

# Clappits Works

## Construction Noise and Vibration Management Scheme

### DCO Requirement 24

(Applicable to Work Numbers 21 to 24)

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FOR DISCUSSION

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FOR DISCHARGE

## 1. INTRODUCTION AND SCOPE

### 1.1. Project Overview

1. East Anglia Three Limited (EATL) was awarded a Development Consent Order (DCO) by the Secretary of State, Department of Business, Energy & 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 and is live until 28 August 2022.
2. 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). The application is currently in the consultation phase.
3. 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.
4. 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 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.

### 1.2. Purpose and Scope

5. This Construction Noise and Vibration Management Scheme (CNVMS) sets out the mitigation and control measures to be applied to the Clappits Works Stage of the EA THREE construction works to minimise potential noise and vibration impacts on nearby residents and other sensitive receptors during construction. This plan has been produced to fulfil DCO Requirement 22 (2) and 24 (1) & (2)) and which state:
  - 22.— (2) The code of construction practice must include –
    - (d) a written scheme for noise and vibration management during construction
  - 24.—(1) No stage of the connection works may commence until a noise and vibration management scheme for construction of that stage (which must accord with the written scheme for noise and vibration management contained in the outline code of construction practice) has been submitted to and approved by the relevant planning authority. The scheme for noise and vibration management must form part of the code of construction practice.
    - (2) The scheme must set out the particulars of—

- (a) the construction works, and the method by which they are to be carried out;
- (b) the noise attenuation measures to be taken to minimise noise resulting from the construction works, including any noise limits; and
- © a scheme for monitoring the noise during the construction works to ensure compliance with the noise limits and effectiveness of the attenuation measures.

6. The scope of this document relates to the CNVMS associated with the Clappits Works Stage, as part of the onshore cable route that runs from the landfall location at Bawdsey to the Converter Station located near Bramford, Suffolk. The works in this stage comprise Work No.s 21 to 24 (see Figure 1 Overview Plan and Figure 2 Site Context Plan). CNVMSs have been produced for each stage of the onshore works and are provided under separate cover. In addition, an Operational Noise Insulation Scheme (ONIS) (EA3-OND-CNS-REP-IBR-000009) has been prepared for the Converter Station to set out the mitigation measures to be applied to the operational EA THREE onshore Converter Station (Work No. 67).
7. The Clappits Works will be some of the first works to be undertaken along the cable route. These works have been designated as a stage in their own right to allow the works to commence at this location prior to works commencing along the cable route as a whole (i.e. the main cable works construction phase). The CCS and the access to it will be constructed in Summer 2022 and the remaining works (jointing bay installation, cable installation and reinstatement) will be undertaken as part of the main cable works construction phase.
8. The purpose of this CNVMS is to ensure that the construction activities for the EA THREE Clappits Works comply with relevant UK legislation, DCO Requirements, environmental commitments as set out in the Environmental Statement (ES), and environmental and construction best practice.
9. The measures contained herein will be adhered to by the Principal Contractor (and their subcontractors) and the implementation and compliance will be monitored by the Construction Management Team. These measures will only be revised with the agreement of East Suffolk Council (ESC).

## 2. ABBREVIATIONS

<b>BPM</b>	Best practice measures
<b>CCS</b>	Consolidated Construction Sites
<b>CNVMS</b>	Construction Noise and Vibration Management Scheme
<b>CLO</b>	Community Liaison Officer
<b>CoPA</b>	Control of Pollution Act 1974
<b>DBEIS</b>	Department of Business, Energy and Industrial Strategy
<b>DC</b>	Direct Current
<b>DCO</b>	Development Consent Order
<b>EA ONE</b>	East Anglia ONE Offshore Windfarm
<b>EA THREE</b>	East Anglia THREE Offshore Windfarm
<b>EATL</b>	East Anglia THREE Limited
<b>EHO</b>	Environmental Health Officer
<b>EnvCoW</b>	Environmental Clerk of Works
<b>ES</b>	Environmental Statement
<b>ESC</b>	East Suffolk Council
<b>GPS</b>	Global Positioning System
<b>HVDC</b>	High Voltage Direct Current
<b>MW</b>	Megawatt

NG	National Grid
NPS – EN1	Overarching National Policy Statement for Energy EN-1
ONIS	Operational Noise Insulation Scheme
PPV	Particle peak velocity
PRoW	Public Rights of Way
PCCS	Primary Construction Consolidation Site
SCCS	Secondary Construction Consolidation Site
RTK	Real Time Kinematic
SCC	Suffolk County Council
SLM	Sound level meter

### 3. CONSTRUCTION DETAILS

#### 3.1. Cable Works – Overview

10. 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. The cables will be pulled through pre-installed ducts laid during the onshore works for East Anglia ONE. The construction activity within each section along the onshore cable route will be as follows:

- Any minor temporary modifications to the public road network;
- Establish the Construction Consolidation Sites (CCSs);
- Establish accesses to, and temporary haul road to, the jointing bay locations;
- Establish temporary jointing bay compounds;
- Excavate jointing bay pit to locate the existing ducts at each of the compounds;
- Construct jointing bay;
- Transport of cables to site, pull cables through ducts and undertake jointing;
- Topsoil replacement and seeding;
- Remove temporary compounds (jointing bays and CCS); and
- Reinststate all disturbed land and permanent fences and hedges.

11. Some temporary modification of the existing road networks may be required such as localised widening, temporary widening or socketing of street signs and temporary moving of street furniture in order to allow larger vehicles than normal to access the jointing bays. This will be completed prior to the start of the main construction works within relevant sections of the cable corridor route.

12. EATL will require up to seven temporary construction compounds to aid in the construction of the proposed East Anglia THREE project. These have been designated as ‘Primary Construction Consolidation Site’ (PCCS) and ‘Secondary Construction Consolidation Site’ (SCCS) depending on their uses. Two PCCS and up to five SCCS will be installed, which will all be temporary and will be removed once construction is complete.

**Table 3-1 – Construction Consolidation Site Locations**

CCS Type	ID	Address
Secondary	A	Bullen Lane, Bramford, Ipswich, Suffolk IP8
Primary	B	Paper Mill Lane, Claydon, Ipswich, Suffolk IP6 0AP
Secondary	C	Witnesham Road, Ipswich, Suffolk IP6
Secondary	D	Playford Corner, Playford Mount, Ipswich, Suffolk IP6 9DS
Primary	E	Top Street, Martlesham, Suffolk IP12
Secondary	F	Clappits, Woodbridge Road, Newbourne, Woodbridge, Suffolk IP12 4PA
Secondary	G	Park Lane, Ipswich, Suffolk IP10

13. The PCCSs will:

- Form the main point of access onto the linear construction site;

- Provide areas for the storage of materials and equipment;
  - House site administration and welfare facilities for the labour resources;
  - Form an interchange hub for deliveries of material, equipment and resources; and
  - Allow HGVs to park prior to entering the local road network during peak hours.
14. The SCCSs will act as hubs for the delivery of materials, equipment and resources along the route and will enable access to the cable route for construction. They will be of sufficient size to accommodate limited storage of materials, equipment and labour welfare facilities.
15. It is anticipated that 29 jointing bays will be required along the 37km cable route, in addition to a transition bay at the landfall. Each jointing bay will comprise a concrete box 10m long by 3m wide by 1.5m high buried so that the base is 2.5m below ground level. A jointing bay construction compound will be required adjacent to each jointing bay and will have hardstanding areas of up to 900m<sup>2</sup> within the compound which would typically measure 24m x 115m i.e. 2,760m<sup>2</sup>. (in accordance with Requirement 12(11) which stipulates that the footprint must not exceed 3,740m<sup>2</sup>). The compounds will have hardstanding and accommodate containers, drum trailer movement, parking, and welfare. A typical layout is shown in Figure 2 of the Code of Construction Practice (EA3-LDC-CNS-REP-IBR-000061).
16. Existing accesses and farm tracks will be upgraded and used where possible to access the jointing bay locations. Once these accesses reach the cable corridor, the routes to connect to the jointing bays are referred to as 'haul road'. The length of haul road for the cable route is limited by Requirement 12(12) of the DCO to 18.05km.
17. In addition, the ducts to be used for EA THREE, which were installed during the EA ONE project construction works, will require to be 'proved' to ensure that they are intact and free of debris. This will be undertaken by the use of foam pigs which will be driven under pressure from jointing bay to jointing bay. Each stretch of duct that was installed using Horizontal Direct Drilling (HDD) will, however, require duct-proving excavations at each end of the HDD, to allow the use of different size foam pigs, due to a difference in the diameter of these compared to the ducting installed using open trench techniques.

