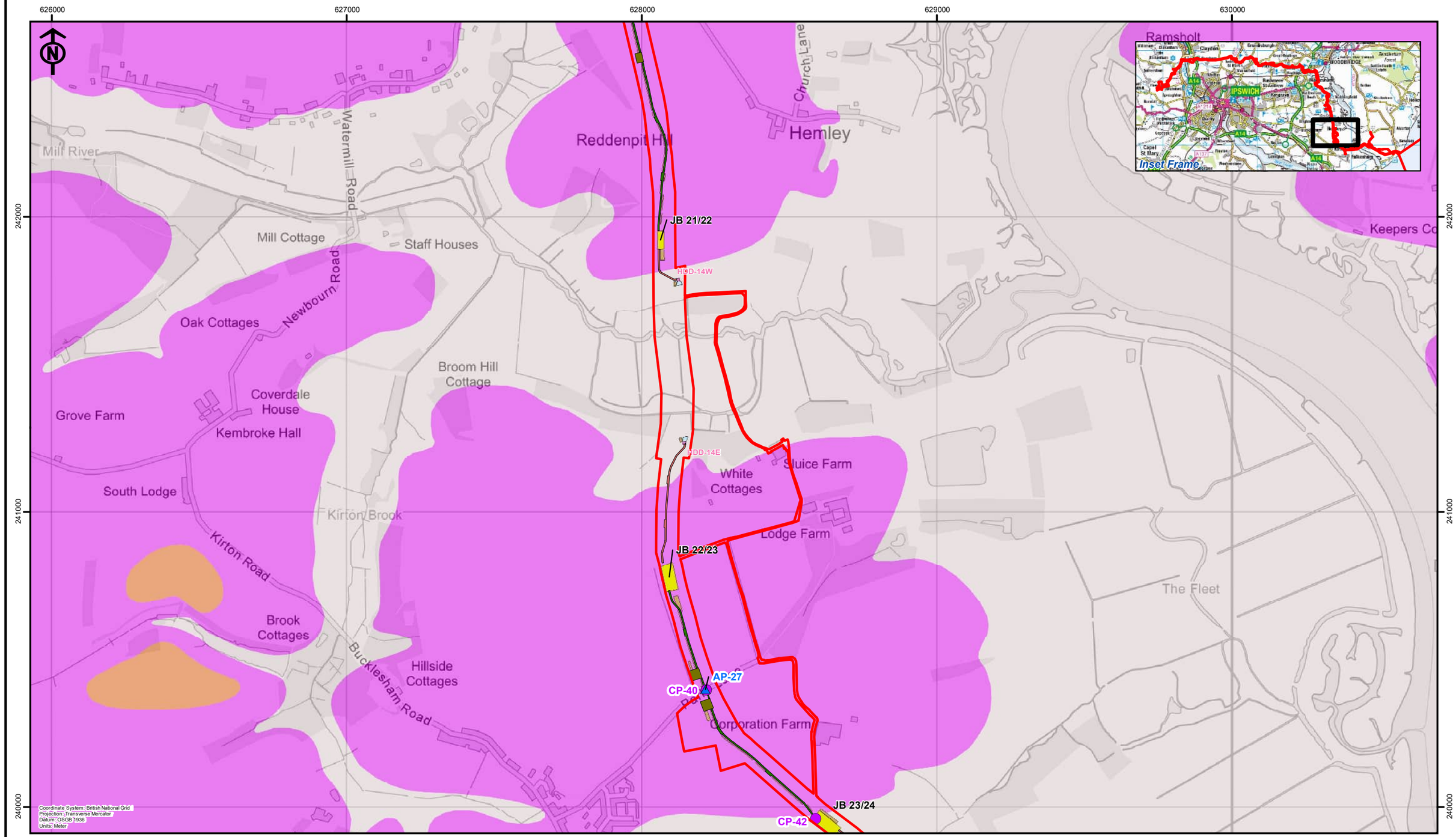
0 200 400 Metres

EA THREE Cable Route

FIGURE 2.7 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0024.0 Bedrock Geology.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Bedrock Geology

Chillesford Church Sand Member - Sand (Quaternary)
Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.8 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0024.0 Bedrock Geology.mxd

629000
630000
631000
632000
241000
240000
239000

N

HDD-14E
White Cottages
Sluice Farm
Lodge Farm
JB 22/23
AP-27
CP-40
Corporation Farm
JB 23/24
CP-42
HDD-15W
HDD-15E
irton
The Fleet
River Deben
Poplar Farm
Elm Row
Alderton House
HDD-16E
JB 25/26
JB 24/25
HDD-16W
JB 26/27
Red House Farm
AP-28
Falkenham Road
Lower Falkenham Road
Falkenham

Inset Frame

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

Bedrock Geology

Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)

GoBe consultants

Rev	Date	By	Comment
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Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.9 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

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632000 633000 634000 635000

240000 239000 238000

The Carriage House

Bawdsey

The Street

East Lane

The Stables

Tower House

Middle Barn

Ferry Road

Queen's Fleet

Marsh Cottages

Kennelman's Cottage

King's Fleet

The Gatehouse

JB 25/26

HDD-16E

JB 26/27

HDD-17W

HDD-17E

JB 27/28

AP-31

Landfall CCS

Transitional Jointing Bays

AP-30

CP-49

Inset Frame

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)

Existing Track
HGV Turning
Stone Haul Road
Trackway

Transition Jointing Bays
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding

Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound

Bedrock Geology

Red Crag Formation - Sand (Quaternary)
Thames Group - Clay, Silt And Sand (Paleogene)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 2.10 Bedrock Geology

Drg No	404.5356.00006.0024.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0024.0 Bedrock Geology.mxd

609000 610000 611000 612000

248000 247000 246000

AP-5 HDD-2E HDD-2W AP-4 AP-3 JB 2/3 HDD-1E HDD-1W HDD-24E CP-01 JB 1/2 HDD-21W AP-1 AP-2 Bullen Lane CCS River Gipping River Gipping

Inset Frame

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

- EA THREE Development Order Limits
- Access Point
- Crossing Point (Road Crossings Numbered)
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway
- Top Soil Strip
- Top Soil Bund
- Jointing Bay Hardstanding
- Horizontal Direct Drill Work Platform
- Consolidated Construction Site Compound
- Spring
- Licensed Surface Water Abstraction
- Private Water Supply
- Statutory Main River
- Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 3.1 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd

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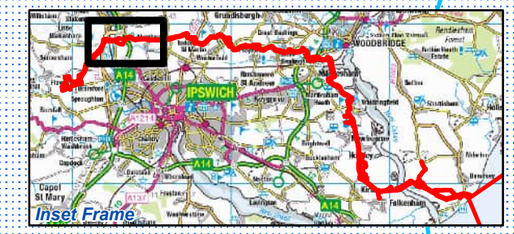
250000 249000 248000



Paper Mill Lane CCS

AP-7 AP-8 AP-9 AP-10

JB 3/4 JB 4/5 JB 5/6 JB 2/3

HDD-19E HDD-19W HDD-4E HDD-4W HDD-5E HDD-5W HDD-2E HDD-2W

CP-05

AP-5 AP-4 AP-3

River Gipping

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)

Existing Track
HGV Turning
Stone Haul Road
Trackway

Soil Storage
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding

Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound
Spring

Licensed Surface Water Abstraction
Private Water Supply
Statutory Main River

Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 3.2 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd

615000 616000 617000 618000 619000

250000 249000 248000

River Fynn

Inset Frame

JB 6/7

JB 8/9

HDD-BE

HDD-SW

AP-12

AP-11

JB-5/6

CP-14

JB 7/8

River Fynn

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

- EA THREE Development Order Limits
- Access Point
- Crossing Point (Road Crossings Numbered)
- HGV Turning
- Stone Haul Road
- Trackway
- Trackway Crane Pad
- Top Soil Strip
- Top Soil Bund
- Jointing Bay Hardstanding
- Horizontal Direct Drill Work Platform
- Spring
- Licensed Surface Water Abstraction
- Private Water Supply
- Statutory Main River
- Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 3.3 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd

619000 620000 621000 622000 623000

250000 249000 248000

N

Inset Frame

JB 8/9
HDD-6E
HDD-6W
JB 9/10
HDD-20W
HDD-20E
AP-14
AP-15
AP-16
CP-17
JB 10/11
Playford Corner CCS
CP-18
JB 11/12
HDD-7W
CP-22
HDD-7E
JB 12/13
River Fynn

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound
Spring
Licensed Surface Water Abstraction
Private Water Supply
Statutory Main River
Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 3.4 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd

623000 624000 625000 626000 627000

248000 247000

N

JB 11/12
AP-17
AP-18
JB 13/14
HDD-7W
CP-22
HDD-7E
JB 12/13
HDD-8W
HDD-8E
JB 14/15
Top Street CCS
B1438
AP-19
HDD-9E
HDD-10W
HDD-10E
AP-20
AP-21
JB 15/16
Broom Hill
Maidensgrave
Ipswich Road
Top Street
River Fynn
River Fynn
Creek Farm
Kyson Hill
Martlesham Creek
HDD-11E
JB 16/17
Hill Farm
Walk Farm Cottage
Waldringfield Road
School Lane
Main Road
AP-22
Inset Frame
IPSWICH
WOODBRIDGE

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

- EA THREE Development Order Limits
- Access Point
- Crossing Point (Road Crossings Numbered)
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway
- Trackway Crane Pad
- Top Soil Strip
- Top Soil Bund
- Jointing Bay Hardstanding
- Horizontal Direct Drill Work Platform
- Consolidated Construction Site Compound
- Spring
- Licensed Surface Water Abstraction
- Private Water Supply
- Statutory Main River
- Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

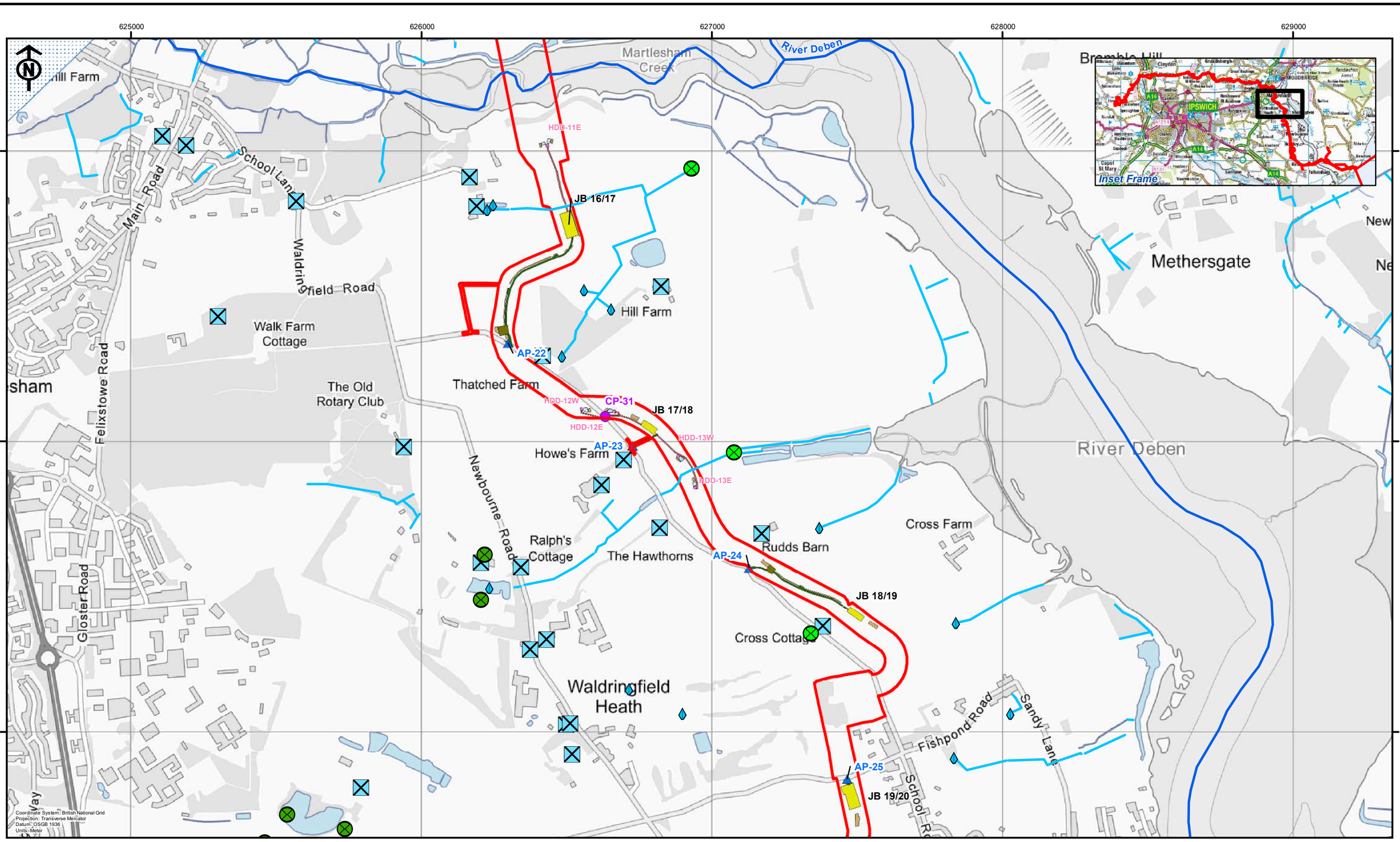
0 200 400 Metres

EA THREE Cable Route

FIGURE 3.5 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Spring
Licensed Surface Water Abstraction
Licensed Ground Water Abstraction
Private Water Supply
Statutory Main River
Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 3.6 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd

626000 627000 628000 629000 630000

245000 244000 243000

AP-25
JB 19/20
School Road
Fishpond Lane
Cliff Road
Waldringfield
Inset Frame
Glebe Farm
Clappits CCS
JB 20/21
AP-26
Mill Road
Woodbridge Road
White Hall
Plum Tree Cottage
River Deben
Newbourne
CP-36
The Street
Street Farm
Mill River
Church Lane
Ramsholt Lodge Farm
Hemley
Plum Tree H

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

- EA THREE Development Order Limits
- Access Point
- Crossing Point (Road Crossings Numbered)
- Existing Track
- HGV Turning
- Stone Haul Road
- Top Soil Bund
- Jointing Bay Hardstanding
- Consolidated Construction Site Compound
- Spring
- Licensed Surface Water Abstraction
- Licensed Ground Water Abstraction
- Private Water Supply
- Statutory Main River
- Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