### 3.2. Clappits Works

18. Clappits Works comprise a stage of the onshore connection works and cover Work No.s 21 to 24. The infrastructure within these Work No.s comprises:
- The Clappits SCCS (CCS F) in Work No. 22;
  - Three Jointing Bays (20 to 22) in Work No. 21;
  - Two improved accesses with the public roads as follows:
    - Access AP-H (Work No. 23) eastwards from Woodbridge Road, to access the Clappits SCCS and Jointing Bays 21 and 22 in Work No. 21; and
    - Access AP-I (Work No. 24) eastwards from Newbourne Road, to access Jointing Bay 20 in Work No. 21; and
  - A crossing of The Street (CR01 and CR02); and
  - The access tracks/haul roads required to access Clappits SCCS and jointing bays 20 to 22.
19. These are shown on Figure 2.

#### 3.2.1. Accesses H and I, the Crossing Point, Access Tracks and Haul Roads

20. Clappits SCCS will be accessed from Woodbridge Road using Access AP-H. This junction was used for the EA ONE project (Access AX-14) but was fully reinstated following the EA ONE works and will need to be constructed under the EA THREE DCO. The vehicular access track from the access to the Clappits SCCS that was installed as part of the EA ONE construction works remains in situ as it was agreed with ESC that restoration would be environmentally more damaging than leaving the improved track in place. A new temporary vehicular access track of 160m length and 5.5m width will be used to link this existing track and the Clappits SCCS to reach the edge of the cable corridor (Work No. 21), where 610m of 5.5m wide haul road will link to road crossing CR02, and a further 1,520m from road crossing CR01 to Jointing Bays 20 and 21. The amount of temporary haul road required to access these jointing bays will be 2.13km.
21. Access AP-I will be constructed from Newbourne Road, along with 400m of 5.5m wide access track to link to the edge of the cable corridor which will access directly onto the compound of Jointing Bay 20. This access was not used as part of the EA ONE construction works.



22. A crossing of The Street (CR01 and CR02) will be required. This will be in the same location as that used for EA ONE.
23. No watercourse crossings will be required for the Clappits Works.
24. The construction methodologies associated with the accesses, access track and haul roads are typically as follows:
- Set out the access and track/haul road with the use of Global Positioning Systems (GPS) Real Time Kinematic (RTK) equipment;
  - Locate, divert and cap any existing field drains;
  - Set out and install drainage features the length of track to be constructed;
  - Remove vegetation, then remove and locally store topsoil material over the working width; seeding topsoil if it is to be stored for longer than 6 months;
  - Excavate to formation level and store any excess material;
  - Under-track drainage will be installed where necessary and in accordance with drainage requirements;
  - Place a geotextile onto existing subsoil to improve the bearing capacity of the sub-soil, depending on ground conditions, programme and landowner requirements; and
  - Place imported stone in accordance with the design to form the track structure; and

### **3.2.2. Secondary Construction Consolidation Site (Work No. 22)**

25. The Clappits SCCS will be a hub for the delivery of materials, equipment and resources. The dimensions of the Clappits SCCS will be 60m long by 20m wide covering a surface area of 1,200m<sup>2</sup>, this is in accordance with Requirement 12(9)(a) of the DCO which limits the size of each SCCS to 1,200m<sup>2</sup>. The Clappits SCCS will also be within the area previously used for the EA ONE SCCS in this location.
26. The construction of the SCCSs involves stripping of topsoil, importing and laying stone for the compound base and installing cabins and welfare facilities. Construction of the Clappits SCCS will take approximately 3 weeks and the methodology will be as follows:
- The extent of SCCS will be marked out with the use of GPS RTK equipment;
  - Any existing field drains will be located, diverted and capped;
  - Drainage features will be set out and installed as required;
  - Security fencing will be erected around the perimeter of the SCCS;
  - Once vegetation has been removed, topsoil material over the SCCS area will be removed and locally stored and seeded if it is to be stored for longer than 6 months;
  - Any excess material will be excavated to formation level and stored; and
  - Imported stone will be placed in accordance with the design of the SCCS base structure.
27. The SCCS will be constructed first, with the duct proving, jointing bays and cable pull through occurring at a later date (anticipated in 2024). It is intended that the SCCS will provide an early onsite presence for the onshore cable construction works and will be used as a base for mitigation and survey works being undertaken as well as for the construction team to visit site during the later stages of the planning and design process. It may also be used for stakeholder and other site meetings.
28. The Clappits SCCS will remain in situ for the duration of the onshore cable works, prior to being restored as described in Section 3.2.5.

### **3.2.3. Jointing Bays 20 to 21 (Work No. 21)**

29. The three jointing bays in Work No. 21 will be located as follows:
- Jointing Bay 20 – 340m to the east of Newbourne Road and to the southwest of Waldringfield (Grid Ref 627520 244187);
  - Jointing Bay 21 – 45m to the west of Mill Road, to the east of Newbourne (Grid Ref 627881 243040); and
  - Jointing Bay 22 – 240m to the north of Kirton Creek and 190m to the southeast of White Horse Wood, to the southeast of Newbourne (Grid Ref 628065 241862).
30. Once the location of each jointing bay compound has been established (using GPS RTK equipment), creation of the compound will commence with erection of temporary security fencing, removal of topsoil layer and installation of hardstanding areas.
31. The jointing bay will then be excavated to a depth of up to 2.5m with adequate slope batter or shoring on all sides of the excavation to prevent the soil from collapse. The existing ducts will be uncovered and concrete slabs constructed to provide a level working area. Two sump pits will be included to facilitate drainage and dewatering and water will be treated, where necessary, before being

discharged. Installation and jointing of the cables will then take place, along with installation of earthing link boxes and fibre optic cable chambers, before the area is back filled with subsoil.

32. The creation of each jointing bay compound and excavation of each jointing bay will take a week each.

### 3.2.4. Cable Installation

33. The electrical transmission cables will be delivered to the Clappits SCCS where they will be transferred to the jointing bay compounds when needed. The cable drums will comprise abnormal loads and their delivery will be managed as set out in the Traffic Management Plan (EA3-LDC-CNS-REP-IBR-000053). Two cable lengths of approximately 1,260m will be required to pull through between each pair of jointing bays. The cable ducts will be proved before the cable is pulled through. Once the cables are received at the jointing bay compound, they will be temporarily stored on the hardstanding area prior to installation in the pre-installed ducts.
34. Installation of the cables into the ducts between the jointing bays will begin with a cable pulling system being installed into the bay. A steel bond and winching system with free spinning rollers will be installed along the bottom of the bay. Hydraulic jacks will raise the cable drum off the ground and a winch will be used to pull in cable using a pulling rope. A dynamometer will ensure the maximum pulling tension is not exceeded. Tension on the cable will be reduced using a biodegradable water-based lubricant. This process will be repeated for the second cable being installed in the duct. The cables will then be jointed once 2 cable sections (4 cables) have been installed.
35. It is expected that pulling and jointing operations at each location would take approximately 2.5 weeks typically spread over a three to four week period, with approximately five workers for each jointing bay. These works will then be repeated to install the cables between all the jointing bays .

### 3.2.5. Reinstatement

36. Following installation and jointing of the cables, the jointing bays, compound, accesses and haul roads will be reinstated with the stored topsoil and subsoil following trenching. If necessary, the subsoil will be 'ripped' prior to placement if compaction had occurred. Topsoil will be spread in such a way as to ensure that it does not become compacted. The topsoil will then be cultivated and reseeded (if required) and suitable hedgerow species replanted during the first appropriate planting season, in accordance with the Landscape Management Plan (EA3-LDC-CNS-REP-IBR-000056). Temporary fencing around any new planting would be removed once reinstatement was established.
37. The Clappits SCCS will remain in situ for the duration of the cable works and will then be removed and reinstated.

## 3.3. Schedule and Working Hours

38. Construction activities for the Clappits Works are proposed to start in July 2022. The construction of the CCS is expected to take approximately 5 weeks to complete. It is then anticipated that the access/haul road, jointing bay and jointing bay compound will not be constructed until 2024.

39. DCO Requirement 25 defines the construction working hours as follows:

*25.—(1) Construction work for the connection works must only take place between 0700 hours and 1900 hours Monday to Saturday, with no activity on Sundays or bank holidays, except as specified in paragraph (2).*

*(2) Outside the hours specified in paragraph (1), construction work may be undertaken for essential and non-intrusive activities including but not limited to:*

*(a) continuous periods of operation that are required as assessed in the environmental statement, such as concrete pouring;*

*(b) fitting out works associated with the onshore substation(s) comprised within Work No. 67;*

*(c) delivery to the connection works of abnormal loads that may cause congestion on the local road network;*

*(d) connection works carried out on the foreshore;*

*(e) daily start up or shut down;*

*(f) electrical installation; and*

(g) non-destructive testing.

(3) All construction work undertaken in accordance with paragraph (2)(a) to (d) must be agreed with the relevant planning authority in writing in advance, and must be carried out within the agreed time.

40. It has been agreed with ESC, that for the purposes of Requirement 25, 'essential and non-intrusive' will also include the following activities, which can therefore be undertaken outside of the above working hours without prior notification to ESC:

- Fuelling of generator servicing pumping equipment etc, where the need for this was not known during normal working hours and fuelling is required to enable the continued operation of the equipment
- Response to failure of the following to enable return of service:
  - Electrical Generator to Welfare Facilities
  - Site LAN/WAN
  - Utility Power Supply
- Security patrols and response to unauthorised access
- Response to incident on site e.g inclement weather damage
- Non scheduled maintenance of fencing and access points, where the need for this was not known during normal working hours and immediate attention is required<sup>1</sup>
- Further information regarding the notification of such activities is included within Section 5.3 of the Code of Construction Practice.

41. Further information regarding the notification of such activities is included within Section 5.3 of the Code of Construction Practice.

#### 4. LEGISLATION AND GUIDELINES

42. The following legislation and guidelines for the assessment of noise and vibration, arising from construction activities, will be utilised throughout the duration of the project:

- Noise and Statutory Nuisance Act 1993;
- Environmental Protection Act 1990;
- Control of Pollution Act 1974 (CoPA);
- Overarching National Policy Statement for Energy (EN-1). Department of Energy and Climate Change (July 2011);
- National Planning Policy Framework (NPPF). Department for Communities and Local Government (February 2019);
- BS7445-1:2003: Description and Measurement of Environmental Noise. Guide to quantities and procedures;
- BS5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites. Part 1: Noise; and
- BS5228-2:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites. Part 2: Vibration.

#### 5. CONSTRUCTION NOISE AND VIBRATION MANAGEMENT SCHEME GOVERNANCE

43. Prior to the commencement of construction activities, an Environmental Clerk of Works (EnvCoW) will be appointed by the contractor to manage *inter alia* the implementation of the CNVMS. Contact details for the EnvCoW will be submitted to stakeholders for their records prior to commencement of construction.

#### 6. LOCAL COMMUNITY LIAISON

44. EATL is committed to providing clear communication to local residents and will manage public relations with local residents and businesses. Proactive community liaison will be maintained, keeping local residents informed of the type and timing of the works involved. As outlined in the Code of Construction Practice (EA3-LDC-CNS-REP-IBR-00061), a combination of communication mechanisms such as posters, notices, exhibitions, letters, newsletters, website updates and parish council meetings will be employed to keep local residents and businesses informed.

45. A designated EA THREE Community Liaison Officer (CLO) will manage and respond to any public concerns, queries or complaints in a professional and diligent manner as set out in the Community Liaison and Public Relations Procedure contained within the Code of Construction Practice (EA3-LDC-CNS-REP-IBR-000061). The Complaints Procedure will be publicised and complaints will be directed

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<sup>1</sup> Where out of hours work associated with maintenance of fencing and access points has been required, ESC will be notified of these works the following working day

to the EATL Community Liaison Officer. All enquiries will be logged, investigated and rectifying actions taken when deemed appropriate. Enquiries will be dealt with in an expedient and courteous manner. Details of complaints will be reported to ESC and SCC within 48 hours.

46. Parish Councils, District Councilors and County Councilors, including Ward Members and Portfolio Holders, in the area and the local liaison group will be contacted (in writing) in advance of the proposed works and ahead of key milestones in order to advise them of the ongoing works. The information provided will include a timetable of works, a schedule of working hours, the extent of the works, and a contact name, address and telephone number in case of complaint or query.

## 7. BASELINE CONDITIONS

47. An updated noise survey was undertaken in October and November 2021 to characterise the noise environment at the nearest noise-sensitive receptors as requested by the Environmental Health Team. The monitoring locations in the vicinity of the Clappits Works are presented in Table 7-1 and Figure 3 Sensitive Receptors.

**Table 7-1 Noise Sensitive Receptors - Clappits Works**

Receptor	Co-ordinates	
	Easting	Northing
R1 - Glebe Farm	627255	243781
R2 – Low Farm	627540	244883
R3 – Hemley	628400	242411

48. Measurements were undertaken at a height of 1.5m and in free-field conditions i.e. >3.5m from a reflective surface. The monitoring equipment used for the survey is detailed in Table 7-2.

**Table 7-2 2021 Monitoring Equipment**

ID	Period	Equipment Details	Serial Number
R1	Daytime	Norsonic Nor140 Class 1 Sound Level Meter	1403010
		Norsonic 1251 Acoustic Calibrator	31875
	Night-time	Norsonic Nor140 Class 1 Sound Level Meter	1403010
		Norsonic 1251 Acoustic Calibrator	31875
R2	Daytime	Norsonic Nor140 Class 1 Sound Level Meter	1403010
		Norsonic 1251 Acoustic Calibrator	31875
	Night-time	Rion NL-52 Class 1 Sound Level Meter	00331823
		Rion NC-74 Acoustic Calibrator	34336013
R3	Daytime	Norsonic Nor140 Class 1 Sound Level Meter	1403010
		Norsonic 1251 Acoustic Calibrator	31875
	Night-time	Cirrus CR:171B Class 1 Sound Level Meter	G080284
		Cirrus CR:515 Acoustic Calibrator	83164

49. The calibration of the Sound Level Meters (SLMs) was checked before and after the measurements using the acoustic calibrator, with no drift being observed. The SLMs conform to BS EN 61672-1:2003 Electroacoustics - Sound level meters, and the calibrator conforms to BS EN 60942:2003 Electroacoustics - Sound calibrators. The equipment used has a calibration history that is traceable to a certified calibration institution.

50. Table 7-3 presents the results of the 2021 background noise measurements for day-time and night-time:

**Table 7-3 2021 Background Noise Measurements**

ID	Date	Start	Duration (hr:min)	L <sub>Aeq</sub>	LAF(max)	L <sub>A10</sub>	L <sub>A90</sub>
Day-time (dB(A))							
R1	20/10/2021	12:45	01:00	54	78	54	41
R2	20/10/2021	14:05	01:00	58	76	62	50
R3	20/10/2021	15:15	01:00	53	92	52	41
Night-time (dB(A))							
R1	08/11/2021	22:43	01:00	40	74	36	30
R2	08/11/2021	22:58	01:00	36	71	35	30
R3	08/11/2021	23:12	01:00	38	79	35	32

51. It should be noted that the daytime monitoring was completed during unsettled weather conditions with wind induced noise resulting in higher ambient sound levels than the locations would generally be subject to. However, based on the ABC method for construction noise assessments this did not increase the threshold values.

52. During the night-time period it was noted that distant road traffic noise was the main contributor.

**8. NOISE AND VIBRATION CRITERIA**

53. Noise levels generated by construction activities are deemed to be significant if they exceed the threshold values as derived in accordance with the ABC Method detailed in BS5228-1.

54. The ABC method is based on the measured ambient noise levels (rounded to 5 dBA) in the area and the advice in Table E1 of BS 5228, as shown here in Table 8-1. It is considered that if the site noise level exceeds the appropriate category at the most noise-sensitive receptors then a potential significant effect has been indicated. This will depend upon (as set out in BS 5228) “other project-specific factors, such as the number of receptors affected and the duration and character of the impact.”

**Table 8-1 Threshold of Potential Significant Effect at Dwellings**

Assessment Category and Threshold Value Period	Threshold value, dB LAeq, T		
	Category A	Category B	Category C
Daytime (07:00 – 23:00) and Saturday (07:00 – 13:00)	65	70	75
Weekdays (19:00 – 23:00), Saturdays (13:00 – 23:00) and Sundays (07:00 – 23:00)	55	60	65
Night time (23:00 – 07:00)	45	50	55

- 55. The assessment category and associated threshold value would apply to the relevant working period where required (Daytime, Saturday, Sunday, Weekdays (19:00 – 23:00) and Night time).
- 56. If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total LAeq, T noise level for the period increases by more than 3 dB due to site noise.
- 57. Annex E of BS 5228-1 also provides criteria for providing sound insulation at affected receptors. Exceedance of identified levels trigger a responsibility on the developer to provide noise insulation or a scheme to facilitate temporary rehousing.
- 58. The standard suggests that noise insulation should be provided, in spite of mitigation measures, in the following cases:
  - where noise levels exceed the noise insulation trigger level, presented in Table 8-2; or
  - the total noise (pre-construction ambient plus construction noise) is 5 dB above the existing airborne noise level for the corresponding times of day, whichever is the higher; and
  - for a period of ten or more days of working in any fifteen consecutive days or for a total of days exceeding 40 in any 6-month period.