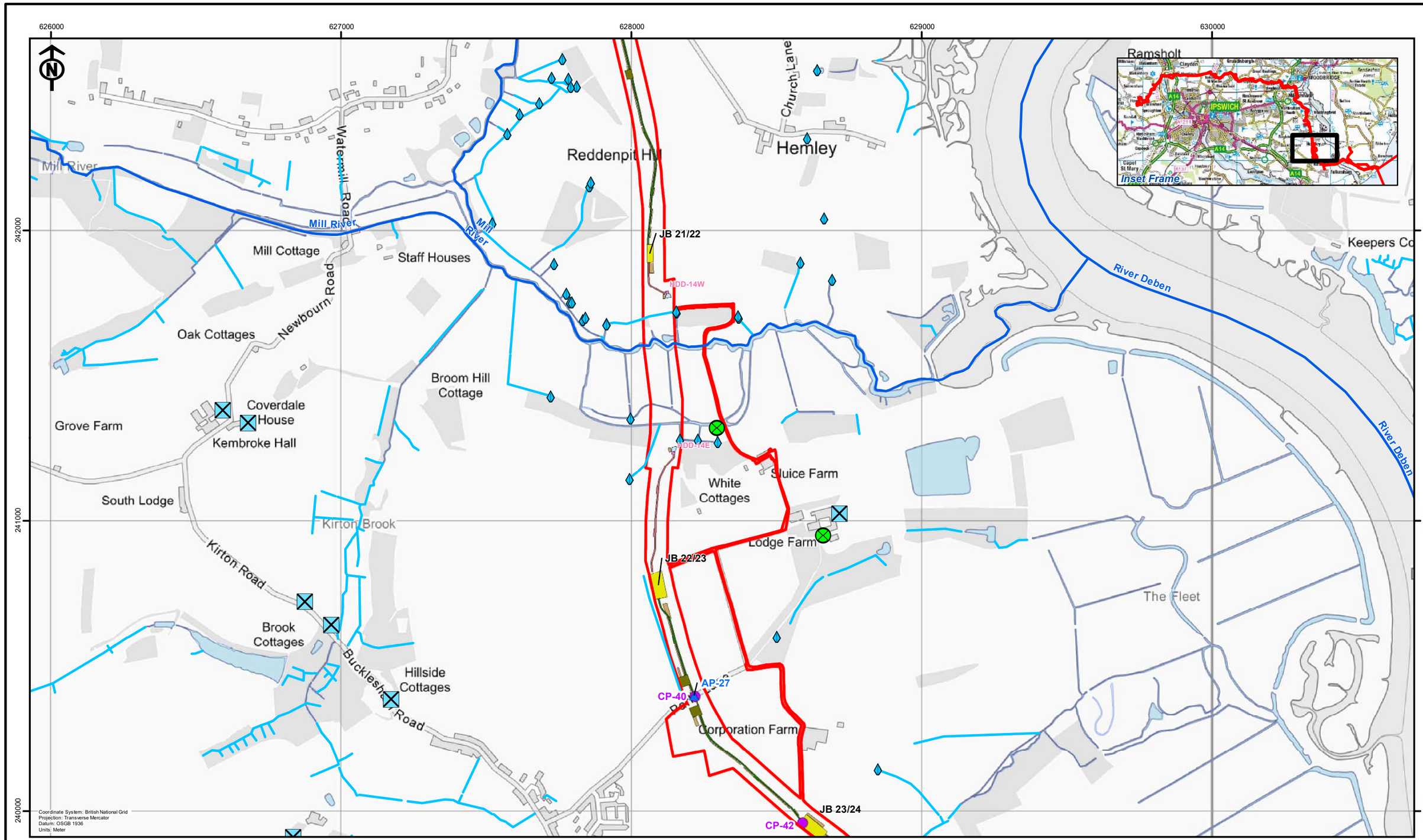
0 200 400 Metres

EA THREE Cable Route

FIGURE 3.7 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Spring
Licensed Surface Water Abstraction
Private Water Supply
Statutory Main River
Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

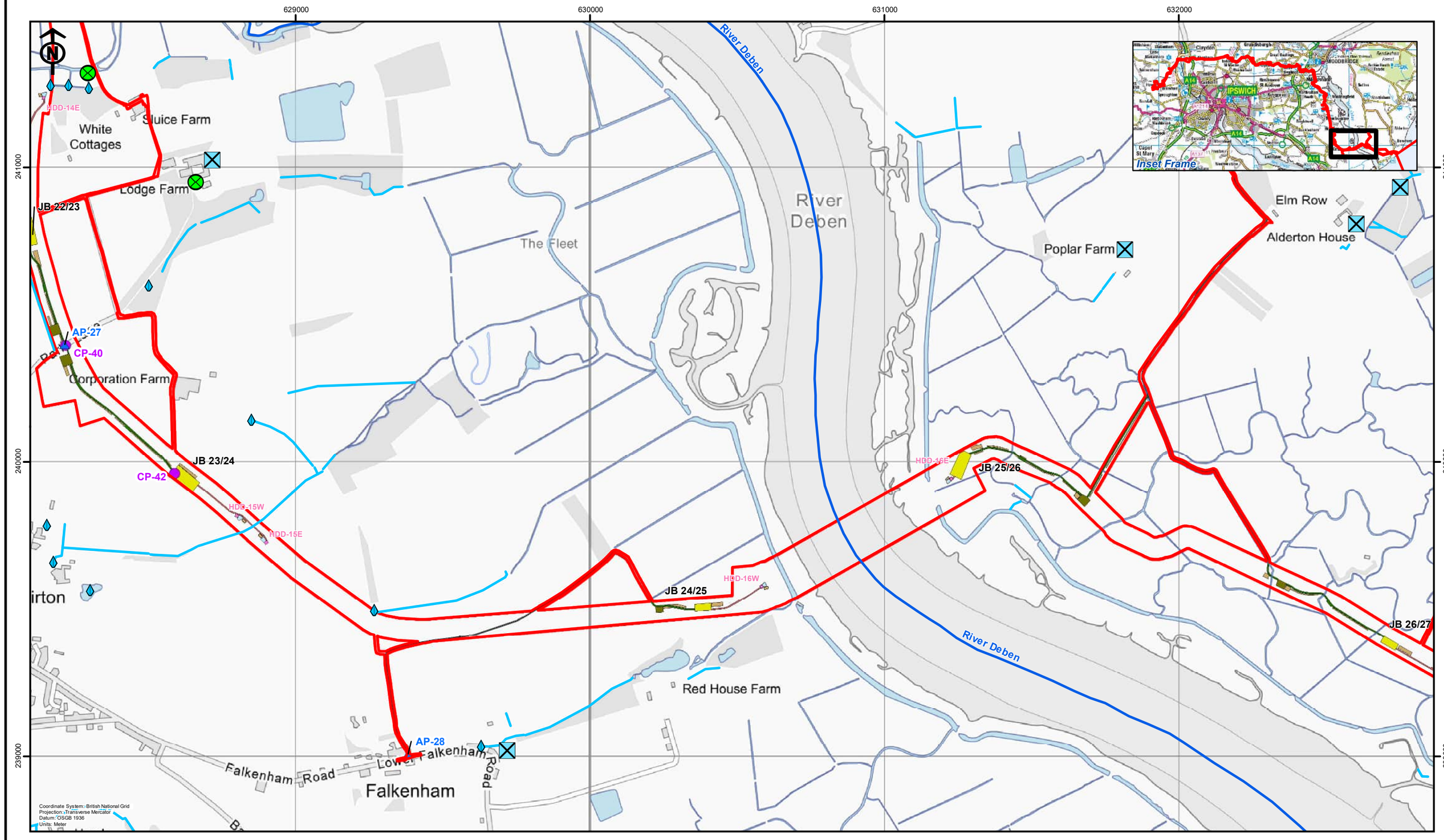
0 200 400 Metres

EA THREE Cable Route

FIGURE 3.8 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Spring
Licensed Surface Water Abstraction
Private Water Supply
Statutory Main River
Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 3.9 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd

632000 633000 634000 635000

240000 239000 238000

The Carriage House

Bawdsey

The Street

East Lane

The Stables

Tower House

Inset Frame

JB 25/26

HDD-16E

JB 26/27

HDD-17W

HDD-17E

JB 27/28

AP-31

Landfall CCS

Transitional Jointing Bays

AP-30

CP-49

River Deben

Middle Barn

Ferry Road

Queen's Fleet

Marsh Cottages

Kennelman's Cottage

King's Fleet

The Gatehouse

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

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Transition Jointing Bays
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound
Private Water Supply
Statutory Main River
Ordinary Watercourse

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

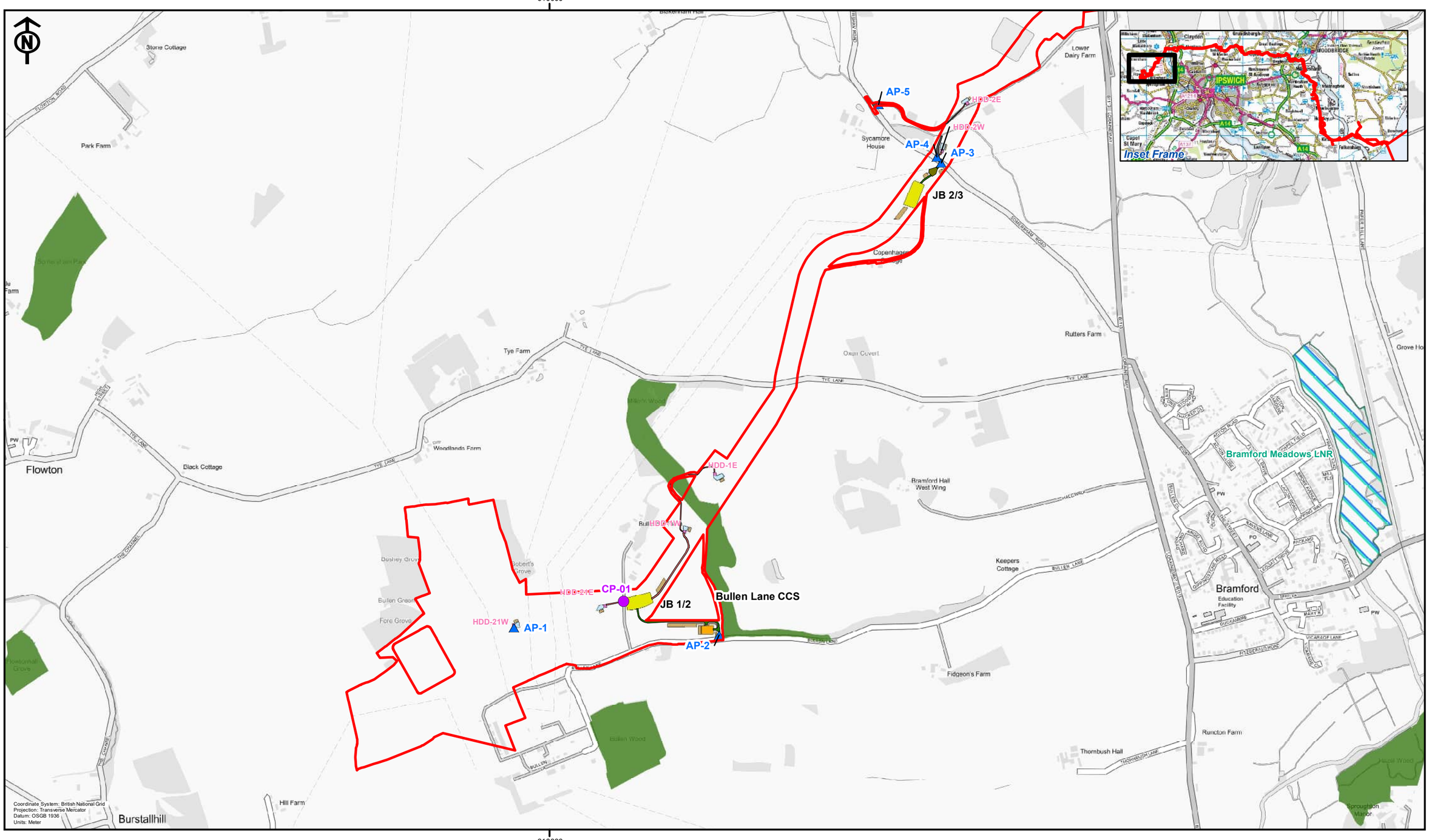
EA THREE Cable Route

FIGURE 3.10 Location of all Current Abstraction Licences, Private Abstractions and Source Protection

Drg No	404.5356.00006.0025.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0025.0 Location of all Current Abstraction Licences, Private Abstractions and Source Protection Zones.mxd

610000



610000

- EA THREE Development Order Limits
- Access Point
- Crossing Point (Road Crossings Numbered)
- Existing Track
- HGV Turning
- Stone Haul Road
- Trackway
- Top Soil Strip
- Top Soil Bund
- Jointing Bay Hardstanding
- Horizontal Direct Drill Work Platform
- Consolidated Construction Site Compound
- Local Nature Reserve (LNR)
- Ancient Woodland

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

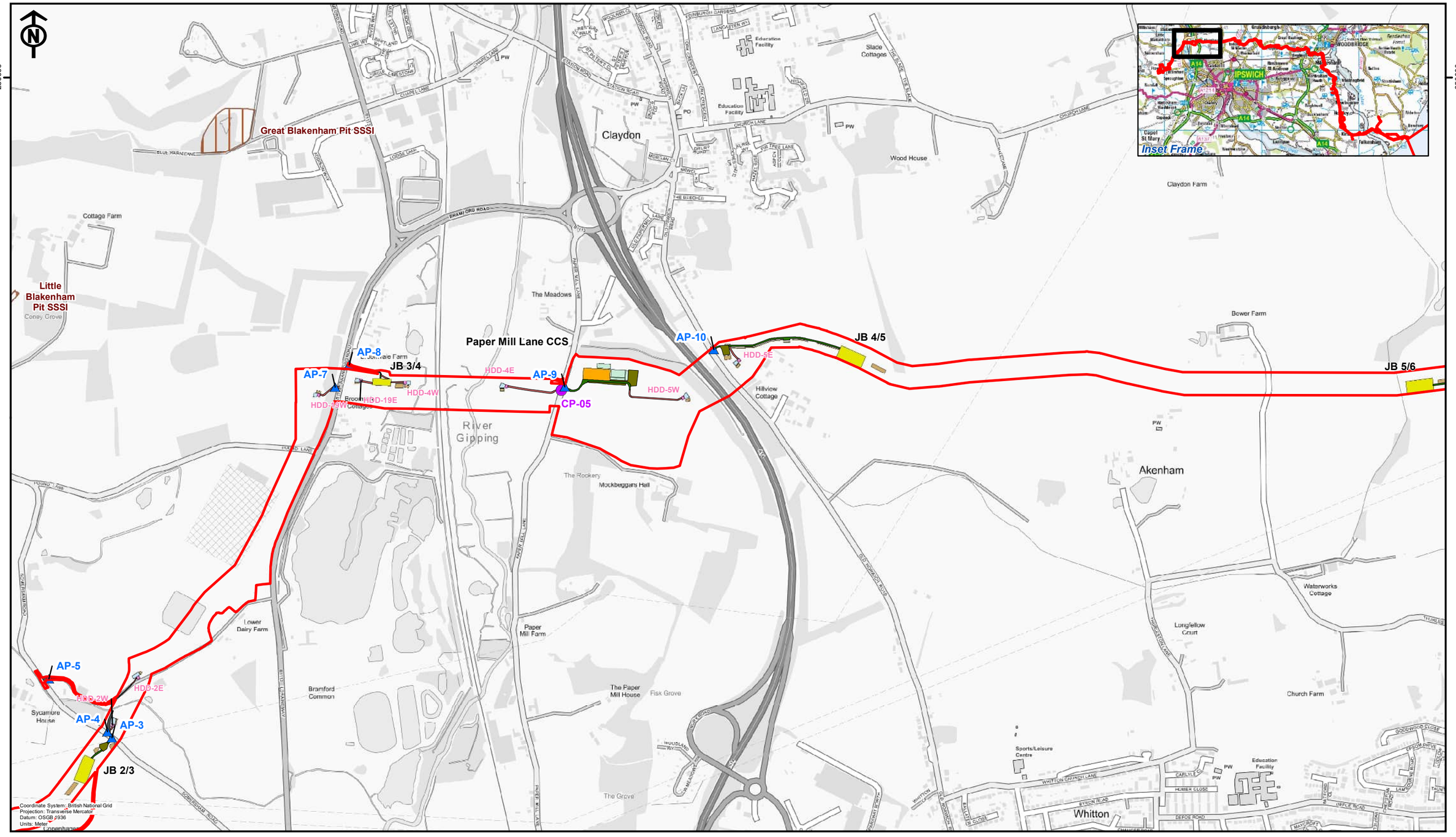
0 200 400 Metres

EA THREE Cable Route

FIGURE 4.1 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0026.0 Ecological Sites.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Soil Storage
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound
Site of Special Scientific Interest (SSSI)