**Table 8-2 Time Periods, Averaging Times and Noise Levels Applicable to Assessing Eligibility for Noise Insulation BS 5228-1:2009 (Annex E).**

Time	Relevant Time Period	Averaging time, T	Noise trigger level dB LAeq, T
Monday to Friday	07.00-08.00	1 h	70
	08.00-18.00	10 h	75
	18.00-19.00	1 h	70
	19.00-22.00	3 h	65
	22.00-07.00	1 h	55
Saturday	07.00-08.00	1 h	70
	08.00-13.00	5 h	75
	13.00-14.00	1 h	70
	14.00-22.00	3 h	65
	22.00-07.00	1 h	55

Time	Relevant Time Period	Averaging time, T	Noise trigger level dB LAeq,T
Sunday & Public Holidays	07.00-21.00	1 h	65
	21.00-07.00	1 h	55

**Note 1) Equivalent continuous A-weighted noise level predicted or measured at a point in front of the most exposed windows or doors leading directly to a habitable room (living room or bedroom) in an eligible dwelling**

59. BS5228-2 provides guidance on the control of vibration from construction sites and response limits for cosmetic damage in buildings as reproduced in Table 8-3. Table 8-3 shows the limits at which the vibration level (measured as a peak particle velocity) would result in cosmetic damage at a range of vibration frequency levels.

**Table 8-3 Transient Vibration Guide for Cosmetic Damage (from BS 5228-2:2009)**

Type of Building	Peak Component Particle Velocity (PPV) in Frequency Range of Predominant Pulse	
	4Hz to 15Hz	15Hz and above
Reinforced or framed structures Industrial and heavy commercial buildings	50mm/s at 4Hz and above	50mm/s at 4Hz and above
Unreinforced or light framed structures Residential or light commercial buildings	15mm/s at 4Hz increasing to 20mm/s at 15 Hz	20mm/s at 15Hz increasing to 50mm/s at 40Hz and above

Note 1) Values referred to are at the base of the building  
 Note 2) For line 2, at frequencies below 4Hz, a maximum displacement of 0.6mm (zero to peak) is not be exceeded

60. BS 5228-2 also presents levels of vibration that may cause complaint, which is predicted to occur between 0.3 mm/s (just perceptible) and 1.0 mm/s (likely to cause complaint). BS 5228-2 values have been taken into consideration in the assessment of vibration levels from construction HGV traffic.

## 9. NOISE AND VIBRATION ASSESSMENT

### 9.1. Noise Assessment

61. In undertaking the Environmental Impact Assessment for EA THREE, a noise and vibration assessment was completed to identify and assess the potential activities associated with the proposed onshore construction works that could lead to noise and vibration impacts on receptors (Environmental Statement Volume 1, Chapter 26 Noise and Vibration). The Environmental Statement (ES) was undertaken by Royal HaskoningDHV in November 2015.

62. The noise and vibration assessment was undertaken in accordance with the requirements stated in the Sections 5.11.4 to 5.11.7 of the National Policy Statement EN-1 (NPS EN-1). In this sense, the NPS EN-1 states that, “where noise impacts are likely to arise, the applicant should include:

- a description of the noise generating aspects of the development proposal leading to noise impacts including the identification of any distinctive tonal, impulsive or low frequency characteristics of the noise;
- identification of noise sensitive premises and noise sensitive areas that may be affected;
- the characteristics of the existing noise environment;
- a prediction of how the noise environment will change with the proposed development;
- in the shorter term such as during the construction period;
- in the longer term during the operating life of the infrastructure;
- at particular times of the day, evening and night as appropriate;
- an assessment of the effect of predicted changes in the noise environment on any noise sensitive premises and noise sensitive area; and
- measures to be employed in mitigating noise.”

63. To carry out the noise and vibration assessment a worst-case scenario was selected taking into account the following aspects:

- The methods within BS 5228-1 and BS 5228-2 were used to assess noise and vibration from the onshore construction works.
- In order to assess the noise from road traffic, the method CRTN (Calculation of Road Traffic Noise) produced by the Department of Transport / Welsh Office and the guidance provided by the Highways Agency (Design Manual for Roads and Bridges. Volume 11, Section 3, Part 7 Had 213/11 Noise and Vibration) were taken into account.
- Clappits Works activities.

64. The noise levels of the equipment to be used for Clappits Works are shown in Table 9-1 (taken from Annex C and D of BS 5228-1:2009+A1:2014).

**Table 9-1 Assumed construction equipment and noise emissions used for noise calculations (BS 5228-1:2009+A1:2014)**

Activity	Assumed construction equipment	Noise emissions (dB(A) at 10m from source)
Jointing Bays	Generator	62
	Telehandler	78
	30T Excavator	75
	Loader	67
	Tractor and trailer	79
	Cable winch	66
	HIAB crane lorry	77
	Lorry and low loader	80
CCS/Accesses/Haul Roads	Loader	67
	D8 Dozer	86
	Grader	86
	Road Roller	80
	20T Dumper	77
	30T Excavator	75
	Tractor and trailer	79
	Bowser	79
	Sweeper	76

65. It was assumed that the majority of construction works would be restricted to daytime working hours. The exceptions to this are limited as described in Section 3.3.

66. Based on Method 1 of Annex E of BS5228 (ABC Method), the site noise level should be limited to the lower impact threshold of 65dB LAeq 12hr for the Clappits Works due to existing ambient noise levels at the nearest receptor of less than 60dB LAeq.

67. The distance from the construction works at which the threshold will be met was calculated using a distance propagation calculation and was found to be 80m for cable route, excluding the landfall transition bays. The ES concluded that any receptors outside this distance would experience a negligible effect, in accordance with BS 5228:2009 + A1:2014.

68. An initial screening exercise was then undertaken to establish the presence of any residential receptors within this buffer distance of the onshore works. The ES concluded that there are no properties within the construction noise impact buffer around the cable activities and, therefore, on-site construction works were predicted to result in an effect of negligible magnitude and a negligible impact.

**9.1.1. Off-site Construction Traffic**

69. Following the methodology contained in Design Manual for Roads and Bridges (DMRB) (Volume 11, Section 3, Chapter 3) (Highways Agency,2011)<sup>2</sup> an initial screening assessment was undertaken to assess whether there would be any significant changes in traffic

<sup>2</sup> The DMRB has since been updated by document Highways England document LA111 Noise and Vibration May 2020, however, it is considered that the scoping assessment still holds true.



volumes as a result of the development. An increase in traffic volume of 25% corresponds to a 1dB(A) change in noise level over an 18 hour period on the relevant road link. A change in noise level of less than 1dB(A) is regarded as imperceptible and therefore negligible with regard to impact significance. If there is no increase greater than 25%, then the guidance indicates that no further assessment needs to be conducted (Highways Agency 2011).

- 70. The ES concluded that no road links associated with the onshore cable works, including the Clappits Works are likely to experience an increase in total traffic or HGV flows greater than 25% and, therefore, the associated noise impacts would be negligible.

**9.2. Vibration Assessment**

- 71. Ground borne vibration from construction activities was scoped out of detailed assessment in the ES on the basis of separation distance from construction activities and any sensitive receptors, with only properties within 100m of the works given further consideration due to the generally relatively low levels of vibration due to the proposed construction activities. The Clappits Works site is not located within 100m of residential properties.
- 72. Discontinuities (e.g. potholes) on the roads adjacent to sensitive receptors have the potential to result in vibration levels that exceed the minimum peak particle velocity (PPV) as specified in BS5288-2. The majority of buildings would be resilient to the worst case vibration levels anticipated. However, a precautionary approach has been considered for listed buildings and non-earthwork related scheduled ancient monuments as these are considered of high sensitivity. Archaeological sites and listed buildings have been identified (Appendix 1) within 10m of the designated construction HGV routes (see Traffic Management Plan (EA3-LDC-CNS-REP-IBR-000053)). 10m is considered the largest distance from the road at which there is potential for vibration impacts from HGV along roads, with a distance of 5m considered as a distance for a potentially significant effect. A review of the scheduled ancient monuments found no known archaeological sites within 10m of the proposed HGV routes to and from the site at Clappits.
- 73. Listed buildings have been assessed based on distance to the proposed HGV route to the site at Clappits and also the extent of current use by HGV along these roads using the Suffolk Lorry Route Network. Listed buildings on the existing lorry route would not be subjected to higher vibration levels than are already within the baseline environment. There are no listed buildings within 5m of the road and on a route not designated on the Suffolk Lorry Route Network. In addition, the CCS, new access and haul road to the jointing bay location are not located within 5m of any listed buildings and there is, therefore, no requirement to monitor their condition with respect to potential vibration impacts.