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

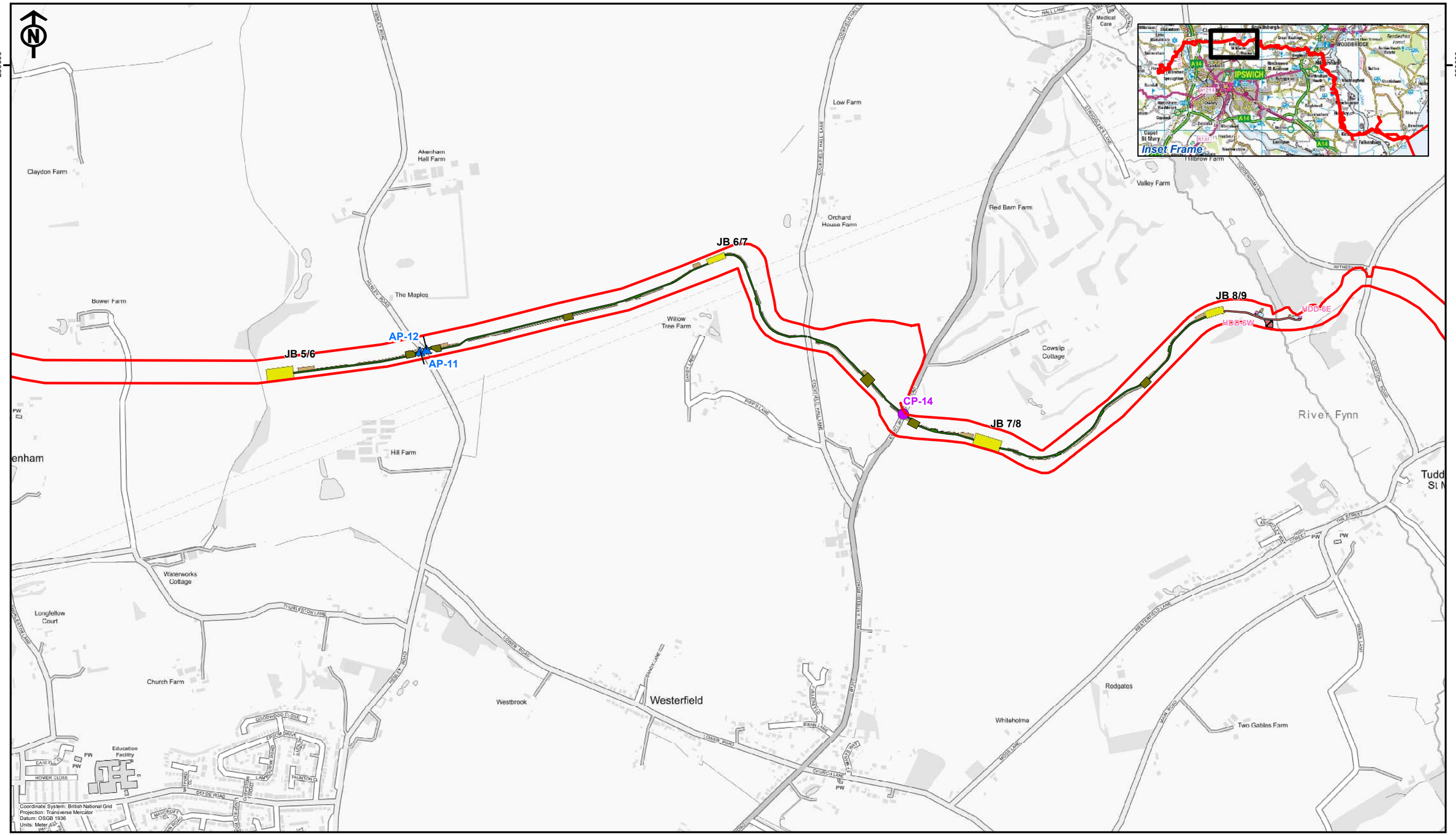
0 200 400 Metres

EA THREE Cable Route

FIGURE 4.2 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0026.0 Ecological Sites.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 4.3 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0026.0 Ecological Sites.mxd

620000

250000

Stone Cottages
Great Pinners Farm
Tuddenham Hall Wood
Culpho Wood
Hillbrow Farm
Walnuthill Plantation
Culpho Manor
Abbey Farm
Culpho
Hill Farm
Boot Street
River Fynn
Park Corner Cottages
Culpho Hall
Farrows End
Clematis Cottage
Tuddenham St Martin
Farm Bungalow
Two Gables Farm
Warren Plantation
Playford
Little Bealings
Alder Carr
Education Facility

Inset Frame

JB 8/9
HDD-6E
HDD-6W
JB 9/10
HDD-20W
HDD-20E
AP-14
AP-15
AP-16
CP-17
JB 10/11
Playford Corner CCS
CP-18
JB 11/12
HDD-7W
CP-22
HDD-7E
JB 12/13