**10. NOISE AND VIBRATION CONTROLS**

- 74. EA THREE onshore construction works will comply with the recommendations set out in BS 5228-1 and BS5228-2 and in the ES.
- 75. Best Practice Measures (BPM) and attenuation measures will be applied during construction works to minimise noise and vibration at neighbouring residential properties and other sensitive receptors arising from construction activities. Whilst the Threshold values indicate when significant impact may occur, BPM should be employed to reduce noise as far as practicable.
- 76. BPM are defined in Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environmental Protection Act 1990, as those measures which are ‘*reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications*’.
- 77. At this time, the BPM and mitigation measures described in Table 10-1 will be implemented to minimise noise during the onshore construction works. Following receipt of a justified complaint these measures would be reviewed to confirm they have been adopted and are being utilised.

**Table 10-1 Best Practice and Mitigation Measures**

Construction Best Practice Mitigation Measures
<ul style="list-style-type: none"> <li>• Consideration of noise levels when selecting construction methods and equipment used.</li> </ul>
<ul style="list-style-type: none"> <li>• Management of construction operating hours (in accordance with those specified within the DCO).</li> </ul>
<ul style="list-style-type: none"> <li>• Training of construction workers on site to ensure noise is considered through all stages.</li> </ul>
<ul style="list-style-type: none"> <li>• Implementation of traffic management measures such as agreed routes for construction traffic.</li> </ul>
<ul style="list-style-type: none"> <li>• Use of modern, fit for purpose, well maintained plant equipment to minimise noise generation. Plant and vehicles will be fitted with mufflers / silencers maintained in good working order. Use of silenced equipment, as far as possible and low</li> </ul>

Construction Best Practice Mitigation Measures	
	impact type compressors and generators fitted with lined and sealed acoustic covers. Doors and covers housing noise emitting plant will be kept closed when machines are in use. The positioning and specification of any generators used close to residential properties shall be so as to ensure compliance with the assessed noise guidance thresholds and shall be agreed with ESC as required.
	<ul style="list-style-type: none"> <li>Where reasonably practicable, vibrating and noisy equipment should be located as far from sensitive premises as possible, and, if on a structure, not on one which is continuous with that of the sensitive premises; contractors and subcontractors should be trained to employ appropriate techniques to keep site noise to a minimum, and should be effectively supervised to ensure that best working practice in respect of noise and vibration reduction are followed.</li> </ul>
	<ul style="list-style-type: none"> <li>Minimise drop height of materials.</li> </ul>
	<ul style="list-style-type: none"> <li>Construction site layout to minimise or avoid reversing with use of banksmen where appropriate. Output noise from reversing alarms set at levels for health and safety compliance.</li> </ul>
	<ul style="list-style-type: none"> <li>Start-up plant, equipment and vehicles sequentially rather than all together.</li> </ul>
	<ul style="list-style-type: none"> <li>No working during night hours except for specific activities which have been agreed with ESC and should be discouraged as much as possible.</li> </ul>
	<ul style="list-style-type: none"> <li>Radios (other than two-way radios used for the purposes of communication related to the works) and other forms of audio equipment (other than associated with safety mechanisms (such as reversing beepers) shall not be operated during construction activities.</li> </ul>
	<ul style="list-style-type: none"> <li>Construction activities with the potential for significant impacts should be discouraged if possible, during night hours.</li> </ul>
	<ul style="list-style-type: none"> <li>Avoid shouting and minimise talking loudly and slamming vehicle doors.</li> </ul>
	<ul style="list-style-type: none"> <li>Ensuring engines are switched off when machines are idle.</li> </ul>
	<ul style="list-style-type: none"> <li>Noise and vibration should be controlled at source and the spread of noise and vibration should be limited.</li> </ul>
	<ul style="list-style-type: none"> <li>Use screens and noise barriers / acoustics screens where deemed necessary.</li> </ul>
	<ul style="list-style-type: none"> <li>Regular communication with site neighbours to inform them of the construction schedule, and when noisy activities are likely to occur.</li> </ul>
	<ul style="list-style-type: none"> <li>All residents who are likely to be affected by constructional noise that exceeds 64dB(A) expressed as a 1 hour L(A)eq value shall be notified at least 24 Hours in advance of the works and given an estimate of how long the elevated noise levels will continue</li> </ul>
	<ul style="list-style-type: none"> <li>If it is deemed by ESC that during construction monitoring of construction noise is necessary, then the locations for such monitoring will be agreed in advance with ESC.</li> </ul>

79. The above table is not an exhaustive list of BPM and should additional, more appropriate, measures be deduced then they should be included as reasonable steps to minimise noise.

80. To ensure that excessive vibration levels on the road network are not caused by HGVs travelling over discontinuities in the road, visual checks should be made of roads adjacent to the buildings listed in Appendix 1 (to follow) by contractors, the construction management team and EnvCoW.

## 11. NOISE AND VIBRATION MONITORING

### 11.1. Noise Monitoring

81. A scheme of noise monitoring will be implemented and maintained during construction in order to ensure compliance with the noise limits and to verify the effectiveness of the best practice and mitigation measures identified in Section 10. The frequency will be flexible (weekly during initial stages and monthly once compliance with levels established) and should cover all construction activities and stages. Monitoring will also be undertaken, as required, when working near sensitive receptors or in response to a complaint.

82. The purpose of the noise monitoring is to facilitate data acquisition to demonstrate that the EA THREE Clappits Works are being carried out within the noise criteria set out in accordance with the BS 5228-1 and in such a manner to minimise the noise impacts at nearby sensitive receptors, and if required in response to complaints.

83. Short term attended noise measurements shall be taken by a suitably qualified acoustician in the vicinity of the property in order to assess the fulfilment of the noise criteria stated in Section 8. Where access to a property is not granted to undertake such measurements, measurements shall be undertaken at a location that is considered by the suitably qualified acoustician, to be representative of noise levels at the property or properties in question.

84. The noise measurement sample duration at each location for both day and night-time monitoring will be no less than 30 minutes. Data collected for the identified receptors will include at least the following parameters:  $L_{A1}$ ,  $L_{A5}$ ,  $L_{A10}$ ,  $L_{A50}$ ,  $L_{A90}$ ,  $L_{A95}$ ,  $L_{A99}$ ,  $L_{Aeq}$ ,  $L_{Amax}$  and  $L_{Amin}$ .

85. Type 1 integrating averaging SLM and Class 1 Sound Calibrators will be used. SLM and Calibrators must fulfil the requirements established in the following British and European standards:

- BS EN 61672-1:2003. Electroacoustics. Sound level meters. Specifications;
- BS EN 61672-2:2003. Electroacoustics. Sound level meters. Pattern evaluation tests;
- BS EN 61672-3:2006. Electroacoustics. Sound level meters. Periodic tests;
- BS 7580-1:1997. Specification for the verification of sound level meters. Comprehensive procedure; and
- BS EN 60942:2003. Electroacoustics. Sound calibrators.

86. SLM and calibrators shall be calibrated to a traceable standard by a UKAS-accredited laboratory, within a 24- month period before the survey for SLMs and 12-month period for calibrators. The SLMs shall be field-calibrated before and after monitoring using an acoustic calibrator.

87. The SLM shall be positioned such that the microphone is located 1.5m above ground level in free-field conditions (at least 3.5m from the nearest vertical reflecting surface), at all receptors. A note of the prevailing weather conditions shall be made at the time of the measurements.

## 11.2. Vibration Monitoring

88. It is not anticipated that vibration monitoring will be required during the normal course of construction works. Vibration monitoring would only be adopted upon receiving a complaint or a specific directive from ESC.

89. Where required vibration monitoring instrumentation will be deployed as close to the sensitive buildings as possible.

90. The instrumentation will be installed, operated and maintained by suitable qualified personnel. Vibration levels shall be measured using instrumentation calibrated to a traceable standard by a UKAS-accredited laboratory according with BS 5228- 2:2009.

## 12. REPORTING

### 12.1. Noise Report

91. On completion of each noise survey a report shall be prepared in a format suitable submission to ESC. The report shall be submitted within seven working days of the scheduled date.

92. The report shall contain at least:

- the results of the noise survey;
- details of the instrumentation and measurement methods used;
- calibration details;
- weather conditions and factors that might have adversely affected the reliability or accuracy of the measurements;
- plans of the site and neighbourhood showing the position of plant, associated buildings and notes of site activities during monitoring period(s); and
- time, date and name of person carrying out the measurement.

### 12.2. Vibration Report

93. If required, on completion of a vibration survey a report shall be prepared in a format suitable for submission to ESC. The report shall be submitted within seven working days of the scheduled date.

94. The report shall contain at least:

- the results of the vibration survey;
- details of the instrumentation and measurement methods used;

- plans of the site and neighbourhood showing the position of plant, associated buildings and notes of site activities during monitoring period(s); and
- time, date and name of person carrying out the measurement.

### 13. NOISE AND VIBRATION ENVIRONMENTAL INCIDENT

95. The following situations represent potential noise and vibration environmental incidents and as such will be subject to the relevant controls (as set out in Section 14 ), including review of control measures to ensure that BPM are being utilised:

- a complaint received from a member of the public, by ESC;
- an incident or activity which results in a breach of consent conditions e.g. non-compliance with the working hours, non-permitted plant/equipment or non-compliance with BPM or mitigation measures; and
- measured exceedance.

### 14. NON-COMPLIANCE WITH NOISE LIMITS

96. If the noise criteria levels set out Section 8 are exceeded during the noise and vibration surveys as a result of construction works or a complaint is received by the Principal Contractor, EATL, ESC from a local resident, an investigation shall be instigated by the Principal Contractor to identify the cause of the non compliance. In the event that the Principal Contractor or EATL receives the complaint they shall notify the ESC Environmental Health Officer (EHO) within 48 hours.

97. Such an investigation may involve the identification and cessation of the activity or activities considered to be the cause of the non-compliance and/or the investigation of the mitigation measures to reduce the noise or vibration emission levels from the activity or activities, for example the replacement of the noisy plant with quieter alternatives and/or the use of temporary screens.

98. Where noise or vibration monitoring is required this will be undertaken as soon as possible, in accordance with the methodology set out in Section 11.1. Following the monitoring a report shall be prepared and submitted to ESC within 5 days. Following the report, if required noise mitigation measures will be agreed with the relevant local planning authority and implemented. In the event that a further complaint is made further monitoring may be undertaken in agreement with ESC.

99. Any deviation from agreed working practices shall be identified immediately and conformance to the working practice reinstated.

### 15. TRAINING

100. All site personnel should be trained to employ appropriate techniques to keep noise to a minimum and should be effectively supervised to ensure that best working practice in respect of noise reduction is followed.

101. All employees should be advised regularly of the following, as part of their training:

- the proper use and maintenance of tools and equipment;
- the positioning of machinery on site to reduce the emission of noise to the neighbourhood and to site personnel;
- the avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment;
- the protection of persons against noise;
- the impact of noise and vibration on ecology; and
- the operation of sound measuring equipment (selected personnel).

102. All site personnel will be made aware of the noise and vibration issues covered in this Noise and Vibration Management Plan during site induction.

## 16. REFERENCES

Department for Energy & Climate Change, July 2021, *Overarching National Policy Statement for Energy* (EN-1). London: The Stationery Office

EA ONE Ltd, 2017, East Anglia ONE Baseline Noise Data Report – FINAL 296926-01(00) EA1 Onshore Enabling Works (ONCA & ONSS), EA1-GRD-F-RDB-116819 Rev0 ONCA & ONSS

Highways Agency, 2011, *Design Manual for Roads and Bridges (DMRB) (Volume 11, Section 3, Chapter 3)*, London, The Stationery Office Ltd

Highways England, May 2020, *LA 111 Noise and vibration* (formerly HD 213/11, IAN 185/15), Revision 2,

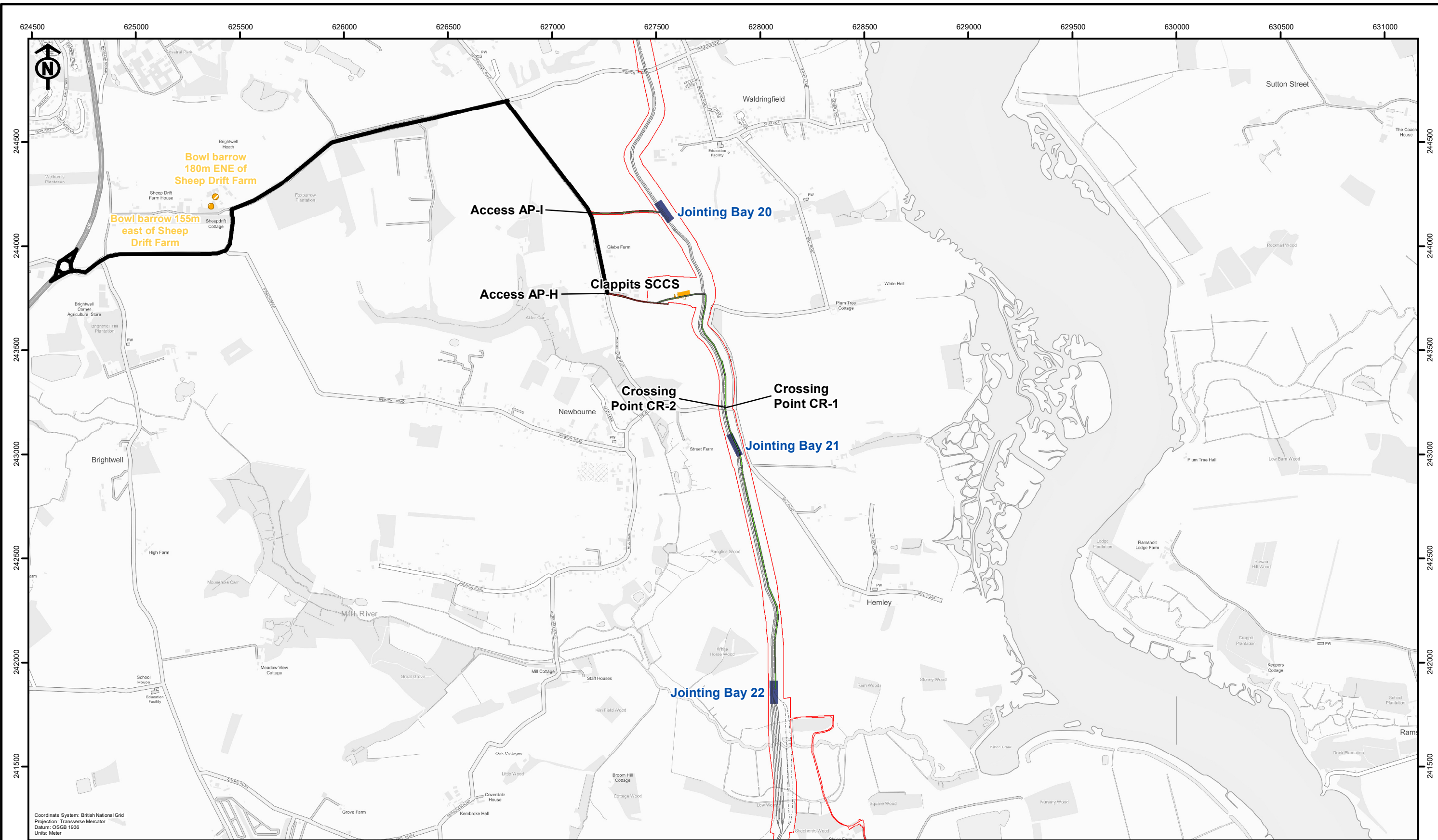
Ministry of Housing, Communities and Local Government, *NPF - National Planning Policy Framework*, 2019, Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [accessed 17/12/2020]

FOR DISCHARGE

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**APPENDIX 1 ARCHAEOLOGICAL SITES AND LISTED BUILDINGS WITHIN 100M OF  
THE DESIGNATED CONSTRUCTION HGV ROUTES**

FOR DISCHARGE



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

- EA THREE DCO Corridor
- Secondary Construction Consolidation Site
- Jointing Bay Compound
- Access Track
- Haul Road
- Existing Track
- Top Soil
- EA THREE Existing Cable Ducts
- EA ONE Existing Cable Ducts
- HGV Route from A12
- Scheduled Monument within 100m of the HGV Route