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

620000

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound
Ancient Woodland

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

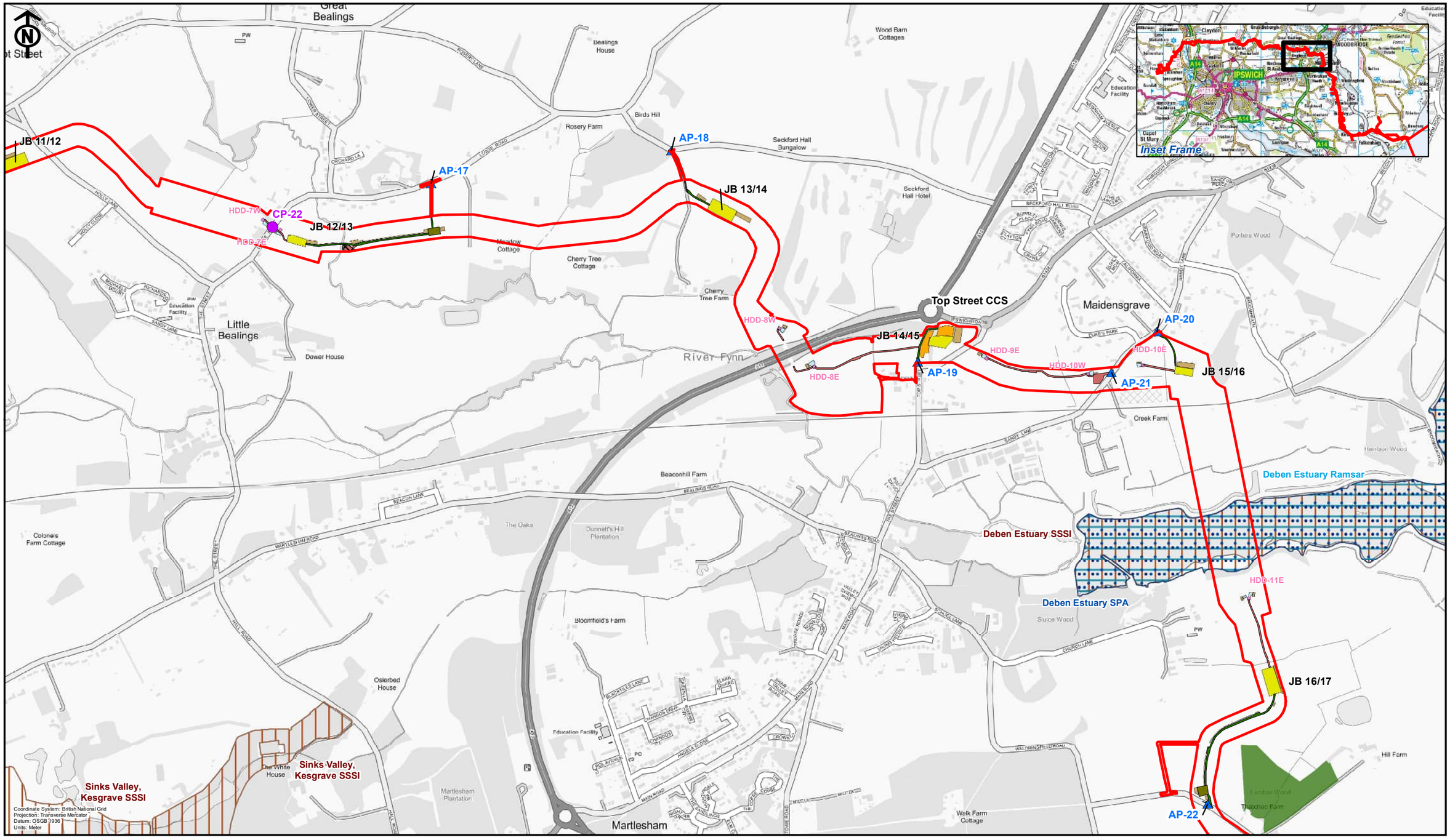
0 200 400 Metres

EA THREE Cable Route

FIGURE 4.4 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0026.0 Ecological Sites.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Trackway Crane Pad
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound
Special Protection Area (SPA)
Ramsar
Site of Special Scientific Interest (SSSI)
Ancient Woodland

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

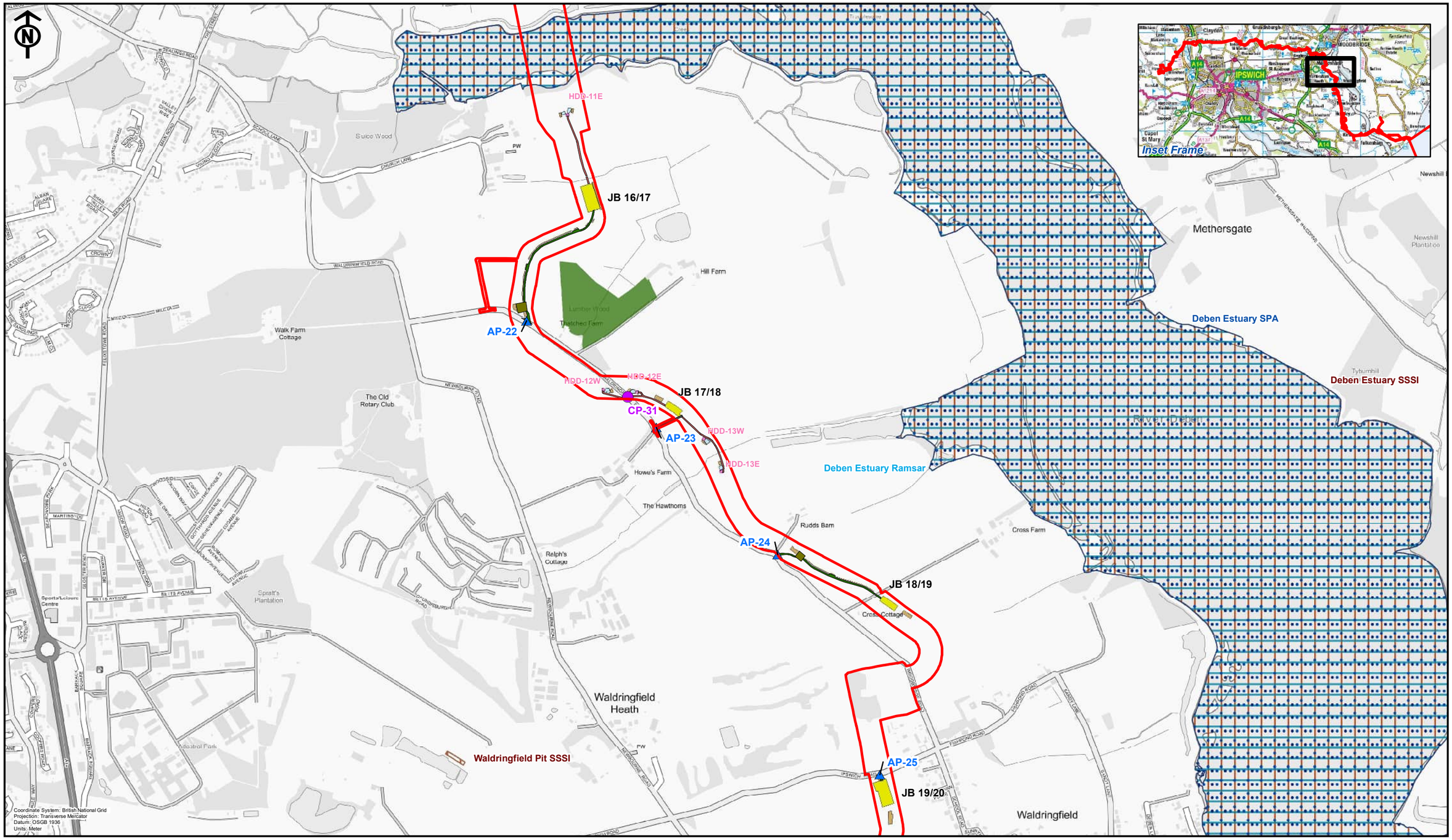
0 200 400 Metres

EA THREE Cable Route

FIGURE 4.5 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0026.0 Ecological Sites.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Special Protection Area (SPA)
Ramsar
Site of Special Scientific Interest (SSSI)
Ancient Woodland