*Note: There are no Listed Buildings within 100m of the HGV Route*



Rev	Date	By	Comment
A	07/04/2022	PW	First Issue

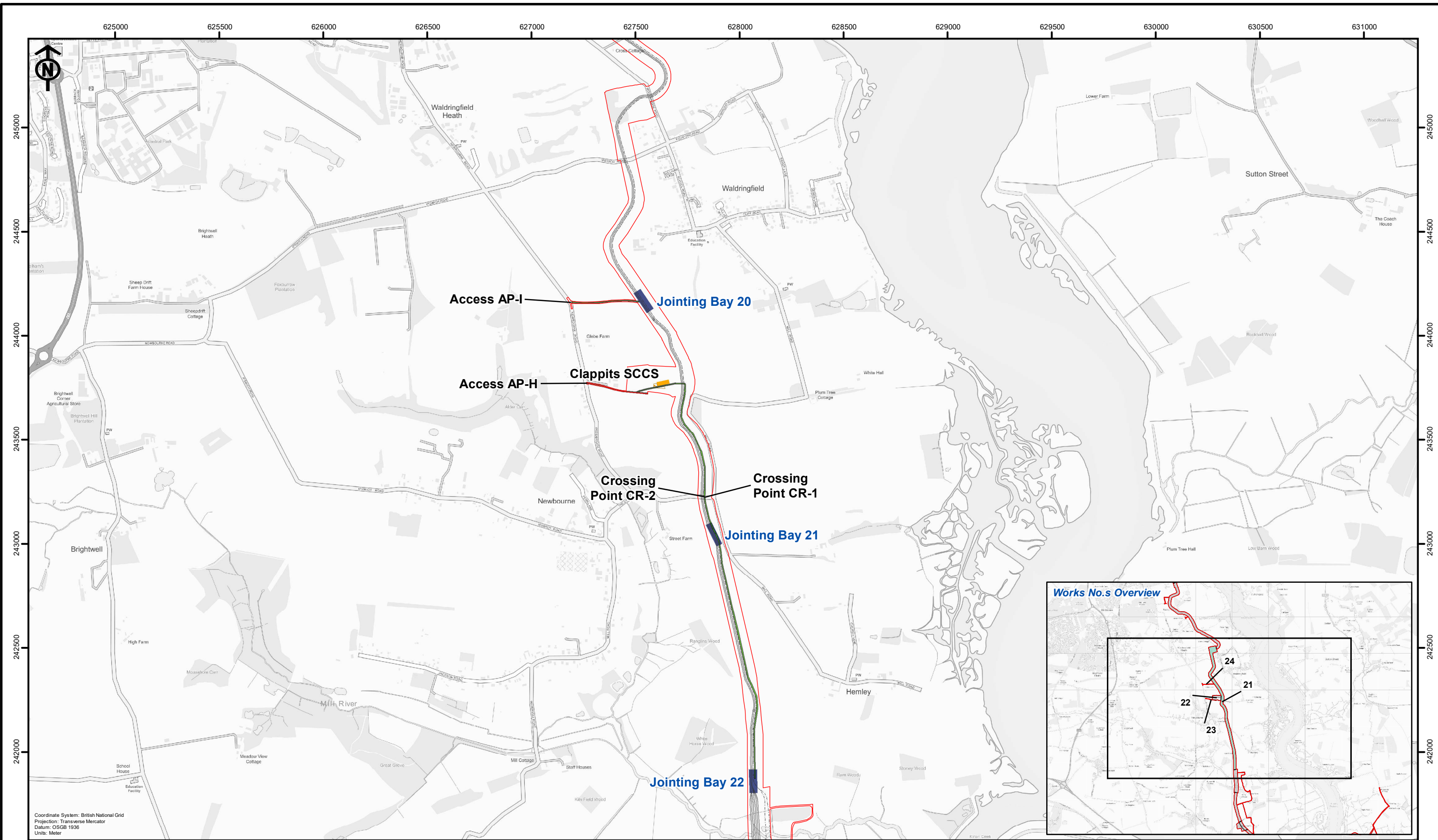
Original A3 Plot Scale 1:17,500

0 360 720 Metres

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**Clappits Works Stage**  
 Appendix : Archaeological Sites and Listed Buildings Within 100m of the Designated Construction HGV Routes

Drg No	05356.00006.12.0060.0 HGV Route
Rev	1
Date	07/04/2022
Layout	N/A



EA THREE DCO Corridor	Access Track	EA ONE Existing Cable Ducts
Secondary Construction Consolidation Site	Haul Road	
Jointing Bay Compound	Existing Track	
Top Soil	EA THREE Existing Cable Ducts	

<b>Works No.s</b>	24
	21
	22
	23

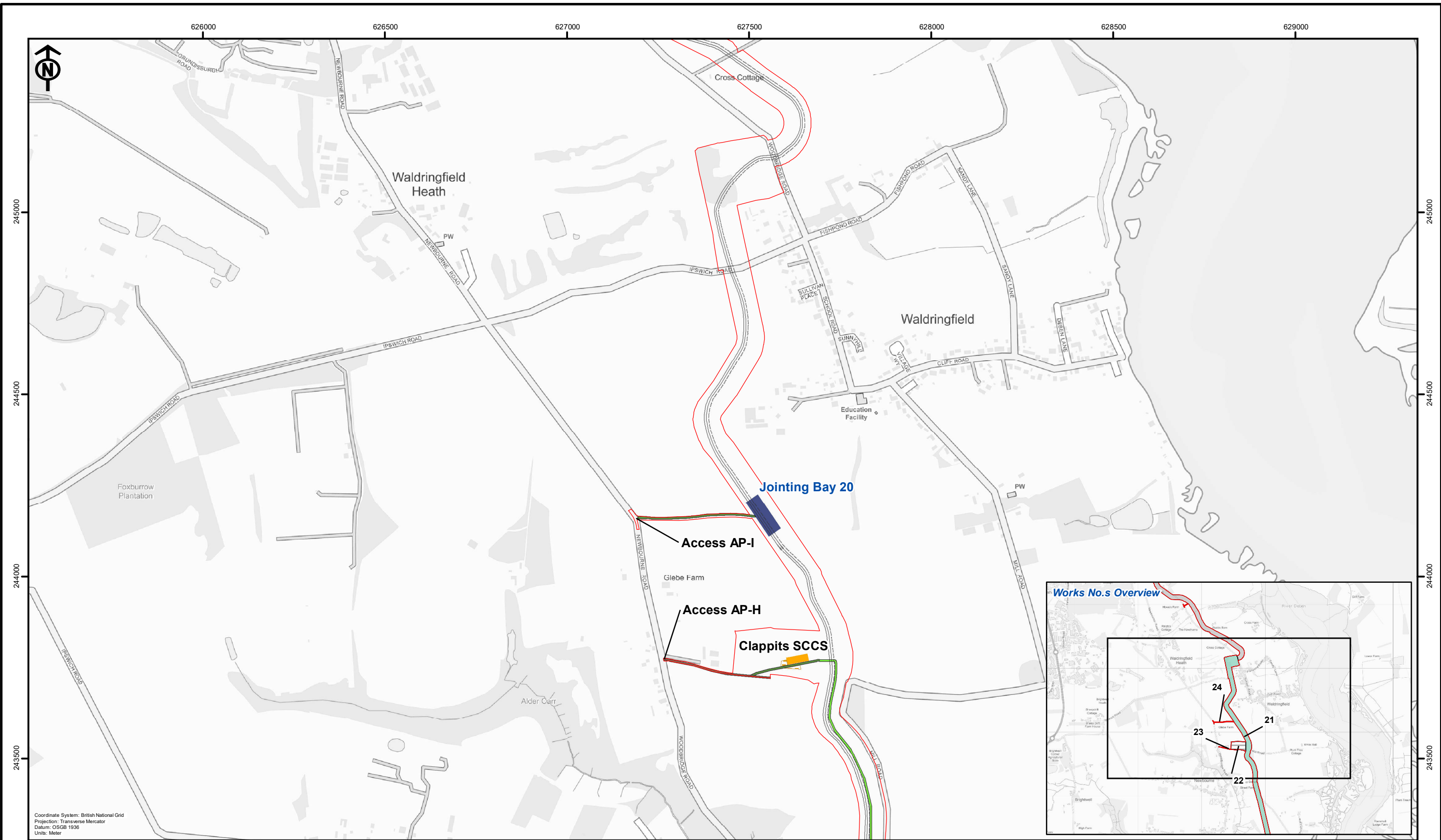


				Original A3 Plot Scale 1:17,500	0 360 720 Metres
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A	31/03/2022	JRS	First Issue		
Rev	Date	By	Comment		

**Clappits Works Stage**  
 Figure 1: Overview Plan

Drg No	05356.00006.12.0021.1 Site Context Plan
Rev	2
Date	05/04/2022
Layout	N/A





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

EA THREE DCO Corridor	Access Track	EA ONE Existing Cable Ducts	<b>Works No.s</b> 21 22 23 24
Secondary Construction Consolidation Site	Haul Road	Existing Track	
Jointing Bay Compound	EA THREE Existing Cable Ducts		
Top Soil			