GoBe consultants

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

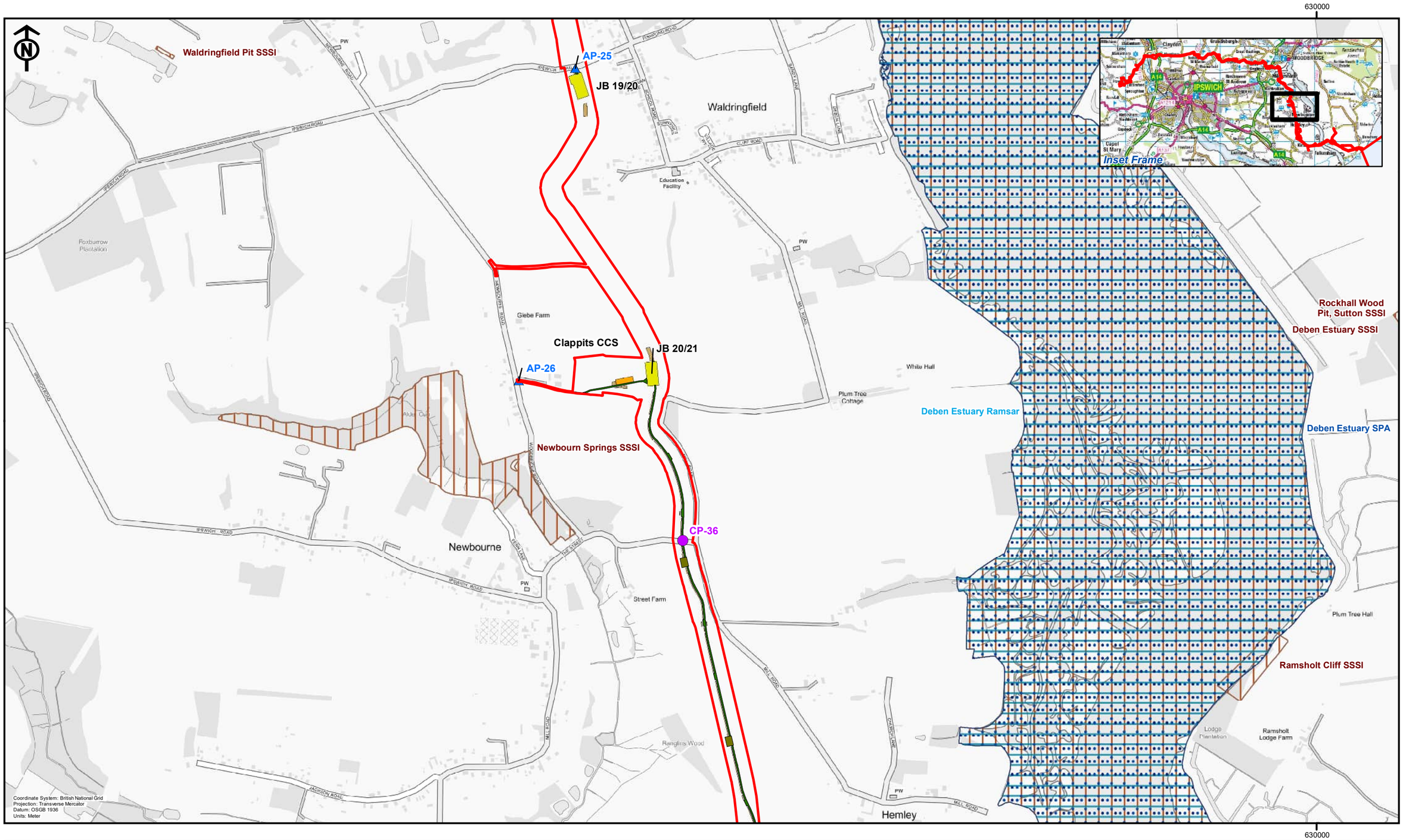
0 200 400 Metres

EA THREE Cable Route

FIGURE 4.6 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0026.0 Ecological Sites.mxd



EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Top Soil Bund
Jointing Bay Hardstanding
Consolidated Construction Site Compound
Special Protection Area (SPA)
Ramsar
Site of Special Scientific Interest (SSSI)

GoBe consultants

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 4.7 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

Document Path: P:\05356 - GoBe Consultants Ltd\00006 East Anglia Three\Tech\GIS\Dwgs\Wking\EA3\2023 05 EA THREE Cable Route\17 HRA\404.5356.00006.0026.0 Ecological Sites.mxd

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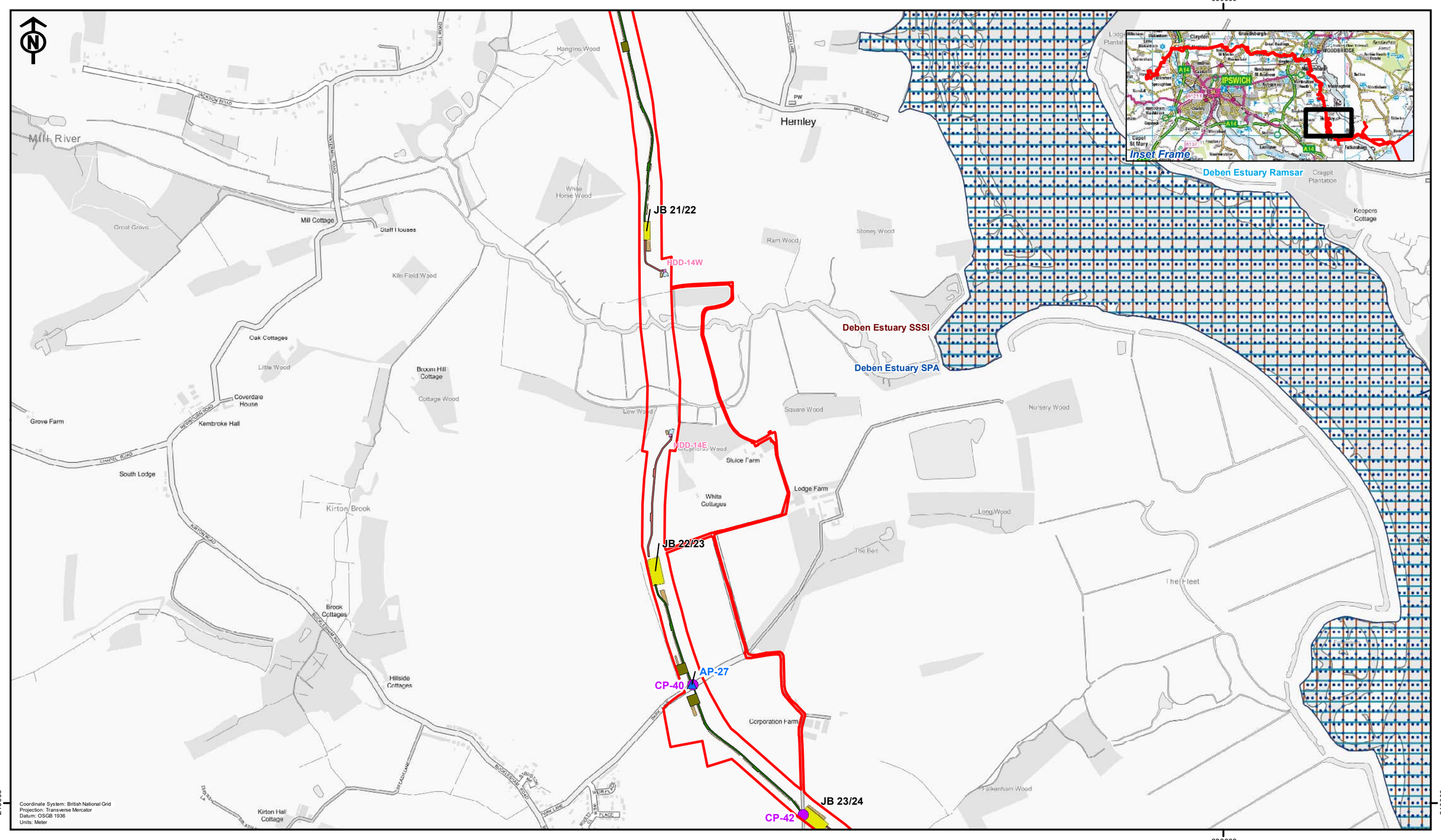
240000



- EA THREE Development Order Limits
- Access Point
- Crossing Point (Road Crossings Numbered)
- HGV Turning
- Stone Haul Road
- Trackway
- Top Soil Strip
- Top Soil Bund
- Jointing Bay Hardstanding
- Horizontal Direct Drill Work Platform
- Special Protection Area (SPA)
- Ramsar
- Site of Special Scientific Interest (SSSI)

Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 4.8 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

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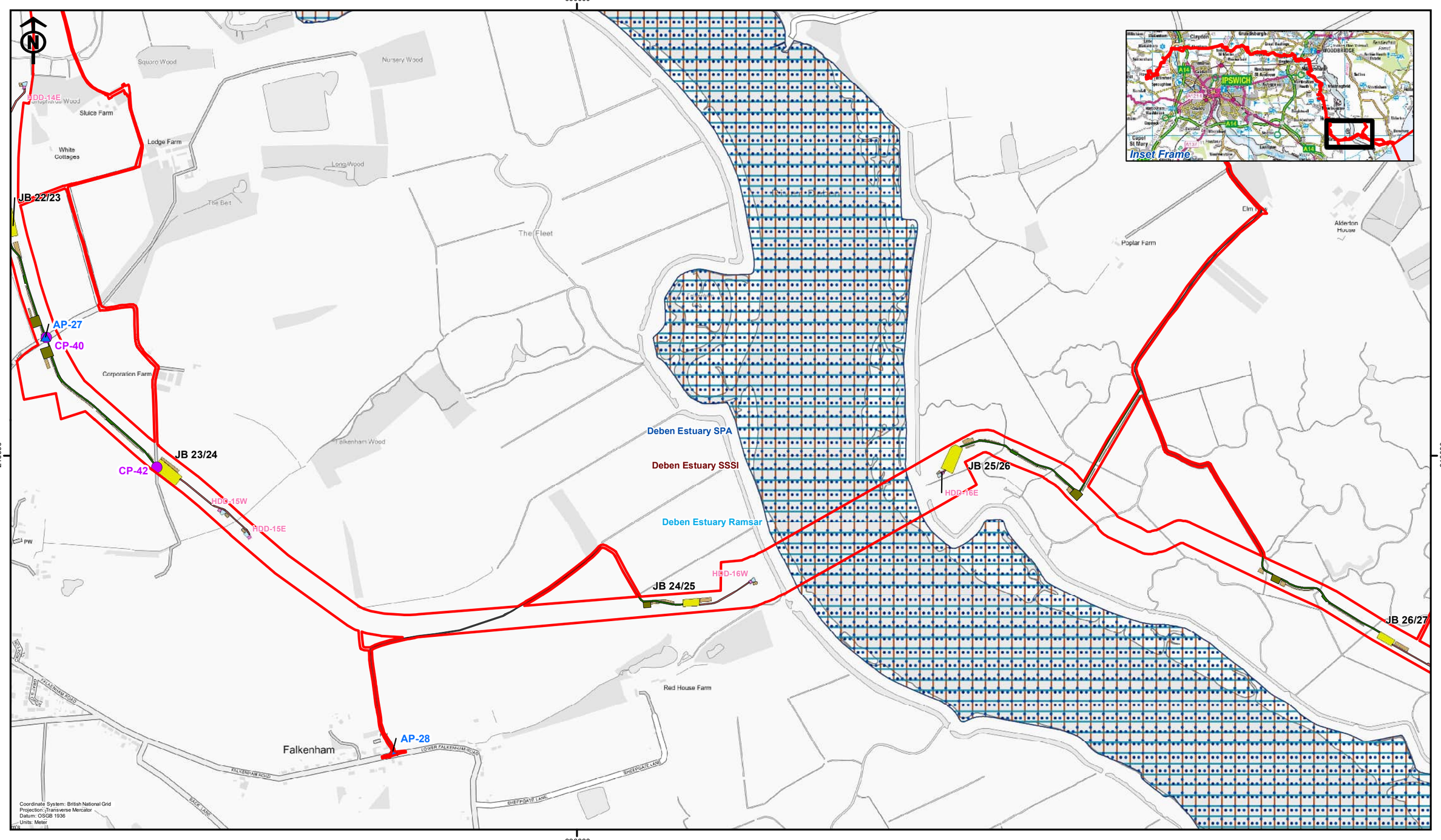

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EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Special Protection Area (SPA)
Ramsar
Site of Special Scientific Interest (SSSI)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 4.9 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

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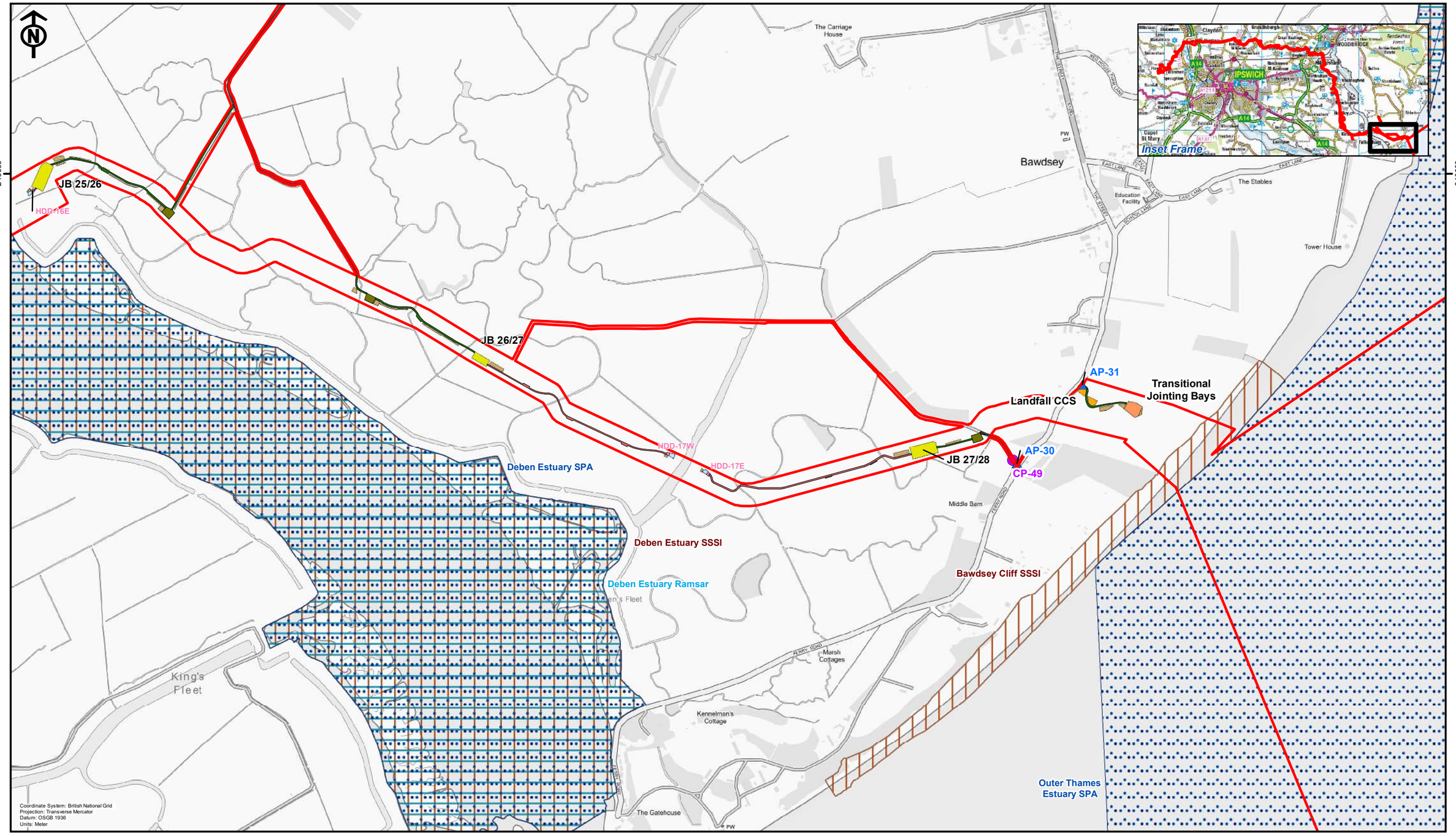

EA THREE Development Order Limits
Access Point
Crossing Point (Road Crossings Numbered)
Existing Track
HGV Turning
Stone Haul Road
Trackway
Transition Jointing Bays
Top Soil Strip
Top Soil Bund
Jointing Bay Hardstanding
Horizontal Direct Drill Work Platform
Consolidated Construction Site Compound
Special Protection Area (SPA)
Ramsar
Special Area of Conservation (SAC)
Site of Special Scientific Interest (SSSI)

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Rev	Date	By	Comment
A	10/11/2023	PW	First Issue

Original A3 Plot Scale 1:12,500

0 200 400 Metres

EA THREE Cable Route

FIGURE 4.10 Ecological Sites

Drg No	404.5356.00006.0026.0
Rev	0
Date	10/11/2023
Layout	N/A

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