Rev	Date	By	Comment
B	05/04/2022	PW	Second Issue
A	31/03/2022	JRS	First Issue

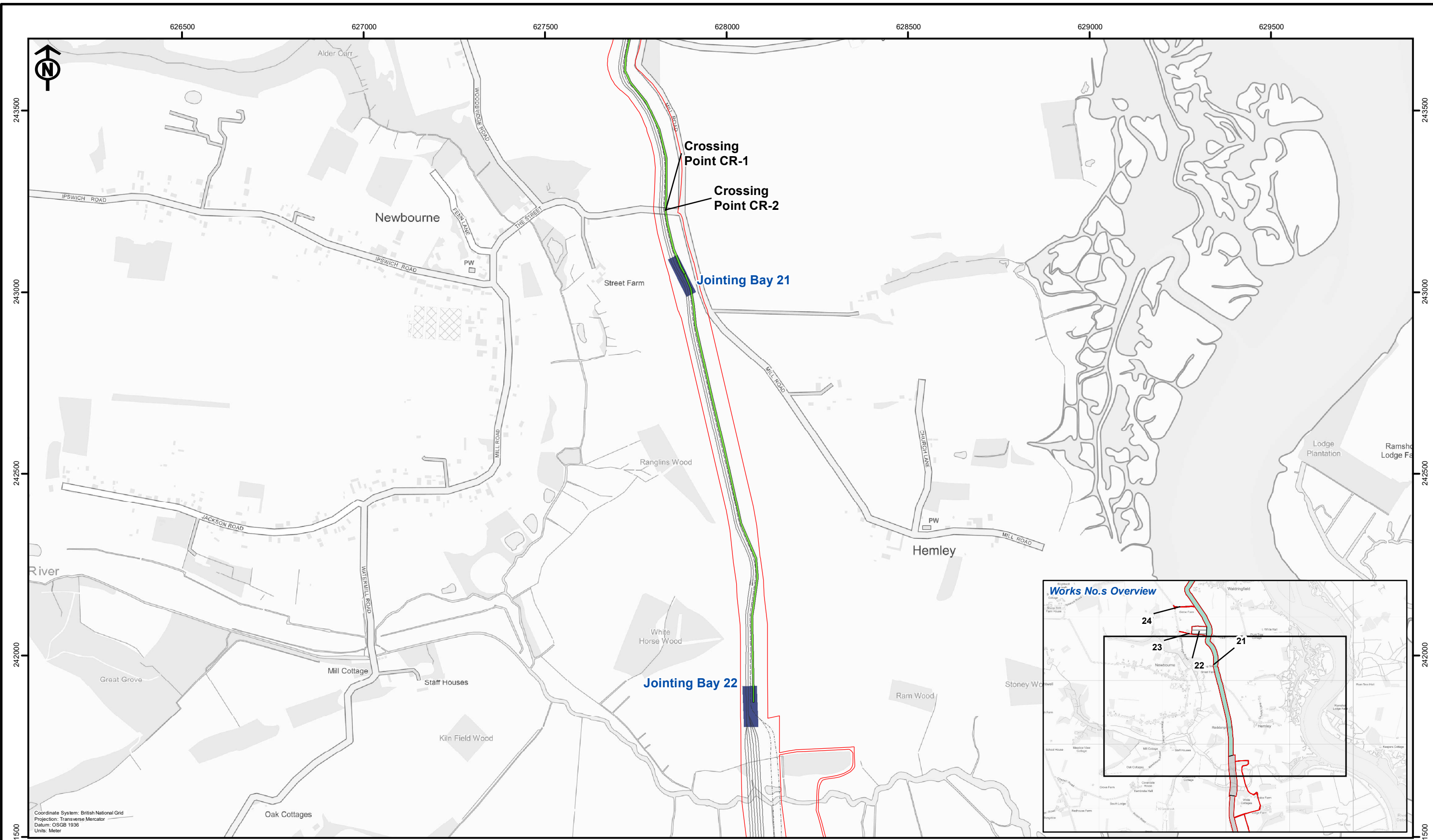
Original A3 Plot Scale 1:10,000

0 200 400 Metres

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**Clappits Works Stage**  
 Figure 2a: Site Context Plan (North)

Drg No	05356.00006.12.0021.1 Site Context Plan
Rev	2
Date	05/04/2022
Layout	N/A



- EA THREE DCO Corridor
- EA ONE Existing Cable Ducts
- Jointing Bay Compound
- Haul Road
- EA THREE Existing Cable Ducts

- Works No.s**
- 24
  - 21
  - 22
  - 23



Rev	Date	By	Comment
B	05/04/2022	PW	Second Issue
A	31/03/2022	JRS	First Issue

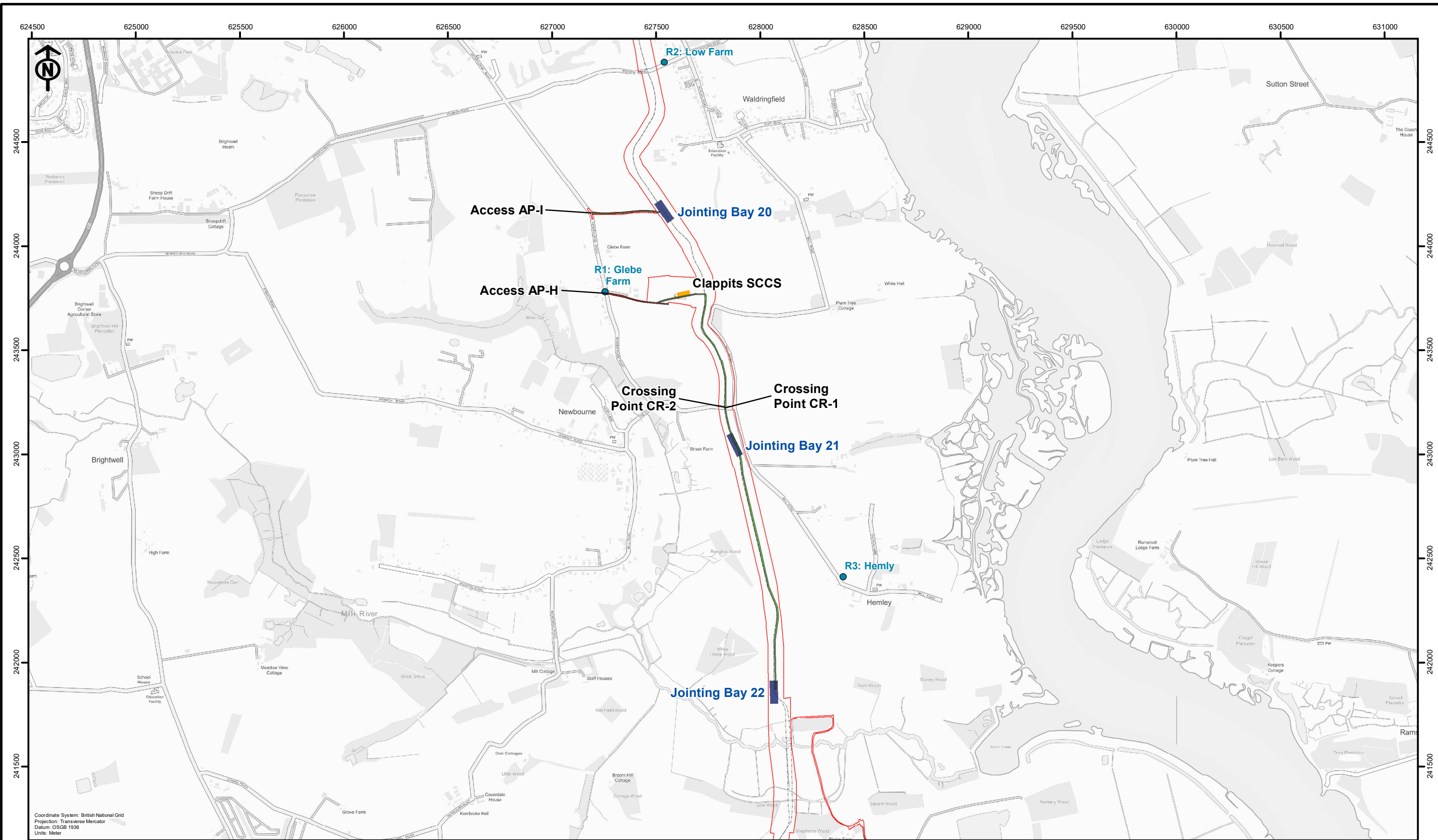
Original A3 Plot Scale 1:10,000

0 200 400 Metres

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NOT TO BE USED FOR NAVIGATION.

**Clappits Works Stage**  
Figure 2b: Site Context Plan (South)

Drg No	05356.00006.12.0021.1 Site Context Plan
Rev	2
Date	05/04/2022
Layout	N/A



	EA THREE DCO Corridor		Haul Road		Sensitive Receptor
	Secondary Construction Consolidation Site		Existing Track		Top Soil
	Jointing Bay Compound		EA THREE Existing Cable Ducts		
	Access Track				



Rev	Date	By	Comment
B	05/04/2022	PW	Second Issue
A	07/01/2022	PW	First Issue

Original A3 Plot Scale 1:17,500

0 340 680 Metres

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**Clappits Works Stage**  
Figure 3: Sensitive Receptors

Drg No	05356.00006.12.0022.1 Figure 2 Sensitive Receptors
Rev	2
Date	05/04/2022
Layout	N/A